

VM3B1
VM3B - 036 - 1 N 00 - B 1 01 *

Series external drain

Series internal drain

Torque

- 009 = 0.130 Nm/bar
- 012 = 0.186 Nm/bar
- 018 = 0.304 Nm/bar
- 027 = 0.485 Nm/bar
- 036 = 0.624 Nm/bar

Type of shaft

- 1 - keyed (no SAE)
- 3 - splined (SAE A)
- 4 - splined (SAE B)

Rotation

N - bi-directional

View from shaft end:

- CW rotation A = inlet
B = outlet
- CCW rotation A = outlet
B = inlet

Modifications

Port connections

- 00 = SAE threaded port
SAE drain
- 01 = SAE 4 bolt flange
BSPP drain
- 02 = BSPP threaded port
BSPP drain

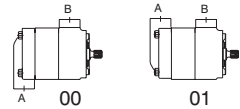
Seal class

- 1 - S1
- 4 - S4
- 5 - S5

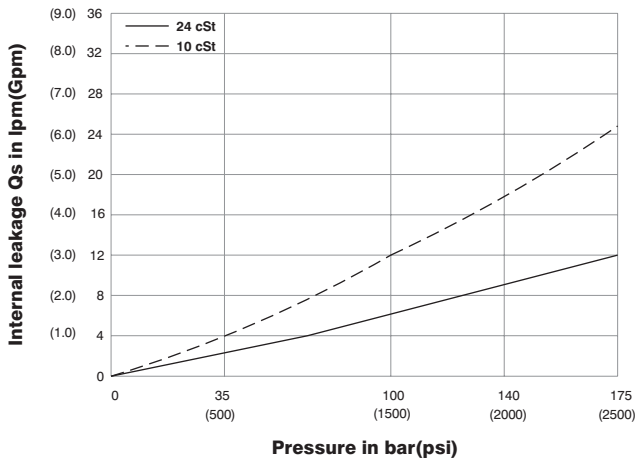
Design letter

Porting combination

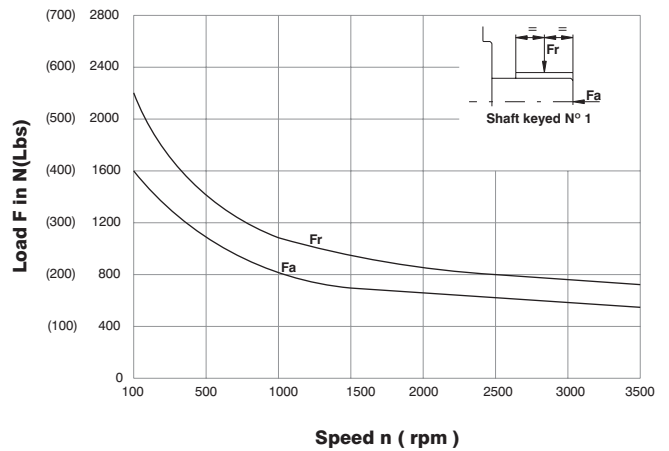
00 - standard



INTERNAL LEAKAGE



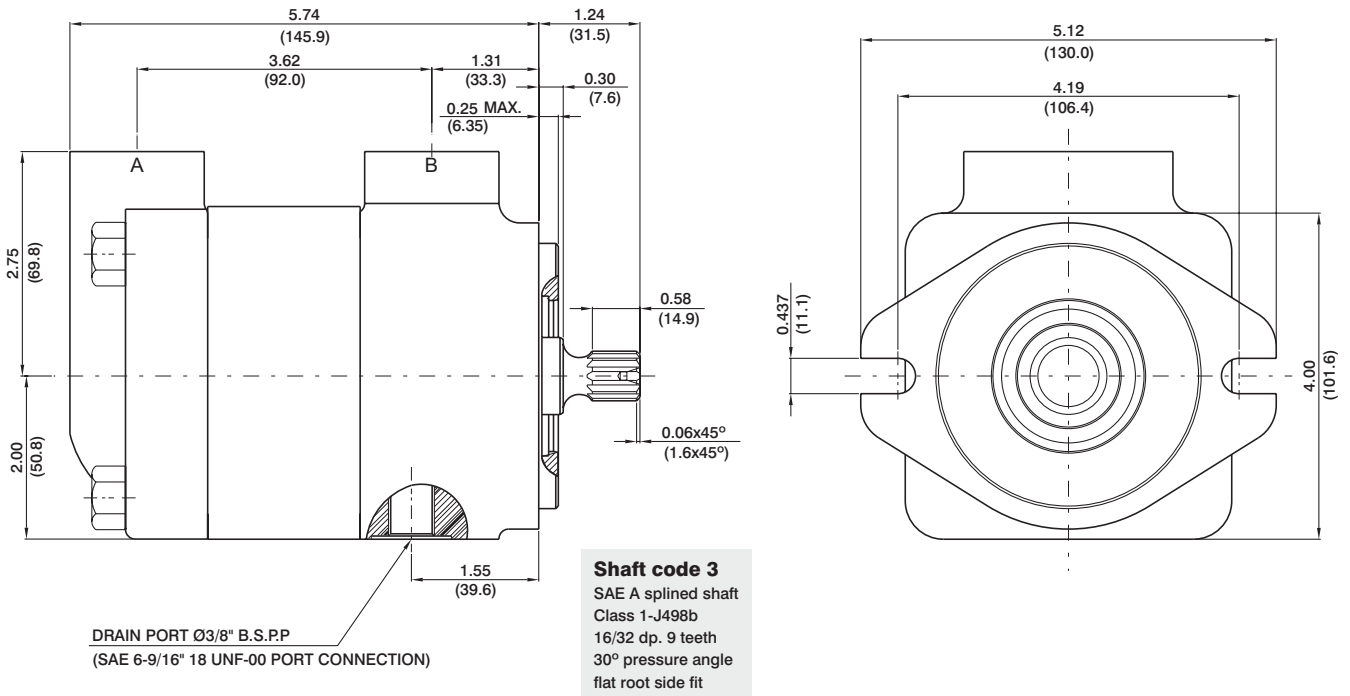
