



MWA/MWB **Roundline Cylinders**

*For working pressures up to
160 and 250 bar*

*Catalogue HY07-1216/UK
June 2001*



Standard MW Cylinders

Parker's MW range of cylinders is designed for medium and heavy duty industrial and mobile applications. Two versions are available; the MWA Series for use at working pressures up to 250 bar, and the MWB Series for 160 bar applications. The MW range of cylinders is of welded construction at the cap end, with a threaded rod bearing at the head housing the gland seals. Standard cylinders are suitable for use with mineral oil, and are available in a choice of mounting styles.

Custom Designed Cylinders

This catalogue describes the basic range of MW cylinders; in practice, many of these cylinders are designed as 'specials' to the customer's unique specification. Some examples of these special cylinders are illustrated below. For more information, please contact your nearest Parker sales office.



Standard Specification

| | |
|-----------------------------|-------------------------------|
| Max. working pressure – MWA | 250 bar |
| – MWB | 160 bar |
| Bore sizes – MWA | 50mm to 200mm |
| – MWB | 32mm to 200mm |
| Piston rod diameters – MWA | 32mm to 125mm |
| – MWB | 14mm to 125mm |
| Standard stroke lengths | up to 4000mm |
| Operating temperature range | –30°C to +80°C |
| Maximum piston speed | 0.5m/s |
| Standard fluid | hydraulic fluid to ISO 6743/4 |
| Viscosity range | 2.8 – 380 mm ² /s |

Parker Hannifin Corporation . . .

is a world leader in the manufacture of components and systems for motion control. Parker has more than 800 product lines for hydraulic, pneumatic and electro-mechanical applications in some 1200 industrial and aerospace markets.

With over 40,000 employees and some 200 manufacturing plants and administrative offices around the world, Parker provides its customers with technical excellence and first class customer service.

Contents

| | Page |
|--------------------------|-------------|
| Introduction | 2 |
| Specification | 2 |
| Standard features | 3 |
| Optional features | 3 |
| Ports | 3 |
| Custom designs | 3 |
| Mounting styles – | |
| Pivot mountings | 4-5 |
| Trunnion mounting | 6 |
| Flange mounting | 7 |
| Rod end eyes | 8 |
| Push and pull forces | 9 |
| Model codes and ordering | 9 |



Catalogues describing our standard products are available from your nearest Parker sales office – please see the rear cover of this catalogue for details, or visit us at www.parker.com. Where an application demands a non-standard approach, special products can be designed to order – our engineers will be pleased to advise.

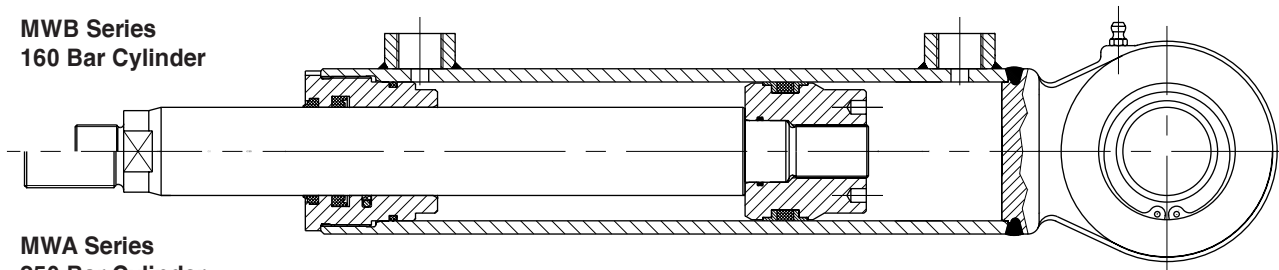


Visit us at www.parker.com

Note: In line with our policy of continuing product improvement, specifications in this catalogue are subject to change without notice.

Sectional View of MWA and MWB Cylinders

**MWB Series
160 Bar Cylinder**



**MWA Series
250 Bar Cylinder**

Note heavier duty gland sealing, and larger diameter and extended rod end thread to provide fatigue-free performance at 250 bar.

Standard Features

- Construction: threaded head, welded cap
- Piston rod material: precision ground high tensile carbon steel, hard chrome plated to min. 20µm thickness and polished
- Tube material: cold drawn tubing, skived and roller burnished
- Piston seal: twin wear/anti-extrusion rings with elastomeric sealing element
- Rod seal: MWA (250 bar) cylinders – polyurethane lipseal plus PTFE seal with energizer and wiper seal; MWB (160 bar) cylinders – polyurethane lipseal and wiper seal
- Standard ports: BSPP threaded ports to DIN 3852 Pt.2

Optional Features

- Ports: metric threaded ports to DIN 3852 Pt.1 and ISO 6149. Other styles and positions to order.
- Strokes: to any practicable length
- Rod end threads: custom thread forms and lengths
- Mountings: special designs to customer order
- Seals: alternative seal and bearing materials to suit application
- Fluids: seal materials for all common hydraulic fluids including water-based and 'green' fluids
- Integrated valve and manifold designs
- Spherical bearing and plain bearing rod end eyes
- Air bleeds
- Position switches
- Linear transducers
- Custom paint finishes

