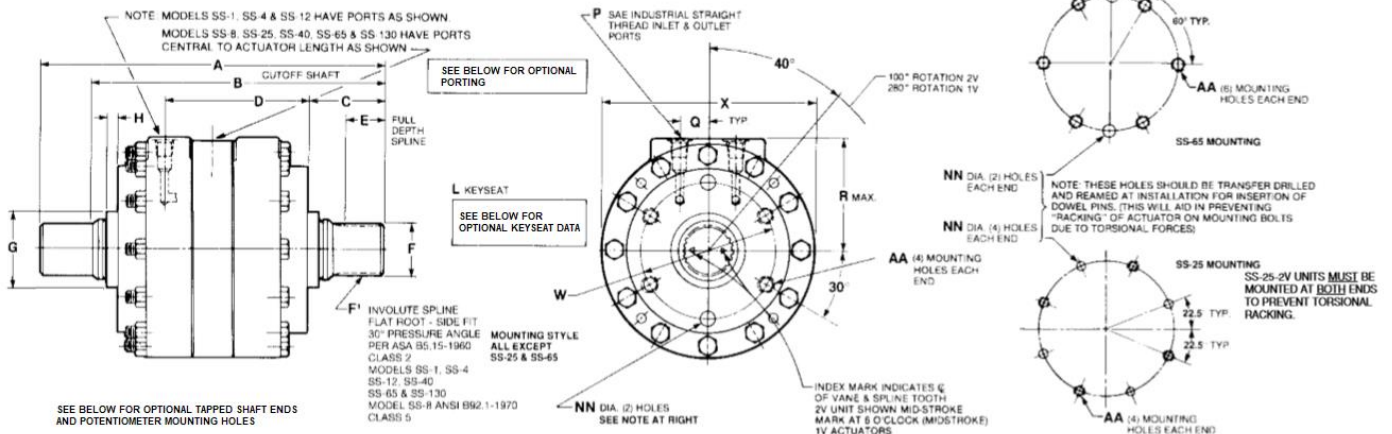
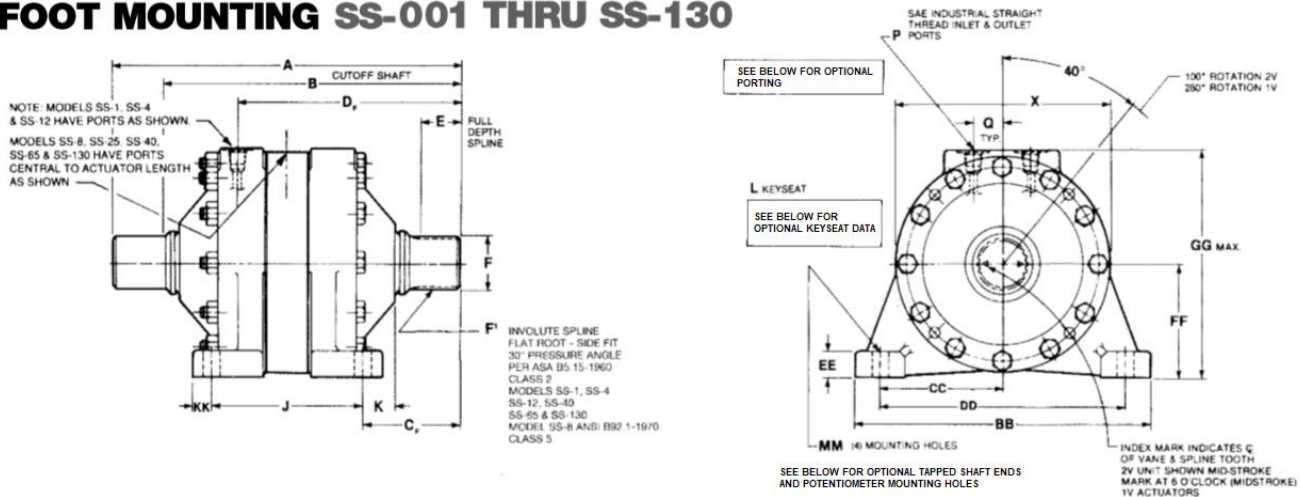


