ISO 6431

Tie Rod Cylinders

TECHNICAL PRODUCT CATALOG

144 Kay Drive, Easley, SC 29640

ISO 6431 Tie Rod Cylinders

End Caps	*Die-Casted Aluminum*
Tube	*Anodized Aluminum*
Tie Rods	*High Strength Steel*
Seals	*Polyurethane + NBR*
Rod Bearing	*Heavy Duty Nylon*
Piston Rod	*Chromium Coated Steel*

Working Pressure	*Max 10 bar*
Temperature	*-20ºC + 80ºC with dry air*
Working Fluid	*Filtered compressed air, lubricated or not*

Available Versions

Double Acting, Magnetic, Cushioned
Double Acting, Magnetic, Cushioned, Through Piston Rod

Standard Strokes

Ø mm	25	40	50	80	100	125	160	200	250	300	320	400	500
32	•	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•	•	•
160	•	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•	•	•
320	•	•	•	•	•	•	•	•	•	•	•	•	•

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How to Order Base Models

CX 050 A 0 2 M 100 B A C TM400 1 2

Series
CX – ISO 6431 Tie Rod Cylinder

Bore

032 –	32 mm	125 –	125 mm
040 –	40 mm	160 –	160 mm
050 –	50 mm	200 –	200 mm
063 –	63 mm	250 –	250 mm
080 –	80 mm	320 –	320 mm
100 –	100 mm		

Cushioning
A – Adjustable Cushioning Standard

Range
0 – Single Rod
2 – Through Rod

Magnet
2 – Magnetic Piston Standard

Piston Rod Ends
M – Male

Stroke

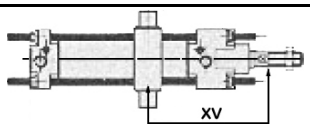
025 –	25 mm	200 –	200 mm
040 –	40 mm	250 –	250 mm
050 –	50 mm	300 –	300 mm
080 –	80 mm	320 –	320 mm
100 –	100 mm	400 –	400 mm
125 –	125 mm	500 –	500 mm
160 –	160 mm		

Piston Rod Material
B – Chromium Coated Steel

Tie Rod Material
A – High Strength Steel

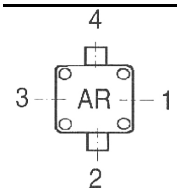
Body Material
C – Die-Casted Aluminum

Side Trunnion
Blank – No Trunnion
TM*** – *** = "XV" Dimension (please specify)



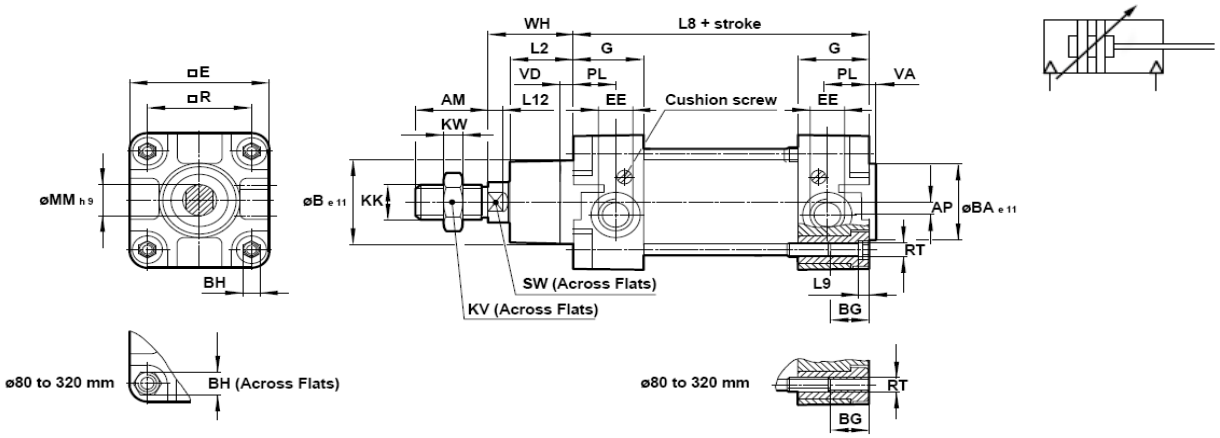
Port Position - Head
1 – Position 1
2 – Position 2
3 – Position 3
4 – Position 4

Port Position - Cap
1 – Position 1
2 – Position 2
3 – Position 3
4 – Position 4

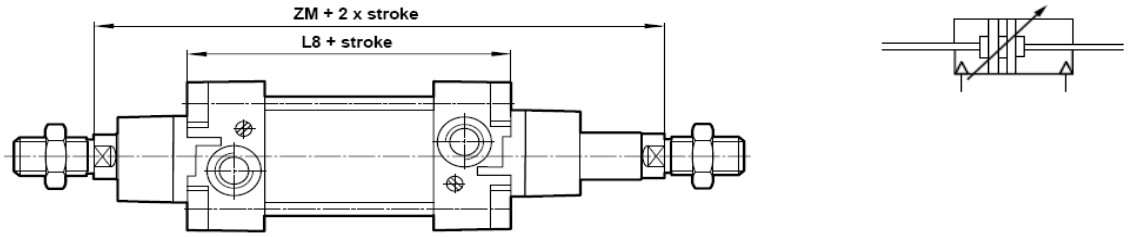


ISO 6431 Tie Rod Cylinders

Double Acting Single Rod



Double Acting Through Rod



ømm	AM	AP	øBe11	øBAe11	BG	BH	❑E	EE	G	KK	KV	KW
32	0.87 (22)	0.14 (3.5)	1.18 (30)	1.18 (30)	0.71 (18)	0.24 (6)	1.85 (47)	G 1/8 (1/8" NPT)	1.08 (27.5)	M10x1.25	0.67 (17)	0.20 (5)
40	0.94 (24)	0.18 (4.5)	1.38 (35)	1.38 (35)	0.71 (18)	0.24 (6)	2.09 (53)	G 1/4 (1/4" NPT)	1.26 (32)	M12x1.25	0.75 (19)	0.24 (6)
50	1.26 (32)	0.24 (6)	1.57 (40)	1.57 (40)	0.71 (18)	0.31 (8)	2.56 (65)	G 1/4 (1/4" NPT)	1.22 (31)	M16x1.5	0.94 (24)	0.31 (8)
63	1.26 (32)	0.39 (10)	1.77 (45)	1.77 (45)	0.69 (17.5)	0.31 (8)	2.95 (75)	G 3/8 (3/8" NPT)	1.30 (33)	M16x1.5	0.94 (24)	0.31 (8)
80	1.57 (40)	0.33 (8.5)	1.77 (45)	1.77 (45)	0.85 (21.5)	0.75 (19)	3.74 (95)	G 3/8 (3/8" NPT)	1.30 (33)	M20x1.5	1.18 (30)	0.39 (10)
100	1.57 (40)	0.35 (9)	2.17 (55)	2.17 (55)	0.85 (21.5)	0.75 (19)	4.53 (115)	G 1/2 (1/2" NPT)	1.46 (37)	M20x1.5	1.18 (30)	0.39 (10)
125	2.13 (54)	0.39 (10)	2.36 (60)	2.36 (60)	1.26 (32)	0.94 (24)	5.51 (140)	G 1/2 (1/2" NPT)	1.81 (46)	M27x2	1.61 (41)	0.53 (13.5)
160	2.83 (72)	0.71 (18)	2.56 (65)	2.56 (65)	1.12 (28.5)	1.26 (32)	7.22 (183.5)	G 3/4 (3/4" NPT)	1.97 (50)	M36x2	2.17 (55)	0.71 (18)
200	2.83 (72)	0.71 (18)	2.95 (75)	2.95 (75)	1.12 (28.5)	1.26 (32)	8.82 (224)	G 3/4 (3/4" NPT)	1.97 (50)	M36x2	2.17 (55)	0.71 (18)
250	3.31 (84)	0.89 (22.5)	3.54 (90)	3.54 (90)	1.38 (35)	1.42 (36)	11.02 (280)	G 1 (1" NPT)	2.28 (58)	M42x2	2.56 (65)	0.83 (21)
320	3.78 (96)	0.89 (22.5)	4.33 (110)	4.33 (110)	1.18 (30)	1.81 (46)	13.78 (350)	G 1 (1" NPT)	2.36 (60)	M48x2	2.95 (75)	0.94 (24)

