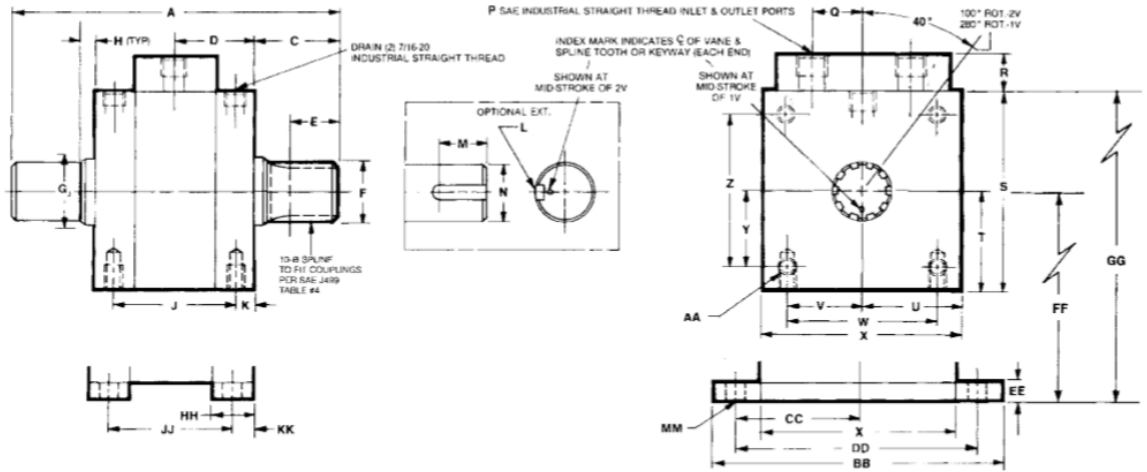


Rotac® Hyd-ro-ac® Products – Rotary Actuator: MPJ-32 THRU MPJ-128

(Dimensional Data) (Keyway Data) (Port Data) (Performance Data) (Test Parameters) (Product Catalog) (HS Order Form)

**MP-32 THRU MP-128**

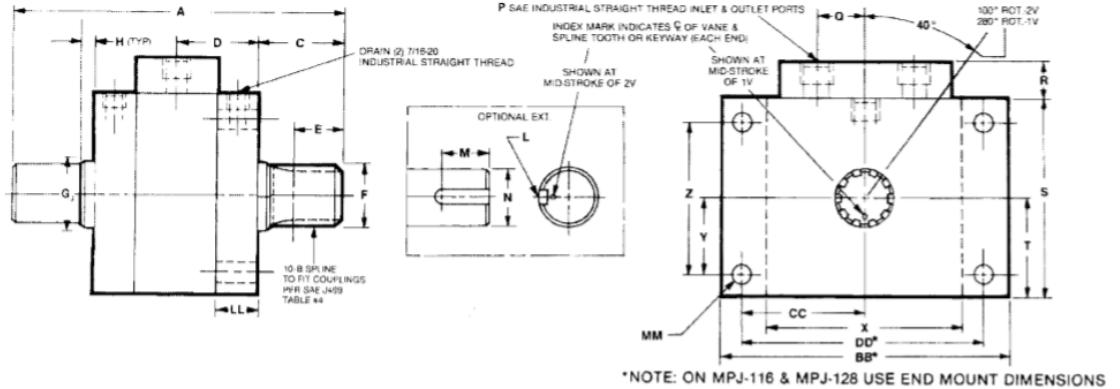
**END BASE MOUNTING**



**FOOT MOUNTING**



**FLANGE MOUNTING**



**IMPORTANT NOTES TO AVOID ACTUATOR DAMAGE AND VOIDED WARRANTY:**

1. Connections of drains will add significant life to the shaft seals. This is highly recommended.
2. Design considerations should be made to limit the axial and radial loading applied to the actuator. Contact factory if axial and/or radial loading must be applied to the actuator. Unapproved axial and/or radial loading will void the actuator's warranty.
3. External stops must be used to limit shaft rotation for most applications. Using the actuators internal components as rotational stops will cause damage and void the actuators warranty.
4. It is critical that the hydraulic system have pressure relief located in close proximity to the actuator to prevent pressure spikes from damaging the actuator. Micromatic offers Cross Port Relief (CPR) manifolds that can be used with the actuator if the customer's hydraulic system does not have pressure relief (contact factory for details). Hydraulic pressure spikes will rapidly cause damage and void the actuator's warranty.
5. It is recommended the hydraulic fluid be filtered to 5 microns or less (maximum of 10 microns).

