




## Tie Rod Cylinders


### 3MA Series - Economy NFPA Cylinder



- Bore sizes 1-1/2 through 5 inch
- 18 standard mounting styles
- Pressures up to 250 PSIG
- Temperatures -10°F to 165°F
- Aluminum body construction

**B6**


### 4MA / 4ML Series - Flexible NFPA Cylinder



- Bore sizes 1-1/2 through 8 inch
- 20 standard mounting styles
- Pressures up to 250 PSIG
- Temperatures -50°F to 250°F
- Aluminum body construction

**B16**


### 3MAJ / 4MAJ - Rodlock Cylinder



- Bore sizes 1-1/2 through 8 inch
- 17 standard mounting styles
- Pressures up to 100 PSIG
- Temperatures -10°F to 165°F
- Aluminum body construction

**B40**

### 4MNR Series - Non-Rotating Cylinder



- Bore sizes 1-1/8 through 4 inch
- 14 standard mounting styles
- Pressures up to 250 PSIG
- Temperatures -10°F to 165°F
- Aluminum body construction

**B58**

### P1D Series - ISO 15552 / ISO 6431




- 6 available for maximum flexibility
- Bore sizes 32mm through 200mm
- 10 standard mounting styles
- Pressures up to 145 PSIG
- Temperatures -10°F to 250°F
- Aluminum body construction

**B65**

## Round Body Cylinders


### SR / SRM / SRD / SRDM Series - Non-Repairable



- Bore sizes 5/16 through 3 inch
- 28 mounting styles
- Pressures up to 250 PSIG
- Temperatures -10°F to 165°F
- Stainless steel body construction

**B83**


### SRX Series - Position Feedback



- Bore sizes 1-1/16 through 3 inch
- Continuous position feedback
- Pressures up to 150 PSIG
- Temperatures 40°F to 165°F
- Stainless steel body construction

**B109**


### P1L Series - Repairable



- Bore sizes 20mm through 100mm
- 9 mounting styles
- Pressures up to 145 PSIG
- Temperatures -10°F to 250°F
- Aluminum body construction

**B117**


### P1A Series - ISO Non-Repairable



- Bore sizes 10mm through 25mm
- 5 mounting styles
- Pressures up to 145 PSIG
- Temperatures -40°F to 302°F
- Stainless steel body construction

**B132**

### P Series - Repairable



- Bore sizes 1-1/8 through 4 inch
- 4 mounting styles
- Pressures up to 150 PSIG
- Temperatures -10°F to 250°F
- Aluminum body construction

**B136**

## Compact Cylinders


**P1Q Series - Economy Compact Cylinder**



- Bore sizes 12mm through 100mm
- 4 flexible mounting options
- Pressures up to 10 PSIG
- Temperatures 23°F to 158°F
- Aluminum body construction

**B143**

**P1M Series - Compact Cylinder**



- Bore sizes 12mm through 100mm
- 6 mounting options
- Pressures up to 145 PSIG
- Temperatures -4°F to 250°F
- Aluminum body construction

**B151**

**LP / LPM Series - Compact Cylinder**




- Bore sizes 9/16 through 4 inch
- 6 mounting styles
- Pressures up to 150 PSIG
- Temperatures -10°F to 200°F
- Aluminum body construction

**B163**

## Guided Cylinders


**P5T Series - Compact Guided**



- Bore sizes 16mm through 100mm
- Pressures up to 145 PSIG
- Temperatures 0°F to 250°F
- Aluminum body construction
- Flexible porting: top, rear, side

**B169**

**P5L Series - Guided**



- Bore sizes 20mm through 100mm
- Direct mounting
- Pressures up to 145 PSIG
- Temperatures 0°F to 250°F
- Extruded aluminum body construction

**B176**


**HB Series - Heavy Duty Guided**



- Bore sizes 1-1/2 through 2-1/2 inch
- Thrust, reach and compact versions available
- Air service pressure up to 250 PSIG, hydraulic service up to 750 PSIG
- Temperatures 0°F to 250°F
- Aluminum body construction
- Rod lock version available