END MOUNTING SS-001 THRU SS-130



FOOT MOUNTING SS-001 THRU SS-130



IMPORTANT NOTES TO AVOID ACTUATOR DAMAGE AND VOIDED WARRANTY:

1. 2,000 psi maximum is recommended for severe duty applications, such as operating at maximum torque at high cycle rates for extended periods. Please consult factory for test applications beyond 2,000 psi. 3,000 psi can be used on intermittent shockless actuations.
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).

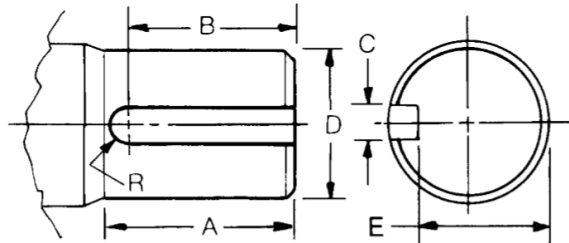
DIMENSION IN INCHES (MILLIMETERS)

SS-001	SS-004	SS-008	SS-012	SS-025	SS-040	SS-065	SS-130
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A	7.66 (194.56)	10.50 (266.70)	11.69 (296.92)	14.12 (358.90)	21.28 (540.51)	20.06 (509.52)	23.75 (603.25)	29.75 (755.65)
B	6.91 (175.51)	9.05 (229.87)	9.85 (250.19)	11.94 (303.28)	17.06 (433.32)	16.35 (415.29)	19.75 (501.65)	23.50 (596.9)
C	1.38 (35.05)	2.34 (59.43)	2.84 (72.14)	3.31 (84.07))	5.81 (147.57)	5.06 (128.52)	6.26 (159.00)	8.12 (206.25)
C_F	2.19 (55.63)	2.94 (74.68)	3.28 (83.31)	4.00 (101.60)	5.52 (140.21)	5.38 (136.65)	6.26 (159.00)	8.75 (222.25)
D	3.35 (85.09)	4.40 (111.76)	3.00 (76.2)	5.75 (146.05)	4.81 (122.17)	4.96 (125.98)	6.38 (162.05)	6.75 (171.45)
D_F	4.69 (119.13)	6.75 (171.45)	5.64 (148.34)	9.06 (230.12)	10.64 (270.26)	10.03 (254.76)	11.95 (303.53)	14.87 (377.70)
E	0.59 (14.98)	1.22 (30.98)	1.75 (44.45)	1.89 (48.00)	3.27 (83.06)	3.27 (83.06)	3.88 (98.55)	5.50 (139.70)
F₆	Ø1.0355 (Ø26.302)	Ø1.5452 (Ø39.249)	Ø1.9362 (Ø49.181)	Ø2.1962 (Ø55.785)	Ø3.3445 (Ø84.950)	Ø3.3445 (Ø84.950)	Ø3.8435 (Ø97.625)	Ø5.2935 (Ø134.455)
F₁	20T 20/40P 1.0000PD	24T 16/32P 1.5000PD	30T 16/32P 1.8750PD	26T 12-24P 2.1667PD	26T 8/16P 3.2500PD	26T 8/16P 3.2500PD	30T 8/16P 3.7500PD	31T 8/12P 5.1667PD
G	1.63 (41.40)	2.25 (57.15)	3.25 (87.55)	3.25 (87.55)	6.00 (152.40)	4.75 (120.65)	6.50 (165.10)	10.25 (260.35)
H	0.13 (3.30)	0.34 (8.64)	0.44 (11.18)	0.56 (14.22)	1.38 (35.05)	0.69 (17.53)	0.75 (19.05)	1.13 (28.70)
J	3.27 (83.06)	4.62 (117.35)	5.12 (130.05)	6.12 (155.45)	10.25 (260.35)	9.3 (236.22)	11.38 (289.05)	12.25 (311.15)