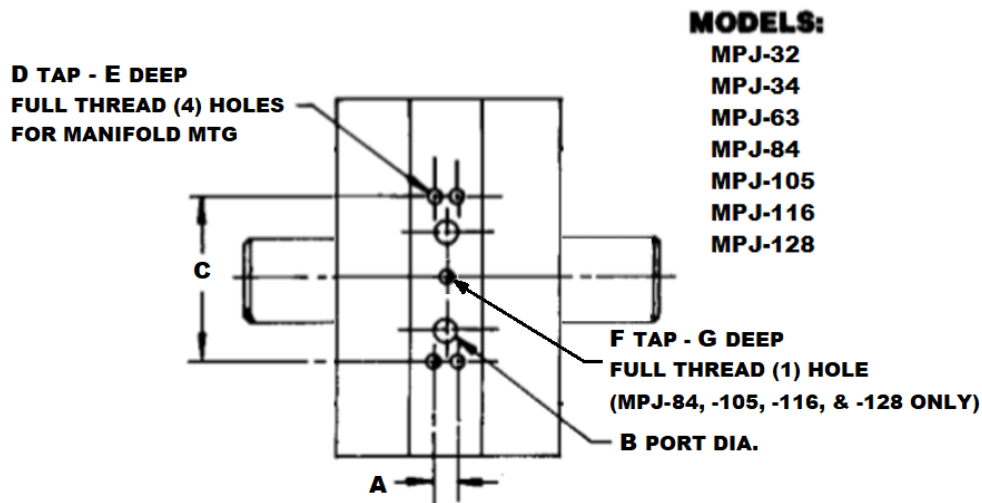
DIMENSION IN INCHES (MILLIMETERS)							
	MPJ-32	MPJ-34	MPJ-63	MPJ-84	MPJ-105	MPJ-116	MPJ-128
A	8.25 (210)	10.25 (260)	13.88 (352)	16.88 (429)	18.88 (480)	22.38 (568)	25.38 (645)
C	2.05 (52)	2.05 (52)	3.49 (88.6)	4.49 (114)	4.49 (114)	5.02 (127.5)	5.50 (140)

