# Dynamax® Pneumatics

# 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 | • | • | • | • | • | • | • | • | • | • | • | • | • |



144 Kay Drive, Easley, SC 29640

# ISO 6431 Tie Rod Cylinders

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**

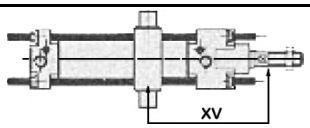
| | | | |
|---|---|---|---|
| 025 – | 25 mm | 200 – | 200 mm |
| 040 – | 40 mm | 250 – | 250 mm |
| 050 – | 50 mm | 300 – | 300 mm |
| 080 – | 80 mm | 320 – | 320 mm |
| 100 – | 100 mm | 400 – | 400 mm |
| 125 – | 125 mm | 500 – | 500 mm |
| 160 – | 160 mm | | |

**Piston Rod Material**
B – Chromium Coated Steel

**Tie Rod Material**
A – High Strength Steel

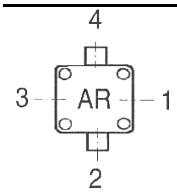
**Body Material**
C – Die-Casted Aluminum

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



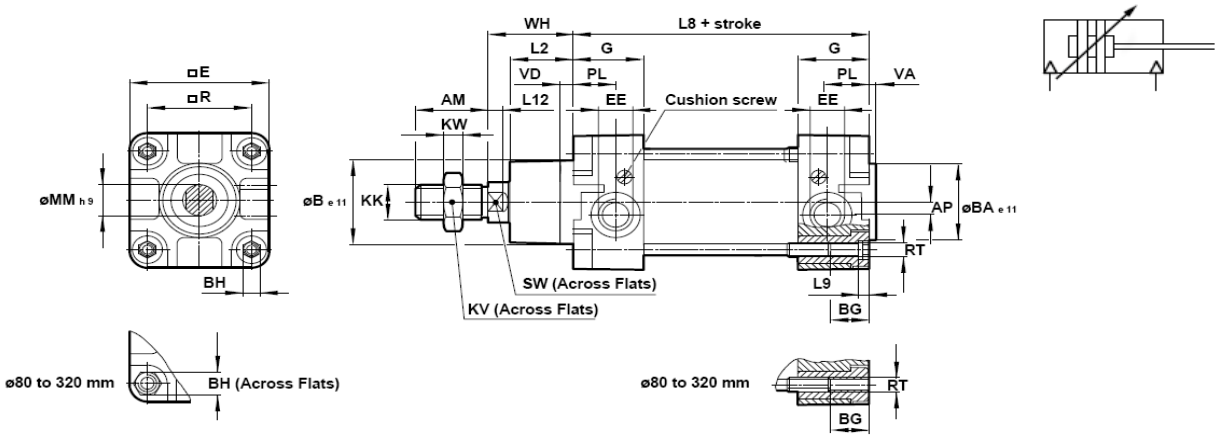

**Port Position - Head**
1 – Position 1
2 – Position 2
3 – Position 3
4 – Position 4

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

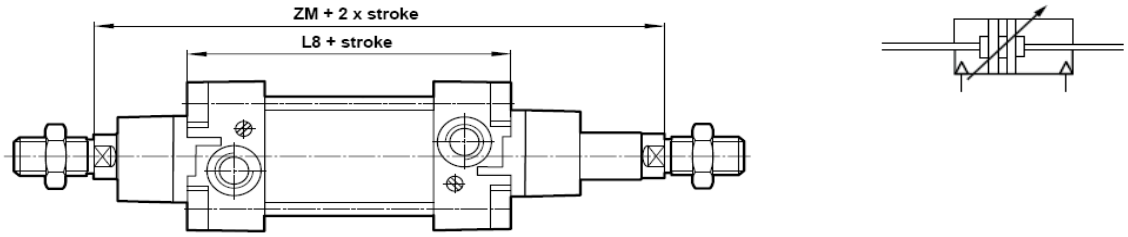


# ISO 6431 Tie Rod Cylinders

## *Double Acting Single Rod*




## *Double Acting Through Rod*



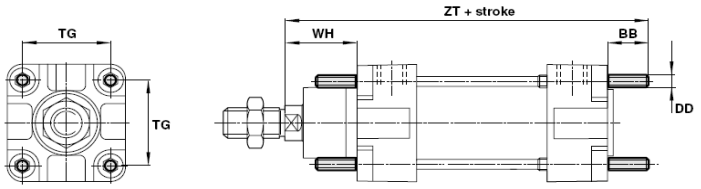