ømm	L2	L8	L9	L12	øMMh9	PL	❑R	RT	SW	VA	VD	WH	ZM
32	0.79 (20)	3.70 (94)	0.16 (4)	0.24 (6)	0.47 (12)	0.51 (13)	1.26 (32.5)	M 6	0.39 (10)	0.12 (3)	0.24 (6)	1.02 (26)	5.75 (146)
40	0.87 (22)	4.13 (105)	0.16 (4)	0.26 (6.5)	0.63 (16)	0.59 (15)	1.50 (38)	M 6	0.51 (13)	0.14 (3.5)	0.24 (6)	1.18 (30)	6.50 (165)
50	1.06 (27)	4.17 (106)	0.20 (5)	0.31 (8)	0.79 (20)	0.73 (18.5)	1.83 (46.5)	M 8	0.67 (17)	0.14 (3.5)	0.24 (6)	1.46 (37)	7.09 (180)
63	1.14 (29)	4.76 (121)	0.20 (5)	0.31 (8)	0.79 (20)	0.75 (19)	2.22 (56.5)	M 8	0.67 (17)	0.16 (4)	0.24 (6)	1.46 (37)	7.68 (195)
80	1.30 (33)	5.04 (128)	-	0.39 (10)	0.98 (25)	0.75 (19)	2.83 (72)	M 10	0.87 (22)	0.16 (4)	0.24 (6)	1.81 (46)	8.66 (220)
100	1.42 (36)	5.43 (138)	-	0.39 (10)	0.98 (25)	0.71 (18)	3.50 (89)	M 10	0.87 (22)	0.16 (4)	0.24 (6)	2.01 (51	9.45 (240)
125	1.77 (45)	6.30 (160)	-	0.51 (13)	1.26 (32)	0.79 (20)	4.33 (110)	M 12	1.06 (27)	0.24 (6)	0.61 (15.5)	2.56 (65)	11.42 (290)
160	2.28 (58)	7.09 (180)	-	0.63 (16)	1.57 (40)	0.83 (21)	5.51 (140)	M 16	1.42 (36)	0.16 (4)	0.59 (15)	3.15 (80)	13.39 (340)
200	2.64 (67)	7.09 (180)	-	0.63 (16)	1.57 (40)	0.83 (21)	6.89 (175)	M 16	1.42 (36)	0.20 (5)	0.59 (15)	3.74 (95)	14.57 (370)
250	3.15 (80)	7.87 (200)	-	0.79 (20)	1.97 (50)	1.14 (29)	8.66 (220)	M 20	1.61 (41)	0.28 (7)	0.51 (13)	4.13 (105)	–
320	3.54 (90)	8.66 (220)	-	0.94 (24)	2.48 (63)	1.18 (30)	10.63 (270)	M 24	2.17 (55)	0.28 (7)	0.51 (13)	4.72 (120)	–

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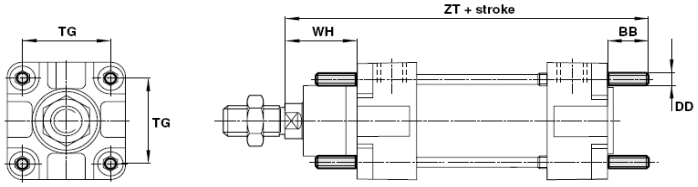
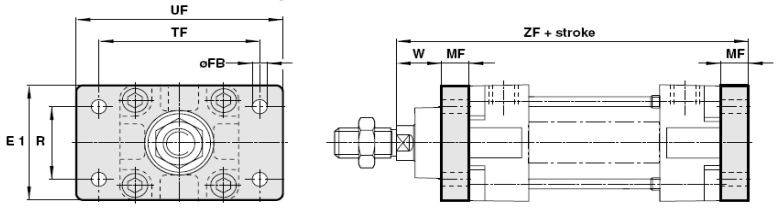
Mounting Accessories for Tie Rod Cylinders

Front or Rear Stud



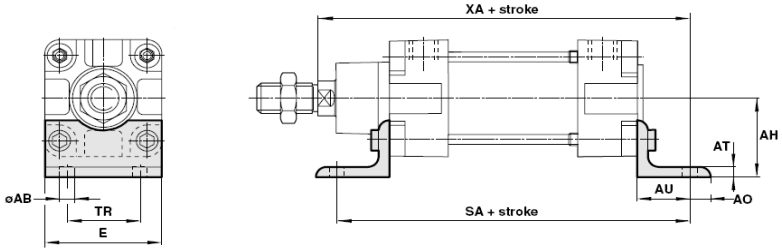
ø mm	Part Number
32	MX1-032
40	MX1-040
50	MX1-050
63	MX1-063
80	MX1-080
100	MX1-100
125	MX1-125
160	MX1-160
200	MX1-200
250	MX1-250
320	MX1-320

Front or Rear Flange



ø mm	Part Number
32	MF-032
40	MF-040
50	MF-050
63	MF-063
80	MF080
100	MF-100
125	MF-125
160	MF-160
200	MF-200
250	MF-250
320	MF-320

Foot Mount



ø mm	Part Number
32	MS1-032
40	MS1-040
50	MS1-050
63	MS1-063
80	MS1-080
100	MS1-100
125	MS1-125
160	MS1-160
200	MS1-200
250	MS1-250
320	MS1-320

ømm	øAB	AH	AO	AT	AU	BB	DD	E	E1	øFB	MF
32	0.28 (7)	1.26 (32)	0.31 (8)	0.16 (4)	0.94 (24)	0.67 (17)	M 6	1.89 (48)	1.97 (50)	0.28 (7)	0.39 (10)
40	0.35 (9)	1.42 (36)	0.35 (9)	0.16 (4)	1.10 (28)	0.67 (17)	M 6	2.09 (53)	2.17 (55)	0.35 (9)	0.39 (10)
50	0.35 (9)	1.77 (45)	0.39 (10)	0.20 (5)	1.26 (32)	0.91 (23)	M 8	2.52 (64)	2.56 (65)	0.35 (9)	0.47 (12)
63	0.35 (9)	1.97 (50)	0.47 (12)	0.20 (5)	1.26 (32)	0.91 (23)	M 8	2.91 (74)	2.95 (75)	0.35 (9)	0.47 (12)
80	0.47 (12	2.48 (63)	0.75 (19)	0.20 (5)	1.61 (41)	1.10 (28)	M 10	3.86 (98)	3.94 (100)	0.47 (12)	0.63 (16)
100	0.55 (14)	2.80 (71)	0.75 (19)	0.20 (5)	1.61 (41)	1.10 (28)	M 10	4.53 (115)	4.72 (120)	0.55 (14)	0.63 (16)
125	0.63 (16)	3.54 (90)	0.79 (20)	0.35 (9)	1.77 (45)	1.34 (34)	M 12	5.51 (140)	5.51 (140)	0.63 (16)	0.79 (20)
160	0.71 (18)	4.53 (115)	0.79 (20)	0.31 (8)	2.36 (60)	1.65 (42)	M 16	7.09 (180)	7.09 (180)	0.71 (18)	0.79 (20)
200	0.87 (22)	5.31 (135)	1.18 (30)	0.35 (9)	2.76 (70)	1.65 (42)	M 16	8.66 (220)	8.66 (220)	0.87 (22)	0.98 (25)
250	1.02 (26)	6.50 (165)	1.38 (35)	0.39 (10)	2.95 (75)	1.97 (50)	M 20	11.02 (280)	11.02 (280)	1.02 (26)	0.98 (25)
320	1.30 (33)	7.87 (200)	1.77 (45)	0.63 (16)	3.35 (85)	2.36 (60)	M 24	13.78 (350)	13.78 (350)	1.30 (33)	1.18 (30)