D	2.08 (52.8)	3.08 (78)	3.45 (87.6)	3.95 (100.3)	4.95 (125.7)	6.17 (156.7)	7.19 (182.6)
E	1.12 (28.5)	1.12 (28.5)	1.75 (44.5)	2.50 (63.5)	2.75 (69.8)	3.25 (82.6)	4.00 (101.6)
F <sub>6</sub>	∅ 1.2455 (∅ 31.636)	∅ 1.2455 (∅ 31.636)	∅ 1.9935 (∅ 50.635)	∅ 2.4935 (∅ 63.335)	∅ 2.9935 (∅ 76.035)	∅ 3.4935 (∅ 88.735)	∅ 3.9935 (∅ 101.435)
G	1.27 (32.26)	1.27 (32.26)	2.02 (51.3)	3.00 (76.2)	3.02 (76.7)	3.74 (95)	N/A
H	0.30 (7.6)	0.30 (7.6)	0.49 (12)	0.49 (12)	0.49 (12)	0.50 (12)	0.09 (2.3)
J	3.25 (82.5)	5.25 (133.4)	5.50 (139.7)	6.00 (152.4)	7.00 (177.8)	9.50 (241.3)	11.25 (285.75)
K	0.45 (11.4)	0.45 (11.4)	0.70 (17.8)	0.95 (24)	1.45 (36.8)	1.44 (36.6)	1.56 (39.6)
L <sub>2</sub>	5/16 X 5/32 (8 X 4)	5/16 X 5/32 (8 X 4)	1/2 X 1/4 (12.7 X 6.4)	5/8 X 5/16 (15.9 X 7.9)	3/4 X 3/8 (19 X 19.5)	1 X 1/2 (25.4 X 12.7)	1 X 1/2 (25.4 X 12.7)
M	1.00 (25.4)	1.00 (25.4)	1.75 (44.5)	2.50 (63.5)	2.75 (69.8)	3.75 (95.25)	4.00 (101.6)
N <sub>6</sub>	1.2485 (31.712)	1.2485 (31.712)	1.9985 (50.762)	2.4985 (63.462)	2.9985 (76.162)	3.4985 (88.862)	3.9985 (101.562)
P <sub>3</sub>	7/8-14	7/8-14	1-1/16-12	1-5/16-12	1-5/8-12	1-7/8-12	1-7/8-12
Q	0.94 (24)	0.94 (24)	1.25 (31.75)	1.63 (41.4)	2.00 (50.8)	2.50 (63.5)	2.50 (63.5)
R	0.75 (19)	0.75 (19)	1.88 (25.4)	1.00 (25.4)	1.00 (25.4)	1.25 (31.75)	1.25 (31.75)
S	4.25 (108)	4.25 (108)	8.00 (203)	10.50 (267)	12.50 (317.5)	14.25 (362)	16.00 (406.4)
T <sub>4</sub>	2.125 (53.98)	2.125 (53.98)	4.00 (101.6)	5.25 (133.35)	6.25 (158.75)	7.125 (180.98)	8.00 (203.2)
U	2.12 (53.85)	2.12 (53.85)	4.00 (101.6)	5.25 (133.4)	6.25 (158.75)	7.12 (180.8)	8.00 (203.2)
V	1.63 (41.4)	1.63 (41.4)	3.00 (76.2)	4.25 (108)	5.00 (127)	6.00 (152.4)	6.75 (171.5)
W	3.25 (82.55)	3.25 (82.55)	6.00 (152.4)	8.50 (216)	10.00 (254)	12.00 (304.8)	13.50 (343)
X	4.25 (108)	4.25 (108)	8.00 (203)	10.50 (267)	12.50 (317.5)	14.25 (362)	16.00 (406.4)
Y	1.63 (41.4)	1.63 (41.4)	3.00 (76.2)	4.25 (108)	5.00 (127)	6.00 (152.4)	6.75 (171.5)
Z	3.25 (82.55)	3.25 (82.55)	6.00 (152.4)	8.50 (216)	10.00 (254)	12.00 (304.8)	13.50 (342.9)
AA	3/8-16 0.56 DP	3/8-16 0.56 DP	3/4-10 1.12 DP	3/4-10 1.12 DP	1-8 1.75 DP	1-8 1.75 DP	1-1/4-7 2.00 DP
BB	6.25 (159)	6.25 (159)	11.00 (279)	13.50 (343)	16.50 (419)	18.25 (464)	20.50 (521)

