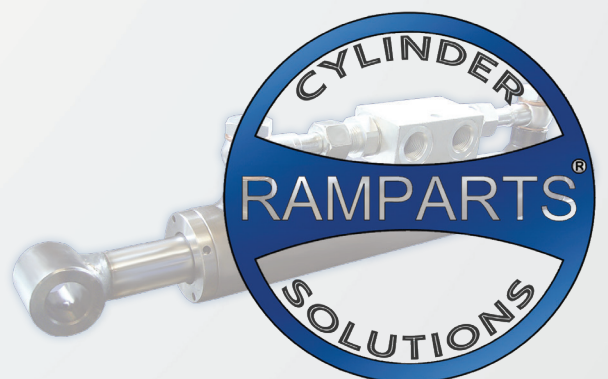
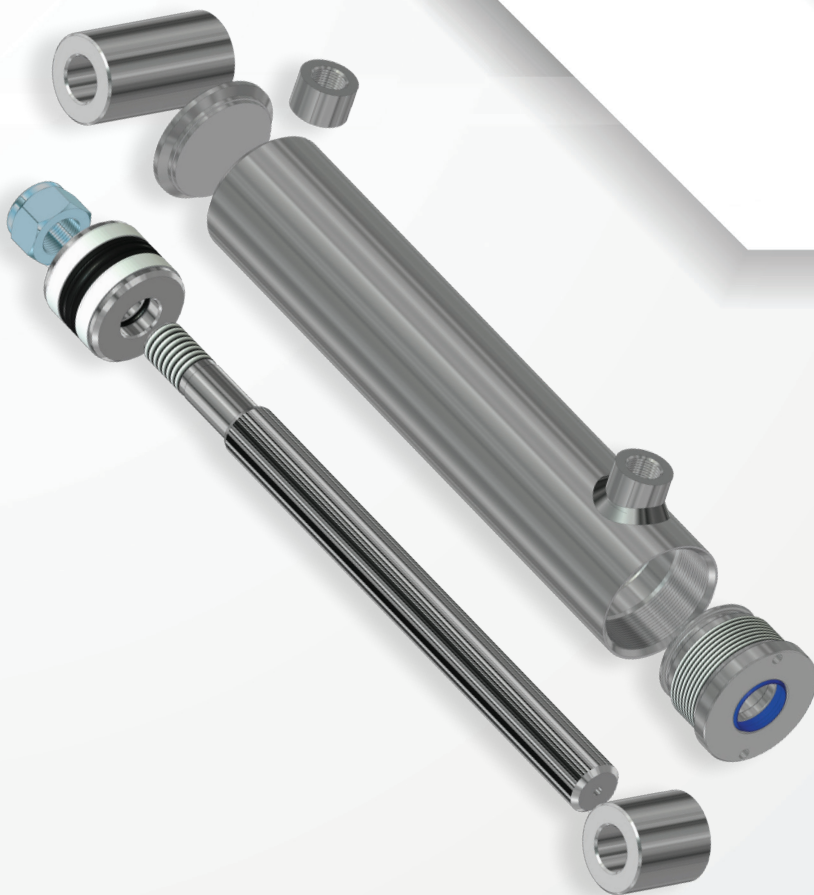


STEERFORTH

HYDRAULIC COMPONENTS

14th EDITION



14th EDITION

STEERFORTH HYDRAULIC COMPONENTS ACCOMMODATE THE DEMANDS OF ALL INDUSTRY SECTORS



WITH MANY YEARS EXPERIENCE SUPPLYING
HYDRAULIC RE-SELLERS AND OEM ACCOUNTS

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PRICING POLICY

AS SUPPLIERS TO THE TRADE WE RECOGNISE THE NEED TO PROTECT OUR CUSTOMER'S MARGINS.
WE WILL NOT KNOWINGLY GIVE FULL TRADE DISCOUNT TO AN END USER.

OUR SERVICES

BELOW ARE JUST SOME OF THE WIDE RANGE OF SERVICES WE OFFER TO OUR CUSTOMERS...



ONLINE WEB ACCOUNT:

CONTACT US TO OPEN AN ONLINE ACCOUNT AND PLACE ORDERS ON YOUR EXISTING CREDIT ACCOUNT.

BENEFIT FROM FREE DELIVERY ON ORDERS OVER £25 PLACED ONLINE.

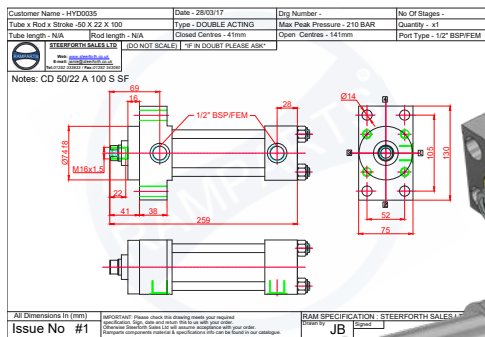
DOWNLOAD DATA SHEETS AND CHECK PRICES.

PLAIN WRAP DELIVERIES:

USE OUR PLAIN WRAP SERVICE TO GET ITEMS TO YOUR CUSTOMERS SOONER.

SEND US YOUR DELIVERY NOTES AND OUR NAME WILL NOT APPEAR ANYWHERE ON THE PARCEL.

SAVE ON DELIVERY CHARGES TO YOUR CUSTOMERS.



2D & 3D CAD FILES:

CAD FILES CREATED WITH QUOTATIONS TO ENSURE YOU RECEIVE CYLINDERS TO YOUR SPECIFICATION.

3D CAD FILES AVAILABLE TO AID THE DESIGN PROCESS.

DOWNLOAD ISO6020/2 & ISO6022 CAD FILES FROM OUR WEBSITE.

RAMPARTS® CYLINDER KITS:

LOOK OUT FOR THE "RK" IMAGE FOR STANDARD HYDRAULIC CYLINDERS AVAILABLE IN KIT FORM.

RK KITS AVAILABLE FROM STOCK FOR QUICK DELIVERIES.



WE NOW OFFER THE LARGEST RANGE OF STANDARD CYLINDERS WITH 1100+ AVAILABLE!!

HMF HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

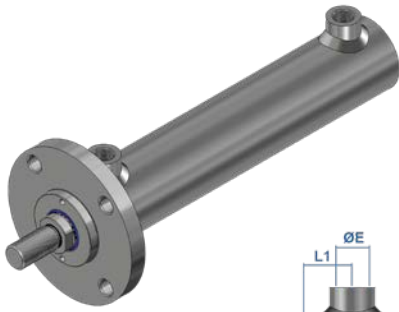
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

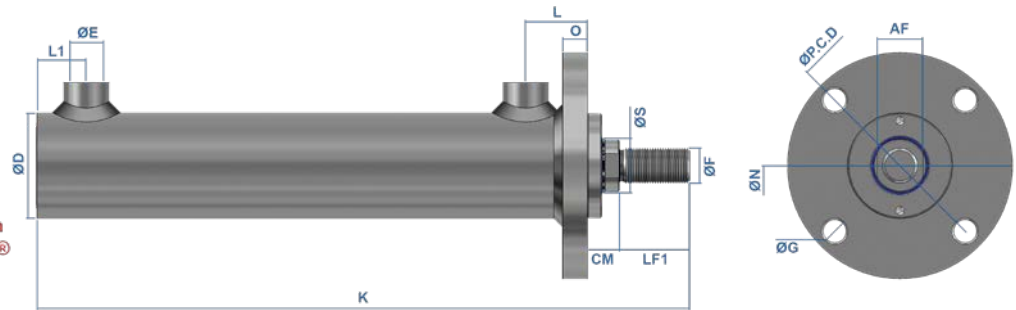
OPERATING TEMPERATURE (°C) = +80°C TO -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



Available in a Ramparts® kit!



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	CM (mm)	L (mm)	L1 (mm)	F Ø(mm)	LF1 (mm)	O (mm)	AF (mm)	PCD Ø(mm)	N Ø(mm)	G (mm)	FLANGE REF	WEIGHT
HMF1200100				250	100													3
HMF1200200				350	200													3.8
HMF1200300	40	50	20	450	300	1/4"	18	32	25	16x1.5	30	12	18	87	109	11 (x4)	CFL0050	4.6
HMF1200400				550	400													5.4
HMF1200500				650	500													6.2
HMF2300100				270	100													4.6
HMF2300200				370	200													5.8
HMF2300300	50	60	30	470	300	3/8"	18	35	25	20x1.5	40	14	26	105	128	13 (x4)	CFL0060	7
HMF2300400				570	400													8.2
HMF2300500				670	500													9.4
HMF3350100				300	100													6.9
HMF3350200				400	200													8.4
HMF3350300	60	70	35	500	300	3/8"	20	40	30	27x2	50	16	32	117	142	13 (x4)	CFL0070	9.9
HMF3350400				600	400													11.4
HMF3350500				700	500													12.9
HMF4400100				312	100													8.63
HMF4400200				412	200													10.53
HMF4400300	70	80	40	512	300	3/8"	22	40	30	30x2	60	16	36	127	162	15 (x4)	CFL0080	12.76
HMF4400400				612	400													15
HMF4400500				712	500													17.2
HMF5500100				345	100													13.7
HMF5500200				445	200													16.8
HMF5500300	80	95	50	545	300	1/2"	25	50	40	36x2	70	18	45	149	181	17 (x6)	CFL0095	19.9
HMF5500400				645	400													23
HMF5500500				745	500													26.1
HMF6500100				375	100													20.2
HMF6500200				475	200													25.8
HMF6500300	100	115	50	575	300	1/2"	27	70	40	36x2	70	24	45	162	194	17 (x6)	CFL0115	27.2
HMF6500400				675	400													30.8
HMF6500500				775	500													34.4

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMF1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HFR / NFR HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

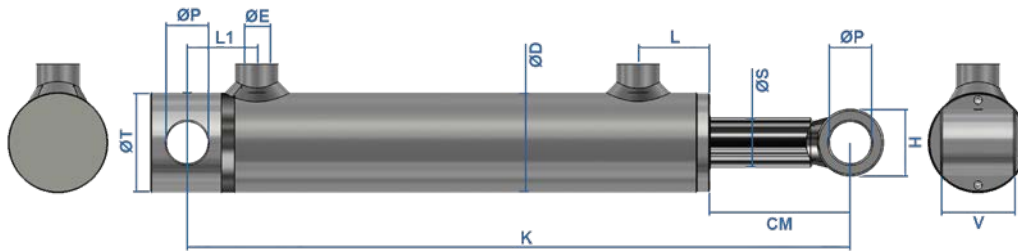
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C TO -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	P Ø(mm)	H Ø(mm)	V (mm)	T Ø(mm)	WEIGHT (kgs)
HFR0160050	25	35	16	160	50	1/4"	33	22	31	12.1	25	25	35	1.0
HFR0160100				210	100									1.2
HFR0160150				260	150									1.4
HFR0160200				310	200									1.7
HFR0200050	32	42	20	205	50	1/4"	33	35	51	16.2	30	35	40	1.7
HFR0200100				255	100									2.1
HFR0200150				305	150									2.4
HFR0200200				355	200									2.8
HFR0200250				405	250									3.1
HFR0200300				455	300									3.5
HFR0200400				555	400									4.2
HFR0200500				655	500									4.8
NEW! HFR0200600				755	600									5.6
NEW! HFR0200700				855	700									6.3
NFR1250100	40	50	25	270	100	3/8"	40	38	65	20.25	35	40	50	3.0
NFR1250150				320	150									3.4
NFR1250200				370	200									3.9
NFR1250250				420	250									4.4
NFR1250300				470	300									4.8
NFR1250400				570	400									5.8
NFR1250500				670	500									6.7
NFR1250600				770	600									7.6
NFR1250700				870	700									8.6
NFR1250800				970	800									9.5
NEW! NFR1251000	1170	1000	11.4											
NFR2300100	50	60	30	300	100	3/8"	43	42	85	25.25	40	45	60	4.4
NFR2300150				350	150									5.0
NFR2300200				400	200									5.6
NFR2300250				450	250									6.2
NFR2300300				500	300									6.9
NFR2300400				600	400									8.1
NFR2300500				700	500									9.3
NFR2300600				800	600									10.5
NFR2300700				900	700									11.8
NFR2300800				1000	800									13.0
NFR2300900	1100	900	14.2											
NFR2301000	1200	1000	15.5											
NFR3300100	60	70	30	300	100	3/8"	50	36	83	25.25	40	45	70	5.6
NFR3300150				350	150									6.3
NFR3300200				400	200									7.0

HFR / NFR HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	P Ø(mm)	H Ø(mm)	V (mm)	T Ø(mm)	WEIGHT (kgs)
NFR3300250	60	70	30	450	250	3/8"	50	36	83	25.25	40	45	70	7.7
NFR3300300				500	300									8.3
NFR3300350				550	350									9.0
NFR3300400				600	400									9.7
NFR3300450				650	450									10.4
NFR3300500				700	500									11.0
NFR3300600				800	600									12.4
NFR3300700				900	700									13.7
NEW! NFR3350100	60	70	35	300	100	3/8"	50	36	83	25.25	40	45	70	5.9
NEW! NFR3350150				350	150									6.7
NFR3350200				400	200									7.4
NEW! NFR3350250				450	250									8.2
NFR3350300				500	300									9.0
NEW! NFR3350350				550	350									10.0
NFR3350400				600	400									10.6
NEW! NFR3350450				650	450									11.3
NFR3350500				700	500									12.1
NFR3350600				800	600									13.7
NFR3350700				900	700									15.2
NFR3350800				1000	800									16.8
NFR3350900				1100	900									18.3
NFR3351000				1200	1000									19.9
NFR4400200	70	80	40	410	200	3/8"	50	46	82	30.25	50	55	80	10.1
NFR4400250				460	250									11.0
NFR4400300				510	300									12.0
NFR4400350				560	350									13.0
NFR4400400				610	400									13.9
NFR4400450				660	450									14.9
NFR4400500				710	500									15.8
NFR4400600				810	600									17.7
NFR4400700				910	700									19.6
NFR4400800				1010	800									21.5
NFR4400900				1110	900									23.4
NEW! NFR4401000				1210	1000									25.4
NFR5400200	80	92	40	410	200	3/8"	60	42	70	30.25	50	55	90	13.0
NFR5400250				460	250									14.2
NFR5400300				510	300									15.3
NFR5400350				560	350									16.4
NFR5400400				610	400									17.5
NFR5400500				710	500									19.8
NFR5400600				810	600									22.0
NFR5400700				910	700									24.3
NFR5400800				1010	800									26.5
NFR5400900				1110	900									28.8
NFR5401000				1210	1000									31.0
NFR6500200				100	115									50
NFR6500300	525	300	25.0											
NFR6500400	625	400	28.5											
NFR6500500	725	500	32.0											
NFR6500700	925	700	39.1											
NFR6500900	1125	900	46.1											
NFR6501000	1225	1000	49.6											

PLEASE NOTE THAT THE 'NFR' CYLINDER RANGE IS NOT AVAILABLE IN RAMPARTS® KIT FORMAT.

HM HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

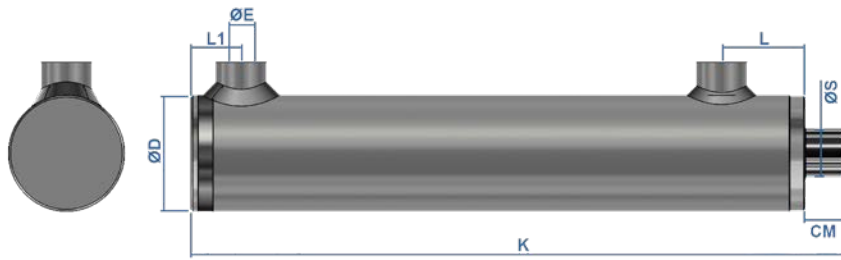
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C TO -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



Available in
a Ramparts®
kit!

RK

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	WEIGHT (kgs)
HM0025160050	25	35	16	135	50	1/4"	33	15	17	0.7
HM0025160100				185	100					1.0
HM0025160150				235	150					1.3
HM0025160200				285	200					1.5
HM0032200050	32	42	20	155	50	1/4"	33	20	16	1.3
HM0032200100				205	100					1.6
HM0032200150				255	150					2.0
HM0032200200				305	200					2.3
HM0032200250				355	250					2.7
HM0032200300				405	300					3.0
HM0032200400				505	400					3.7
HM0032200500				605	500					4.4
HM01200100	40	50	20	230	100	1/4"	40	23	22	2.3
HM01200150				280	150					2.7
HM01200200				330	200					3.1
HM01200250				380	250					6.5
HM01200300				430	300					6.9
HM01200350				480	350					4.3
HM01200400				530	400					4.7
HM01200450				580	450					5.1
HM01200500				630	500					5.5
HM01250100				40	50					25
HM01250150	280	150	3.0							
HM01250200	330	200	3.4							
HM01250250	380	250	3.9							
HM01250300	430	300	4.3							
HM01250350	480	350	4.8							
HM01250400	530	400	5.3							
HM01250450	580	450	5.8							
HM01250500	630	500	6.2							
HM01250550	680	550	6.6							
HM01250600	730	600	7.2							
HM02250100	50	60	25	240	100	3/8"	43	26	22	3.3
HM02250150				290	150					3.8
HM02250200				340	200					4.4
HM02250250				390	250					4.9
HM02250300				440	300					5.4
HM02250350				490	350					6.0
HM02250400				540	400					6.4

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM01200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

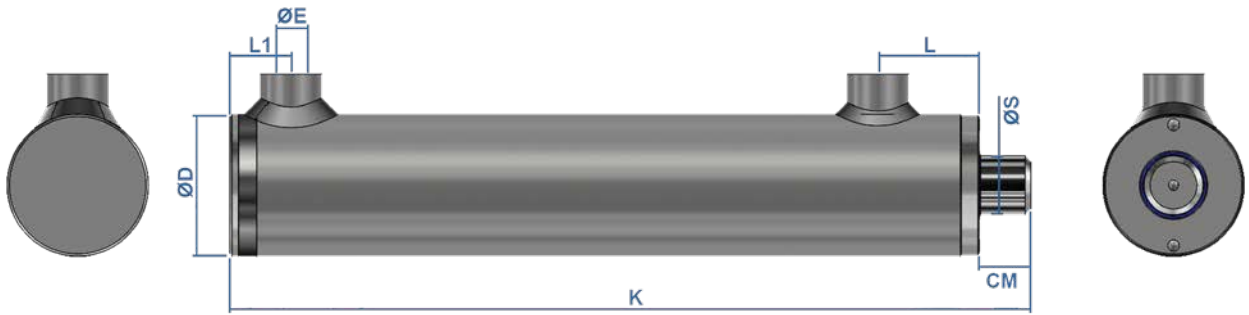
HM HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	WEIGHT (kgs)
HM02250450	50	60	25	590	450	3/8"	43	26	22	7.3
HM02250500				640	500					7.4
HM02250550				690	550					8.1
HM02250600				740	600					8.5
NEW! HM02250700				840	700					9.7
HM02250800				940	800					10.7
HM02251000				1140	1000					12.9
NEW! HM02300100	50	60	30	240	100	3/8"	43	26	22	3.6
HM02300150				290	150					4.1
HM02300200				340	200					4.8
HM02300250				390	250					5.4
HM02300300				440	300					6.0
HM02300350				490	350					6.6
HM02300400				540	400					7.2
HM02300450				590	450					7.8
HM02300500				640	500					8.5
HM02300550				690	550					9.1
HM02300600				740	600					9.7
HM02300700				840	700					10.8
HM02300800				940	800					12.1
HM02301000				1140	1000					14.6
HM03300100	60	70	30	260	100	3/8"	50	30	23	4.8
HM03300150				310	150					5.6
HM03300200				360	200					6.1
HM03300250				410	250					6.9
HM03300300				460	300					7.6
HM03300350				510	350					8.2
HM03300400				560	400					8.9
HM03300450				610	450					9.6
HM03300500				660	500					10.3
HM03300550				710	550					10.9
HM03300600				760	600					11.6
NEW! HM03300700				860	700					13.0
HM03300800				960	800					14.3
HM03301000				1160	1000					17.0
HM03350100	60	70	35	260	100	3/8"	50	30	23	5.1
HM03350150				310	150					5.9
HM03350200				360	200					6.6
HM03350250				410	250					7.4
HM03350300				460	300					8.2
HM03350350				510	350					9.0
HM03350400				560	400					9.8
HM03350450				610	450					10.5
HM03350500				660	500					11.3
HM03350550				710	550					12.0
HM03350600				760	600					12.8
NEW! HM03350700				860	700					14.5
HM03350800				960	800					15.8
HM03351000				1160	1000					18.9
HM03400200	60	70	40	360	200	3/8"	50	30	23	7.3
HM03400250				410	250					8.2
HM03400300				460	300					9.1

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM01200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HM HYDRAULIC CYLINDERS



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	WEIGHT (kgs)
HM03400350	60	70	40	510	350	3/8"	50	30	23	9.9
HM03400400				560	400					10.8
HM03400450				610	450					11.7
HM03400500				660	500					12.5
HM03400550				710	550					13.5
HM03400600				760	600					14.3
NEW! HM03400700				860	700					16.2
HM03400800				960	800					17.8
HM03401000				1160	1000					21.4
HM0063400200				63	73					40
HM0063400250	410	250	8.5							
HM0063400300	460	300	9.4							
HM0063400350*	510	350	10.3							
HM0063400400	560	400	11.2							
HM0063400450*	610	450	12.1							
HM0063400500	660	500	13.0							
HM0063400550*	710	550	13.9							
HM0063400600	760	600	14.8							
NEW! HM0063400700	860	700	16.7							
HM0063400800	960	800	18.5							
HM0063401000	1160	1000	22.1							
HM04350100	70	80	35	260	100	3/8"	50	33	23	6.1
HM04350150				310	150					7.0
HM04350200				360	200					7.8
HM04350250				410	250					8.6
HM04350300				460	300					9.4
HM04350350				510	350					10.3
HM04350400				560	400					11.0
HM04350450				610	450					11.9
HM04350500				660	500					12.6
HM04350550				710	550					13.7
HM04350600	760	600	14.2							
NEW! HM04350700	860	700	16.2							
HM04350800	960	800	17.6							
HM04351000	1160	1000	21.3							
NEW! HM04400100	70	80	40	260	100	3/8"	50	33	23	6.5
NEW! HM04400150				310	150					7.4
HM04400200				360	200					8.3
HM04400250				410	250					9.3
HM04400300				460	300					10.3
HM04400350				510	350					11.2
HM04400400				560	400					12.8

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: **RKHM01200100**.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HM HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	WEIGHT (kgs)
HM04400450	70	80	40	610	450	3/8"	50	33	23	13.2
HM04400500				660	500					14.0
HM04400550				710	550					15.1
HM04400600				760	600					16.0
NEW! HM04400700				860	700					17.9
HM04400800				960	800					19.8
HM04401000				1160	1000					23.5
HM05400200				80	92					40
HM05400250	430	250	12.2							
HM05400300	480	300	13.3							
HM05400400	580	400	15.6							
HM05400500	680	500	17.8							
HM05400600	780	600	20.0							
NEW! HM05400700	880	700	22.5							
HM05400800	980	800	24.5							
HM05401000	1180	1000	29.0							
HM05500200	80	92	50	380	200	1/2"	60	35	25	12.4
HM05500250				430	250					13.8
HM05500300				480	300					15.2
HM05500400				580	400					18.0
HM05500500				680	500					20.8
HM05500600				780	600					24.0
NEW! HM05500700				880	700					26.5
HM05500800				980	800					30.0
HM05501000	1180	1000	35.0							
HM0090500300	90	105	50	486	300	1/2"	60	40	23	19.3
HM0090500400				586	400					22.7
HM0090500500				686	500					26.0
HM0090500600				786	600					29.3
NEW! HM0090500700				886	700					32.6
HM0090500800				986	800					36.0
HM0090501000				1186	1000					42.7
HM06500200				100	115					50
HM06500250	460	250	21.5							
HM06500300	510	300	23.0							
HM06500400	610	400	26.5							
HM06500500	710	500	30.0							
HM06500600	810	600	33.5							
NEW! HM06500700	910	700	37.2							
HM06500800	1010	800	40.5							
HM06501000	1210	1000	47.5							
HM06600300	100	115	60	510	300	1/2"	82	38	25	25.5
HM06600400				610	400					29.5
HM06600500				710	500					33.5
HM06600600				810	600					37.5
NEW! HM06600700				910	700					42.1
HM06600800				1010	800					46.0
HM06601000				1210	1000					54.5

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: **RKHM01200100**.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HM1 HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

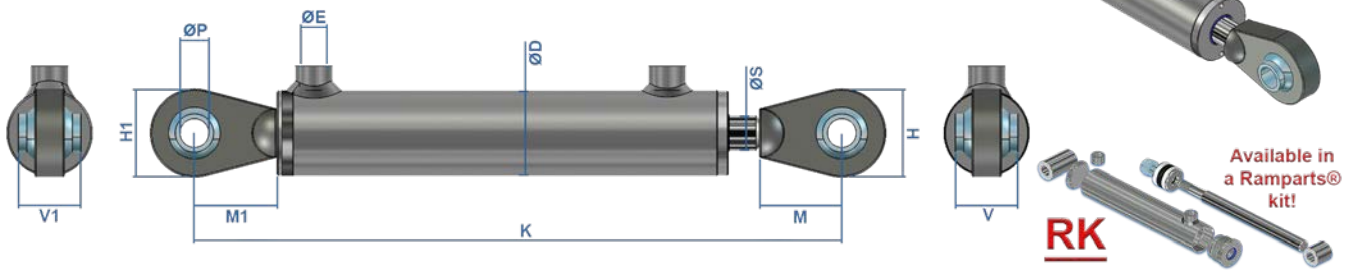
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM103220050	32	42	20	275	50	1/4"	60	60	16.2	46	46	20	20	1.9
HM1032200100				325	100									2.2
HM1032200150				375	150									2.6
HM1032200200				425	200									2.9
HM1032200250				475	250									3.3
HM1032200300				525	300									3.6
HM1032200400				625	400									4.3
HM1032200500				725	500									5.0
HM11200100	40	50	20	350	100	1/4"	60	60	16.2	46	46	20	20	2.9
HM11200150				400	150									3.3
HM11200200				450	200									3.7
HM11200250				500	250									4.0
HM11200300				550	300									4.5
HM11200350				600	350									4.9
HM11200400				650	400									5.3
HM11200450				700	450									5.7
HM11200500	750	500	6.1											
HM11250100	40	50	25	350	100	1/4"	60	60	16.2	46	46	20	20	3.1
HM11250150				400	150									3.6
HM11250200				450	200									4.0
HM11250250				500	250									4.5
HM11250300				550	300									4.9
HM11250350				600	350									5.4
HM11250400				650	400									5.9
HM11250450				700	450									6.3
HM11250500	750	500	6.8											
HM11250550	800	550	7.2											
HM11250600	850	600	7.8											
HM12250100	50	60	25	356	100	3/8"	58	58	20.2	62	62	44	44	4.6
HM12250150				406	150									5.1
HM12250200				456	200									5.6
HM12250250				506	250									6.2
HM12250300				556	300									6.7
HM12250350				606	350									7.3
HM12250400				656	400									7.7
HM12250450				706	450									8.6
HM12250500	756	500	8.7											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM11200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

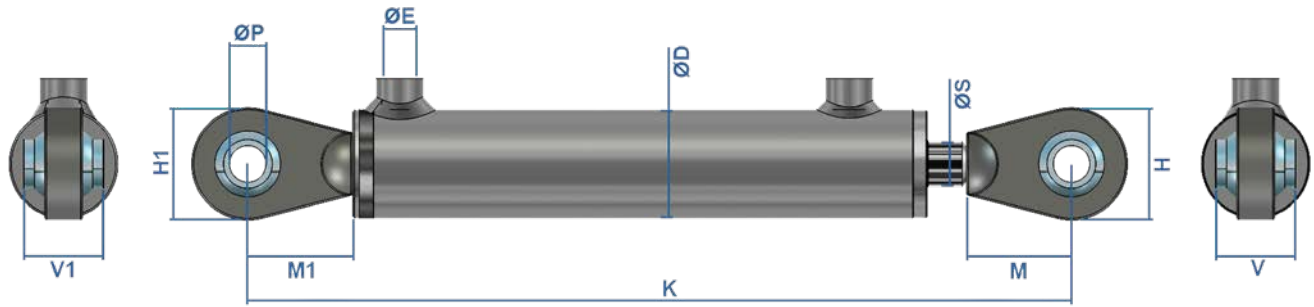
HM1 HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM12250550	50	60	25	806	550	3/8"	58	58	20.2	62	62	44	44	9.62
HM12250600				856	600									10.15
NEW! HM12250700				956	700									11.2
HM12250800				1056	800									12.0
HM12251000				1256	1000									14.2
NEW! HM12300100	50	60	30	356	100	3/8"	58	58	20.2	62	62	44	44	5.0
HM12300150				406	150									5.4
HM12300200				456	200									6.0
HM12300250				506	250									6.7
HM12300300				556	300									7.3
HM12300350				606	350									7.9
HM12300400				656	400									8.5
HM12300450				706	450									9.1
HM12300500				756	500									9.7
HM12300550				806	550									10.3
HM12300600				856	600									11.0
HM12300700				956	700									12.2
HM12300800				1056	800									13.4
HM12301000				1256	1000									15.9
HM13300100				60	70									30
HM13300150	440	150	7.5											
HM13300200	490	200	8.2											
HM13300250	540	250	8.8											
HM13300300	590	300	9.5											
HM13300350	640	350	10.2											
HM13300400	690	400	10.9											
HM13300450	740	450	11.5											
HM13300500	790	500	12.2											
HM13300550	840	550	12.8											
HM13300600	890	600	13.6											
NEW! HM13300700	990	700	15.6											
HM13300800	1090	800	16.2											
HM13301000	1290	1000	19.0											
HM13350100	60	70	35			390	100	3/8"	65	65	25.4	75	75	
HM13350150				440	150	7.8								
HM13350200				490	200	8.6								
HM13350250				540	250	9.4								
HM13350300				590	300	10.1								
HM13350350				640	350	10.9								
HM13350400				690	400	11.7								
HM13350450				740	450	12.4								
HM13350500				790	500	13.2								
HM13350550				840	550	14.0								
HM13350600				890	600	14.8								
NEW! HM13350700				990	700	17.0								
HM13350800				1090	800	17.8								
HM13351000				1290	1000	20.9								
HM13400200				60	70	40	490							200
HM13400250	540	250	10.8											
HM13400300	590	300	11.7											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM11200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HM1 HYDRAULIC CYLINDERS



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM13400350	60	70	40	640	350	3/8"	65	65	25.4	75	75	51	51	11.9
HM13400400				690	400									12.8
HM13400450				740	450									13.6
HM13400500				790	500									14.5
HM13400550				840	550									15.38
HM13400600				890	600									16.23
NEW! HM13400700				990	700									18.80
HM13400800				1090	800									19.75
HM13401000				1290	1000									23.33
HM1063400200				63	73									40
HM1063400250	540	250	10.44											
HM1063400300	590	300	11.34											
HM1063400350*	640	350	12.24											
HM1063400400	690	400	13.14											
HM1063400450*	740	450	14.04											
HM1063400500	790	500	14.94											
HM1063400550*	840	550	15.84											
HM1063400600	890	600	16.74											
NEW! HM1063400700	990	700	19.19											
HM1063400800	1090	800	20.44											
HM1063401000	1290	1000	24.04											
HM14350100	70	80	35	390	100	3/8"	65	65	25.4	75	75	51	51	8.03
HM14350150				440	150									8.89
HM14350200				490	200									9.68
HM14350250				540	250									10.54
HM14350300				590	300									11.34
HM14350350				640	350									12.2
HM14350400				690	400									12.94
HM14350450				740	450									13.82
HM14350500				790	500									14.54
HM14350550				840	550									15.6
HM14350600	890	600	16.14											
NEW! HM14350700	990	700	18.71											
HM14350800	1090	800	19.5											
HM14351000	1290	1000	23.2											
NEW! HM14400100	70	80	40	390	100	3/8"	65	65	25.4	75	75	51	51	9.05
NEW! HM14400150				440	150									10.0
HM14400200				490	200									10.91
HM14400250				540	250									11.90
HM14400300				590	300									12.86
HM14400350				640	350									13.81

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM11200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HM1 HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM14400400	70	80	40	690	400	3/8"	65	65	25.4	75	75	51	51	14.74
HM14400450				740	450									15.05
HM14400500				790	500									15.95
HM14400550				840	550									17.04
HM14400600				890	600									17.93
NEW! HM14400700				990	700									20.48
HM14400800				1090	800									21.67
HM14401000				1290	1000									25.45
HM15400200				80	92									40
HM15400250	560	250	15.01											
HM15400300	610	300	16.14											
HM15400400	710	400	18.35											
HM15400500	810	500	20.56											
HM15400600	910	600	22.77											
NEW! HM15400700	1010	700	25.45											
HM15400800	1110	800	27.29											
HM15401000	1310	1000	31.71											
HM15500200	80	92	50	510	200	1/2"	65	65	30.2	83	83	55	55	15.14
HM15500250				560	250									16.52
HM15500300				610	300									17.94
HM15500400				710	400									20.74
HM15500500				810	500									23.5
HM15500600				910	600									26.79
NEW! HM15500700				1010	700									29.48
HM15500800				1110	800									32.29
HM15501000				1310	1000									37.79
HM1090500300	90	105	50	656	300	1/2"	85	85	40.2	108	108	75	75	26.22
HM1090500400				756	400									29.56
HM1090500500				856	500									32.89
HM1090500600				956	600									36.22
NEW! HM1090500700				1056	700									40.44
HM1090500800				1156	800									42.89
HM1090501000	1356	1000	49.56											
HM16500200	100	115	50	580	200	1/2"	85	85	40.2	108	108	75	75	26.43
HM16500250				630	250									28.43
HM16500300				680	300									29.92
HM16500400				780	400									33.43
HM16500500				880	500									36.93
HM16500600				980	600									40.43
NEW! HM16500700				1080	700									45.10
HM16500800				1180	800									47.43
HM16501000				1380	1000									54.43
HM16600300	100	115	60	680	300	1/2"	85	85	40.2	108	108	75	75	32.43
HM16600400				780	400									36.43
HM16600500				880	500									40.43
HM16600600				980	600									44.43
NEW! HM16600700				1080	700									49.88
HM16600800				1180	800									52.93
HM16601000				1380	1000									61.43

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: **RKHM11200100**.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

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HM2 HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

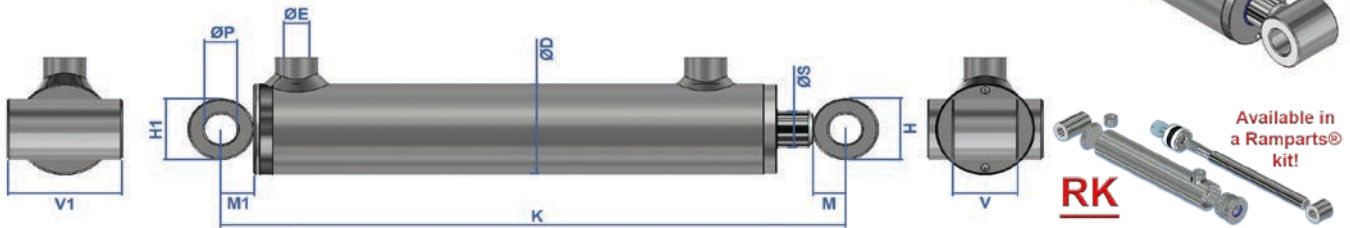
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



Available in
a Ramparts®
kit!

RK

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM203220050	32	42	20	190	50	1/4"	17.5	17.5	16.25	35	35	30	60	1.88
HM2032200100				240	100									2.18
HM2032200150				290	150									2.53
HM2032200200				340	200									2.88
HM2032200250				390	250									3.28
HM2032200300				440	300									3.58
HM2032200400				540	400									4.28
HM2032200500				640	500									4.98
HM21200100	40	50	20	265	100	1/4"	17.5	17.5	16.25	35	35	30	60	2.85
HM21200150				315	150									3.25
HM21200200				365	200									3.63
HM21200250				415	250									4.03
HM21200300				465	300									4.43
HM21200350				515	350									4.85
HM21200400				565	400									5.23
HM21200450				615	450									5.66
HM21200500	665	500	6.07											
HM21250100	40	50	25	265	100	1/4"	17.5	17.5	16.25	35	35	30	60	3.08
HM21250150				315	150									3.53
HM21250200				365	200									3.97
HM21250250				415	250									4.43
HM21250300				465	300									4.9
HM21250350				515	350									5.37
HM21250400				565	400									5.84
HM21250450				615	450									6.3
HM21250500	665	500	6.78											
HM21250550	715	550	7.18											
HM21250600	765	600	7.71											
HM22250100	50	60	25	280	100	3/8"	20	20	20.25	40	40	40	70	4.13
HM22250150				330	150									4.67
HM22250200				380	200									5.18
HM22250250				430	250									5.69
HM22250300				480	300									6.19
HM22250350				530	350									6.78
HM22250400				580	400									7.24
HM22250450				630	450									8.14
HM22250500	680	500	8.27											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM21200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

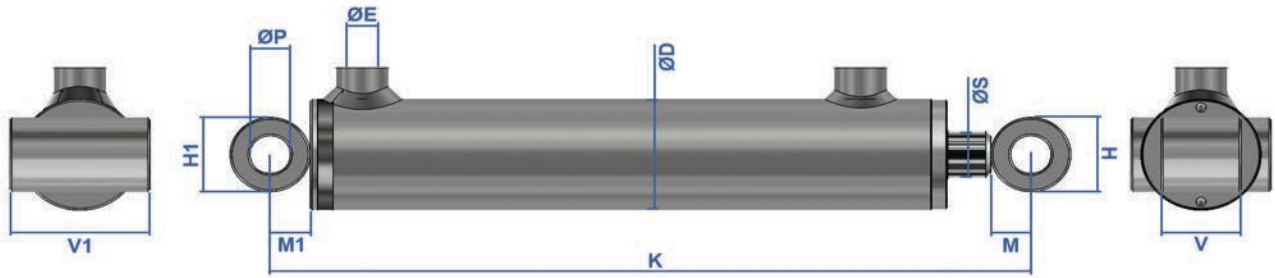
HM2 HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM22250550	50	60	25	730	550	3/8"	20	20	20.25	40	40	40	70	8.9
HM22250600				780	600									9.3
NEW! HM22250700				880	700									10.5
HM22250800				980	800									11.55
HM22251000				1180	1000									13.71
NEW! HM22300100	50	60	30	280	100	3/8"	20	20	20.25	40	40	40	70	4.35
HM22300150				330	150									4.95
HM22300200				380	200									5.58
HM22300250				430	250									6.19
HM22300300				480	300									6.81
HM22300350				530	350									7.39
HM22300400				580	400									8.04
HM22300450				630	450									8.64
HM22300500				680	500									9.26
HM22300550				730	550									9.88
HM22300600				780	600									10.48
HM22300700				880	700									11.69
HM22300800				980	800									12.94
HM22301000				1180	1000									15.41
HM23300100				60	70									30
HM23300150	360	150	7.05											
HM23300200	410	200	7.7											
HM23300250	460	250	8.37											
HM23300300	510	300	9.05											
HM23300350	560	350	9.7											
HM23300400	610	400	10.4											
HM23300450	660	450	11.03											
HM23300500	710	500	11.75											
HM23300550	760	550	12.36											
HM23300600	810	600	13.1											
NEW! HM23300700	910	700	14.5											
HM23300800	1010	800	15.76											
HM23301000	1210	1000	18.5											
HM23350100	60	70	35			310	100	3/8"	25	25	25.25	50	50	
HM23350150				360	150	7.35								
HM23350200				410	200	8.1								
HM23350250				460	250	8.9								
HM23350300				510	300	9.65								
HM23350350				560	350	10.44								
HM23350400				610	400	11.22								
HM23350450				660	450	11.97								
HM23350500				710	500	12.75								
HM23350550				760	550	13.5								
HM23350600				810	600	14.31								
NEW! HM23350700				910	700	15.94								
HM23350800				1010	800	17.37								
HM23351000				1210	1000	20.43								
HM23400200				60	70	40	410							200
HM23400250	460	250	9.64											
HM23400300	510	300	10.53											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM21200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HM2 HYDRAULIC CYLINDERS



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM23400350	60	70	40	560	350	3/8"	25	25	25.25	50	50	50	80	11.49
HM23400400				610	400									12.4
HM23400450				660	450									13.29
HM23400500				710	500									14.17
HM23400550				760	550									14.95
HM23400600				810	600									15.8
NEW! HM23400700				910	700									17.79
HM23400800				1010	800									19.32
HM23401000				1210	1000									22.9
HM2063400200				63	73									40
HM2063400250	460	250	10.01											
HM2063400300	510	300	10.91											
HM2063400350*	560	350	11.81											
HM2063400400	610	400	12.71											
HM2063400450*	660	450	13.61											
HM2063400500	710	500	14.51											
HM2063400550*	760	550	15.41											
HM2063400600	810	600	16.31											
NEW! HM2063400700	910	700	18.1870											
HM2063400800	1010	800	20.01											
HM2063401000	1210	1000	23.61											
HM24350100	70	80	35	310	100	3/8"	25	25	25.25	50	50	50	90	7.6
HM24350150				360	150									8.46
HM24350200				410	200									9.25
HM24350250				460	250									10.11
HM24350300				510	300									10.91
HM24350350				560	350									11.77
HM24350400				610	400									12.51
HM24350450				660	450									13.39
HM24350500				710	500									14.11
HM24350550				760	550									15.17
HM24350600	810	600	15.71											
NEW! HM24350700	910	700	17.82											
HM24350800	1010	800	19.07											
HM24351000	1210	1000	22.77											
NEW! HM24400100	70	80	40	310	100	3/8"	25	25	25.25	50	50	50	90	8.15
NEW! HM24400150				360	150									9.11
HM24400200				410	200									9.79
HM24400250				460	250									10.77
HM24400300				510	300									11.25
HM24400350				560	350									12.71

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM21200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HM2 HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)											
HM24400400	70	80	40	610	400	3/8"	25	25	25.25	50	50	50	90	14.31											
HM24400450				660	450									14.62											
HM24400500				710	500									15.52											
HM24400550				760	550									16.61											
HM24400600				810	600									17.5											
NEW! HM24400700				910	700									19.59											
HM24400800				1010	800									21.24											
HM24401000				1210	1000									25.02											
HM25400200				80	92									40	440	200	1/2"	30	30	30.25	60	60	60	110	13.91
HM25400250															490	250									15.05
HM25400300	540	300	16.18																						
HM25400400	640	400	18.39																						
HM25400500	740	500	20.6																						
HM25400600	840	600	22.81																						
NEW! HM25400700	940	700	25.32																						
HM25400800	1040	800	27.33																						
HM25401000	1240	1000	31.75																						
HM25500200	80	92	50			440	200	1/2"	30	30	30.25	60	60		60	110									15.18
HM25500250				490	250	16.56																			
HM25500300				540	300	17.98																			
HM25500400				640	400	20.78																			
HM25500500				740	500	23.54																			
HM25500600				840	600	26.83																			
NEW! HM25500700				940	700	29.35																			
HM25500800				1040	800	32.33																			
HM25501000				1240	1000	37.83																			
HM2090500300				90	105	50	556							300			1/2"	35	35	40.25	70	70	70	130	23.63
HM2090500400	656	400	26.97																						
HM2090500500	756	500	30.3																						
HM2090500600	856	600	33.63																						
NEW! HM2090500700	956	700	36.98																						
HM2090500800	1056	800	40.3																						
HM2090501000	1256	1000	46.97																						
HM26500200	100	115	50				480	200	1/2"	35	35	40.25	70	70	70	130									23.84
HM26500250				530	250	25.84																			
HM26500300				580	300	27.34																			
HM26500400				680	400	30.84																			
HM26500500				780	500	34.34																			
HM26500600				880	600	37.84																			
NEW! HM26500700				980	700	41.54																			
HM26500800				1080	800	44.84																			
HM26501000				1280	1000	51.84																			
HM26600300				100	115	60	580	300									1/2"	35	35	40.25	70	70	70	130	29.84
HM26600400	680	400	33.84																						
HM26600500	780	500	37.84																						
HM26600600	880	600	41.84																						
NEW! HM26600700	980	700	46.44																						
HM26600800	1080	800	50.34																						
HM26601000	1280	1000	58.84																						

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM21200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HM5 HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

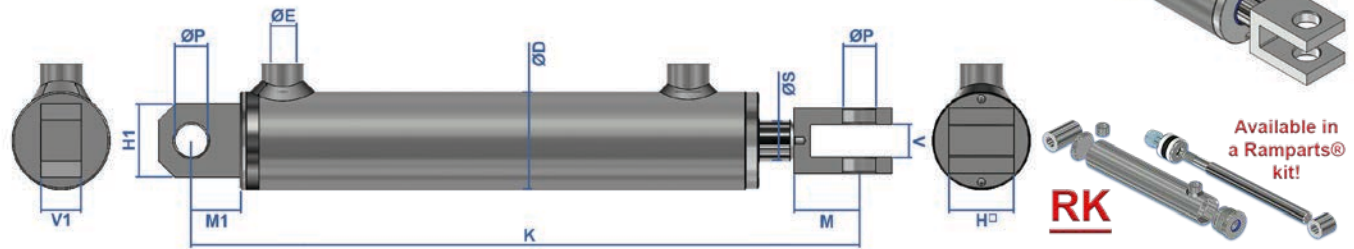
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM503220050	32	42	20	214	50	1/4"	34	25	16.2	35	35	16	20	1.79
HM5032200100				264	100									2.09
HM5032200150				314	150									2.44
HM5032200200				364	200									2.79
HM5032200250				414	250									3.19
HM5032200300				464	300									3.49
HM5032200400				564	400									4.19
HM5032200500				664	500									4.89
HM51200100	40	50	20	289	100	1/4"	34	25	16.2	35	35	16	20	2.76
HM51200150				339	150									3.16
HM51200200				289	200									3.54
HM51200250				439	250									3.94
HM51200300				489	300									4.34
HM51200350				539	350									4.76
HM51200400				589	400									5.14
HM51200450				639	450									5.57
HM51200500	689	500	5.98											
HM51250100	40	50	25	289	100	1/4"	34	25	16.2	35	35	16	20	2.99
HM51250150				339	150									3.44
HM51250200				389	200									3.88
HM51250250				439	250									4.34
HM51250300				489	300									4.81
HM51250350				539	350									5.28
HM51250400				589	400									5.75
HM51250450				639	450									6.21
HM51250500	689	500	6.69											
HM51250550	739	550	7.09											
HM51250600	789	600	7.62											
HM52250100	50	60	25	310	100	3/8"	40	30	20.25	40	45	20	25	4.07
HM52250150				360	150									4.61
HM52250200				410	200									5.12
HM52250250				460	250									5.63
HM52250300				510	300									6.13
HM52250350				560	350									6.72
HM52250400				610	400									7.18
HM52250450				660	450									8.08
HM52250500	710	500	8.26											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM51200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

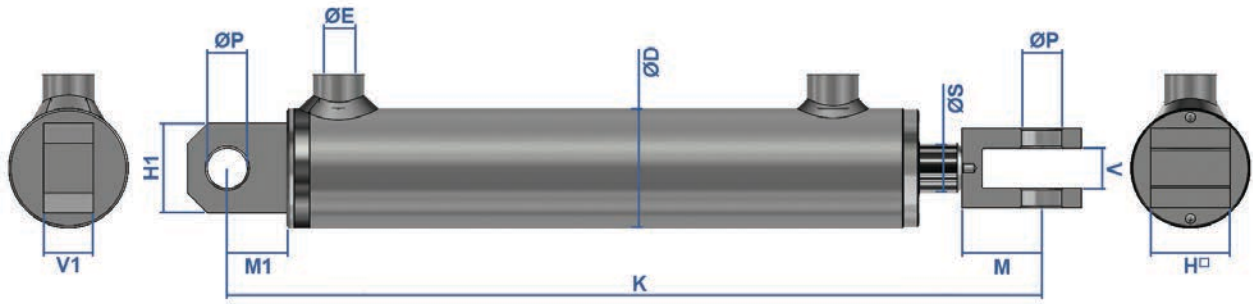
HM5 HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM52250550	50	60	25	760	550	3/8"	40	30	20.25	40	45	20	25	8.84
HM52250600				810	600									9.24
NEW! HM52250700				910	700									10.4
HM52250800				1010	800									11.49
HM52251000				1210	1000									13.65
NEW! HM52300100	50	60	30	310	100	3/8"	40	30	20.25	40	45	20	25	4.25
HM52300150				360	150									4.89
HM52300200				410	200									5.52
HM52300250				460	250									6.13
HM52300300				510	300									6.75
HM52300350				560	350									7.33
HM52300400				610	400									7.98
HM52300450				660	450									8.58
HM52300500				710	500									9.2
HM52300550				760	550									9.82
HM52300600				810	600									10.42
HM52300700				910	700									11.63
HM52300800				1010	800									12.88
HM52301000				1210	1000									15.35
HM53300100				60	70									30
HM53300150	390	150	6.87											
HM53300200	440	200	7.52											
HM53300250	490	250	8.19											
HM53300300	540	300	8.87											
HM53300350	590	350	9.52											
HM53300400	640	400	10.22											
HM53300450	690	450	10.85											
HM53300500	740	500	11.57											
HM53300550	790	550	12.18											
HM53300600	840	600	12.92											
NEW! HM53300700	940	700	14.33											
HM53300800	1040	800	15.58											
HM53301000	1240	1000	18.32											
HM53350100	60	70	35			340	100	3/8"	45	35	25.25	50	50	
HM53350150				390	150	7.17								
HM53350200				440	200	7.92								
HM53350250				490	250	8.72								
HM53350300				540	300	9.47								
HM53350350				590	350	10.26								
HM53350400				640	400	11.04								
HM53350450				690	450	11.79								
HM53350500				740	500	12.57								
HM53350550				790	550	13.32								
HM53350600				840	600	14.13								
NEW! HM53350700				940	700	15.77								
HM53350800				1040	800	17.19								
HM53351000				1240	1000	20.25								
HM53400200				60	70	40	440							200
HM53400250	490	250	9.46											
HM53400300	540	300	10.35											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM51200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HM5 HYDRAULIC CYLINDERS



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM53400350	60	70	40	590	350	3/8"	45	35	25.25	50	50	25	30	11.22
HM53400400				640	400									12.11
HM53400450				690	450									12.96
HM53400500				740	500									13.84
HM53400550				790	550									14.77
HM53400600				840	600									15.62
NEW! HM53400700				940	700									17.56
HM53400800				1040	800									19.14
HM53401000				1240	1000									22.72
HM5063400200				63	73									40
HM5063400250	490	250	9.83											
HM5063400300	540	300	10.73											
HM5063400350*	590	350	11.63											
HM5063400400	640	400	12.53											
HM5063400450*	690	450	13.43											
HM5063400500	740	500	14.33											
HM5063400550*	790	550	15.23											
HM5063400600	840	600	16.13											
NEW! HM5063400700	940	700	17.97											
HM5063400800	1040	800	19.83											
HM5063401000	1240	1000	23.43											
HM54350100	70	80	35	340	100	3/8"	45	35	25.25	50	50	25	30	7.42
HM54350150				390	150									8.28
HM54350200				440	200									9.07
HM54350250				490	250									9.93
HM54350300				540	300									10.73
HM54350350				590	350									11.59
HM54350400				640	400									12.33
HM54350450				690	450									13.21
HM54350500				740	500									13.93
HM54350550				790	550									14.99
HM54350600	840	600	15.53											
NEW! HM54350700	940	700	17.49											
HM54350800	1040	800	18.89											
HM54351000	1240	1000	22.59											
NEW! HM54400100	70	80	40	340	100	3/8"	45	35	25.25	50	50	25	30	7.82
NEW! HM54400150				390	150									8.77
HM54400200				440	200									9.61
HM54400250				490	250									10.59
HM54400300				540	300									11.57
HM54400350				590	350									12.53

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM51200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HM5 HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HM54400400	70	80	40	640	400	3/8"	45	35	25.25	50	50	25	30	14.13
HM54400450				690	450									14.44
HM54400500				740	500									15.34
HM54400550				790	550									16.43
HM54400600				840	600									17.32
NEW! HM54400700				940	700									19.26
HM54400800				1040	800									21.06
HM54401000				1240	1000									24.84
HM55400200				80	92									40
HM55400250	525	250	14.36											
HM55400300	575	300	15.49											
HM55400400	675	400	17.7											
HM55400500	775	500	19.91											
HM55400600	875	600	22.12											
NEW! HM55400700	975	700	24.58											
HM55400800	1075	800	26.64											
HM55401000	1275	1000	31.06											
HM55500200	80	92	50	475	200	1/2"	50	45	30.25	60	60	30	35	14.49
HM55500250				525	250									15.87
HM55500300				575	300									17.29
HM55500400				675	400									20.09
HM55500500				775	500									22.85
HM55500600				875	600									26.14
NEW! HM55500700				975	700									28.62
HM55500800				1075	800									31.64
HM55501000				1275	1000									37.14
HM5090500300	90	105	50	616	300	1/2"	70	60	40.25	80	70	40	40	23.58
HM5090500400				716	400									26.92
HM5090500500				816	500									30.25
HM5090500600				916	600									33.58
NEW! HM5090500700				1016	700									36.98
HM5090500800				1116	800									40.25
HM5090501000				1316	1000									46.92
HM56500200	100	115	50	540	200	1/2"	70	60	40.25	80	70	40	40	23.79
HM56500250				590	250									25.79
HM56500300				640	300									27.29
HM56500400				740	400									30.79
HM56500500				840	500									34.29
HM56500600				940	600									37.79
NEW! HM56500700				1040	700									41.73
HM56500800				1140	800									44.79
HM56501000				1340	1000									51.79
HM56600300	100	115	60	640	300	1/2"	70	60	40.25	80	70	40	40	29.79
HM56600400				740	400									33.79
HM56600500				840	500									37.79
HM56600600				940	600									41.79
NEW! HM56600700				1040	700									46.61
HM56600800				1140	800									50.29
HM56601000				1340	1000									58.79

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHM51200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HMB HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

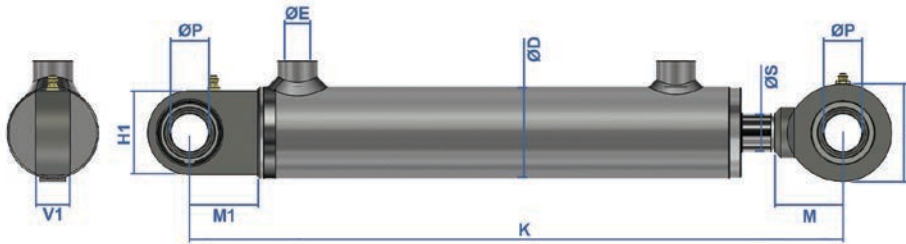
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



Available in a Ramparts® kit!

RK

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMB032200050	32	42	20	225	50	1/4"	35	35	16	46	48	14	17.5	1.8
HMB032200100				275	100									2.1
HMB032200150				325	150									2.45
HMB032200200				375	200									2.8
HMB032200250				425	250									3.2
HMB032200300				475	300									3.5
HMB032200400				575	400									4.2
HMB032200500				675	500									4.9
HMB1200100	40	50	20	300	100	1/4"	35	35	16	46	48	14	17.5	2.77
HMB1200150				350	150									3.17
HMB1200200				400	200									3.55
HMB1200250				450	250									3.95
HMB1200300				500	300									4.35
HMB1200350				550	350									4.77
HMB1200400				600	400									5.15
HMB1200450				650	450									5.58
HMB1200500	700	500	5.99											
HMB1250100	40	50	25	300	100	1/4"	35	35	16	46	48	14	17.5	3
HMB1250150				350	150									3.45
HMB1250200				400	200									3.89
HMB1250250				450	250									4.35
HMB1250300				500	300									4.82
HMB1250350				550	350									5.29
HMB1250400				600	400									5.76
HMB1250450				650	450									6.22
HMB1250500	700	500	6.7											
HMB1250550	750	550	7.1											
HMB1250600	800	600	7.63											
HMB2250100	50	60	25	316	100	3/8"	38	38	20	53	50	16	19	3.94
HMB2250150				366	150									4.48
HMB2250200				416	200									4.99
HMB2250250				466	250									5.5
HMB2250300				516	300									6
HMB2250350				566	350									6.59
HMB2250400				616	400									7.05
HMB2250450				666	450									7.95
HMB2250500	716	500	8.08											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMB1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

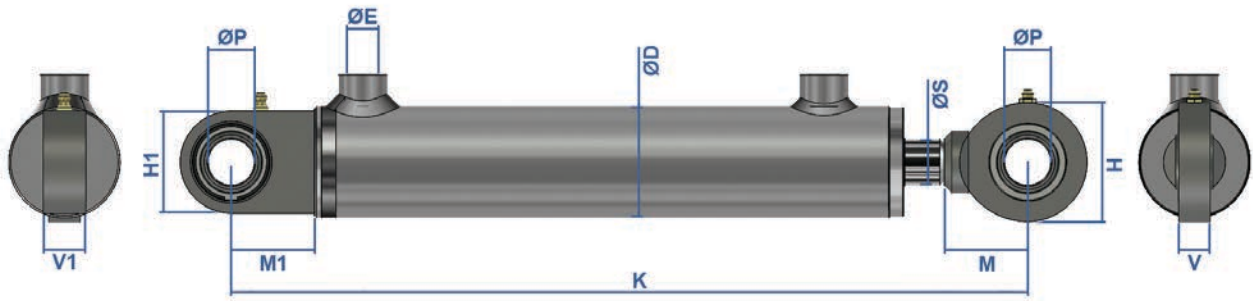
HMB HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMB2250550	50	60	25	766	550	3/8"	38	38	20	53	50	16	19	8.71
HMB2250600				816	600									9.11
NEW! HMB2250700				916	700									10.26
HMB2250800				1016	800									11.36
HMB2251000				1216	1000									13.52
NEW! HMB2300100	50	60	30	316	100	3/8"	38	38	20	53	50	16	19	4.11
HMB2300150				366	150									4.76
HMB2300200				416	200									5.39
HMB2300250				466	250									6
HMB2300300				516	300									6.62
HMB2300350				566	350									7.2
HMB2300400				616	400									7.85
HMB2300450				666	450									8.45
HMB2300500				716	500									9.07
HMB2300550				766	550									9.69
HMB2300600				816	600									10.29
HMB2300700				916	700									11.5
HMB2300800				1016	800									12.75
HMB2301000				1216	1000									15.22
HMB3300100				60	70									30
HMB3300150	400	150	6.58											
HMB3300200	450	200	7.23											
HMB3300250	500	250	7.9											
HMB3300300	550	300	8.58											
HMB3300350	600	350	9.23											
HMB3300400	650	400	9.93											
HMB3300450	700	450	10.56											
HMB3300500	750	500	11.28											
HMB3300550	800	550	11.89											
HMB3300600	850	600	12.63											
NEW! HMB3300700	950	700	14.00											
HMB3300800	1050	800	15.29											
HMB3301000	1250	1000	18.03											
HMB3350100	60	70	35			350	100	3/8"	45	45	25	64	55	
HMB3350150				400	150	6.88								
HMB3350200				450	200	7.63								
HMB3350250				500	250	8.43								
HMB3350300				550	300	9.18								
HMB3350350				600	350	9.97								
HMB3350400				650	400	10.75								
HMB3350450				700	450	11.5								
HMB3350500				750	500	12.28								
HMB3350550				800	550	13.03								
HMB3350600				850	600	13.84								
NEW! HMB3350700				950	700	15.44								
HMB3350800				1050	800	16.9								
HMB3351000				1250	1000	19.96								
HMB3400200				60	70	40	450							200
HMB3400250	500	250	9.19											
HMB3400300	550	300	10.11											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMB1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HMB HYDRAULIC CYLINDERS



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMB3400350	60	70	40	600	350	3/8"	45	45	25	64	55	20	23	10.99
HMB3400400				650	400									11.86
HMB3400450				700	450									12.78
HMB3400500				750	500									13.67
HMB3400550				800	550									14.48
HMB3400600				850	600									15.33
NEW! HMB3400700				950	700									17.24
HMB3400800				1050	800									18.85
HMB3401000				1250	1000									22.43
HMB063400200				63	73									40
HMB063400250	500	250	9.54											
HMB063400300	550	300	10.44											
HMB063400350*	600	350	11.34											
HMB063400400	650	400	12.24											
HMB063400450*	700	450	13.14											
HMB063400500	750	500	14.04											
HMB063400550*	800	550	14.94											
HMB063400600	850	600	15.84											
NEW! HMB063400700	950	700	17.64											
HMB063400800	1050	800	19.54											
HMB063401000	1250	1000	23.14											
HMB4350100	70	80	35	350	100	3/8"	45	45	25	64	55	20	23	7.13
HMB4350150				400	150									7.99
HMB4350200				450	200									8.78
HMB4350250				500	250									9.64
HMB4350300				550	300									10.44
HMB4350350				600	350									11.3
HMB4350400				650	400									12.04
HMB4350450				700	450									12.92
HMB4350500				750	500									13.64
HMB4350550				800	550									14.7
HMB4350600	850	600	15.24											
NEW! HMB4350700	950	700	17.15											
HMB4350800	1050	800	18.6											
HMB4351000	1250	1000	22.3											
NEW! HMB4400100	70	80	40	350	100	3/8"	45	45	25	64	55	20	23	7.48
NEW! HMB4400150				400	150									8.44
HMB4400200				450	200									9.32
HMB4400250				500	250									10.3
HMB4400300				550	300									11.28
HMB4400350				600	350									12.24

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMB1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HMB HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)											
HMB4400400	70	80	40	650	400	3/8"	45	45	25	64	55	20	23	13.84											
HMB4400450				700	450									14.15											
HMB4400500				750	500									15.05											
HMB4400550				800	550									16.14											
HMB4400600				850	600									17.03											
NEW! HMB4400700				950	700									18.92											
HMB4400800				1050	800									20.77											
HMB4401000				1250	1000									24.55											
HMB5400200				80	92									40	482	200	1/2"	51	51	30	73	65	22	28	12.67
HMB5400250															532	250									13.81
HMB5400300	582	300	14.94																						
HMB5400400	682	400	17.15																						
HMB5400500	782	500	19.366																						
HMB5400600	882	600	21.57																						
NEW! HMB5400700	982	700	24.05																						
HMB5400800	1082	800	26.09																						
HMB5401000	1282	1000	30.51																						
HMB5500200	80	92	50			482	200	1/2"	51	51	30	73	65		22	28									13.94
HMB5500250				532	250	15.32																			
HMB5500300				582	300	16.74																			
HMB5500400				682	400	19.54																			
HMB5500500				782	500	22.3																			
HMB5500600				882	600	25.59																			
NEW! HMB5500700				982	700	28.10																			
HMB5500800				1082	800	31.09																			
HMB5501000				1282	1000	36.59																			
HMB090500300				90	105	50	624							300			1/2"	69	69	40	92	100	28	35	23.36
HMB090500400	724	400	26.6																						
HMB090500500	824	500	29.93																						
HMB090500600	924	600	33.26																						
NEW! HMB090500700	1024	700	36.47																						
HMB090500800	1124	800	39.93																						
HMB090501000	1324	1000	46.6																						
HMB6500200	100	115	50				548	200	1/2"	69	69	40	92	100	28	35									23.47
HMB6500250				598	250	25.47																			
HMB6500300				648	300	26.97																			
HMB6500400				748	400	30.47																			
HMB6500500				848	500	33.97																			
HMB6500600				948	600	37.47																			
NEW! HMB6500700				1048	700	41.05																			
HMB6500800				1148	800	44.47																			
HMB6501000				1348	1000	51.47																			
HMB6600300				100	115	60	648	300									1/2"	69	69	40	92	100	28	35	29.47
HMB6600400	748	400	33.47																						
HMB6600500	848	500	37.47																						
HMB6600600	948	600	41.47																						
NEW! HMB6600700	1048	700	45.95																						
HMB6600800	1148	800	49.97																						
HMB6601000	1348	1000	58.47																						

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMB1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HMC HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

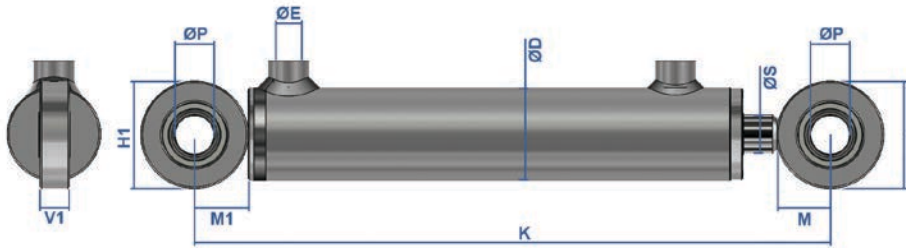
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMC032200050	32	42	20	195	50	1/4"	20	20	15	40	40	12	12	1.46
HMC032200100				245	100									1.76
HMC032200150				295	150									2.11
HMC032200200				345	200									2.46
HMC032200250				395	250									4.86
HMC032200300				445	300									3.16
HMC032200400				545	400									3.86
HMC032200500				645	500									4.56
HMC1200100	40	50	20	280	100	1/4"	25	25	20	50	50	16	16	2.53
HMC1200150				330	150									2.93
HMC1200200				380	200									3.31
HMC1200250				430	250									3.71
HMC1200300				480	300									4.11
HMC1200350				530	350									4.53
HMC1200400				580	400									4.91
HMC1200450				630	450									5.34
HMC1200500	680	500	5.75											
HMC1250100	40	50	25	280	100	1/4"	25	25	20	50	50	16	16	2.76
HMC1250150				330	150									3.21
HMC1250200				380	200									3.65
HMC1250250				430	250									4.11
HMC1250300				480	300									4.58
HMC1250350				530	350									5.05
HMC1250400				580	400									5.52
HMC1250450				630	450									5.98
HMC1250500	680	500	6.46											
HMC1250550	730	550	6.86											
HMC1250600	780	600	7.39											
HMC2250100	50	60	25	309	100	3/8"	34.5	34.5	25	69	69	20	20	4.04
HMC2250150				359	150									4.58
HMC2250200				409	200									5.09
HMC2250250				459	250									5.6
HMC2250300				509	300									6.1
HMC2250350				559	350									6.69
HMC2250400				609	400									7.15
HMC2250450				659	450									8.05
HMC2250500	709	500	8.18											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMC1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

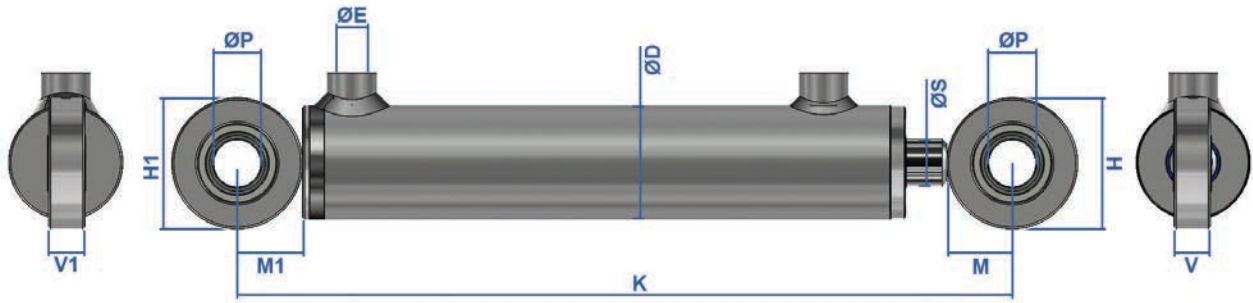
HMC HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMC2250550	50	60	25	759	550	3/8"	34.5	34.5	25	69	69	20	20	8.81
HMC2250600				809	600									9.21
NEW! HMC2250700				909	700									10.65
HMC2250800				1009	800									11.46
HMC2251000				1209	1000									13.62
NEW! HMC2300100	50	60	30	309	100	3/8"	34.5	34.5	25	69	69	20	20	4.44
HMC2300150				359	150									4.86
HMC2300200				409	200									5.49
HMC2300250				459	250									6.1
HMC2300300				509	300									6.72
HMC2300350				559	350									7.3
HMC2300400				609	400									7.95
HMC2300450				659	450									8.55
HMC2300500				709	500									9.17
HMC2300550				759	550									9.79
HMC2300600				809	600									10.39
HMC2300700				909	700									11.6
HMC2300800				1009	800									12.85
HMC2301000				1209	1000									15.32
HMC3300100				60	70									30
HMC3300150	379	150	6.3											
HMC3300200	429	200	6.95											
HMC3300250	479	250	7.62											
HMC3300300	529	300	8.3											
HMC3300350	579	350	8.95											
HMC3300400	629	400	9.65											
HMC3300450	679	450	10.28											
HMC3300500	729	500	11											
HMC3300550	779	550	11.61											
HMC3300600	829	600	12.35											
NEW! HMC3300700	929	700	14.04											
HMC3300800	1029	800	15.01											
HMC3301000	1229	1000	17.75											
HMC3350100	60	70	35			329	100	3/8"	34.5	34.5	25	69	69	
HMC3350150				379	150	6.6								
HMC3350200				429	200	7.35								
HMC3350250				479	250	8.15								
HMC3350300				529	300	8.9								
HMC3350350				579	350	9.69								
HMC3350400				629	400	10.47								
HMC3350450				679	450	11.22								
HMC3350500				729	500	12								
HMC3350550				779	550	12.75								
HMC3350600				829	600	13.56								
NEW! HMC3350700				929	700	15.48								
HMC3350800				1029	800	16.62								
HMC3351000				1229	1000	19.68								
HMC3400200				60	70	40	429							200
HMC3400250	479	250	8.89											
HMC3400300	529	300	9.78											

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMC1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HMC HYDRAULIC CYLINDERS



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMC3400350	60	70	40	579	350	3/8"	34.5	34.5	25	69	69	20	20	10.95
HMC3400400				629	400									11.84
HMC3400450				679	450									12.73
HMC3400500				729	500									13.63
HMC3400550				779	550									14.2
HMC3400600				829	600									15.05
NEW! HMC3400700				929	700									17.28
HMC3400800				1029	800									18.57
HMC3401000				1229	1000									22.15
HMC063400200				63	73									40
HMC063400250	479	250	9.26											
HMC063400300	529	300	10.16											
HMC063400350*	579	350	11.06											
HMC063400400	629	400	11.96											
HMC063400450*	679	450	12.86											
HMC063400500	729	500	13.76											
HMC063400550*	779	550	14.66											
HMC063400600	829	600	15.56											
NEW! HMC063400700	929	700	17.68											
HMC063400800	1029	800	19.26											
HMC063401000	1229	1000	22.86											
HMC4350100	70	80	35	335	100	3/8"	37.5	37.5	30	75	75	22	22	6.97
HMC4350150				385	150									7.83
HMC4350200				435	200									8.62
HMC4350250				485	250									9.48
HMC4350300				535	300									10.28
HMC4350350				585	350									11.14
HMC4350400				635	400									11.88
HMC4350450				685	450									12.76
HMC4350500				735	500									13.48
HMC4350550				785	550									14.54
HMC4350600	835	600	15.08											
NEW! HMC4350700	935	700	17.43											
HMC4350800	1035	800	18.44											
HMC4351000	1235	1000	22.14											
NEW! HMC4400100	70	80	40	335	100	3/8"	37.5	37.5	30	75	75	22	22	7.76
NEW! HMC4400150				385	150									8.71
HMC4400200				435	200									9.16
HMC4400250				485	250									10.14
HMC4400300				535	300									11.12
HMC4400350				585	350									12.08

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMC1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

* = IF SUPPLIED IN RAMPARTS® KIT FORMAT, THIS TUBE AND ROD WILL NEED TO BE CUT DOWN BY 50mm EACH.

HMC HYDRAULIC CYLINDERS

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	M (mm)	M1 (mm)	P Ø(mm)	H (mm)	H1 (mm)	V (mm)	V1 (mm)	WEIGHT (kgs)
HMC4400400	70	80	40	635	400	3/8"	37.5	37.5	30	75	75	22	22	13.68
HMC4400450				685	450									13.99
HMC4400500				735	500									14.89
HMC4400550				785	550									15.98
HMC4400600				835	600									16.87
NEW! HMC4400700				935	700									19.20
HMC4400800				1035	800									20.61
HMC4401000				1235	1000									24.39
HMC5400200				80	92									40
HMC5400250	524	250	13.87											
HMC5400300	574	300	15											
HMC5400400	674	400	17.21											
HMC5400500	774	500	19.42											
HMC5400600	874	600	21.63											
NEW! HMC5400700	974	700	24.80											
HMC5400800	1074	800	26.15											
HMC5401000	1274	1000	30.57											
HMC5500200	80	92	50	474	200	1/2"	47	47	40	94	94	28	28	14
HMC5500250				524	250									15.38
HMC5500300				574	300									16.8
HMC5500400				674	400									19.6
HMC5500500				774	500									22.36
HMC5500600				874	600									25.65
NEW! HMC5500700				974	700									28.72
HMC5500800				1074	800									31.15
HMC5501000				1274	1000									36.65
HMC090500300	90	105	50	580	300	1/2"	47	47	40	94	94	28	28	20.96
HMC090500400				680	400									24.3
HMC090500500				780	500									27.63
HMC090500600				880	600									30.96
NEW! HMC090500700				980	700									35.12
HMC090500800				1080	800									37.63
HMC090501000				1280	1000									44.3
HMC6500200	100	115	50	530	200	1/2"	60	60	50	120	120	35	35	23.95
HMC6500250				580	250									25.95
HMC6500300				630	300									27.45
HMC6500400				730	400									30.95
HMC6500500				830	500									34.45
HMC6500600				930	600									37.95
NEW! HMC6500700				1030	700									42.37
HMC6500800				1130	800									44.95
HMC6501000				1330	1000									51.95
HMC6600300	100	115	60	630	300	1/2"	60	60	50	120	120	35	35	29.95
HMC6600400				730	400									33.95
HMC6600500				830	500									37.95
HMC6600600				930	600									41.95
NEW! HMC6600700				1030	700									47.23
HMC6600800				1130	800									50.45
HMC6601000				1330	1000									58.95

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMC1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

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HMT HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

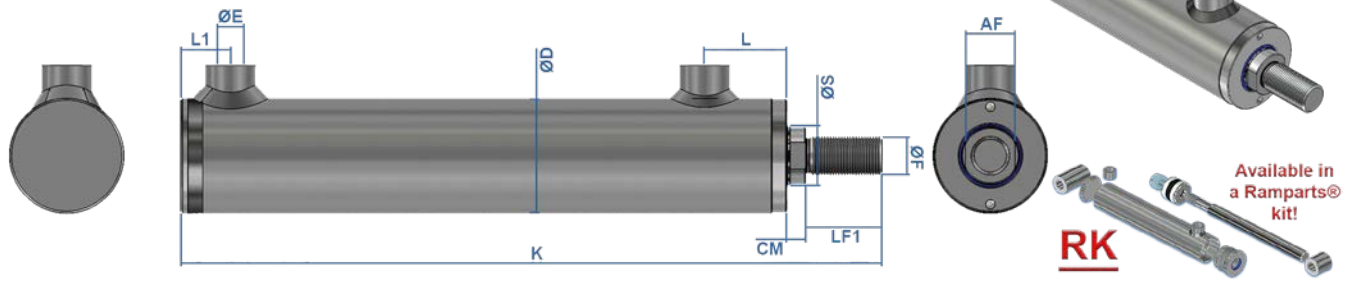
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	CM (mm)	L (mm)	L1 (mm)	F Ø(mm)	LF1 (mm)	AF (mm)	WEIGHT (kgs)
HMT1200100	40	50	20	248	100	1/4"	10	40	23	16 x 1.5	30	18	2.4
HMT1200200				348	200								3.2
HMT1200300				448	300								4.0
HMT1200400				548	400								4.8
HMT1200500				648	500								5.6
HMT2300100	50	60	30	268	100	3/8"	10	43	26	20 x 1.5	40	26	3.5
HMT2300200				368	200								4.8
HMT2300300				468	300								6.1
HMT2300400				568	400								7.3
HMT2300500				668	500								8.6
HMT3350100	60	70	35	297	100	3/8"	10	50	30	27 x 2	50	32	5.2
HMT3350200				397	200								6.8
HMT3350300				497	300								8.3
HMT3350400				597	400								10.0
HMT3350500				697	500								11.4
HMT3400100	60	70	40	309	100	3/8"	12	50	30	30 x 2	60	36	6.5
HMT3400200				409	200								7.5
HMT3400300				509	300								9.2
HMT3400400				609	400								11.0
HMT3400500				709	500								13.4
HMT063350200	63	73	35	397	200	3/8"	10	50	30	27 x 2	50	32	6.7
HMT063350300				497	300								8.5
HMT063350400				597	400								10.2
HMT063350500				697	500								12.4
HMT4350100	70	80	35	297	100	3/8"	10	50	33	27 x 2	50	32	6.2
HMT4350200				397	200								7.8
HMT4350300				497	300								9.5
HMT4350400				597	400								13.0
HMT4350500				697	500								14.4
HMT4400100	70	80	40	309	100	3/8"	12	50	33	30 x 2	60	36	7.7
HMT4400200				409	200								8.3
HMT4400300				509	300								10.4
HMT4400400				609	400								13.0
HMT4400500				709	500								14.3
HMT5500200	80	92	50	440	200	1/2"	15	60	35	36 x 2	70	45	12.5
HMT5500300				540	300								15.3
HMT5500400				640	400								18.2
HMT5500500				740	500								21.0
HMT6500200	100	115	50	470	200	1/2"	15	82	38	36 x 2	70	45	19.9
HMT6500300				570	300								23.3
HMT6500400				670	400								26.8
HMT6500500				770	500								30.2

FOR CYLINDER KIT FORM PLEASE QUOTE 'RK' IN FRONT OF THE RELEVANT PART NUMBER, I.E: RKHMT1200100.

RAMPARTS® CYLINDER COMPONENT KITS ARE AVAILABLE 'NEXT DAY' SUBJECT TO AVAILABILITY.

HFRT HYDRAULIC CYLINDERS



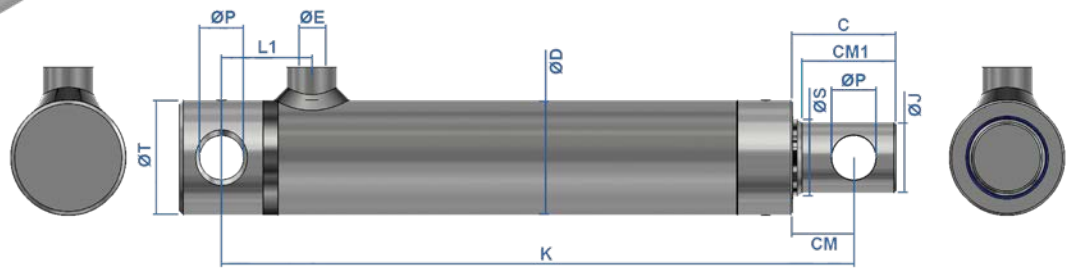
SINGLE ACTING HYDRAULIC DISPLACEMENT CYLINDER
 MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L1 (mm)	P Ø(mm)	C (mm)	CM (mm)	CM1 (mm)	J Ø(mm)	T Ø(mm)	WEIGHT (kgs)
HFRT125100	30	40	25	190	100	3/8"	40	14.1	38	24	35	22	40	1.7
HFRT125150				240	150									2.0
HFRT125200				290	200									2.5
HFRT125250				340	250									2.9
HFRT125300				390	300									3.3
HFRT230200	40	50	30	300	200	3/8"	42	16.2	42	26	37	27	50	3.6
HFRT230250				350	250									4.2
HFRT230300				400	300									4.8
HFRT230350				450	350									5.3
HFRT230400				500	400									5.9
HFRT230550				650	550									7.3
NEW! HFRT230700	800	700	9.2											
HFRT340200	50	60	40	330	200	3/8"	47	23.1	54	32	49	37	60	6.0
HFRT340250				380	250									6.9
HFRT340300				430	300									7.7
HFRT340350				480	350									8.5
HFRT340400				530	400									9.4
HFRT340550				680	550									11.7
HFRT340700				830	700									14.1
NEW! HFRT345200	50	60	45	330	200	3/8"	47	23.1	56	34	49	42	60	6.8
NEW! HFRT345250				380	250									7.7
NEW! HFRT345300				430	300									8.7
NEW! HFRT345350				480	350									9.7
NEW! HFRT345400				530	400									10.6
HFRT450300	60	70	50	460	300	3/8"	50	25.5	74	49	65	47	65	11.8
HFRT450400				560	400									14.0
HFRT450550				710	550									17.5
HFRT450700				860	700									21.0
NEW! HFRT560200	70	80	60	360	200	3/8"	50	25.25	61	36	57	57	75	12.3
NEW! HFRT560300				460	300									15.4
NEW! HFRT560400				560	400									18.6
NEW! HFRT560550				710	550									23.3
NEW! HFRT560700				860	700									28.0
NEW! HFRT570300	80	92	70	509	300	3/8"	55	30.25	96	66	90	67	85	22.7
NEW! HFRT570400				609	400									27.0
NEW! HFRT570500				709	500									31.3

PLEASE NOTE THAT THE 'HFRT' CLINDER RANGE IS NOT AVAILABLE IN RAMPARTS® KIT FORMAT.

HT HYDRAULIC CYLINDERS

SINGLE ACTING HYDRAULIC DISPLACEMENT CYLINDER

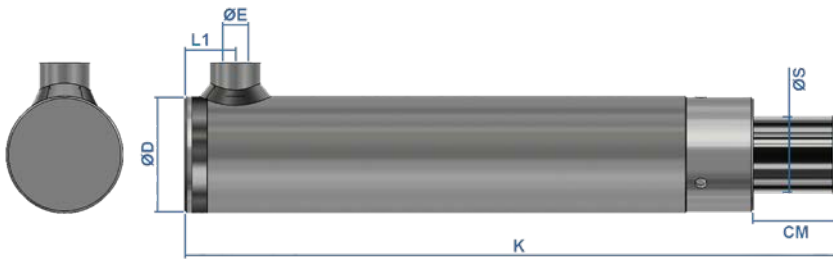
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ► -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE

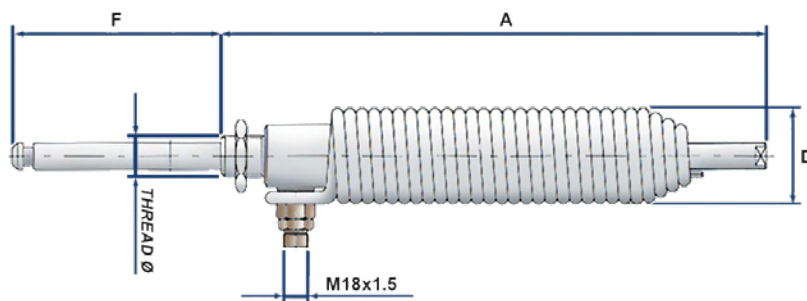


ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L1 (mm)	CM (mm)	WEIGHT (kgs)
HT02300200	40	50	30	326	200	3/8"	23	40	3.7
HT02300250				376	250				4.2
HT02300300				426	300				4.8
HT02300350				476	350				5.4
HT02300400				526	400				5.9
HT02300500				626	500				7.0
HT03400200	50	60	40	338	200	3/8"	26	45	5.7
HT03400300				438	300				7.3
HT03400400				538	400				9.0
HT03400500				638	500				10.6
HT03400600				738	600				12.3
HT04500300	60	70	50	450	300	3/8"	30	50	10.5
HT04500400				550	400				12.9
HT04500500				650	500				15.2
HT04500600				750	600				17.5

PLEASE NOTE THAT THE 'HT' CLINDER RANGE IS NOT AVAILABLE IN RAMPARTS® KIT FORMAT.

SPRING RETURN ACTUATOR

SINGLE ACTING SPRING RETURN HYDRAULIC ACTUATOR



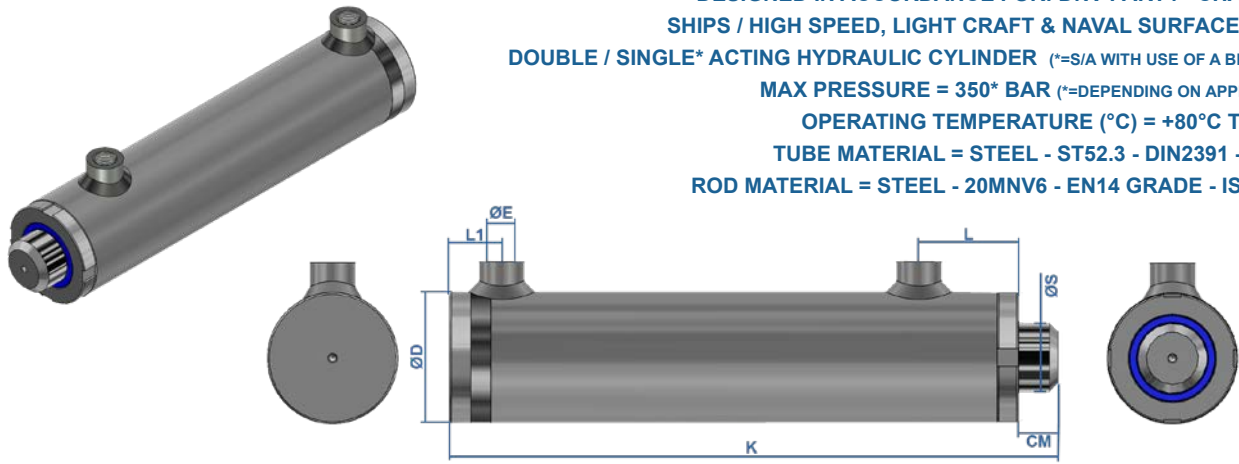
BRASS GATE VALVES AVAILABLE ON REQUEST.

ORDER CODE	SIZE	A (mm)	D Ø (mm)	F (mm)	THREAD (Metric)	WEIGHT (Kgs)
HA0050	4"	445	70	133	M30x2	7
HA0060	5"	445		157	M30x2	7.5
HA0070	6"	445		187	M30x2	8
HA0080	8"	497		221	M35x2	8.5



NEW! HM0PM DNV HYDRAULIC CYLINDERS

DESIGNED IN ACCORDANCE FOR: DNV PART4 - CHAPTER 7
 SHIPS / HIGH SPEED, LIGHT CRAFT & NAVAL SURFACE CRAFT
 DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)
 MAX PRESSURE = 350* BAR (*=DEPENDING ON APPLICATION)
 OPERATING TEMPERATURE (°C) = +80°C TO -25°C
 TUBE MATERIAL = STEEL - ST52.3 - DIN2391 - ISO H8
 ROD MATERIAL = STEEL - 20MNV6 - EN14 GRADE - ISO10289



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	K (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	L1 (mm)	CM (mm)	WEIGHT (kgs)
HM0PM3400200	60	75	40	350	200	3/8"	57	30	23	8.71
HM0PM3400400				550	400					13.12
HM0PM3400600				750	600					17.58
HM0PM3400800				950	800					22.03
HM0PM3401000				1150	1000					26.48
HM0PM4400200	70	85	40	375	200	3/8"	60	38	24	11.21
HM0PM4400400				575	400					16.00
HM0PM4400600				775	600					20.81
HM0PM4400800				975	800					25.62
HM0PM4401000				1175	1000					30.43
HM0PM5500200	80	100	50	395	200	1/2"	67	42	28	17.11
HM0PM5500400				595	400					24.59
HM0PM5500600				795	600					32.06
HM0PM5500800				995	800					39.53
HM0PM5501000				1195	1000					47.01
HM0PM09060200	90	110	60	400	200	1/2"	70	48	30	21.44
HM0PM09060400				600	400					30.75
HM0PM09060600				800	600					40.06
HM0PM09060800				1000	800					49.37
HM0PM09061000				1200	1000					58.69
HM0PM6600200	100	120	60	405	200	1/2"	70	47	31	24.33
HM0PM6600400				605	400					34.13
HM0PM6600600				805	600					43.93
HM0PM6600800				1005	800					53.73
HM0PM6601000				1205	1000					63.53
HM0PM7700200	120	145	70	435	200	1/2"	75	58	33	38.95
HM0PM7700400				635	400					53.11
HM0PM7700600				835	600					67.27
HM0PM7700800				1035	800					81.42
HM0PM7701000				1235	1000					95.59

PLEASE NOTE THAT THE 'HM0PM' CLINDER RANGE IS NOT AVAILABLE IN RAMPARTS® KIT FORMAT.

NEW! HMS HYDRAULIC CYLINDERS

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)

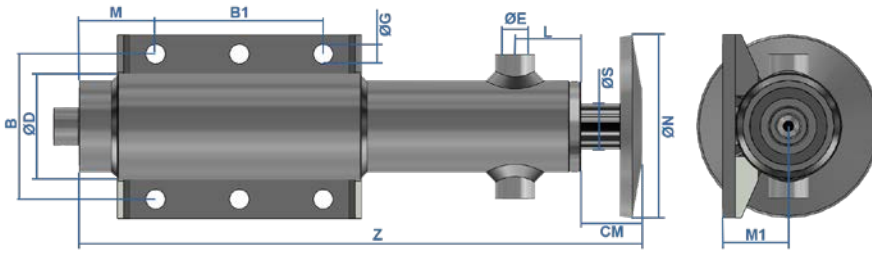
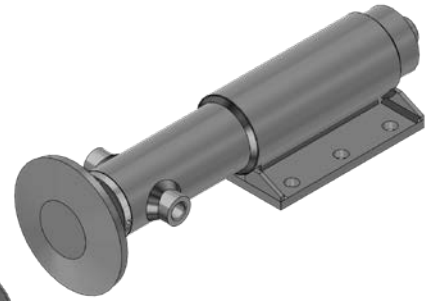
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C TO -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

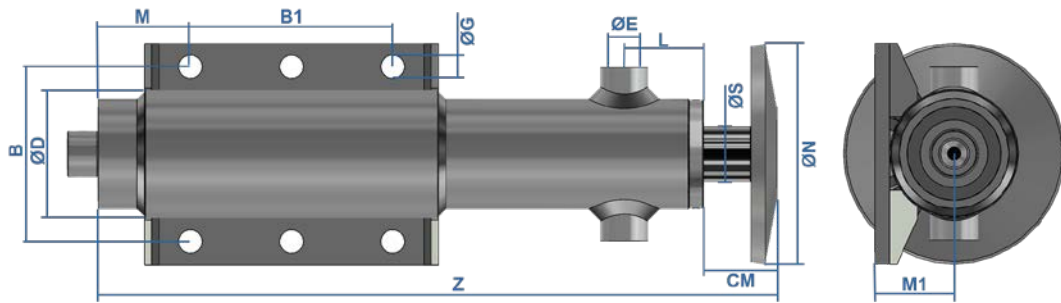
ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	Z (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	CM (mm)	N Ø(mm)	M1 (mm)	B (mm)	M (mm)	B1 (mm)	G Ø(mm)	WEIGHT (kgs)
HMS1250200	40	50	25	369	200	3/8"	40	40	110	38	85	50	100	13	6.36
HMS1250300				469	300										7.30
HMS1250400				569	400										8.23
HMS1250500				669	500										9.17
HMS1250600				769	600										10.11
HMS2300200	50	60	30	369	200	3/8"	43	40	120	43	95	50	110	13	8.19
HMS2300300				469	300										9.42
HMS2300400				569	400										10.65
HMS2300500				669	500										11.87
HMS2300600				769	600										13.11
HMS3350200	60	70	35	371	200	3/8"	50	40	130	50	105	53	125	13	11.10
HMS3350300				471	300										12.65
HMS3350400				571	400										14.20
HMS3350500				671	500										15.75
HMS3350600				771	600										17.30
HMS3400200	60	70	40	371	200	3/8"	50	40	130	50	105	53	125	13	11.65
HMS3400300				471	300										13.43
HMS3400400				571	400										15.21
HMS3400500				671	500										16.99
HMS3400600				771	600										18.77
HMS4400200	70	80	40	410	200	1/2"	50	50	150	55	120	53	125	15	14.16
HMS4400300				510	300										15.83
HMS4400400				610	400										17.51
HMS4400500				710	500										19.18
HMS4400600				810	600										20.85
HMS4500200	70	80	50	410	200	1/2"	50	50	150	55	120	53	125	15	14.70
HMS4500300				510	300										16.60
HMS4500400				610	400										18.51
HMS4500500				710	500										19.49
HMS4500600				810	600										22.31
HMS5400200	80	90	40	410	200	1/2"	60	50	160	62	125	58	145	15	17.69
HMS5400300				510	300										19.72
HMS5400400				610	400										21.74
HMS5400500				710	500										23.77
HMS5400600				810	600										25.80
HMS5500200	80	90	50	410	200	1/2"	60	50	160	62	125	58	145	15	19.04
HMS5500300				510	300										21.62
HMS5500400				610	400										24.20
HMS5500500				710	500										26.78
HMS5500600				810	600										29.36
HMS09040200	90	100	40	410	200	1/2"	60	50	170	67	135	60	150	15	20.30
HMS09040300				510	300										22.45
HMS09040400				610	400										24.59
HMS09040500				710	500										26.74
HMS09040600				810	600										28.29

PLEASE NOTE THAT THE 'HMS' CLINDER RANGE IS NOT AVAILABLE IN RAMPARTS® KIT FORMAT.

NEW! HMS HYDRAULIC CYLINDERS

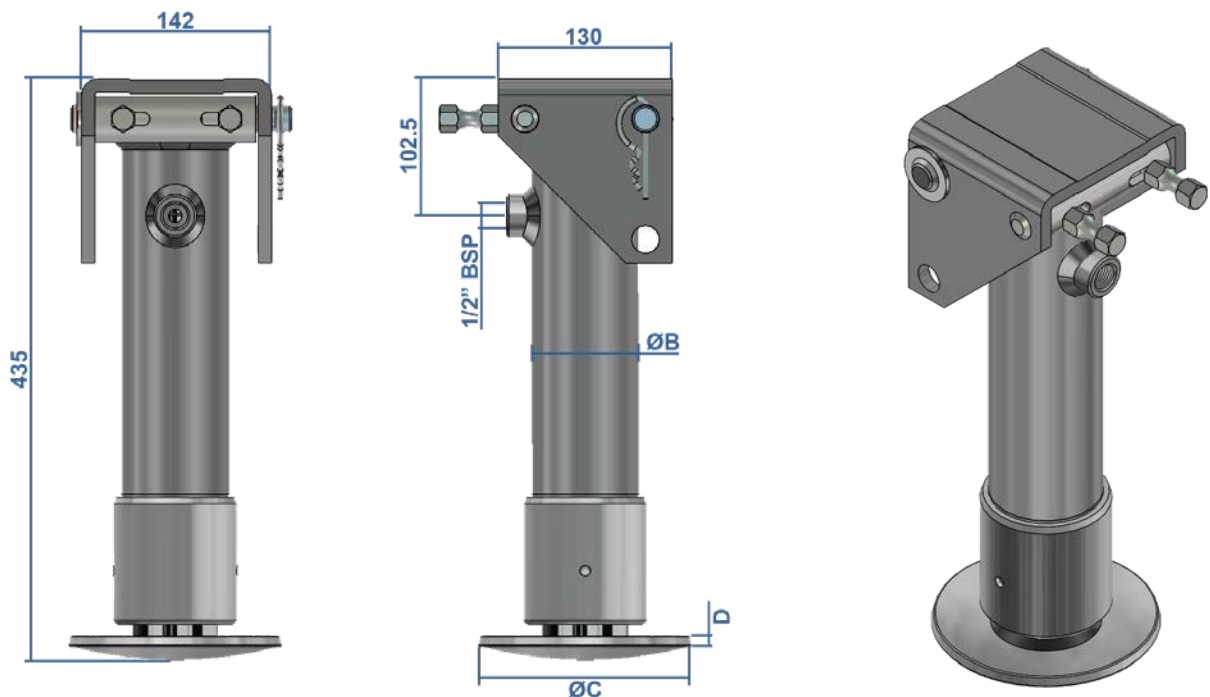


ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	Z (mm)	STROKE (mm)	E Ø(bsp)	L (mm)	CM (mm)	N Ø(mm)	M1 (mm)	B (mm)	M (mm)	B1 (mm)	G Ø(mm)	WEIGHT (Kgs)
HMS09050200	90	100	50	410	200	1/2"	60	50	170	67	135	60	150	15	21.65
HMS09050300				510	300										24.35
HMS09050400				610	400										27.05
HMS09050500				710	500										29.76
HMS09050600				810	600										32.46
HMS6500200	100	110	50	420	200	1/2"	82	60	180	73	145	60	170	15	26.92
HMS6500300				520	300										29.74
HMS6500400				620	400										32.57
HMS6500500				720	500										35.39
HMS6500600				820	600										38.22
HMS6600200	100	110	60	420	200	1/2"	82	60	180	73	145	60	170	15	28.61
HMS6600300				520	300										32.11
HMS6600400				620	400										35.61
HMS6600500				720	500										39.11
HMS6600600				820	600										42.61

NEW! HMSA HYDRAULIC CYLINDERS

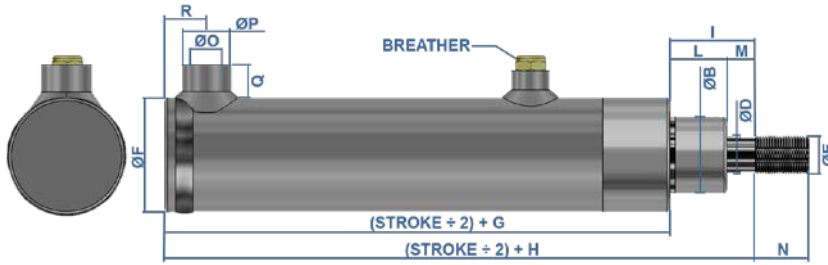
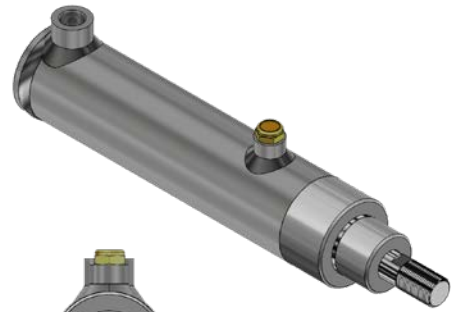
ORDER CODE	STROKE (mm)	BORE Ø(mm)	B (mm)	C (mm)	D (mm)	CAPACITY AT 100 BAR (Kgs)	CAPACITY AT 180 BAR (Kgs)	WEIGHT (Kgs)
HMSA65	250	65	80	160	8	3300	5900	17
HMSA85	250	85	100	220	10	5700	10200	23

FOLD DOWN STABILISER LEG CYLINDER
SINGLE ACTING SPRING RETURN
MAX PRESSURE = 180 BAR



2 STAGE TELESCOPIC CYLINDERS

SINGLE ACTING 2 STAGE TELESCOPIC HYDRAULIC DISPLACEMENT CYLINDER
 MAX PRESSURE = 150 BAR (CONTINUOUS)
 MAX SPEED = 0.5 M/S
 OPERATING TEMPERATURE (°C) = +80°C ► -25°C
 TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9
 ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE

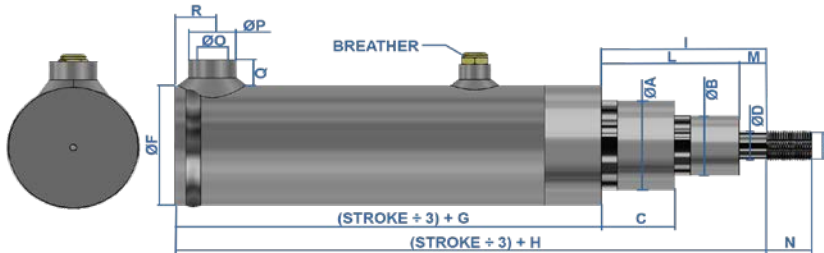


SERIES	CODE	B Ø(mm)	D Ø(mm)	E Ø(mm)	F Ø(mm)	G (mm)	H (mm)	I (mm)	L (mm)	M (mm)	N (mm)	O Ø(BSP)	P Ø (mm)	Q (mm)	R (mm)
CTSE/2	20040	40	20	M20x1.5	60	120	175	55	40	15	28	3/8"	26	17	20
CTSE/2	25045	45	25	M20x1.5	65	120	185	65	50	15	28	3/8"	26	17	20
CTSE/2	30050	50	30	M27x2	70	128	188	60	45	15	35	3/8"	26	17	24
CTSE/2	35055	55	35	M27x2	75	128	188	60	45	15	35	3/8"	26	17	24
CTSE/2	40060	60	40	M33x2	80	128	193	65	50	15	45	1/2"	30	18	27
CTSE/2	45065	65	45	M33x2	90	145	205	60	45	15	45	1/2"	30	18	27
CTSE/2	50070	70	50	M42x2	100	180	240	60	40	20	55	1/2"	30	18	27
CTSE/2	55075	75	55	M42x2	105	165	225	60	40	20	55	3/4"	38	20	30
CTSE/2	60080	80	60	M42x2	110	170	230	70	50	20	55	3/4"	38	20	33
CTSE/2	70100	100	70	M48X2	135	150	235	85	65	20	60	3/4"	38	20	35

EXAMPLE ORDERING CODE = SERIES **CTSE/2** - CODE **20040** - STROKE **1000**

3 STAGE TELESCOPIC CYLINDERS

SINGLE ACTING 3 STAGE HYDRAULIC DISPLACEMENT CYLINDER
 MAX PRESSURE = 150 BAR (CONTINUOUS)
 MAX SPEED = 0.5 M/S
 OPERATING TEMPERATURE (°C) = +80°C ► -25°C
 TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9
 ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



SERIES	CODE	A Ø(mm)	B Ø(mm)	C Ø(mm)	D Ø(mm)	E Ø(mm)	F Ø(mm)	G (mm)	H (mm)	I (mm)	L (mm)	M (mm)	N (mm)	O Ø(BSP)	P Ø (mm)	Q (mm)	R (mm)
CTSE/3	2040060	60	40	65	20	M20x1.5	80	133	253	120	105	15	28	1/2"	30	18	25
CTSE/3	2545065	65	45	55	25	M20x1.5	95	150	270	120	105	15	28	1/2"	30	18	28
CTSE/3	3050070	70	50	45	30	M27x2	100	165	270	105	90	15	35	1/2"	30	18	28
CTSE/3	3555075	75	55	45	35	M27x2	105	165	270	105	90	15	35	3/4"	38	20	30
CTSE/3	4060080	80	60	50	40	M33x2	110	170	285	115	100	15	45	3/4"	38	20	35
CTSE/3	4565085	85	65	45	45	M33x2	115	190	295	105	90	15	45	3/4"	38	20	35
CTSE/3	5070100	100	70	65	50	M42x2	135	220	345	125	105	20	55	3/4"	38	20	35

EXAMPLE ORDERING CODE = SERIES **CTSE/3** - CODE **2040060** - STROKE **1000**

DOUBLE ACTING TELESCOPIC CYLINDERS



DOUBLE ACTING 2 STAGE TELESCOPIC HYDRAULIC CYLINDER

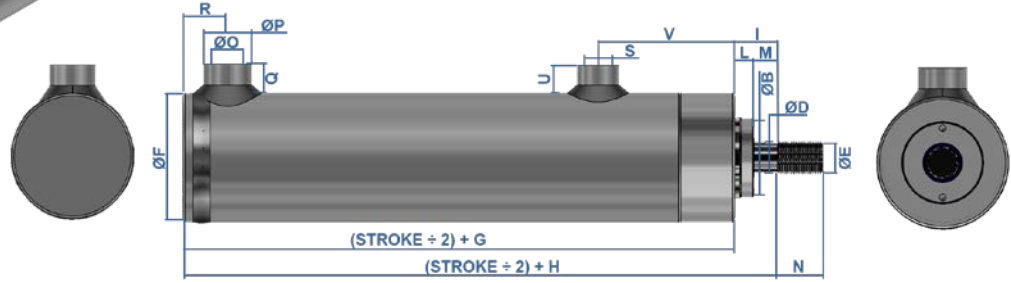
MAX PRESSURE = 150 BAR (CONTINUOUS)

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ▶ -25°C

TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9

ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



SERIES	CODE	Ø B (mm)	Ø D (mm)	Ø E (mm)	Ø F (mm)	G (mm)	H (mm)	I (mm)	L (mm)	M (mm)	N (mm)	Ø O (BSP)	Ø P (mm)	Q (mm)	R (mm)	Ø S (BSP)	U (mm)	V (mm)
CTDE	25050080	50	25	M24x2	80	193	210	17	12	5	45	1/2"	30	18	25	3/8"	17	85
CTDE	30065095	65	30	M30x2	95	210	230	20	15	5	55	3/4"	38	20	28	1/2"	18	95
CTDE	35070100	70	35	M33x2	100	238	258	20	15	5	47	3/4"	38	20	28	1/2"	18	120
CTDE	40075105	75	40	M39x3	105	255	275	20	15	5	60	1"	45	25	30	3/4"	20	135
CTDE	50085115	85	50	M48x2	115	265	287	22	17	5	63	1"	45	25	32	3/4"	20	135
CTDE	60100140	100	60	M58x1.5	140	285	340	55	50	5	60	1"	45	25	36	3/4"	20	135

EXAMPLE ORDERING CODE = **SERIES** **CODE** **STROKE**
CTDE - **30065095** - **1000**

TELESCOPIC TIPPING CYLINDERS

SINGLE ACTING TELESCOPIC HYDRAULIC TIPPING CYLINDERS

AVAILABLE IN 2 TO 10 STAGES WITH SWIVEL BALL OR PIN MOUNT

ROD AND TUBE PIN MOUNTED VERSIONS AVAILABLE

MAX PRESSURE = 180 BAR

MAX SPEED = 0.5 M/S

OPERATING TEMPERATURE (°C) = +80°C ▶ -25°C

TUBE MATERIAL = STEEL - ST52 - DIN1629

TENIFER TF1 TREATED STAGES

2D + 3D CAD FILES AVAILABLE!
FOR COMPLETE CYLINDER CATALOGUE VISIT
WWW.STEERFORTH.CO.UK



SPECIAL HYDRAULIC CYLINDERS

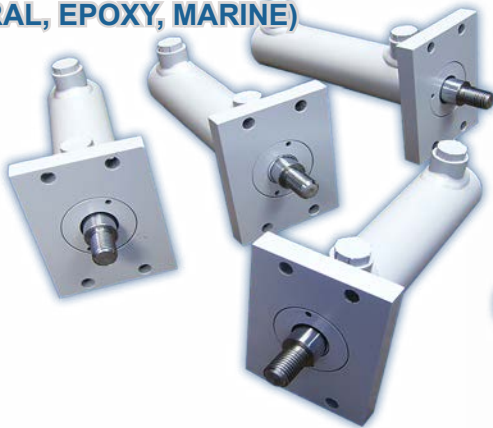
CUSTOM HYDRAULIC CYLINDERS DESIGNED AND MANUFACTURED USING OUR STANDARD RAMPARTS COMPONENTS.

BENEFITS INCLUDE:

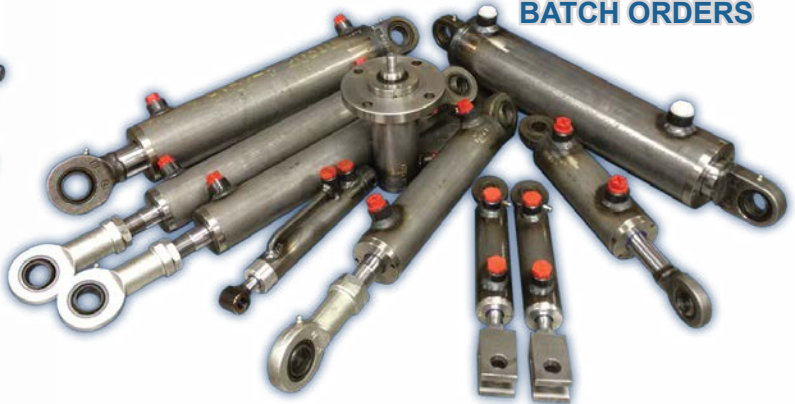
- REDUCED PRODUCTION COSTS USING STANDARD PARTS.
- 2D + 3D DRAWINGS AVAILABLE WITH QUOTATION.
- QUICK DELIVERY.
- LARGE BATCH AND CALL OFF ORDERS AVAILABLE.
- SPARE PISTONS, GLANDS AND SEALS KEPT IN STOCK.
- ONLINE ENQUIRY FORM AVAILABLE.



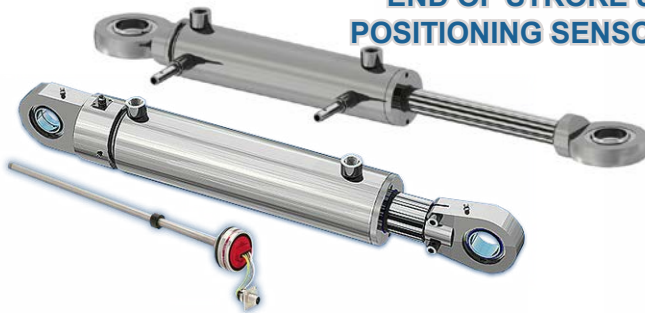
PAINTED FINISH (RAL, EPOXY, MARINE)



BATCH ORDERS



END OF STROKE & POSITIONING SENSORS



CUSTOM MOUNTINGS

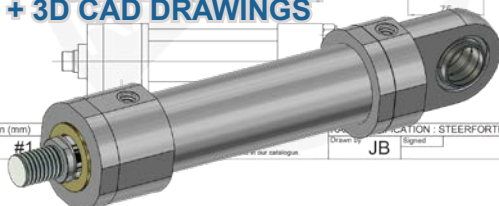
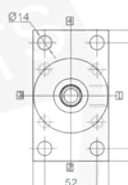
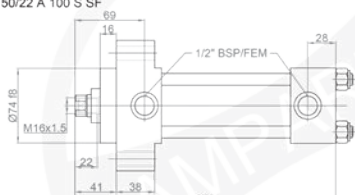


Customer Name - HYD0035	Date - 28/03/17	Org Number -	No Of Stages -
Tube x Rod x Stroke - 50 X 22 X 100	Type - DOUBLE ACTING	Max Peak Pressure - 210 BAR	Quantity - x1
Tube length - N/A	Rod length - N/A	Closed Centres - 41mm	Open Centres - 141mm
Port Type - 1/2" BSP/FEM			

AVAILABLE OPTIONS:

- HEAVY DUTY CYLINDERS UPTO 350 BAR .
- END OF STROKE ADJUSTABLE CUSHIONING.
- COMPLETE STAINLESS STEEL CYLINDERS.
- AIR BLEEDS AND TEST POINTS.
- END OF STROKE INDUCTIVE SENSORS.
- TEMPOSONIC TRANSDUCER CYLINDERS.
- LOW FRICTION AND HIGH TEMPERATURE SEALS.
- STEEL OR BU/BX BUSH ROD END INSERTS.
- UP TO 300mm INTERNAL BORE CYLINDERS.
- CYLINDER MOUNTED SAFETY VALVES
- + MANY MORE

2D + 3D CAD DRAWINGS



All Dimensions in (mm)
Issue No #1
DRAWING NO: CD 50/22 A 100 S SF
DRAWN BY: JB
SIGNATURE: JB
DATE: 28/03/17
LOCATION: STEERFORTH SALES LTD

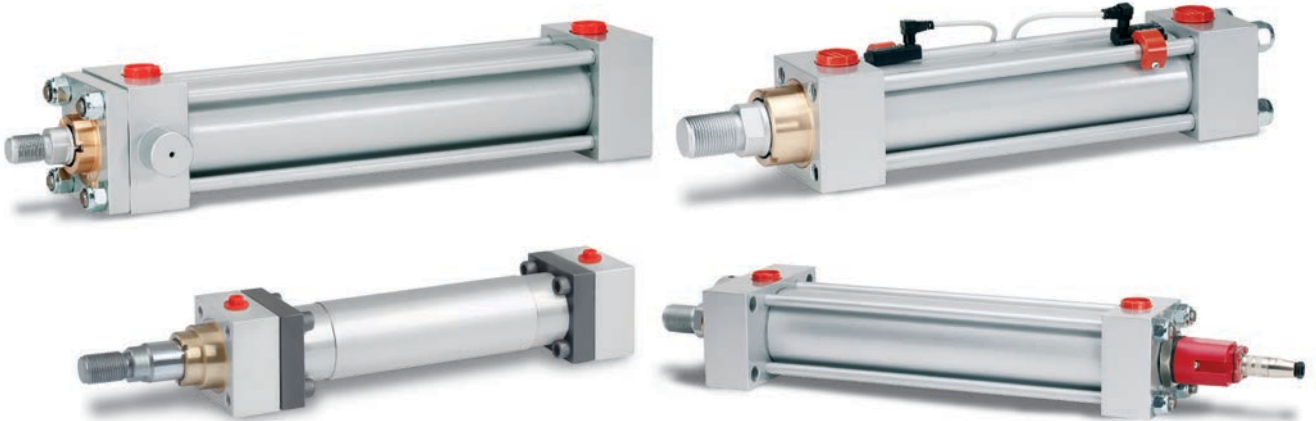
INDUSTRIAL HYDRAULIC CYLINDERS



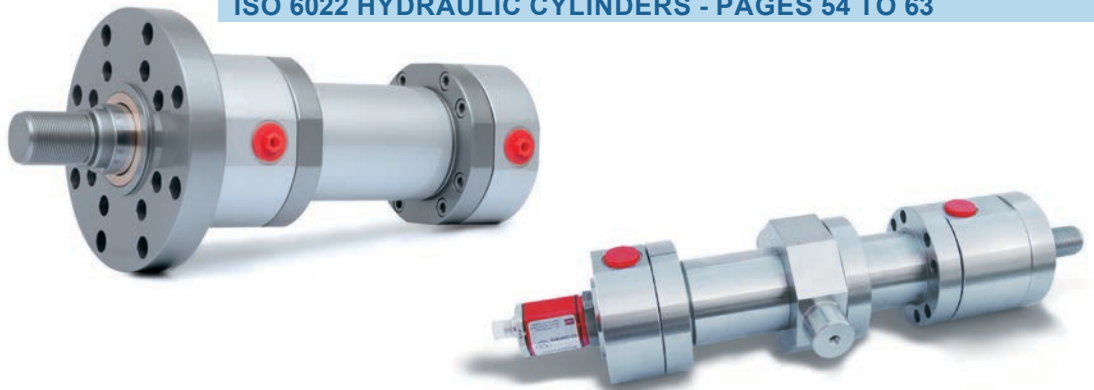
INDUSTRIAL ISO 6020/2 AND ISO 6022
HYDRAULIC CYLINDERS.

COMPACT INDUSTRIAL CYLINDERS.
ROTARY ACTUATORS.

ISO 6020/2 HYDRAULIC CYLINDERS - PAGES 40 TO 53



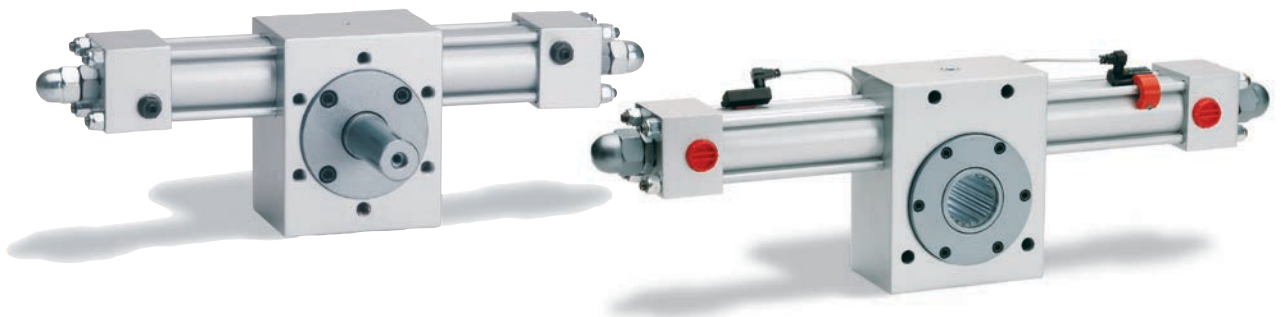
ISO 6022 HYDRAULIC CYLINDERS - PAGES 54 TO 63



LIGHT / HEAVY DUTY COMPACT CYLINDERS - PAGES 64 TO 71



ROTARY ACTUATORS - PAGES 72 TO 75



INDUSTRIAL ISO 6020/2 HYDRAULIC CYLINDERS

TIE ROD HYDRAULIC CYLINDERS, IN COMPLIANCE WITH THE ISO 6020/2 STANDARD, ALSO AVAILABLE WITH MAGNETIC SENSORS.

ALL STANDARD ISO MOUNTINGS ARE AVAILABLE, IN SEVERAL SEAL CONFIGURATIONS, DEPENDING ON APPLICATION CONDITIONS AND DESIRED PERFORMANCE.

ALL CYLINDERS ARE TESTED IN COMPLIANCE WITH THE ISO 10100 STANDARD.