K	0.94 (23.88)	0.94 (23.88)	0.87 (22.10)	1.25 (31.75)	1.07 (27.18)	1.00 (25.4)	1.44 (36.58)	1.75 (44.45)
L₂	1/4 X 1/8 (6.35X3.17) 0.75	3/8 X 3/16 (9.52X4.76) 1.25	1/2 X 1/4 (12.70X6.35) 1.88	1/2 X 1/4 (12.70X6.35) 2.00	3/4 X 3/8 (19.05X9.52) 3.25	3/4 X 3/8 (19.05X9.52) 3.25	1 X 1/2 (25.4X12.7) 3.88	1-1/4 X 5/8 (31.75X15.87) 5.50
P₃	7/16-20	9/16-18	9/16-18	3/4-16	7/8-14	1-5/16-12	1-5/16-12	1-5/8-12
Q	0.50 (12.70)	0.88 (22.35)	1.12 (28.45)	1.25 (31.75)	1.78 (45.21)	1.88 (47.75)	2.13 (54.10)	2.75 (69.85)
R	2.62 (66.55)	3.53 (89.66)	4.25 (107.95)	4.81 (122.17)	5.53 (140.46)	7.00 (177.80)	7.75 (196.85)	10.12 (257.05)
W	2.63 (66.80)	4.13 (104.90)	5.00 (127.00)	5.63 (143.00)	9.00 (228.60)	8.75 (222.25)	9.00 (228.60)	13.50 (342.90)
X	4.88 (123.95)	6.65 (168.91)	8.41 (213.61)	9.15 (232.41)	10.44 (265.18)	13.50 (342.90)	15.00 (381.00)	20.00 (508.00)
AA	3/8-16 0.75DP (19.05)	1/2-13 1.0DP (25.40)	1/2-13 1.0DP (25.40)	5/8-11 1.25DP (31.75)	5/8-11 1.25DP (31.75)	3/4-10 1.50DP (38.10)	3/4-10 1.25DP (31.75)	1-8 2.0DP (50.80)
BB	6.50 (165.10)	9.00 (228.60)	11.00 (279.40)	11.88 (301.75)	13.00 (330.20)	15.25 (387.35)	19.00 (482.60)	25.25 (641.35)
CC	2.75 (69.85)	3.75 (95.25)	4.75 (120.65)	5.06 (128.52)	5.00 (127.00)	6.50 (165.10)	8.00 (203.20)	11.00 (279.40)
DD	5.50 (139.70)	7.50 (190.50)	9.50 (241.30)	10.13 (257.30)	10.00 (254.00)	13.00 (330.20)	16.00 (405.40)	22.00 (558.80)
EE	0.63	0.75	0.94	0.94	1.25	1.13	1.69	1.50

	(16.00)	(19.05)	(23.88)	(23.88)	(31.75)	(28.70)	(42.93)	(38.10)
FF₄	2.50 (63.50)	3.38 (85.85)	4.375 (111.13)	4.63 (117.60)	5.38 (136.65)	6.88 (174.75)	7.875 (200.03)	10.13 (257.30)
GG	5.13 (130.30)	6.91 (175.51)	8.63 (219.20)	9.44 (239.78)	10.75 (273.05)	13.75 (349.25)	15.63 (397.00)	20.25 (514.35)
KK	0.50 (12.70)	0.63 (16.00)	0.91 (23.11)	0.88 (22.35)	1.07 (27.18)	1.00 (25.40)	1.44 (36.58)	1.62 (41.11)
MM	0.41 (10.41)	0.53 (13.46)	0.69 (17.53)	0.78 (19.81)	0.97 (23.88)	1.06 (26.92)	1.31 (33.27)	1.56 (39.62)
NN₅	0.41 (10.41)	0.47 (11.94)	0.47 (11.94)	0.59 (14.98)	0.62 (15.75)	0.84 (21.30)	0.84 (21.30)	1.22 (30.99)
	0.75DP (19.05)	0.75DP (19.05)	0.75DP (19.05)	1.25DP (31.75)	1.75DP (44.45)	1.75DP (44.45)	1.50DP (38.10)	2.00DP (50.80)

