



CYLINDERS

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The product information and specifications within this catalogue should be viewed as a guide only and are subject to change without notice. Please refer to inside front cover for further details.



ASAE AGRICULTURAL MEDIUM/HEAVY DUTY

NORDON CYLINDERS Nordon Cylinders



FEATURES:

- Australian made and owned
- Fully serviceable
- Tested in dynamic situation
- 1.5" to 2.5" bore - 3/16" wall thickness
- 3" to 5" bore - 1/4" wall thickness
- 5" to 7" bore - 3/8" wall thickness
- 8" bore - 1/2" wall thickness
- Barrel St52.3 BK + S 520 N/mm sq
- Surface finish Ra .08 to .6um
- Precision ground and polished hard chrome shaft
- Nyloc nut to ensure positive lock
- One piece piston
- Five part double acting seal
- Barrel thread treated with never seize
- Cast iron gland
- Twin lip Hythane® rod seal
- Slotted back Hythane® rod wiper
- Alternative port positions available
- Plated clevis pins with clips to both ends
- Threaded clevis to rod
- Steel threaded gland cap on NH, PH, & HDN Series
- Painted in medium grey top coat
- Alternative mounting styles available
- Special sizes available to order
- Max cylinder speed .4 Meter/Sec

NORDON CYLINDERS

Nordon is working harder to become Australia's leading source for Hydraulic cylinders.

Nordon's knowledge and more than 30 years experience of the fluid power market place in the mobile, agricultural and industrial sectors enables them to consistently provide quality, durability and performance in their welded cylinder products.

In addition to custom manufacturing capabilities, Nordon also maintain continuous inventory of standard hydraulic cylinders, as well as stock held by distributors throughout the country. Nordon Cylinders are proud to include Berendsen Fluid Power as a National Distributor.

The Nordon Cylinders product range coupled with Berendsen Fluid Power's own manufactured range of heavy duty cylinders provides a range of hydraulic cylinders to our customers which is unequalled in Australia.

Let Nordon Cylinders work harder for you.



	NGA	GSN	NH	PH	HD	SL
Australian made and owned	✓	✓	✓	✓	✓	✓
Fully serviceable	✓	✓	✓	✓	✓	✓
Every cylinder tested in dynamic situation			✓	✓	✓	
Tube internal surface finish between RA .08um & .4um	✓	✓	✓	✓	✓	✓
3/16" Wall tube 1" to 2.5" bore	✓	✓	✓	✓		
1/4" Wall tube 3" to 5" bore		✓	✓	✓		
3/8" Wall tube 6" to 7" bore			✓	✓		
3/8" Wall tube 3" to 5" bore					✓	
1/2" Wall tube 6" to 8" bore					✓	
Precision ground and polished hard chrome shaft K1045 minimum with 100 HR splash test hard chrome	✓	✓	✓	✓		✓
Precision ground and polished hard chrome shaft 20mv6 minimum with 100 HR splash test hard chrome especially used for special cylinder with welded rod mounts			✓		✓	
Nyloc nut to ensure positive lock	✓	✓	✓	✓	✓	✓
One piece piston	✓	✓	✓	✓	✓	✓
Five part double acting seal		Hallite 755 Series Seal	✓			✓
Heavy Duty Hallite 714 seal & wear rings				✓	✓	
Barrel thread treated with never seize		✓	✓	✓	✓	
Cast iron gland	✓	✓	✓	✓	✓	✓
Twin lip Hythane® rod seal	✓	✓	✓	✓		✓
Twin lip Hallite 621 Series Hythane® rod seal					✓	
Slotted back 520 Series Hythane® rod wiper	✓	✓	✓	✓	✓	✓
UNF O ring ports	✓	✓	✓	✓	✓	✓
Alternative port position available		✓	✓	✓	✓	
Standard female clevis	✓	✓	✓	✓		✓
Plated clevis pins	✓	✓	✓	✓	✓	✓
Threaded clevis to rod	✓	✓	✓	✓	✓	✓
Clips to both ends	✓	✓	✓	✓	✓	✓
Steel threaded gland cap			✓	✓	✓	
Internal threaded gland	✓	✓				✓
Painted in medium grey top coat	✓	✓	✓	✓	✓	✓
Alternative mounting styles available		✓	✓	✓	✓	
Special sizes available to order		✓	✓	✓	✓	
Special seals available to order		✓	✓	✓	✓	



Nordon Cylinders (Cont.)

ORDERING INFORMATION:

NGA - C - 20 - A - E - A - P - 12 - ST050 - B - FBR - R1.00 D I - B - CV
 (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14)

(1) CYLINDER TYPE

NGA = Light Duty
 GSN = Medium Duty
 NH = Industrial
 HD = Heavy Duty
 PH = STD Phasing
 SL = Slim Line

(2) CUSHION

C = Base End Non Adj.
 E = Rod End Non Adj.
 G = Base End Adj. Cushion
 H = Rod End Adj. Cushion

(3) BORE IN INCHES

15 = 1.5"
 20 = 2"
 25 = 2.5"
 30 = 3"
 35 = 3.5"
 40 = 4"
 50 = 5"
 60 = 6"
 70 = 7"
 80 = 8"

(4) BASE PORT POSITION VIEWED FROM BASE END

A = 0°
 B = 90°
 X__ = Other clockwise Degrees from Base "A" position
SEE DIAGRAM

(5) BASE PORT TYPE

STANDARD (OMIT) = Straight Port 3/4" UNF O-Ring
 E = Elbow
 P = Port Tube
 S = Non Standard

(6) ROD PORT POSITION VIEWED FROM BASE END

A = 0°
 B = 90°
 X__ = Other clockwise Degrees from Base "A" position
SEE DIAGRAM

(7) ROD PORT TYPE

STANDARD (OMIT) = Straight Port 3/4" UNF O-Ring
 E = Elbow
 P = Port Tube
 S = Non Standard

(8) STROKE IN INCHES

08 = 8"
 12 = 12"
 16 = 16"
 18 = 18"
 20 = 20"
 24 = 24"
 36 = 36"
 48 = 48"
 Specify stroke length in inches.
 For fractional strokes specify next inch size up followed by 's'.

