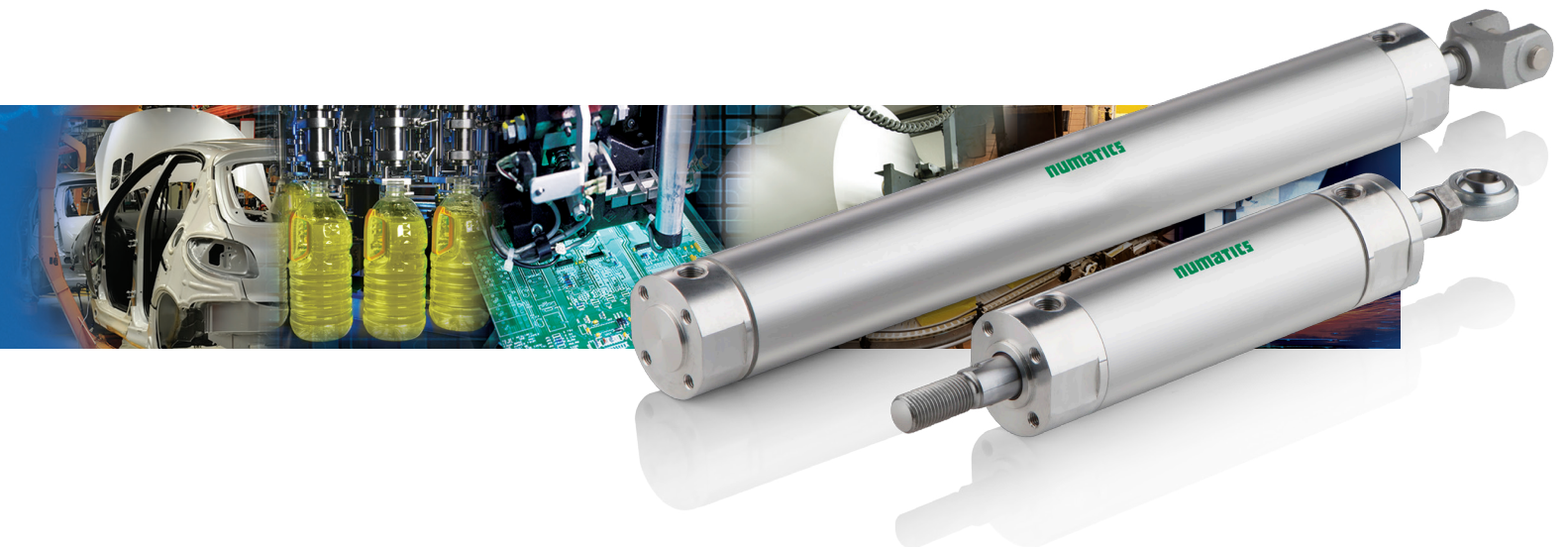


# NUMATICS®

## Actuator and Motion Control Products

488 Series | Repairable Round Line Cylinder



# numatics®

**Numatics, Inc. is a leading manufacturer of pneumatic products and motion control products.** Our broad spectrum of standard, custom developed products and application components have made a significant impact on pneumatic innovation as well as pneumatic and motion control technology. Our company has an extensive history of generating innovative concepts and technological breakthroughs. Many of today's standard features in pneumatic technology were industry firsts from Numatics. We continue our innovative approach to product development by developing electric motion control solutions and enhancing our embedded Fieldbus and I/O products to continually meet and solve our customer's application requirements.



**Today Numatics is proud to be a part of the Industrial Automation Division of Emerson Electric Co.**

Emerson (NYSE:EMR), based in St. Louis, Missouri (USA), is a global leader in bringing technology and engineering together to provide innovative solutions for customers in industrial, commercial, and consumer markets through its network power, process management, industrial automation, climate technologies, and appliance and tools businesses. For more information, visit [www.Emerson.com](http://www.Emerson.com).





Numatics Express Shipping Program guarantees<sup>†</sup> product shipment in two, three or five business days. Unlike most traditional quick ship programs, the Numatics Express Shipping Program includes the most comprehensive offering in the industry. This program encompasses the range and options that you require!

Numatics is committed to offering you the highest level of customer service, quality and performance.

## 2DAY

Numatics Express 2Day shipping program guarantees<sup>†</sup> product shipment in two business days. The program includes the most popular valve, air preparation and actuator products and includes applicable switches and mounting accessories.

Numatics guarantees<sup>†</sup> to ship any order received before 3 pm EST for up to 10 2Day products\* in two business days.

## 3DAY

Numatics Express shipping program offers a 3Day shipping program that guarantees<sup>†</sup> product shipment of a fully assembled and tested valve manifold in 3 business days. The program includes the most popular manifold configurations of the 2000 and Mark series valves:

- Sub D, Terminal Strip and Fieldbus Electronic Options
- Can be configured for DIN Rail Mounting and Muffled Exhaust
- Shipped complete and 100% tested

The 3Day Express shipping program enables you to create a 2 to 8 station manifold assembly complete with any combination of valves, regulators, and blank stations that can be configured from the valve model charts in this catalog.

Numatics guarantees<sup>†</sup> to ship any order received before 3 pm EST for up to 5 manifold assemblies configured from this catalog in three business days or Numatics pays the shipping cost.

## 5DAY

We are pleased to expand Numatics Express to include a broad range of products in a 5Day shipping program. Numatics guarantees<sup>†</sup> to ship up to 10 of any 5Day product\*\* for orders received before 3 pm EST in 5 business days or Numatics pays the shipping cost.

We are committed to providing you with an unmatched level of customer service, quality, and reliability. If you cannot locate the specific product for your application or need additional product specifications, visit [www.numatics.com](http://www.numatics.com) or call 888-686-2842. Numatics Express orders cannot be canceled or adjusted once entered. Saturdays, Sundays, and Holidays are excluded.

<sup>†</sup>As industry requirements change, Numatics reserves the right to modify the contents of this catalog and program without notification. Updates on this program can be obtained from the Numatics website [www.numatics.com](http://www.numatics.com) or by calling 888-686-2842, or by contacting your local Numatics representative or distributor and referencing the Numatics Express program.

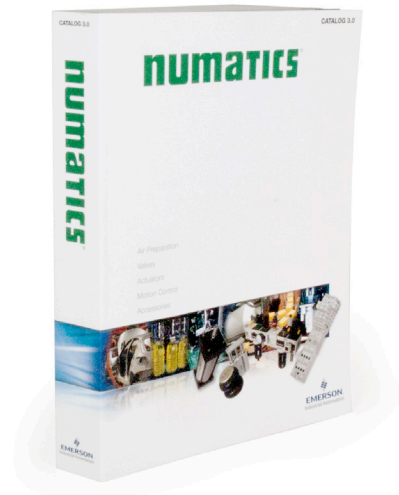
**\*Sentronic<sup>®</sup> Proportional Valves, CGT Compact Slides, NR Series Rodless and Air Bellows are limited to orders up to 5.**

**\*\*ASP Series Steel Body NFPA and G Series Guide Rail Rodless are limited to orders up to 5.**

# Welcome to the World of Fluid Automation...

Since 1945, Numatics has emerged as the prominent specialist in developing and manufacturing pneumatic and fluid power components for a widely diverse field of automated industry. From idea to implementation, leading engineers choose Numatics as their single source for:

- Quality Fluid Power components
- Technologically advanced design resources
- Quick response time in delivery and service from around the world



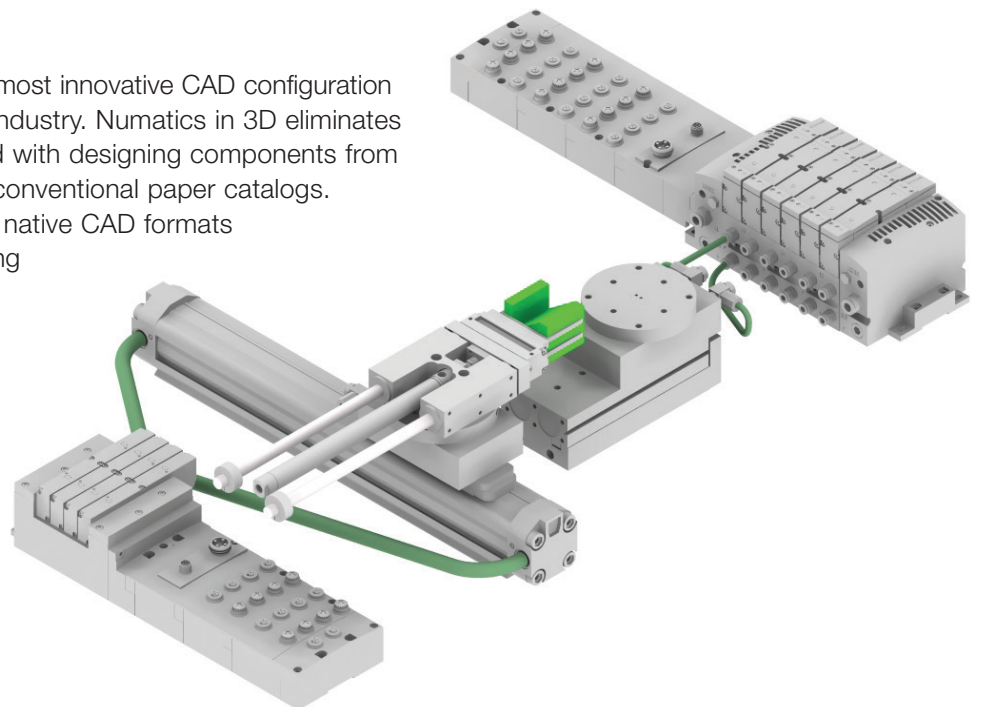
## Numasizing®

Developed by Numatics, Numasizing® offers a whole new level of fluid power system optimization. Compare large amounts of component and process data against user objectives and industry benchmarks for the best possible size, pneumatic pressure, actuator stroke velocities and other part and process variable determinations.

## CAD Modeling

Save critical development time with the most innovative CAD configuration program in the pneumatic component industry. Numatics in 3D eliminates the time consuming process associated with designing components from scratch based on information found in conventional paper catalogs.

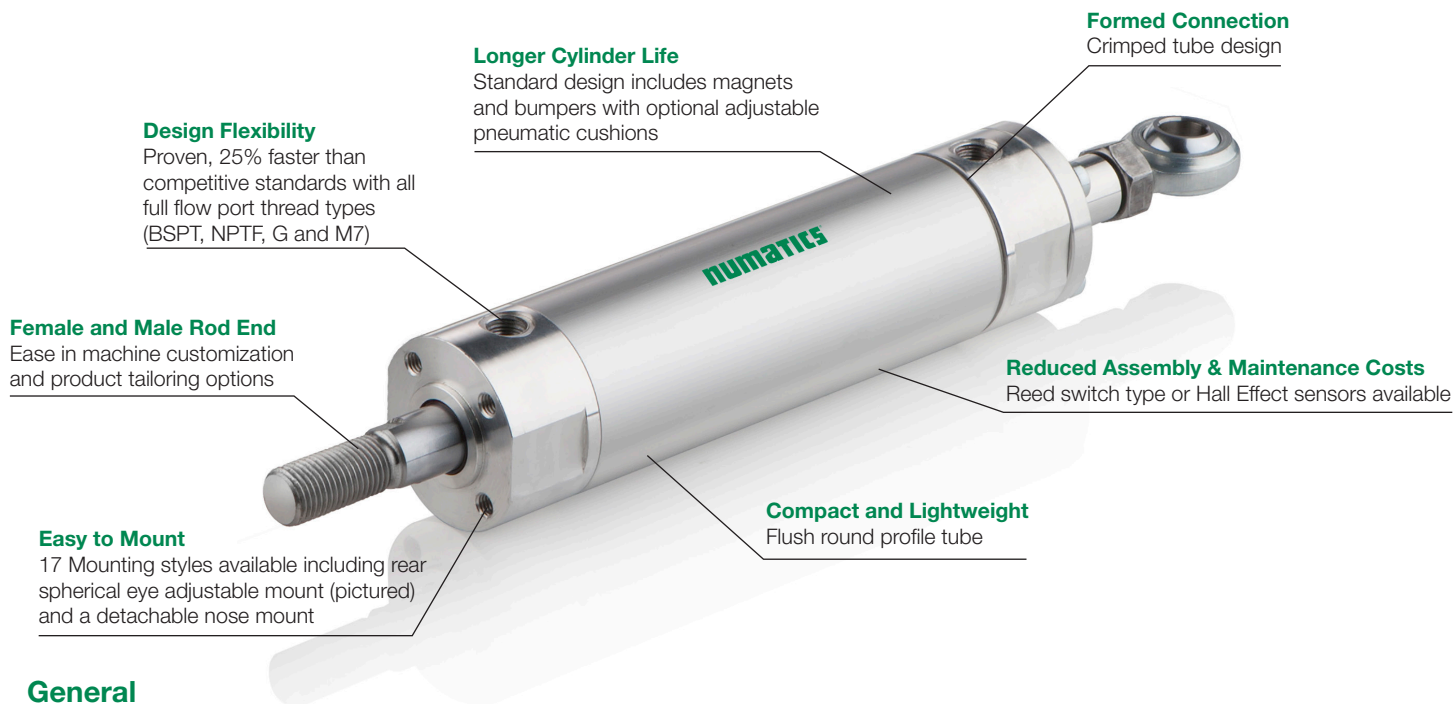
The models are available in 85 different native CAD formats in 2D drawings and 3D models, including all the popular formats including Catia, I-DEAS, Pro/Engineer, SolidWorks, Unigraphics and more.