Standard and Optional Threaded Ports

| Bore dia. | Standard | Optional | |
|-----------|--------------------------------|-----------------|---------------------------|
| | BSPP DIN 3852 Pt.2 | DIN 3852 Pt.1 | ISO 6149 DIN 3852 Pt.3 |
| 32 | G ³ / ₈ | M16x1.5 | M16x1.5 |
| 40 | G ³ / ₈ | M16x1.5 | M16x1.5 |
| 50 | G ¹ / ₂ | M22x1.5 | M22x1.5 |
| 63 | G ¹ / ₂ | M22x1.5 | M22x1.5 |
| 80 | G ¹ / ₂ | M22x1.5 | M22x1.5 |
| 90 | G ³ / ₄ | M27x2 / M26x1.5 | M27x2 / M26x1.5 |
| 100 | G ³ / ₄ | M27x2 / M26x1.5 | M27x2 / M26x1.5 |
| 110 | G1 | M33x2 | M33x2 |
| 125 | G1 | M33x2 | M33x2 |
| 140 | G1 ¹ / ₄ | M42x2 | M42x2 |
| 160 | G1 ¹ / ₄ | M42x2 | M42x2 |
| 180 | G1 ¹ / ₄ | M42x2 | M42x2 |
| 200 | G1 ¹ / ₄ | M42x2 | M42x2 |

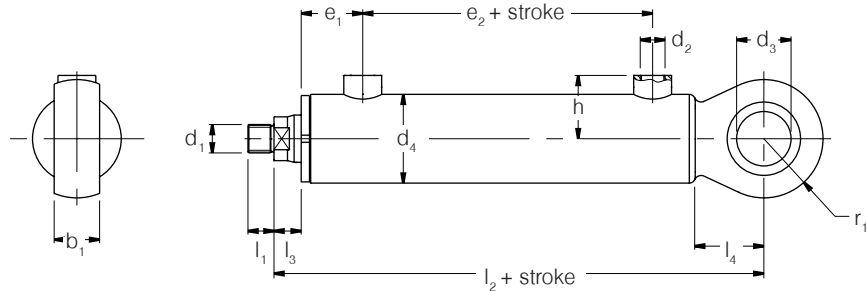
Custom Cylinder Designs

Parker's wide experience and extensive design and manufacturing facilities are available to assist with your custom cylinder projects. Please contact your nearest Parker Sales Office for details – see addresses on rear cover.

All dimensions are in millimetres unless otherwise stated.



Style B1
 Cap Fixed Eye
 (ISO Style MP3)