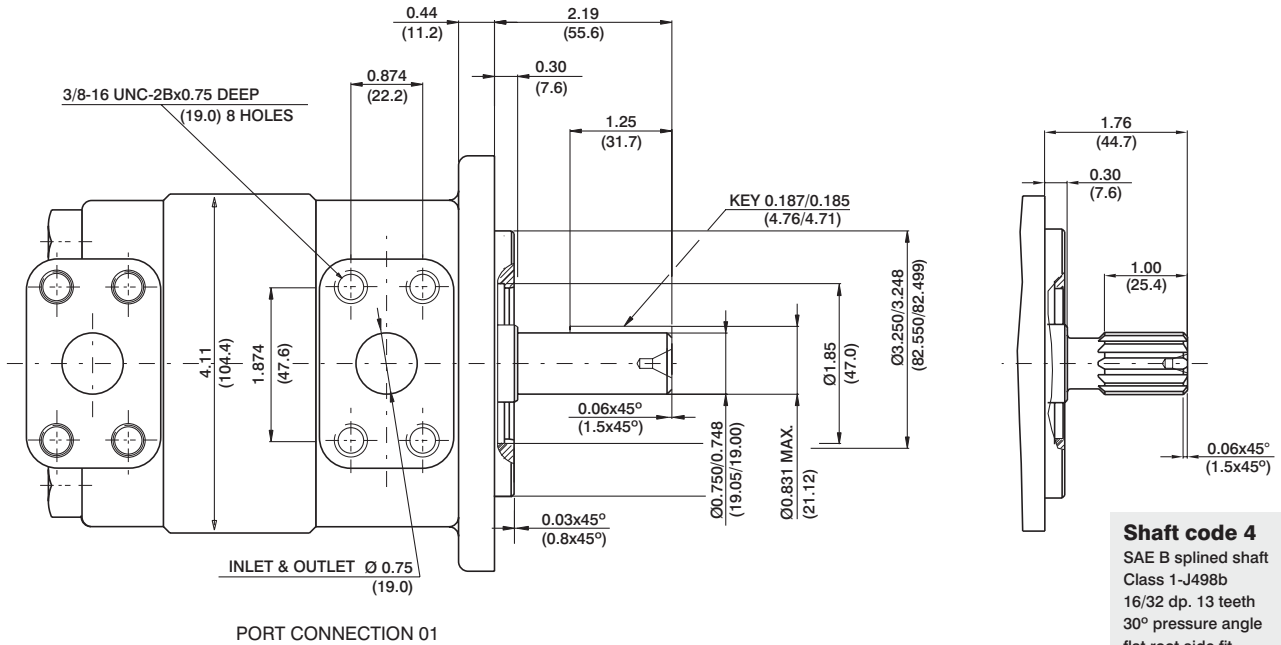
PERMISSIBLE RADIAL AND AXIAL LOADS



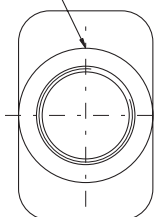
Do not apply Fr and Fa loads simultaneously

OPERATING CHARACTERISTICS - TYPICAL (24 cSt)

Model	Series	Volumetric Displacement Vi		Input flow at n = 2000 rpm				Torque T at n = 2000 rpm		Power output at n = 2000 rpm	
				Theoretical		at 175 bar (2500 psi) Δp		at 175 bar (2500 psi) Δp		at 175 bar (2500 psi) Δp	
		in ³ /rev	cm ³ /rev	GPM	l/min	GPM	l/min	in.lbf	Nm	HP	KW
VM3B	009	0.56	9.2	4.9	18.4	8.0	30.4	174.3	19.7	5.8	4.3
	012	0.75	12.3	6.5	24.6	9.7	36.6	236.3	26.7	7.8	5.8
	018	1.13	18.5	9.8	37.0	12.9	49.0	412.4	46.6	13.4	10.0
	027	1.70	27.8	14.7	55.6	17.8	67.6	680.5	77.4	21.8	16.3
	036	2.26	37.1	19.6	74.2	22.8	86.2	902.6	102.0	28.3	21.1

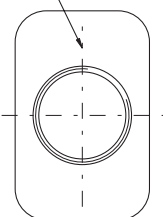


SAE 12(1 1/16"-12 UNF)