| ømm | AM | AP | øBe11 | øBAe11 | BG | BH | ❑E | EE | G | KK | KV | KW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | 0.87 (22) | 0.14 (3.5) | 1.18 (30) | 1.18 (30) | 0.71 (18) | 0.24 (6) | 1.85 (47) | G 1/8 (1/8" NPT) | 1.08 (27.5) | M10x1.25 | 0.67 (17) | 0.20 (5) |
| **40** | 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) | – |

# ISO 6431 Tie Rod Cylinders

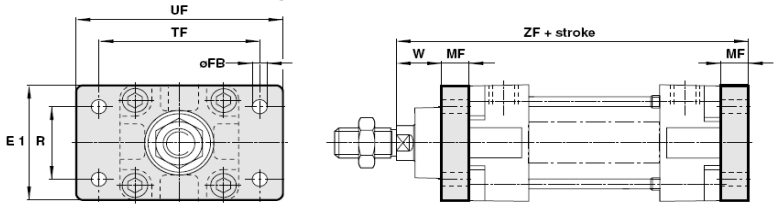
## *Mounting Accessories for Tie Rod Cylinders*

### *Front or Rear Stud*



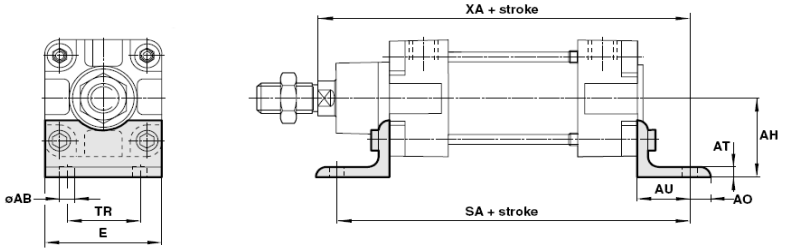

| ø mm | Part Number |
|---|---|
| 32 | MX1-032 |
| 40 | MX1-040 |
| 50 | MX1-050 |
| 63 | MX1-063 |
| 80 | MX1-080 |
| 100 | MX1-100 |
| 125 | MX1-125 |
| 160 | MX1-160 |
| 200 | MX1-200 |
| 250 | MX1-250 |
| 320 | MX1-320 |

### *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 |

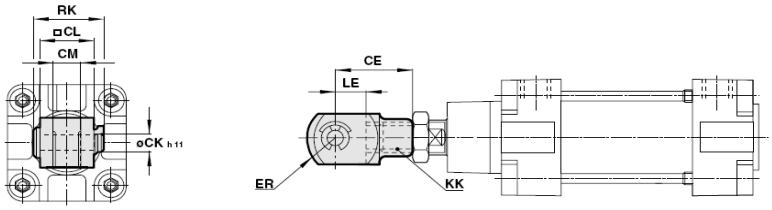
| ømm | øAB | AH | AO | AT | AU | BB | DD | E | E1 | øFB | MF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 0.28 (7) | 1.26 (32) | 0.31 (8) | 0.16 (4) | 0.94 (24) | 0.67 (17) | M 6 | 1.89 (48) | 1.97 (50) | 0.28 (7) | 0.39 (10) |
| 40 | 0.35 (9) | 1.42 (36) | 0.35 (9) | 0.16 (4) | 1.10 (28) | 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) |