Dimensions – B1 See also Optional Port Dimensions, page 3

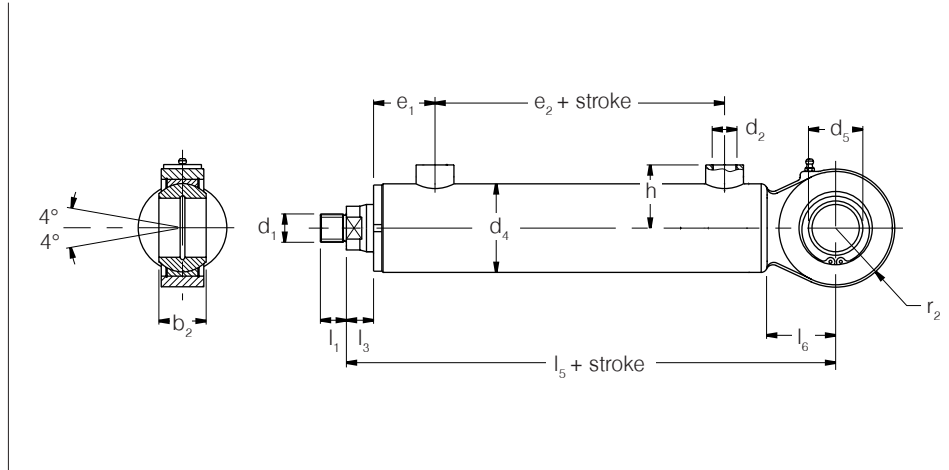
MWA MWB

| Bore | Pressure Bar | Rod Dia. | b ₁ h ₁₁ | d ₁ 6g | d ₂ 6H | d ₃ C11 | d ₄ ~ | e ₁ | e ₂ ~ | h ~ | l ₁ | l ₂ | l ₃ ~ | l ₄ min | r ₁ max |
|------|--------------|----------|-----------------------------------|----------------------|-------------------------------|-----------------------|---------------------|----------------|---------------------|--------|----------------|----------------|---------------------|-----------------------|-----------------------|
| 32 | 160 | 14 | 20 | M12x1.5 | G ³ / ₈ | 20 | 42 | 34 | 25 | 34 | 12 | 130 | 14 | 22 | 20 |
| | 160 | 20 | | | | | | | | | | | | | |
| 40 | 160 | 18 | 25 | M16x1.5 | G ³ / ₈ | 25 | 50 | 43 | 33.5 | 38 | 14 | 149 | 15 | 28 | 25 |
| | 160 | 25 | | | | | | | | | | | | | |
| 50 | 160 | 22 | 32 | M18x1.5 | G ¹ / ₂ | 32 | 60 | 48 | 36 | 45 | 16 | 170 | 17 | 33 | 32 |
| | 160 | 32 | | | | | | | | | | | | | |
| | 250 | 32 | | | | | | | | | | | | | |
| 63 | 160 | 28 | 40 | M24x1.5 | G ¹ / ₂ | 40 | 75 | 52 | 45 | 53 | 22 | 200 | 22 | 43 | 40 |
| | 160 | 40 | | | | | | | | | | | | | |
| | 250 | 40 | | | | | | | | | | | | | |
| 80 | 160 | 36 | 50 | M30x1.5 | G ¹ / ₂ | 50 | 95 | 64 | 42 | 63 | 28 | 240 | 26 | 53 | 50 |
| | 160 | 50 | | | | | | | | | | | | | |
| | 250 | 50 | | | | | | | | | | | | | |
| 90 | 160 | 40 | 55 | M36x1.5 | G ³ / ₄ | 55 | 110 | 68 | 49 | 72 | 34 | 260 | 29 | 58 | 55 |
| | 160 | 56 | | | | | | | | | | | | | |
| 100 | 160 | 45 | 60 | M36x1.5 | G ³ / ₄ | 60 | 120 | 80 | 59 | 77 | 34 | 290 | 34 | 63 | 60 |
| | 160 | 63 | | | | | | | | | | | | | |
| | 250 | 63 | | | | | | | | | | | | | |
| 110 | 160 | 50 | 65 | M42x2 | G1 | 65 | 130 | 88 | 61 | 85 | 38 | 310 | 35 | 70 | 65 |
| | 160 | 70 | | | | | | | | | | | | | |
| 125 | 160 | 56 | 75 | M48x3 | G1 | 75 | 145 | 102 | 65 | 93 | 44 | 345 | 36 | 80 | 75 |
| | 160 | 80 | | | | | | | | | | | | | |
| | 250 | 80 | | | | | | | | | | | | | |
| 140 | 160 | 63 | 85 | M52x3 | G ¹ / ₄ | 85 | 170 | 97 | 83 | 107 | 48 | 390 | 43 | 87 | 80 |
| | 160 | 90 | | | | | | | | | | | | | |
| 160 | 160 | 70 | 100 | M60x4 | G ¹ / ₄ | 100 | 190 | 110 | 90 | 117 | 54 | 420 | 44 | 95 | 90 |
| | 160 | 100 | | | | | | | | | | | | | |
| | 250 | 100 | | | | | | | | | | | | | |
| 180 | 160 | 80 | 100 | M68x4 | G ¹ / ₄ | 100 | 210 | 115 | 112 | 132 | 60 | 460 | 58 | 95 | 90 |
| | 160 | 110 | | | | | | | | | | | | | |
| 200 | 160 | 90 | 120 | M72x4 | G ¹ / ₄ | 120 | 235 | 117 | 120 | 142 | 65 | 495 | 70 | 105 | 100 |
| | 160 | 125 | | | | | | | | | | | | | |
| | 250 | 125 | | | | | | | | | | | | | |
| | | | 125 | M100x3 | G ¹ / ₄ | 125 | 235 | 117 | 120 | 142 | 112 | 495 | 70 | 105 | 100 |

All dimensions are in millimetres unless otherwise stated.



Style B2
 Cap Fixed Eye
 with Spherical Bearing