**B202**

**P5E Series - P1D ISO Guided**



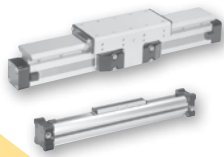
- Bore sizes 32mm through 100mm
- Pressures up to 145 PSIG
- Temperatures 14°F to 165°F
- Aluminum body construction
- Rod lock version available

**B210**

**B**  
 Pictorial Index  
 Actuator Products

## Rodless Cylinders

### OSP-P Series - Band Type Rodless



- Bore sizes 10mm through 80mm
- Pressures to max. 8 bar
- Temperatures -10°F to 80°F
- Aluminum body construction

B216

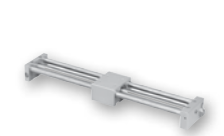
### P1X Series - Band Type Rodless



- 7 bore sizes 16mm through 63mm
- Integral sensor mounting rail
- Pressures 7 to 100 PSIG
- Temperatures 40°F to 140°F
- Aluminum body construction

B234

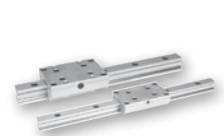
### P1Z Series - Magnetically Coupled Rodless



- 3 bore sizes 16mm, 20mm & 32mm
- Pressures 29 to 100 PSIG
- Temperatures 15°F to 140°F
- Stainless steel body construction

B246

### GDL Series - Rails & Cassettes



- 6 sizes available
- Speed up to 10m/s (33 ft/s)
- Temperatures -10°C to 80°C
- Aluminum alloy rail
- Aluminum body construction

B258

## Rotary Actuators

### PV Series - Vane Rotary



- 8 model sizes
- Single or double vane models
- Pressures to 150 PSIG
- Temperatures 30°F to 250°F
- 7 to 1800 lb-in output torque

B263

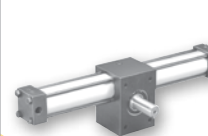
### PRN(A) Series - Vane Rotary



- 5 miniature and 4 standard models
- Temperatures -23°F to 176°F
- 1.33 to 2355 in-lb torque at 100 PSIG

B267

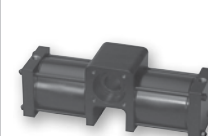
### PTR Series - Rack & Pinion Rotary



- Bore sizes 1 through 3-1/4 inch
- Pressures to 250 PSIG
- Temperatures 0°F to 250°F
- 39 to 2281 lb-in output torque

B272

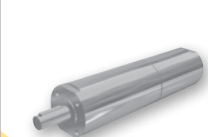
### HP Series - Large Rack & Pinion Rotary



- 2 large bore models
- 3 standard rotations
- Pressures to 100 PSIG
- Temperatures 0°F to 250°F
- 4500 and 10,000 lb-in output at 100 PSIG

B275

### P1V-S Series - Air Motors



- Power from 20 through 1200 watts
- Speeds 5 to 24,000 RPM
- Pressures to max. 7 bar
- Temperatures -30°C to 100°C

B278

## Automation Products

### Grippers



- Grip forces to 44,000N
- Parallel or Angular
- 2 or 3 jaw
- Pneumatic or electric
- Temperature to 300°F
- Magnetic piston standard
- Clean room

B281

### Slide Tables



- 6 bore sizes: 6mm to 25mm
- Strokes to 150mm
- Integration of linear rail and dual bore cylinder
- Available with adjustable stroke and shock absorbers
- Magnetic piston standard

B314

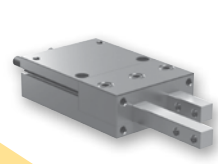
### Rotary Tables



- 4 bore sizes: 16mm to 32mm
- Dual rack and pinion with integrated bearing
- Adjustable rotation standard 0 to 190 degrees
- Available with optional shock absorbers