(9) STOP TUBE

ST__ = length of Stop Tube in mm

(10) BASE MOUNT & (11) ROD MOUNT

B = Bare
 E = Pin Eye (Length in mm)
 FBR = Base Flange Round
 FBSQ = Base Flange Square
 FBN = Base Flange NFPA Style
 FRR = Rod Flange Round
 FRSQ = Rod Flange Square
 FRN = Rod Flange NFPA Style
 M = Male Lug
 T = Trunnion
 SB = Spherical Bearing
 C = Female Clevis
 S = Special

PLEASE REFER TO NORDON'S MANUAL FOR FURTHER EXPLANATION IF REQUIRED

(12) ROD SPECIFICATION

R__ = Rod Size Ø in Inches
 I = Induction Hardened

(13) TYPES OF THREADS

B = Standard Thread (No Flats)
 TF = Threaded with Spanner Flats
 N = Rod End - NFPA
 S = Special (specify)

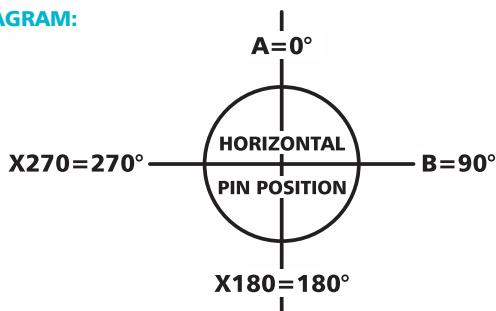
(14) VALVE MOUNTING

CV = Base Mounted C/Balance Valve
 DCV = Base Mounted Dual C/Balance Valve
 OCV = Block Mounted Single Valve
 DOCV = Block Mounted Double Valve

SPECIAL APPLICATION CYLINDERS

Special application cylinders also available including:
SS Series - Stomper cylinders for cotton module builders
TL Series - Toplink style cylinders for tractor 3 port linkage
SP Series - Special light & medium duty cylinders made to order
HDN Series - Special heavy duty & high speed cylinders made to order

DIAGRAM:





NFPA TIE ROD CYLINDERS

Vickers W40 Tie Rod Cylinders

FEATURES:

- Induction hardened piston rod
- Hard chrome plated piston rod 0.2-0.3µm
- One Piece rod gland cartridge for easy seal removal
- Standard nitrile wiper seal
- High strength cold-drawn barrel
- Barrel honed and polished to 0.3-0.4µm
- One piece screw on piston secured with locking compound
- Spotfaced BSPP ports
- High strength tie rods with min. yield strength to 70 daN.mm²
- Superior O’ring tube seals
- Standard GT piston seals and nylon (delrin) piston wear rings
- Matt enamel external paint finish



SPECIFICATIONS:

Bore: Available in 9 sizes from 1.5” to 8”
 Rod: Standard, intermediate and heavy duty sizes
 Stroke: Up to 900 to with ±1.0mm tolerance
 From 900 to 1800mm with ±2.0mm tolerance
 Mounting: 13 Mounting styles to NFPA standards
 Pressure: 207 bar (3000 psi) max. rated
 Operating Speed: 41cm/sec (max. recommended)

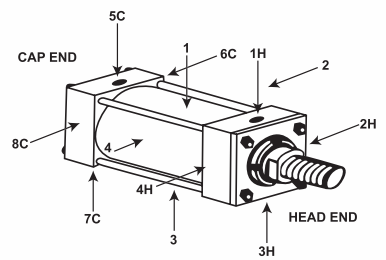
OPTIONS:

- Viton, low internal leakage, low friction, high speed seals
- Floating cushions with ball check for fast reversal breakaway
- Air bleed plugs built into barrel
- Piston rod boots
- Stainless Steel piston rods
- Weather resistant paint finish
- Proximity and temposonic sensors

Page 50 shows available mounting styles and Page 51 shows break up of ordering codes. For application information, mounting dimensions rated pressures, accessories, seal kit information etc refer to Eaton/Vickers publication “W40 Series” Cylinders available from any Berendsen sales and service location

PORT/VENT POSITIONS AND OPTIONS:

Cylinder Mounting Style	PORT/VENT LOCATION OPTIONS			
	HEAD END		CAP END	
	Port	Vent	Port	Vent
SL	1, 2, 3 or 4	1, 2 or 4	5, 6, 7 or 8	1, 2 or 4
FCM, FEM, SB, HR	1, 2, 3 or 4	1, 2, 3 or 4	5, 6, 7 or 8	1, 2, 3 or 4
RFH, RFC	1, 2, 3 or 4	1, 2, 3 or 4	5, 6, 7 or 8	1, 2, 3 or 4
IT	1 or 3	1 or 3	5 or 7	1 or 3
NM, TB, TH, TC	1, 2, 3 or 4	1, 2, 3 or 4	5, 6, 7 or 8	1, 2, 3 or 4
SFH, SFC	1, 2, 3 or 4	1, 2, 3 or 4	5, 6, 7 or 8	1, 2, 3 or 4
HT	1 or 3	1, 2, 3 or 4	5, 6, 7 or 8	1, 2, 3 or 4
CT	1, 2, 3 or 4	1, 2, 3 or 4	5 or 7	1, 2, 3 or 4