PORT CONNECTION 00

3/4 BSPP-0.75 DEEP (19.0)



PORT CONNECTION 02



VM4*C1

VM4*C - 067 - 1 N 00 - A 1 02 *

Series external drain

Series internal drain

Torque

- 024 = 0.39 Nm/bar
- 027 = 0.45 Nm/bar
- 031 = 0.55 Nm/bar
- 043 = 0.74 Nm/bar
- 055 = 0.93 Nm/bar
- 067 = 1.13 Nm/bar
- 075 = 1.27 Nm/bar

Type of shaft

- 1 - keyed (SAE B)
- 2 - keyed (no SAE)
- 3 - splined (SAE B)

Rotation

N - Bi-directional

* S = Severe duty motor

VM4C1-VM4SC1 : Drain port is plugged

View from shaft end:

CW rotation A = inlet B = outlet

CCW rotation A = outlet B = inlet

Modifications

Port connections

- 01 = SAE threaded port
SAE drain
- 02 = SAE 4 bolt flange
UNC threaded - SAE drain
- 04 = SAE 4 bolt flange
UNC threaded - BSPP drain
- M4 = SAE 4 bolt flange
metric threaded - BSPP drain

Seal class

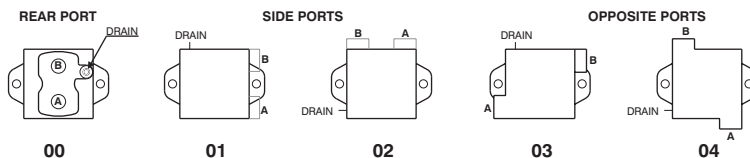
- 1 - S1 (VM4C)
- 5 - S5 (VM4SC)

Design letter

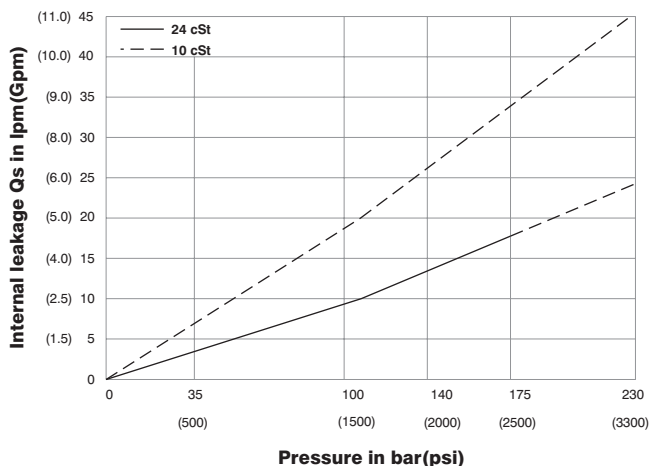
Porting combination

00 - standard

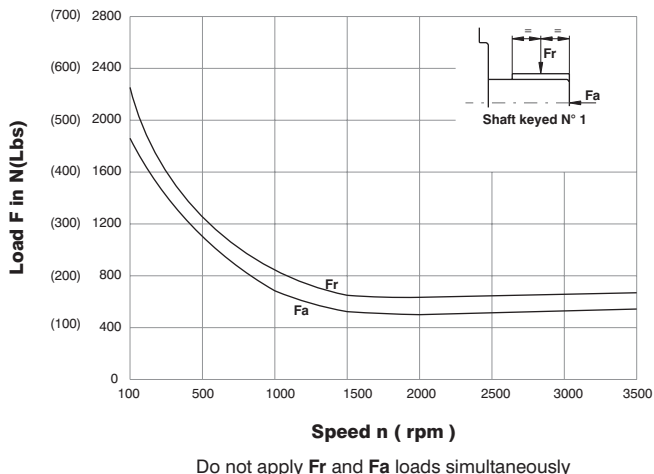
Porting combination



INTERNAL LEAKAGE

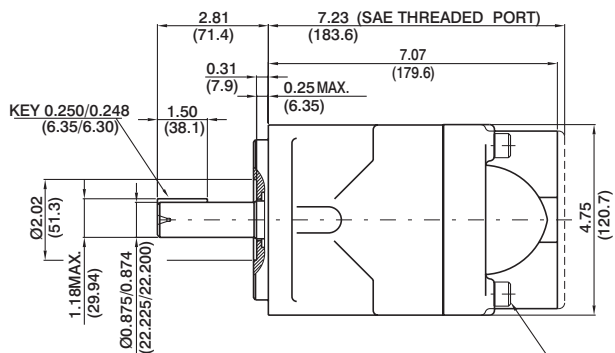


PERMISSIBLE RADIAL AND AXIAL LOADS



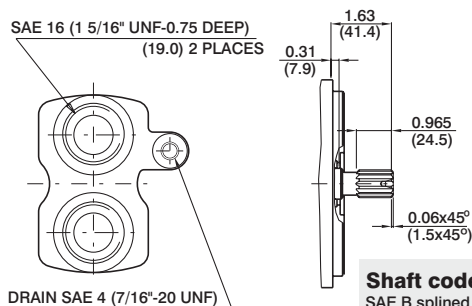
OPERATING CHARACTERISTICS - TYPICAL (24 cSt)