<b>CC</b>	2.63 (66.8)	2.63 (66.8)	4.75 (120.7)	6.00 (152.4)	7.25 (184.15)	8.12 (206.2)	9.12 (231.6)
<b>DD</b>	5.25 (133.4)	5.25 (133.4)	9.50 (241.3)	12.00 (304.8)	14.50 (368.3)	16.25 (412.75)	18.25 (463.6)
<b>EE</b>	0.38 (10)	0.38 (10)	1.00 (25.4)	1.50 (38)	1.75 (44.5)	1.75 (44.5)	2.00 (51)
<b>FF<sub>4</sub></b>	2.50 (63.5)	2.50 (63.5)	5.00 (127)	6.75 (171.45)	8.00 (203.2)	8.875 (225.43)	10.00 (254)
<b>GG</b>	4.63 (117.6)	4.63 (117.6)	9.00 (229)	12.00 (305)	14.25 (362)	16.00 (406.4)	18.00 (457)
<b>HH</b>	1.12 (28.5)	1.12 (28.5)	2.00 (50.8)	2.00 (50.8)	2.50 (64)	3.00 (76)	3.00 (76)
<b>JJ</b>	3.06 (77.7)	5.06 (128.5)	5.00 (127)	6.00 (152.4)	7.50 (190.5)	9.50 (241.3)	11.25 (285.75)
<b>KK</b>	0.55 (14)	0.55 (14)	0.95 (24)	0.95 (24)	1.20 (30.5)	1.44 (36.6)	1.56 (40)
<b>LL</b>	1.08 (27.4)	1.08 (27.4)	1.95 (49.5)	1.95 (49.5)	2.45 (62)	2.91 (73.9)	3.19 (81)
<b>MM</b>	0.41 (10.4)	0.41 (10.4)	0.78 (19.8)	0.78 (19.8)	1.03 (26.2)	1.03 (26.2)	1.32 (33.5)

- 1 SEE NOTE ABOVE FOR SPLINE TYPE
- 2 SEE BELOW FOR OPTIONAL SHAFT FEATURES
- 3 SEE BELOW FOR OTHER PORT OPTIONS
- 4 TOLERANCE  $\pm 0.005$  (0.013)
- 6 TOLERANCE  $\pm 0.0005$  (0.01)

OPTIONAL NPT AND BSPP PORTING			OPTIONAL SHAFT HOLES	
MODEL	NATIONAL PIPE THREAD (NPT)	BRITISH STANDARD PIPE THREAD (BSPP)	POTENTIOMETER SHAFT HOLE (in)	SHAFT END TAPPED HOLE (in)
<b>MPJ-32</b>	3/8-18 NPT	3/8-19 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	3/8-16 UNC X 9/16 DP
<b>MPJ-34</b>	3/8-18 NPT	3/8-19 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	3/8-16 UNC X 9/16 DP
<b>MPJ-63</b>	3/4-14 NPT	3/4-14 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	1/2-13 UNC X 3/4 DP
<b>MPJ-84</b>	3/4-14 NPT	3/4-14 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	1/2-13 UNC X 3/4 DP
<b>MPJ-105</b>	1-11.5 NPT	1-11 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	3/4-10 UNC X 1-1/8 DP
<b>MPJ-116</b>	1-1/4-11.5 NPT	1-11 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	3/4-10 UNC X 1-1/8 DP
<b>MPJ-128</b>	1-1/4-11.5 NPT	1-11 BSPP	$\frac{0.2491}{0.2486}$ X 0.50DP	1-8 UNC X 1-1/2 DP



OPTIONAL MANIFOLD PORTING							
MODEL	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)
MPJ-32	1.250	37/64	3-1/8	5/16-18 UNC	1/2	-	-
MPJ-34	1.250	37/64	3-1/8	5/16-18 UNC	1/2	-	-
MPJ-63	2.000	5/8	3-3/4	3/8-16 UNC	9/16	-	-
MPJ-84	2.000	15/16	5	3/8-16 UNC	13/16	3/8-16 UNC	1/2
MPJ-105	2.750	1	5-3/4	1/2-13 UNC	11/16	1/2-13 UNC	11/16
MPJ-116	3.500	1-1/2	6-1/2	5/8-11 UNC	1	5/8-11 UNC	1
MPJ-128	3.500	1-1/2	6-1/2	5/8-11 UNC	1	5/8-11 UNC	1