- 1 SEE NOTE ABOVE FOR SPLINE TYPE
- 2 SEE BELOW FOR OPTIONAL SHAFT FEATURES
- 3 SEE BELOW FOR OTHER PORT OPTIONS
- 4 TOLERANCE ± 0.005 (0.013)
- 5 MODEL SS-025 HAS (4) HOLES ON A 90° PATTERN ROTATED 22.5° COUNTER-CLOCKWISE
TOLERANCE ± 0.00075 (0.019) FOR SS-004, SS-008, AND SS-012
- 6 TOLERANCE ± 0.0015 (0.038) FOR SS-025 AND SS-040
TOLERANCE ± 0.0025 (0.064) FOR SS-065 AND SS-0130



OPTIONAL KEYWAY DATA FOR SS-001 THRU SS-130							
MODEL	(A) SHAFT EXT (in)	(B) KEYWAY LENGTH ± 0.02 (in)	(C) KEYWAY WIDTH $+ 0.0005$ -0.0015 (in)	(D) SHAFT DIA. (in)	(E) KEYWAY DEPTH (in)	MAX.* RECOMMENDED TORQUE (ONE KEY) (in-lbs)	MAX. SUPPLY PRESSURE (psi)
SS-001-1V SS-001-2V	1.07	0.750	0.250	<u>1.0360</u> 1.0350	<u>0.905</u> 0.910	1,620	1,350 (1V) 675 (2V)
SS-004-1V SS-004-2V	1.83	1.250	0.375	<u>1.5460</u> 1.5445	<u>1.353</u> 1.358	6,040	1,585 (1V) 793 (2V)
SS-008-1V SS-008-2V	2.28	1.875	0.500	<u>1.9370</u> 1.9355	<u>1.681</u> 1.686	15,140	1,892 (1V) 946 (2V)
SS-012-1V SS-012-2V	2.63	2.000	0.500	<u>2.1970</u> 2.1955	<u>1.941</u> 1.946	18,320	1,472 (1V) 736 (2V)
SS-025-1V SS-025-2V	4.11	3.250	0.750	<u>3.000</u> 2.998	<u>2.625</u> 2.620	60,975	2,448 (1V) 1,224 (2V)
SS-040-1V SS-040-2V	4.11	3.250	0.750	<u>3.3460</u> 3.3430	<u>2.963</u> 2.968	67,990	1,700 (1V) 850 (2V)

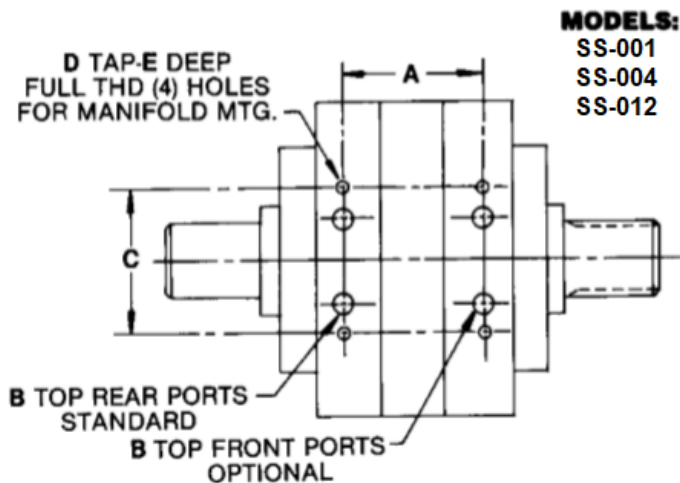
SS-065-1V SS-065-2V	4.54	3.875	1.000	<u>3.846</u> 3.841	<u>3.341</u> 3.345	124,190	1,910 (1V) 955 (2V)
SS-130-1V SS-130-2V	6.66	5.500	1.250	<u>5.2960</u> 5.2920	<u>4.667</u> 4.662	303,520	2,335 (1V) 1,167 (2V)