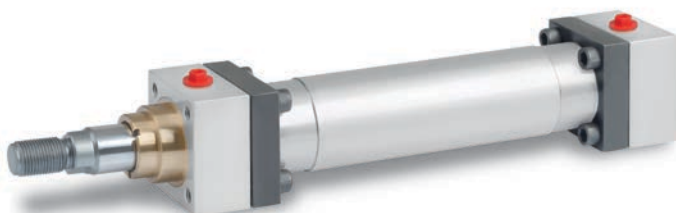
IN THE EVENT OF STROKES LONGER THAN 2000 MM, WE RECOMMEND THE USE OF CYLINDERS SERIES HD / HK

CD/DK - TIE ROD



SPECIFICATIONS	
STANDARD CYLINDERS	ISO 6020/2 - DIN 24554 TIE RODS
BORE (mm)	25-100mm = CD - 125-200mm = DK
PRESSURE (Bar)	NOMINAL = 160 - MAX = 210
MAX STROKE (mm)	4000
STROKE TOLERANCE	0 + 2mm ISO8131 STANDARD
FLUID	MINERAL OIL, PHOSPHORIC ESTERS + HFC FLUID CLYCOL
VISCOSITY	12...90mm ² /s

HD/HK - COUNTER FLANGE



SPECIFICATIONS	
STANDARD CYLINDERS	ISO 6020/2 - DIN 24554 COUNTER FLANGE
BORE (mm)	50-100mm = HD - 125-200mm = HK
PRESSURE (Bar)	NOMINAL = 210 - MAX = 250
MAX STROKE (mm)	4000
STROKE TOLERANCE	0 + 2mm ISO8131 STANDARD
FLUID	MINERAL OIL, PHOSPHORIC ESTERS + HFC FLUID CLYCOL
VISCOSITY	12...90mm ² /s

MD - MAGNETIC

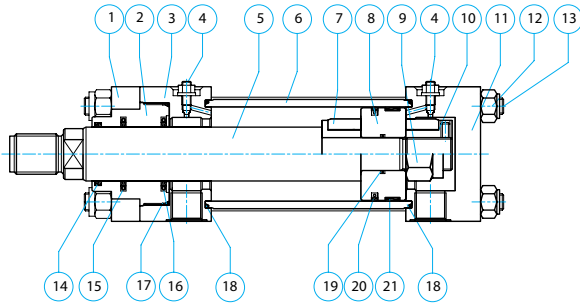


SPECIFICATIONS	
STANDARD CYLINDERS	ISO 6020/2 - DIN 24554 TIE RODS
BORE (mm)	25-125mm
PRESSURE (Bar)	MAX = 160
MAX STROKE (mm)	4000
STROKE TOLERANCE	0 + 2mm ISO8131 STANDARD
FLUID	MINERAL OIL, PHOSPHORIC ESTERS + HFC FLUID CLYCOL
VISCOSITY	12...90mm ² /s

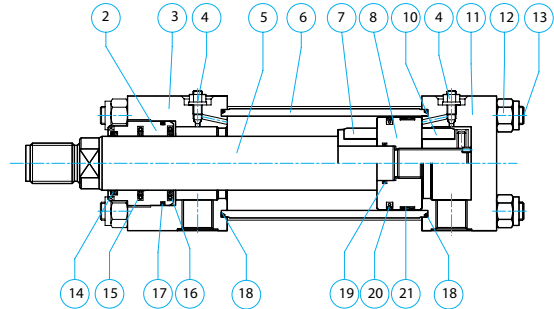
SEAL CODE	PERFORMANCE					FLUID		
	HIGH SEALING	LOW FRICTION	MAX SPEED	TEMP °C MIN	TEMP °C MAX	HYDRAULIC OIL	PHOSPHORIC ESTERS	WATER CLYCOL
S	√	-	0.5 m/s	-20	+80	√	-	-
L	-	√	1 m/s	-20	+80	√	-	-
H	-	√	1 m/s	-20	+150	√	√	-
G	-	√	0.5 m/s	-20	+80	-	-	√

INDUSTRIAL ISO 6020/2 HYDRAULIC CYLINDERS

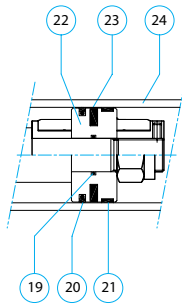
CD



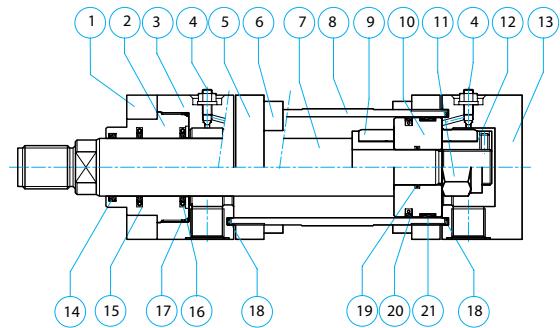
DK



MD - MAGNETIC VERSION



HD - COUNTER FLANGE

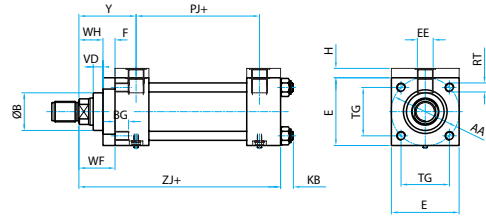
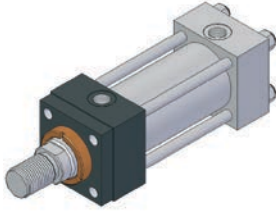


	COMPONENT	MATERIAL	SPECIFICATIONS
1	CLOSING FLANGE	STEEL	BURNISHED
2	GUIDE BUSHING	BRONZE	
3	FRONT HEAD	STEEL	BURNISHED
4	CUSHIONING ADJUSTING + BLEED SCREW	STEEL	
5	PISTON ROD / COUNTER FLANGE (HD)	CHROME PLATED STEEL	Cr 25 µm ISO f7 - Ra 0.20 µm
6	CYLINDER BODY / CLOSING SCREW (HD)	STEEL	HONED H8 - Ra 040 µm
7	FRONT CUSHIONING / PISTON ROD (HD)	HARDENED STEEL	
8	PISTON / CYLINDER BODY (HD)	STEEL	
9	LOCKING NUT / FRONT CUSHIONING (HD)	STEEL	
10	REAR CUSHIONING / PISTON (HD)	HARDENED STEEL	
11	REAR HEAD / LOCKING NUT (HD)	STEEL	BURNISHED
12	TIE ROD LOCKING NUT / REAR CUSHIONING (HD)	STEEL	
13	TIE ROD / REAR HEAD (HD)	ALLOY STEEL	ROLLED THREAD
22	MAGNETIC PISTON	STAINLESS STEEL	500
23	MAGNET		600
24	CYLINDER BODY	STAINLESS STEEL	

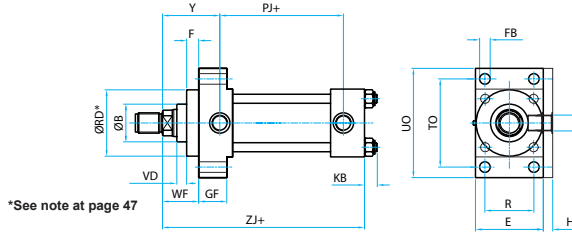
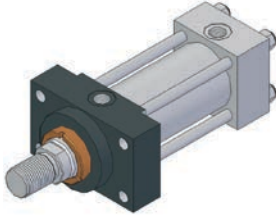
	COMPONENT	GROOVE	MATERIAL			
			S	L	H	G
14	ROD WIPER		NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
15	ROD SEAL	ISO 7425/2	NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
16	ROD SEAL	ISO 7425/2	PU	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
17	HEAD BUSHING SEAL		NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
18	TUBE SEAL		NBR	NBR	VITON®	NBR
19	PISTON SEAL		NBR	NBR	VITON®	NBR
20	PISTON SEAL	ISO 7425/2	NBR + PU	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
21	PISTON GUIDE		RESIN	RESIN	RESIN	RESIN

ISO 6020/2 MOUNTINGS

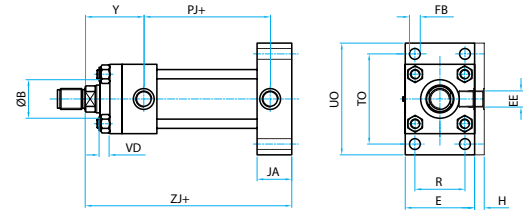
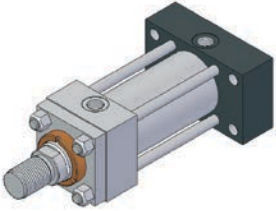
X - ISO MX5 - FRONT THREADED HOLES



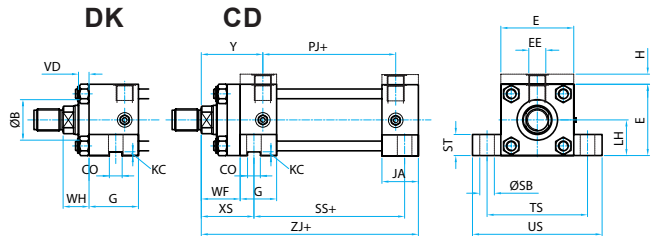
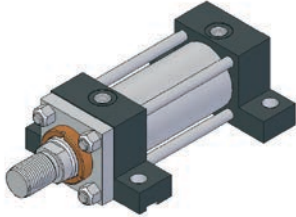
A - ISO ME5 - FRONT FLANGE



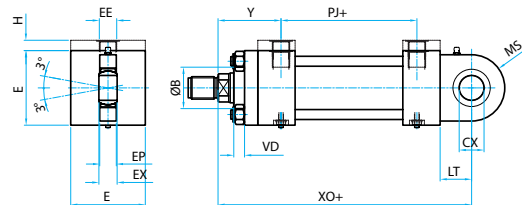
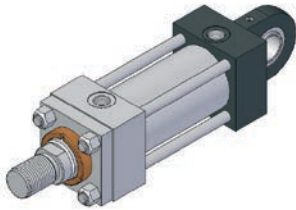
B - ISO ME6 - REAR FLANGE



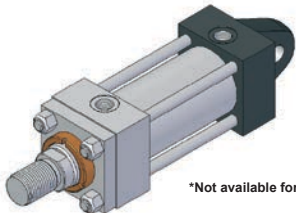
E - ISO - MS2 FOOT MOUNT



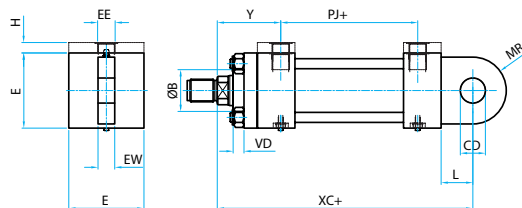
D - ISO - MP5 REAR SPHERICAL BEARING



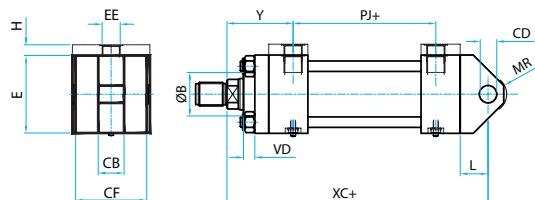
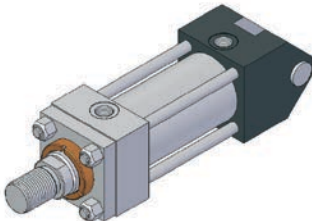
C - ISO MP3 - MALE CLEVIS



*Not available for bore sizes 160mm & 200mm

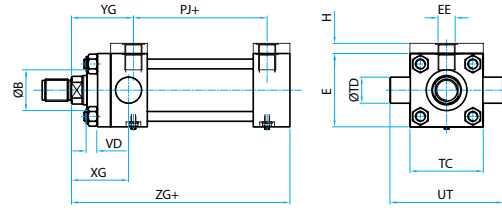
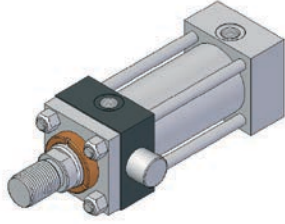


M - ISO MP1 - FEMALE CLEVIS

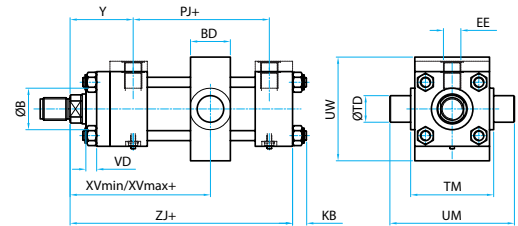
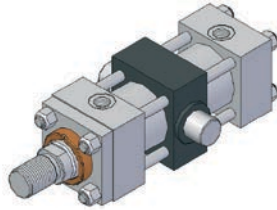


ISO 6020/2 MOUNTINGS

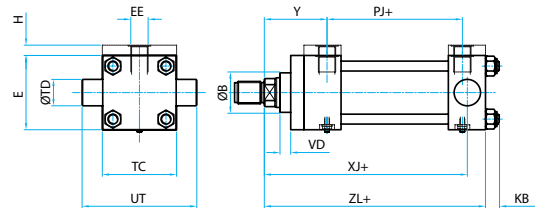
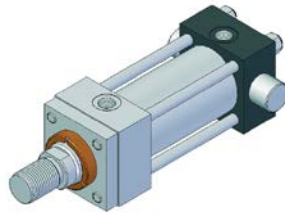
G - ISO MT1 - FRONT TRUNNION



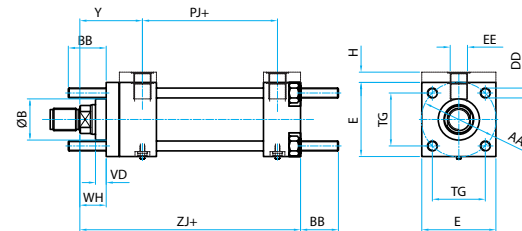
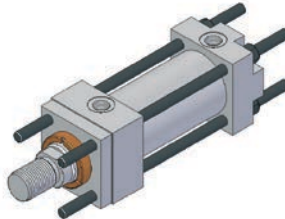
H - ISO MT4 - INTERMEDIATE TRUNNION



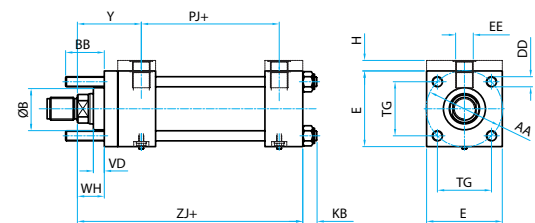
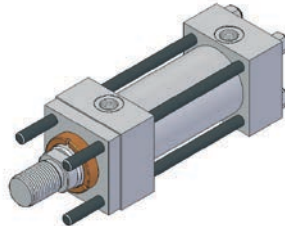
L - ISO MT2 - REAR TRUNNION



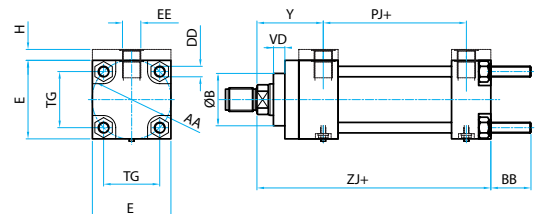
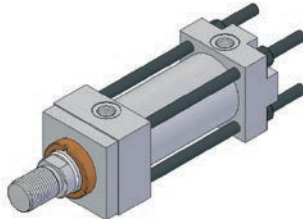
Q - ISO MX1 - FRONT + REAR EXTENDED TIE RODS



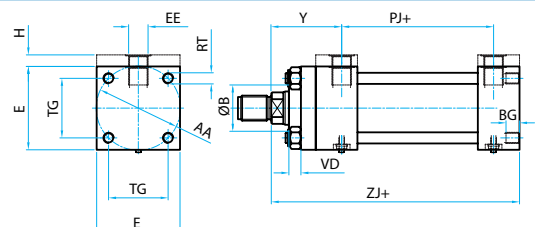
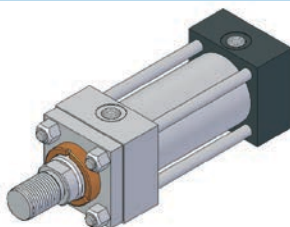
R - ISO MX3 - FRONT EXTENDED TIE RODS



S - ISO MX2 - REAR EXTENDED TIE RODS

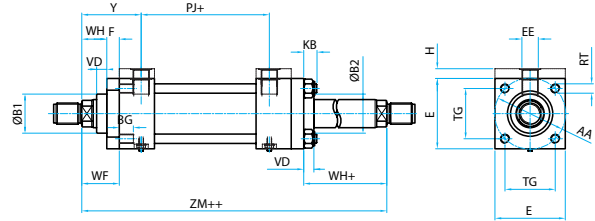
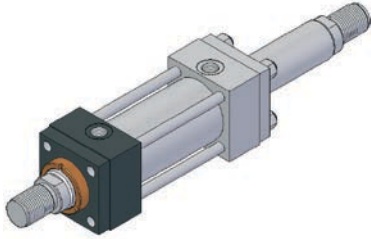


T - ISO MX6 - REAR THREADED HOLES

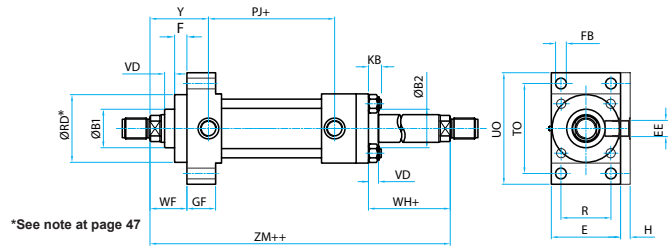
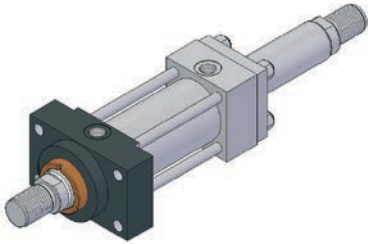


ISO 6020/2 DOUBLE ROD MOUNTINGS

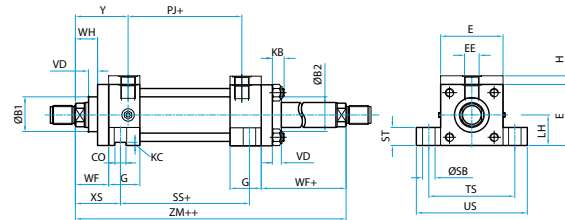
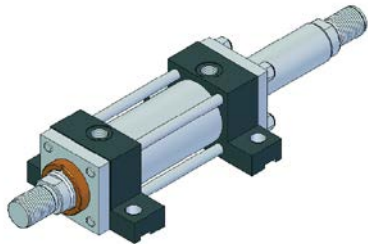
X - ISO MX5 - FRONT THREADED HOLES



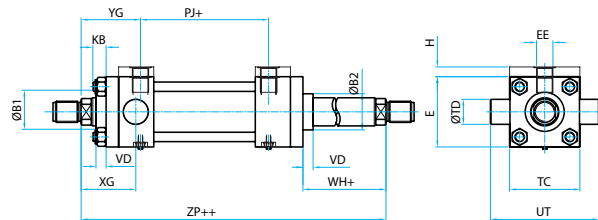
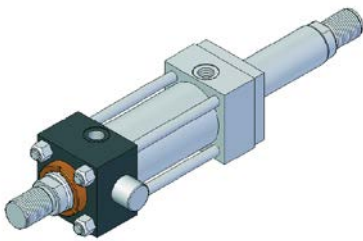
A - ISO ME5 - FRONT FLANGE



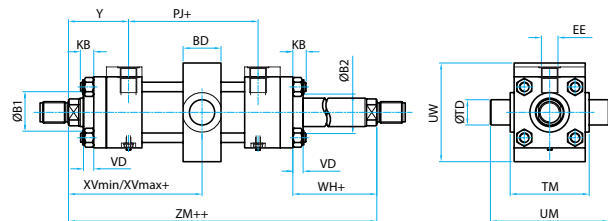
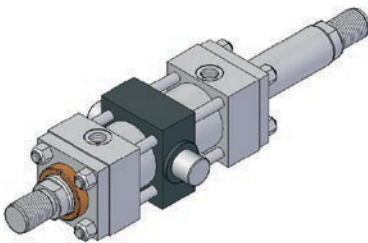
E - ISO MS2 - FOOT MOUNT



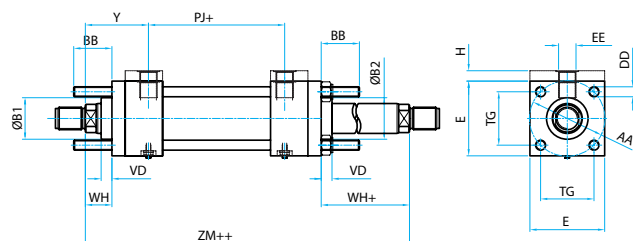
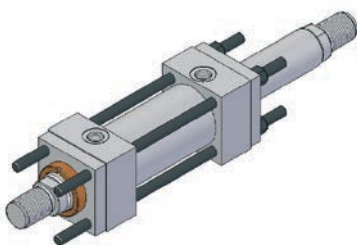
G - ISO MT1 - FRONT TRUNNION



H - ISO MT4 - INTERMEDIATE TRUNNION



Q - ISO MX1 - FRONT + REAR EXTENDED TIE RODS



ISO 6020/2 DIMENSIONS

BORE	25			32			40			50			63			80			100			125			160			200		
ROD	12	18	14	18	22	18	22	28	22	28	36	28	36	45	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140	
B f9	24	30	26	30	34	30	34	42	34	42	50	42	50	60	50	60	72	60	72	88	72	88	108	88	108	133	108	133	163	
AA	40			47			59			74			91			117			137			178			219			269		
BB	19			24			35			46			46			59			59			81			92			115		
BD	20			25			29			38			48			58			68			88			108			125		
BG	12			15			16			18			18			24			24			30			35			40		
CB	16 (*)			16			20			30			30			40			50			64 (*)			80 (*)			80		
CD h8	10			12			14			20			20			28			36			45			56			70		
CF	40			45			60			74			90			110			130			164			200			240		
CO H8	--			--			12			12			16			16			16			20			30			40		
CX	12 - 0.008			16 - 0.008			20 - 0.012			25 - 0.012			30 - 0.012			40 - 0.012			50 - 0.012			60 - 0.015			80 - 0.015			100 - 0.020		
DD	M5x0.8			M6x1			M8x1			M12x1.25			M12x1.25			M16x1.5			M16x1.5			M22x1.5			M27x2			M30x2		
E max	40			45			60			75			90			115			130			165			200			245		
EE	G 1/4"			G 1/4"			G 3/8"			G 1/2"			G 1/2"			G 3/4"			G 3/4"			G 1"			G 1"			G 1 1/4"		
EP	9			12			14			18			20			24			30			38			47			58		
EW h14	12			16			20			30			30			40			50			60			--			--		
EX	10			14			16			20			22			28			35			44			55			70		
F	10			10			10			16			16			20			22			22			25			25		
FB H13	5.5			6.6			11			14			14			18			18			22			26			33		
G	32			35.5			46			45			45			52			55			87			95			117		
GF	25			25			38			38			38			45			45			58			58			76		
H	5			5			--			--			--			--			--			--			--			--		
JA	32			35.5			46			45			45			52			55			65			70			92		
KB	7			10			13			17			17			23			23			30			35			37		
KC	--			--			4			4.5			4.5			5			6			6			8			8		
L	13			19			19			32			32			39			54			57			63			82		
LH h10	19			22			31			37			44			57			63			82			101			122		
LT	16			20			25			31			38			48			58			72			92			116		
MR max	12			17			17			29			29			34			50			53			59			78		
MS max	20			22.5			29			33			40			50			62			80			100			120		
PJ	49+ (*)			47+ (*)			58+ (*)			62+ (*)			64+ (*)			77+ (*)			78+ (*)			117+			130+			165+		
R	27			33			41			52			65			83			97			126			155			190		
RD f8	38			42			62			74			88 (**)			105 (**)			125 (**)			150 (**)			170 (**)			210 (**)		
RT	M5			M6			M8			M12			M12			M16			M16			M22			M27			M30		
SB H13	6.6			9			11			14			18			18			26			26			33			39		
SS	73+			73+			98+			92+			86+			105+			102+			131+			130+			172+		
ST	8.5			12.5			12.5			19			26			26			32			32			38			44		
TC	38			44			63			76			89			114			127			165			203			241		
TD f8	12			16			20			25			32			40			50			63			80			100		
TG	28.3			33.2			41.7			52.3			64.3			82.7			96.9			125.9			154.9			190.2		
TM	48			55			76			89			100			127			140			178			215			279		
TO	51			58			87			105			117			149			162			208			253			300		
TS	54			63			83			102			124			149			172			210			260			311		
UM	68			79			108			129			150			191			220			278			341			439		
UO	65			70			110			130			145			180			200			250			300			360		
US	72			84			103			127			161			186			216			254			318			381		
UT	58			68			95			116			139			178			207			265			329			401		
UW	45			50			70			90			100			130			140			180			215			300		
VD	6			12			12			9			13			9			10			10			7			7		
WF	25			35			35			41			48			51			57			57			57			57		
WH	15			25			25			25			32			31			35			35			32			32		
XC	127+			147+			172+			191+			200+			229+			257+			289+			308+			381+		
XG	44			54			57			64			70			76			71			75			75			85		
XJ	95+ (*)			109+ (*)			131+ (*)			136+ (*)			146+ (*)			165+ (*)			177+ (*)			214+ (*)			227+ (*)			271+ (*)		
XO	130+			148+			178+			190+			206+			238+			261+			304+			337+			415+		
XS	33			45			45			54			65			68			79			79			86			92		
XV min/max	67 / 72+			83 / 80+			96 / 92+			106 / 94+			118 / 98+			133 / 108+			147 / 113+			166 / 123+			182 / 120+			213 / 142+		
Y	45 (*)			58 (*)			65 (*)			69 (*)			76 (*)			82 (*)			91 (*)			86			86			98		
YG	45 (*)			58 (*)			65 (*)			69 (*)			76 (*)			82 (*)			79 (*)			86			86			98		
ZG	114+			128+			153+			159+			168+			190+			191+			232+			245+			299+		
ZJ	114+			128+			153+			159+			168+			190+			203+			232+			245+			299+		
ZL	114+			128+			153+			159+			168+			190+			203+			254+			270+			324+		
ZM	139++			163++			188++			200++			216++			241++			260++			289++			302++			356++		
ZP	139++			163++			188++			200++			216++			241++			248++			289++			302++			356++		

(*) DOES NOT COMPLY WITH ISO 6020/2 STANDARD

(**) RD DIMENSION IS UNIFIED, WITH REFERENCE TO THE HIGHER DIAMETER BETWEEN THE ONES DEFINED BY ISO 6020/2.

+ = ADD THE STROKE

++ = ADD DOUBLE THE STROKE

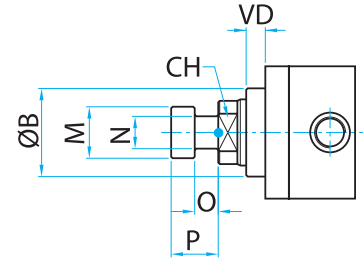
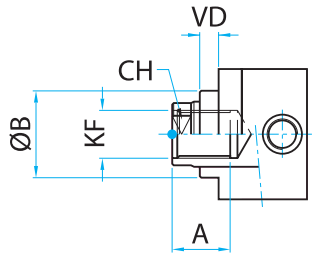
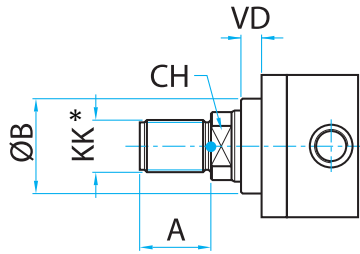
ISO 6020/2 ROD END DETAILS

ISO 6020/2

STANDARD

SF

ST



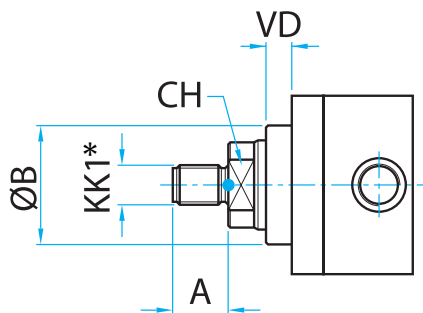
ROD Ø(mm)	12	14	18	22	28	36	45	56	70	90	110	140
A	14	16	18	22	28	36	45	56	63	85	95	112
B f9	24	26	30	34	42	50	60	72	88	108	133	163
CH	10	12	15	19	22	30	36	46	60	75	95	120
KK	M10x1.25	M12x1.25	M14x1.5	M16x1.5	M20x1.5	M27x2	M33x2	M42x2	M48x2	M64x3	M80x3	M100x3
KF	M8x1	M10x1.25	M12x1.25	M16x1.5	M20x1.5	M27x2	M33x2	M42x2	M48x2	M64x3	M80x3	M100x3
M	11	13	16	18	22	28	35	45	56	70	106	136
N	6.5	8	10	11	14	18	22	28	35	45	65	70
O	5	6	7	8	10	13	16	20	25	35	35	45
P	10	12	14	16	20	25	32	40	50	70	70	90

* FOR THE STANDARD MALE ROD END, THE MOST SUITABLE ROD EYE WITH SPHERICAL BEARING IS THE TAPR-CE VERSION PLEASE SEE (PAGE 179)

DIN 24554

SL

DIN 24554



BORE Ø(mm)	25		32			40			50			63			80			100			125			160			200		
ROD Ø(mm)	12	18	14	18	22	18	22	28	22	28	36	28	36	45	36	45	56	45	56	70	56	70	90	70	90	110	90	110	140
A1	14		16			18			22			28			36			45			56			63			85		
B f9	24	30	26	30	34	30	34	42	34	42	50	42	50	60	50	60	72	60	72	88	72	88	108	88	103	133	108	133	163
CH	10	15	12	15	19	15	19	22	19	22	30	22	30	36	30	36	46	36	46	60	46	60	75	60	75	95	75	95	120
KK1	M10x1.25		M12x1.25			M14x1.5			M16x1.5			M20x1.5			M27x2			M33x2			M42x2			M48x2			M64x3		
VD	6		12			12			9			13			9			10			10			7			7		

* FOR THE SL MALE ROD END, THE MOST SUITABLE ROD EYE WITH SPHERICAL BEARING IS THE TAPR-S VERSION PLEASE SEE (PAGE 179)

ISO 6020/2 ORDERING CODES



DOUBLE ACTING
 SIZES FROM 25mm ▶ 200mm BORE
 SPEED (MAX) - 0.5 M/S (LOW FRICTION 1 M/S)
 FLUID TEMPERATURE °C = -20°C ▶ +80°C
 MAXIMUM STROKE - 4000mm
 STANDARD CYLINDERS - ISO6020/2-1991 - DIN24554
 ALSO AVAILABLE IN MAGNETIC DESIGN - QUOTE 'MD'
 ALSO AVAILABLE IN COUNTER FLANGE DESIGN - QUOTE 'HD/HK'

CD - 50 28 - A - 300 - - - - -

TYPE	BORE Ø(mm)	CODE
STANDARD	25 ▶ 100	CD
	125 ▶ 200	DK
COUNTER FLANGE	50 ▶ 100	HD
	125 ▶ 200	HK
MAGNETIC	25 ▶ 125	MD

SPECIAL VARIANTS** SX

SELECTED BORE SIZE Ø(mm)	SELECTED ROD SIZE Ø(mm)
25	12
	18
32	14
	18
40	18
	22
	28
50	22
	28
	36
63	28
	36
	45
80	36
	45
	56
100	45
	56
	70
125	56
	70
	90
160	70
	90
	110
200	90
	110
	140

STROKE
 - SPECIFY IN 'MM'

CODE	CUSHIONING
-	NOT REQUIRED
V	FRONT ONLY
Z	REAR ONLY
K	FRONT & REAR

CODE	AIR BLEED TYPE
-	NOT REQUIRED
SV	FRONT ONLY
SZ	REAR ONLY
SK	FRONT & REAR

CODE	ROD EXTREMITIES
-	MALE THREAD (STANDARD)
SF	FEMALE THREAD
ST	TENON
SL	MALE THREAD (DIN24554)

CODE	SEALS
S	STANDARD
L	LOW FRICTION
H	VITON
G	GLYCOL

CODE	SPACER FOR STROKE (mm)
-	0 ▶ 1000mm
SJ50	1000 ▶ 1500mm
SJ100	1500 ▶ 2000mm
SJ150	2000 ▶ 3000mm
SJ200	ABOVE 3000mm

MOUNTING TYPE (SEE PAGES 44 - 46)	ISO 6020/2	DIN 24554	CODE
FRONT TAPPED HOLES	MX5	-	X
FRONT FLANGE	ME5	ME5	A
REAR FLANGE	ME6	ME6	B
FOOT MOUNTING	MS2	MS2	E
BALL JOINTED / SPHERICAL EYE	MP5	MP5	D
MALE CLEVIS	MP3	-	C**
FEMALE CLEVIS	MP1	-	M
FRONT TRUNNION	MT1	-	G
INTERMEDIATE TRUNNION	MT4	MT4	H
REAR TRUNNION	MT2	-	L
EXTENDED FRONT & REAR TIE RODS	MX1	-	Q
EXTENDED FRONT TIE RODS	MX3	-	R
EXTENDED REAR TIE RODS	MX2	-	S
REAR TAPPED HOLES	MX6	-	T

SENSOR QUANTITY

CODE	SENSOR TYPE
SR	REED - 24 ▶ 110V AC/DC
SH	PNP - 24V DC

SD BUSHING DRAIN

SECOND ROD (IF REQUIRED) -

** NOT AVAILABLE FOR 160mm & 200mm BORES.

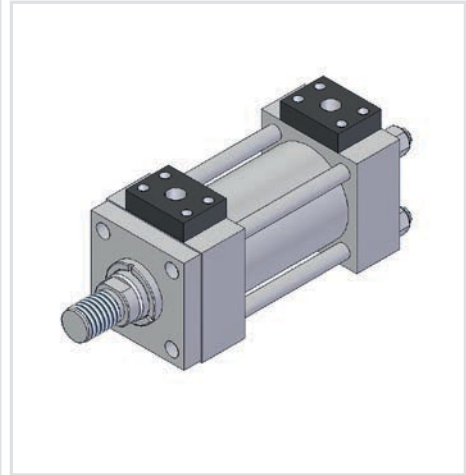
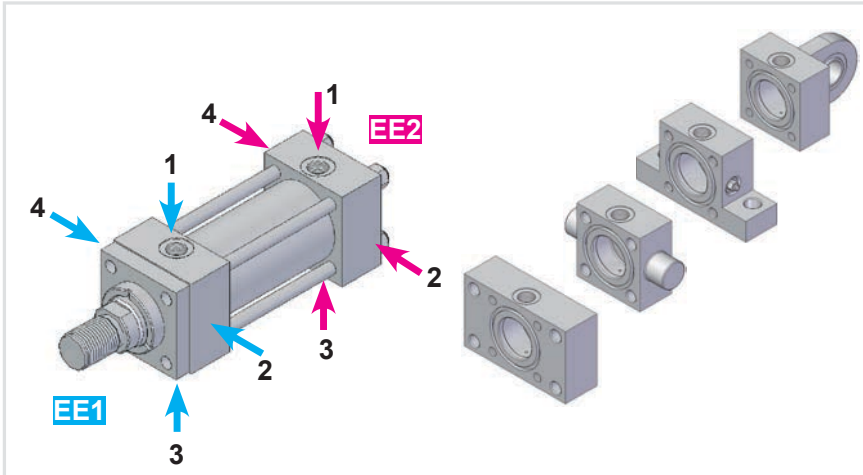
PLEASE USE THE ABOVE GUIDE TO PRODUCE YOUR TIE ROD RAM ORDER CODE. START FROM THE LEFT AND WORK YOUR WAY RIGHT USING THE TABLES TO CREATE YOUR BESPOKE TIE ROD CYLINDER. THE EXAMPLE SHOWN IS FOR A BASIC 'CD' TYPE CYLINDER WITH A 50mm BORE AND 28mm ROD, A FRONT FLANGE MOUNTING AND 300mm STROKE. GIVING "CD50/28A300" AS YOUR ORDER CODE.

**SPECIFY 'SX' ONLY IF DIFFERENT FROM STANDARD - OPTIONS INCLUDE: OIL PORT POSITIONS, OVERSIZED OIL PORTS, LENGTHENED ROD, SPECIAL ROD EXTREMITY, CETOP SUBPLATES, ROD PROTECTIVE COVER ROD TREATMENT (NIKROM, HARDENED, AISI...ETC), ANTI ROTATION ROD.

ISO 6020/2 SPECIAL OPTIONS

PORT LOCATIONS

SAE 3000 CONNECTIONS



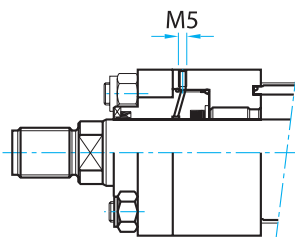
THE STANDARD CONFIGURATION HAS THE OIL PORTS IN POSITION "1" AND THE CUSHIONING ADJUSTMENT OR AIR BLEED IN POSITION "3", EXCEPT FOR THE MOUNTING TYPE "E", WHERE THEY ARE IN POSITION "2".

BORE Ø(mm)	ISO 1179-1 (BSP)				SAE 3000			
	STANDARD		OVERSIZE PORTS		STANDARD		OVERSIZE PORTS	
	FRONT	REAR	FRONT	REAR	FRONT	REAR	FRONT	REAR
25	G 1/4"	G 1/4"	--	G 3/8"	--	--	--	--
32	G 1/4"	G 1/4"	--	G 3/8"	--	--	--	--
40	G 3/8"	G 3/8"	--	G 1/2"	--	--	--	--
50	G 1/2"	G 1/2"	--	G 3/4"	--	--	--	--
63	G 1/2"	G 1/2"	--	G 3/4"	--	--	--	--
80	G 3/4"	G 3/4"	--	G 1"	3/4"	3/4"	1"	1"
100	G 3/4"	G 3/4"	--	G 1"	3/4"	3/4"	1"	1"
125	G 1"	G 1"	G 1-1/4"	G 1-1/4"	1"	1"	1-1/4"	1-1/4"
160	G 1"	G 1"	G 1-1/4"	G 1-1/4"	1"	1"	1-1/4"	1-1/4"
200	G 1-1/4"	G 1-1/4"	G 1-1/2"	G 1-1/2"	1-1/4"	1-1/4"	1-1/2"	1-1/2"

ROD MATERIAL OPTIONS

RRX	STAINLESS STEEL CHROME PLATED ROD
RRB	HARDENED AND TEMPERED CHROME PLATED ROD
RRK	NIKROM ROD
RRH	HARDENED CHROME PLATED ROD

SD - BUSHING DRAIN



THE BUSHING DRAIN AVOIDS THE ACCUMULATION OF LIQUID BEHIND THE SCRAPER. A CONNECTION BETWEEN THE SCRAPER AND THE LIP SEAL ALLOWS FLUID BACK TO THE TANK. THE DRAIN IS USUALLY INSTALLED ON THE OPPOSITE SIDE OF THE OIL PORT.

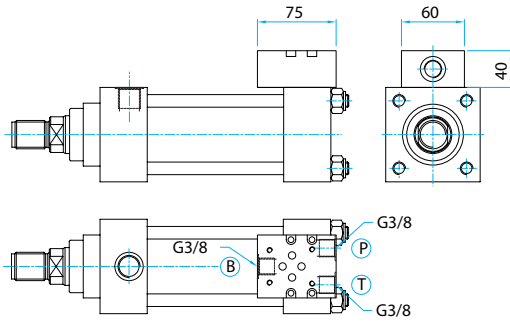
BL

FOR SPECIAL APPLICATION, WHERE HIGH SEALING AND LOW FRICTION IS REQUIRED (I.E, CLOSED CIRCUIT APPLICATION), A SPECIAL PISTON IS AVAILABLE. PLEASE CONTACT OUR SALES DEPARTMENT FOR MORE INFORMATION.

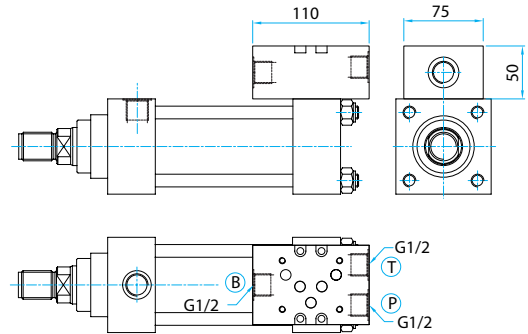
ISO 6020/2 INCORPORATED PLATES

INCORPORATED PLATES: MOUNTED WITH 4 SCREWS

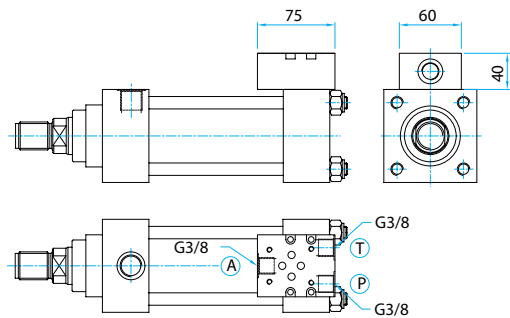
BV3 - A



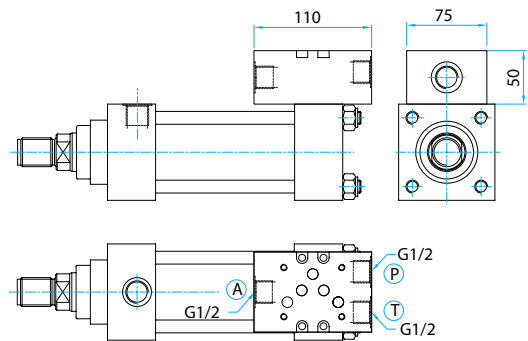
BV5 - A



BV3 - B



BV5 - B



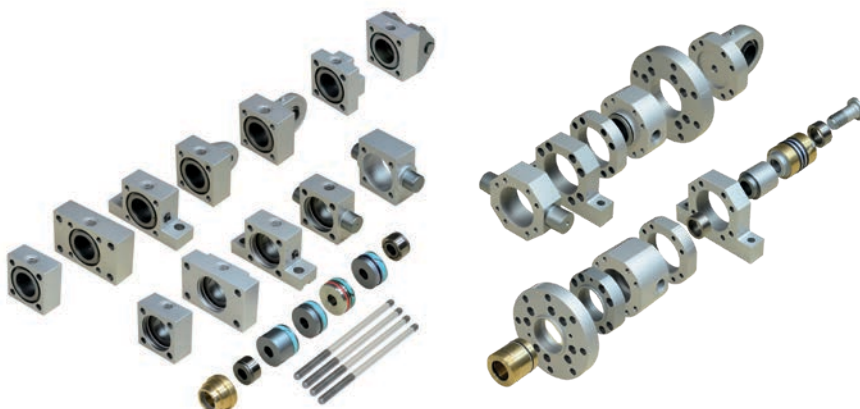
THE INCORPORATED PLATE ALLOWS MOUNTING OF A FOUR PORT CONTROL VALVE WITH AN ISO 4410 MOUNTING SURFACE. IN THIS WAY, THE OIL VOLUMES BETWEEN THE CYLINDER AND THE VALVE ARE REDUCED, OBTAINING A BETTER CONTROL PRECISION. THEY ARE MOUNTED DIRECTLY ON THE CYLINDERS REAR HEAD THROUGH FOUR SCREWS AND A NIPPLE. THEY ARE AVAILABLE ALSO IN A VERSION WITH CONIC THREADED NIPPLE, USABLE ALSO FOR SMALL BORES OR IN OTHER PARTICULAR SITUATIONS: FOR INFORMATION CONTACT OUR SALES DEPARTMENT.

INCORPORATED PLATES ORDERING CODE

BV 3 - A

OIL PORT DIMENSION	BORE RANGE			LINK CONFIGURATION
ISO 4001-03 NG6	40 - 125	3	A	PORT A ► REAR SIDE
ISO 4001-05 NG10	50 - 200	5	B	PORT B ► REAR SIDE

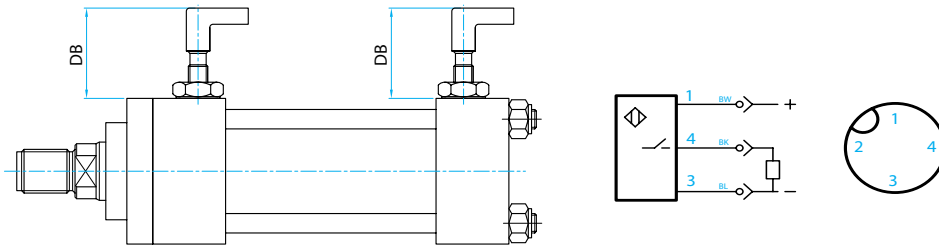
THE FIELDS CONTAINING SAMPLE VALUES ARE COMPULSORY.



ISO CYLINDERS
AVAILABLE IN KIT FORM.
FOR COMPLETE KIT
CATALOGUE VISIT
WWW.STEERFORTH.CO.UK

ISO 6020/2 PROXIMITY SWITCHES

PROXIMITY SWITCHES



BORE Ø(mm)	DB MAX (mm)
40	85
50	80
63	80
80	70
100	60
125	65
160	55
200	50

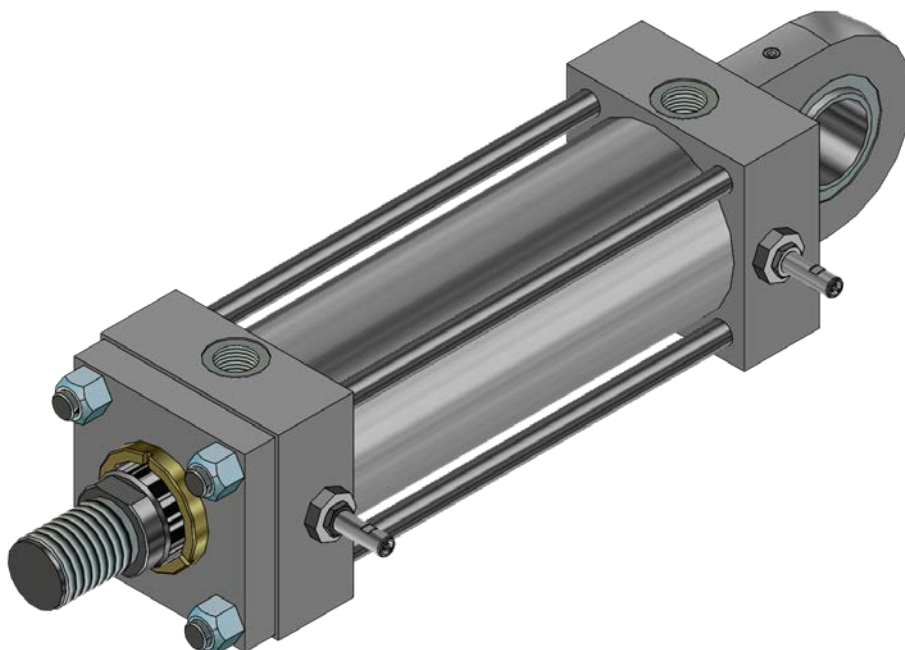
PROXIMITY SWITCHES CAN BE USED TO DETECT THE PISTON POSITION WHEN IT IS CLOSE TO THE STROKE END. THEY ARE MOUNTED ON THE CYLINDER HEAD, USUALLY IN POSITION 4 (SEE PAGE 48). THE PROXIMITY SWITCHES WORK ONLY IN CYLINDERS WITH BORES OF 40mm TO 200mm WITH CUSHIONING. THE PROXIMITY SWITCH GENERATES A MAGNETIC FIELD AND IS ABLE TO DETECT ITS MODIFICATION DUE TO THE PROXIMITY OF THE CUSHIONING BUSHING. THE OUTPUT SIGNAL IS MODULATED BY A "NORMALLY OPEN* SWITCH.

SPECIFICATIONS

WORKING TEMPERATURE	- 25 °C ... + 80 °C
MAXIMUM PRESSURE	500 BAR
PROTECTION GRADE	IP68
CONNECTION	S4
HYSTERESIS	<= 15%
REPEATABILITY	<= 5%
WIRING	3 WIRES
SWITCHING FUNCTION	NORMALLY OPEN
OUTPUT SIGNAL	PNP
RATING OPERATIONAL VOLTAGE	24V DC
RATED OPERATIONAL CURRENT	200 mA
SUPPLY VOLTAGE	10 ... 30 VDC

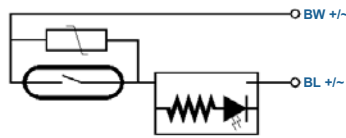
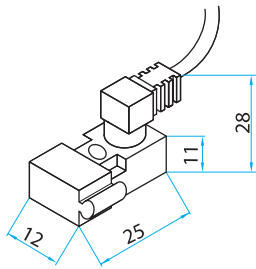
ORDERING CODES

SPV	FRONT SENSOR
SPZ	REAR SENSOR
SPK	FRONT AND REAR SENSOR



ISO 6020/2 MAGNETIC SWITCHES

SR - REED SWITCH

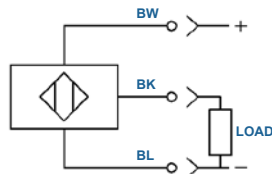
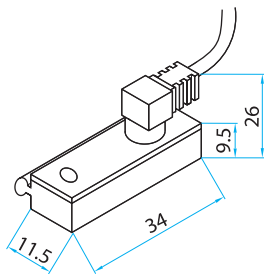


BW = BROWN
BL = BLUE

SPECIFICATIONS

SPECIFICATIONS	
VOLTAGE	24 - 110 V AC/DC
MAX CURRENT (At 25 °C)	0.3 A
ELECTRIC CIRCUIT	REED
SWITCHING-ON TIME	0.8 ms
SWITCHING-OFF TIME	0.1 ms
ELECTRIC LIFESPAN	10 ⁷ PULSE
PROTECTION CLASS	IP 67 EN60529
TEMPERATURE RANGE	- 20°C ... + 80°C
INDICATING	LED
CABLE	2 x 0.25 mm ²
CABLE LENGTH	5.0m

SH - PNP SWITCH



BW = BROWN
BL = BLUE
BK = BLACK

SPECIFICATIONS

SPECIFICATIONS	
VOLTAGE	24 V DC
MAX CURRENT (At 25 °C)	0.25 A
ELECTRIC CIRCUIT	PNP
SWITCHING-ON TIME	0.8 ms
SWITCHING-OFF TIME	0.1 ms
ELECTRIC LIFESPAN	10 ⁷ PULSE
PROTECTION CLASS	IP 67 EN60529
TEMPERATURE RANGE	- 20°C ... + 80°C
INDICATING	LED
CABLE	3 x 0.25 mm ²
CABLE LENGTH	5.0m

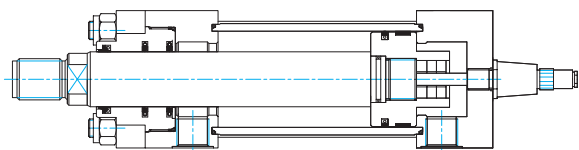
BORE Ø(mm)	X (mm)	Y (mm)	BRACKET	DIMENSIONS	DIMENSIONS
25	43	26	STA		
32	45	28			
40	50	32			
50	56	44	STB		
63	61	50			
80	71	57	STC		
100	78	64			
125	95	80	STD		

CORRECT USE OF MAGNETIC SENSORS: VOLTAGE AND CURRENT VALUES MUST NEVER EXCEED SPECIFIED IN THE TABLE. CURRENT SURGES MAY BE CAUSED BY CAPACITIVE LOADS (eg. CABLES OF LENGTHS OVER 3m). VOLTAGE SURGES MAY BE CAUSED BY INDUCTANCE (eg. SOLENOID VALVES, RELAYS, CONTACTORS ETC). MAGNETIC DISTORTION MAY BE CAUSED BY FERROUS MASSES (eg. CYLINDER SEAT INSIDE MOULDS) OR THE PRESENCE OF STRONG MAGNETIC FIELDS (eg. ELECTRIC MOTORS, COILS, INVERTERS ETC). FOR STROKES LOWER THAN 20mm, CONTACT OUR SALES TEAM.

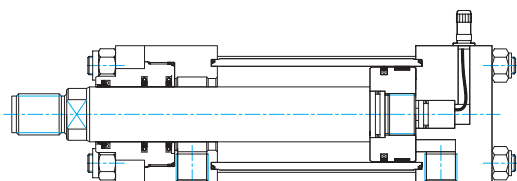
ISO 6020/2 HYDRAULIC SERVOCYLINDERS



VERSION WITH EXTERNAL TRANSDUCER. FOR MOUNTINGS X, A, E, G, H, L, R



VERSION WITH INTERNAL TRANSDUCER. FOR MOUNTINGS B, D, C, M, Q, S, T



ISO 6020/2 SERVOCYLINDERS ARE AVAILABLE BOTH WITH TIE RODS (TD AND TK VERSIONS) AND WITH COUNTER FLANGES (TH AND TX VERSIONS).

THE SERVOCYLINDERS INCLUDE AN ELECTRONIC TRANSDUCER, THIS ALLOWS TO OBTAIN THE EXACT POSITION OF THE PISTON ROD. THE TYPE OF TRANSDUCER TO BE USED DEPENDS ON THE PERFORMANCE NEEDED. THE PRECISION OF POSITIONING IS DETERMINED BY TWO ELEMENTS: THE RESOLUTION OF THE TRANSDUCER AND THE DRIVE SYSTEM OF THE CYLINDER. THREE TYPES OF TRANSDUCERS ARE AVAILABLE:

- **TEMPOSONIC®** = IT ALLOWS HIGH RESOLUTIONS AND DIFFERENT TYPES OF CONTROL; IT SUPPORTS ALL THE NECESSARY STROKE LENGTHS.
- **POTENTIOMETRIC** = THE OUTPUT SIGNAL IS GIVEN FROM A CURSOR SLIDING ON A PIEZOELECTRIC. MAXIMUM STROKE LENGTH AVAILABLE = 500mm
- **INDUCTIVE** = EMITS A VOLTAGE OR CURRENT SIGNAL GENERATED BY A SEPARATED ELECTRICAL CIRCUIT. MAXIMUM STROKE LENGTH AVAILABLE = 1000mm.

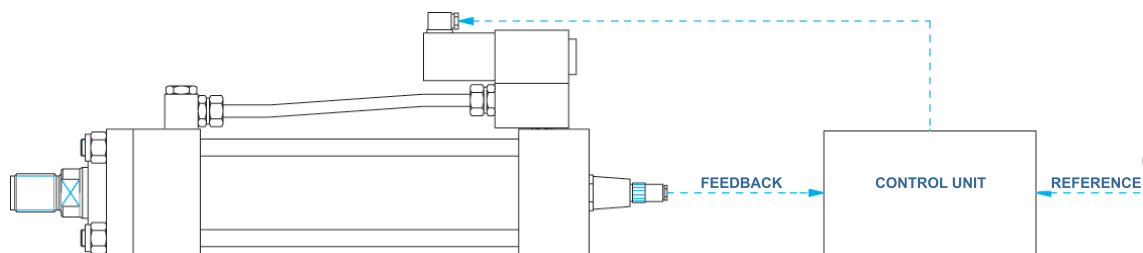
	MV	MA	MS	PV	IV	IA
TYPE	TEMPOSONIC	TEMPOSONIC	TEMPOSONIC	POTENTIOMETRIC	INDUCTIVE	INDUCTIVE
SUPPLY VOLTAGE	24V DC	24V DC	24V DC	MAX 60V	24V DC	24V DC
OUTPUT	0 - 10 V	4 - 20 mA	SSI	-	0 - 10 V	4 - 20 mA
RESOLUTION	ENDLESS	ENDLESS	-	ENDLESS	ENDLESS	ENDLESS
LINEARITY	<±0.02% F.S (Min ±50 µm)	<±0.02% F.S (Min ±50 µm)	<±0.01% F.S (Min ±50 µm)	±0.1 F.S	±0.2 F.S	±0.2 F.S
REPEATABILITY	<±0.001% F.S (Min ±2.5µm)	<±0.001% F.S (Min ±2.5µm)	<±0.001% F.S (Min ±2.5µm)	-	-	-
HYSTERESIS	< 4 µm	< 4 µm	< 4 µm	-	-	-
ABSORPTION	100 mA	100 mA	100 mA	-	-	-
MAX SPEED	2 m/s	2 m/s	2 m/s	1 m/s	2 m/s	2 m/s
TEMPERATURE	- 20 °C + 70 °C	- 20 °C + 70 °C	- 20 °C + 70 °C	- 20 °C + 70 °C	- 20 °C + 70 °C	- 20 °C + 70 °C
MAX STROKE	2500	2500	2500	500	1000	1000

F.S = FULL SCALE

SERVOCYLINDERS CAN BE EQUIPPED WITH ISO INTERFACE PLATES, THIS ALLOWS MOUNTING DIRECTLY ONTO THE CYLINDER THE FOLLOWING VALVES:

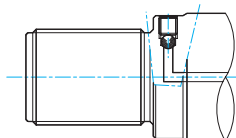
- SOLENOID ON/OFF VALVES
- PROPORTIONAL SOLENOID VALVES
- SERVOVALVES

THIS CONFIGURATION, TOGETHER WITH A CONTROL UNIT ENSURES OPTIMAL HYDRAULIC RIGIDITY. THIS GREATLY IMPROVES RESPONSE TIMES, THE REPEATABILITY AND THE PRECISION OF THE POSITIONING.



AIR BLEED

TO ALLOW THE SERVOCYLINDER TO WORK CORRECTLY, YOU NEED TO COMPLETELY REMOVE ALL AIR FROM THE CYLINDER. THEREFORE, THESE CYLINDERS NOT ONLY INCLUDE AIR BLEED ON THE HEADS, BUT THEY ALSO HAVE AN AIR BLEED FOR REMOVING THE AIR WITHIN THE CHAMBER OF THE TRANSDUCER. THE POSITIONING OF THIS AIR BLEED WORKS EVEN WHEN THE CYLINDER IS OPERATING, WITHOUT HAVING TO REMOVE THE ROD FROM IT'S HOUSING.



SERVOCYLINDER ORDERING CODES



DOUBLE ACTING
SIZES FROM 40mm ▶ 200mm BORE
MAXIMUM STROKE - 2500mm
STANDARD CYLINDERS - ISO6020/2-1991 - DIN24554

TD MA - 80 56 - A 500 - L - -

TYPE	BORE Ø(mm)	CODE
TIE ROD	40 ▶ 100	TD
	125 ▶ 200	TK
COUNTER FLANGES	50 ▶ 100	TH
	125 ▶ 200	TX

TRANSDUCER	CODE
TEMPOSONIC	MV
	MA
	MS
POTENTIOMETRIC	PV
INDUCTIVE	IV
	IA

SPECIAL VARIANTS**	SX
--------------------	----

TYPE	SELECTED BORE SIZE Ø(mm)	SELECTED ROD SIZE Ø(mm)
TD	40	28
TD	TH	28
		36
		45
		56
	TX	28
		36
		45
		56
TK	TH	56
		70
		80
		90
		110
		140
	TX	70
		90
		110
		110
		140
		140

STROKE
- SPECIFY IN 'MM'

CODE	SPACER FOR STROKE (mm)
-	0 ▶ 1000mm
SJ50	1000 ▶ 1500mm
SJ100	1500 ▶ 2000mm
SJ150	2000 ▶ 3000mm
SJ200	ABOVE 3000mm

CODE	AIR BLEED TYPE
-	NOT REQUIRED
SV	FRONT ONLY
SZ	REAR ONLY
SK	FRONT & REAR

CODE	ROD EXTREMITIES
-	MALE THREAD (STANDARD)
SF	FEMALE THREAD
ST	TENON
SL	MALE THREAD (DIN24554)

MOUNTING TYPE (SEE PAGES 44 - 46)	ISO 6020/2	DIN 24554	CODE
FRONT TAPPED HOLES	MX5	-	X
FRONT FLANGE	ME5	ME5	A
FOOT MOUNTING	MS2	MS2	E
FRONT TRUNNION	MT1	-	G
INTERMEDIATE TRUNNION	MT4	MT4	H
REAR TRUNNION	MT2	-	L
EXTENDED FRONT TIE RODS	MX3	-	R

CODE	SEALS
L	LOW FRICTION
H	VITON
G	GLYCOL

REAR FLANGE	ME6	ME6	B
REAR SPHERICAL BEARING	MP5	MP5	D
MALE CLEVIS	MP3	-	C
FEMALE CLEVIS	MP1	-	M
EXTENDED FRONT + REAR TIE RODS	MX1	-	Q
EXTENDED REAR TIE RODS	MX2	-	S
REAR TAPPED HOLES	MX6	-	T

CONTACT OUR SALES DEPARTMENT.

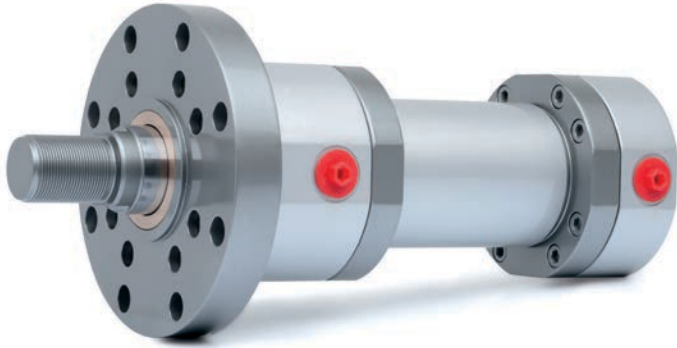
PLEASE USE THE ABOVE GUIDE TO PRODUCE YOUR TIE ROD ORDER CODE. START FROM THE LEFT AND WORK YOUR WAY RIGHT USING THE TABLES TO CREATE YOUR BESPOKE TIE ROD CYLINDER. THE EXAMPLE SHOWN IS FOR A BASIC 'TD' TYPE CYLINDER WITH A 80mm BORE AND 56mm ROD, A FRONT FLANGE MOUNTING AND 500mm STROKE + MA TEMPOSONIC TRANSDUCER. GIVING "TDMA80/56A500L" AS YOUR ORDER CODE.

**SPECIFY 'SX' ONLY IF DIFFERENT FROM STANDARD - OPTIONS INCLUDE: OIL PORT POSITIONS, OVERSIZED OIL PORTS, LENGTHENED ROD, SPECIAL ROD EXTREMITY, CETOP SUBPLATES, ROD PROTECTIVE COVER ROD TREATMENT (NIKROM, HARDENED, AISI...ETC), ANTI ROTATION ROD.

INDUSTRIAL ISO 6022 HYDRAULIC CYLINDERS

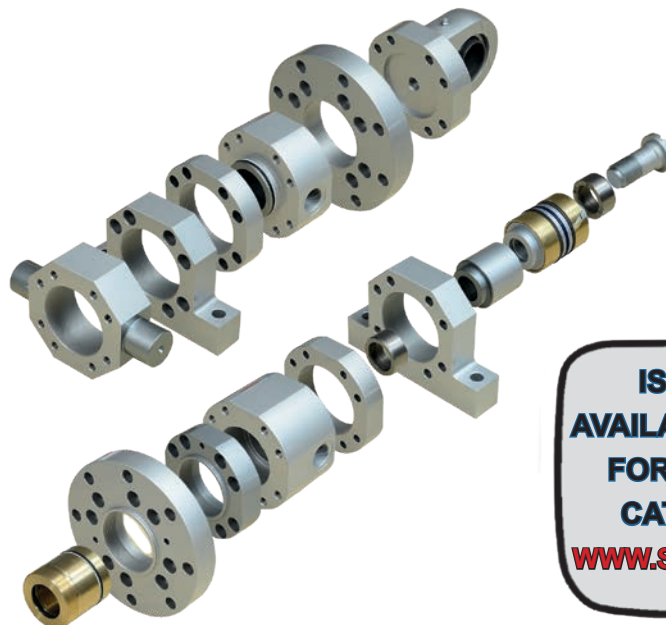
HYDRAULIC CYLINDERS FOR HEAVY DUTY APPLICATIONS, IN COMPLIANCE WITH THE ISO 6022 STANDARD. THESE CYLINDERS ARE AVAILABLE WITH MANY MOUNTING OPTIONS AND DIFFERENT SEALING CONFIGURATIONS. CYLINDERS CONTAIN BRONZE GUIDE RINGS FOR THE ROD AND PISTON WHICH GUARANTEES HIGH PERFORMANCE WITH A LONG CYLINDER LIFE. ALL CYLINDERS ARE TESTED IN COMPLIANCE WITH THE ISO 10100 STANDARD.

DP



SPECIFICATIONS	
STANDARD CYLINDERS	ISO 6022 - DIN 24333
BORE (mm)	50 - 200mm
PRESSURE (Bar)	NOMINAL = 250 - MAX = 320
MAX STROKE (mm)	6000
STROKE TOLERANCE	0 + 2mm ISO8131 STANDARD
FLUID	MINERAL OIL, PHOSPHORIC ESTERS + HFC FLUID GLYCOL
VISCOSITY	12...90mm ² / s

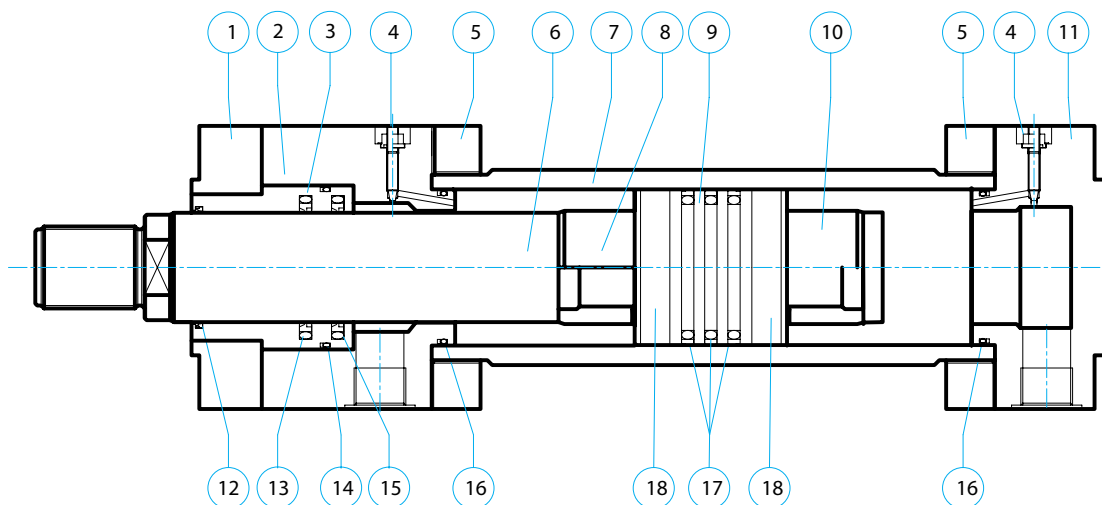
SEAL CODE	PERFORMANCE					FLUID		
	HIGH SEALING	LOW FRICTION	MAX SPEED	TEMP °C MIN	TEMP °C MAX	HYDRAULIC OIL	PHOSPHORIC ESTERS	HFC FLUID
S	√	-	0.5 m/s	-20	+80	√	-	-
L	-	√	1 m/s	-20	+80	√	-	-
H	-	√	1 m/s	-20	+150	√	√	-
G	-	√	0.5 m/s	-20	+80	-	-	√



**ISO CYLINDERS
AVAILABLE IN KIT FORM.
FOR COMPLETE KIT
CATALOGUE VISIT
WWW.STEERFORTH.CO.UK**

INDUSTRIAL ISO 6022 HYDRAULIC CYLINDERS

DP

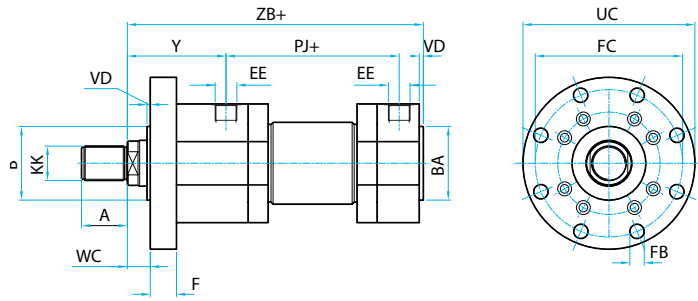
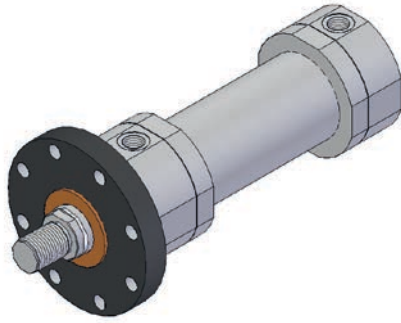


	COMPONENT	MATERIAL	SPECIFICATIONS
1	CLOSING FLANGE	STEEL	
2	FRONT HEAD	STEEL	
3	GUIDE BUSHING	BRONZE	
4	CUSHIONING ADJUSTING + BLEED SCREW	STEEL	
5	COUNTER FLANGE	STEEL	
6	PISTON ROD	HARDENED AND TEMPERED CHROME STEEL	Cr 25 µm ISO f7 - Ra 0.20 µm
7	CYLINDER BODY	STEEL	HONED H8 - Ra 040 µm
8	FRONT CUSHIONING	HARDENED STEEL	
9	PISTON	STEEL	
10	REAR CUSHIONING	HARDENED STEEL	
11	REAR HEAD	STEEL	

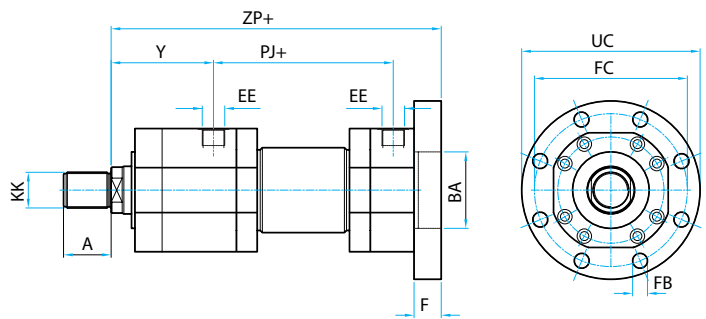
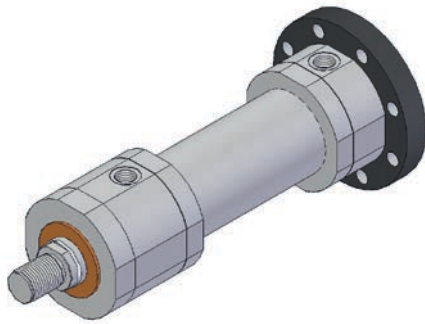
	COMPONENT	GROOVE	MATERIAL			
			S	L	H	G
12	ROD WIPER		NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
13	ROD SEAL	ISO 7425/2	PU	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
14	HEAD BUSHING SEAL		NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
15	ROD SEAL	ISO 7425/2	NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
16	TUBE SEAL		NBR	NBR	VITON®	NBR
17	PISTON SEALS	ISO 7425/2	NBR+PTFE+ PU	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
18	PISTON GUIDE		BRONZE	BRONZE	BRONZE	BRONZE

ISO 6022 MOUNTINGS

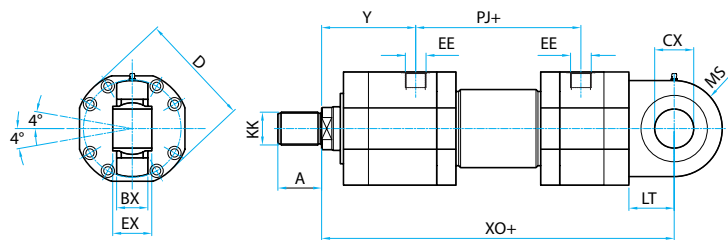
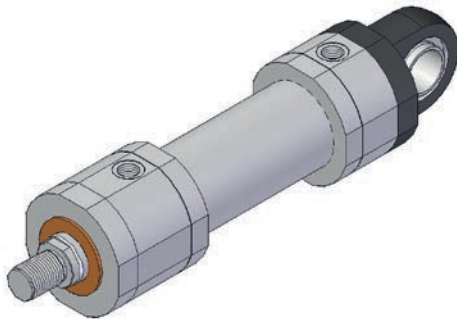
A - ISO MF3 - FRONT FLANGE



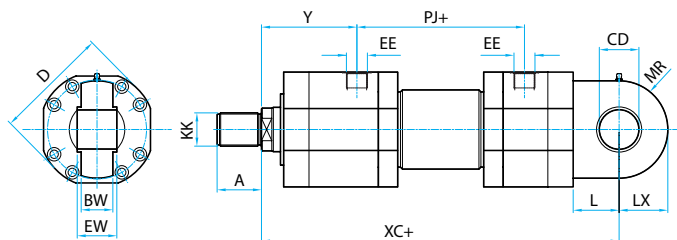
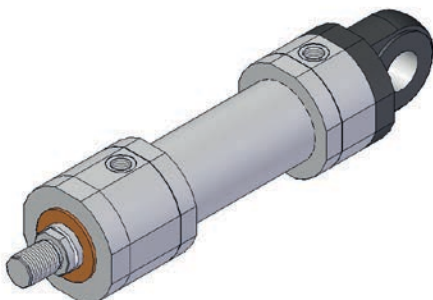
B - ISO MF4 - REAR FLANGE



D - ISO MP6 - REAR SPHERICAL BEARING

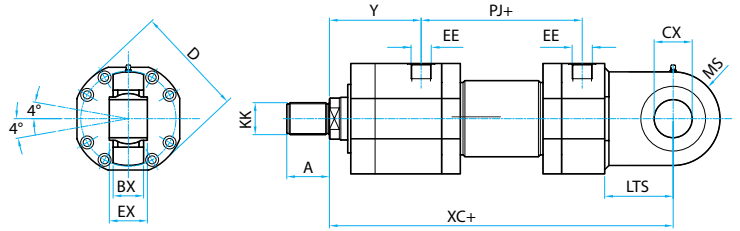
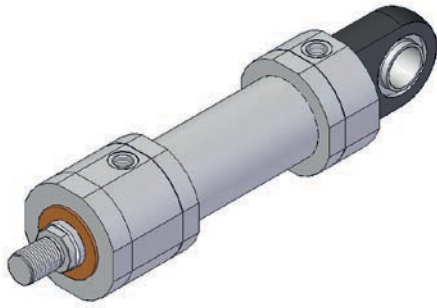


C - ISO MP4 - MALE CLEVIS

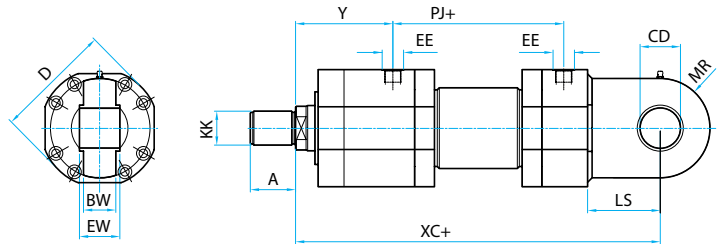
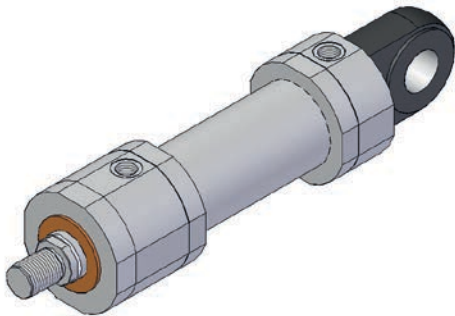


ISO 6022 MOUNTINGS

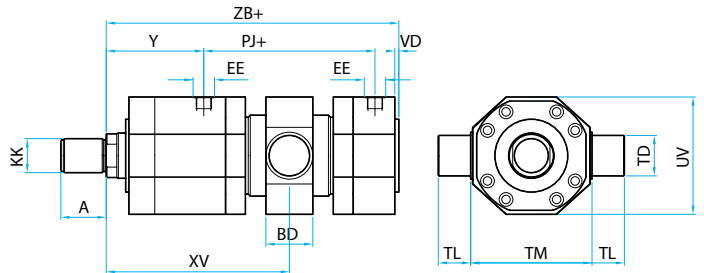
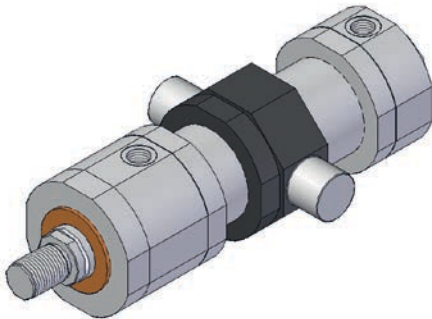
S - ISO MP5 - EXTENDED REAR SPHERICAL BEARING



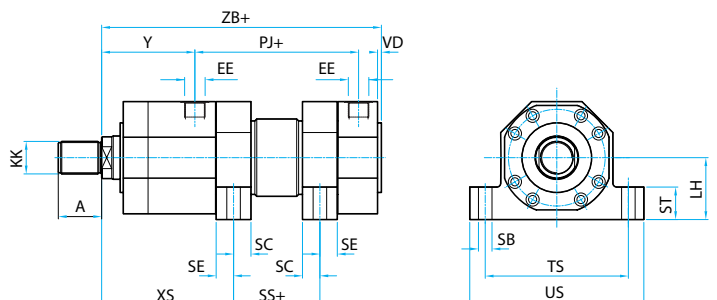
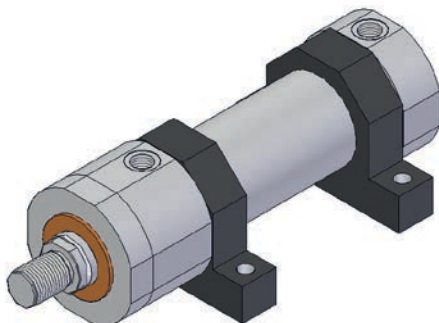
R - ISO MP3 - EXTENDED MALE CLEVIS



H - ISO MT4 - INTERMEDIATE TRUNNION

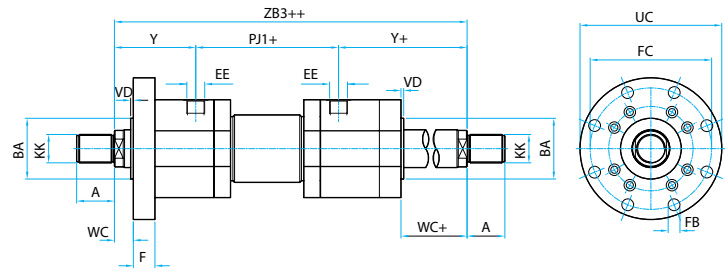
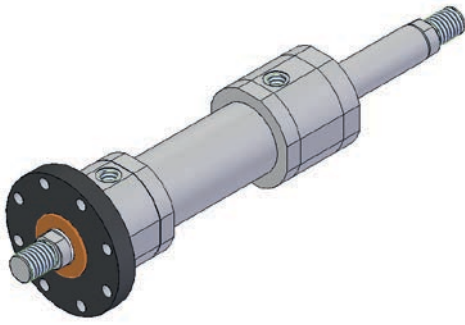


E - ISO MS2 - FOOT MOUNT

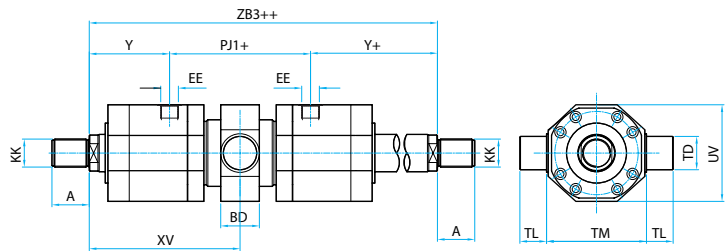
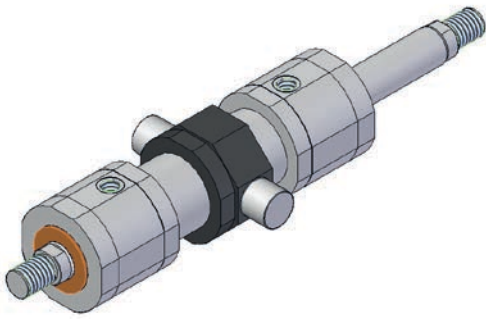


ISO 6022 MOUNTINGS

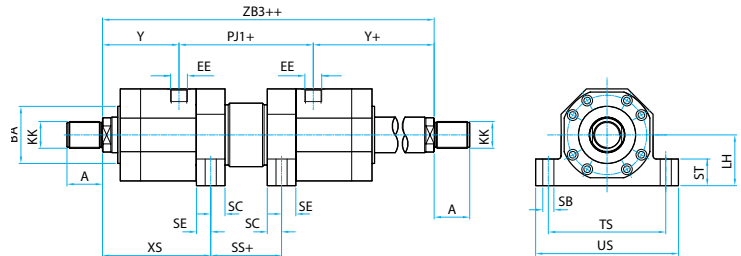
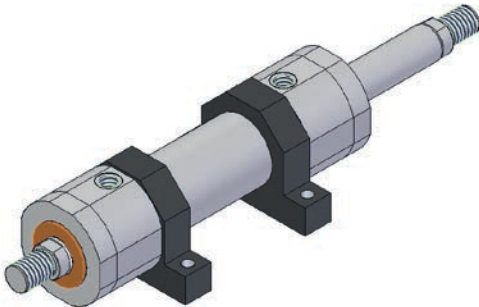
A - ISO MF3 - FRONT FLANGE



B - ISO MT4 - INTERMEDIATE TRUNNION

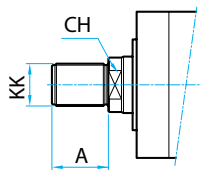


D - ISO MS2 - FOOT MOUNT

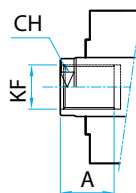


ISO 6022 ROD END DETAILS

STANDARD



SF



ROD Ø(mm)	32	36	40	45	50	56	63	70	80	90	90	100	100	110	125	140
A	36	36	45	45	56	56	63	63	85	85	90	90	95	95	112	112
CH	28	30	34	36	43	46	52	60	65	75	75	85	85	95	110	120
KK	M27x2	M27x2	M33x2	M33x2	M42x2	M42x2	M48x2	M48x2	M64x3	M64x3	M72x3	M72x3	M80x3	M80x3	M100x3	M100x3
KF	--	M27x2	--	M33x2	--	M42x2	--	M48x2	--	M64x3	--	M72x3	--	M80x3	--	M100x3

ISO 6022 DIMENSIONS

BORE Ø(mm)	50	63	80	100	125	140*	160	200
B f8	63	75	90	110	132	145	160	200
BA f8	63	75	90	110	132	145	160	200
BD	38	48	58	73	88	98	108	133
BW	27	35	40	52	60	65	84	102
BX	27	35	40	52	60	65	84	102
CD H9	32	40	50	63	80	90	100	125
CX H7	32	40	50	63	80	90	100	125
D max	105	124	148	175	207	255	270	330
EW	32	40	50	63	80	90	100	125
EX	32	40	50	63	80	90	100	125
EE	G 1/2"	G 3/4"	G 3/4"	G 1"	G 1"	G 1 1/4"	G 1 1/4"	G 1 1/4"
F	25	28	32	36	40	40	45	56
FB	8 x Ø13.5	8 x Ø13.5	8 x Ø17.5	8 x Ø22	8 x Ø22	8 x Ø26	8 x Ø26	8 x Ø33
FC	132	150	180	212	250	300	315	385
L	40	50	63	71	90	115	112	160
LS	65	78	95	107	130	155	157	216
LT	40	50	63	71	90	115	112	160
LTS	65	78	95	107	130	155	157	216
LH h10	60	68	80	95	115	135	145	170
MR	38	50	61.5	71	90	113	112	145
MS	38	50	61.5	71	90	113	112	145
PJ	120+	136+	156+	172+	205+	208+	235+	278+
PJ1	120+	136+	156+	172+	214+	208+	240+	280+
SB	11	13.5	17.5	22	26	30	33	40
SC	15.5	17.5	22.5	27.5	30	35.5	37.5	45
SE	15.5	17.5	22.5	27.5	30	35.5	37.5	45
ST	32	37	42	52	62	77	77	87
SS	55+	55+	55+	55+	60+	61+	79+	90+
TD f8	32	40	50	63	80	90	100	125
TL	25	32	40	50	63	70	80	100
TM	112	125	150	180	224	265	280	335
TS	135	155	185	220	270	325	340	405
UC	155	175	210	250	290	340	360	440
US	160	185	225	265	325	390	405	480
UV	108	124	148	175	218	260	280	330
VD	4	4	5	5	6	5	7	10
WC	22	25	28	32	36	36	40	45
XC	305+	348+	395+	442+	520+	580+	617+	756+
XO	305+	348+	395+	442+	520+	580+	617+	756+
XS	130	147.5	170.5	192.5	230	254.5	265.5	315
XV min/max	187 / 132+	212 / 137+	245 / 155+	280 / 160+	340 / 180+	380 / 200+	400 / 220+	450 / 260+
Y	98	107	120	134	153	181	185	221
ZB	244+	274+	305+	340+	396+	430+	467+	550+
ZB3	315++	350++	396++	440++	520++	570++	610++	720++
ZP	265+	298+	332+	371+	430+	465+	505+	596+

+ = ADD THE STROKE

++ = ADD DOUBLE THE STROKE

* = BORE NOT SPECIFIED IN ISO 6022 STANDARD

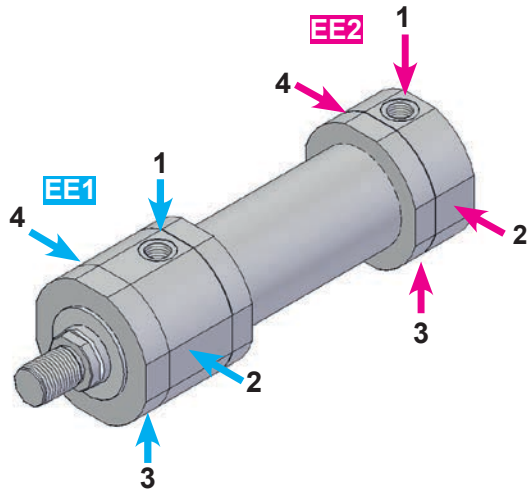


**ISO BRACKETS, PINS
AND ROD ENDS ALSO
AVAILABLE.**

**SEE PAGES
188 - 193**

ISO 6022 SPECIAL OPTIONS

PORT LOCATIONS



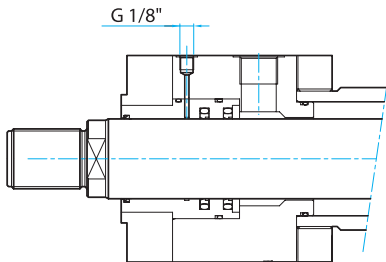
THE STANDARD CONFIGURATION HAS THE OIL PORTS IN POSITION "1"

BORE Ø(mm)	SIDE	ISO 1779-1 (BSP)		SAE 3000	
		STANDARD	OVERSIZE PORTS	STANDARD	OVERSIZE PORTS
50	FRONT	G 1/2"	G 3/4"	--	--
	REAR	G 1/2"	G 3/4"	--	--
63	FRONT	G 3/4"	G 1"	1/2"	--
	REAR	G 3/4"	G 1"	1/2"	--
80	FRONT	G 3/4"	G 1"	1/2"	--
	REAR	G 3/4"	G 1"	1/2"	--
100	FRONT	G 1"	G 1-1/4"	3/4"	1"
	REAR	G 1"	G 1-1/4"	3/4"	1"
125	FRONT	G 1"	G 1-1/4"	3/4"	1"
	REAR	G 1"	G 1-1/4"	3/4"	1"
140	FRONT	G 1-1/4"	G 1-1/2"	1"	1-1/4"
	REAR	G 1-1/4"	G 1-1/2"	1"	1-1/4"
160	FRONT	G 1-1/4"	G 1-1/2"	1"	1-1/4"
	REAR	G 1-1/4"	G 1-1/2"	1"	1-1/4"
200	FRONT	G 1-1/4"	G 1-1/2"	1"	1-1/4"
	REAR	G 1-1/4"	G 1-1/2"	1"	1-1/4"

ROD MATERIAL OPTIONS

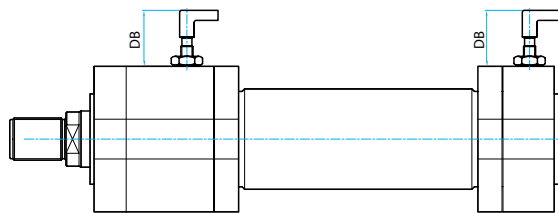
RRX	STAINLESS STEEL CHROME PLATED ROD
RRB	HARDENED AND TEMPERED CHROME PLATED ROD
RRK	NIKROM ROD
RRH	HARDENED CHROME PLATED ROD

SD - BUSHING DRAIN



THE BUSHING DRAIN AVOIDS ACCUMULATION OF LIQUID BEHIND THE SCRAPER. A CONNECTION BETWEEN THE SCRAPER AND THE LIP SEAL ALLOWS FLUID BACK TO THE TANK. THE DRAIN IS USUALLY INSTALLED ON THE OPPOSITE SIDE OF THE OIL PORT.

PROXIMITY SWITCHES



BORE Ø(mm)	DB MAX (mm)
50	80
63	80
80	70
100	60
125	65
160	55
200	50

ORDERING CODES

SPV	FRONT SENSOR
SPZ	REAR SENSOR
SPK	FRONT AND REAR SENSOR

FOR PROXIMITY SWITCH FEATURES, SEE PAGE 52.

ISO 6022 ORDERING CODES



DOUBLE ACTING MILL CYLINDERS
 SIZES FROM 50mm ▶ 200mm BORE & UP TO 6000mm MAXIMUM STROKE
 MAX PRESSURE 320 BAR - CONTINUOUS PRESSURE 250 BAR
 SPEED (MAX) - 0.5 M/S (LOW FRICTION 1 M/S)
 FLUID TEMP° C = -20°C ▶ +80°C & -20°C ▶ +150°C IN VITON
 STANDARD CYLINDERS - ISO6022 - DIN24333
 PROXIMITY SWITCHES 'SP' & BUSHING DRAIN 'SD' AVAILABLE ON REQUEST
 SERVO CYLINDER TYPE 'TP' ALSO AVAILABLE ON REQUEST

DP - 80 50 - A - 500 - - - - -

SPECIAL VARIANTS** SX

SELECTED BORE SIZE (mm)	SELECTED ROD SIZE (mm)
50	32
50	36
63	40
63	45
80	50
80	56
100	63
100	70
125	80
125	90
140	90
140	100
160	100
160	110
200	125
200	140

2ND ROD -

STROKE
- SPECIFY IN 'MM'

SPACER
CONTACT SALES DEPT

CODE	CUSHIONING
-	NOT REQUIRED
V	FRONT ONLY
Z	REAR ONLY
K	FRONT & REAR

CODE	ROD EXTREMITIES
-	MALE THREAD (STANDARD)
SF	FEMALE THREAD

CODE	SEALS
S	STANDARD
L	LOW FRICTION
H	VITON
G	GLYCOL

CODE	AIR BLEED TYPE
-	NOT REQUIRED
SV	FRONT ONLY
SZ	REAR ONLY
SK	FRONT & REAR

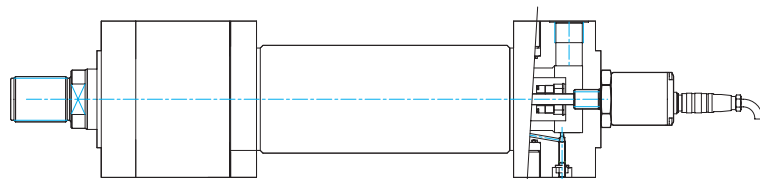
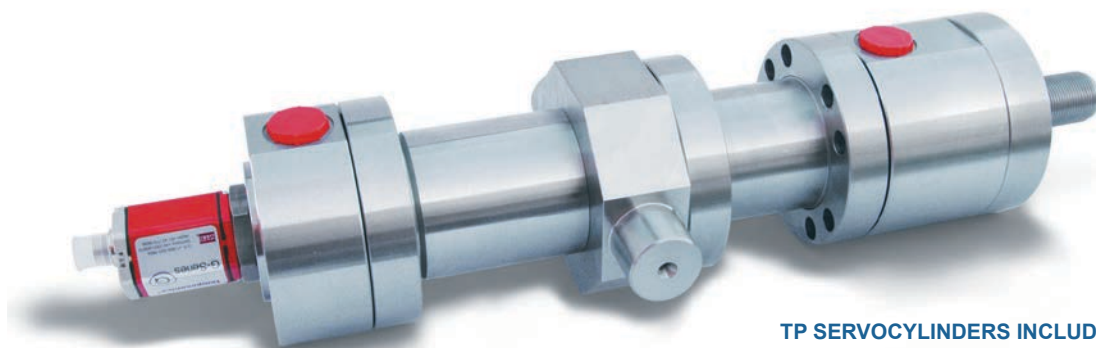
CODE	TEMPERED / CHROME PLATED ROD
RH	TEMPERED / CHROME PLATED ROD

MOUNTING TYPE	ISO 6022	CODE
FRONT FLANGE	MF3	A
REAR FLANGE	MF4	B
REAR SPHERICAL BEARING	MP6	D
REAR MALE CLEVIS	MP4	C
EXTENDED SPHERICAL BEARING	MP5	S
EXTENDED MALE CLEVIS	MP3	R
INTERMEDIATE TRUNNION	MT4	H
FOOT MOUNTED	MS2	E

PLEASE USE THE ABOVE GUIDE TO PRODUCE YOUR MILL CYLINDER ORDER CODE. START FROM THE LEFT AND WORK YOUR WAY RIGHT USING THE TABLES TO CREATE YOUR BESPOKE MILL CYLINDER. THE EXAMPLE SHOWN IS FOR THE STANDARD 'DP' TYPE CYLINDER WITH 80mm BORE AND 50mm ROD, A FRONT FLANGE MOUNTING AND 500mm STROKE. GIVING "DP80/50A500" AS YOUR ORDER CODE.

**SPECIFY 'SX' ONLY WHEN THERE ARE SPECIAL OPTIONS OR VERSIONS.

ISO 6022 HYDRAULIC SERVOCYLINDERS



TP SERVOCYLINDERS INCLUDE AN ELECTRONIC TRANSDUCER, THIS PROVIDES THE EXACT POSITION OF THE PISTON ROD. THE TYPE OF TRANSDUCER TO BE USED DEPENDS ON THE PERFORMANCE NEEDED. THE PRECISION OF POSITIONING IS DETERMINED BY TWO ELEMENTS: THE RESOLUTION OF THE TRANSDUCER AND THE DRIVE SYSTEM OF THE CYLINDER. THE STANDARD TRANSDUCER IS THE TEMPOSONIC, THIS ALLOWS HIGH RESOLUTIONS AND DIFFERENT TYPES OF CONTROL.

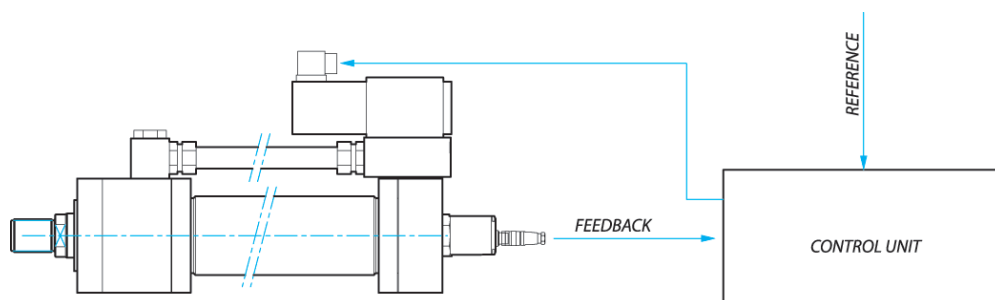
	MV	MA	MS
TYPE	TEMPOSONIC	TEMPOSONIC	TEMPOSONIC
SUPPLY VOLTAGE	24V DC	24V DC	24V DC
OUTPUT	0 - 10 V	4 - 20 mA	SSI
RESOLUTION	ENDLESS	ENDLESS	-
LINEARITY	<±0.02% F.S (Min ±50 µm)	<±0.02% F.S (Min ±50 µm)	<±0.01% F.S (Min ±50 µm)
REPEATABILITY	<±0.001% F.S (Min ±2.5µm)	<±0.001% F.S (Min ±2.5µm)	<±0.001% F.S (Min ±2.5µm)
HYSTERESIS	< 4 µm	< 4 µm	< 4 µm
ABSORPTION	100 mA	100 mA	100 mA
MAX SPEED	2 m/s	2 m/s	2 m/s
TEMPERATURE	- 20 °C + 70 °C	- 20 °C + 70 °C	- 20 °C + 70 °C
MAX STROKE	2500	2500	2500

F.S = FULL SCALE

TP SERVOCYLINDERS CAN BE EQUIPPED WITH ISO INTERFACE PLATES, THIS ALLOWS MOUNTING DIRECTLY ONTO THE CYLINDER THE FOLLOWING VALVES:

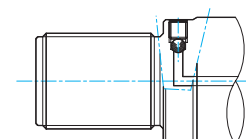
- SOLENOID ON/OFF VALVES
- PROPORTIONAL SOLENOID VALVES
- SERVO VALVES

THIS CONFIGURATION, TOGETHER WITH A CONTROL UNIT ENSURES OPTIMAL HYDRAULIC RIGIDITY. THIS DRASTICALLY INCREMENTS THE ANSWER TIME, THE REPEATABILITY AND THE PRECISION OF THE POSITIONING.

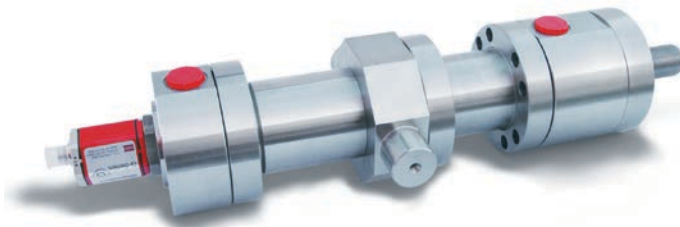


AIR BLEED

TO ALLOW SERVOCYLINDERS TO WORK CORRECTLY, YOU NEED TO COMPLETELY REMOVE ALL AIR FROM THE CYLINDER. THEREFORE, THESE CYLINDERS NOT ONLY INCLUDE AIR BLEED ON THE HEADS, BUT THEY ALSO HAVE AN AIR BLEED FOR REMOVING AIR WITHIN THE CHAMBER OF THE TRANSDUCER. THE POSITIONING OF THIS AIR BLEED WORKS EVEN WHEN THE CYLINDER IS OPERATING, WITHOUT HAVING TO REMOVE THE ROD FROM ITS HOUSING.



SERVOCYLINDER ORDERING CODES



DOUBLE ACTING MILL CYLINDERS

SIZES FROM 50mm ▶ 200mm BORE

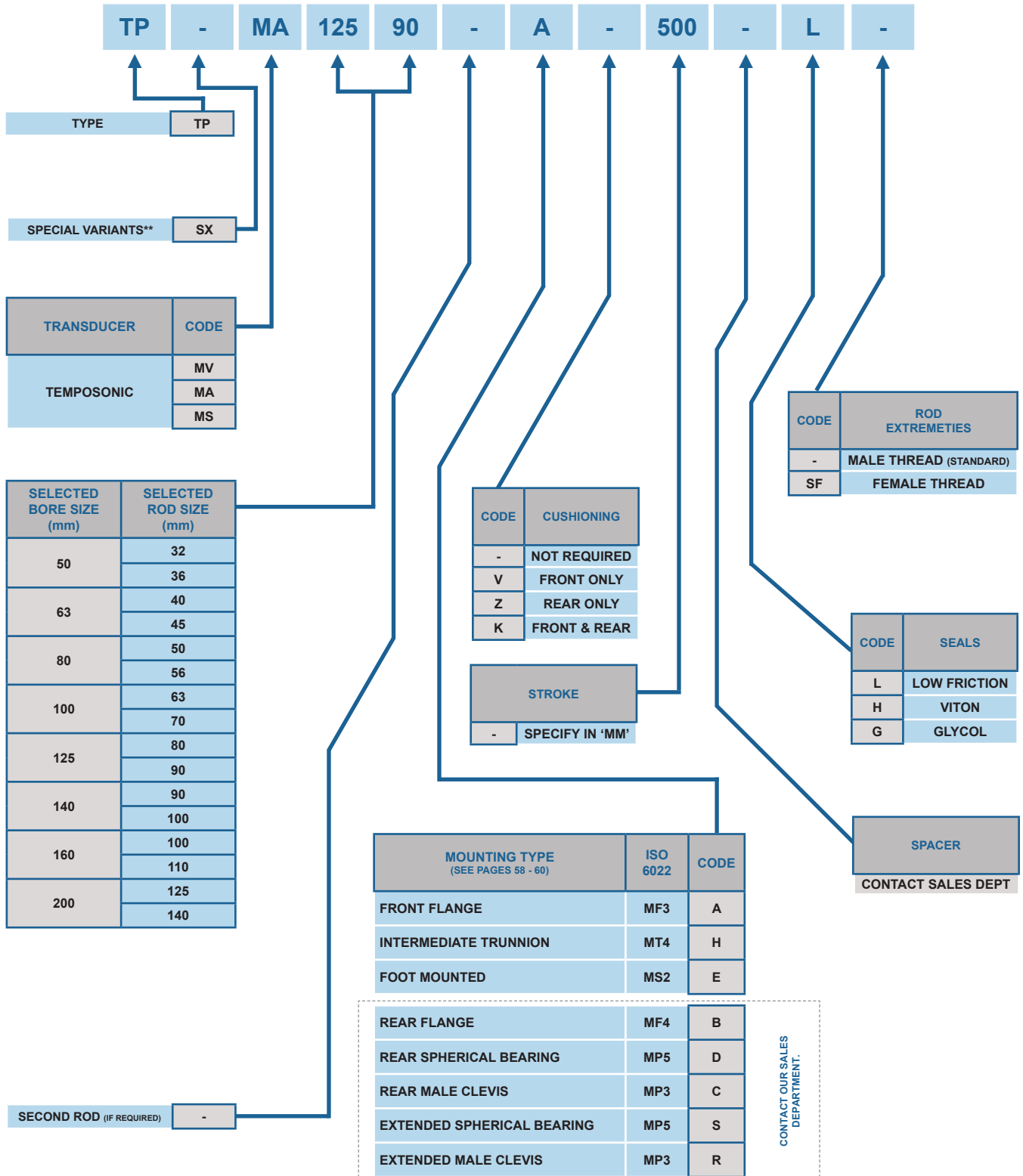
2500mm MAXIMUM STROKE

SPEED (MAX) - 0.5 M/S (LOW FRICTION 1 M/S)

FLUID TEMP °C = -20°C ▶ +80°C & -20°C ▶ +150°C IN VITON

STANDARD CYLINDERS - ISO6022 - DIN24333

BUSHING DRAIN 'SD' AVAILABLE ON REQUEST



PLEASE USE THE ABOVE GUIDE TO PRODUCE YOUR CYLINDER ORDER CODE. START FROM THE LEFT AND WORK YOUR WAY RIGHT USING THE TABLES TO CREATE YOUR BESPOKE CYLINDER. THE EXAMPLE SHOWN IS FOR A BASIC 'TP' TYPE CYLINDER WITH A 125mm BORE AND 90mm ROD, A FRONT FLANGE MOUNTING AND 500mm STROKE + MA TEMPOSONIC TRANSDUCER. GIVING "TPMA125/90A500L" AS YOUR ORDER CODE.

**SPECIFY 'SX' ONLY IF DIFFERENT FROM STANDARD - OPTIONS INCLUDE: OIL PORT POSITIONS, OVERSIZED OIL PORTS, LENGTHENED ROD, SPECIAL ROD EXTREMITY, CETOP SUBPLATES, ROD PROTECTIVE COVER ROD TREATMENT (NIKROM, HARDENED, AISI...ETC), ANTI ROTATION ROD.

LIGHT COMPACT HYDRAULIC CYLINDERS

DOUBLE ACTING HYDRAULIC CYLINDERS, MANUFACTURED FROM HIGH RESISTANCE ALUMINIUM WITH WEAR-RESISTANT COATING. SUITABLE FOR INDUSTRIAL AUTOMATION APPLICATIONS, IN MEDIUM CONDITIONS, WHEN A LIGHT, COMPACT AND HIGHLY MODULAR CONSTRUCTION IS REQUIRED. DESIGNED ALSO FOR USE WITH INTEGRATED MAGNETIC SENSORS TO CONTROL THE PISTON'S POSITION.

RP/MP

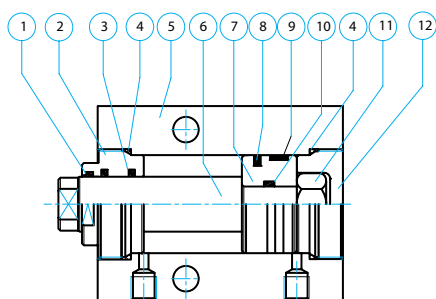


SPECIFICATIONS		
BORE Ø(mm)	25 - 63mm	80 - 100mm
MAX PRESSURE (Bar)	160	100
STANDARD STROKES (mm)	20, 50, 80, 100	

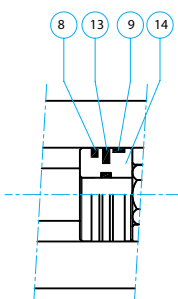
FOR PISTON SPEEDS HIGHER THAN 0.1 M/S, WE RECOMMEND TO LIMIT THE STROKE EXTERNALLY, AVOIDING PISTON CONTACT WITH BODY ENDS. PRESSURE PEAKS, CYCLIC HITS AND STRESS CAN REDUCE THE ALUMINIUM CYLINDER LIFE. IN THESE CASES, WE RECOMMEND USING THE RQ STEEL CYLINDERS ON PAGE 70.

SEAL CODE	PERFORMANCE					FLUID		
	HIGH SEALING	LOW FRICTION	MAX SPEED	TEMP °C MIN	TEMP °C MAX	HYDRAULIC OIL	PHOSPHORIC ESTERS	GLYCOL
S	√	-	0.5 m/s	-20	+80	√	-	-
L	-	√	1 m/s	-20	+80	√	-	-
H	-	√	1 m/s	-20	+150	√	√	-
G	-	√	0.5 m/s	-20	+80	-	-	√

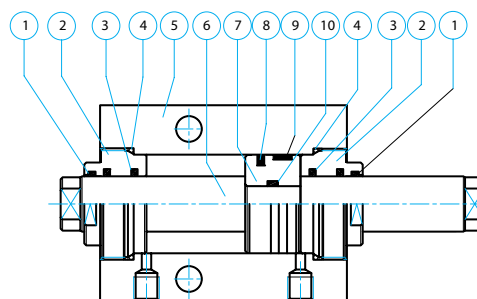
STANDARD



MAGNETIC VERSION



DOUBLE ROD CYLINDER

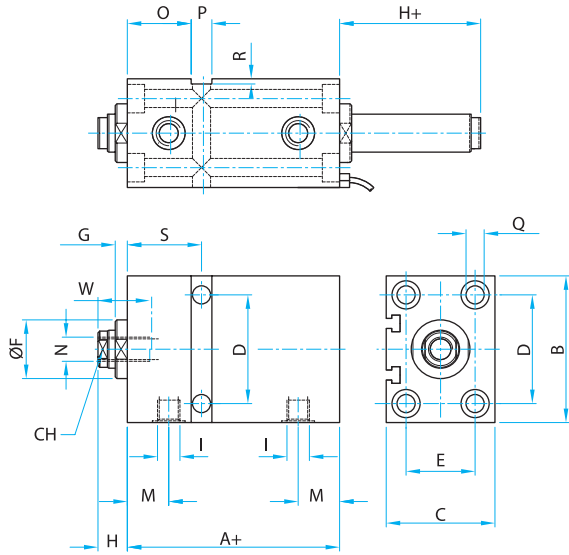


	COMPONENT	MATERIAL
2	GUIDE BUSHING	BRONZE
5	CYLINDER BODY	SPECIAL LIGHT ALLOY
6	PISTON ROD	CHROME PLATED STEEL
7	PISTON	STEEL
11	ROD NUT	STEEL
12	REAR CAP	STEEL
13	MAGNET	--
14	MAGNETIC PISTON (MP SERIES)	STAINLESS STEEL

	COMPONENT	GROOVE	MATERIAL			
			S	L	H	G
1	ROD WIPER		NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
3	ROD SEAL	ISO 7425/2	NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
4	BODY SEAL		NBR + PTFE	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
8	PISTON SEAL	ISO 7425/2	NBR + PU	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
9	PISTON GUIDE RING		RESIN	RESIN	RESIN	RESIN
10	PISTON SEALS		NBR	NBR	VITON®	NBR

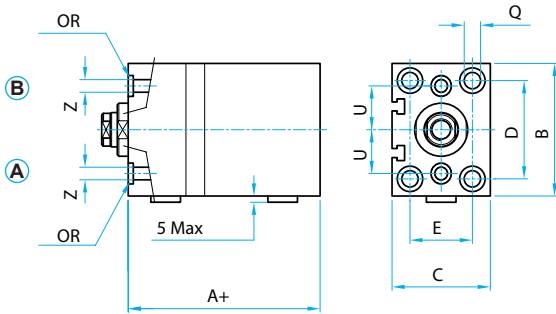
COMPACT CYLINDER OPTIONS

X - STANDARD OIL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
ROD Ø(mm)	18	22	22	28	28	36	45
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
CH	15	19	19	22	22	30	36
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
F f8	32	34	34	42	50	60	72
G	6.5	8	7	8	7	7	8
H	14	15	17	20	20	20	25
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
M	17	18	23.5	23.5	26	30	35
N	M10	M12	M14	M20	M20	M27	M33
O	32	34	37	37.5	47.5	50	60
P	10	12	12	15	15	20	20
Q	8.5	10.5	10.5	13	13	17	17
R	2	3	3	5	5	5	5
S	37	40	43	45	55	60	70
W	23	23	30	30	30	40	50

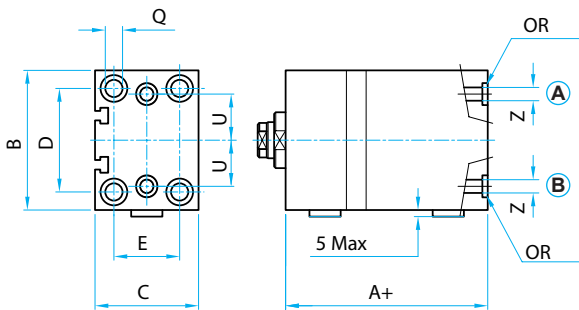
A - FRONT OIL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
OR	OR106	OR106	OR106	OR108	OR108	OR108	OR108
Q	8.5	10.5	10.5	13	13	17	17
U	25.5	30	32.5	40	47.5	59	70
Z	4	4	5	7	7	7	7

Ⓐ = PULL Ⓑ = PUSH

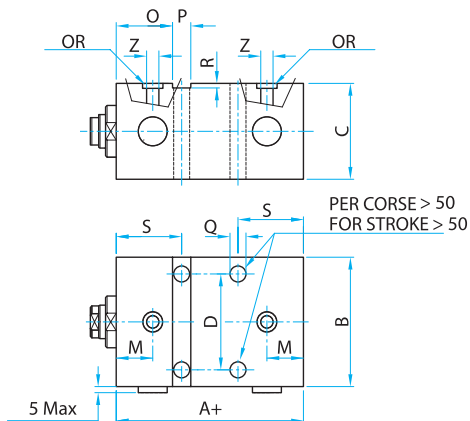
B - REAR OIL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
OR	OR106	OR106	OR106	OR108	OR108	OR108	OR108
Q	8.5	10.5	10.5	13	13	17	17
U	25.5	30	32.5	40	47.5	59	70
Z	4	4	5	7	7	7	7

Ⓐ = PULL Ⓑ = PUSH

E - LATERAL OIL SUPPLY

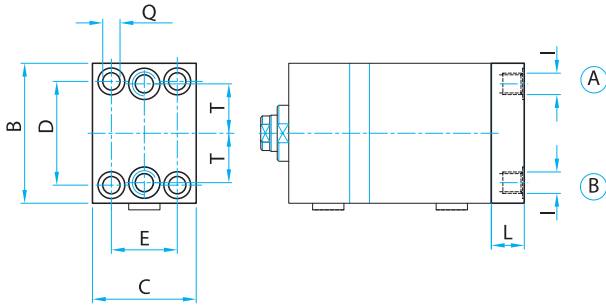


BORE Ø(mm)	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
M	17	18	23.5	23.5	26	30	35
O	32	34	37	37.5	47.5	50	60
OR	OR106	OR106	OR106	OR108	OR108	OR108	OR108
P	10	12	12	15	15	20	20
Q	8.5	10.5	10.5	13	13	17	17
R	2	3	3	5	5	5	5
S	37	40	43	45	55	60	70
Z	4	4	5	7	7	7	7

+ = ADD THE STROKE

COMPACT CYLINDER OPTIONS

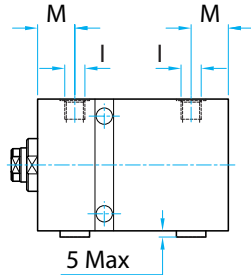
BU - PLATE CONNECTIONS - VERSION B



BORE Ø(mm)	25	32	40	50	63	80	100
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
L	20	20	20	24	30	30	30
Q	8.5	10.5	10.5	13	13	17	17
T	16	20	30	37	40	50	56

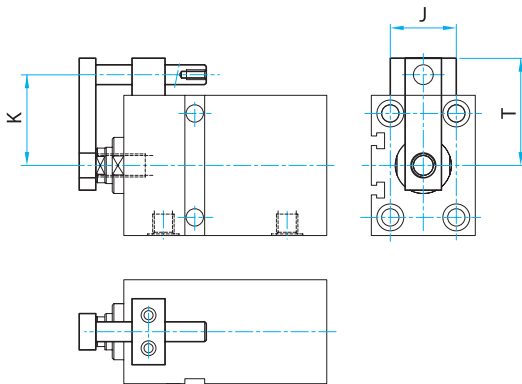
Ⓐ = PULL Ⓑ = PUSH

AS - ADDITIONAL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
M	17	18	23.5	23.5	26	30	35

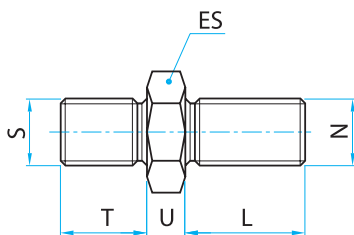
AR - ANTI-ROTATION SYSTEM



BORE Ø(mm)	25	32	40	50	63	80	100
K	45	50	55	62.5	70	82.5	97.5
J	40	40	40	40	40	40	50
T	55	60	65	72.5	80	92.5	107.5

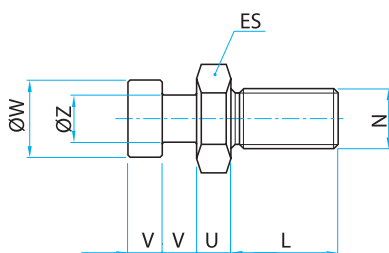
ROD ACCESSORIES

EM - MALE ROD END



BORE Ø(mm)	25	32	40	50	63	80	100
TYPE	EM10	EM12	EM14	EM20	EM20	EM27	EM33
ES	17	19	22	30	30	36	46
L	20	20	25	30	30	40	50
N	M10	M12	M14	M20	M20	M27	M33
S	M10x1.25	M12x1.25	M14x1.5	M20x1.5	M20x1.5	M27x2	M33x2
T	14	16	18	28	28	36	45
U	6	7	8	9	9	12	14

ET - FLOATING JOINT

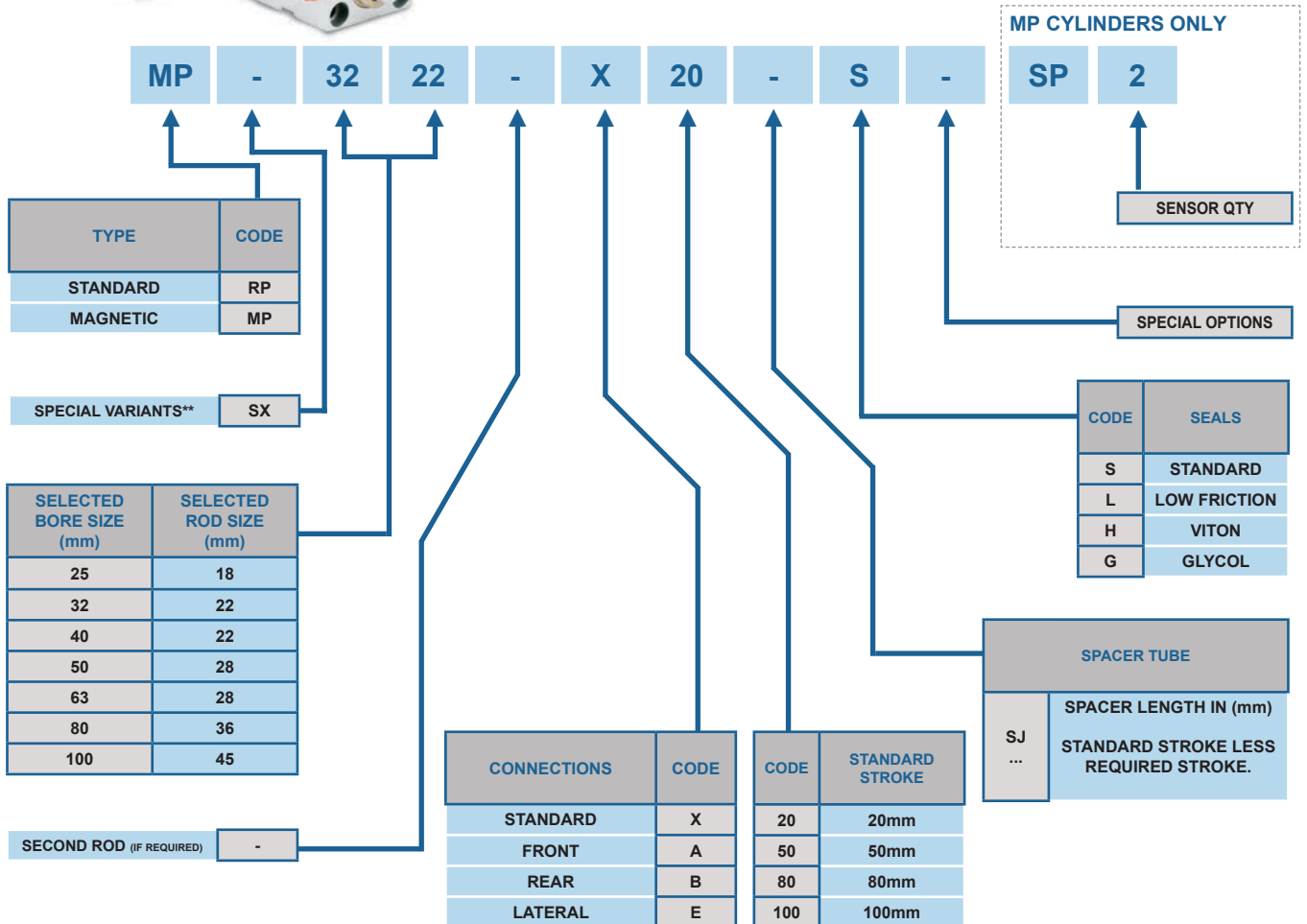


BORE Ø(mm)	25	32	40	50	63	80	100
TYPE	ET10	ET12	ET14	ET20	ET20	ET27	ET33
ES	17	19	22	30	30	36	46
L	20	20	25	30	30	40	50
N	M10	M12	M14	M20	M20	M27	M33
U	6	7	8	9	9	12	14
V	7	8	8	10	10	12.5	16
W	16	18	18	22	22	28	35
Z	10	11	11	14	14	18	22

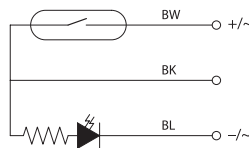
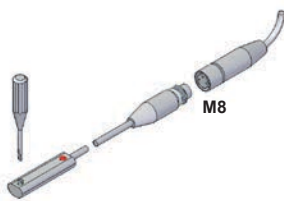
COMPACT CYLINDER ORDERING CODES



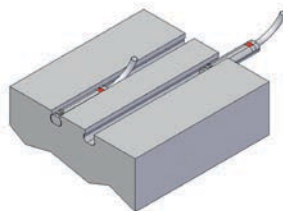
DOUBLE ACTING COMPACT CYLINDERS
 SIZES FROM 25mm ▶ 100mm BORE & UP TO 100mm MAXIMUM STROKE
 MAX PRESSURE 160 BAR UPTO 63mm BORE / 100 BAR 80+100mm BORE
 SPEED (MAX) - 0.5 M/S (LOW FRICTION 1 M/S)
 FLUID TEMP' °C = -20°C ▶ +80°C & -20°C ▶ +150°C IN VITON
 REED SWITCHES 'SP' AVAILABLE ON 'MP' MAGNETIC CYLINDERS



SP - REED SWITCHES



BW = brown
 BL = blue
 BK = black



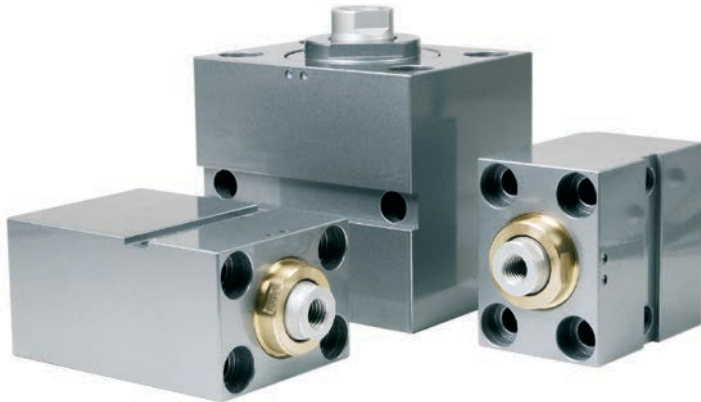
SPECIFICATIONS	
VOLTAGE	24V AC/DV
MAX CURRENT (At 25 °C)	0.25 A
ELECTRIC CIRCUIT	REED
SWITCHING-ON TIME	0.8 ms
SWITCHING-OFF TIME	0.1 ms
ELECTRIC LIFESPAN	10 ⁷ PULSE
PROTECTION CLASS	IP 67 EN60529
TEMPERATURE RANGE	- 20°C ... + 80°C
INDICATING	LED
CABLE	2 x 0.25 mm ²
CABLE LENGTH	5.0m

CORRECT USE OF MAGNETIC SENSORS: VOLTAGE AND CURRENT VALUES MUST NEVER EXCEED THAT SPECIFIED IN THE TABLE. CURRENT SURGES MAY BE CAUSED BY CAPACITIVE LOADS (eg. CABLES OF LENGTHS OVER 3m). VOLTAGE SURGES MAY BE CAUSED BY INDUCTANCE (eg. SOLENOID VALVES, RELAYS, CONTACTORS ETC). MAGNETIC DISTORTION MAY BE CAUSED BY FERROUS MASSES (eg. CLINDER SEAT INSIDE MOULDS) OR THE PRESENCE OF STRONG MAGNETIC FIELDS (eg. ELECTRIC MOTORS, COILS, INVERTER S ETC). FOR STROKES LOWER THAN 20mm, CONTACT OUR SALES TEAM.

HEAVY DUTY COMPACT CYLINDERS

DOUBLE ACTING HYDRAULIC CYLINDERS, MANUFACTURED FROM STEEL FOR HEAVY DUTY USES. SUITABLE FOR INDUSTRIAL AUTOMATION APPLICATIONS, WHEN A STRONG, COMPACT AND HIGHLY MODULAR CONSTRUCTION IS REQUIRED. AVAILABLE ALSO WITH ANTI-ROTATION DEVICE AND MECHANICAL STROKE LIMITERS TO CONTROL THE FINAL ROD POSITIONS.