B326

### Escapements

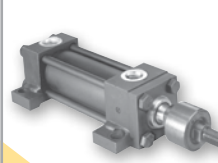


- 3 bore sizes: 14mm to 27mm
- Locking key ensures part separation and eliminates jams
- Adjustable retract stops
- Sealed design repels contaminants
- Dowel holes in body for precision applications

B328

## Actuator Accessories

### Linear Alignment Couplers



- 12 standard thread sizes
- Maximum reliability for trouble-free operation, long life and lower operating costs
- Increased cylinder life by reducing wear on piston and rod bearings
- Stainless steel versions available

B335

### 4TK Series - Air Oil Tanks



- 6 standard bore sizes
- Lightweight aluminum / fiberglass design
- 2 fluid flow baffles reduce agitation and aeration
- 8 standard mounting styles

B336

### PRL Series - Stand Alone Rodlock



- 5 different sizes
- Large holding forces
- 2 different mounting styles
- Case-hardened rod material available

B337

## Electronic Sensors

### Sensors



- Solid state
- Reed
- NAMUR
- Proximity

B339

## Shock Absorbers

### Shock Absorbers



- Miniature - self-compensating
- Heavyweight - soft contact and self-compensating
- Miniature - soft contact and self-compensating
- Magnum series - adjustable
- Heavy - self-compensating
- Heavy - adjustable

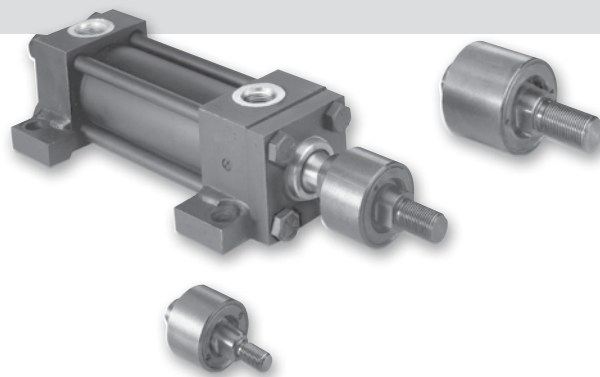
B361

## Linear Alignment Couplers

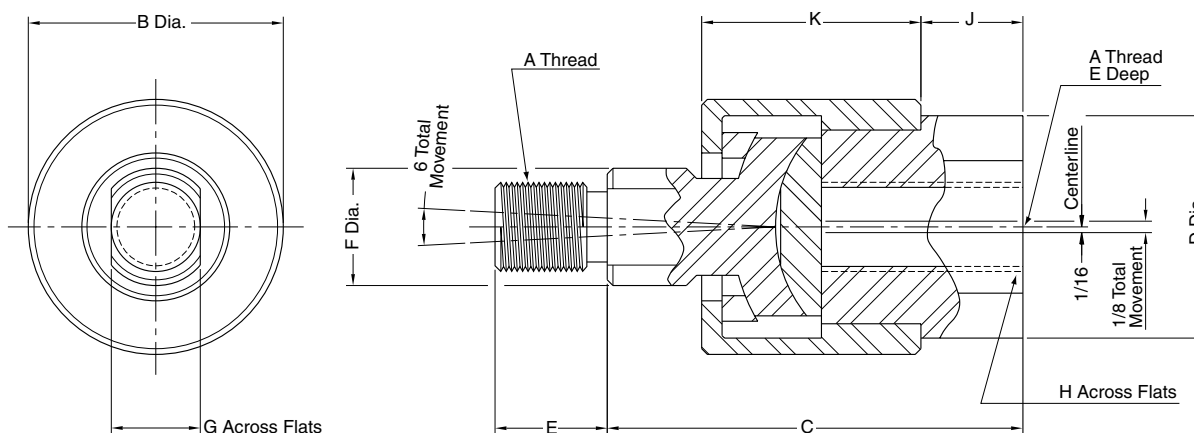
**Linear Alignment Couplers are available in 12 standard thread sizes...**