***NOTES:**

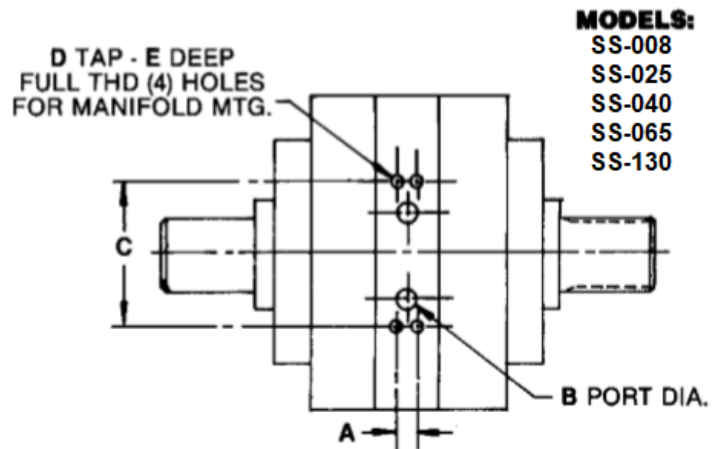
1. Keyway drives are recommended only for low pressure and low cycle applications. Note the maximum recommended torque for each model in the table below. Maximum recommended torque values are based on using a key with minimum yield strength of 65,000 psi and operating the unit within normal accepted application guidelines.
2. For double keyway use (1.75) times this value up to full torque capacity of the actuator.
3. Standard keyway is located at 12 o'clock when shaft is at mid-position of travel.

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)
SS-001	1/8-27 NPT	1/8-28 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	5/16-18 UNC X 1/2 DP
SS-004	1/4-18 NPT	1/4-19 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	3/8-16 UNC X 9/16 DP
SS-008	3/8-18 NPT	3/8-19 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	1/2-13 UNC X 3/4 DP
SS-012	3/8-18 NPT	3/8-19 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	1/2-13 UNC X 3/4 DP
SS-025	1/2-14 NPT	1/2-14 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	3/4-10 UNC X 1-1/8 DP
SS-040	1-11.5 NPT	3/4-14 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	3/4-10 UNC X 1-1/8 DP
SS-065	1-11.5 NPT	1-11 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	1-8 UNC X 1-1/2 DP
SS-130	1-11.5 NPT	1-11 BSPP	$\frac{0.2491}{0.2486} \times 0.50DP$	1-8 UNC X 1-1/2 DP

Solid Shaft Series



Solid Shaft Series



OPTIONAL MANIFOLD PORTING					
MODEL	A (in)	B (in)	C (in)	D (in)	E (in)
SS-001	1.848	5/32	2	1/4-20 UNC	3/8
SS-004	3.000	1/4	3	1/4-20 UNC	1/2
SS-008	1.125	1/2	3-1/4	5/16-18 UNC	11/16
SS-012	4.000	5/16	4	3/8-16 UNC	5/8
SS-025	1.875	11/16	4-7/8	1/2-13 UNC	1-1/8
SS-040	2.000	7/8	6	1/2-13 UNC	1
SS-065	3.000	1-5/32	6-1/2	5/8-11 UNC	1
SS-130	2.750	1-5/32	8-1/4	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 ³ (cm ³)		APPROX. WEIGHT lb (kg)
	1000 psi (69.0 bar)	2000 psi (137.9 bar)	3000 psi (206.9 bar)	PER 280°	PER Radian	
SS-001	1,080 (122)	2,160 (244)	3,240 (366)	5.85 (95.88)	1.20 (19.66)	21.5 (9.75)
SS-004	3,430 (388)	6,860 (775)	10,300 (1164)	18.59 (304.69)	3.81 (62.44)	48.5 (23)
SS-008	7,200 (814)	14,400 (1627)	21,600 (2440)	39.04 (639.86)	8.00 (131.12)	78 (35)
SS-012	11,210 (1266)	22,420 (2533)	33,615 (3798)	60.75 (995.69)	12.45 (204.05)	121.5 (55)
SS-025	22,410 (2532)	44,820 (5065)	67,230 (7597)	121.51 (1991.54)	24.90 (408.11)	220 (100)
SS-040	36,000 (4068)	72,000 (8136)	108,000 (12204)	195.20 (3199.32)	40.00 (655.60)	355 (161)
SS-065	58,500 (6611)	117,000 (13221)	175,500 (19831)	317.20 (5198.90)	65.00 (1065.35)	560 (254)
SS-130	117,000 (13221)	234,000 (26442)	351,000 (39663)	634.40 (10397.81)	130 (2130.70)	975 (442)