# ISO 6431 Tie Rod Cylinders

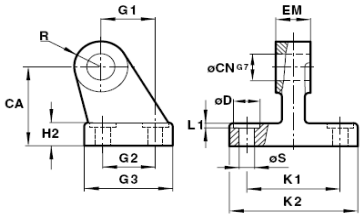
## *Mounting Accessories for Tie Rod Cylinders*

### *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 |

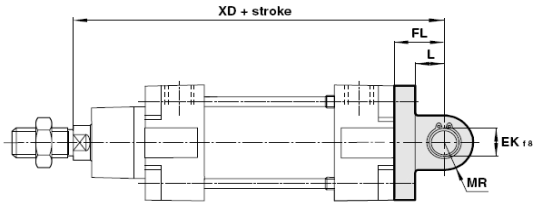
| ømm | CA | CE | øCKh11 | ❑CL | CM | øCNG7 | øD | EM | ER | G1 | G2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | 1.26 (32) | 1.57 (40) | 0.39 (10) | 0.79 (20) | 0.39 (10) | 0.39 (10) | 0.43 (11) | 0.39 (10) | 0.63 (16) | 0.83 (21) | 0.71 (18) |
| **40** | 1.42 (36) | 1.89 (48) | 0.47 (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) | – | – |

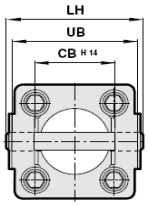
| ømm | G3 | H2 | KK | K1 | K2 | L1 | LE | R | RK | øS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | 1.22 (31) | 0.31 (8) | M10x1.25 | 1.50 (38) | 2.01 (51) | 0.06 (1.6) | 0.79 (20) | 0.39 (10) | 1.10 (28) | 0.26 (6.6) | |
| **40** | 1.38 (35) | 0.39 (10) | M12x1.25 | 1.61 (41) | 2.13 (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) | – | |

# ISO 6431 Tie Rod Cylinders

## *Mounting Accessories for Tie Rod Cylinders*

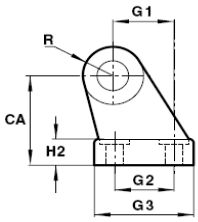
### *Wide Rear Clevis*

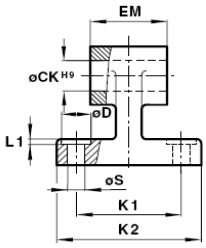



| ø mm | Part Number |
|---|---|
| 32 | MP2-032 |
| 40 | MP2-040 |
| 50 | MP2-050 |
| 63 | MP2-063 |
| 80 | MP2-080 |
| 100 | MP2-100 |
| 125 | MP2-125 |
| 160 | MP2-160 |
| 200 | MP2-200 |
| 250 | MP2-250 |
| 320 | MP2-320 |

### *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 |

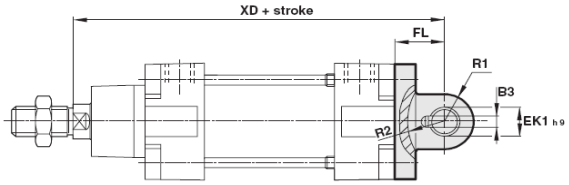
| ømm | CA | CBH14 | øCKH9 | øD | EK18 | EM | FL | G1 | G2 | G3 | H2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 1.26 (32) | 1.02 (26) | 0.39 (10) | 0.43 (11) | 0.39 (10) | 1.02 (26) | 0.87 (22) | 0.83 (21) | 0.71 (18) | 1.22 (31) | 0.31 (8) |
| 40 | 1.42 (36) | 1.10 (28) | 0.47 (12) | 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) |