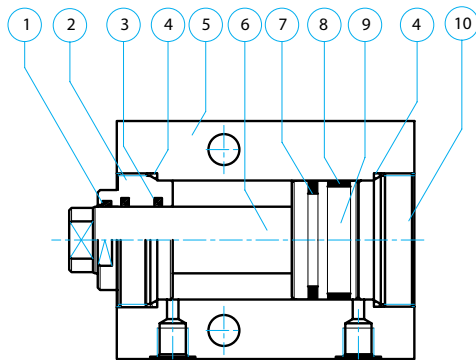
RQ



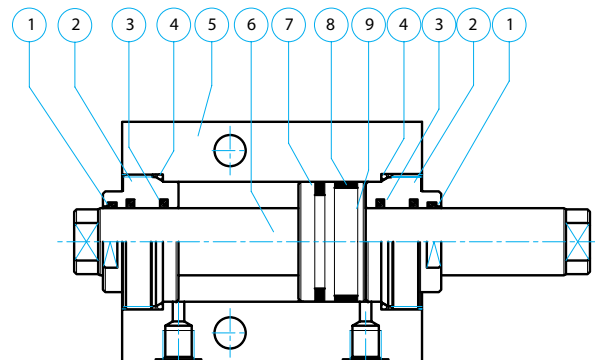
SPECIFICATIONS		
BORE Ø(mm)	25 - 100mm	
MAX PRESSURE (Bar)	250 CONTINUOUS	320 MAX
STANDARD STROKES (mm)	20, 50, 80, 100	

SEAL CODE	PERFORMANCE					FLUID		
	HIGH SEALING	LOW FRICTION	MAX SPEED	TEMP °C MIN	TEMP °C MAX	HYDRAULIC OIL	PHOSPHORIC ESTERS	GLYCOL
L	-	√	1 m/s	-20	+80	√	-	-
H	-	√	1 m/s	-20	+150	√	√	-
G	-	√	0.5 m/s	-20	+80	-	-	√

STANDARD



DOUBLE ROD CYLINDER

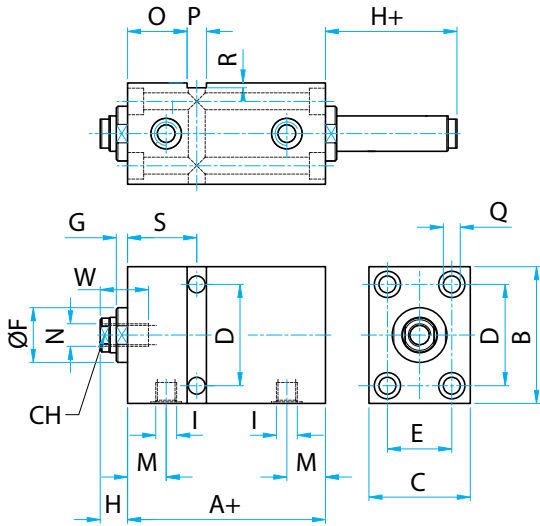


	COMPONENT	MATERIAL
2	GUIDE BUSHING	BRONZE
5	CYLINDER BODY	STEEL
6	PISTON ROD	CHROME PLATED STEEL
9	PISTON	STEEL
10	REAR CAP	STEEL

	COMPONENT	GROOVE	MATERIAL		
			L	H	G
1	ROD WIPER		NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
3	ROD SEAL	ISO 7425/2	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
4	BODY SEAL		NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
7	PISTON SEAL	ISO 7425/1	NBR + PTFE	VITON® + PTFE	NBR + PTFE CG
8	PISTON GUIDE RING		RESIN	RESIN	RESIN

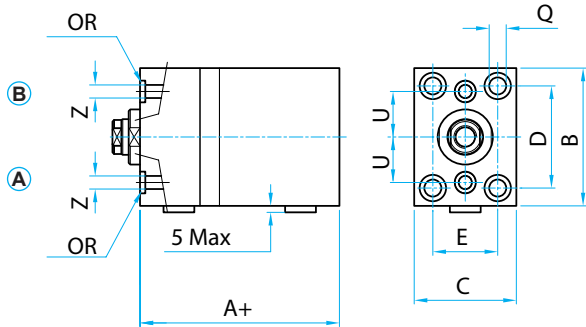
HEAVY DUTY COMPACT OPTIONS

X - STANDARD OIL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
ROD Ø(mm)	18	22	22	28	28	36	45
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
CH	15	19	19	22	22	30	36
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
F f8	32	34	34	42	50	60	72
G	6.5	8	7	8	7	7	8
H	14	15	17	20	20	20	25
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
M	17	18	23.5	23.5	26	30	35
N	M10	M12	M14	M20	M20	M27	M33
O	32	34	37	37.5	47.5	50	60
P	10	12	12	15	15	20	20
Q	8.5	10.5	10.5	13	13	17	17
R	2	3	3	5	5	5	5
S	37	40	43	45	55	60	70
W	23	23	30	30	30	40	50

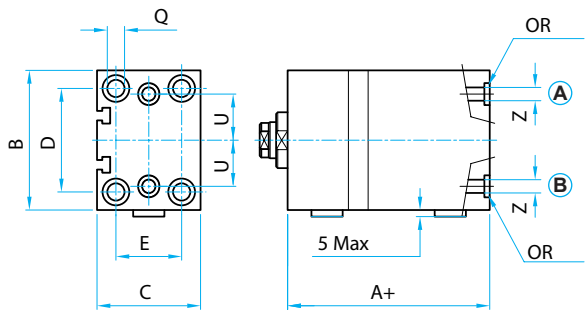
A - FRONT OIL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
OR	OR106	OR106	OR106	OR108	OR108	OR108	OR108
Q	8.5	10.5	10.5	13	13	17	17
U	25.5	30	32.5	40	47.5	59	70
Z	4	4	5	7	7	7	7

Ⓐ = PULL Ⓑ = PUSH

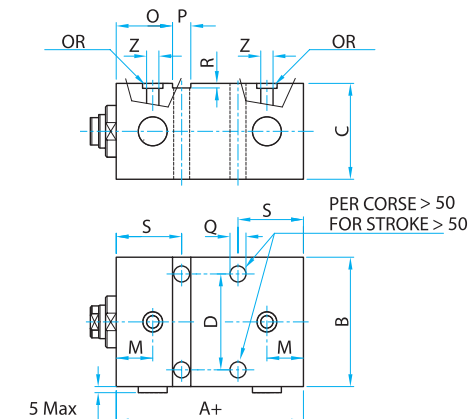
B - REAR OIL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
OR	OR106	OR106	OR106	OR108	OR108	OR108	OR108
Q	8.5	10.5	10.5	13	13	17	17
U	25.5	30	32.5	40	47.5	59	70
Z	4	4	5	7	7	7	7

Ⓐ = PULL Ⓑ = PUSH

E - LATERAL OIL SUPPLY

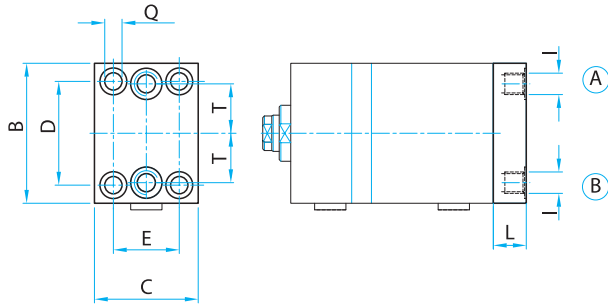


BORE Ø(mm)	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
M	17	18	23.5	23.5	26	30	35
O	32	34	37	37.5	47.5	50	60
OR	OR106	OR106	OR106	OR108	OR108	OR108	OR108
P	10	12	12	15	15	20	20
Q	8.5	10.5	10.5	13	13	17	17
R	2	3	3	5	5	5	5
S	37	40	43	45	55	60	70
Z	4	4	5	7	7	7	7

+ = ADD THE STROKE

HEAVY DUTY COMPACT OPTIONS

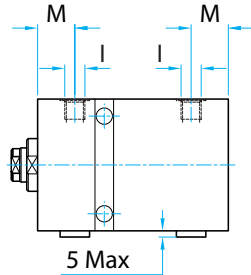
BU - PLATE CONNECTIONS - VERSION B



BORE Ø(mm)	25	32	40	50	63	80	100
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
L	20	20	20	24	30	30	30
Q	8.5	10.5	10.5	13	13	17	17
T	16	20	30	37	40	50	56

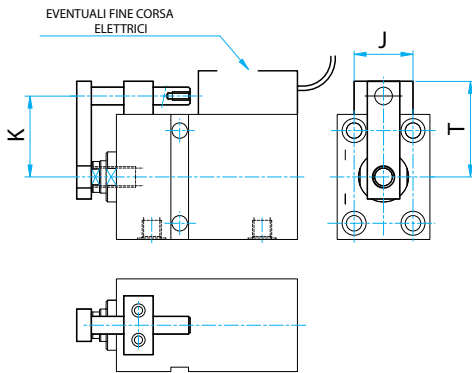
A = PULL B = PUSH

AS - ADDITIONAL CONNECTIONS



BORE Ø(mm)	25	32	40	50	63	80	100
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
M	17	18	23.5	23.5	26	30	35

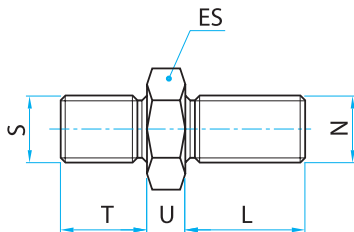
AR - ANTI-ROTATION SYSTEM AND STROKE LIMITERS



BORE Ø(mm)	25	32	40	50	63	80	100
K	45	50	55	62.5	70	82.5	97.5
J	40	40	40	40	40	40	50
T	55	60	65	72.5	80	92.5	107.5

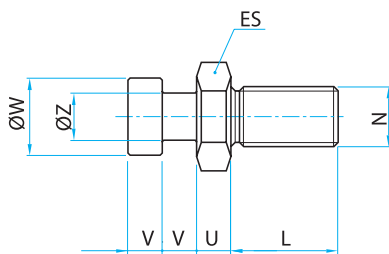
ROD ACCESSORIES

EM - MALE ROD END



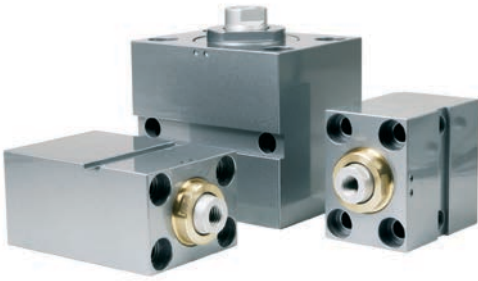
BORE Ø(mm)	25	32	40	50	63	80	100
TYPE	EM10	EM12	EM14	EM20	EM20	EM27	EM33
ES	17	19	22	30	30	36	46
L	20	20	25	30	30	40	50
N	M10	M12	M14	M20	M20	M27	M33
S	M10x1.25	M12x1.25	M14x1.5	M20x1.5	M20x1.5	M27x2	M33x2
T	14	16	18	28	28	36	45
U	6	7	8	9	9	12	14

ET - FLOATING JOINT

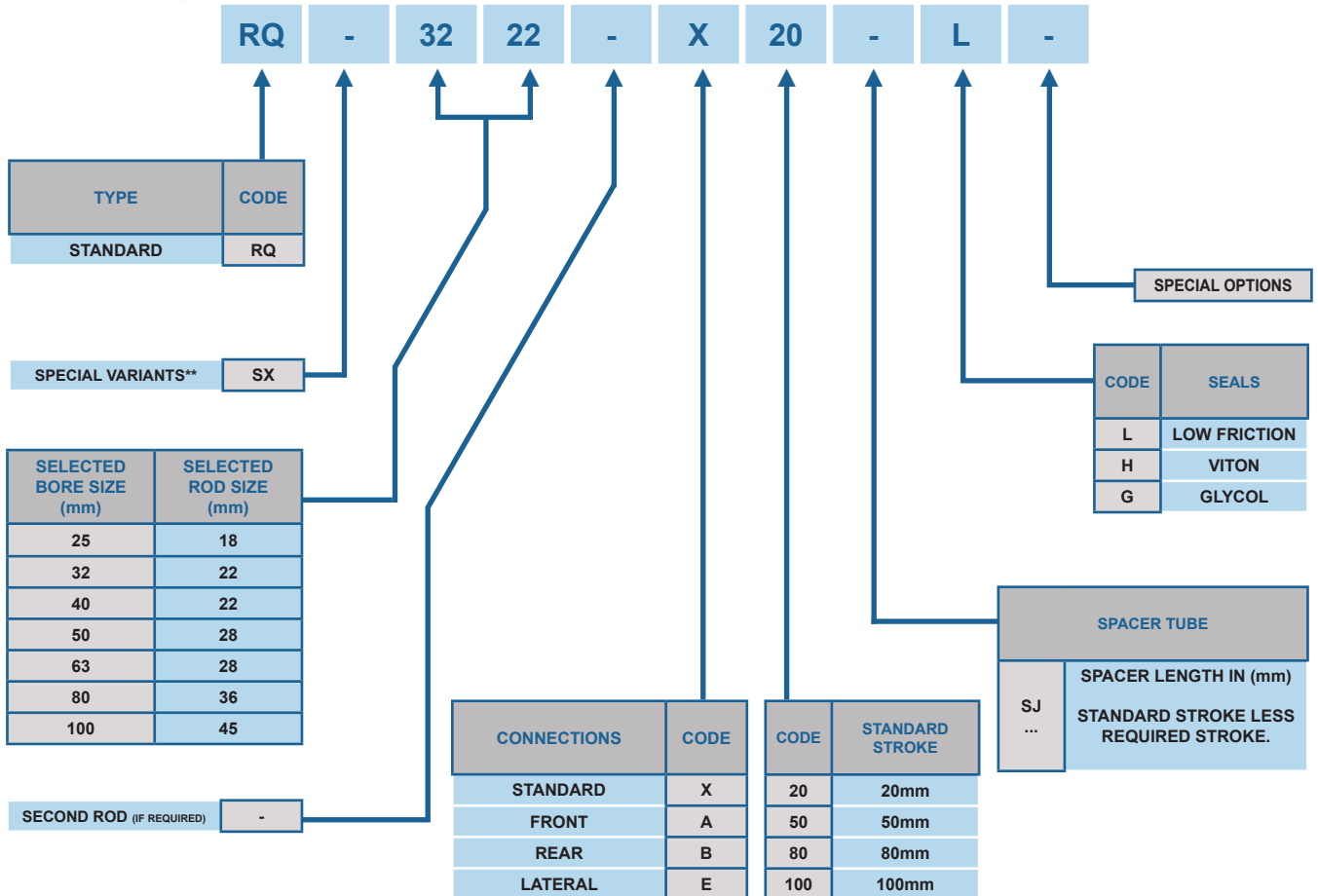


BORE Ø(mm)	25	32	40	50	63	80	100
TYPE	ET10	ET12	ET14	ET20	ET20	ET27	ET33
ES	17	19	22	30	30	36	46
L	20	20	25	30	30	40	50
N	M10	M12	M14	M20	M20	M27	M33
U	6	7	8	9	9	12	14
V	7	8	8	10	10	12.5	16
W	16	18	18	22	22	28	35
Z	10	11	11	14	14	18	22

COMPACT CYLINDER ORDERING CODES



DOUBLE ACTING HEAVY DUTY COMPACT CYLINDERS
 SIZES FROM 25mm ▶ 100mm BORE & UP TO 100mm MAXIMUM STROKE
 MAX PRESSURE CONTINUOUS PRESSURE = 250 BAR / 320 MAX PEAK
 SPEED (MAX) - 0.5 M/S (LOW FRICTION 1 M/S)
 FLUID TEMP' °C = -20°C ▶ +80°C & -20°C ▶ +150°C IN VITON
 ANTI-ROTATION AND STROKE LIMITERS AVAILABLE ON REQUEST



2D & 3D CAD FILES AVAILABLE

Customer Name - HYD0035	Date - 28/03/17	Drg Number -	No Of Stages -
Tube x Rod x Stroke -50 X 22 X 100	Type - DOUBLE ACTING	Max Peak Pressure - 210 BAR	Quantity - x1
Tube length - N/A	Rod length - N/A	Closed Centres - 41mm	Open Centres - 141mm
Port Type - 1/2" BSP/FEM			

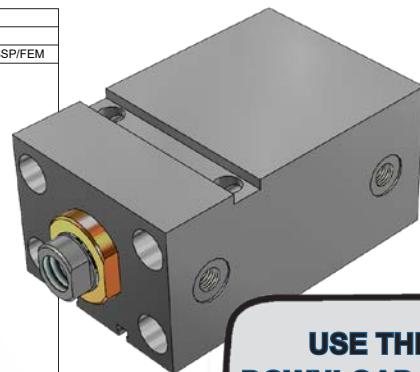
STEEFORTH SALES LTD (DO NOT SCALE) | IF IN DOUBT PLEASE ASK*

Notes: CD 50/22 A 100 S SF

All Dimensions In (mm)

Issue No #1

IMPORTANT: Please check this drawing meets your required specifications. Sign, date and return this to us with your order. Otherwise Steerforth Sales Ltd will assume acceptance with your order. Ramparts components material & specifications info can be found in our catalogue.



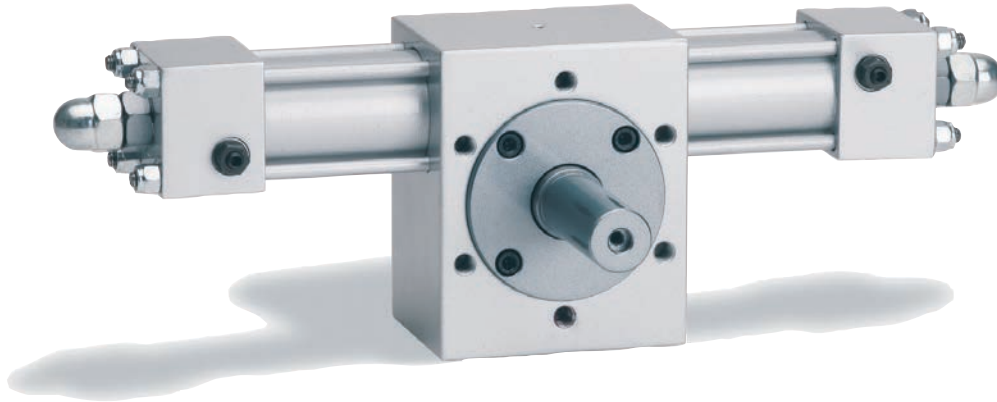
USE THE CAD
 DOWNLOAD FUNCTION
 ON OUR WEBSITE.

WWW.STEEFORTH.CO.UK

HYDRAULIC ROTARY ACTUATORS

ROTARY ACTUATORS GENERATE A TORQUE THROUGH A COGWHEEL AND A RACK MOVED BY A HYDRAULIC CYLINDER. THIS SOLUTION SIMPLIFIES THE KINEMATIC AND MAINTENANCE REQUIRED DURING ITS LIFE CYCLE. ROTARY ACTUATORS HAVE ADJUSTABLE CUSHIONING, THIS CAN GENERATE A CUSHIONING TORQUE COMPARABLE TO THE MAXIMUM TORQUE OF THE CYLINDER. THE STROKE END ADJUSTER ALLOWS PHASING THE SYSTEM WITH A REGULATION RANGE OF +/- 5 DEGREES. ACTUATORS ARE ALSO AVAILABLE WITH A MAGNETIC PISTON "MR SERIES" WHICH CAN BE FITTED WITH PROXIMITY SWITCHES ALONG THE STROKE.

HR - STANDARD



MD - MAGNETIC



SPECIFICATIONS			
TYPE	HR 32/32	HR 40/70	HR 63/96
BORE Ø(mm)	32	40	63
SPECIFIC STROKE (1)	0.28	0.61	0.83
SPECIFIC TORQUE (daNm / bar)	1.2	4	12
OPERATING PRESSURE (bar)	50	100	100
PEAK PRESSURE (bar)	80	140	140
MAX. SPEED ROTATION (rad / sec)	30	14	10
WEIGHT - 180° (Kgs)	4.80	12.5	43

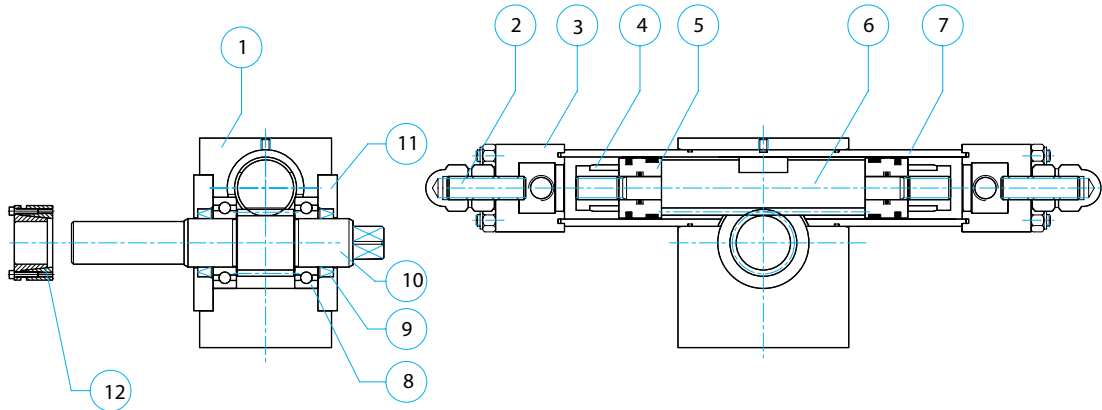
FEATURES AVAILABLE AS PER "CD" AND "MD" CYLINDERS

(1) SPECIFIC STROKE FOR EVERY ROTATION ANGLE
FOR EXAMPLE HR 40/70 - 180° STROKE (0.61x180) = 110

SEAL CODE	PERFORMANCE					FLUID		
	HIGH SEALING	LOW FRICTION	MAX SPEED	TEMP °C MIN	TEMP °C MAX	HYDRAULIC OIL	PHOSPHORIC ESTERS	GLYCOL
S	√	-	0.5 m/s	-20	+80	√	-	-
L	-	√	1 m/s	-20	+80	√	-	-
H	-	√	1 m/s	-20	+150	√	√	-
G	-	√	0.5 m/s	-20	+80	-	-	√

HYDRAULIC ROTARY ACTUATORS

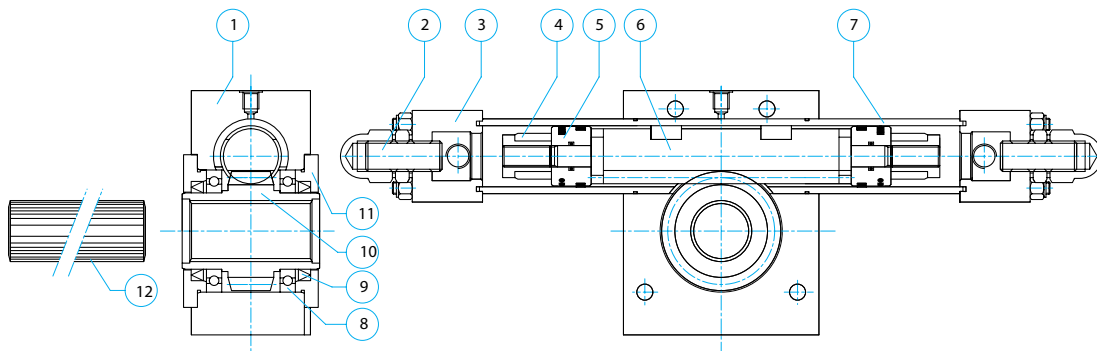
HR 32/32



	COMPONENT	MATERIAL
1	BODY	ALUMINIUM
2	STROKE ADJUSTER +/- 5°	STEEL
3	HEAD	STEEL
4	CUSHIONING	HARDENED STEEL
5	PISTON	STEEL
6	RACK	ALLOY STEEL
7	TUBE	STEEL
8	BALL BEARING	
9	ROTATING SHAFT SEAL	NBR
10	COGWHEEL WITH SHAFT	ALLOY STEEL
11	CLOSING FLANGE	STEEL
12*	SHAFT CLAMP	

*SUPPLIED ON REQUEST

HR 40/70 + HR 63/96

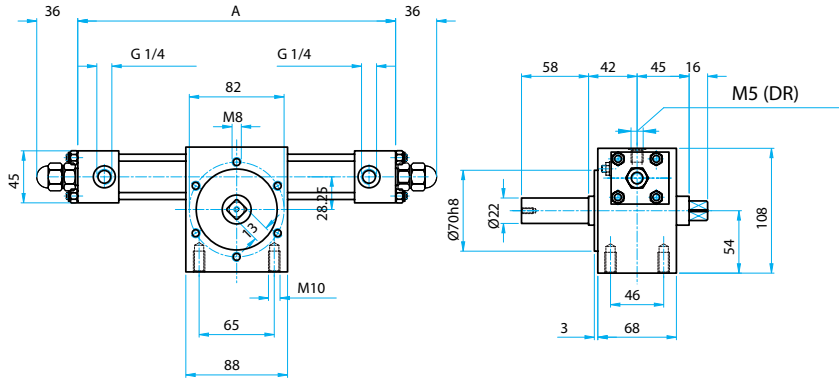
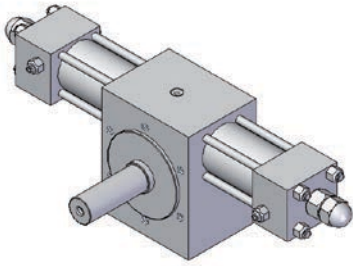


	COMPONENT	MATERIAL
1	BODY	ALUMINIUM
2	STROKE ADJUSTER +/- 5°	STEEL
3	HEAD	STEEL
4	CUSHIONING	HARDENED STEEL
5	PISTON	STEEL
6	RACK	ALLOY STEEL
7	TUBE	STEEL
8	BALL BEARING	
9	ROTATING SHAFT SEAL	NBR
10	COGWHEEL WITH SHAFT	ALLOY STEEL
11	CLOSING FLANGE	STEEL
12*	GROOVED SHAFT	

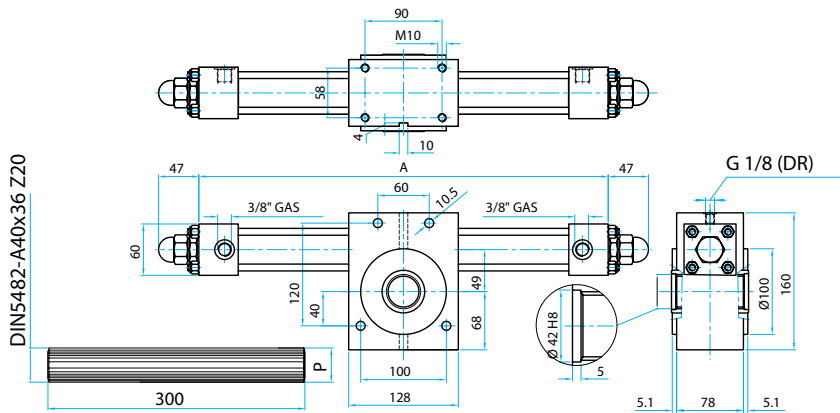
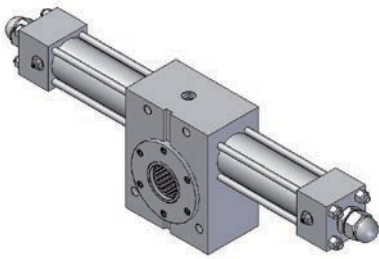
*SUPPLIED ON REQUEST

ROTARY ACTUATOR DIMENSIONS

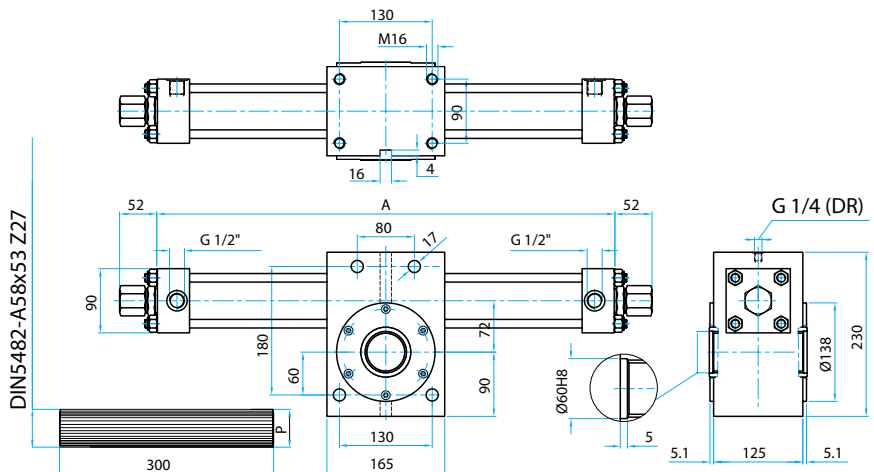
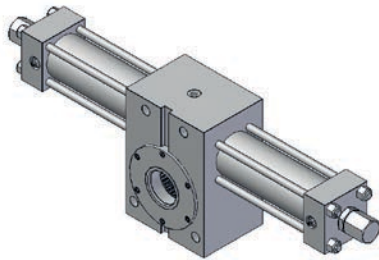
HR 32/32



HR 32/32



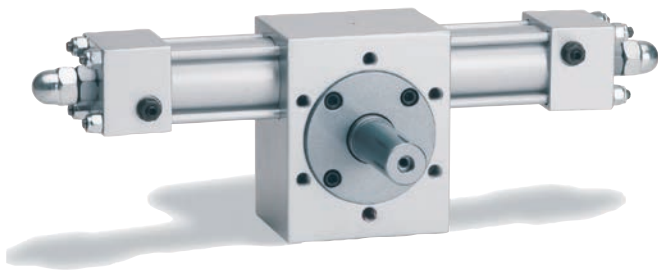
HR 32/32



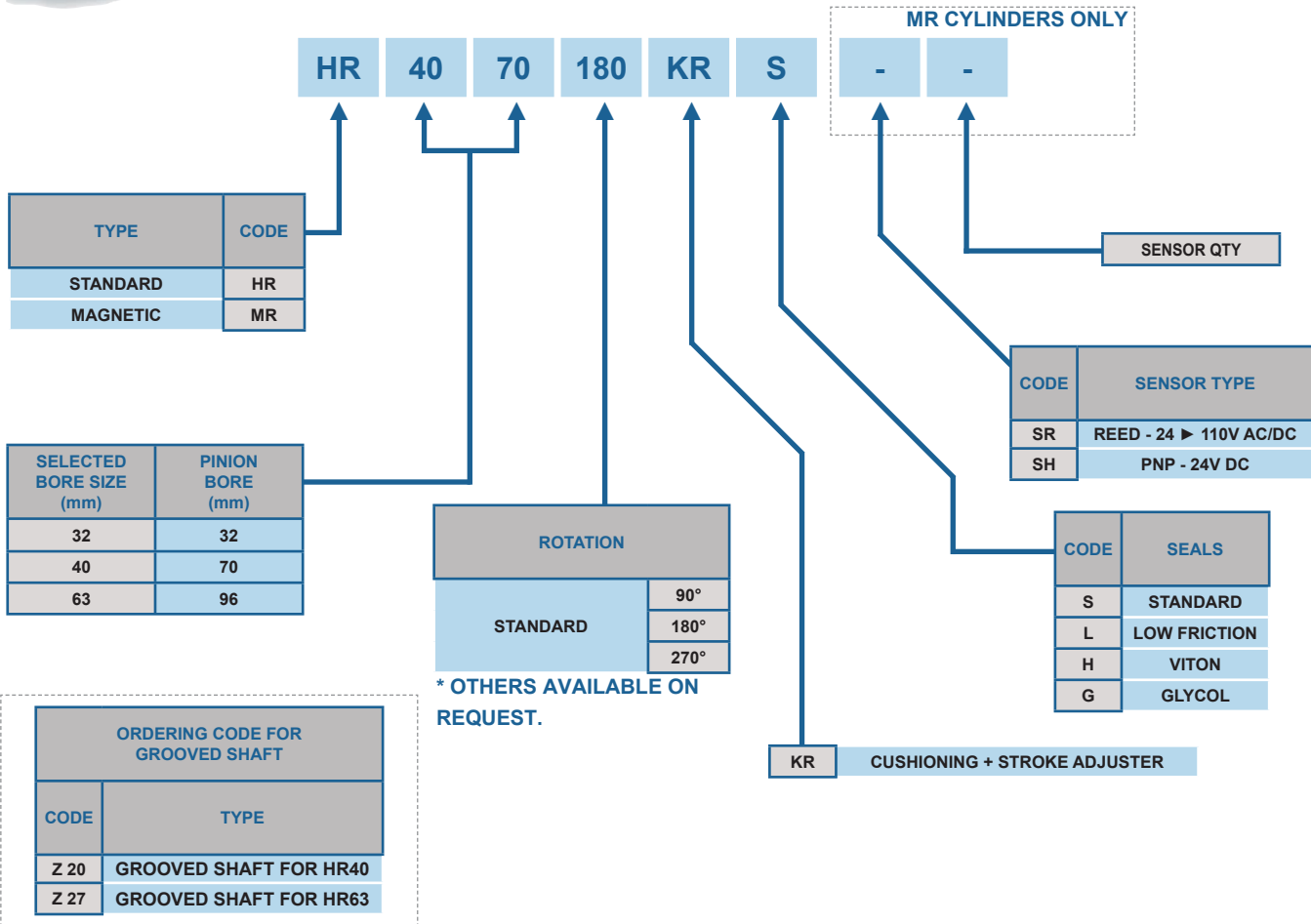
TYPE	ROTATION ANGLE		
	90°	180°	270°
HR 32/32	222	272	322
HR 40/70	368	478	587
HR 63/96	462	610	760

* IT IS COMPULSORY TO LINK THE DRAIN (DR) PORT TO THE TANK

ROTARY ACTUATOR ORDERING CODES



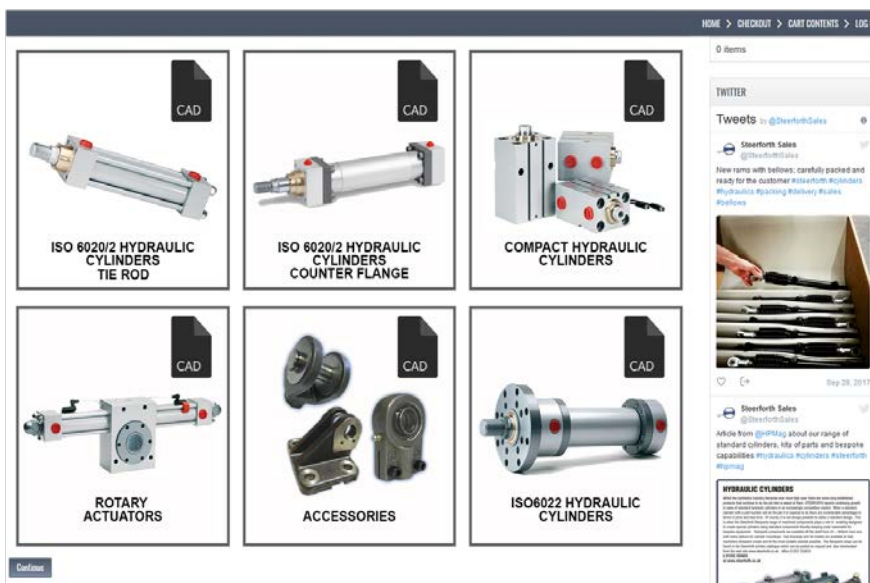
DOUBLE ACTING ROTARY ACTUATOR
 SIZES 32mm, 40mm AND 63mm BORES
 MAX PEAK PRESSURE = 80 BAR TO 140 MAX
 FLUID TEMP' °C = -20°C ▶ +80°C & -20°C ▶ +150°C IN VITON
 GROOVED SHAFT AVAILABLE ON REQUEST



2D & 3D CAD FILES AVAILABLE

USE THE NEW CAD DOWNLOAD SECTION ON OUR WEBSITE TO DOWNLOAD 2D AND 3D DRAWING FILES FOR ISO6020/2 CYLINDERS, ISO6022 CYLINDERS, COMPACT CYLINDERS AND ROTARY ACTUATORS.

VISIT WWW.STEERFORTH.CO.UK.



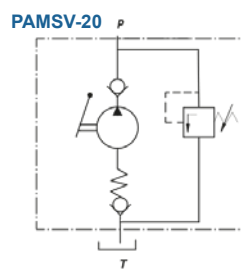
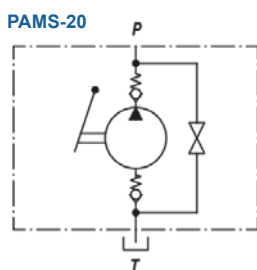
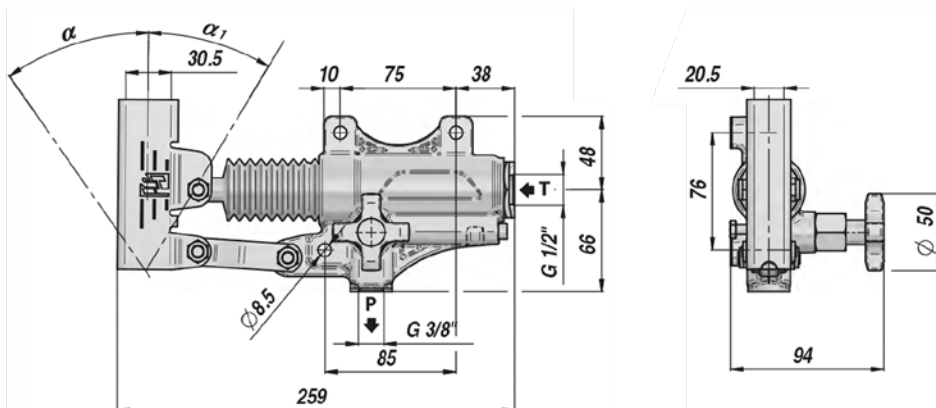
PAM-S20 & SV HAND PUMPS

CAPACITY: 20CM³ PER CYCLE
 SEPARATE RESERVOIR REQUIRED
 NOT SUITABLE FOR USE WITH STANDARD TANK MOUNTING
 PAM-SV TYPE INCLUDES RELIEF VALVE
 VITON SEALS AVAILABLE ON REQUEST
 ROUND HANDLE VERSION AVAILABLE ON REQUEST

ORDER CODE	TYPE	CAPACITY (c.c)	MAXIMUM PRESSURE (bar)
PAM0142000	PAMS-20	20	350
WITH RELIEF VALVE (PAMSV)			
PAM0142005	PAMSV-20	20	350



PAMS-20



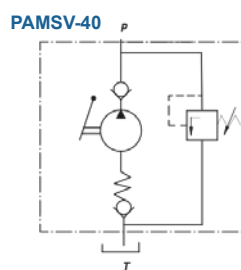
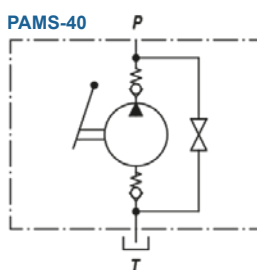
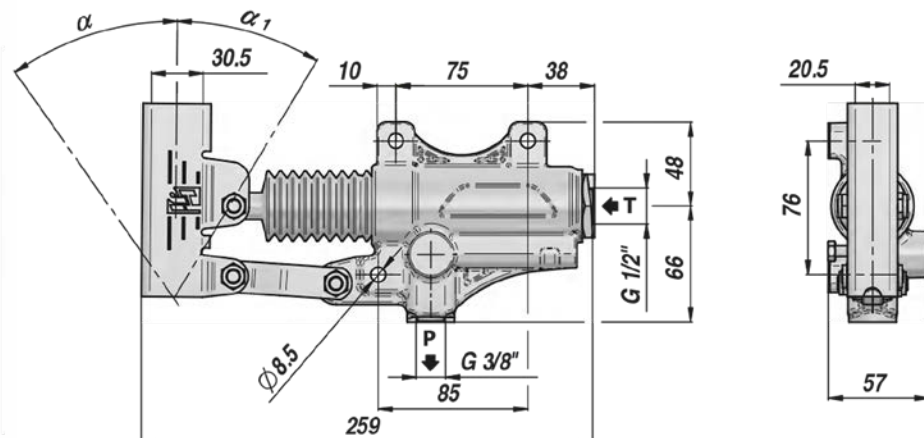
PAM-S40 & SV HAND PUMPS

CAPACITY: 20CM³ PER CYCLE
 SEPARATE RESERVOIR REQUIRED
 NOT SUITABLE FOR USE WITH STANDARD TANK MOUNTING
 PAM-SV TYPE INCLUDES RELIEF VALVE
 VITON SEALS AVAILABLE ON REQUEST
 ROUND HANDLE VERSION AVAILABLE ON REQUEST

ORDER CODE	TYPE	CAPACITY (c.c)	MAXIMUM PRESSURE (bar)
PAM0144000	PAMS-40	40	280
WITH RELIEF VALVE (PAMSV)			
PAM0144005	PAMSV-40	40	280



PAMS-40



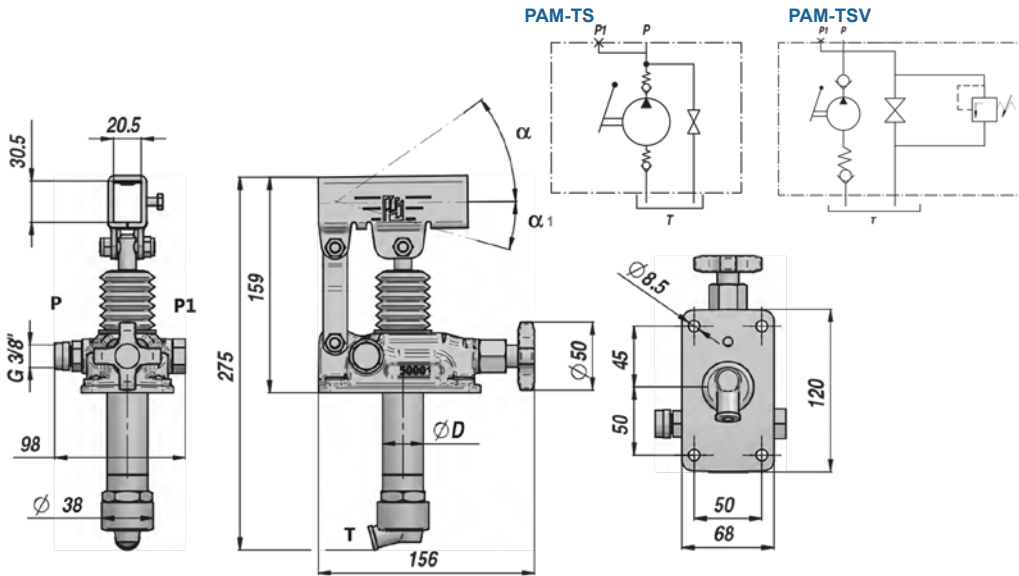
PAM-TS & TSV HAND PUMPS

ORDER CODE	TYPE	CAPACITY (c.c)	D Ø(mm)	MAXIMUM PRESSURE (bar)
PAM0141200	PAM-TS12	12	30	380
PAM0142500	PAM-TS25	25	35	350
PAM0144500	PAM-TS45	42	40	280

WITH RELIEF VALVE (PAM-TSV)

PAM0141201	PAM-TSV12	12	30	380
PAM0142501	PAM-TSV25	25	35	350
PAM0144501	PAM-TSV45	42	40	280

CAPACITY: 12, 25 & 42CM³ PER CYCLE
 SUITABLE FOR TANK MOUNTING
 COMPLETE WITH GASKET AND FIXINGS
 FOR SINGLE ACTING CYLINDERS (RELEASE WHEEL)
 PAM-TSV TYPE INCLUDES RELIEF VALVE
 VITON SEALS AVAILABLE ON REQUEST
 ROUND HANDLE VERSION AVAILABLE ON REQUEST



PAM-TS

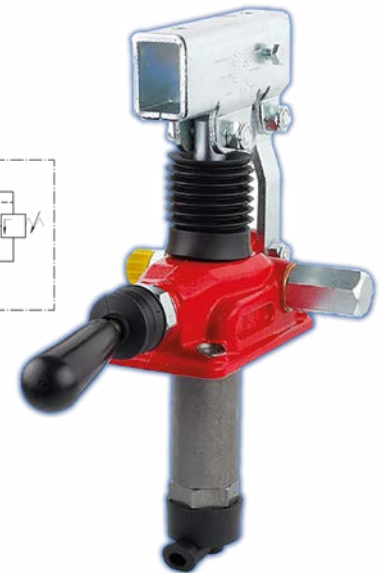
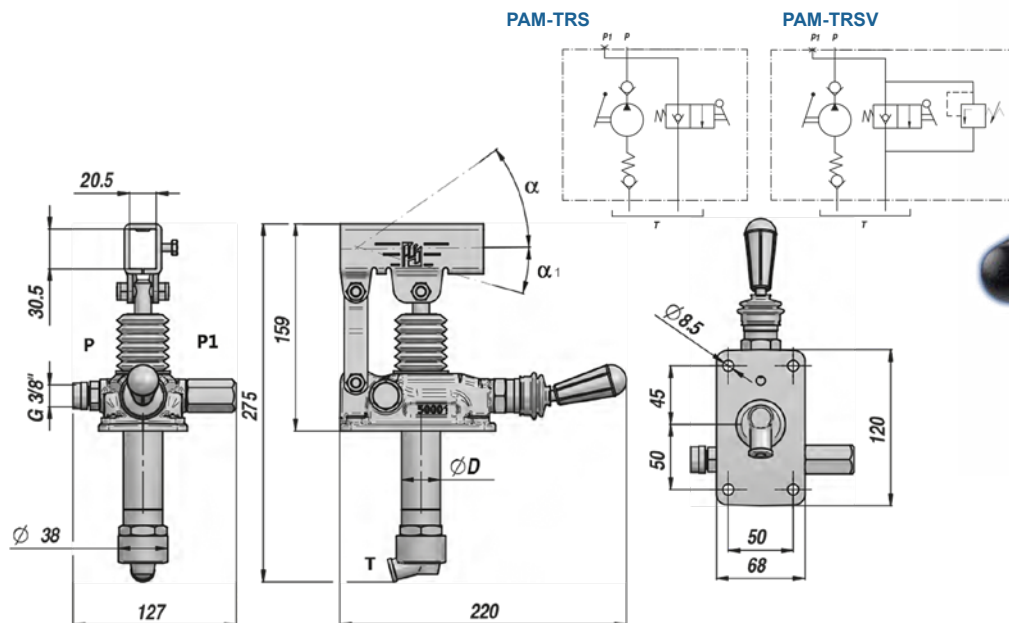
NEW! PAM-TRS & PAM-TRSV HAND PUMPS

ORDER CODE	TYPE	CAPACITY (c.c)	D Ø(mm)	MAXIMUM PRESSURE (bar)
PAM0141206	PAM-TRS12	12	30	380
PAM0142506	PAM-TRS25	25	35	350
PAM0144506	PAM-TRS45	42	40	280

WITH RELIEF VALVE (PAM-TRSV)

PAM0141207	PAM-TRSV12	12	30	380
PAM0142507	PAM-TRSV25	25	35	350
PAM0144507	PAM-TRSV45	42	40	280

CAPACITY: 12, 25 & 42CM³ PER CYCLE
 SUITABLE FOR TANK MOUNTING
 COMPLETE WITH GASKET AND FIXINGS
 FOR SINGLE ACTING CYLINDERS (RELEASE LEVER)
 PAM-TRSV TYPE INCLUDES RELIEF VALVE
 VITON SEALS AVAILABLE ON REQUEST
 ROUND HANDLE VERSION AVAILABLE ON REQUEST



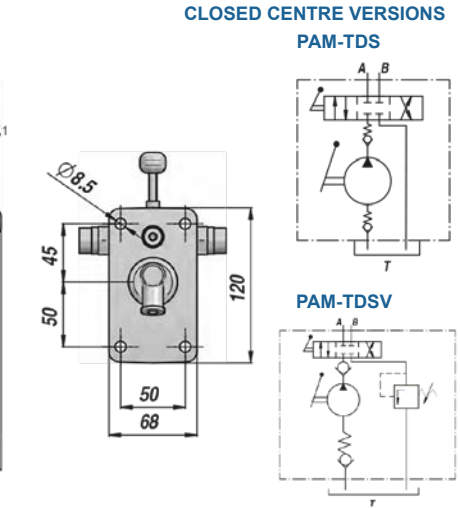
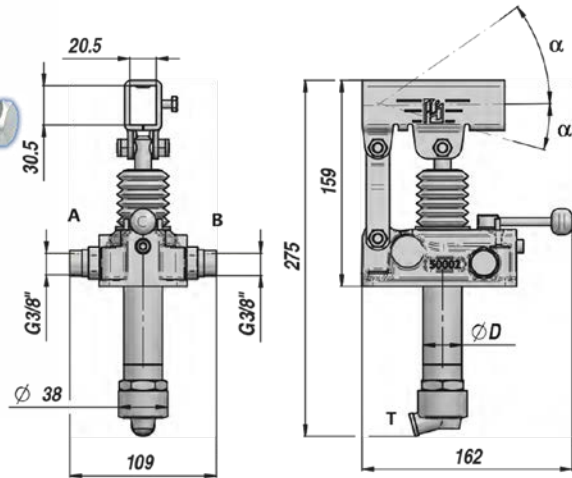
PAM-TRSV

PAM-TDS & PAM-TDSV HAND PUMPS

CAPACITY: 12, 25 & 42CM³ PER CYCLE
 SUITABLE FOR TANK MOUNTING
 COMPLETE WITH GASKET AND FIXINGS
 FOR DOUBLE ACTING CYLINDERS - 4 WAY DIVERTER
 PAM-TDSV TYPE INCLUDES RELIEF VALVE
 VITON SEALS AVAILABLE ON REQUEST
 ROUND HANDLE VERSION AVAILABLE ON REQUEST



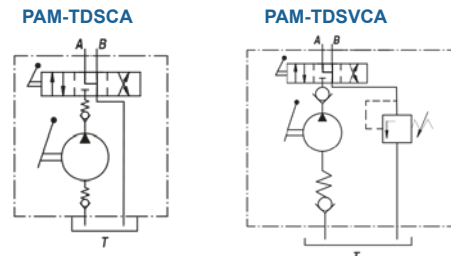
PAM-TDSV



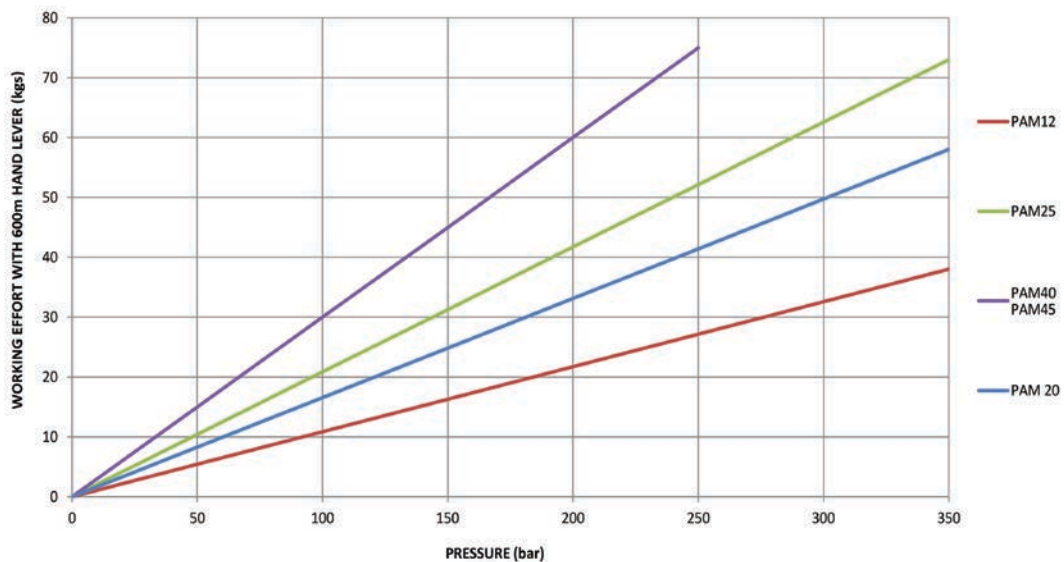
OPEN CENTRE VERSION				
ORDER CODE	TYPE	CAPACITY (c.c)	D Ø(mm)	MAXIMUM PRESSURE (bar)
PAM0161200	PAM-TDSCA12	12	30	380
PAM0162500	PAM-TDSCA25	25	35	350
PAM0164500	PAM-TDSCA45	42	40	280

WITH RELIEF VALVE (PAM-TDSVCA)				
ORDER CODE	TYPE	CAPACITY (c.c)	D Ø(mm)	MAXIMUM PRESSURE (bar)
PAM0161202	PAM-TDSVCA12	12	30	380
PAM0162502	PAM-TDSVCA25	25	35	350
PAM0164502	PAM-TDSVCA45	42	40	280

OPEN CENTRE VERSIONS



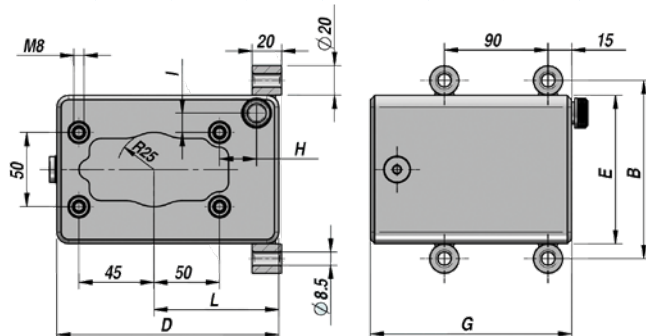
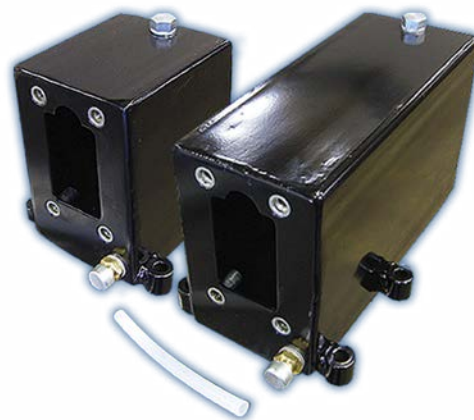
HAND PUMP FORCE CHART



TANKS (FOR PAM-T HAND PUMPS)

ORDER CODE	B (mm)	D (mm)	E (mm)	CAPACITY (ltr)	G (mm)	H (mm)	I (mm)	L (mm)
PM00220001	120	150	100	1	120	24	12	90
PM00220002	120	150	100	2	180	24	12	90
PM00220003	120	150	100	3	247	24	12	90
PM00220005	195	175	175	5	200	42	45	110
PM00220007	195	175	175	7	269	42	45	110
PM00220010	195	175	175	10	376	42	45	110

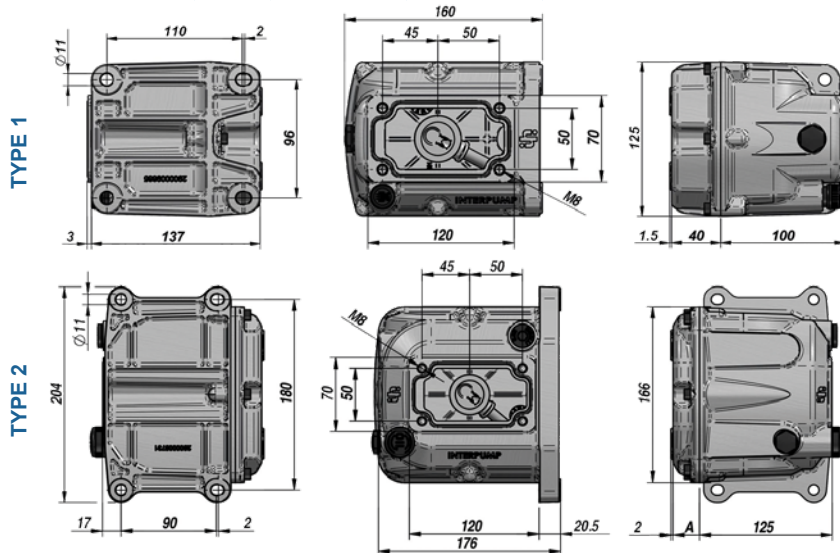
STEEL
CAPACITY FROM 1 ► 10 LITRES
SUITABLE FOR THE PAM-TS/TSV &
PAM-TDS/TDSV SERIES PUMPS



ALUMINIUM TANKS (FOR PAM-T HAND PUMPS)

ORDER CODE	A (mm)	CAPACITY (ltr)	LEVEL INDICATOR	TYPE
S01	40	1	3/8" BSP	1
S02	25	2	3/8" BSP	2
S03	70	3	3/8" BSP	2
S05	180	5	3/8" BSP	2

ALUMINIUM
CAPACITY FROM 1 ► 5 LITRES
SUITABLE FOR THE PAM-T/TSV &
PAM-TDS/TDSV SERIES PUMPS



ACCESSORIES FOR PAM HAND PUMPS

ORDER CODE	ACCESSORY
PAM0290000	PAM HAND PUMP HANDLE (20x30x600mm)
PAM0290900	PAM HAND PUMP HANDLE (20x30x900mm)
PAM0291000	PAM HAND PUMP HANDLE (20x30x1000mm)
PAM0290100	PAM ROUND PUMP HANDLE (Ø27X600mm)
PAM0190102	PAM HAND PUMP KNOB / WHEEL
PAM0190101	PAM HAND PUMP BELLOWS
PAMRHKIT	PAM ROUND HANDLE CONVERSION KIT



PAM0290000

PAM0290100

PAM0190102

PAM0190101

PAMRHKIT

HYDRAULIC CONTROL VALVES - P SERIES

P40, P80 & P120 SERIES VALVES

CAST IRON (BODY) - EN-GJL300

1 ▶ 7 LEVER CONTROL BANKS

NOMINAL FLOW RATE - 40,80 & 120 LPM

MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR

OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C



P - 40 3 A 1 A 8 D 1 CONTINUE CODE UP TO THE NUMBER OF BANKS REQUIRED **G - - - C2**

TYPE	CODE
LEFT HAND (STANDARD)	-
RIGHT HAND	R

SELECTED VALVE TYPE	SELECTED BANKS
P40 <small>(40LPM - 1 ▶ 7 SPOOLS)</small>	1
	2
	3
	4
	5
	6
	7
P80 <small>(80LPM - 1 ▶ 6 SPOOLS)</small>	1
	2
	3
	4
	5
	6
P120 <small>(120LPM - 1 ▶ 4 SPOOLS)</small>	1
	2
	3
	4

CODE	SPOOL CONTROL
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12 (RIGHT HAND)	
13 (RIGHT HAND)	
15 (LEFT HAND)	
16 (LEFT HAND)	

CODE	RETURNING LINE
-	'N' PLUG FITTED (STANDARD)
C	CLOSED CENTRE
C1	METRIC CARRY OVER
C2	BSP CARRY OVER

CODE	MICROSWITCH
E	

CODE	OPERATION FEATURE
P	ON - OFF PNEUMATIC CONTROL
H	ON - OFF HYDRAULIC CONTROL

CODE	LEVER RESTRICTION
T	TETON (ON REQUEST)

CODE	PORTS
G	BSP (STANDARD)
M	METRIC (ON REQUEST)
S	IMPERIAL (ON REQUEST)

SPOOL TYPES	CODE
	A (STANDARD)
	B
	C
	D
	E
	F
	G
	H
	M
	N
	O

SPOOL TYPES	CODE
	P
	Q
	R
	S
	T
	K
	L

PLEASE NOTE: SPOOL TYPE DATA SHEET AVAILABLE ON REQUEST.

PLEASE USE THE ABOVE GUIDE TO PRODUCE YOUR BESPOKE CONTROL VALVE ORDER CODE. START FROM THE LEFT AND WORK YOUR WAY RIGHT USING THE TABLES TO CREATE YOUR CONTROL VALVE.

THE EXAMPLE SHOWN IS FOR A BASIC 'P40' TYPE CONTROL VALVE, WITH 3 LEVER CONTROL (NUMBER OF SPOOLS), STANDARD SPOOL TYPE AND CONTROL ON THE FIRST BANK, STANDARD SPOOL TYPE AND DETENT CONTROL ON THE SECOND, THEN MOTOR SPOOL TYPE WITH STANDARD CONTROL ON THE THIRD. THE VALVE THEN HAS STANDARD PORTS (BSP) AND 'C2' TYPE BSP CARRY OVER FITTED.

THIS GIVES YOU "P403A1A8D1G2" AS YOUR ORDER CODE.

HYDRAULIC CONTROL VALVES - P40 SERIES

Badestnost
hydraulic components

CAST IRON (BODY) - EN-GJL300

1 ▶ 7 LEVER CONTROL BANKS

NOMINAL FLOW RATE - 40 LPM

MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR

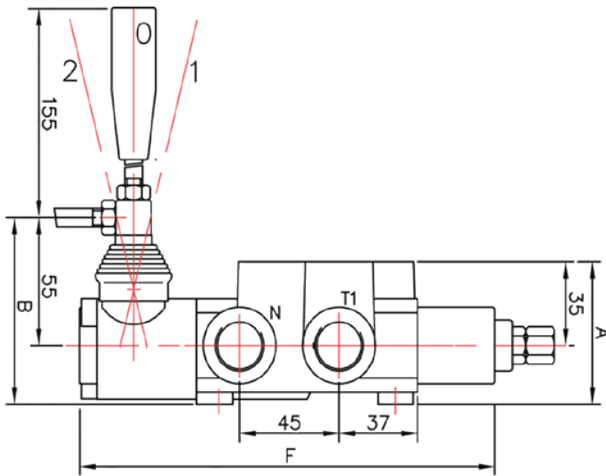
SPOOL STROKE : ±6 MM

OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C

SPOOL LEAKAGE @ 120 BAR = 15CM³ P/M

RELIEF VALVE SETTING: 180 BAR (250 BAR MAX')

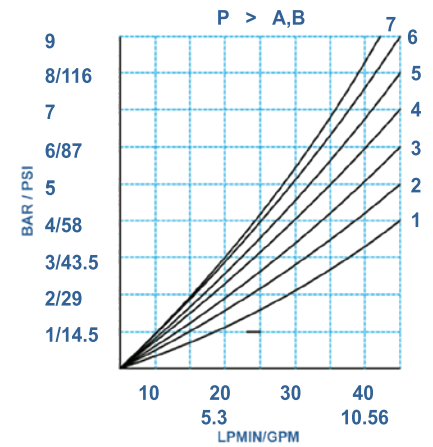
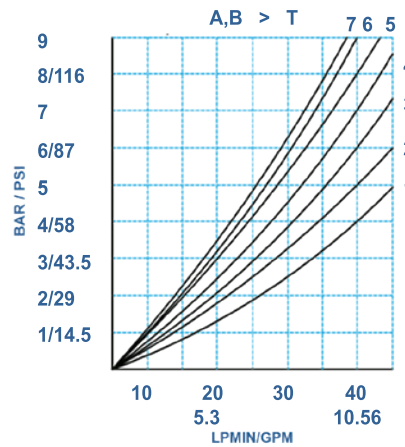
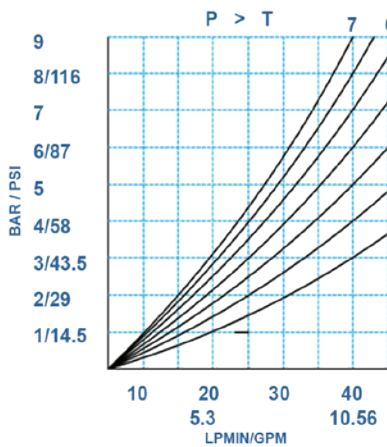
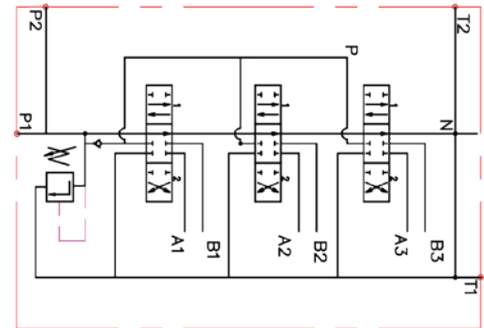
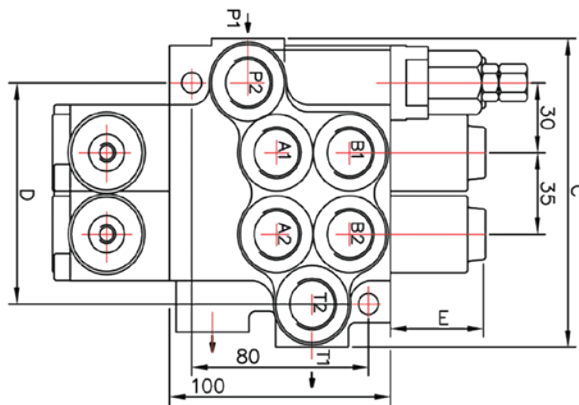
MOUNTING : M8 BOLT SIZE (x2)



LEFT HAND CONFIGURATION (STANDARD)



STANDARD PARALLEL CONFIGURATION



ORDER CODE	VALVE TYPE	NUMBER OF SECTIONS	NOMINAL FLOW (lpm)	MAX OPERATING PRESSURES (bar)			A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	PORT SIZES (bsp)			
				P	T	A - B							P	T	A - B	N
P401A1G	P40	1	40	250	50	300	60	80	85	60	40	193	1/2"	1/2"	3/8"	1/2"
P402A1G		2							129	97		225				
P403A1G		3							164	132		225				
P404A1G		4							199	167		193				
P405A1G		5							234	202		193				
P406A1G		6							269	237		193				
P407A1G		7							304	272		193				

HYDRAULIC CONTROL VALVES - P80 SERIES

CAST IRON (BODY) - EN-GJL300

1 ▶ 6 LEVER CONTROL BANKS

NOMINAL FLOW RATE - 80 LPM

MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR

SPOOL STROKE : ±7 MM

OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C

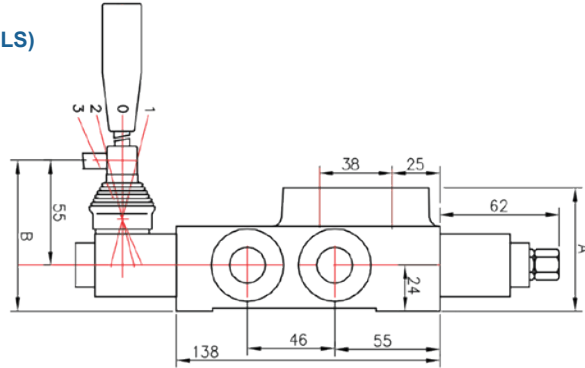
SPOOL LEAKAGE @ 120 BAR = 18CM³ P/M

RELIEF VALVE SETTING: 180 BAR (250 BAR MAX')

MOUNTING : M8 BOLT SIZE (x3)

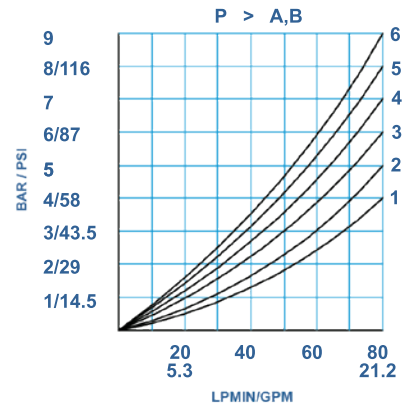
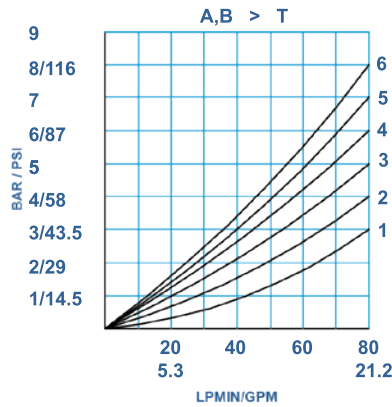
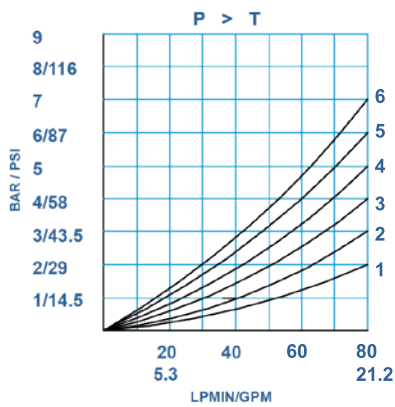
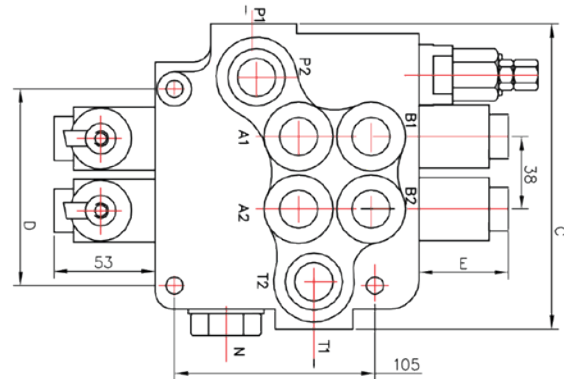
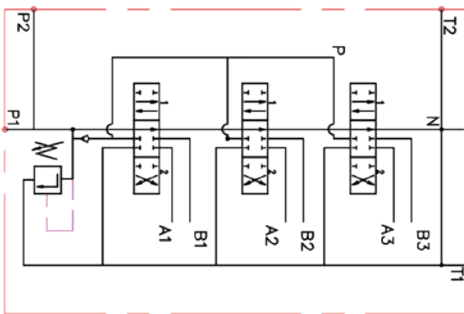
PX-80 HEAVY DUTY VERSION ON REQUEST (ENQUIRE FOR DETAILS)

Badestnost
hydraulic components



LEFT HAND CONFIGURATION (STANDARD)

STANDARD PARALLEL CONFIGURATION



ORDER CODE	VALVE TYPE	NUMBER OF SECTIONS	NOMINAL FLOW (lpm)	MAX OPERATING PRESSURES (bar)			A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	PORT SIZES (bsp)						
				P	T	A - B							P	T	A - B	N			
P801A1G	P80	1	80	250	50	300	65	79	107	65	40	193	1/2"	3/4"	1/2"	3/4"			
P802A1G		2															160	103	225
P803A1G		3															198	141	225
P804A1G		4															236	179	193
P805A1G		5															274	217	193
P806A1G		6															312	255	193

HYDRAULIC CONTROL VALVES - P120 SERIES

Badestnost
hydraulic components

CAST IRON (BODY) - EN-GJL300

1 ▶ 4 LEVER CONTROL BANKS

NOMINAL FLOW RATE - 120 LPM

MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR

SPOOL STROKE : ±10 MM

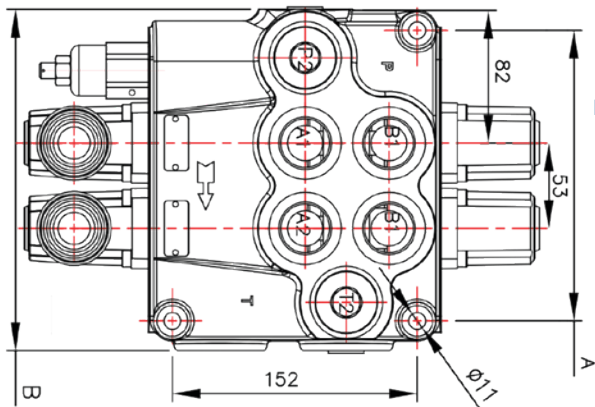
OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C

SPOOL LEAKAGE @ 120 BAR = 30CM³ P/M

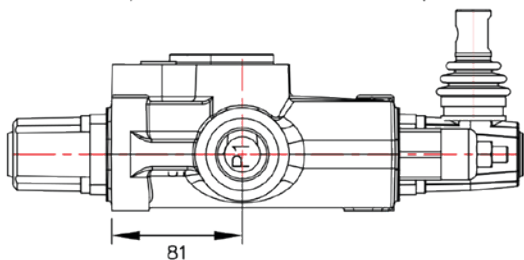
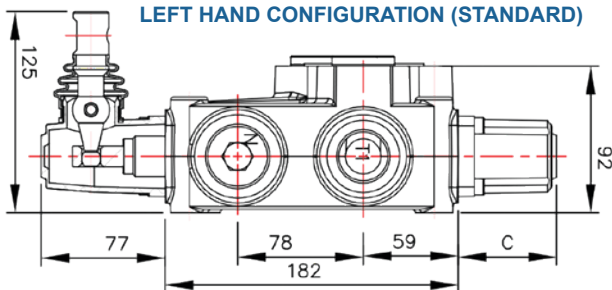
RELIEF VALVE SETTING: 180 BAR (250 BAR MAX')

MOUNTING : M10 BOLT SIZE (x3)

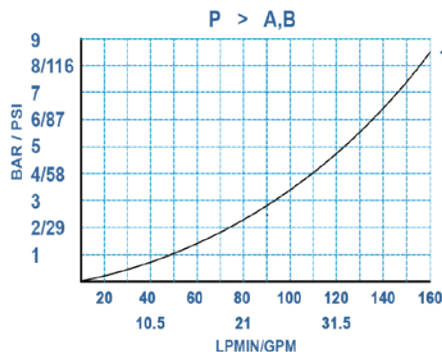
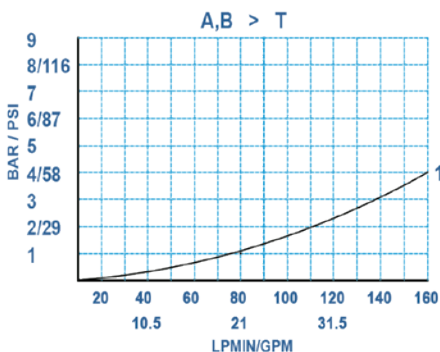
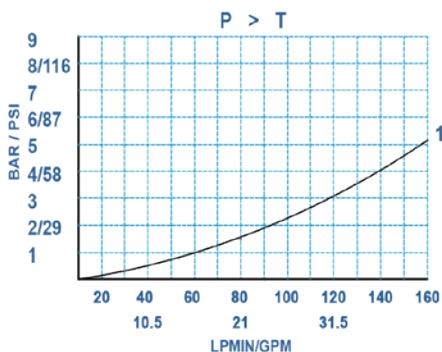
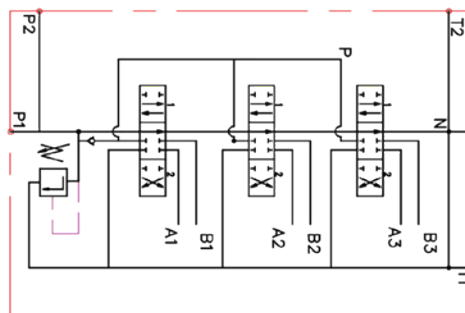
PX-80 HEAVY DUTY VERSION ON REQUEST (ENQUIRE FOR DETAILS)



LEFT HAND CONFIGURATION (STANDARD)



STANDARD PARALLEL CONFIGURATION

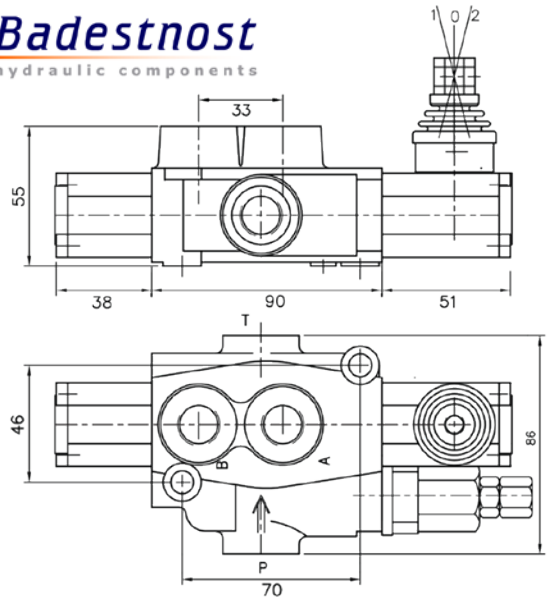


ORDER CODE	VALVE TYPE	NUMBER OF SECTIONS	NOMINAL FLOW (lpm)	MAX OPERATING PRESSURES (bar)			A (mm)	B (mm)	C (mm)	PORT SIZES (bsp)			
				P	T	A - B				P	T	A - B	N
P1201A1G	P120	1	120	250	50	300	129	160	64	1"	1"	1"	M36x1.5
P1202A1G		2					182	213					
P1203A1G		3					235	266					
P1204A1G		4					288	319					

HYDRAULIC CONTROL VALVES - P35 SERIES

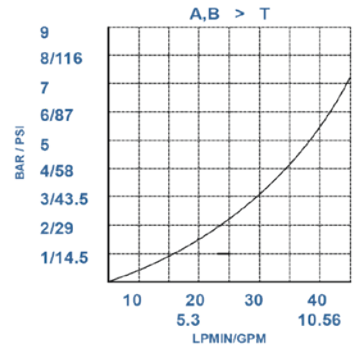
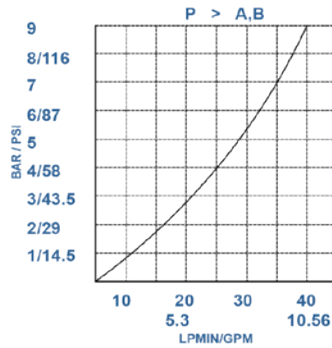
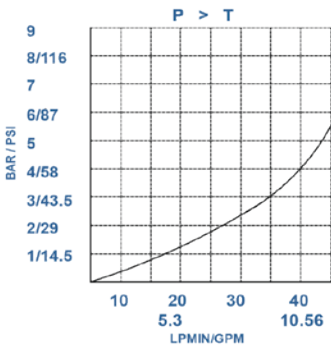
CAST IRON (BODY) - EN-GJL300
 1 LEVER CONTROL BANK
 NOMINAL FLOW RATE - 35 LPM
 MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR
 OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C
 SPOOL LEAKAGE @ 120 BAR = 10-15CM³ P/M
 TETON AND ELECTRIC MICROSWITCH OPTIONS (ON REQUEST)
 MOUNTING : M8 BOLT SIZE (x2)
 PORTS P, T, A + B = 3/8" BSP FEMALE

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 hydraulic components



ORDER CODE P35A1G

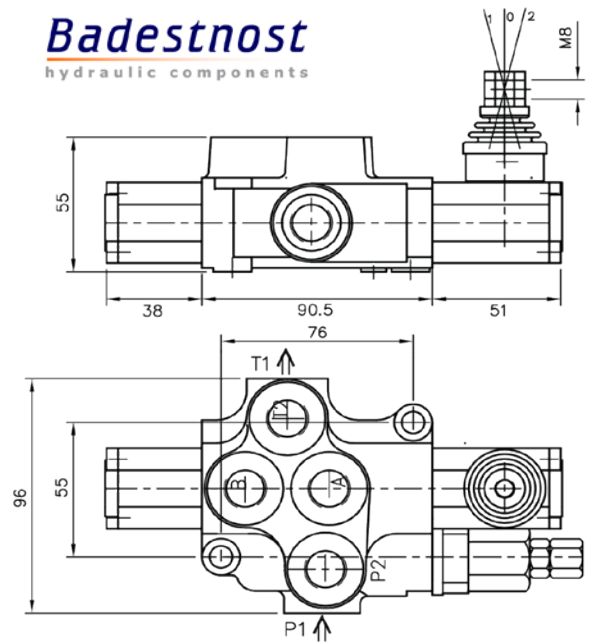
FOR ADDITIONAL P+T PORT VERSION
 SEE P38A1G BELOW



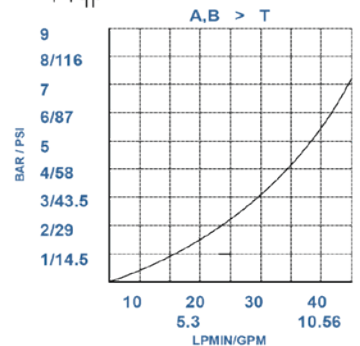
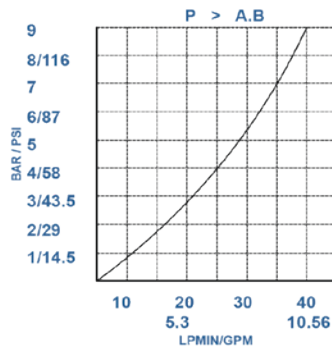
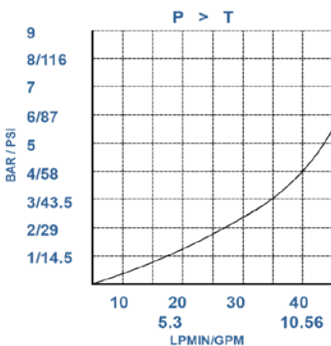
HYDRAULIC CONTROL VALVES - P38 SERIES

CAST IRON (BODY) - EN-GJL300
 1 LEVER CONTROL BANK
 NOMINAL FLOW RATE - 35 LPM
 MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR
 OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C
 SPOOL LEAKAGE @ 120 BAR = 10-15CM³ P/M
 SIMILAR TO THE P35 BUT HAS ADDED P & T OUTLETS ON THE TOP
 TETON AND ELECTRIC MICROSWITCH OPTIONS (ON REQUEST)
 MOUNTING : M8 BOLT SIZE (x2)
 PORTS P, T, A + B = 3/8" BSP FEMALE

Badestnost
 hydraulic components



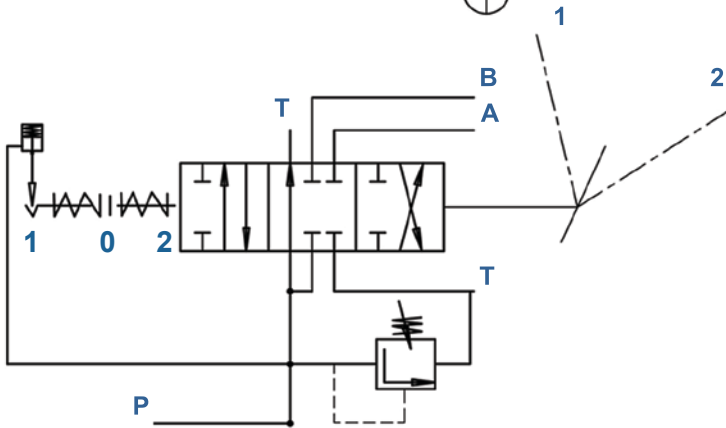
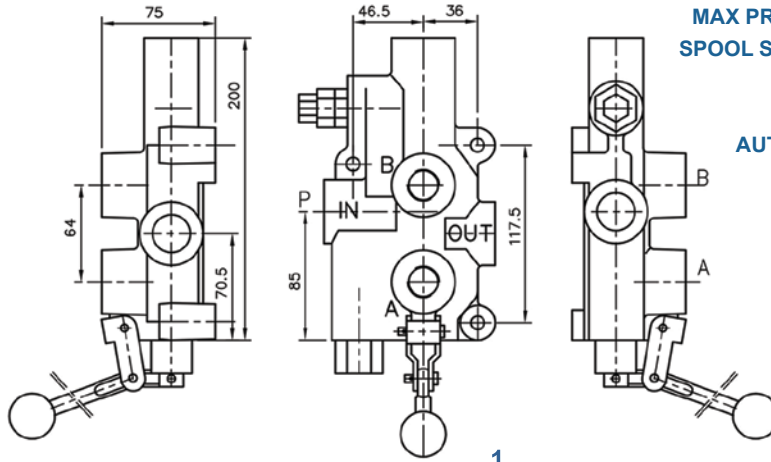
ORDER CODE P38A1G



LOG SPLITTER VALVES - P81 SERIES

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hydraulic components

CAST IRON (BODY) - EN-GJL300
1 LEVER CONTROL BANKS (DESIGNED AS LOG SPLITTER VALVE)
NOMINAL FLOW RATE - 80 LPM
MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR
SPOOL STROKE : $\pm 7,9$ MM (WITH <220N ACTUATING FORCE)
OPERATING TEMPERATURE (°C) : -40°C ▶ +60°C
SPOOL LEAKAGE @ 120 BAR = 20CM³ P/M
AUTOMATIC SPOOL RELEASE PRESSURE: 70-140 BAR
MOUNTING : M8 BOLT SIZE (x3)
PORTS = P + T - 3/4" BSP, A + B = 1/2" BSP

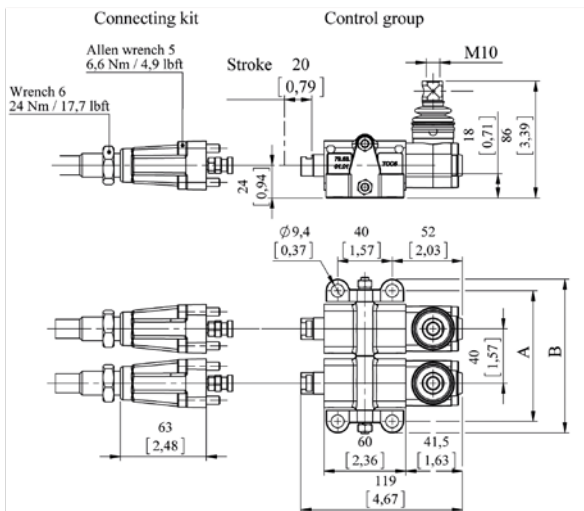


ORDER CODE

P81A2G

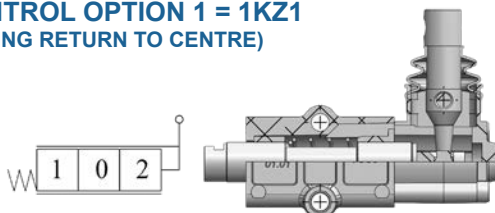
REMOTE CONTROL LEVER OPTIONS

TO SUIT P40 & P80 SERIES VALVES
1 ▶ 7 LEVER CONTROL BANKS
CABLE LENGTHS FROM 1 ▶ 5.6 METRES
EASY MODULAR DESIGN

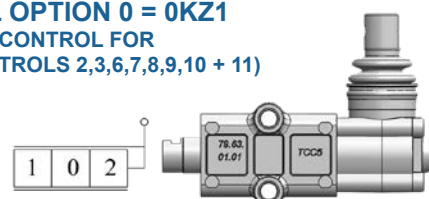


TYPE	1-BCC5	2-BCC5	3-BCC5	4-BCC5	5-BCC5	6-BCC5	7-BCC5
A	56mm	96mm	136mm	176mm	216mm	256mm	296mm
B	73mm	113mm	153mm	193mm	233mm	273mm	313mm

CONTROL OPTION 1 = 1KZ1
(SPRING RETURN TO CENTRE)



CONTROL OPTION 0 = 0KZ1
(DETENTED CONTROL FOR
SPOOL CONTROLS 2,3,6,7,8,9,10 + 11)



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hydraulic components

STEERFORTH 85

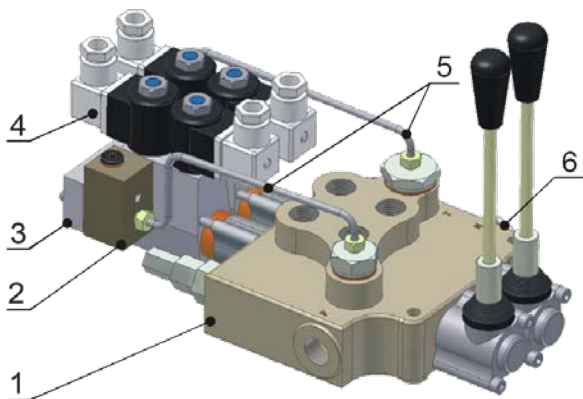
NEW! ELECTRO-HYDRAULIC VALVE P40 & P80

TO SUIT P40 & P80 SERIES VALVES
 1 ► 7 LEVER CONTROL BANKS
 ELECTRO-HYDRAULIC
 12V, 24 VDC AND 220 VAC OPTIONS

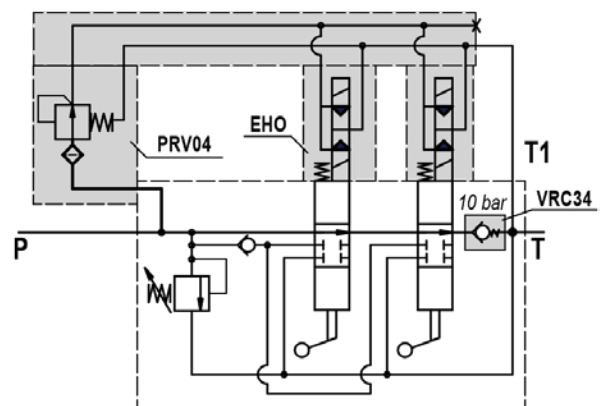
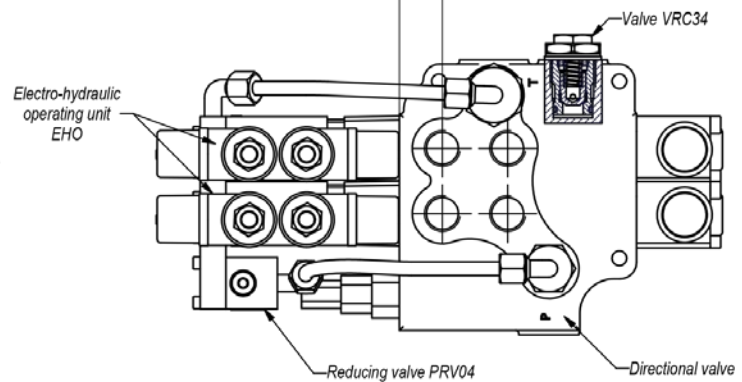
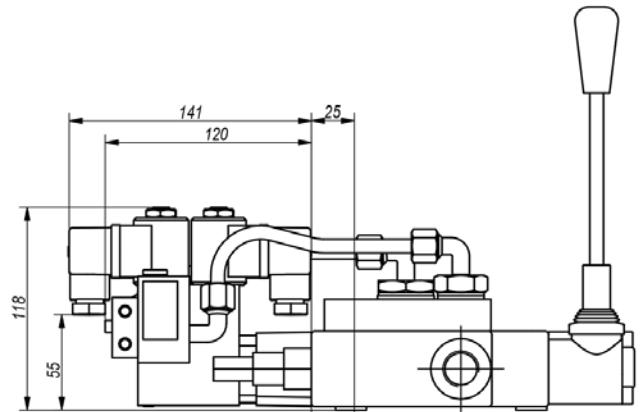
EHO ELECTRO-HYDRAULIC OPERATING UNIT IS DESIGNED TO FIT P40 AND P80 CONTROL VALVES.

OIL IS SUPPLIED TO MOVE EACH SPOOL FROM DIRECTING FLOW FROM THE VALVES PRESSURE INLET PORT, CONNECTED VIA A PIPE TO A PRESSURE REDUCING VALVE. THIS PROVIDES THE MINIMUM PRESSURE OF 10 BAR TO MOVE EACH SPOOL WHEN NOT UNDER LOAD, A BACK PRESSURE VALVE VRC34 IS MOUNTED IN THE CARRYOVER "N" PORT. THIS MAINTAINS THE MINIMUM PRESSURE DURING ALL OPERATIONS OF THE VALVE.

THE ELECTRO HYDRAULIC OPERATING UNIT SHOWN BELOW IS MOUNTED TO A DOUBLE BANK P80 VALVE.



- 1 = DIRECTIONAL CONTROL VALVE (P40 / P80)
- 2 = PRESSURE REDUCING VALVE
- 3 = OIL COLLECTOR
- 4 = EHO ELECTRO OPERATING UNIT
- 5 = OIL SUPPLY PIPES
- 6 = VRC34 BACK PRESSURE VALVE



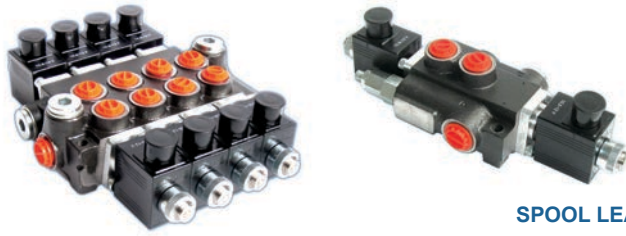
EXAMPLE ORDER CODE

EHO	2	P80	12V
↑	↑	↑	↑
TYPE	NO OF SECTIONS	VALVE BLOCK	SUPPLY VOLTAGE
EHO	1-7	P40/P80	12V, 24V, 220V

TECHNICAL SPECIFICATIONS

SUPPLY PRESSURE	MIN 10 BAR / MAX 20 BAR
MAXIMUM PRESSURE IN OUTLET LINE	MAX 20 BAR
SUPPLY VOLTAGE	12 - 24 VDC / 220 VAC
POWER CONSUMPTION PER 1x SOLENOID	18 WATT
FITS DIRECTIONAL CONTROL VALVE	P40 / P80

SOLENOID HYDRAULIC CONTROL VALVES



CAST IRON (BODY) - EN-GJL300
 PRECISE BORE HONING & SPOOL GRINDING (LESS LEAKAGE)
 1 ► 7 LEVER CONTROL BANKS
 NOMINAL FLOW RATE - 50 & 80 LPM
 MAX PRESSURE - P = 250 BAR, T = 50 BAR, A / B = 300 BAR
 12 & 24 VOLT VDC COILS WITH ISO4400 CONNECTOR
 OPERATING TEMPERATURE (°C) : -40°C ► +60°C
 SPOOL LEAKAGE - Z50 @ 100 BAR = 18CM³ & Z80 @ 120 BAR = 20-40 CM³ P/M
 MOUNTING : M8 BOLTS OR A COMPLETE LINE OF STUDS

Z - 50 3 A ES3 A ES1 D ES2 CONTINUE CODE UP TO THE NUMBER OF BANKS REQUIRED G 12 VDC

TYPE	CODE
LEFT HAND (STANDARD)	-
RIGHT HAND	R

SELECTED VALVE TYPE	SELECTED BANKS
Z50 (50LPM - 1 ► 7 SPOOLS)	1
	2
	3
	4
	5
	6
	7
Z80 (80LPM - 1 ► 6 SPOOLS)	1
	2
	3
	4
	5
	6

SPOOL TYPES	CODE
	A (STANDARD)
	D

FOLLOWING LEVERS & SPOOL
 CONTINUE TO ENTER YOUR FOLLOWING SPOOL TYPES & SPOOL CONTROL CODES UP TO THE AMOUNT OF LEVERS YOU WISH TO ORDER.

CODE	SPOOL CONTROL
ES1	SINGLE ACTING P ► A WITH SPRING RETURN IN NEUTRAL
ES2	SINGLE ACTING P ► B WITH SPRING RETURN IN NEUTRAL
ES3	DOUBLE ACTING P ► A (B) WITH SPRING RETURN IN NEUTRAL

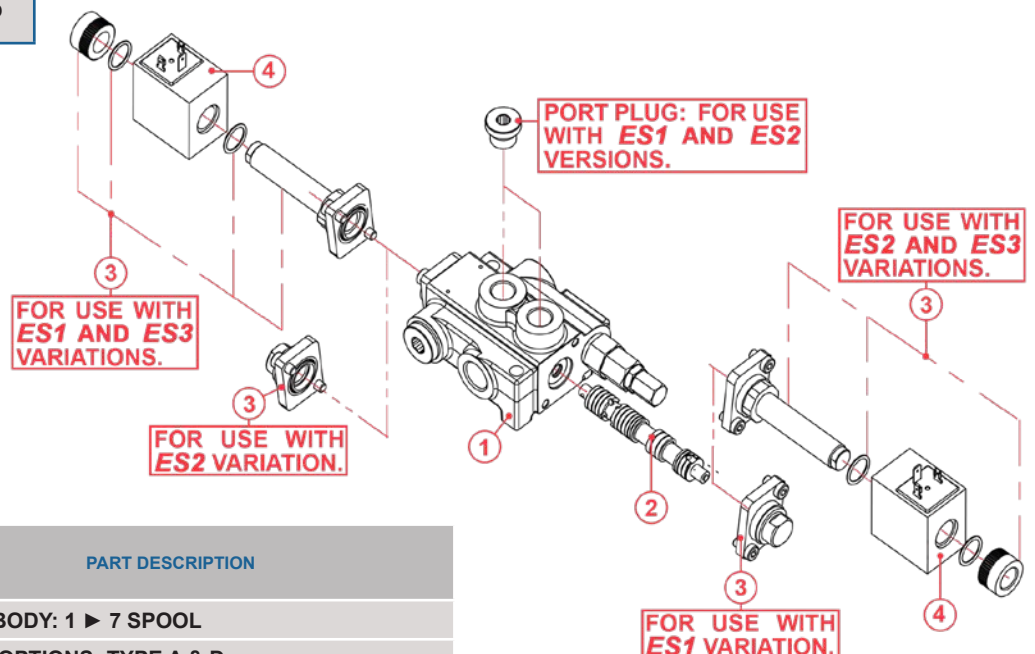
CODE	COIL VOLTAGE (DC)
12	12 VOLT DC NOMINAL VOLTAGE (WITH CONNECTOR ISO4400)
24	24 VOLT DC NOMINAL VOLTAGE (WITH CONNECTOR ISO4400)

CODE	PORTS
G	BSP (STANDARD) Z50 = A+B = 3/8" BSP - P+T = 1/2" BSP Z80 = P,A+B = 1/2" BSP - T = 3/4" BSP

PLEASE USE THE ABOVE GUIDE TO PRODUCE YOUR BESPOKE DIRECT SOLENOID CONTROL VALVE ORDER CODE. START FROM THE LEFT AND WORK YOUR WAY RIGHT USING THE TABLES TO CREATE YOUR CONTROL VALVE.

THE EXAMPLE SHOWN IS FOR A BASIC 'Z50' TYPE CONTROL VALVE, WITH 3 LEVER CONTROL (NUMBER OF SPOOLS). THIS HAS A STANDARD SPOOL TYPE 'A' AND ES3 DOUBLE ACTING CONTROL ON THE FIRST BANK, STANDARD SPOOL TYPE A AND ES1 SINGLE ACTING CONTROL ON THE SECOND, THEN 'MOTOR SPOOL' TYPE D WITH ES2 CONTROL ON THE THIRD. THE VALVE THEN HAS STANDARD PORTS (BSP) AND 12 VOLT TYPE SOLNOIDS.

THIS GIVES YOU "Z503AES3AES1DES2G12VDC" AS YOUR ORDER CODE.



ITEM NUMBER	PART DESCRIPTION
1	VALVE BODY: 1 ► 7 SPOOL
2	SPOOL OPTIONS: TYPE A & D
3	SPOOL CONTROL KIT: ES1, ES2 & ES3
4	COILS: 12 OR 24 VOLT DC

CETOP 03 SOLENOID CONTROL VALVES

CETOP 03 DIRECTIONAL CONTROL VALVE (SOLENOID OPERATED)
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 NOMINAL FLOW = 50 L/MIN / MAX FLOW = 60 L/MIN
 MAXIMUM NOMINAL PRESSURE ON PORTS A,B + P = 320 BAR
 MAXIMUM PRESSURE ON T PORT = 210 BAR
 PROTECTION TO DIN 40050 (IP65)
 PHOSPHATED HOUSING FOR 240H SALT SPRAY PROTECTION
 COIL CONNECTIONS = ISO 4400 (DIN 43650-A)



HD3-ES/20 ORDERING CODES - MAX PRESSURE 32MPa - 320 BAR

HD3 - ES - 1C - * - 024C /20

TYPE	CODE
4-WAY CETOP 3	HD3

SOLENOID OPERATED **ES**

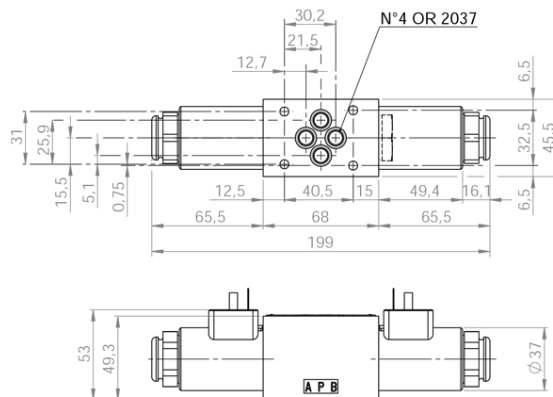
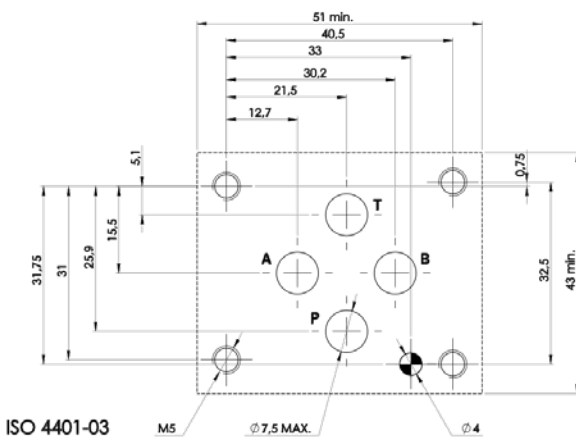
CODE	SPECIAL OPTION
S	CALIBRATED ORIFICE ON PORT P
K	WATERPROOF CAPS ON EMERGENCY PIN

DESIGN NUMBER

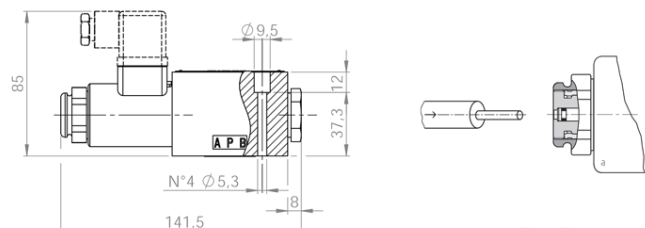
SPOOL TYPES	CODE	CODE	SPOOL TYPES	COIL TYPE	CODE
	0C	1LL		NO COILS	0000
	1C	1LLB		V12DC COILS	012C
	3C	4ML		V24DC COILS	024C
	4C	0MLB		V110/50 - V115/60 AC COILS	115A
	0ML	1MLB		V220/50 - V230/60 AC COILS	230A
	1ML	3MLB			
	3ML	4MLB			

* STANDARD COIL CONNECTIONS SUPPLIED AS PER DIN 43650-A (ISO 4400). OTHER CONNECTIONS AVAILABLE ON REQUEST.

MOUNTING AND INSTALLATION DIMENSIONS



ALL HD3 VALVES CONFORM WITH ISO AND CETOP SPECIFICATIONS. WHEN ASSEMBLED TO THE MOUNTING PLATE VALVE HD3 MUST BE FASTENED WITH 4 BOLTS M5x45 (OR M5x** ACCORDING TO THE NUMBER OF MODULES) TIGHTENED TO 8Nm TORQUE. LEAKAGE BETWEEN VALVE AND MOUNTING SURFACE IS PREVENTED BY THE POSITIVE COMPRESSION ON THEIR SEATS OF 4 SEALS OF QUAD RING TYPE 9.25x1.68x1.68



CETOP 03 VALVE SPECIFICATION

TECHNICAL DATA

SPECIFICATIONS	
NOMINAL FLOW	50 L/MIN
MAXIMUM REC. FLOW RATE	60 L/MIN
MAXIMUM NOMINAL PRESSURE (P, A, B)	32 Mpa (320 BAR)
MAXIMUM PRESSURE ON T PORT	21 Mpa (210 BAR)
PRESSURE DROPS	SEE FIG.1 BELOW
PROTECTION TO DIN 40050	IP 65
DUTY CYCLE	100%
MASS	1.6/1.2 KG
INSTALLATION AND DIMENSIONS	SEE PAGE 91

ELECTRIC CHARACTERISTICS

VALVE TYPE HD3-ES ARE OPERATED BY SOLENOIDS THAT ARE ENERGIZED:

DIRECTLY FROM A D.C VOLTAGE SUPPLY:
V 12 DC = 012C , V 24 DC = 024C

BY THE USE OF COILS THAT INCORPORATE A FULL WAVE BRIDGE RECTIFIER, FROM A.C VOLTAGE SUPPLY:
V 110/50 V - 115/60 = 115A
V 220/50 V - 220/60 = 230A

OTHER AVAILABLE VOLTAGES ARE: 014C ; 048C ; 060C ; 102C ; 205C & V24/50 = 024A

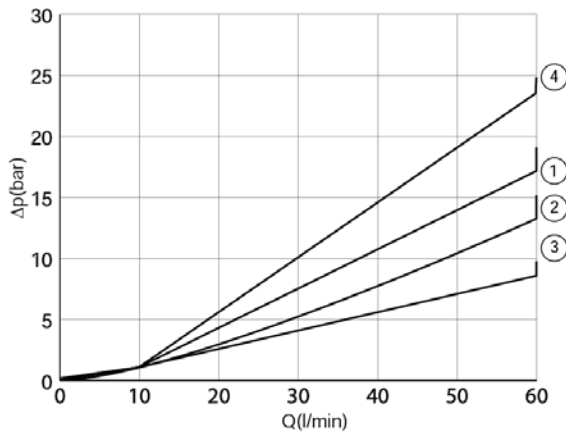
ALL CONNECTIONS MUST CONFORM TO ISO 4400 (DIN43650) AND ELECTRIC CIRCUITRY MUST BE ABLE TO CARRY THE FOLLOWING RATED CURRENT VALUES:

V 12 DC = 2.4 A V 115/50 = 0.26 A
V 24 DC = 1.2 A V 230/50 = 0.14 A

COILS WITH 2 ELECTRIC PINS, CONFORMING WITH AMP CONNECTORS, ARE ONLY AVAILABLE FOR DC SUPPLY (EXAMPLE OF CODE: B02-012C AMP).

PERMISSIBLE SUPPLY VOLTAGE VARIATION: +/- 10%

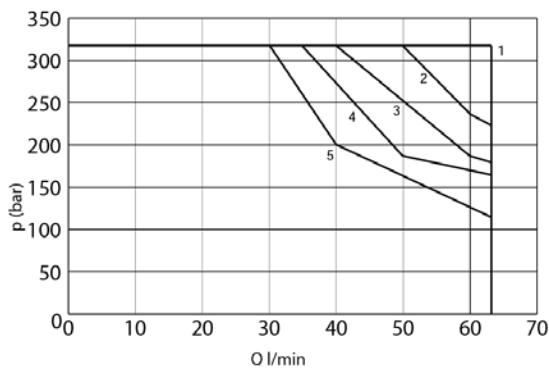
PRESSURE DROPS



TYPICAL DIFFERENCE p-Q CURVES FOR VALUES HDS-ES IN STANDARD CONFIGURATION, WITH MINERAL OIL AT V=32 mm²/s AND T = 40°C

SPOOL	P - A	P - B	A - T	B - T	P - T
1C	2	2	2	2	-
4C	4	4	4	4	2
0C	2	2	3	3	2
3C	2	2	3	3	-
1LL	3	3	4	4	-
1LLB	3	3	4	4	-
1ML	-	2	2	-	-
4ML	4	-	4	-	2
0ML	2	-	3	-	2
3ML	2	-	2	-	-

HYDRAULIC LIMIT OF USE



1C	4C	0C	3C	1LL	3ML	4ML	1ML	0ML	1MLB	1LLB	4MLB	0MLB	3MLB
1	5	1	2	3	2	5	1	1	1	1	5	1	2

HYDRAULIC FLUID

SEALS AND MATERIALS USED ON STANDARD VALVES HD3 ARE FULLY COMPATIBLE WITH HYDRAULIC FLUIDS OF MINERAL BASE, UPGRADED WITH ANTIFOAMING AND ANTI OXIDIZING AGENTS.

THE HYDRAULIC FLUID MUST BE KEPT CLEAN AND FILTERED TO ISO 4406 CLASS 19/17/14, OR BETTER, AND USED IN A RECOMMENDED VISCOSITY RANGE FROM 10 cSt TO 60 cSt.

FOR COMPLETE RANGE
AND TECHNICAL DATA

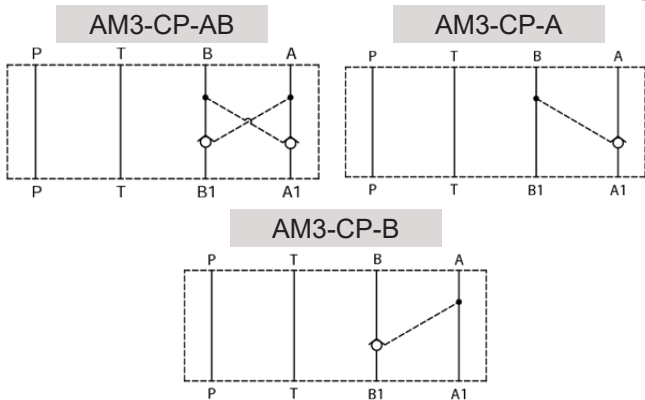
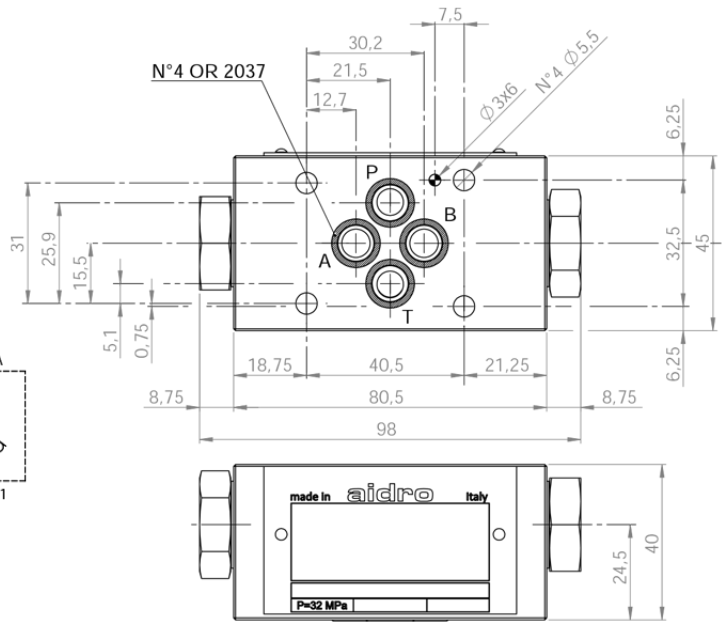
VISIT:

WWW.STEERFORTH.CO.UK

AM3-CP/10 CETOP 03 CHECK VALVE

CETOP 03 STACKABLE PILOT OPERATED CHECK VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE = 60 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 CHECK VALVE CRACKING PRESSURE = 2 BAR (APPROX)

ORDER CODE	TYPE	MAX PRESSURE (Bar)	PILOT RATIO (Approx)	SIZE
AM3-CP-AB	D/A	320	3.5	CETOP 03
AM3-CP-A	S/A	320	3.5	CETOP 03
AM3-CP-B	S/A	320	3.5	CETOP 03

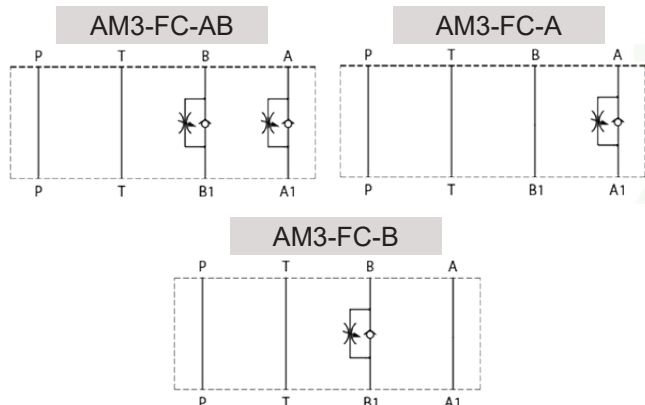
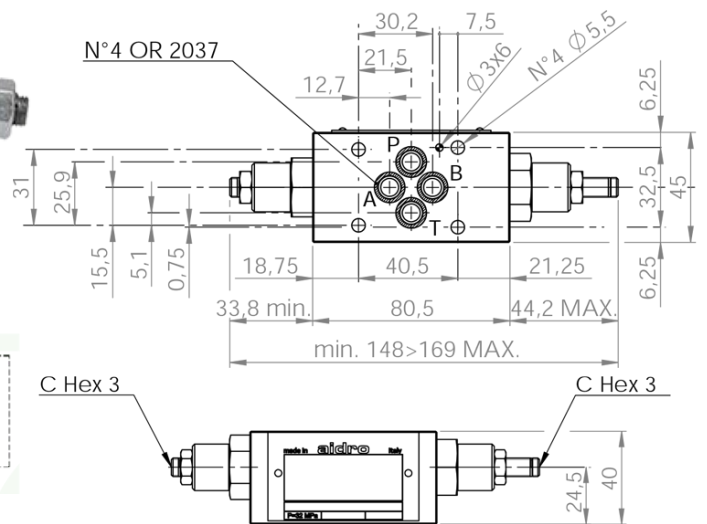


FOR COMPLETE TECHNICAL SPECIFICATIONS PLEASE CONTACT OUR SALES OFFICE OR DOWNLOAD THE AIDRO CATALOGUE FROM OUR WEBSITE WWW.STEERFORTH.CO.UK

AM3-FC/10 CETOP 03 FLOW CONTROL VALVE

CETOP 03 STACKABLE FLOW CONTROL VALVE
 ONE WAY FLOW CONTROL WITH METER OUT CONTROL
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE = 60 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR

ORDER CODE	MAX PRESSURE (Bar)	CHECK VALVE OPENING PRESSURE	SIZE
AM3-FC-AB	320	0.4 BAR	CETOP 03
AM3-FC-A	320	0.4 BAR	CETOP 03
AM3-FC-B	320	0.4 BAR	CETOP 03

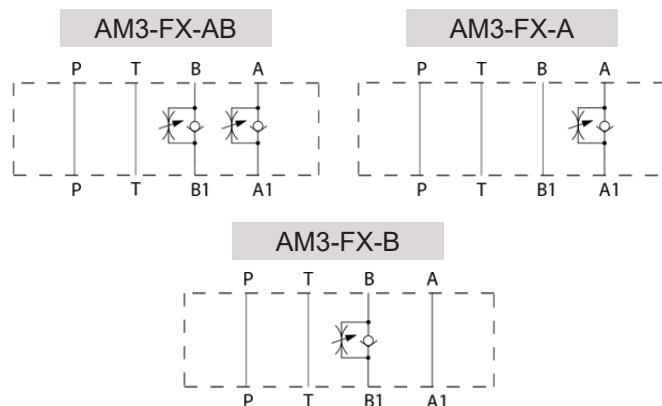
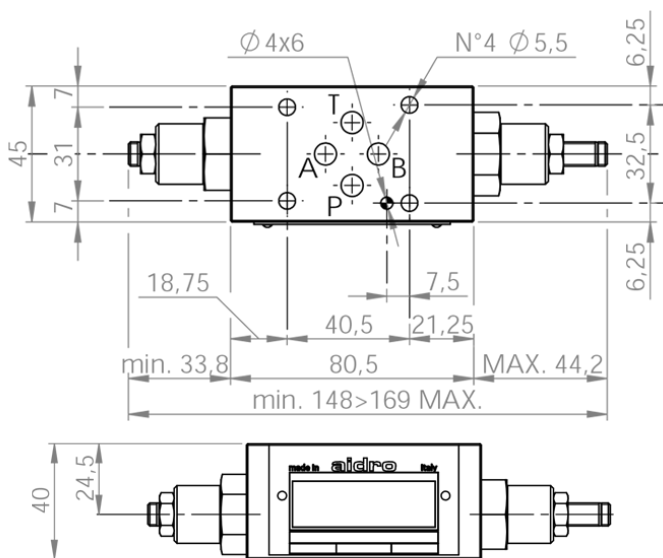


FOR COMPLETE TECHNICAL SPECIFICATIONS PLEASE CONTACT OUR SALES OFFICE OR DOWNLOAD THE AIDRO CATALOGUE FROM OUR WEBSITE WWW.STEERFORTH.CO.UK

AM3-FX/10 CETOP 03 FLOW CONTROL VALVE

ORDER CODE	MAX PRESSURE (Bar)	CHECK VALVE OPENING PRESSURE	SIZE
AM3-FX-AB	320	0.4 BAR	CETOP 03
AM3-FX-A	320	0.4 BAR	CETOP 03
AM3-FX-B	320	0.4 BAR	CETOP 03

CETOP 03 STACKABLE FLOW CONTROL VALVE
 ONE WAY FLOW CONTROL WITH METER IN CONTROL
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE = 60 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR

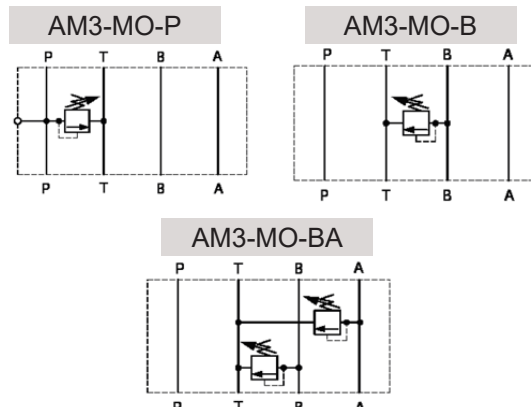
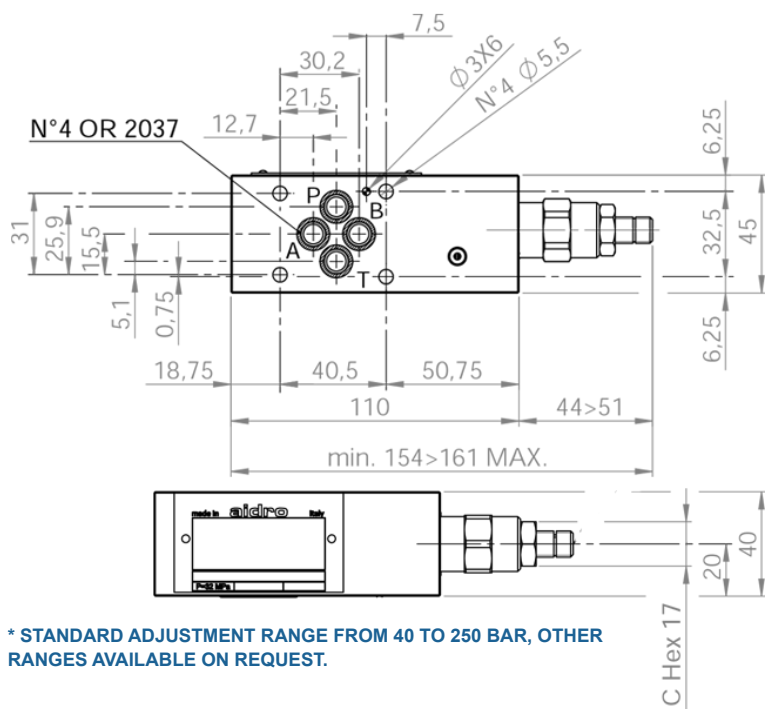


FOR COMPLETE TECHNICAL SPECIFICATIONS PLEASE CONTACT OUR SALES OFFICE OR DOWNLOAD THE AIDRO CATALOGUE FROM OUR WEBSITE WWW.STEERFORTH.CO.UK

AM3-MO/10 CETOP 03 RELIEF VALVE

ORDER CODE	MAX PRESSURE (Bar)	ADJUSTMENT RANGE *	SIZE
AM3-MO-P	320	40-250 BAR	CETOP 03
AM3-MO-B	320	40-250 BAR	CETOP 03
AM3-MO-BA	320	40-250 BAR	CETOP 03

CETOP 03 STACKABLE PRESSURE RELIEF VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE ON FREE LINES = 60 L/MIN
 MAXIMUM FLOW RATE ON PROTECTED LINES = 32 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 DIRECT ACTING VALVE

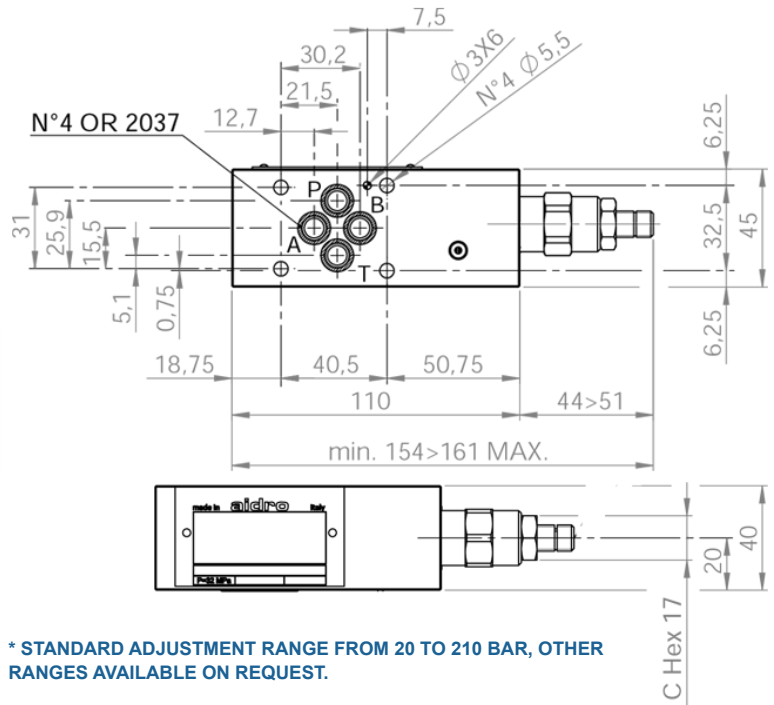
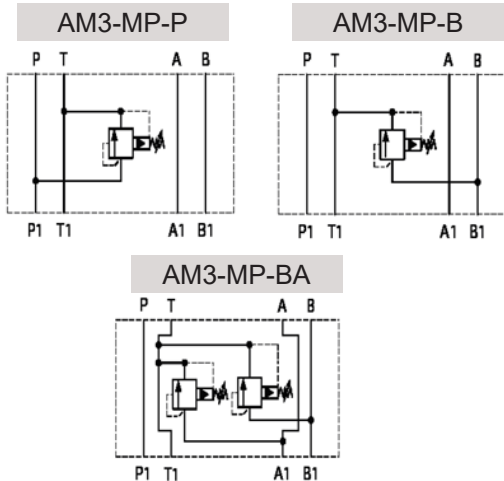


* STANDARD ADJUSTMENT RANGE FROM 40 TO 250 BAR, OTHER RANGES AVAILABLE ON REQUEST.

AM3-MP/10 CETOP 03 RELIEF VALVE

CETOP 03 STACKABLE PRESSURE RELIEF VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE ON FREE LINES = 60 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 PILOT OPERATED VALVE

ORDER CODE	MAX PRESSURE (Bar)	ADJUSTMENT RANGE *	SIZE
AM3-MP-P	320	20-210 BAR	CETOP 03
AM3-MP-B	320	20-210 BAR	CETOP 03
AM3-MP-BA	320	20-210 BAR	CETOP 03

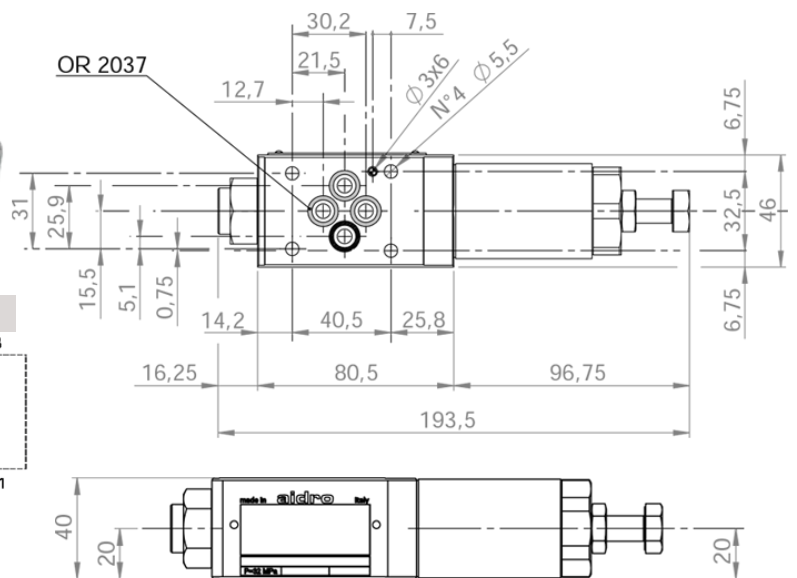
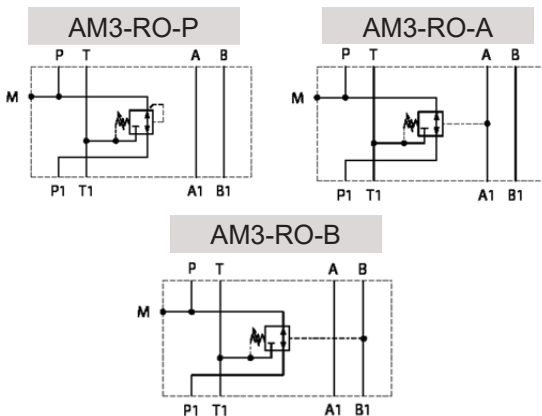


* STANDARD ADJUSTMENT RANGE FROM 20 TO 210 BAR, OTHER RANGES AVAILABLE ON REQUEST.

AM3-RO CETOP 03 PRESSURE REDUCING VALVE

CETOP 03 STACKABLE PRESSURE REDUCING VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE ON FREE LINES = 60 L/MIN
 MAXIMUM FLOW RATE ON CONTROLLED LINES = 40 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 DIRECT OPERATED 3 WAY VALVE

ORDER CODE	MAX PRESSURE (Bar)	ADJUSTMENT RANGE *	SIZE
AM3-RO-P	320	60-280 BAR	CETOP 03
AM3-RO-A	320	60-280 BAR	CETOP 03
AM3-RO-B	320	60-280 BAR	CETOP 03



* STANDARD ADJUSTMENT RANGE FROM 60 TO 280 BAR, OTHER RANGES AVAILABLE ON REQUEST.

CETOP 05 SOLENOID CONTROL VALVES



CETOP 05 DIRECTIONAL CONTROL VALVE (SOLENOID OPERATED)
 MOUNTING FACE DIMENSIONS TO ISO 4401 (DIN 24340)
 NOMINAL FLOW = 120 L/MIN
 MAXIMUM NOMINAL PRESSURE ON PORTS A,B + P = 320 BAR
 MAXIMUM PRESSURE ON T PORT = 210 BAR
 PROTECTION TO DIN 40050 (IP65)
 PHOSPHATED HOUSING FOR 240H SALT SPRAY PROTECTION
 COIL CONNECTIONS = ISO 4400 (DIN 43650-A)

HD5-ES/20 ORDERING CODES - MAX PRESSURE 32MPa - 320 BAR

HD5 - ES - 1C - * - 024C /20

TYPE	CODE
4-WAY CETOP 5	HD5

SOLENOID OPERATED **ES**

CODE	SPECIAL OPTION
DR	SOLENOID CHAMBER DRAINING
K	WATERPROOF CAPS ON EMERGENCY PIN

DESIGN NUMBER

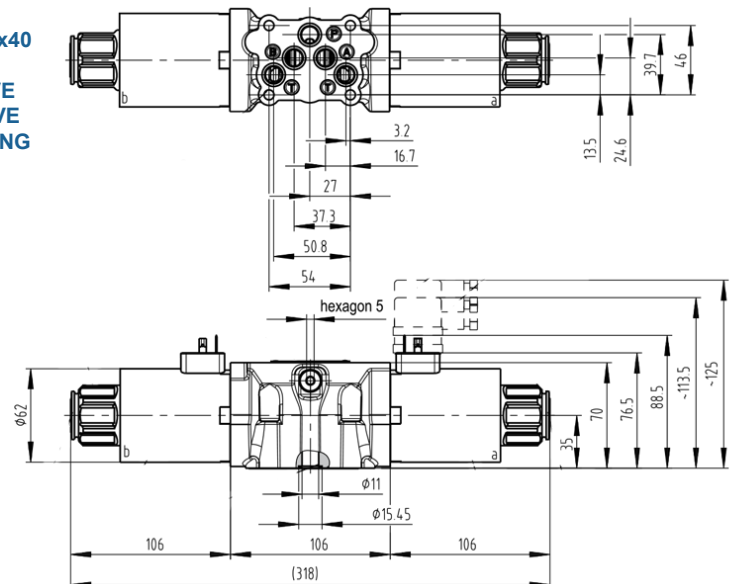
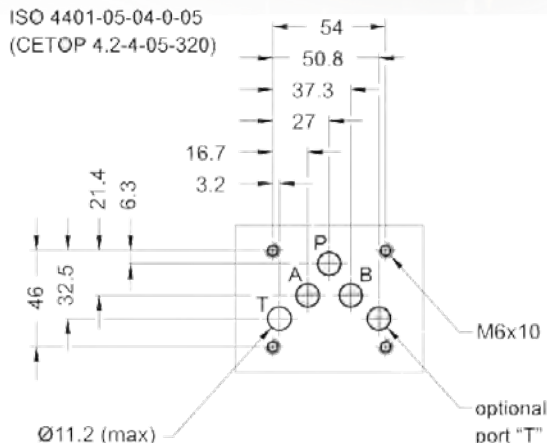
SPOOL TYPES	CODE	CODE	SPOOL TYPES
	0C	4ML	
	1C	0LL	
	3C	1LLB	
	4C	1LL	
	0ML	2LL	
	1ML		
	3ML		

COIL TYPE	CODE
NO COILS	0000
V12DC COILS	012C
V24DC COILS	024C
V110/50 - V115/60 AC COILS	115A
V220/50 - V230/60 AC COILS	230A

* STANDARD COIL CONNECTIONS SUPPLIED AS PER DIN 43650-A (ISO 4400). OTHER CONNECTIONS AVAILABLE ON REQUEST.