 (ISO style MP5)



Dimensions – B2 See also Optional Port Dimensions, page 3

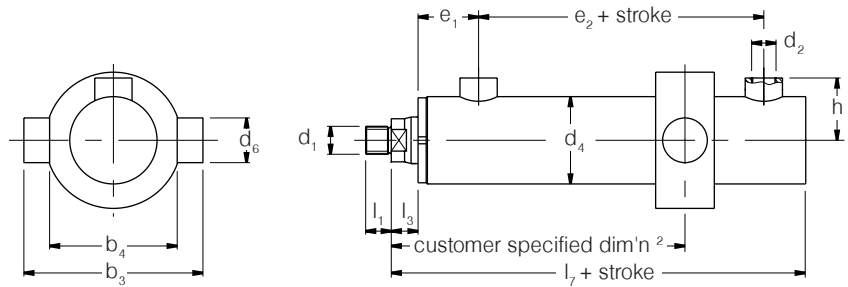
MWA MWB

| Bore | Pressure Bar | Rod Dia. | b ₂ -0.5 | d ₁ 6g | d ₂ 6H | d ₅ | d ₄ - | e ₁ | e ₂ - | h - | l ₁ | l ₃ - | l ₅ | l ₆ min | r ₂ max |
|------|--------------|----------|------------------------|----------------------|-------------------------------|----------------|---------------------|----------------|---------------------|--------|----------------|---------------------|----------------|-----------------------|-----------------------|
| 32 | 160 | 14 | 24 | M12x1.5 | G ³ / ₈ | 20 | 42 | 34 | 25 | 34 | 12 | 14 | 138 | 31 | 28 |
| | 160 | 20 | | | | | | | | | | | | | |
| 40 | 160 | 18 | 30 | M16x1.5 | G ³ / ₈ | 25 | 50 | 43 | 33.5 | 38 | 14 | 15 | 161 | 39 | 35 |
| | 160 | 25 | | | | | | | | | | | | | |
| 50 | 160 | 22 | 34 | M18x1.5 | G ¹ / ₂ | 30 | 60 | 48 | 36 | 45 | 16 | 17 | 184 | 47 | 45 |
| | 160 | 32 | | | | | | | | | | | | | |
| | 250 | 32 | | | | | | | | | | | | | |
| 63 | 160 | 28 | 40 | M24x1.5 | G ¹ / ₂ | 40 | 75 | 52 | 45 | 53 | 22 | 22 | 213 | 56 | 52 |
| | 160 | 40 | | | | | | | | | | | | | |
| | 250 | 40 | | | | | | | | | | | | | |
| 80 | 160 | 36 | 50 | M30x1.5 | G ¹ / ₂ | 50 | 95 | 64 | 42 | 63 | 28 | 26 | 255 | 68 | 65 |
| | 160 | 50 | | | | | | | | | | | | | |
| | 250 | 50 | | | | | | | | | | | | | |
| 90 | 160 | 40 | 60 | M36x1.5 | G ³ / ₄ | 60 | 110 | 68 | 49 | 72 | 34 | 29 | 280 | 78 | 75 |
| | 160 | 56 | | | | | | | | | | | | | |
| | 250 | 56 | | | | | | | | | | | | | |
| 100 | 160 | 45 | 60 | M36x1.5 | G ³ / ₄ | 60 | 120 | 80 | 59 | 77 | 34 | 34 | 310 | 83 | 80 |
| | 160 | 63 | | | | | | | | | | | | | |
| | 250 | 63 | | | | | | | | | | | | | |
| 110 | 160 | 50 | 65 | M42x2 | G1 | 70 | 130 | 88 | 61 | 85 | 38 | 35 | 335 | 95 | 90 |
| | 160 | 70 | | | | | | | | | | | | | |
| | 250 | 70 | | | | | | | | | | | | | |
| 125 | 160 | 56 | 75 | M48x3 | G1 | 80 | 145 | 102 | 65 | 93 | 44 | 36 | 375 | 110 | 105 |
| | 160 | 80 | | | | | | | | | | | | | |
| | 250 | 80 | | | | | | | | | | | | | |
| 140 | 160 | 63 | - | M52x3 | G ¹ / ₄ | - | 170 | 97 | 83 | 107 | 48 | 43 | - | - | - |
| | 160 | 90 | | | | | | | | | | | | | |
| 160 | 160 | 70 | - | M60x4 | G ¹ / ₄ | - | 190 | 110 | 90 | 117 | 54 | 44 | - | - | - |
| | 160 | 100 | | | | | | | | | | | | | |
| | 250 | 100 | | | | | | | | | | | | | |
| 180 | 160 | 80 | - | M68x4 | G ¹ / ₄ | - | 210 | 115 | 112 | 132 | 60 | 58 | - | - | - |
| | 160 | 110 | | | | | | | | | | | | | |
| | 250 | 110 | | | | | | | | | | | | | |
| 200 | 160 | 90 | - | M72x4 | G ¹ / ₄ | - | 235 | 117 | 120 | 142 | 65 | 70 | - | - | - |
| | 160 | 125 | | | | | | | | | | | | | |
| | 250 | 125 | | | | | | | | | | | | | |
| | | | 125 | M100x3 | G ¹ / ₄ | 125 | 235 | 117 | 120 | 142 | 112 | 70 | 570 | 165 | 160 |