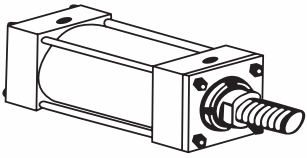
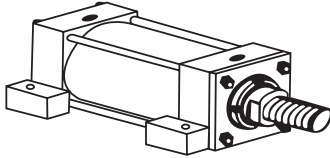
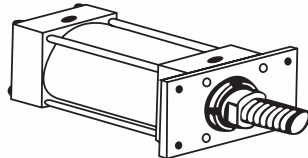
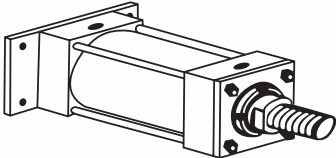
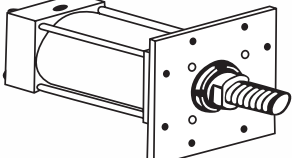
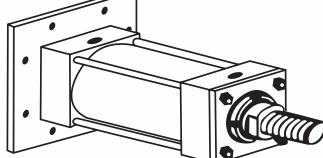
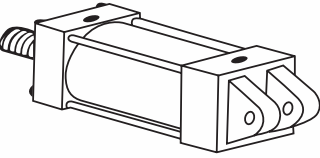
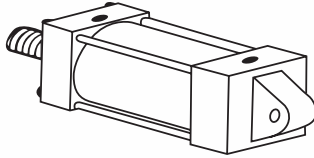
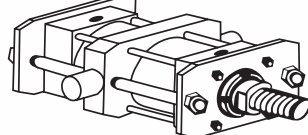
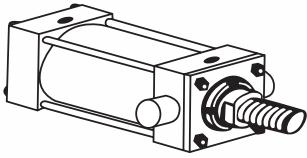
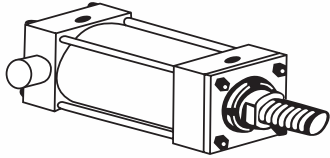
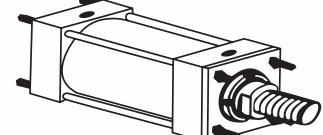
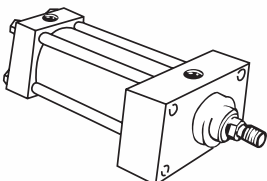
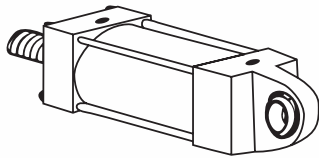
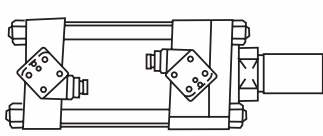
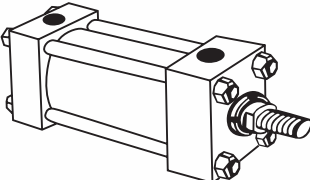
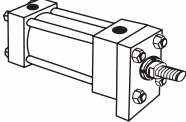
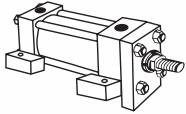
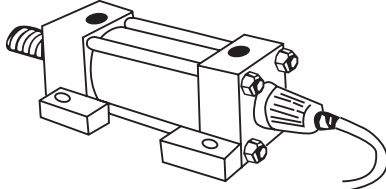




W40 Tie Rod Cylinders (Cont.)

Index to Mounting Styles

For all sizes 38.1 to 203.2mm

<p>Basic Cylinder - Style NM (N.F.P.A. Style MXO)</p> 	<p>Side Mounting - Style SL (N.F.P.A. Style MS2)</p> 	<p>Rectangular Flange Mounting - Style RFH (N.F.P.A. Style MF1)</p> 
<p>Rectangular Flange Mounting - Style RFC (N.F.P.A. Style MF2)</p> 	<p>Square Flange Mounting - Style SFH (N.F.P.A. Style MF5)</p> 	<p>Square Flange Mounting - Style SFC (N.F.P.A. Style MF6)</p> 
<p>Fixed Clevis Mounting - Style FCM (N.F.P.A. Style MP1)</p> 	<p>Fixed Eye Mounting - Style FEM (N.F.P.A. Style MP2)</p> 	<p>Intermediate Trunnion Mounting - Style IT (N.F.P.A. Style MT4)</p> 
<p>Head Trunnion Mounting - Style HT (N.F.P.A. Style MT1)</p> 	<p>Cap Trunnion Mounting - Style CT (N.F.P.A. Style MT2)</p> 	<p>Extended Tie Bolt Mounting - Styles TB, TC, TH (N.F.P.A. Styles MX1, MX2, MX3)</p> 
<p>Head Rectangular Mounting - Style HR (N.F.P.A. Style ME5)</p> 	<p>Spherical Bearing - Style SB</p> 	<p>Proximity Switches - Style PRX</p> 
<p>Tapped Mounting - Style NMT</p> 	<p>Keyed Tapped Mounting - Style KT</p>  <p>Keyed Side Lug Mounting - Style KSL</p> 	<p>Temposonic Sensor - Style LT</p> 



ORDERING INFORMATION:

F3 - W40 - SB - CC - H1 - S - S - 1H 5C - 0 - L - S - 10 -
(1) (2) (3) (4) (5)(6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17)

(1) FLUID MEDIUM

= Omit for Mineral Oil and Water Glycol
F3 = Phosphate Ester Compatible Seals (Viton)

(2) CYLINDER IDENTITY - W40 SERIES - NFPA STANDARD

(3) MOUNTING

SL = Side Lug
 RFH = Rectangular Flange - Head End
 RFC = Rectangular Flange - Cap End
 SFH = Square Flange - Head End
 SFC = Square Flange - Cap End
 FCM = Fixed Clevis Mounting
 FEM = Fixed Eye Mounting
 IT = Intermediate Trunnion
 HT = Head Trunnion
 CT = Cap Trunnion
 TB = Extended Tie Bolts - Both Ends
 TH = Extended Tie Bolts - Head End
 TC = Extended Tie Bolts - Cap End
 NM = No Mounting
 SM = Special Mounting
 HR = Head Rectangular
 SB = Spherical Bearings
 PRX = Proximity Switches
 NMT = Tapped mounting
 KT = Keyed Tapped Mounting
 KSL = Keyed Side Lug Mounting
 LT = Temposonic Sensor

(4) CUSHIONS

NC = No Cushions
 CB = Cushions Both Ends
 CH = Cushions Head End
 CC = Cushions Cap End

(5) PISTON ROD - TYPE

S = Standard Duty
 SS = Standard Duty - Double Ended
 I = Intermediate Duty
 II = Intermediate Duty - Double Ended
 H = Heavy Duty
 HH = Heavy Duty - Double Ended