## Series 488

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The 488 Series is a Repairable Round Line Air Cylinder with more mounting and thread type options than most competitive drop-in replacements, including standard magnets and bumpers as well as optional adjustable cushions. Expertly engineered, this cylinder's robust design is more reliable than most non-repairable cylinders which make it ideal for the high cycle rates found in numerous automation applications.



## General

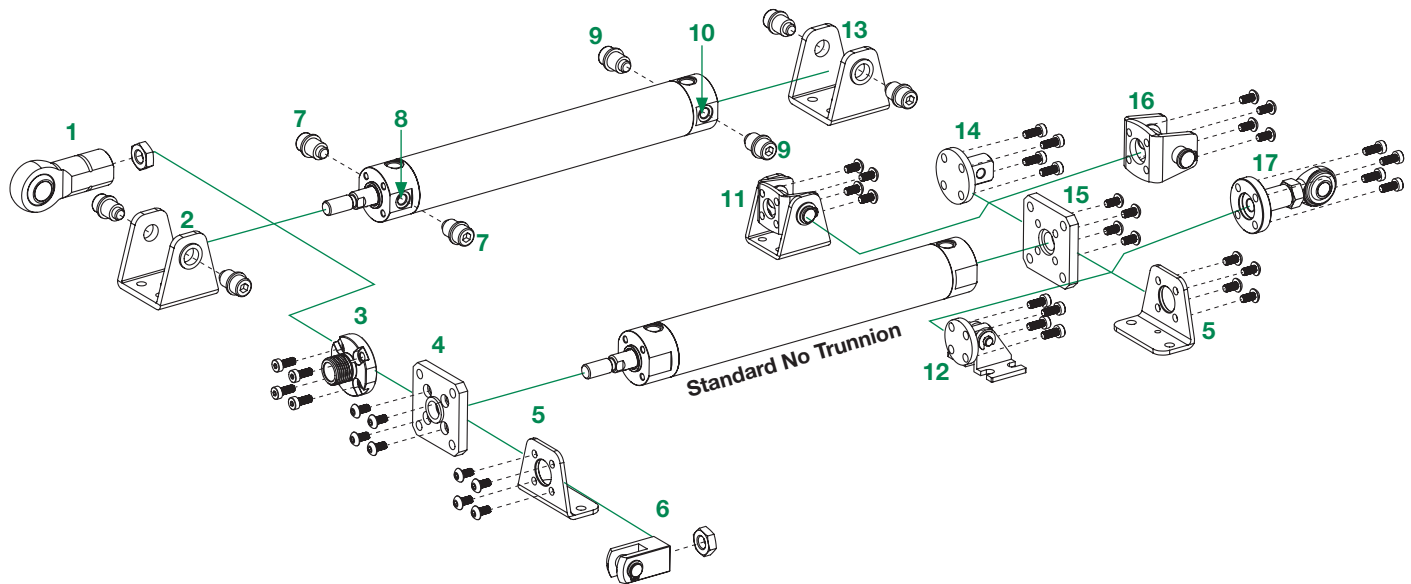
<b>Detection</b>	Switches Available for Position Sensing
<b>Fluid</b>	Compressed Air
<b>Action</b>	Double Acting, Single and Double Rod
<b>Max. Operating pressure</b>	10.3 Bar (150 PSIG)
<b>Ambient temperature</b>	-23°C to 74°C (-10°F to 165°F)
<b>Max. speed rate</b>	1.0 m/s

## Construction

<b>Tube</b>	Hard Coat Anodized Aluminum
<b>Head and Cap</b>	Aluminum (6061-T6)
<b>Bore</b>	20mm to 80mm
<b>Stroke</b>	5mm to 1000mm <sup>+1.0</sup> <sub>-0</sub>
<b>Magnet</b>	Standard
<b>Bumpers</b>	Standard
<b>Adjustable Cushions</b>	Optional
<b>Port Types</b>	All full flow port thread types (BSPT, NPTF, G and M7)
<b>Mountings</b>	17 Styles
<b>Bearing</b>	PTFE - Coated Bronze
<b>Piston Rod</b>	Ø20 - 25: Stainless Steel (303) Ø32 - 80: Hard Chrome Plated Steel
<b>Rod End</b>	Metric, Male and Female*
<b>Piston</b>	Aluminum (6061-T6)
<b>Piston Seals</b>	NBR

<p><b>Basic No Mount</b></p>	<p><b>Basic No Mount Double Rod</b></p>	<p><b>Detachable Nose Mount (DNM)</b></p>
		
<p><b>Foot Bracket Mount (C01)</b></p>	<p><b>Rear Spherical Eye Adjustable Mount (C22)</b></p>	<p><b>Front Flange Mount (CF2)</b></p>
		
<p><b>Rear Flange Mount (CR2)</b></p>	<p><b>Oscillating Bracket w/Lugs (C07)</b></p>	<p><b>Oscillating Bracket w/Lugs (C07) w/Mounting Brackets (044)</b></p>
		
<p><b>Oscillating Bracket w/Wide Fork Type Mount (C08)</b></p>	<p><b>Oscillating Bracket w/Fork Type Mount (C08) w/Angle Bracket (042)</b></p>	<p><b>Trunnion Mount Female Threaded Holes in Cylinder Head (MTH)</b></p>
		
<p><b>Trunnion Mount Female Threaded Holes in Cylinder Cap (MTC)</b></p>	<p><b>Head Trunnion Mount (MT6)</b></p>	<p><b>Cap Trunnion Mount (MT7)</b></p>
		
<p><b>Front Trunnion Mount w/Bracket (MT8)</b></p>	<p><b>Rear Trunnion Mount w/Bracket (MT9)</b></p>	<p><b>Rod Clevis Mount (CF4)</b></p>
		
<p><b>Rod Clevis Mount Both Ends (Double End) (CD4)</b></p>	<p><b>Front Spherical Eye Mount (CF5)</b></p>	<p><b>Spherical Eye Mount Both Sides (Double Rod) (CD5)</b></p>
		

Mounting Orientation



#	Mounting Option Code	Mounting Description	Bore Ø (mm)
1	CF5	Front Spherical Eye Mount	20 - 80
2	MT8	Front Trunnion Mount w/ Bracket	20 - 63
3	DNM	Detachable Nose Mount	20 - 63
4	CF2	Front Flange Mount	20 - 80
5	C01	Foot Bracket Mount	20 - 80
6	CF4	Rod Clevis Mount	20 - 80
7	MT6	Head Trunnion Mount	20 - 63
8	MTH	Trunnion Mount Female Threaded Holes in Cylinder Head	20 - 63
9	MT7	Cap Trunnion Mount	20 - 63
10	MTC	Trunnion Mount Female Threaded Holes in Cylinder Cap	20 - 63
11	042	Oscillating Bracket w/ Fork Type Mount (C08) w/ Angle Bracket	20 - 63
12	044	Oscillating Bracket w/ Lugs (C07) w/ Mounting Bracket	20 - 63
13	MT9	Rear Trunnion Mount w/ Bracket	20 - 63
14	C07	Oscillating Bracket with Lugs	20 - 63
15	CR2	Rear Flange Mount	20 - 80
16	C08	Oscillating Bracket with Wide Fork Type Mount	20 - 80
17	C22	Rear Spherical Eye Adjustable Mount	20 - 80
Not Pictured	CD4	Rod Clevis Mount Both Ends (Double Rod)	20 - 80
Not Pictured	CD5	Spherical Eye Mount Both Sides (Double Rod)	20 - 80



## How to Order

**8 488 A 3 S K 0100 A00**

### Port Type

- 8 = NPTF
- G = ISO 228/1-G
- J = ISO 7/1 Rc
- H = METRIC (M7)

### Product Series

- 488 = Repairable Round Line

### Revision

- A = Initial Release

### Bore Ø (mm)

- L = 20
- M = 25
- 3 = 32
- 4 = 40
- 5 = 50
- 6 = 63
- 8 = 80

### Cylinder Type

- S = Double Acting, Single Rod
- 2 = Double Acting, Double Rod (Through Rod)
- C = Double Acting, Single Rod w/ Cushions
- 4 = Double Acting, Double Rod w/ Cushions (Through Rod)

### Rod Options

- M = Male Rod Thread (Carbon Steel Rod<sup>(1)</sup>)
- K = Female Rod Thread (Carbon Steel Rod<sup>(1)</sup>)
- G = Female Rod Thread (303 Stainless Rod<sup>(2)</sup>)
- N = Male Rod Thread (303 Stainless Rod<sup>(2)</sup>)

### Full Millimeters of Stroke

- 0005 = 5mm (Minimum Stroke)
- 1000 = 1000mm (Maximum Stroke)

### Options

- A00 = No Options
- DNM = Detachable Nose Mount<sup>(3)</sup>
- C01 = Foot Bracket Mount
- C22 = Rear Spherical Eye Adjustable Mount
- CF2 = Front Flange Mount
- CR2 = Rear Flange Mount
- C07 = Oscillating Bracket with Lugs<sup>(3)</sup>
- 044 = Oscillating Bracket w/ Lugs (C07) w/ Mounting Bracket<sup>(3)</sup>
- C08 = Oscillating Bracket with Wide Fork Type Mount
- 042 = Oscillating Bracket w/ Fork Type Mount (C08) w/ Angle Bracket<sup>(3)</sup>
- MTH = Trunnion Mount Female Threaded Holes in Cylinder Head<sup>(3)</sup>
- MTC = Trunnion Mount Female Threaded Holes in Cylinder Cap<sup>(3)</sup>
- MT6 = Head Trunnion Mount<sup>(3)</sup>
- MT7 = Cap Trunnion Mount<sup>(3)</sup>
- MT8 = Front Trunnion Mount w/ Bracket<sup>(3)</sup>
- MT9 = Rear Trunnion Mount w/ Bracket<sup>(3)</sup>
- CF4 = Rod Clevis Mount
- CD4 = Rod Clevis Mount Both Ends (Double Rod)
- CF5 = Front Spherical Eye Mount
- CD5 = Spherical Eye Mount Both Sides (Double Rod)
- 01A = Front Rod Extension
- 01B = Rear Rod Extension
- 02A = Front Thread Extension
- 02B = Rear Thread Extension
- R2F = 2 Reed Switches, Flying Lead
- R2C = 2 Reed Switches, 8mm Connect w/ Cable
- R2Q = 2 Reed Switches, 8mm Connect w/o Cable
- P2F = 2 PNP Elec Switches, Flying Lead
- P2C = 2 PNP Elec Switches, 8mm Connect w/ Cable
- P2Q = 2 PNP Elec Switches, 8mm Connect w/o Cable
- N2F = 2 NPN Elec Switches, Flying Lead
- N2C = 2 NPN Elec Switches, 8mm Connect w/ Cable
- N2Q = 2 NPN Elec Switches, 8mm Connect w/o Cable