**NOTES:**

1. Port locations are symmetrical to manifold mounting holes.
2. See above for port locations and spacing.

**OPTIONAL CROSS PORT RELIEF MANIFOLDS**

**OPTIONAL SPLINED SHAFT COUPLINGS**

SINGLE VANE 280° ROTATION (±5°)						
MODEL	TORQUE in-lbs (N-m)			VOLUMETRIC DISPLACEMENT in <sup>3</sup> (cm <sup>3</sup> )		APPROX. WEIGHT lb (kg)
	100 psi (6.9 bar)	500 psi (34.5 bar)	1000 psi (69.0 bar)	PER 280°	PER Radian	
MPJ-32	103 (11.64)	705 (79.63)	1,595 (180.24)	9.2 (150.79)	1.88 (30.81)	19 (8.6)
MPJ-34	206 (23.28)	1,410 (159.33)	3,190 (360.47)	18.4 (301.58)	3.76 (61.31)	26 (11.8)
MPJ-63	600 (67.80)	4,090 (462.17)	9,280 (1048.64)	53.30 (873.59)	10.90 (179)	122 (55.2)
MPJ-84	1,430 (161.59)	9,750 (1101.75)	22,100 (2497.30)	127.40 (2088.09)	26.07 (428)	203 (92.1)

<b>MPJ-105</b>	2,850 (322.05)	19,400 (2192.20)	44,000 (4972)	253.3 (4151.59)	51.83 (850)	348 (157.9)
<b>MPJ-116</b>	4,650 (525.45)	31,700 (3582)	71,800 (8113)	412.9 (6767.43)	84.50 (1386)	552 (250.4)
<b>MPJ-128</b>	6,625 (748.63)	45,151 (5102)	102,345 (11565)	588.4 (9643.88)	120.41 (1975)	835 (378.8)

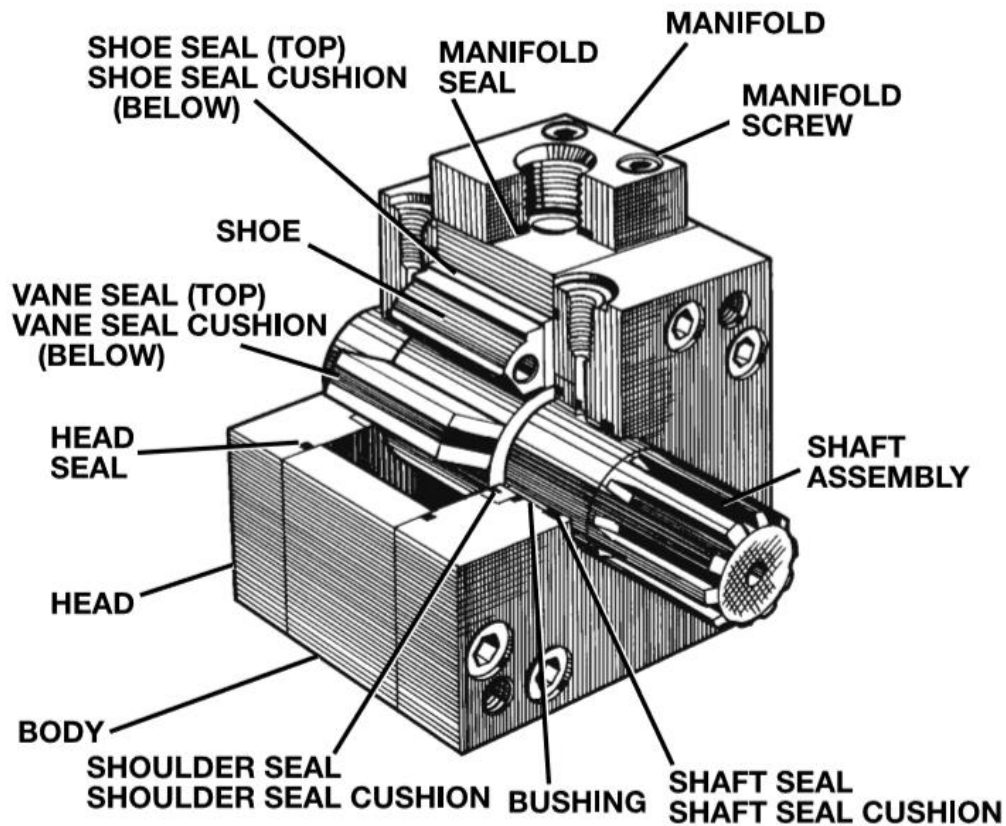
\*For 1,500 psi (103.4 BAR) contact factory.