(6) PISTON ROD - MATERIAL

1 = Standard Material - Induction Hardened
 2 = Stainless Steel - Grade 431

(7) ROD DETAIL

S = Standard
 F = Special

(8) PISTON SEAL

S = Standard - double Acting
 O = Other

(9) PORT POSITION - HEAD END

1H
 2H
 3H
 4H

(10) PORT POSITION - CAP END

5C
 6C
 7C
 8C

(11) VENT POSITION

0 = No Vents
 1 (Refer to sketch on pg. 53)
 2
 3
 4

(12) PISTON ROD BOOTS

O = No Boots
 L = Leather
 V = Vinyl

(13) PAINT

S = Standard
 W = Weather Resistant (2 Pak Epoxy)
 C = Customer Specified

(14) DESIGN NUMBER - 10 - BASIC DESIGN

(15) BORE SIZES

38.1 (1.50")
 50.8 (2.00")
 63.5 (2.50")
 82.6 (3.25")
 101.6 (4.00")
 127.0 (5.00")
 152.4 (6.00")
 177.8 (7.00")
 203.2 (8.00")

(16) STROKE

Millimetres (mm)

(17) STOP TUBE

Millimetres (Stroke + Stop Tube)
 Stop Tube in 25mm Increments



HEAVY DUTY ROUNDLINE CYLINDERS



HDR Series 350 bar

Berendsen Fluid Power roundline cylinders are the first choice for a well engineered, heavy duty hydraulic cylinder for diverse mobile and industrial applications. Designed with the aid of computer generated calculations and drawings, the cylinders are manufactured in our dedicated manufacturing facility in Newcastle.

FEATURES:

- Designed with reference to the international standard ISO 6020/1-1981 for mounting dimensions. We have sought to maintain all critical mounting dimensions in this standard to provide commonality between cylinders. However, our standard range described in this catalogue have a shorter overall length than the standard. This was undertaken to provide a more compact and economical design. We are able to offer a cylinder fully conforming to the standard upon request.
- The cylinders are designed to operate at 250 bar nominal, 350 bar peak pressures with the exception of MF1 and MF2 mounts. Please refer to the pressure limitation table for these latter two mounts.
- The cylinder barrel is manufactured from high strength grade SAE 1026 DOM tube. The bore is precision honed and polished to a 0.4 micron finish.
- The cylinder end caps and mounting trunnion or clevis are welded to the Australian Standard AS 4041 "Pressure Pipe Welding Code". This ensures full adherence to qualified procedures and post weld ultrasonic examination.
- The piston rods are machined from high strength carbon steel and hard chrome plated and ground to 0.2 micron finish.
- A threaded gland facilitates assembly and disassembly and is torqued to preset limits. It houses a heavy duty rod wiper to protect against contaminant ingress. It also houses a single acting rod seal and provides an extended bearing surface for longer life.
- The piston is tightened to a preset torque and scotch keyed for additional security. It houses a double acting piston seal with integral non metallic wear rings to prevent metal to metal contact.
- All cylinders are available upon request with progressive, fixed cushioning at either end complete with fast return check valves.
- A full range of rod end clevises is offered which includes spherical bearing options as well as male and female plain clevises.
- Standard ports are BSPP with machined spots faces for face sealed fittings.

STANDARD OPERATING LIMITS:

Fluid:	Hydraulic mineral oil
Viscosity:	2.8 to 380 cST
Oil Temperature:	-30°C to 90°C
Operating Speed:	500mm/sec. max

NON-STANDARD CYLINDERS:

Any cylinder configurations outside of those detailed in this catalogue are subject to individual design and quotation.

Note: Specify any non-standard XV dimension at end of code for MT4 Mount.

Example: HDR-200-140-950-MT4 (XV=600mm).



ORDERING INFORMATION:

HDR - 50 - MF3 - 36 - 250 - MC - S
(1) (2) (3) (4) (5) (6) (7)

(1) SERIES

HDR = Used in all HDR Series

(2) BORE

Specify in Millimetres

(3) MOUNTING TYPE

MF1 = Head Rectangular Flange
 MF2 = Cap Rectangular Flange
 MF3 = Head Circular Flange
 MF4 = Cap Circular Flange
 MP3 = Cap Fixed Eye
 MP5 = Cap Fixed Spherical
 MP7 = Cap Fixed Female
 MT1 = Head Trunnion
 MT2 = Cap Trunnion
 MT4* = Intermediate Trunnion
 FM1 = Foot Mount

(4) ROD

Specify in Diameter (mm)

(5) STROKE

Specify in Millimetres. If Stroke is over 20 times cylinder bore, Consult Berendsen Fluid Power

(6) ACCESSORIES ROD ENDS

SC = Swivel Clevis
 MC = Male Clevis
 FC = Female Clevis & Pin
 (Omit if not necessary)