Model	Series	Volumetric Displacement Vi		Input flow at n = 2000 rpm				Torque T at n = 2000 rpm		Power output at n = 2000 rpm	
				Theoretical		at 175 bar (2500 psi) Δp		at 175 bar (2500 psi) Δp		at 175 bar (2500 psi) Δp	
		in ³ /rev	cm ³ /rev	GPM	l/min	GPM	l/min	in.lbf	Nm	HP	KW
VM4C-VM4SC	024	1.49	24.4	13.0	49.0	17.7	67.0	535.4	60.5	17.0	12.7
	027	1.72	28.2	14.8	56.0	19.5	74.0	619.5	70.0	19.7	14.7
	031	2.11	34.5	18.5	69.0	23.2	87.0	768.0	86.8	24.0	18.0
	043	2.84	46.5	24.6	93.0	29.3	111.0	1062.0	120.0	33.6	25.1
	055	3.59	58.8	31.2	118.0	36.0	136.0	1318.6	149.0	41.8	31.2
	067	4.34	71.1	37.5	142.0	42.3	160.0	1504.5	170.0	47.7	35.6
	075	4.89	80.1	42.3	160.0	47.0	178.0	1752.2	198.0	55.6	41.5



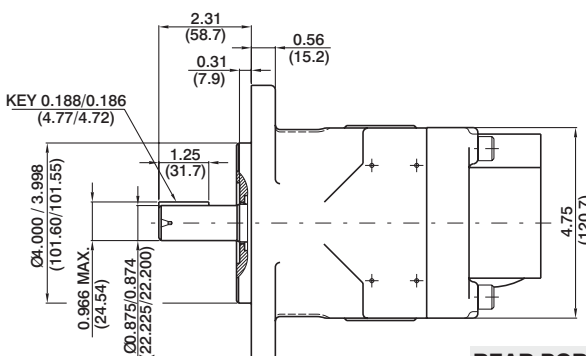
Shaft code 1
(Keyed SAE B)

MOUNTING TORQUE 75 ft.lbs
(102 Nm)



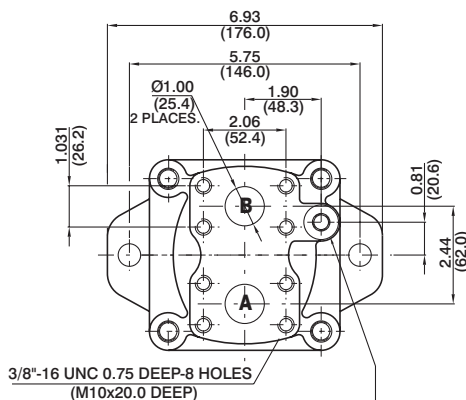
SAE THREADED PORT
DRAIN SAE 4 (7/16"-20 UNF)

Shaft code 3
SAE B splined shaft
Class 1-J498b
16/32 dp. 13 teeth
30° pressure angle
flat root side fit



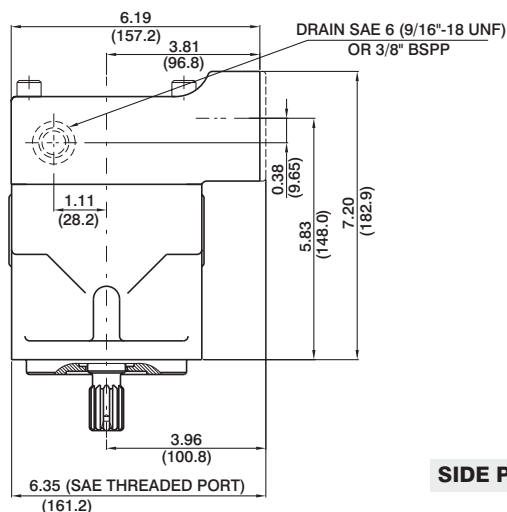
Shaft code 2
(Keyed no SAE)

REAR PORTS

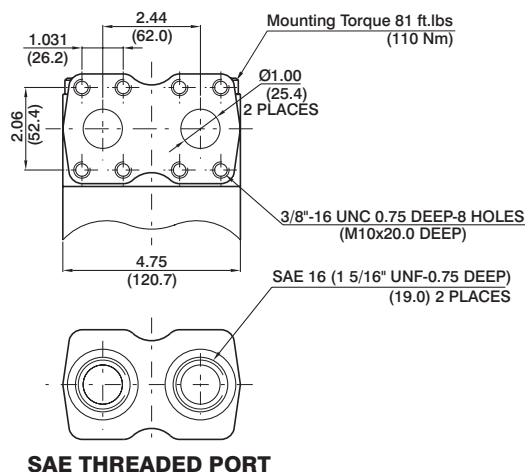


3/8"-16 UNC 0.75 DEEP-8 HOLES
(M10x20.0 DEEP)