MOUNTING AND INSTALLATION DIMENSIONS

ALL HD5 VALVES CONFORM WITH ISO AND CETOP SPECIFICATIONS. WHEN ASSEMBLED TO THE MOUNTING PLATE VALVE HD5 MUST BE FASTENED WITH 4 BOLTS M6x40 (OR M6x** ACCORDING TO THE NUMBER OF MODULES) TIGHTENED TO 12Nm TORQUE. LEAKAGE BETWEEN VALVE AND MOUNTING SURFACE IS PREVENTED BY THE POSITIVE COMPRESSION ON THEIR SEATS OF 5 SEALS OF QUAD RING TYPE 12.42x1.68x1.68



CETOP 05 VALVE SPECIFICATION

TECHNICAL DATA

SPECIFICATIONS	
NOMINAL FLOW	120 L/MIN
MAXIMUM NOMINAL PRESSURE (P, A, B)	32 Mpa (320 BAR)
MAXIMUM PRESSURE ON T PORT	21 Mpa (210 BAR)
PRESSURE DROPS	SEE FIG.1 BELOW
PROTECTION TO DIN 40050	IP 65
DUTY CYCLE	100%
MASS	3.9 - 5.4 KG
INSTALLATION AND DIMENSIONS	SEE PAGE 95

ELECTRIC CHARACTERISTICS

VALVE TYPE HD5-ES ARE OPERATED BY SOLENOIDS THAT ARE ENERGIZED:

DIRECTLY FROM A D.C VOLTAGE SUPPLY:
 V 12 DC = 012C , V 24 DC = 024C

BY THE USE OF COILS THAT INCORPORATE A FULL WAVE BRIDGE RECTIFIER, FROM A.C VOLTAGE SUPPLY:
 V 110/50 V - 115/60 = 115A
 V 220/50 V - 220/60 = 230A

OTHER AVAILABLE VOLTAGES ARE: 014C ; 048C ; 060C ; 102C ; 205C & V24/50 = 024A

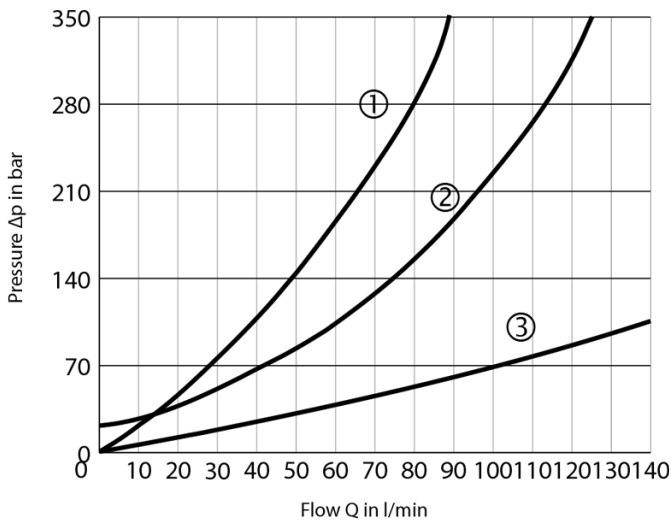
ALL CONNECTIONS MUST CONFORM TO ISO 4400 (DIN43650) AND ELECTRIC CIRCUITRY MUST BE ABLE TO CARRY THE FOLLOWING RATED CURRENT VALUES:

V 12 DC = 2.4 A V 115/50 = 0.26 A
 V 24 DC = 1.2 A V 230/50 = 0.14 A

COILS WITH 2 ELECTRIC PINS, CONFORMING WITH AMP CONNECTORS, ARE ONLY AVAILABLE FOR DC SUPPLY (EXAMPLE OF CODE: B02-012C AMP).

PERMISSIBLE SUPPLY VOLTAGE VARIATION: +/- 10%

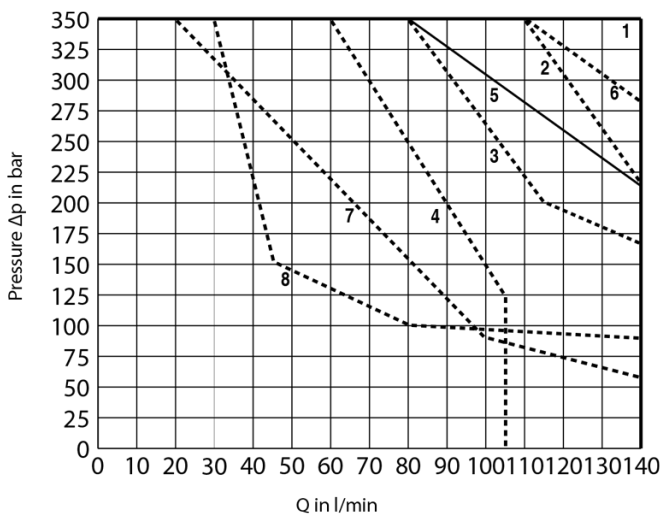
PRESSURE DROPS



TYPICAL DIFFERENCE p-Q CURVES FOR VALUES HD5-ES IN STANDARD CONFIGURATION, WITH MINERAL OIL AT V=32 mm²/s AND T = 40°C

SPOOL	P - A	P - B	A - T	B - T	P - T
0C	1	1	2	2	1
1C	1	1	2	2	-
3C	1	1	2	2	-
4C	3	3	4	4	1
0ML	-	1	2	-	1
1ML	-	1	2	-	-
3ML	-	1	2	-	-
4ML	3	-	-	4	1
0LL	1	1	1	3	-
1LLB	1	1	2	2	-
1LL	1	1	2	2	-
2LL	1	1	-	-	-

HYDRAULIC LIMIT OF USE



0C	1C	3C	4C	0ML	1ML	3ML	4ML	0LL	1LLB	1LL	2LL
1	1	5	3	1	1	5	3	2	2	2	8

HYDRAULIC FLUID

SEALS AND MATERIALS USED ON STANDARD VALVES HD5 ARE FULLY COMPATIBLE WITH HYDRAULIC FLUIDS OF MINERAL BASE, UPGRADED WITH ANTIFOAMING AND ANTI OXIDIZING AGENTS.

THE HYDRAULIC FLUID MUST BE KEPT CLEAN AND FILTERED TO ISO 4406 CLASS 19/17/14, OR BETTER, AND USED IN A RECOMMENDED VISCOSITY RANGE FROM 10 cSt TO 60 cSt.

FOR COMPLETE RANGE
AND TECHNICAL DATA

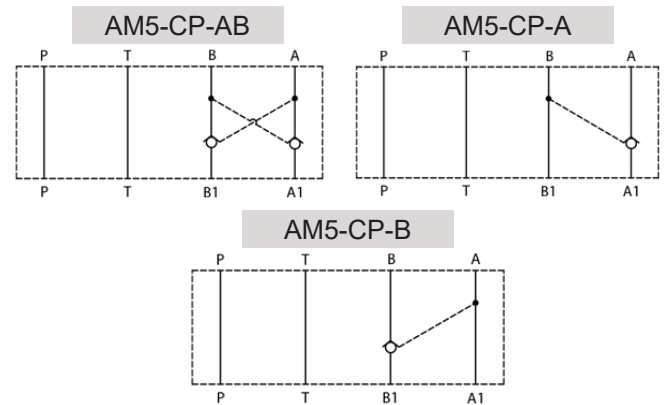
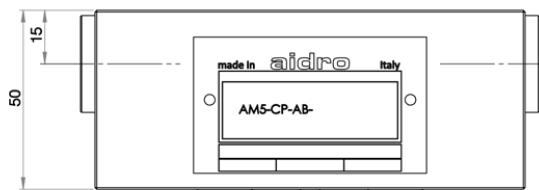
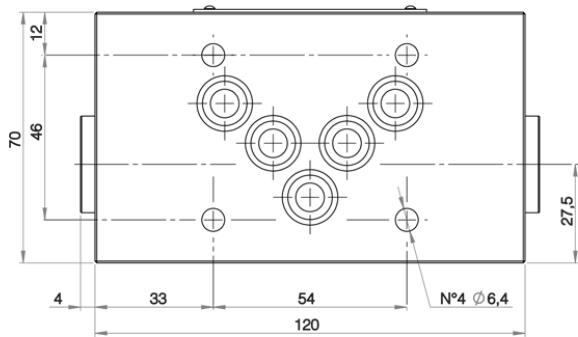
VISIT:

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AM5-CP/10 CETOP 05 CHECK VALVE

ORDER CODE	TYPE	MAX PRESSURE (Bar)	PILOT RATIO (Approx)	SIZE
AM5-CP-AB	D/A	320	5.6	CETOP 05
AM5-CP-A	S/A	320	5.6	CETOP 05
AM5-CP-B	S/A	320	5.6	CETOP 05

CETOP 05 STACKABLE PILOT OPERATED CHECK VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE = 100 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 CHECK VALVE CRACKING PRESSURE = 2 BAR (APPROX)

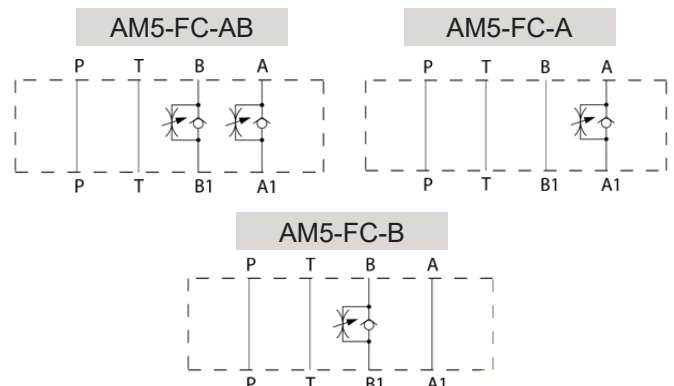
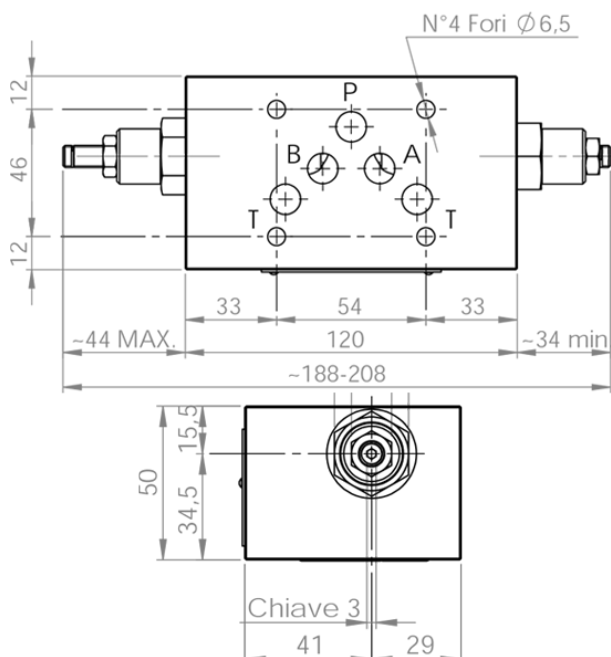


FOR COMPLETE TECHNICAL SPECIFICATIONS PLEASE CONTACT OUR SALES OFFICE OR DOWNLOAD THE AIDRO CATALOGUE FROM OUR WEBSITE WWW.STEERFORTH.CO.UK

AM5-FC/10 CETOP 05 FLOW CONTROL VALVE

ORDER CODE	MAX PRESSURE (Bar)	CHECK VALVE OPENING PRESSURE	SIZE
AM5-FC-AB	320	0.4 BAR	CETOP 05
AM5-FC-A	320	0.4 BAR	CETOP 05
AM5-FC-B	320	0.4 BAR	CETOP 05

CETOP 05 STACKABLE FLOW CONTROL VALVE
 ONE WAY FLOW CONTROL WITH METER OUT CONTROL
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE = 100 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR

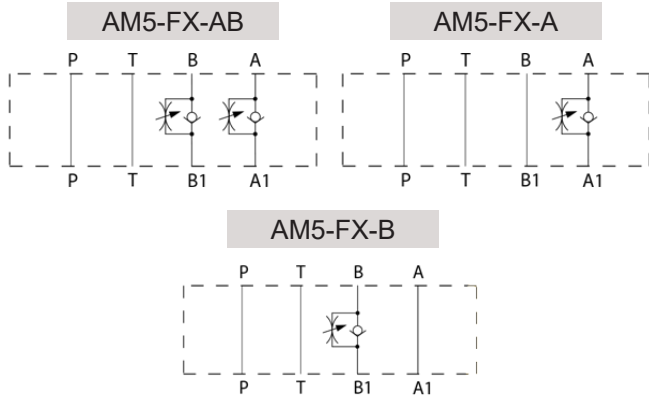
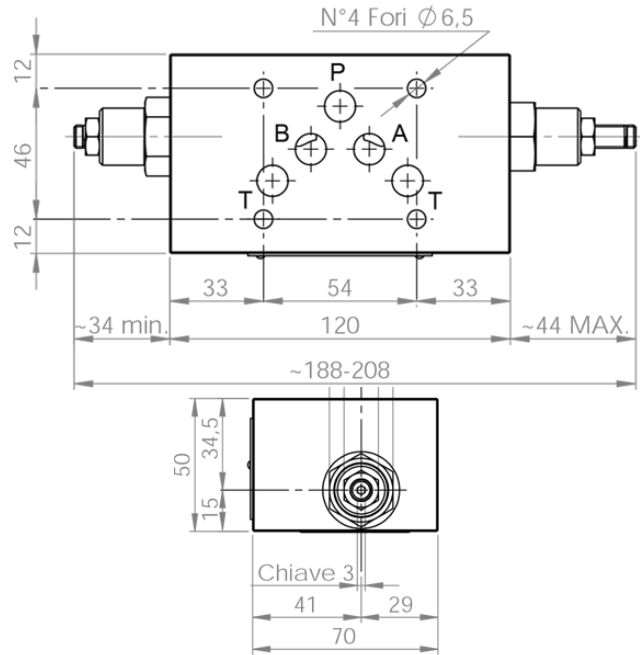


FOR COMPLETE TECHNICAL SPECIFICATIONS PLEASE CONTACT OUR SALES OFFICE OR DOWNLOAD THE AIDRO CATALOGUE FROM OUR WEBSITE WWW.STEERFORTH.CO.UK

AM5-FX/10 CETOP 05 FLOW CONTROL VALVE

CETOP 05 STACKABLE FLOW CONTROL VALVE
 ONE WAY FLOW CONTROL WITH METER IN CONTROL
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE = 100 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR

ORDER CODE	MAX PRESSURE (Bar)	CHECK VALVE OPENING PRESSURE	SIZE
AM5-FX-AB	320	0.4 BAR	CETOP 05
AM5-FX-A	320	0.4 BAR	CETOP 05
AM5-FX-B	320	0.4 BAR	CETOP 05

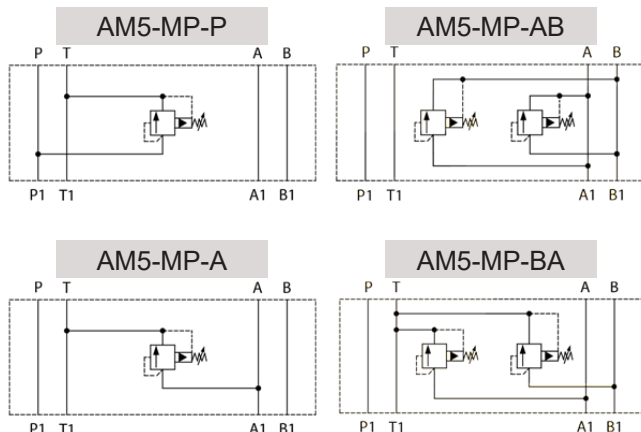
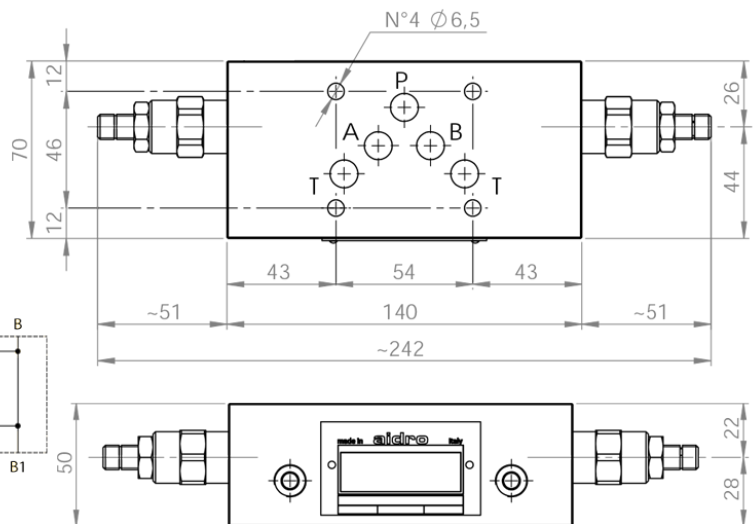


FOR COMPLETE TECHNICAL SPECIFICATIONS PLEASE CONTACT OUR SALES OFFICE OR DOWNLOAD THE AIDRO CATALOGUE FROM OUR WEBSITE WWW.STEERFORTH.CO.UK

AM5-MP/10 CETOP 05 RELIEF VALVE

CETOP 05 STACKABLE PRESSURE RELIEF VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE ON FREE LINES = 100 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 PILOT OPERATED VALVE

ORDER CODE	MAX PRESSURE (Bar)	ADJUSTMENT RANGE *	SIZE
AM5-MP-P	320	20-210 BAR	CETOP 05
AM5-MP-B	320	20-210 BAR	CETOP 05
AM5-MP-BA	320	20-210 BAR	CETOP 05
AM5-MP-AB	320	20-210 BAR	CETOP 05

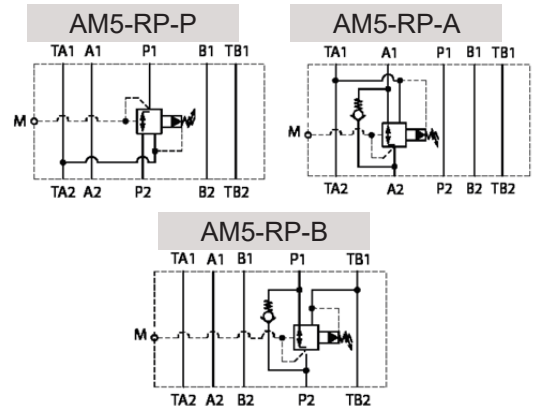
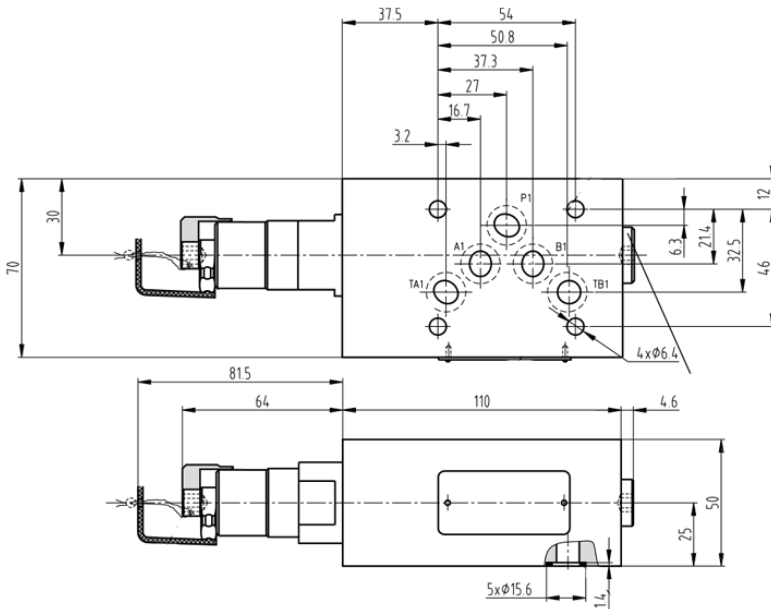


* STANDARD ADJUSTMENT RANGE FROM 20 TO 210 BAR, OTHER RANGES AVAILABLE ON REQUEST.

AM5-RP CETOP 05 PRESSURE REDUCING VALVE

ORDER CODE	MAX PRESSURE (Bar)	ADJUSTMENT RANGE *	SIZE
AM5-RP-P	320	5-70 BAR	CETOP 05
AM5-RP-A	320	5-70 BAR	CETOP 05
AM5-RP-B	320	5-70 BAR	CETOP 05

CETOP 05 STACKABLE PRESSURE REDUCING VALVE
 MOUNTING FACE DIMENSIONS TO ISO 4401-03 (DIN 24340)
 MAXIMUM FLOW RATE ON FREE LINES = 100 L/MIN
 MAXIMUM FLOW RATE ON CONTROLLED LINES = 80 L/MIN
 MAXIMUM NOMINAL PRESSURE = 320 BAR
 PILOT OPERATED 3 WAY VALVE (PILOT FLOW RATE 0.7 L/MIN)



OTHER ITEMS AVAILABLE IN THE RANGE



ISO MONOBLOCK MANIFOLDS
 1 > 8 SECTIONS, CETOP 03 > 05

SOLENOID CARTRIDGE VALVES
 VARIOUS TYPES AND CAVITIES AVAILABLE.



LEVER OPERATED VALVES
 VARIOUS SPOOL OPTIONS AVAILABLE.



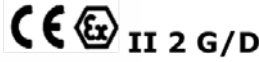
ATEX VALVES
 EXPLOSION PROOF SOLENOID VALVES INCLUDING DIRECTIONAL & PROPORTIONAL 2+3 WAY CARTRIDGES.



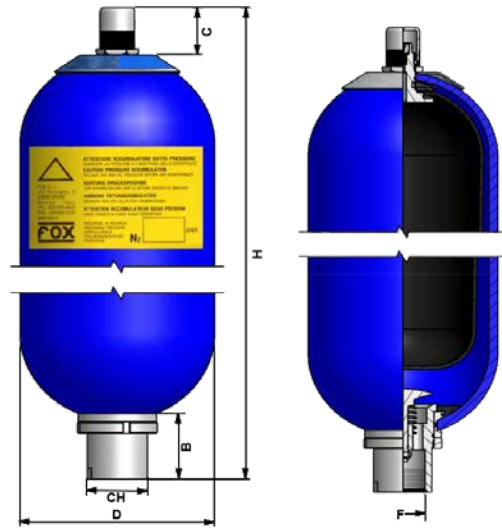
SOLENOID COILS
 VARIOUS STYLES AND SIZES TO SUIT ALL VARIETY OF VALVES.

HB BLADDER HYDROPNEUMATIC ACCUMULATOR

BOTTOM REPAIRABLE BLADDER ACCUMULATOR
MAXIMUM WORKING PRESSURE = 330/350 BAR
PAINTED FORGED STEEL BODY
WORKING TEMPERATURE = -20°C TO +80°C
INSTALLATION POSITION = VERTICAL



According to:
 - 97/23/CE - PED
 - 94/9/CE - ATEX Group II Cat 2
 - ASME-USTAMP
 - GOST-R (Russia)
 - SELO (China)



* SUPPLIED UNCHARGED

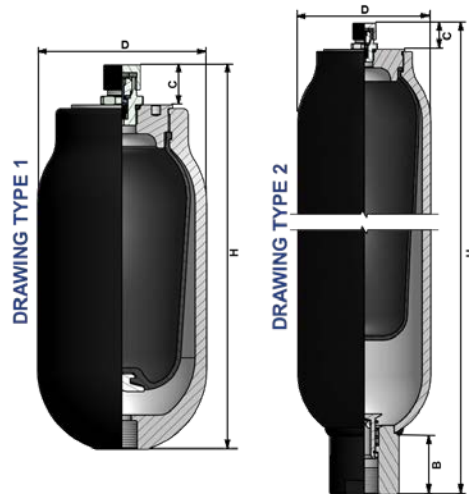
ORDER CODE	MAX PRESSURE (Bar)	NITROGEN VOLUME (Ltr)	MAX N2 PRECHARGE (Bar)	H (mm)	D (mm)	C (mm)	B (mm)	CH (mm)	HYDRAULIC CONNECTION	NITROGEN CONNECTION	MAX FLOW (Lpm)	WEIGHT (Kgs)
HB1	350	1	230	295	114	55	52	36	3/4" BSP	5/8" - 18 UNF (1/4" BSP AVAILABLE ON REQUEST)	220	4.5
HB1.5		1.5		357		55	52	36	3/4" BSP		220	5.5
HB2.5		2.5		520		58					220	12
HB4.5		4		410	168	58	63	50	1 - 1/4" BSP		400	16
HB6		6		505							350	19.5
HB10		10		775							300	36
HB10/2	330	10		550	223	100	70	2" BSP	630	48		
HB20		18.5	870	600					53			
HB25		24.9	1030	570					62			
HB35		33.5	1400	540					84			
HB50		49	1900	500					115			

HTR BLADDER HYDROPNEUMATIC ACCUMULATOR

TOP REPAIRABLE BLADDER ACCUMULATOR
MAXIMUM WORKING PRESSURE = 150/210/250 BAR
PAINTED CARBON STEEL BODY
WORKING TEMPERATURE = -20°C TO +80°C
INSTALLATION POSITION = VERTICAL OR HORIZONTAL



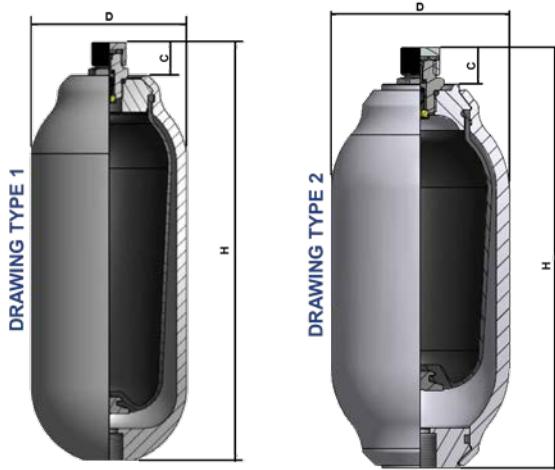
According to:
 - 97/23/CE - PED
 - 94/9/CE - ATEX Group II Cat 2
 - ASME VIII Div.1
 - GOST-R (Russia)
 - SELO (China)



* SUPPLIED UNCHARGED

ORDER CODE	MAX PRESSURE (Bar)	NITROGEN VOLUME (Ltr)	MAX N2 PRECHARGE (Bar)	H (mm)	D (mm)	C (mm)	B (mm)	HYDRAULIC CONNECTION	NITROGEN CONNECTION	MAX FLOW (Lpm)	WEIGHT (Kgs)	DRG TYPE
HTR1.5	250	1.5	160	280	115	15	25	M18 x 1.5	5/8" - 18 UNF (1/4" BSP AVAILABLE ON REQUEST)	40	5.3	1
HTR2.5		2.5		483			50	110		11.5		
HTR3		2.8		495			50	260		12.8		
HTR4.5	210	4.5	140	395	170	20	80	1-1/4" BSP	400	15	2	
HTR6.5		6.5		520			60	350	24			
HTR10		10		760			80	300	31			
HTR10/2	150	10	100	540	220	15	125	2" BSP	630	33		
HTR20		19.5		845			600	59				
HTR35		35		1500			540	90				
HTR50		50		1990			500	121				

H BLADDER TYPE ACCUMULATOR



NON REPAIRABLE BLADDER ACCUMULATOR
MAXIMUM WORKING PRESSURE = 210/250 BAR
PAINTED COLD FORM STEEL BODY
WORKING TEMPERATURE = -20°C TO +80°C
INSTALLATION POSITION = VERTICAL OR HORIZONTAL



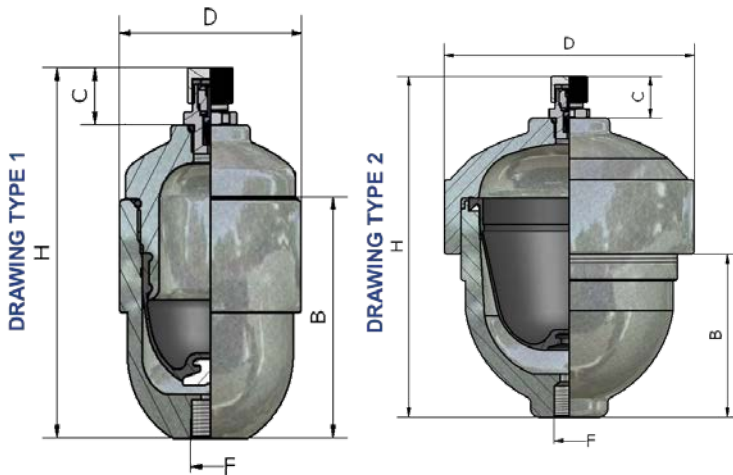
According to:
 - 97/23/CE - PED
 - 94/9/CE - ATEX Group II Cat 2
 - GOST-R (Russia)
 - SELO (China)



* SUPPLIED UNCHARGED

ORDER CODE	MAX PRESSURE (Bar)	NITROGEN VOLUME (Ltr)	MAX N2 PRECHARGE (Bar)	H (mm)	D (mm)	C (mm)	HYDRAULIC CONNECTION	NITROGEN CONNECTION	MAX FLOW (Lpm)	WEIGHT (Kgs)	DRG TYPE
H120R	250	0.12	160	145	50	23	M18 x 1.5	5/8" - 18 UNF (M28x1.5 AVAILABLE ON REQUEST)	35	1	1
H150R		0.15		135	70				40	1.2	1
H350R		0.35		190	70				35	1.7	1
H500R		0.45		167	92				50	1.9	1
H700R		0.7		220	92				40	2.7	1 & 2
H990R		0.99		251	92				50	3.4	1 & 2
H1000R		1		200	115				50	3.5	1 & 2
H1400R		1.4		270	115				40	4.9	1 & 2
H2000R		2		350	115				40	5.8	1
H3000R		250		2.8	160				400	115	1/2" BSP
H4000R	210	3.8	135	320	170	3/4" BSP	80	14	1		

HST DIAPHRAGM TYPE ACCUMULATOR



TOP REPAIRABLE DIAPHRAGM ACCUMULATOR
MAXIMUM WORKING PRESSURE = 300 BAR
PAINTED CARBON STEEL BODY
WORKING TEMPERATURE = -20°C TO +90°C
INSTALLATION POSITION = ANY



According to:
 - 97/23/CE - PED
 - 94/9/CE - ATEX Group II Cat 2
 - GOST-R (Russia)
 - SELO (China)



* SUPPLIED UNCHARGED

ORDER CODE	MAX PRESSURE (Bar)	NITROGEN VOLUME (Ltr)	MAX N2 PRECHARGE (Bar)	H (mm)	D (mm)	C (mm)	B (mm)	HYDRAULIC CONNECTION	NITROGEN CONNECTION	MAX FLOW (Lpm)	WEIGHT (Kgs)	DRG TYPE
HST0.05	300	0.05	210	98	60	22	68	3/8" BSP	5/8" - 18 UNF (1/4" BSP AVAILABLE ON REQUEST)	35	1.1	1
HST0.12		0.12		151	53		130	45		1.9	1	
HST0.15		0.15		141	80		94	45		2.1	1	
HST0.35		0.35		152	101		100	50		3.2	1	
HST0.5		0.5		175	124		120	60		5	1	
HST0.7		0.7		218	100		80	55		5.5	1	
HST0.8		0.8		185	138		85	60		5.8	2	
HST1.3		1.3		232	125		180	55		7.9	1	
HST1.5		1.5		270	138		160	55		8.7	2	
HST2.3		2.3		340	138		165	55		10.5	2	

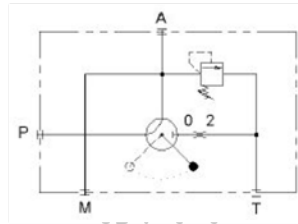


SB SAFETY BLOCKS

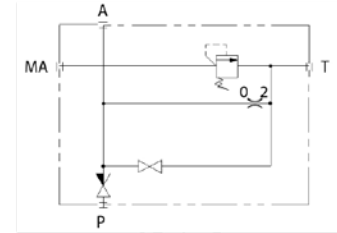
MAXIMUM WORKING PRESSURE = 350 BAR
 BODY = ZINC COATED FORGED STEEL
 WORKING TEMPERATURE = -20°C TO +80°C
 STANDARD FEATURES:

- ISOLATION BALL VALVE
- SAFETY RELIEF VALVE
- DRAIN PORT
- GAUGE PORT
- ELECTRIC SOLENOID VALVE FOR ACCUMULATOR DISCHARGE

MANUAL VERSION

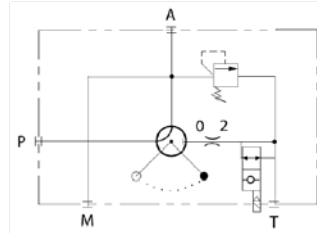


SB 1 - 2 - 3

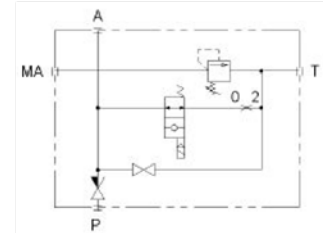


SB 4 - 5

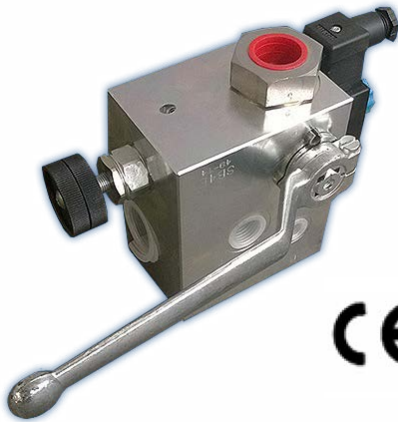
ELECTRICAL / MANUAL VERSION



SB 1 - 2 - 3 E



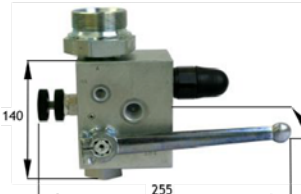
SB 4 - 5 E



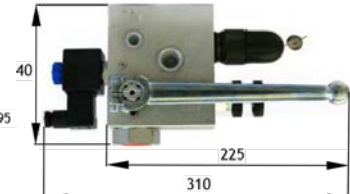
SB 1-2-3



SB 1-2-3 E



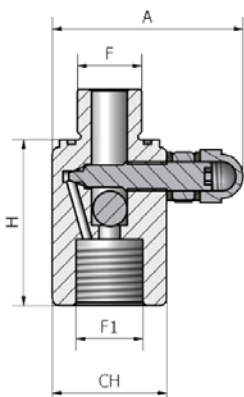
SB 1-2-3 E



SB 4-5 E

ORDER CODE	TYPE	RECOMMENDED ACCUMULATORS	HYDRAULIC CONNECTION ACCUMULATOR SIDE	HYDRAULIC CONNECTION INSTALLATION SIDE	HOLE DIA FOR FLUID (mm)	FLOW RATE (Ltr/Min)
SB1	MANUAL	SIZES FROM 2.5L - 10L	3/4" BSP MALE	1/2" BSP FEMALE	10	55 Ltr/Min at 10 M/S
SB1E	ELECTRIC		3/4" BSP MALE			
SB2	MANUAL		1-1/4" BSP MALE			
SB2E	ELECTRIC		1-1/4" BSP MALE			
SB3	MANUAL	SIZES FROM 10L - 50L	2" BSP MALE	3/4" BSP FEMALE	20	190 Ltr/Min at 10 M/S
SB3E	ELECTRIC		2" BSP MALE			
SB4	MANUAL	SIZES FROM 2.5L - 10L	1-1/4" BSP MALE	3/4" BSP FEMALE	20	190 Ltr/Min at 10 M/S
S4E	ELECTRIC		1-1/4" BSP MALE			
SB5	MANUAL	SIZES FROM 20L - 50L	2" BSP MALE	1-1/2" BSP FEMALE	32	295 Ltr/Min at 6 M/S
SB5E	ELECTRIC		2" BSP MALE			
SB6	MANUAL		2" BSP MALE			
SB6E	ELECTRIC		2" BSP MALE			

VSA FLOW RATE REGULATORS



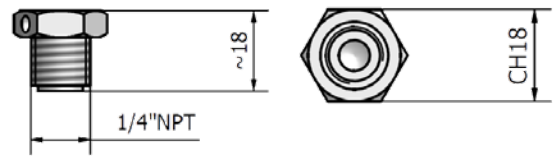
ORDER CODE	MAX PRESSURE (Bar)	MAX FLOW WITHOUT ACCUMULATOR *	F1 ACCUMULATOR SIDE	F INSTALLATION SIDE	H (mm)	A (mm)	CH (mm)	WEIGHT (Kgs)
VSA18	330	50 Ltr/Min	M18x1.5	M18x1.5	45	53	32	0.3
VSA21	330	50 Ltr/Min	M18x1.5	1/2" BSP	45	53	32	0.3
VSA34	330	90 Ltr/Min	3/4" BSP	3/4" BSP	57	65	36	0.45

* INCREASES FOLLOWING A FUNCTION DIRECTY PROPORTIONAL TO THE VALUE OF THE NITROGEN PRECHARGE.

RD RUPTURE DISKS

SPECIFICATIONS

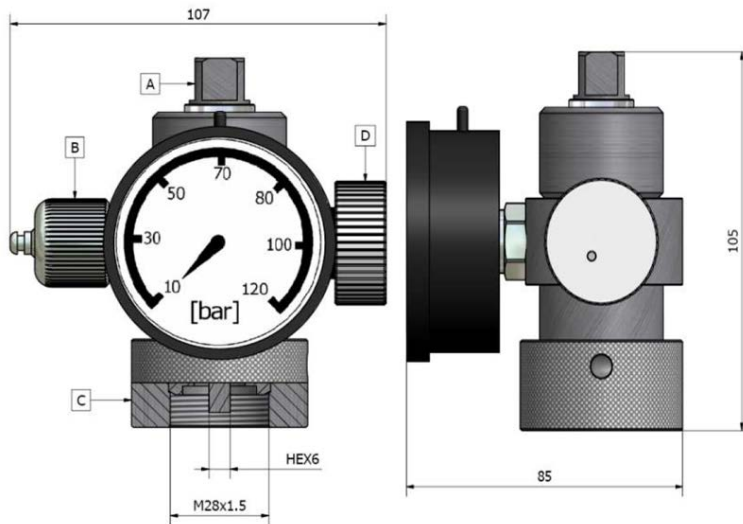
- NOT REPAIRABLE	- RADIAL DISCHARGE
- BODY MATERIAL = ASTM A240 316L	- RUPTURE PRESSURE AVAILABLE ON REQUEST
- DISC MATERIAL = ASTM A240 316L	- RUPTURE TEMPERATURE 80°C
- SEAL MATERIAL = ASTM A240 316L	- ACCURACY = +/- 10%
- HYDRAULIC CONNECTION = 1/4" NPT	- ACCORDING TO 97/23/CE (CE0426)



ORDER CODE

RD-14

ARM28 FILLING AND CONTROL KIT



MAXIMUM WORKING PRESSURE = 400 BAR
 BODY = STEEL WITH PHOSPHATE COATING
 2.5m FLEXIBLE NITROGEN BOTTLE HOSE (3/8" BSP)
 NIPPLE TO CONNECT TO PRESSURE REDUCER
 STANDARD ACCUMULATOR CONNECTION = M28x1.5
 CARRY CASE INCLUDED



ORDER CODE	PRESSURE GAUGE RANGE (Bar)
ARM28/1.0	0 TO 6 BAR
ARM28/1.1	0 TO 16 BAR
ARM28/1	0 TO 40 BAR
ARM28/2	0 TO 60 BAR
ARM28/3	0 TO 100 BAR
ARM28/4	0 TO 160 BAR
ARM28/5	0 TO 250 BAR
ARM28/6	0 TO 400 BAR

ARM28 LEGEND	
A	SQUARE 14mm
B	NITROGEN CONNECTION
C	RING NUT
D	DISCHARGE VALVE

INSTRUCTIONS

HOW TO CHECK NITROGEN PRESSURE:

A) MAKE SURE THERE'S NO PRESSURE IN THE CIRCUIT WHICH THE ACCUMULATOR IS TO BE INSTALLED, SCREW THE DEVICE ONTO THE ACCUMULATORS NITROGEN VALVE.

B) SCREW OFF THE KNOB OF THE NITROGEN DISCHARGE VALVE (D) AND TURN THE SQUARE KEY (A) UNTIL THE PRESSURE GAUGE SHOWS THE INTERNAL PRESSURE.

C) IN ORDER TO REDUCE THE PRESSURE SLOWLY SCREW THE KNOB OF THE DISCHARGE VALVE (D) UNTIL THE DESIRED VALUE IS REACHED; SCREW OFF TO MAKE THE VALVE CLOSE ITSELF. UNSCREW THE SQUARE KEY (A) COMPLETELY AND THE KNOB OF THE NITROGEN DISCHARGE VALVE (D) TO ELIMINATE RADIAL PRESSURE. FINALLY REMOVE THE DEVICE FROM THE ACCUMULATOR, TAKING CARE TO RE-INSTALL THE PROTECTION CAP OF THE FILLING VALVE TURNING IT STRONGLY.

RELOADING:

REPEAT THE ABOVE OPERATIONS, CONNECTING THE QUICK RELEASE COUPLING TO THE NITROGEN BOTTLE BEFORE OPENING THE SQUARE KEY. START FILLING NITROGEN VERY SOFTLY TO LET THE DIAPHRAGM PROGRESSIVELY ADAPT TO THE INCREASING PRESSURE. IT IS MANDATORY TO INSTALL A GAS PRESSURE REDUCER ON THE BOTTLE IN ORDER TO AVOID OVER-PRESSURIZATION OF THE ACCUMULATOR BODY DURING FILLING OPERATIONS, AS IT MAY COMPROMISE SECURITY FEATURES. WE RECOMMEND A PERIODIC MONITORING OF THE NITROGEN PRE-CHARGE EVERY SIX MONTHS.

ADAPTERS

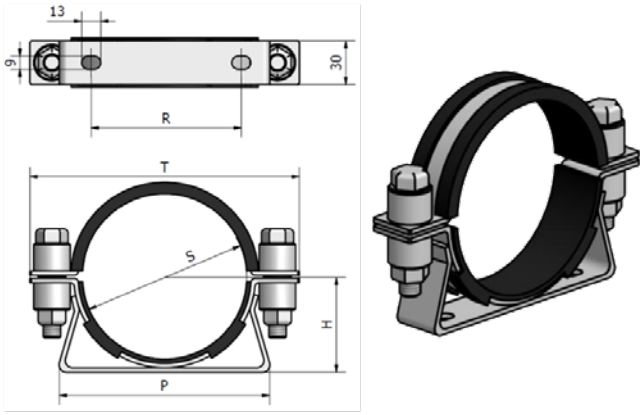


RID2858

ORDER CODE	ADAPTER TYPE
RID2858	M28x1.5 TO 5/8" UNF
RID132	5/8" UNF TO 1/32" UNF
RID78	5/8" UNF TO 7/8" UNF

CLAMPS AND BRACKETS

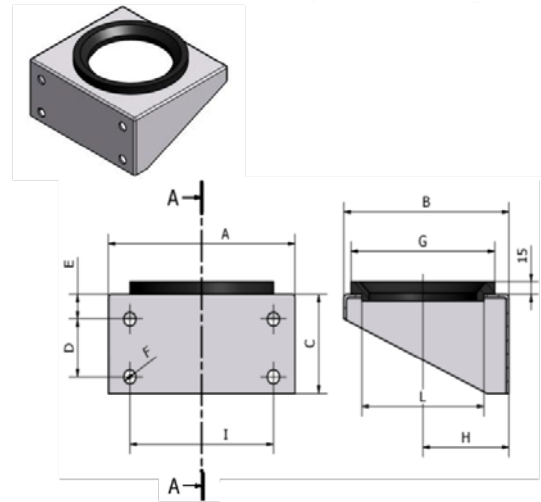
CR - CLAMP



ORDER CODE	S (mm)	R (mm)	T (mm)	H (mm)	P (mm)
CR114	114 - 116	100	180	66	137
CR168	168 - 172	148	230	93	180
CR223	216 - 225	216	290	110	253

* AVAILABLE IN STAINLESS STEEL ON REQUEST.

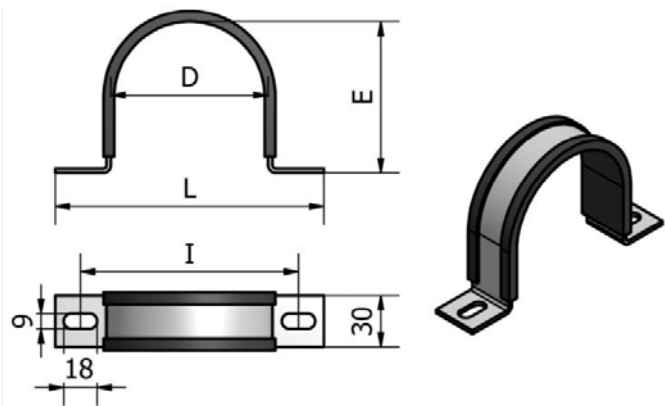
MCR - BRACKET



ORDER CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	L (mm)
MCR168	200	175	90	40	30	11	140	93	140	120
MCR223	260	230	120	70	30	16	200	120	200	170

* AVAILABLE IN STAINLESS STEEL ON REQUEST.

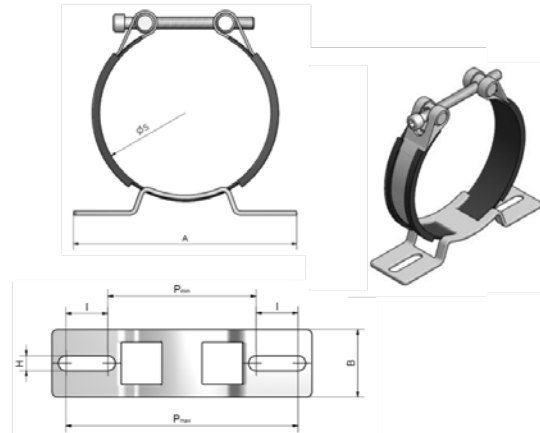
CRE - CLAMP



ORDER CODE	L (mm)	I (mm)	D (mm)	E (mm)
CRE70	125	99	70	68
CRE92	150	125	92	90
CRE100	165	140	100	98
CRE115	185	160	115	113
CRE125	190	165	125	123
CRE138	215	190	138	136

* AVAILABLE IN STAINLESS STEEL ON REQUEST.

CRO - CLAMP

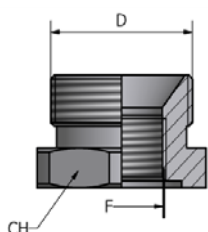


ORDER CODE	Ø S (mm)	A (mm)	B (mm)	H (mm)	I (mm)	P (MIN) (mm)	P (MAX) (mm)
CRO70	68 - 73	156	50	9	17	100	136
CRO92	92 - 101	156	50	9	17	100	136
CRO114	109 - 117	156	50	9	17	100	136
CRO125	117 - 126	156	50	9	17	100	136
CRO168	158 - 169	156	50	9	17	100	136

* AVAILABLE IN STAINLESS STEEL ON REQUEST.

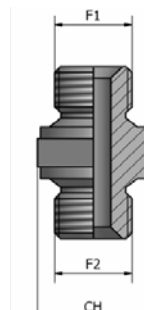
ADAPTOR FITTINGS

VS - MALE TO FEMALE ADAPTOR



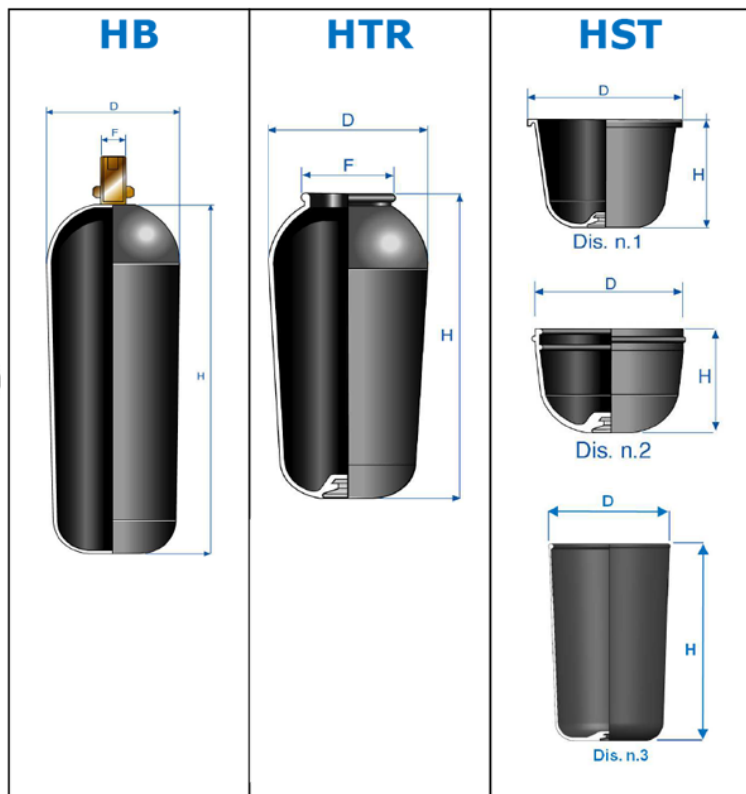
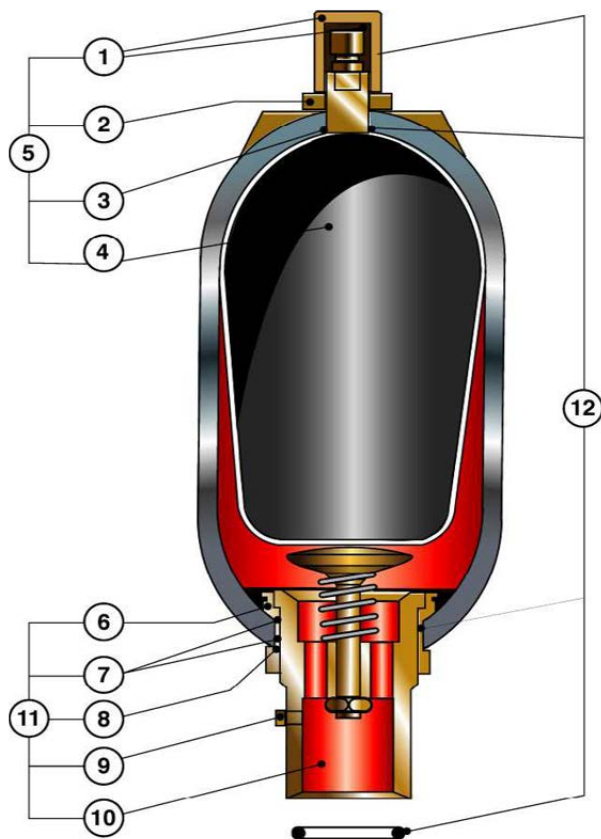
ORDER CODE	D	F (bsp)	CH (mm)
VS21	M18x1.5	1/2"	32
VS34	1-1/4" BSP	3/4"	50
VS214	2" BSP	1-1/4"	70
VS234	2" BSP	3/4"	70

NS - MALE TO MALE ADAPTOR



ORDER CODE	F1	F2 (bsp)	CH (mm)
NS15	M18x1.5	3/8"	27
NS21	M18x1.5	1/2"	27

MAINTENANCE AND REPAIR



ACCUMULATOR LEGEND

1	VALVE CAP + GASKET	7	BACK-UP RING
2	NUT	8	THREADED SLEEVE
3	O-RING SEAL	9	DRAIN SCREW
4	BLADDER	10	VALVE HOUSING
5	BLADDER WITH SEAL	11	COMPLETE FLUID VALVE
6	RUBBER/METAL RING	12	SEAL SET

HOW TO ORDER

PLEASE ALWAYS INDICATE: TYPE, SERIAL NUMBER, DIAMETER SIZE OF THE OPENING AT THE NITROGEN VALVE SIDE.

STANDARD BLADDERS:

IN THE TABLE BELOW ARE THE DIMENSIONS OF BLADDERS FOR ALL THE STANDARD VOLUMES. ALL OF THE STANDARD BLADDERS ARE SUPPLIED WITH NITROGEN VALVE 5/8" UNF THREAD, LOCKING NUT AND PROTECTION CAP. STANDARD BLADDERS ARE COMPATIBLE WITH MANY OTHER TYPES OF ACCUMULATORS WITH THE SAME CAPACITY, NITROGEN SIDE CONNECTIONS WITH DIFFERENT PORT ARE AVAILABLE.

SPECIAL BLADDERS AND DIAPHRAGMS:

FOX CAN OFFER A LARGE RANGE OF BLADDERS AND DIAPHRAGMS IN DIFFERENT MATERIALS AS BELOW:

- NITRILE (NBR) - BUTILE - NEOPRENE - EPDM - PVC
- ALIMENTAR - HYTREL (DU PONT) - FPM (VITON)

HB BLADDERS - VOLUME IN LITRES

	2.5 LTR	4.5 LTR	5 LTR	6 LTR	10 LTR	20 LTR	25 LTR	35 LTR	50 LTR
D (mm)	93	145	93	145	145	198			
H (mm)	350	210	680	310	600	600	740	1110	1500
F (mm)	22.25					25.25 (50 Available)			

HTR BLADDERS - VOLUME IN LITRES

	0.3 LTR	0.35 LTR	0.7 LTR	1.5 LTR	2.5 LTR	4.5 LTR	5 LTR	10 LTR	20 LTR	35 LTR	50 LTR
D (mm)	56	74	74	95	95	142	93	142	198		
H (mm)	120	88	150	190	300	240	680	600	1110	1500	1500
F (mm)	41	53	53	68	68	74	74	74	22.25		

HST BLADDERS - VOLUME IN LITRES

	0.05 LTR	0.1 LTR	0.35 LTR	0.5 LTR	0.7 LTR	0.8 LTR	1.3 LTR	1.5 LTR	2.3 LTR	4.5 LTR	10LTR
D (mm)	44	60	80	100	75	110				150	
H (mm)	29	50	55	75	110	80	130	160	250	500	
DRG NO	1	2				1	2	1	3		

HST BLADDER TYPES



MAM HYDRAULIC MOTORS

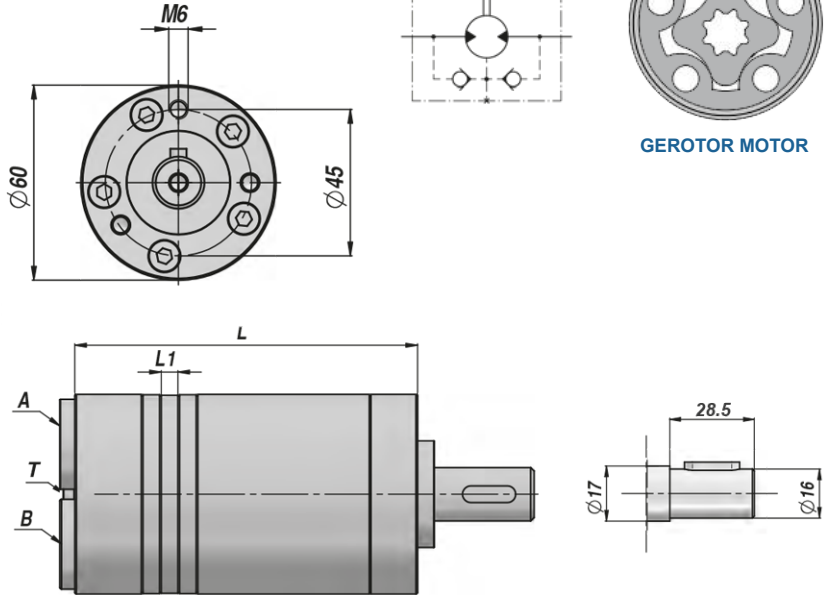
MAM SERIES - (GEROTOR)

SHAFT Ø16mm

WITHOUT FLANGE - 2 + 3 BOLT VERSION

BUILT IN CHECK VALVES

WITH DRAIN LINE



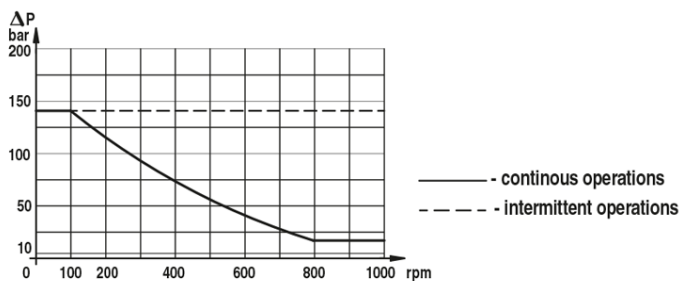
GEROTOR MOTOR

ORDER CODE	DISPLACEMENT (c.c / rev)	MAXIMUM SPEED (rpm)	MAXIMUM OIL FLOW (ltr / min)	MAXIMUM TORQUE (Nm)	MAX PRESSURE INLET (Bar)	MAXIMUM PRESSURE DROP (Bar)	A - B (Bsp)	T (Bsp)	L (mm)	L1 (mm)	WEIGHT Kg
MAM008	8.2	1950	16	11	140	100	3/8"	1/8"	104	3.5	1.9
MAM012	12.9	1550	20	16					106	5.5	2
MAM020	19.9	1000		25					109	8.5	2.1
MAM032	31.6	630		40		114			13.5	2.2	
MAM040	39.8	500	45	117.5		17			2.3		
MAM050	50.3	400	46	122		21.5			2.4		

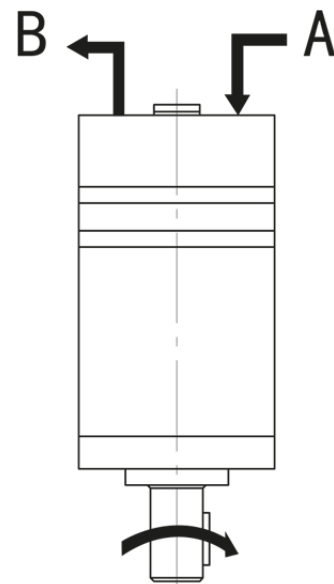
* WITH DRAIN CONNECTION FITTED.

TABLE ABOVE SHOWS CONTINUOUS WORK SPECIFICATIONS.

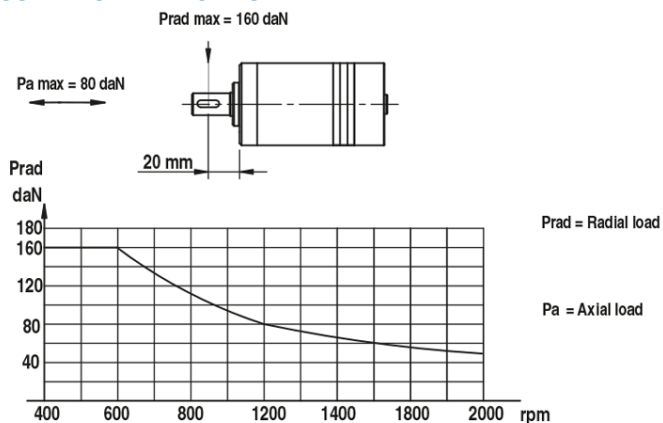
MAX RETURN PRESSURE WITHOUT DRAIN



DIRECTION OF SHAFT ROTATION



PERMISSIBLE SHAFT LOADS

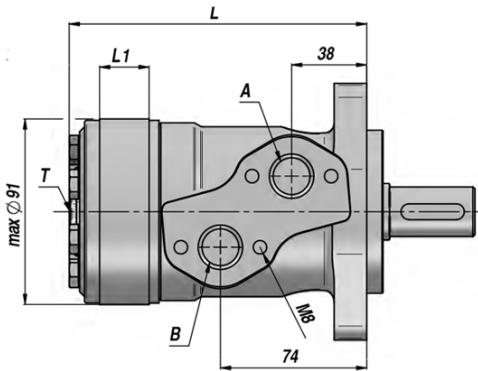
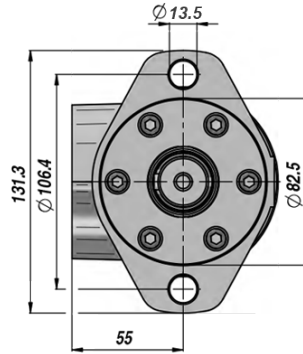
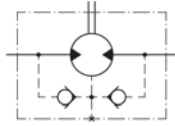


MAP HYDRAULIC MOTORS

MAP SERIES - (GEROTOR)
 SHAFT Ø25mm
 SAE 'A' 2 BOLT TYPE FLANGE
 BUILT IN CHECK VALVES
 WITH DRAIN LINE



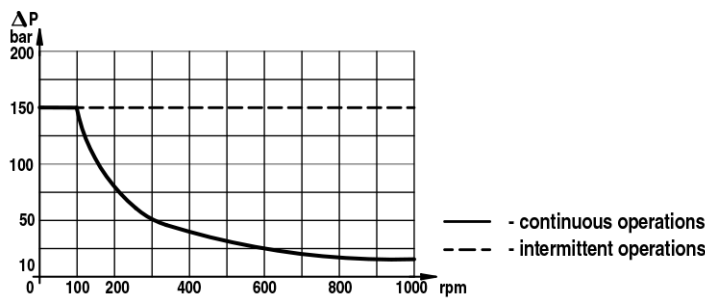
GEROTOR MOTOR



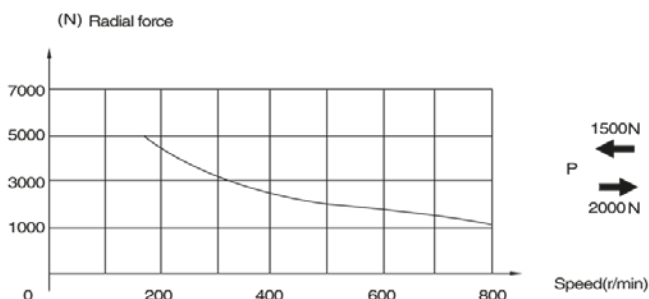
ORDER CODE	DISPLACEMENT (c.c / rev)	MAXIMUM SPEED (rpm)	MAXIMUM OIL FLOW (ltr / min)	MAXIMUM TORQUE (Nm)	MAX PRESSURE INLET (Bar)	MAXIMUM PRESSURE DROP (Bar)	A - B (Bsp)	T (Bsp)	L (mm)	L1 (mm)	WEIGHT Kg
MAP050	52.9	800	40	78	165	140	1/2"	1/4"	141	7	5.6
MAP080	79.3	770	60	120					145	11	5.7
MAP100	98.2	615		149					147	13	5.9
MAP125	120.9	480		180					150	16	6
MAP160	158.7	385		219					155	21	6.2
MAP200	196.4	310		262					160	26	6.4
MAP250	241.8	250		300					166	32	6.6
MAP315	317.3	195		338					176	42	6.9
MAP400	392.9	155		334					186	52	7.4

* WITH DRAIN CONNECTION FITTED.
 TABLE ABOVE SHOWS CONTINUOUS WORK SPECIFICATIONS.

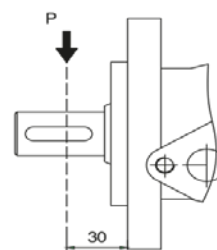
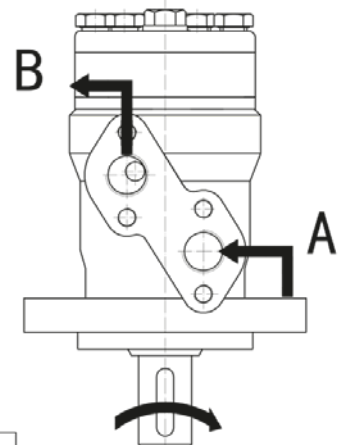
MAX RETURN PRESSURE WITHOUT DRAIN



PERMISSIBLE SHAFT LOADS

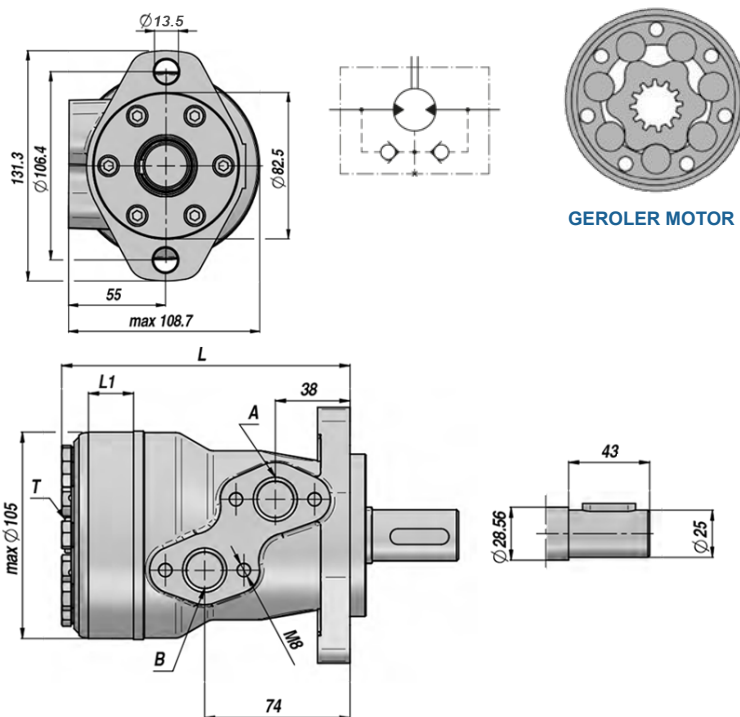


DIRECTION OF SHAFT ROTATION



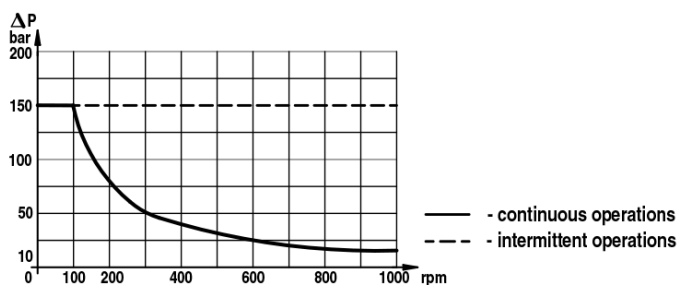
MAR HYDRAULIC MOTORS

MAR SERIES - (GEROLER)
SHAFT Ø25mm
SAE 'A' 2 BOLT TYPE FLANGE
BUILT IN CHECK VALVES
WITH DRAIN LINE

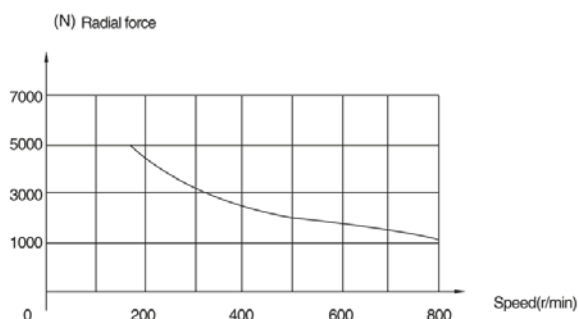


ORDER CODE	DISPLACEMENT (c.c / rev)	MAXIMUM SPEED (rpm)	MAXIMUM OIL FLOW (ltr / min)	MAXIMUM TORQUE (Nm)	MAX PRESSURE INLET (Bar)	MAXIMUM PRESSURE DROP (Bar)	A - B (Bsp)	T (Bsp)	L (mm)	L1 (mm)	WEIGHT Kg
MAR050	51.7	775	40	93	175	140	1/2"	1/4"	142	9	6.5
MAR080	80.5	750	60	152					147	14	6.9
MAR100	100.5	600		194					150.5	17.5	7
MAR125	126.3	475		237					155	22	7.3
MAR160	160.8	375		310					161	28	7.5
MAR200	200.9	300		369					168	35	8
MAR250	252.6	240		380					177	44	8.5
MAR315	321.5	190		380					189	56	9
MAR400	403.9	160		380					203	70	11

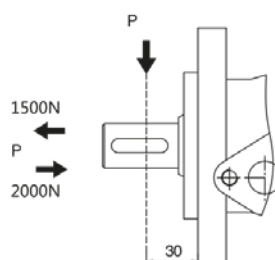
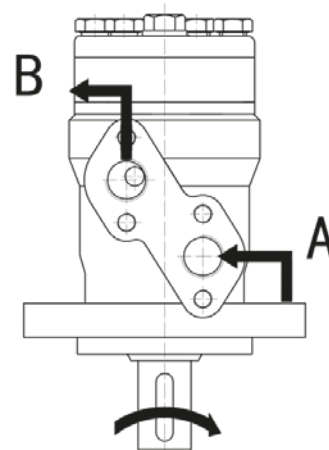
* WITH DRAIN CONNECTION FITTED.
 TABLE ABOVE SHOWS CONTINUOUS WORK SPECIFICATIONS.
 MAX RETURN PRESSURE WITHOUT DRAIN



PERMISSIBLE SHAFT LOADS

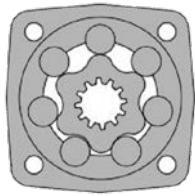


DIRECTION OF SHAFT ROTATION

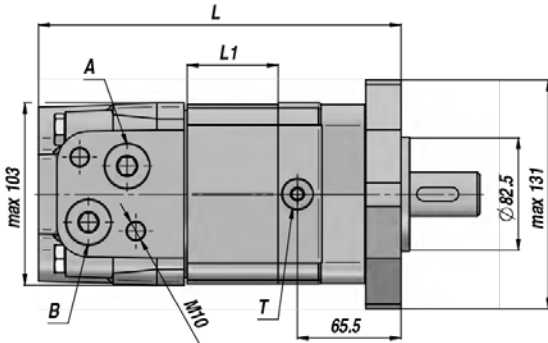
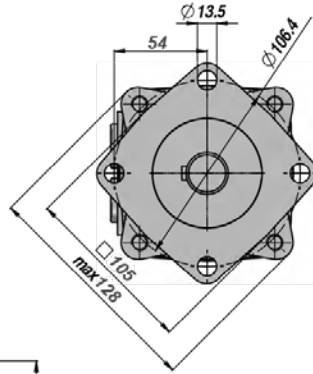
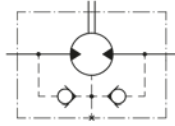


MAS HYDRAULIC MOTORS

MAS SERIES - (GEROLER)
 SHAFT Ø32mm
 SAE 'A' 4 BOLT TYPE FLANGE
 BUILT IN CHECK VALVES
 WITH DRAIN LINE



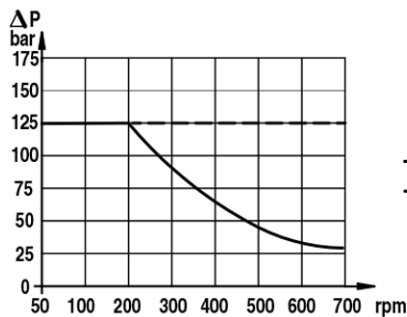
GEROLER MOTOR



ORDER CODE	DISPLACEMENT (c.c / rev)	MAXIMUM SPEED (rpm)	MAXIMUM OIL FLOW (ltr / min)	MAXIMUM TORQUE (Nm)	MAX PRESSURE INLET (Bar)	MAXIMUM PRESSURE DROP (Bar)	A - B (Bsp)	T (Bsp)	L (mm)	L1 (mm)	WEIGHT Kg	
MAS080	80.5	810	65	194	225	175	1/2"	1/4"	167	11	9.8	
MAS100	100.5	750	75	242					175	170.5	14.5	10
MAS125	126.3	600		303						175	19	10.3
MAS160	160.8	470		358		160			25	10.7		
MAS200	200.9	375		438		160			188	32	11.1	
MAS250	252.6	300		440					125	197	41	11.6
MAS315	321.5	240		551		100			209	53	12.3	
MAS400	401.9	180		560					100	223	67	13.1

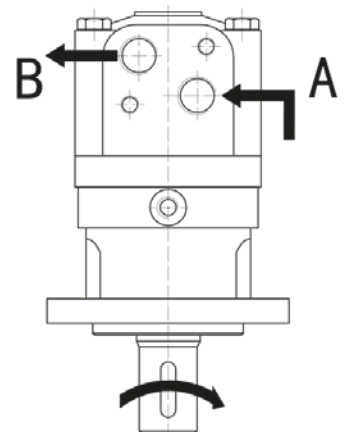
* WITH DRAIN CONNECTION FITTED.
 TABLE ABOVE SHOWS CONTINUOUS WORK SPECIFICATIONS.

MAX RETURN PRESSURE WITHOUT DRAIN

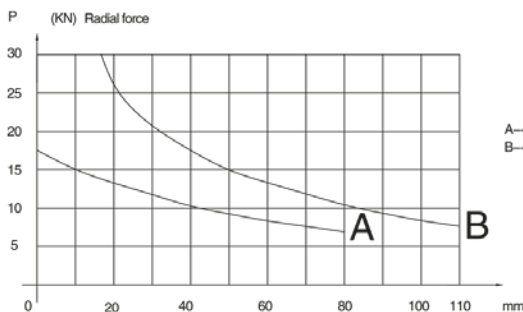


— - continuous operations
 - - - intermittent operations

DIRECTION OF SHAFT ROTATION



PERMISSIBLE SHAFT LOADS

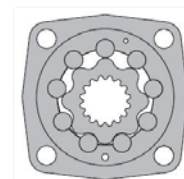
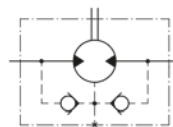
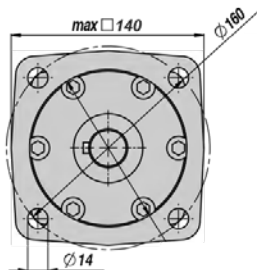
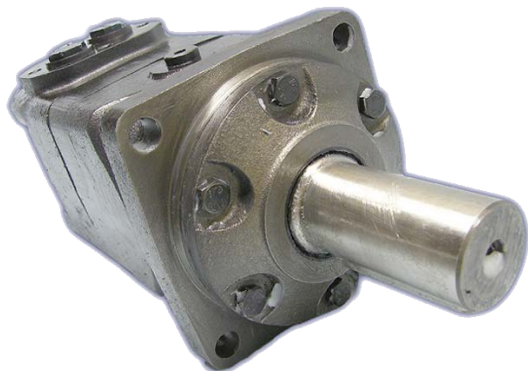


A—BM3
 B—BM3W

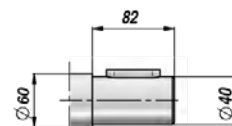
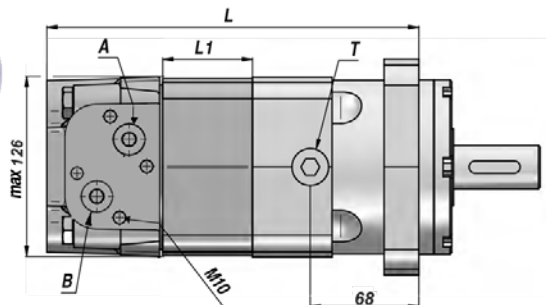
P max=5KN

MAT HYDRAULIC MOTORS

MAT SERIES - (GEROLER)
SHAFT Ø40mm
SAE 'C' 4 BOLT TYPE FLANGE
BUILT IN CHECK VALVES
WITH DRAIN LINE



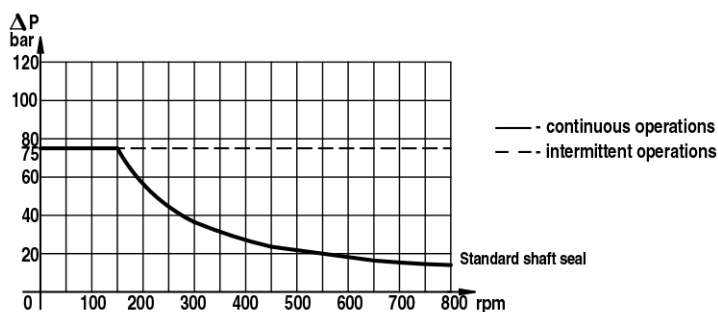
GEROLER MOTOR



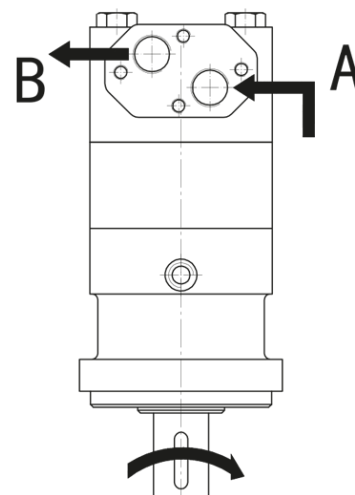
ORDER CODE	DISPLACEMENT (c.c / rev)	MAXIMUM SPEED (rpm)	MAXIMUM OIL FLOW (ltr / min)	MAXIMUM TORQUE (Nm)	MAX PRESSURE INLET (Bar)	MAXIMUM PRESSURE DROP (Bar)	A - B (Bsp)	T (Bsp)	L (mm)	L1 (mm)	WEIGHT Kg
MAT160	158.8	625	100	450	240	200	3/4"	1/4"	213	12	20.3
MAT200	200.8	500		561					217.5	16.5	20.8
MAT250	252.2	400		710					223	22	21.4
MAT315	317.5	312		902					230	29	22.4
MAT400	401.6	250		1008		239			38	23	
MAT500	535.3	175		1121		257.5			56.5	24	

* WITH DRAIN CONNECTION FITTED.
 TABLE ABOVE SHOWS CONTINUOUS WORK SPECIFICATIONS.

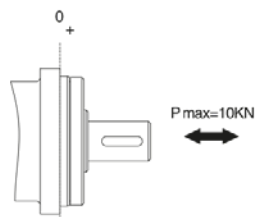
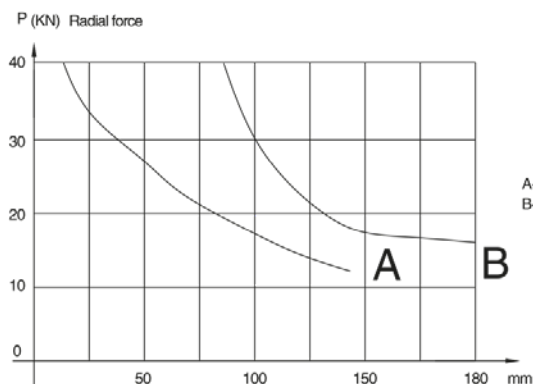
MAX RETURN PRESSURE WITHOUT DRAIN



DIRECTION OF SHAFT ROTATION

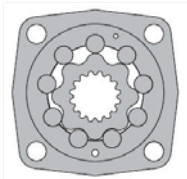


PERMISSIBLE SHAFT LOADS

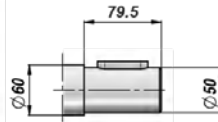
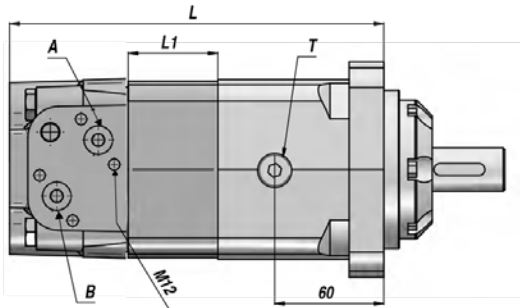
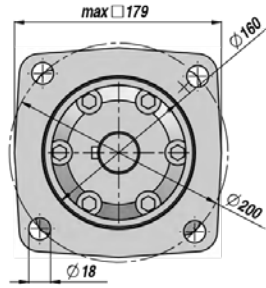
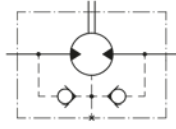


MAV HYDRAULIC MOTORS

MAV SERIES - (GEROLER)
 SHAFT Ø50mm
 4 BOLT TYPE FLANGE
 BUILT IN CHECK VALVES
 WITH DRAIN LINE



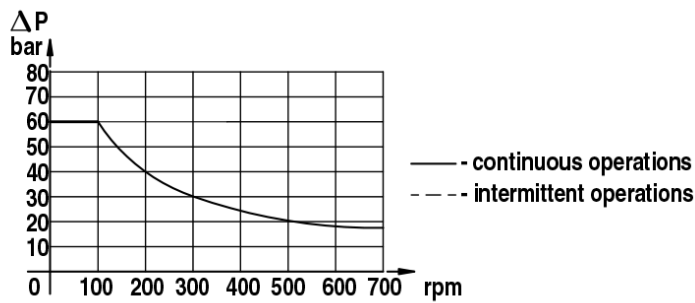
GEROLER MOTOR



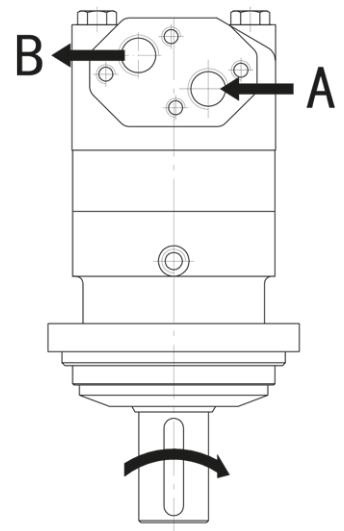
ORDER CODE	DISPLACEMENT (c.c / rev)	MAXIMUM SPEED (rpm)	MAXIMUM OIL FLOW (ltr / min)	MAXIMUM TORQUE (Nm)	MAX PRESSURE INLET (Bar)	MAXIMUM PRESSURE DROP (Bar)	A - B (Bsp)	T (Bsp)	L (mm)	L1 (mm)	WEIGHT Kg
MAV315	314.9	475	150	873	240	200	1"	1/4"	214	19	30.7
MAV400	399.7	375		1108					221	26	31.5
MAV500	496.6	300		1385					229	34	32.4
MAV630	617.8	238		1570					239	44	33.6
MAV800	787.4	187		1773					253	58	35.2

* WITH DRAIN CONNECTION FITTED.
 TABLE ABOVE SHOWS CONTINUOUS WORK SPECIFICATIONS.

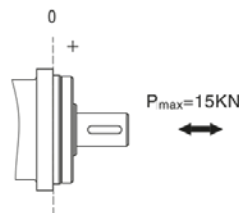
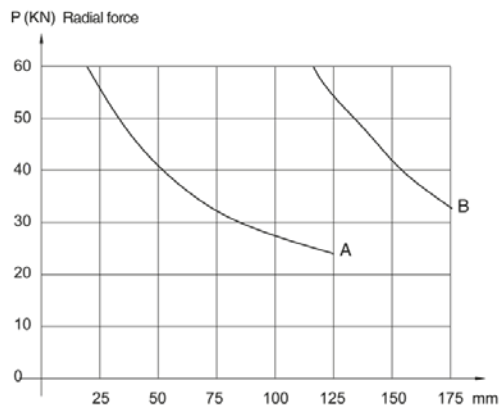
MAX RETURN PRESSURE WITHOUT DRAIN



DIRECTION OF SHAFT ROTATION

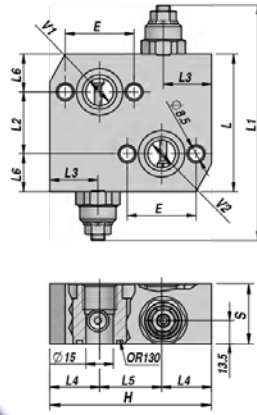


PERMISSIBLE SHAFT LOADS

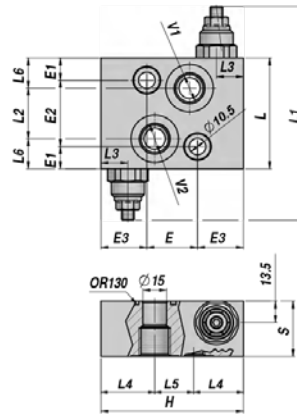


CROSSLINE RELIEF VALVES FOR MOTORS

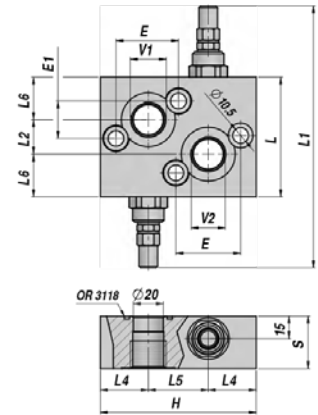
STEEL BODY
FACE MOUNTED
300 BAR MAX WORKING PRESSURE



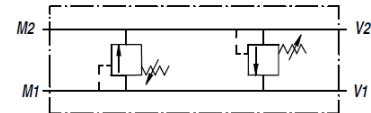
MAP/MAR
CP40DD



MAS
CP60DD



MAT
CP80DD

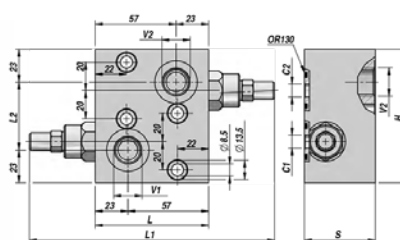


ORDER CODE	TO SUIT MOTOR	V1 - V2 Ø(Bsp)	MAX FLOW (ltr/ min)	MAX PRESSURE (Bar)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	E (mm)	E1 (mm)	E2 (mm)	E3 (mm)	H (mm)	S (mm)
CP40DD	MAP/MAR	1/2"	60	300	80	164	36	28	29	-	22	40	-	-	-	94	35
CP60DD	MAS	1/2"	50	300	70	154	32	17	34	22	19	32	14	42	29	90	35
CP80DD	MAT	3/4"	100	300	80	188	23	-	32	40	28.5	43.2	25	-	-	104	35

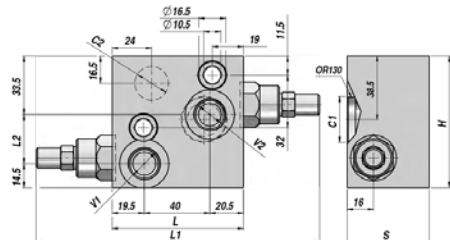
STANDARD VERSION ADJUSTABLE BETWEEN 10-180 BAR

OVERCENTRE VALVES FOR MOTORS

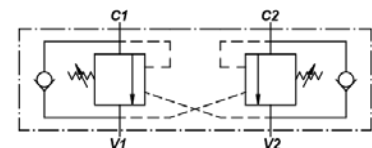
STEEL BODY
FACE MOUNTED
300 BAR MAX WORKING PRESSURE



MAP/MAR
OCV40DD



MAS
OCV60DD

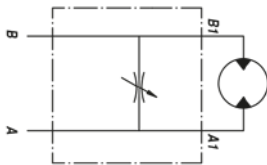
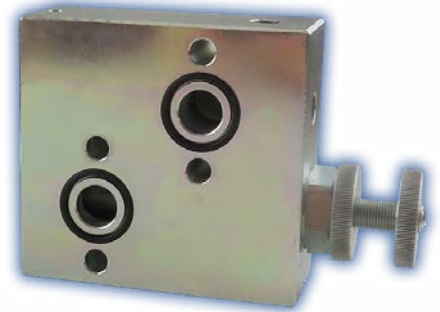
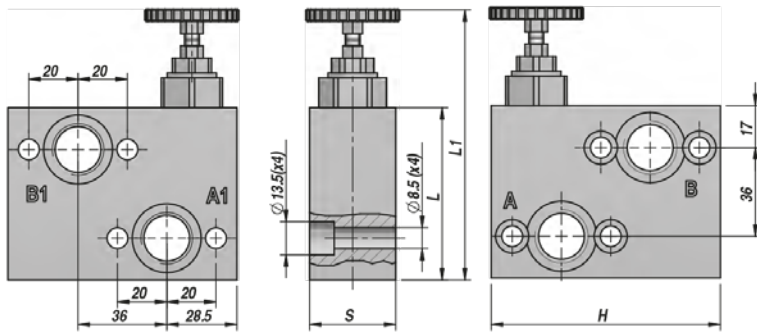


ORDER CODE	TO SUIT MOTOR	V1 - V2 Ø(Bsp)	C1 - C2 Ø(mm)	MAX FLOW (ltr/ min)	MAX PRESSURE (Bar)	PILOT RATIO	L (mm)	L1 (mm)	L2 (mm)	H (mm)	S (mm)
OCV40DD	MAP/MAR	1/2"	9	50	350	1 : 4.5	80	172	48	94	50
OCV60DD	MAS	1/2"	9	50	350	1 : 4.5	80	170	38	80	50

STANDARD SETTING = 320 BAR
MINIMUM SETTING = 200 BAR

FLOW CONTROL VALVE FOR MOTORS

ALUMINIUM BODY
FACE MOUNTED
210 BAR MAX WORKING PRESSURE

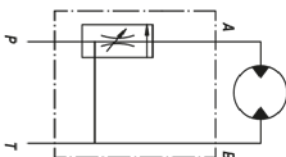
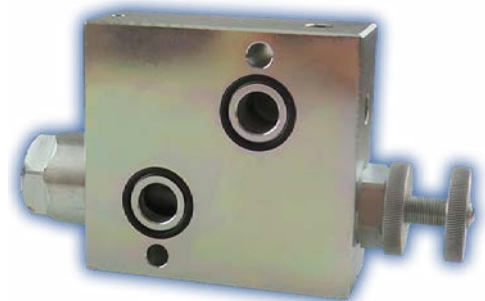
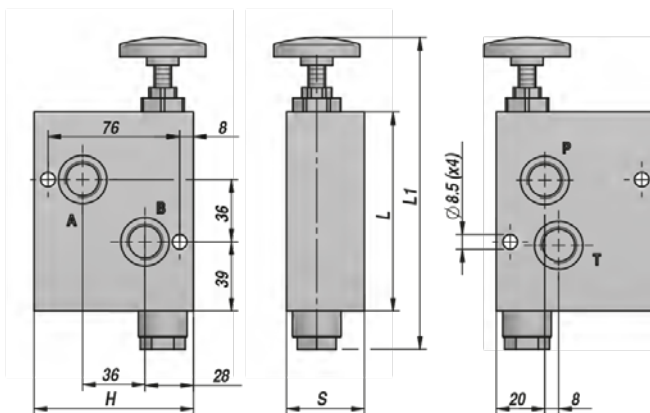


ORDER CODE	TO SUIT MOTOR	V1 - V2 Ø(Bsp)	MAX FLOW (ltr/ min)	MAX PRESSURE (Bar)	L (mm)	L1 (mm)	H (mm)	S (mm)
VBVR012010	MAP/MAR	1/2"	50	210	70	117	93	35

EXCEEDING FLOW TO TANK.

PRIORITY FLOW CONTROL VALVE FOR MOTORS

STEEL BODY
FACE MOUNTED
250 BAR MAX WORKING PRESSURE



ORDER CODE	TO SUIT MOTOR	V1 - V2 Ø(Bsp)	MAX FLOW (ltr/ min)	MAX PRESSURE (Bar)	L (mm)	L1 (mm)	H (mm)	S (mm)
VBVR012050	MAP/MAR	1/2"	60	250	115	185	92	45

EXCEEDING FLOW TO TANK.

THE HYDRAULIC RAM ENGINEER'S HANDBOOK

RAMPARTS® IS THE ORIGINAL SYSTEM OF MACHINED HYDRAULIC COMPONENTS FOR BUILDING HIGH QUALITY HYDRAULIC CYLINDERS FROM Ø20 ▶ 300mm BORE.

THE RAMPARTS® RANGE INCLUDES:

- STAINLESS STEEL (AISI316) COMPONENTS FROM Ø40 ▶ 80mm BORE.
- HEAVY DUTY COMPONENTS UP TO Ø300mm BORE.
- ADJUSTABLE CUSHIONING UP TO Ø100mm BORE.
- HYDRAULIC VALVES INCLUDING CHECK / OVERCENTER VALVE KITS.
- HARDENED STEEL & SPLIT PIN BUSHES.
- ROD ENDS AND SPHERICAL BEARINGS.
- CONSISTENT PRODUCT QUALITY.

FOR RAMPARTS® CYLINDER ASSEMBLY INSTRUCTIONS, PLEASE GO TO: WWW.STEERFORTH.CO.UK AND CLICK ON THE 'CATALOGUES' TAB AND THEN DOWNLOAD 'RAM ASSEMBLY INSTRUCTIONS'.

**SUPPORTING CYLINDER ENGINEERS
THROUGHOUT THE UK AND FURTHER
AFIELD.**

**3D CAD FILES
AVAILABLE! +
CUSTOM CYLINDER
DRAWINGS AVAILABLE
ON REQUEST**

STEERFORTH ~~DO NOT~~ RECOMMEND THAT ORIGINAL RAMPARTS® COMPONENTS BE USED WITH COPY PARTS FROM OTHER SOURCES.

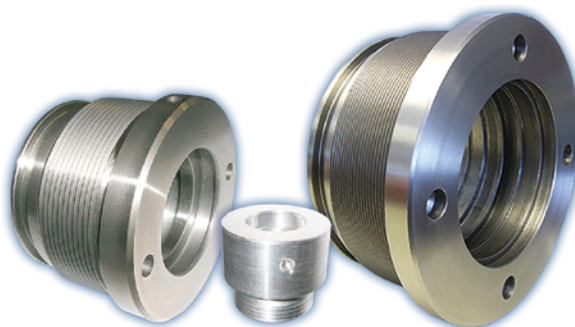
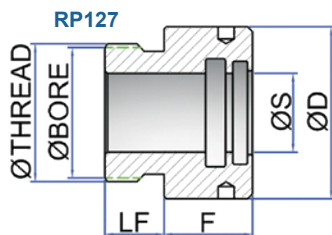
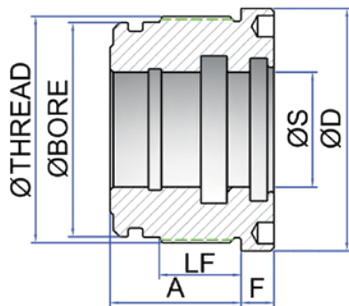
THREADED HEAD BUSH / GLANDS

CAST IRON - UNI5007-G25
ALUMINIUM - UNI2011-11S

SINGLE & DOUBLE ACTING APPLICATION

MAXIMUM PRESSURE 250 BAR (20mm BORE = 200 BAR)

(N.B: CERTAIN SIZES ARE AVAILABLE IN STAINLESS STEEL - PLEASE ENQUIRE)



	ORDER CODE	BORE Ø(mm)	S Ø(mm)	D Ø(mm)	F (mm)	THREAD Ø(mm)	LF (mm)	A (mm)
NEW!	RP2012**	20	12	30	13	26 x 1.5	11	19
NEW!	RP2015**	20	15	30	13	26 x 1.5	11	19
NEW!	RP2016**	20	16	30	13	26 x 1.5	11	19
	RP127*	25	16	35	18	28 x 1.5	12	-
	RP128*	30	16	40	6	34 x 1.5	15	27
	RP128A*	32	16	42	6	36 x 1.5	15	27
	RP129	32	20	42	6	36 x 1.5	15	27
	RP130	35	20	44	8	39 x 1.5	19	32
	RP130A	35	22	44	8	39 x 1.5	19	32
	RP131 (1)	40	20	49	8	44 x 1.5	19	32
	RP131A	40	22	49	8	44 x 1.5	19	32
	RP131B (1)	40	25	49	8	44 x 1.5	19	32
	RP131C	40	28	49	8	44 x 1.5	19	32
	RP132	45	22	54	8	49 x 1.5	19	32
	RP132A	45	25	54	8	49 x 1.5	19	32
	RP133C	50	20	59	8	54 x 1.5	22	35
	RP133 (1)	50	25	59	8	54 x 1.5	22	35
	RP133F	50	28	59	8	54 x 1.5	22	35
	RP133A (1)	50	30	59	8	54 x 1.5	22	35
	RP133E	50	32	59	8	54 x 1.5	22	35
	RP133B	50	35	59	8	54 x 1.5	22	35
	RP133D	55	25	64	8	60 x 1.5	21	35
	RP134	55	30	64	8	60 x 1.5	21	35
	RP134A	55	35	64	8	60 x 1.5	21	35
	RP134B	60	25	69	10	64 x 1.5	27	40
	RP135 (1)	60	30	69	10	64 x 1.5	27	40
	RP135A (1)	60	35	69	10	64 x 1.5	27	40
	RP135B (1)	60	40	69	10	64 x 1.5	27	40
	RP135H	60	45	69	10	64 x 1.5	27	40
	RP135C	63	30	73	10	68 x 1.5	25	40
	RP135F	63	32	73	10	68 x 1.5	25	40
	RP135D	63	35	73	10	68 x 1.5	25	40
	RP135G	63	36	73	10	68 x 1.5	25	40
	RP135E	63	40	73	10	68 x 1.5	25	40
	RP135J	63	45	73	10	68 x 1.5	25	40
	RP136	65	30	74	10	69 x 1.5	25	40
	RP136A	65	35	74	10	69 x 1.5	25	40
	RP136B	65	40	74	10	69 x 1.5	25	40
	RP136F	65	45	74	10	69 x 1.5	25	40
	RP137E	70	25	79	10	74 x 1.5	27	40
	RP137	70	30	79	10	74 x 1.5	27	40
	RP137A (1)	70	35	79	10	74 x 1.5	27	40
	RP137B (1)	70	40	79	10	74 x 1.5	27	40
	RP137D	70	45	79	10	74 x 1.5	27	40
	RP137C	70	50	79	10	74 x 1.5	27	40
	RP138	75	30	89	10	80 x 2	33	50

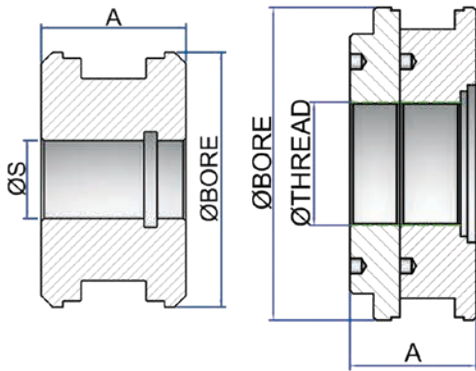
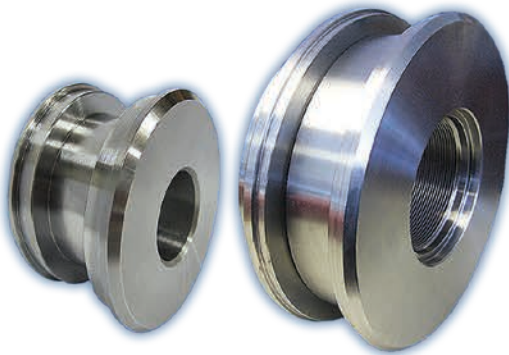
	ORDER CODE	BORE Ø(mm)	S Ø(mm)	D Ø(mm)	F (mm)	THREAD Ø(mm)	LF (mm)	A (mm)
	RP138A	75	35	89	10	80 x 2	33	50
	RP138B	75	40	89	10	80 x 2	33	50
	RP138C	75	45	89	10	80 x 2	33	50
	RP139E	80	30	94	10	85 x 2	33	50
	RP139	80	35	94	10	85 x 2	33	50
	RP139A (1)	80	40	94	10	85 x 2	33	50
	RP139B	80	45	94	10	85 x 2	33	50
	RP139C	80	50	94	10	85 x 2	33	50
	RP139F	80	55	94	10	85 x 2	33	50
	RP139D	80	60	94	10	85 x 2	33	50
	RP140	85	35	99	10	90 x 2	33	50
	RP140A	85	40	99	10	90 x 2	33	50
	RP140B	85	45	99	10	90 x 2	33	50
	RP140C	85	50	99	10	90 x 2	33	50
	RP141	90	40	104	10	95 x 2	33	50
	RP141A	90	45	104	10	95 x 2	33	50
	RP141B	90	50	104	10	95 x 2	33	50
	RP141C	90	60	104	10	95 x 2	33	50
	RP142	100	40	114	12	105 x 2	51	70
	RP142A	100	45	114	12	105 x 2	51	70
	RP142B	100	50	114	12	105 x 2	51	70
	RP142C	100	60	114	12	105 x 2	51	70
	RP142J	100	63	114	12	105 x 2	51	70
	RP142D	100	70	114	12	105 x 2	51	70
	RP142E	110	45	124	12	115 x 2	41	60
	RP142F	110	50	124	12	115 x 2	41	60
	RP142G	110	60	124	12	115 x 2	51	70
	RP142H	110	70	124	12	115 x 2	51	70
	RP143C	120	50	139	12	125 x 2	49	70
	RP143	120	60	139	12	125 x 2	49	70
	RP143A	120	70	139	12	125 x 2	49	70
	RP143B	120	80	139	12	125 x 2	49	70
	RP144	125	60	144	12	130 x 2	59	80
	RP144A	125	70	144	12	130 x 2	59	80
	RP144D	125	80	144	12	130 x 2	59	80
	RP144E	125	90	144	12	130 x 2	59	80
	RP144B	140	70	159	12	145 x 2	59	80
	RP144C	140	80	159	12	145 x 2	59	80
	RP145	150	70	169	12	155 x 2	69	90
	RP145A	150	80	169	12	155 x 2	69	90
	RP146	160	80	179	12	165 x 2	69	90
	RP146A	160	90	179	12	165 x 2	69	90
	RPCG30180100	180	100	210	18	188 x 2.5	58	92
	RPCG30180120	180	120	210	18	188 x 2.5	58	92
	RPCG30200100	200	100	218	18	208 x 2.5	58	92
	RPCG30200120	200	120	218	18	208 x 2.5	58	92
	RPCG30250120	250	120	268	18	258 x 2.5	80	117
	RPCG30250150	250	150	268	18	258 x 2.5	80	117

* = ALUMINIUM UNI 2011-11S / ** = STEEL 11SMn30 +NI TEMPER

(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL - PLEASE QUOTE 'SS' IN PART NUMBER, I.E: RPSS131

PISTONS (FOR STANDARD RODS)

STEEL - 9SMN28 & UNI-C40
ALUMINIUM - UNI2011-11S
SINGLE & DOUBLE ACTING APPLICATION
MAXIMUM PRESSURE 250 BAR



NEW!

ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)
RP147A	20	10.5	25
RP147*	25	M10x1.5	25
RP148*	30	13	24.7
RP149A	32	13	30
RP149	32	15	30
RP150	35	15	40
RP151	40	15	40
RP152	45	15	40
RP152A	50	15	40
RP153	50	20	40
RP154	55	20	40
RP155	60	20	50
RP155A	60	24	45
RP155B	60	27	50
RP155C	63	20	50
RP155D	63	24	45
RP156	65	20	50
RP156A	65	24	45
RP157	70	20	50
RP157A	70	24	45

ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)
RP157B	70	27	50
RP158A	75	24	45
RP158B	75	27	50
RP159	80	24	45
RP159A	80	27	50
RP160	85	24	45
RP160A	85	27	50
RP161	90	27	50
RP161A	90	33	50
RP162	100	27	50
RP162A	100	33	50
RP162B	110	33	50
RP162C	110	40	50
RP163	120	40	50
RP164	125	40	50
RP164A	140	40	58
RP165	150	40	58
RP166	160	51	58
RPCT11180080**	180	80 x 2	82
RPCT11200080**	200	80 x 2	82
RPCT11250080**	250	98 x 2	82

PLEASE NOTE: WHEN CHOOSING A ROD ASSEMBLY MATCH THE PISTON USING DIMENSION 'S' WITH THE ROD DIMENSION 'C' ON PAGES 129 ►132.

RPCT THREADED PISTONS ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

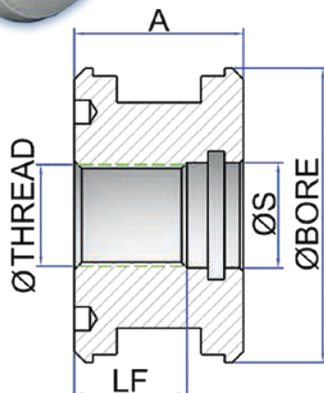
* = ALUMINIUM UNI 2011-11S

** = UNI-C40 (2 PIECE THREADED 'RPCT' PISTON)

PLEASE GO TO PAGE 148 FOR LOCK NUTS.

THREADED PISTONS

MILD STEEL - 9SMN28
COMPLETE WITH SEALS
SINGLE & DOUBLE ACTING APPLICATION
MAXIMUM PRESSURE 250 BAR



ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)	LF (mm)	THREAD Ø(mm)
RPCTF040	40	17	40	30	16 x 1.5
RPCTF050	50	21	40	28	20 x 1.5
RPCTF060	60	25	45	30	24 x 2
RPCTF063	63	25	45	30	24 x 2
RPCTF070	70	25	45	30	24 x 2
RPCTF080	80	28	45	30	27 x 2
RPCTF090	90	35	50	35	33 x 2
RPCTF100	100	35	50	35	33 x 2
RPCTF 110	110	42	50	35	39 x 3
RPCTF120	120	45	50	35	42 x 3
RPCTF125	125	45	50	35	42 x 3
RPCTF140	140	51	58	40	48 x 3
RPCTF150	150	51	58	40	48 x 3
RPCTF160	160	54	58	40	52 x 3
RPCTBF030*	30	13	25	17	12 x 1.5
RPCTBF032*	32	13	27	19	12 x 1.5
RPCTBF035*	35	13	27	19	12 x 1.5
RPCTBF040*	40	17	27	19	16 x 1.5
RPCTBF045*	45	17	30	21	16 x 1.5
RPCTBF050*	50	21	30	21	20 x 1.5
RPCTBF055*	55	21	35	24	20 x 1.5
RPCTBF060*	60	25	35	24	24 x 2
RPCTBF063*	63	25	35	24	24 x 2
RPCTBF065*	65	25	35	24	24 x 2
RPCTBF070*	70	25	35	24	24 x 2
RPCTBF075*	75	28	35	24	27 x 2
RPCTBF080*	80	28	40	26	27 x 2
RPCTBF085*	85	28	40	26	27 x 2
RPCTBF090*	90	35	40	26	33 x 2
RPCTBF100*	100	35	40	26	33 x 2

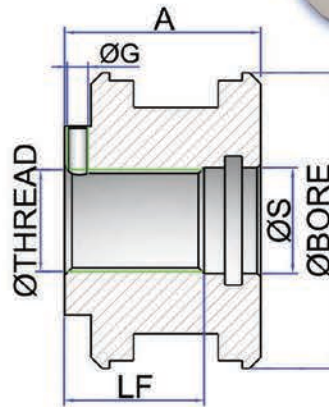
PLEASE NOTE: THREADED PISTONS ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

* = SHORT THREADED VERSION

THREADED PISTONS

ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)	LF (mm)	G Ø(mm)	THREAD Ø(mm)
RP025*	25	11	30.5	23	M3	10 x 1.5
RP026*	30	13	30.5	23		12 x 1.5
RP027	32	13	33	25		12 x 1.5
RP028	35	13	40	32	M4	12 x 1.5
RP029	40	17	42	32		16 x 1.5
RP030	45	17	42	32		16 x 1.5
RP031	50	21	44	32	M5	20 x 1.5
RP032	55	21	44	32		20 x 1.5
RP033	60	25	46	31		24 x 2
RP034	63	25	46	31	M6	24 x 2
RP035	65	25	46	31		24 x 2
RP036	70	25	49	34		24 x 2
RP037	75	28	52	37	M6	27 x 2
RP038	80	28	52	37		27 x 2
RP039	85	28	52	37		27 x 2
RP040	90	35	52	37	M8	33 x 2
RP041	100	35	54	39		33 x 2
RP042**	110	42	57	42		39 x 3
RP043**	120	45	57	42	M8	42 x 3
RP044**	125	45	59	44		42 x 3
RP045**	140	51	65	47		48 x 3
RP046**	150	51	65	47	M8	48 x 3
RP047**	160	54	65	47		52 x 3

STEEL - 9SMN28 & UNI5007-G25
 ALUMINIUM - UNI-2011-11S
 COMPLETE WITH SEALS
 SINGLE & DOUBLE ACTING APPLICATION
 MAXIMUM PRESSURE 250 BAR
 LOCKING GRUB SCREW VERSION



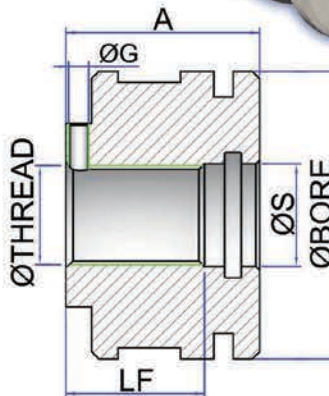
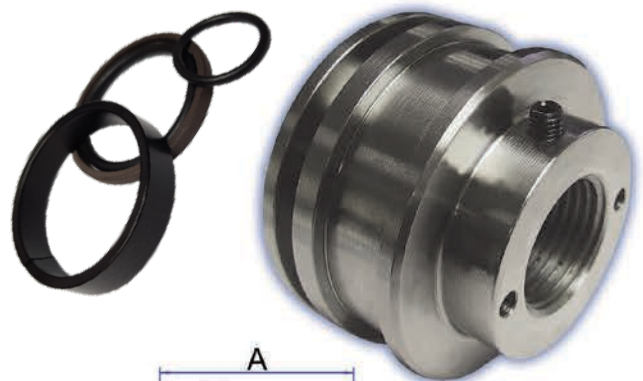
PLEASE NOTE: THREADED PISTONS ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

* = ALUMINIUM UNI 2011-11S
 ** = STEEL UNI-C40

HIGH SPEED PISTONS

ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)	LF (mm)	G Ø(mm)	THREAD Ø(mm)
RP048	30	13	30	22.5	M3	12 x 1.5
RP049	32	13	30	22		12 x 1.5
RP050	35	13	30	22		12 x 1.5
RP051	40	17	32	22	M4	16 x 1.5
RP052	45	17	32	22		16 x 1.5
RP053	50	17	32	22		16 x 1.5
RP054	55	21	35	23	M5	20 x 1.5
RP055	60	25	40	25		24 x 2
RP056	63	25	40	25		24 x 2
RP057	65	25	40	25	M6	24 x 2
RP058	70	25	40	25		24 x 2
RP059	75	28	45	30		27 x 2
RP060	80	28	45	30	M6	27 x 2
RP061	85	28	45	30		27 x 2
RP062	90	35	48	33		33 x 2
RP063	100	35	48	33	M8	33 x 2
RP064**	110	42	50	35		39 x 3
RP065**	120	45	50	35		42 x 3
RP066**	125	45	52	37	M8	42 x 3
RP067**	140	51	55	40		48 x 3
RP068**	150	51	55	40		48 x 3
RP069**	160	54	60	45	M8	52 x 3

STEEL - 9SMN28 & UNI-C40
 COMPLETE WITH SEAL & WEAR RING
 12 M/SEC MAXIMUM SPEED RATING
 SINGLE & DOUBLE ACTING APPLICATION
 MAXIMUM PRESSURE 250 BAR

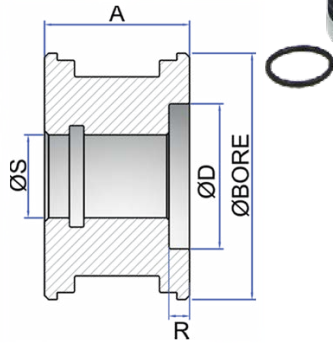


PLEASE NOTE: THREADED PISTONS ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

** = STEEL UNI-C40

SHORT PISTONS

MILD STEEL - 9SMN28
COMPLETE WITH SEALS
SINGLE & DOUBLE ACTING APPLICATION
MAXIMUM PRESSURE 200 BAR

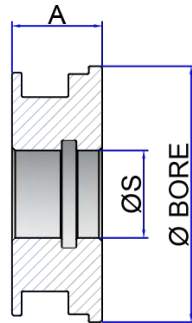
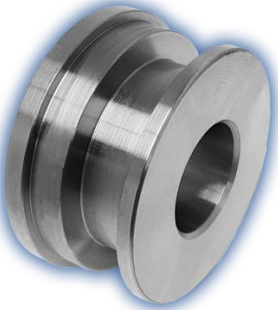


ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)	R (mm)	D (mm)
RP170SK	40	15	27	5	27
RP171SK	50	21	30	5	36
RP172SK	60	25	35	5	45
RP173SK	70	25	35	5	45
RP174SK	80	28	40	6	50
RP175SK	100	35	40	6	60

PLEASE NOTE: PISTONS NOT SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

NEW! SINGLE ACTING PISTONS

MILD STEEL - 9SMN28
COMPLETE WITH SEALS
SINGLE ACTING APPLICATION
MAXIMUM PRESSURE 250 BAR

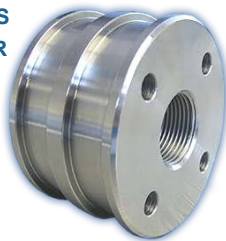


ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)
RPSA040	40	15	20
RPSA050	50	20	25
RPSA060	60	20	25
RPSA063	63	24	25
RPSA070	70	27	28
RPSA080	80	27	28
RPSA090	90	33	30
RPSA100	100	33	30

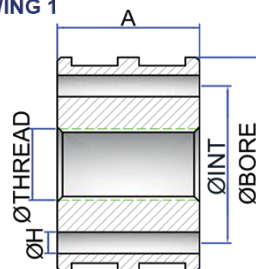
PLEASE NOTE: PISTONS NOT SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

DISPLACEMENT PISTONS

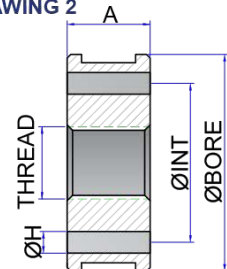
MILD STEEL - 9SMN28
COMPLETE WITH WEAR RINGS
MAXIMUM PRESSURE 250 BAR



DRAWING 1



DRAWING 2



DOUBLE WEAR RING PISTON (DRAWING 1)

ORDER CODE	BORE Ø(mm)	THREAD Ø(mm)	A (mm)	INT Ø(mm)	H Ø(mm)
RPCTT030	30	12 x 1.5	35	20	3 (x4)
RPCTT035	35	14 x 1.5	35	23	4 (x4)
RPCTT040	40	14 x 1.5	35	27	4 (x4)
RPCTT045	45	16 x 1.5	35	32	4 (x4)
RPCTT050	50	20 x 1.5	35	34	5 (x4)
RPCTT055	55	20 x 1.5	40	38	5 (x4)
RPCTT060	60	20 x 1.5	40	42	6 (x4)
RPCTT070	70	24 x 2	45	50	7 (x4)
RPCTT080	80	27 x 2	45	60	7 (x4)
RPCTT085	85	27 x 2	45	65	7 (x4)
RPCTT090	90	33 x 2	50	68	7 (x6)
RPCTT100	100	33 x 2	50	76	8 (x6)
RPCTT110	110	39 x 3	55	86	8 (x6)
RPCTT120	120	39 x 3	55	93	10 (x6)

SINGLE WEAR RING PISTON (DRAWING 2)

ORDER CODE	BORE Ø(mm)	THREAD Ø(mm)	A (mm)	INT Ø(mm)	H Ø(mm)
RPCTTB030	30	12 x 1.5	14	20	3 (x4)
RPCTTB035	35	14 x 1.5	14	23	4 (x4)
RPCTTB040	40	14 x 1.5	14	27	4 (x4)
RPCTTB045	45	16 x 1.5	14	32	4 (x4)
RPCTTB050	50	20 x 1.5	14	34	5 (x4)
RPCTTB055	55	20 x 1.5	18	38	5 (x4)
RPCTTB060	60	20 x 1.5	18	42	6 (x4)
RPCTTB070	70	24 x 2	20	50	7 (x4)
RPCTTB080	80	27 x 2	20	60	7 (x4)
RPCTTB085	85	27 x 2	20	65	7 (x4)
RPCTTB090	90	33 x 2	22	68	7 (x6)
RPCTTB100	100	33 x 2	22	76	8 (x6)
RPCTTB110	110	39 x 3	22	86	8 (x6)
RPCTTB120	120	39 x 3	22	93	10 (x6)

PLEASE NOTE: THREADED PISTONS ARE NOT SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

DISPLACEMENT HEAD BUSHES

ORDER CODE	BORE Ø(mm)	S Ø(mm)	D (mm)	LF (mm)	THREAD Ø(mm)	F (mm)	A (mm)
RP200	30	20	39	15	34 x 1.5	30	27
RP201	35	25	44	19	39 x 1.5	33	32
RP202	40	30	49	19	44 x 1.5	33	32
RP203	45	35	54	19	49 x 1.5	33	32
RP204	50	40	59	22	54 x 1.5	35	35
RP204A	55	45	64	22	60 x 1.5	35	35
RP205	60	50	69	22	64 x 1.5	35	40
RP206	70	60	79	27	74 x 1.5	35	40
RP207*	85	70	100	30	90 x 2	60	30
RP208*	90	80	107	40	96 x 2	55	40
RP209*	120	100	138.5	42	124 x 2	115	42

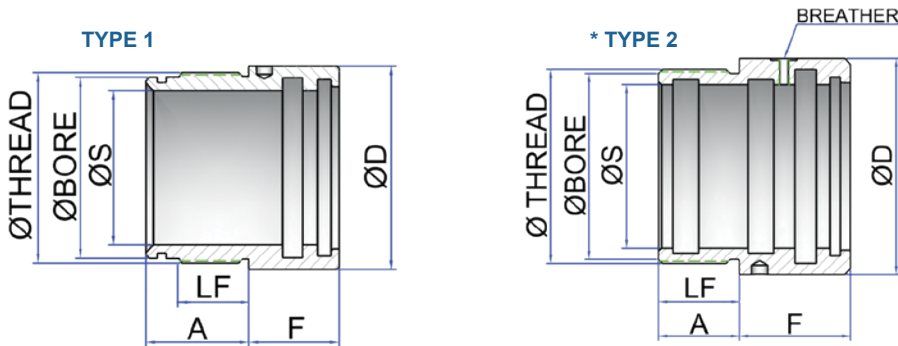
* = TYPE 2 HEAD BUSH

PLEASE NOTE: Ø35, 55, 90 & 120 BORE HEAD BUSHES ARE NOT SUITABLE FOR USE WITH STANDARD RAMPARTS® TUBES ON PAGES 126 ► 128.

TYPE 1: HYDRAULIC CAST IRON - UNI5007-G25
SINGLE & DOUBLE ACTING APPLICATION
MAXIMUM PRESSURE 250 BAR



TYPE 2: STEEL - ST52.2 / UNI-C40
SINGLE & DOUBLE ACTING APPLICATION
MAXIMUM PRESSURE 250 BAR



SEALS AND STOP RINGS

ORDER CODE	DESCRIPTION
RP200G	SEAL KIT FOR Ø30 x 20 (RP200 HEAD BUSH)
RP201G	SEAL KIT FOR Ø35 x 25 (RP201 HEAD BUSH)
RP202G	SEAL KIT FOR Ø40 x 30 (RP202 HEAD BUSH)
RP203G	SEAL KIT FOR Ø45 x 35 (RP203 HEAD BUSH)
RP204G	SEAL KIT FOR Ø50 x 40 (RP204 HEAD BUSH)
RP204AG	SEAL KIT FOR Ø55 x 45 (RP204A HEAD BUSH)
RP205G	SEAL KIT FOR Ø60 x 50 (RP205 HEAD BUSH)
RP206G	SEAL KIT FOR Ø70 x 60 (RP206 HEAD BUSH)

RP207G	SEAL KIT FOR Ø85 x 70 (RP207 HEAD BUSH)
RP208G	SEAL KIT FOR Ø90 x 80 (RP208 HEAD BUSH)
RP209G	SEAL KIT FOR Ø120 x 100 (RP209 HEAD BUSH)

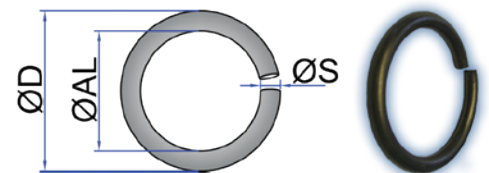
ORDER CODE	AL Ø(mm)	D Ø(mm)	A (mm)	S Ø(mm)
RP228	22	28	-	3
RP229	27	33	-	3
RP230	31.5	38.5	-	3.5
RP231	36	44	-	4
RP232	41	49	-	4
RP234	45.5	54.5	-	4.5
RP235	54.5	65.5	-	5.5

RP236	15	34	10	-
RP237	20	38	15	-
RP238	20	43	15	-
RP239	20	48	20	-
RP239A	27	58	20	-
RP239B	27	68	20	-

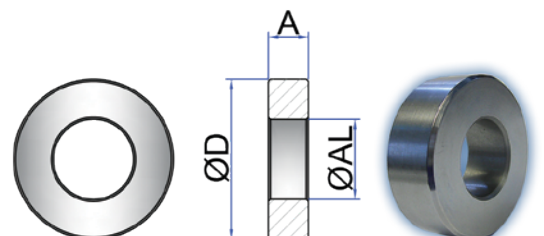
COMPLETE SEAL KITS FOR DISPLACEMENT HEAD BUSH



STEEL SPLIT STOP RING



STEEL STOP RING : FE510C

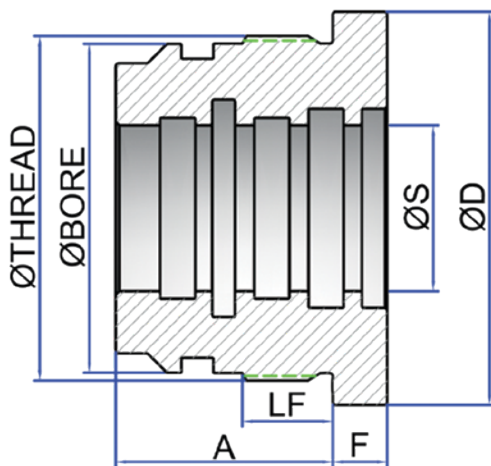
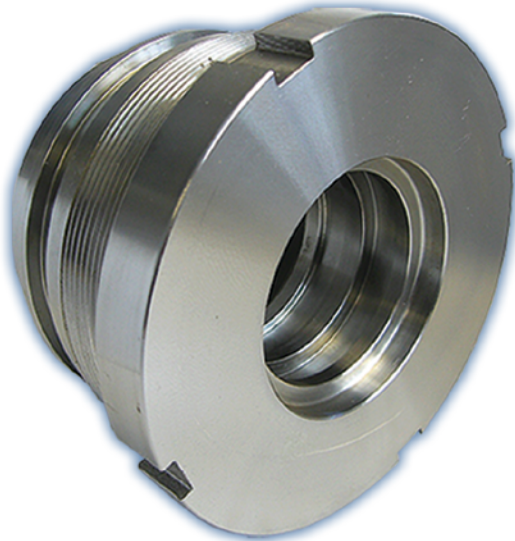


HEAVY DUTY HEAD BUSHES

STEEL - UNI-C40

SINGLE & DOUBLE ACTING APPLICATION

MAXIMUM PRESSURE 350 BAR



ORDER CODE	BORE Ø(mm)	S Ø(mm)	D (mm)	LF (mm)	THREAD Ø(mm)	F (mm)	A (mm)
RPHD100	50	25	64	22	54 x 1.5	10	45
RPHD101	50	30	64	22	54 x 1.5	10	45
RPHD102	50	35	64	22	54 x 1.5	10	45
RPHD103	60	30	74	22	64 x 1.5	12	48
RPHD104	60	35	74	22	64 x 1.5	12	48
RPHD105	60	40	74	22	64 x 1.5	12	48
RPHD110	63	35	78	22	68 x 1.5	12	48
RPHD111	63	40	78	22	68 x 1.5	12	48
RPHD001A	70	35	84	22	74 x 1.5	15	50
RPHD001	70	40	84	22	74 x 1.5	15	50
RPHD002A	80	40	94	25	85 x 2	15	60
RPHD002	80	45	94	25	85 x 2	15	60
RPHD003	80	50	94	25	85 x 2	15	60
RPHD004	90	45	109	25	95 x 2	15	60
RPHD005	90	50	109	25	95 x 2	15	60
RPHD005A	90	60	109	25	95 x 2	15	60
RPHD006A	100	45	119	25	105 x 2	15	60
RPHD006	100	50	119	25	105 x 2	15	60
RPHD007	100	60	119	25	105 x 2	15	60
RPHD008	110	50	129	30	115 x 2	15	70
RPHD009	110	60	129	30	115 x 2	15	70
RPHD010	120	60	139	30	125 x 2	15	70
RPHD011	120	70	139	30	125 x 2	15	70
RPHD011A	120	80	139	30	125 x 2	15	70
RPHD011B	125	70	144	39	130 x 2	15	75
RPHD011C	125	80	144	39	130 x 2	15	75
RPHD012	140	80	159	40	145 x 2	15	75
RPHD012A	140	90	159	40	145 x 2	15	75
RPHD013	140	100	159	40	145 x 2	15	75
RPHD013A	150	80	169	46	155 x 2	15	85
RPHD013B	150	90	169	46	155 x 2	15	85
RPHD013C	150	100	169	46	155 x 2	15	85
RPHD014	160	100	179	46	165 x 2	15	85
RPHD014A	160	120	179	46	165 x 2	15	85
RPHD040	180	100	215	60	188 x 2.5	18	107
RPHD041	180	120	215	60	188 x 2.5	18	107
RPHD050	200	100	225	60	208 x 2.5	18	107
RPHD051	200	120	225	60	208 x 2.5	18	107
RPHD052	200	140	225	60	208 x 2.5	18	107
RPHD060	220	120	245	65	228 x 2.5	18	112
RPHD061	220	140	245	65	228 x 2.5	18	112
RPHD070	250	150	275	80	258 x 2.5	20	130
RPHD071	250	180	275	80	258 x 2.5	20	130
RPHD080	300	150	335	95	308 x 3	25	155
RPHD081	300	180	335	95	308 x 3	25	155

PLEASE NOTE: ALL HEAVY DUTY HEAD BUSHES ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® TUBES.