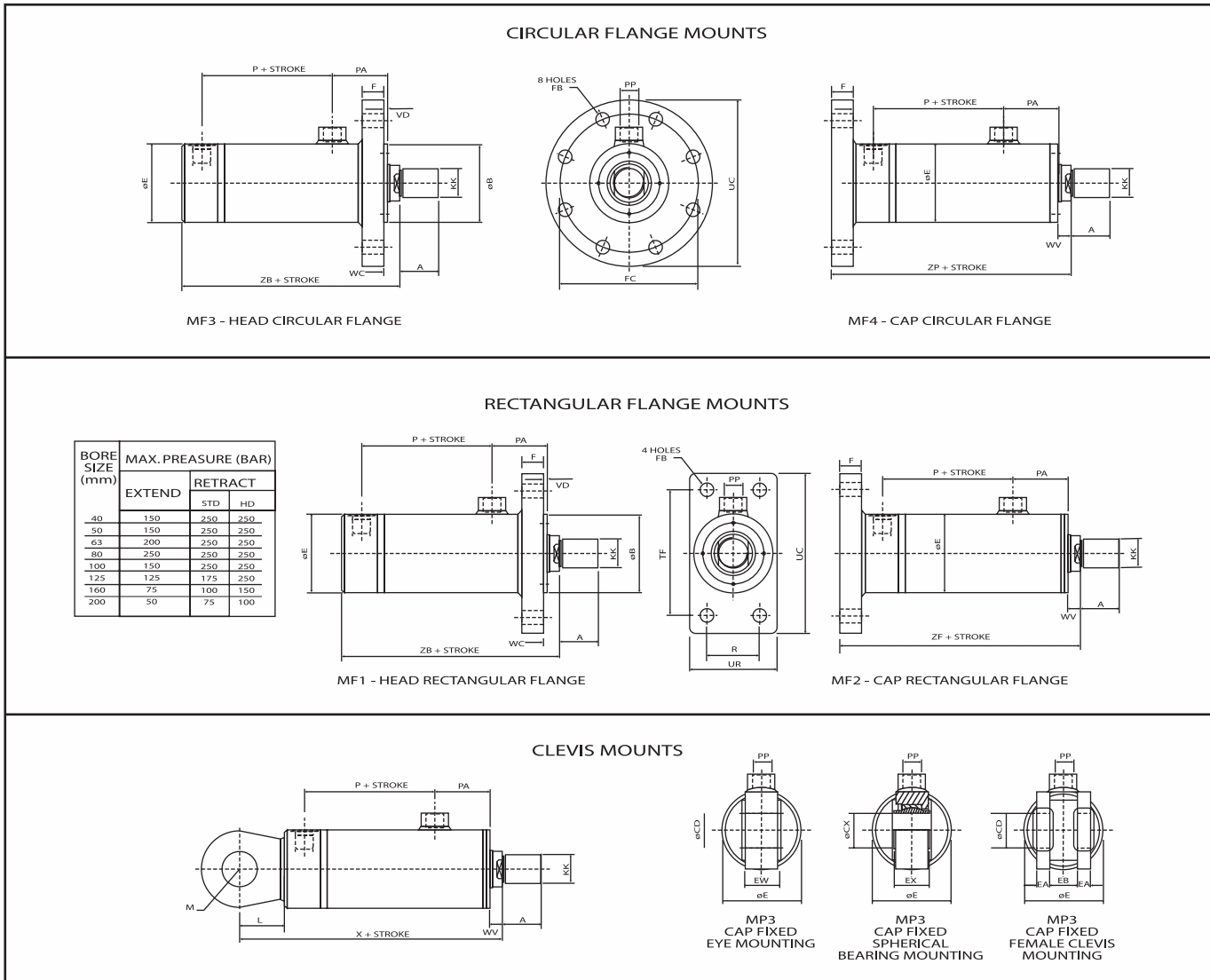
(7) SPECIAL FEATURES

S = Specify with order, or provide drawing
 (Omit if not necessary)

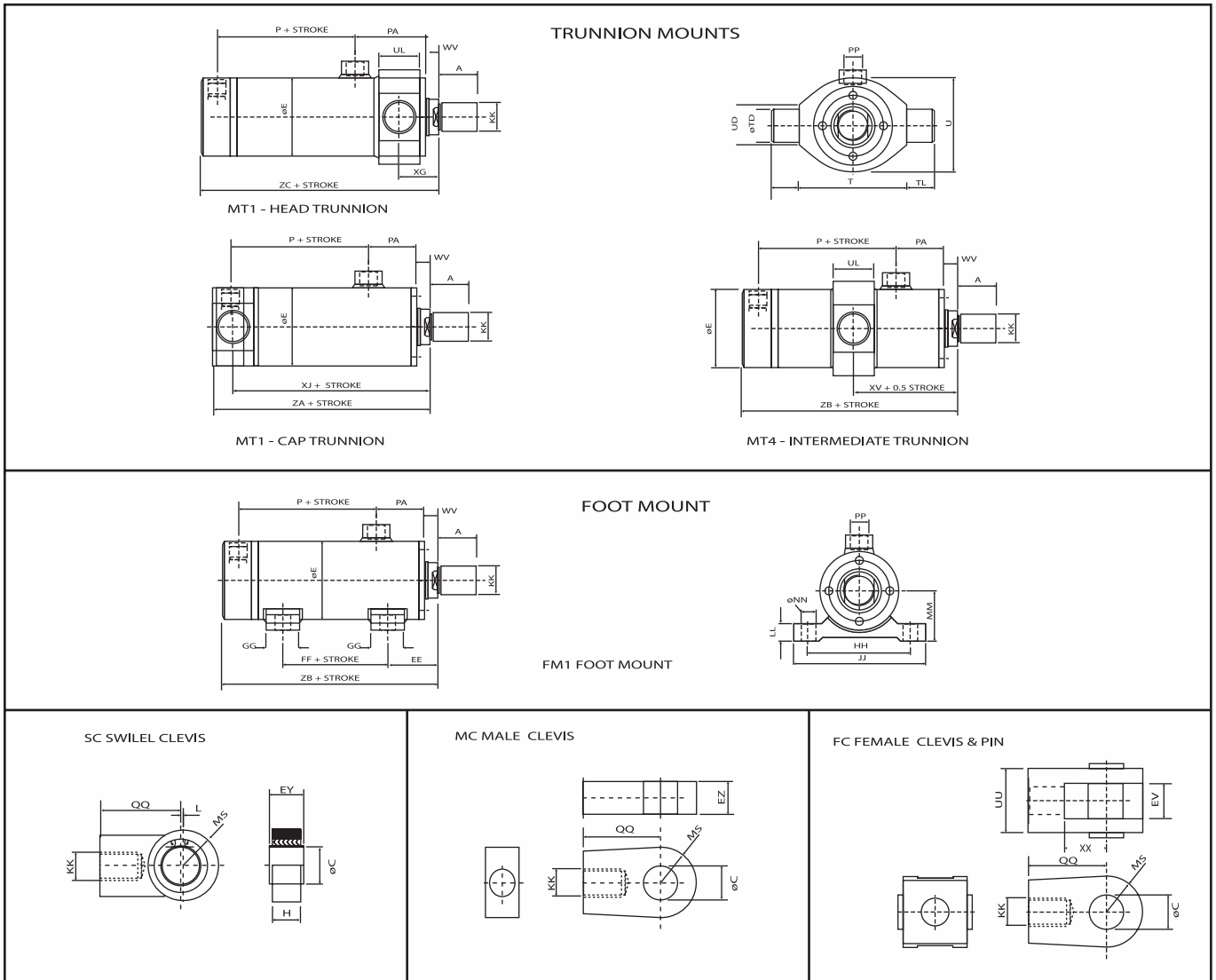


HDR Series 350 bar (Cont.)