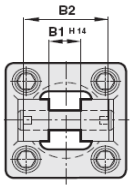
| ømm | K1 | K2 | L | L1 | LH | MR | R | øS | UB | XD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 1.50 (38) | 2.01 (51) | 0.51 (13) | 0.06 (1.6) | 2.05 (52) | 0.35 (9) | 0.39 (10) | 0.26 (6.6) | 1.77 (45) | 5.59 (142) | |
| 40 | 1.61 (41) | 2.13 (54) | 0.63 (16) | 0.06 (1.6) | 2.36 (60) | 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) | |

# ISO 6431 Tie Rod Cylinders

## *Mounting Accessories for Tie Rod Cylinders*

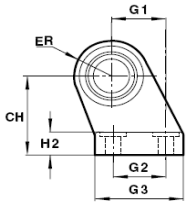
### *Narrow Rear Clevis*

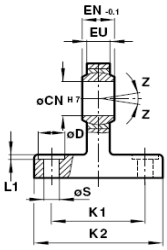



| ø mm | Part Number |
|---|---|
| 32 | MP2N-032 |
| 40 | MP2N-040 |
| 50 | MP2N-050 |
| 63 | MP2N-063 |
| 80 | MP2N-080 |
| 100 | MP2N-100 |
| 125 | MP2N-125 |
| 160 | MP2N-160 |
| 200 | MP2N-200 |

### *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 |

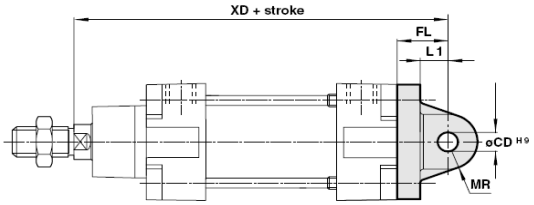
| ømm | B1H14 | B2 | B3 | CH | øCNH7 | øD | øEKH9 | EN-0.1 | ER | EU | FL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 0.55 (14) | 1.34 (34) | 0.13 (3.3) | 1.26 (32) | 0.39 (10) | 0.43 (11) | 0.39 (10) | 0.55 (14) | 0.63 (16) | 0.41 (10.5) | 0.87 (22) |
| 40 | 0.63 (16) | 1.57 (40) | 0.17 (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) |

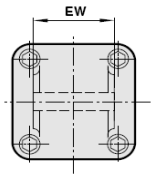
| ømm | G1 | G2 | G3 | H2 | K1 | K2 | L1 | R1 | R2 | øS | XD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 0.83 (21) | 0.71 (18) | 1.22 (31) | 0.31 (8) | 1.50 (38) | 2.01 (51) | 0.06 (1.6) | 0.43 (11) | 0.67 (17) | 0.26 (6.6) | 5.59 (142) |
| 40 | 0.94 (25) | 0.87 (22) | 1.38 (35) | 0.39 (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) |

# ISO 6431 Tie Rod Cylinders

## *Mounting Accessories for Tie Rod Cylinders*

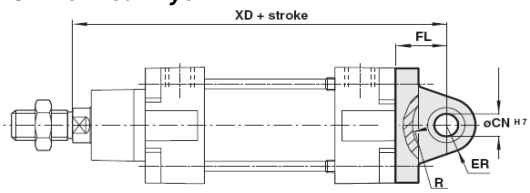
### *Rear Eye*

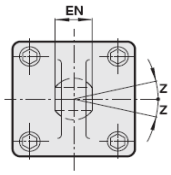



| ø mm | Part Number |
|---|---|
| 32 | MP4-032 |
| 40 | MP4-040 |
| 50 | MP4-050 |
| 63 | MP4-063 |
| 80 | MP4-080 |
| 100 | MP4-100 |
| 125 | MP4-125 |
| 160 | MP4-160 |
| 200 | MP4-200 |