TUBE AND ROD MACHINING DETAILS ARE AVAILABLE ON REQUEST.

RECOMMENDED TUBE SIZES FOR HEAVY DUTY PARTS

TUBE BORE Ø(mm)	O/D Ø(mm)	WALL THICKNESS (mm)	TUBE BORE Ø(mm)	O/D Ø(mm)	WALL THICKNESS (mm)
50	65	7.5	125	145	10
60	75	7.5	140	160	10
63	80	8.5	150	170	10
70	85	7.5	160	180	10
80	100	10	180	220	20
90	110	10	200	244	22
100	120	10	220	260	20
110	130	10	250	298	24
120	140	10	300	355	27.5

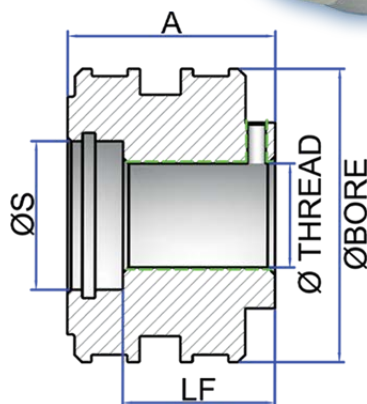
HEAVY DUTY PISTONS

STEEL - UNI-C40
SINGLE & DOUBLE ACTING APPLICATION
SUPPLIED WITH GRUB SCREW
MAXIMUM PRESSURE 350 BAR

ORDER CODE	BORE Ø(mm)	S Ø(mm)	GRUB SCREW	LF (mm)	THREAD Ø(mm)	A (mm)
RPHD014B	50	21	M6	28	20 x 1.5	40
NEW! RPHD014C	50	25	M6	28	22 x 1.5	40
RPHD014D	60	30	M6	30	27 x 2	45
RPHD015	63	30	M6	30	27 x 2	45
RPHD016	70	40	M6	41	30 x 2	56
NEW! RPHD017	70	35	M6	41	33 x 2	56
RPHD018	80	40	M6	41	30 x 2	56
NEW! RPHD019	80	40	M6	41	33 x 2	56
RPHD020	90	38	M6	40	36 x 3	55
NEW! RPHD021	90	43	M6	47	40 x 2	55
RPHD022	100	45	M6	41	42 x 2	56
RPHD023	110	50	M8	55	48 x 3	70
RPHD024	120	50	M8	55	48 x 3	70
NEW! RPHD025	120	54	M8	55	52 x 2	70
RPHD026	125	51	M8	55	48 x 3	70
NEW! RPHD027	125	54	M8	57	52 x 2	70
RPHD028	140	50	M8	57	48 x 3	75
NEW! RPHD029	140	67	M8	61	64 x 3	75
RPHD030	150	56	M8	60	52 x 3	80
NEW! RPHD031	150	67	M8	64	64 x 3	80
RPHD032	160	56	M8	60	52 x 3	80
NEW! RPHD033	160	76	M8	64	74 x 3	80
RPHD034	180	90	M10	85	80 x 2	115
RPHD035	200	100	M10	85	90 x 2	115
RPHD036	220	110	M10	90	100 x 2	120
RPHD037	250	125	M10	100	115 x 3	130
RPHD038	300	150	M12	105	140 x 3	140

PLEASE NOTE: ALL HEAVY DUTY PISTONS ARE NOT SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.

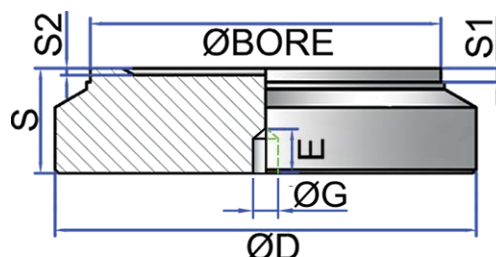
RPHD039 PISTONS DESIGNED IN ACCORDANCE WITH DNV PART 4 CHAPTER 7 RULES.



HEAVY DUTY END PLUGS

STEEL - FE510 A105
MAXIMUM PRESSURE 350 BAR

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S (mm)	S1 (mm)	S2 (mm)	ØG x E (mm)
RPHD023A	50	60	17	4	2	Ø4.25 x 8
RPHD023	50	65	17	4	-	
RPHD024A	60	70	19	4	2	
RPHD024	60	75	19	4	-	
RPHD024B	63	75	19	4	-	
RPHD025A	70	80	22	4	2	
RPHD025	70	85	22	4	2	
RPHD025B	75	90	22	4	-	
RPHD026	80	95	25	4	2	
RPHD026B	80	100	25	4	2	
RPHD026C	85	100	25	4	-	
RPHD027B	90	105	26	4	-	
RPHD027	90	110	26	4	-	
RPHD028B	100	115	30	4	2	Ø6.25 x 12
RPHD028	100	120	30	4	2	
RPHD029A	110	125	31	7	-	
RPHD029	110	130	31	7	-	
RPHD030	120	140	34	7	-	
RPHD030B	120	145	34	7	-	
RPHD030C	125	145	35	7	-	
RPHD030D	125	150	35	7	-	
RPHD031	140	160	40	7	-	
RPHD031B	140	170	40	7	-	
RPHD031C	150	170	42	7	-	
RPHD031D	150	180	42	7	-	
RPHD032	160	180	45	7	-	
RPHD032A	160	190	45	10	-	



HEAD BUSHES WITH ADJUSTABLE CUSHIONING

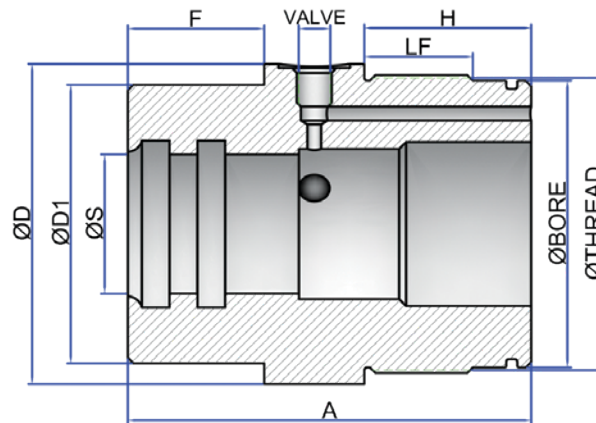
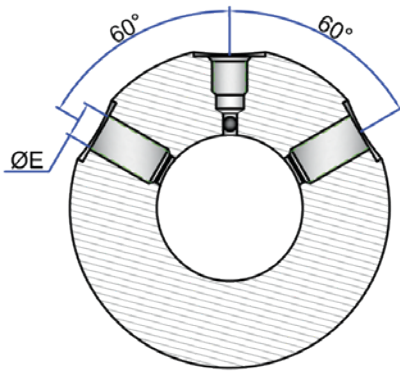
HYDRAULIC CAST IRON - G25
 DOUBLE ACTING APPLICATION
 'QR' CUSHIONING VALVE SUPPLIED
 COMPLETE WITH FULL SEAL KIT
 ALSO AVAILABLE IN FLANGED VERSION
 MAX PRESSURE 200 BAR



ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	D1 Ø(mm)	THREAD Ø(mm)	F (mm)	A (mm)	H (mm)
RP0201040020/2	40	63	20	50	45 x 1.5	28	90	35
RP0201050025/2	50	66	25	60	54 x 1.75	32	100	40
RP0201065035/2	65	88	35	75	69 x 1.75	35	110	45
RP0201080040/2	80	99	40	90	85 x 2	36	125	55
RP0201100050/2	100	115	50	100	105 x 2	49	145	60

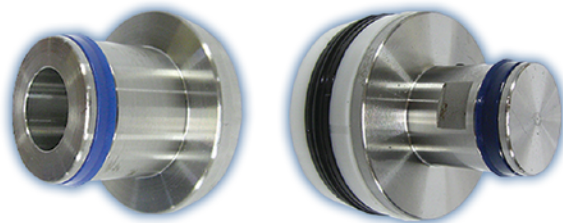
PLEASE NOTE: ALL CUSHIONING HEAD BUSHES ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® TUBES.

ORDER CODE	E Ø(gas)	QR VALVE (type)	LF (mm)
RP0201040020/2	1/4"	QR2	30
RP0201050025/2	1/4"	QR2	25
RP0201065035/2	3/8"	QR3	28
RP0201080040/2	1/2"	QR4	34
RP0201100050/2	1/2"	QR4	38



2 PART PISTONS FOR RAMS WITH ADJUSTABLE CUSHIONING

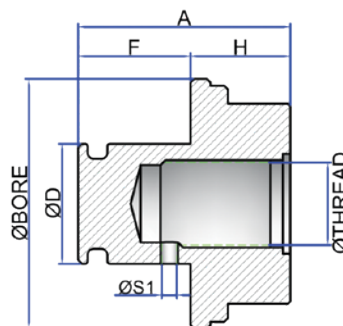
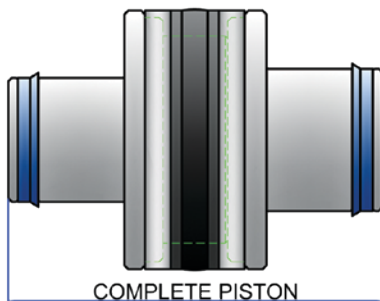
STEEL - C45 - UNI 7845-78
 DOUBLE ACTING APPLICATION
 COMPLETE WITH FULL SEAL KIT
 MAX PRESSURE 200 BAR



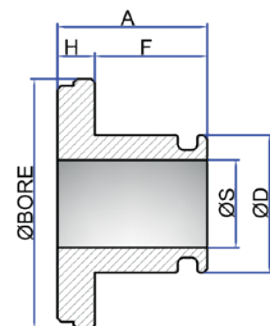
ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	F (mm)	A (mm)	H (mm)
RP0202040020	40	24	14	25	35	10
RP0202050025	50	30	16	29	40	11
RP0202065035	65	40	22	35	47	12
RP0202080040	80	45	27	40	55	15
RP0202100050	100	55	33	45	60	15

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S1 Ø(mm)	A (mm)	THREAD Ø(mm)	F (mm)	H (mm)
RP0203040020	40	20	5	51	14 x 1.5	25	26
RP0203050025	50	24	5	58	16 x 1.5	29	29
RP0203065035	65	30	6	65	22 x 1.5	35	30
RP0203080040	80	38	6	75	27 x 2	40	35
RP0203100050	100	48	6	85	33 x 2	45	40

PLEASE NOTE: ALL CUSHIONING PISTONS ARE **NOT** SUITABLE FOR USE WITH OUR STANDARD RAMPARTS® RODS ON PAGES 73 ▶ 76.



REAR PISTON (RP0203.)

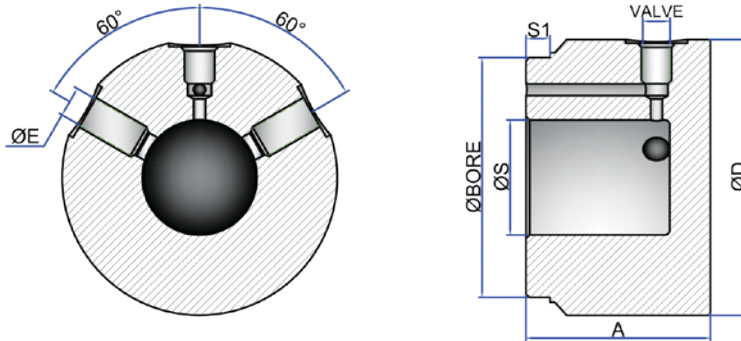


FRONT PISTON (RP0202.)

END PLUGS WITH ADJUSTABLE CUSHIONING

ORDER CODE	BORE Ø(mm)	D Ø(mm)	S Ø(mm)	S1 (mm)	E Ø(gas)	A (mm)	QR VALVE (type)
RP0204040020/2	40	58	20	7	1/4"	44	QR2
RP0204050025/2	50	63	24	8	1/4"	48	QR2
RP0204065035/2	65	79	30	10	3/8"	60	QR3
RP0204080040/2	80	94	38	10	1/2"	68	QR4
RP0204100050/2	100	115	48	10	1/2"	77	QR4

STEEL - FE A/105
 DOUBLE ACTING APPLICATION
 'QR' CUSHIONING VALVE SUPPLIED
 MAX PRESSURE 200 BAR



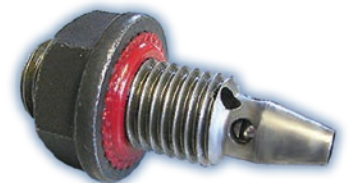
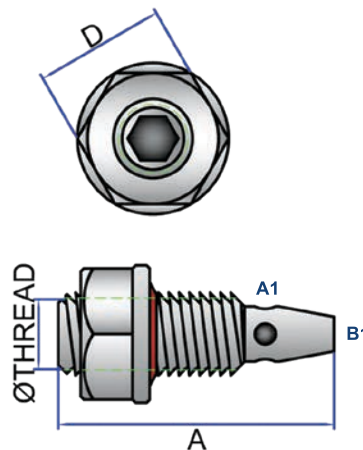
QR CUSHIONING VALVES (ADJUSTABLE)

ORDER CODE	THREAD Ø(mm)	D (mm)	A (mm)
RPCQR2	8 x 1	13	28
RPCQR3	10 x 1	17	36
RPCQR4	12 x 1.5	19	40

STEEL - SURFACE PHOSPHATED & OILED
 SOLID CONE NEEDLE
 OPENING PRESSURE 0.5 BAR
 DIN51524 & 51525
 TEMPERATURE RANGE -40°C TO +90°C
 MAX PRESSURE 300 BAR

FLOW DIRECTION FOR 'QR' VALVE:

- CONTROLLED FLOW FROM A1 TO B1
- FREE FLOW FROM B1 TO A1



SEAL KITS FOR CUSHIONING COMPONENTS

ORDER CODE	DESCRIPTION
RP02054020	SEAL KIT FOR 40 x 20 CUSHIONED COMPONENTS
RP02055025	SEAL KIT FOR 50 x 25 CUSHIONED COMPONENTS
RP02056535	SEAL KIT FOR 65 x 35 CUSHIONED COMPONENTS
RP02058040	SEAL KIT FOR 80 x 40 CUSHIONED COMPONENTS
RP020510050	SEAL KIT FOR 100 x 50 CUSHIONED COMPONENTS

TEMPERATURE RANGE -30°C TO +110°C
 SPEED 25 M / MIN
 MAX PRESSURE 200 BAR

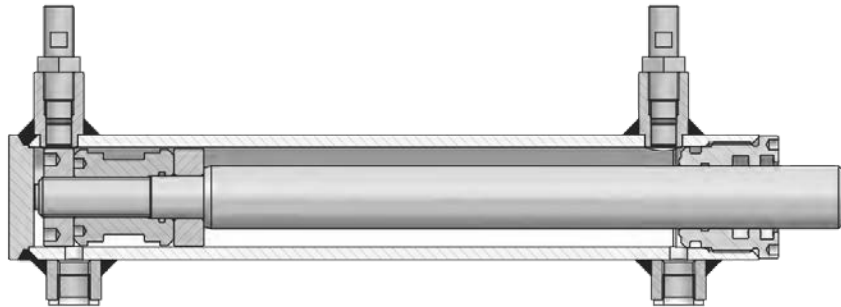


NEW! END OF STROKE INDUCTIVE SENSORS

INDUCTIVE END OF STROKE SENSORS

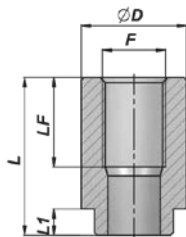
TECHNICAL SPECIFICATION:

- DC DIRECT CURRENT
- PNP/NORMALLY OPEN (NO)
- $S_n = 1.5\text{mm}$
- FLUSH (SHIELDED)
- 350 BAR MAX



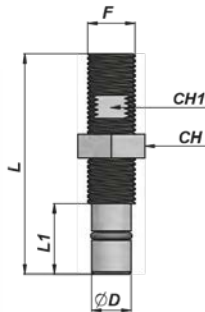
THREADED PORT FOR SENSOR

STEEL - S355J0 (Fe510C)



ORDER CODE	F (mm)	LF (mm)	L (mm)	D Ø(mm)	L1 (mm)
RPCBSSP06	M12x1	17	30	20	5

BALLUFF INDUCTIVE SENSOR - BES 516-300-S321-S4-D



ORDER CODE	F (mm)	L1 (mm)	L (mm)	D Ø(mm)	CH (mm)	CH1 (mm)	BRAND
RPBS400N	M12x1	17.9	78	10 e7	17	10	BALLUFF
RPMFH202	M12x1	15	60	9.7	17	10	IFM

PLEASE NOTE: CABLES SOLD SEPARATELY.
AVAILABLE IN DIFFERENT VARIATIONS ON REQUEST

FOR FULL TECHNICAL DETAILS PLEASE VISIT WWW.STEERFORTH.CO.UK

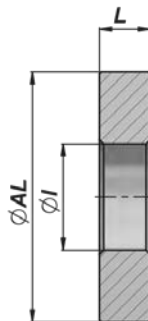
PISTON SENSOR RINGS

STEEL - 9SMn28

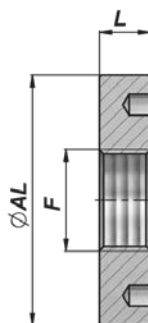
SINGLE & DOUBLE ACTING



FRONT SENSOR PLATE



REAR SENSOR PLATE



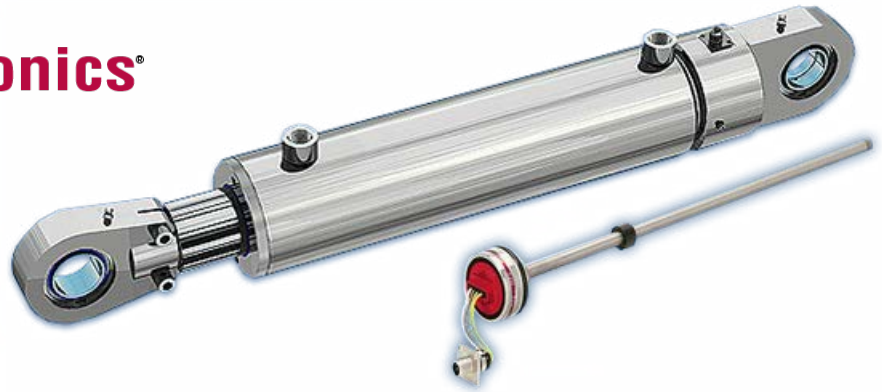
FRONT SENSOR PISTON RING

ORDER CODE	AL Ø (mm)	I Ø (mm)	L (mm)
RPSR040	40	17	12
RPSR050	50	21	12
RPSR060	60	25	12
RPSR063	63	25	12
RPSR070	70	25	12
RPSR080	80	28	12
RPSR090	90	35	12
RPSR100	100	35	12

REAR SENSOR PISTON RING

ORDER CODE	AL Ø (mm)	F (mm)	L (mm)
RPSR040T	40	M16x1.5	12
RPSR050T	50	M20x1.5	12
RPSR060T	60	M24x2	12
RPSR063T	63	M24x2	12
RPSR070T	70	M24x2	12
RPSR080T	80	M27x2	12
RPSR090T	90	M33x2	12
RPSR100T	100	M33x2	12

LINEAR POSITIONING SENSORS

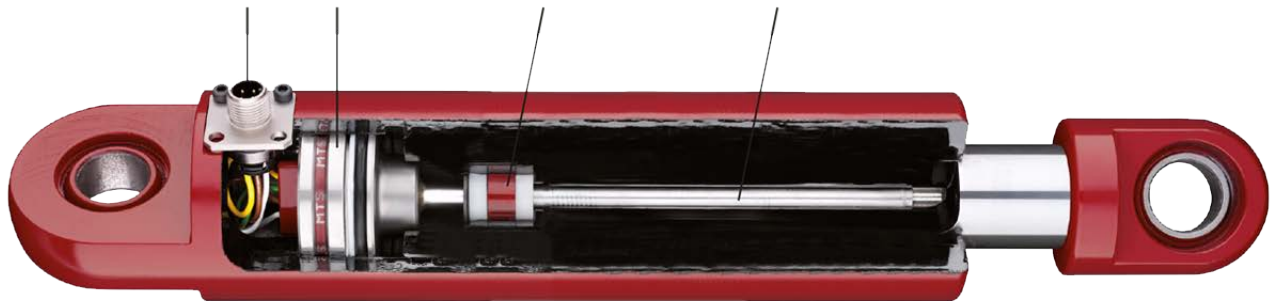


PRODUCT DESCRIPTION AND TECHNOLOGY

TEMPOSONICS® SENSORS CAN BE USED ON VERSATILE MOBILE MACHINES WITHOUT ANY RESTRICTION AND REPLACE CONTACT-BASED LINEAR SENSORS LIKE POTENTIOMETERS. HIGHLY DYNAMIC SYSTEMS ARE CONTROLLED SAFELY BY MEANS OF TEMPOSONICS® SENSORS. THUS ENHANCING THE PRODUCTIVITY, AVAILABILITY AND QUALITY OF THE WORKING PROCESS OF THE MACHINE. INSENSITIVE TO VIBRATION, SHOCKS, DUST AND WEATHERING INFLUENCE AND ELECTRO-MAGNETIC DISTURBANCES. TEMPOSONICS® MH SERIES ARE SUCCESSFULLY USED IN FRONT AXLE AND ARTICULATED FRAME STEERING CYLINDERS, HYDRAULIC JACKS AND IN STEERING SYSTEMS FOR HYDRAULIC UNITS ON AGRICULTURAL AND CONSTRUCTION MACHINERY.

① Temposonics®

Connector system (IP69K) ② Flange housing ③ Position magnet ④ Pressure pipe



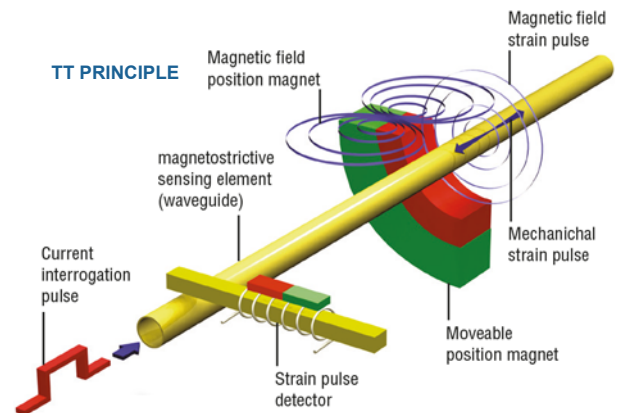
SIMPLE MECHANICS

THE EXTREMELY ROBUST SENSOR CONSISTS OF THE FOLLOWING MAIN PARTS:

- (1) THE INNOVATIVE CONNECTOR SYSTEM WHICH IS EASY TO INSTALL IN A FEW SECONDS, WITHOUT ANY SOLDERING OR CRIMPING. DUST-AND WATERPROOF UP TO IP69K.
- (2) THE FLANGE HOUSING WITH BUILT-IN ELECTRONICS AND SIGNAL CONVERTER.
- (3) THE POSITION MAGNET IS THE ONLY MOVING PART, WHICH IS ASSEMBLED INTO THE PISTON BOTTOM OR ROD. THIS PERMANENT MAGNET TRAVELS WEAR-FREE AND CONTACTLESS ALONG THE PRESSURE PIPE AND MEASURES THE ACTUAL POSITION.
- (4) THE PRESSURE PIPE PLACED WITHIN THE DRILLED PISTON ROD CONTAINS THE PROTECTED MAGNETOSTRICTIVE SENSING ELEMENT.

MAGNETOSTRICTION

TEMPOSONICS® LINEAR SENSORS ARE BASED ON THE MAGNETOSTRICTIVE TECHNOLOGY. BY MEASURING THE ACTUAL POSITION WITH NON CONTACT POSITION MAGNET THE SENSOR OPERATES 100% WEAR FREE. THE ABSOLUTE OPERATING PRINCIPLE ENABLES RELIABLE READINGS WITHOUT ANY REFERENCE POINT OR RECALIBRATION. A MECHANICAL STRAIN PULSE IS TRIGGERED BY THE TRAVELLING POSITION MAGNET. THE RUNTIME OF THIS ULTRASONIC WAVE IS MEASURED PRECISELY AND COMPILED INTO STANDARD ELECTRONIC OUTPUT SIGNALS.



- DUE TO SMALL DIMENSIONS MH SENSORS REQUIRE VERY LITTLE SPACE
- SUITABLE FOR OPERATING PRESSURES UP TO 300 BAR
- UNAFFECTED BY SURROUNDING MEDIA SUCH AS AGEING OR FOAMING OIL
- INSENSITIVE TO SHOCK AND VIBRATION
- DESIGNED FOR ALL CURRENT SUPPLY VOLTAGES (12/24 VDC)
- TEMPOSONICS® SENSORS OFFER ALL COMMON USED OUTPUT SIGNALS:
 - ANALOG: VDC/mA
 - BUS PROTOCOLS: CANopen, SAE J1939

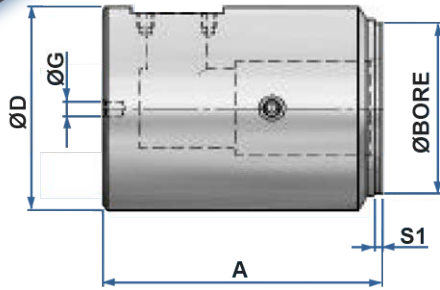
FOR TECHNICAL DATA

VISIT:

WWW.STEERFORTH.CO.UK

END PLUGS FOR RAMS WITH TEMPOSONICS® LINEAR POSITION SENSOR

STEEL - S355J0 (FE510C) - S355JR (A105)
 SINGLE & DOUBLE ACTING
 MAX PRESSURE 250 BAR

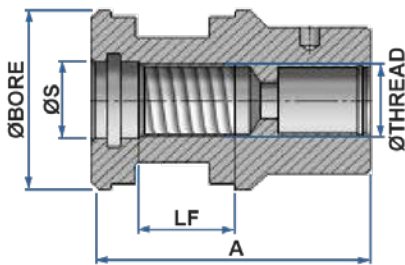


ORDER CODE	BORE Ø(mm)	D Ø(mm)	A (mm)	S1 (mm)	SENSOR TYPE	G Ø(mm)
RPPS40	40	50	75	2	MS	4.25
RPPS50	50	60				
RPPS60	60	70		10	MH	
RPPS63	63	73				
RPPS70	70	80				
RPPS80	80	95				
RPPS90	90	105				
RPPS100	100	115				



PISTONS FOR RAMS WITH TEMPOSONICS® LINEAR POSITION SENSOR

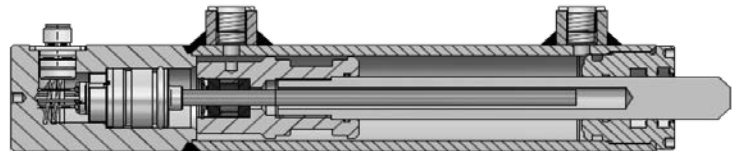
STEEL - 9SMN28
 SINGLE & DOUBLE ACTING APPLICATION
 COMPLETE WITH FULL SEAL KIT
 MAX PRESSURE 250 BAR



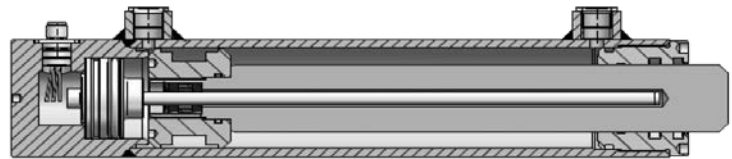
ORDER CODE	BORE Ø(mm)	S Ø(mm)	A (mm)	THREAD (mm)	LF (mm)
RPPS040P	40	20	70	18 x 1.5	24
RPPS050P	50	21	70	20 x 1.5	24

PLEASE NOTE: FOR BORE SIZES Ø60,63,70,80,90 &100, THE 'THREADED PISTONS ARE TO BE USED ALONG WITH THE TEMPOSONICS® SENSOR TYPE 'MH'. THE HOUSING OF THE MAGNET IS LOCATED AND INTEGRATED IN THE ROD STEM.

TEMPOSONICS® SENSOR PISTONS ARE **NOT** SUITABLE FOR USE WITH STANDARD RAMPARTS® RODS.



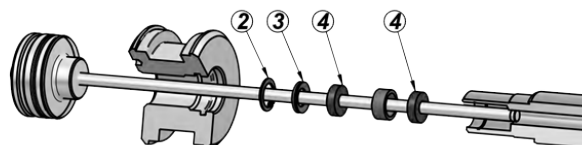
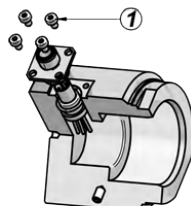
TEMPOSONICS® SENSOR TYPE - MS



TEMPOSONICS® SENSOR TYPE - MH

NEW! FITTING KITS FOR MTS MS + MH TEMPOSONICS® SENSOR

- KIT INCLUDES:
- 1 - CONNECTOR FIXING SCREWS
 - 2 - CIRCLIP
 - 3 - RING DIN6798A
 - 4 - SPACER RINGS



PLEASE NOTE: SENSOR AND MAGNET NOT INCLUDED



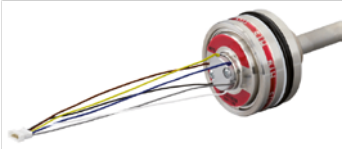
ORDER CODE	DESCRIPTION
CKMSMH0100	FITTING KIT FOR "MS/MH" SENSOR

TEMPOSONICS® IN CYLINDER LINEAR POSITION SENSORS

TEMPOSONICS® LINEAR SENSORS FOR ACCURATE PISTON POSITIONING.

THE PRINCIPLE OPERATION OF THE TEMPOSONICS® SENSOR LINEAR POSITION IS BASED ON THE MAGNETOSTRICTIVE EFFECT.



TEMPOSONICS® TYPE 'MS'	TEMPOSONICS® TYPE 'MH'	TEMPOSONICS® TYPE 'EE'
PROPOSED FOR BORES Ø40 & Ø50	PROPOSED FOR BORES FROM Ø60	PROPOSED FOR BORES FROM Ø60
		

PRINCIPLE APPLICATION:	CONSTRUCTION & MOBILE HANDLING	CONSTRUCTION & MOBILE HANDLING	INDUSTRIAL MACHINERY
MEASURING RANGES:	50-2500mm	50-2500mm	50-2500mm
ANALOG OUTPUT SIGNAL: (CHOICE)	VDC: 0.25...4.75 0.50...4.50 mA: 4...20	VDC: 0.25...4.75 0.50...4.50 mA: 4...20	mA: 4...20 mA: 20...4
DIGITAL OUTPUT SIGNAL:	-	CANopen/SAE J1939	-
LINEARITY:	50 ▶ 250mm ± 0.1mm 255 ▶ 2000mm ± 0.04% FULL STROKE 2005 ▶ 2500mm ± 0.8mm	50 ▶ 250mm ± 0.1mm 255 ▶ 2000mm ± 0.04% FULL STROKE 2005 ▶ 2500mm ± 0.8mm	◀ ± 0.02% FULL STROKE
RESOLUTION:	± 0.1mm	± 0.1mm	INFINITE
OPERATING TEMPERATURE:	-40°C ▶ +105°C	-40°C ▶ +105°C	-40°C ▶ +85°C
PRESSURE PN/Pmax:	300 / 400 BAR	350 / 450 BAR	350 BAR
CONNECTOR:	M12 - IP69K	M12 - IP69K	6 PIN MOLEX PICOBLADE™
VOLTAGE:	12 / 24 VDC	12 / 24 VDC	24 VDC
EMC:	ROAD VEHICLES: 2009 / 64 / EG (EG1 CONFORM). AGRICULTURAL & FOREST MACHINERY: 2009 / 19 / EG. CONSTRUCTION MACHINERY: EN13309	ROAD VEHICLES: 2009 / 64 / EG (EG1 CONFORM). AGRICULTURAL & FOREST MACHINERY: 2009 / 19 / EG. CONSTRUCTION MACHINERY: EN13309	ELECTROMAGNETIC EMISSION ACCORDING TO EN 55011, CL B:2009 + A1:2010 ELECTROMAGNETIC IMMUNITY ACCORDING TO EN 61326-1 : 2006

FULL DATA SHEETS AVAILABLE ON REQUEST

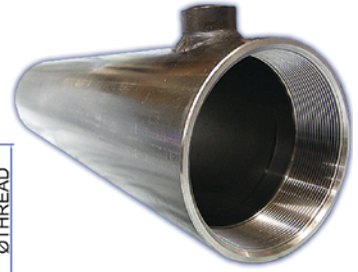
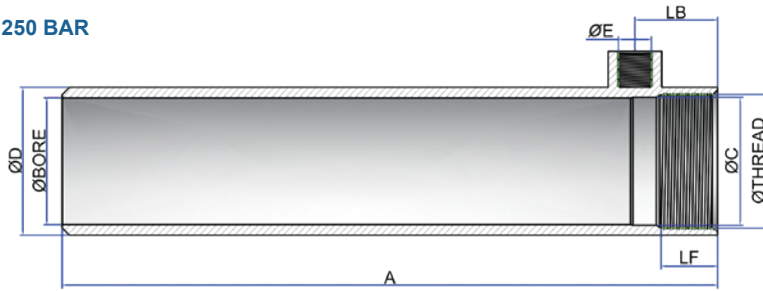
HYDRAULIC CYLINDER TUBES

STEEL - ST52.3 DOM & COLD DRAWN SEAMLESS TUBE

PORT UNDRILLED

MAXIMUM PRESSURE 250 BAR

ISO - H8 & H9



ORDER CODE	BORE Ø(mm)	D Ø(mm)	C Ø(mm)	A (mm)	STROKE (mm)	E Ø(bsp)	LB (mm)	LF (mm)	THREAD Ø(mm)
RP540	25	35	-	95	50	1/4"	15	13	28 x 1.5
RP541				145	100				
RP542				195	150				
RP543				245	200				
RP550	30	40	30.6	220	150	1/4"	32	14	34 x 1.5
RP552				370	300				
RP554	32	42	32.6	570	500	1/4"	27	16	36 x 1.5
RP560				127	50				
RP561				177	100				
RP562				227	150				
RP563				277	200				
RP564				327	250				
RP565				377	300				
RP566				477	400				
RP567	577	500	40.6	192	100	1/4"	32	20	44 x 1.5
RP650A	40	50		242	150				
RP650				292	200				
RP651				342	250				
RP652				392	300				
RP653				442	350				
RP653A				492	400				
RP654				542	450				
RP654C				592	500				
RP654A				642	550				
RP654D				692	600				
RP654B				892	800				
RP654E			1092	1000	50.6	202	100	3/8"	35
RP655A	50	60	252	150					
RP655			302	200					
RP656			352	250					
RP657			402	300					
RP658			452	350					
RP658A			502	400					
RP659			552	450					
RP659A			602	500					
RP660			652	550					
RP660A			702	600					
RP661			802	700					
RP661D			902	800					
RP661A	1102	1000	60.6	217	100	3/8"	40	28	64 x 1.5
RP661B	1602	1500							
RP661C	60	70		267	150				
RP662A				317	200				
RP662				367	250				
RP663				417	300				
RP664				467	350				
RP665				517	400				
RP665A			567	450					
RP666									
RP666A									

HYDRAULIC CYLINDER TUBES

ORDER CODE	BORE Ø(mm)	D Ø(mm)	C Ø(mm)	A (mm)	STROKE (mm)	E Ø(bsp)	LB (mm)	LF (mm)	THREAD Ø(mm)
RP667	60	70	60.6	617	500	3/8"	40	28	64 x 1.5
RP667A				667	550				
RP668				717	600				
NEW! RP668D				817	700				
RP668A				917	800				
RP668B				1117	1000				
RP668C				1617	1500				
RP300	63	73	64.1	267	150	3/8"	40	26	68 x 1.5
RP300A				317	200				
RP301				367	250				
RP302				417	300				
RP303				517	400				
RP304				617	500				
RP305				717	600				
NEW! RP305A				817	700				
RP306				917	800				
RP308				1117	1000				
RP310	1617	1500							
RP669A	70	80	70.6	217	100	3/8"	40	28	74 x 1.5
RP669				267	150				
RP670				317	200				
RP671				367	250				
RP672				417	300				
RP672A				467	350				
RP673				517	400				
RP673A				567	450				
RP674				617	500				
RP674A				667	550				
RP675				717	600				
NEW! RP675A				817	700				
RP676				917	800				
RP677				1117	1000				
RP678	1617	1500							
RP696	75	90	75.6	635	500	1/2"	50	35	80 x 2
RP697				1135	1000				
RP698				1635	1500				
RP680	80	92	80.6	335	200	1/2"	50	34	85 x 2
RP681				385	250				
RP682				435	300				
RP683				535	400				
RP684				635	500				
RP685				735	600				
NEW! RP685A				835	700				
RP686				935	800				
RP687				1135	1000				
RP688				1635	1500				
RP689	90	105	90.6	290	150	1/2"	50	34	95 x 2
RP690				440	300				
RP690A				540	400				
RP691				640	500				
NEW! RP691A				740	600				
RP691B				840	700				
RP692				940	800				
RP693				1140	1000				
RP694				1640	1500				
RP770	100	115	100.6	360	200	1/2"	70	52	105 x 2
RP771				410	250				
RP772				460	300				
RP773				560	400				
RP774				660	500				
RP775				760	600				
RP776				960	800				
RP777				1160	1000				
RP778				1660	1500				
RP780				125	145				
RP781	1178	1000							
RP782	1678	1500							

FLANGED HYDRAULIC CYLINDER TUBES

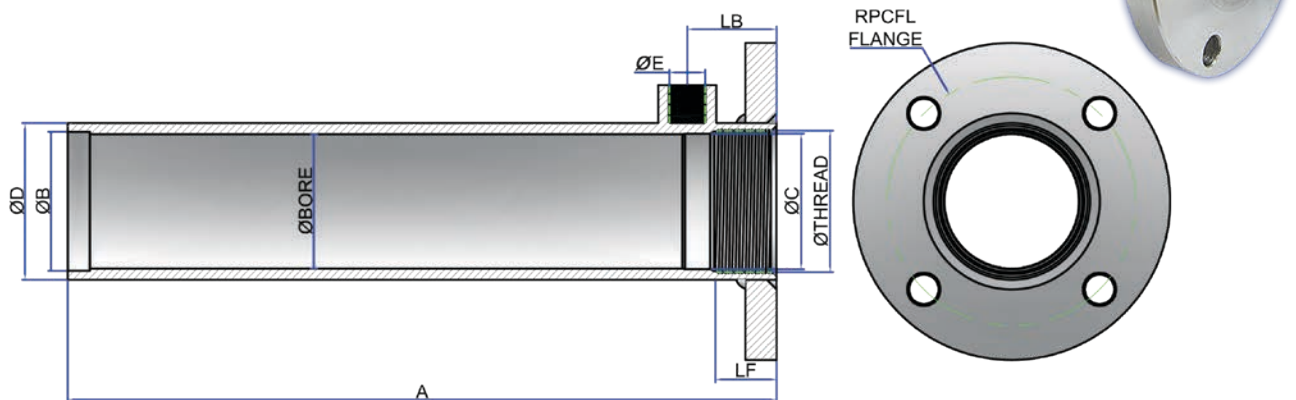
STEEL - ST52.3 DOM & COLD DRAWN SEAMLESS TUBE

PORT UNDRILLED

MAXIMUM PRESSURE 250 BAR

FLANGE= STEEL - FE510C

ISO - H9 DIN2393



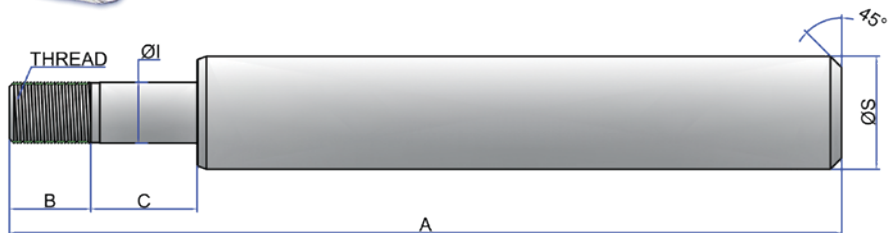
ORDER CODE	BORE Ø(mm)	D Ø(mm)	C Ø(mm)	A (mm)	STROKE (mm)	E Ø(bsp)	LB (mm)	LF (mm)	THREAD Ø(mm)	FLANGE TYPE	B Ø(mm)
RP320	40	50	40.6	202	100	1/4"	32	20	44 x 1.5	RPCFL0050*	41
RP321				302	200						
RP322				402	300						
RP323				502	400						
RP324				602	500						
RP325	50	60	50.6	212	100	3/8"	35	23	54 x 1.5	RPCFL0060*	51
RP326				312	200						
RP327				412	300						
RP328				512	400						
RP329				612	500						
RP330	60	70	60.6	230	100	3/8"	40	28	64 x 1.5	RPCFL0070*	61
RP331				330	200						
RP332				430	300						
RP333				530	400						
RP334				630	500						
RP335	70	80	70.6	230	100	3/8"	40	28	74 x 1.5	RPCFL0080*	71
RP336				330	200						
RP337				430	300						
RP338				530	400						
RP339				630	500						
RP340	80	95	80.6	250	100	1/2"	50	34	85 x 2	RPCFL0095*	81
RP341				350	200						
RP342				450	300						
RP343				550	400						
RP344				650	500						
RP345	100	115	100.6	278	100	1/2"	70	52	105 x 2	RPCFL0115*	101
RP346				378	200						
RP347				478	300						
RP348				578	400						
RP349				678	500						

*= PLEASE NOTE: FULL FLANGE DETAILS ARE AVAILABLE ON PAGE 144.
FOR SUITABLE END PLUGS DESIGNED FOR RAMPARTS® STANDARD FLANGED TUBES, PLEASE GO TO PAGE 137.

CHROME PLATED RODS



STEEL - EN8 GRADE DIN UNI CK45
CHROME - 25 MICRON (±5) HARD CHROME PLATED



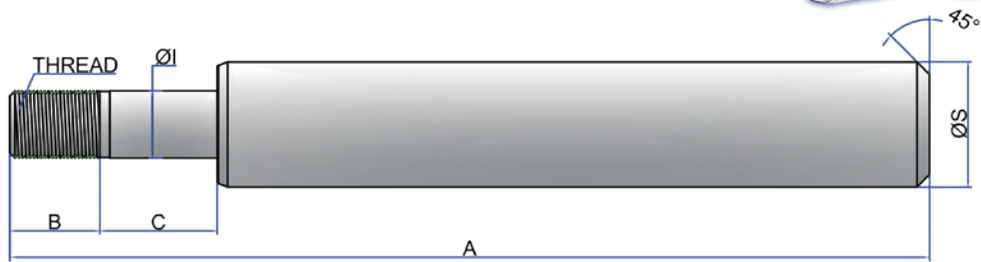
ORDER CODE	S Ø(mm)	I Ø(mm)	C (mm)	B (mm)	A (mm)	STROKE (mm)	THREAD Ø(mm)	SUITABLE FOR CYLINDER BORE Ø
RP570	16	11	6.5	24.5	128	50	10 x 1.5	25
RP571					178	100		
RP572					228	150		
RP573					278	200		
RP598	16	13	20	21	247	150	12 x 1.5	30
RP599					397	300		
RP600					597	500		
RP580	20	15	27	21	147	50	14 x 1.5	32
RP581					197	100		
RP582					247	150		
RP583					297	200		
RP584					347	250		
RP585					397	300		
RP586					497	400		
RP587	597	500						
RP601A	20	15	35	23	220	100	14 x 1.5	35, 40 & 50**
RP601					270	150		
RP602					320	200		
RP603					370	250		
RP604					420	300		
RP604A					470	350		
RP605					520	400		
RP605A					570	450		
RP605B	620	500						
RP709	25	15	35	23	220	100	14 x 1.5	40
RP710					270	150		
RP711					320	200		
RP712					370	250		
RP713					420	300		
RP713A					470	350		
RP714					520	400		
RP714A					570	450		
RP715					620	500		
RP715A					670	550		
RP716	720	600						
RP717	920	800						
RP718	1120	1000						
RP606A	25	20	35	30	230	100	20 x 1.5	50 & 55
RP606					280	150		
RP607					330	200		
RP608					380	250		
RP609					430	300		
RP609A					480	350		
RP610					530	400		
RP610A					580	450		
RP611					630	500		
RP611A					680	550		
RP612					730	600		
NEW! RP612C					830	700		
RP612A	930	800						
RP612B	1130	1000						

** = SUITABLE FOR USE WITH Ø50 BORE PISTON (RP152A) ON PAGE 114, BUT PLEASE NOTE THAT STROKE LENGTH WILL BE INCREASED BY 7mm DUE TO DIFFERENCE IN SPIGOT LENGTH.

CHROME PLATED RODS

STEEL - EN8 GRADE DIN UNI CK45

CHROME - 25 MICRON (±5) HARD CHROME PLATED



ORDER CODE	S Ø(mm)	I Ø(mm)	C (mm)	B (mm)	A (mm)	STROKE (mm)	THREAD Ø(mm)	SUITABLE FOR CYLINDER BORE Ø
RP719	30	20	35	30	230	100	20 x 1.5	50 & 55
RP720					280	150		
RP721					330	200		
RP722					380	250		
RP723					430	300		
RP723A					480	350		
RP724					530	400		
RP724A					580	450		
RP725					630	500		
RP725A					680	550		
RP726					730	600		
RP726A					830	700		
RP727					930	800		
RP728					1130	1000		
RP729	1630	1500						
RP613A	30	20	45	30	248	100	20 x 1.5	60, 63, 65 & 70
RP613					298	150		
RP614					348	200		
RP615					398	250		
RP616					448	300		
RP616A					498	350		
RP617					548	400		
RP617A					598	450		
RP618					648	500		
RP618A					698	550		
RP619					748	600		
NEW! RP619D					848	700		
RP619A					948	800		
RP619B					1148	1000		
RP619C	1648	1500						
RP620A	35	20	45	30	248	100	20 x 1.5	60, 63, 65 & 70
RP620					298	150		
RP621					348	200		
RP622					398	250		
RP623					448	300		
RP623A					498	350		
RP624					548	400		
RP624A					598	450		
RP625					648	500		
RP625A					698	550		
RP626					748	600		
NEW! RP626D					848	700		
RP626A					948	800		
RP626B					1148	1000		
RP626C	1648	1500						
NEW! RP627A	40	27	45	30	248	100	27 x 2	60 & 70
NEW! RP627B					298	150		
RP627					348	200		
RP628					398	250		
RP629					448	300		
RP629A					498	350		
RP630					548	400		

CHROME PLATED RODS

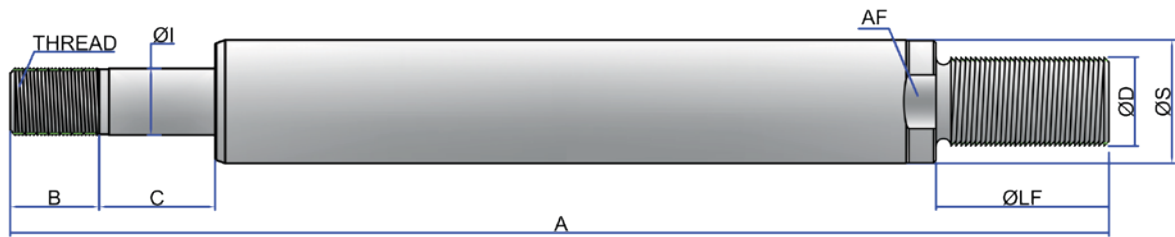
ORDER CODE	S Ø(mm)	I Ø(mm)	C (mm)	B (mm)	A (mm)	STROKE (mm)	THREAD Ø(mm)	SUITABLE FOR CYLINDER BORE Ø
RP630A	40	27	45	30	598	450	27 x 2	60 & 70
RP631					648	500		
RP631A					698	550		
RP632					748	600		
NEW! RP632A					848	700		
RP633					948	800		
RP634					1148	1000		
RP635					1648	1500		
RP785	40	24	40	35	348	200	24 x 2	60, 63 & 70
RP786					398	250		
RP787					448	300		
RP788					548	400		
RP789					648	500		
RP790					748	600		
NEW! RP790A					848	700		
RP791					948	800		
RP792	1148	1000						
RP793	1648	1500						
RP730	40	27	45	38	368	200	27 x 2	75, 80 & 90**
RP731					418	250		
RP732					468	300		
RP733					568	400		
RP734					668	500		
RP735					768	600		
NEW! RP735A					868	700		
RP736					968	800		
RP737	1168	1000						
RP740	50	27	45	38	368	200	27 x 2	70, 80 & 90**
RP741					418	250		
RP742					468	300		
RP743					568	400		
RP744					668	500		
RP745					768	600		
NEW! RP745A					868	700		
RP746					968	800		
RP747	1168	1000						
RP748	1668	1500						
RP800	50	33	45	43	471	300	33 x 2	90
RP801					571	400		
RP802					671	500		
RP803					771	600		
NEW! RP803A					871	700		
RP804					971	800		
RP805	1171	1000						
RP750	50	33	45	43	395	200	33 x 2	100
RP751					445	250		
RP752					495	300		
RP753					595	400		
RP754					695	500		
RP755					795	600		
NEW! RP755A					895	700		
RP756					995	800		
RP757	1195	1000						
RP758	1695	1500						
RP760	60	33	45	43	495	300	33 x 2	100
RP761					595	400		
RP762					695	500		
RP763					795	600		
NEW! RP763A					895	700		
RP764					995	800		
RP765					1195	1000		
RP765A					1695	1500		
RP766	717	500						
RP767	1217	1000						
RP768	1717	1500						

** = SUITABLE FOR USE WITH Ø70 BORE PISTON (RP157B), BUT PLEASE NOTE THAT STROKE LENGTH WILL BE REDUCED BY 8mm.
ALSO Ø90 BORE PISTON (RP161), BUT PLEASE NOTE STROKE LENGTH WILL BE INCREASED BY 5mm

CHROME PLATED RODS

STEEL - EN8 GRADE DIN UNI CK45 (SAE 1045)

CHROME - 25 MICRON (±5) HARD CHROME PLATED



ORDER CODE	S Ø(mm)	I Ø(mm)	C (mm)	B (mm)	A (mm)	STROKE (mm)	THREAD Ø(mm)	SUITABLE FOR CYLINDER BORE Ø	AF (mm)	D Ø(mm)	LF (mm)
RP810	20	15	35	23	238	100	14 x 1.5	40	18	16 x 1.5	30
RP811					338	200					
RP812					438	300					
RP813					538	400					
RP814					638	500					
RP815	30	20	35	30	258	100	20 x 1.5	50	26	20 x 1.5	40
RP816					358	200					
RP817					458	300					
RP818					558	400					
RP819					658	500					
RP820	35	24	40	35	285	100	24 x 2	60, 63 & 70	32	27 x 2	50
RP821					385	200					
RP822					485	300					
RP823					585	400					
RP824					685	500					
RP825	40	27	45	30	297	100	27 x 2	60, 63 & 70	36	30 x 2	60
RP826					397	200					
RP827					497	300					
RP828					597	400					
RP829					697	500					
RP830	50	27	45	38	328	100	27 x 2	80	45	36 x 2	70
RP831					428	200					
RP832					528	300					
RP833					628	400					
RP834					728	500					
RP835	50	33	45	43	355	100	33 x 2	100	45	36 x 2	70
RP836					455	200					
RP837					555	300					
RP838					655	400					
RP839					755	500					

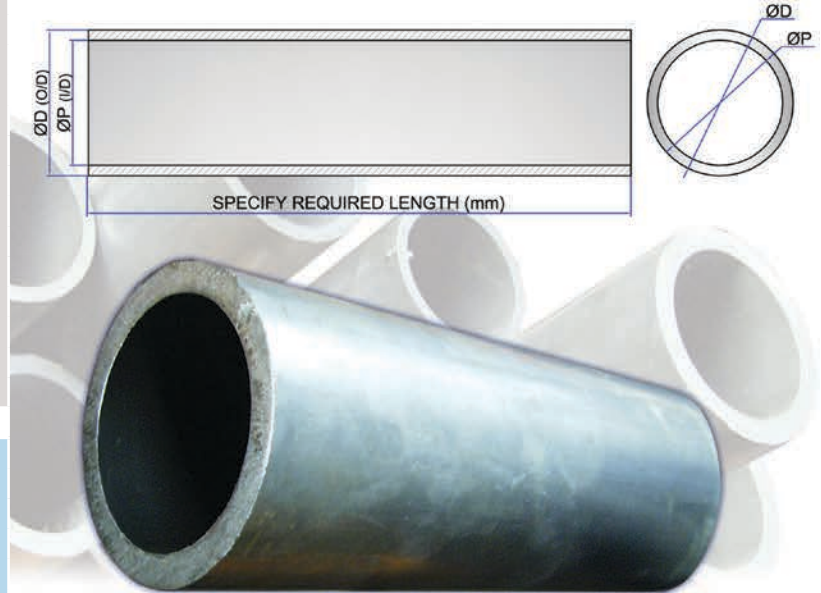


STANDARD ROD BELLOWS ALSO AVAILABLE!
SEE PAGES 150-151

PLAIN MATERIAL

STEEL - ST52.3 DIN 2391 / 2393 - H8 / H9 / H10
HONED & SMOOTH BORE
SEAMLESS, WELDED AND D.O.M

ORDER CODE	P Ø(mm)	D Ø(mm)	SPECIFICATION
RPD2535	25	35	SMOOTH BORE TUBE (DOM TUBE) ST52.3 - COLD DRAWN DIN2393/h9
RPD3040	30	40	
RPD3240	32	40	
RPD3242	32	42	
RPD3545	35	45	
RPD4050	40	50	
RPD4555	45	55	
RPD5060	50	60	
RPD5565	55	65	
RPD6070	60	70	
RPD6373	63	73	
RPD6575	65	75	
RPD7080	70	80	
RPD8095	80	95	



PLEASE USE THE TABLE TO THE LEFT TO ORDER OUR STANDARD RANGE OF SMOOTH BORE AND HONED BORE TUBE. USE THE ORDER CODE SHOWN AND ADVISE THE REQUIRED LENGTH AT TIME OF ORDER / QUOTATION.

ORDER CODE	P Ø(mm)	D Ø(mm)	SPECIFICATION
RPH4050	40	50	HONED TUBE ST52.3 - ISOh8-h10
RPH4555	45	55	
RPH5060	50	60	
RPH5565	55	65	
RPH6070	60	70	
RPH6075	60	75	
RPH6373	63	73	
RPH6575	65	75	
RPH7080	70	80	
RPH7590	75	90	
RPH8095	80	95	
RPH85100	85	100	
RPH90105	90	105	
RPH95110	95	110	
RPH100115	100	115	
RPH100120	100	120	
RPH105120	105	120	
RPH110125	110	125	
RPH110130	110	130	
RPH120140	120	140	
RPH125145	125	145	
RPH140160	140	160	
RPH150170	150	170	
RPH150180	150	180	
RPH160180	160	180	
RPH160185	160	185	
RPH180210	180	210	
RPH200220	200	220	
RPH250280	250	280	

ALSO AVAILABLE:

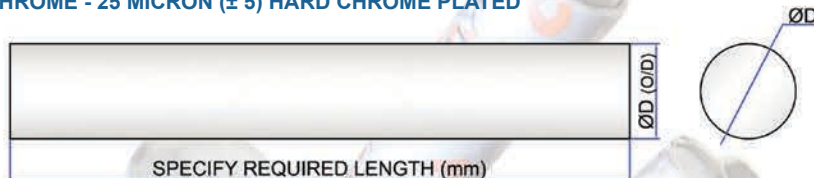
- IMPERIAL TUBE AND ROD SIZES
- 20MV6 EN14 GRADE ROD
- NIKROM 350 & 500 GRADE ROD
- E431, 316 & 304 STAINLESS STEEL
- C35E / C45E IH INDUCTION HARDENED
- BRONZE / CHROME MARINE GRADE ROD

ORDER CODE	D Ø(mm)	SPECIFICATION
RPC10	10	CHROME PLATED ROD CK45 / EN8 GRADE f7 TOLERANCE
RPC12	12	
RPC14	14	
RPC16	16	
RPC20	20	
RPC22	22	
RPC25	25	
RPC30	30	
RPC35	35	
RPC40	40	
RPC45	45	
RPC50	50	
RPC55	55	
RPC60	60	
RPC65	65	
RPC70	70	
RPC75	75	
RPC80	80	
RPC85	85	
RPC90	90	
RPC100	100	
RPC110	110	
RPC120	120	
RPC130	130	
RPC150	150	

CHROME PLATED ROD

MILD STEEL - EN8 GRADE DIN UNI-CK45

CHROME - 25 MICRON (± 5) HARD CHROME PLATED



PLEASE USE THE TABLE TO THE RIGHT TO ORDER OUR STANDARD RANGE OF EN8 GRADE ROD. USE THE ORDER CODE SHOWN AND ADVISE THE REQUIRED LENGTH AT TIME OF ORDER / QUOTATION.

PLEASE NOTE: ALL TUBE AND ROD IS CUT AND DESPATCHED AS PLAIN MATERIAL AND WILL REQUIRE MACHINING TO SPECIFICATION.

COMPLETE SEAL KITS FOR RAMPARTS® COMPONENTS

TEMP' RANGE = -30°C ▶ +110°C

MAXIMUM SPEED - 0.5 M/S

YOUR SEAL KIT WILL INCLUDE:

O'RINGS
 MAIN (90 SHORE)
 LARGER BORE MAIN (90 SHORE + GKS)*
 THREAD (70 SHORE)
 PISTON SPIGOT
 NBR -30°C ▶ +130°C
 GKS (POLYESTER) -40°C ▶ +150°C

WIPER / SCRAPER (GHK)
 POLYURETHANE -40°C ▶ +110°C

GLAND (TTI / TSE)
 TTI = POLYURETHANE -40°C ▶ +110°C
 TSE = NBR+FABRIC -30°C ▶ +120°C

PISTON (5 PIECE-TPM)
 NBR + POM + POLYESTER -30°C ▶ +110°C

GUIDE RING (AGE)*
 POM + GLASS
 -40°C ▶ +110°C



ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)
RP398	25	16	RP414C	63	40	RP437	100	40
RP399	30	16	RP414F	63	45	RP438	100	45
RP400A	32	16	RP415	65	30	RP439	100	50
RP400	32	20	RP416	65	35	RP440	100	60
RP401	35	20	RP417	65	40	RP440D	100	63
RP402	35	22	RP417A	65	45	RP440A	100	70
RP403	40	20	RP418A	70	25	RP438A	110	45
RP404	40	22	RP418	70	30	RP439A	110	50
RP405	40	25	RP419	70	35	RP440B	110	60
RP405A	40	28	RP420	70	40	RP440C	110	70
RP406	45	22	RP420B	70	45	RP441A	120	50
RP407	45	25	RP420A	70	50	RP441	120	60
RP408A	50	20	RP421	75	30	RP442	120	70
RP408	50	25	RP422	75	35	RP442A	120	80
RP408B	50	28	RP423	75	40	RP443	125	60
RP409	50	30	RP424	75	45	RP444	125	70
RP409C	50	32	RP425A	80	30	RP444C	125	80
RP409A	50	35	RP425	80	35	RP444D	125	90
RP410A	55	25	RP426	80	40	RP444A	140	70
RP410	55	30	RP427	80	45	RP444B	140	80
RP411	55	35	RP428	80	50	RP445	150	70
RP412A	60	25	RP428B	80	60	RP446	150	80
RP412	60	30	RP429	85	35	RP447	160	80
RP413	60	35	RP430	85	40	RP448	160	90
RP414	60	40	RP431	85	45	RPGKG1180100*	180	100
RP413A	60	45	RP432	85	50	RPGKG1180120*	180	120
RP414A	63	30	RP433	90	40	RPGKG1200100*	200	100
RP414D	63	32	RP434	90	45	RPGKG1200120*	200	120
RP414B	63	35	RP435	90	50	RPGKG1250120*	250	120
RP414E	63	36	RP436	90	60	RPGKG1250150*	250	150

HEAD BUSH SEAL KITS FOR RAMPARTS® COMPONENTS

TEMP' RANGE = -30°C ▶ +110°C

MAXIMUM SPEED - 0.5 M/S

NITRILE RUBBER - NBR80

POLYURETHANE

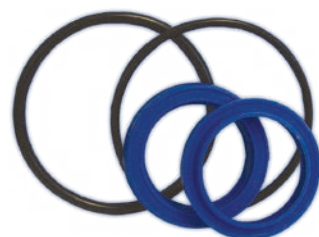
NBR80 & FABRIC

YOUR SEAL KIT WILL INCLUDE:

O'RINGS
 MAIN (90 SHORE)
 THREAD (70 SHORE)
 NBR -30°C ▶ +130°C

WIPER / SCRAPER (GHK)
 POLYURETHANE -40°C ▶ +110°C

GLAND (TTI / TSE)
 TTI = POLYURETHANE -40°C ▶ +110°C
 TSE = NBR+FABRIC -30°C ▶ +120°C



ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)
RPSK127	25	16	RPSK134B	60	25	RPSK138	75	30	RPSK142C	100	60
RPSK128	30	16	RPSK135	60	30	RPSK138A	75	35	RPSK142D	100	70
RPSK128A	32	16	RPSK135A	60	35	RPSK138B	75	40	RPSK142J	100	63
RPSK129	32	20	RPSK135B	60	40	RPSK138C	75	45	RPSK142E	110	45
RPSK130	35	20	RPSK135H	60	45	RPSK139E	80	30	RPSK142F	110	50
RPSK130A	35	22	RPSK135C	63	30	RPSK139	80	35	RPSK142G	110	60
RPSK131	40	20	RPSK135F	63	32	RPSK139A	80	40	RPSK142H	110	70
RPSK131A	40	22	RPSK135D	63	35	RPSK139B	80	45	RPSK143C	120	50
RPSK131B	40	25	RPSK135E	63	40	RPSK139C	80	50	RPSK143	120	60
RPSK131C	40	28	RPSK135J	63	45	RPSK139D	80	60	RPSK143A	120	70
RPSK132	45	22	RPSK135G	63	36	RPSK140	85	35	RPSK143B	120	80
RPSK132A	45	25	RPSK136	65	30	RPSK140A	85	40	RPSK144	125	60
RPSK133C	50	20	RPSK136A	65	35	RPSK140B	85	45	RPSK144A	125	70
RPSK133	50	25	RPSK136B	65	40	RPSK140C	85	50	RPSK144D	125	80
RPSK133F	50	28	RPSK136F	65	45	RPSK141	90	40	RPSK144E	125	90
RPSK133A	50	30	RPSK137E	70	25	RPSK141A	90	45	RPSK144B	140	70
RPSK133E	50	32	RPSK137	70	30	RPSK141B	90	50	RPSK144C	140	80
RPSK133B	50	35	RPSK137A	70	35	RPSK141C	90	60	RPSK145	150	70
RPSK133D	55	25	RPSK137B	70	40	RPSK142	100	40	RPSK145A	150	80
RPSK134	55	30	RPSK137D	70	45	RPSK142A	100	45	RPSK146	160	80
RPSK134A	55	35	RPSK137C	70	50	RPSK142B	100	50	RPSK146A	160	90

SEAL KITS FOR HEAVY DUTY COMPONENTS

ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)
RPHD5025G	50	25	RPHD9060G	90	60	RPHD15090G	150	90
RPHD5030G	50	30	RPHD10045G	100	45	RPHD150100G	150	100
RPHD5035G	50	35	RPHD10050G	100	50	RPHD160100G	160	100
RPHD6030G	60	30	RPHD10060G	100	60	RPHD160120G	160	120
RPHD6035G	60	35	RPHD11050G	110	50	RPHD180100G	180	100
RPHD6040G	60	40	RPHD11060G	110	60	RPHD180120G	180	120
RPHD6335G	63	35	RPHD12060G	120	60	RPHD200100G	200	100
RPHD6340G	63	40	RPHD12070G	120	70	RPHD200120G	200	120
RPHD7035G	70	35	RPHD12080G	120	80	RPHD200140G	200	140
RPHD7040G	70	40	RPHD12570G	125	70	RPHD220120G	220	120
RPHD8040G	80	40	RPHD12580G	125	80	RPHD220140G	220	140
RPHD8045G	80	45	RPHD14080G	140	80	RPHD250150G	250	150
RPHD8050G	80	50	RPHD14090G	140	90	RPHD250180G	250	180
RPHD9045G	90	45	RPHD140100G	140	100	RPHD300150G	300	150
RPHD9050G	90	50	RPHD15080G	150	80	RPHD300180G	300	180

HEADBUSH SEAL KITS

TEMP' RANGE = -30°C ▶ +110°C

MAXIMUM SPEED - 0.8 M/S



ORDER CODE	BORE Ø(mm)	ORDER CODE	BORE Ø(mm)	ORDER CODE	BORE Ø(mm)
RPHD0050	50	RPHD0100	100	RPHD0150	150
RPHD0060	60	RPHD0110	110	RPHD0160	160
RPHD0063	63	RPHD0120	120	RPHD0180	180
RPHD0070	70	RPHD0125	125	RPHD0200	200
RPHD0080	80	RPHD0140	140	RPHD0220	220
RPHD0090	90	RPHD0140	140	RPHD0250	250
RPHD0090	90	RPHD0140	140	RPHD0300	300

PISTON SEAL KITS

TEMP' RANGE = -30°C ▶ +80°C

MAXIMUM SPEED - 0.8 M/S



HFR / NFR CYLINDER SEAL KITS

ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	TO SUIT CYLINDER
RP398	25	16	'HFR0160' SERIES CYLINDER
RP400	32	20	'HFR0200' SERIES CYLINDER
RP450	40	25	'NFR1250' SERIES CYLINDER
RP451	50	30	'NFR2300' SERIES CYLINDER
RP452	60	30	'NFR3300' SERIES CYLINDER
RP453	60	35	'NFR3350' SERIES CYLINDER
RP454	70	40	'NFR4400' SERIES CYLINDER
RP455	80	40	'NFR5400' SERIES CYLINDER
RP456	100	50	'NFR6500' SERIES CYLINDER

TEMPERATURE RANGE = -30°C ▶ +110°C

MAXIMUM SPEED - 0.5 M/S

POLYURETHANE / NBR80 & FABRIC

NITRILE RUBBER NBR80

ACETAL



HEAD BUSH SEAL KITS FOR STAINLESS RAMPARTS®

ORDER CODE	BORE Ø(mm)	ROD Ø(mm)	ORDER CODE	BORE Ø(mm)	ROD Ø(mm)
RPSS4020	40	20	RPSS6035	60	35
RPSS4025	40	25	RPSS6040	60	40
RPSS5025	50	25	RPSS7035	70	35
RPSS5030	50	30	RPSS7040	70	40
RPSS6030	60	30	RPSS8040	80	40

TEMPERATURE RANGE = -30°C ▶ +110°C

MAXIMUM SPEED - 0.5 M/S

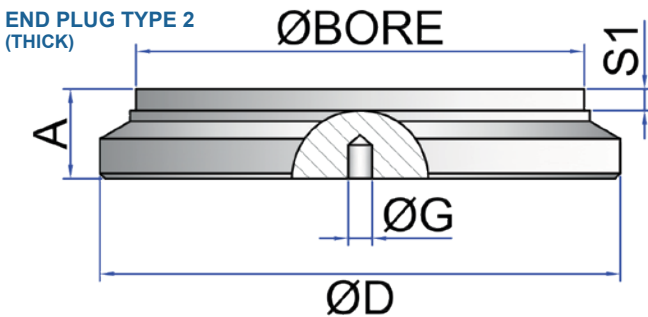
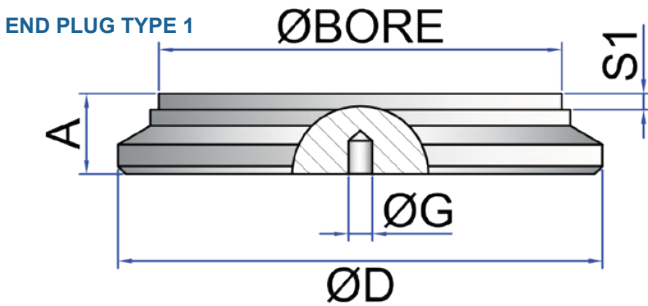
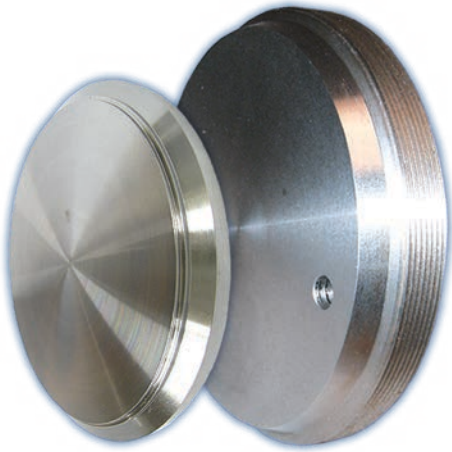
NITRILE RUBBER NBR80

POLYURETHANE & COMPOSITE

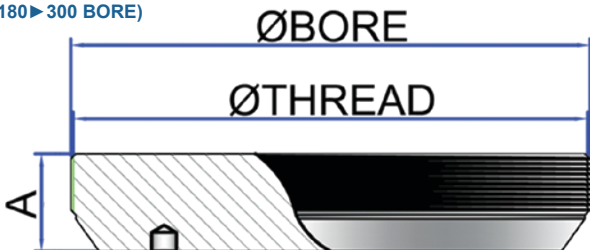


WELDABLE FLAT END PLUGS

STEEL - FE510C A105 & UNI-C40 (LARGE BORE)



LARGE BORE END PLUG (Ø180 > 300 BORE)



PLEASE NOTE: END PLUGS TYPE 1 LISTED IN THE UPPER RIGHT HAND TABLE ARE DESIGNED TO ACCEPT OTHER PARTS BEING WELDED TO THEM FOR EXAMPLE: SWIVEL BEARINGS, CLEAVISES ETC. THE ADDITION OF THESE PARTS GIVES ADDED RIGIDITY, WHICH ASSISTS IN WITHSTANDING HYDRAULIC PRESSURE AND BENDING MOMENTS.

WE RECOMMEND THE TYPE 2 END PLUGS LISTED IN THE LOWER RIGHT HAND TABLE FOR USE ON PLAIN ENDED CYLINDER DESIGNS. PLEASE ALSO NOTE THAT THE USE OF THE END PLUGS WITH S1 DIMENSION LARGER THAN 2mm WILL REDUCE THE AVAILABLE STROKE OF THE TUBE.

(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL PLEASE QUOTE 'SS' IN PART NUMBER, I.E RPSS114

NEW!

END PLUG TYPE 1

ORDER CODE	BORE Ø(mm)	D Ø(mm)	THREAD Ø(mm)	A (mm)	S1 (mm)	G Ø(mm)
RP107	20	30	-	7	1.5	-
RP108	25	35	-	7	2	3.25
RP109	30	40	-	8	2	4.25
RP110	32	42	-	8	2	4.25
RP111	35	45	-	10	2	4.25
RP112 (1)	40	50	-	10	2	4.25
RP113	45	55	-	10	2	4.25
RP114 (1)	50	60	-	10	2	4.25
RP115	55	65	-	12	2	4.25
RP116 (1)	60	70	-	12	2	4.25
RP116B	63	73	-	12	2	4.25
RP116A	65	75	-	12	2	4.25
RP117	65	80	-	12	2	4.25
RP118 (1)	70	80	-	12	2	4.25
RP118B	70	85	-	12	2	4.25
RP119	75	90	-	12	2	4.25
RP120B	80	90	-	12	2	4.25
RP120 (1)	80	95	-	12	2	4.25
RP121	85	100	-	15	2	4.25
RP122	90	105	-	15	2	4.25
RP123	100	115	-	15	2	4.25
RP123B	110	125	-	15	2	6.25
RP123F	110	130	-	15	2	6.25
RP124	120	140	-	18	2	6.25
RP125	125	145	-	18	2	6.25
RP125A	140	160	-	18	2	6.25
RP126	150	170	-	20	2	6.25
RP126A	160	180	-	20	2	6.25
RPCF00180185	180	-	185 x 2.5	35	-	-
RPCF00200205	200	-	205 x 2.5	48	-	-
RPCF00220228	220	-	228 x 2.5	48	-	-
RPCF00250255	250	-	255 x 2.5	48	-	-
RPCF00300308	300	-	308 x 3	60	-	-

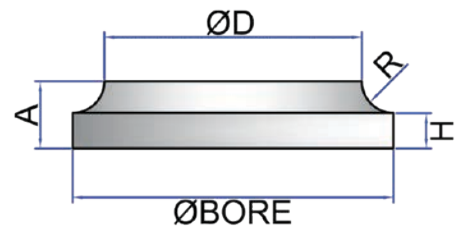
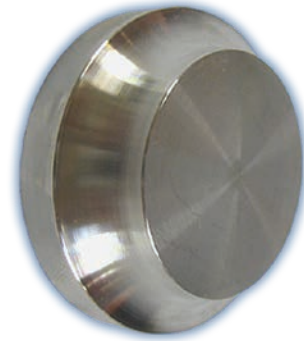
END PLUG TYPE 2 (THICK)

ORDER CODE	BORE Ø(mm)	D Ø(mm)	THREAD Ø(mm)	A (mm)	S1 (mm)	G Ø(mm)
RP111A	35	45	-	14	4	4
RP112A	40	50	-	14	4	4
RP113A	45	55	-	14	4	4
RP114A	50	60	-	15	4	4
RP115A	55	65	-	15	4	4
RP116D	60	70	-	18	5	4
RP116C	63	73	-	18	5	4
RP117A	65	75	-	18	5	4
RP118A	70	80	-	18	5	4
RP119A	75	90	-	20	6	4
RP120A	80	95	-	20	6	4
RP121A	85	100	-	20	6	4
RP122A	90	105	-	20	6	4
RP123A	100	115	-	22	7	4
RP123E	110	125	-	22	7	4
RP123C	110	130	-	22	7	4
RP124A	120	140	-	25	8	4
RP125B	125	145	-	25	8	4
RP125C	140	160	-	28	10	4
RP126B	150	170	-	28	10	4
RP126C	160	180	-	30	12	4

WELDABLE END PLUGS (INTERNAL)

STEEL - FE510C A105

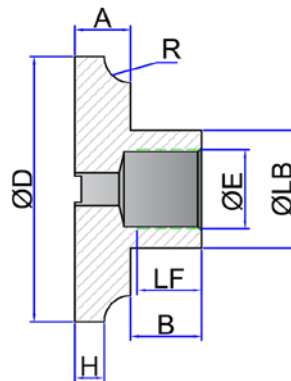
ORDER CODE	SUITABLE FOR BORE SIZE Ø(mm)	BORE Ø(mm)	D Ø(mm)	R R(mm)	A (mm)	H (mm)
RPCF025	25	26	18	4	8	4
RPCF030	30	31	21	5	10	5
RPCF032	32	33	23	5	10	5
RPCF035	35	36	26	5	10	5
RPCF040	40	41	27	7	12	5
RPCF045	45	46	32	7	12	5
RPCF050	50	51	37	7	12	5
RPCF055	55	56	40	8	15	7
RPCF060	60	61	45	8	15	7
RPCF063	63	64	48	8	15	7
RPCF065	65	66	50	8	15	7
RPCF070	70	71	56	7.5	15	7.5
RPCF075	75	76	60	8	17	9
RPCF080	80	81	65	8	17	9
RPCF085	85	86	70	8	17	9
RPCF090	90	91	75	8	17	9
RPCF100	100	101	81	10	20	10
RPCF110	110	111	89	11	22	11
RPCF120	120	121	97	12	24	12
RPCF125	125	126	102	12	24	12
RPCF140	140	141	115	13	30	17
RPCF150	150	151	121	15	35	20
RPCF160	160	161	131	15	40	25



NEW! INTERNAL END PLUGS WITH INLET PORT

STEEL - FE510C A105

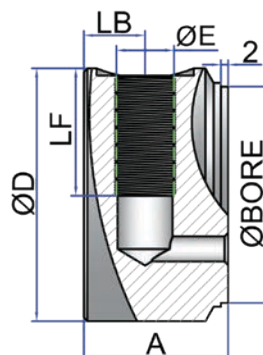
ORDER CODE	BORE Ø(mm)	D Ø(mm)	A (mm)	H (mm)	R (mm)	E Ø(bsp)	LF (mm)	B (mm)	LB Ø (mm)
RPCP040	40	41	12	7	5	3/8"	15	17	25
RPCP050	50	51	12	5	7	3/8"	15	17	25
RPCP060	60	61	15	4	8	3/8"	15	17	25
RPCP070	70	71	15	7.5	7.5	1/2"	16	18	30
RPCP080	80	81	17	9	8	1/2"	16	18	30
RPCP090	90	91	17	9	8	1/2"	16	18	30
RPCP100	100	101	20	10	10	1/2"	16	18	30



WELDABLE END PLUGS WITH INLET PORT

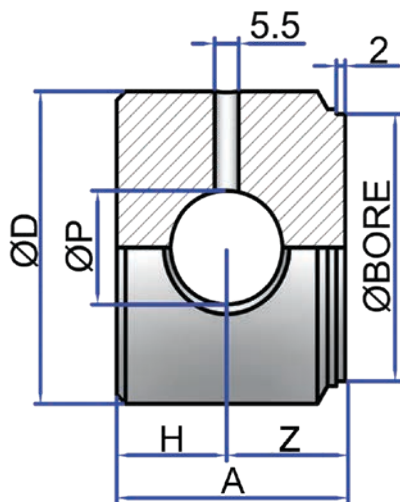
STEEL - FE510C A105

ORDER CODE	BORE Ø(mm)	D Ø(mm)	A (mm)	LF (mm)	LB (mm)	E Ø(bsp)
RP500	40	50	40	30	17	1/4"
RP501	50	60	40	35	17	3/8"
RP502	60	70	40	35	17	3/8"
RP503	63	73	40	35	17	3/8"
RP504	70	80	40	35	17	3/8"
RP505	80	95	50	45	20	1/2"
RP505A	90	105	50	45	20	1/2"
RP506	100	115	50	45	20	1/2"



WELDABLE END PLUGS WITH CROSSHOLE - HFR / NFR SERIES

STEEL - FE510 A105

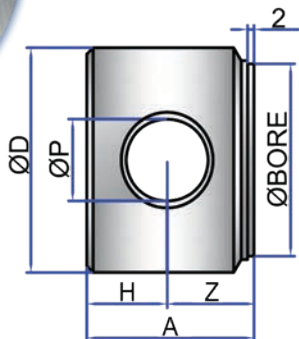
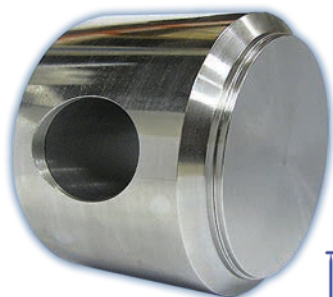


PLEASE NOTE: *= NFR CYLINDER TYPE END PLUG

ORDER CODE	BORE Ø(mm)	D Ø(mm)	P Ø(mm)	Z (mm)	H (mm)	A (mm)
RP900	25	35	12.1	18	12	30
RP901	32	40	16.1	23	17	40
RP902	35	45	16.1	20	15	35
RP903*	40	50	20.25	22	18	40
RP904	40	50	20.5	30	19	49
RP905	45	55	20.25	25	20	45
RP906*	50	60	25.25	27	22	49
RP907	50	60	25.5	45	25	70
RP908	55	65	25.25	28	22	50
RP909*	60	70	25.25	25	22	47
RP910	60	70	25.5	27	25	52
RP911	60	70	30.25	25	22	47
RP912	63	73	25.25	30	23	53
RP913	63	73	30.25	30	23	53
RP914	65	75	25.25	28	22	50
RP915*	70	80	30.25	35	28	63
RP916	70	80	30.5	37	25	62
RP917	75	90	30.25	35	25	60
RP918*	80	90	30.25	32	28	60
RP919	80	90	30.5	37	25	62
RP920	80	90	40.25	32	28	60
RP921	85	100	35.25	35	28	63
RP922	90	105	35.25	35	28	63
RP923	90	105	40.25	35	28	63
RP924*	100	115	30.25	35	28	63
RP925	100	115	30.5	36	34	70
RP926	100	115	40.25	35	28	63
RP927	110	125	40.25	40	35	75
RP928	110	125	50.5	40	35	75
RP929	120	140	50.5	50	45	95
RP930	120	140	60.5	50	45	95
RP931	125	145	50.5	50	45	95
RP932	125	145	60.5	50	45	95
RP933	140	160	60.5	60	50	110
RP934	140	160	70.5	60	50	110
RP935	150	170	70.5	75	55	130
RP936	160	180	80.5	75	65	140

WELDABLE END PLUGS WITH CROSSHOLE

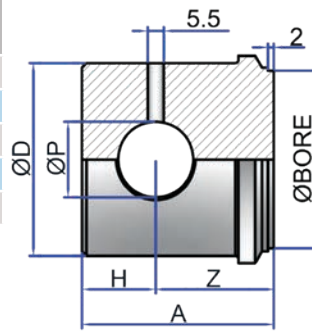
STEEL - FE510C A105



ORDER CODE	BORE Ø(mm)	D Ø(mm)	P Ø(mm)	Z (mm)	H (mm)	A (mm)
RP180	40	50	16.2	20	15	35
RP181	50	60	20.25	25	20	45
RP182	60	70	25.25	27.5	22.5	50
RP183	70	80	25.25	27.5	22.5	50
RP184	80	95	30.25	35	25	60
RP185	100	115	35.25	40	30	70

WELDABLE END PLUGS WITH CROSSHOLE - HFRT SERIES

ORDER CODE	BORE Ø(mm)	D Ø(mm)	P Ø(mm)	Z (mm)	H (mm)	A (mm)
RP937	30	40	14	16	14	30
RP938	50	60	23	28	22	50
RP939	60	65	25.5	40	25	65
RP940	70	75	25.25	35	25	60
RP941	80	85	30.25	40	30	70

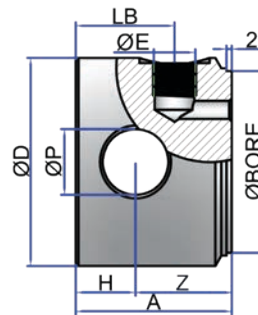


STEEL - FE510C A105



WELDABLE END PLUGS WITH CROSSHOLE & INLET PORT

ORDER CODE	BORE Ø(mm)	D Ø(mm)	P Ø(mm)	Z (mm)	H (mm)	A (mm)	LB (mm)	E Ø(mm)
RP190 (1)	40	50	16.2	35	15	50	30	1/4"
RP191 (1)	50	60	20.25	40	20	60	38	3/8"
RP192 (1)	60	70	25.25	37	23	60	38	3/8"
RP192A	63	73	25.25	37	23	60	38	3/8"
RP193 (1)	70	80	25.25	37	23	60	38	3/8"
RP194	80	95	30.25	50	25	75	47	1/2"
RP195	100	115	35.25	45	30	75	47	1/2"



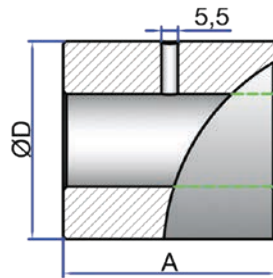
STEEL - FE510C A105



(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL
PLEASE QUOTE 'SS' IN PART NUMBER, I.E RPSS190.

WELDABLE BOSSES

ORDER CODE	D Ø(mm)	P Ø(mm)	A (mm)
RP010	25	12.1	25
RP011	30	16.2	35
RP011A	35	20.25	40
RP012	40	20.5	40
RP012A	40	25.25	45
RP013	50	25.5	45
RP013A	50	30.25	55
RP014	50	30.5	55
RP014A	60	30.25	70
RP015	65	30.5	70
RP016	65	35.5	60
RP017	65	35.5	120
RP018	85	50.5	80
RP019	85	50.5	140
RP020	100	60.5	90
RP021	100	60.5	150

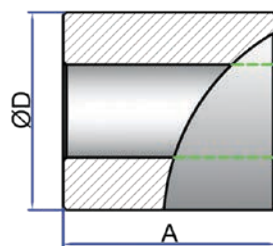


BOSS - TYPE 1

STEEL - FE510C (S355J0)



BOSS TYPE 2			
ORDER CODE	D Ø(mm)	P Ø(mm)	A (mm)
RP260 (1)	35	16.25	30
RP261	35	16.25	60
RP262 (1)	40	20.25	40
RP263	40	20.25	70
RP264 (1)	50	25.25	50
RP265	50	25.25	80
RP266	50	25.25	90
RP267 (1)	60	30.25	60
RP268	60	30.25	110
RP269	70	40.25	70
RP270	70	40.25	130



BOSS - TYPE 2



(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL - PLEASE QUOTE 'SS' IN PART NUMBER, I.E RPSS260.

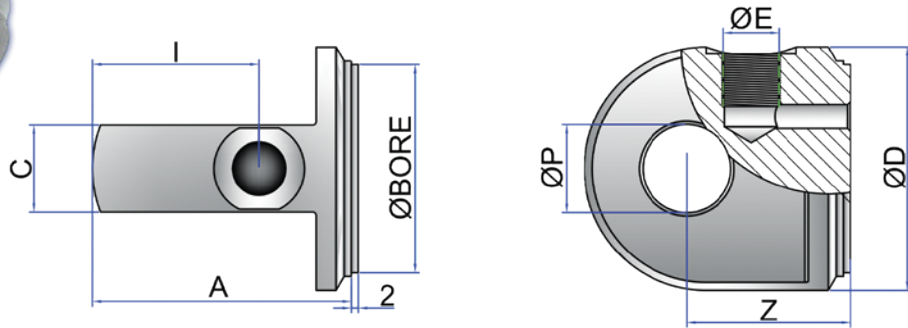
(N.B: TYPE 2 BOSS DOES NOT COME WITH LUBRICATION HOLE)

HINGE END PLUGS WITH CROSSHOLE & INLET PORT

STEEL - FE510 A105



ORDER CODE	BORE Ø(mm)	D Ø(mm)	P Ø(mm)	A (mm)	Z (mm)	C (mm)	E Ø(bsp)	I (mm)
RP240	40	50	16.2	63	46	24.8	1/4"	39
RP241	50	60	20.25	80	51	24.8	3/8"	56
RP242	60	70	25.25	88	57	24.8	3/8"	63
RP243	70	80	25.25	105	65	39.5	3/8"	82

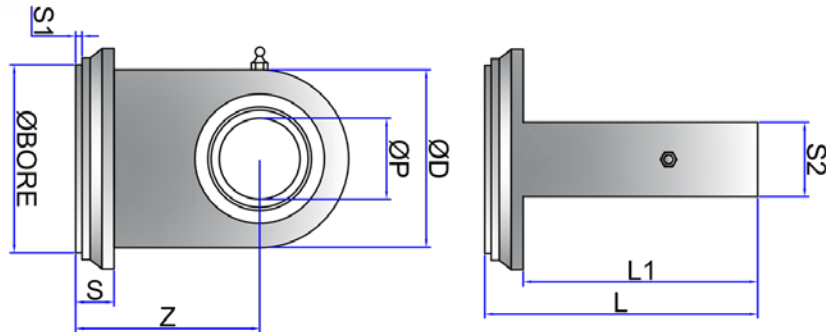


WELDABLE END PLUGS & BEARING

STEEL - ST52.3

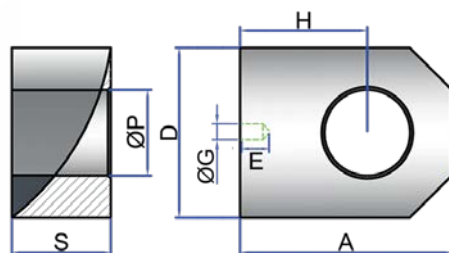


ORDER CODE	BORE Ø(mm)	P Ø(mm)	Z (mm)	S1 (mm)	S (mm)	D (mm)	L1 (mm)	L (mm)	S2 (mm)
RP4020	40	20	48	2	10	50	63	73	19
RP4520	45	20	48		10	50	63	73	19
RP5020	50	20	48		10	50	63	73	19
RP5525	55	25	57		12	55	72.5	84.5	23
RP6025	60	25	57		12	55	72.5	84.5	23
RP6325	63	25	57		12	55	72.5	84.5	23
RP6530	65	30	63		12	65	83.5	95.5	28
RP7030	70	30	63		12	65	83.5	95.5	28
RP7530	75	30	63		12	65	83.5	95.5	28
RP8030	80	30	63		12	65	83.5	95.5	28



WELDABLE MALE CLEVIS

STEEL - FE510C



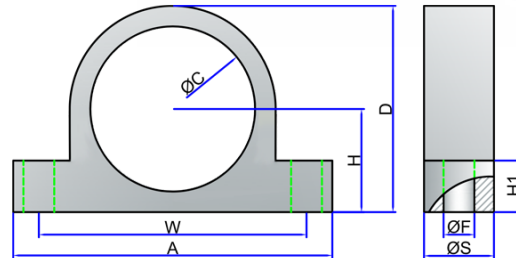
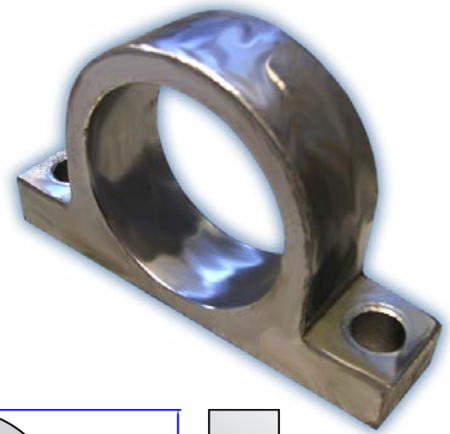
ORDER CODE	P Ø(mm)	A (mm)	D (mm)	S (mm)	H (mm)	ØG x E (mm)
RPCOF16	16.2	42	35	20	25	Ø4.25 x 8
RPCOF20 (1)	20.25	50	45	25	30	
RPCOF25	25.25	60	50	30	35	
RPCOF30	30.25	75	60	35	45	
RPCOF35	35.25	90	70	40	55	
RPCOF40	40.25	95	70	40	60	Ø4.25 x 10
RPCOF50	50.5	120	90	40	75	
RPCOF60	60.5	140	100	50	90	

(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL PLEASE QUOTE 'SS' IN PART NUMBER, I.E RPSSCOF20.

WELDABLE FOOT MOUNTS

STEEL - FE510 UNI6659

ORDER CODE	C Ø(mm)	D (mm)	H (mm)	A (mm)	W (mm)	H1 (mm)	S (mm)	F Ø(mm)
RPFM45	45	60	30	100	80	15	24	11
RPFM50	50	64	32	105	85			
RPFM55	55	70	35	110	90			
RPFM60	60	74	37	115	95	20	29	13
RPFM65	65	80	40	120	100			
RPFM70	70	84	42	135	110	25	34	15
RPFM73	73	94	47	145	120			
RPFM75	75	100	50	155	130			
RPFM80	80							
RPFM80A	80	108	54	160	135	30	38	17
RPFM85	85							
RPFM90	90	114	57	170	140			
RPFM95	95							
RPFM100	100	130	65	190	160			
RPFM105	105							
RPFM115	115	144	72	208	175	43	19	
RPFM120	120							
RPFM125	125	154	77	218	185			
RPFM130	130							
RPFM135	135	170	85	240	205	35	48	21
RPFM140	140							
RPFM140A	140	174	87	245	210			
RPFM145	145							
RPFM145A	145	180	90	250	215			
RPFM150	150							

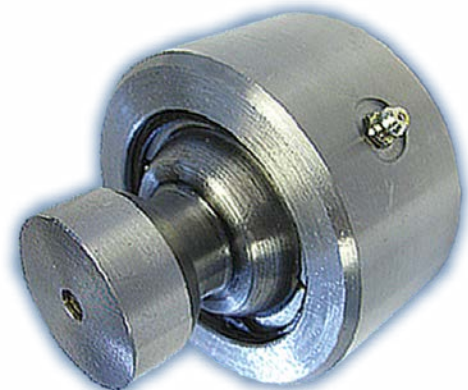


ORDER CODE	C Ø(mm)	D (mm)	H (mm)	A (mm)	W (mm)	H1 (mm)	S (mm)	F Ø(mm)
RPFM160	160	200	100	280	240	40	58	25
RPFM170	170	210	105	290	250			
RPFM180	180	220	110	300	260			
RPFM185	185	230	115	310	270			

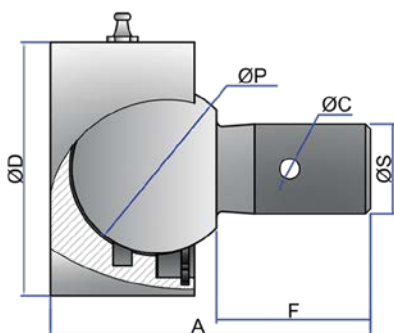
WELDABLE BALL JOINTS

FORGED STEEL - C40

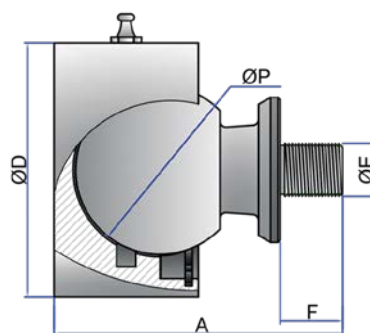
ORDER CODE	S Ø(mm)	P Ø(mm)	D Ø(mm)	A (mm)	F (mm)	C (mm)	E Ø(mm)	MAX LOAD (ton)
RPCSB04	30	45	110	62	9	-	-	11.0
RPCSB05	40	50	85	82	20	-	-	9.6
RPCSB05A	45	55	95	78	8	-	-	15.0
RPCSB06	50	60	98	100	25	-	-	15.7
RPCSB07	60	70	105	115	30	-	-	18.9
RPCSB08	64	65	107	88	9	-	-	23.0
RPCSB09	-	45	110	61	26	-	22 x 1.5	11.0
RPCSB10	-	55	95	78	35	-	32 x 2	15.0
RPCSB11	36	45	88	106	64	-	-	8.0
RPCSB12	36	45	88	106	58.5	8.4	-	8.0
RPCSB13	36	55	92	118.5	62	8.4	-	14.0



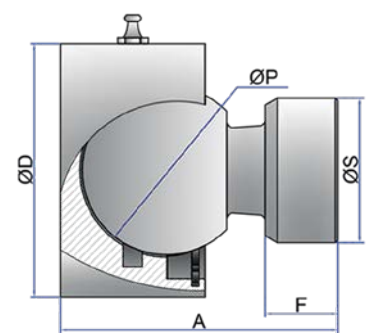
RPCSB11 ▶ RPCSB13



RPCSB09 ▶ RPCSB10

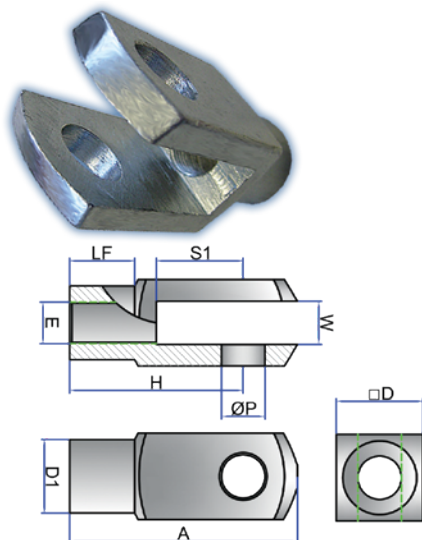


RPCSB04 ▶ RPCSB08



THREADED FORKS (ISO)

STEEL - 9SMN PB23 R50Kg/mm²
ISO8140



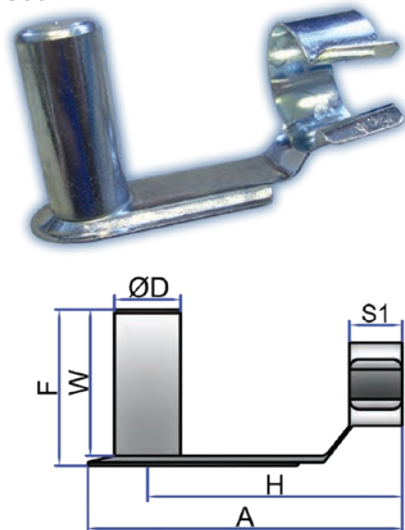
ORDER CODE	P Ø(mm)	D (mm)	A (mm)	W (mm)	E Ø(mm)	S1 (mm)	LF (mm)	H (mm)	D1 (mm)
FFF1760	4	8	21	4	4 x 0.7	8	6	16	8
FFF1762	6	12	31	6	6 x 1	12	9	24	10
FFF1764	8	16	42	8	8 x 1.25	16	12	32	14
FFF1766	10	20	52	10	10 x 1.25	20	15	40	18
FFF1768	12	24	62	12	12 x 1.25	24	18	48	20
FFF1770	16	32	83	16	16 x 1.5	32	24	64	26
FFF1772	20	40	105	20	20 x 1.5	40	30	80	34
FFF1774	25	50	132	25	24 x 2	50	36	100	42
FFF1775	30	55	148	30	27 x 2	56.5	37	109.5	48
FFF1776	35	70	188	35	36 x 2	72	40	144	60

PLEASE NOTE: UNI1676 AND CETOP STANDARD SIZES ARE AVAILABLE ON REQUEST.

ALTHOUGH 'SAF' TYPE LOCKABLE PINS ARE BEST SUITED FOR THE 'FFF' THREADED FORKS OTHER PIN TYPES ARE AVAILABLE ON PAGES 190 ► 192

LOCKABLE PINS (ISO)

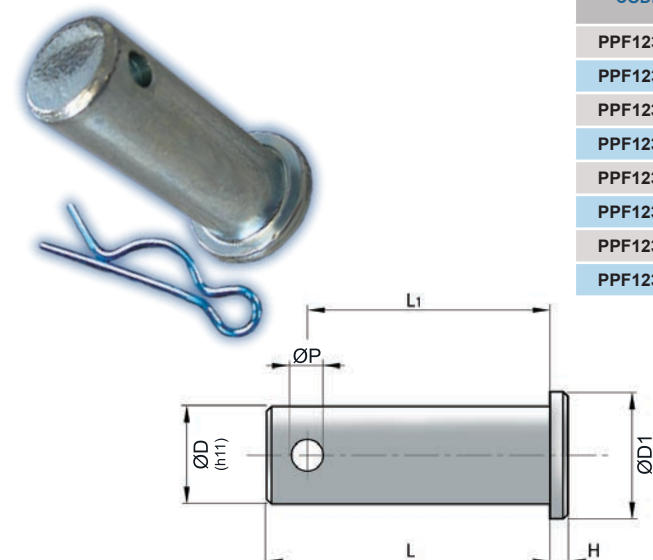
STEEL - 9SMN PB23 R50Kg/mm²
ISO8144



ORDER CODE	D Ø(mm)	A (mm)	H (mm)	W (mm)	F (mm)	S1 (mm)
SAF1790	4	19	15	9	11	5
SAF1792	6	28	23	14	16	6
SAF1794	8	37	31	19	21	8
SAF1796	10	46	39	23	26	10
SAF1798	12	55	47	28	32	12
SAF1800	16	72	62	36	40	14
SAF1802	20	88	72	44	48	16

PIN FOR FFF TYPE FORK ENDS

MATERIAL: 9SMN PB23 R 50Kg/mm²
DIN1434 - UNI1710



ORDER CODE	D Ø(mm)	L (mm)	H (mm)	L1 (mm)	P Ø(mm)	D1 Ø(mm)
PPF12336	6	16	1.5	13	2	9
PPF12337	8	20	2	17	2	12
PPF12338	10	25	2	21.5	3	14
PPF12339	12	30	3	26.5	3	16
PPF12340	14	35	3	31	4	19
PPF12341	16	40	3	36	4	20
PPF12388	18	45	4	40	4	22
PPF12389	20	49	4	43.5	4	24

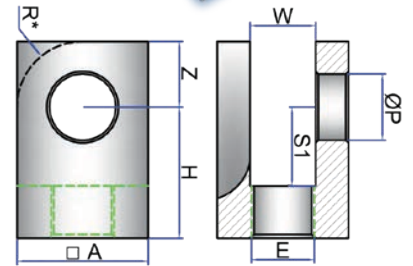
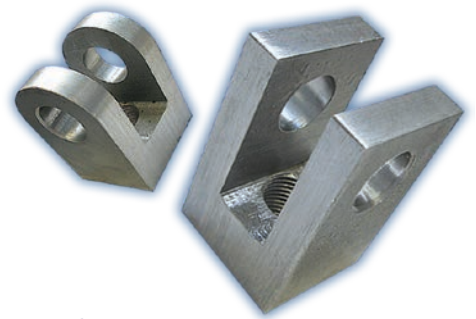
THREADED FORKS

ORDER CODE	P Ø(mm)	A □(mm)	H (mm)	Z (mm)	E Ø(mm)	S1 (mm)	W (mm)	R R(mm)
RP271 (1)	16.20	35	39	16	16 x 1.5	24	16	-
RP272 (1)	20.25	40	45	20	20 x 1.5	30	20	-
RP273 (1)	25.25	50	50	25	24 x 2	30	25	-
RP274*	30.25	60	65	30	30 x 2	35	30	30
RP274A*	35.25	70	75	35	33 x 2	40	35	35
RP274B*	40.25	80	85	40	33 x 2	50	40	40
RP274C*	50.5	100	100	50	45 x 3	60	50	50
RP274D*	60.5	110	110	55	56 x 4	65	60	55

*=DENOTES FORGING ON SOME MODELS (SEE DIMENSION - R)

(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL PLEASE QUOTE 'SS' IN PART NUMBER, I.E: RPS271

STEEL - Fe360

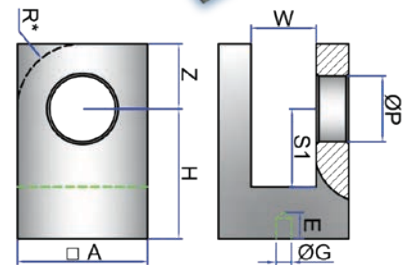
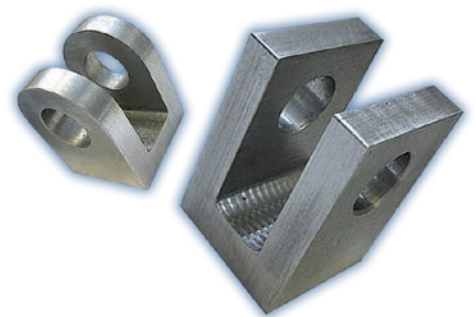


WELDABLE FORKS

ORDER CODE	P Ø(mm)	A □(mm)	H (mm)	Z (mm)	ØG x E (mm)	S1 (mm)	W (mm)	R R(mm)
RP275	16.20	35	34	16	4.25 x 6	24	16	-
RP276	20.25	40	40	20	4.25 x 6	30	20	-
RP277	25.25	50	45	25	4.25 x 8	30	25	-
RP278*	30.25	60	50	30	4.25 x 8	35	30	30
RP279*	35.25	70	55	35	4.25 x 8	40	35	35
RP279A*	40.25	80	70	40	4.25 x 10	50	40	40
RP280*	50.5	100	95	50	6.25 x 12	60	50	50
RP281*	60.5	110	105	55	6.25 x 12	65	60	55

*=DENOTES FORGING ON SOME MODELS (SEE DIMENSION - R)

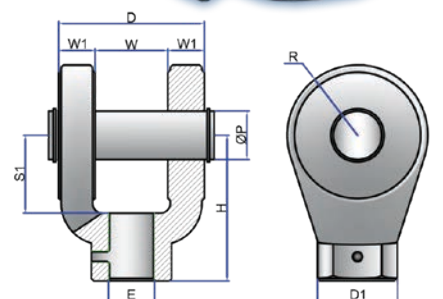
STEEL - Fe360



THREADED FORK ENDS INC PINS (ISO)

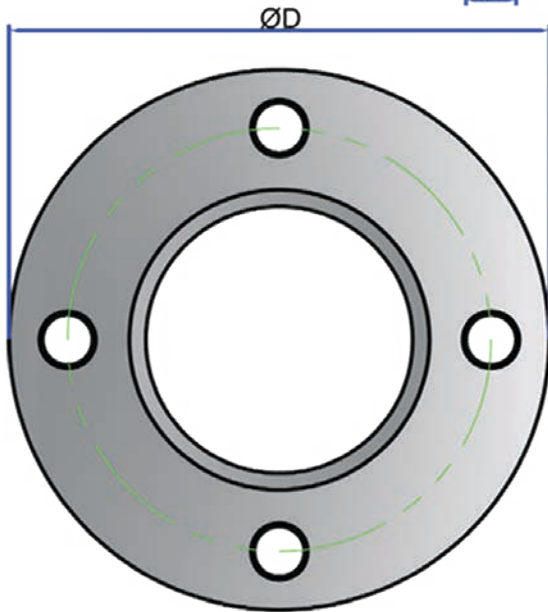
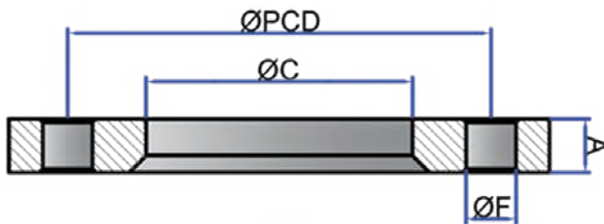
ORDER CODE	P Ø(mm)	D (mm)	H (mm)	W (mm)	E Ø(mm)	S1 (mm)	W1 (mm)	R R(mm)	D1 (mm)
RPKLP10	10	24	32	12	10 x 1.25	13	6	12	19
RPKLP12	12	32	36	16	12 x 1.25	19	8	17	21
RPKLP14	14	40	38	20	14 x 1.5	19	10	17	21
RPKLP16	20	60	54	30	16 x 1.5	32	15	29	32
RPKLP20	20	60	60	30	20 x 1.5	32	15	29	32
RPKLP27	28	80	75	40	27 x 2	39	20	34	40
RPKLP33	36	100	99	50	33 x 2	54	25	50	55
RPKLP42	45	120	113	60	42 x 2	57	30	53	56
RPKLP48	56	140	126	70	48 x 2	63	35	59	75
RPKLP64	70	160	168	80	64 x 3	83	40	78	95
RPKLP80	70	160	168	80	80 x 3	83	40	78	95

FORGED STEEL - ST52.3
ISO8133



FLANGES (4 & 6 BOLT)

STEEL - FE510



ORDER CODE	C Ø(mm)	D Ø(mm)	F Ø(mm)	A (mm)	PCD Ø(mm)
RPCFL0035	35	72	7 (x4)	10	60
RPCFL0040	40	80	9 (x4)	12	65
RPCFL0042	42	89	9 (x4)	12	70
RPCFL0045	45	95	9 (x4)	12	75
RPCFL0050(1)	50	109	11 (x4)	12.5	87
RPCFL0055	55	123	11 (x4)	14.5	100
RPCFL0060*(1)	60	128	13 (x4)	14.5	105
RPCFL0065	65	135	13 (x4)	15.5	110
RPCFL0070(1)	70	142	13 (x4)	16.5	117
RPCFL0073	73	145	13 (x4)	16.5	120
RPCFL0075	75	152	13 (x4)	16.5	125
RPCFL0080(1)	80	162	15 (x4)	16.5	127
RPCFL0090	90	175	15 (x4)	18.5	145
RPCFL0095	95	181	17 (x6)	18.5	149
RPCFL0100	100	190	17 (x6)	18.5	155
RPCFL0105	105	190	17 (x6)	24.5	156
RPCFL0115	115	194	17 (x6)	24.5	162
RPCFL0123	123	230	21 (x6)	28	190
RPCFL0138	138	240	21 (x6)	28	200
RPCFL0143	143	250	21 (x6)	28	210
RPCFL0158	158	280	23 (x6)	33	230
RPCFL0168	168	300	25 (x6)	38	250
RPCFL0178	178	325	28 (x6)	38	270

TYPE 2					
RP4512	45	95	8.5 (x6)	12	75
RP5012	50	100	8.5 (x6)	12	80
RP5512	55	105	8.5 (x6)	12	85
RP6015	60	120	11 (x6)	15	95
RP6515	65	125	11 (x6)	15	100
RP7015	70	130	11 (x6)	15	105
RP7315	73	135	13 (x6)	15	110
RP7515	75	135	13 (x6)	15	110
RP8015	80	135	13 (x6)	15	110
RP8020	80	150	13 (x6)	20	120
RP8520	85	150	13 (x6)	20	120
RP9020	90	170	15 (x6)	20	135
RP9520	95	170	15 (x6)	20	135
RP10025	100	180	15 (x6)	25	145
RP10525	105	180	15 (x6)	25	145
RP11525	115	195	17 (x6)	25	160
RP12025	120	195	17 (x6)	25	160
RP12528	125	215	19 (x6)	28	175
RP13028	130	215	19 (x6)	28	175
RP13033	135	230	19 (x6)	33	190
RP14033	140	230	19 (x6)	33	190
RP14533	145	240	19 (x6)	33	195
RP14533A	145	250	21 (x6)	33	205
RP15033	150	250	21 (x6)	33	205
RP16035	160	270	23 (x6)	35	220
RP17038	170	280	23 (x6)	38	230
RP18040	180	310	25 (x6)	40	250
RP18540	185	320	25 (x6)	40	260

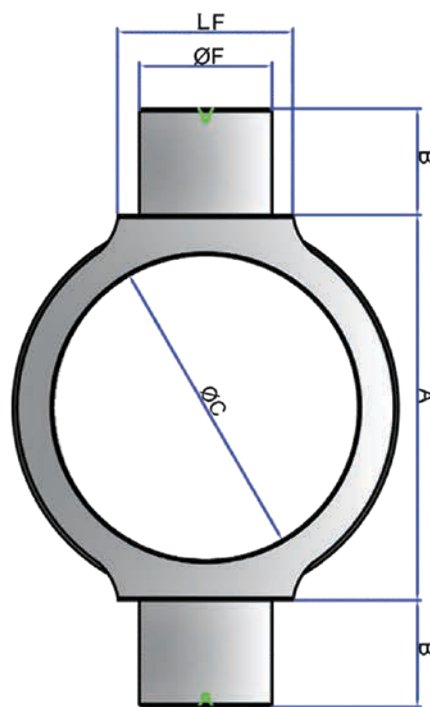
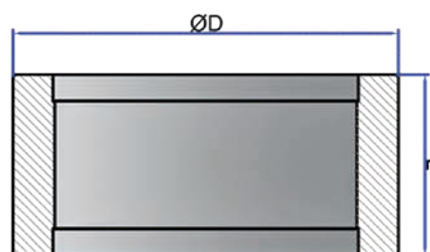
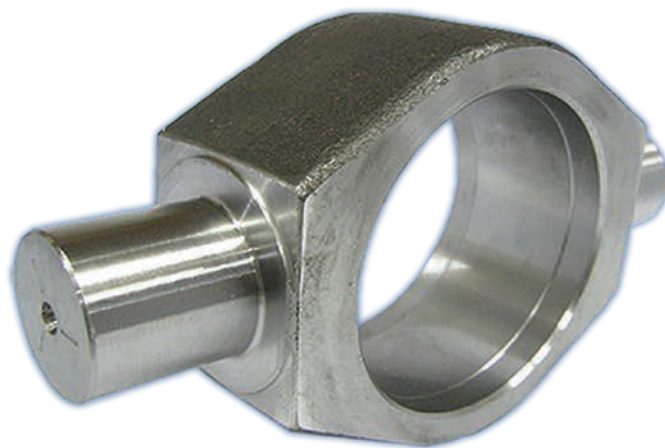
(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL
PLEASE QUOTE 'SS' IN PART NUMBER, I.E: RPSSCFL006

IT IS RECOMMENDED THAT THE TUBE BORE IS THREADED / RE-THREADED AFTER FLANGE FITMENT TO THE OUTSIDE OF TUBE ON FRONT FLANGE ASSEMBLIES. THIS IS DUE TO POTENTIAL TUBE DISTORTION AFTER WELDING.

WELDABLE TRUNNIONS

STEEL - FE501C / FE510 - UNI6659

ORDER CODE	C Ø(mm)	D Ø(mm)	A (mm)	B (mm)	L (mm)	F Ø(mm)	LF (mm)
RPCB035	35	45	50	15	20	15	-
RPCB040	40	50	50	15	20	15	-
RPCB042	42	55	55	20	25	20	-
RPCB045	45	60	60	20	25	20	-
RPCB050	50	65	70	20	30	20	-
RPCB055	55	70	75	20	30	20	-
RPCB060	60	75	80	25	35	25	-
RPCB065	65	85	90	25	35	25	-
RPCB070	70	90	100	30	45	30	-
RPCB073	73	95	100	30	45	30	-
RPCB075	75	95	100	30	45	30	-
RPCB080	80	100	110	35	50	35	-
RPCB090	90	115	115	35	50	35	-
RPCB092	92	115	115	40	55	40	-
RPCB095	95	115	115	40	55	40	-
RPCB100	100	120	120	40	55	40	-
RPCB105	105	125	125	45	60	45	-
RPCB115	115	145	145	50	70	50	-
RPCB125	125	160	160	50	70	50	-
RPCB140	140	170	170	60	80	60	-
RPCB145	145	180	180	60	80	60	-
RPCB160	160	200	200	60	100	60	-
RPCB170	170	205	210	60	100	70	-
RPCB180	180	225	230	60	105	80	-



TYPE 2							
RP3545	45	60	60	15	24	20	22
RP4050	50	65	65	15	29	25	27
RP4555	55	70	70	15	29	25	27
RP5060	60	75	75	20	34	30	32
RP5565	65	80	80	20	34	30	32
RP6070	70	90	90	20	34	30	32
RP6373	73	95	95	25	44	35	42
RP6575	75	100	100	25	44	35	42
RP6580	80	100	100	25	44	35	42
RP7080	80	105	105	30	54	40	52
RP7085	85	105	105	30	54	40	52
RP8090	90	120	120	35	58	45	56
RP8095	95	120	120	35	58	45	56
RP90100	100	130	130	35	58	45	56
RP90105	105	130	130	35	58	45	56
RP100115	115	145	145	40	68	50	66
RP100120	120	145	145	40	68	50	66
RP110125	125	155	155	40	68	50	66
RP110130	130	155	155	40	68	50	66
RP120135	135	170	170	45	78	55	76
RP120140	140	170	170	45	78	55	76
RP125140	140	175	175	45	78	55	76
RP125145	145	175	175	45	78	55	76
RP130145	145	180	180	45	78	60	76
RP130150	150	180	180	45	78	60	76
RP140160	160	200	200	50	98	65	96
RP150170	170	210	210	50	98	65	96
RP160180	180	220	220	55	108	70	106
RP160185	185	230	230	60	108	80	106

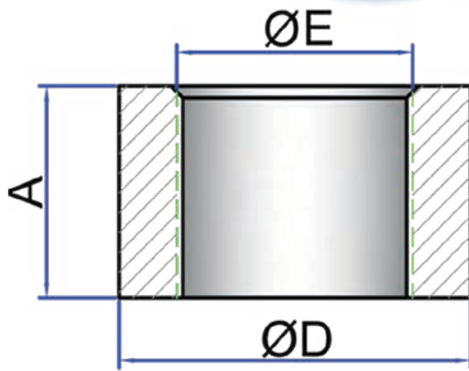
SUPPLIED WITH INTERFERENCE FIT AND WILL REQUIRE MACHINING TO ACCOMMODATE OUTSIDE DIAMETER TOLERANCE OF TUBE.

IF TRUNNION IS TO BE MOUNTED IN THE STROKE AREA OF TUBE, IT IS RECOMMENDED THAT "SUITABLE FOR HONING" TUBE IS USED DUE TO POTENTIAL WELD DISTORTION.

FEMALE THREADED PORTS

STEEL - 9SMN28

BSP, METRIC, SAE & NPT VERSIONS



ORDER CODE	E Ø PORT THREAD	D Ø(mm)	A (mm)
RP092A	1/8" (bsp)	20	14
RP092 (1)	1/4" (bsp)	22	16
RP093 (1)	3/8" (bsp)	26	17
RP094 (1)	1/2" (bsp)	30	18
RP095	3/4" (bsp)	38	20
RP096	1" (bsp)	45	25
RP096A	1-1/4" (bsp)	55	25
RP096B	1-1/2" (bsp)	62	30
RP096C	2" (bsp)	70	30

RP096D	12 x 1.5 (m)	22	16
RP097	14 x 1.5 (m)	22	16
RP097B	16 x 1.5 (m)	26	17
RP098	18 x 1.5 (m)	28	18
RP098A	20 x 1.5 (m)	30	18
RP099	22 x 1.5 (m)	30	18

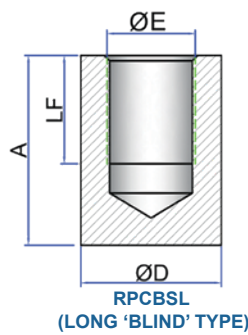
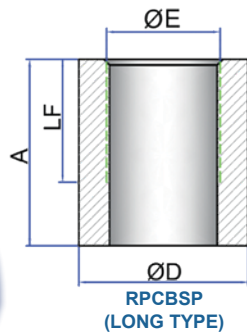
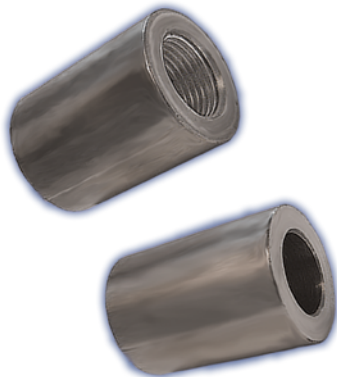
RP072	9/16" - 18 (SAE06)	22	18
RP073	3/4" - 16 (SAE08)	28	18
RP074	1-1/16" - 12 (SAE12)	38	26
RP075	1-1/2" - 12 (SAE16)	45	32

RP082	1/4" (npt)	26	12.7
RP083	3/8" (npt)	26	12.7
RP084	1/2" (npt)	32	17.45
RP085	3/4" (npt)	38	17.45

(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL - PLEASE QUOTE 'SS' IN PART NUMBER, I.E RPS093.

FEMALE THREADED PORTS (LONG)

STEEL - 9SMN28

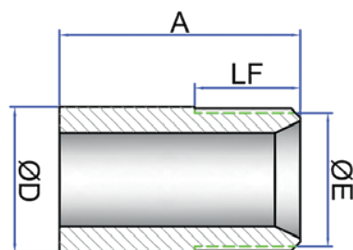


ORDER CODE	E Ø (bsp)	D Ø (mm)	A (mm)	LF (mm)
RPCBSP04	1/4"	22	40	27
RPCBSP06	3/8"	26	42	28
RPCBSP08	1/2"	30	48	33

RPCBSL04	1/4"	22	30	13
RPCBSL06	3/8"	26	35	20
RPCBSL08	1/2"	30	35	22

MALE THREADED PORTS

STEEL - 9SMN28



ORDER CODE	E Ø (bsp)	D Ø (mm)	A (mm)	LF (mm)
RPRV5110400	1/4"	15	25	13
RPRV5110600	3/8"	17	35	14
RPRV5110800	1/2"	21	35	15
RPRV5111200	3/4"	28	41	15
RPRV5111600	1"	35	41	16
RPRV5112000	1-1/4"	43	45	20

SAE SINGLE PART BUTT WELDABLE PORTS

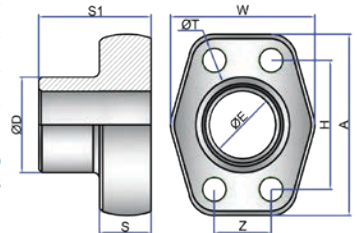
ORDER CODE	Ø SIZE (in)	E Ø(mm)	D Ø(mm)	S (mm)	W (mm)	A (mm)	Z (mm)	H (mm)	S1 (mm)	T Ø(mm)	PSI RATING
RP3012	1/2"	13	21.6	16	47	57	17.5	38.1	36	M8	3000
RP3034	3/4"	19	27.2	18	50	67	22.3	47.6	36	M10	
RP3100	1"	25	34	18	54	72	26.2	52.4	38	M10	
RP3114	1-1/4"	32	42.8	21	68	82	30.2	58.7	41	M10	
RP3112	1-1/2"	38	48.6	25	79	96	35.7	69.8	44	M12	
RP3200	2"	51	61	25.5	88	102	42.9	77.8	45	M12	
RP3212	2-1/2"	63	76.6	26	101	115	50.8	88.9	50	M12	

RP6012	1/2"	13	21.6	16.5	47	57	18.2	40.5	36	M8	6000
RP6034	3/4"	19	28	19.5	54	72	23.8	50.8	36	M10	
RP6100	1"	25	34	24.5	68	82	27.8	57.2	41	M12	
RP6114	1-1/4"	32	42.8	27.5	79	95	31.8	66.6	44	M12	
RP6112	1-1/2"	38	48.3	31	88	108	36.5	79.3	51	M16	
RP6200	2"	51	61	37	118	137	44.5	96.8	70	M20	
RP6212	2-1/2"	60.5	90	45	150	180	58.7	123.8	80	M24	

PLEASE NOTE: THE MAXIMUM WORKING PRESSURES SHOWN APPLY TO THE FLANGE ITSELF AND DOES DEPEND ON THE BOLTS USED (GRADE 8.8 / 10.9). THE ACTUAL MAXIMUM WORKING PRESSURE IS DEPENDANT ON THE THICKNESS AND QUALITY OF THE TUBE USED.