(1) In Bore Sizes: 32, 40, 50, 63 & 80 mm

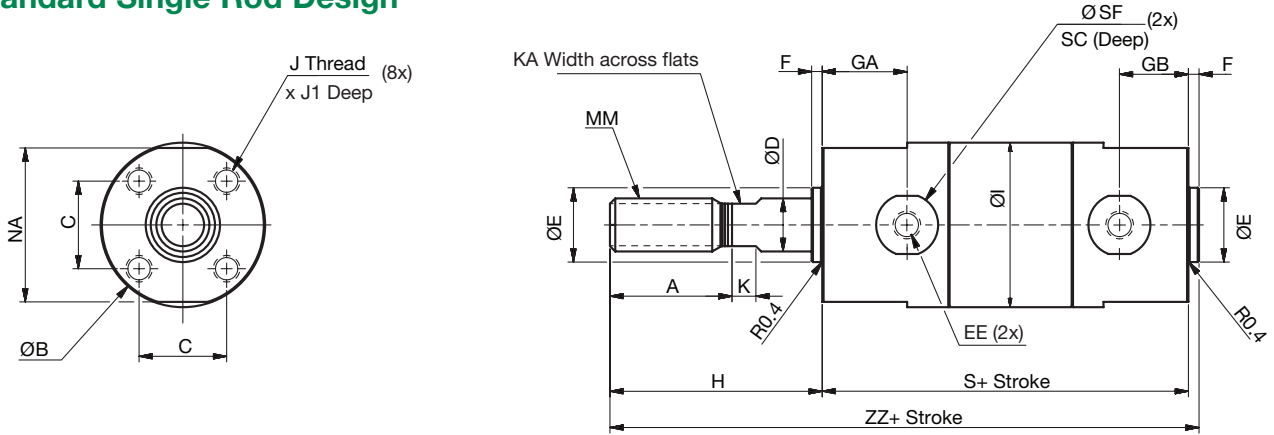
(2) In Bore Sizes: 20 & 25 mm

(3) In Bore Sizes: 20, 25, 32, 40, 50 & 63 mm

Bore Ø (mm)	Rod Diameters by Bore Size	Rod End Styles and Threads	
	Standard Rod Diameter ØD (mm)	Standard Male Thread (M,N)	Standard Female Thread (K,G)
20	8	M8 x 1.25	M4 x 0.7
25	10	M10 x 1.25	M5 x 0.8
32	12	M10 x 1.25	M6 x 1
40	16	M14 x 1.5	M8 x 1.25
50	20	M18 x 1.5	M10 x 1.5
63	20	M18 x 1.5	M10 x 1.5
80	25	M22 x 1.5	M14 x 1.5

Dimensions: mm

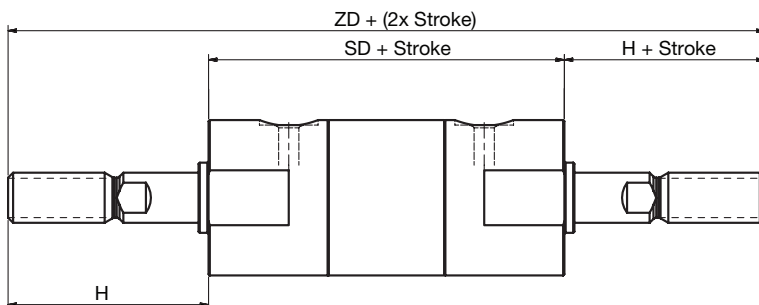
Standard Single Rod Design



Bore Ø (mm)	A	ØB	C	ØD		ØE	EE (Port Size and Type)				F	GA	GB
				Rod Dia.			NPTF or UNF	ISO228 or Metric	BSPT (Rc)	Metric (M7)			
20	18	26	14	8	12 <sup>+0</sup> <sub>-0.4</sub>	#10-32	M5 x 0.8	-	M7 x 1	2	16	12	
25	22	31	16.5	10	14 <sup>+0</sup> <sub>-0.4</sub>	#10-32	M5 x 0.8	-	M7 x 1	2	16	13	
32	22	38	20	12	18 <sup>+0</sup> <sub>-0.4</sub>	1/8	1/8	1/8	-	2	16	13	
40	30	47	26	16	25 <sup>+0</sup> <sub>-0.4</sub>	1/8	1/8	1/8	-	2	17	12	
50	35	58	32	20	30 <sup>+0</sup> <sub>-0.4</sub>	1/4	1/4	1/4	-	2	19	16	
63	35	72	38	20	32 <sup>+0</sup> <sub>-0.4</sub>	1/4	1/4	1/4	-	2	19	12	
80	40	89	50	25	40 <sup>+0</sup> <sub>-0.4</sub>	3/8	3/8	3/8	-	3	23	15	

Bore Ø (mm)	H	ØI	J	J1	K	KA	MM	NA	S	ØSF	SC	ZZ
20	35	25	M4 x 0.7	7	5	6	M8 x 1.25	24	69	11.7	1	106
25	40	30	M5 x 0.8	7.5	5.5	8	M10 x 1.25	29	69	11.7	1	111
32	40	38	M5 x 0.8	8	5.5	10	M10 x 1.25	35.5	71	13	1	113
40	50	47	M6 x 1	12	6	14	M14 x 1.5	44	78	13	1	130
50	58	58	M8 x 1.25	16	7	18	M18 x 1.5	55	90	19	1.5	150
63	58	72	M10 x 1.5	16	7	18	M18 x 1.5	69	90	19	1.5	150
80	71	89	M10 x 1.5	22	10	22	M22 x 1.5	86	108	22	1.5	182

Standard Double Rod Design

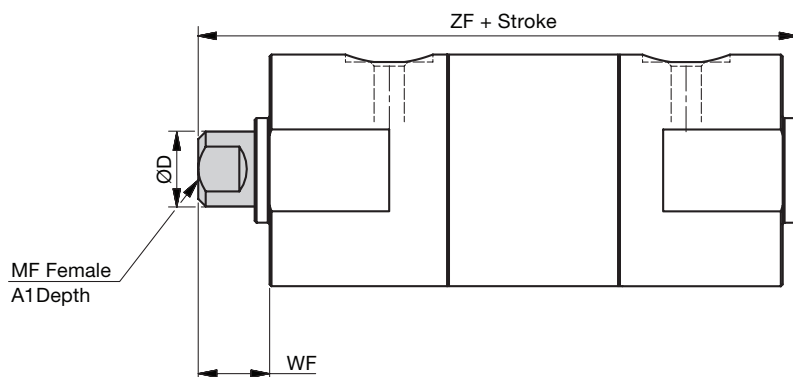


Bore Ø (mm)	H	SD	ZD
20	35	71	141
25	40	71	151
32	40	74	154
40	50	83	183
50	58	93	209
63	58	97	213
80	71	117	259

Note: Other dimensions are the same as standard cylinder layout.

Dimensions: mm

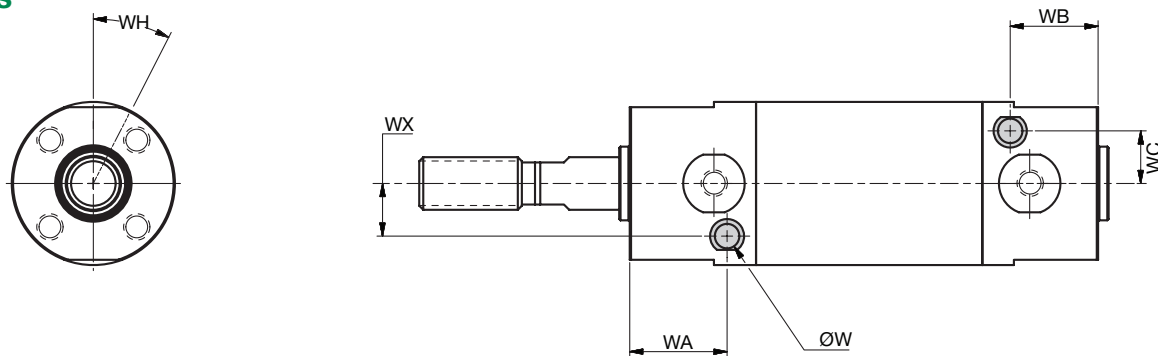
### Female Rod End



Bore Ø (mm)	A1	ØD	MF	WF	ZF
		Rod Dia.			
20	8	8	M4 x 0.7	13	84
25	8	10	M5 x 0.8	14	85
32	12	12	M6 x 1	14	87
40	13	16	M8 x 1.25	15	95
50	18	20	M10 x 1.5	16	108
63	18	20	M10 x 1.5	16	108
80	21	25	M14 x 1.5	19	133

Note: For male rod end dimensions and other dimensions please see the standard cylinder layout.

### Cushions



Bore Ø (mm)	WA	WB	WC	ØW	WH (angle)	WX
20	18.5	16.5	8	6.3	0°	8
25	18.5	16.7	10	6.3	0°	10
32	19.5	16.5	13	6.3	0°	13
40	20.5	17.5	17	6	0°	15
50	24.5	21.5	19.5	6	0°	19.5
63	24	18	15.2	7.5	25°	15.2
80	30	22	17.4	7.5	23°	17.4

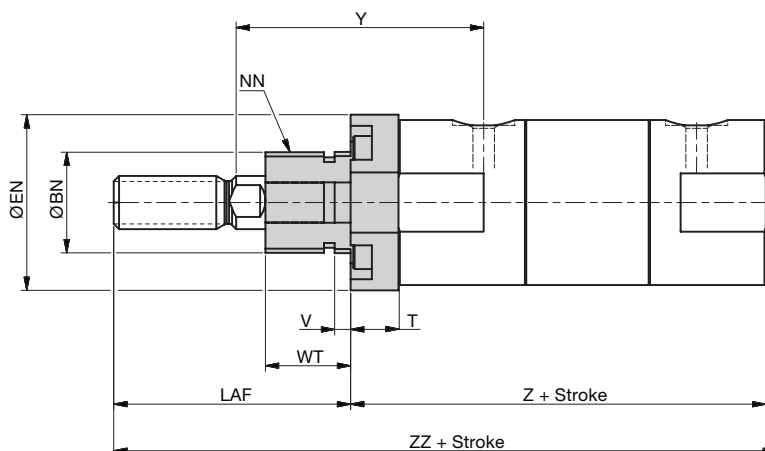
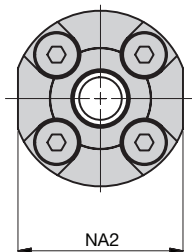
Note: Other dimensions are the same as standard cylinder layout.

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Dimensions: mm

Mounting Options  
Detachable Nose Mount

DNM

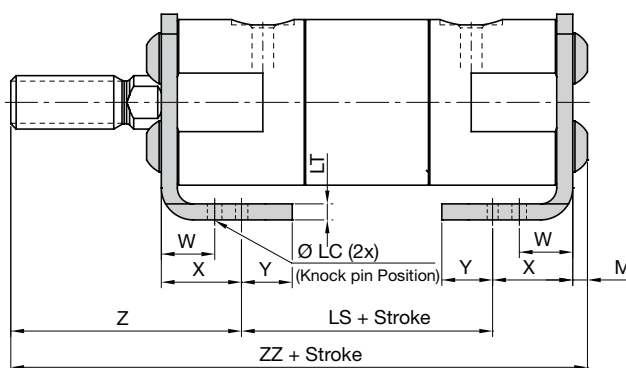
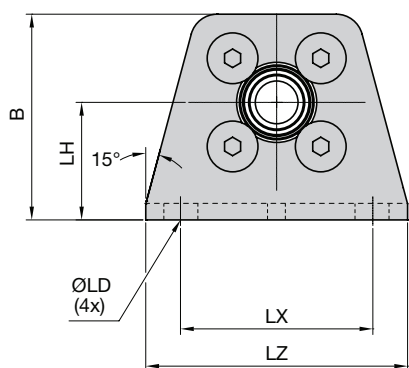


Bore Ø (mm)	ØBN	ØEN	NA2	LAF	NN	V	Y	WT	T	Z	ZZ
20	19.02 <sup>+0</sup> <sub>-0.08</sub>	28.5	27	40	3/4-16	3	47	16	9	78	120
25	19.02 <sup>+0</sup> <sub>-0.08</sub>	33	31	44.5	3/4-16	3	48	16	9	78	124.5
32	19.02 <sup>+0</sup> <sub>-0.08</sub>	41.4	40	44.5	3/4-16	3	48	16	9	80	126.5
40	26.80 <sup>+0</sup> <sub>-0.08</sub>	51	49	57	1-14	3	54	20	10	88	147
50	34.90 <sup>+0</sup> <sub>-0.10</sub>	60.5	58	63.5	1-1/4-12	3	58	20.5	10	100	165.5
63	38.10 <sup>+0</sup> <sub>-0.10</sub>	73	70	63.5	1-1/4-12	3	59	20.5	11.5	101.5	167
80	-	-	-	-	-	-	-	-	-	-	-

Note: Other dimensions are the same as standard cylinder layout.