Layout Dimensions:



Bore mm	Rod Dia.	KK Thread	A	PP BSPP PORT	VD	ØB	WC, W	WV	ØE Max	P (+str)	PA	ZB (+str)	ZP (+str)	ZF (+str)	F	ØFB	FC	UC	TF	R	UF	UR	X (+str)	L	M	ØCD, ØCX
40	22	M16 x 1.5	22	3/8	3	50	16	13	55	63.5	40	136	150	16	9	106	125	98	40.5	116	60	164	30	25	20	
	28	M20 x 1.5	28																							
50	28	M20 x 1.5	28	3/8	4	60	18	14	65	68.5	45	147	165	20	11	126	150	116.4	48.2	140	72	180	35	30	25	
	36	M27 x 2	36																							
63	36	M27 x 2	36	1/2	4	70	20	16	75	70	67	171	194	25	13.5	145	175	134	55.5	165	90	214	45	37	32	
	45	M33 x 2	45																							
80	45	M33 x 2	45	1/2	4	85	22	18	95	78	77	193	223	32	17.5	165	200	152.5	63.1	190	110	246	55	45	40	
	56	M42 x 2	56																							
100	56	M42 x 2	56	3/4	5	106	25	20	125	100	98	246	276	32	22	200	245	184.8	76.5	235	130	309	65	56	50	
	70	M48 x 2	63																							
125	70	M48 x 2	63	1	5	132	28	23	150	116	138	288	318	32	22	235	280	217.1	90.2	270	170	366	80	68	63	
	90	M64 x 3	85																							
160	90	M64 x 3	85	1-1/4	5	160	30	25	195	143	142	354	386	36	22	280	325	295	125	360	214	447	95	85	80	
	110	M80 x 3	95																							
200	110	M80 x 3	95	1-1/2	5	200	35	30	245	160.5	139.5	374	412	40	26	340	395	370	155	455	270	492	120	110	100	
	140	M100 x 3	112																							



EW, X	EA	EB	ZC	ZA	XG	XJ (+str)	XV (+0.5 str)	UL	UD	ØTD	U	TL	T	FF (+str)	EE	GG	ØNN	LL	MM	HH	JJ	QQ	L	MS	H	ØC EV, EZ EY	XX	UU
20	8	15	136	136	25.5	116.5	68.5	25	28	20	66	16	90	46	33	25	9	15	35	65	80	52	3	23.5	17	20	27	36
																						65	3	29	21	25	33	40
25	10	20	147	147	29	127.5	73.5	30	32	25	80	20	105	51	39	32	11	20	40	88	108	65	3	29	21	25	33	40
																						80	3	35	27	32	43	66
32	12	25	171	174	40	154	86.5	40	40	32	99	25	120	53	46	38	13.5	25	55	95	120	80	3	35	27	32	43	66
																						97	5	45.5	32	40	51	80
40	16	30	198	203	47	178	96.5	50	50	40	124	32	135	63	53	43	18	30	65	120	150	97	5	45.5	32	40	51	80
																						120	5	54	40	50	64	96
50	20	40	256	261	57.5	228	128	65	65	50	148	40	160	89	60	45	22	35	80	150	190	120	5	54	40	50	64	96
																						140	5	66	52	63	77	114
63	25	50	313	298	68	257	157	80	80	63	177	50	195	103	73	55	26	40	95	185	230	140	5	66	52	63	77	114
																						180	6	84	66	80	95	148
80	32	65	389	369	80	317	203	100	100	80	221	63	240	117	90	75	33	50	120	235	290	180	6	84	66	80	95	148
																						210	7	105	84	100	114	178
100	40	80	374	419	100	354	225	130	120	100	270	80	295	111.5	105	85	39	60	147	290	360	210	7	105	84	100	114	178
																						260	14	131	102	125	147	200



HEAVY DUTY MILL CYLINDERS



BERENDSEN AM1 Series ISO FLUID POWER

Berendsen AM1 Series ISO mill type cylinders are the first choice for a well engineered, heavy duty hydraulic cylinder for a variety of industrial applications. Designed with the aid of computer and manufactured in our custom built, cylinder manufacturing facility. These robust and reliable units offer the following key features:

FEATURES:

- Manufactured to the international standard ISO 6022-1981 "Mounting Dimensions for 250 Bar Single Rod Cylinders" as specified by the Steel Industry.
- Two additional non ISO standard bore sizes of 140 and 180mm have been added to supplement the range and bridge the gap between selected ISO sizes. We have also incorporated a non ISO standard foot mount option to maximise the options available to the user.
- The cylinder barrel is manufactured from high strength grade ST52 cold drawn seamless steel tube and hollow bar grade 750V. The bore is precision honed and polished to a micro finish.
- Both the gland and piston incorporate bronze impregnated Teflon wear rings to eliminate metal to metal contact and provide maximum bearing durability and strength.
- The piston rods are machined from high strength carbon alloy steel and hard chrome plated and ground to a micro finish.
- Both the gland and pistons use the latest technology in dynamic, self adjusting seals, all designed to fit into ISO 5597-1980 housing dimensions.
- The gland arrangement incorporates a heavy duty piston rod scraper to ISO 6195-1986 housing dimensions to prevent contamination from entering the cylinder.
- Cylinder bolts are high tensile grade 12.9 Unbrako socket head cap screws carefully tightened to the required torque for maximum strength and fatigue rating.
- We also offer a range of spherical bearing piston rod eyes to ISO6982-1982.
- Standard ports are BSP parallel up to 200 bore and SAE code 62 flange connections for up to 500 bore. We are able to offer other port configurations on request.
- All cylinders come standard with fully integrated, cartridge type cushion arrangements for smooth cylinder deceleration which also include an air bleed/pressure test point at each end.