STAINLESS STEEL (1.4404 "W5") VERSION AVAILABLE ON REQUEST.

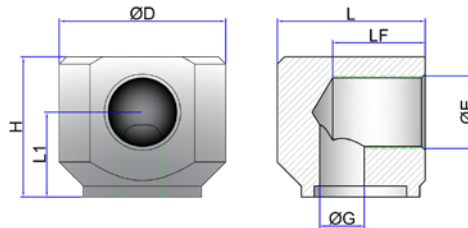
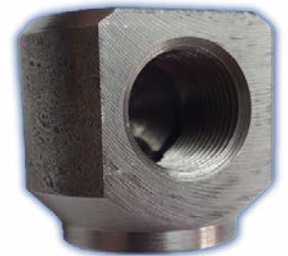
STEEL - S355J0 OR EQUIVALENT
3000 & 6000 PSI PRESSURES
BLANK OILED FINISH



90° FEMALE THREADED OIL INLET

ORDER CODE	E Ø(mm)	D Ø(mm)	L (mm)	H (mm)	LF (mm)	G Ø(mm)	L1 (mm)
RPCBLT04	1/4"	30	26	28	15	7	18
RPCBLT06	3/8"	35	30.5	30	20	8	18
RPCBLT08	1/2"	45	40	38	22	12	23

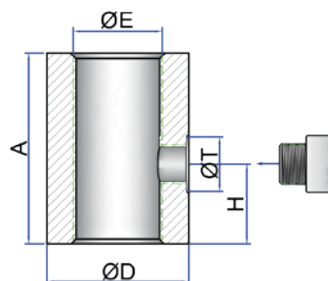
STEEL - FE510C



FEMALE PORTS WITH BLEED SCREW

ORDER CODE	E Ø(mm)	A (mm)	D Ø(mm)	H (mm)	T Ø(mm)	BLEED SCREW Ø(mm)
RPCBSS04	1/4"	30	22	12	12	M6
RPCBSS06	3/8"	30	26	12	12	M6
RPCBSS08	1/2"	30	30	12	12	M6

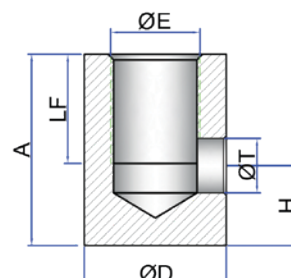
STEEL - 9SMN28



FEMALE PORTS SUITABLE FOR WELDED FEED PIPES

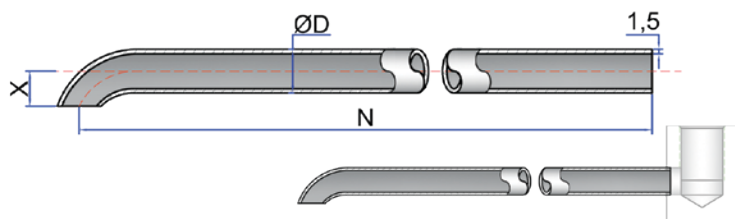
ORDER CODE	E Ø(mm)	A (mm)	D Ø(mm)	LF (mm)	T Ø(mm)	H (mm)
RPBA10A	1/4"	25	22	14	10	10
RPBA12	3/8"	30	25	19	12	10
RPBA14	3/8"	30	25	19	14	10
RPBA12A	1/2"	46	30	18	12	12
RPBA14A	1/2"	46	30	18	14	12

STEEL - 9SMN28



FEED PIPES (WELDED)

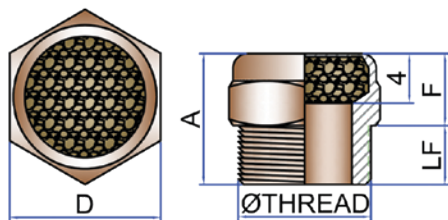
STEEL - 9SMN28



ORDER CODE	D Ø(mm)	N (mm)	X (mm)
RPTR1001	10	300	12
RPTR1002	10	600	
RPTR1003	10	1000	
RPTR1201	12	300	
RPTR1202	12	600	
RPTR1203	12	1000	
RPTR1401	14	300	
RPTR1402	14	600	
RPTR1403	14	1000	

BREATHERS

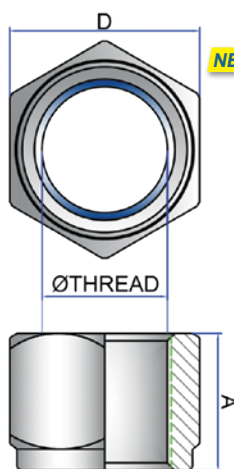
BRASS + SINTERED BRONZE (CAPPED VERSIONS ALSO AVAILABLE)



ORDER CODE	THREAD Ø(bsp)	A (mm)	F (mm)	LF (mm)	D (mm)
RPASEP03	1/8"	13	7	6	13
RPASEP04	1/4"	16	8	8	16
RPASEP06	3/8"	18	9	9	19
RPASEP08	1/2"	20	9	11	24
RPASEP12	3/4"	24	11	13	30
RPASEP16	1"	27	12	15	36

LOCKNUTS (NYLOC)

STEEL - UNI7473 / 7474 - DIN.EN ISO2320

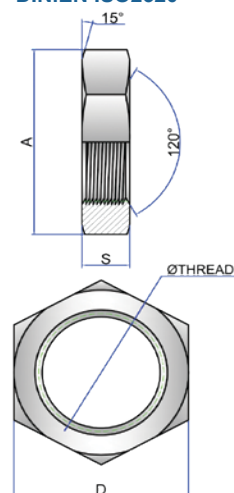


NEW!

ORDER CODE	THREAD Ø(mm)	A (mm)	D (mm)	ORDER CODE	THREAD Ø(mm)	A (mm)	D (mm)
RP219A	10 x 1.5	9	12	RP222A	24 x 2	20	35
RP219	12 x 1.5	14	19	RP222B	24 x 2	27	36
RP220	14 x 1.5	16	22	RP223	27 x 2	23	41
RP215	16 x 1.5	18	24	RP224	27 x 2	30	41
RP210	18 x 1.5	20	27	RP224A	30 x 2	30	46
RP221	20 x 1.5	18	30	RP225	33 x 2	36	50
RP221B	22 x 1.5	25	32	RP226	39 x 3	42	60
RP222	20 x 1.5	22	30	RP227	48 x 3	52	75

HEXAGON HALF / LOCKNUTS

STEEL - UNI7473 / 7474 - DIN.EN ISO2320

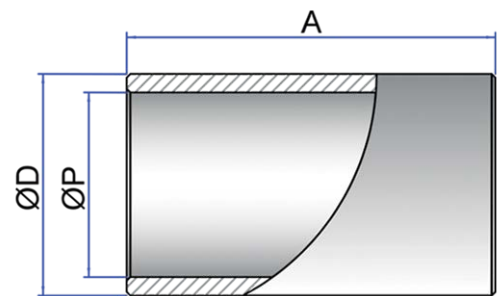


ORDER CODE	THREAD Ø(mm)	A (mm)	D (mm)	S (mm)	ORDER CODE	THREAD Ø(mm)	A (mm)	D (mm)	S (mm)
RP220H	10 x 1.5	19.2	16.7	5	RP229H	30 x 2	51.2	46	12
RP221AH	12 x 1.25	21.8	19	7	RP230H	33 x 2	55.8	50	14
RP221H	12 x 1.75	21.5	19	5.8	RP231AH	36 x 2	61.3	55	14
RP222H	14 x 2	22	25	7.8	RP231H	36 x 3	61.3	55	14
RP223AH	16 x 1.5	27.2	23.7	7.8	RP232H	39 x 3	67	60	16
RP223H	16 x 2	27.2	23.7	7.8	RP233H	42 x 3	72.6	65	16
RP224H	18 x 1.5	30	27	9	RP234H	45 x 3	78.2	70	18
RP225H	20 x 1.5	33.5	30	9	RP235H	52 x 3	89.5	80	20
RP226H	22 x 1.5	35.7	32	10	RP236H	56 x 4	95	85	22
RP227H	24 x 2	40	36	10	RP237H	64 x 4	106.4	95	26
RP228H	27 x 2	45.6	41	12					

STROKE RESTRICTION TUBES (STOP TUBES)

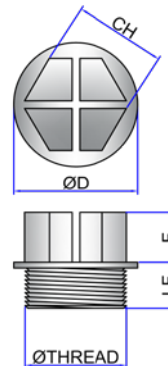
STEEL - ST52.3 DIN 2393 ISO-H9

50mm LONG SPACER TUES				100mm LONG SPACER TUES			
ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)
RPST1650	16	22	50	RPST16100	16	22	100
RPST2050	20	30	50	RPST20100	20	30	100
RPST2250	22	32	50	RPST22100	22	32	100
RPST2550	25	35	50	RPST25100	25	35	100
RPST2850	28	38	50	RPST28100	28	38	100
RPST3050	30	40	50	RPST30100	30	40	100
RPST3250	32	42	50	RPST32100	32	42	100
RPST3550	35	45	50	RPST35100	35	45	100
RPST3650	36	42	50	RPST36100	36	42	100
RPST4050	40	50	50	RPST40100	40	50	100
RPST4550	45	55	50	RPST45100	45	55	100
RPST5050	50	60	50	RPST50100	50	60	100
RPST5550	55	65	50	RPST55100	55	65	100
RPST6050	60	75	50	RPST60100	60	75	100
RPST6350	63	75	50	RPST63100	63	75	100
RPST7050	70	85	50	RPST70100	70	85	100
RPST8050	80	95	50	RPST80100	80	95	100
RPST9050	90	105	50	RPST90100	90	105	100
RPST10050	100	120	50	RPST100100	100	120	100
RPST12050	120	145	50	RPST120100	120	145	100
RPST14050	140	170	50	RPST140100	140	170	100
RPST15050	150	180	50	RPST150100	150	180	100
RPST18050	180	210	50	RPST180100	180	210	100



NEW! OIL PORT PLUGS

ORDER CODE	THREAD Ø(bsp)	LF (mm)	F (mm)	D Ø(mm)	CH (mm)	PACK QTY
RPP18	1/8"	9	10	16.8	13	x20
RPP14	1/4"	9	10	19.2	13	x20
RPP38	3/8"	9	11	22.2	17	x20
RPP12	1/2"	12	13	27.2	19	x20
RPP34	3/4"	12	13	32.3	24	x10
RPP01	1"	15	14	40	27	x10



POLYAMIDE PA 6



NEW! GREASE NIPPLES

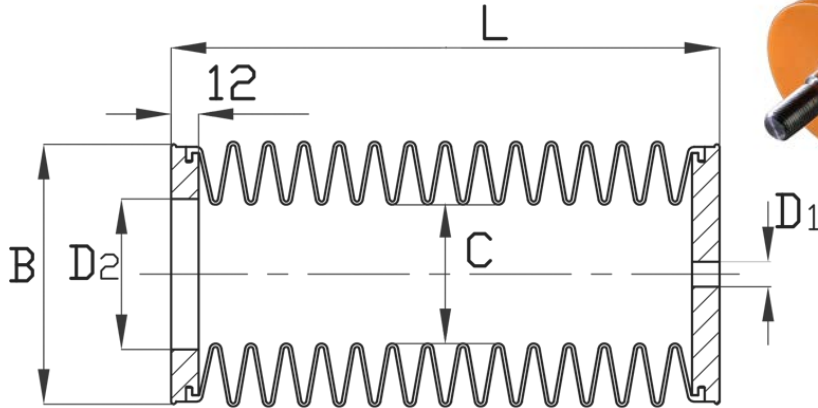
ORDER CODE	THREAD Ø	STYLE	PACK QTY
M6NIPPLE	M6x1	STRAIGHT	x25
M6NIPPLE45	M6x1	45 DEGREE	x25
M6NIPPLE90	M6x1	90 DEGREE	x25
M8NIPPLE	M8x1.25	STRAIGHT	x25
M8NIPPLE45	M8x1.25	45 DEGREE	x25
M8NIPPLE90	M8x1.25	90 DEGREE	x25
18NIPPLE	1/8" BSP	STRAIGHT	x25
NIPCAP	GREASE NIPPLE CAP		

GREASE NIPPLE = STEEL
CAP = POLYETHYLENE L.D



NEW! STANDARD MODULAR ROD BELLOWS / GAITER

STANDARD SIZED RUBBER BELLOWS.
 PATENTED JOINT MODULAR DESIGN.
 AVAILABLE IN NBR, EPDM & FOOD GRADE SILICONE.
 AVAILABLE FROM STOCK.
 SIMPLE TO INSTALL WITH MINIMAL MACHINING.
 CONNECT MULTIPLE BELLOWS TOGETHER TO REACH
 DESIRED LENGTH.

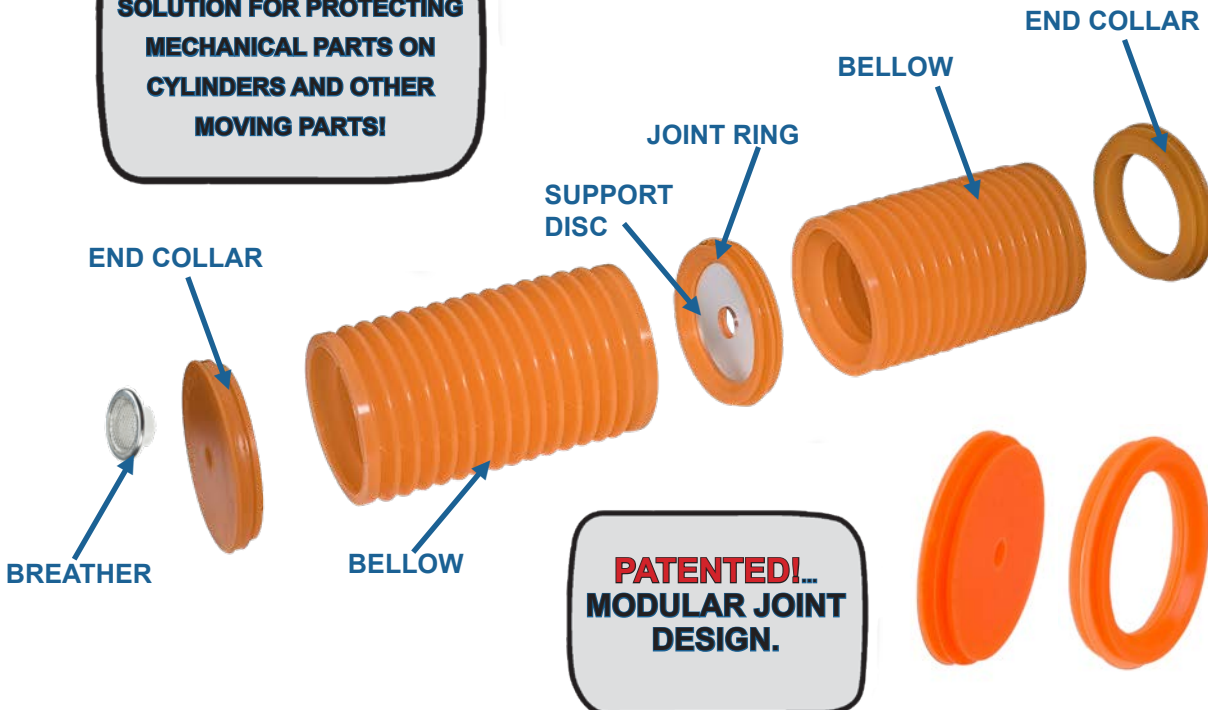


BELLOW SIZE (TYPE)	B (mm)	C (mm)	D1 (mm) MIN	D2 (mm) MAX	L (mm) WITHOUT JOINT RINGS		L (mm) WITH 1x JOINT RING		L (mm) WITH 2x JOINT RINGS		AVAILABLE MATERIALS * (Standard = NBR)		
					CLOSED	OPEN	CLOSED	OPEN	CLOSED	OPEN	NBR	EPDM	SILICONE
TYPE - 60	60	30	10	40	55	300	110	600	165	900	√	√	√
TYPE - 80	83	50	10	60	65	350	130	700	195	1050	√	√	√
TYPE - 106	106	70	10	80	40	220	80	440	120	660	√	√	√
TYPE - 106/L	106	55	10	80	100	750	200	1500	300	2250	√	√	√
TYPE - 120	120	63	10	100	95	700	190	1400	285	2100	√	√	√
TYPE - 135	135	90	30	116	75	550	150	1100	225	1650	√	√	√
TYPE - 135/M	135	85	30	116	130	950	260	1900	390	2850	N/A	√	N/A
TYPE - 135/L	135	72	30	116	140	1100	280	2200	420	3300	N/A	√	N/A

* MAXIMUM OPERATING TEMPERATURES:

- ▶ NBR = 120°C
- ▶ SILICONE = 200°C
- ▶ EPDM = 110°C

CHEAPEST + SIMPLEST ...
SOLUTION FOR PROTECTING
MECHANICAL PARTS ON
CYLINDERS AND OTHER
MOVING PARTS!



BELLOW PARTS LIST AND ORDERING CODES

EXAMPLE ORDERING CODES...



BLC-60-R **BLB-60-R** **BLJ-60-R** ***BLD-60** **BLF4** **BLF2**

END COLLAR ORDER CODE			BELLOW ORDER CODE				JOINT ORDER CODE			SUPPORT DISC ORDER CODE		BREATHER ORDER CODE
CODE	TYPE Ø(mm)	MATERIAL	CODE	TYPE Ø(mm)	LENGTH	MATERIAL	CODE	TYPE Ø(mm)	MATERIAL	CODE	TYPE Ø(mm)	
BLC	60	R = NBR S = SILICONE	BLB	60	55	R = NBR S = SILICONE E = EPDM	BLJ	60	R = NBR S = SILICONE	BLD	60	BLF2
	83			83	65			83			83	
	106			106	40			106			106	
	120			106/L	100			120			120	
	135			120	95			135			135	
	135	75		135/M	130		135	135				
				135/L	140							

* REQUIRED ONLY TO SUPPORT THE WEIGHT OF THE BELLOWS IF SEVERAL ARE JOINED TOGETHER IN A HORIZONTAL POSITION. (NOT NECESSARY FOR ONE OR TWO BELLOWS JOINED).

EXAMPLE MOUNTING OPTIONS...

OPTION 1 - FACE MOUNTING

DRILL 2x 4mm HOLES IN THE FRONT OF THE GLAND CAP, USE THE M5 SELF TAPPING SCREWS SUPPLIED TO MOUNT THE END COLLAR TO THE GLAND BUSH.



OPTION 2 - PUSH FIT MOUNTING

OPEN OUT THE STANDARD PILOT HOLE IN THE BELLOW COLLAR, MACHINE 1mm SMALLER THAN THE DIAMETER OF THE SPIGOT TO BE MOUNTED TO.



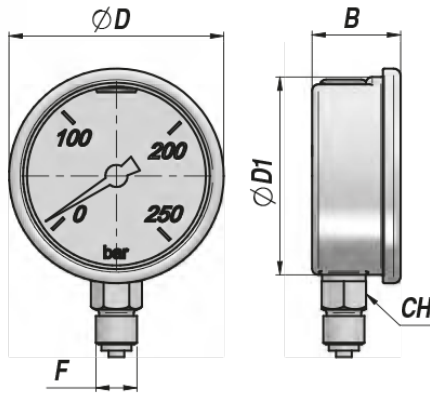
WATCH ...
THE FULL
INSTALLATION VIDEO AT
WWW.STEERFORTH.CO.UK



* 5mm AND 8mm HOLE PUNCHES AVAILABLE ON REQUEST FOR MAKING BOLT AND BREATHER HOLES IN COLLARS.

NEW! PRESSURE GAUGES & ADAPTOR KITS

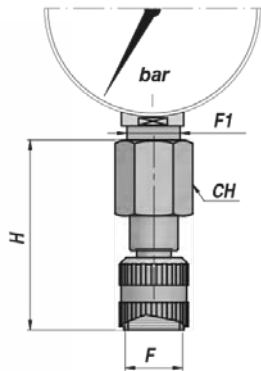
BODY MATERIAL = STAINLESS STEEL CASING
 BSP THREAD
 GLYCERINE FILLED



ORDER CODE	F THREAD Ø(bsp)	DIAL (mm)	RANGE (bar)	B (mm)	CH (mm)	D Ø(mm)					
AMG6310	1/4"	63	0 - 10	28	14	68					
AMG6325			0 - 25								
AMG6360			0 - 60								
AMG63100			0 - 100								
AMG63160			0 - 160								
AMG63250			0 - 250								
AMG63400			0 - 400								
AMG63600			0 - 600								
AMG10010			1/2"				100	0 - 10	33.9	17	109.8
AMG10025								0 - 25			
AMG10060	0 - 60										
AMG100100	0 - 100										
AMG100160	0 - 160										
AMG100250	0 - 250										
AMG100400	0 - 400										
AMG100600	0 - 600										

NEW! M16x2 GAUGE ADAPTOR

BODY MATERIAL = STEEL
 STAINLESS STEEL ON REQUEST



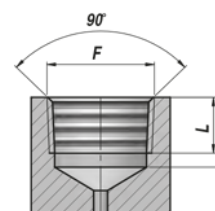
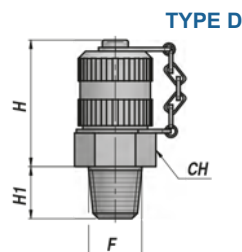
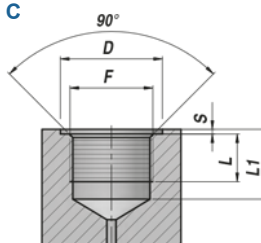
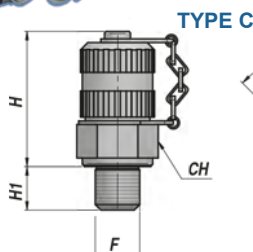
ORDER CODE	F THREAD	F1 Ø(bsp)	MAX PRESSURE (bar)	H (mm)	CH (mm)
AM2014	M16x2	1/4"	630	50	19
AM2012	M16x2	1/2"	630	55	27

NEW! M16x2 TEST POINTS

STEEL = STANDARD
 STAINLESS STEEL ON REQUEST
 MAX PRESSURE = 630 BAR
 AMD18 = MAX PRESSURE 400 BAR




ORDER CODE	TYPE	F (THREAD)	H (mm)	H1 (mm)	CH (mm)	D Ø(mm)	L (mm)	L1 (mm)	S (mm)
AMC18	C	1/8" BSP	37	8	17	17	10	13.5	1.0
AMC14	C	1/4" BSP		12	19	20	14	18.5	1.0
AMC38	C	3/8" BSP		14	22	24	16	18.5	1.5
AMC12	C	1/2" BSP		15	27	30	18	24	1.5
AMCM10	C	M10x1		8	17	17	10	13.5	1.0
AMCM12	C	M12x1.5		10	17	18	12	18.5	1.0
AMCM14	C	M14x1.5		12	19	20	14	18.5	1.0
AMCM16	C	M16x1.5		12	22	22	14	18.5	1.5
AMD18	D	1/8" BSPT		10	17	-	5.5	12	-
AMD14	D	1/4" BSPT		12	19	-	8.5	13.5	-
AMD38	D	3/8" BSPT	14	22	-	12	20	-	



VALVES & VALVE KITS

SERIES TYPE	VALVE TYPE	VALVE (Page No)	VALVE KIT (Page No)
PILOT OPERATED CHECK VALVES	STANDARD	154	156
	DIN-2353	154	156
	FACE MOUNTED	157	157
	PORT MOUNTED	155	156
	COMPACT	155-156	156
OVERCENTRE VALVES	STANDARD	158	160
	PORT MOUNTED	158	160
	FACE MOUNTED	159	159
FLOW CONTROL VALVES	FLOW CONTROL	161	-
	THROTTLE CHECK	162	-
	FLOW DIVIDERS	164	-
	BALL / DIVERTER	165	-



TYPE	DESCRIPTION	PAGE NO
BOLT FOR BANJO	BANJO BOLT	167

BANJO CONNECTIONS		
DIN2523 BANJO	'DIN 2353' CONNECTION INC NUT & CUTTING RING	167
THREADED BANJO	THREADED BANJO CONNECTION	
WELDED BANJO	WELDABLE BANJO CONNECTION	
DIN2523 90° COUPLING	'DIN 2353' 90° COUPLING INC BOLT, NUT & CUTTING RING	

1 VALVES & VALVE KITS

BANJO CONNECTIONS & BOLTS 2

3 VALVE CONNECTIONS & MOUNTINGS

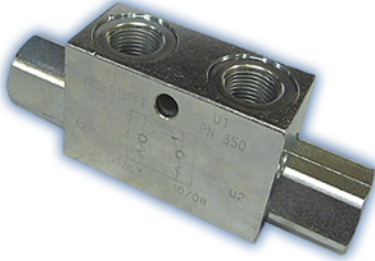
PIPES & FEEDS 4

TYPE	DESCRIPTION	PAGE NO
DIN2523 CONNECTION	'DIN 2353' COUPLING INC NUT & CUTTING RING	168
CONNECTIONS, ADAPTORS & PLUGS		
HEXAGON PLUG	INTERNAL PLUG	168
STRAIGHT ADAPTOR	MALE / MALE	
REDUCING ADAPTOR (INTERNAL)	MALE / FEMALE (INT)	
STRAIGHT REDUCING ADAPTOR	MALE / MALE	168
	MALE / FEMALE	169
MOUNTING OPTIONS & ACCESSORIES		
FLANGE MOUNTINGS	SINGLE / DOUBLE ACTING	157+159
PIPE CLAMPS	SINGLE WELDABLE FEED PIPE CLAMPS	169

TYPE	DESCRIPTION	PAGE NO
PIPE WITH BANJO	PIPE FITTED WITH 1/4", 3/8" & 1/2" BANJO UP TO 1000MM LONG	169
FEED PIPES	Ø10,12 & 14MM WELDABLE FEED PIPES UP TO 1000MM LONG	148

PILOT OPERATED CHECK VALVES

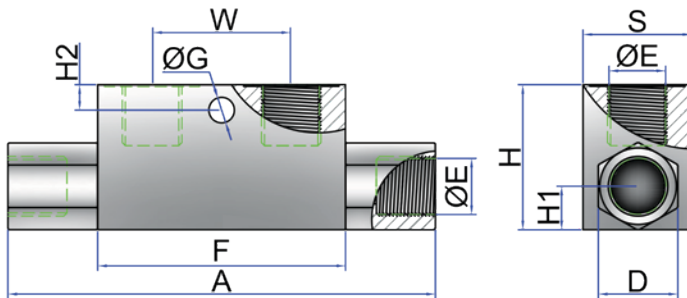
STEEL - ZINC PLATED
SINGLE & DOUBLE ACTING
OPENING PRESSURE - 4 BAR
PILOT RATIO = 1:4 ▶ 1:4.5
MAX PRESSURE 300 BAR



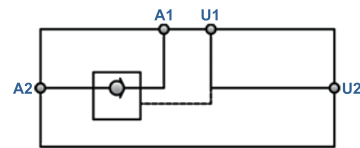
SINGLE ACTING CHECK VALVES											
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E (Ø(bsp / mm))	W (mm)	S (mm)	D (mm)	H2 (mm)	G Ø(mm)	PILOT RATIO
RPV311F10454	30	118	40	68	1/4"	38	30	24	7	7	1:4.5
RPV311F15454	30	118	40	68	3/8"	38	30	24			
RPV311F20404	50	144	50	80	3/8"	40	30	27	15	8.5	1:4
RPV311F30404	80	171	60	90	1/2"	40	40	30			

DOUBLE ACTING CHECK VALVES											
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E (Ø(bsp / mm))	W (mm)	S (mm)	D (mm)	H2 (mm)	G Ø(mm)	PILOT RATIO
RPV18650400	30	118	40	68	1/4"	38	30	24	7	7	1:4.5
RPV18650600	30	118	40	68	3/8"	38	30	24			
RPV18650601	50	144	50	80	3/8"	40	30	27	15	8.5	1:4
RPV18650800	50	144	50	80	1/2"	40	30	27			
RPV18650801	80	171	60	90	1/2"	40	40	30			
RPV18011200	120	196	70	107	3/4"	60	50	41			

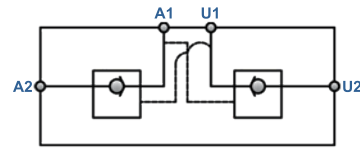
PLEASE NOTE:
A1 / U1 PORTS = OIL FEED IN / RETURN
A2 / U2 PORTS = RAM FEED / RETURN



SINGLE ACTING TYPE
(REFER TO UPPER TABLE)

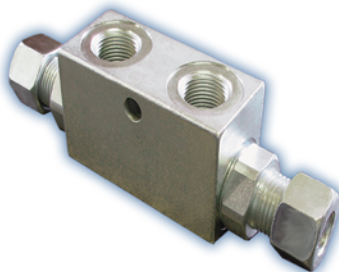


DOUBLE ACTING TYPE
(REFER TO LOWER TABLE)



PILOT OPERATED CHECK VALVES - DIN2353 SERIES

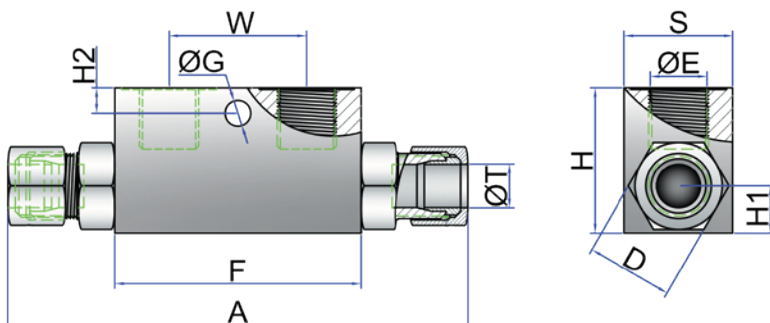
STEEL - ZINC PLATED
SINGLE & DOUBLE ACTING
OPENING PRESSURE - 4 BAR
INCLUDES NUT & OLIVE
PILOT RATIO = 1:4 ▶ 1:4.5
MAX PRESSURE 300 BAR



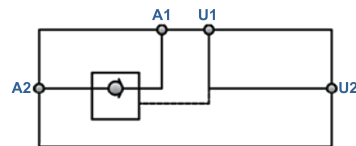
SINGLE ACTING CHECK VALVES													
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E (Ø(bsp / mm))	T Ø(mm)	W (mm)	S (mm)	H1 (mm)	D (mm)	H2 (mm)	G Ø(mm)	PILOT RATIO
RPV321F10454	30	138	40	68	1/4"	12	38	30	13	24	7	7	1:4.5
RPV321F15454	30	138	40	68	3/8"	12	38	30	13	24			
RPV321F20454	50	166	50	80	3/8"	15	40	30	16	27	15	8.5	1:4
RPV321F25454	50	166	50	80	1/2"	15	40	30	16	27			
RPV321F30454	80	180	60	90	1/2"	18	40	40	20	30			

DOUBLE ACTING CHECK VALVES													
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E (Ø(bsp / mm))	T Ø(mm)	W (mm)	S (mm)	H1 (mm)	D (mm)	H2 (mm)	G Ø(mm)	PILOT RATIO
RPV322F10454	30	138	40	68	1/4"	12	38	30	13	24	7	7	1:4.5
RPV322F15454	30	138	40	68	3/8"	12	38	30	13	24			
RPV322F20454	50	166	50	80	3/8"	15	40	30	16	27	15	8.5	1:4
RPV322F25454	50	166	50	80	1/2"	15	40	30	16	27			
RPV322F30454	80	180	60	90	1/2"	18	40	40	20	30			

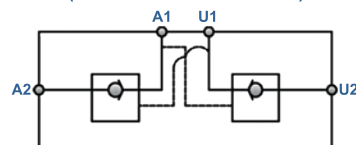
PLEASE NOTE:
A1 / U1 PORTS = OIL FEED IN / RETURN
A2 / U2 PORTS = RAM FEED / RETURN



SINGLE ACTING TYPE
(REFER TO UPPER TABLE)



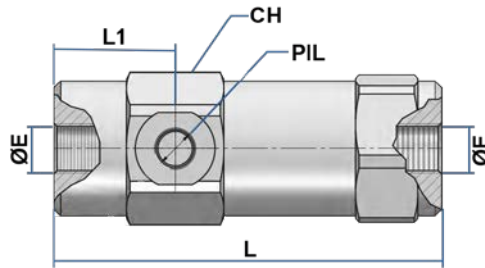
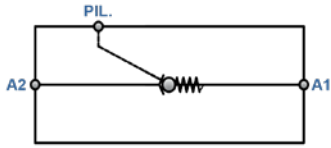
DOUBLE ACTING TYPE
(REFER TO LOWER TABLE)



NEW! PILOT OPERATED CHECK VALVES

ORDER CODE	MAX (ltr/min)	P MAX (Bar)	L (mm)	L1 (mm)	CH (mm)	PIL Ø(bsp)	E Ø(bsp)	PILOT RATIO
RPVBPS010	25	350	103	32.5	36	1/4"	1/4"	1:4
RPVBPS020	40		111	35	40		3/8"	1:4
RPVBPS030	60		122	38	42		1/2"	1:7
RPVBPS040	90		145.5	44.5	55		3/4"	1:7
RPVBPS050	130		260	164	44.5		55	1"

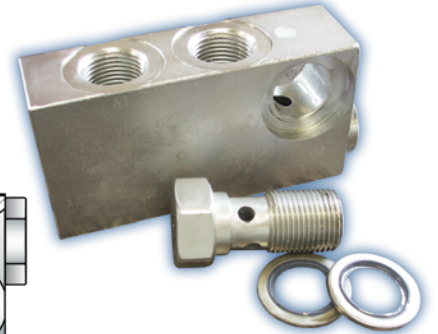
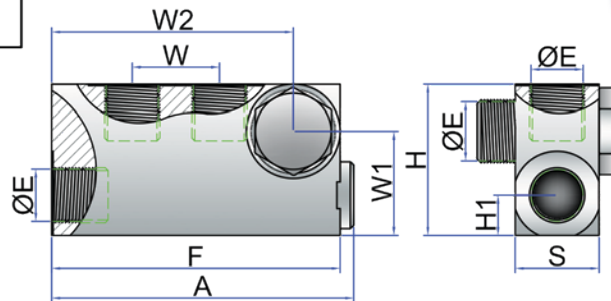
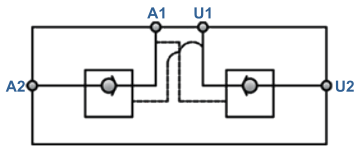
STEEL - ZINC PLATED
SINGLE ACTING
OPENING PRESSURE - 1 BAR
PILOT RATIO = 1:3.5 ▶ 1:9.5
PILOT PORT = 1/4" BSP/FEM



PILOT OPERATED CHECK VALVES - PORT MOUNTED

ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	H1 (mm)	F (mm)	W (mm)	W2 (mm)	E Ø(bsp)	S (mm)	PILOT RATIO
RPV32610450	20	88.5	40	10	84	24	68.5	1/4"	20	1:49
RPV32620490	20	90.5	45	12	86	26	72	3/8"	25	

STEEL - ZINC PLATED
DOUBLE ACTING
OPENING PRESSURE - 1 BAR
INCLUDES BANJO & WASHERS
PILOT RATIO = 1:4.9
MAX PRESSURE 300 BAR

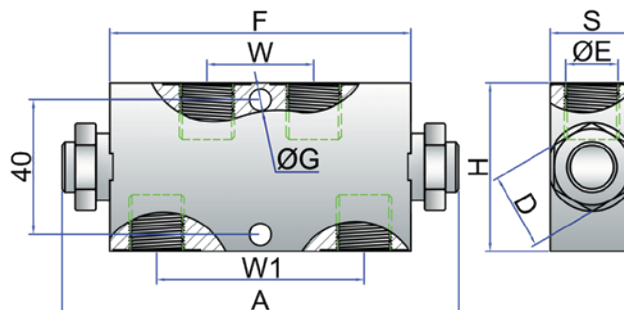
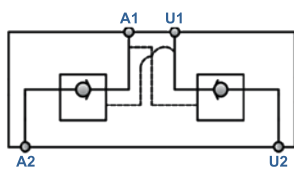


PILOT OPERATED CHECK VALVES - COMPACT SERIES

ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	W (mm)	W1 (mm)	E Ø(bsp)	S (mm)	D (mm)	G Ø(mm)	PILOT RATIO
RPV352104	20	113	50	90	32	62	1/4"	25	22	6.5	1:4
RPV352154	20		50	90			3/8"	25	22		1:4
RPV352207*	35		60	96			3/8"	35	27		1:7
RPV352257*	35		60	96			1/2"	35	27		1:7
RPV352305*	50	139	70	117	43	84	1/2"	40	32	10.1	1:5.2

STEEL - ZINC PLATED / ALUMINIUM
DOUBLE ACTING
OPENING PRESSURE - 4 BAR
PILOT RATIO = 1:4 ▶ 1:7
MAX PRESSURE 350 BAR

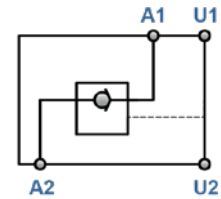
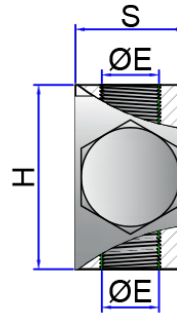
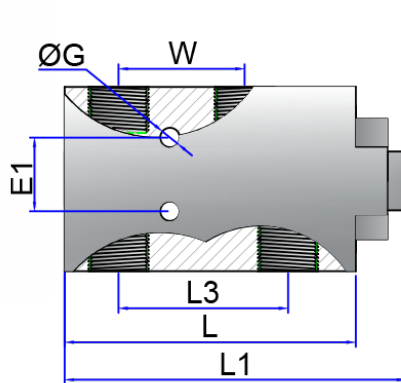
* = ALUMINIUM



NEW! PILOT OPERATED CHECK VALVES - COMPACT

ALUMINIUM
SINGLE ACTING
OPENING PRESSURE - 4 BAR
PILOT RATIO = 1:7
MAX PRESSURE 350 BAR

ORDER CODE	MAX (ltr/min)	L1 (mm)	L (mm)	L2 (mm)	L3 (mm)	E1 (mm)	E Ø(bsp)	S (mm)	H (mm)	G Ø(mm)	PILOT RATIO
RPV350207	35	95	83	34	49	40	3/8"	35	60	6.5	1:7
RPV350257	35	95	83	34	49	40	1/2"	35	60	6.5	1:7

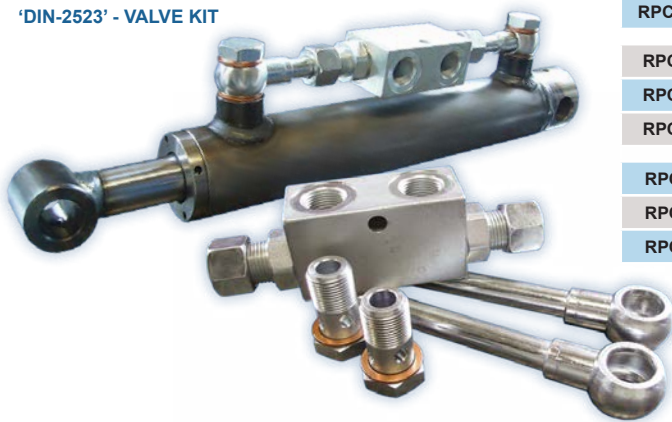


PILOT OPERATED CHECK VALVE KITS

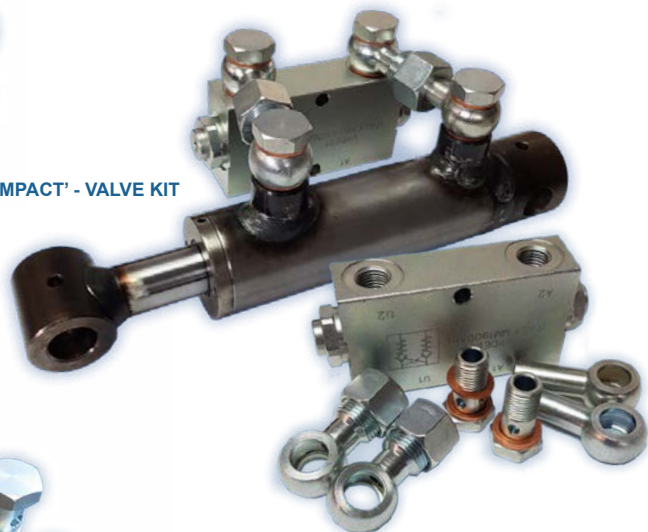
DOUBLE ACTING - INCLUDING PIPES, BANJOS & FITTINGS
SHORT, MEDIUM & LONG PORT CENTRE VERSIONS
FOR VALVE TECHNICAL INFO PLEASE SEE PAGES 154-155
SINGLE ACTING VERSIONS AVAILABLE ON REQUEST

ORDER CODE	PORT Ø(mm)	KIT SIZE	PORT CENTRES		VALVE STYLE (type)
			MIN (mm)	MAX (mm)	
RPCVK14PDS	1/4"	SHORT	124	283	PORT MOUNT
RPCVK14DSD	1/4"		165	486	'DIN' STYLE
RPCVK14CDS	1/4"		50		COMPACT
RPCVK38PDS	3/8"		127	287	PORT MOUNT
RPCVK38DS	3/8"		165	486	'DIN' STYLE
RPCVK38CDS	3/8"		50		COMPACT
RPCVK12DS	1/2"		244	308	'DIN' STYLE
RPCVK12CDS	1/2"		50		COMPACT
RPCVK14DM	1/4"	MEDIUM	228	942	STANDARD
RPCVK38DM	3/8"		198	1086	'DIN' STYLE
RPCVK12DM	1/2"		244	708	'DIN' STYLE
RPCVK14DL	1/4"	LONG	228	2142	STANDARD
RPCVK38DL	3/8"		198	2086	'DIN' STYLE
RPCVK12DL	1/2"		244	1108	'DIN' STYLE

'DIN-2523' - VALVE KIT



'COMPACT' - VALVE KIT



'PORT MOUNT' - VALVE KIT

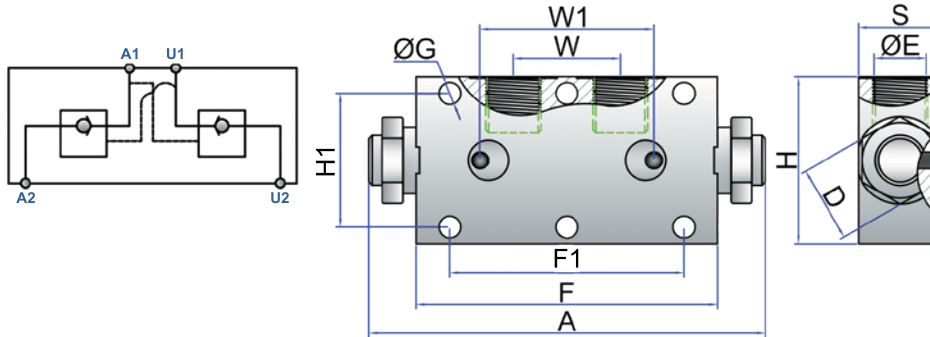


PILOT OPERATED CHECK VALVES - FACE MOUNTED

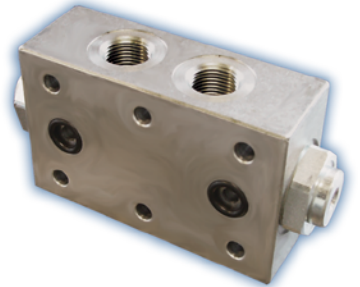
ALUMINIUM VALVES													
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	F1 (mm)	H1 (mm)	W (mm)	W1 (mm)	E (Ø(bsp))	S (mm)	D (mm)	G (Ø(mm))	PILOT RATIO
RPV353104	20	113	50	90	70	40	32	52	1/4"	30	22	6.5	1:4
RPV353154	20		50	90					3/8"	30	22		
RPV353207	35		60	96					3/8"	35	27		
RPV353257	35		60	96					1/2"	35	27		

STEEL VALVES													
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	F1 (mm)	H1 (mm)	W (mm)	W1 (mm)	E (Ø(bsp))	S (mm)	D (mm)	G (Ø(mm))	PILOT RATIO
RPV353154STE	30	113	60	80	70	40	30	52	3/8"	30	24	6.5	1:5.5
RPV353207STE	30	117	60	90	70	40	32	62	3/8"	35	24	6.5	1:5.5
RPV353257STE	55	147	80	115	81	56	39	81	1/2"	35	27	8.5	1:4.5

PLEASE NOTE: FOR AVAILABLE MATING FLANGE SEE SUB PLATES BELOW.

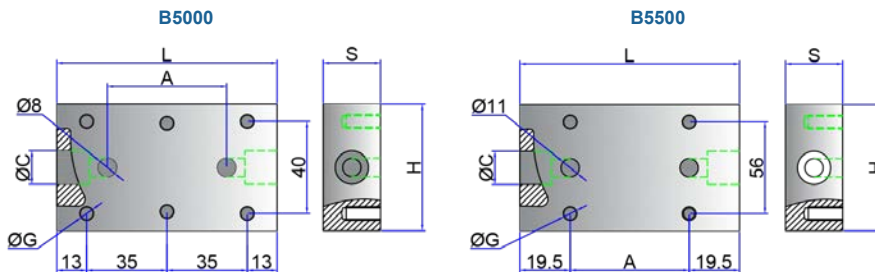


ALUMINIUM
DOUBLE ACTING
PILOT RATIO = (SEE TABLE)
MAX PRESSURE 350 BAR

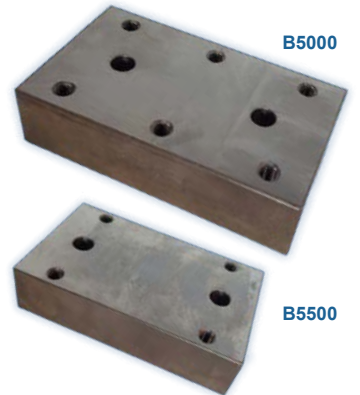


NEW! FACE MOUNTED CHECK VALVE SUB PLATES

ORDER CODE	A (mm)	L (mm)	H (mm)	S (mm)	G (Ø(mm))	C (Ø(mm))	SUITABLE FOR VALVE TYPE
B5000	52	96	55	25	M6	14.5	RPV353104 / RPV353154 / RPV353154STE
B5500	81	120	70	30	M8	17.5	RPV353257STE



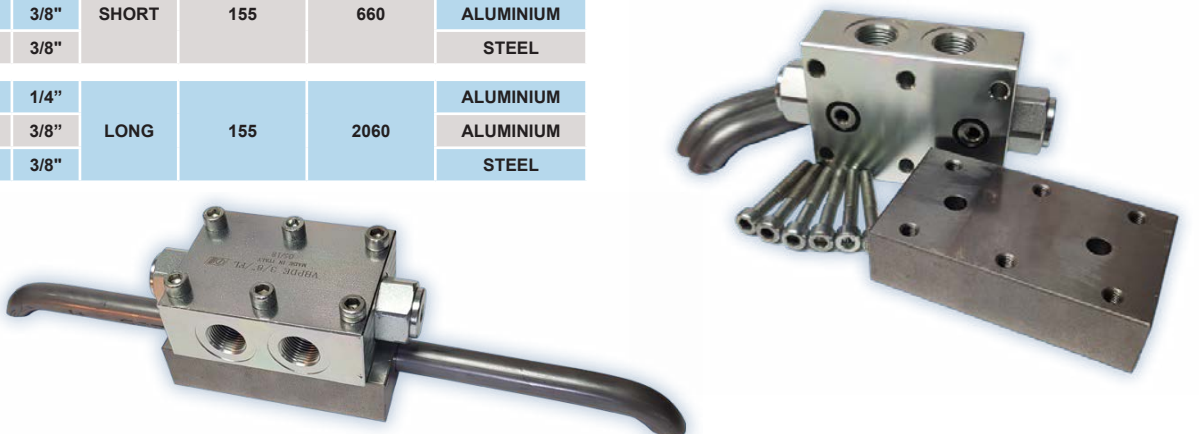
STEEL



NEW! FACE MOUNTED CHECK VALVE KITS

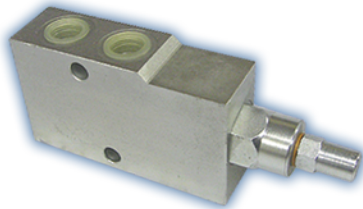
ORDER CODE	PORT Ø(mm)	KIT SIZE	PORT CENTRES		VALVE MATERIAL
			MIN (mm)	MAX (mm)	
RPFCVK14S	1/4"	SHORT	155	660	ALUMINIUM
RPFCVK38S	3/8"				ALUMINIUM
RPFCVK38STE	3/8"				STEEL
RPFCVK14L	1/4"	LONG	155	2060	ALUMINIUM
RPFCVK38L	3/8"				ALUMINIUM
RPFCVK38LTE	3/8"				STEEL

DOUBLE ACTING
KITS INCLUDE VALVE, SUB PLATE, BOLTS & PIPE WORK
MAX PRESSURE 350 BAR



OVERCENTRE VALVES (PIPE MOUNTED)

STEEL - ZINC PLATED
SINGLE & DOUBLE ACTING
PILOT RATIO = 1:4.5 ▶ 1:5.5
MAX PRESSURE 350 BAR
STANDARD SETTING 320 BAR

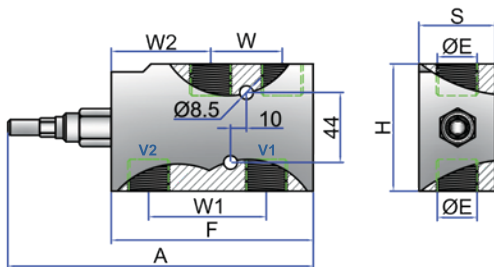


SINGLE ACTING TYPE (RPV2190)



DOUBLE ACTING TYPE (RPV2290)

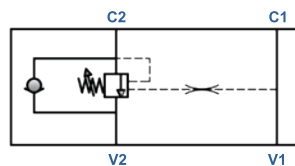
PLEASE NOTE: V1 / V2 PORTS = OIL FEED IN / RETURN
C1 / C2 PORTS = RAM FEED / RETURN



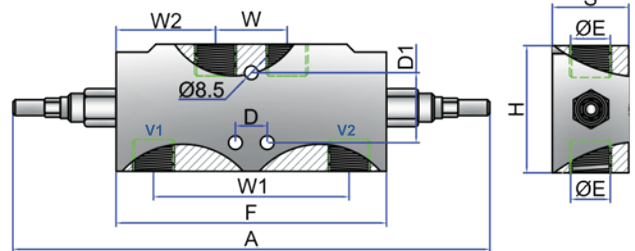
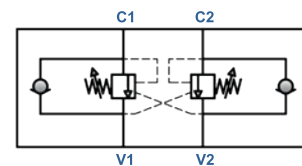
SINGLE ACTING OVERCENTRE VALVES												
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E Ø(bsp)	W (mm)	W1 (mm)	W2 (mm)	S (mm)	D (mm)	D1 (mm)	PILOT RATIO
RPV2190A400	20				1/4"							
RPV2190A600	40	149	60	100	3/8"	30	60	50	30		44	1:4.5
RPV2190A800	60				1/2"	36	65			10		
RPV2190A120	95	192	80	127	3/4"	46	85	62.5	35			1:5.5
RPV2190A160	160	213	90	156	1"	70	109	63	50		70	

DOUBLE ACTING OVERCENTRE VALVES												
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E Ø(bsp)	W (mm)	W1 (mm)	W2 (mm)	S (mm)	D (mm)	D1 (mm)	PILOT RATIO
RPV2290A400	20	237			1/4"	38	94	43				
RPV2290A600	40	248	60	150	3/8"	50	110	50	30	30	44	1:4.5
RPV2290A800	60	248			1/2"	50	110	50				
RPV2290A120	95	304	80	190	3/4"	65	143	62.5	35	44	64	1:5.5
RPV2290A160	160	319	90	210	1"	66	158	72	50	-	-	

SINGLE ACTING TYPE (REFER TO UPPER TABLE)

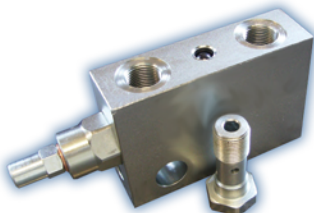


DOUBLE ACTING TYPE (REFER TO LOWER TABLE)

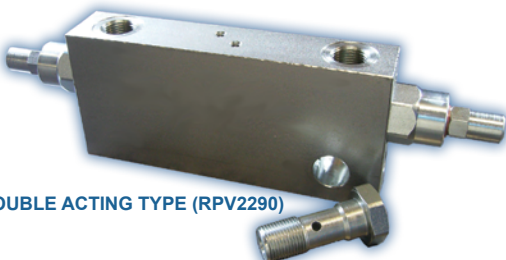


OVERCENTRE VALVES - PORT MOUNTED

STEEL - ZINC PLATED
SINGLE & DOUBLE ACTING
PILOT RATIO = 1:4.5
MAX PRESSURE 350 BAR
STANDARD SETTING 320 BAR



SINGLE ACTING TYPE (RPV2190)



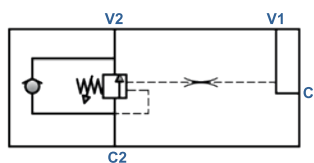
DOUBLE ACTING TYPE (RPV2290)

SINGLE ACTING OVERCENTRE VALVES												
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E Ø(bsp)	W (mm)	W1 (mm)	W2 (mm)	W3 (mm)	S (mm)	PILOT RATIO	
RPV21900392	40	150	60	100	3/8"	60	15	50	20	30	1:4.5	
RPV21900412	60				1/2"			47				

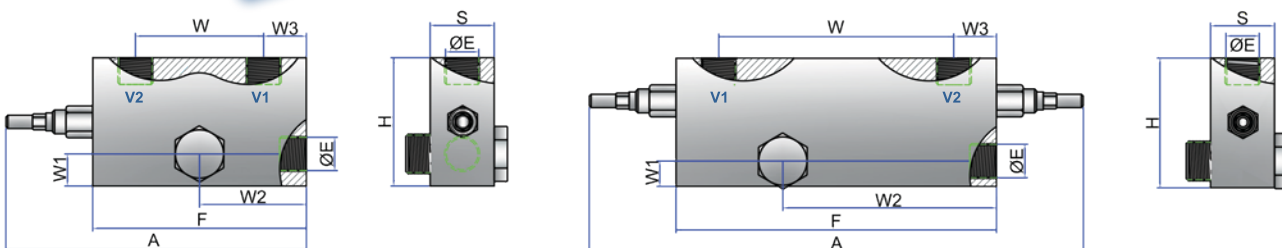
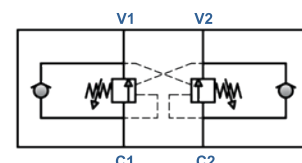
DOUBLE ACTING OVERCENTRE VALVES												
ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E Ø(bsp)	W (mm)	W1 (mm)	W2 (mm)	W3 (mm)	S (mm)	PILOT RATIO	
RPV22900422	40	250	70	150	3/8"	110	12.5	100	20	30	1:4.5	
RPV22900432	60		80		1/2"		18					

PLEASE NOTE: V1 / V2 PORTS = OIL FEED IN / RETURN
C1 / C2 PORTS = RAM FEED / RETURN

SINGLE ACTING TYPE (REFER TO UPPER TABLE)



DOUBLE ACTING TYPE (REFER TO LOWER TABLE)



OVERCENTRE VALVES - FACE MOUNTED

SINGLE ACTING OVERCENTRE VALVES

ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E Ø(bsp)	W (mm)	N Ø(mm)	D (mm)	D1 (mm)	S (mm)	PILOT RATIO
RPV2190B600	40	149	60	100	3/8"	60	9	30	30	30	1:4.5
RPV2190B800	60				1/2"	65					

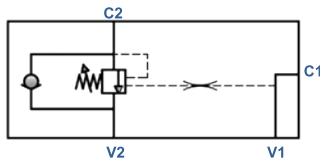
DOUBLE ACTING OVERCENTRE VALVES

ORDER CODE	MAX (ltr/min)	A (mm)	H (mm)	F (mm)	E Ø(bsp)	W (mm)	N Ø(mm)	D (mm)	D1 (mm)	S (mm)	PILOT RATIO
RPV2290B600	40	248	60	150	3/8"	110	9	48	40	30	1:4.5
RPV2290B800	60				1/2"						

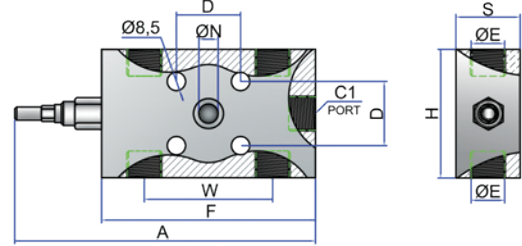
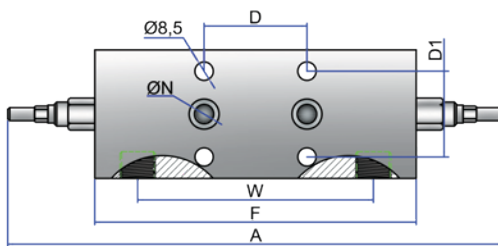
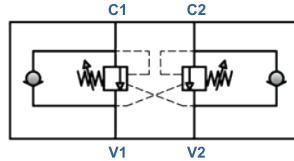
PLEASE NOTE: V1 / V2 PORTS = OIL FEED / RETURN

C1 / C2 PORTS = RAM FEED / RETURN

SINGLE ACTING TYPE (REFER TO UPPER TABLE)



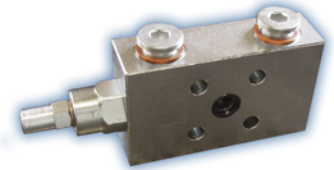
DOUBLE ACTING TYPE (REFER TO LOWER TABLE)



SINGLE ACTING TYPE (RPV2190)

DOUBLE ACTING TYPE (RPV2290)

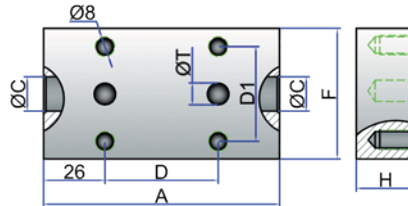
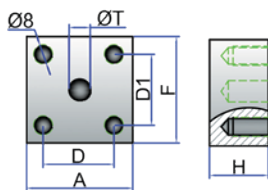
STEEL - ZINC PLATED
SINGLE & DOUBLE ACTING
PILOT RATIO = 1:4.5 ▶ 1:5.5
MAX PRESSURE 350 BAR
STANDARD SETTING 320 BAR



SUB PLATES FOR FACE MOUNTED OVERCENTRE VALVES

ORDER CODE	A (mm)	F (mm)	H (mm)	T Ø(mm)	G Ø(mm)	C Ø(mm)	D (mm)	D1 (mm)	SUITABLE FOR VALVE TYPE
RPV999080	45	45	25	9	M8	-	30	30	RPV2190B600 / 800

RPV999085	100	55	25	9	M8	14.5	48	40	RPV2290B600 / 800
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STEEL



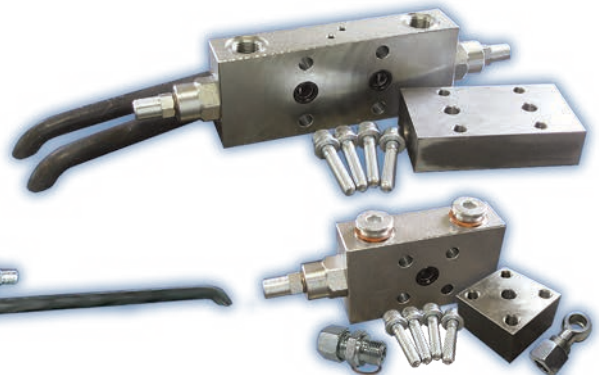
FACE MOUNTED OVERCENTRE VALVE KITS

ORDER CODE	PORT CENTRES		PORT Ø(mm)	SINGLE / DOUBLE ACTING
	MIN (mm)	MAX (mm)		
RPFVK38S*	-	-	3/8"	SINGLE ACTING
RPFVK12S*	-	-	1/2"	

RPFVK38DS	185	685	3/8"	DOUBLE ACTING
RPFVK12DS	185	685	1/2"	
RPFVK38DL	185	2085	3/8"	
RPFVK12DL	185	2085	1/2"	

* = SINGLE ACTING KITS ARE NOT SUPPLIED WITH PIPEWORK, BUT ARE SUPPLIED WITH DIN CONNECTION & BANJO.

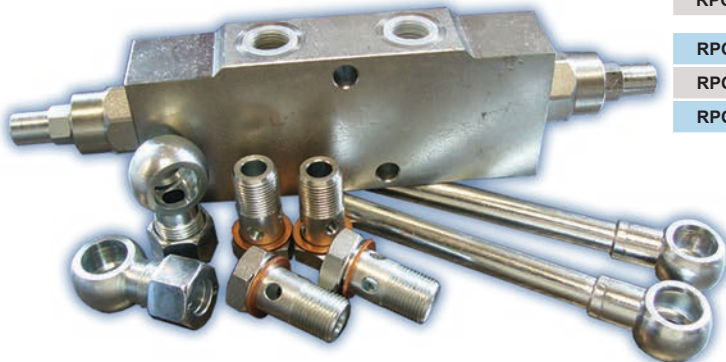
STEEL - ZINC PLATED
SINGLE & DOUBLE ACTING
KITS INCLUDE VALVE, SUB PLATE, BOLTS & PIPE WORK
PILOT RATIO = 1:4.5 ▶ 1:5.5
MAX PRESSURE 350 BAR



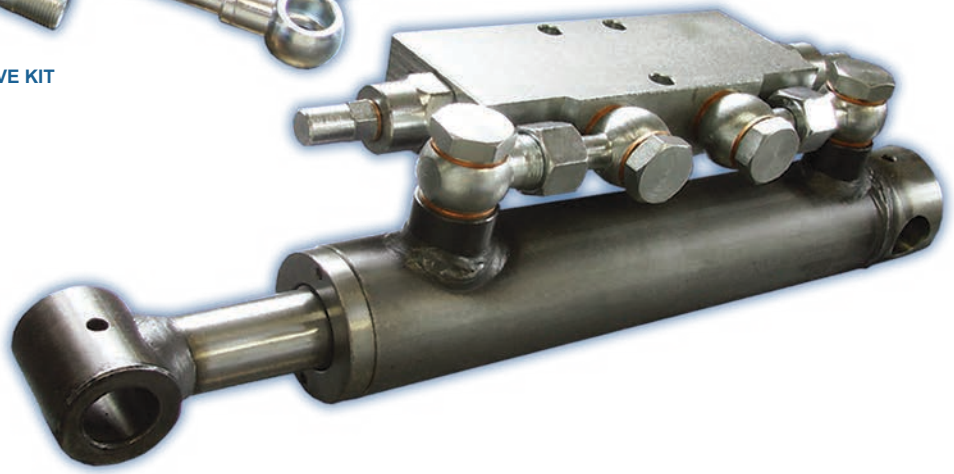
OVERCENTRE VALVE KITS

STEEL - ZINC PLATED
 KITS INCLUDE PIPES, BANJOS & FITTINGS
 SHORT & LONG PORT CENTRE VERSIONS
 STANDARD SETTING = 320 BAR
 PILOT RATIO = 1:4.5
 MAX PRESSURE 350 BAR

ORDER CODE	PORT Ø(mm)	KIT SIZE	PORT CENTRES	
			MIN (mm)	MAX (mm)
DOUBLE ACTING OVERCENTRE VALVES				
RPOCVK14DS	1/4"	SHORT	177	494
RPOCVK38DS	3/8"		177	1080
RPOCVK12DS	1/2"		210	692
RPOCVK14DL	1/4"	LONG	200	894
RPOCVK38DL	3/8"		200	2080
RPOCVK12DL	1/2"		210	1092



DOUBLE ACTING 'OVER CENTRE' - VALVE KIT



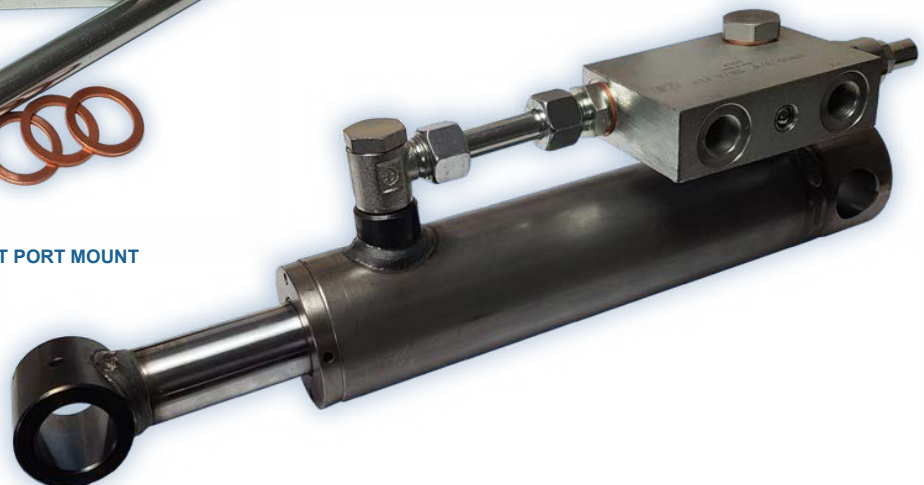
NEW! PORT MOUNTED OVERCENTRE VALVE KITS

STEEL - ZINC PLATED
 KITS INCLUDE PIPES, BANJOS & FITTINGS
 SHORT & LONG PORT CENTRE VERSIONS
 STANDARD SETTING = 320 BAR
 PILOT RATIO = 1:4.5
 MAX PRESSURE 350 BAR

ORDER CODE	PORT Ø(mm)	KIT SIZE	PORT CENTRES	
			MIN (mm)	MAX (mm)
SINGLE ACTING OVERCENTRE VALVES				
RPPOCVK38SS	3/8"	SHORT	155	495
RPPOCVK12SS	1/2"		175	495
RPPOCVK38LS	3/8"	LONG	155	1090
RPPOCVK12LS	1/2"		175	1095
DOUBLE ACTING OVERCENTRE VALVES				
RPPOCVK38DS	3/8"	SHORT	210	550
RPPOCVK12DS	1/2"		220	545
RPPOCVK38DL	3/8"	LONG	210	1145
RPPOCVK12DL	1/2"		220	1145



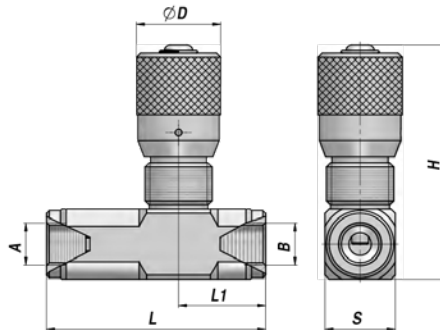
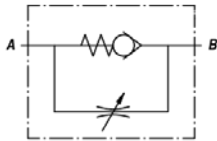
SINGLE ACTING 'OVER CENTRE' - VALVE KIT PORT MOUNT



NEW! FLOW CONTROL VALVES

ORDER CODE	A Ø(bsp)	B Ø(bsp)	L/Min MAX A>B	L/Min MAX B>A	L (mm)	L1 (mm)	D Ø(mm)	H (mm)	S (mm)
UFV14	1/4"	1/4"	30	35	75	29	30	82	25
UFV38	3/8"	3/8"	40	50	78	31	30	82	25
UFV12	1/2"	1/2"	50	90	93	33.5	30	88	30
UFV34	3/4"	3/4"	80	140	110	41.5	42	116	40
UFV1	1"	1"	110	180	135	44.5	42	116	40

MAX W.P: 1/4" - 1/2" = 350 BAR
 3/4" = 320 BAR
 1" = 300 BAR



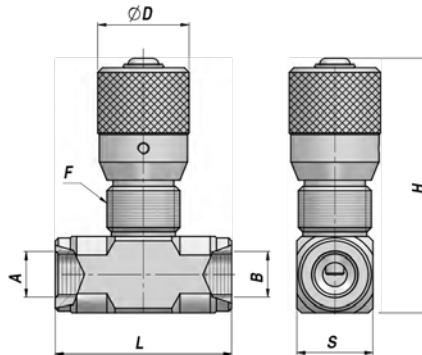
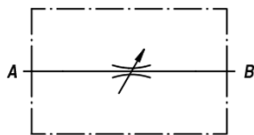
STEEL
UNIDIRECTIONAL
LINE MOUNTING (POPPET TYPE)



NEW! FLOW CONTROL VALVES

ORDER CODE	A Ø(bsp)	B Ø(bsp)	L/Min MAX	F (mm)	L (mm)	D Ø(mm)	H (mm)	S (mm)
BFV14	1/4"	1/4"	30	M25x1.5	58	30	82	25
BFV38	3/8"	3/8"	40	M25x1.5	58	30	82	25
BFV12	1/2"	1/2"	50	M25x1.5	64	30	88	30
BFV34	3/4"	3/4"	80	M35x1.5	89	42	116	40
BFV1	1"	1"	110	M35x1.5	89	42	116	40

MAX W.P: 1/4" - 1/2" = 350 BAR
 3/4" = 320 BAR
 1" = 300 BAR



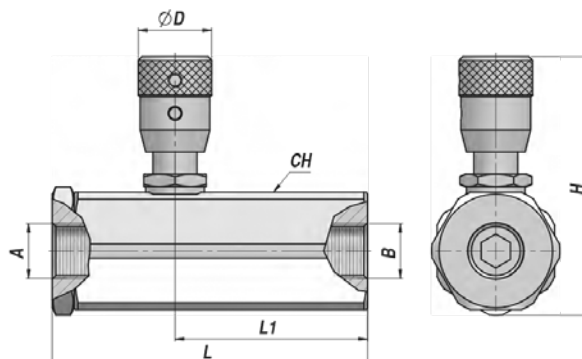
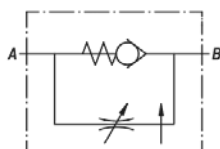
STEEL
BIDIRECTIONAL
LINE MOUNTING



NEW! COMPENSATED FLOW CONTROL VALVES

ORDER CODE	A Ø(bsp)	B Ø(bsp)	L/Min MAX A>B	L/Min MAX B>A	L (mm)	L1 (mm)	D Ø(mm)	H (mm)	CH (mm)
VRFU90C010	1/4"	1/4"	17	25	87	52.5	20	68	32
VRFU90C020	3/8"	3/8"	17	30	87	52.5	20	68	32
VRFU90C030	1/2"	1/2"	28	35	107	61	20	71	36

MAX W.P: 1/4" = 300 BAR
 3/8" = 300 BAR
 1/2" = 250 BAR



STEEL
UNIDIRECTIONAL
LINE MOUNTING

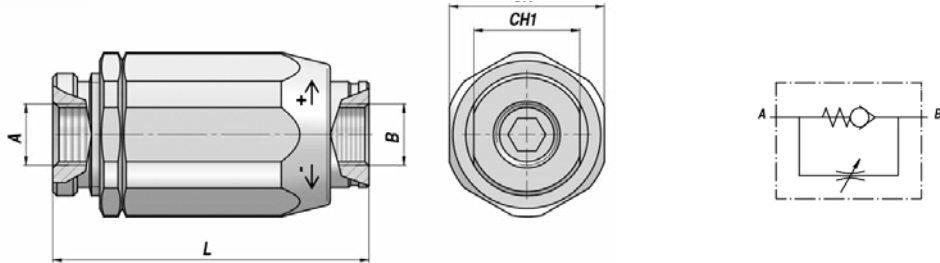


NEW! ADJUSTABLE THROTTLE CHECK VALVE

STEEL
UNIDIRECTIONAL
LINE MOUNTING (POPPET TYPE)

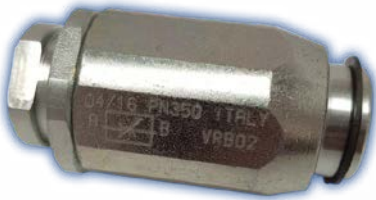


ORDER CODE	A Ø(bsp)	B Ø(bsp)	L/Min MAX A>B	L/Min MAX B>A	MAX PRESSURE (bar)	L (mm)	CH (mm)	CH1 (mm)
VRFC010	1/4"	1/4"	30	30	350	66	32	22
VRFC020	3/8"	3/8"	40	50	350	77.5	38	26
VRFC030	1/2"	1/2"	50	80	350	83	41	30
VRFC040	3/4"	3/4"	80	110	300	104	55	38
VRFC050	1"	1"	110	160	250	118.5	65	46
VRFC060	1-1/4"	1-1/4"	150	210	230	135	80	55
VRFC070	1-1/2"	1-1/2"	210	280	230	149.5	90	62

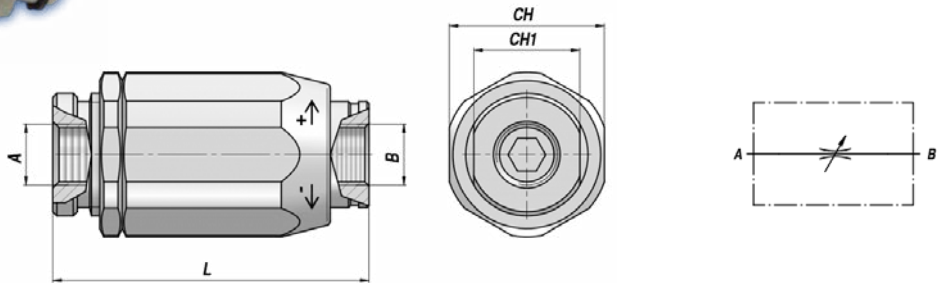


NEW! ADJUSTABLE THROTTLE VALVE

STEEL
BIDIRECTIONAL
LINE MOUNTING



ORDER CODE	A Ø(bsp)	B Ø(bsp)	L/Min MAX	MAX PRESSURE (bar)	L (mm)	CH (mm)	CH1 (mm)
VRB010	1/4"	1/4"	30	350	66	32	22
VRB020	3/8"	3/8"	45	350	77.5	38	26
VRB030	1/2"	1/2"	70	350	83	41	30
VRB040	3/4"	3/4"	100	300	104	55	38
VRB050	1"	1"	150	250	118.5	60	46

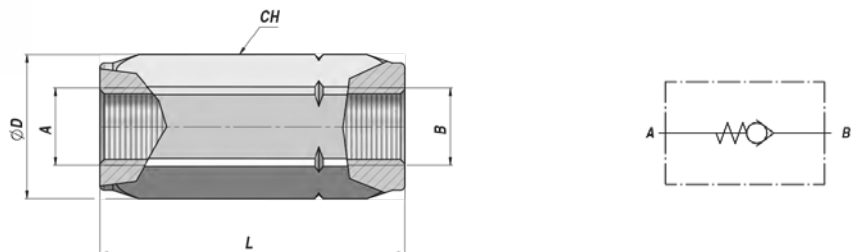


NEW! CHECK VALVE

STEEL
LINE MOUNTING (POPPET TYPE)
OPENING PRESSURE - 0.5 BAR



ORDER CODE	A - B Ø(bsp)	L/Min MAX	MAX PRESSURE (bar)	L (mm)	ØD (mm)	CH (mm)
VUR010C	1/4"	30	400	58	21	19
VUR020C	3/8"	50	400	62	27	24
VUR030C	1/2"	90	350	71	33	30
VUR040C	3/4"	130	300	83	40	36
VUR050C	1"	180	270	106	59	45
VUR060C	1-1/4"	250	250	127	63	55
VUR070C	1-1/2"	380	200	138	74	65



NEW! ADJUSTABLE DESCENT VALVE

VRDE DESCENT VALVE CARTRIDGE

ORDER CODE	F Ø(bsp)	L/Min MAX B>A	L/Min MAX A>B	L (mm)	L2 (mm)	L3 (mm)	D Ø(mm)	D1 Ø(mm)	CH1 (mm)	CH2 (mm)
VRDE01**	1/4"	10	25	39	8	-	10	10	5.5	5.5
VRDE02**	3/8"	25	50	45	6	2	11.5	13.5	6	7
VRDE03**	1/2"	67	90	50	7	2	16	18	6	7
VRDE04**	3/4"	150	220	60	9.5	2	20	23	6	7

**FLOW RANGE (L/Min at 50 bar)

VRDE01 - 01=(1-1.6), 02=(1.6-2.5), 03=(2.5-4), 04=(4-6.3), 05=(6.3-10)

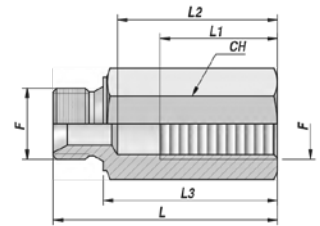
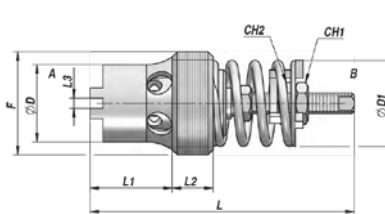
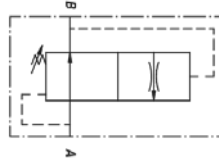
VRDE02 - 01=(2.5-4), 02=(4-6.3), 03=(6.3-10), 04=(10-16), 05=(16-25)

VRDE03 - 01=(16-21), 02=(21-28), 03=(28-37), 04=(37-50), 05=(50-67)

VRDE04 - 01=(37-50), 02=(50-67), 03=(67-90), 04=(90-120), 05=(120-150)

VALVE HOUSING

ORDER CODE	A Ø(bsp)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	CH (mm)
CMFVRD010	1/4"	76	41	61	66	19
CMFVRD020	3/8"	82	41	63	70	22
CMFVRD030	1/2"	100	45	79	86	27
CMFVRD040	3/4"	112	55	86	96	32



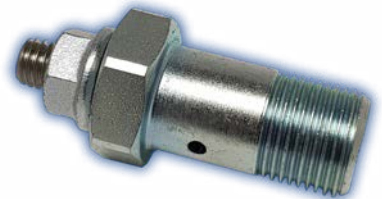
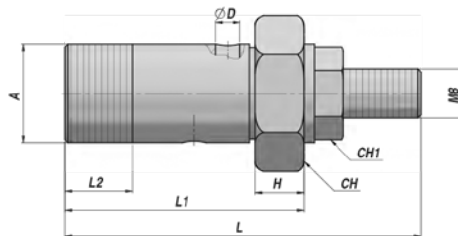
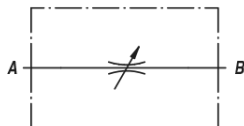
STEEL
MAX PRESSURE 300 BAR
FEMALE TO FEMALE HOUSING AVAILABLE
ON REQUEST



NEW! BANJO THROTTLE SCREW

ORDER CODE	A Ø(bsp)	L MAX (mm)	L1 (mm)	L2 (mm)	H (mm)	D Ø(mm)	CH (mm)	CH1 (mm)	L/Min MAX
R1351	1/4"	53	36	15	7	2.5	19	13	36
R1361	3/8"	58	39	15	8	3	22	13	39
R1371	1/2"	62	46	16	8	4	27	13	46

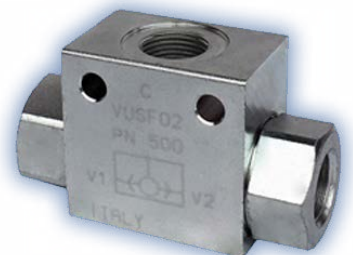
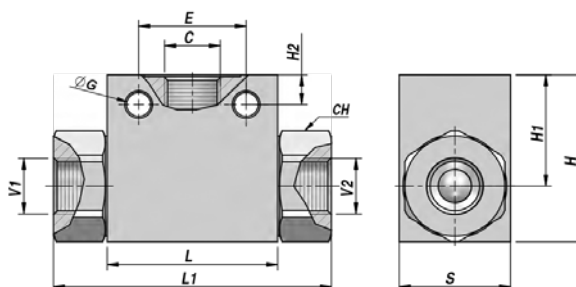
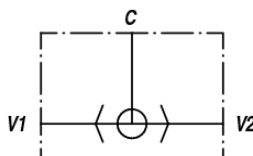
STEEL
SCREW TYPE
CYLINDER MOUNTING
MAX PRESSURE 350 BAR



NEW! SHUTTLE VALVE

ORDER CODE	C Ø(bsp)	V1-V2 Ø(bsp)	L/Min MAX	MAX PRESSURE (bar)	L (mm)	L1 (mm)	G Ø(mm)	E (mm)	H2 (mm)	CH (mm)	H1 (mm)	H (mm)	S (mm)
VUSF010	1/4"	1/4"	35	500	36	69	5.5	25	7.5	22	22.5	35	25
VUSF020	3/8"	3/8"	50	500	45	75	6.5	29	8	27	30	45	30
VUSF030	1/2"	1/2"	90	500	57	94	5.5	36	9	30	32	50	35
VUSF040	3/4"	3/4"	140	350	65	100	6.5	50	6.5	41	37.5	60	50
VUSF050	1"	1"	180	300	80	126	10.5	60	11	46	54.5	80	50

STEEL
LINE MOUNTING

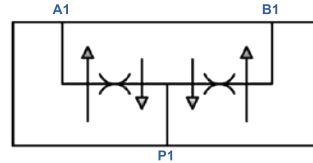
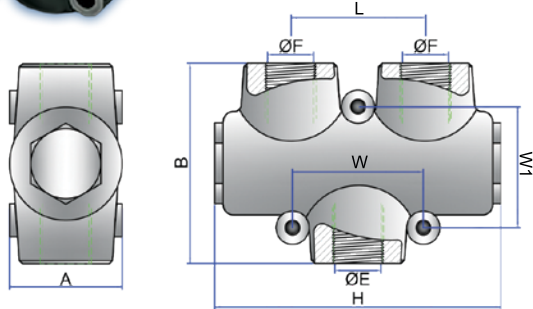


FLOW DIVIDERS (2 WAY)

HARDENED & GROUND STEEL INTERNALS
CAST IRON BODY
LINE MOUNTING
MAX PRESSURE 250 BAR



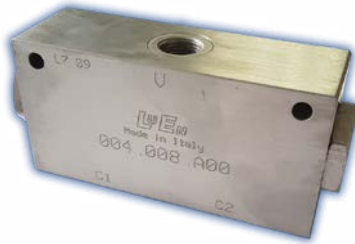
ORDER CODE	MIN / MAX (ltr/min)	A (mm)	B (mm)	H (mm)	L (mm)	W (mm)	W1 (mm)	E Ø(bsp)	F Ø(bsp)
VEQ08	1 / 3	48	68	117	53	40	45	3/8"	3/8"
VEQ10	3 / 6							3/8"	3/8"
VEQ15	6 / 10							3/8"	3/8"
VEQ20	10 / 20							3/8"	3/8"
VEQ22	20 / 32							3/8"	3/8"
VEQ25	25 / 40							1/2"	3/8"
VEQ30	40 / 60							1/2"	3/8"
VEQ35	60 / 80							1/2"	3/8"



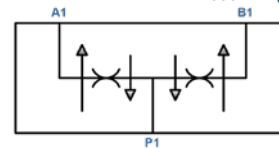
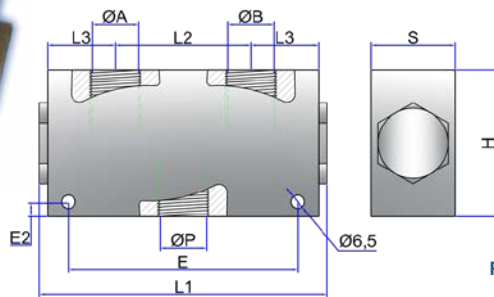
PLEASE NOTE: A1 / B1 PORTS = RAM FEED / RETURN.
 P1 PORT = OIL FEED / RETURN.

NEW! FLOW DIVIDERS (2 WAY)

ALUMINIUM BODY
LINE MOUNTING
MAX PRESSURE 210 BAR



ORDER CODE	MIN / MAX (ltr/min)	A - B Ø(bsp)	P Ø(bsp)	L1 (mm)	L2 (mm)	L3 (mm)	E (mm)	E2 (mm)	H (mm)	S (mm)
VDF020**	6.5 / 38	3/8"	3/8"	135	53	34	100	7	60	40
VDF025**	6.5 / 38	3/8"	1/2"	135	53	34	100	7	60	40
VDF035**	20 / 95	1/2"	3/4"	120	48	42	102	10	80	40



**FLOW RANGE (L/Min at 50 bar)

VDF020 - A=(6.5-12), B=(13-23), C=(24-38)

VDF025 - A=(6.5-12), B=(13-23), C=(24-38)

VDF035 - A=(20-55), B=(56-95)

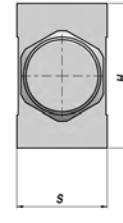
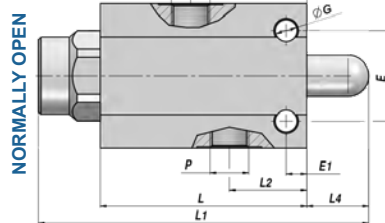
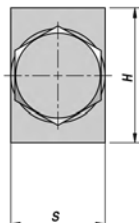
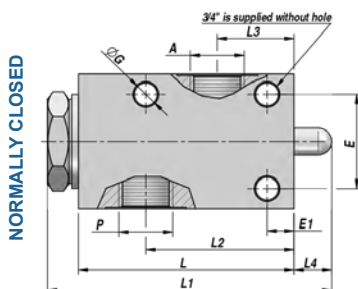
PLEASE NOTE: A1 / B1 PORTS = RAM FEED / RETURN.
 P1 PORT = OIL FEED / RETURN.

NEW! END OF STROKE VALVES

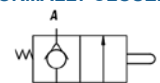
STEEL BODY
LINE MOUNTING
MAX PRESSURE 350 BAR



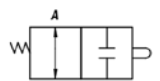
ORDER CODE	MAX (ltr/min)	A - P Ø(bsp)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	ØG (mm)	E (mm)	E1 (mm)	H (mm)	S (mm)
NORMALLY CLOSED												
V70150600	50	3/8"	80	105	55	30	14	8.5	35	10	50	35
V70150800	70	1/2"	80	105	55	28.5	14	8.5	35	10	50	35
V70151200	100	3/4"	88	115	61	23	14	8.5	50	20	70	45
NORMALLY OPEN												
V70900600	40	3/8"	80	129	30	45	24	8.5	35	8	56	35
V70900800	60	1/2"	80	129	30	45	24	8.5	35	8	62	35



NORMALLY CLOSED



NORMALLY OPEN



BALL VALVES

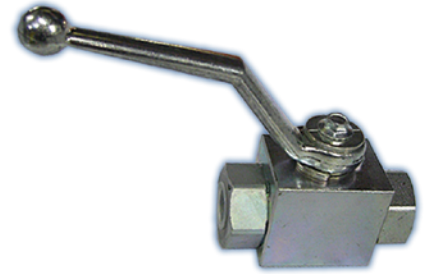
2 WAY BALL VALVES

ORDER CODE	E Ø(bsp)	A (mm)	F (mm)	H (mm)	S (mm)	D (mm)	MAXIMUM FLOW (ltr/min)	2 / 3 WAY VALVE TYPE	MAX PRESSURE (bar)
DRS204	1/4"	71	42.4	35	30	24	25	2 WAY	500
DRS206	3/8"	73	44.4	40	35	30	35		500
DRS208	1/2"	83	48.4	43	37	32	60		500
DRS212	3/4"	95	62.5	55	45	41	100		400
DRS216	1"	112	66.5	65	55	50	160		350
DRS220	1-1/4"	120	66.5	65	55	55	160		350
DRS224	1-1/2"	131	85	107	102	-	-		350
DRS232	2"	140	98	114	118	-	-		350

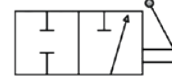
3 WAY BALL VALVES

ORDER CODE	E Ø(bsp)	A (mm)	F (mm)	H (mm)	S (mm)	D (mm)	MAXIMUM FLOW (ltr/min)	2 / 3 WAY VALVE TYPE	MAX PRESSURE (bar)
DRS304	1/4"	71	42.4	35	30	24	25	3 WAY	400
DRS306	3/8"	73	44.4	40	35	30	35		400
DRS308	1/2"	83	48.4	43	37	32	60		350
DRS312	3/4"	95	62.5	55	45	41	100		350
DRS316	1"	112	66.5	65	55	50	160		350
DRS320	1-1/4"	120	66.5	65	55	55	160		350
DRS324	1-1/2"	131	85	107	115	-	-		350
DRS332	2"	140	98	114	128	-	-		350

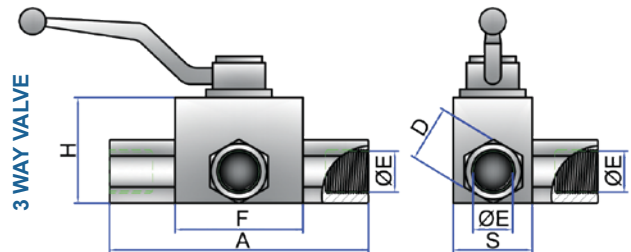
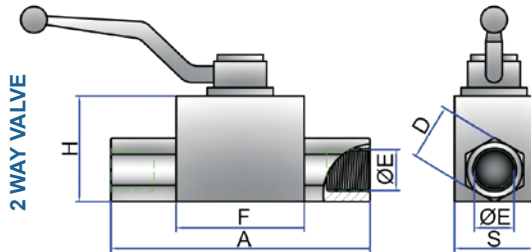
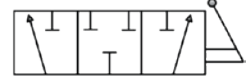
STEEL - DIN ISO228
350 ▶ 500 BAR MAX PRESSURE
ALSO AVAILABLE IN 316 STAINLESS STEEL



2 WAY VALVE



3 WAY VALVE



FLOW DIVERTER VALVES

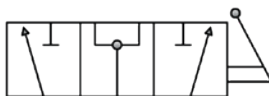
3 WAY DIVERTER VALVES

ORDER CODE	E Ø(bsp)	A (mm)	F (mm)	H (mm)	MAXIMUM FOW (ltr/min)	MAX PRESSURE (bar)
DEV0300010	3/8"	73	78.5	62	60	315
DEV0300020	1/2"	85	95.5	70	90	280
DEV0300030	3/4"	91	101.5	80	120	250
DEV0300040	1"	98	113	90	180	220

6 WAY DIVERTER VALVES

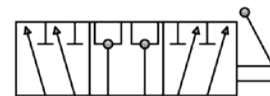
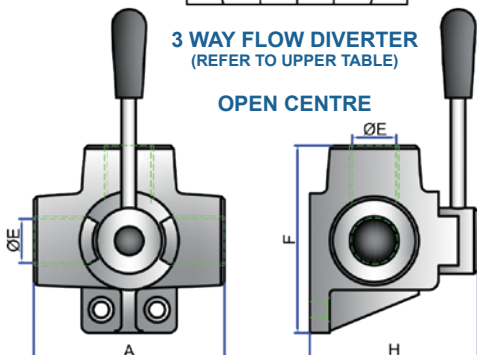
DEV0300050	3/8"	73	78.5	124	60	315
DEV0300060	1/2"	85	95.5	140	90	280

CAST IRON BODY
OPEN CENTRE VERSION
CLOSED CENTRE VERSION ON REQUEST



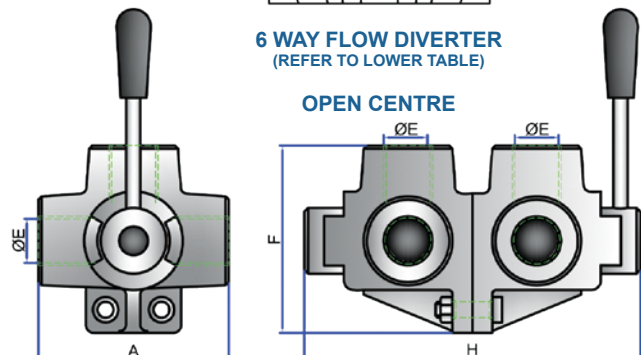
3 WAY FLOW DIVERTER
(REFER TO UPPER TABLE)

OPEN CENTRE



6 WAY FLOW DIVERTER
(REFER TO LOWER TABLE)

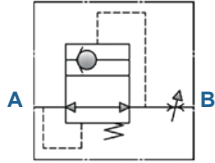
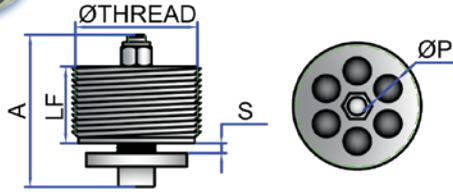
OPEN CENTRE



BURST VALVES

STEEL

350 BAR MAX PRESSURE



ORDER CODE	THREAD Ø(bsp)	A (mm)	P Ø (mm)	S (mm)	LF (mm)	MAXIMUM FLOW (ltr/min)
RPVP7	1/4"	19	1.8	0.8	8	29
RPVP10	3/8"	23	3.4	1.5	12	45
RPVP13	1/2"	29	4.2	1.8	13	67
RPVP19	3/4"	34	6.2	2.25	18	169
RPVP25	1"	40	6.9	2.6	20	223

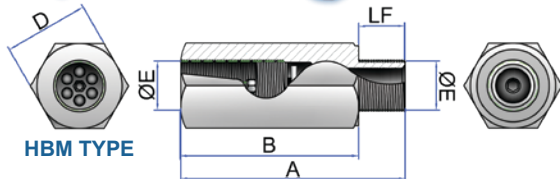
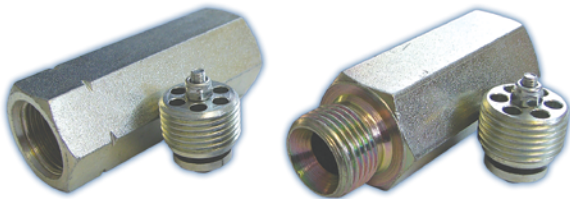
PLEASE NOTE: BURST VALVE PRESSURE SETTING DIAGRAM IS AVAILABLE ON REQUEST

BURST VALVE CARTRIDGES

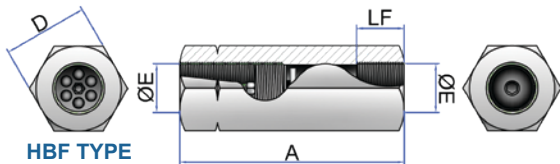
STEEL BODY - ZINC PLATED

COMPLETE WITH 'RPVP' TYPE BURST VALVE

MAX PRESSURE 300 BAR (250 BAR FOR 1")



HBM TYPE



HBF TYPE

ORDER CODE	VALVE TYPE	A (mm)	B (mm)	D (mm)	LF (mm)	E Ø(bsp)
HBM14	RPVP7	50	38	19	12	1/4"
HBM38	RPVP10	60	48	22	12	3/8"
HBM12	RPVP13	63	49	27	14	1/2"
HBM34	RPVP19	75	59	32	16	3/4"
HBM1	RPVP25	88	70	41	18	1"

ORDER CODE	VALVE TYPE	A (mm)	B (mm)	D (mm)	LF (mm)	E Ø(bsp)
HBF14	RPVP7	50	-	19	12	1/4"
HBF38	RPVP10	58	-	22	14	3/8"
HBF12	RPVP13	60	-	27	19	1/2"
HBF34	RPVP19	76	-	32	19	3/4"
HBF1	RPVP25	85	-	41	18	1"

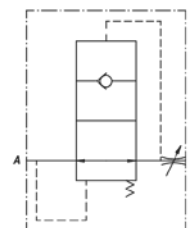
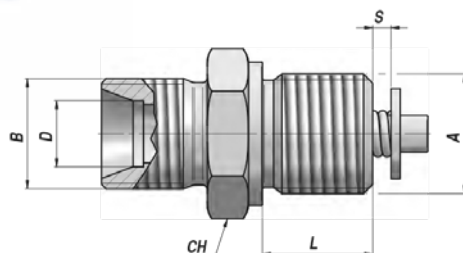
NEW! BURST VALVES (MALE) DIN2353

STEEL

350 BAR MAX PRESSURE

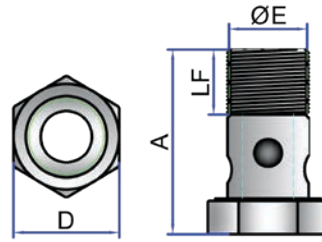


ORDER CODE	A Ø(bsp)	B (mm)	MAX PRESSURE (bar)	S (mm)	L (mm)	D (mm)	CH (mm)	MAXIMUM FLOW (ltr/min)
RPVPM7	3/8"	16x1.5	350	1.2	11	10	22	50
RPVPM10	3/8"	18x1.5	350	1.2	11	12	22	50
RPVPM13	3/8"	22x1.5	350	1.2	11	15	24	50
RPVPM19	1/2"	22x1.5	350	1.6	13	15	27	80



BOLTS FOR BANJO

ORDER CODE	E Ø(bsp)	A (mm)	D (mm)	LF (mm)
RV4310400	1/4"	34	19	15
RV4310600	3/8"	39	22	15
RV4310800	1/2"	47	27	17
RV4311200	3/4"	57	32	25
RV4311600	1"	68	41	25

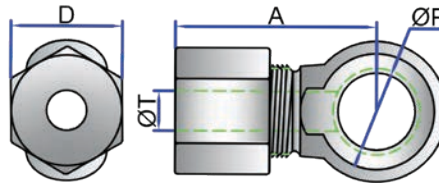


STEEL - ZINC PLATED
INCLUDES WASHERS



BANJO WITH DIN2353 CONNECTION

ORDER CODE	P Ø(bsp)	A (mm)	D (mm)	T Ø(mm)
RV5360412	1/4"	43.5	22	12
RV5360612	3/8"	38.5	22	12
RV5360815	1/2"	44.5	27	15

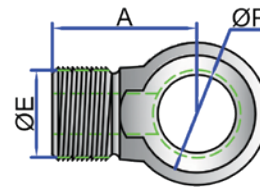


STEEL - ZINC PLATED
INCLUDES NUT & OLIVE



THREADED BANJO CONNECTION

ORDER CODE	P Ø(bsp)	A (mm)	E Ø(bsp)
RV4540404	1/4"	25	1/4"
RV4540606	3/8"	28	3/8"
RV4540806	1/2"	28	3/8"
RV4540808	1/2"	32	1/2"
RV4541208	3/4"	32	1/2"
RV4541212	3/4"	40	3/4"

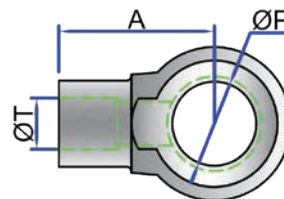


STEEL - ZINC PLATED



WELDABLE BANJO CONNECTION

ORDER CODE	P Ø(bsp)	A (mm)	T Ø(mm)
RV5310400	1/4"	24	10
RV5310610	3/8"	28	10
RV5310600	3/8"	28	12
RV5310800	1/2"	32	15
RV5310814	1/2"	32	14
RV5311200	3/4"	40	20
RV5311600	1"	57	25

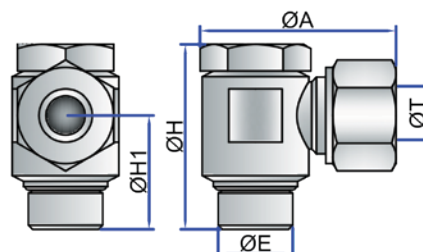


STEEL - ZINC PLATED



90° BANJO WITH DIN2353 CONNECTION

ORDER CODE	E Ø(bsp)	A (mm)	H (mm)	H1 (mm)	T Ø(mm)
RD13110LRO	1/4"	29	36.5	22	10
RD13110SRO	3/8"	33	43	25	10
RD13112LRO	3/8"	30	43	25	12
RD13115LRO	1/2"	34	56	33	15
RD13122LRO	3/4"	42	61	36	22

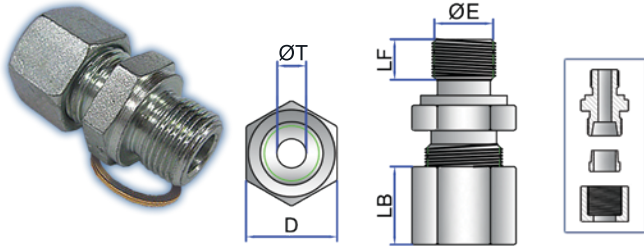


STEEL - ZINC PLATED
INCLUDES BOLT, NUT & OLIVE



3 PIECE CONNECTION - DIN2353

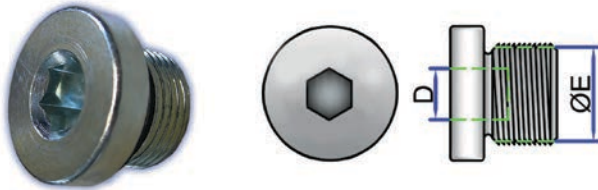
STEEL - ZINC PLATED
INCLUDES NUT & OLIVE



ORDER CODE	E Ø(bsp)	D (mm)	LB (mm)	LF (mm)	T Ø(mm)
RD09210LRO	1/4"	19	16	9	10
RD09212LRO	3/8"	22	16	10	12
RD09215LRO	1/2"	27	16	11	15
RD09222LRO	3/4"	32	16	16	22

HEX BLANKING PLUG

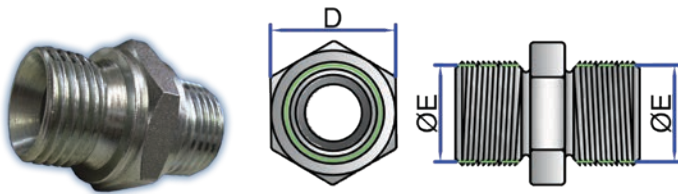
STEEL - ZINC PLATED



ORDER CODE	E Ø(bsp)	D (mm)	ORDER CODE	E Ø(mm)	D (mm)
RD185GGR03	1/8"	5	RD185GGM12	12 x 1.5	6
RD185GGR04	1/4"	6	RD185GGM14	14 x 1.5	6
RD185GGR06	3/8"	8	RD185GGM16	16 x 1.5	8
RD185GGR08	1/2"	10	RD185GGM18	18 x 1.5	8
RD185GGR12	3/4"	12	RD185GGM20	20 x 1.5	10
RD185GGR16	1"	17	RD185GGM22	22 x 1.5	10

STRAIGHT ADAPTORS (MALE / MALE)

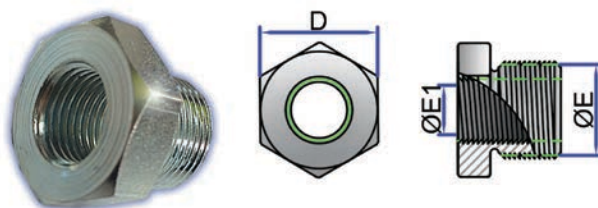
STEEL - ZINC PLATED
BSP - 60° SEAT



ORDER CODE	E Ø(bsp)	D (mm)
RV0010400	1/4"	19
RV0010600	3/8"	22
RV0010800	1/2"	27
RV0011200	3/4"	32
RV0011600	1"	41

REDUCING ADAPTOR (MALE / FEMALE)

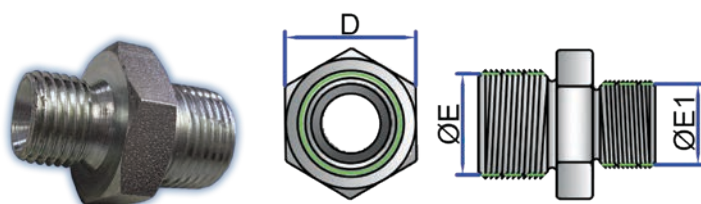
STEEL - ZINC PLATED
BSP



ORDER CODE	E Ø(bsp)	E1 Ø(bsp)	D (mm)
RV3210604	3/8"	1/4"	22
RV3210804	1/2"	1/4"	27
RV3210806	1/2"	3/8"	27
RV3211208	3/4"	1/2"	32
RV3211608	1"	1/2"	41
RV3211612	1"	3/4"	41

STRAIGHT REDUCERS (MALE / MALE)

STEEL - ZINC PLATED
BSP - 60° SEAT

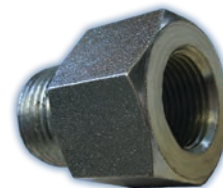
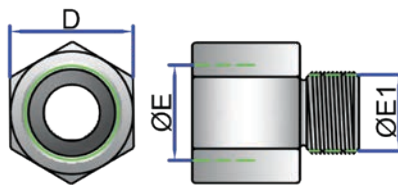


ORDER CODE	E Ø(bsp)	E1 Ø(bsp)	D (mm)
RV3010604	3/8"	1/4"	22
RV3010804	1/2"	1/4"	27
RV3010806	1/2"	3/8"	27
RV3011206	3/4"	3/8"	32
RV3011208	3/4"	1/2"	32
RV3011608	1"	1/2"	41
RV3011612	1"	3/4"	41

STRAIGHT REDUCERS (MALE / FEMALE)

ORDER CODE	E Ø(bsp)	E1 Ø(bsp)	D (mm)
RV3110406	3/8"	1/4"	22
RV3110408	1/2"	1/4"	27
RV3110604	1/4"	3/8"	22
RV3110608	1/2"	3/8"	27
RV3110806	3/8"	1/2"	27
RV3110812	3/4"	1/2"	32
RV3111208	1/2"	3/4"	32
RV3111216	1"	3/4"	41
RV3111612	3/4"	1"	41

STEEL - ZINC PLATED

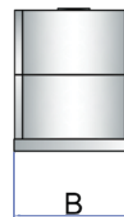
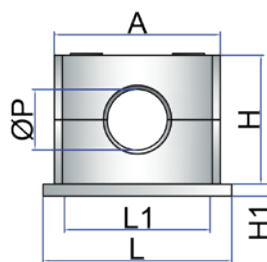


PIPE CLAMPS

ORDER CODE	P Ø(mm)	A (mm)	H (mm)	H1 (mm)	L (mm)	L1 (mm)	B (mm)
RPCL2010	10	37	27	3	41	20	30
RPCL2012	12	37	27		41	20	30
RPCL2015	15	42	33		47	26	30

CLAMP = POLYPROPYLENE
PLATE = STEEL

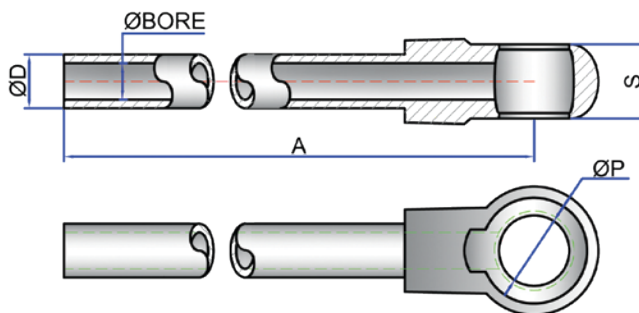
PLEASE NOTE: OTHER SIZES AVAILABLE ON REQUEST.



PIPES WITH BANJO

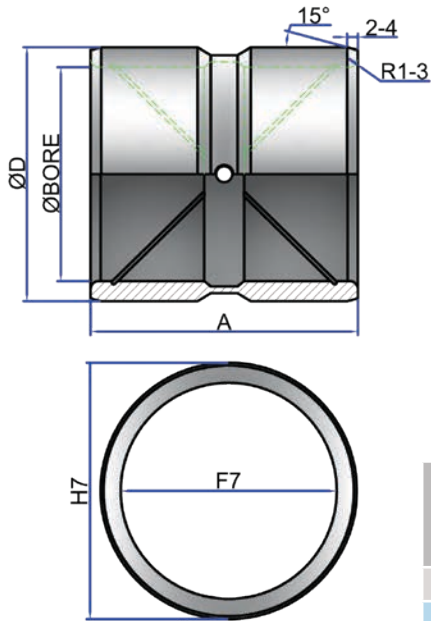
ORDER CODE	BORE Ø(mm)	A (mm)	D Ø(mm)	S (mm)	P Ø(bsp)
RV5350410	6.6	100	10	14	1/4"
RV5350420	6.6	200	10	14	1/4"
RV5350430	6.6	300	10	14	1/4"
RV5350440	6.6	400	10	14	1/4"
RV5350460	6.6	600	10	14	1/4"
RV5350485	6.6	850	10	14	1/4"
RV5350499	6.6	1000	10	14	1/4"
RV535120404	8.6	40	12	14	1/4"
RV535120420	8.6	200	12	14	1/4"
RV535120440	8.6	400	12	14	1/4"
RV5350603	8.6	40	12	17.5	3/8"
RV5350610	8.6	100	12	17.5	3/8"
RV5350620	8.6	200	12	17.5	3/8"
RV5350630	8.6	300	12	17.5	3/8"
RV5350640	8.6	400	12	17.5	3/8"
RV5350650	8.6	500	12	17.5	3/8"
RV5350660	8.6	600	12	17.5	3/8"
RV5350699	8.6	1000	12	17.5	3/8"
RV5350810	11.6	100	15	22	1/2"
RV5350820	11.6	200	15	22	1/2"
RV5350830	11.6	300	15	22	1/2"
RV5350840	11.6	400	15	22	1/2"
RV5350850	11.6	500	15	22	1/2"
RV5350899	11.6	1000	15	22	1/2"

STEEL - ZINC PLATED



HARDENED STEEL BUSHES - SB SERIES

HIGH QUALITY HARDENED STEEL - S45C & FE510
 VERY HIGH LOAD CAPACITY & IMPACT RESISTANCE: HRC52 ▶ 60 HARDNESS
 TEMPERATURE RATING: -100°C ▶ +300°C
 SUITABLE FOR EXCAVATOR ARMS & OTHER HEAVY DUTY APPLICATIONS
 LOW FRICTION ANTI WEAR WITH GOOD CHEMICAL RESISTANCE
 STOCKS HELD FROM Ø25mm PIN UPWARDS



MATING HOUSING TOLERANCE: H7
 MATING SHAFT TOLERANCE: E7 / F7

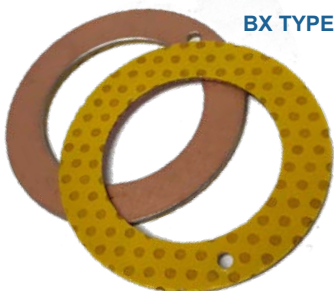
**OTHER SIZES
 AVAILABLE
 ON REQUEST.
 PLEASE CONTACT US**

ORDER CODE	BORE Ø(mm)	D (mm)	A (Length mm)													
			20	25	30	35	40	45	50	60	65	70	80			
SB2533**K	25	33	■	■	■											
SB2538**K	25	38			■											
SB3038**K	30	38	■		■	■	■	■								
SB3040**K	30	40			■	■	■	■	■							
SB3545**K	35	45			■	■	■	■	■	■						
SB4048**K	40	48					■	■	■							
SB4050**K	40	50			■			■	■	■						
SB4555**K	45	55						■	■	■						
SB5060**K	50	60						■	■	■	■				■	
SB6070**K	60	70							■	■	■	■				
SB6075**K	60	75										■	■			
SB8095**K	80	95														■

PLEASE NOTE: ** LENGTH "A" MEASUREMENT TO BE ADDED TO COMPLETE ORDER NUMBER.

EXAMPLE: SB304030K = 30mm I/D x 40mm O/D x 30mm LENGTH

PTFE / ACETAL LINED WASHERS



BX TYPE - STEEL / BRONZE POLYMER
 RE-LUBRICATING



BU TYPE - STEEL / BRONZE PTFE
 SELF-LUBRICATING

ON REQUEST:

- LARGE RANGE OF SIZES AVAILABLE
- SUITABLE FOR ROTARY + OSCILLATING MOVEMENTS
- RE-LUBRICATING OR SELF-LUBRICATING VERSIONS
- WIDE RANGE OF APPLICATIONS
- QUICK DELIVERY

PLEASE CONTACT US FOR MORE INFORMATION.

BU + BX TYPE BUSHES

BU TYPE - STEEL / BRONZE PTFE
SELF-LUBRICATING

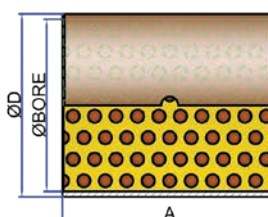
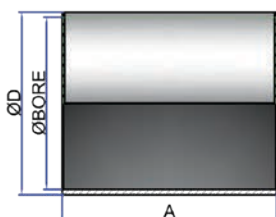
BX TYPE - STEEL / BRONZE POLYMER
RE-LUBRICATING



BU TYPE



BX TYPE



FOR THE SIZE NEEDED, PLEASE USE THE 'BU' OR 'BX' SERIES TYPE CODE. THEN ADD THE INTERNAL DIAMETER SIZE REQUIRED, FOLLOWED BY THE LENGTH.

FOR EXAMPLE: FINBU3040 = BU TYPE BUSH WITH A Ø30 I/D x Ø34 O/D x 40mm LENGTH

ORDER CODE	BORE Ø(mm)	D (mm)	A (Length mm)						
FIN BX / BU 08 **	8	10	8	10	12				
FIN BX / BU 10 **	10	12	8	10	12	15	20		
FIN BX / BU 12 **	12	14	10	12	15	20	25		
FIN BX / BU 14 **	14	16	10	12	15	20	25		
FIN BX / BU 15 **	15	17	10	12	15	20	25		
FIN BX / BU 16 **	16	18	10	12	15	20	25		
FIN BX / BU 18 **	18	20	15	20	25				
FIN BX / BU 20 **	20	23	10	15	20	25	30		
FIN BX / BU 22 **	22	25	15	20	25	30			
FIN BX / BU 24 **	24	27	15	20	25	30			
FIN BX / BU 25 **	25	28	12	15	20	25	30	50	
FIN BX / BU 28 **	28	32	20	25	30				
FIN BX / BU 30 **	30	34	15	20	25	30	40		
FIN BX / BU 32 **	32	36	20	30	35	40			
FIN BX / BU 35 **	35	39	20	30	35	40	50		
FIN BX / BU 40 **	40	44	20	30	40	50			
FIN BX / BU 45 **	45	50	20	30	40	45	50		
FIN BX / BU 50 **	50	55	20	30	40	50	60		
FIN BX / BU 55 **	55	60	20	25	30	40	50	60	
FIN BX / BU 60 **	60	65	20	30	40	60	70		
FIN BX / BU 65 **	65	70	30	40	50	60	70		
FIN BX / BU 70 **	70	75	25	40	50	65	70	80	
FIN BX / BU 75 **	75	80	40	50	60	80			
FIN BX / BU 80 **	80	85	40	60	80	100			
FIN BX / BU 85 **	85	90	30	40	60	80	100		
FIN BX / BU 90 **	90	95	25	40	60	80	90	100	
FIN BX / BU 95 **	95	100	60	100					
FIN BX / BU 100 **	100	105	50	60	70	80	95	115	
FIN BX / BU 105 **	105	110	60	115					

ORDER CODE	BORE Ø(mm)	D (mm)	A (Length mm)						
FIN BX / BU 110 **	110	115	60	110	115				
FIN BX / BU 115 **	115	120	50	60	70				
FIN BX / BU 120 **	120	125	60	100	110				
FIN BX / BU 125 **	125	130	60	100	110				
FIN BX / BU 130 **	130	135	50	60	80	100			
FIN BX / BU 135 **	135	140	60	80	100				
FIN BX / BU 140 **	140	145	50	60	80	100			
FIN BX / BU 145 **	145	150	60	100					
FIN BX / BU 150 **	150	155	50	60	80	100			
FIN BX / BU 155 **	155	160	60	100					
FIN BX / BU 160 **	160	165	50	60	80	100			
FIN BX / BU 165 **	165	170	60	100					
FIN BX / BU 170 **	170	175	50	60	80	100			
FIN BX / BU 175 **	175	180	60	100					
FIN BX / BU 180 **	180	185	50	60	80	100			
FIN BX / BU 190 **	190	195	50	60	80	100	120		
FIN BX / BU 200 **	200	205	50	60	80	100	120		
FIN BX / BU 220 **	220	225	50	60	80	100	120		
FIN BX / BU 240 **	240	245	50	60	80	100	120		
FIN BX / BU 250 **	250	255	50	60	80	100	120		
FIN BX / BU 260 **	260	265	50	60	80	100	120		
FIN BX / BU 280 **	280	285	50	60	80	100	120		
FIN BX / BU 300 **	300	305	60	80	100	120			

SPHERICAL BEARINGS - SR / SR-2RS SERIES

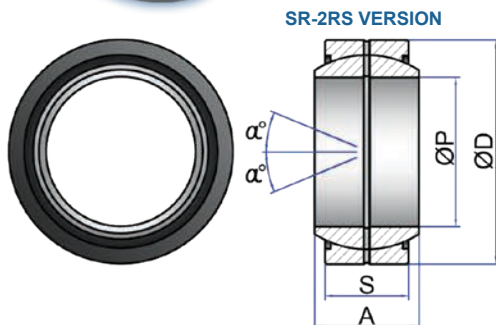
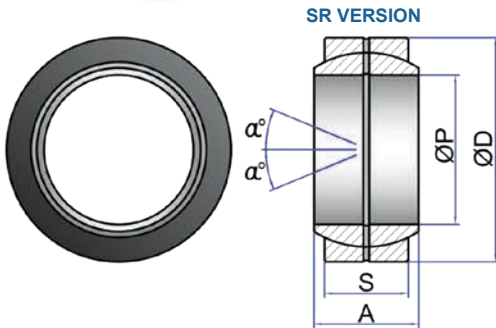
SPHERICAL PLAIN BEARING

ISO12240-1 - SERIES E

MAINTENANCE VERSION

STEEL / STEEL COUPLING

'2RS' VERSION FITTED WITH PROTECTION RINGS



ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SR06*	6	14	6	4	13	3.4	17
SR08*	8	16	8	5	15	5.5	27.5
SR10*	10	19	9	6	12	8.15	40.5
SR12*	12	22	10	7	11	10.8	54
SR15	15	26	12	9	8	17	85
SR16	16	30	14	10	10	21.2	106
SR17	17	30	14	10	10	21.2	106
SR20	20	35	16	12	9	30	146
SR25	25	42	20	16	7	48	240
SR30	30	47	22	18	6	62	310
SR35	35	55	25	20	6	80	400
SR40	40	62	28	22	7	100	500
SR45	45	68	32	25	7	127	640
SR50	50	75	35	28	6	156	780
SR60	60	90	44	36	6	245	1220
SR70	70	105	49	40	6	315	1560
SR80	80	120	55	45	6	400	2000
SR90	90	130	60	50	5	490	2450
SR100	100	150	70	55	7	610	3050
SR110	110	160	70	55	6	655	3250
SR120	120	180	85	70	6	950	4750
SR140	140	210	90	70	7	1080	5400
SR160	160	230	105	80	8	1370	6800
SR180	180	260	105	80	6	1530	7650
SR200	200	290	130	100	7	2120	10600
SR220	220	320	135	100	8	2320	11600
SR240	240	340	140	100	8	2550	12700
SR260	260	370	150	110	7	3050	15300
SR280	280	400	155	120	6	3550	18000
SR300	300	430	165	120	7	3800	19000

SR15-2RS	15	26	12	9	8	17	85
SR17-2RS	17	30	14	10	10	21.2	106
SR20-2RS	20	35	16	12	9	30	146
SR25-2RS	25	42	20	16	7	48	240
SR30-2RS	30	47	22	18	6	62	310
SR35-2RS	35	55	25	20	6	80	400
SR40-2RS	40	62	28	22	7	100	500
SR45-2RS	45	68	32	25	7	127	640
SR50-2RS	50	75	35	28	6	156	780
SR60-2RS	60	90	44	36	6	245	1220
SR70-2RS	70	105	49	40	6	315	1560
SR80-2RS	80	120	55	45	6	400	2000
SR90-2RS	90	130	60	50	5	490	2450
SR100-2RS	100	150	70	55	7	610	3050
SR110-2RS	110	160	70	55	6	655	3250
SR120-2RS	120	180	85	70	6	950	4750
SR140-2RS	140	210	90	70	7	1080	5400
SR160-2RS	160	230	105	80	8	1370	6800
SR180-2RS	180	260	105	80	6	1530	7650
SR200-2RS	200	290	130	100	7	2120	10600
SR220-2RS	220	320	135	100	8	2320	11600
SR240-2RS	240	340	140	100	8	2550	12700
SR260-2RS	260	370	150	110	7	3050	15300
SR280-2RS	280	400	155	120	6	3550	18000
SR300-2RS	300	430	165	120	7	3800	19000

PLEASE NOTE: * = NON LUBRICATABLE

TO AVOID DAMAGE / LOSS OF THE PROTECTION RINGS (-2RS), DO NOT ALLOW THE INNER BALL TO ROTATE OUT OF THE EXTERNAL HOUSING.

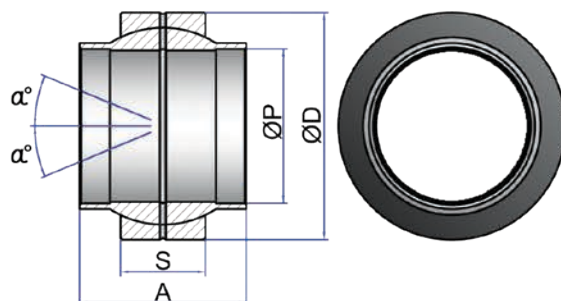
SPHERICAL BEARINGS - SRC SERIES

ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRC12*	12	22	12	7	4	10.8	54
SRC16	16	28	16	9	4	17.6	88
SRC20	20	35	20	12	4	30	146
SRC25	25	42	25	16	4	48	240
SRC32	32	52	32	18	4	67	335
SRC40	40	62	40	22	4	100	500
SRC50	50	75	50	28	4	156	780
SRC63	63	95	63	36	4	255	1270
SRC70	70	105	70	40	4	315	1560
SRC80	80	120	80	45	4	400	2000
SRC90	90	130	90	50	4	490	2450
SRC100	100	150	100	55	4	610	3050
SRC110	110	160	110	55	4	655	3250
SRC125	125	180	125	70	4	950	4750
SRC160	160	230	160	80	4	1370	6800
SRC200	200	290	200	100	4	2120	10600
SRC250	250	400	250	120	4	3750	18000
SRC320	320	520	320	160	4	6200	30500

* = NON RE-LUBRICATABLE

FITTING TOLERANCE DETAILS FOR MATING HOUSINGS AND PINS ARE AVAILABLE ON REQUEST.

SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES W
MAINTENANCE VERSION
STEEL / STEEL COUPLING

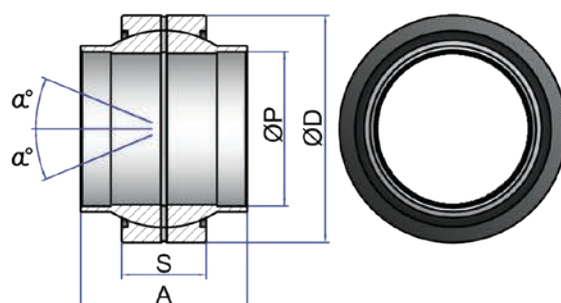


SPHERICAL BEARINGS - SRC-2RS SERIES

ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRC20-2RS	20	35	24	12	3	30	146
SRC25-2RS	25	42	29	16	3	48	240
SRC30-2RS	30	47	30	18	3	62	310
SRC35-2RS	35	55	35	20	3	80	400
SRC40-2RS	40	62	38	22	3	100	500
SRC45-2RS	45	68	40	25	3	127	640
SRC50-2RS	50	75	43	28	3	156	780
SRC60-2RS	60	90	54	36	3	245	1220
SRC70-2RS	70	105	65	40	3	315	1560
SRC80-2RS	80	120	74	45	3	400	2000

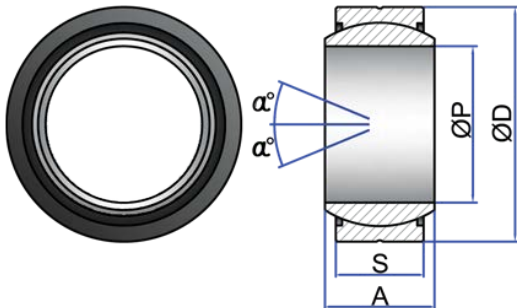
PLEASE NOTE: TO AVOID DAMAGE / LOSS OF THE PROTECTION RINGS (-2RS), DO NOT ALLOW THE INNER BALL TO ROTATE OUT OF THE EXTERNAL HOUSING.

SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES W
MAINTENANCE VERSION
STEEL / STEEL COUPLING
FITTED WITH PROTECTION RINGS



SPHERICAL BEARINGS - SRT-2RS SERIES

SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES E
MAINTENANCE FREE VERSION
FITTED WITH PROTECTION RINGS
HARD CHROMIUM / PTFE COUPLING

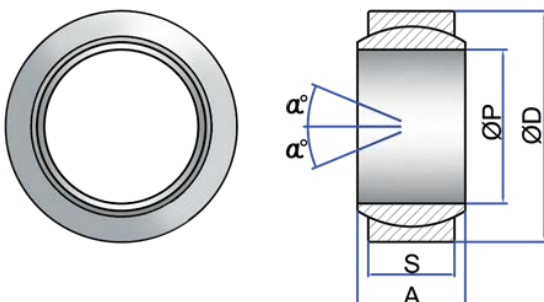


ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRT17-2RS	17	30	14	10	10	48	81
SRT20-2RS	20	35	16	12	9	68	112
SRT25-2RS	25	42	20	16	7	130	225
SRT30-2RS	30	47	22	18	6	170	285
SRT35-2RS	35	55	25	20	6	220	370
SRT40-2RS	40	62	28	22	7	280	465
SRT45-2RS	45	68	32	25	7	360	600
SRT50-2RS	50	75	35	28	6	440	735
SRT60-2RS	60	90	44	36	6	690	1155
SRT70-2RS	70	105	49	40	6	880	1470
SRT80-2RS	80	120	55	45	6	1135	1900
SRT90-2RS	90	130	60	50	5	1375	2320
SRT100-2RS	100	150	70	55	7	1725	2860
SRT110-2RS	110	160	70	55	6	1860	3100
SRT120-2RS	120	180	85	70	6	2700	4500
SRT140-2RS	140	210	90	70	7	3010	5020
SRT160-2RS	160	230	105	80	8	3840	6400
SRT180-2RS	180	260	105	80	6	4320	7200
SRT200-2RS	200	290	130	100	7	6000	10000
SRT220-2RS	220	320	135	100	8	6600	11000
SRT240-2RS	240	340	140	100	8	7200	12000
SRT260-2RS	260	370	150	110	7	8650	14300
SRT280-2RS	280	400	155	120	6	10050	16750
SRT300-2RS	300	430	165	120	7	10800	18000

PLEASE NOTE: TO AVOID DAMAGE / LOSS OF THE PROTECTION RINGS (-2RS), DO NOT ALLOW THE INNER BALL TO ROTATE OUT OF THE EXTERNAL HOUSING.

SPHERICAL BEARINGS - GE...ET/X (STAINLESS STEEL)

SPHERICAL PLAIN BEARING
STAINLESS STEEL
ISO12240-1 - SERIES G
MAINTENANCE FREE VERSION
STEEL / PTFE COUPLING

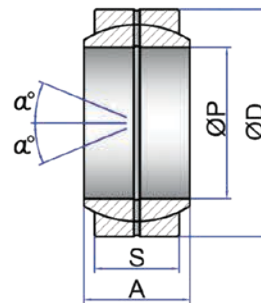


ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
GE12ET/X	12	22	10	7	10	15	30
GE15ET/X	15	26	12	9	8	23.6	47.5
GE17ET/X	17	30	14	10	10	30	60
GE20ET/X	20	35	16	12	9	41.5	83
GE25ET/X	25	42	20	16	7	68	137
GE30ET/X	30	47	22	18	6	88	176
GE35ET/X	35	55	25	20	6	112	224
GE40ET/X	40	62	28	22	7	140	280
GE45ET/X	45	68	32	25	7	180	360
GE50ET/X	50	75	35	28	6	220	440
GE60ET/X	60	90	44	36	6	345	695
GE70ET/X	70	105	49	40	6	440	880
GE80ET/X	80	120	55	45	6	570	1140
GE90ET/X	90	130	60	50	5	695	1370
GE100ET/X	100	150	70	55	7	865	1730
GE110ET/X	110	160	70	55	6	930	1860
GE120ET/X	120	180	85	70	6	1340	2700
GE140ET/X	140	210	90	70	7	1500	3000
GE160ET/X	160	230	105	80	8	1930	3800
GE180ET/X	180	260	105	80	6	2160	4300
GE200ET/X	200	290	130	100	7	3000	6000
GE220ET/X	220	320	135	100	8	3350	6550
GE240ET/X	240	340	140	100	8	3600	7200
GE260ET/X	260	370	150	110	7	4300	8650
GE280ET/X	280	400	155	120	6	5000	10000
GE300ET/X	300	430	165	120	7	5400	10800

SPHERICAL BEARINGS - GEZ...ES SERIES

ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
GEZ12ES	12.7	22.225	11.1	9.525	6	13.7	41.5
GEZ15ES	15.87	26.988	13.894	11.91	6	22	65.5
GEZ19ES	19.05	31.75	16.662	14.27	6	31.5	95
GEZ22ES	22.22	36.513	19.431	16.66	6	42.5	127
GEZ25ES	25.4	41.275	22.225	19.05	6	54	163
GEZ31ES	31.75	50.8	27.762	23.8	6	86.5	260
GEZ34ES	34.92	55.563	30.15	26.18	6	102	310
GEZ38ES	38.1	61.913	33.325	28.57	6	122	365
GEZ44ES	44.45	71.438	38.887	33.32	6	170	510
GEZ50ES	50.8	80.963	44.45	38.1	6	224	670
GEZ57ES	57.15	90.488	50.013	42.85	6	280	850
GEZ63ES	63.5	100.01	55.55	47.62	6	355	1060
GEZ69ES	69.85	111.12	61.112	52.37	6	375	1250
GEZ76ES	76.2	120.65	66.675	57.15	6	500	1500
GEZ82ES	82.55	130.17	72.238	61.9	6	600	1760
GEZ88ES	88.9	139.7	77.775	66.67	6	680	2040
GEZ95ES	95.25	149.22	83.337	71.42	6	780	2360
GEZ101ES	101.6	158.75	88.900	76.20	6	900	2650
GEZ107ES	107.95	168.27	94.463	80.95	6	1000	3000
GEZ114ES	114.3	177.8	100.00	85.72	6	1120	3400
GEZ120ES	120.65	187.32	105.56	90.47	6	1250	3750
GEZ127ES	127	196.85	111.12	95.25	6	1400	4150
GEZ152ES	152.4	222.25	120.65	104.77	5	1730	5200

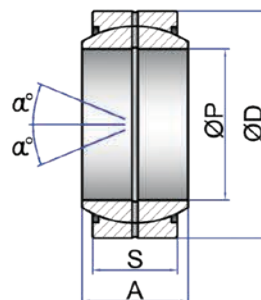
SPHERICAL PLAIN BEARING
METRIC ► IMPERIAL EQUIVALENT
MAINTENANCE VERSION
STEEL / STEEL COUPLING



SPHERICAL BEARINGS - GEZ...ES-2RS SERIES

ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
GEZ19ES-2RS	19.05	31.75	16.662	14.27	6	31.5	95
GEZ22ES-2RS	22.22	36.513	19.431	16.66	6	42.5	127
GEZ25ES-2RS	25.4	41.275	22.225	19.05	6	54	163
GEZ31ES-2RS	31.75	50.8	27.762	23.8	6	86.5	260
GEZ34ES-2RS	34.92	55.563	30.15	26.18	6	102	310
GEZ38ES-2RS	38.1	61.913	33.325	28.57	6	122	365
GEZ44ES-2RS	44.45	71.438	38.887	33.32	6	170	510
GEZ50ES-2RS	50.8	80.963	44.45	38.1	6	224	670
GEZ57ES-2RS	57.15	90.488	50.013	42.85	6	280	850
GEZ63ES-2RS	63.5	100.01	55.55	47.62	6	355	1060
GEZ69ES-2RS	69.85	111.12	61.112	52.37	6	375	1250
GEZ76ES-2RS	76.2	120.65	66.675	57.15	6	500	1500
GEZ82ES-2RS	82.55	130.17	72.238	61.9	6	600	1760
GEZ88ES-2RS	88.9	139.7	77.775	66.67	6	680	2040

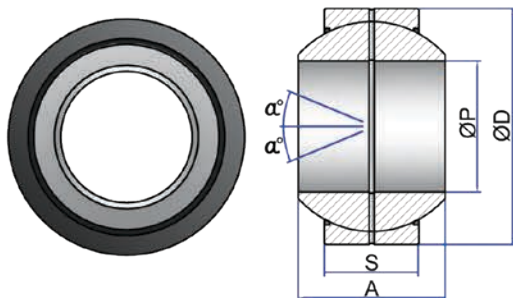
SPHERICAL PLAIN BEARING
METRIC / IMPERIAL EQUIVALENT
MAINTENANCE VERSION
FITTED WITH PROTECTION RINGS
STEEL / STEEL COUPLING



PLEASE NOTE: TO AVOID DAMAGE / LOSS OF THE PROTECTION RINGS (-2RS), DO NOT ALLOW THE INNER BALL TO ROTATE OUT OF THE EXTERNAL HOUSING.

SPHERICAL BEARINGS - SRL-2RS SERIES

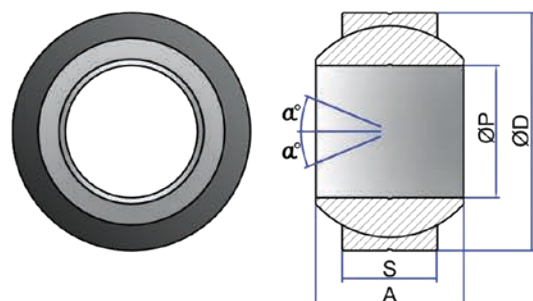
SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES G
MAINTENANCE VERSION
FITTED WITH PROTECTION RINGS
STEEL / STEEL COUPLING



ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRL15-2RS	15	30	16	10	16	21.2	106
SRL17-2RS	17	35	20	12	19	30	146
SRL20-2RS	20	42	25	16	17	48	240
SRL25-2RS	25	47	28	18	17	62	310
SRL30-2RS	30	55	32	20	17	80	400
SRL35-2RS	35	62	35	22	16	100	500
SRL40-2RS	40	68	40	25	17	127	640
SRL45-2RS	45	75	43	28	15	156	780
SRL50-2RS	50	90	56	36	17	245	1220
SRL60-2RS	60	105	63	40	17	315	1560
SRL70-2RS	70	120	70	45	16	400	2000
SRL80-2RS	80	130	75	50	14	490	2450
SRL90-2RS	90	150	80	55	15	610	3050
SRL100-2RS	100	160	85	55	14	655	3250
SRL110-2RS	110	180	100	70	12	950	4750
SRL120-2RS	120	210	115	70	16	1080	5400
SRL140-2RS	140	230	130	80	16	1370	6800
SRL160-2RS	160	260	135	80	16	1530	7650
SRL180-2RS	180	290	155	100	14	2120	10600
SRL200-2RS	200	320	165	100	15	2320	11600
SRL220-2RS	220	340	175	100	16	2550	12700
SRL240-2RS	240	370	190	110	15	3050	15300
SRL260-2RS	260	400	205	120	15	3550	18000
SRL280-2RS	280	430	210	120	15	3800	19000

SPHERICAL BEARINGS - SRLB SERIES

SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES G
MAINTENANCE FREE VERSION
HARD CHROMIUM / PTFE COUPLING



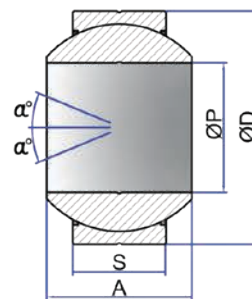
ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRLB06	6	16	9	5	21	5.85	14.6
SRLB08	8	19	11	6	21	8.65	21.6
SRLB10	10	22	12	7	18	11.4	28.5
SRBL12	12	26	15	9	18	17.6	44
SRLB15	15	30	16	10	16	22.4	56
SRLB17	17	35	20	12	19	31.5	78
SRLB20	20	42	25	16	17	51	127
SRLB25	25	47	28	18	17	65.5	166
SRLB30	30	55	32	20	17	210	350

SPHERICAL BEARINGS - SRLT-2RS SERIES

ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRLT30-2RS	30	55	32	20	17	210	350
SRLT35-2RS	35	62	35	22	16	275	465
SRLT40-2RS	40	68	40	25	17	360	600
SRLT45-2RS	45	75	43	28	15	440	740
SRLT50-2RS	50	90	56	36	17	690	1150
SRLT60-2RS	60	105	63	40	17	885	1475
SRLT70-2RS	70	120	70	45	16	1125	1875
SRLT80-2RS	80	130	75	50	14	1380	2300
SRLT90-2RS	90	150	85	55	15	1720	2860
SRLT100-2RS	100	160	85	55	14	1840	3070
SRLT110-2RS	110	180	100	70	12	2685	4480
SRLT120-2RS	120	210	115	70	16	3015	5030
SRLT140-2RS	140	230	130	80	16	3845	6400
SRLT160-2RS	160	260	135	80	16	4320	7210
SRLT180-2RS	180	290	155	100	14	6000	10000
SRLT200-2RS	200	320	165	100	15	6600	11000
SRLT220-2RS	220	340	175	100	16	7200	12000
SRLT240-2RS	240	370	190	110	15	8550	14250
SRLT260-2RS	260	400	205	120	15	10050	16750
SRLT280-2RS	280	430	210	120	15	10800	18000

PLEASE NOTE: TO AVOID DAMAGE / LOSS OF THE PROTECTION RINGS (-2RS), DO NOT ALLOW THE INNER BALL TO ROTATE OUT OF THE EXTERNAL HOUSING.

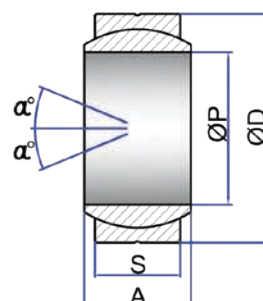
SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES G
MAINTENANCE FREE VERSION
FITTED WITH PROTECTION RINGS
HARD CHROMIUM / PTFE COUPLING



SPHERICAL BEARINGS - SRB SERIES

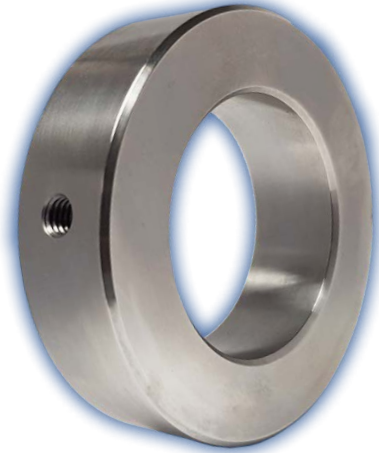
ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	S (mm)	MOVEMENT ANGLE (α°)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SRB06	6	14	6	4	13	3.6	9
SRB08	8	16	8	5	15	5.85	14.6
SRB10	10	19	9	6	12	8.65	21.6
SRB12	12	22	10	7	11	11.4	28.5
SRB15	15	26	12	9	8	17.6	44
SRB17	17	30	14	10	10	22.4	56
SRB20	20	35	16	12	9	31.5	78
SRB25	25	42	20	16	7	51	127
SRB30	30	47	22	18	6	65.5	166

SPHERICAL PLAIN BEARING
ISO12240-1 - SERIES E
MAINTENANCE FREE VERSION
HARD CHROMIUM / PTFE COUPLING



WELD ON RING FOR SPHERICAL BEARINGS

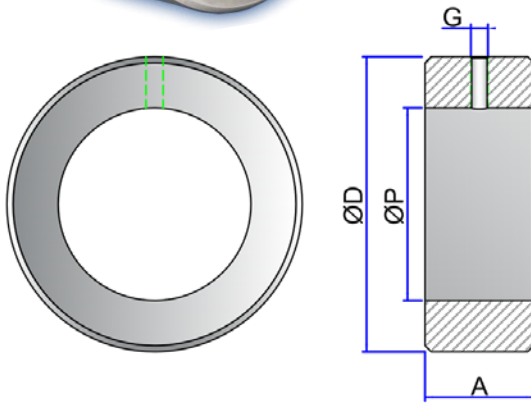
STEEL - FE510C (S355J0) - S355JR (A105)
ALSO AVAILABLE IN 316 STAINLESS STEEL



ORDER CODE	P Ø(mm)	D Ø(mm)	A (mm)	G Ø(mm)	TO SUIT BEARING SERIES
RPCA40	26	40	11	M6	SR15, SR15-2RS, GE15ET/X (S/S), SRB15
RPCA50 (1)	35	50	14		SR20, SR20-2RS, GE20ET/X (S/S), SRB20
RPCA69 (1)	42	69	19		SR25, SR25-2RS, GE25ET/X (S/S), SRB25
RPCA75 (1)	47	75	20		SR30, SR30-2RS, GE30ET/X (S/S), SRB30
RPCA80	55	80	22		SR35, SR35-2RS, GE35ET/X (S/S)
RPCA94 (1)	62	94	26		SR40, SR40-2RS, GE40ET/X (S/S)
RPCA100	68	100	30		SR45, SR45-2RS, GE45ET/X (S/S)
RPCA120	75	120	33		SR50, SR50-2RS, GE50ET/X (S/S)
RPCA138	90	138	40		SR60, SR60-2RS, GE60ET/X (S/S)

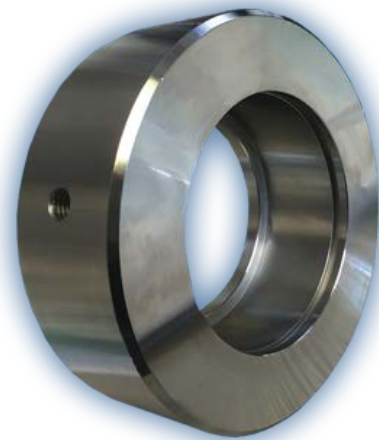
(1) = SIZE CAN BE SUPPLIED IN AISI 316 GRADE STAINLESS STEEL PLEASE QUOTE 'SS' IN PART NUMBER, I.E: RPS~~S~~CAGE50

MATCHING BEARING SERIES DETAILS FOUND ON PAGES 172, 173 & 174.



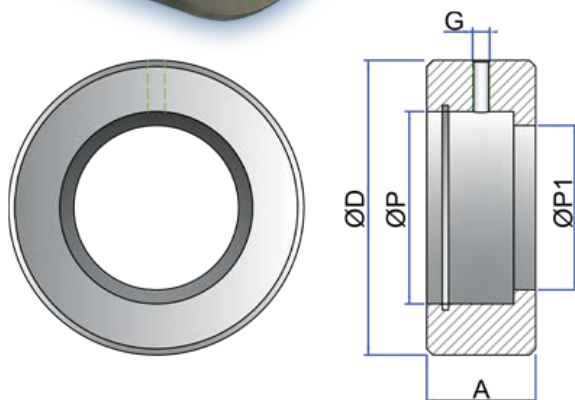
WELD ON RING FOR SPHERICAL BEARINGS

STEEL - FE510C (S355J0) - S355JR (A105)



ORDER CODE	P Ø(mm)	P1 Ø(mm)	D Ø(mm)	A (mm)	G Ø(mm)	TO SUIT BEARING SERIES
RPCAGE40	26	22	40	15	M6	SR15, SR15-2RS, GE15ET/X (S/S), SRB15
RPCAGE50	35	29	50	19		SR20, SR20-2RS, GE20ET/X (S/S), SRB20
RPCAGE60	42	35	60	23		SR25, SR25-2RS, GE25ET/X (S/S), SRB25
RPCAGE70	47	40	70	28		SR30, SR30-2RS, GE30ET/X (S/S), SRB30
RPCAGE85	55	47	85	30		SR35, SR35-2RS, GE35ET/X (S/S)
RPCAGE95	62	53	95	35	M8	SR40, SR40-2RS, GE40ET/X (S/S)
RPCAGE110	68	60	110	40		SR45, SR45-2RS, GE45ET/X (S/S)
RPCAGE120	75	66	120	40		SR50, SR50-2RS, GE50ET/X (S/S)
RPCAGE138	90	80	138	50		SR60, SR60-2RS, GE60ET/X (S/S)

MATCHING BEARING SERIES DETAILS FOUND ON PAGES 172, 173 & 174.

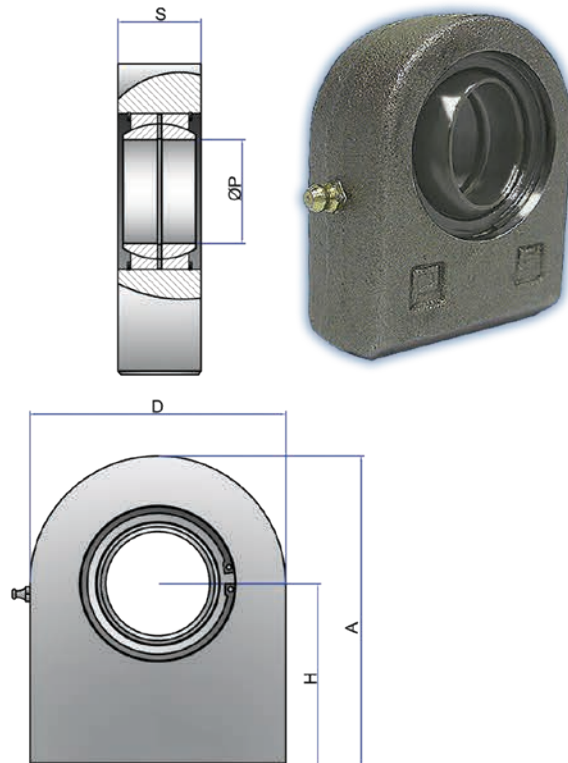


WELD ON ENDS - TS...N SERIES

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TS15N*	15	45	53.5	16	31	17	53
TS16N	16	48	59	17.5	35	21.2	59
TS17N	17	48	59	17.5	35	21.2	65
TS20N	20	50	63	19	38	30	67
TS25N	25	55	72.5	23	45	48	69.5
TS30N	30	65	83.5	28	51	62	118
TS35N	35	83	102.5	30	61	80	196
TS40N	40	100	119	35	69	100	305
TS45N	45	110	132	40	77	127	386
TS50N	50	123	149.5	40	88	156	441
TS60N	60	140	170	50	100	245	570
TS70N	70	164	197	55	115	315	724
TS80N	80	180	231	60	141	400	804
TS90N	90	226	263	65	150	490	1340
TS100N	100	250	295	70	170	610	1516
TS110N	110	295	332.5	80	185	655	2340
TS120N	120	360	390	90	210	950	3210

* = LUBRICATION VIA GREASING HOLE.

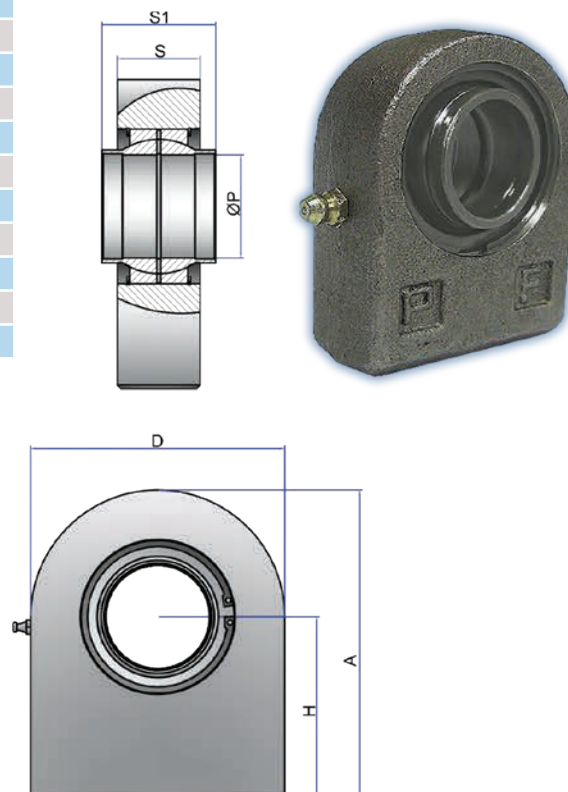
INSERT PLAIN BEARING TYPE 'SR'
ISO12240-1 - SERIES E
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING



WELD ON ENDS - TS...CEN SERIES

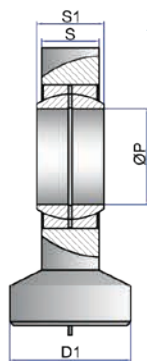
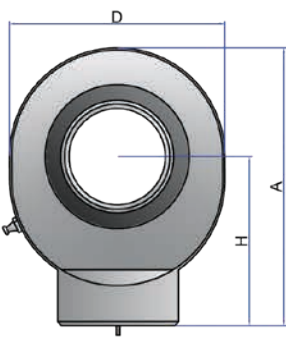
ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	S1 (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TS20CE-N	20	50	63	19	38	20	30	74
TS25CE-N	25	55	72.5	23	45	25	48	95
TS32CE-N	32	70	103	27	65	32	62.5	168
TS40CE-N	40	100	119	35	69	40	100	268
TS50CE-N	50	123	149.5	40	88	50	156	362
TS63CE-N	63	145	178	50	107	63	248	570
TS70CE-N	70	164	197	55	115	70	315	800
TS80CE-N	80	180	231	60	141	80	400	874
TS90CE-N	90	226	263	65	150	90	490	1045
TS100CE-N	100	250	295	70	170	100	610	1330
TS110CE-N	110	295	332.5	80	185	110	655	1490
TS125CE-N	125	360	390	90	210	125	950	2200

INSERT PLAIN BEARING TYPE 'SRC'
ISO12240-1 - SERIES W
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING



WELD ON ENDS - TS...C SERIES

INSERT PLAIN BEARING TYPE 'SR'
ISO12240-4 - SERIES E TYPE S
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING

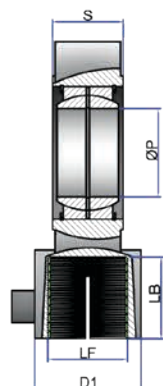
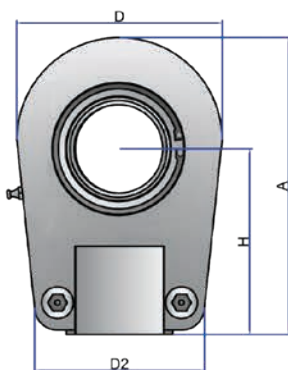


* = LUBRICATION VIA GREASING HOLE.
(1) = NON-LUBRICATABLE.

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	S1 (mm)	D1 (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TS10C(1)	10	29	38.5	7	24	9	15	8.15	15.6
TS12C(1)	12	34	44	8	27	10	17.5	10.8	21.6
TS15C*	15	40	51	10	31	12	21	17	32
TS16C*	16	46	58	11	35	14	24	19	36
TS17C*	17	46	58	11	35	14	24	21.2	40
TS20C*	20	53	64.5	13	38	16	27.5	30	54
TS25C	25	64	77	17	45	20	33.5	48	72
TS30C	30	73	87.5	19	51	22	40	62	95
TS35C	35	82	102	21	61	25	47	80	125
TS40C	40	92	115	23	69	28	52	100	156
TS45C	45	102	128	27	77	32	58	127	208
TS50C	50	112	144	30	88	35	62	156	250
TS60C	60	135	167.5	38	100	44	70	245	390
TS70C	70	160	195	42	115	49	80	315	510
TS80C	80	180	231	47	141	55	95	400	620

THREADED ENDS - TAPR...U SERIES

INSERT PLAIN BEARING TYPE 'SR'
ISO12240-1 - SERIES E
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING



* = MATERIAL: NODULAR CAST IRON.

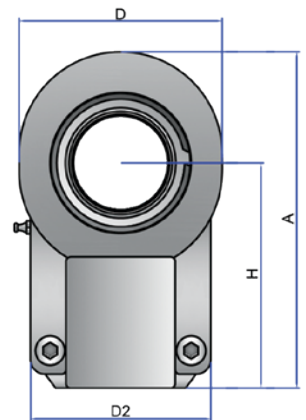
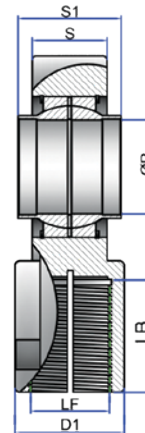
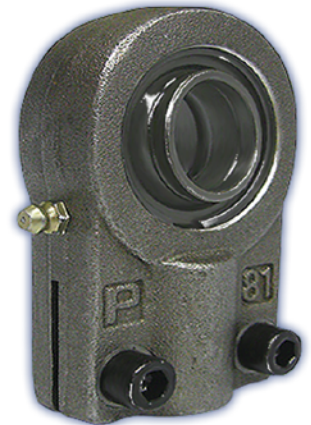
ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TAPR20U	20	56	80	19	50	25	46	16 x 1.5	17	30	81
TAPR25U	25	56	80	23	50	25	46	16 x 1.5	17	48	72
TAPR30U	30	64	94	28	60	32	50	22 x 1.5	23	62	106
TAPR35U	35	78	112	30	70	40	66	28 x 1.5	29	80	153
TAPR40U	40	94	135	35	85	49	76	35 x 1.5	36	100	250
TAPR50U	50	116	168	40	105	61	90	45 x 1.5	46	156	365
TAPR60U	60	130	200	50	130	75	120	58 x 1.5	59	245	400
TAPR70U	70	154	232	55	150	86	130	65 x 1.5	66	315	540
TAPR80U	80	176	265	60	170	105	160	80 x 2	81	400	670
TAPR90U*	90	206	322	65	210	124	180	100 x 2	101	490	980
TAPR100U*	100	231	360	70	235	138	200	110 x 2	111	610	1120
TAPR110U*	110	266	407.5	80	265	152	220	120 x 3	125	655	1700
TAPR120U*	120	340	490	90	310	172	257	130 x 3	135	950	2900

THREADED ENDS - TAPR...CE SERIES

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	LB (mm)	S1 (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TAPR12CE (1)	12	32	54	11	38	16	32	12 x 1.25	17	12	10.8	24.5
TAPR16CE	16	40	64	13	44	21	40	14 x 1.5	19	16	17.6	36.5
TAPR20CE	20	47	77	17	52	25	47	16 x 1.5	23	20	30	48
TAPR25CE	25	58	96	22	65	30	54	20 x 1.5	29	25	48	78
TAPR32CE	32	71	118	28	80	38	66	27 x 2	37	32	67	114
TAPR40CE	40	90	146	33	97	47	80	33 x 2	46	40	100	204
TAPR50CE	50	109	179	41	120	58	96	42 x 2	57	50	156	310
TAPR63CE	63	136	213	53	140	70	114	48 x 2	64	63	255	430
TAPR70CE*	70	155	245	57	160	80	135	56 x 2	76	70	315	540
TAPR80CE*	80	170	270	67	180	90	148	64 x 3	86	80	400	695
TAPR90CE*	90	185	296	72	195	100	160	72 x 3	91	90	490	750
TAPR100CE*	100	211	322	85	210	110	178	80 x 3	96	100	610	1060
TAPR110CE*	110	235	364	88	235	125	190	90 x 3	106	110	655	1200
TAPR125CE*	125	265	406.5	103	260	135	200	100 x 3	113	125	950	1430
TAPR160CE*	160	326	488	130	310	165	250	125 x 4	126	160	1370	2200
TAPR200CE*	200	418	620	162	390	215	320	160 x 4	161	200	2120	3650

* = MATERIAL: NODULAR CAST IRON
(1) = NON-LUBRICATABLE.

INSERT PLAIN BEARING TYPE 'SRC'
ISO12240-1 - SERIES W
DIN24338 - ISO6982 - ISO8132
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING

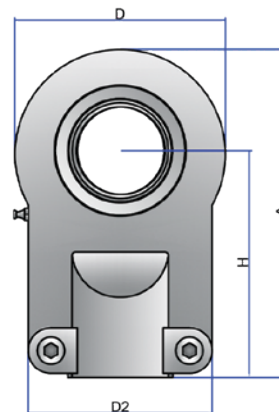
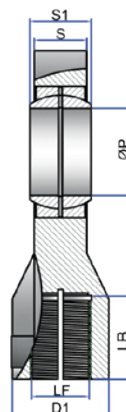


THREADED ENDS - TAPR...S SERIES

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	LB (mm)	S1 (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TAPR12S(1)	12	35	58	8	42	17	40	10 x 1.25	15	10	10.8	17
TAPR16S(2)	16	45	69	11	48	21	45	12 x 1.25	17	14	21.1	28.5
TAPR20S(2)	20	55	83	13	58	25	55	14 x 1.5	19	16	30	42.5
TAPR25S	25	65	99	17	68	30	62	16 x 1.5	23	20	48	67
TAPR30S	30	80	123	19	85	36	77	20 x 1.5	29	22	62	108
TAPR40S	40	100	153	23	105	45	90	27 x 2	37	28	100	156
TAPR50S	50	120	188	30	130	55	105	33 x 2	46	35	156	245
TAPR60S	60	160	230	38	150	68	134	42 x 2	57	44	245	380
TAPR80S*	80	205	282.5	47	185	90	156	48 x 2	64	55	400	585
TAPR100S*	100	240	357.5	55	240	110	190	64 x 3	86	70	610	865

* = MATERIAL: NODULAR CAST IRON
(1) = NON-LUBRICATABLE
(2) = LUBRICATION VIA GREASING HOLE.

INSERT PLAIN BEARING TYPE 'SR'
ISO12240-1 - SERIES W
DIN24555 - ISO8133
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING



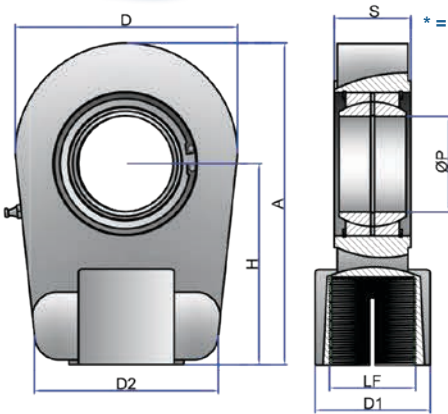
THREADED ENDS - TAPR...N SERIES

INSERT PLAIN BEARING TYPE 'SR'
ISO12240-1 - SERIES E
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING



ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TAPR20N	20	56	80	19	50	25	46	16 x 1.5	17	30	81.1
TAPR25N	25	56	80	23	50	25	46	16 x 1.5	17	48	72
TAPR30N	30	64	94	28	60	32	50	22 x 1.5	23	62	106
TAPR35N	35	78	112	30	70	40	66	28 x 1.5	29	80	153
TAPR40N	40	94	135	35	85	49	76	35 x 1.5	36	100	250
TAPR50N	50	116	168	40	105	61	90	45 x 1.5	46	156	365
TAPR60N	60	130	200	50	130	75	120	58 x 1.5	59	245	400
TAPR70N	70	154	232	55	150	86	130	65 x 1.5	66	315	540
TAPR80N	80	176	265	60	170	105	160	80 x 2	81	400	670
TAPR90N*	90	206	322	65	210	124	180	100 x 2	101	490	980
TAPR100N*	100	231	360	70	235	138	200	110 x 2	111	610	1120
TAPR110N*	110	266	407	80	265	152	220	120 x 3	125	655	1700
TAPR120N*	120	340	490	90	310	172	257	130 x 3	135	950	2900

* = MATERIAL: NODULAR CAST IRON.



THREADED ENDS - TFI...FK / FK-2RS SERIES

INSERT PLAIN BEARING TYPE 'SR'
STEEL HOUSING - CK45 ZINC PLATED
ISO12240-4 - SERIES E TYPE F
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING

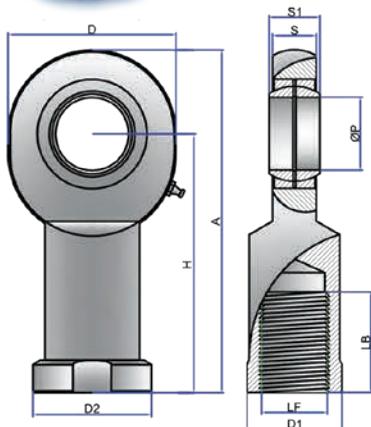


ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFI06FK (1)	6	21	40.5	4.3	30	11	13	6 x 1	6	11	3.4	8.1
TFI08FK (1)	8	24	48	6	36	13	15	8 x 1.25	8	15	5.5	12.9
TFI10FK (1)	10	29	57.5	7	43	15	18	10 x 1.5	9	20	8.1	17.6
TFI12FK (1)	12	34	67	8	50	18	20	12 x 1.75	10	24	10.8	24.5
TFI15FK* (2)	15	40	81	10	61	21	24	14 x 2	12	30	17	36
TFI17FK* (2)	17	46	90	11	67	24	28	16 x 2	14	34	21.2	45
TFI20FK* (2)	20	53	103.5	13	77	32	35	20 x 1.5	16	40	30	60
TFI25FK*	25	64	126	17	94	36	42	24 x 2	20	48	48	83
TFI30FK*	30	73	146.5	19	110	41	50	30 x 2	22	56	62	110
TFI35FK*	35	82	166	21	125	50	58	36 x 3	25	60	80	146
TFI40FK*	40	92	188	23	142	55	65	39 x 3	28	67	100	180
TFI45FK*	45	102	196	27	145	60	70	42 x 3	32	65	127	240
TFI50FK*	50	112	216	30	160	65	75	45 x 3	35	69	156	290
TFI60FK*	60	135	242	38	175	75	88	52 x 3	44	73	245	450
TFI70FK*	70	160	280	42	200	80	98	56 x 4	49	80	315	610
TFI80FK*	80	180	320	47	230	100	110	64 x 4	55	85	400	695

* = ALSO AVAILABLE IN TFI...FK-2RS TYPE WITH PROTECTION RINGS FITTED. PLEASE QUOTE PART NUMBER AND ADD '-2RS' (EXAMPLE = TFI40FK-2RS).

(1) NON-LUBRICATABLE.

(2) LUBRICATION BY GREASING HOLE.

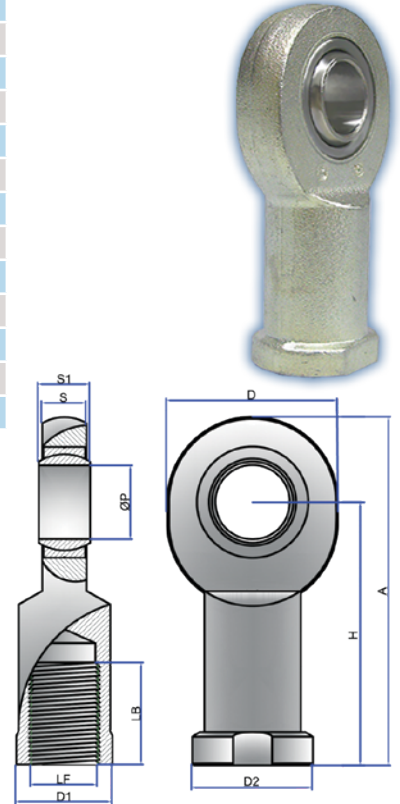


THREADED ENDS - TFI...FKB & TFI...T-2RS SERIES

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFI06FKB	6	21	40.5	4.3	30	11	13	6 x 1	6	11	3.6	8.1
TFI08FKB	8	24	48	6	36	13	15	8 x 1.25	8	15	5.8	12.9
TFI10FKB	10	29	57.5	7	43	15	18	10 x 1.5	9	20	8.6	17.6
TFI12FKB	12	34	67	8	50	18	20	12 x 1.75	10	24	11.4	24.5
TFI15FKB	15	40	81	10	61	21	24	14 x 2	12	30	17.6	36
TFI17FKB*	17	46	90	11	67	24	28	16 x 2	14	34	22.4	45
TFI20FKB*	20	53	103.5	13	77	32	35	20 x 1.5	16	40	31.5	60
TFI25FKB*	25	64	126	17	94	36	42	24 x 2	20	48	51	83
TFI30FKB*	30	73	146.5	19	110	41	50	30 x 2	22	56	66.5	110
TFI35T-2RS	35	82	166	21	125	50	58	36 x 3	25	60	112	146
TFI40T-2RS	40	92	188	23	142	55	65	39 x 3	28	67	140	180
TFI45T-2RS	45	102	196	27	145	60	70	42 x 3	32	65	180	240
TFI50T-2RS	50	112	216	30	160	65	75	45 x 3	35	69	220	290
TFI60T-2RS	60	135	242	38	175	75	88	52 x 3	44	73	345	450
TFI70T-2RS	70	160	280	42	200	80	98	56 x 4	49	80	440	610
TFI80T-2RS	80	180	320	47	230	100	110	64 x 4	55	85	570	695

* = ALSO AVAILABLE IN TFI...T-2RS TYPE WITH PROTECTION RINGS FITTED. PLEASE QUOTE PART NUMBER AND ADD 'T-2RS' INSTEAD OF FKB (EXAMPLE = TFI40FK-2RS).
STAINLESS STEEL VERSION AVAILABLE ON REQUEST.

INSERT PLAIN BEARING TYPE
'SRB/SRT-2RS'
STEEL HOUSING - CK45 ZINC PLATED
ISO12240-4 - SERIES E TYPE F
MAINTENANCE FREE VERSION
HARD CHROMIUM / PTFE COUPLING



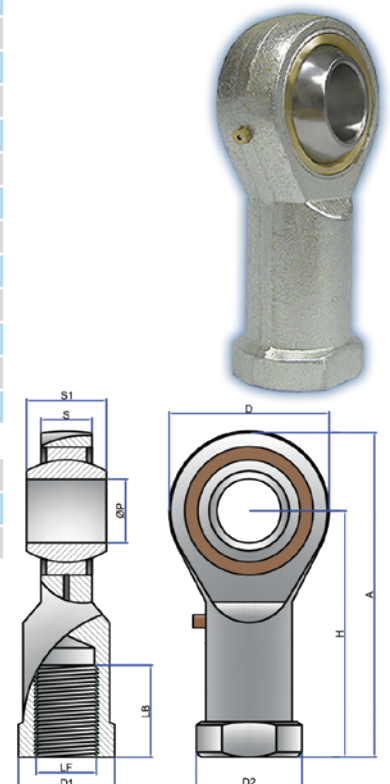
THREADED ENDS - TFI...PB SERIES

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFI05PB	5	16	35	6	27	9	11	5 x 0.8	8	14	3.3	4.1
TFI06PB	6	18	39	6.7	30	11	13	6 x 1	9	14	4.3	5.3
TFI08PB	8	22	47	9	36	14	16	8 x 1.25	12	17	6.8	9.2
TFI10PB	10	26	56	10.5	43	17	19	10 x 1.5	14	21	10	12
TFI12PB	12	30	65	12	50	19	22	12 x 1.75	16	24	13	17
TFI14PB	14	34	74	13.5	57	22	25	14 x 2	19	27	17	22
TFI16PB	16	38	83	15	64	22	27	16 x 2	21	33	21	28
TFI18PB	18	42	92	16.5	71	27	31	18 x 1.5	23	36	26	34
TFI20PB	20	48	100	18	77	30	34	20 x 1.5	25	40	31	40
TFI22PB	22	50	109	20	84	32	37	22 x 1.5	28	43	38	50
TFI25PB	25	60	124	22	94	36	42	24 x 2	31	48	47	63
TFI28PB	28	66	136	25	103	41	46	27 x 2	35	53	59	81
TFI30PB (1)	30	70	145	25	110	41	50	30 x 2	37	56	63	86
TFI35PB	35	80	166	28	126	50	58	36 x 2	43	58	79	109

TFI10PB-MB*	10	26	56	10.5	43	17	19	10 x 1.25	14	21	10	12
TFI12PB-MB*	12	30	65	12	50	19	22	12 x 1.25	16	24	13	17
TFI16PB-MB*	16	38	83	15	64	22	27	16 x 1.5	21	33	21	28

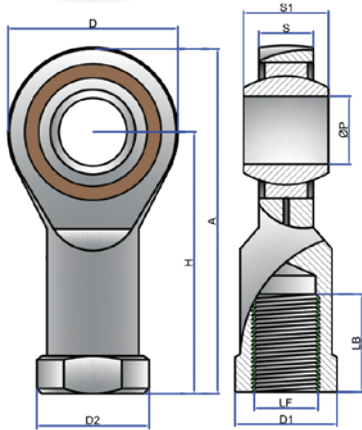
* = VERSION WITH CETOP TYPE THREAD.
(1) THIS SIZE IS AVAILABLE WITH M27x2 THREAD VARIATION ON REQUEST.

INSERT PLAIN BEARING
ISO12240-4 - SERIES K ISO6126
FITTED WITH GREASE NIPPLE
STEEL / BRONZE COUPLING



THREADED ENDS - TFI...PW SERIES

INSERT PLAIN BEARING
ISO12240-4 - SERIES K ISO6126
MAINTENANCE FREE
STEEL / PTFE COUPLING



ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFI05PW	5	18	36	7.5	27	10	12	5 x 0.8	8	8	3.6	4.6
TFI06PW	6	20	40	7.5	30	10	13	6 x 1	9	9	4.7	5.2
TFI08PW	8	24	48	9.5	36	13	16	8 x 1.25	12	12	7.6	8.2
TFI10PW	10	30	58	11.5	43	16	19	10 x 1.5	14	15	12	15
TFI12PW	12	34	67	12.5	50	18	22	12 x 1.75	16	18	14	19
TFI14PW	14	38	76	14.5	57	21	25	14 x 2	19	21	19	24
TFI16PW	16	42	85	15.5	64	24	27	16 x 2	21	24	23	29
TFI18PW	18	46	94	17.5	71	27	31	18 x 1.5	23	27	29	34
TFI20PW	20	50	102	18.5	77	30	34	20 x 1.5	25	30	34	40
TFI22PW	22	56	112	21	84	34	37	22 x 1.5	28	33	42	50
TFI25PW	25	60	124	23	94	36	42	24 x 2	31	36	52	57
TFI28PW	28	66	136	26	103	41	46	27 x 2	35	41	66	69
TFI30PW(1)	30	70	145	27	110	46	50	30 x 2	37	45	73	77
TFI35PW	35	80	166	28	126	50	58	36 x 2	43	58	94	97

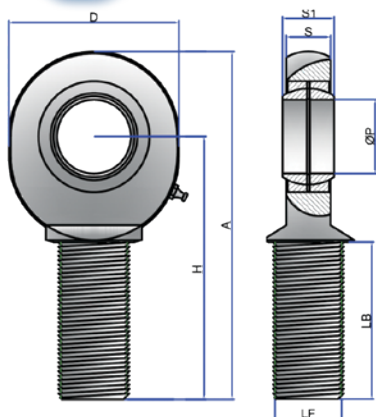
TFI10PW-MB*	10	30	58	11.5	43	16	19	10 x 1.25	14	15	12	15
TFI12PW-MB*	12	34	67	12.5	50	18	22	12 x 1.25	16	18	14	19
TFI16PW-MB*	16	42	85	15.5	64	24	27	16 x 1.5	21	24	23	29

* = VERSION WITH CETOP TYPE THREAD.

(1) THIS SIZE IS AVAILABLE WITH M27x2 THREAD VARIATION ON REQUEST.

THREADED ENDS - TFE...MK / MK-2RS SERIES

INSERT PLAIN BEARING TYPE 'SR'
STEEL HOUSING - CK45 ZINC PLATED
ISO12240-4 - SERIES E TYPE M
FITTED WITH GREASE NIPPLE
STEEL / STEEL COUPLING



ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFE06MK (1)	6	21	46.5	4.3	36	6 x 1	6	18	3.4	10.2
TFE08MK (1)	8	24	54	6	42	8 x 1.25	8	22	5.5	16
TFE10MK (1)	10	29	62.5	7	48	10 x 1.5	9	27	8.1	22
TFE12MK (1)	12	34	71	8	54	12 x 1.75	10	30	10.8	30.4
TFE15MK (2)	15	40	83	10	63	14 x 2	12	34	17	44.8
TFE17MK* (2)	17	46	92	11	69	16 x 2	14	36	21.2	56.5
TFE20MK* (2)	20	53	104.5	13	78	20 x 1.5	16	43	30	75.6
TFE25MK*	25	64	126	17	94	24 x 2	20	53	48	88.2
TFE30MK*	30	73	146.5	19	110	30 x 2	22	65	62	119
TFE35MK*	35	82	181	21	140	36 x 3	25	82	80	159
TFE40MK*	40	92	196	23	150	39 x 3	28	86	100	194
TFE45MK*	45	102	218	27	163	42 x 3	32	94	127	259
TFE50MK*	50	112	241	30	185	45 x 3	35	106	156	313
TFE60MK*	60	135	277.5	38	210	52 x 3	44	115	245	485
TFE70MK*	70	160	315	42	235	56 x 4	49	125	315	564
TFE80MK*	80	180	360	47	270	64 x 4	55	140	400	689

* = ALSO AVAILABLE IN TFE...MK-2RS TYPE WITH PROTECTION RINGS FITTED. PLEASE QUOTE PART NUMBER AND ADD '-2RS' (EXAMPLE = TFE40MK-2RS).

(1) NON-LUBRICATABLE.

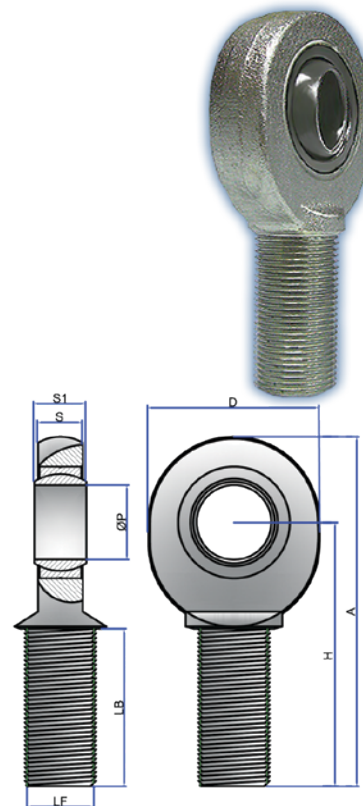
(2) LUBRICATION BY GREASING HOLE.

THREADED ENDS - TFE...MKB / TFE...T-2RS SERIES

ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFE06MKB	06	21	46.5	4.3	36	6 x 1	6	18	3.6	8.1
TFE08MKB	08	24	54	6	42	8 x 1.25	8	22	5.8	12.9
TFE10MKB	10	29	62.5	7	48	10 x 1.5	9	27	8.6	17.6
TFE12MKB	12	34	71	8	54	12 x 1.75	10	30	11.4	24.5
TFE15MKB	15	40	83	10	63	14 x 2	12	34	17.6	36
TFE17MKB*	17	46	92	11	69	16 x 2	14	36	22.4	45
TFE20MKB*	20	53	104.5	13	78	20 x 1.5	16	43	31.5	60
TFE25MKB*	25	64	126	17	94	24 x 2	20	53	51	83
TFE30MKB*	30	73	146.5	19	110	30 x 2	22	65	65.5	110
TFE35T-2RS	35	82	181	21	140	36 x 3	25	82	112	146
TFE40T-2RS	40	92	196	23	150	39 x 3	28	86	140	180
TFE45T-2RS	45	102	218	27	163	42 x 3	32	94	180	240
TFE50T-2RS	50	112	241	30	185	45 x 3	35	106	220	290
TFE60T-2RS	60	135	277.5	38	210	52 x 3	44	115	345	450
TFE70T-2RS	70	160	315	42	235	56 x 4	49	125	440	610
TFE80T-2RS	80	180	360	47	270	64 x 4	55	140	570	750

* = ALSO AVAILABLE IN TFE...T-2RS TYPE WITH PROTECTION RINGS FITTED. PLEASE QUOTE PART NUMBER AND ADD 'T-2RS' INSTEAD OF MKB (EXAMPLE = TFE40T-2RS).
STAINLESS STEEL VERSION AVAILABLE ON REQUEST.

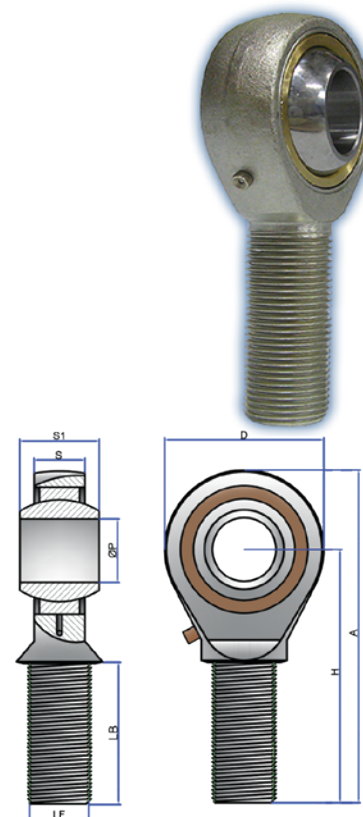
INSERT PLAIN BEARING TYPE 'SR'
STEEL HOUSING - CK45 ZINC PLATED
ISO12240-4 - SERIES E TYPE M
MAINTENANCE FREE VERSION
HARD CHROMIUM / PTFE COUPLING



THREADED ENDS - TFE...PB SERIES

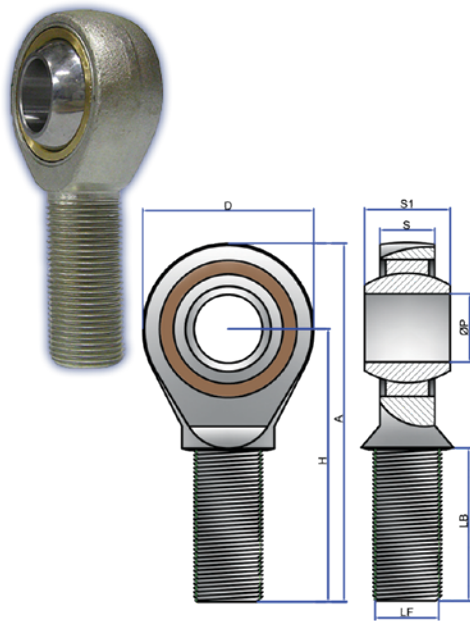
ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFE05PB	5	16	41	6	33	5 x 0.8	8	20	3.3	4.1
TFE06PB	6	18	45	6.7	36	6 x 1	9	22	4.3	5.3
TFE08PB	8	22	53	9	42	8 x 1.25	12	25	6.8	9.2
TFE10PB	10	26	61	10.5	48	10 x 1.5	14	29	10	12
TFE12PB	12	30	69	12	54	12 x 1.75	16	33	13	17
TFE14PB	14	34	77	13.5	60	14 x 2	19	36	17	22
TFE16PB	16	38	85	15	66	16 x 2	21	40	21	28
TFE18PB	18	42	93	16.5	72	18 x 1.5	23	44	26	34
TFE20PB	20	46	101	18	78	20 x 1.5	25	47	31	40
TFE22PB	22	50	109	20	84	22 x 1.5	28	51	38	50
TFE25PB	25	60	124	22	94	24 x 2	31	57	47	63
TFE28PB	28	66	136	25	103	27 x 2	35	62	59	81
TFE30PB	30	70	145	25	110	30 x 2	37	66	63	86

INSERT PLAIN BEARING
ISO12240-4 - SERIES K ISO6126
FITTED WITH GREASE NIPPLE
STEEL / BRONZE COUPLING



THREADED ENDS - TFE...PW SERIES

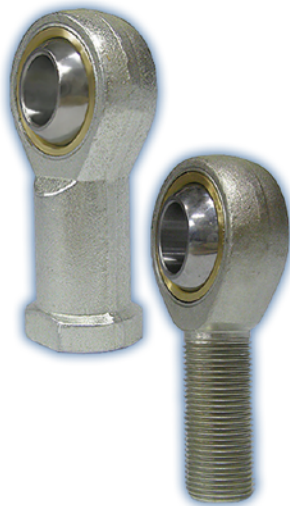
INSERT PLAIN BEARING
ISO12240-4 - SERIES K ISO6126
MAINTENANCE FREE
STEEL / PTFE COUPLING



ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	LF (mm)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
TFE05PW	5	18	42	7.5	33	5 x 0.8	8	19	3.6	3.9
TFE06PW	6	20	46	7.5	36	6 x 1	9	21	4.7	5.2
TFE08PW	8	24	54	9.5	42	8 x 1.25	12	25	7.6	8.2
TFE10PW	10	30	63	11.5	48	10 x 1.5	14	28	12	15
TFE12PW	12	34	71	12.5	54	12 x 1.75	16	32	14	19
TFE14PW	14	38	79	14.5	60	14 x 2	19	36	19	24
TFE16PW	16	42	87	15.5	66	16 x 2	21	37	23	29
TFE18PW	18	46	95	17.5	72	18 x 1.5	23	41	29	34
TFE20PW	20	50	103	18.5	78	20 x 1.5	25	45	34	40
TFE22PW	22	56	112	21	84	22 x 1.5	28	48	42	50
TFE25PW	25	60	124	23	94	24 x 2	31	55	52	57
TFE28PW	28	66	136	26	103	27 x 2	35	62	66	69
TFE30PW	30	70	145	27	110	30 x 2	37	66	73	77

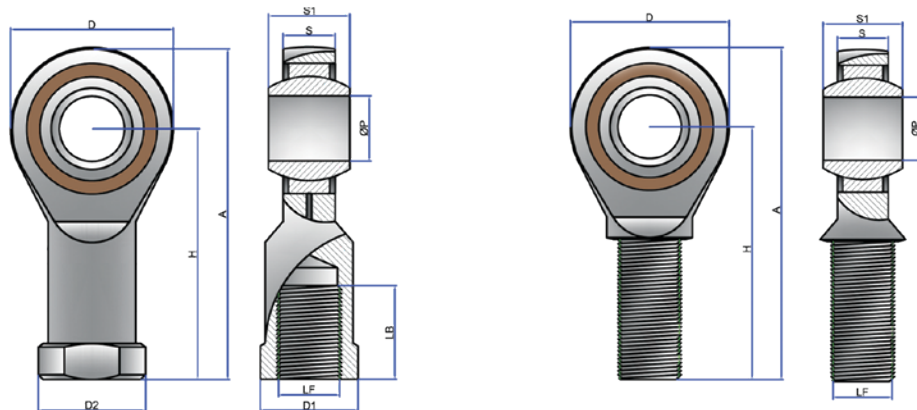
THREADED ENDS - SIZP...S / SAZP...S SERIES

SPHERICAL PLAIN BEARING
IMPERIAL 'UNF' THREAD
HARD CHROME
BRONZE COUPLING



ORDER CODE	P Ø(mm)	D (mm)	A (mm)	S (mm)	H (mm)	D1 (mm)	D2 (mm)	LF (unf)	S1 (mm)	LB (mm)	DYNAMIC LOAD (kn)	STATIC LOAD (kn)
SIZP04S	4.83	15.88	34.93	6.35	26.97	7.92	10.31	10-32	7.92	14.27	3.4	4.8
SIZP06S	6.35	19.05	42.85	7.14	33.32	9.53	11.91	1/4-282	9.53	19.05	4.5	7.7
SIZP07S	7.94	22.23	46.02	8.74	34.93	11.10	12.70	5/16-24	11.10	19.05	6.9	8.4
SIZP09S	9.53	25.40	53.98	10.31	41.28	14.27	17.45	3/8-24	12.70	23.80	9.4	10
SIZP11S	11.11	28.58	60.33	11.10	46.02	15.88	19.05	7/16-202	14.27	26.97	11	13
SIZP12S	12.70	33.20	70.64	12.70	53.98	19.05	22.23	1/2-20	15.88	30.15	15	19
SIZP15S	15.88	38.10	82.55	14.27	63.50	22.23	25.40	5/8-18	19.05	38.10	20	21
SIZP19S	19.05	44.45	95.25	17.45	73.03	25.40	28.58	3/4-16	22.23	44.45	29	29
SIZP25S	25.40	69.85	139.7	25.40	104.78	38.10	44.45	5/4-12	34.93	53.98	60	101

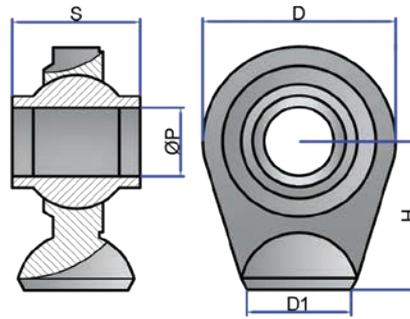
SAZP04S	4.83	15.88	39.7	6.35	31.75	-	-	10-32	7.92	19.05	3.4	3.8
SAZP06S	6.35	19.05	49.2	7.14	39.67	-	-	1/4-282	9.53	25.4	4.5	6.6
SAZP07S	7.94	22.23	58.72	8.74	47.63	-	-	5/16-24	11.10	31.75	6.9	8.4
SAZP09S	9.53	25.40	61.93	10.31	49.23	-	-	3/8-24	12.70	31.75	9.4	10
SAZP11S	11.11	28.58	68.28	11.10	53.98	-	-	7/16-202	14.27	34.93	11	13
SAZP12S	12.70	33.02	78.59	12.70	61.93	-	-	1/2-20	15.88	38.1	15	19
SAZP15S	15.88	38.10	85.73	14.27	66.68	-	-	5/8-18	19.05	41.28	20	21
SAZP19S	19.05	44.45	95.25	17.45	73.03	-	-	3/4-16	22.23	44.45	29	29
SAZP25S	25.40	69.85	139.70	25.40	104.78	-	-	5/4-12	34.93	53.98	60	101



WELD ON AGRICULTURAL TOP LINKS

ORDER CODE	P Ø(mm)	CAT TYPE	D (mm)	H (mm)	D1 (mm)	S (mm)
RP250	16	-	46	60	30	20
RP251	19	1	62	58	34	44
RP252	20	-	62	60	34	44
RP253	22.1	-	62	50	26	35
RP254	25.4	2	75	65	38	51
RP255	30	-	83	65	50	55
RP256	35	-	83	65	50	35
RP257	40	-	108	85	60	75
RP258	45	-	108	85	60	75
RP259	50	-	108	85	60	75

COUPLING - STEEL ON STEEL
STEEL - C40 UNI EN 10083-1

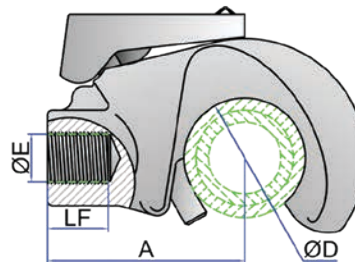


PLEASE NOTE: OTHER SIZES ARE AVAILABLE ON REQUEST.

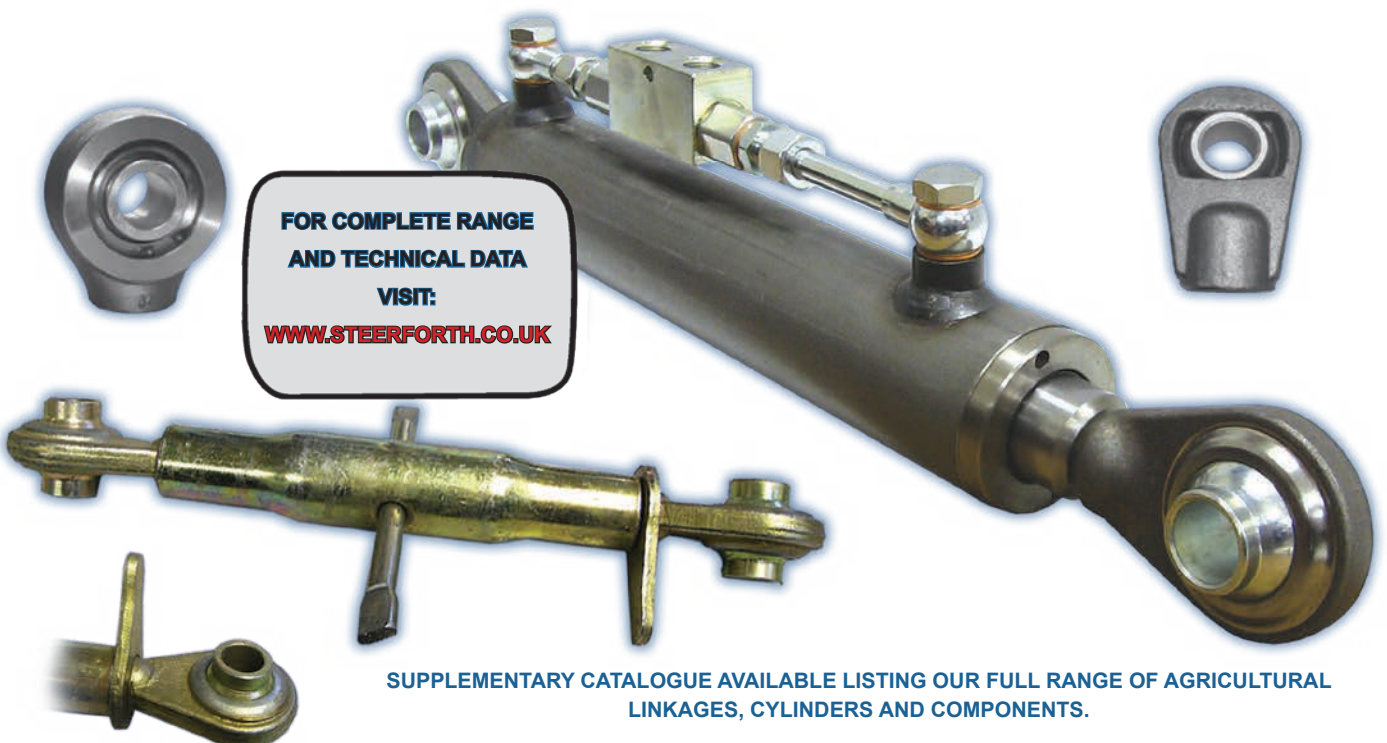
WELD ON TOP LINKS (AUTOMATIC HITCH)

ORDER CODE	A Ø(mm)	CAT TYPE	E Ø(mm)	LF (mm)	D Ø(mm)
RP10975	105	2	12 (bore)	15	50
RP10976	105	2	20 x 1.5	25	
RP10969	105	2	27 x 2	25	
RP10974	105	2	30 x 2	25	
RP10977	132	3/2	20 (bore)	25	60
RP10979	132	3/2	27 x 2	45	
RP10970	132	3/2	36 x 2	45	

STEEL - ZINC PLATED



AGRICULTURAL TOP LINK CYLINDERS & LINKAGES



FOR COMPLETE RANGE
AND TECHNICAL DATA
VISIT:
WWW.STEERFORTH.CO.UK

SUPPLEMENTARY CATALOGUE AVAILABLE LISTING OUR FULL RANGE OF AGRICULTURAL LINKAGES, CYLINDERS AND COMPONENTS.

THIS CAN BE FOUND IN THE 'CATALOGUE' SECTION AT WWW.STEERFORTH.CO.UK

ISO & DIN BRACKETS FOR HYDRAULIC CYLINDERS



90° ASSEMBLY USING THE IKB BRACKET WITH TAPR...CE THREADED END



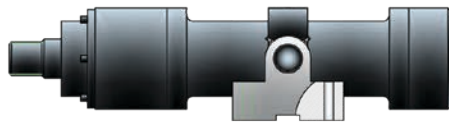
180° ASSEMBLY USING THE IKA BRACKET WITH TAPR...CE THREADED END



IKB SERIES



DK SERIES



IS / ISS SERIES



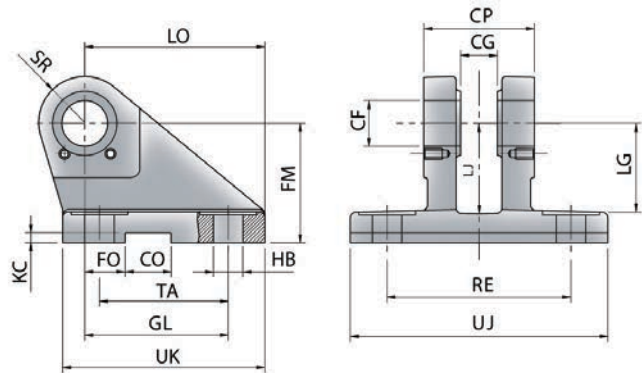
IKA SERIES



IF SERIES (SEE PAGE 192)

DK TYPE BRACKET (DIN)

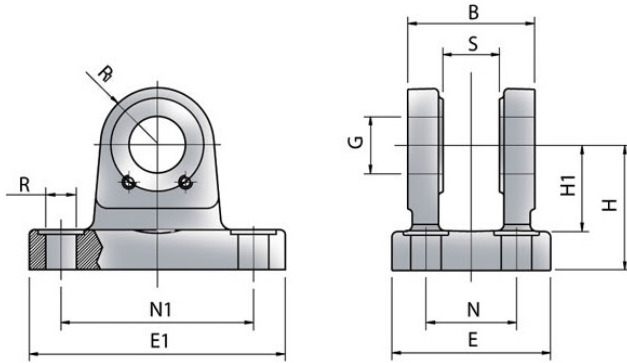
MATERIAL: EN-GJS500/7
DIN 24556



ORDER CODE	CP (mm)	CG (mm)	FM (mm)	CF (k7) (mm)	LJ (mm)	LG (mm)	LO (mm)	SR (mm)	UJ (mm)	UK (mm)	GL (mm)	TA (mm)	RE (mm)	FO (mm)	CO (mm)	KC (mm)	HB (mm)	RATED VALUE (kn)	WEIGHT (kgs)
DK12	30	10	40	12	29	28	56	12	75	60	46	40	55	16	10	3.3	9	8	0.52
DK16	40	14	50	16	38	37	74	16	95	80	61	55	70	18	16	4.3	11	12.5	1.05
DK20	50	16	55	20	40	39	80	20	120	90	64	58	85	20	16	4.3	13.5	20	1.72
DK25	60	20	65	25	49	48	98	25	140	110	78	70	100	22	25	5.4	15.5	32	2.72
DK30	70	22	85	30	63	62	120	30	160	135	97	90	115	24	25	5.4	17.5	50	5.15
DK40	80	28	100	40	73	72	148	40	190	170	123	120	135	24	36	8.4	22	80	9.3
DK50	100	35	125	50	92	90	190	50	240	215	155	145	170	35	36	8.4	30	125	18.3
DK60	120	44	150	60	110	108	225	60	270	260	187	185	200	35	50	11.4	39	200	35
DK80	160	55	190	80	142	140	295	80	320	340	255	260	240	35	50	11.4	45	320	63
DK100	200	70	210	100	152	150	335	100	400	400	285	300	300	35	63	12.4	48	500	109

IKA TYPE 180° BRACKET (ISO)

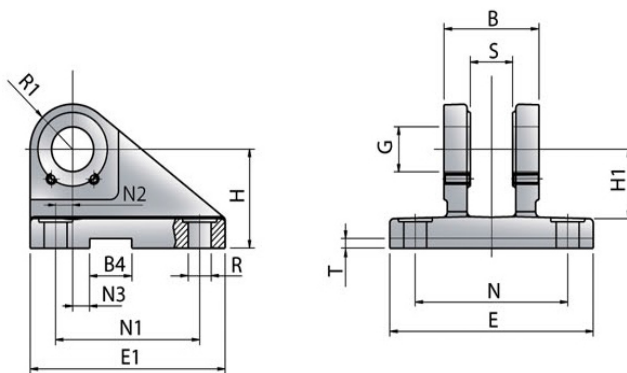
MATERIAL: EN-GJS500/7
100 - 250 BAR
ISO 8132



ORDER CODE	B (mm)	E (mm)	E1 (mm)	G (H9) (mm)	H (mm)	H1 (mm)	N (mm)	N1 (mm)	R1 (mm)	R (mm)	S (mm)	RATED VALUE (kn)	WEIGHT (kgs)
IKA10	24	33	60	10	32	22	17	42	10	6.6	10	5	0.1
IKA12	28	40	70	12	34	22	20	50	12	9	12	8	0.31
IKA16	36	50	90	16	40	27	26	65	16	11	16	12.5	0.59
IKA20	45	58	98	20	45	30	32	75	20	11	20	20	0.9
IKA25	56	70	113	25	55	37	40	85	25	13.5	25	32	1.6
IKA32	70	85	143	32	65	43	50	110	32	17.5	32	50	2.8
IKA40	90	108	170	40	76	52	65	130	40	22	40	80	5.0
IKA50	110	130	220	50	95	65	80	170	50	26	50	125	10.1
IKA63	140	160	270	63	112	75	100	210	63	33	63	200	15.4
IKA80	170	210	320	80	140	95	125	250	80	39	80	320	30.0

IKB TYPE 90° BRACKET (ISO)

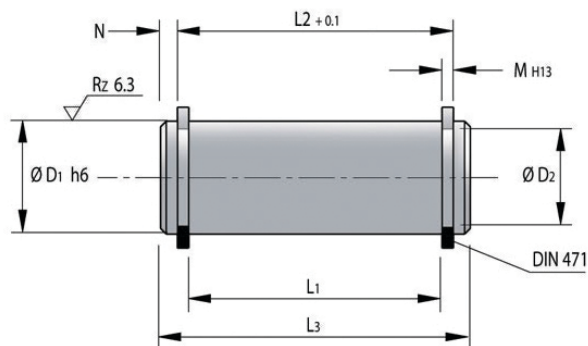
MATERIAL: EN-GJS500/7
100 - 250 BAR
ISO 8132



ORDER CODE	B (mm)	B4 (mm)	E (mm)	E1 (mm)	G (H9) (mm)	H (mm)	H1 (mm)	N (mm)	N1 (mm)	N2 (mm)	N3 (mm)	R1 (mm)	R (mm)	S (mm)	T (mm)	RATED VALUE (kn)	WEIGHT (kgs)
IKB10	24	8	56	60	10	32	22	39	44	2	10	10	6.6	10	3.3	5	0.31
IKB12	28	10	72	65	12	34	22	52	45	2	10	12	9	12	3.3	8	0.55
IKB16	36	16	90	80	16	40	27	65	55	3.5	10	16	11	16	4.3	12.5	0.9
IKB20	45	16	100	95	20	45	30	75	70	7.5	10	20	11	20	4.3	20	1.5
IKB25	56	25	120	115	25	55	37	90	85	10	10	25	13.5	25	5.4	32	2.7
IKB32	70	25	145	145	32	65	43	110	110	14.5	6	32	17.5	32	5.4	50	4.5
IKB40	90	36	185	170	40	76	52	140	125	17.5	6	40	22	40	8.4	80	8.5
IKB50	110	36	215	200	50	95	65	165	150	25	-	50	26	50	8.4	125	13.5
IKB63	140	50	270	230	63	112	75	210	170	33	-	63	33	63	11.4	200	23.4
IKB80	170	50	320	280	80	140	95	250	210	45	-	80	39	80	11.4	320	38.5

PIN FOR DK TYPE BRACKETS

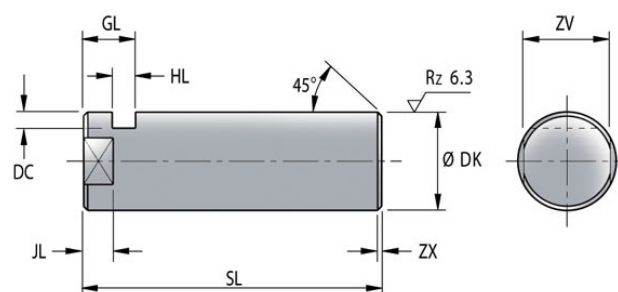
MATERIAL: 16 MN CR5



ORDER CODE	D1 (H6) Ø(mm)	D2 Ø(mm)	L1 (mm)	L2 (mm)	L3 (mm)	N (mm)	M (mm)	BLOCK RING
KPA12	12	11.5	30	33	35	1	1.1	12 x 1
KPA16	16	15.2	40	43	46	1.5	1.1	16 x 1
KPA20	20	19	50	53.4	57	1.8	1.3	20 x 1.2
KPA25	25	23.9	60	63.4	67	1.8	1.3	25 x 1.2
KPA30	30	28.6	70	74	79	2.5	1.6	30 x 1.5
KPA40	40	37.5	80	84.5	93	4.2	1.85	40 x 1.75
KPA50	50	47	100	105	115	5	2.15	50 x 2
KPA60	60	57	120	125	135	5	2.15	60 x 2
KPA80	80	76.5	160	166	178	6	2.65	80 x 2.5
KPA100	100	96.5	200	207	221	7	3.15	100 x 3

PIN FOR DK TYPE BRACKETS (ISO)

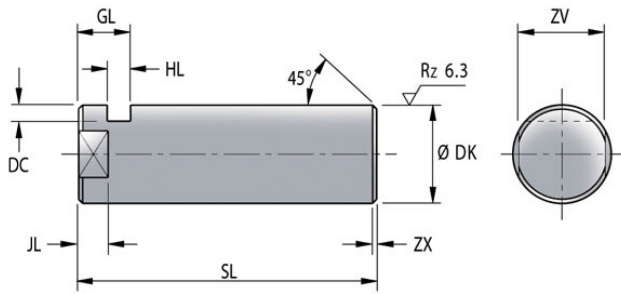
MATERIAL: 16 MN CR5
ISO 8133



ORDER CODE	DK (H6) Ø(mm)	SL (mm)	GL (mm)	HL (mm)	JL (mm)	ZV (mm)	DC (mm)	ZX (mm)
KPB12	12	40	8	3.3	4.5	10	4	1
KPB16	16	50	8	3.3	5.5	13	4	1
KPB20	20	62	10	4.5	5.5	17	5	1.5
KPB25	25	72	10	4.5	5.5	22	5	1.5
KPB30	30	85	13	5.5	7.5	24	6	2
KPB40	40	100	16	6.5	9.5	32	7	2
KPB50	50	122	19	9	10	41	8	2
KPB60	60	145	20	9	11	50	9	2
KPB80	80	190	26	11	15	70	11	3
KPB100	100	235	30	13	15	90	14	3

PIN FOR IKA & IKB TYPE BRACKETS

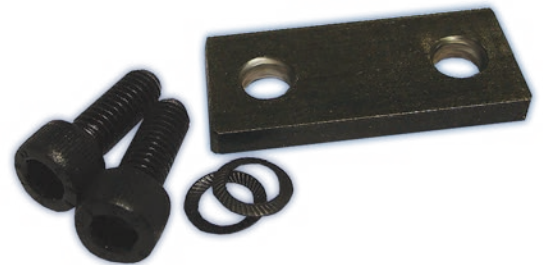
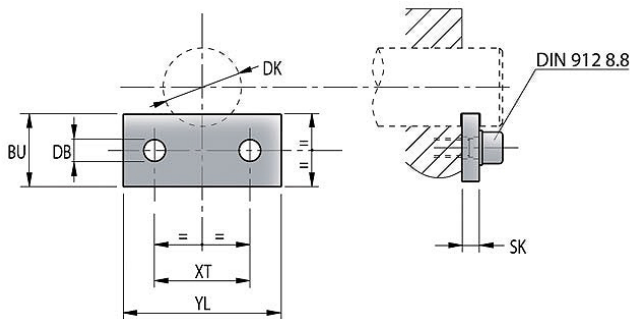
MATERIAL: 16 MN CR5



ORDER CODE	DK (M6) Ø(mm)	SL (mm)	GL (mm)	HL (mm)	JL (mm)	ZV (mm)	DC (mm)	ZX (mm)
KPE10	10	34	8	3.3	4.5	8	3	1
KPE12	12	38	8	3.3	4.5	10	4	1
KPE16	16	46	8	3.3	5.5	13	4	1
KPE20	20	58	10	4.5	5.5	17	5	1.5
KPE25	25	69	10	4.5	6.5	21	5	1.5
KPE32	32	87	13	5.5	8.5	27	6	2
KPE40	40	110	16	6.5	8.5	32	7	2
KPE50	50	133	19	9	8.5	41	8	2
KPE63	63	164	20	9	8.5	55	9	2
KPE80	80	202	26	11	11.5	65	11	3

FIXING PLATES FOR KPB & KPE TYPE PINS (ISO)

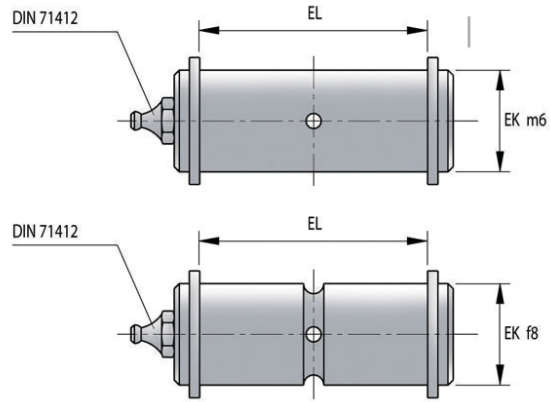
MATERIAL: FE510 - ST52.3
ISO 8133



ORDER CODE	DB (mm)	DK (mm)	BU (mm)	SK (mm)	YL (mm)	XT (mm)	HOLE THREAD (mm)	SAFETY RING	ORDER CODE	DB (mm)	DK (mm)	BU (mm)	SK (mm)	YL (mm)	XT (mm)	HOLE THREAD (mm)	SAFETY RING
PPP10*	5.4	10/12	15	3	20	11	5 x 12	5	PPP60	10.5	60	25	8	80	55	10 x 25	10
PPP12	6.4	12	15	3	27	16	6 x 12	6	PPP63*	10.5	63	25	8	80	55	10 x 25	10
PPP16*	6.4	16	15	3	30	16	6 x 12	6	PPP80	10.5	80	30	10	90	60	10 x 25	10
PPM16	6.4	16	15	3	40	25	6 x 12	6	PPP100	10.5	100	40	12	120	90	10 x 25	10
PPP20	6.4	20	18	4	40	25	6 x 16	6	* = NON STANDARD.								
PPP25	6.4	25	18	4	40	25	6 x 16	6									
PPP30	6.4	30	20	5	45	30	6 x 16	6									
PPP32*	6.4	32	20	5	45	30	6 x 16	6									
PPP40	8.4	40	20	6	62	42	8 x 20	8									
PPP50	8.4	50	25	8	65	45	8 x 20	8									

PIN FOR IKA / IKB TYPE BRACKETS

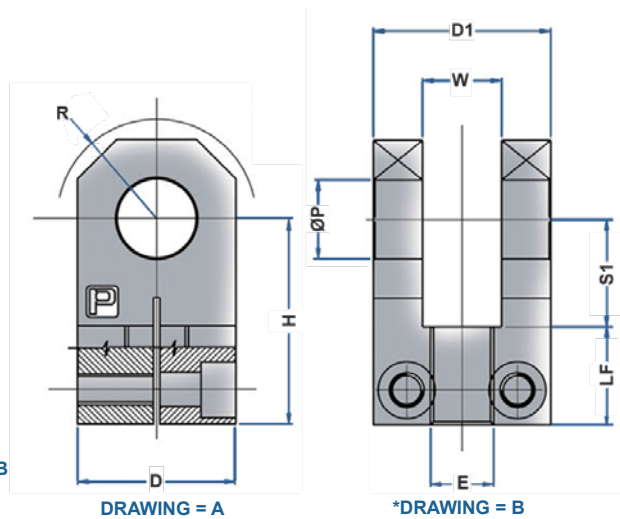
MATERIAL: 16 MN CR5



ORDER CODE (TYPE KPC)	ORDER CODE (TYPE KPD)	EK (F8 / M6) Ø(mm)	EL (H16) (mm)	RATED VALUE (kn)
KPC10	KPD10	10	25	5
KPC12	KPD12	12	29	8
KPC16	KPD16	16	37	12.5
KPC20	KPD20	20	46	20
KPC25	KPD25	25	57	32
KPC32	KPD32	32	72	50
KPC40	KPD40	40	92	80
KPC50	KPD50	50	112	125
KPC63	KPD63	63	142	200
KPC80	KPD80	80	172	320

THREADED FORK ENDS (ISO 8132) - IF SERIES

STEEL - FE510 - ST52.3
ISO 8132



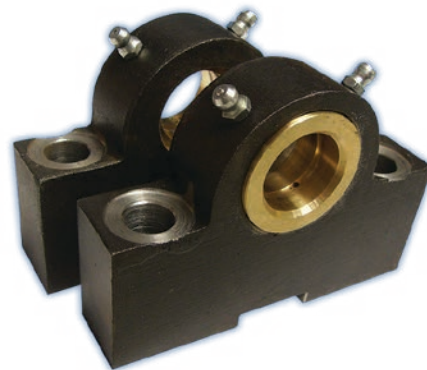
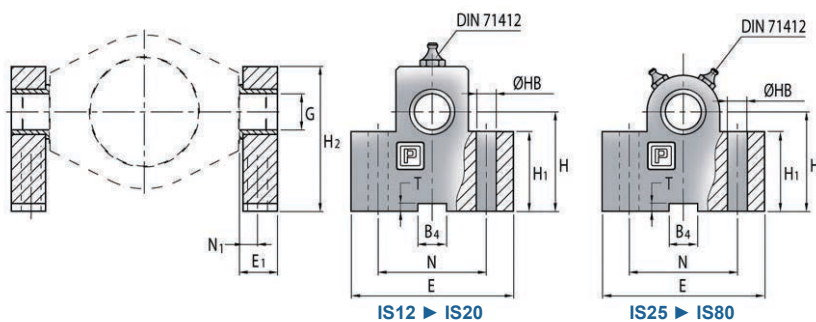
PLEASE NOTE:
• IF10►IF32 ARE SUPPLIED AS PER DRAWING=A.
• IF40►IF80 ARE SUPPLIED WITH RADIUS AS PER *DRAWING=B

PINS AVAILABLE ON PAGES 190 ►192

ORDER CODE	P Ø(mm)	D (mm)	H (mm)	W (mm)	E Ø(mm)	S1 (mm)	D1 (mm)	R R(mm)	LF (mm)
IF10	10	20	37	10	10 x 1.25	18	24	11	19
IF12	12	25	38	12	12 x 1.25	18	28	16	20
IF16	16	30	44	16	14 x 1.5	22	36	20	22
IF20	20	40	52	20	16 x 1.5	27	45	25	25
IF25	25	50	65	25	20 x 1.5	34	56	32	31
IF32	32	65	80	32	27 x 2	42	70	40	38
IF40*	40	80	97	40	33 x 2	52	90	50	45
IF50*	50	100	120	50	42 x 2	64	110	63	56
IF63*	63	120	140	63	48 x 2	75	140	71	65
IF80*	80	150	180	80	64 x 3	94	170	90	86

IS TYPE BRACKET (ISO)

MATERIAL: FE510 - ST52.3
SUPPLIED AS A PAIR
ISO 8132

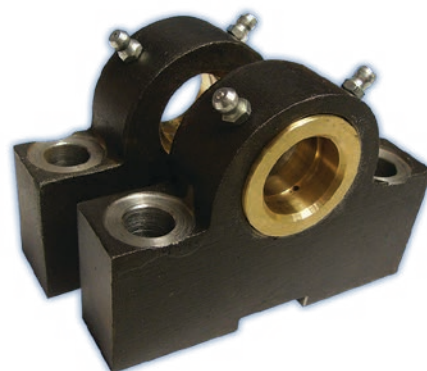
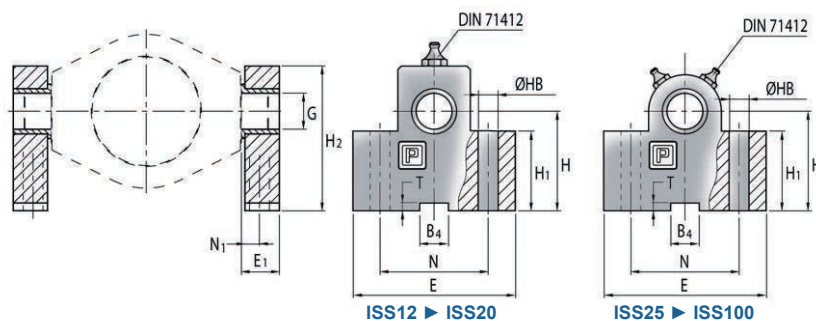


ORDER CODE	H (mm)	H1 (mm)	H2 (mm)	G (H7) (mm)	E (mm)	E1 (mm)	N (mm)	N1 (mm)	B4 (N9) (mm)	T (mm)	HB (H13) Ø(mm)	RATED VALUE (kn)	WEIGHT (kgs)
IS12	34	25	49	12	63	17	40	8	10	3.3	9	8	0.46
IS16	40	30	59	16	80	21	50	10	16	4.3	11	12.5	0.83
IS20	45	38	69	20	90	21	60	10	16	4.3	11	20	1.21
IS25	55	45	80	25	110	26	80	12	25	5.4	13.5	32	2.15
IS32	65	52	100	32	150	33	110	15	25	5.4	17.5	50	4.63
IS40	76	60	120	40	170	41	125	16	36	8.4	22	80	7.78
IS50	95	75	140	50	210	51	160	20	36	8.4	26	125	14.3
IS63	112	85	177	63	265	61	200	25	50	11.4	33	200	23.4
IS80	140	112	220	80	325	81	250	31	50	11.4	39	320	53.1

PLEASE NOTE: TRUNNIONS ARE AVAILABLE ON PAGE 91.

ISS TYPE BRACKET

MATERIAL: FE510 - ST52.3
SUPPLIED AS A PAIR
NON ISO STANDARD - BIGGER DISTANCE BETWEEN CENTRES

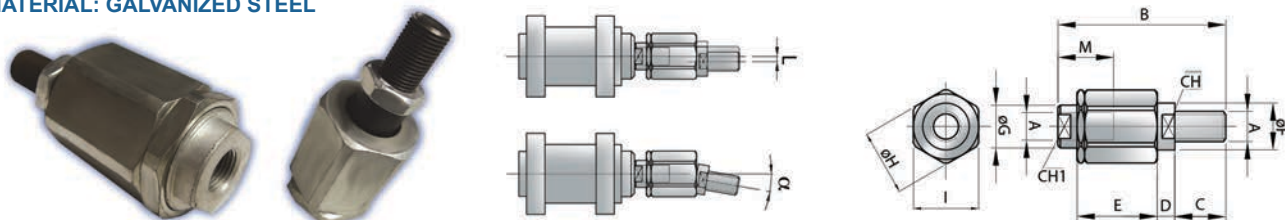


ORDER CODE	H (mm)	H1 (mm)	H2 (mm)	G (H7) (mm)	E (mm)	E1 (mm)	N (mm)	N1 (mm)	B4 (N9) (mm)	T (mm)	HB (H13) Ø(mm)	RATED VALUE (kn)	WEIGHT (kgs)
ISS 12	38	25	55	12	63	17	40	8	10	3.3	9	8	0.48
ISS 16	45	30	65	16	80	21	50	10	16	4.3	11	12.5	0.87
ISS 20	55	38	80	20	90	21	60	10	16	4.3	11	20	1.30
ISS 25	65	45	90	25	110	26	80	12	25	5.4	14	32	2.35
ISS 32	75	52	110	32	150	33	110	15	25	5.4	18	50	4.80
ISS 40	95	60	140	40	170	41	125	16	36	8.4	22	80	8.10
ISS 50	105	72	150	50	210	51	160	20	36	8.4	26	125	21.10
ISS 63	125	87	195	63	265	61	200	25	50	11.4	33	200	31.30
ISS 80	150	112	230	80	325	81	250	31	50	11.4	39	320	69.30
ISS 100	200	150	300	100	410	101	320	42	63	12.4	52	500	112

PLEASE NOTE: TRUNNIONS ARE AVAILABLE ON PAGE 91.

SELF-ALIGNING JOINTS

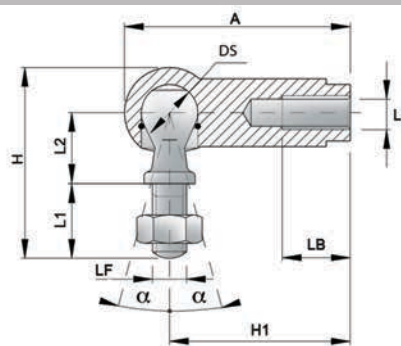
MATERIAL: GALVANIZED STEEL



ORDER CODE	A Ø(mm)	B (mm)	C (mm)	D (mm)	E (mm)	F Ø(mm)	G Ø(mm)	H Ø(mm)	I (mm)	L (mm)	M (mm)	CH (mm)	MOVEMENT ANGLE (α°)	CH1 (mm)	WEIGHT (grams)
SAU40006	M6 x 1	35	10	3.5	17.5	6	8.5	14.5	13	1	10	5	10	7	25
SAU40008	M8 x 1.25	57	20	4	28.5	8	12.5	19	17	2	7	11		60	
SAU40010	M10 x 1.25	71	20	5	35	14	22	32	30		20	12		19	220
SAU40011	M10 x 1.5		230												
SAU40012	M12 x 1.25	75	24	8	54	22	32	45	41		32	20		30	230
SAU40013	M12 x 1.75		660												
SAU40016	M16 x 1.5	103	32	8	54	22	32	45	41		40	20		30	700
SAU40020	M20 x 1.5	119	40												

ANGULAR JOINTS (DIN)

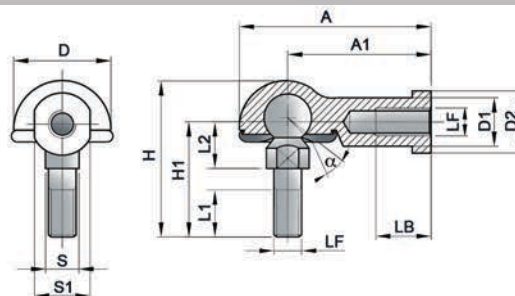
MATERIAL: AVP
DIN71802



ORDER CODE	LF Ø(mm)	LB (mm)	L1 (mm)	L2 (mm)	A (mm)	H (mm)	H1 (mm)	DS (mm)	MOVEMENT ANGLE (α°)	WEIGHT (grams)
SA10480	M5 x 0.8	12	12.5	11	32	31	24.5	10	18	28
SA10481	M6 x 1	12	12.5	11	32	31	24.5	10		39
SA10482	M8 x 1.25	14	16.5	13	39	40	29.5	13		68
SA10483	M10 x 1.5	18	20	17	46	49	34	16		112
SA10484	M14 x 1.5	22	28	23	60	66	45	18		164

ANGULAR JOINTS

MATERIAL: GALVANIZED STEEL



ORDER CODE	LF Ø(mm)	D1 Ø(mm)	D2 Ø(mm)	D (mm)	H (mm)	H1 (mm)	A (mm)	A1 (mm)	L1 (mm)	L2 (mm)	LB (mm)	S (mm)	S1 (mm)	STATIC LOAD (kn)	MOVEMENT ANGLE (α°)	WEIGHT (grams)
SA20005	M5	9	11	16	29	21	35	27	8	10	14	7	9	2.2	25	28
SA20006	M6	10	13	19	35.5	26	40	30	11	11	14	8	11	3.5		39
SA20008	M8	12.5	16	23	42.5	31	48	36	12	14	17	10	14	6.6		68
SA20010	M10 x 1.25	15	19	27	50.5	37	57	43	15	17	21	11	17	10	25	112
SA20012	M12 x 1.25	17.5	22	31	57.5	42	66	50	17	19	25	15	19	16		164
SA20014	M14 x 1.5	20	25	35	73.5	56	75	57	22	21.5	26	17	22	19		254
SA20016	M16 x 1.5	22	27	39	79.5	60	84	64	23	23.5	32	19	22	26	20	336

THE FOLLOWING PAGES INCLUDE:

- HYDRAULIC JACKS, CYLINDERS
- HYDRAULIC HAND & FOOT PUMPS
- MANUAL AND HYDRAULIC PULLERS
- HIGH PRESSURE HOSES
- HIGH PRESSURE COUPLINGS & FITTINGS
- HIGH PRESSURE VALVES & ACCESSORIES



OFFERING PREMIUM QUALITY
COMPONENTS AT AFFORDABLE PRICES

POWERRAM CE
HYDRAULIC TOOLS

CYLINDER SPECIFICATION:

STOP RING FOR PISTON
BLOW-OUT PROTECTION.

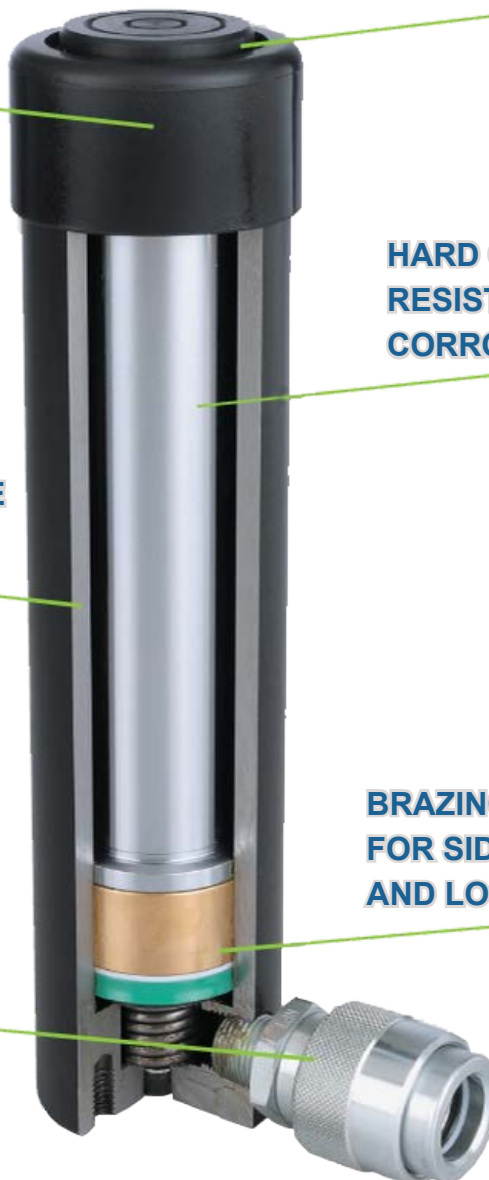
STANDARD HEAVY DUTY,
HEAT TREATED LOAD CAP.

PRECISION POLISHED BORE
MINIMISES FRICTION AND
WEAR.

HARD CHROME PLATED RODS
RESIST SCORING AND
CORROSION.

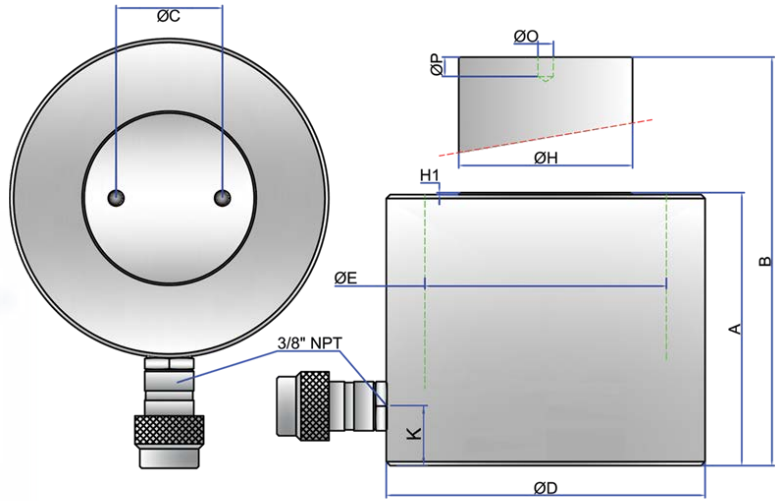
QUALITY HIGH FLOW
COUPLERS WITH DUST
CAPS.

BRAZING FINISH ON PISTON
FOR SIDE LOAD PROTECTION
AND LONG LIFE.



HYDRAULIC CYLINDERS - SCS SERIES

CAPACITY 10 ► 90 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 STROKE 38mm ► 62mm
 SINGLE ACTING SPRING ASSISTED RETURN
 PISTON HARD CHROMED
 INSIDE RE-POLISHED
 OUTSIDE BLASTED & BLACK NITRIDE FINISH



ORDER CODE	CAPACITY (ton)	STROKE (mm)	OIL CAPACITY (cm ³)	A (mm)	B (mm)	C Ø(mm)	D Ø(mm)	E Ø(mm)	H Ø(mm)	O Ø(mm)	K (mm)	P (mm)	H1 (mm)	WEIGHT (kgs)
SCS101	10	38	55	88	126	26	78	42.8	38	M4	17.5	8	5	4.1
SCS201	20	45	127	98	143	39	97	60	50.8	M5		9	3	5.0
SCS302	30	62	274	117	179	39	107	75	63.5		8	3	6.8	
SCS502	50	60	429	122	182	39	127	95	70		19	8	2	10.9
SCS1002	100	58	830	141.5	199.5	55	165	135	92	M8	10	1.5	22.7	

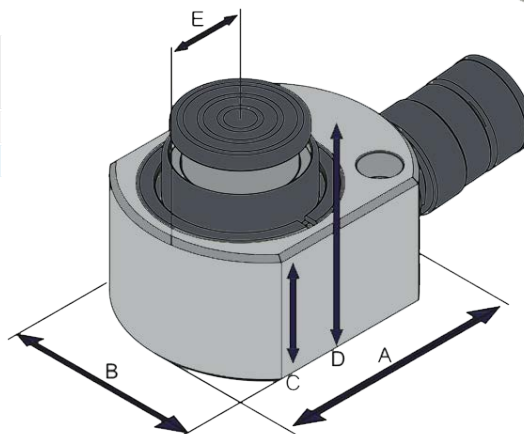
NEW! TELESCOPIC CYLINDERS - SLS SERIES

CAPACITY 10 ► 20 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 STROKE 25mm
 SINGLE ACTING SPRING ASSISTED RETURN
 PISTON HARD CHROMED
 OUTSIDE BLASTED & BLACK NITRIDE FINISH

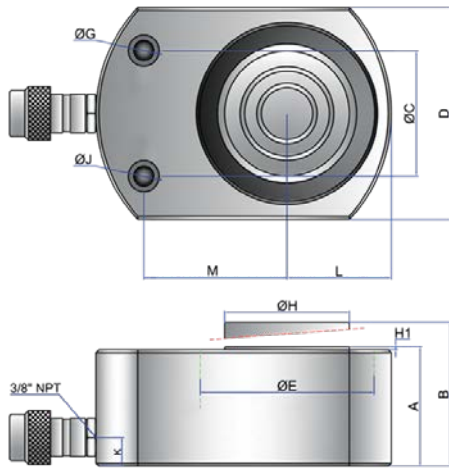


ORDER CODE	1st STAGE CAPACITY (ton)	1st STAGE STROKE (mm)	2nd STAGE CAPACITY (ton)	2nd STAGE STROKE (mm)
SLS10-05	10	12	5	13
SLS20-10	20	12	10	13

ORDER CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
SLS10-05	82	60	42	67	30
SLS20-10	100	78	51	76	39



HYDRAULIC CYLINDERS - SLS SERIES

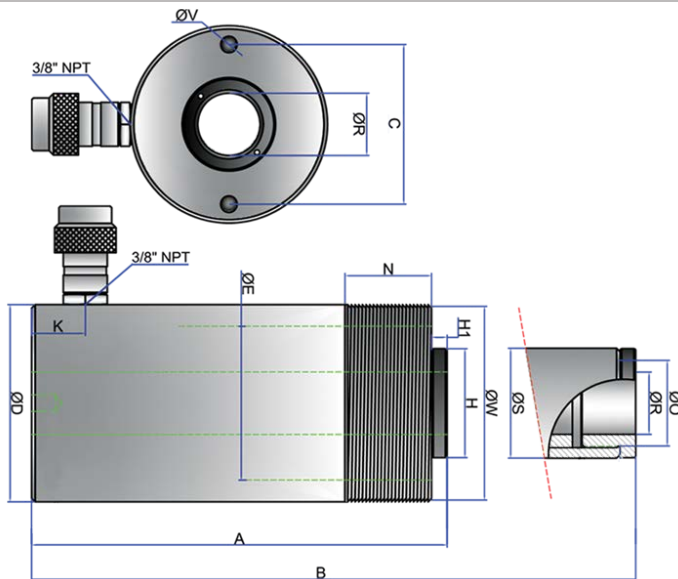


CAPACITY 5 ▶ 150 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 STROKE 6mm ▶ 17mm
 SINGLE ACTING SPRING ASSISTED RETURN
 PISTON HARD CHROMED
 INSIDE RE-POLISHED
 OUTSIDE BLASTED & BLACK NITRIDE FINISH



ORDER CODE	CAPACITY (ton)	STROKE (mm)	OIL CAPACITY (cm ³)	A (mm)	B (mm)	C Ø(mm)	D length x width (mm)	E Ø(mm)	H Ø(mm)	G Ø(mm)	K (mm)	J Ø(mm)	H1 (mm)	L (mm)	M (mm)	WEIGHT (kgs)
SLS50	5	6	4.5	33	39	28.5	58.5 x 44	31	25.4	5.3	16	9.5	1	22	22	1.0
SLS100	10	12	18	42	54	36.5	82.5 x 60	44	38	7.5	19	11		30	34	1.4
SLS200	20	12	34	51	63	49.3	100 x 78	60	50.8	10	23	15		39	39	3.1
SLS300	30	13	54	58	71	52.3	117.5 x 95	73	63.5	10		16	47.5	47.5	4.5	
SLS500	50	16	113	66	82	66.5	145 x 115	95	70	11		19	57.5	58	6.8	
SLS750	75	16	180	79	95	76.2	170 x 145	120	82.5	13.5		20.5	72.5	70	11.3	
SLS1000	100	16	229	85	101	76.2	185 x 160	135	92	13.5		20.5	80	78	14.5	
SLS1500	150	17	363	100	117	117	225 x 195	165	115	13.5		20.5	97.5	85	26.3	

HYDRAULIC CYLINDERS - SHS SERIES



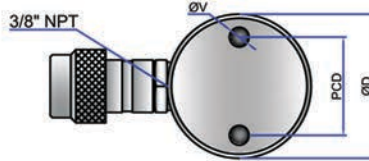
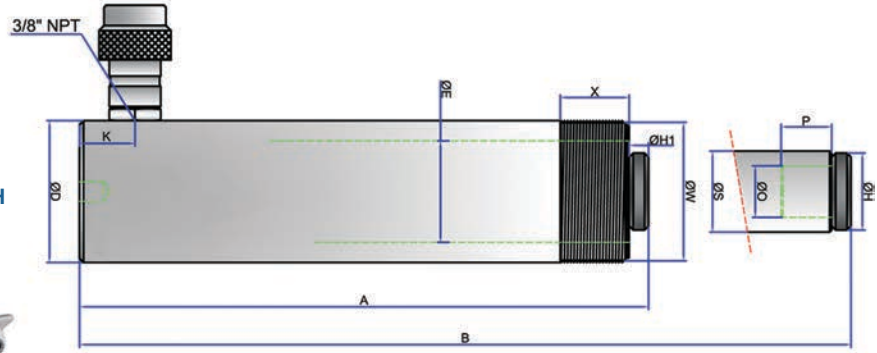
CAPACITY 12 ▶ 100 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 STROKE 8mm ▶ 160mm
 SINGLE ACTING SPRING ASSISTED RETURN
 PISTON HARD CHROMED
 INSIDE RE-POLISHED
 OUTSIDE BLASTED & BLACK NITRIDE FINISH



ORDER CODE	CAP' (ton)	STROKE (mm)	OIL CAP' (cm ³)	A (mm)	B (mm)	C (mm)	D Ø(mm)	E Ø(mm)	H (mm)	S Ø(mm)	H1 (mm)	K (mm)	W Ø(unc)	O Ø(unc)	V Ø(unc)	R CENT' HOLE Ø(mm)	N (mm)	WEIGHT (kgs)
SHS120	12	8	14.8	60	68	50.8	73	54.1	-	35	-	12.5	2-3/4"-16	3/4"-16	5/16"-18	19.5	30	1.5
SHS1211		42	79	120	162			55										3
SHS121		42	79	120	162			55										3
SHS123		76	143.2	184	260			55										4.2
SHS202	20	51	173	162	213	82.6	98.5	75	54	55	7	19	3-7/8"-12	1-9/16"-16	3/8"-16	27	38	7.5
SHS206		155	527	306	461													75
SHS302	30	65	310	178.5	243.5	92	117	90	59.9	65	0.5	21.5	4-1/2"-12	1-7/8"-16	3/8"-16	37	42	11
SHS306		160	763	330	490													90
SHS603	60	76	680	247.5	323.5	130	158.6	125	89	90	12.5	32	6-1/4"-12	2-3/4"-16	1/2"-12	54	50	26.4
SHS606		152	1360	323.5	475.5													125
SHS1003	100	76	1085	254	330	178	213	165	125	125	12	38	8-3/8"-12	4"-16	5/8"-11	79	60	50.1

HYDRAULIC CYLINDERS - SSS SERIES

CAPACITY 5 ▶ 100 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 STROKE 25mm ▶ 362mm
 SINGLE ACTING SPRING ASSISTED RETURN
 PISTON HARD CHROMED
 INSIDE RE-POLISHED
 OUTSIDE BLASTED & BLACK NITRIDE FINISH



ORDER CODE	CAP' (ton)	STROKE (mm)	OIL CAP' (cm ³)	A (mm)	B (mm)	D Ø(mm)	E Ø(mm)	S Ø(mm)	K (mm)	H (mm)	H1 (mm)	P (mm)	PCD Ø(mm)	X (mm)	O Ø(un)	V Ø(un)	W Ø(unf)	WEIGHT (kgs)
SSS51	5	26	17	110	136	38	28.6	25.4	19	25	6	14	25	28	3/4"-16	1/4"-20	1-1/2"-16	1
SSS53		76	54	165	241													1.5
SSS55		127	90	216	343													1.9
SSS57		183	129	273	456													2.4
SSS59		232	164	324	556													2.8
SSS101	10	25.4	36.5	90	115.4	57	42.8	38	19	40	6	19	39	30	1"-8	5/16"-18	2-1/4"-14	1.8
SSS102		51	73	121	172													2.3
SSS104		101	145	171	272													3.3
SSS106		152.5	242	247	399.5													4.4
SSS108		203.5	323	298	501.5													5.4
SSS1010		253.5	406	350	605.5													6.4
SSS1012		305.5	486	400	705.5													6.8
SSS1014	356.5	567	451	807.5	8.2													
SSS151	15	26.5	65	124	150.5	73	55	40	19	38	9.6	25.4	47.7	30	1"-8	3/8"-16	2-3/4"-16	3.3
SSS152		52.5	85	149.6	202.1													4.1
SSS154		102.5	243	200	302.5													5.0
SSS156		153	363	271.5	424.6													6.8
SSS158		203.5	488	322	525.5													8.2
SSS1510		254.5	604	373	627.5													9.5
SSS1512		305	724	424	729													10.9
SSS1514		355.7	845	474.6	830.3													11.8
SSS251	25	25.5	98	139.5	165	88	70	55	25	50	10.5	25.4	58	50	1-1/2"-16	1/2"-13	3-5/16"-12	5.9
SSS252		51	196	165	215.8													6.4
SSS254		102	392	216	317.5													8.2
SSS256		158.5	610	273	425.4													10
SSS258		209.5	806	324	534													12.2
SSS2510		260.5	1002	375	636													14.1
SSS2512		311	1196	425.5	736.5													16.3
SSS2514	361.5	1390	476	838	17.7													
SSS308	30	209.5	925	387.5	597	103	75	60	57	50	10.5	25.4	-	50	1-1/2"-16	-	4"-12	18.1
SSS502	50	51	361	177	228	127	95	80	33	70	3	-	95	55	-	1/2"-13	5"-12	15
SSS504		101.5	719	229	330.5													19.1
SSS506		157.5	1116	283	440.5													23.1
SSS5013		335.5	2377	461	796.5													37.6
SSS756	75	155	1752	285	440	152	120	95	50	70	3	-	-	45	-	-	5-3/4"-12	29.5
SSS7513		333.5	3770	491	824.5													59
SSS1006	100	170	2432	358	528	177	135	105	41	70	3	-	139	45	-	3/4"-10	6-7/8"-12	59
SSS10010		260	3720	448	708													72.6

DOUBLE ACTING HYDRAULIC CYLINDERS - DAC & DAH SERIES

CAPACITY 10 ▶ 100 TON (DAC SERIES) & 30 ▶ 100 TON (DAH 'HOLLOW' SERIES)

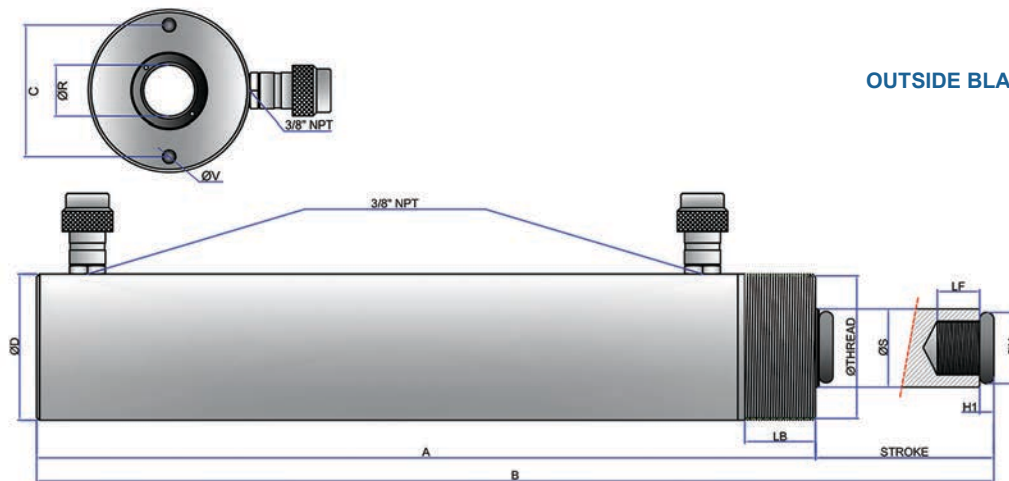
MAXIMUM PRESSURE 10'000 PSI (700 BAR)

STROKE 76mm ▶ 470mm

PISTON HARD CHROMED

INSIDE RE-POLISHED

OUTSIDE BLASTED & BLACK NITRIDE FINISH



ORDER CODE	CAPACITY (ton)		STROKE (mm)	OIL CAP' (cm ³)		A (mm)	B (mm)	D Ø(mm)	LB (mm)	THREAD Ø(unf)	S Ø(mm)	H Ø(mm)	H1 (mm)	LF (mm)	C Ø(mm)	V Ø(unc)	R CENT HOLE Ø(mm)	WEIGHT (kgs)
	PUSH	PULL		PUSH	PULL													
DAC1010	10	4	251	399	144	408	659	78	27	2-1/4"-14	35	40	8	25.4	-	-	-	13
DAC1012			301	478	172	458	759											15
DAC308	30	14	209	923	426	387	596	103	50	4"-12	55	50	12	25.4	-	-	-	20
DAC3014			368	1625	751	547	915											29
DAC506	50	14	150	1062	309	331	481	127	50	5"-12	80	70	5	25.4	88.9	5/8"-11	-	29
DAC5013			330	2338	680	511	841											43
DAC5018	75	29.5	470	3330	968	675	1145	152	45	5-3/4"-12	95	70	5	38	114.3	3/4"-10	-	59
DAC756			155	1752	654	348	503											40
DAC7513	100	43	333	3764	1405	526	859	177	50	6-7/8"-12	95	80	5	35	139.7	3/4"-10	-	58
DAC1006			160	2289	1155	358	518											59
DAC10013	100	43	330	4721	2383	528	858	213	60	8-3/8"-12	125	125	12	30	178	5/8"-11	79	83
DAH307			178	849	541	330	508											22
DAH3010	30	21	257	1226	782	431	688	117	42	4-1/2"-12	65	59.5	0.5	25	92	3/8"-16	34	27
DAH603			89	797	526	247.5	336.5						10					28
DAH606	60	41	165	1477	975	323.5	488.5	158.6	50	6-1/4"-12	90	89	12.5	25	130	1/2"-13	54	35
DAH6010			257	2300	1518	437.5	694.5											45
DAH1003	100	64	76	1086	692	254	330	213	60	8-3/8"-12	125	125	12	30	178	5/8"-11	79	52
DAH1006			152	2172	1384	325	477											65
DAH10010	100	64	256	3656	2331	462	718	213	60	8-3/8"-12	125	125	12	30	178	5/8"-11	79	88

LOW HEIGHT HYDRAULIC CYLINDERS - CJC SERIES

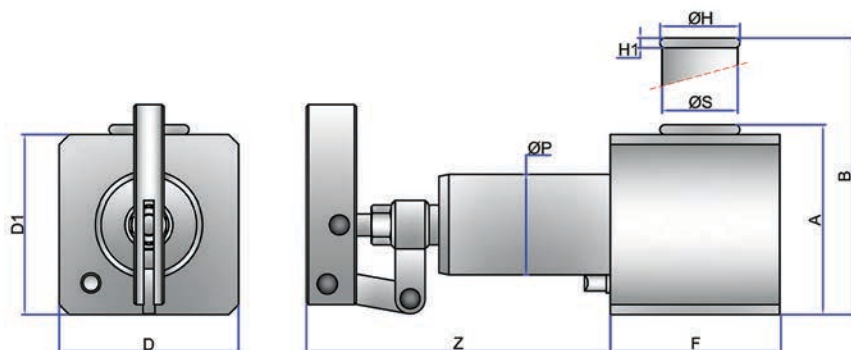
CAPACITY 10 ▶ 20 TON

MAXIMUM PRESSURE 10'000 PSI (700 BAR)

SPRING ASSISTED RETURN

PISTON HARD CHROMED

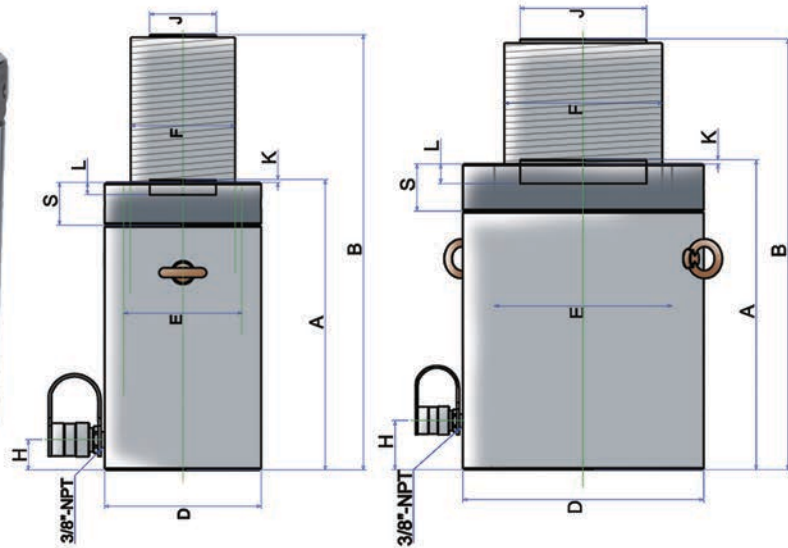
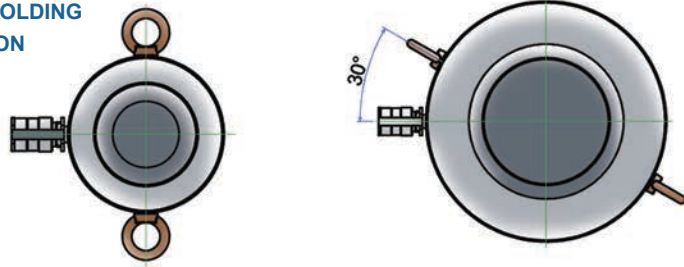
INSIDE RE-POLISHED



ORDER CODE	CAPACITY (ton)	STROKE (mm)	OIL CAPACITY (cm ³)	A (mm)	B (mm)	H Ø(mm)	H1 (mm)	F (mm)	S Ø(mm)	P Ø(mm)	Z (mm)	D (mm)	D1 (mm)	WEIGHT (kgs)
CJC100	10	41	155	95	136	40	4.9	85	37.95	53.8	152.5	90	90	5.5
CJC200	20	41	250	95	136	40	4.9	110	50.8	69.8	152.5	110	90	8

HYDRAULIC CYLINDERS - LOCK NUT SERIES

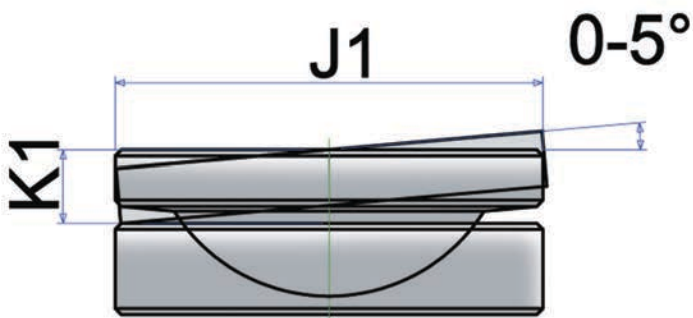
WITHSTANDS SIDELOAD FORCES UP TO 5% (RATED CAPACITY)
 SAFETY LOCK NUT DESIGN FOR MECHANICAL LOAD HOLDING
 STOP RING FITTED FOR PISTON BLOW OUT PROTECTION
 SINGLE ACTING LOAD RETURN
 TILT SADDLE OPTION
 CAPACITY 50 ▶ 1000 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 STROKE 50mm ▶ 300mm
 OUTSIDE BLASTED & BLACK NITRIDE FINISH



ORDER CODE	CAPACITY (ton)	STROKE (mm)	OIL CAPACITY (cm ³)	A (mm)	B (mm)	D Ø(mm)	E Ø(mm)	F Ø(mm)	H (mm)	J Ø(mm)	K (mm)	L (mm)	S (mm)	WEIGHT (kgs)
JLLC502	50	50	354.5	164	214	125	95	Tr95x4	20	70	2	13	35	15
JLLC506		150	1063.5	264	414	125	95		20		2	13	35	25
JLLC5010		250	1772.5	364	614	125	95		20		2	13	35	35
JLLC1002	100	50	665	187	237	165	130	Tr130x4	32	70	2	13	45	30
JLLC1006		150	1995	287	437	165	130		32		2	13	45	48
JLLC10010		250	3325	387	637	165	130		32		2	13	45	64
JLLC1502	150	50	1005	209	259	205	160	Tr160x6	49	125	2	25	45	53
JLLC1506		150	3015	309	459	205	160		49		2	25	45	78
JLLC15012		300	6030	459	759	205	160		49		2	25	45	117
JLLC2002	200	50	1345	243	293	235	185	Tr185x6	52	125	2	25	50	83
JLLC2006		150	4035	343	493	235	185		52		2	25	50	117
JLLC20012		300	8070	493	793	235	185		52		2	25	50	170
JLLC3002	300	50	2167.5	295	345	305	235	Tr235x6	62	160	5	25	60	173
JLLC3006		150	6502.5	395	545	305	235		62		5	25	60	233
JLLC30012		300	13005	545	845	305	235		62		5	25	60	323
JLLC4002	400	50	2755	335	385	355	265	Tr265x6	76	160	5	25	70	250
JLLC4006		150	8265	435	585	355	265		76		5	25	70	327
JLLC40012		300	16530	585	885	355	265		76		5	25	70	441
JLLC5002	500	50	3532.5	375	425	395	300	Tr300x6	81	180	5	25	80	367
JLLC5006		150	10597.5	475	625	395	300		81		5	25	80	466
JLLC50012		300	21195	625	925	395	300		81		5	25	80	617
JLLC6002	600	50	4274	395	445	425	330	Tr330x6	89	195	5	25	85	446
JLLC6006		150	12823	495	645	425	330		89		5	25	85	562
JLLC60012		300	25646	645	945	425	330		89		5	25	85	737
JLLC8002	800	50	5970	455	505	505	390	Tr390x6	105	225	5	25	100	709
JLLC8006		150	17910	555	705	505	390		105		5	25	100	870
JLLC80012		300	35820	705	1005	505	390		105		5	25	100	1110
JLLC10002	1000	50	7257	495	545	555	430	Tr430x6	108	250	5	25	110	949
JLLC10006		150	21772	595	745	555	430		108		5	25	110	1141
JLLC100012		300	43544	745	1045	555	430		108		5	25	110	1430

TILT SADDLE FOR 'JLLC' LOCK NUT CYLINDERS

OPTIONAL TILT SADDLE
SPECIFICALLY FITS 'JLLC' CYLINDER RANGE
0-5° MAXIMUM TILT RANGE



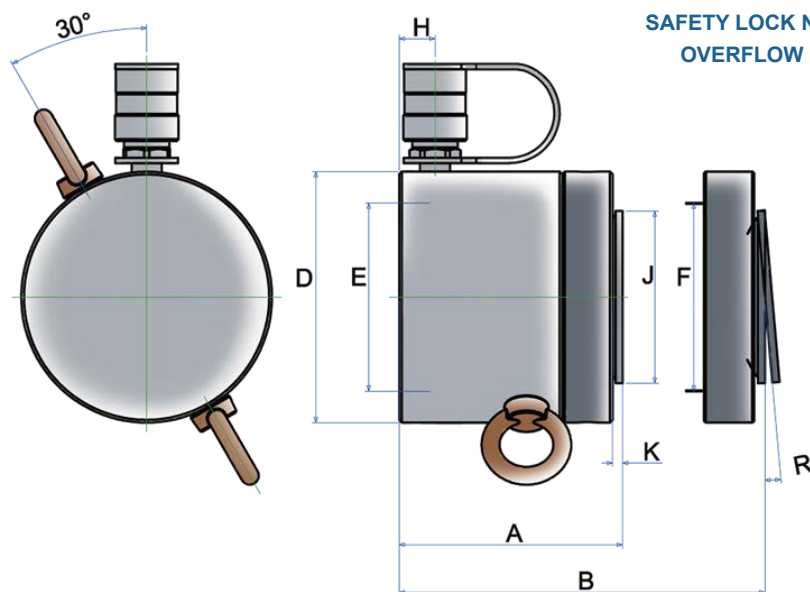
ORDER CODE	J1 (mm)	K1 (mm)	FITS MODEL NUMBER
TSA100	70	24	JLLC502
			JLLC506
			JLLC5010
			JLLC1002
			JLLC1006
			JLLC10010
TSA200	125	20	JLLC1502
			JLLC1506
			JLLC15012
			JLLC2002
			JLLC2006
			JLLC20012

ORDER CODE	J1 (mm)	K1 (mm)	FITS MODEL NUMBER
TSA300	195	75	JLLC3002
			JLLC3006
			JLLC30012
TSA400	225	85	JLLC4002
			JLLC4006
			JLLC40012
TSA500	250	90	JLLC5002
			JLLC5006
			JLLC50012

ORDER CODE	J1 (mm)	K1 (mm)	FITS MODEL NUMBER
TSA600	275	95	JLLC6002
			JLLC6006
			JLLC60012
TSA800	320	120	JLLC8002
			JLLC8006
			JLLC80012
TSA1000	360	135	JLLC10002
			JLLC10006
			JLLC100012

HYDRAULIC CYLINDERS - LOCK NUT SERIES (LOW HEIGHT)

WITHSTANDS SIDELOAD FORCES UP TO 3% (RATED CAPACITY)
SAFETY LOCK NUT DESIGN FOR MECHANICAL LOAD HOLDING
OVERFLOW PORT FUNCTION (ACTS AS A STROKE LIMITER)
SINGLE ACTING LOAD RETURN
TILT SADDLE OPTION
CAPACITY 60 ► 520 TON
MAXIMUM PRESSURE 10'000 PSI (700 BAR)
OUTSIDE BLASTED & BLACK NITRIDE FINISH



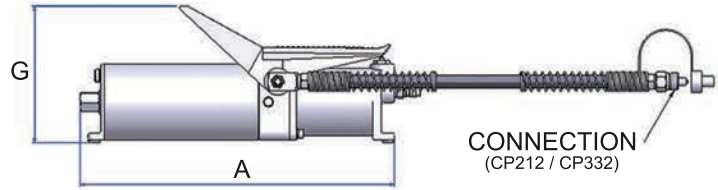
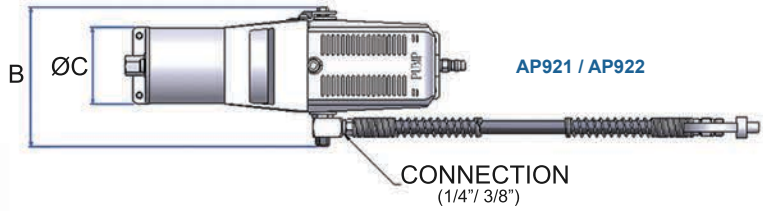
ORDER CODE	CAPACITY (ton)	STROKE (mm)	OIL CAPACITY (cm ³)	A (mm)	B (mm)	D Ø(mm)	E Ø(mm)	F Ø(mm)	H (mm)	J Ø(mm)	K (mm)	R (tilt ang°)	S (mm)	WEIGHT (kgs)
JLPC602	60	50	433	125	175	140	105	Tr105x6	20	96	6	5°	28	15
JLPC1002	100		715	137	187	175	135	Tr135x6	21	126	8	5°	31	26
JLPC1502	150	45	963	148	193	220	165	Tr165x6	27	150	9	5°	40	44
JLPC2002	200		1273.5	155	200	245	190	Tr190x6	30	180	10	5°	43	57
JLPC2502	250		1710	159	204	275	215	Tr215x6	32	200	11	5°	44	74
JLPC4002	400		2574	178	223	350	270	Tr270x6	39	250	11	5°	55	134
JLPC5002	520		3179	192	237	400	300	Tr300x6	48	285	10	5°	62	189

AIR / HYDRAULIC PUMPS

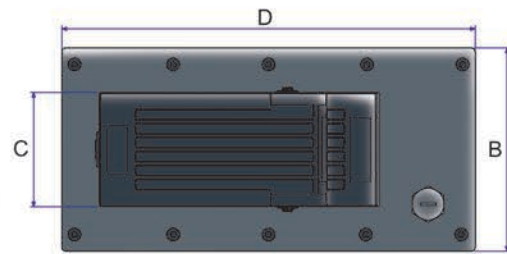
RESERVOIR CAPACITY 750 ▶ 8000 (C.C)
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 SINGLE AND DOUBLE ACTING DESIGNS
 AIR CONSUMPTION 9CFM
 RUGGED CONSTRUCTION
 BUILT FOR LONG SERVICE LIFE



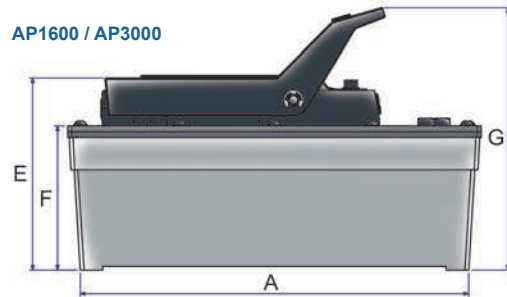
AP921 / AP922



AP1600 / AP1600D



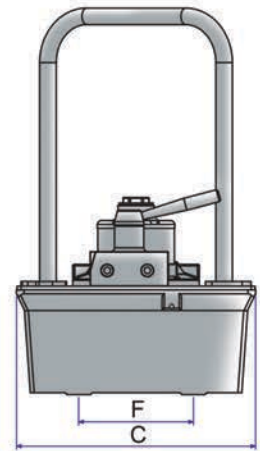
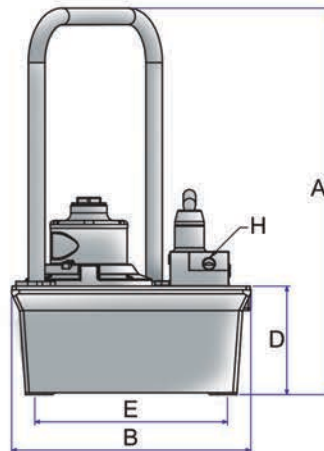
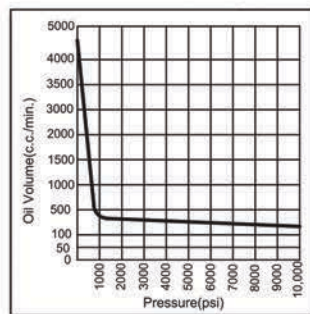
AP1600 / AP3000



AP18S



AP18



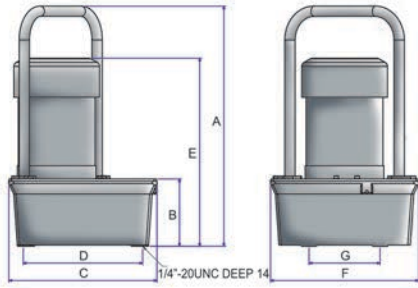
ORDER CODE	RESERVOIR CAPACITY (cm ³)	AIR USAGE (cfm)	TYPE	VALVE		A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	CONNECTION Ø (npt)	WEIGHT (kgs)
				TYPE	FUNCTION									
AP921	750	9	SINGLE ACTING	2 POSITION / 2 WAY	ADVANCE / RETRACT*	442	170	89	-	-	-	179	1/4" (CP212 COUPLER)	5.4
AP922						-	-	-	3/8" (CP332 COUPLER)	5.4				
AP18S	8000	9	SINGLE ACTING	2 POSITION / 2 WAY	ADVANCE / RETRACT*	505	312	312	142	251	149	-	3/8"	20**
AP1600S	1600	-	-	-	-	242	128	90	258	154	114	205	-	7.3
AP3000S	3000	-	-	-	-	305	160	90	325	152	114	205	-	10

AP18D	8000	9	DOUBLE ACTING	3 POSITION / 4 WAY	ADVANCE / HOLD / RETRACT	505	312	312	142	251	149	-	3/8"	20**
AP1600D	1600					242	128	90	258	154	114	205	-	7.3
AP3000D	3000					305	160	90	325	152	114	205	-	10

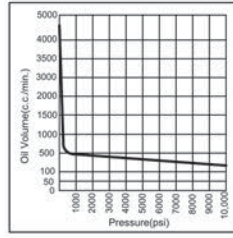
* = HOLDS PRESSURE IN ADVANCE POSITION WHEN VALVE MOTOR IS SHUT OFF.