Foot Bracket Mount

C01



Bore Ø (mm)	B	ØLC	ØLD	LH	LS	LT	LX	LZ	M	W	X	Y	Z	ZZ
20	34	4	6	20	45	3	32	44	2.2	10	15	7	47	109.2
25	38.5	4	6	22	45	3	36	49	2.8	10	15	7	52	114.8
32	45	4	6.6	25	45	3	44	58	2.8	10	16	8	53	116.8
40	54.5	4	6.6	30	51	3	54	71	3.3	10	16.5	8.5	63.5	134.3
50	70.5	5	9	40	55	4.5	66	86	4.4	17.5	22	11	75.5	156.9
63	82.5	5	11	45	55	4.5	82	106	5.5	17.5	22	13	75.5	158
80	101	6	11	55	60	4.5	100	125	5	20	28.5	14	95	188.5

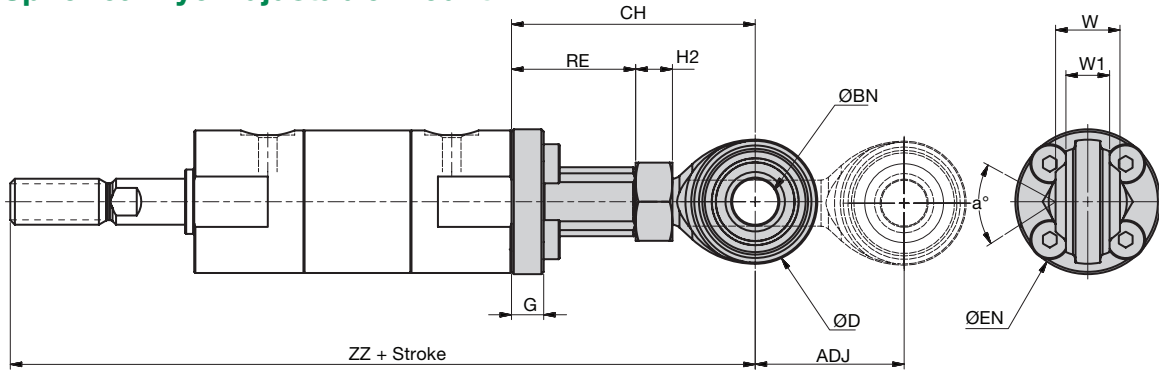
Note: Other dimensions are the same as standard cylinder layout.

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Dimensions: mm

### Rear Spherical Eye Adjustable Mount

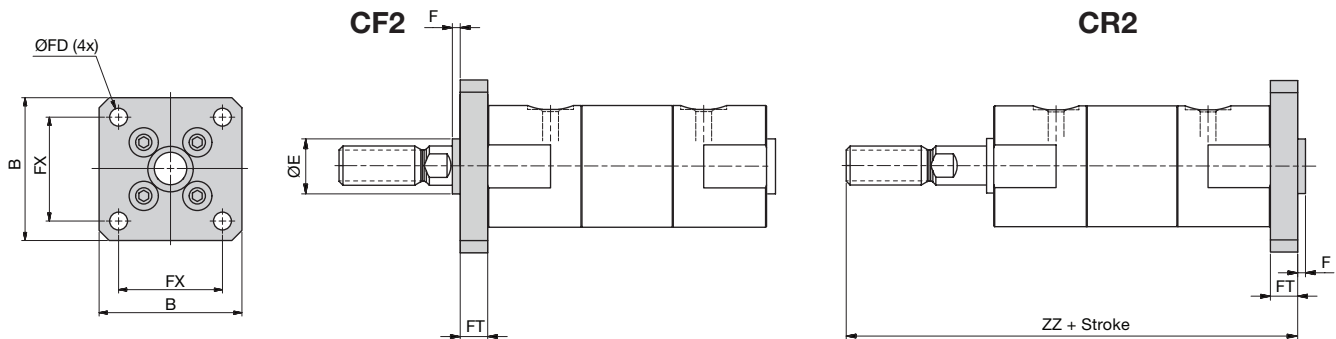
C22



Bore Ø (mm)	CH (Min.)	ADJ (Max.)	ØBN	ØD	ØEN	G	H2	RE	W	W1	ZZ (Min.)	a° (Max.)
20	46.5	11	8 <sup>+0.065</sup> <sub>-0.013</sub>	22.3	28.5	7	4	27	12 ±0.13	8	150.5	28°
25	53	9	10 <sup>+0.065</sup> <sub>-0.013</sub>	27	31.5	7	8	27	14 ±0.13	9.5	162	26°
32	59	9	10 <sup>+0.065</sup> <sub>-0.013</sub>	27	38	7	8	33	14 ±0.13	9.5	170	26°
40	62	9	12 <sup>+0.065</sup> <sub>-0.013</sub>	30	47	7	10	32	16 ±0.13	10.8	190	27°
50	71	8	14 <sup>+0.065</sup> <sub>-0.013</sub>	34.8	60	7	7	40	19 ±0.13	12.3	219	30°
63	71	8	14 <sup>+0.065</sup> <sub>-0.013</sub>	34.8	72	7	7	40	19 ±0.13	12.3	219	30°
80	79	8	16 <sup>+0.065</sup> <sub>-0.013</sub>	38	90	7	13	40	21 ±0.13	12.8	258	33°

Note: Other dimensions are the same as standard cylinder layout.

### Front or Rear Flange Mount



Bore Ø (mm)	B	ØE	F	FX	ØFD	FT	ZZ
20	40	12 <sup>+0</sup> <sub>-0.4</sub>	2	28	5.5	6	112
25	44	14 <sup>+0</sup> <sub>-0.4</sub>	2	32	5.5	7	118
32	53	18 <sup>+0</sup> <sub>-0.4</sub>	2	38	6.6	7	120
40	61	25 <sup>+0</sup> <sub>-0.4</sub>	2	46	6.6	8	138
50	76	30 <sup>+0</sup> <sub>-0.4</sub>	2	58	9	9	159
63	92	32 <sup>+0</sup> <sub>-0.4</sub>	2	70	11	9	159
80	104	40 <sup>+0</sup> <sub>-0.4</sub>	3	82	11	11	193

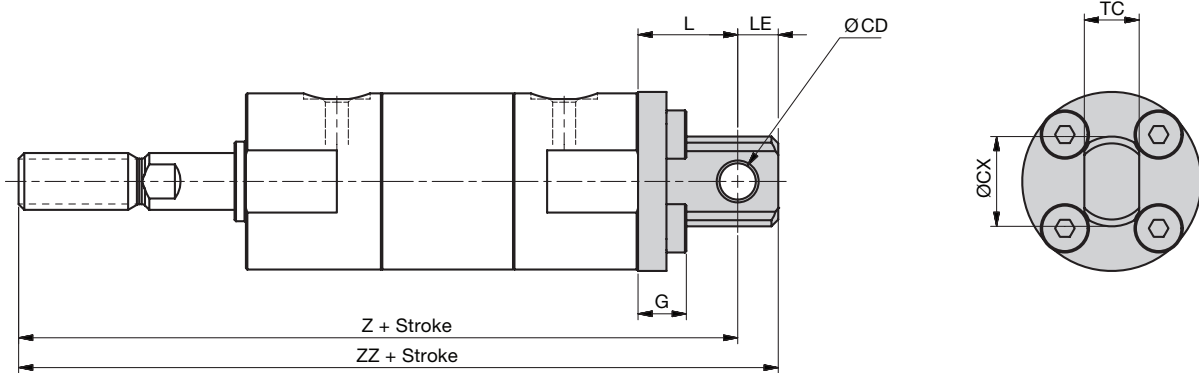
Note: Other dimensions are the same as standard cylinder layout.

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Dimensions: mm

Oscillating Bracket w/ Lugs Mount

C07

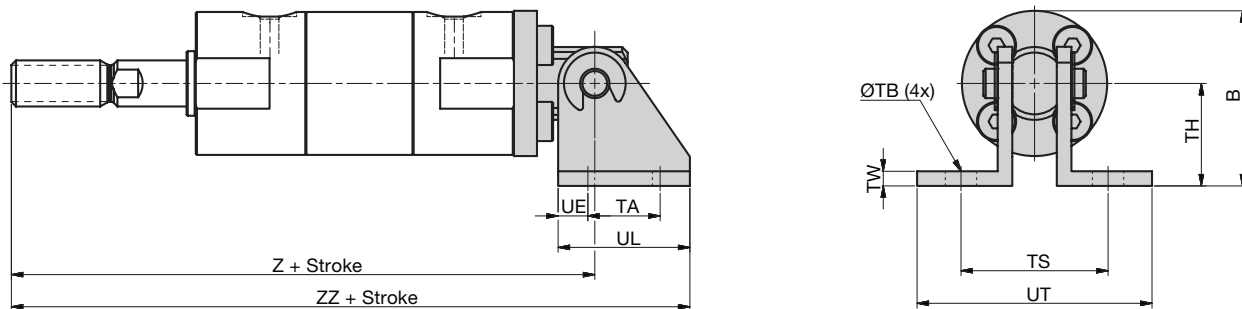


Bore Ø (mm)	ØCD	ØCX	G	L	LE	TC	Z	ZZ
20	6.4 <sup>+0.03</sup> <sub>-0</sub>	15.8	7.8	16.5	7.1	9.7	120.5	127.7
25	6.4 <sup>+0.03</sup> <sub>-0</sub>	15.8	8.5	17.5	7.1	9.7	126.5	133.7
32	6.4 <sup>+0.03</sup> <sub>-0</sub>	19	8.5	18.8	10.3	12.7	129.8	140.1
40	9.6 <sup>+0.03</sup> <sub>-0</sub>	22	10.5	23.2	12.7	15.8	151.2	163.9
50	9.6 <sup>+0.03</sup> <sub>-0</sub>	32	12.5	26.8	11.1	19.1	174.8	185.9
63	12.7 <sup>+0.03</sup> <sub>-0</sub>	35	14	30.8	11.1	22.4	178.8	189.9
80	-	-	-	-	-	-	-	-

Note: Other dimensions are the same as standard cylinder layout.

Oscillating Bracket w/ Lugs (C07) and w/Mounting Brackets

044



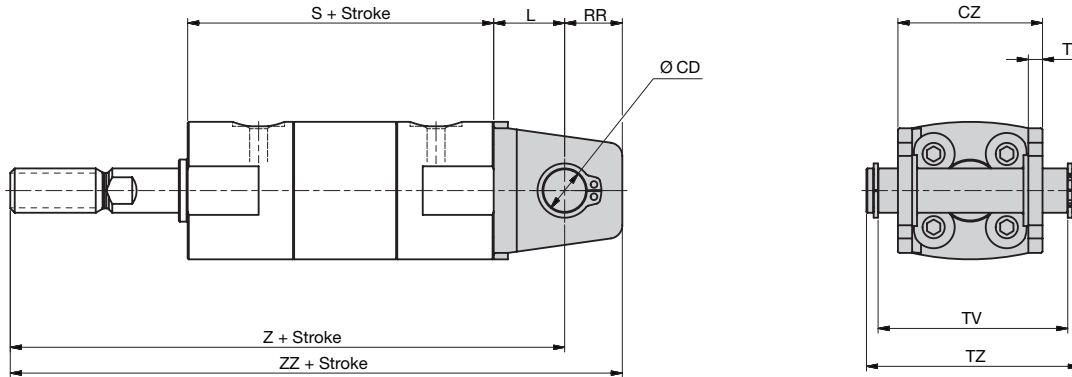
Bore Ø (mm)	B	TA	ØTB	TH	TS	TW	UE	UL	UT	Z	ZZ
20	35.2	19.1	6.8	22.2	31.9	3.2	4.8	28.6	51	120.5	141.2
25	37.7	19.1	6.8	22.2	31.9	3.2	4.8	28.6	51	126.5	147.2
32	41.2	19.1	6.8	22.2	35	3.2	4.8	28.6	54	129.8	150.4
40	58.4	25.4	6.8	34.9	50.7	6.4	6.4	38.1	72.9	151.2	179.8
50	63.9	25.4	6.8	34.9	54	6.4	6.4	38.1	76.2	174.8	203.4
63	80.5	31.8	6.8	44.5	66.8	6.4	6.4	44.5	98.6	178.8	210.6
80	-	-	-	-	-	-	-	-	-	-	-

Note: Other dimensions are the same as standard cylinder layout.

Dimensions: mm

### Oscillating Bracket w/ Wide Fork Type Mount

C08

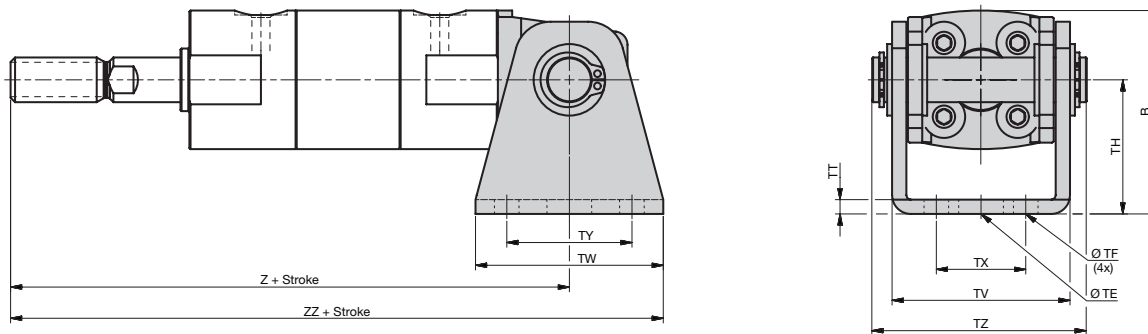


Bore Ø (mm)	ØCD Hole	ØCD Shaft	CZ	L	RR	S	TT	TV	TZ	Z	ZZ
20	8 +0.058 -0	8 -0.040 -0.076	29	14	11	69	3.2	35.8	43.4	118	129
25	10 +0.058 -0	10 -0.040 -0.076	33	16	13	69	3.2	39.8	48	125	138
32	12 +0.070 -0	12 -0.050 -0.093	40	20	15	71	4.5	49.4	59.4	131	146
40	14 +0.070 -0	14 -0.050 -0.093	49	22	18	78	4.5	58.4	71.4	150	168
50	16 +0.070 -0	16 -0.050 -0.093	60	25	20	90	6	72.4	86	173	193
63	18 +0.070 -0	18 -0.050 -0.093	74	30	22	90	8	90.4	105.4	178	200
80	18 +0.070 -0	18 -0.050 -0.093	56	35	18	108	14	57	64	214	232

Note: Other dimensions are the same as standard cylinder layout.