ømm	R	SA	TF	❑TG	TR	UF	W	WH	XA	ZF	ZT
32	1.26 (32)	5.59 (142)	2.52 (64)	1.28 (32.5)	1.26 (32)	3.15 (80)	0.63 (16)	1.02 (26)	5.67 (144)	5.12 (144)	5.39 (137)
40	1.42 (36)	6.34 (161)	2.83 (72)	1.50 (38)	1.42 (36)	3.54 (90)	0.79 (20)	1.18 (30)	6.42 (163)	5.71 (145)	5.98 (152)
50	1.77 (45)	6.69 (170)	3.54 (90)	1.83 (46.5)	1.77 (45)	4.33 (110)	0.98 (25)	1.46 (37)	6.89 (175)	6.10 (155)	6.54 (166)
63	1.97 (50)	7.28 (185)	3.94 (100)	2.22 (56.5)	1.97 (50)	4.92 (125)	0.98 (25)	1.46 (37)	7.48 (190)	6.69 (170)	7.13 (181)
80	2.48 (63)	8.27 (210)	4.96 (126)	2.83 (72)	2.48 (63)	6.06 (154)	1.18 (30)	1.81 (46)	8.46 (215)	7.48 (190)	7.95 (202)
100	2.95 (75)	8.66 (220)	5.91 (150)	3.50 (89)	2.95 (75)	7.32 (186)	1.38 (35)	2.01 (51)	9.06 (230)	8.07 (205)	8.54 (217)
125	3.54 (90)	9.84 (250)	7.09 (180)	4.33 (110)	3.54 (90)	8.82 (224)	1.77 (45)	2.56 (65)	10.63 (270)	9.65 (245)	10.20 (259)
160	4.53 (115)	11.81 (300)	9.06 (230)	5.51 (140)	4.53 (115)	11.02 (280)	2.36 (60)	3.15 (80)	12.60 (320)	11.02 (280)	11.89 (302)
200	5.31 (135)	12.60 (320)	10.63 (270)	6.89 (175)	5.31 (135)	12.60 (320)	2.76 (70)	3.74 (95)	13.58 (345)	11.81 (300)	12.48 (317)
250	6.50 (165)	13.78 (350)	12.99 (330)	8.66 (220)	6.50 (165)	15.55 (395)	3.15 (80)	4.13 (105)	14.96 (380)	12.99 (330)	13.98 (355)
320	7.87 (200)	15.35 (390)	15.75 (400)	10.63 (270)	7.87 (200)	18.70 (475)	3.54 (90)	4.72 (120)	16.73 (425)	14.57 (370)	15.75 (400)

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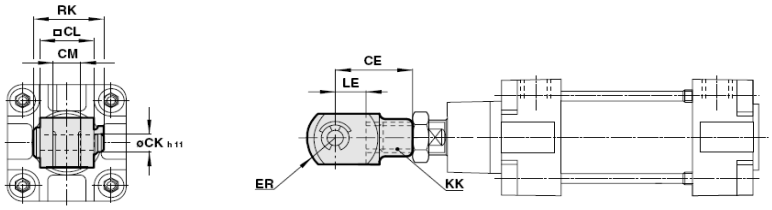
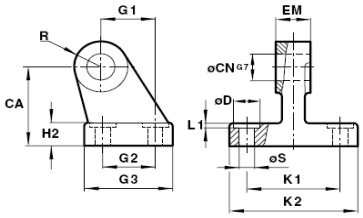
Mounting Accessories for Tie Rod Cylinders

Piston Rod Clevis



ø mm	Part Number
32	FEC10x125
40	FEC12x125
50	FEC16x150
63	FEC16x150
80	FEC20x150
100	FEC20x150
125	FEC27x200
160	FEC36x200
200	FEC36x200
250	FEC42x200
320	FEC42x200

Front Hinge Bracket



ømm	Part Number
32	MFH-032
40	MFH-040
50	MFH-050
63	MFH-063
80	MFH-080
100	MFH-100
125	MFH-125
160	MFH-160
200	MFH-200
250	MFH-250
320	MFH-320

ømm	CA	CE	øCKh11	❑CL	CM	øCNG7	øD	EM	ER	G1	G2
32	1.26 (32)	1.57 (40)	0.39 (10)	0.79 (20)	0.39 (10)	0.39 (10)	0.43 (11)	0.39 (10)	0.63 (16)	0.83 (21)	0.71 (18)
40	1.42 (36)	1.89 (48)	0.47 (12)	0.94 (24)	0.47 (12)	0.47 (12)	0.43 (11)	0.47 (12)	0.75 (19)	0.94 (24)	0.87 (22)
50	1.77 (45)	2.52 (45)	0.63 (16)	1.26 (32)	0.63 (16)	0.63 (16)	0.59 (15)	0.63 (16)	0.98 (25)	1.30 (33)	1.18 (30)
63	1.97 (50)	2.52 (45)	0.63 (16)	1.26 (32)	0.63 (16)	0.63 (16)	0.59 (15)	0.63 (16)	0.98 (25)	1.46 (37)	1.38 (35)
80	2.48 (63)	3.15 (80)	0.79 (20)	1.57 (40)	0.79 (20)	0.79 (20)	0.71 (18)	0.79 (20)	1.26 (32)	1.85 (47)	1.57 (40)
100	2.80 (71)	3.15 (80)	0.79 (20)	1.57 (40)	0.79 (20)	0.79 (20)	0.71 (18)	0.79 (20)	1.26 (32)	2.17 (55)	1.97 (50)
125	3.54 (90)	4.33 (110)	1.18 (30)	2.17 (55)	1.18 (30)	1.18 (30)	0.79 (20)	1.18 (30)	1.77 (45)	2.76 (70)	2.36 (60)
160	4.53 (115)	5.67 (144)	1.38 (35)	2.76 (70)	1.38 (35)	1.38 (35)	0.79 (20)	1.38 (35)	2.24 (57)	3.82 (97)	3.46 (88)
200	5.31 (135)	5.67 (144)	1.38 (35)	2.76 (70)	1.38 (35)	1.38 (35)	0.94 (24)	1.38 (35)	2.24 (57)	4.13 (105)	3.54 (90)
250	–	6.61 (168)	1.57 (40)	3.35 (85)	1.57 (40)	–	–	–	2.68 (68)	–	–
320	–	7.56 (192)	1.97 (50)	3.78 (96)	1.97 (50)	–	–	–	3.35 (85)	–	–

ømm	G3	H2	KK	K1	K2	L1	LE	R	RK	øS	
32	1.22 (31)	0.31 (8)	M10x1.25	1.50 (38)	2.01 (51)	0.06 (1.6)	0.79 (20)	0.39 (10)	1.10 (28)	0.26 (6.6)	
40	1.38 (35)	0.39 (10)	M12x1.25	1.61 (41)	2.13 (54)	0.06 (1.6)	0.94 (24)	0.43 (11)	1.26 (32)	0.26 (6.6)	
50	1.77 (45)	0.47 (12)	M16x1.5	1.97 (50)	2.56 (65)	0.06 (1.6)	1.26 (32)	0.51 (13)	1.63 (41.5)	0.35 (9)	
63	1.97 (50)	0.47 (12)	M16x1.5	2.05 (52)	2.64 (67)	0.06 (1.6)	1.26 (32)	0.59 (15)	1.63 (41.5)	0.35 (9)	
80	2.36 (60)	0.55 (14)	M20x1.5	2.60 (66)	3.39 (86)	0.10 (2.5)	1.57 (40)	0.59 (15)	1.97 (50)	0.43 (11)	
100	2.76 (70)	0.59 (15)	M20x1.5	2.99 (76)	3.78 (96)	0.10 (2.5)	1.57 (40)	0.75 (19)	1.97 (50)	0.43 (11)	
125	3.54 (90)	0.79 (20)	M27x2	3.70 (94)	4.88 (124)	0.13 (3.2)	2.13 (54)	0.87 (22)	2.44 (62)	0.55 (14)	
160	4.96 (126)	0.98 (25)	M36x2	4.65 (118)	6.14 (156)	0.16 (4)	2.83 (72)	1.22 (31)	3.74 (95)	0.55 (14)	
200	5.12 (130)	1.18 (30)	M36x2	4.80 (122)	6.38 (162)	0.16 (4)	2.83 (72)	1.22 (31)	3.74 (95)	0.71 (18)	
250	–	–	M42x2	–	–	–	3.31 (84)	–	4.17 (106)	–	
320	–	–	M48x2	–	–	–	3.78 (96)	–	4.76 (121)	–	