STANDARD OPERATING LIMITS:

Fluid:	Hydraulic mineral oil
Viscosity:	2.8 to 380 cST
Oil Temperature:	-30°C to 90°C
Operating Speed:	500mm/sec. max

NON-STANDARD CYLINDERS:

Any mill cylinder configurations outside of those detailed in this catalogue are subject to individual design and quotation.

Note: Specify any non-standard XV dimension at end of code.

Example: AM1-200-950-MT4 (XV=560mm).

(standard XV places trunnion at centre of barrel)



ORDERING INFORMATION:

AM1 - **250** - **1430** - **MF3** - **MC** - **S**
(1) **(2)** **(3)** **(4)** **(5)** **(6)**

(1) SERIES

AM1 = Used in all AM1 Series

(2) BORE

Specify in Millimetres

(3) STROKE

Specify in Millimetres. If Stroke is over 20 times cylinder bore, Consult Berendsen Fluid Power

(4) MOUNTING TYPE

MP5 = Swivel Clevis
 MF3 = Head Flange
 MF4 = Cap Flange
 MT4 = Trunnion
 MFM = Foot

(5) ACCESSORIES ROD ENDS

SC = Swivel Clevis
 MC = Male Clevis
 FC = Female Clevis & Pin
 (Omit if not necessary)

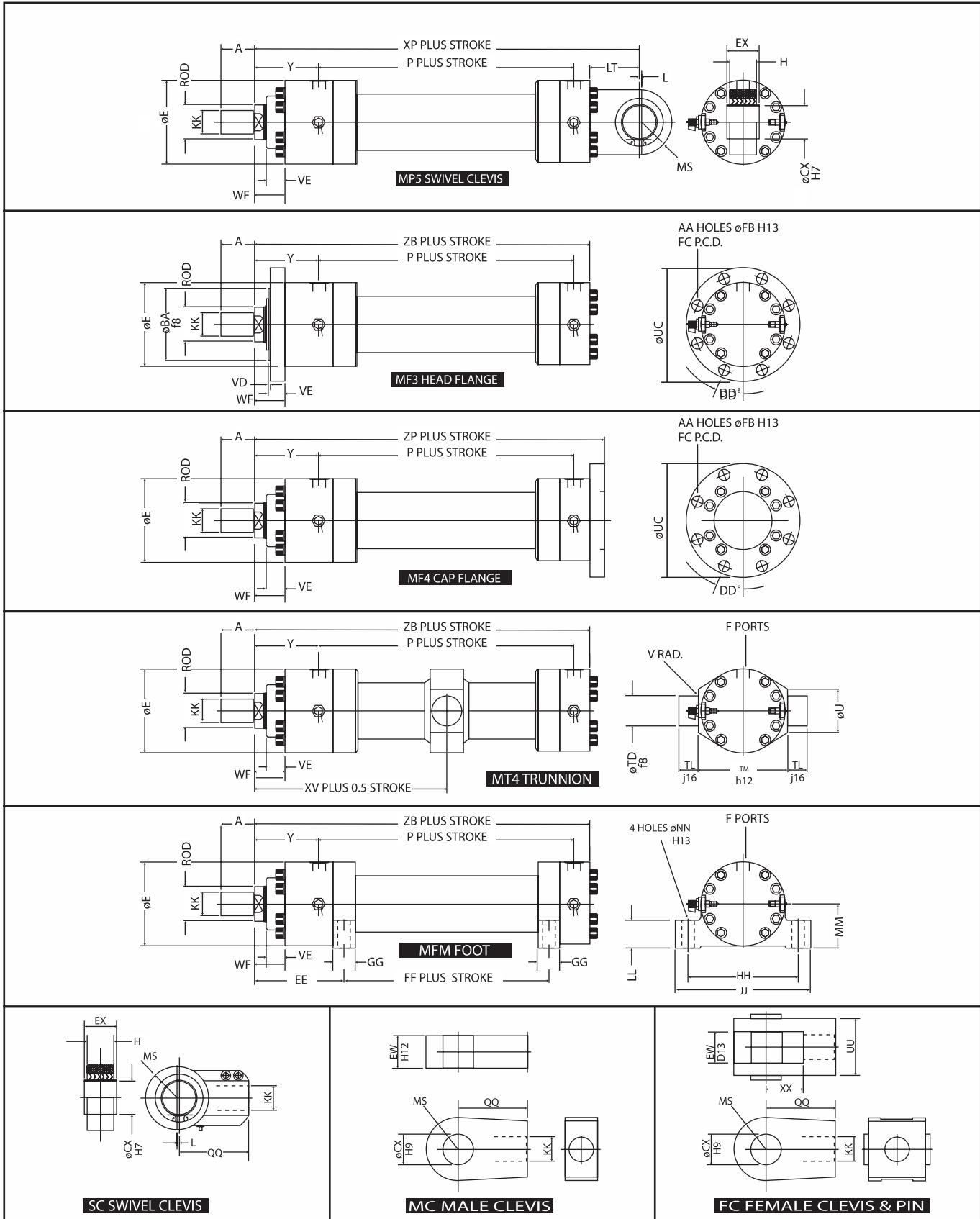
(6) SPECIAL FEATURES

S = Specify with order, or provide drawing
 (Omit if not necessary)



AM1 Series ISO (Cont.)