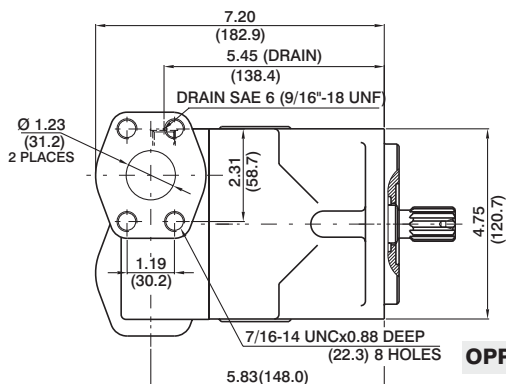
DRAIN SAE 4 (7/16"-20 UNF) OR 1/4" BSPP
(PLUG FOR INTERNAL DRAIN)



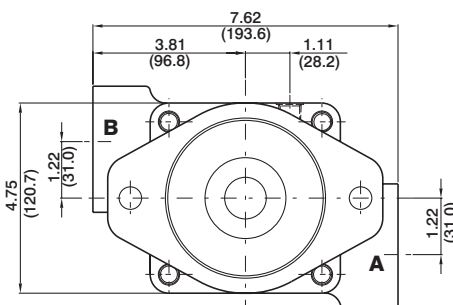
SIDE PORTS



SAE THREADED PORT



OPPOSITE PORTS



VM4*D1

VM4*D - 138 - 1 N 00 - B 1 02 *

Series external drain

Series internal drain

Torque

- 062 = 1.04 Nm/bar
- 074 = 1.22 Nm/bar
- 088 = 1.45 Nm/bar
- 102 = 1.68 Nm/bar
- 113 = 1.86 Nm/bar
- 128 = 2.11 Nm/bar
- 138 = 2.30 Nm/bar

Type of shaft

- 1 - keyed (SAE C)
- 3 - splined (SAE C)
- S - splined (SAE J718c)

Rotation

N - Bi-directional

*S = Severe duty motor

VM4D1-VM4SD1 : Drain port is plugged

View from shaft end:

CW rotation A = inlet B = outlet

CCW rotation A = outlet B = inlet

Modifications

Port connections

- 01 = SAE threaded port
SAE drain
- 02 = SAE 4 bolt flange
UNC threaded - SAE drain
- 04 = SAE 4 bolt flange
UNC threaded - BSPP drain
- M4 = SAE 4 bolt flange
metric threaded - BSPP drain

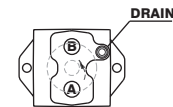
Seal class

- 1 - S1 (VM4D)
- 5 - S5 (VM4SD)