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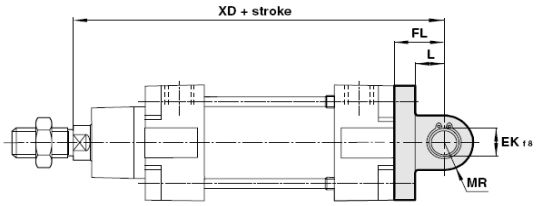
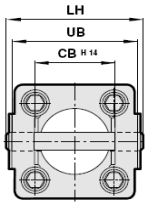
Mounting Accessories for Tie Rod Cylinders

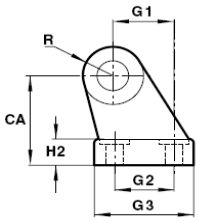
Wide Rear Clevis

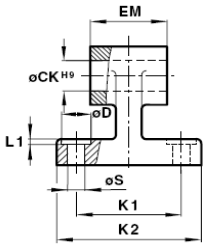




ø mm	Part Number
32	MP2-032
40	MP2-040
50	MP2-050
63	MP2-063
80	MP2-080
100	MP2-100
125	MP2-125
160	MP2-160
200	MP2-200
250	MP2-250
320	MP2-320

Wide Rear Hinge Bracket





ø mm	Part Number
32	MC4-032
40	MC4-040
50	MC4-050
63	MC4-063
80	MC4-080
100	MC4-100
125	MC4-125
160	MC4-160
200	MC4-200
250	MC4-250
320	MC4-320

ømm	CA	CBH14	øCKH9	øD	EK18	EM	FL	G1	G2	G3	H2
32	1.26 (32)	1.02 (26)	0.39 (10)	0.43 (11)	0.39 (10)	1.02 (26)	0.87 (22)	0.83 (21)	0.71 (18)	1.22 (31)	0.31 (8)
40	1.42 (36)	1.10 (28)	0.47 (12)	0.43 (11)	0.47 (12)	1.10 (28)	0.98 (25)	0.94 (24)	0.87 (22)	1.38 (35)	0.39 (10)
50	1.77 (45)	1.26 (32)	0.47 (12)	0.59 (15)	0.47 (12)	1.26 (32)	1.06 (27)	1.30 (33)	1.18 (30)	1.77 (45)	0.47 (12)
63	1.97 (50)	1.57 (40)	0.63 (16)	0.59 (15)	0.63 (16)	1.57 (40)	1.26 (32)	1.46 (37)	1.38 (35)	1.97 (50)	0.47 (12)
80	2.48 (63)	1.97 (50)	0.63 (16)	0.71 (18)	0.63 (16)	1.97 (50)	1.42 (36)	1.85 (47)	1.57 (40)	2.36 (60)	0.55 (14)
100	2.80 (71)	2.36 (60)	0.79 (20)	0.71 (18)	0.79 (20)	2.36 (60)	1.61 (41)	2.17 (55)	1.97 (50)	2.76 (70)	0.59 (15)
125	3.54 (90)	2.76 (70)	0.98 (25)	0.79 (20)	0.98 (25)	2.76 (70)	1.97 (50)	2.76 (70)	2.36 (60)	3.54 (90)	0.79 (20)
160	4.53 (115)	3.54 (90)	1.18 (30)	0.79 (20)	1.18 (30)	3.54 (90)	2.17 (55)	3.82 (97)	3.46 (88)	4.96 (126)	0.98 (25)
200	5.31 (135)	3.54 (90)	1.18 (30)	0.94 (24)	1.18 (30)	3.54 (90)	2.36 (60)	4.13 (105)	3.54 (90)	5.12 (130)	1.18 (30)
250	6.50 (165)	4.33 (110)	1.57 (40)	1.30 (33)	1.57 (40)	4.33 (110)	2.76 (70)	5.04 (128)	4.33 (110)	6.30 (160)	1.38 (35)
320	7.87 (200)	4.72 (120)	1.77 (45)	1.57 (40)	1.77 (45)	4.72 (120)	3.15 (80)	5.91 (150)	4.80 (122)	7.32 (186)	1.57 (40)

ømm	K1	K2	L	L1	LH	MR	R	øS	UB	XD	
32	1.50 (38)	2.01 (51)	0.51 (13)	0.06 (1.6)	2.05 (52)	0.35 (9)	0.39 (10)	0.26 (6.6)	1.77 (45)	5.59 (142)	
40	1.61 (41)	2.13 (54)	0.63 (16)	0.06 (1.6)	2.36 (60)	0.47 (12)	0.43 (11)	0.26 (6.6)	2.05 (52)	6.30 (160)	
50	1.97 (50)	2.56 (65)	0.67 (17)	0.06 (1.6)	2.68 (68)	0.47 (12)	0.51 (13)	0.35 (9)	2.36 (60)	6.69 (170)	
63	2.05 (52)	2.64 (67)	0.87 (22)	0.06 (1.6)	3.11 (79)	0.59 (15)	0.59 (15)	0.35 (9)	2.76 (70)	7.48 (190)	
80	2.60 (66)	3.39 (86)	0.87 (22)	0.10 (2.5)	3.90 (99)	0.59 (15)	0.59 (15)	0.43 (11)	3.54 (90)	8.27 (210)	
100	3.00 (76)	3.78 (96)	1.06 (27)	0.10 (2.5)	4.69 (119)	0.79 (20)	0.75 (19)	0.43 (11)	4.33 (110)	9.06 (230)	
125	3.70 (94)	4.88 (124)	1.22 (31)	0.13 (3.2)	5.47 (139)	0.98 (25)	0.87 (22)	0.55 (14)	5.12 (130)	10.83 (275)	
160	4.65 (118)	6.14 (156)	1.40 (35.5)	0.16 (4)	7.13 (181)	1.18 (30)	1.22 (31)	0.55 (14)	6.69 (170)	12.40 (315)	
200	4.80 (122)	6.38 (162)	1.41 (36)	0.16 (4)	7.13 (181)	1.18 (30)	1.22 (31)	0.71 (18)	6.69 (170)	13.19 (335)	
250	5.91 (150)	7.87 (200)	1.77 (45)	0.08 (2)	8.60 (218)	1.57 (40)	1.57 (40)	0.87 (22)	7.87 (200)	14.76 (375)	
320	6.69 (170)	9.21 (234)	1.97 (50)	0.08 (2)	9.37 (238)	1.77 (45)	1.77 (45)	1.02 (26)	8.66 (220)	16.54 (420)	

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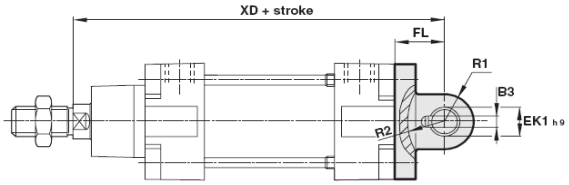
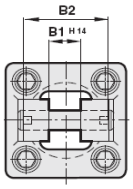
Mounting Accessories for Tie Rod Cylinders

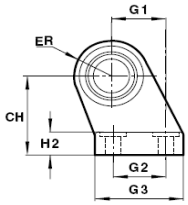
Narrow Rear Clevis

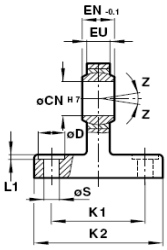




ø mm	Part Number
32	MP2N-032
40	MP2N-040
50	MP2N-050
63	MP2N-063
80	MP2N-080
100	MP2N-100
125	MP2N-125
160	MP2N-160
200	MP2N-200

Bearing Swivel/Rear Hinge





ø mm	Part Number
32	MFSH-032
40	MFSH-040
50	MFSH-050
63	MFSH-063
80	MFSH-080
100	MFSH-100
125	MFSH-125
160	MFSH-160
200	MFSH-200