### Cost Saving Features and Benefits Include...

- Maximum reliability for trouble-free operation, long life and lower operating costs
- Increased cylinder life by reducing wear on piston and rod bearings
- Stainless steel versions available. Please consult factory.
- Simplifying cylinder installation and reducing assembly costs
- Increase rod bearing and rod seal life for lower maintenance costs



### Alignment coupler



See table 1 for part numbers and dimensions

**Table 1 – Part numbers and dimensions**

A	B	C	D	E	F	G	H	J	K	Max. pull load (lbs.)	Approx. weight (Lbs.)	Part number
5/16 -24	1-1/8	1-3/4	15/16	1/2	1/2	3/8	3/4	3/8	15/16	1200	0.35	<b>1347570031</b>
3/8 -24	1-1/8	1-3/4	15/16	1/2	1/2	3/8	3/4	3/8	15/16	2425	0.35	<b>1347570038</b>
7/16 -20	1-3/8	2	1-1/8	3/4	5/8	1/2	7/8	3/8	1-3/32	3250	0.55	<b>1347570044</b>
1/2 -20	1-3/8	2	1-1/8	3/4	5/8	1/2	7/8	3/8	1-3/32	4450	0.55	<b>1347570050</b>
5/8 -18	1-3/8	2	1-1/8	3/4	5/8	1/2	7/8	3/8	1-3/32	6800	0.55	<b>1347570063</b>
3/4 -16	2	2-5/16	1-5/8	1-1/8	1-5/16	3/4	1-5/16	7/16	1-9/32	9050	1.4	<b>1347570075</b>
7/8 -14	2	2-5/16	1-5/8	1-1/8	1-5/16	3/4	1-5/16	7/16	1-9/32	14450	1.4	<b>1347570088</b>
1-14	3-1/8	3	2-3/8	1-5/8	1-7/16	1-1/4	1-7/8	3/4	1-25/32	19425	4.8	<b>1347570100</b>
1-1/4 -12	3-1/8	3	2-3/8	1-5/8	1-7/16	1-1/4	1-7/8	3/4	1-25/32	30500	4.8	<b>1347570125</b>
1-1/4 -12	3-1/2	4	2	2	1-1/2	1-1/4	1-11/16	3/4	2-1/2	30500	6.9	<b>1337390125</b>
1-1/2 -12	4	4-3/8	2-1/4	2-1/4	1-3/4	1-1/2	1-15/16	7/8	2-3/4	45750	9.8	<b>1337390150</b>
1-3/4 -12	4	4-3/8	2-1/4	2-1/4	1-3/4	1-1/2	1-15/16	7/8	2-3/4	58350	9.8	<b>1337390175</b>
1-7/8 -12	5	5-5/8	3	3	2-1/4	1-15/16	2-5/8	1-3/8	3-3/8	67550	19.8	<b>1337390188</b>

### How to order linear alignment couplers

When ordering a cylinder with a threaded male rod end, specify the coupler of equal thread size by part number as listed in Table 1, i.e.; Piston Rod "KK" or "CC" dimension is 3/4" - 16", specify coupler part number 1347570075.



**B**

Actuator Accessories  
Actuator Products

Linear Alignment

4TK Series

PRL Series

## 4TK Air-Oil Tanks

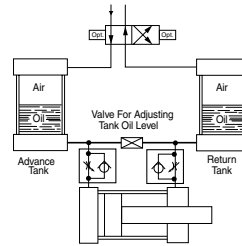
### 4TK Air-Oil Tanks – For Smoother Hydraulic Flow

Parker Air-Oil tanks provide a means to convert shop air pressure into hydraulic pressure. Compressed air is applied directly to the oil in the air-oil tank to convert it into hydraulic pressure. The hydraulic pressure is at a 1-to-1 ratio, i.e. 80 PSIG air produces 80 PSIG hydraulic pressure.