Layout Dimensions:





Bore mm	Rod	KK Thread	A	F Ports	ØE	Y	P	WF	VE	XC	LT	L	MS	ØCX	EX	H
50	36	M27-2.OP	36	1/2"BSPP	108	95	125	47	29	305	61	3	35	32	32	27
63	45	M33-2.OP	45	3/4"BSPP	122	105	140	53	32	348	74	3	45.5	40	40	32
80	56	M42-2.OP	56	3/4"BSPP	142	122	152	60	36	395	91	5	54	50	50	40
100	70	M48-2.OP	63	1"BSPP	172	135	170	68	41	442	102	5	66	63	63	52
125	90	M64-3.OP	85	1"BSPP	215	165	190	76	45	520	125	6	84	80	80	66
140	100	M72-3.OP	90	1-1/4"BSPP	255	176	209	80	48	580	150	8.5	92.5	90	90	72
160	110	M80-3.OP	95	1-1/4"BSPP	270	185	235	85	50	617	152	7	105	100	100	84
180	125	M90-3.OP	105	1-1/4"BSPP	315	205	250	95	55	690	185	11.5	117.5	110	110	88
200	140	M100-3.OP	112	1-1/2"BSPP	330	225	270	101	61	756	211	14	131	125	125	102
250	180	M125-4.OP	125	1-1/2"SAE-62	412	255	330	113	71	903	255	15	163	160	160	130
320	220	M160-4.OP	160	2"SAE-62	500	295	380	136	88	1080	322	21	209	200	200	162
400	280	M200-4.OP	200	2"SAE-62	620	275	420	163	110	1075	310	27	290	250	250	192
500	360	M250-6.OP	250	2-1/2"SAE-62	750	335	480	195	135	1275	365	25	350	320	320	260

Bore mm	ZB	ZP	VD	ØUC	ØBA	X	AA	ØFB	FC	DD°	XV	ØTD	TM	TL	U	V	EE	FF
50	244	265	4	155	63	25	8	13.5	132	22.5	157	32	112	25	40	0.8	134	47
63	274	298	4	175	75	28	8	13.5	150	22.5	175	40	125	32	50	1.0	151	47
80	304	332	4	210	90	32	8	17.5	180	22.5	198	50	150	40	65	1.0	170	55
100	340	371	5	250	110	36	8	22.0	212	22.5	220	63	180	50	80	1.2	192	55
125	395	430	5	290	132	40	8	22.0	250	22.5	260	80	224	63	100	1.2	230	60
140	430	465	5	340	145	43	8	26.0	300	22.5	285	90	265	70	110	1.5	255	52
160	465	505	5	360	160	45	8	26.0	315	22.5	305	100	280	80	120	1.5	268	70
180	505	550	5	420	185	50	8	33.0	365	22.5	330	110	320	90	140	1.5	288	85
200	545	596	5	440	200	56	8	33.0	385	22.5	360	125	335	100	155	1.5	315	90
250	648	703	8	540	250	63	8	39.0	475	22.5	420	160	425	125	200	1.5	360	120
320	758	830	8	675	320	80	8	45.0	600	22.5	485	200	530	160	250	2.0	425	120
400	765	855	10	800	400	100	12	45.0	720	-	485	250	630	200	320	2.0	440	90
500	910	1025	10	950	500	125	12	52.0	840	-	575	320	760	250	400	2.0	545	60

Bore mm	GG	HH	JJ	MM	LL	ØNN	QQ	EW	UU	XX	Area in Sq. mm		kN @ 1.0 MPa	
											Extend	Retract	Extend	Retract
50	38	135	160	60	32	11	80	32	66	43	1963	945	1.963	0.945
63	43	155	185	68	37	13.5	97	40	80	51	3117	1526	3.117	1.526
80	45	185	225	80	42	17.5	120	50	96	64	5026	2563	5.026	2.563
100	55	220	265	95	52	22	140	63	114	77	7854	4005	7.854	4.005
125	60	270	325	115	62	26	180	80	148	95	12272	5910	12.272	5.910
140	75	325	390	135	77	30	195	90	160	105	15394	7540	15.394	7.540
160	75	340	405	145	77	33	210	100	178	114	20106	10603	20.106	10.603
180	85	390	465	165	87	40	235	110	190	129	25447	13175	25.447	13.175
200	90	405	480	170	87	40	260	125	200	147	31416	16022	31.416	16.022
250	100	520	620	215	112	52	310	160	250	184	49087	23640	49.087	23.640
320	120	620	740	260	152	62	390	200	320	229	80425	42412	80.425	42.412
400	190	780	940	320	202	82	530	250	420	325	125664	64089	125.664	64.089
500	250	950	1150	385	252	102	640	320	490	380	196349	94561	196.349	94.561

Note: The layout and quantity of fixing bolts shown is indicative only. Standard port position is shown (at 12 o'clock) with respect to the mounting types.

Cushion and check/bleeder valves are at both ends, and their layout is indicative only.



CUSTOM DESIGNED & MANUFACTURED CYLINDERS

Special Design Cylinders



FEATURES:

- Design to customer application and dimensional requirements
- Bore sizes up to 800 mm
- Stroke sizes up to 8000 mm stroke
- High pressure up to 350 bar
- Stainless steel construction
- Built-in cartridges
- Test bench for static testing cylinders to 700 bar and forces to 450 ton

TYPES:

- Telescopic multiple stage cylinders
- Spring loaded cylinders
- Synchronised constant velocity cylinders
- Linear servo actuators
- Rotating cylinders and distributors
- Rotary actuators (Vane, rack and pinion)



Berendsen Fluid Power's manufacturing facility at Wallsend, NSW (Newcastle) was established in 1995, with a floor space of 3200 square metres, three over head cranes - two 5t and one 10t, and 3 CAD stations. This facility specialises in the design and manufacture of hydraulic and pneumatic cylinders.

Dedicated cylinder stripping, assembly and testing facilities have been purpose designed to the finest details, like self draining flooring for the collection and environmentally conscious disposal of waste oil. Test benches for the static testing of cylinders to 700 bar and forces to 450 tonnes in either direction have been designed and constructed in house.

Berendsen Fluid Power has purpose designed and built their own honing machines, customised for the high levels of precision and accuracy required on specialised engineering projects. The largest of this machines is capable of honing tube 580 mm diameter and 8 metres length.