ømm	B1H14	B2	B3	CH	øCNH7	øD	øEKH9	EN-0.1	ER	EU	FL
32	0.55 (14)	1.34 (34)	0.13 (3.3)	1.26 (32)	0.39 (10)	0.43 (11)	0.39 (10)	0.55 (14)	0.63 (16)	0.41 (10.5)	0.87 (22)
40	0.63 (16)	1.57 (40)	0.17 (4.3)	1.42 (36)	0.47 (12)	0.43 (11)	0.47 (12)	0.63 (16)	0.75 (19)	0.47 (12)	0.98 (25)
50	0.83 (21)	1.77 (45)	0.17 (4.3)	1.77 (45)	0.63 (16)	0.59 (15)	0.63 (16)	0.83 (21)	0.83 (21)	0.59 (15)	1.06 (27)
63	0.83 (21)	2.01 (51)	0.17 (4.3)	1.97 (50)	0.63 (16)	0.59 (15)	0.63 (16)	0.83 (21)	0.94 (24)	0.59 (15)	1.26 (32)
80	0.98 (25)	2.56 (65)	0.17 (4.3)	2.48 (63)	0.79 (20)	0.71 (18)	0.79 (20)	0.98 (25)	1.10 (28)	0.71 (18)	1.42 (36)
100	0.98 (25)	2.95 (75)	0.17 (4.3)	2.80 (71)	0.79 (20)	0.71 (18)	0.79 (20)	0.98 (25)	1.18 (30)	0.71 (18)	1.61 (41)
125	1.46 (37)	3.82 (97)	0.25 (6.3)	3.54 (90)	1.18 (30)	0.79 (20)	1.18 (30)	1.46 (37)	1.57 (40)	0.98 (25)	1.97 (50)
160	1.69 (43)	4.80 (122)	0.25 (6.3)	4.53 (115)	1.38 (35)	1.18 (30)	1.38 (35)	1.69 (43)	1.73 (44)	1.10 (28)	2.17 (55)
200	1.69 (43)	4.80 (122)	0.25 (6.3)	5.31 (135)	1.38 (35)	1.38 (35)	1.38 (35)	1.69 (43)	1.89 (48)	1.10 (28)	2.36 (60)

ømm	G1	G2	G3	H2	K1	K2	L1	R1	R2	øS	XD
32	0.83 (21)	0.71 (18)	1.22 (31)	0.31 (8)	1.50 (38)	2.01 (51)	0.06 (1.6)	0.43 (11)	0.67 (17)	0.26 (6.6)	5.59 (142)
40	0.94 (25)	0.87 (22)	1.38 (35)	0.39 (10)	1.61 (41)	2.13 (54)	0.06 (1.6)	0.47 (12)	0.79 (20)	0.26 (6.6)	6.30 (160)
50	1.30 (33)	1.18 (30)	1.77 (45)	0.47 (12)	1.97 (50)	2.56 (65)	0.06 (1.6)	0.57 (14.5)	0.87 (22)	0.35 (9)	6.69 (170)
63	1.46 (37)	1.38 (35)	1.97 (50)	0.47 (12)	2.05 (52)	2.64 (67)	0.06 (1.6)	0.71 (18)	0.98 (25)	0.35 (9)	7.48 (190)
80	1.85 (47)	1.57 (40)	2.36 (60)	0.55 (14)	2.60 (66)	3.39 (86)	0.10 (2.5)	0.87 (22)	1.18 (30)	0.43 (11)	8.27 (210)
100	2.17 (55)	1.97 (50)	2.76 (70)	0.59 (15)	2.99 (76)	3.78 (96)	0.10 (2.5)	0.87 (22)	1.26 (32)	0.43 (11)	9.06 (230)
125	2.76 (70)	2.36 (60)	3.54 (90)	0.79 (20)	3.70 (94)	4.88 (124)	0.13 (3.2)	1.18 (30)	1.65 (42)	0.55 (14)	10.83 (275)
160	3.82 (97)	3.46 (88)	4.96 (126)	0.98 (25)	4.65 (118)	6.14 (156)	0.16 (4)	1.42 (36)	1.81 (46)	0.55 (14)	12.40 (315)
200	4.13 (105)	3.54 (90)	5.12 (130)	1.18 (30)	4.80 (122)	6.38 (162)	0.16 (4)	1.50 (38)	1.93 (49)	0.71 (18)	13.19 (335)

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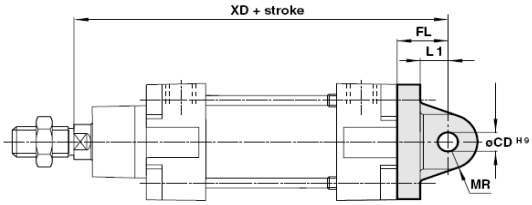
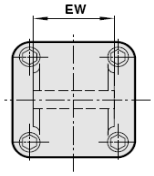
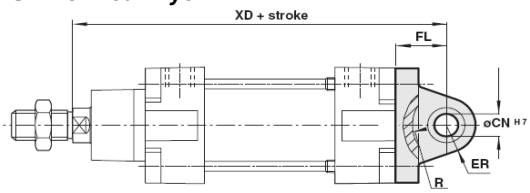
Rear Eye

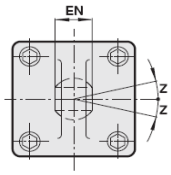




ø mm	Part Number
32	MP4-032
40	MP4-040
50	MP4-050
63	MP4-063
80	MP4-080
100	MP4-100
125	MP4-125
160	MP4-160
200	MP4-200

Swivel Rear Eye





ø mm	Part Number
32	MP4S-032
40	MP4S-040
50	MP4S-050
63	MP4S-063
80	MP4S-080
100	MP4S-100
125	MP4S-125
160	MP4S-160
200	MP4S-200

ømm	øCDH9	øCNH7	EN	ER	EW	FL	L1	MR	R	XD	Z
32	0.39 (10)	0.39 (10)	0.55 (14)	0.63 (16)	1.02 (25.8)	0.87 (22)	0.51 (13)	0.35 (9)	0.57 (14.5)	5.59 (142)	13º
40	0.47 (12)	0.47 (12)	0.63 (16)	0.75 (19)	1.09 (27.8)	0.98 (25)	0.63 (16)	0.47 (12)	0.71 (18)	6.30 (160)	13º
50	0.47 (12)	0.63 (16)	0.83 (21)	0.83 (21)	1.25 (31.7)	1.06 (27)	0.67 (17)	0.47 (12)	0.75 (19)	6.69 (170)	13º
63	0.63 (16)	0.63 (16)	0.83 (21)	0.94 (24)	1.56 (39.7)	1.26 (32)	0.87 (22)	0.59 (15)	0.94 (24)	7.48 (190)	15º
80	0.63 (16)	0.79 (20)	0.98 (25)	1.10 (28)	1.96 (49.7)	1.42 (36)	0.87 (22)	0.59 (15)	0.94 (24)	8.27 (210)	15º
100	0.79 (20)	0.79 (20)	0.98 (25)	1.18 (30)	2.35 (59.7)	1.61 (41)	1.06 (27)	0.79 (20)	1.14 (29)	9.06 (230)	15º
125	0.98 (25)	1.18 (30)	1.46 (37)	1.57 (40)	2.74 (69.7)	1.97 (50)	1.30 (33)	0.98 (25)	1.42 (36)	10.83 (275)	15º
160	1.18 (30)	1.38 (35)	1.69 (43)	1.73 (44)	3.53 (89.7)	2.17 (55)	1.40 (35.5)	1.18 (30)	1.61 (41)	12.40 (315)	16º
200	1.18 (30)	1.38 (35)	1.69 (43)	1.89 (48)	3.53 (89.7)	2.36 (60)	1.46 (37)	1.18 (30)	1.65 (42)	13.19 (335)	16º