All dimensions are in millimetres unless otherwise stated.



Style C1
 Intermediate Trunnion
 (ISO Style MT4)



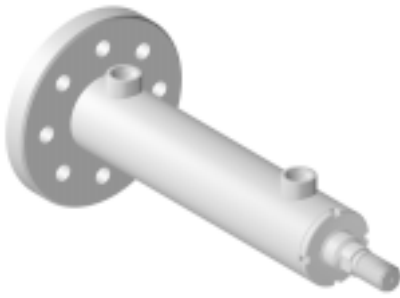
² Preferred position = $2x(e_1 + l_3)$

Dimensions – C1 See also Optional Port Dimensions, page 3

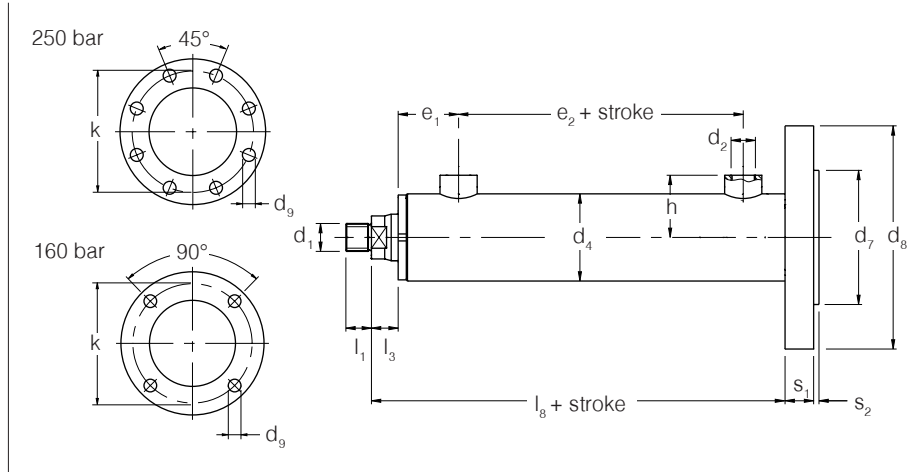
MWA MWB

| Bore | Pressure Bar | Rod Dia. | b ₃ | b ₄ -0.5 | d ₁ 6g | d ₂ 6H | d ₄ - | d ₆ 19 | e ₁ | e ₂ - | h - | l ₁ | l ₃ - | l ₇ max |
|------|--------------|----------|----------------|---------------------|-------------------|-------------------------------|------------------|-------------------|----------------|------------------|-----|----------------|------------------|--------------------|
| 32 | 160 | 14 | 90 | 60 | M12x1.5 | G ³ / ₈ | 42 | 20 | 34 | 25 | 34 | 12 | 14 | 117 |
| | 160 | 20 | | | | | | | | | | | | |
| 40 | 160 | 18 | 100 | 70 | M16x1.5 | G ³ / ₈ | 50 | 25 | 43 | 33.5 | 38 | 14 | 15 | 122 |
| | 160 | 25 | | | | | | | | | | | | |
| 50 | 160 | 22 | 120 | 80 | M18x1.5 | G ¹ / ₂ | 60 | 30 | 48 | 36 | 45 | 16 | 17 | 137 |
| | 160 | 32 | | | | | | | | | | | | |
| | 250 | 32 | | | | | | | | | | | | |
| 63 | 160 | 28 | 145 | 100 | M24x1.5 | G ¹ / ₂ | 75 | 40 | 52 | 45 | 53 | 22 | 22 | 158 |
| | 160 | 40 | | | | | | | | | | | | |
| | 250 | 40 | | | | | | | | | | | | |
| 80 | 160 | 36 | 180 | 120 | M30x1.5 | G ¹ / ₂ | 95 | 45 | 64 | 42 | 63 | 28 | 26 | 187 |
| | 160 | 50 | | | | | | | | | | | | |
| | 250 | 50 | | | | | | | | | | | | |
| 90 | 160 | 40 | 190 | 130 | M36x1.5 | G ³ / ₄ | 110 | 55 | 68 | 49 | 72 | 34 | 29 | 203 |
| | 160 | 56 | | | | | | | | | | | | |
| 100 | 160 | 45 | 200 | 140 | M36x1.5 | G ³ / ₄ | 120 | 60 | 80 | 59 | 77 | 34 | 34 | 228 |
| | 160 | 63 | | | | | | | | | | | | |
| | 250 | 63 | | | | | | | | | | | | |
| 110 | 160 | 50 | 230 | 160 | M42x2 | G1 | 130 | 70 | 88 | 61 | 85 | 38 | 35 | 240 |
| | 160 | 70 | | | | | | | | | | | | |
| 125 | 160 | 56 | 260 | 180 | M48x3 | G1 | 145 | 80 | 102 | 65 | 93 | 44 | 36 | 265 |
| | 160 | 80 | | | | | | | | | | | | |
| | 250 | 80 | | | | | | | | | | | | |
| 140 | 160 | 63 | 290 | 200 | M52x3 | G ¹ / ₄ | 170 | 90 | 97 | 83 | 107 | 48 | 43 | 303 |
| | 160 | 90 | | | | | | | | | | | | |
| 160 | 160 | 70 | 320 | 220 | M60x4 | G ¹ / ₄ | 190 | 100 | 110 | 90 | 117 | 54 | 44 | 325 |
| | 160 | 100 | | | | | | | | | | | | |
| | 250 | 100 | | | | | | | | | | | | |
| 180 | 160 | 80 | 340 | 240 | M68x4 | G ¹ / ₄ | 210 | 110 | 115 | 112 | 132 | 60 | 58 | 365 |
| | 160 | 110 | | | | | | | | | | | | |
| 200 | 160 | 90 | 370 | 260 | M72x4 | G ¹ / ₄ | 235 | 120 | 117 | 120 | 142 | 65 | 70 | 390 |
| | 160 | 125 | | | | | | | | | | | | |
| | 250 | 125 | | | | | | | | | | | | |
| | | | 370 | 260 | M100x3 | G ¹ / ₄ | 235 | 120 | 117 | 120 | 142 | 112 | 70 | 390 |

All dimensions are in millimetres unless otherwise stated.



Style S2
 Cap Circular Flange
 (ISO Style MF4)



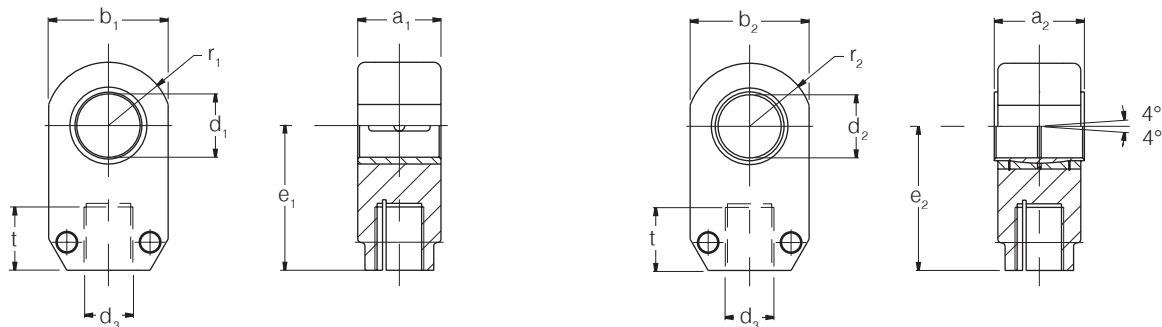
Dimensions – S2 See also Optional Port Dimensions, page 3