All Parker Air-Oil tanks have a fiberglass tube which shows the proper oil level. They also contain two fluid flow baffles. The top baffle disperses the incoming air over the surface of the oil in such a way to avoid agitation and aeration. The bottom baffle insures a smooth flow pattern that minimizes oil turbulence and eliminates swirling, funneling or splashing which in turn could cause oil aeration or the oil to be blown from the tank into the exhaust air.

Air-Oil tanks are used to smooth out the cylinder piston rod travel and to prevent chatter. They are mainly used in slow speed circuits. Since each tank is designed for a specific port size, increasing the port size in a tank to lower the fluid velocity is not recommended. A tank with a larger port size should be selected.

Fluid velocity in or out of the tank through standard ports should be less than 6 feet per second to prevent aeration of the oil. To limit the fluid velocity, flow controls should be applied to the air side of the tank to restrict the exhaust. Metered-in flow controls on the air side may aid in the reduction of aeration. Additional flow controls on the oil side may aid in controlling the actuator motion.



In a basic air-oil circuit the advance tank is connected to the cap end port of a hydraulic cylinder and the return tank to the head end port. Shop air is applied alternately to the two tanks through a 4-way air control valve. The oil in the advance tank is forced into the cap end of the cylinder to cause the piston rod to extend. At the same time, oil from the head end port is forced into the return tank, the air side of which is open to exhaust. To return the cylinder to retract position, air pressure is applied to the oil in the return tank.

#### Operating information

Operating pressure	17 bar (250 PSIG) maximum
Operating temperature	74°C (165°F) maximum
Filtration requirements	40 micron, dry filtered air

**Table A – Rated capacities - cubic inches (in<sup>3</sup>)**

Bore size	Usable tank volume (Cu. In.) per internal height of tank											
	4	6	8	10	12	14	16	18	20	24	28	32
2-1/2	9	17	27	35	44	52	62	70	79	97	115	132
3-1/4	16	30	46	60	76	91	107	121	137	167	198	228
4	18	33	58	73	98	120	144	166	191	237	283	330
5	29	53	92	116	155	189	228	261	300	373	446	519
6	42	77	133	168	224	273	329	378	434	539	645	750
8	75	137	237	300	400	487	587	675	775	963	1150	1338

### Ordering information

Example: 4.00CB4TKU 6.000

<b>4.00</b>			<b>U</b>		<b>6.000</b>
Tank diameter (inches)	Tank mounting style		Ports		Special modification
2.50	<b>TEF</b> Sleeve nut with side tap	<b>TE</b> Sleeve nut	<b>U</b> NPTF	<b>S</b> Special	Tank height*
3.25	<b>TB</b> Tie rods extended, air end	<b>TC</b> Tie rods extended, oil end			Internal height in inches
4.00	<b>TD</b> Tie rods extended, both ends	<b>C</b> Side lug (3MA style)			* Less than 4 Inches, Consult Factory
5.00	<b>CB</b> Side end angles	<b>NB</b> Base bar			
6.00					
8.00					

**Note:** Standard air-oil tanks are designed for use with petroleum base hydraulic oil. If other fluids will be used, please consult the factory. For larger than 8" Bore Sizes consult factory.

For ordering purposes, when special options or common modifications are requested, the factory will assign a sequential part number in place of the model number.

## PRL Series

The PRL Series rod lock is used in applications where the locking of linear travel is required. It is commonly used in workholding applications and for locking tools and fixtures in the event of air pressure or electrical control failure.