### Oscillating Bracket w/ Fork Type Mount (C08) and w/ Angle Bracket Mount

042



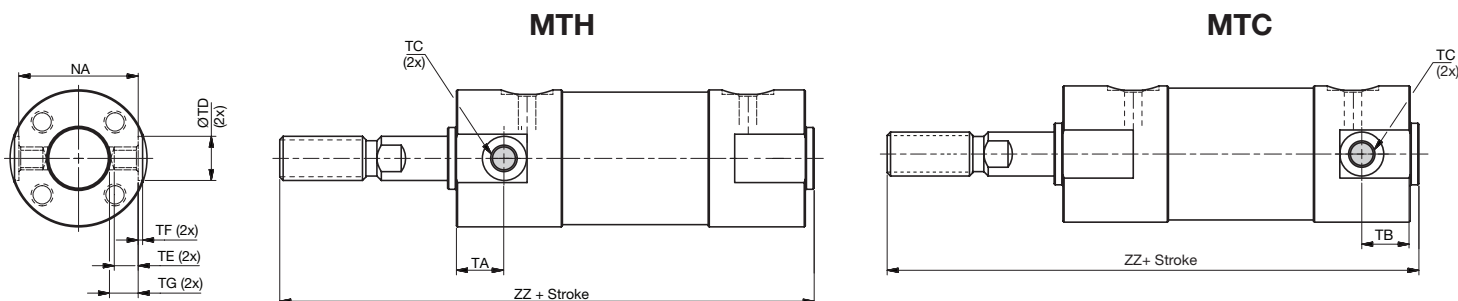
Bore Ø (mm)	B	ØTE Locating Hole	ØTF Mount Hole	TH	TT	TV	TW	TX	TY	TZ	Z	ZZ
20	38	10 +0.1 -0	5.5	25	3.2	35.8	42	16	28	43.4	118	139
25	45.5	10 +0.1 -0	5.5	30	3.2	39.8	42	20	28	48	125	146
32	54	10 +0.1 -0	6.6	35	4.5	49.4	48	22	28	59.4	131	155
40	63.5	10 +0.1 -0	6.6	40	4.5	58.4	56	30	30	71.4	150	178
50	79	20 +0.1 -0	9	50	6	72.4	64	36	36	86	173	205
63	96	20 +0.1 -0	11	60	8	90.4	74	46	46	105.4	178	215
80	-	-	-	-	-	-	-	-	-	-	-	-

Note: Other dimensions are the same as standard cylinder layout.

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Dimensions: mm

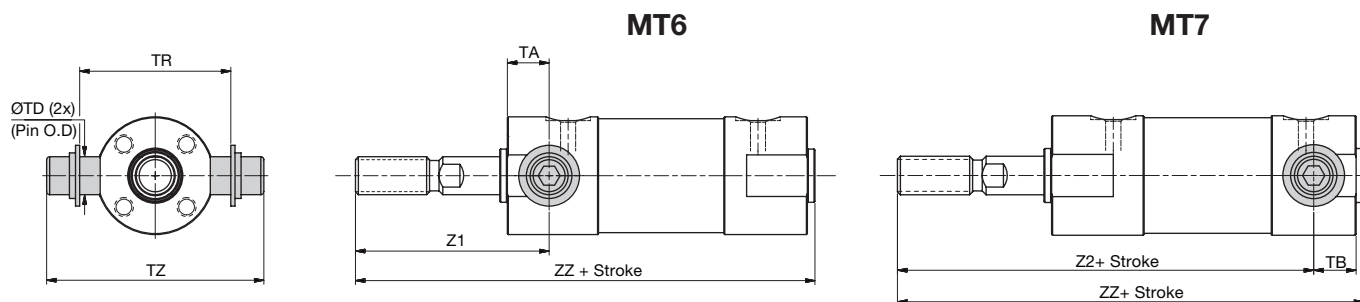
## Trunnion Mount Female Threaded Holes in Cylinder Head or Cap



Bore Ø (mm)	TA	TB	TC	ØTD	TE	TF	TG	NA	ZZ
20	11	11	M5 x 0.8	8 $\begin{smallmatrix} +0.08 \\ -0 \end{smallmatrix}$	4	0.5	5.5	24	106
25	11	11	M6 x 0.75	10 $\begin{smallmatrix} +0.08 \\ -0 \end{smallmatrix}$	5	1	6.5	29	111
32	11	10	M8 x 1	12 $\begin{smallmatrix} +0.08 \\ -0 \end{smallmatrix}$	5.5	1	7	35.5	113
40	12	10	M10 x 1.25	14 $\begin{smallmatrix} +0.08 \\ -0 \end{smallmatrix}$	6	1.3	7	44	130
50	13	13	M12 x 1.25	16 $\begin{smallmatrix} +0.08 \\ -0 \end{smallmatrix}$	7.5	2	9.5	55	150
63	13	13	M14 x 1.5	18 $\begin{smallmatrix} +0.08 \\ -0 \end{smallmatrix}$	11.5	3	13.5	69	150
80	-	-	-	-	-	-	-	-	-

Note: Other dimensions are the same as standard cylinder layout.

## Head or Cap Trunnion Mount



Bore Ø (mm)	TA	TB	ØTD	TR	TZ	Z1	Z2	ZZ
						(Front)	(Rear)	
20	11	11	8 $\begin{smallmatrix} -0.025 \\ -0.047 \end{smallmatrix}$	39	51	46	93	106
25	11	11	10 $\begin{smallmatrix} -0.025 \\ -0.047 \end{smallmatrix}$	43	57.9	51	98	111
32	11	10	12 $\begin{smallmatrix} -0.032 \\ -0.059 \end{smallmatrix}$	53.5	73.3	51	101	113
40	12	10	14 $\begin{smallmatrix} -0.032 \\ -0.059 \end{smallmatrix}$	64.5	89.5	62	118	130
50	13	13	16 $\begin{smallmatrix} -0.032 \\ -0.059 \end{smallmatrix}$	80	109.2	71	135	150
63	13	13	18 $\begin{smallmatrix} -0.032 \\ -0.059 \end{smallmatrix}$	98	131	71	135	150
80	-	-	-	-	-	-	-	-

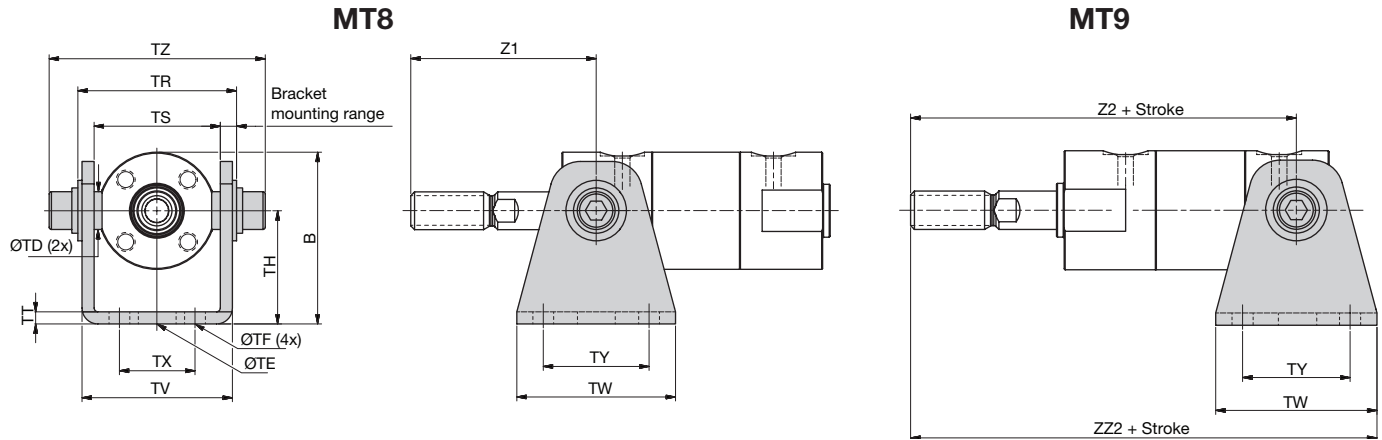
12 Note: Other dimensions are the same as standard cylinder layout.

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Dimensions: mm

### Front or Rear Trunnion Mount w/ Bracket



Bore Ø (mm)	Stroke Range	B	ØTD	ØTE	ØTF	TH	TR	TS
	(Front or rear)							
20	Up to 200	38	8 -0.025 -0.047	10 +0.1 -0	5.5	25	39	29
25	Up to 300	45.5	10 -0.025 -0.047	10 +0.1 -0	5.5	30	43	33
32	Up to 300	54	12 -0.032 -0.059	10 +0.1 -0	6.6	35	53.5	40
40	Up to 500	63.5	14 -0.032 -0.059	10 +0.1 -0	6.6	40	64.5	49
50	Up to 600	79	16 -0.032 -0.059	20 +0.1 -0	9	50	80	60
63	Up to 600	96	18 -0.032 -0.059	20 +0.1 -0	11	60	98	74
80	-	-	-	-	-	-	-	-

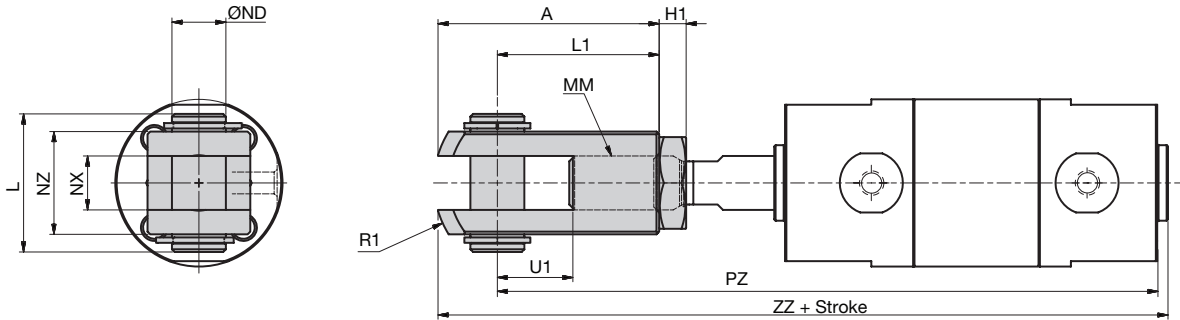
Bore Ø (mm)	TT	TV	TW	TX	TY	TZ	Z1	Z2	ZZ2
							(Front)	(Rear)	
20	3.2	35.8	42	16	28	51	46	93	114
25	3.2	39.8	42	20	28	57.9	51	98	119
32	4.5	49.4	48	22	28	73.3	51	101	125
40	4.5	58.4	56	30	30	89.5	62	118	146
50	6	72.4	64	36	36	109.2	71	135	167
63	8	90.4	74	46	46	131	71	135	172
80	-	-	-	-	-	-	-	-	-

Note: Other dimensions are the same as standard cylinder layout.