MWA MWB

| Bore | Pressure Bar | Rod Dia. | d ₁ 6g | d ₂ 6H | d ₄ ~ | d ₇ f9 | d ₈ | d ₉ | e ₁ | e ₂ ~ | h ~ | l ₁ | l ₃ ~ | l ₈ | k | s ₁ | s ₂ |
|------|--------------|----------|----------------------|-------------------------------|---------------------|----------------------|----------------|----------------|----------------|---------------------|--------|----------------|---------------------|----------------|-----|----------------|----------------|
| 32 | 160 | 14 | M12x1.5 | G ³ / ₈ | 42 | 63 | 108 | 9 | 34 | 25 | 34 | 12 | 14 | 119 | 86 | 16 | 3 |
| | 160 | 20 | | | | | | | | | | | | | | | |
| 40 | 160 | 18 | M16x1.5 | G ³ / ₈ | 50 | 75 | 125 | 11 | 43 | 33.5 | 38 | 14 | 15 | 133 | 100 | 16 | 3 |
| | 160 | 25 | | | | | | | | | | | | | | | |
| 50 | 160 | 22 | M18x1.5 | G ¹ / ₂ | 60 | 90 | 147 | 13.5 | 48 | 36 | 45 | 16 | 17 | 155 | 120 | 20 | 3 |
| | 160 | 32 | | | | | | | | | | | | | | | |
| 50 | 250 | 32 | M27x2 | G ¹ / ₂ | 60 | 90 | 147 | 13.5 | 48 | 36 | 45 | 36 | 17 | 155 | 120 | 20 | 3 |
| | 250 | 32 | | | | | | | | | | | | | | | |
| 63 | 160 | 28 | M24x1.5 | G ¹ / ₂ | 75 | 100 | 170 | 17.5 | 52 | 45 | 53 | 22 | 22 | 175 | 135 | 25 | 3 |
| | 160 | 40 | | | | | | | | | | | | | | | |
| 63 | 250 | 40 | M33x2 | G ¹ / ₂ | 75 | 100 | 170 | 17.5 | 52 | 45 | 53 | 45 | 22 | 175 | 135 | 25 | 3 |
| | 250 | 40 | | | | | | | | | | | | | | | |
| 80 | 160 | 36 | M30x1.5 | G ¹ / ₂ | 95 | 125 | 195 | 17.5 | 64 | 42 | 63 | 28 | 26 | 202 | 160 | 32 | 3 |
| | 160 | 50 | | | | | | | | | | | | | | | |
| 80 | 250 | 50 | M42x2 | G ¹ / ₂ | 95 | 125 | 195 | 17.5 | 64 | 42 | 63 | 56 | 26 | 202 | 160 | 32 | 3 |
| | 250 | 50 | | | | | | | | | | | | | | | |
| 90 | 160 | 40 | M36x1.5 | G ³ / ₄ | 110 | 140 | 216 | 22 | 68 | 49 | 72 | 34 | 29 | 217 | 180 | 32 | 3 |
| | 160 | 56 | | | | | | | | | | | | | | | |
| 100 | 160 | 45 | M36x1.5 | G ³ / ₄ | 120 | 150 | 226 | 22 | 80 | 59 | 77 | 34 | 34 | 240 | 190 | 32 | 3 |
| | 160 | 63 | | | | | | | | | | | | | | | |
| 100 | 250 | 63 | M48x2 | G ³ / ₄ | 120 | 150 | 226 | 22 | 80 | 59 | 77 | 63 | 34 | 240 | 190 | 32 | 3 |
| | 250 | 63 | | | | | | | | | | | | | | | |
| 110 | 160 | 50 | M42x2 | G1 | 130 | 170 | 265 | 26 | 88 | 61 | 85 | 38 | 35 | 261 | 220 | 32 | 3 |
| | 160 | 70 | | | | | | | | | | | | | | | |
| 125 | 160 | 56 | M48x3 | G1 | 145 | 180 | 285 | 30 | 102 | 65 | 93 | 44 | 36 | 284 | 235 | 32 | 5 |
| | 160 | 80 | | | | | | | | | | | | | | | |
| 125 | 250 | 80 | M64x3 | G1 | 145 | 180 | 285 | 30 | 102 | 65 | 93 | 85 | 36 | 284 | 235 | 32 | 5 |
| | 250 | 80 | | | | | | | | | | | | | | | |
| 140 | 160 | 63 | M52x3 | G ¹ / ₄ | 170 | 200 | 322 | 33 | 97 | 83 | 107 | 48 | 43 | 330 | 260 | 40 | 5 |
| | 160 | 90 | | | | | | | | | | | | | | | |
| 160 | 160 | 70 | M60x4 | G ¹ / ₄ | 190 | 230 | 356 | 36 | 110 | 90 | 117 | 54 | 44 | 345 | 290 | 45 | 5 |
| | 160 | 100 | | | | | | | | | | | | | | | |
| 160 | 250 | 100 | M80x3 | G ¹ / ₄ | 190 | 230 | 356 | 36 | 110 | 90 | 117 | 95 | 44 | 345 | 290 | 45 | 5 |
| | 250 | 100 | | | | | | | | | | | | | | | |
| 180 | 160 | 80 | M68x4 | G ¹ / ₄ | 210 | 250 | 395 | 39 | 115 | 112 | 132 | 60 | 58 | 383 | 320 | 50 | 5 |
| | 160 | 110 | | | | | | | | | | | | | | | |
| 200 | 160 | 90 | M72x4 | G ¹ / ₄ | 235 | 280 | 445 | 45 | 117 | 120 | 142 | 65 | 70 | 408 | 360 | 56 | 6 |
| | 160 | 125 | | | | | | | | | | | | | | | |
| 200 | 250 | 125 | M100x3 | G ¹ / ₄ | 235 | 280 | 445 | 45 | 117 | 120 | 142 | 112 | 70 | 408 | 360 | 56 | 6 |
| | 250 | 125 | | | | | | | | | | | | | | | |

All dimensions are in millimetres unless otherwise stated.

Rod End Eyes for 160 Bar Cylinders



Plain Bearing Eye (PBE)

Spherical Bearing Eye (SBE)