### Application

- **Clamping:** Without an appropriate air signal to the rod lock pressure port, the rod lock clamps to the precision metric rod and prevents rod movement in the axial direction.
- **Delatching:** When 4 Bar (58 PSIG) of air pressure is applied to the port, the rod lock releases and allows free movement of the rod. This will be required for installation.
- **Locking Direction:** The rod lock is designed specifically to prevent rod movement in the axial direction only. It is not recommended for locking rotary rod motion.
- **Rod Material:** The Series PRL rod lock is a precision locking device, therefore strict rod tolerances and rod material specifications are required to ensure safe and proper operation. Minimum requirements for the rod material include a chrome plated surface finish of 10 microinches or less and a surface hardness of 52 Rc. Rod material may be ordered separately in custom lengths. See next page for how to order.
- **Environment:** The rod lock is recommended for use in dry, clean conditions. Please take precautions to prevent moisture from entering the pressure port or the exhaust port of the locking device.

There should be no relative motion between the rod and the Rod Lock Device when the locking device is activated. The locking device is not intended to brake a movement in repeated sequences.

### Considerations for Rod Sizing

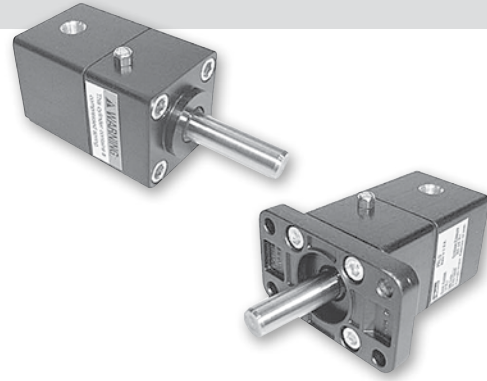
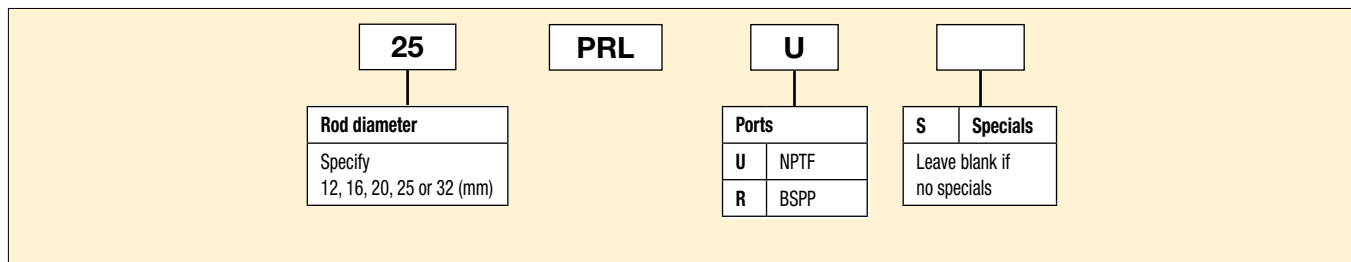
When applying a rod lock device, it is important to consider the loading forces which will be imposed on the rod in the axial direction.

For applications where the rod lock and its associated load impose a compressive force on the rod, please consider the axial compression force and rod length to select the appropriate rod diameter for preventing rod buckling.

In situations where the rod lock and its associated load place the rod in tension, please take care to securely fasten the rod ends to the machine member.

### Ordering information

**Example: 25PRLU**



### Operating information

Working pressure	Max. 10 bar (145 PSIG)
Working temperature	-20° to 80°C (-4°F to 176°F)
Locking pressure	4 bar (58 PSIG) ±10%
Filtration requirements	40 micron, dry filtered air

### Holding Forces

Model number	Holding force	
	Pounds (lbs.)	Newtons (N)
12PRL*	123	550
16PRL*	193	860
20PRL*	481	2140
25PRL*	1211	5390
32PRL*	1894	8425