Design letter

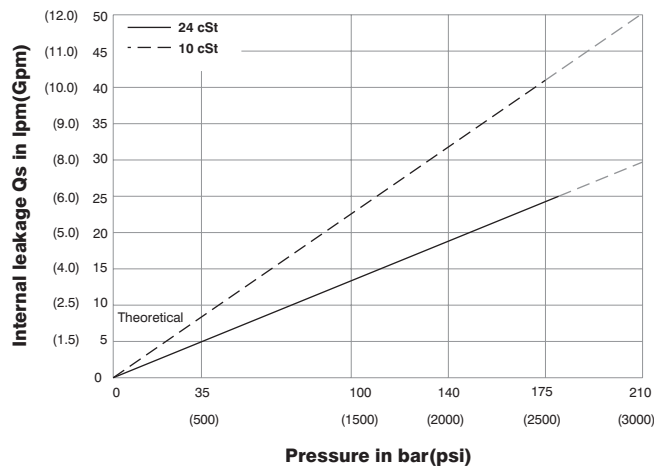
Porting combination

00 - standard

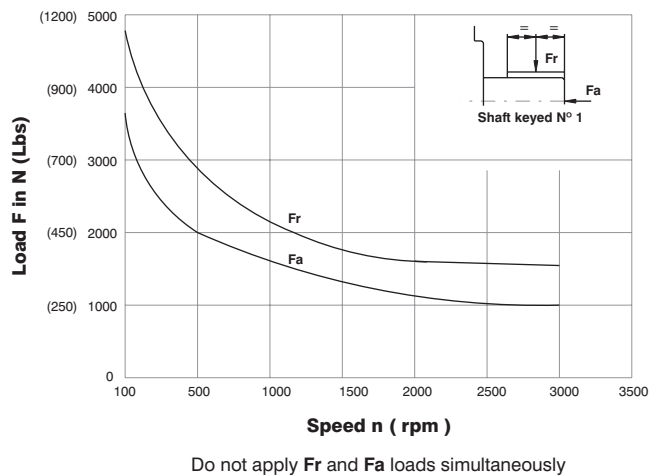


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INTERNAL LEAKAGE

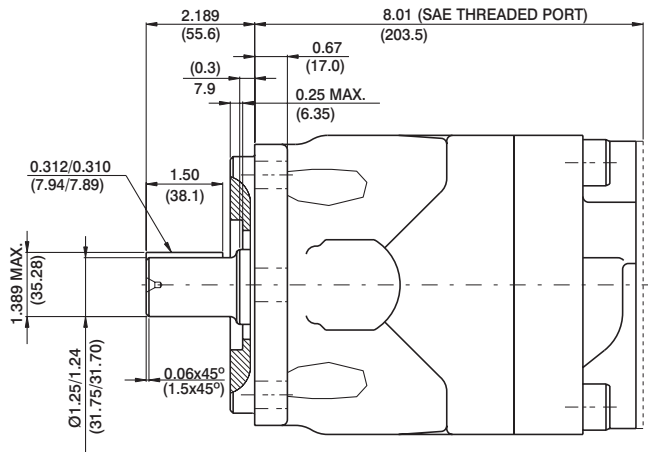


PERMISSIBLE RADIAL AND AXIAL LOADS

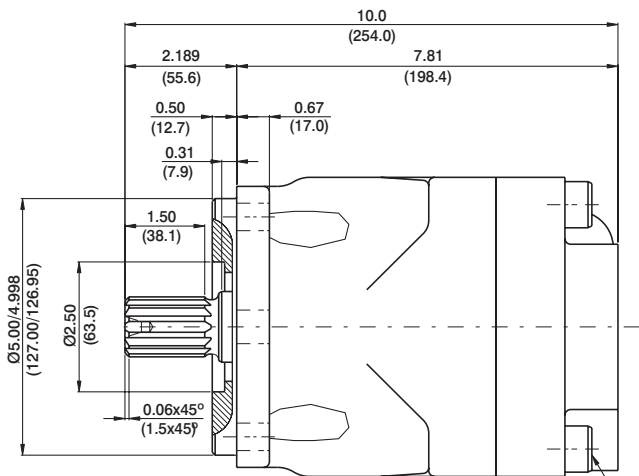
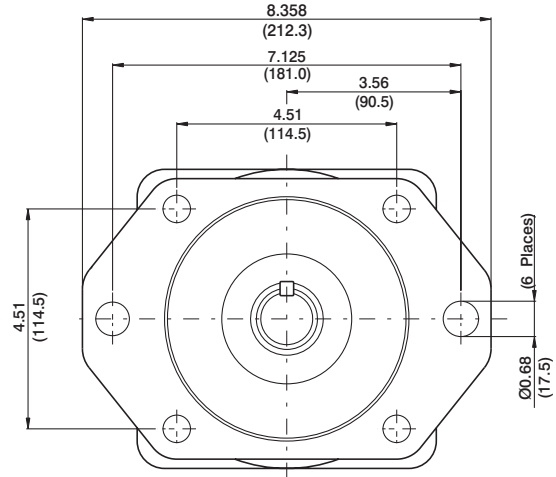


OPERATING CHARACTERISTICS - TYPICAL (24 cSt)

Model	Series	Volumetric Displacement Vi		Input flow at n = 2000 rpm				Torque T at n = 2000 rpm		Power output at n = 2000 rpm	
				Theoretical		at 175 bar (2500 psi) Δp		at 175 bar (2500 psi) Δp		at 175 bar (2500 psi) Δp	
		in³/rev	cm³/rev	GPM	l/min	GPM	l/min	in.lbf	Nm	HP	KW
VM4D-VM4SD	062	3.97	65.1	33.8	130.0	40.0	154.0	1460.0	165.0	46.4	34.6
	074	4.69	76.8	41.5	154.0	47.8	178.0	1770.0	200.0	56.2	41.9
	088	5.56	91.1	48.0	182.0	54.4	206.0	2088.5	236.0	66.2	49.4
	102	6.44	105.5	55.5	211.0	61.8	241.0	2336.3	264.0	74.1	55.3
	113	7.12	116.7	61.5	233.0	67.9	257.0	2655.0	300.0	84.2	62.8
	128	8.08	132.4	70.0	265.0	76.3	289.0	3009.0	340.0	95.5	71.2
	138	8.81	144.4	76.3	289.0	82.7	313.0	3292.0	372.0	104.5	77.9



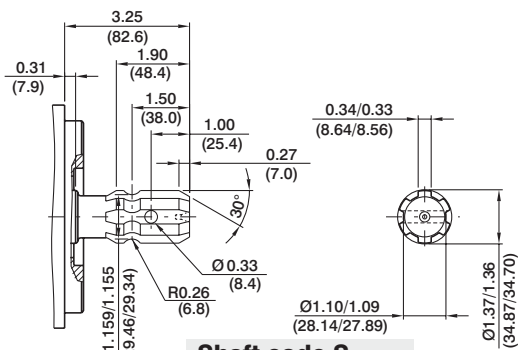
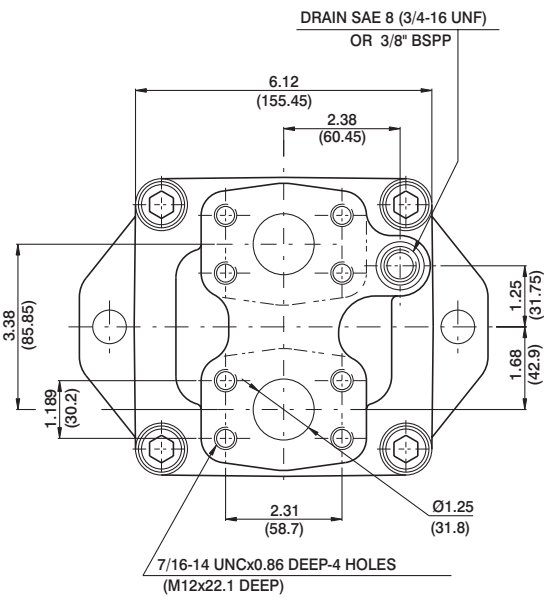
Shaft code 1
(Keyed SAE C)