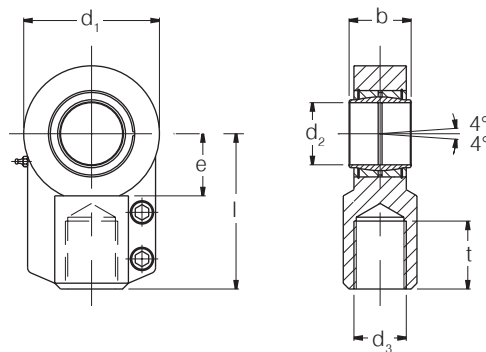
To 125mm bore size only

| Bore dia. | Thread d ₃ 6H | a ₁ | a ₂ -0.5 | b ₁ max | b ₂ max | d ₁ C11 | d ₂ K7 | e ₁ | e ₂ | r ₁ max | r ₂ max | t min | Mass – kg | |
|-----------|--------------------------|------------------------------------|---------------------|--------------------|--------------------|--------------------|-------------------|----------------|----------------|--------------------|--------------------|-------|-----------|-----|
| | | | | | | | | | | | | | PBE | SBE |
| 32 | M12x1.5 | 20 ^{+0.5} _{-0.8} | 24 | 38 | 50 | 20 | 20 | 30 | 35 | 22 | 28 | 13 | 0.2 | 0.3 |
| 40 | M16x1.5 | 25 ^{+0.5} _{-0.7} | 30 | 45 | 56 | 25 | 25 | 35 | 40 | 25 | 32 | 15 | 0.3 | 0.5 |
| 50 | M18x1.5 | 32 ^{+0.5} _{-0.7} | 34 | 58 | 70 | 32 | 30 | 45 | 45 | 32 | 38 | 17 | 0.6 | 1.1 |
| 63 | M24x1.5 | 39.5 ±0.6 | 40 | 72 | 85 | 40 | 40 | 55 | 60 | 40 | 50 | 23 | 1.2 | 1.8 |
| 80 | M30x1.5 | 49.5 ±0.8 | 50 | 86 | 105 | 50 | 50 | 65 | 70 | 50 | 60 | 29 | 2.2 | 3.2 |
| 90 | M36x1.5 | 54.5 ±0.8 | 60 | 94 | 120 | 55 | 60 | 75 | 82 | 52 | 65 | 35 | 3.3 | 4 |
| 100 | M36x1.5 | 60 ⁺¹ _{-1.5} | 60 | 105 | 135 | 60 | 60 | 80 | 85 | 60 | 73 | 36 | 4 | 4 |
| 110 | M42x2 | 65 ⁺¹ _{-1.5} | 65 | 110 | 150 | 65 | 70 | 90 | 95 | 65 | 84 | 40 | 6 | 6 |
| 125 | M48x3 | 75 ⁺¹ ₋₂ | 75 | 130 | 175 | 75 | 80 | 105 | 110 | 75 | 95 | 47 | 8 | 8 |
| 140 | M52x3 | 85 ^{+1.5} ₋₂ | – | 140 | – | 85 | – | 115 | – | 83 | – | 51 | 11 | – |
| 160 | M60x4 | 100 ⁺² ₋₃ | – | 160 | – | 100 | – | 130 | – | 90 | – | 58 | 16 | – |
| 180 | M68x4 | 100 ⁺² ₋₃ | – | 170 | – | 100 | – | 140 | – | 100 | – | 65 | 17 | – |
| 200 | M72x4 | 120 ⁺² ₋₃ | – | 200 | – | 120 | – | 155 | – | 115 | – | 70 | 24 | – |

Rod End Eyes for 250 Bar Cylinders

Spherical Bearing Eye to ISO 6982

| Bore dia. | Part No. | Thread d ₃ | b h12 | d ₁ | d ₂ H7 | e | l | t | Mass kg |
|-----------|----------|-----------------------|-------|----------------|-------------------|-----|-----|-----|---------|
| 50 | 145241 | M27x2 | 32 | 70 | 32 | 32 | 80 | 37 | 1.2 |
| 63 | 145242 | M33x2 | 40 | 89 | 40 | 41 | 97 | 46 | 2.1 |
| 80 | 145243 | M42x2 | 50 | 108 | 50 | 50 | 120 | 57 | 4.4 |
| 100 | 145244 | M48x2 | 63 | 132 | 63 | 62 | 140 | 64 | 7.6 |
| 125 | 145245 | M64x3 | 80 | 168 | 80 | 78 | 180 | 86 | 14.5 |
| 160 | 148724 | M80x3 | 100 | 210 | 100 | 98 | 210 | 96 | 28 |
| 200 | 148726 | M100x3 | 125 | 262 | 125 | 120 | 260 | 113 | 43 |



Plain rod eyes with dimensions to ISO 6981 are available on request – please contact factory.

All dimensions are in millimetres unless otherwise stated.

Push and Pull Forces

| Bore | Pressure Bar | Rod Dia. φ | Stroke Range at full rated pressure | | | Theoretical Force N | | |
|------|--------------|--------------------|-------------------------------------|--------------------------------------|------|----------------------------|----------------------------|--------|
| | | | Min | Max $\varphi = 1.25$ $\varphi = 1.6$ | | Extension $\varphi = 1.25$ | Retraction $\varphi = 1.6$ | |
| 32 | 160 | 14 ^{1.25} | 25 | 160 | 400 | 12620 | 10210 | 7690 |
| | 160 | 20 ^{1.6} | | | | | | |
| 40 | 160 | 18 ^{1.25} | 25 | 250 | 500 | 19720 | 15730 | 12020 |
| | 160 | 25 ^{1.6} | | | | | | |
| 50 | 160 | 22 ^{1.25} | 25 | 320 | 630 | 30820 | 24850 | 18200 |
| | 160 | 32 ^{1.6} | | | | | | |
| | 250 | 32 ^{1.6} | | | | | | |
| 63 | 160 | 28 ^{1.25} | 25 | 400 | 800 | 48930 | 39260 | 29200 |
| | 160 | 40 ^{1.6} | | | | | | |
| | 250 | 40 ^{1.6} | | | | | | |
| 80 | 160 | 36 ^{1.25} | 25 | 500 | 1000 | 78900 | 62920 | 48080 |
| | 160 | 50 ^{1.6} | | | | | | |
| | 250 | 50 ^{1.6} | | | | | | |
| 90 | 160 | 40 ^{1.25} | 25 | 500 | 1250 | 99850 | 80130 | 61190 |
| | 160 | 56 ^{1.6} | | | | | | |
| 100 | 160 | 45 ^{1.25} | 40 | 630 | 1250 | 123280 | 98310 | 74350 |
| | 160 | 63 ^{1.6} | | | | | | |
| | 250 | 63 ^{1.6} | | | | | | |
| 110 | 160 | 50 ^{1.25} | 40 | 630 | 1600 | 149160 | 118350 | 88760 |
| | 160 | 70 ^{1.6} | | | | | | |
| 125 | 160 | 56 ^{1.25} | 40 | 800 | 1600 | 192620 | 153960 | 113720 |
| | 160 | 80 ^{1.6} | | | | | | |
| | 250 | 80 ^{1.6} | | | | | | |
| 140 | 160 | 63 ^{1.25} | 40 | 800 | 2000 | 241620 | 192690 | 141770 |
| | 160 | 90 ^{1.6} | | | | | | |
| 160 | 160 | 70 ^{1.25} | 63 | 1000 | 2000 | 315590 | 255180 | 192310 |
| | 160 | 100 ^{1.6} | | | | | | |
| | 250 | 100 ^{1.6} | | | | | | |
| 180 | 160 | 80 ^{1.25} | 63 | 1000 | 2500 | 399410 | 320520 | 250250 |
| | 160 | 110 ^{1.6} | | | | | | |
| 200 | 160 | 90 ^{1.25} | 63 | 1250 | 2500 | 493100 | 393250 | 300490 |
| | 160 | 125 ^{1.6} | | | | | | |
| | 250 | 125 ^{1.6} | | | | | | |