*2,000 psi maximum is recommended for severe duty applications, such as operating at maximum torque at high cycle rates for extended periods.

DOUBLE VANE 100° ROTATION (±5°)						
MODEL	TORQUE in-lbs (N-m)			VOLUMETRIC DISPLACEMENT in ³ (cm ³)		APPROX. WEIGHT lb (kg)
	1000 psi (69.0 bar)	2000 psi (137.9 bar)	3000 psi (206.9 bar)	PER 100°	PER Radian	

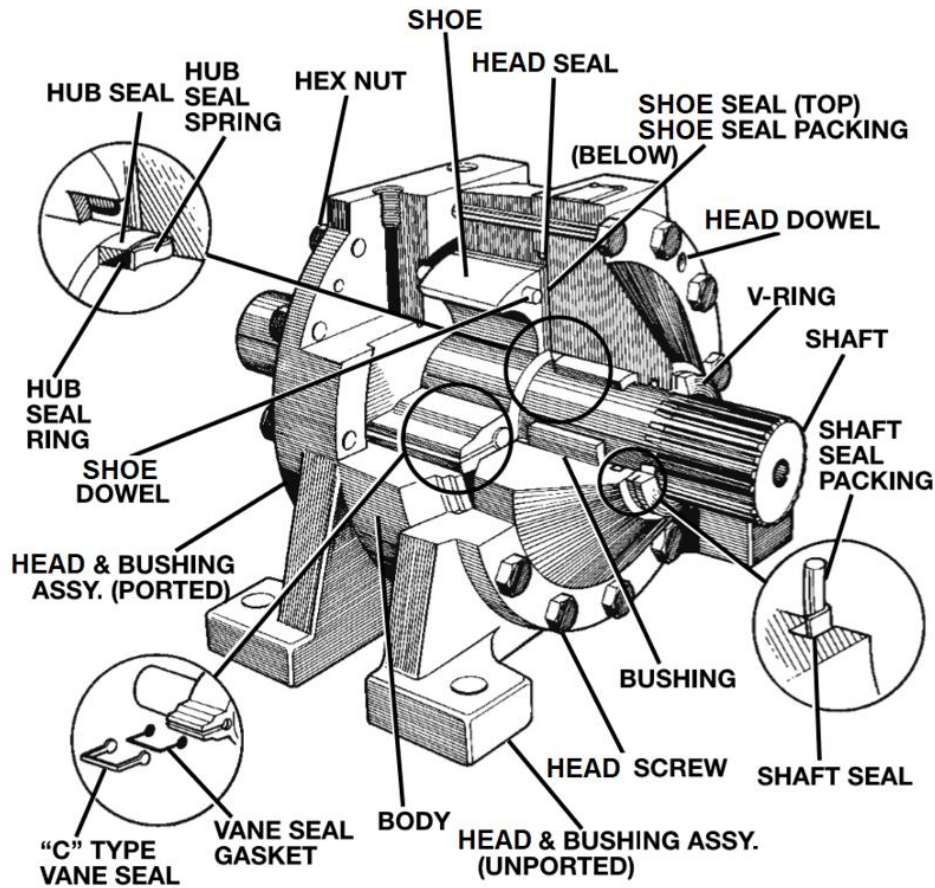
SS-001	2,280 (257)	4,560 (515)	6,840 (773)	4.18 (68.51)	2.40 (39.33)	22 (10)
SS-004	7,230 (817)	14,460 (1634)	21,700 (2452)	13.29 (217.82)	7.62 (124.89)	50 (23)
SS-008	15,200 (1718)	30,400 (3435)	45,600 (5153)	27.92 (457.60)	16 (262.24)	80 (36.29)
SS-012	23,660 (2673)	47,320 (5347)	70,965 (8019)	43.45 (712.14)	24.90 (408.11)	125 (57)
SS-025	47,310 (5346)	94,620 (10692)	141,930 (16038)	86.41 (1416.31)	49.80 (816.22)	230 (104)
SS-040	76,000 (8588)	152,000 (17176)	228,000 (25764)	139.61 (2288)	80.00 (1311)	370 (168)
SS-065	123,500 (13955)	247,000 (27911)	370,500 (41866)	226.87 (3718)	130 (2130)	582 (264)
SS-130	247,000 (27911)	494,000 (55822)	741,000 (83733)	453.75 (7436)	260 (4261)	1,035 (469)