Dimensions: mm

Rod Clevis Mount

CF4

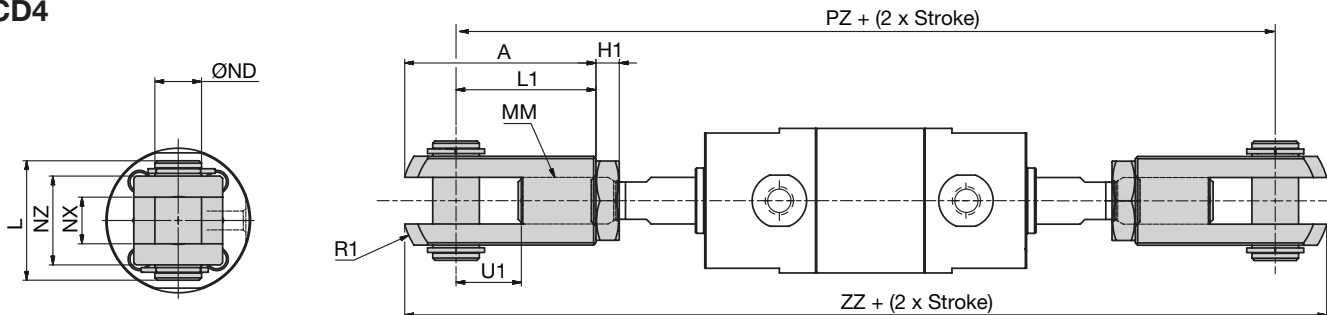


Bore Ø (mm)	A	H1	L	L1	MM	R1	U1	ØND	NX	NZ	ZZ (Min.)	PZ
20	34	4	21	25	M8 x 1.25	14	11.5	8	8 <sup>+0.4</sup> / <sub>+0.2</sub>	16	131.5	117
25	41	5	25.6	30	M10 x 1.25	18	14	10	10 <sup>+0.4</sup> / <sub>+0.2</sub>	20	141.5	124
32	41	5	25.6	30	M10 x 1.25	18	14	10	10 <sup>+0.4</sup> / <sub>+0.2</sub>	20	143.5	126
40	42	7	41.6	30	M14 x 1.5	12	14	10	18 <sup>+0.5</sup> / <sub>+0.3</sub>	36	156	137
50	56	9	50.6	40	M18 x 1.5	16	20	14	22 <sup>+0.5</sup> / <sub>+0.3</sub>	44	186	164
63	56	9	50.6	40	M18 x 1.5	16	20	14	22 <sup>+0.5</sup> / <sub>+0.3</sub>	44	186	164
80	71	11	64	50	M22 x 1.5	21	27	18	32 <sup>+0.5</sup> / <sub>+0.3</sub>	56	230	203

Note: Other dimensions are the same as standard cylinder layout.

Rod Clevis Mount Both Ends (Double Rod)

CD4

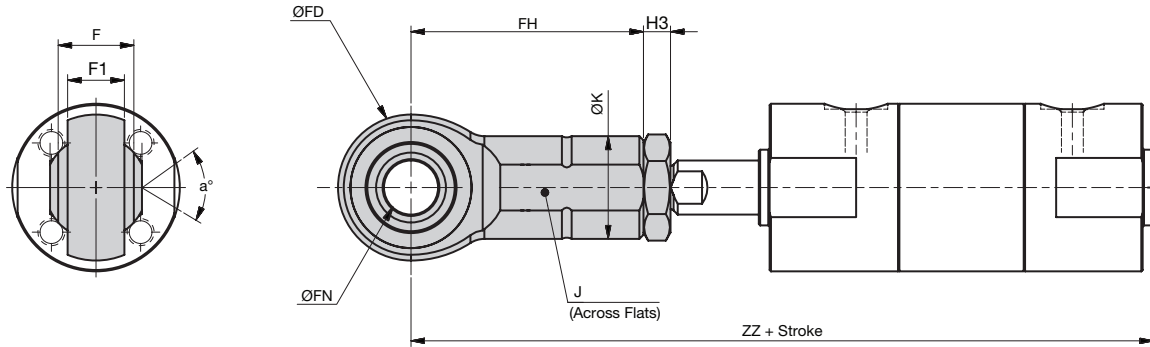


Bore Ø (mm)	A	H1	L	L1	MM	R1	U1	ØND	NX	NZ	ZZ (Min.)	PZ
20	34	4	21	25	M8 x 1.25	14	11.5	8	8 <sup>+0.4</sup> / <sub>+0.2</sub>	16	192	145
25	41	5	25.6	30	M10 x 1.25	18	14	10	10 <sup>+0.4</sup> / <sub>+0.2</sub>	20	212	155
32	41	5	25.6	30	M10 x 1.25	18	14	10	10 <sup>+0.4</sup> / <sub>+0.2</sub>	20	215	158
40	42	7	41.6	30	M14 x 1.5	12	14	10	18 <sup>+0.5</sup> / <sub>+0.3</sub>	36	235	173
50	56	9	50.6	40	M18 x 1.5	16	20	14	22 <sup>+0.5</sup> / <sub>+0.3</sub>	44	281	205
63	56	9	50.6	40	M18 x 1.5	16	20	14	22 <sup>+0.5</sup> / <sub>+0.3</sub>	44	285	209
80	71	11	64	50	M22 x 1.5	21	27	18	32 <sup>+0.5</sup> / <sub>+0.3</sub>	56	355	259

**Dimensions: mm**

## Front Spherical Eye Mount

CF5

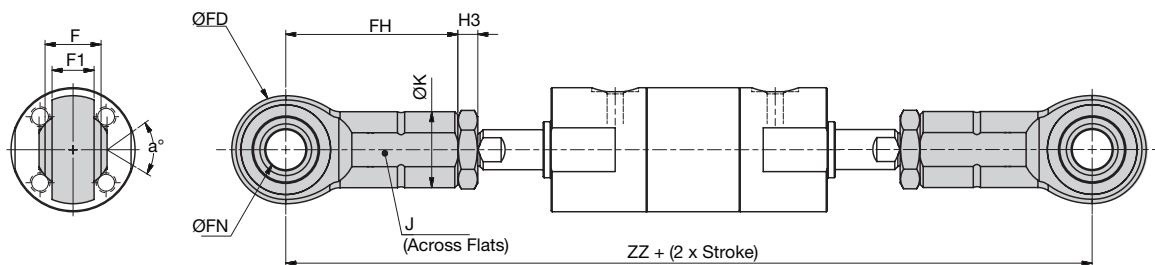


Bore Ø (mm)	ØFN	ØFD	H3	FH	F	F1	ØK	J	ZZ (Min.)	a° (Max.)
20	8 $+0.065$ $-0.013$	22.3	4	36	12 $\pm 0.13$	9 $\pm 0.13$	16 $\pm 0.25$	14 $\pm 0.25$	128	18°
25	10 $+0.065$ $-0.013$	27	5	43	14 $\pm 0.13$	11 $\pm 0.13$	19 $\pm 0.25$	17 $\pm 0.25$	137	17°
32	10 $+0.065$ $-0.013$	27	5	43	14 $\pm 0.13$	11 $\pm 0.13$	19 $\pm 0.25$	17 $\pm 0.25$	139	17°
40	14 $+0.065$ $-0.013$	34.8	7	57	19 $\pm 0.13$	14 $\pm 0.13$	25 $\pm 0.25$	22 $\pm 0.25$	164	21°
50	18 $+0.065$ $-0.013$	42	9	71	23 $\pm 0.13$	16 $\pm 0.13$	31 $\pm 0.25$	27 $\pm 0.25$	195	21°
63	18 $+0.065$ $-0.013$	42	9	71	23 $\pm 0.13$	16 $\pm 0.13$	31 $\pm 0.25$	27 $\pm 0.25$	195	21°
80	22 $+0.065$ $-0.013$	50	11	86	28 $\pm 0.13$	20 $\pm 0.13$	37 $\pm 0.25$	32 $\pm 0.25$	239	22°

Note: Other dimensions are the same as standard cylinder layout.

## Spherical Eye Mount Both Sides (Double Rod)

CD5



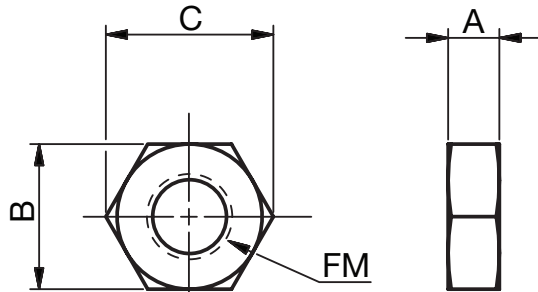
Bore Ø (mm)	ØFN	ØFD	H3	FH	F	F1	ØK	J	ZZ (Min.)	a° (Max.)
20	8 $+0.065$ $-0.013$	22.3	4	36	12 $\pm 0.13$	9 $\pm 0.13$	16 $\pm 0.25$	14 $\pm 0.25$	185	18°
25	10 $+0.065$ $-0.013$	27	5	43	14 $\pm 0.13$	11 $\pm 0.13$	19 $\pm 0.25$	17 $\pm 0.25$	203	17°
32	10 $+0.065$ $-0.013$	27	5	43	14 $\pm 0.13$	11 $\pm 0.13$	19 $\pm 0.25$	17 $\pm 0.25$	206	17°
40	14 $+0.065$ $-0.013$	34.8	7	57	19 $\pm 0.13$	14 $\pm 0.13$	25 $\pm 0.25$	22 $\pm 0.25$	251	21°
50	18 $+0.065$ $-0.013$	42	9	71	23 $\pm 0.13$	16 $\pm 0.13$	31 $\pm 0.25$	27 $\pm 0.25$	299	21°
63	18 $+0.065$ $-0.013$	42	9	71	23 $\pm 0.13$	16 $\pm 0.13$	31 $\pm 0.25$	27 $\pm 0.25$	303	21°
80	22 $+0.065$ $-0.013$	50	11	86	28 $\pm 0.13$	20 $\pm 0.13$	37 $\pm 0.25$	32 $\pm 0.25$	373	22°

Note: Other dimensions are the same as standard cylinder layout.

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Dimensions: mm

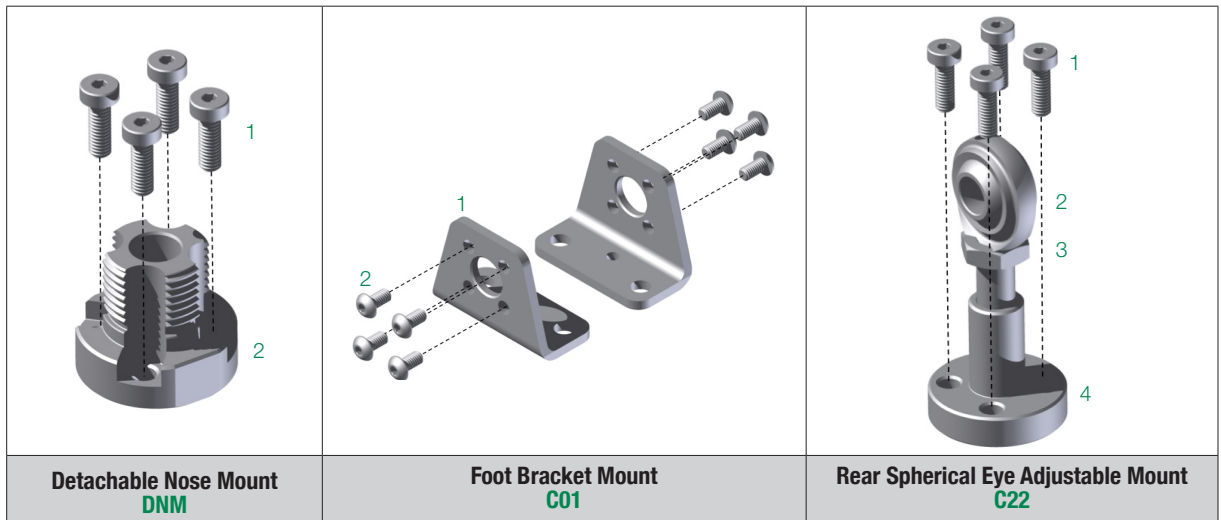
Rod Nut



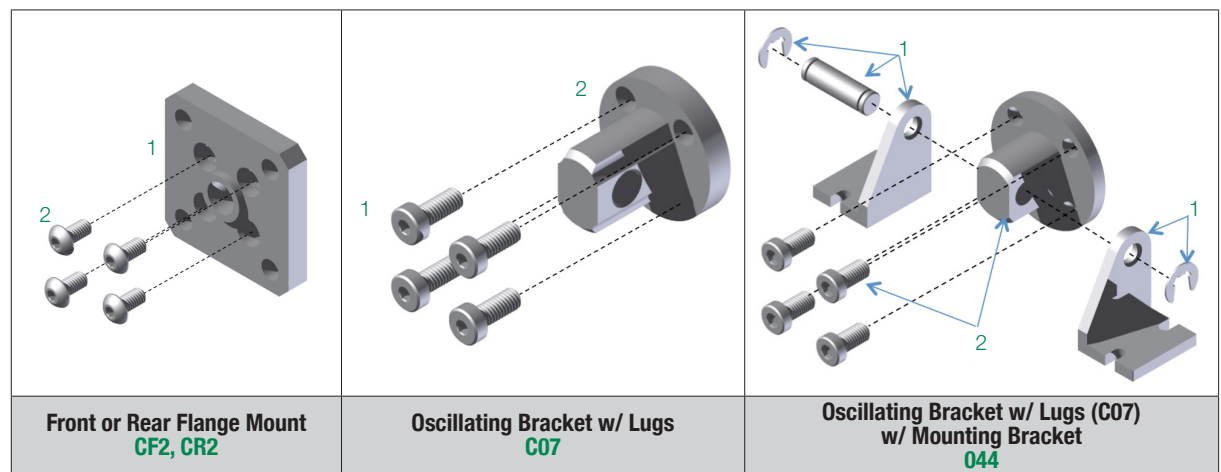
Bore Ø (mm)	A	B	C	FM (Thread)
20	4	13	15	M8 x 1.25
25	5	13	19	M10 x 1.25
32	5	13	19	M10 x 1.25
40	7	22	25	M14 x 1.5
50	9	27	31	M18 x 1.5
63	9	27	31	M18 x 1.5
80	11	32	37	M22 x 1.5

Note: Other dimensions are the same as standard cylinder layout.