\* Character reserved for port style

**B**

Actuator Accessories  
 Actuator Products

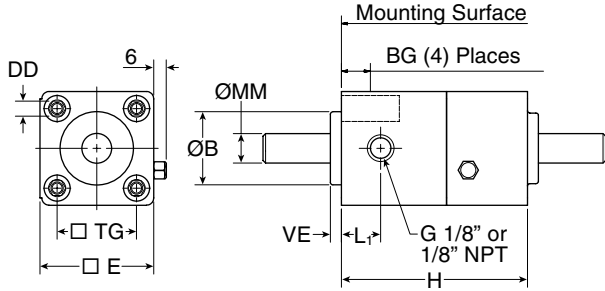
Linear  
 Alignment

4TK  
 Series

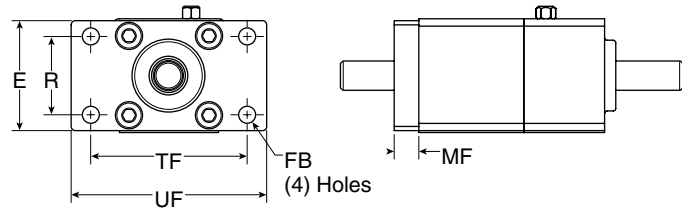
PRL  
 Series



**Basic rod lock**



**Rod lock with flange mount**



**Table 1 – Mounting dimensions**

Part	Rod dia. MM	B D11	BG	DD	E	FB	H	L1	MF	R	TF	TG	UF	VE
12PRL*	12.00 (-.04)	30	16	M6	46.5	7	76	16	10	32	64	32.5	80	4.5
16PRL*	16.00 (-.04)	35	16	M6	51	9	81.1	16	10	36	72	38	92	4.5
20PRL*	20.00 (-.04)	45	16	M8	76	9	100.8	26	12	50	100	56.5	129	5
25PRL*	25.00 (-.04)	55	16	M10	114.5	14	146	50	16	75	150	89	186	4
32PRL*	32.00 (-.04)	60	20	M12	140	16	165.2	60	20	90	180	110	220	6

\* Character reserved for port style

**Flange mounting kit**

Mounting kits are available separately from the rod lock device. Please use the following part numbers to order. Mounting fasteners are included with the kits.

Model number	Flange mount
12PRL*	<b>L075370032</b>
16PRL*	<b>L075370040</b>
20PRL*	<b>L075370063</b>
25PRL*	<b>L075370100</b>
32PRL*	<b>L075370125</b>

\* Character reserved for port style

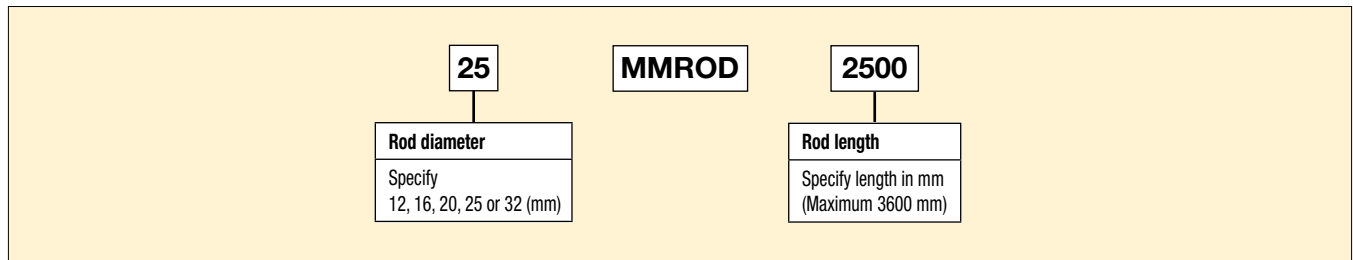
**Metric rod material**

Rods will be supplied in the specified length with chamfered ends. Please note, the rod material is case hardened and requires annealing prior to machining. Parker is pleased to quote custom machined rods per customer supplied drawings.

**⚠ Caution:** Using piston rod material which does not meet the tolerance and finished conditions as listed on the previous page may prevent the locking device from properly holding the intended load.

**How to order**

Example: 25MMROD2500



**B**  
 Actuator Accessories  
 Linear Alignment  
 4TK Series  
 PRL Series