### *Swivel Rear Eye*



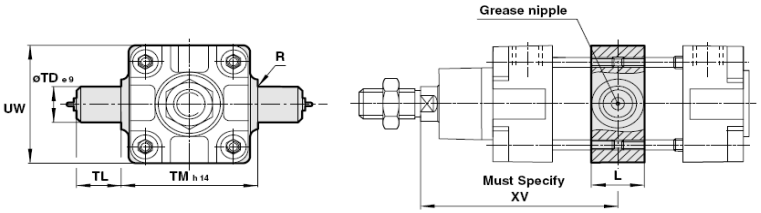

| ø mm | Part Number |
|---|---|
| 32 | MP4S-032 |
| 40 | MP4S-040 |
| 50 | MP4S-050 |
| 63 | MP4S-063 |
| 80 | MP4S-080 |
| 100 | MP4S-100 |
| 125 | MP4S-125 |
| 160 | MP4S-160 |
| 200 | MP4S-200 |

| 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 |

# ISO 6431 Tie Rod Cylinders

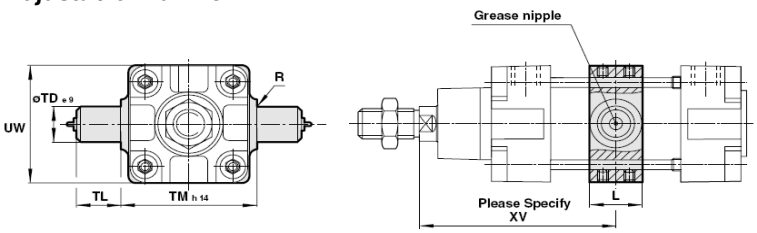
## *Mounting Accessories for Tie Rod Cylinders*

### *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*



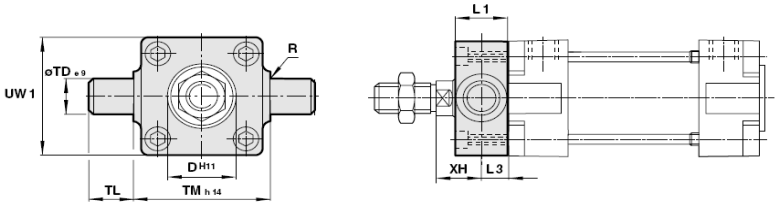

| ø mm | Part Number |
|---|---|
| 32 | MT4A-032 |
| 40 | MT4A-040 |
| 50 | MT4A-050 |
| 63 | MT4A-063 |
| 80 | MT4A-080 |
| 100 | MT4A-100 |
| 125 | MT4A-125 |
| 160 | MT4A-160 |
| 200 | MT4A-200 |
| 250 | MT4A-250 |
| 320 | MT4A-320 |

| 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) | – |

# ISO 6431 Tie Rod Cylinders

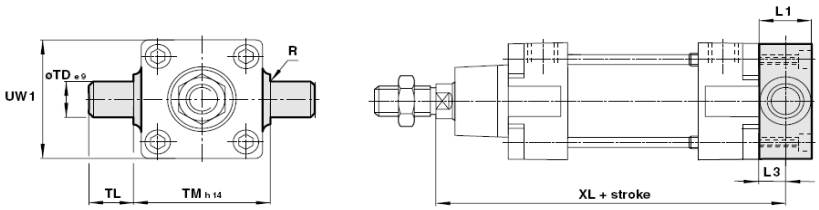
## *Mounting Accessories for Tie Rod Cylinders*

### *Head Detachable Trunnion*



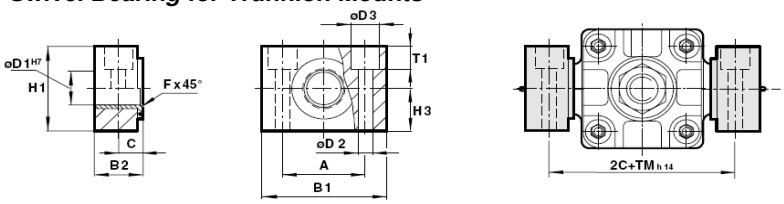

| ømm | Part Number |
|---|---|
| 32 | MT6-032 |
| 40 | MT6-040 |
| 50 | MT6-050 |
| 63 | MT6-063 |
| 80 | MT6-080 |
| 100 | MT6-100 |
| 125 | MT6-125 |