### Mounting Kit Options and Kit Numbers



	<b>Detachable Nose Mount DNM</b>	<b>Foot Bracket Mount C01</b>	<b>Rear Spherical Eye Adjustable Mount C22</b>
<b>Construction</b>	<b>Aluminum</b>	<b>Stamped Sheet Steel</b>	<b>Steel and Aluminum</b>
<b>Bore Ø (mm)</b>			
<b>20</b>	P493AL02G100A00	P493AL024000A00	P493AL02L010A00
<b>25</b>	P493AM02G100A00	P493AM024000A00	P493AM02L010A00
<b>32</b>	P493A302G100A00	P493A3024000A00	P493A302L010A00
<b>40</b>	P493A402G100A00	P493A4024000A00	P493A402L010A00
<b>50</b>	P493A502G100A00	P493A5024000A00	P493A502L010A00
<b>63</b>	P493A602G100A00	P493A6024000A00	P493A602L010A00
<b>80</b>	-	P493A8024000A00	P493A802L010A00
<b>Parts Included in Mounting Kit</b>	4 Mounting bolts (1), 1 detachable nose mount (2)	2 Foot brackets (1), 8 mounting bolts (2)	4 Mounting bolts (1), 1 male rod eye (2), 1 nut (3), 1 rear spherical eye adjustable mount (4)



	<b>Front or Rear Flange Mount CF2, CR2</b>	<b>Oscillating Bracket w/ Lugs C07</b>	<b>Oscillating Bracket w/ Lugs (C07) w/ Mounting Bracket O44</b>
<b>Construction</b>	<b>Steel</b>	<b>Aluminum</b>	<b>Stamped Sheet Steel and Aluminum</b>
<b>Bore Ø (mm)</b>			
<b>20</b>	P493AL026000A00	P493AL022000A00	P493AL02K010A00
<b>25</b>	P493AM026000A00	P493AM022000A00	P493AM02K010A00
<b>32</b>	P493A3026000A00	P493A3022000A00	P493A302K010A00
<b>40</b>	P493A4026000A00	P493A4022000A00	P493A402K010A00
<b>50</b>	P493A5026000A00	P493A5022000A00	P493A502K010A00
<b>63</b>	P493A6026000A00	P493A6022000A00	P493A602K010A00
<b>80</b>	P493A8026000A00	-	-
<b>Parts Included in Mounting Kit</b>	1 Flange (1), 4 mounting bolts (2)	4 Mounting bolts (1), 1 clevis (2)	1 Pivot mount bracket (1), 1 single clevis (2)

## Mounting Kit Options and Kit Numbers

	<b>Oscillating Bracket w/ Wide Fork Type Mount C08</b>	<b>Oscillating Bracket w/Fork Type Mount (C08) w/Angle Bracket 042</b>	<b>Head or Cap Trunnion Mount MT6, MT7</b>
<b>Construction</b>	<b>Stamped Sheet Steel</b>	<b>Stamped Sheet Steel</b>	<b>Steel</b>
<b>Bore Ø (mm)</b>			
<b>20</b>	P493AL021000A00	P493AL02J010A00	P493AL02H001A00
<b>25</b>	P493AM021000A00	P493AM02J010A00	P493AM02H001A00
<b>32</b>	P493A3021000A00	P493A302J010A00	P493A302H001A00
<b>40</b>	P493A4021000A00	P493A402J010A00	P493A402H001A00
<b>50</b>	P493A5021000A00	P493A502J010A00	P493A502H001A00
<b>63</b>	P493A6021000A00	P493A602J010A00	P493A602H001A00
<b>80</b>	P493A8021000A00	-	-
<b>Parts Included in Mounting Kit</b>	2 Retaining rings (1), 1 clevis pin (2), 4 mounting bolts (3), 1 double rear clevis (4)	1 Clevis, 4 mounting bolts, 1 clevis pin, 2 retaining rings, 1 angle bracket	2 Trunnion pins, 2 trunnion bolts, 2 sleeves

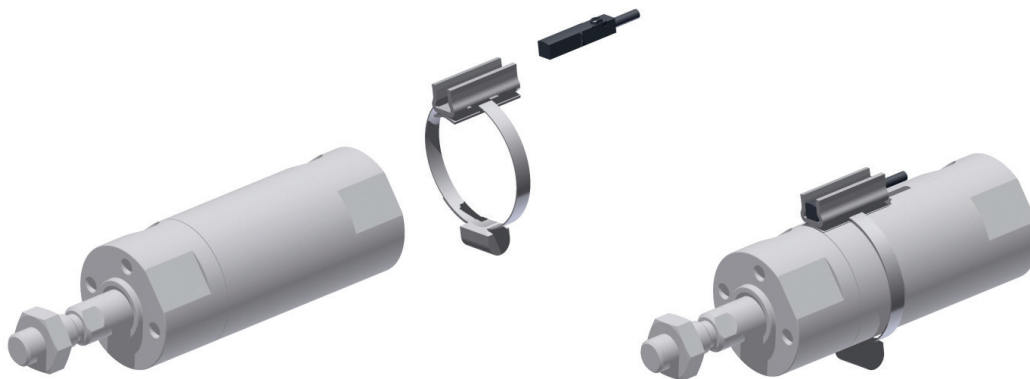
	<b>Front or Rear Trunnion Mount w/ Bracket MT8, MT9</b>	<b>Rod Clevis Mount CF4*</b>	<b>Front Spherical Eye Mount CF5**</b>	<b>Rod Nut</b>
<b>Construction</b>	<b>Stamped Sheet Steel</b>	<b>Steel</b>	<b>Steel</b>	<b>Zinc Plated Steel</b>
<b>Bore Ø (mm)</b>				
<b>20</b>	P493AL02H000A00	P493AL031000A00	P493AL032010A00	P493AL039000A00
<b>25</b>	P493AM02H000A00	P493AM031000A00	P493AM032010A00	P493AM039000A00
<b>32</b>	P493A302H000A00	P493AM031000A00	P493AM032010A00	P493AM039000A00
<b>40</b>	P493A402H000A00	P493A4031000A00	P493A4032010A00	P493A4039000A00
<b>50</b>	P493A502H000A00	P493A5031000A00	P493A5032010A00	P493A5039000A00
<b>63</b>	P493A602H000A00	P493A5031000A00	P493A5032010A00	P493A5039000A00
<b>80</b>	-	P493A8031000A00	P493A8032010A00	P493A8039000A00
<b>Parts Included in Mounting Kit</b>	2 Trunnion bolts (1), 2 trunnion washers (2), 2 trunnion pins (3), 1 pivot bracket (4)	2 Retaining rings (1), 1 clevis pin (2), 1 rod clevis (3)	1 Female spherical eye mount	1 Nut

\* Please order 2 CF4 kits for option code CD4.

\*\* Please order 2 CF5 kits for option code CD5.

### Sensor Switch Mounting Instructions

Sensor switches are used for position detection of the cylinder's piston. These sensor switches can be remounted onto other Numatics actuator and motion control product.



#### Mounting Bracket Kit Numbers

Bore Ø (mm)	Band Clamp Kit P/N
20	P494AL129600A00
25-32	P494A3129600A00
40	P4995051700N001
50	P494A4129600A00
63	P4995051710N001
80	P4995051720N001

Note: These part numbers are for brackets only, they do not include sensors. For complete sensor kit information, please see pg. 20-22.

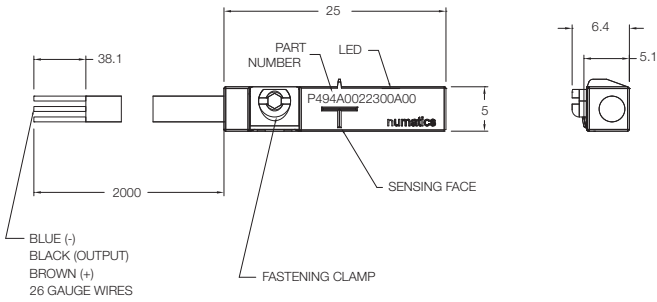
#### Sensor Switch Kit Numbers

Sensor Description	Standard Cord Set	Quick Disconnect
Reed Switch	P494A0021300A00	P494A0021600A00
Hall PNP	P494A0022300A00	P494A0022600A00
Hall NPN	P494A0022400A00	P494A0022700A00

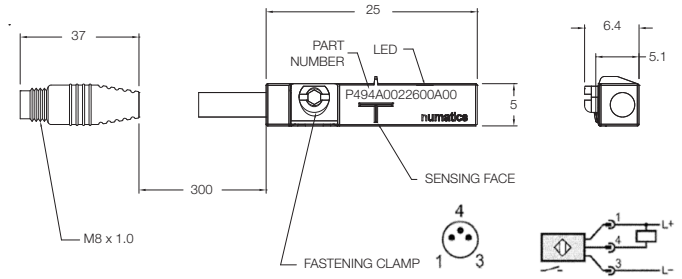
Dimensions: mm

Sensing Part Numbers - Hall PNP

P494A0022300A00



P494A0022600A00



<b>ELECTRICAL DESIGN</b>	DC PNP
<b>OUTPUT</b>	Normally Open
<b>OPERATING VOLTAGE</b>	10-30 VDC
<b>CURRENT RATING</b>	100 mA
<b>SHORT-CIRCUIT PROTECTION</b>	Yes
<b>OVERLOAD PROTECTION</b>	Yes
<b>REVERSE POLARITY PROTECTION</b>	Yes
<b>VOLTAGE DROP</b>	< 2.5 V
<b>CURRENT CONSUMPTION</b>	< 12 mA
<b>REPEATABILITY</b>	< .2mm
<b>POWER-ON DELAY TIME</b>	< 30 ms
<b>SWITCH FREQUENCY</b>	> 3000 Hz
<b>AMBIENT TEMPERATURE</b>	-25°C to 85°C (-13°F to 185°F)
<b>PROTECTION</b>	IP 67, III
<b>HYSTERESIS</b>	1.0mm
<b>MAGNETIC SENSITIVITY</b>	2.0 mT
<b>TRAVEL SPEED</b>	> 10 m/s
<b>HOUSING MATERIAL</b>	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
<b>FUNCTION DISPLAY SWITCHING STATUS</b>	Yellow LED
<b>CONNECTION</b>	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
<b>REMARKS</b>	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
<b>ACCESSORIES</b>	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
<b>AGENCY APPROVALS</b>	CE cUL US RoHS

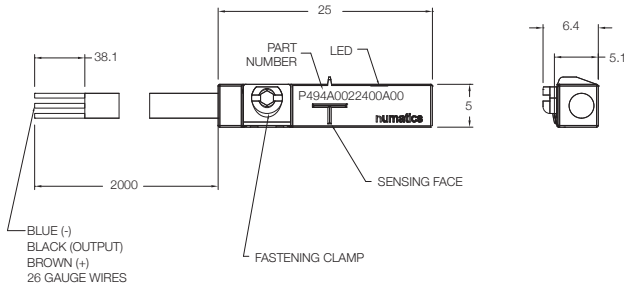
<b>ELECTRICAL DESIGN</b>	DC PNP
<b>OUTPUT</b>	Normally Open
<b>OPERATING VOLTAGE</b>	10-30 VDC
<b>CURRENT RATING</b>	100 mA
<b>SHORT-CIRCUIT PROTECTION</b>	Yes
<b>OVERLOAD PROTECTION</b>	Yes
<b>REVERSE POLARITY PROTECTION</b>	Yes
<b>VOLTAGE DROP</b>	< 2.5 V
<b>CURRENT CONSUMPTION</b>	< 12 mA
<b>REPEATABILITY</b>	< .2mm
<b>POWER-ON DELAY TIME</b>	< 30 ms
<b>SWITCH FREQUENCY</b>	> 3000 Hz
<b>AMBIENT TEMPERATURE</b>	-25°C to 85°C (-13°F to 185°F)
<b>PROTECTION</b>	IP 67, III
<b>HYSTERESIS</b>	1.0mm
<b>MAGNETIC SENSITIVITY</b>	2.0 mT
<b>TRAVEL SPEED</b>	> 10 m/s
<b>HOUSING MATERIAL</b>	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
<b>FUNCTION DISPLAY SWITCHING STATUS</b>	Yellow LED
<b>CONNECTION</b>	M8 Connector, Pur Cable (.3 m)
<b>REMARKS</b>	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
<b>ACCESSORIES</b>	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
<b>AGENCY APPROVALS</b>	CE cUL US RoHS