Shaft code 3

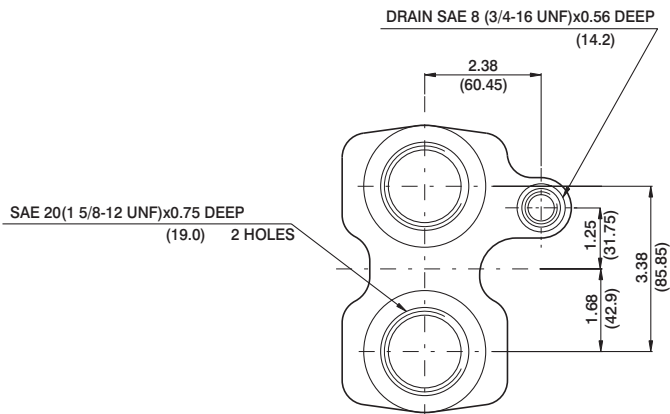
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
Flat root side fit

MOUNTING TORQUE 133 ft.lbs
(180 Nm)



Shaft code S

SAE J718C
540 rpm power take-off
For Farm Tractor application



SAE THREADED PORT

VM4*E1

VM4*E - 214 - 1 N 00 - B 5 02 *

Series external drain

Series internal drain

Torque

153 = 2.52 Nm/bar
185 = 3.05 Nm/bar
214 = 3.53 Nm/bar

Type of shaft

1 - keyed (SAE C)
3 - splined (SAE C)

Rotation

N - Bi-directional

*S = Severe duty motor

VM4E1-VM4SE1 : Drain port is plugged

View from shaft end:

CW rotation A = inlet B = outlet

CCW rotation A = outlet B = inlet

Modifications

Port connections

01 = SAE threaded port
SAE drain

02 = SAE 4 bolt flange
UNC threaded - SAE drain

04 = SAE 4 bolt flange
UNC threaded - BSPP drain

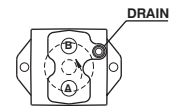
Seal class

5 - S5

Design letter

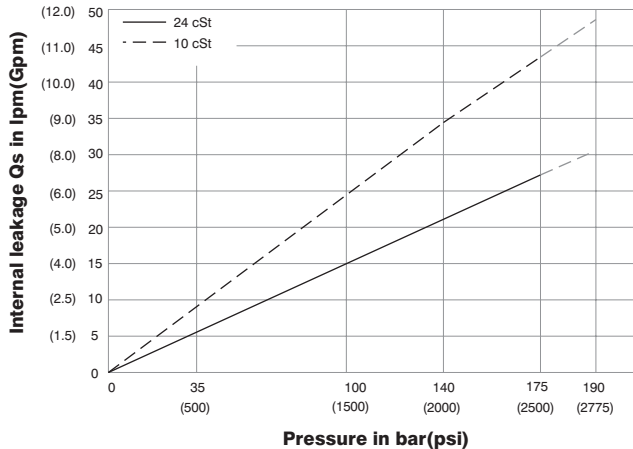
Porting combination

00 - standard

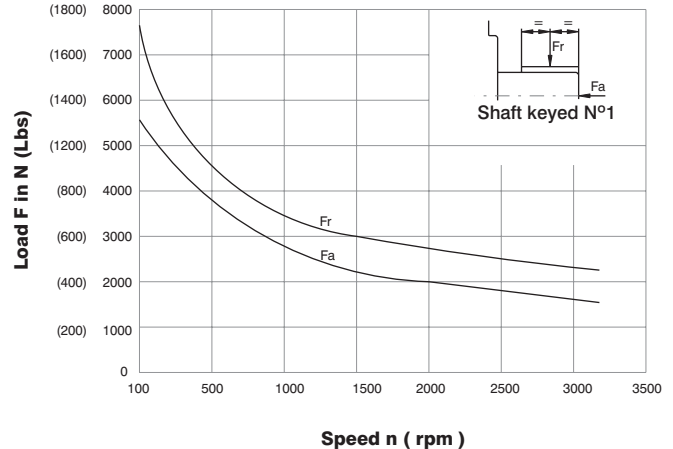


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INTERNAL LEAKAGE



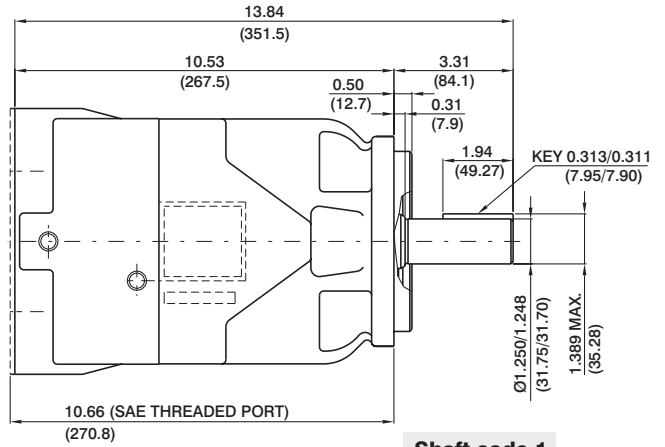
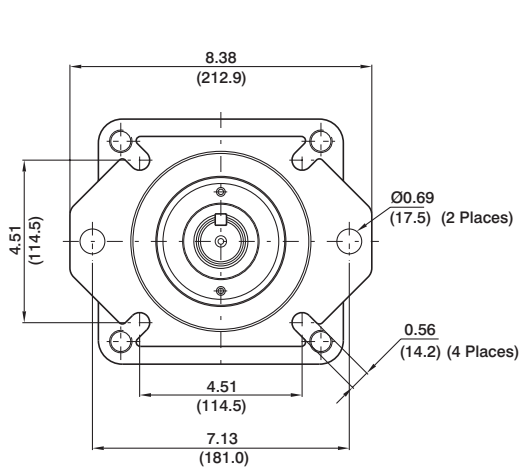
PERMISSIBLE RADIAL AND AXIAL LOADS



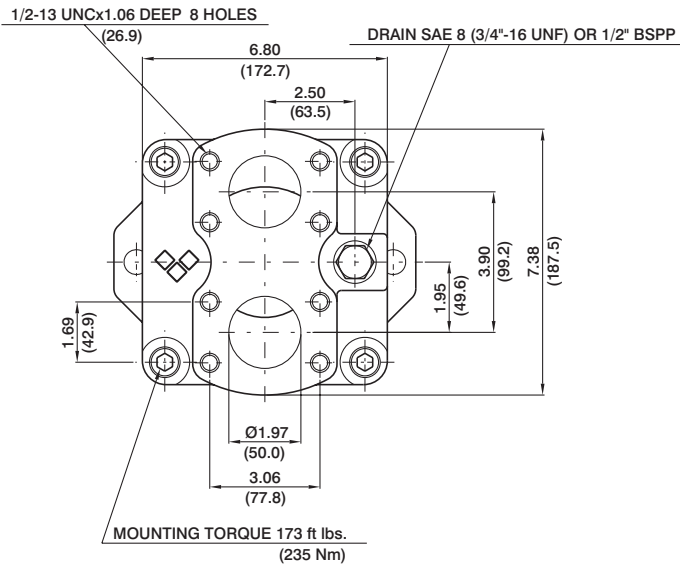
Do not apply Fr and Fa loads simultaneously

OPERATING CHARACTERISTICS - TYPICAL (24 cSt)

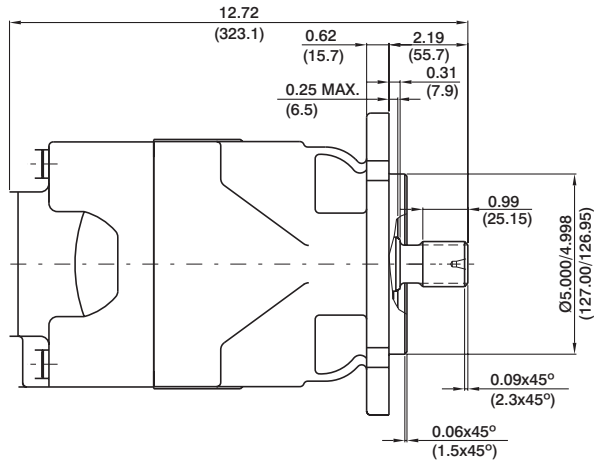
Model	Series	Volumetric Displacement Vi		Input flow at n = 2000 rpm				Torque T at n = 2000 rpm		Power output at n = 2000 rpm	
				Theoretical		at 175 bar (2500 psi) ΔP		at 175 bar (2500 psi) ΔP		at 175 bar (2500 psi) ΔP	
		in ³ /rev	cm ³ /rev	GPM	l/min	GPM	l/min	in.lbf	Nm	HP	KW
VM4E-VM4SE	153	9.67	158.5	83.7	316.4	90.6	343.0	3522.0	398.0	111.8	83.4
	185	11.69	191.6	101.2	382.5	108.0	409.0	4283.2	484.0	136.0	101.4
	214	13.55	222.0	117.3	443.4	124.2	470.0	5017.7	567.0	159.3	118.8



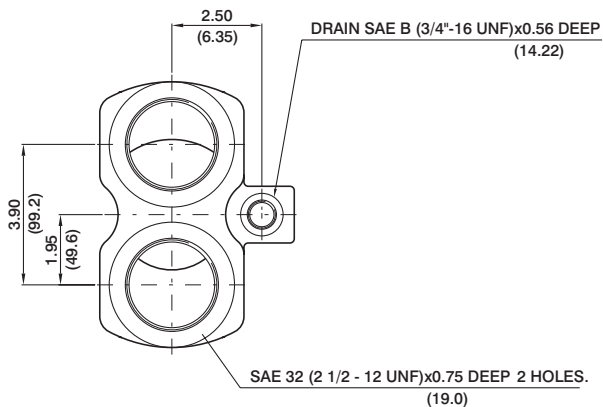
Shaft code 1
(Keyed SAE C)



DRAIN SAE 8 (3/4"-16 UNF) OR 1/2" BSPP



Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
Flat root side fit



SAE THREADED PORT