### *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 |

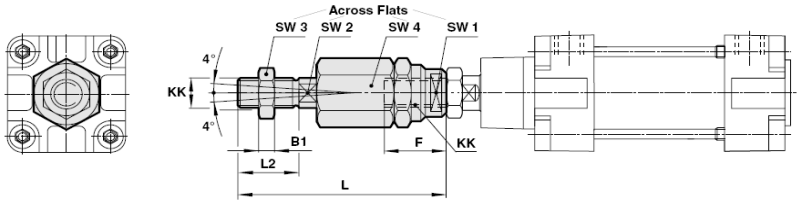
| ømm | A | B1 | B2 | C | øDH11 | øD1H7 | øD2 | øD3 | Fx45º | H1 | H3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 1.26 (32) | 1.81 (46) | 0.71 (18) | 0.41 (10.5) | 1.18 (30) | 0.47 (12) | 0.26 (6.6) | 0.43 (11) | 0.04 (1) | 1.18 (30) | 0.59 (15) |
| 40 | 1.42 (36) | 2.17 (55) | 0.83 (21) | 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 | øTDe9 | TL | TMh14 | 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) | – | – | – | |

# ISO 6431 Tie Rod Cylinders

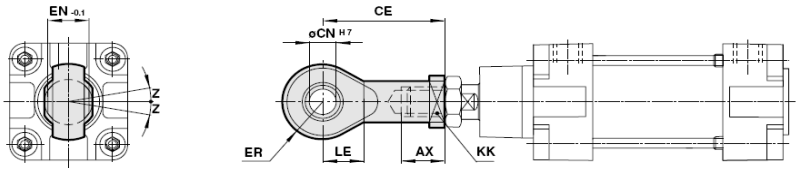
## *Mounting Accessories for Tie Rod Cylinders*

### *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 |

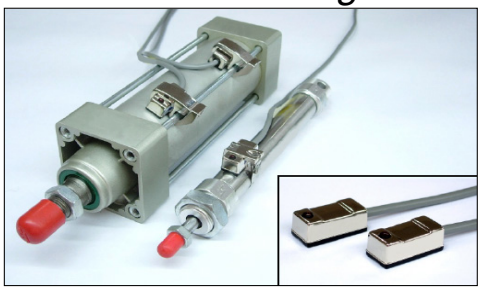
| ømm | AX | B1 | CE | øCNH7 | EN-.01 | ER | F | KK |
|---|---|---|---|---|---|---|---|---|
| 32 | 0.79 (20) | 0.20 (5) | 1.69 (43) | 0.39 (10) | 0.55 (14) | 0.55 (14) | 1.02 (26) | M10x1.25 |
| 40 | 0.87 (22) | 0.24 (6) | 1.97 (50) | 0.47 (12) | 0.63 (16) | 0.63 (16) | 1.02 (26) | M12x1.25 |
| 50 | 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 |

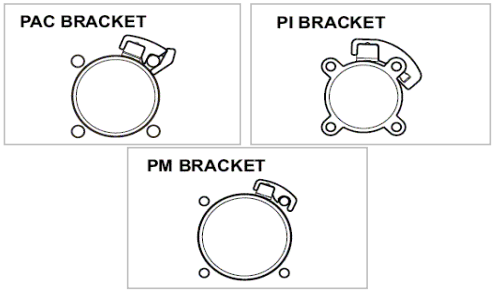
| ømm | L | L2 | LE | SW1 | SW2 | SW3 | SW4 | Z |
|---|---|---|---|---|---|---|---|---|
| 32 | 2.87 (73) | 0.79 (20) | 0.59 (15) | 0.75 (15) | 0.47 (12) | 0.67 (17) | 1.18 (30) | 13º |
| 40 | 3.03 (77) | 0.94 (24) | 0.67 (17) | 0.75 (15) | 0.47 (12) | 0.75 (19) | 1.18 (30) | 13º |
| 50 | 4.17 (106) | 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 |