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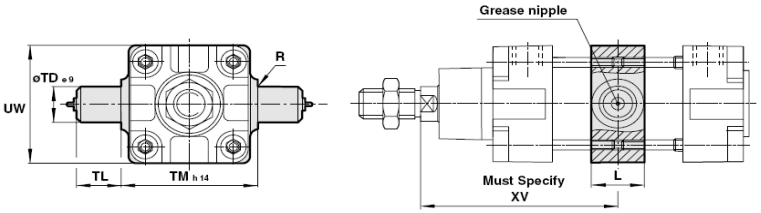
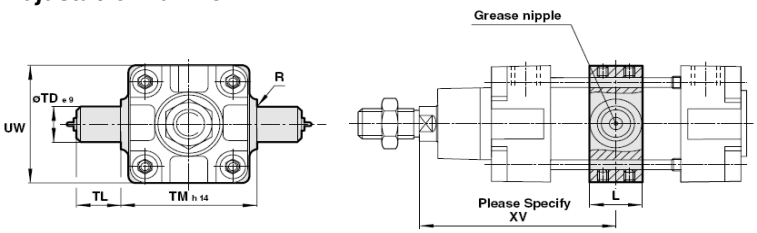
Central Trunnion



ø mm	Part Number
32	MT4-032
40	MT4-040
50	MT4-050
63	MT4-063
80	MT4-080
100	MT4-100
125	MT4-125
160	MT4-160
200	MT4-200
250	MT4-250
320	MT4-320

Adjustable Trunnion



ø mm	Part Number
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40	MT4A-040
50	MT4A-050
63	MT4A-063
80	MT4A-080
100	MT4A-100
125	MT4A-125
160	MT4A-160
200	MT4A-200
250	MT4A-250
320	MT4A-320

ømm	L	R	øTDe9	TL	TMh14	UW	XV min	XV max	Torque
32	0.79 (20)	0.04 (1)	0.47 (12)	0.47 (12)	1.97 (50)	1.97 (50)	2.50 (63.5)	3.25 (82.5)	4.4 (6)
40	0.94 (24)	0.06 (1.6)	0.63 (16)	0.63 (16)	2.48 (63)	2.28 (58)	2.91 (74)	3.58 (91)	4.4 (6)
50	1.10 (28)	0.06 (1.6)	0.63 (16)	0.63 (16)	2.95 (75)	2.76 (70)	3.23 (82)	3.86 (98)	7.4 (10)
63	1.10 (28)	0.06 (1.6)	0.79 (20)	0.79 (20)	3.54 (90)	3.15 (80)	3.31 (84)	4.37 (111)	7.4 (10)
80	1.10 (28)	0.06 (1.6)	0.79 (20)	0.79 (20)	4.33 (110)	3.94 (100)	3.66 (93)	5.00 (127)	11.1 (15)
100	1.50 (38)	0.08 (2)	0.98 (25)	0.98 (25)	5.20 (132)	4.96 (126)	4.21 (107)	5.24 (133)	11.1 (15)
125	1.97 (50)	0.08 (2)	0.98 (25)	0.98 (25)	6.30 (160)	5.98 (152)	5.35 (136)	6.06 (154)	18.4 (25)
160	1.97 (50)	0.10 (2.5)	1.26 (32)	1.26 (32)	7.87 (200)	7.56 (192)	6.10 (155)	7.28 (185)	29.5 (40)
200	1.97 (50)	0.10 (2.5)	1.26 (32)	1.26 (32)	9.84 (250)	9.45 (240)	6.69 (170)	7.87 (200)	29.5 (40)
250	2.36 (60)	0.13 (3.2)	1.57 (40)	1.57 (40)	12.60 (320)	12.52 (318)	7.60 (193)	8.54 (217)	–
320	2.76 (70)	0.13 (3.2)	1.97 (50)	1.97 (50)	15.75 (400)	15.75 (400)	8.46 (215)	9.65 (245)	–

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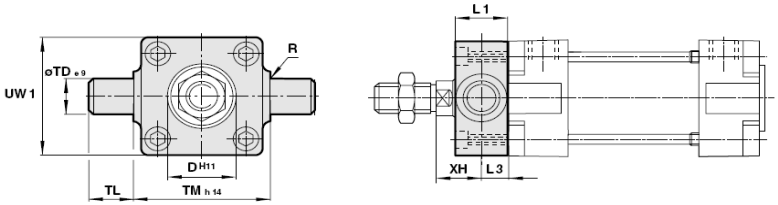
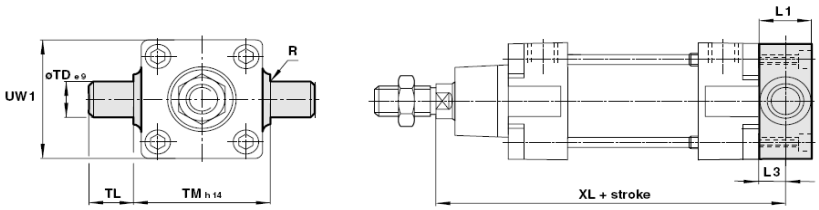
Mounting Accessories for Tie Rod Cylinders

Head Detachable Trunnion



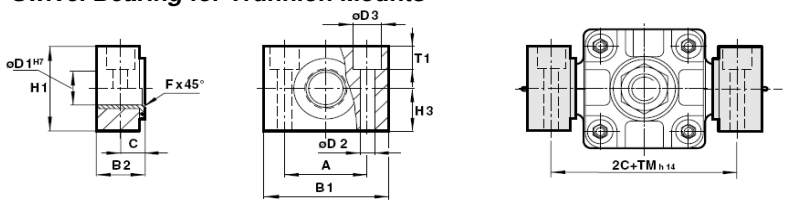
ømm	*Part Number*
32	MT6-032
40	MT6-040
50	MT6-050
63	MT6-063
80	MT6-080
100	MT6-100
125	MT6-125

Cap Detachable Trunnion



ømm	*Part Number*
32	MT6-032
40	MT6-040
50	MT6-050
63	MT6-063
80	MT6-080
100	MT6-100
125	MT6-125

Swivel Bearing for Trunnion Mounts



ø mm	*Part Number*
32	MT2-032
40	MT2-040/050
50	MT2-040/050
63	MT2-063/080
80	MT2-063/080
100	MT2-100/125
125	MT2-100/125
160	MT2-160/200
200	MT2-100/125

ømm	**A**	**B1**	**B2**	**C**	**øD**H11	**øD1**H7	**øD2**	**øD3**	**Fx45º**	**H1**	**H3**
32	1.26 (32)	1.81 (46)	0.71 (18)	0.41 (10.5)	1.18 (30)	0.47 (12)	0.26 (6.6)	0.43 (11)	0.04 (1)	1.18 (30)	0.59 (15)
40	1.42 (36)	2.17 (55)	0.83 (21)	0.47 (12)	1.38 (35)	0.63 (16)	0.35 (9)	0.59 (15)	0.06 (1.6)	1.42 (36)	0.71 (18)
50	1.42 (36)	2.17 (55)	0.83 (21)	0.47 (12)	1.57 (40)	0.63 (16)	0.35 (9)	0.59 (15)	0.06 (1.6)	1.42 (36)	0.71 (18)
63	1.65 (42)	2.56 (65)	0.91 (23)	0.51 (13)	1.77 (45)	0.79 (20)	0.43 (11)	0.71 (18)	0.06 (1.6)	1.57 (40)	0.79 (20)
80	1.65 (42)	2.56 (65)	0.91 (23)	0.51 (13)	1.77 (45)	0.79 (20)	0.43 (11)	0.71 (18)	0.06 (1.6)	1.57 (40)	0.79 (20)
100	1.97 (50)	2.95 (75)	1.12 (28.5)	0.63 (16)	2.17 (55)	0.98 (25)	0.55 (14)	0.79 (20)	0.08 (2)	1.97 (50)	0.98 (25)
125	1.97 (50)	2.95 (75)	1.12 (28.5)	0.63 (16)	2.36 (60)	0.98 (25)	0.55 (14)	0.79 (20)	0.08 (2)	1.97 (50)	0.98 (25)
160	2.36 (60)	3.62 (92)	1.54 (39)	0.85 (21.5)	–	1.26 (32)	0.71 (18)	1.02 (26)	0.10 (2.5)	2.36 (60)	1.18 (30)
200	2.36 (60)	3.62 (92)	1.54 (39)	0.85 (21.5)	–	1.26 (32)	0.71 (18)	1.02 (26)	0.10 (2.5)	2.36 (60)	1.18 (30)