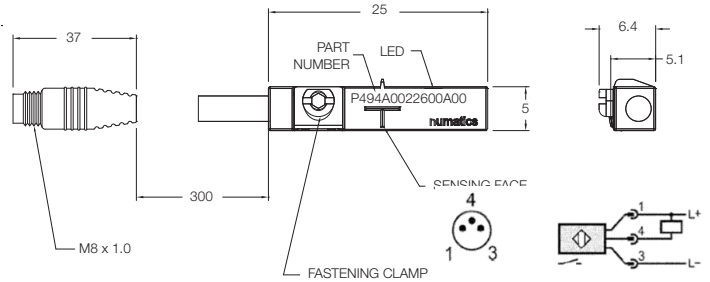
## Dimensions: mm

### Sensing Part Numbers - Hall NPN

#### P494A0022400A00



#### P494A0022700A00



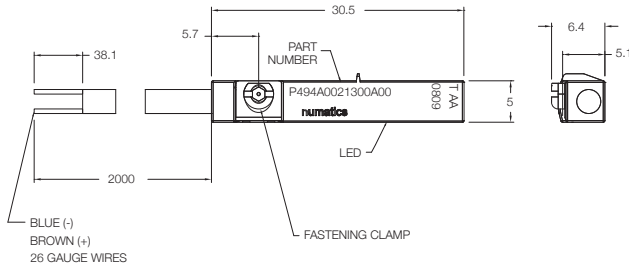
<b>ELECTRICAL DESIGN</b>	DC NPN
<b>OUTPUT</b>	Normally Open
<b>OPERATING VOLTAGE</b>	10-30 VDC
<b>CURRENT RATING</b>	100 mA
<b>SHORT-CIRCUIT PROTECTION</b>	Yes
<b>OVERLOAD PROTECTION</b>	Yes
<b>REVERSE POLARITY PROTECTION</b>	Yes
<b>VOLTAGE DROP</b>	< 2.5 V
<b>CURRENT CONSUMPTION</b>	< 12 mA
<b>REPEATABILITY</b>	< .2mm
<b>POWER-ON DELAY TIME</b>	< 30 ms
<b>SWITCH FREQUENCY</b>	> 3000 Hz
<b>AMBIENT TEMPERATURE</b>	-25°C to 85°C (-13°F to 185°F)
<b>PROTECTION</b>	IP 67, III
<b>HYSTERESIS</b>	1.0mm
<b>MAGNETIC SENSITIVITY</b>	2.0 mT
<b>TRAVEL SPEED</b>	> 10 m/s
<b>HOUSING MATERIAL</b>	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
<b>FUNCTION DISPLAY SWITCHING STATUS</b>	Yellow LED
<b>CONNECTION</b>	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
<b>REMARKS</b>	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
<b>ACCESSORIES</b>	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
<b>AGENCY APPROVALS</b>	CE cUL US RoHS

<b>ELECTRICAL DESIGN</b>	DC NPN
<b>OUTPUT</b>	Normally Open
<b>OPERATING VOLTAGE</b>	10-30 VDC
<b>CURRENT RATING</b>	100 mA
<b>SHORT-CIRCUIT PROTECTION</b>	Yes
<b>OVERLOAD PROTECTION</b>	Yes
<b>REVERSE POLARITY PROTECTION</b>	Yes
<b>VOLTAGE DROP</b>	< 2.5 V
<b>CURRENT CONSUMPTION</b>	< 12 mA
<b>REPEATABILITY</b>	< .2mm
<b>POWER-ON DELAY TIME</b>	< 30 ms
<b>SWITCH FREQUENCY</b>	> 3000 Hz
<b>AMBIENT TEMPERATURE</b>	-25°C to 85°C (-13°F to 185°F)
<b>PROTECTION</b>	IP 67, III
<b>HYSTERESIS</b>	1.0mm
<b>MAGNETIC SENSITIVITY</b>	2.0 mT
<b>TRAVEL SPEED</b>	> 10 m/s
<b>HOUSING MATERIAL</b>	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
<b>FUNCTION DISPLAY SWITCHING STATUS</b>	Yellow LED
<b>CONNECTION</b>	M8 Connector, Pur Cable (.3 m)
<b>REMARKS</b>	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
<b>ACCESSORIES</b>	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
<b>AGENCY APPROVALS</b>	CE cUL US RoHS

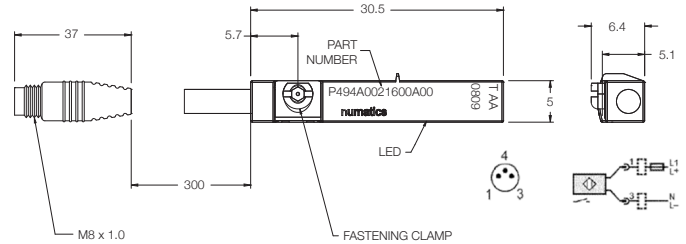
Dimensions: mm

Sensing Part Numbers - Reed

P494A0021300A00



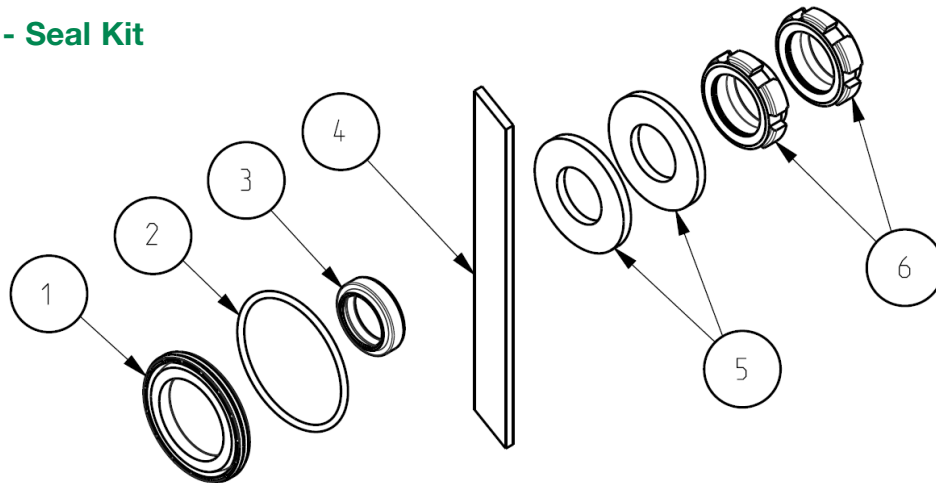
P494A0021600A00



<b>ELECTRICAL DESIGN</b>	AC/DC REED
<b>OUTPUT</b>	Normally Open
<b>OPERATING VOLTAGE</b>	5-120 VAC/DC
<b>CURRENT RATING</b>	100 mA*
<b>SHORT-CIRCUIT PROTECTION</b>	No
<b>OVERLOAD PROTECTION</b>	No
<b>REVERSE POLARITY PROTECTION</b>	Yes
<b>VOLTAGE DROP</b>	< 5 V
<b>REPEATABILITY</b>	± .2mm
<b>MAKETIME INCLUDING BOUNCE</b>	< .6 ms
<b>BREAKTIME</b>	< .1 ms
<b>SWITCHING POWER (MAX)</b>	5 W
<b>SWITCH FREQUENCY</b>	1000 Hz
<b>AMBIENT TEMPERATURE</b>	-25°C to 70°C (-13°F to 158°F)
<b>PROTECTION</b>	IP 67, II
<b>HYSTERESIS</b>	.9mm
<b>HOUSING MATERIAL</b>	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
<b>FUNCTION DISPLAY SWITCHING STATUS</b>	Yellow LED
<b>CONNECTION</b>	Flying Leads, Pur Cable (2m Long, 2 x26 Gauge Wire)
<b>REMARKS</b>	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc.) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
<b>ACCESSORIES</b>	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
<b>AGENCY APPROVALS</b>	

<b>ELECTRICAL DESIGN</b>	AC/DC REED
<b>OUTPUT</b>	Normally Open
<b>OPERATING VOLTAGE</b>	5-60 VDC / 5-50 VAC
<b>CURRENT RATING</b>	100 mA*
<b>SHORT-CIRCUIT PROTECTION</b>	No
<b>OVERLOAD PROTECTION</b>	No
<b>REVERSE POLARITY PROTECTION</b>	Yes
<b>VOLTAGE DROP</b>	< 5 V
<b>REPEATABILITY</b>	± .2mm
<b>MAKETIME INCLUDING BOUNCE</b>	< .6 ms
<b>BREAKTIME</b>	< .1 ms
<b>SWITCHING POWER (MAX)</b>	5 W
<b>SWITCH FREQUENCY</b>	1000 Hz
<b>AMBIENT TEMPERATURE</b>	-25°C to 70°C (-13°F to 158°F)
<b>PROTECTION</b>	IP 67, II
<b>HYSTERESIS</b>	.9mm
<b>HOUSING MATERIAL</b>	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
<b>FUNCTION DISPLAY SWITCHING STATUS</b>	Yellow LED
<b>CONNECTION</b>	M8 Connector, Pur Cable (.3m)
<b>REMARKS</b>	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc.) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits # M8 Connector voltage limited to 5-60 VDC/ 5-50 VAC to conform with 2008 IEC 61076-2-104 Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
<b>ACCESSORIES</b>	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
<b>AGENCY APPROVALS</b>	

### How to Order - Seal Kit



Bore Ø (mm)	Kit Number	Parts Included					
		①	②	③	④	⑤	⑥
		Piston Seal	O-Ring	Rod Seal	Wear Band	Bumper	Cushion Seal
<b>Single Rod Seal Kits</b>							
20	M488502568LN001	•	•	•	•	••	••
25	M488502568MN002	•	•	•	•	••	••
32	M4885025683N003	•	•	•	•	••	••
40	M4885025684N004	•	•	•	•	••	••
50	M4885025685N005	•	•	•	•	••	••
63	M4885025686N006	•	•	•	•	••	••
80	M4885025688N007	•	•	•	•	••	••
20	M488506073LN001	•	•	•	•	••	
25	M488506073MN002	•	•	•	•	••	
32	M4885060733N003	•	•	•	•	••	
40	M4885060734N004	•	•	•	•	••	
50	M4885060735N005	•	•	•	•	••	
63	M4885060736N006	•	•	•	•	••	
80	M4885060738N007	•	•	•	•	••	

<b>Double Rod Seal Kits</b>							
20	M488506074LN001	•	•	••	•	••	••
25	M488506074MN002	•	•	••	•	••	••
32	M4885060743N003	•	•	••	•	••	••
40	M4885060744N004	•	•	••	•	••	••
50	M4885060745N005	•	•	••	•	••	••
63	M4885060746N006	•	•	••	•	••	••
80	M4885060748N007	•	•	••	•	••	••
20	M488506075LN001	•	•	••	•	••	
25	M488506075MN002	•	•	••	•	••	
32	M4885060753N003	•	•	••	•	••	
40	M4885060754N004	•	•	••	•	••	
50	M4885060755N005	•	•	••	•	••	
63	M4885060756N006	•	•	••	•	••	
80	M4885060758N007	•	•	••	•	••	

## Seal Kit Removal/Installation Instructions



1. Safely disconnect the cylinder air lines, rod mount and if applicable other mechanical attachments as directed by machine manufacturer.
2. Remove all mounting accessories from the cylinder.
3. Locate the mounting flats on the front cap (circled above).
4. Using these designated flats, gently loosen the front cap with a wrench and unthread the tube using a strap wrench or concave devise of similar diameter **WARNING:** Do not grip the rear cap end of the cylinder or deform the ID of the tube.
5. Carefully remove all internal sealing and wear elements from the head and piston assembly without nicking or damaging them.
6. If rod bushing is worn more than .13mm out of round, replace head assembly or entire cylinder.
7. With a lint free cloth, remove grease from internal elements as well as the inside of the tube and piston rod.
8. Thoroughly re-lubricate all new replacement seals and tube inside diameter using grease provided. Do not lubricate the rod bushing.
9. Carefully reassemble all elements back onto the head and piston assembly (as seen in the diagram on the previous page):
  - ① Piston Seal
  - ② O-ring
  - ③ Rod Seal
  - ④ Wear Band
  - ⑤ Bumpers
  - ⑥ Cushion Seals (if applicable)
10. Using a sinking tube slide the piston rod assembly back into the freshly lubricated tube.
11. Thread the head back onto the cylinder tube, over the piston rod. Torque cylinder 1°-2° past origin.  
 Note: Not recommended for C01 Foot Mounts. Misalignment of the mounting holes, flats and ports may occur.
12. Re-attach mounting accessories and then safely back onto machine.









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