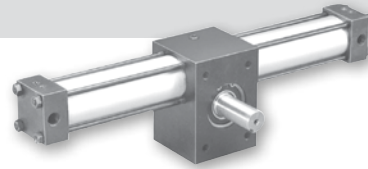


## PTR Series

- Rack and pinion rotary actuator
- 5 bore sizes from 1" to 3-1/4"
- Output torque @ 100 PSIG: 39 lb-in to 2281 lb-in
- Standard rotations: 90°, 180°, 270°, 360°
- Available as single or double rack, 3 position, air/oil, antitbacklash
- Optional bumpers, cushions, stroke adjusters, shock absorbers



### Operating information

Operating pressure:	250 PSIG (17 bar)
Temperature range:	
Nitrile seals	0°F to 180°F (-18° to 82°C)
Fluorocarbon seals	0°F to 250°F (-18° to 121°C)
Filtration requirements:	40 micron, dry filtered air

### Sensors

For sensors see page B339.



### Ordering information

**PTR 25 1 - 090 3 F P - A B 2 1 M V - C**

Model 1	
10	1" Bore
15	1-1/2" Bore
20	2" Bore
25	2-1/2" Bore
32	3-1/4" Bore

Rotation 2	
090	90°
180	180°
270	270°
360	360°
Or specify any other rotation.	

Configuration	
1	Single Rack
2	Double Rack
3	Three Position Actuator
6	Air/Oil Operation
7	Antitbacklash

Mounting	
A	Face/base (standard)
F	Front flange
G	Foot flange
P	Pilot ring
R	Rear flange
X	Special

Design Series	
C	Current

Special Options	
Omit	Standard
(Two-digit code assigned by factory and applies when any "X" or "9" appears in the model number or when special options or features are required.)	

Seals	
Omit	Nitrile
V	Fluorocarbon
X	Special

Standard options	
Omit	None
M	Magnetic piston ring
S	Shaft seal cover
Q	Prepped for external air/oil tank
L	Air/oil cushion & flow control adj. at location 1 (opposite standard)

Port flow controls	
Omit	None
P	Flow control both rotations
R	Flow control CW rotation 3
S	Flow control CCW rotation 3

Shaft	
A	Female keyed
B	Single male keyed (standard)
C	Double male keyed
R	Preload keyway
X	Special

Port location	
1	Position 1 (standard)
2	Position 2
3	Position 3
4	Position 4 8
5	Position 5 6
9	Special

Port type	
1	SAE straight thread
2	NPTF
4	BSPP (ISO 1179-1 with ISO 228-1 threads)
9	Special

Other options	
Detail in clear text:	
• Proximity Sensors	
• Feedback Potentiometer	

#### Notes:

- 1 Cylinder bore size. See appropriate tables for torque output.
- 2 For 3-position units, specify middle and total rotation separated by a "/", ie 090/180. To obtain equal rotation both sides of midstroke (theoretical 12:00), order unit with 5° longer rotation than standard with stroke adjusters.
- 3 Viewed from shaft end.
- 4 Double rack models only.
- 5 Reduces to 10° with cushions.
- 6 Not available with cushions or stroke adjusters.
- 7 Refer to Catalog 0900-E page H45 for option configuration compatibility.
- 8 Not available on double rack models

Cushion / Bumpers	
Omit	None
1	Cushioned CW rotation 3
2	Cushioned CCW rotation 3
3	Cushioned both rotations
4	Four cushions 4
5	Bumper CW rotation 3
6	Bumper CCW rotation 3
7	Bumper both rotations
9	Special

Stroke adjusters	
Omit	None
D	0-30° CW rotation 3, 5
E	0-30° CCW rotation 3, 5
F	0-30° both rotations 5
H	Shock/stroke adj. CW rotation 3, 7
K	Shock/stroke adj. CCW rotation 3, 7
L	Shock/stroke adj. both rotations 7
X	Special

**Quick reference data**

Model		Typ. actual output torque @ 100 PSI (lb-in)	Theoretical output torque* (lb-in) versus input pressure (PSI)				Displacement per degree rotation (in <sup>3</sup> /°)	Maximum angular backlash (minutes)	Tolerance (degrees)
Single rack	Double rack		50	75	100	250			
101		35	19	29	39	98	0.007	60	-0, +5
	102	70	39	59	79	197	0.014	60	-0, +5
151		100	59	88	118	294	0.021	45	-0, +4
	152	200	118	177	236	590	0.042	45	-0, +4
201		250	141	212	282	705	0.049	35	-0, +3
251		375	215	322	430	1074	0.075	35	-0, +3
	202	500	282	423	565	1410	0.099	35	-0, +3
	252	750	430	644	859	2148	0.150	35	-0, +3
321		1000	570	856	1141	2852	0.199	25	-0, +2
	322	2000	1141	1711	2281	5703	0.398	25	-0, +2

\* Allow 10% for friction loss. Allow 20% on air/oil units. Use the single rack torque values for all air/oil, three position, and anti-backlash actuators.