ømm	**L1**	**L3**	**R**	**øTD**e9	**TL**	**TM**h14	**T1**	**UW1**	**XH**	**XL**	
32	0.63 (16)	0.31 (8)	0.04 (1)	0.47 (12)	0.47 (12)	1.97 (50)	0.31 (6.8)	1.97 (50)	0.71 (18)	5.04 (128)	
40	0.79 (20)	0.39 (10)	0.06 (1.6)	0.63 (16)	0.63 (16)	2.48 (63)	0.35 (9)	2.17 (55)	0.79 (20)	5.71 (145)	
50	0.94 (24)	0.47 (12)	0.06 (1.6)	0.63 (16)	0.63 (16)	2.95 (75)	0.35 (9)	2.56 (65)	0.98 (25)	6.10 (155)	
63	0.94 (24)	0.47 (12)	0.06 (1.6)	0.79 (20)	0.79 (20)	3.54 (90)	0.43 (11)	2.95 (75)	0.98 (25)	6.69 (170)	
80	1.10 (28)	0.55 (14)	0.06 (1.6)	0.79 (20)	0.79 (20)	4.33 (110)	0.43 (11)	3.94 (100)	1.26 (32)	7.40 (188)	
100	1.50 (38)	0.75 (19)	0.08 (2)	0.98 (25)	0.98 (25)	5.20 (132)	0.51 (13)	4.72 (120)	1.26 (32)	8.19 (208)	
125	1.97 (50)	0.98 (25)	0.08 (2)	0.98 (25)	0.98 (25)	6.30 (160)	0.51 (13)	5.71 (145)	1.57 (40)	9.84 (250)	
160	–	–	0.10 (2.5)	1.26 (32)	1.26 (32)	7.87 (200)	0.61 (15.5)	–	–	–	
200	–	–	0.10 (2.5)	1.26 (32)	1.26 (32)	9.84 (250)	0.61 (15.5)	–	–	–	

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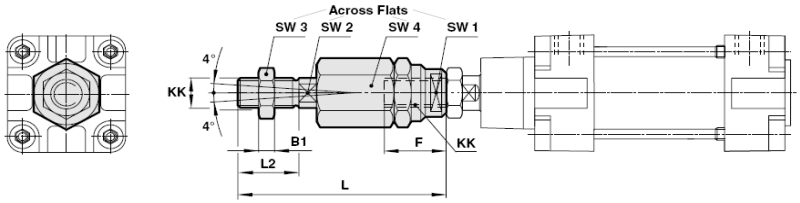
ISO 6431 Tie Rod Cylinders

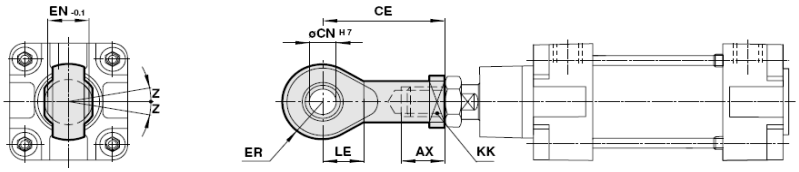
Mounting Accessories for Tie Rod Cylinders

Piston Rod/Swivel Mount



ø mm	Part Number
32	FES10x125
40	FES12x125
50	FES16x150
63	FES16x150
80	FES20x150
100	FES20x150
125	FES27x200
160	FES36x200
200	FES36x200

Spherical Rod End



ø mm	Part Number
32	FER10x125
40	FER12x125
50	FER16x150
63	FER16x150
80	FER20x150
100	FER20x150
125	FER27x200
160	FER36x200
200	FER36x200
250	FER42x200
320	FER48x200

ømm	AX	B1	CE	øCNH7	EN-.01	ER	F	KK
32	0.79 (20)	0.20 (5)	1.69 (43)	0.39 (10)	0.55 (14)	0.55 (14)	1.02 (26)	M10x1.25
40	0.87 (22)	0.24 (6)	1.97 (50)	0.47 (12)	0.63 (16)	0.63 (16)	1.02 (26)	M12x1.25
50	1.10 (28)	0.31 (8)	2.52 (64)	0.63 (16)	0.83 (21)	0.83 (21)	1.34 (34)	M16x1.5
63	1.10 (28)	0.31 (8)	2.52 (64)	0.63 (16)	0.83 (21)	0.83 (21)	1.34 (34)	M16x1.5
80	1.30 (33)	0.39 (10)	3.03 (77)	0.79 (20)	0.98 (25)	0.98 (25)	1.65 (42)	M20x1.5
100	1.30 (33)	0.39 (10)	3.03 (77)	0.79 (20)	0.98 (25)	0.98 (25)	1.65 (42)	M20x1.5
125	2.01 (51)	0.53 (13.5)	4.33 (110)	1.18 (30)	1.46 (37)	1.38 (35)	1.57 (40)	M27x2
160	2.20 (56)	0.71 (18)	4.92 (125)	1.38 (35)	1.69 (43)	1.57 (40)	3.07 (78)	M36x2
200	2.20 (56)	0.71 (18)	4.92 (125)	1.38 (35)	1.69 (43)	1.57 (40)	3.07 (78)	M36x2
250	2.36 (60)	–	5.59 (142)	1.57 (40)	1.93 (49)	1.77 (45)	–	M42x2
320	2.56 (65)	–	6.30 (160)	1.97 (50)	2.36 (60)	2.28 (58)	–	M48x2

ømm	L	L2	LE	SW1	SW2	SW3	SW4	Z
32	2.87 (73)	0.79 (20)	0.59 (15)	0.75 (15)	0.47 (12)	0.67 (17)	1.18 (30)	13º
40	3.03 (77)	0.94 (24)	0.67 (17)	0.75 (15)	0.47 (12)	0.75 (19)	1.18 (30)	13º
50	4.17 (106)	1.26 (32)	0.87 (22)	1.18 (30)	0.75 (19)	0.94 (24)	1.65 (42)	15º
63	4.17 (106)	1.26 (32)	0.87 (22)	1.18 (30)	0.75 (19)	0.94 (24)	1.65 (42)	15º
80	4.80 (122)	1.57 (40)	1.02 (26)	1.18 (30)	0.75 (19)	1.18 (30)	1.65 (42)	15º
100	4.80 (122)	1.57 (40)	1.02 (26)	1.18 (30)	0.75 (19)	1.18 (30)	1.65 (42)	15º
125	5.79 (147)	2.13 (54)	1.42 (36)	1.57 (40)	0.94 (24)	1.61 (41)	2.17 (55)	15º
160	9.88 (251)	2.83 (72)	1.61 (41)	1.97 (50)	1.42 (36)	2.17 (55)	2.95 (75)	16º
200	9.88 (251)	2.83 (72)	1.61 (41)	1.97 (50)	1.42 (36)	2.17 (55)	2.95 (75)	16º
250	–	–	1.81 (46)	–	–	–	–	17º
320	–	–	2.32 (59)	–	–	–	–	12º

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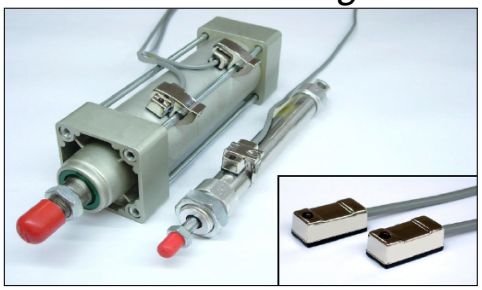
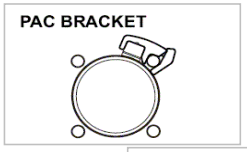
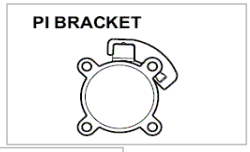
ISO 6431 Tie Rod Cylinders