*2,000 psi maximum is recommended for severe duty applications, such as operating at maximum torque at high cycle rates for extended periods.

TEST PARAMETERS - OIL			
MODEL	MAX BREAK IN psi (bar)	BY-PASS LEAKAGE-MAX ALLOWABLE	
		in³/min AT 3000 psi (206.9 bar)	cm³/min AT 3000 psi (206.9 bar)
SS-001	100 (6.9)	14	229
SS-004	50 (3.44)	16	262
SS-008	50 (3.44)	18	295
SS-012	50 (3.44)	20	328

SS-025	50 (3.44)	22	360
SS-040	50 (3.44)	25	410
SS-065	50 (3.44)	28	459
SS-130	50 (3.44)	43	704

HOW TO ORDER SS-001 THRU SS-130



HOW TO ORDER

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

EXAMPLE: - - - - - - -

- - - - - - -

BLOCK # **1** **2** **3** **4** **5** **6** **7** **8**

Block 1 (MODEL)

SS Solid Shaft

Block 2 (SIZE)

001

004

008

012

025

040

065

130

Block 3 (VANES)

1V Single Vane

2V Double Vane

Block 4 (MOUNTING)

E End

F Foot

Z Special

Block 5 (SEALS)

B Buna "N" Standard Shaft Seal

V Viton Standard Shaft Seal

E Ethylene Propylene

Block 6 (SHAFT CONFIGURATION)

A Standard (Involute spline & plain)

B Plain end cut off

C Plain both ends

D Plain one end – Single key other end

E Plain one end – Double key other end

F Plain end cut off – Single key other end

G Plain end cut off – Double key other end

H Single key both ends

J Double key both ends

K Spline one end – Single key other end

L Spline one end – Double key other end

N Splined both ends

Z Special

Block 7 (SHAFT MODIFICATION)

A Standard (No modifications)

B Drill, tap drive end of shaft

C Drill, tap both ends of shaft

*D Potentiometer shaft hole opposite drive end

E Drill & tap end opposite drive end

Z Special

Block 8 (PORTING)

1 NPT

2 SAE Straight Threads (Standard)

3 Double NPT ports

4 Double SAE ports

**5 End Ports – NPT

**6 End Ports – SAE

7 Manifold Ports (See Optional

Porting for details)

8 Body ports – NPT

9 Double Manifold ports

0 BSPP Straight Threads

Z Special

* See below for sizes

** "End Ports" for HS Series means on non-mounting end, parallel to shaft.

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

Contact Micromatic Customer Service with special feature requests @ CustomerService@micromaticllc.com or 800.333.5752.