**Bearing load capacities and kinetic energy ratings**

Model	Bearing load capacities* (lb)		Distance between bearings	Maximum kinetic energy absorption rating for models based on configuration (lb-in)			
	Radial	Thrust		Standard or stroke adjusters	Bumper	Cushion**	Shock absorbers (per cycle / per hour)
10	100	50	1.40	0.5	0.75	5.00	15/150,000
15	250	125	2.15	1.50	2.25	15.00	35/200,000
20	500	250	2.15	3.00	4.50	35.00	140/350,000
25	750	375	2.50	5.50	8.25	55.00	140/300,000
32	1000	500	3.75	12.00	18.00	155.00	N/A

\* Bearing capacities only. Check Kinetic Energy ratings to determine if actuator will stop load.

\*\* Assuming positive back pressure provided by meter-out flow control.

**Seal kit ordering information**

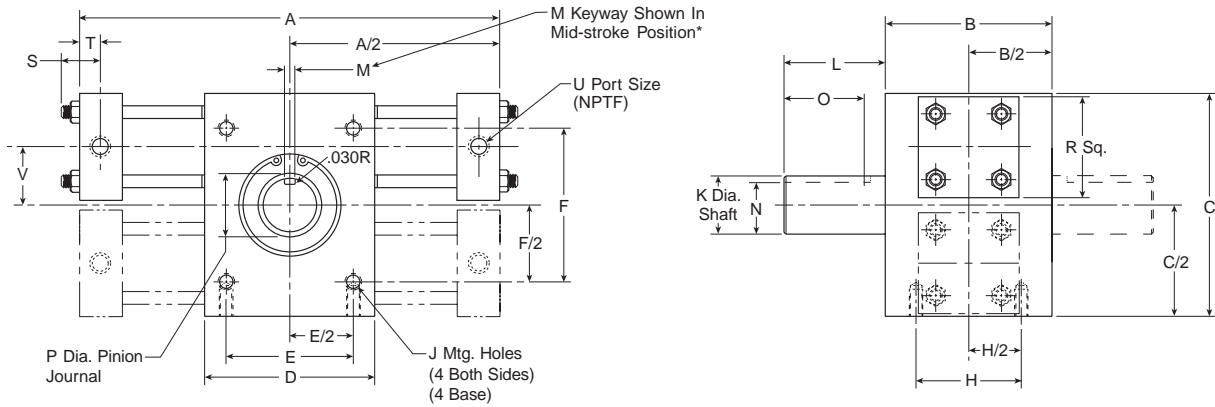
- Standard units are equipped with Nitrile seals.
- Optional seal compounds are available.
- Seal kit part numbers as shown:

PSK Parker seal kit	—	PTR322 Base model	V	
			Omit	Standard
			V	Fluorocarbon
			Q	Quad ring piston seals
			W	Corboxilated nitrile piston seals

**B**  
 Rotary Actuators  
 Actuator Products  
 PV Series  
 PRN(A) Series  
 PTR Series  
 HP Series  
 PIV-S Series

**Standard Face Base Mount (A) and Male Keyed Shaft (B)**

Double Male Keyed Shaft (C) shown in phantom



Model number	Rotation (Degrees)	A	B	C	D	E	F	H	J	K	L	M	N
10	90°	6-11/16											
	180°	8-1/4	2	3	2	1.500	2.000	1.500	1/4-20 x 3/8 DP	0.500 0.499	7/8	0.125 0.127	0.430 0.425
	360°	11-7/16											
15	90°	9-1/8											
	180°	11-3/16	3	4-1/4	3	2.000	3.000	2.000	5/16-18 x 1/2 DP	0.875 0.874	1-7/8	0.188 0.190	0.771 0.761
	360°	15-3/8											
20	90°	11-3/16											
	180°	14-1/16	3	5	4	2.500	3.500	2.000	3/8-16 x 1/2 DP	1.125 1.124	1-7/8	0.250 0.252	0.986
	360°	19-11/16											
25	90°	12-9/16											
	180°	15-1/2	3-1/2	6	4	2.500	4.500	2.000	1/2-13 x 3/4 DP	1.375 1.374	2-1/4	0.313 0.315	1.201 1.191
	360°	20-5/8											
32	90°	16-5/8											
	180°	21-1/8	5	8	5	3.000	5.000	2.500	3/4-10 x 1 DP	1.750 1.749	3-1/2	0.375 0.377	1.542 1.532
	360°	29-3/8											

Model number	O	P	R	S	T	U	V
10	5/8	0.59	1-1/2	1/4	0.31	1/8	3/4
15	1-1/2	0.98	2	5/16	0.41	1/4	1-1/16
20	1-1/2	1.18	2-1/2	3/8	0.41	1/4	1-1/4
25	1-3/4	1.38	3	3/8	0.41	1/4	1-1/2
32	3	1.77	3-3/4	7/16	0.56	3/8	1-15/16

\* To obtain equal rotation both sides of midstroke (theoretical 12:00), order 5° longer rotation than standard with stroke adjusters.

**B**  
 Rotary Actuators  
 Actuator Products  
 Series  
 PV  
 PRN(A)  
 Series  
 PTR  
 Series  
 HP  
 Series  
 P1V-S  
 Series