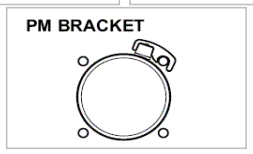
Position Sensing for Tie Rod Cylinders

UL-21 Series

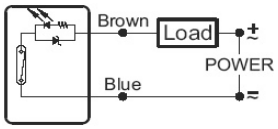
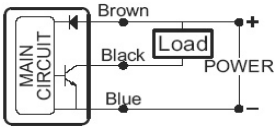
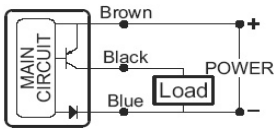




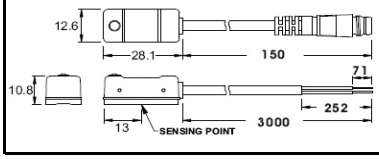




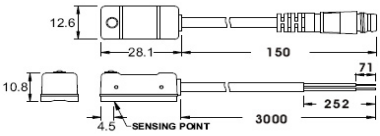
Specifications

CHARACTERISTIC/TYPE	UL-21R	UL-21N	UL-21P
Switching Logic	SPST Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage (Note 1)	5 ~ 240V DC/AC	5 ~ 28V DC	
Switching Current	100 mA max.	200 mA max.	
Switching Rating	10 W max.	6 W max.	
Current Consumption		15 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
Voltage Drop	2.5 V max. @ 40mA DC	1.5 V max. @ 200 mA (Resistive Load)	
Leakage Current		0.01 mA max.	
Indicator	Red LED	Red LED	Green LED
Cable	4.0 §, 2C, OIL RESISTANT PVC	4.0 §, 3C, OIL RESISTANT PVC	
Sensitivity (Note 2)	70 Gauss	**60 Gauss**	
Max. Switching Frequency	200 Hz	1000 Hz	
Temperature Range	-10 ~ 70		
Shock (Note 3)	30 G	50 G	
Vibration (Note 4)	9G		
Enclosure Classification	IP 67 (NEMA 6)		
Protection Circuit		Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
Wiring Diagram			

UL-21R-03
UL-21R-QC8

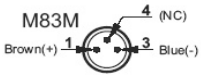


UL-21N(P)-03
UL-21N(P)-QC8

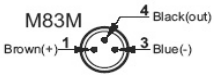


M8 Quick Connector (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. Operating voltage of UL-21R-QC8 is 60V AC/DC (based on IEC61076-2-101).
2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).
3. Sin Wave /X - -Y- -Z 3 Directions / 3 Times Each Direction/ 11mS Each Time
4. Double Amplitude 1.5mm / 10Hz ~55Hz~10Hz (Sweep 1 min) /X - -Y- -Z
3 Directions / 1 Hour each Time

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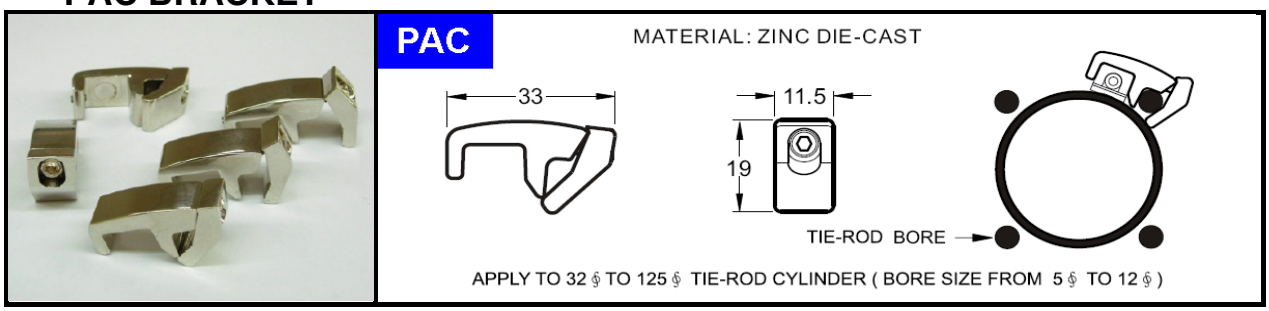
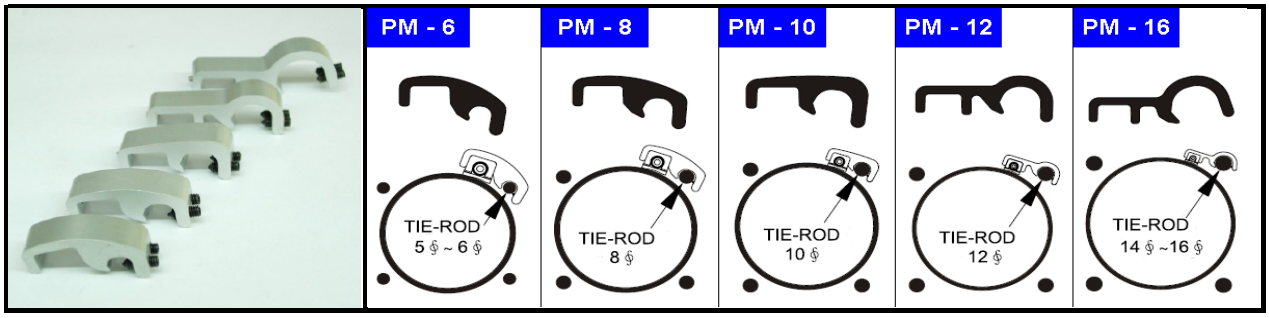
ISO 6431 Tie Rod Cylinders

Mounting Brackets for Tie Rod Cylinders

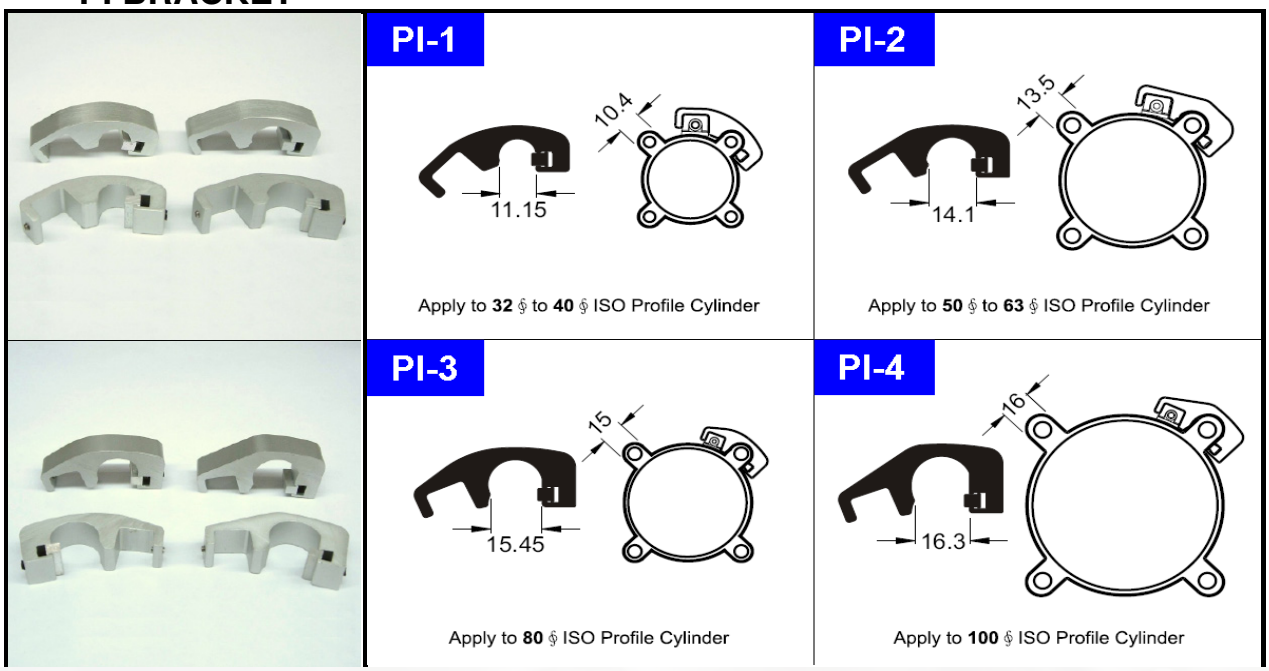
PAC BRACKET



PM BRACKET



PI BRACKET



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