<b>DOUBLE VANE 100° ROTATION (±5°)</b>						
<b>MODEL</b>	<b>TORQUE in-lbs (N-m)</b>			<b>VOLUMETRIC DISPLACEMENT in<sup>3</sup> (cm<sup>3</sup>)</b>		<b>APPROX. WEIGHT lb (kg)</b>
	<b>100 psi (6.9 bar)</b>	<b>500 psi (34.5 bar)</b>	<b>1000 psi (69.0 bar)</b>	<b>PER 100°</b>	<b>PER Radian</b>	
<b>MPJ-32</b>	225 (25.43)	1,540 (174)	3,380 (381.94)	6.60 (108.17)	3.78 (62)	20 (9.1)
<b>MPJ-34</b>	450 (50.85)	3,080 (348.04)	6,750 (762.75)	13.00 (213.07)	7.44 (122)	27 (12.2)
<b>MPJ-63</b>	1,310 (148.03)	8,950 (1011.35)	19,600 (2214.80)	38.0 (622.82)	21.77 (357)	126 (57.2)
<b>MPJ-84</b>	3,120 (352.56)	21,350 (2412.55)	46,700 (5277.00)	91.0 (1491.49)	52.14 (855)	212 (96.2)
<b>MPJ-105</b>	6,220 (702.86)	42,500 (4802.50)	93,300 (10542.90)	181.0 (2966.59)	103.7 (1700)	364 (165.1)
<b>MPJ-116</b>	10,100 (1141.30)	69,300 (7831)	152,100 (17187)	295.0 (4835.05)	169.0 (2772)	581 (263.5)
<b>MPJ-128</b>	14,450 (1633)	98,735 (11157)	216,730 (24490)	420.3 (6888.72)	240.8 (3950)	875 (396.9)

\*For 1,500 psi (103.4 BAR) contact factory.

<b>TEST PARAMETERS - OIL</b>			
<b>MODEL</b>	<b>MAX BREAK IN psi (bar)</b>	<b>BY-PASS LEAKAGE-MAX ALLOWABLE</b>	
		<b>in<sup>3</sup>/min AT 3000 psi (206.9 bar)</b>	<b>cm<sup>3</sup>/min AT 3000 psi (206.9 bar)</b>
<b>MPJ-32</b>	50 (3.45)	12	197
<b>MPJ-34</b>	50 (3.45)	12	197
<b>MPJ-63</b>	50 (3.45)	13	213
<b>MPJ-84</b>	40 (2.8)	14	229
<b>MPJ-105</b>	40 (2.8)	15	246
<b>MPJ-116</b>	40 (2.8)	16	262
<b>MPJ-128</b>	40 (2.8)	17	279

## HOW TO ORDER MPJ-32 THRU MPJ-128



### HOW TO ORDER

Please fill in ALL blocks in accordance with the KEY numbers and letters shown below.

**EXAMPLE:** **MPJ** - **34** - **1V** - **SE** - **K** - **E/B** - **2**

-  -  -  -  -  -

**BLOCK #**     **1**     **2**     **3**     **4**     **6**     **7**     **8**

**Block 1 (MODEL)**

MPJ

**Block 2 (SIZE)**

32  
34  
63  
84  
105  
116  
128

**Block 3 (VANES)**

1V Single Vane  
2V Double Vane

**Block 4 (SHAFT EXTENSION)**

SE Single Extension  
DE Double Extension

**Block 6 (SHAFT TYPE)**

SS 10-B Spline  
K Keyed  
PL Plain  
Z Special

**Block 7 (MOUNTING)**

E/B End/Base  
FT Foot  
FLG Flange  
Z Special

**Block 8 (PORTING)**

1 NPT  
2 SAE Straight Threads (Standard)  
7 Manifold Ports  
0 BSPP Straight Threads  
Z Special

NOTES: 1. Block "5" isn't used for MPJ models

2. All "Z" (non-standard feature request) requires a "Request a Quote" to be filled out for Micromatic to review requirements