# ISO 6431 Tie Rod Cylinders

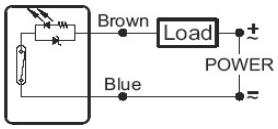
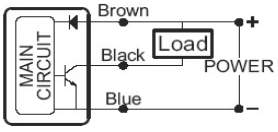
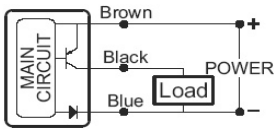
*Position Sensing for Tie Rod Cylinders*

## UL-21 Series

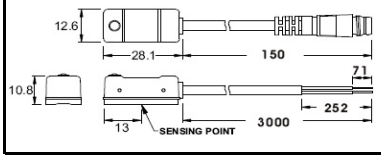




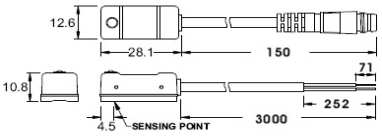

Specifications

| 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

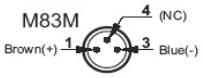



UL-21N(P)-03
UL-21N(P)-QC8

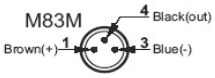



M8 Quick Connector (IEC61076-2-101)

2 wire QC wiring




3 wire QC wiring

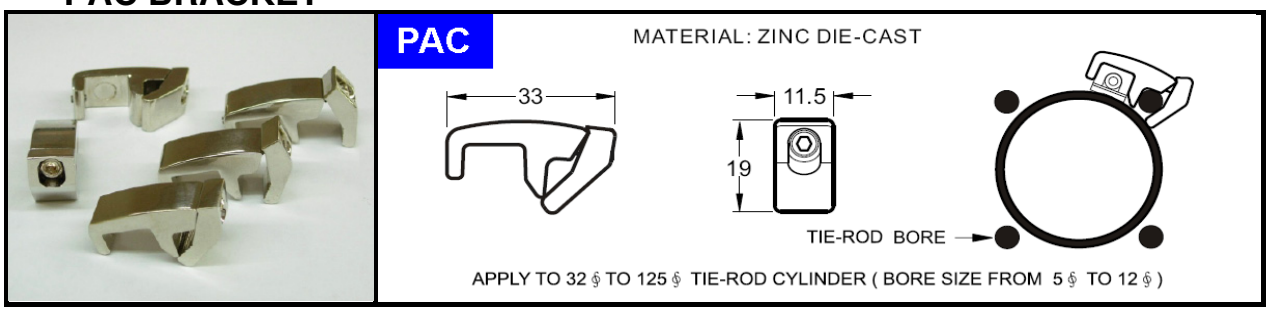



NOTE: 1. The max. Operating voltage of UL-21R-QC8 is 60V AC/DC (based on IEC61076-2-101).
2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).
3. Sin Wave /X - -Y- -Z 3 Directions / 3 Times Each Direction/ 11mS Each Time
4. Double Amplitude 1.5mm / 10Hz ~55Hz~10Hz (Sweep 1 min) /X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