φ = differential area – annular/full bore sides of piston

Model Codes and Ordering
MWA and MWB Series Cylinders

| Feature | Description | Page | Symbol |
|----------|-----------------------|------|------------|
| Series | MWA (250 bar) | 2 | MWA |
| | MWB (160 bar) | 2 | MWB |
| Pressure | Bar | 2 | 250 160 |
| Mounting | Cap fixed eye | 4 | B1 |
| | Cap spherical eye | 5 | B2 |
| | Intermediate trunnion | 6 | C1 |
| | Cap circular flange | 7 | S2 |
| Bore | Millimetres | 4-7 | – |
| Rod dia. | Millimetres | 4-7 | – |
| Stroke | Millimetres | – | – |
| Port | Indicate thread | 3 | G* |

Example

An MWA 250 bar cylinder with cap end spherical bearing eye mounting, 50mm bore with 32mm rod diameter, 500mm stroke and standard (DIN3852 pt.2) ports would have the following model code:

MWA 250 B2 50/32 x 500 G¹/₂

Where optional or special features are required, these should be described clearly as accompanying text.

Rod End Eyes

160 bar plain bearing and spherical bearing rod eyes should be ordered as shown in the table and example below. 250 bar spherical bearing rod eyes should be ordered using the part numbers shown in the table on page 8.

| Feature | Description | Page | Symbol |
|---------------|-----------------------------|------|--------|
| Series | MWB (160 bar) | 2 | MWB |
| Rod end eye | Plain bearing (160 bar) | 8 | A |
| | Spherical bearing (160 bar) | 8 | B |
| Cylinder Bore | Millimetres | – | – |
| Pin dia. | Millimetres | – | – |

Example

A spherical bearing rod eye rated at 160 bar with a pin diameter (dimension d_2) of 80mm for use with an MWB cylinder of 125mm bore would have the following model code:

MWB B 125/80

All dimensions are in millimetres unless otherwise stated.

Cylinder Division Sales Offices

Austria – Marchtrenk

Parker Hannifin GmbH
Tel: (7242) 56921
Fax: (7242) 5692120

Belgium – Nivelles

Parker Hannifin SA NV
Tel: 67 280 900
Fax: 67 280 999

Czech Republic – Prague

Parker Hannifin Corporation
Tel: (02) 830 85 221
Fax: (02) 830 85 360

Denmark – Ishøj

Parker Hannifin Danmark A/S
Tel: 43 56 04 00
Fax: 43 73 31 07

Finland – Vantaa

Parker Hannifin Oy
Tel: 9 476 731
Fax: 9 476 73200

France – Contamine-sur-Arve

Parker Hannifin SA
Tel: 4 50 25.80.25
Fax: 4 50 03.67.37

Germany – Geringswalde

Parker Hannifin GmbH
Tel: (37382) 820
Fax: (37382) 82215

Hungary – Budapest

Parker Hannifin Corp.
Tel + Fax: 1 252 2539

Italy – Arsago-Seprio

Parker Hannifin S.p.A.
Tel: (0331) 765611
Fax: (0331) 765612

Netherlands – Oldenzaal

Parker Hannifin B.V.
Tel: (0541) 585000
Fax: (0541) 585459

Norway – Ski

Parker Hannifin A/S
Tel: 64 91 10 00
Fax: 64 91 10 90

Poland – Warsaw

Parker Hannifin Corp.
Tel: (22) 863 49 42
Fax: (22) 863 49 44

Portugal –

Leca da Palmeira

Parker Hannifin Portugal Lda.
Tel: (22) 999 7360
Fax: (22) 996 1527

Slovakia –

Ref. Czech Republic

Spain – Madrid

Parker Hannifin Espana S.A.
Tel: (91) 675 73 00
Fax: (91) 675 77 11

Sweden – Spånga

Parker Hannifin AB.
Tel: 08 5979 50 00
Fax: 08 5979 51 20

Switzerland – Romanshorn

Hydrel A.G. Romanshorn
Tel: (714) 66 66 66
Fax: (714) 66 63 33

Turkey – Istanbul

Hidroser Hidrolik - Pnömatik
Tel: (212) 886 72 70
Fax: (212) 886 69 35

United Kingdom – Watford

Parker Hannifin Plc
Tel: (01923) 492000
Fax: (01923) 248557

Visit us at www.parker.com/uk

Need a Parker part?

Call Parker's European Product Information Centre
on 00800 27 27 5374