** = WEIGHT EXCLUDING HYDRAULIC OIL.

ELECTRIC / HYDRAULIC PUMPS (1/2 HP & 1- 1/2 HP)

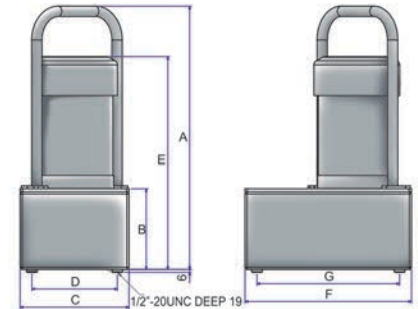


EP13 + EP18

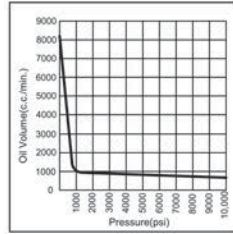


7000 ► 11000 C.C RESERVOIR
 MAX' PRESSURE 10'000 PSI (700 BAR)
 BUILT FOR CONTINUOUS DUTY
 SINGLE AND DOUBLE ACTING DESIGNS
 2 STAGE FAST CYCLE TIMES
 50/60Hz BRUSHLESS MOTOR
 MEETS CE REQUIREMENTS
 3M REMOTE CONTROL CORD

EP13



EP211



EP211D

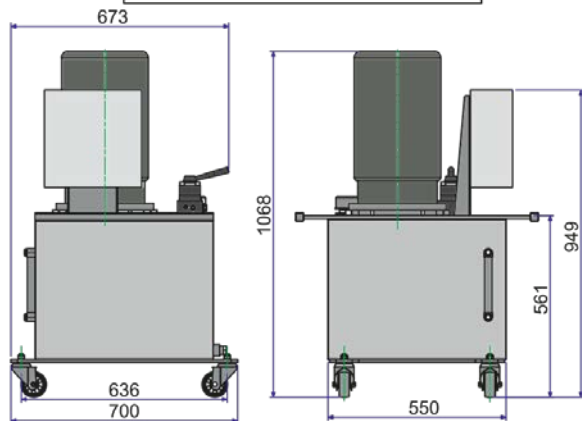
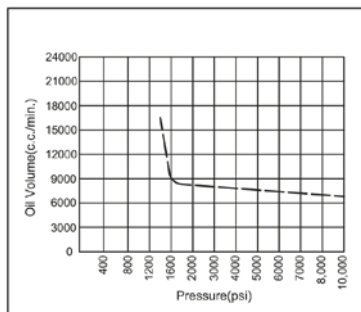


EP18D

ORDER CODE	RESERVOIR CAPACITY (cm ³)	RPM	MOTOR	VALVE		A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	WEIGHT (kgs)
				TYPE	FUNCTION								
EP13	3000	2560	220V, 0.37KW	2 POSITION / 2 WAY	ADVANCE / HOLD / RETRACT	511	149	296	251	405	270	149.4	25.8*
EP18S	8000	2560	220V, 0.37KW			505	142	312	251	395	312	149.4	31*
EP211S	11000	2880	220V, 1.12KW			555	170	229	180	480	350	300	37*
EP13D	3000	2560	220V, 0.37KW	3 POSITION / 4 WAY	ADVANCE / HOLD / RETRACT	511	149	296	251	405	270	149.4	25.8*
EP18D	8000	2560	220V, 0.37KW			505	142	312	251	395	312	149.4	31*
EP211D	11000	2880	220V, 1.12KW			555	170	229	180	480	350	300	37*

* = WEIGHT EXCLUDING HYDRAULIC OIL. ** SOLENOID CHANGE OVER VERSIONS AVAILABLE **

NEW! ELECTRIC / HYDRAULIC PUMPS (10 HP)



100 LITRE RESERVOIR (80 LITRE USEABLE)
 MAX' PRESSURE 10'000 PSI (700 BAR)
 LOW NOISE LEVEL 73 - 80 dBA
 3 PHASE MOTOR WITH THERMAL OVERLOAD PROTECTION
 DOUBLE ACTING DESIGNS
 24V CONTROL CIRCUITS WITH REMOTE CORD



EP5100D



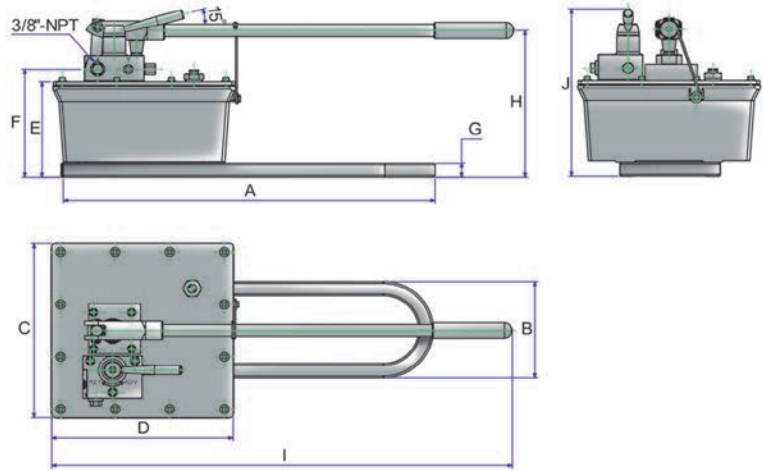
EP5100DS

ORDER CODE	RESERVOIR CAPACITY (cm ³)	RPM	MOTOR	VALVE		AMP DRAW AT 10,000 PSI	WEIGHT (kgs)	OIL DELIVERY (L/Min)			
				TYPE	FUNCTION			100 PSI	1000 PSI	5000 PSI	10000 PSI
EP5100D	100,000	1437	7.46 kW 380V	3 POSITION / 4 WAY	ADVANCE / HOLD / RETRACT	6	232	16	14	6	5.6
EP5100DS	100,000	1437	50 Hz, 3 PHASE			6	241				

* = WEIGHT EXCLUDING HYDRAULIC OIL.

7 LITRE RESERVOIR HAND PUMPS

MAX' PRESSURE 10'000 PSI (700 BAR)
7000 C.C OIL CAPACITY



ORDER CODE	RESERVOIR CAPACITY (cm ³)	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A	B	C	D	E	F	G	H	I	J	WEIGHT (kgs)
		1st STAGE	2nd STAGE	1st STAGE	2nd STAGE	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		
HP80	7000	27.5	700	113	4	635	171	310	310	170	192	25	261	787	298	24*
HP80D	7000										196					25*

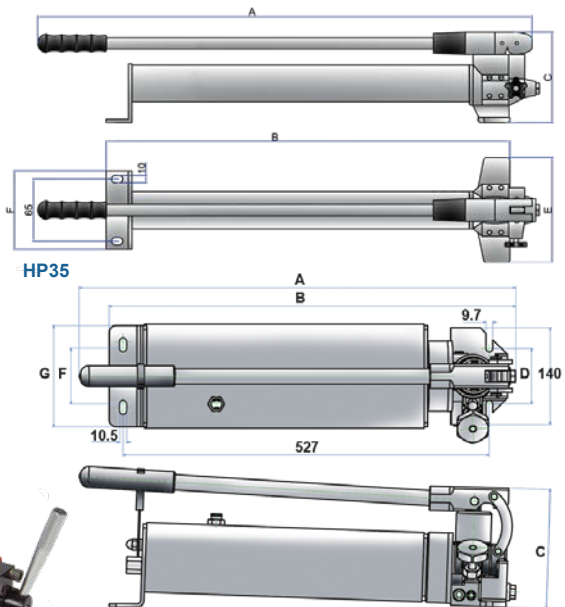
* = WEIGHT EXCLUDING HYDRAULIC OIL.

HEAVY DUTY 700 BAR HAND PUMPS

MAX' PRESSURE 10'000 PSI (700 BAR)
MATERIAL = STEEL
FORGED / WELDED CONSTRUCTION
SINGLE AND TWO SPEED MODELS
EXTERNAL ADJUSTABLE RELIEF VALVE



PA - PB



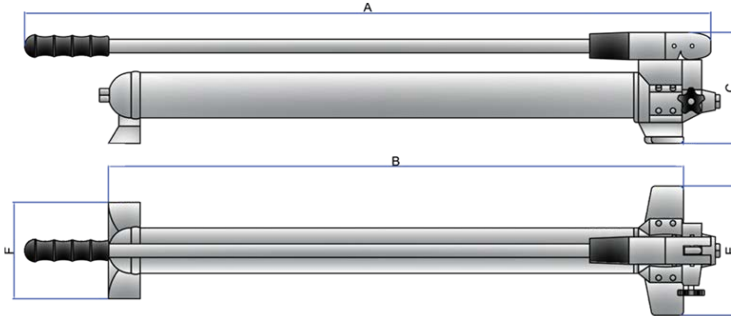
ORDER CODE	CAPACITY (cm ³)	PUMP TYPE	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A	B	C	E	F	PORT	WEIGHT (kgs)
			1st STAGE	2nd STAGE	1st STAGE	2nd STAGE	(mm)	(mm)	(mm)	(mm)	(mm)	Ø(npt)	
PA350	350	SINGLE STAGE HEAVY DUTY HAND PUMP	700	-	3.1	-	335	295	90	146	128	3/8"	5
PA600	600		700	-	3.1	-	545	485	90	146	128	3/8"	6.1
PA700	700		700	-	3.1	-	632	533	90	146	128	3/8"	6.5
PB350	350	TWIN STAGE HEAVY DUTY HAND PUMP	13.8	700	13.0	2.8	335	303	90	146	128	3/8"	5.5
PB600	600		13.8	700	13.0	2.8	545	493	90	146	128	3/8"	7
PB700	700		13.8	700	13.0	2.8	632	541	90	146	128	3/8"	7.3
HP35	3500	SINGLE STAGE HEAVY DUTY HAND PUMP	28	700	40	3	629	586	146	79.7	80.5	3/8"	16.5
HP35D*	3500		28	700	40	3	706	663	146	79.7	80.5	3/8"	16.8

* = DOUBLE ACTING VERSION WITH DIRECTIONAL CHANGE OVER VALVE

700 BAR HAND PUMPS



MAX' PRESSURE 10'000 PSI (700 BAR)
MATERIAL = STEEL
SINGLE AND TWO SPEED MODELS
EXTERNAL ADJUSTABLE RELIEF VALVE

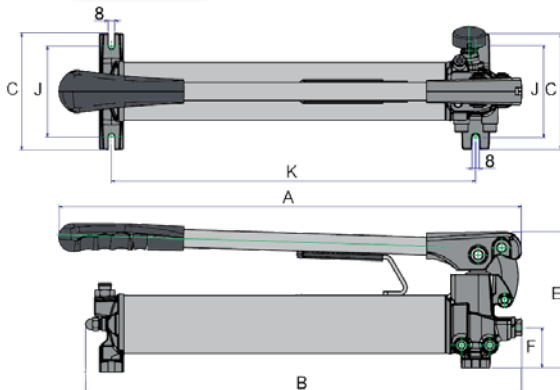


ORDER CODE	CAPACITY (cm ³)	PUMP TYPE	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A (mm)	B (mm)	C (mm)	E (mm)	F (mm)	PORT Ø(npt)	WEIGHT (kgs)
			1st STAGE	2nd STAGE	1st STAGE	2nd STAGE							
HA350	350	SINGLE STAGE HAND PUMP	700	-	3.2	-	343	292	146	142	90	3/8"	5.7
HA600	600		700	-	3.2	-	543	478	146	142	90	3/8"	7.1
HA700	700		700	-	3.2	-	633	526	146	142	90	3/8"	7.6
HD300	300		700	-	2.8	-	330	283	127	130	90	1/4"	4.4
HD500	500		700	-	2.8	-	530	469	127	130	90	1/4"	5.4
HB350	350	TWIN STAGE HAND PUMP	13.8	700	13	2.8	343	310	146	142	66	3/8"	5.9
HB600	600		13.8	700	13	2.8	543	480	146	142	90	3/8"	7.6
HB700	700		13.8	700	13	2.8	633	528	146	142	90	3/8"	8
HC1500	1500		13.8	700	13	28	633	551	200	142	106	3/8"	11.2
HC2500	2500		13.8	700	13	2.8	713	632	200	142	106	3/8"	12
HE2000	2000		13.8	700	13	2.8	580	523	189	148	140	3/8"	11.5
HE2421*	2000		13.8	700	13	2.8	580	523	189	148	140	-	12
HF350	350		13.8	700	7.0	1.0	343	310	127	142	66	3/8"	5.5

* = DOUBLE ACTING VERSION WITH DIRECTIONAL CHANGE OVER VALVE

NEW! HIGH SPEED 700 BAR HAND PUMPS

MAX' PRESSURE 10'000 PSI (700 BAR)
MATERIAL = STEEL
REDUCED HANDLE EFFORT
VENT FREE RESERVOIR



ORDER CODE	CAPACITY (cm ³)	PUMP TYPE	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A (mm)	B (mm)	C (mm)	E (mm)	F (mm)	J (mm)	K (mm)	PORT Ø(npt)	WEIGHT (kgs)
			1st STAGE	2nd STAGE	1st STAGE	2nd STAGE									
P901	300	TWIN STAGE HAND PUMP	20	700	19.4	1.2	447	369.5	140	164	48.5	112	282	3/8"	6.5
P902	750		20	700	19.4	2.8	560	530	140	164	48.5	112	442	3/8"	7.8
P903	1400		20	700	19.4	2.8	633	597.5	140	164	48.5	112	510	3/8"	10
P904	2200		27.5	700	39.5	2.8	633	578	150	195	55	121	502	3/8"	13.5
P904D	2200		27.5	700	35.6	2.8	633	609	150	195	38	121	502	3/8"	15
P905	750		20	1000	19.4	1.2	560	530	140	164	48.5	112	442	3/8"	7.8

ALUMINIUM 700 BAR HAND PUMPS

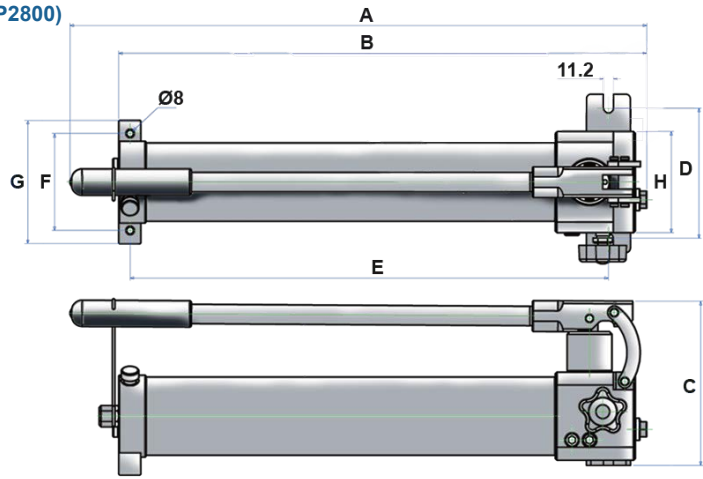
MAXIMUM PRESSURE 10'000 PSI (700 BAR) ▶ 2800 BAR (UHP2800)
 CAPACITY - 350 ▶ 2100 (C.C)
 LARGE 3/8" ▶ 3/4-16" NPT PORT FOR MAXIMUM FLOW
 TWO SPEED LOW HANDLE EFFORT
 LIGHT WEIGHT ALUMINIUM CONSTRUCTION



AHP703



UHP2800
*2800 BAR



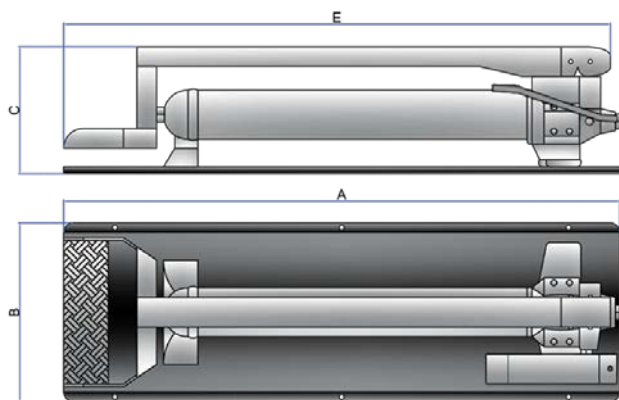
AHP703D

ORDER CODE	CAPACITY (cm ³)	PUMP TYPE	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A (mm)	B (mm)	C (mm)	D (mm)	F (mm)	G (mm)	H (mm)	PORT TYPE	WEIGHT (kgs)
			1st STAGE	2nd STAGE	1st STAGE	2nd STAGE									
AHP701	350	TWIN STAGE HAND PUMP	13.8	700	12.9	1	391	361	127	77	127	42.5	37	3/8" NPT	2.3
AHP702	1000		13.8	700	12.9	2.3	542	513	127	77	127	42.5	37	3/8" NPT	3.5
AHP703	2000		13.8	700	12.9	2.3	623	556	135	102	135	50	37	3/8" NPT	6
AHP703D *	2000		13.8	700	12.9	2.3	623	556	135	102	135	24/37	37	3/8" NPT	7
AHP704	1000		13.8	1000	12.9	1.65	539	501	127	77	127	42.5	37	3/8" NPT	3.5
AHP705	2000		13.8	1500	6.5	1	699	629	157	102	157	50	37	3/4"-16 UNF	6.7
UHP2800	1000		14	2800	12.9	0.65	620	488	157	140	157	26	37	3/4"-16 UNF	5.3

* = DOUBLE ACTING VERSION WITH DIRECTIONAL CHANGE OVER VALVE

700 BAR FOOT PUMPS

MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 CAPACITY - 350 ▶ 700 (C.C)
 SPRING RETURN RELEASE PEDAL
 SINGLE & TWIN SPEED VERSIONS



ORDER CODE	CAPACITY (cm ³)	PUMP TYPE	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A (mm)	B (mm)	C (mm)	E (mm)	PORT Ø(npt)	WEIGHT (kgs)
			1st STAGE	2nd STAGE	1st STAGE	2nd STAGE						
FHA350	350	SINGLE STAGE FOOT PUMP	700	-	3.1	-	474	174	192	461	3/8"	8.4
FHA600	600		700	-	3.1	-	660			647		10.3
FHA700	700		700	-	3.1	-	704			695		10.7
FHB350	350	TWIN STAGE FOOT PUMP	13.8	700	13.0	2.8	474	174	192	461	3/8"	8.5
FHB600	600		13.8	700	13.0	2.8	660			647		10.8
FHB700	700		13.8	700	13.0	2.8	708			695		11.1

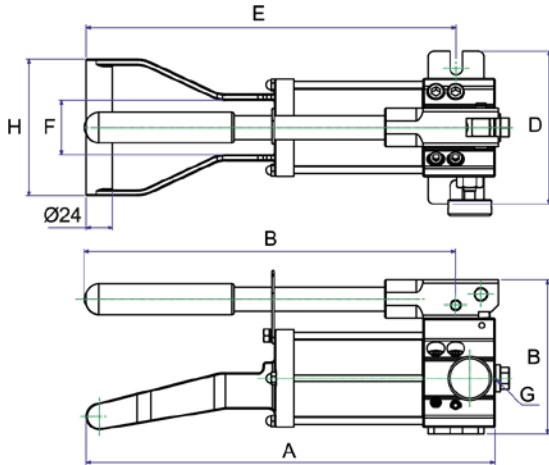
NEW! MULTI ANGLE 700 BAR HAND PUMPS

FEATURES:

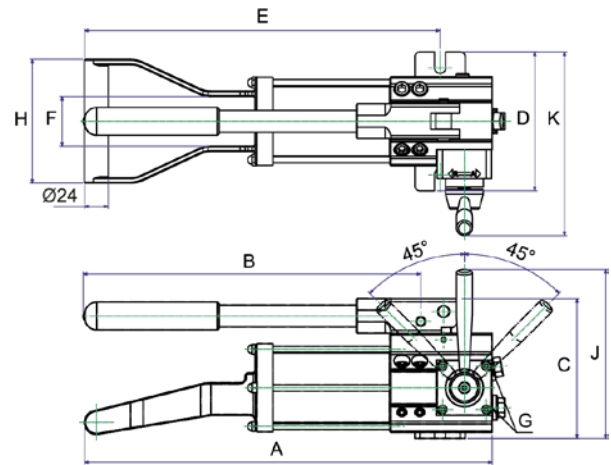
- ALUMINIUM CONSTRUCTION IDEAL FOR EASY PORTABILITY AND MANOEUVRING.
- SPECIAL SEALED OIL RESERVOIR ALLOWS USE AT ALL ANGLES WITHOUT THE RISK OF AIR CONTAMINATION OR OIL SPILLS.
- CAN BE USED IN SUB-SEA APPLICATIONS, IDEAL HANDPUMP FOR DIVERS IN UNDERWATER MAINTENANCE JOBS.
- UNIQUE DESIGN OF HANDLE ALLOWS FOR EASY HAND HELD OPERATION.



TYPE A+B DIMENSIONS



TYPE D DIMENSIONS



AVAILABLE OPTIONS

TYPE A - 1x SINGLE ACTING CYLINDER

TYPE B - 2x SINGLE ACTING CYLINDERS

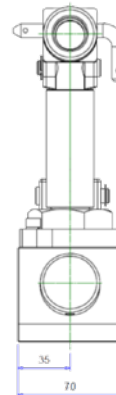
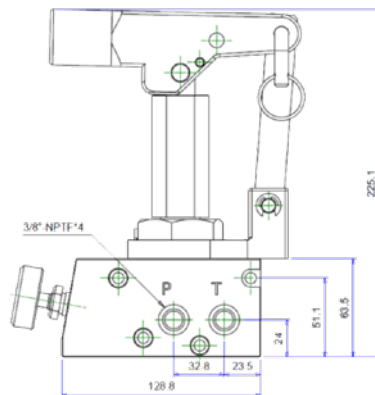
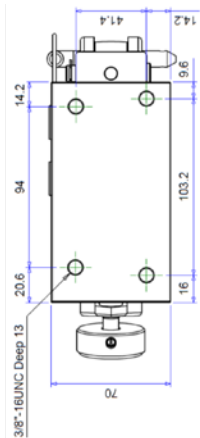
TYPE D - 1x DOUBLE ACTING CYLINDER



ORDER CODE	CAPACITY (cm ³)	PUMP TYPE	PRESSURE RATING (bar)		VOLUME PER STROKE (cm ³)		A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G Ø(npt)	H (mm)	J (mm)	K (mm)	WEIGHT (kgs)
			1st STAGE	2nd STAGE	1st STAGE	2nd STAGE											
P350A	350	TYPE A	20	700	5.8	0.9	374	340	140	140	338.5	50	3/8"	125	-	-	4.4
P350B		TYPE B					421				363.5				-	-	6.2
P350D		TYPE D					411				358.5				171	185	5.3
P550A	550	TYPE A	20	700	5.8	0.9	494	463	140	140	458.5	50	3/8"	125	-	-	6
P550B		TYPE B					541				483.5				-	-	7.1
P550D		TYPE D					531				478.5				171	185	5.5
P1000A	1000	TYPE A	20	700	5.8	0.9	694	568	140	140	658.5	50	3/8"	125	-	-	6.6
P1000B		TYPE B					741				683.5				-	-	8.3
P1000D		TYPE D					731				678.5				171	185	7.7

NEW! HYDRAULIC PUMP HEAD

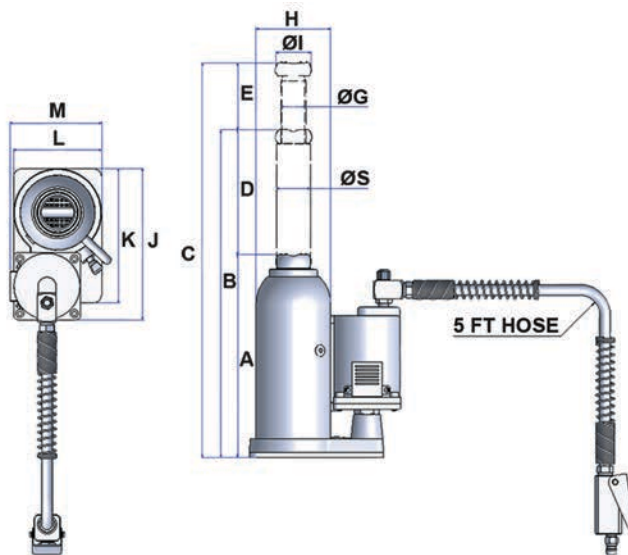
CAN BE USED WITH WATER, HYDRAULIC OIL AND CHEMICALS
 IDEAL FOR PIPE LEAKAGE TESTING AND MAINTENANCE
 WIDE RANGE OF PRESSURES AVAILABLE
 FORGED PUMP HOUSING
 ALUMINIUM ALLOY PUMP BLOCK MANIFOLD



ORDER CODE	MAX PRESSURE (BAR)	VOLUME PER STROKE (cm ³)	MAX HANDLE EFFORT (Kg)	WEIGHT (Kg)
PH1003	827	2.36	30	4.4
PH1004	448	3.80	25	5.5
PH1006	206	8.50	26	5.9
PH1008	69	14.70	15	6.1
PH1012	52	34.0	26	5.7

AIR / HYDRAULIC BOTTLE JACKS

CAPACITY 12 - 50 TON
 LOW PROFILE DESIGN
 FORGED BASE HEAVY CONSTRUCTION
 HOUSING WELDED TO FORGED BASE
 THREADED SADDLE EXTENSION IN ROD END



ORDER CODE	STROKE (mm)	CAPACITY (ton)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	S Ø(mm)	G Ø(mm)	H (mm)	I Ø(mm)	J (mm)	K (mm)	L (mm)	M (mm)	HOSE LENGTH (ft)	HANDLE LENGTH (ft)	WEIGHT (kgs)
AJ120	148.5	12	241	389.5	469.5	148.5	80	39.5	29.5	89	42	180	160	105	107	5	630	6.5
AJ220	129	22	204.5	369.5	449.5	129	80	56	29.5	114	42	205	185	130	132			8
AJ300	162	30	279	441	-	162	-	65	-	140	-	235	-	-	-			10
AJ500	171	50	304	475	-	171	-	75	-	163	-	260	-	-	-			11.9

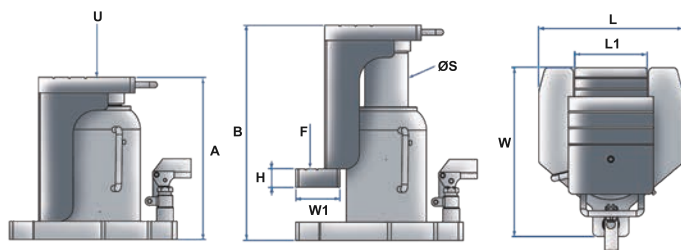
PULL RAMS

CAPACITY 5 ► 10 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 SPRING ASSISTED RETURN
 1/4" NPT FITTINGS



ORDER CODE	PULL CAPACITY (ton)	STROKE (mm)
BK506	5	154
BK1006	10	153

HYDRAULIC TOE JACKS

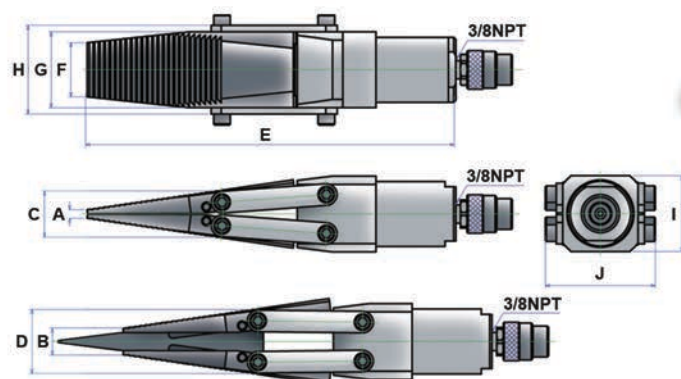


CAPACITY 2.5 - 50 TON
STROKE 100mm - 140mm
HEAT TREATED
CHROMED ROD
TOP & TOE LIFT SYSTEM
INTERNAL SAFETY VALVE

ORDER CODE	STROKE (mm)	U TOP LIFT CAPACITY (ton)	F TOE LIFT CAPACITY (ton)	A (mm)	B (mm)	S Ø(mm)	L x W BASE DIMENSION (mm)	H (mm)	L1 x W1 TOE LIFT DIMENSION (mm)	WEIGHT (kgs)
HTJ02	100	2.5	1.2	194	294	19	140 x 190	19	65 x 50	6.5
HTJ04	110	4	2	204	314	25	150 x 200	19	65 x 50	8
HTJ06	110	6	3	212	322	36	160 x 217	19	65 x 50	10
HTJ10	130	10	5	258	388	40	189 x 242	22	75 x 55	11.9
HTJ16	131	16	8	275	406	52	211 x 256	25	90 x 55	23
HTJ20*	140	20	10	303	443	56	228 x 274	25	100 x 60	31
HTJ30*	147	30	15	322	469	70	259 x 305	32	110 x 60	47.3
HTJ50*	148	50	25	333	481	90	299 x 347	38	150 x 60	77.5

* = SIZES FITTED WITH EXTERNAL SPRINGS (SPRING ASSISTED RETURN)

HYDRAULIC SPREADERS



CAPACITY 15 ▶ 25 TON
SPREAD FROM 6 ▶ 25 (mm)
STROKES FROM 25 ▶ 65 (mm)
LOADS ARE SPREAD PERPENDICULARLY

ORDER CODE	CAPACITY (ton)	SPREAD (mm)		STROKE (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	WEIGHT (kgs)
		MIN (A)	MAX (B)										
SP07	15	6	16	25	36	46	232	31	45	55	Ø63	63	3.3
TL07	15	6	16	25	36	46	232	31	45	55	Ø63	63	3.3
SP15	25	8	25	65	43	59	342	50	70	82	70	102	7.8

HYDRAULIC PORTABLE POWER KITS

ORDER CODE	CAPACITY (ton)	STROKE (mm)	KIT INCLUDES
PA904A	4 TON	100	<ul style="list-style-type: none"> • HEAVY DUTY HAND PUMP WITH 6FT HOSE. • 4 TON 100mm (4") STROKE RAM. • 1/2 TON SPREADER RAM. • 4, 8, 12 & 16" EXTENSION TUBES. • MALE CONNECTOR. • FLAT BASE, 90° V BASE, WEDGE HEAD, RAM TOE, PLUNGER TOE, RUBBER FLEX HEAD, SERRATED SADDLE. • BLOW MOULDED CASE.
PA910A	10 TON	152	<ul style="list-style-type: none"> • HEAVY DUTY HAND PUMP WITH 6FT HOSE. • 10 TON 152mm (6") STROKE RAM. • 1/2 TON SPREADER RAM. • 5, 10, 14 & 19" EXTENSION TUBES. • MALE CONNECTOR. • FLAT BASE, 90° V BASE, WEDGE HEAD, RAM TOE, PLUNGER TOE, RUBBER FLEX HEAD, SERRATED SADDLE. • BLOW MOULDED CASE.

CAPACITY 4 & 10 TON KITS
FORGED HIGH STRENGTH COMPONENTS
SNAP CONNECTIONS FOR QUICK ASSEMBLY

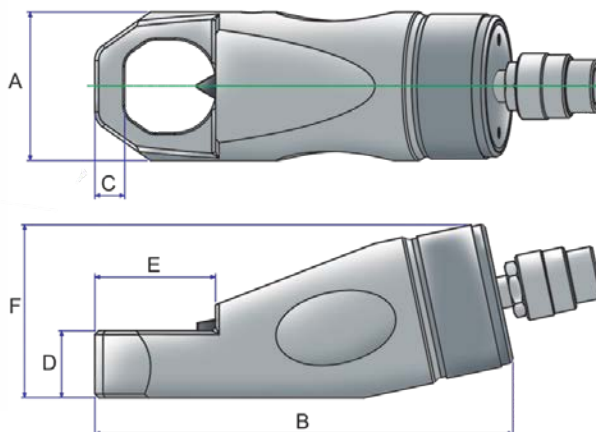


HYDRAULIC NUT SPLITTERS

CAPACITY 10 ▶ 50 TON

MAXIMUM PRESSURE 10'000 PSI (700 BAR)

NUT RANGE 19mm ▶ 60mm



ORDER CODE	CAPACITY (ton)	NUT RANGE HEXAGON (mm)	BOLT RANGE (mm)	OIL CAPACITY (cm ³)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	WEIGHT (kgs)
HNS19	10	19 - 24	M12 - M16	20	60	167.2	10	25	40	68	2.1
HNS24	15	24 - 32	M16 - M22	60	70	178	13	30	52	76	3.1
HNS32	20	32 - 41	M22 - M27	80	80	226	15	36	65	93	4.2
HNS41	35	41 - 50	M27 - M33	155	95	244	21	45	76	106	8
HNS50	50	50 - 60	M33 - M39	240	106	269	24	55	92	125	11.5

NEW! HYDRAULIC FLANGE SPREADER

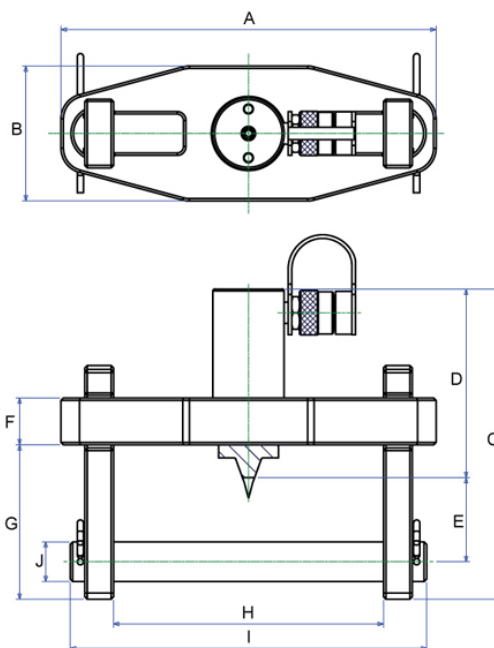
CAPACITY 10 TON (98kN)

CAPACITY IN PAIRS 20TON (196kN) - RECOMMENDED

SPREADING DISTANCE 3mm ▶ 20mm

TOOL WEIGHT 13 Kg

SINGLE ACTING SPRING RETURN



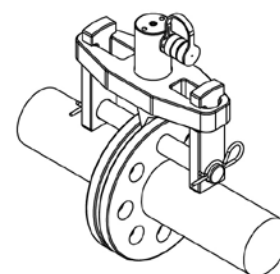
* JAW WIDTHS ADJUSTABLE FROM 104mm TO 216mm

* SPREADERS RECOMMENDED TO BE USED IN PAIRS TO PROVIDE EVEN SPREADING FORCE.

ORDER CODE	CAPACITY (ton)	STROKE (mm)	OIL CAPACITY (cm ³)	STUD SIZE (mm)	STD WEDGE (mm)	MAX FLANGE THICKNESS (mm)	WEIGHT (kgs)
PFS10T	10	51	73	31.75	3 - 20	216	13

DIMENSIONS

A	B	C	D	E	F	G	H	I	J
300	108	248	151	67	37.5	123.5	216	285	31.75

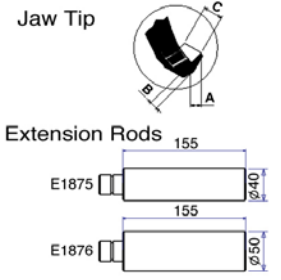
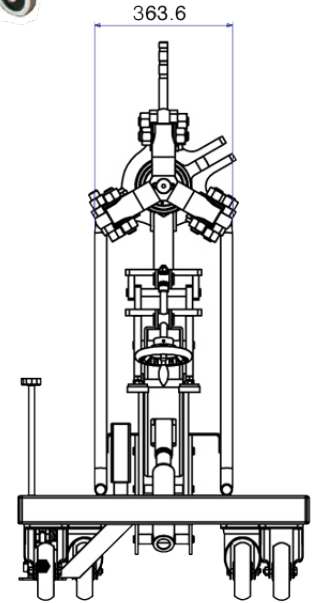
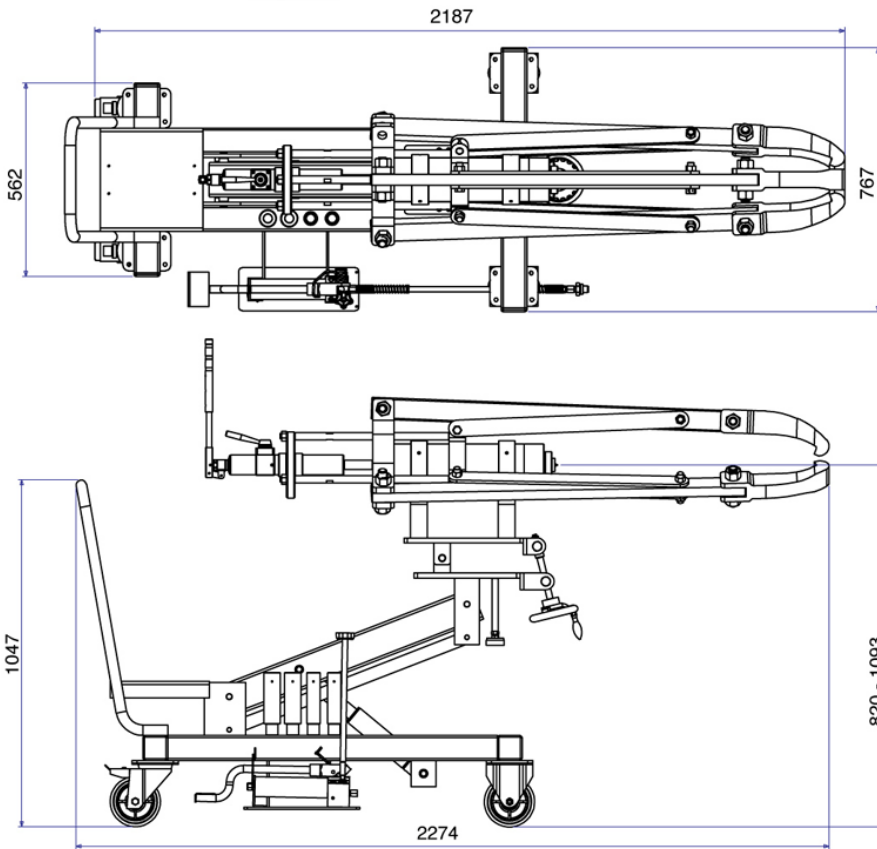


50 TON EASY PULLERS (2/3 WAY)

FEATURES:

- FOOT OPERATING HYDRAULIC LIFT SYSTEM.
- FLOW METERING SYSTEM FOR CONSTANT LOWERING SPEED.
- DOUBLE ACTING HYDRAULIC SYSTEM FOR HOLDING, OPENING AND CLOSING JAWS.
- PULLER CAN BE ASSEMBLED IN 2 OR 3 JAW CONFIGURATIONS.
- PULLER CAN BE ADJUSTED UP OR DOWN 5 DEGREES FOR PRECISE POSITIONING.
- TWO STAGE HYDRAULIC PUMP FOR FAST OPERATION.
- 50 TON SINGLE ACTING SPRING RETURN HYDRAULIC CYLINDER.

CAPACITY 50 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 MAX SPREAD 860mm ► 1250mm
 MAX REACH 455mm ► 780mm
 SELF CENTERING



* THIS MODEL IS EQUIPPED WITH ELECTRIC PUMP EP18S.
 ** HAND PUMP IS NOT INCLUDED WITH THIS MODEL.

ORDER CODE	CAPACITY (ton)	MAX REACH (mm)	MIN - MAX SPREAD (mm)	STROKE (mm)	POWER SOURCE	WEIGHT (kgs)
PME50TE*	50	780	200 - 1250	330	220V / 50 Hz	400
PME50T	50	780	200 - 1250	330	...	369
PRE50T**	50	455	140 - 830	157.5	...	140

JAW TIP		
A	B	C
23	35	60

ELECTRIC PUMP SPECIFICATION				
MODEL NO	TYPE	OIL CAPACITY (cm ³)	FUNCTION	MOTOR
EP18S	SINGLE ACTING	8000	ADV / HOLD / RETRACT	1/2 HP SINGLE PHASE 220V 50/60 Hz

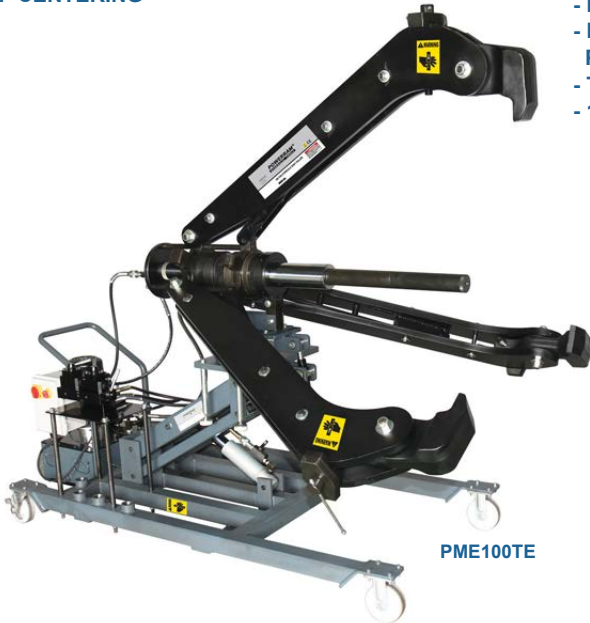
OIL DELIVERY (cc / Min) AT:			
0 PSI	100 PSI	5000 PSI	10000 PSI
4200	3100	330	260

100 TON EASY PULLERS (2/3 WAY)

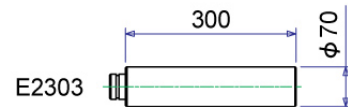
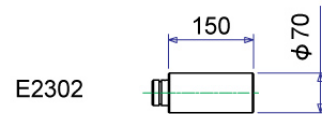
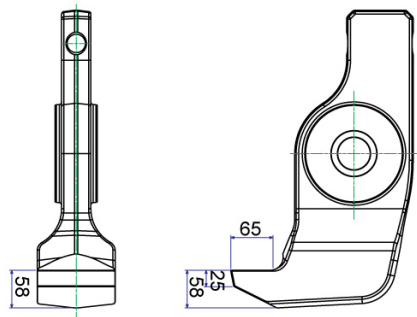
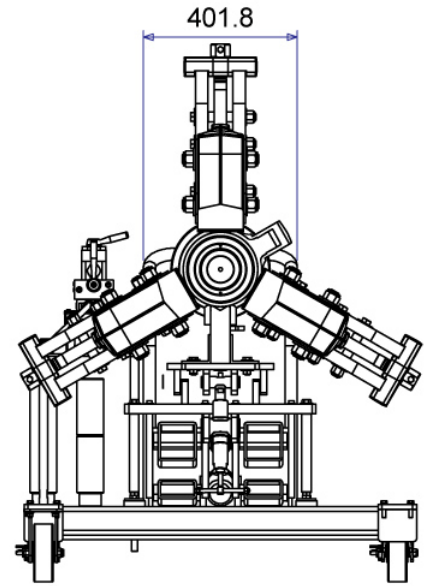
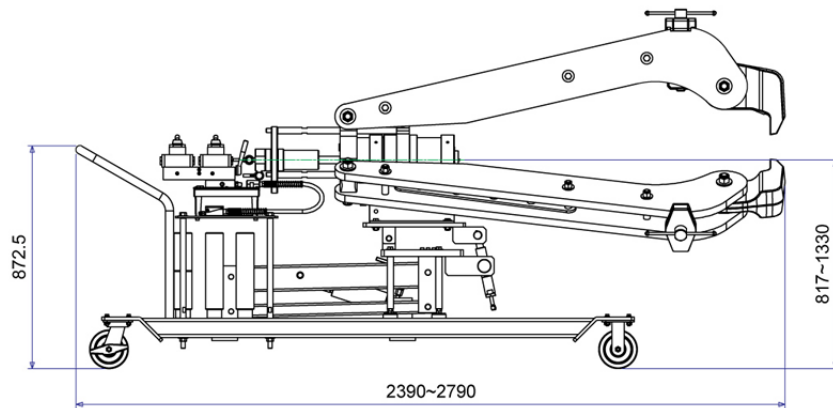
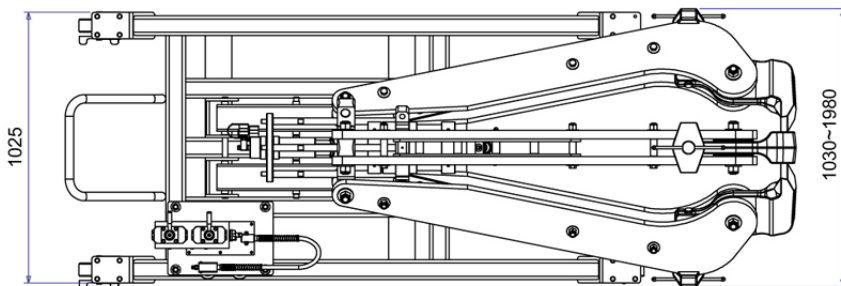
CAPACITY 100 TON
MAXIMUM PRESSURE 10'000 PSI (700 BAR)
MAX SPREAD 1500mm
MAX REACH 1215mm
SELF CENTERING

FEATURES:

- AIR OVER HYDRAULIC OPERATING LIFT SYSTEM.
- FLOW METERING SYSTEM FOR CONSTANT LOWERING SPEED.
- DOUBLE ACTING HYDRAULIC SYSTEM FOR HOLDING, OPENING AND CLOSING JAWS.
- PULLER CAN BE ASSEMBLED IN 2 OR 3 JAW CONFIGURATIONS.
- PULLER CAN BE ADJUSTED UP OR DOWN 5 DEGREES FOR PRECISE POSITIONING.
- TWO STAGE HYDRAULIC PUMP FOR FAST OPERATION.
- 100 TON SINGLE ACTING SPRING RETURN HYDRAULIC CYLINDER.



PME100TE



* THIS MODEL IS EQUIPPED WITH ELECTRIC PUMP ACCORDING TO CUSTOMER SPECIFICATION

ORDER CODE	CAPACITY (ton)	MAX REACH (mm)	MIN - MAX SPREAD (mm)	STROKE (mm)	POWER SOURCE	WEIGHT (kgs)
PME100T	100	1215	200 - 1500	270	...	1120
PME100TE*	100	1215	200 - 1500	270	*	TBA

EXTENSION DIMENSIONS			
PART NO	EXTENSION DIA Ø(mm)	LENGTH (mm)	QTY
E2302	70	150	2
E2303	70	300	2

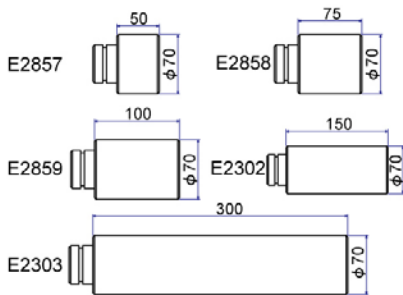
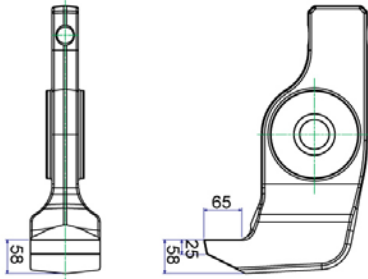
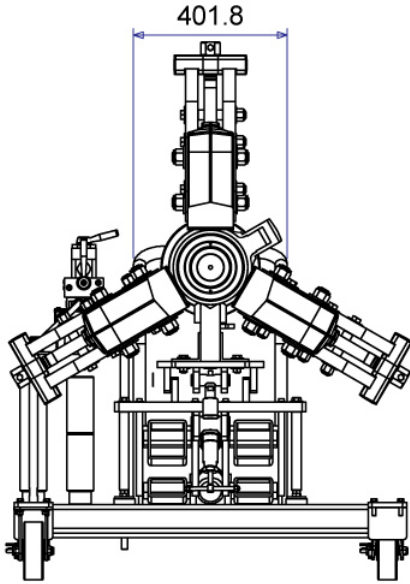
JAW DIMENSIONS		
TIP DEPTH (mm)	TIP CLEARANCE (mm)	TIP WIDTH (mm)
65	25 - 58	120

150 TON EASY PULLERS (2/3 WAY)

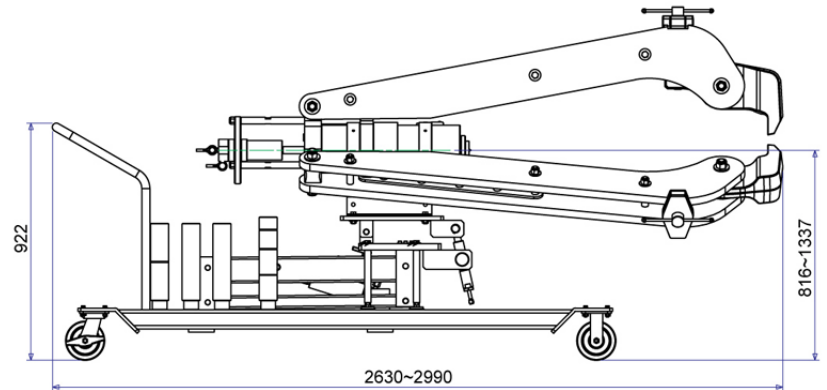
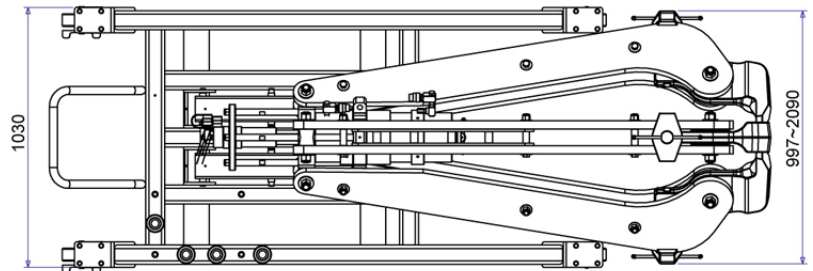
FEATURES:

- AIR OVER HYDRAULIC OPERATING LIFT SYSTEM.
- FLOW METERING SYSTEM FOR CONSTANT LOWERING SPEED.
- DOUBLE ACTING HYDRAULIC SYSTEM FOR HOLDING, OPENING AND CLOSING JAWS.
- PULLER CAN BE ASSEMBLED IN 2 OR 3 JAW CONFIGURATIONS.
- PULLER CAN BE ADJUSTED UP OR DOWN 5 DEGREES FOR PRECISE POSITIONING.
- TWO STAGE HYDRAULIC PUMP FOR FAST OPERATION.
- 150 TON SINGLE ACTING SPRING RETURN HYDRAULIC CYLINDER.

CAPACITY 150 TON
 MAXIMUM PRESSURE 10'000 PSI (700 BAR)
 MAX SPREAD 1600mm
 MAX REACH 1150mm
 SELF CENTERING



PME150TE



* THIS MODEL IS EQUIPPED WITH ELECTRIC PUMP ACCORDING TO CUSTOMER SPECIFICATION

ORDER CODE	CAPACITY (ton)	MAX REACH (mm)	MIN - MAX SPREAD (mm)	STROKE (mm)	POWER SOURCE	WEIGHT (kgs)
PME150T	100	1150	250 - 1600	325	...	1200
PME150TE*	100	1150	250 - 1600	325	*	TBA

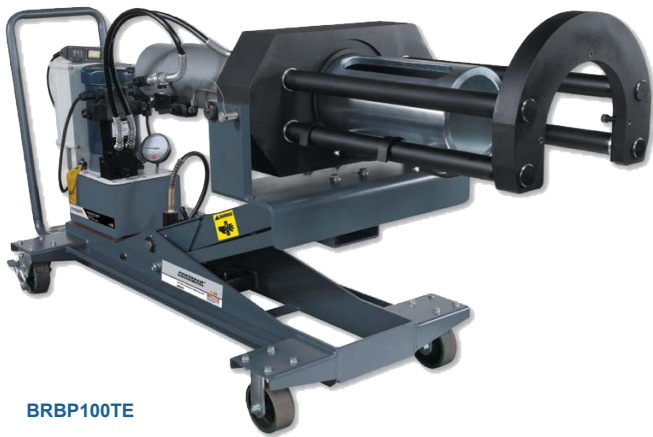
EXTENSION DIMENSIONS			
PART NO	EXTENSION DIA Ø(mm)	LENGTH (mm)	QTY
E2857	70	50	1
E2858	70	75	1
E2589	70	100	2
E2302	70	150	2
E2303	70	300	2

JAW DIMENSIONS		
TIP DEPTH (mm)	TIP CLEARANCE (mm)	TIP WIDTH (mm)
65	25 - 58	120

100 TON PUSH PULLER (RAILROAD VERSION)

CAPACITY 100 TON
MAXIMUM PRESSURE 10'000 PSI (700 BAR)
CLASS B TO CG BEARINGS
ACCESSORY KITS FOR METRIC & IMPERIAL BEARINGS
FRONT AND SIDE MOUNTED VERSIONS

- FEATURES:**
- DISMANTLE OR INSTALL TAPERED ROLLER BEARINGS EASILY AND EFFICIENTLY.
 - SPECIALLY DESIGNED FOR THE MAJOR BEARING MANUFACTURERS.
 - SIMPLE, EFFICIENT AND EASY OPERATION PROVIDED WITH THE 100 TON PULLING FORCE.
 - SINGLE UNIT WITH PORTABLE DESIGN FOR EASY CONVENIENT POSITIONING.
 - SUITABLE FOR CLASS B TO CG BEARINGS

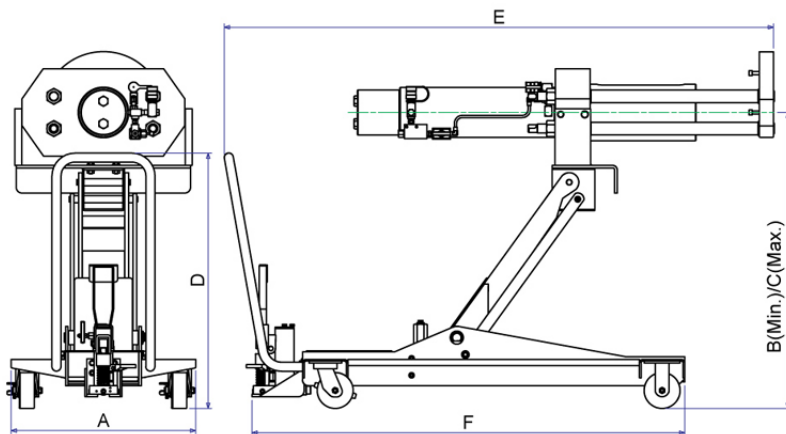


BRBP100TE

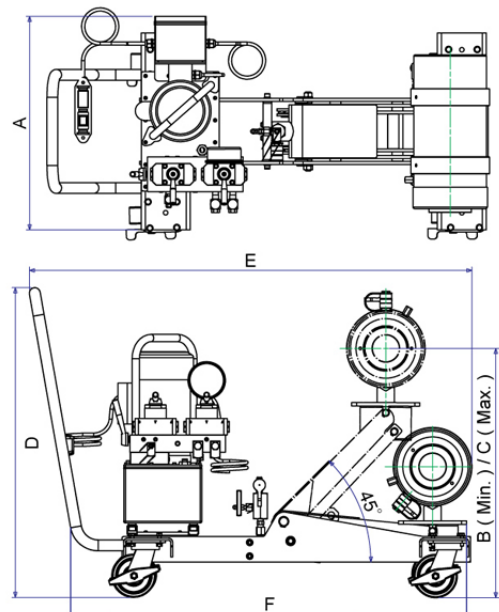


MDTU100TE

BRBP100TE DIMENSIONS



MDTU100TE DIMENSIONS



* THIS MODEL IS EQUIPPED WITH ELECTRIC PUMP EP211D.

ORDER CODE	PULL CAPACITY (ton)	STROKE (mm)	WEIGHT (kgs)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
BRBP100T	100	392	590	652	370	1047	900	1940 - 2209	1530
BRBP100TE*	100	392	805	652	370	1047	900	1940 - 2209	1530
MDTU100TE*	100	254	410	627	384	731	909	1299	1175

ELECTRIC PUMP SPECIFICATION

MODEL NO	TYPE	OIL CAPACITY (cm ³)	FUNCTION	MOTOR
EP211D	DOUBLE ACTING	11000	ADV / HOLD / RETRACT	1/2 HP SINGLE PHASE 220V 50/60 Hz

OIL DELIVERY (cc / Min) AT:

0 PSI	100 PSI	5000 PSI	10000 PSI
8200	7400	840	650

100 TON PUSH PULLER ACCESSORIES



**ACCESSORY SET METRIC & IMPERIAL
CLASS B TO F**



**ACCESSORY SET IMPERIAL
CLASS G TO GG**

IMPORTANT: ACCESSORY CHARTS APPLIES ONLY TO AAR CONFIGURATIONS FOR FREIGHT CARE APPLICATIONS.

CLASS & SIZE OF BEARING ASSEMBLY TO BE SERVICED (IMPERIAL)

	CLASS B	CLASS C	CLASS D	CLASS E	CLASS EE	CLASS EE	CLASS F	CLASS G	CLASS G	CLASS GG
ACCESSORY DESCRIPTION	4-1/4" X 8"	5" X 9"	5-1/2" X 10"	6" X 11"	5-12" AXLE	6" AXLE	6-1/2" X 12"	7" X 12"	6-1/2" AXLE	6-1/2" AXLE
PULLING SHOE	PART NO = F0442 (INCLUDED IN BASIC MACHINE)							F0443	F0443	F0443
PULLING SHOE INSERT ADAPTOR	F0440	F0437	F0438	F0439	F0439	F0441	F0441
GUIDE TUBE & CAP SCREW ASSEMBLY	F0435-1	F0435-2	E2605	E2606	E2607	E2608	E2609	E2611	E2610	E2612
CAP SCREW **	H0423	H0424	H0425	H0426	H0427	H0425	H0428	H0430	H0429	H0429
GUIDE TUBE ADAPTOR	B1247	B1246	B1246	B1248	B1248	B1248	B1248	B1248	B1248	B1248
INSTALLING TUBE	PART NO = D1044 (INCLUDED IN BASIC MACHINE)							D1045	D1045	D1045
INSTALLING TUBE ADAPTOR RING	B1243	D1037	D1038	D1039	D1039	D1040	D1040	D1042	D1041	D1041

NOTE: ADAPTORS LISTED ABOVE ARE FOR SERVICING THE FOLLOWING ROLLER BEARING ASSEMBLIES:
- BRENCO "CROWN-TAPER", NEW DEPARTURE-HYATT "HYROLL TAPER", SKF "EXPEDITER AND TIMKEN "AP".

** CAP SCREWS ARE SUPPLIED WITH THE GUIDE TUBE AND SHOULD ONLY BE ORDERED AS SPARES ONLY!

CLASS & SIZE OF BEARING ASSEMBLY (METRIC) - TBU & SP ACCESSORIES

ACCESSORY DESCRIPTION	120	130	140	150
PULLING SHOE INSERT ADAPTOR	F0436	F0437	F0438	F0439
GUIDE TUBE & CAP SCREW ASSEMBLY	E2601	E2602	E2603	E2604
CAP SCREW **	H0421	H0421	H0421	H0422
GUIDE TUBE ADAPTOR	B1248	B1248	B1248	B1248
INSTALLING TUBE ADAPTOR RING	D1031	D1032	D1033	D1034

MECHANICAL EASY PULLER

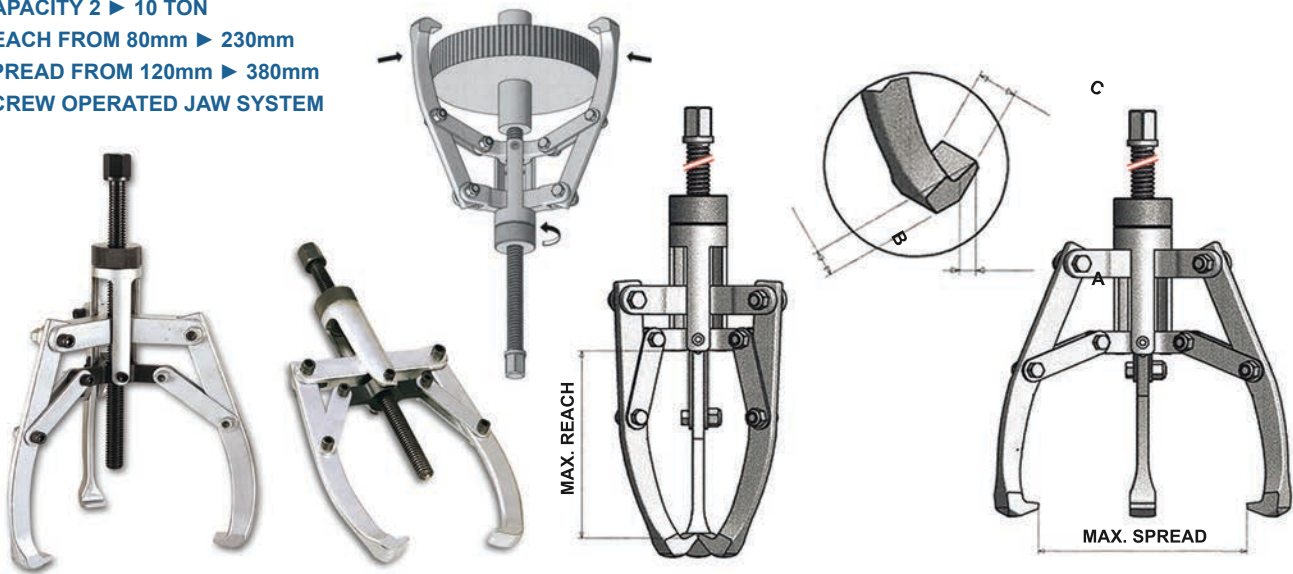
2 & 3 JAW DESIGNS

CAPACITY 2 ► 10 TON

REACH FROM 80mm ► 230mm

SPREAD FROM 120mm ► 380mm

SCREW OPERATED JAW SYSTEM



ORDER CODE	2 / 3 JAW TYPE	CAPACITY (ton)	MAXIMUM REACH (mm)	MAXIMUM SPREAD (mm)	SHAFT Ø(mm)	JAW TIP (mm)			WEIGHT (kgs)
						A	B	C	
PM50	3 JAW	2	80	120	5/8" x 8T	8	6	15	1.3
PM52	2 JAW								0.9
PM100	3 JAW	5	160	250	3/4" x 8T	11	10	25	3.7
PM102	2 JAW								3.1
PM150	3 JAW	10	230	380	7/8" x 6T	14	10	29	8.8
PM152	2 JAW								6.7

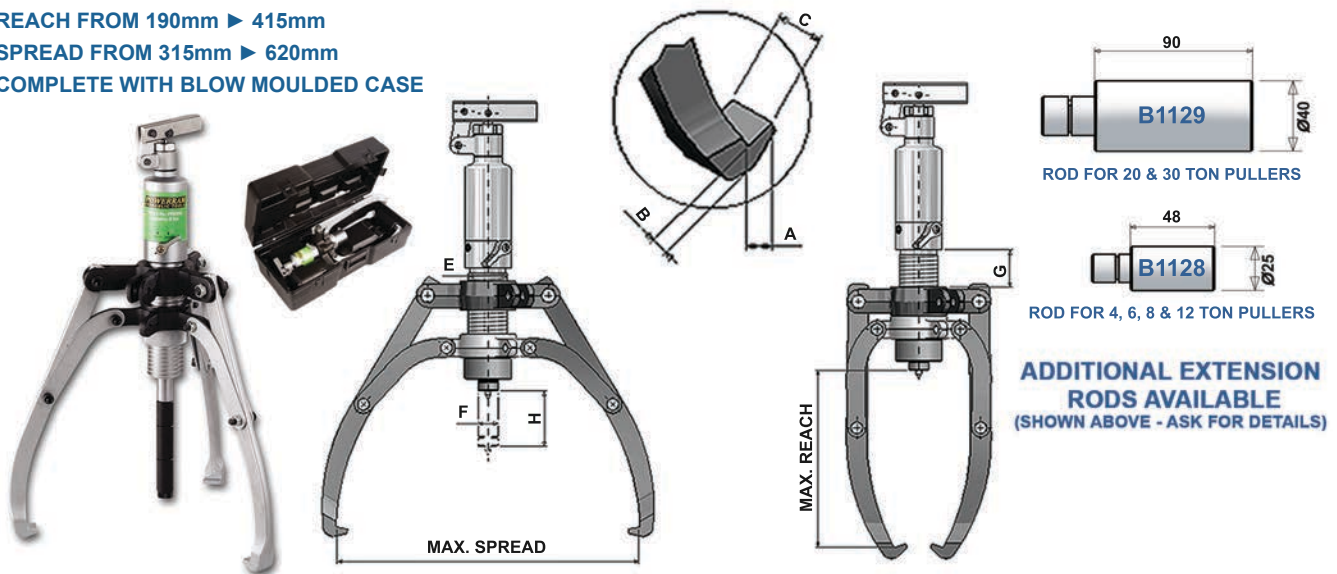
HYDRAULIC EASY PULLERS (2/3 WAY)

CAPACITY 4 ► 30 TON

REACH FROM 190mm ► 415mm

SPREAD FROM 315mm ► 620mm

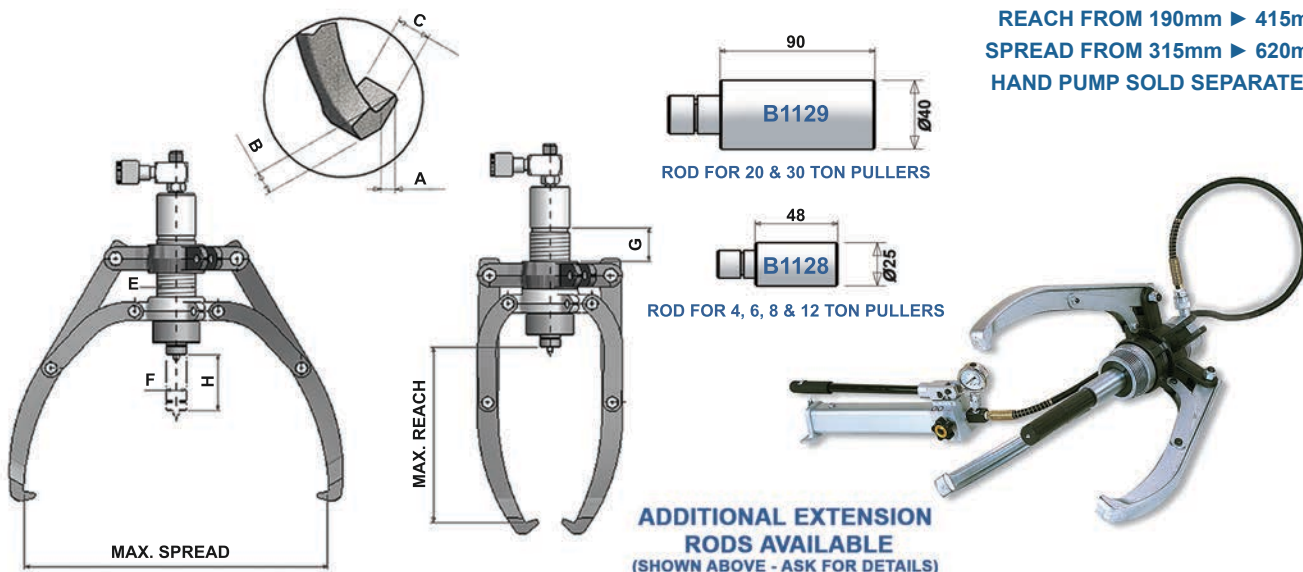
COMPLETE WITH BLOW MOULDED CASE



ORDER CODE	CAPACITY (ton)	MAXIMUM REACH (mm)	MAXIMUM SPREAD (mm)	STROKE (mm)	JAW TIP (mm)			PUMP TIP (mm)			WEIGHT (kgs)
					A	B	C	E	F	G	
PME400	4	190	315	60	13	10	22	42	22	40	8
PME600	6	230	390	70	13	10	22	45	23	50	9.8
PME800	8	280	460	85	13	13	27.5	50	25	70	11.7
PME1200	12	300	515	85	15	16.5	29	60	28	70	14.8
PME2000	20	325	520	111	20	27	33	80	40	62	25.7
PME3000	30	415	620	111	20	27	38	98	50	85	36

HYDRAULIC EASY PULLERS (2/3 WAY)

CAPACITY 4 ▶ 30 TON
 REACH FROM 190mm ▶ 415mm
 SPREAD FROM 315mm ▶ 620mm
 HAND PUMP SOLD SEPARATELY



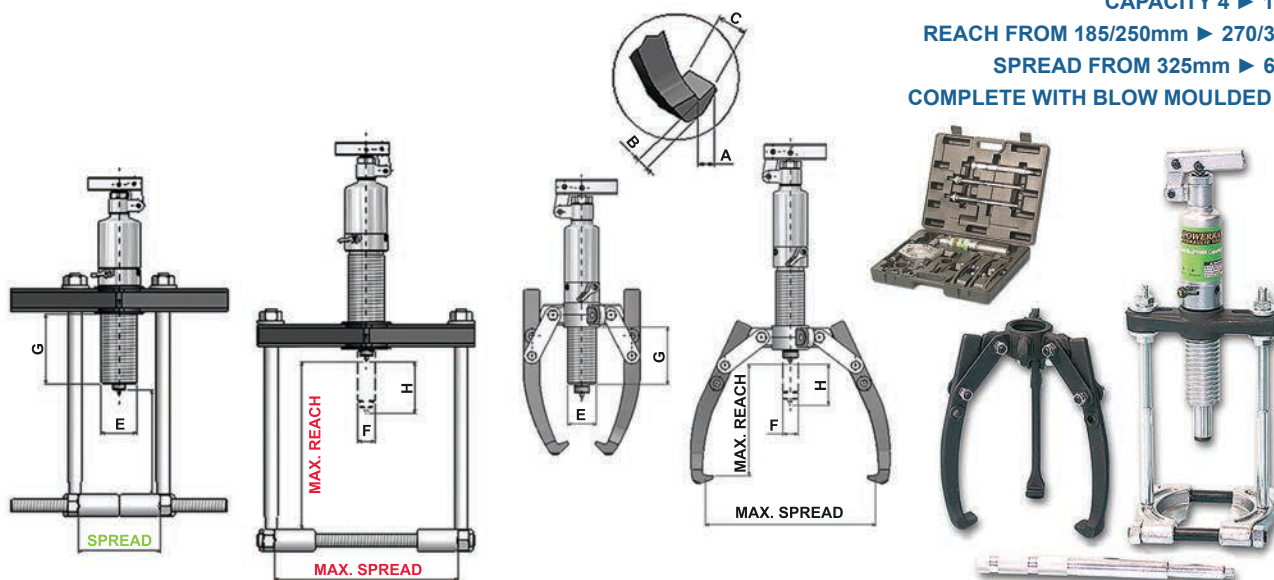
**ADDITIONAL EXTENSION
 RODS AVAILABLE
 (SHOWN ABOVE - ASK FOR DETAILS)**

ORDER CODE	CAPACITY (ton)	MAXIMUM REACH (mm)	MAXIMUM SPREAD (mm)	STROKE (mm)	JAW TIP (mm)			PUMP TIP (mm)			WEIGHT (kgs)
					A	B	C	E	F	G	
PRE400	4	190	315	60	13	10	22	42	22	40	5.6
PRE800	8	280	460	85	13	13	27.5	50	25	70	9
PRE1200	12	300	515	85	15	16.5	29	60	28	70	11.7
PRE2000	20	325	520	111	20	27	33	80	40	62	24
PRE3000	30	415	620	111	20	27	38	98	50	85	34

PLEASE NOTE: HAND PUMP SOLD SEPARATELY

HYDRAULIC PULLERS - PACKAGE MODELS

CAPACITY 4 ▶ 12 TON
 REACH FROM 185/250mm ▶ 270/380mm
 SPREAD FROM 325mm ▶ 680mm
 COMPLETE WITH BLOW MOULDED CASE



ORDER CODE	CAPACITY (ton)	MAXIMUM REACH (mm)	MAXIMUM SPREAD (mm)	STROKE / H (mm)	JAW TIP (mm)			PUMP TIP (mm)			WEIGHT (kgs)
					A	B	C	E	F	G	
PM420	4	185 / 250	55 - 110 / 255	60	11	6	22	42	22	84	4.5 / 8.5
PM620	6	220 / 270	95 - 180 / 330	70	13	10	22	45	23	94	5.5 / 11.5
PM820	8	230 / 270	95 - 220 / 350	85	11	10	25	50	25	122	6.5 / 12.6
PM1220	12	270 / 380	225 - 290 / 375	85	14	10	29	60	28	118	8 / 18

700 BAR FITTINGS & ADAPTORS

700 BAR / 10,000 PSI MAXIMUM WORKING PRESSURE

1/8" NPT ▶ 3/8" NPT FITTINGS

ORDER CODE	TYPE	DIMENSIONS (mm)
ADL101		
ADL102		
ADL202		
ADL303		
ADC303		
ADE303		
ADT101		
ADT202		
ADT303		
ADG303		
ADG323		
ADF102		
ADF203		
ADF302		


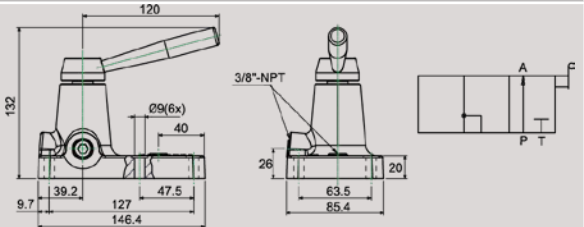

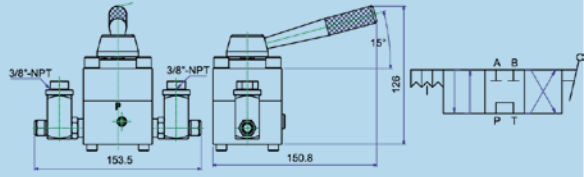

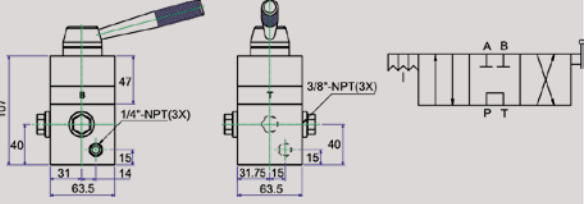

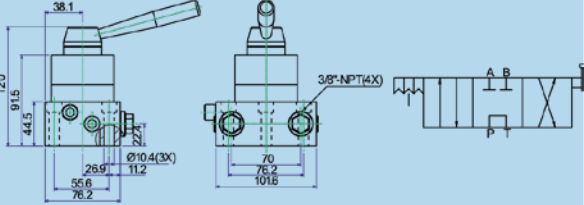

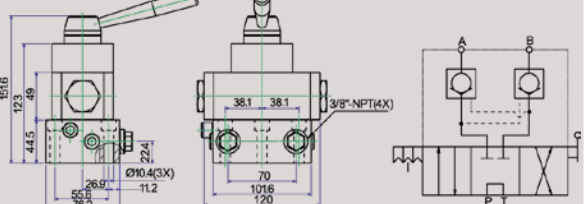

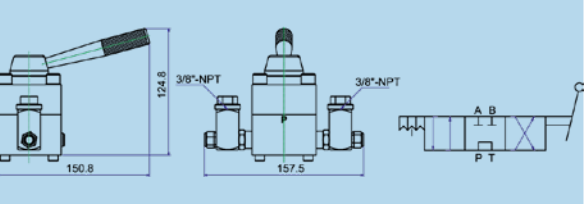

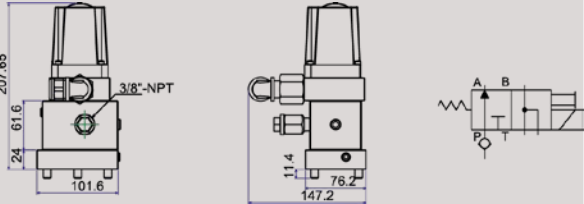

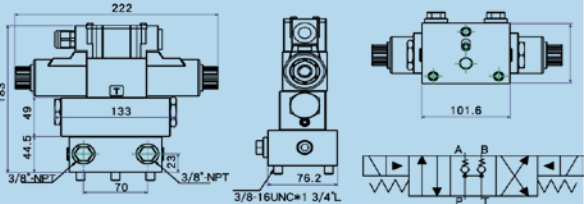
ORDER CODE	TYPE	DIMENSIONS (mm)
ADF303		
ADF304		
ADI202		
ADI203		
ADI303		
ADO101		
ADO202		
ADO2031		
ADO203		
ADO204		
ADO205		
ADO303		
BG9705		

DIRECTIONAL CONTROL VALVES


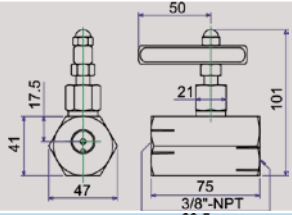
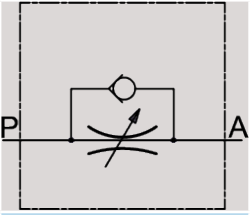

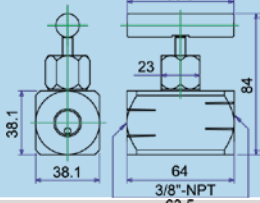
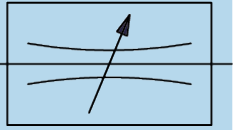

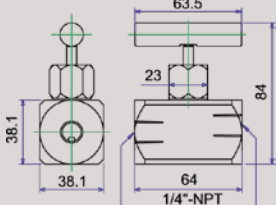
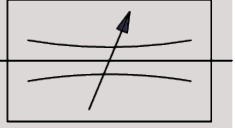

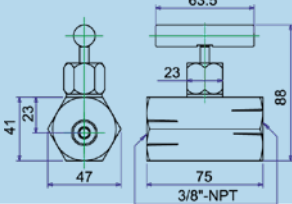
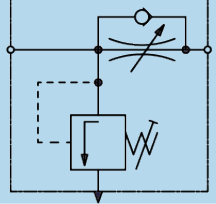

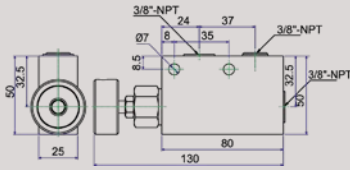
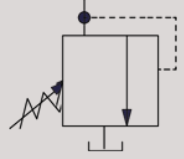

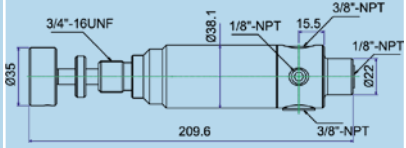
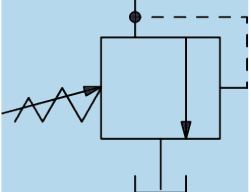

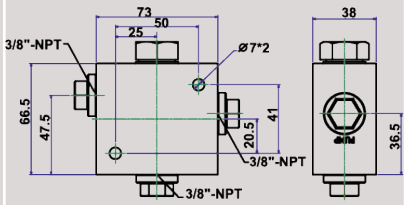
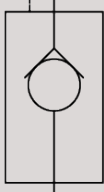

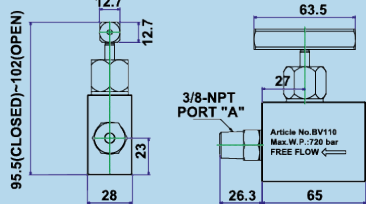


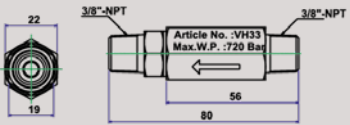
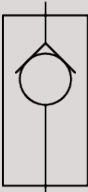
700 BAR MAXIMUM WORKING PRESSURE

3/8" NPT FITTINGS

MANUAL OPERATION

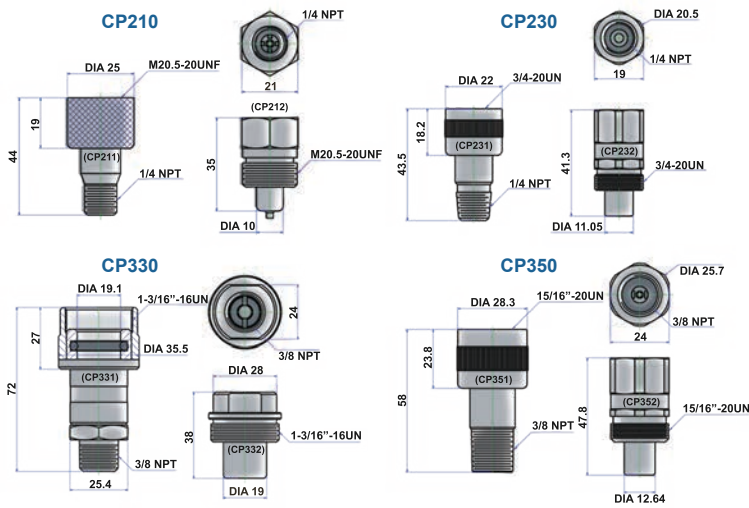
ORDER CODE	OPERATION	ACTION	TYPE	DIMENSIONS (mm)
BP2	3-WAY	2 POSITION ADVANCE / RETRACT FOR SINGLE ACTING CYLINDERS		
BP421	4-WAY	3 POSITION ADVANCE / HOLD / RETRACT FOR SINGLE OR DOUBLE ACTING CYLINDERS		
BP422	4-WAY	3 POSITION ADVANCE / HOLD / RETRACT FOR SINGLE OR DOUBLE ACTING CYLINDERS		
BP423	4-WAY	3 POSITION ADVANCE / HOLD / RETRACT SUITS - HP80D, AP13D, AP18D, EP13D, EP18D, EP211D, EP320D & EP420D		
BP425	4-WAY	3 POSITION ADVANCE / HOLD / RETRACT WITH LOCK FOR LOAD HOLDING		
BP426	4-WAY	SAME AS BP421 WITH FACE MOUNTING TO SUIT HP35D HAND PUMP ONLY		
SV32	3-WAY	2 POSITION SOLENOID VALVE FOR SINGLE ACTING CYLINDERS AVAILABLE IN 24V / 110V & 220V		
SV43	4-WAY	3 POSITION SOLENOID VALVE FOR DOUBLE ACTING CYLINDERS AVAILABLE IN 24V / 110V & 220V		

FLOW CONTROL VALVES

ORDER CODE	ACTION	TYPE	DIMENSIONS (mm)	DIAGRAM
VC331	NEEDLE VALVE: TO CONTROL CYLINDER SPEED, CAN BE USED AS A SHUT OFF VALVE FOR TEMPORARY LOAD HOLDING. NOT RECOMMENDED FOR PRECISE FLOW CONTROL.			
VB101	NEEDLE VALVE (3/8" NPT): TO BE USED AS A SHUT OFF VALVE FOR TEMPORARY LOAD HOLDING			
VB102	NEEDLE VALVE (1/4" NPT): TO BE USED AS A SHUT OFF VALVE FOR TEMPORARY LOAD HOLDING			
VB66	MANUALLY OPERATED CHECK VALVE: USED FOR LOAD HOLDING. VALVE IS MANUALLY OPENED TO ALLOW OIL FLOW BACK TO TANK. FITTED WITH AUTO OVERLOAD RELIEF VALVE.			
BG9623	IN-LINE PRESSURE RELIEF VALVE: USED ON HYDRAULIC CYLINDERS WHERE MAXIMUM REQUIRED PRESSURE IS LESS THAN THE RELIEF VALVE SETTING OF THE PUMP.			
PRV9633	IN-LINE PRESSURE REGULATOR VALVE: USED TO REGULATE OPERATING PRESSURES OF VARIOUS VALVES BELOW THE RELIEF VALVE SETTING OF THE PUMP.			
BV42	PILOT CHECK VALVE			
BV110	LOAD LOWERING VALVE			
VH33	NON-RETURN VALVE			

HIGH PRESSURE COUPLINGS

700 BAR HIGH PRESSURE COUPLERS 1/4" NPT ▶ 3/8" NPT FITTINGS



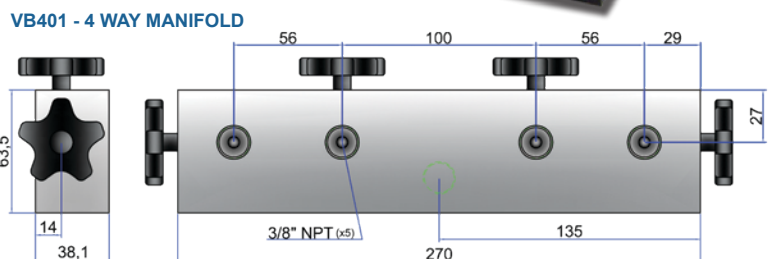
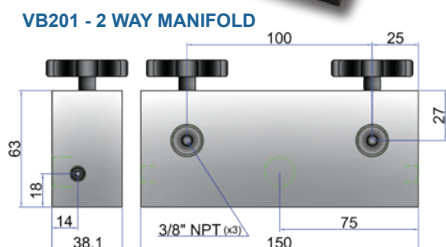
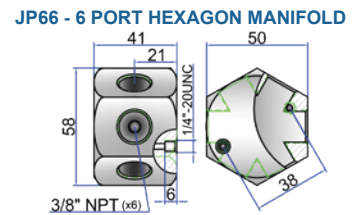
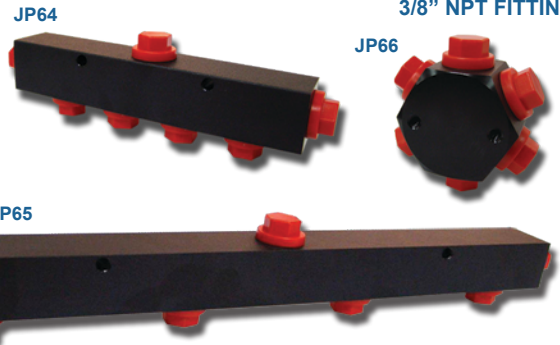
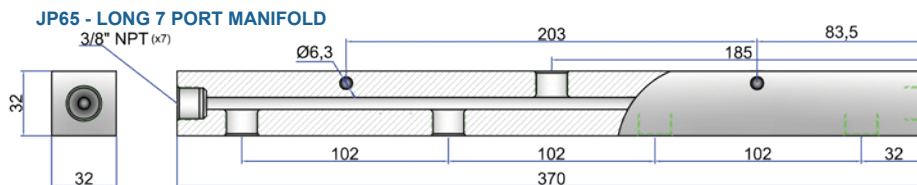
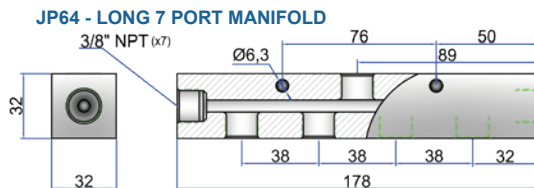
ORDER CODE	THREAD Ø(npt)	SEPERATE PART NUMBERS		WEIGHT (grams)
		HOSE HALF	RAM HALF	
CP210	1/4"	CP212	CP211	124
CP230	1/4"	CP232	CP231	125
CP330	3/8"	CP332	CP331	371
CP350	3/8"	CP352	CP351	254

PLEASE NOTE: 2000 /3000 BAR EXTRA HIGH PRESSURE VERSIONS AVAILABLE (ON REQUEST).

MANIFOLDS & FLOW DISTRIBUTION

ORDER CODE	DESCRIPTION
JP64	7 PORT MANIFOLD (178MM LENGTH)
JP65	7 PORT MANIFOLD (370MM LENGTH)
JP66	6 PORT HEXAGON MANIFOLD
VB201	1 ▶ 2 WAY MANIFOLD
VB401	1 ▶ 4 WAY MANIFOLD

700 BAR HIGH PRESSURE 1 ▶ 7 WAY MANIFOLDS 3/8" NPT FITTINGS



HIGH PRESSURE HOSES

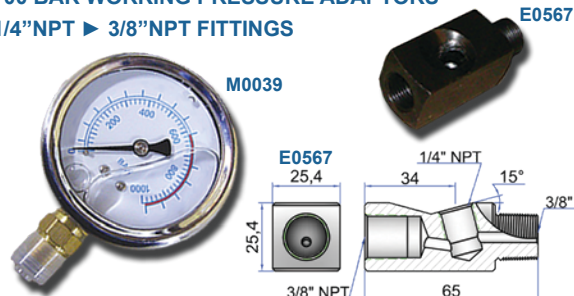
700 BAR HIGH PRESSURE
1/4" NPT ▶ 3/8" NPT FITTINGS
FLEXIBLE BLACK RUBBER COATED
2 LAYERS OF STEEL REINFORCEMENT
SPRING GUARD TO PROTECT ADAPTORS
MALE COUPLING CP332 REQUIRED TO FIT
STANDARD 700 BAR CYLINDERS.



ORDER CODE	TYPE	CONNECTION	LENGTH (ft)	
HS225	STANDARD FLOW (1/4" I/D)	1/4" NPT ▶ 1/4" NPT	5	
HS235		1/4" NPT ▶ 3/8" NPT	5	
HS226		1/4" NPT ▶ 1/4" NPT	6	
HS236		1/4" NPT ▶ 3/8" NPT	6	
HS332		3/8" NPT ▶ 3/8" NPT		2
HS333				3
HS335				5
HS336				6
HS337				7
HS338				8
HS3310				10
HS3312				12
HS3315				15
HS3320				20

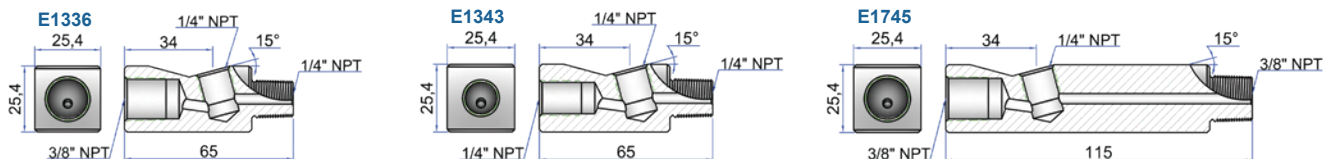
HIGH PRESSURE GAUGE & ADAPTORS

1000 BAR HIGH PRESSURE GAUGE (LIQUID FILLED)
700 BAR WORKING PRESSURE ADAPTORS
1/4" NPT ▶ 3/8" NPT FITTINGS



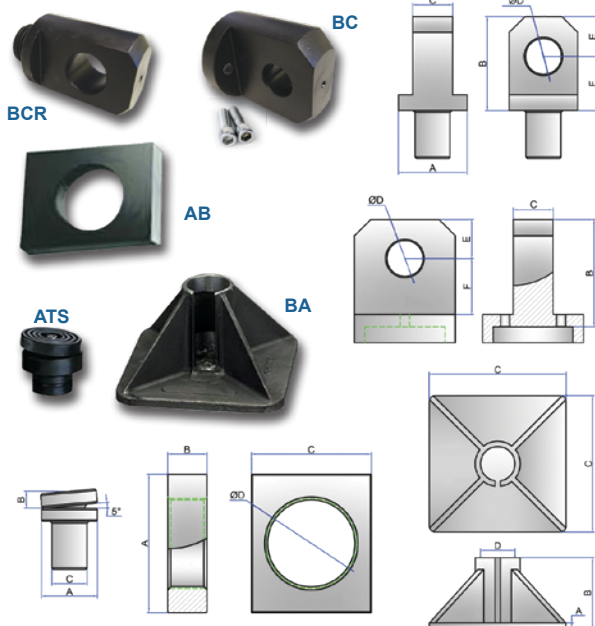
ORDER CODE	DESCRIPTION
M0039	1000 BAR HIGH PRESSURE Ø63 GAUGE (1/4" NPT)
M0040	1000 BAR HIGH PRESSURE Ø100 GAUGE (1/4" NPT)
E0567	3/8" NPT ▶ 3/8" NPT 700 BAR GAUGE ADAPTOR
E1336	3/8" NPT ▶ 1/4" NPT 700 BAR GAUGE ADAPTOR
E1343	1/4" NPT ▶ 1/4" NPT 700 BAR GAUGE ADAPTOR
E1745	3/8" NPT ▶ 3/8" NPT 700 BAR GAUGE ADAPTOR (115MM)

PLEASE NOTE: GAUGES ARE CALIBRATED TO READ IN BAR AND PSI TO MEET DIN STANDARD ACCURACY (PERCENTAGE OF FULL SCALE = ±1.6%).



ACCESSORIES FOR 'SSS' TYPE CYLINDERS

SPECIALISED MOUNTINGS AND ACCESSORIES FOR USE WITH THE 'SSS' TYPE CYLINDER RANGE.

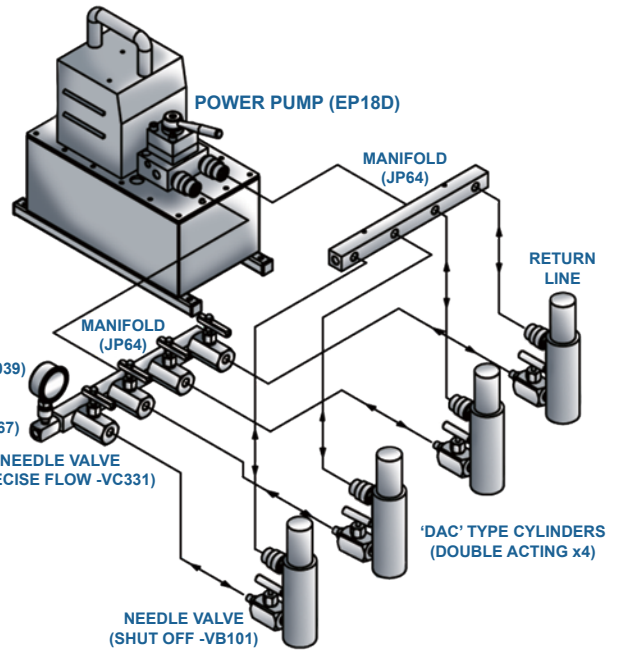
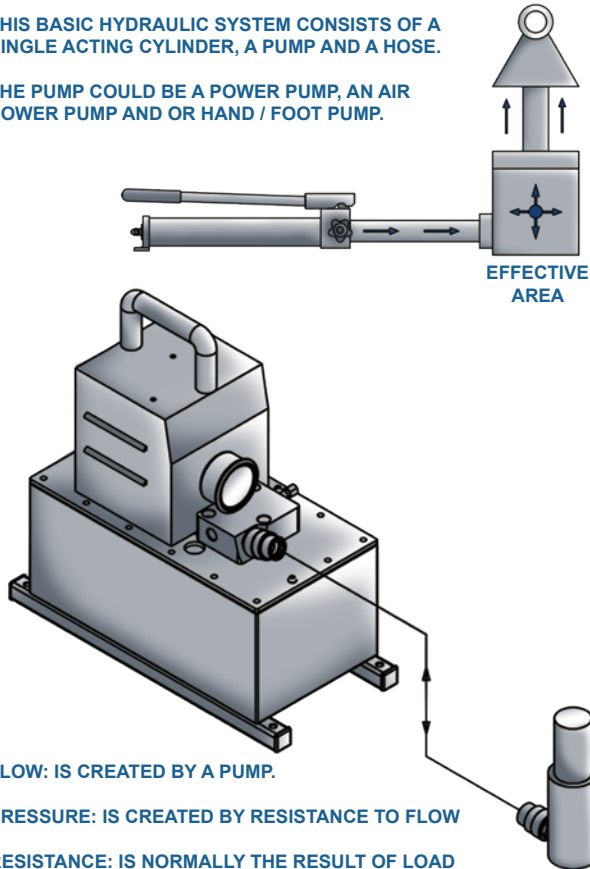


ORDER CODE	A (mm)	B (mm)	C (mm)	D Ø(mm)	E (mm)	F (mm)	SUITABLE FOR	
BCR5	28	41	14	16	16	25	SSS51 ▶ 2514	
BCR10	43	59	25	22.3	25	34		
BCR15	43	62	25	22.3	25	37		
BCR25	57	74	38	31.8	31	43		
BC5	44	48	14	16	16	25		
BC10	63	67	25	22.3	25	35		
BC15	76	67	25	22.3	25	35		
BC25	95	79	38	31.8	31	41		
BA10	9	110	230	58	-	-		SSS102 ▶ 1014
BA25	16	126	280	86	-	-		SSS252 ▶ 2514
ATS10	35	11.5	22	-	-	-	SSS102 ▶ 1014	
ATS25	50	14	36	-	-	-	SSS251 ▶ 2514	
AB5	88	25	76	1-1/2"x16	-	-	SSS51 ▶ 2514	
AB10	114	25	88	2-1/4"x14	-	-		
AB15	101	38	114	2-3/4"x16	-	-		
AB25	127	50	165	3-5/16"x12	-	-		

HYDRAULIC PRINCIPLES & SYSTEMS

THIS BASIC HYDRAULIC SYSTEM CONSISTS OF A SINGLE ACTING CYLINDER, A PUMP AND A HOSE.

THE PUMP COULD BE A POWER PUMP, AN AIR POWER PUMP AND OR HAND / FOOT PUMP.



ABOVE IS AN EXAMPLE USING OUR RANGE OF PRODUCTS FITTED IN A SYSTEM CONTROLLING 4 DOUBLE ACTING CYLINDERS.

MANY DIFFERENT SYSTEM ARRANGEMENTS CAN BE ACHIEVED BY USING A REMOTE MOUNTED DIRECTIONAL CONTROL VALVE. REMOTE VALVES ARE IDEAL WHEN SYSTEM CONTROL IS DESIRED AWAY FROM THE PUMP.

QUICK RELEASE HIGH PRESSURE HYDRAULIC CONNECTIONS ARE QUICK AND CONVENIENT WHEN YOU USE INLINE MANIFOLDS TO CONTROL UP TO 4 DOUBLE ACTING CYLINDERS.

FORMULA FOR THE CALCULATION OF OUTPUT FORCE:

$$\frac{\text{BAR} \times \text{CYLINDER EFFECTIVE AREA} \times \text{NUMBER OF CYLINDERS}}{1000 \text{ KGS}} = \text{METRIC TONS}$$

FORMULA FOR THE CALCULATION OF LIFTING SPEED:

$$\frac{\text{PUMP FLOW (PER MINUTE)}}{\text{CYLINDER EFFECTIVE AREA} \times \text{NUMBER OF CYLINDERS}} = \text{PISTON TRAVEL (MM / MINUTE)}$$



SAFETY TIPS

1) CHOOSE THE RIGHT RAM. YOU MUST KNOW THE WEIGHT OF WHAT YOU INTEND TO LIFT AND CHOOSE A RAM WITH AT LEAST 20% MORE CAPACITY BE AWARE OF POSSIBLE LOAD SHIFT REQUIRING MORE CAPACITY AT ANY PARTICULAR LIFTING POINT.

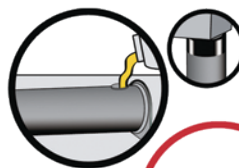


2) CHECK EACH COMPONENT IN FULL BEFORE YOU SET UP YOUR HYDRAULIC SYSTEM. DO NOT USE DAMAGED OR WORN COMPONENTS TURN THEM IN FOR REPAIR OR REPLACEMENT.

3) SAFETY INSTRUCTIONS. READ ALL THE WARNING LABELS AND INSTRUCTIONS MUST BE UNDERSTOOD BEFORE USING THE EQUIPMENT. NEVER REMOVE LABELS FROM EQUIPMENT. REPLACING MISSING, WORN, OR DAMAGED LABELS. ALWAYS WEAR SAFETY GOGGLES AND PROTECTIVE CLOTHING WHEN USING ANY TYPE OF HYDRAULIC EQUIPMENT.



4) EACH JACK OR RAM MUST BE FULLY SUPPORTED AT THE BASE EACH JACK OR RAM, WHETHER USED INDIVIDUALLY OR IN A SYSTEM, SHOULD BE COMPLETELY SUPPORTED ON A SOLID, FIRM, NON - SLIDING FOUNDATION CAPABLE OF SUPPORTING THE LOAD.



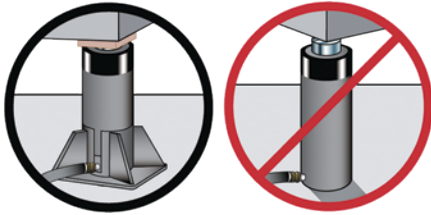
5) FILL OIL RESERVOIRS WITH CYLINDER RETRACTED. ONLY FILL PUMP TO THE RECOMMENDED LEVEL, AND FILL ONLY WHEN THE CONNECTED CYLINDER IS FULLY RETRACTED.

6) KNOW HOW YOUR HYDRAULICS WORK. DO NOT USE EXTENSIONS OR MAKE SHIFT BARS ON HYDRAULIC JACKS OR HAND PUMPS TO RAISE A LOAD.

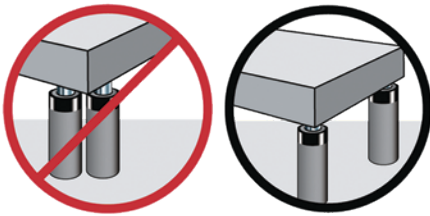


SAFETY TIPS

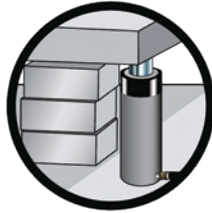
7) CENTRE THE LOAD ON THE LIFT POINT. THE LOAD MUST BE CENTRED ON THE RAM, OR EQUALLY DISTRIBUTED ON MULTIPLE RAMS. OFF CENTRE LOADING CAN RESULT IN THE RAM SLIPPING OUT AND LOSS OF THE LOAD.



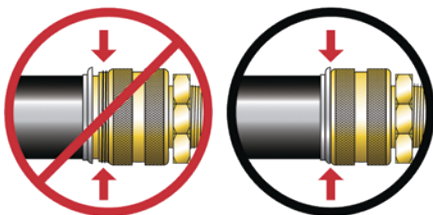
8) WHEN USING MULTIPLE RAMS DISTRIBUTE THE LOAD EVENLY. FOR MULTIPLE LIFTS, YOU MUST BE ABLE TO DETERMINE THE LOCATION AND NUMBER OF THE LIFTING POINTS THAT WILL ALLOW THE LOAD TO BE DISTRIBUTED EVENLY TO ALL OF THE RAMS. THIS IS CALLED LOAD BALANCE. SIZE, CENTRE OF GRAVITY AND LOAD GEOMETRY MUST BE CONSIDERED IN ORDER TO FULLY AND CORRECTLY DETERMINE THE LOAD BALANCE.



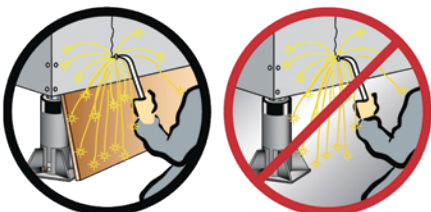
9) BLOCK OR CRIB YOUR LOAD AS IT RISES. PLACE BLOCKING OR CRIBBING UNDER THE LOADS AS YOU RAISE IT. EACH TIME YOU RAISE IT HIGHER, INSERT MORE BLOCKING. POSITION YOURSELF IN A MANNER THAT WILL KEEP YOU CLEAR OF THE LOAD AND WILL NOT ALLOW YOUR HANDS OR OTHER BODY PARTS BETWEEN THE LOAD AND THE CRIBBING.



10) HYDRAULIC CONNECTIONS. WHEN MAKING ANY CONNECTIONS WITH QUICK RELEASE COUPLERS, MAKE SURE THE COUPLINGS ARE FULLY ENGAGED. THREADED CONNECTIONS SUCH AS FITTINGS, GAUGES...ETC. MUST ALL BE SECURELY TIGHTENED AND LEAK FREE. NEVER USE EXCESSIVE FORCE TIGHTENING THE CONNECTIONS THAT MIGHT EITHER DISTORT THE FITTINGS OR STRIP THE THREAD PROFILE.



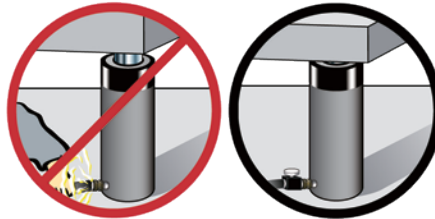
11) AVOID HEAT OR WELD SPLATTER. WELD SPLATTER WILL DAMAGE CYLINDER PLUNGERS / RODS AND ALSO HOSES. HYDRAULIC FLUID CAN IGNITE IF VAPOURIZED OR EXPOSED TO HIGH TEMPERATURES.



12) DO NOT USE RAMS AS PERMANENT SUPPORTS. HYDRAULIC RAMS ARE NOT MEANT TO BE USED AS PERMANENT SUPPORTS, BUT ARE DESIGNED TO LIFT AND LOWER. IF YOU NEED TO HOLD THE LOAD FOR ANY LENGTH OF TIME, CRIBBING OR POWERRAM® LOCKNUT TYPE CYLINDERS SHOULD BE USED.



13) HYDRAULIC DISCONNECTIONS. NEVER ATTEMPT TO DISCONNECT HYDRAULIC HOSES, FITTINGS OR COUPLERS UNDER PRESSURE. UNLOAD THE RAM, OPEN THE RELEASE SCREW ON THE HAND PUMP AND SHIFT OR OPEN ALL HYDRAULIC CONTROLS SEVERAL TIMES. IF THE SYSTEM INCLUDES A GAUGE DOUBLE CHECK THE GAUGE TO INSURE THAT THE PRESSURE HAS BEEN FULLY RELEASED.



14) DO NOT CARRY OR DRAG PUMPS AND RAMS BY THEIR HOSES. DRAGGING OR CARRYING RAMS OR PUMPS BY A CONNECTED HOSE CAN DAMAGE THE COUPLERS AND HOSES AND BE DANGEROUS.



15) KEEP HYDRAULIC HOSES FREE OF OBSTRUCTIONS. DO NOT DROP SHARP OR HEAVY OBJECTS ON HOSE. KEEP HOSE OUT OF HEAVY TRAFFIC AREAS. THIS WILL CAUSE INTERNAL DAMAGE TO HOSE WIRE STRANDS APPLYING PRESSURE TO A DAMAGED HOSE MAY CAUSE IT TO RUPTURE. AVOID SHARP BENDS AND KINKS WHEN ROUTING THE HOSE.



POWERRAM CE
HYDRAULIC TOOLS

TERMS & CONDITIONS OF SALE

1. GENERAL

- 1/ All quotations are made and all orders accepted to the following conditions. All conditions of the Customer and other conditions whatsoever are excluded from the contract or any variation thereof, unless expressly accepted by the company in writing.
- 2/ 'Ramparts' shall mean parts contained and referred to by an order code number in the Steerforth 'Rampart' catalogue.

2. PRICES

- 1/ All prices are as stated in the catalogue, less any discounts given in writing. The Company reserves the right to vary the discount, a minimum of 14 days notice will be given.
- 2/ Any alteration in design or quantities shall entitle the company to make an adjustment in price corresponding to that alteration.
- 3/ The cost of carriage and packing for delivery to the UK mainland is not included in the catalogue price and is normally 3 days. Any special delivery request shall be subject to an additional charge.
- 4/ Minimum goods value per order £25.00

3. DELIVERY

- 1/ Time for delivery is given as accurately as possible. The customer shall have no right to damages or to cancel the order for failure for any cause to meet any delivery time stated.
- 2/ Date of delivery shall in each case depend upon receipt of final instructions from the customer.
- 3/ The company shall endeavour to comply with reasonable requests by the customer for postponement of delivery but shall be under no obligation to do so. Where postponement is agreed by the company, in writing, the Customer shall pay all costs and expenses including a reasonable charge for storage occasioned thereby.

4. RISK: INSURANCE; TITLE

- 1/ Risk shall pass to the Customer when the goods or relevant part thereof leave the premises of the Company for delivery to the Customer notwithstanding that the company may arrange delivery.
- 2/ Title in the goods shall pass to the Customer when payment, in full, has been made under the contract.

5. CANCELLATION

- 1/ Cancellation of an order for goods not listed in the catalogue will not be accepted by the Company. However, the company may, at its discretion agree to cancellation on the strict condition that all expenses, loss of profits and other loss or damage resulting to the Company up to the time of cancellation will be reimbursed by the Customer to the Company forthwith.

6. TERMS OF PAYMENT

- 1/ All accounts shall be net monthly and due and payable by the Customer 30 days following the date of delivery.
- 2/ No disputes arising under the contract or delays beyond control of the Company shall interfere with the prompt payment by the Customer .
- 3/ In event of default of payment by the Customer, the Company shall be entitled to suspend all further deliveries without notice.

7. SHORTAGES AND DEFECTS APPARENT IN INSPECTION

- 1/ Any claim for shortages or defects apparent on inspection will only be considered if;
 - a/ the Customer inspects the goods immediately on arrival at it's premises.
 - b/ a written complaint is made to the company within 7 days of receipt of the goods.
 - c/ the Company is given the opportunity to inspect the goods.If a complaint is not made to the Company as herein provided then the goods shall be deemed to be in all respects in accordance with the contract and the Customer shall be bound to the contract and the customer shall pay for the same accordingly.
The Company is in no way responsible for delivery of the goods and is no way liable for claims for loss or damage in transit which must be made by the customer against the Carrier in accordance with the Carriers conditions.

8. FIT FOR PURPOSE

- 1/ Customer's requests for hydraulic rams shall include 'Ramparts' wherever possible. Applications for the use of any hydraulic rams made by the customer or by the Company using 'Ramparts' or any request to the Company under contract shall be the sole responsibility of the Customer. No liability for the failure as a result of incorrect application, fair wear and tear and usage shall attach to the Company.

9. GUARANTEE

- 1/ Save as provided by condition 7 hereof the Company agrees to replace or repair at its option goods or part of the goods supplied by the Company and proved to the Company's satisfaction to be faulty (fair wear and tear excluded) provided such fault to be notified within 6 months of the date of dispatch from the company's works. The customer hereby acknowledges that:
 - a/ the customer purchased goods in the course of business and not for private use and;
 - b/ the customer knows the extent and meaning of this clause and the limitations thereby imposed by and upon Sections 13, 14 and 15 of the Sale of Goods Act 1979.

10. LIABILITY

- 1/ The Company's liability, whether in respect of one claim or in aggregate, arising out of any contract shall not exceed the purchase price under contract,

11. CUSTOMER'S DRAWINGS

- 1/ The Company accepts no responsibility for the accuracy of information of drawings supplied by the Customer.
- 2/ The Customer shall indemnify the Company against all actions, claims, costs and proceedings which arise due to manufacture of components to the drawings and or specifications of the Customer where such drawings and or specifications shall be at fault or where it is alleged that they involve an infringement of any exclusive right.

12. DATA

- 1/ All illustrations, weights, measures specifications set out in the 'RAMPARTS' catalogue are statements of opinion and are provided for information only and form no part of the contract.

13. SUB-CONTRACTORS

- 1/ The Company shall be entitled to appoint one or more sub-contractors to carry out all or any of its obligations hereunder.

14. LEGAL

- 1/ The contract shall be governed and interpreted exclusively according to English Law.

15. INTEREST

- 1/ Interest at 20% shall be payable on all accounts not settled by the due date.

**STEERFORTH SALES LTD
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UNITED KINGDOM**

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