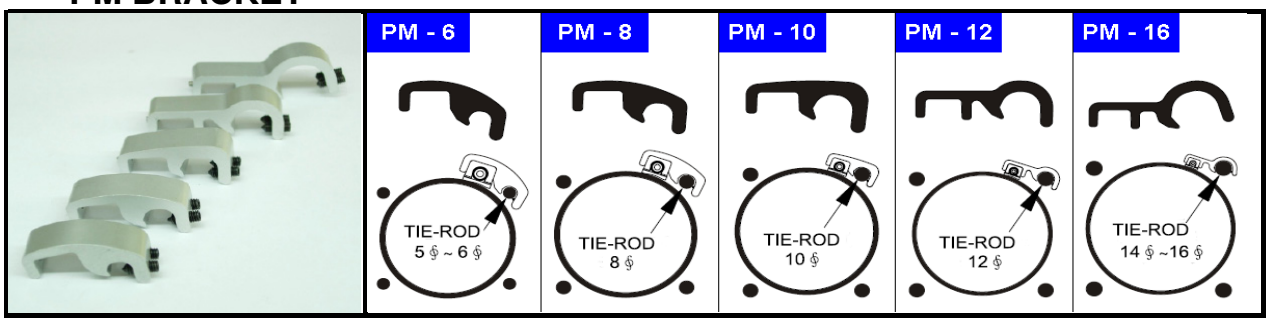
# ISO 6431 Tie Rod Cylinders

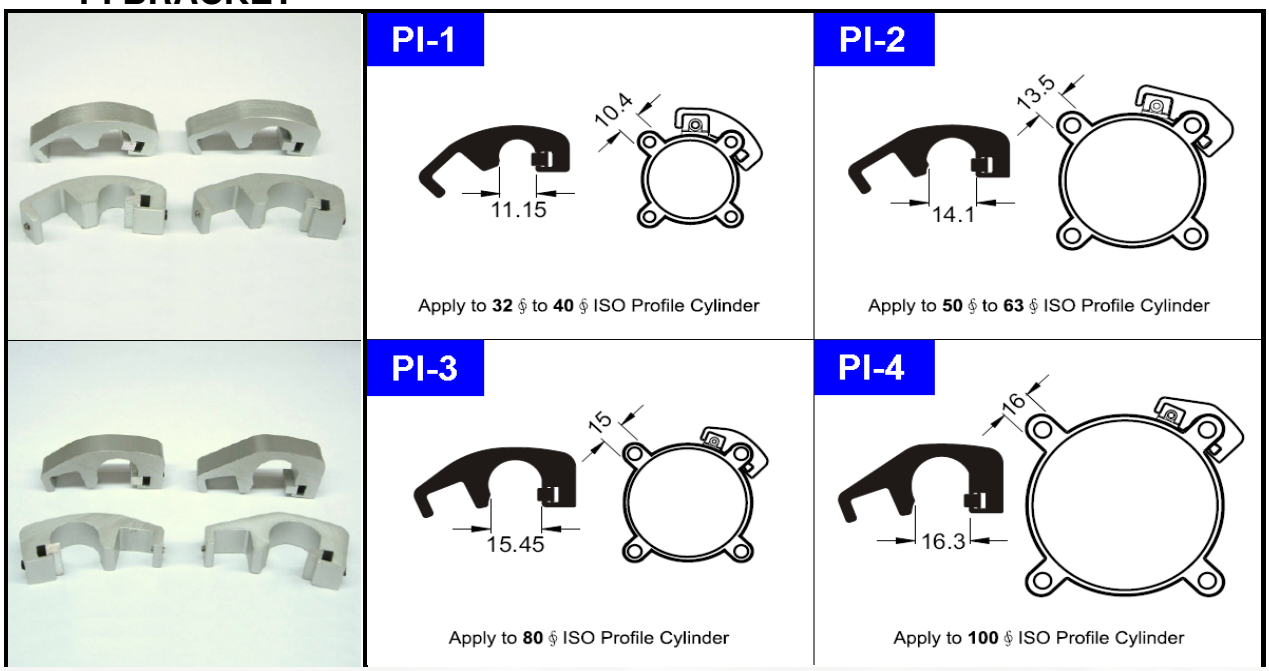
*Mounting Brackets for Tie Rod Cylinders*

## PAC BRACKET




## PM BRACKET




## PI BRACKET