



High Torque High Speed Vane Motor

Catalog 2021

High Speed High Torque Vane Motor

HM2-210 Series

Features and Handling

- HM2 spring loaded vane motors suitable for industrial and mobile applications. The wide range of speeds and pressure make them ideal for most motor applications.
- Motors are constructed with spring loaded vanes offering smooth operation over a wide speed range.
- Motors can be reversed or stalled underload without damage to the unit when proper relief protection is applied. A full size unrestricted drain line must be connected directly from case drain to reservoir return located below the lowest fluid level in the system.



Specification

Model	Torque Nm/6, 9 bar (lb in/ 100 psi)	Displacement cm ³ /r (in ³ /r)	Maximum speeds & Pressure	Approx Weight kg (lb)
HM2-210 & HM2-220	2.0 (25)	24.7 (1.51)	2200 r/min @ 138 bar (2000 psi)	9.4 (20.7)
	4.0 (35)	35.4 (2.16)	1800 r/min @ 121 bar (1750 psi)	

High Speed High Torque Vane Motor

HM2-210 Series

Ordering Code

HM	2	-	2	1	0	-	25	1	C	-	13
1	2	3	4	5	6	7	8	9			

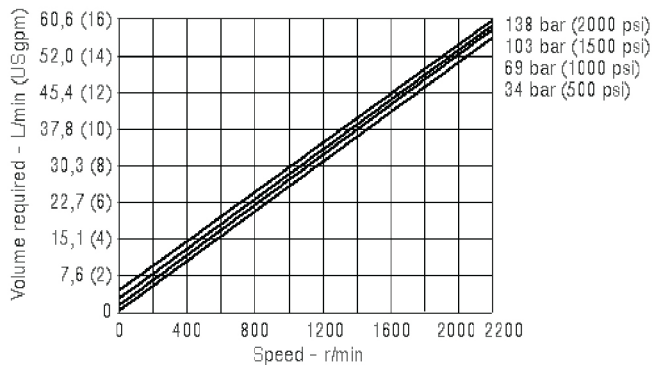
1. Model : HM - Vane Type Motor
SAE A 2 bolts mounting flange J744
2. Series (bi-directional rotation) : 2
3. Series frame size
2 - Small
4. Porting Connection
1 - 3/4" NPT both ports for return line installations.
2 - 1 5/16" - 12 UN both ports
5. Mounting
0 - 2-bolt flange
6. Ring size-Nominal torque Rating (lb.in./100psi)
25
35
7. Type of Shaft
1 - Straight Keyed Shaft
3 - Threaded with woodruff Keyed Shaft
6 - Woodruff Keyed stub Shaft
11 - Splined Keyed Shaft
8. Cover Port positions (View from cover end)
A - Opposite body port
B - 90° CCW body port
C - Inline with body port
D - 90° CW from body port
9. Design
Subject to change. Installation dimensions
remain the same for designs - 10 through -19

High Speed High Torque Vane Motor HM2-210 Series

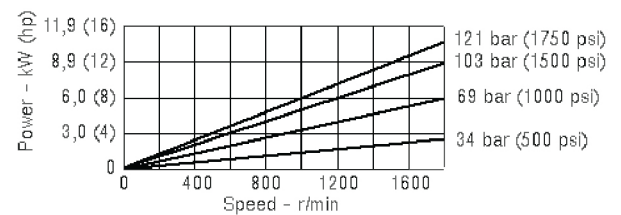
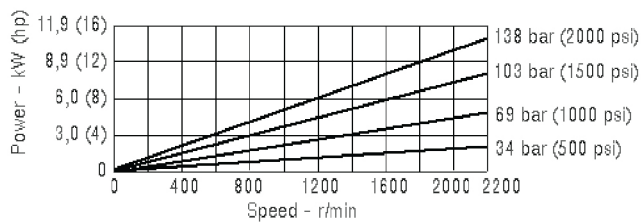
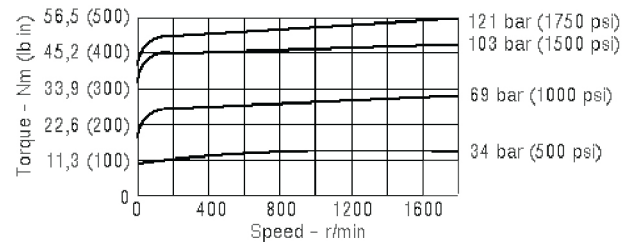
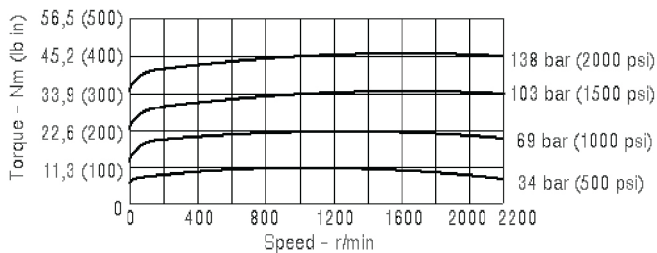
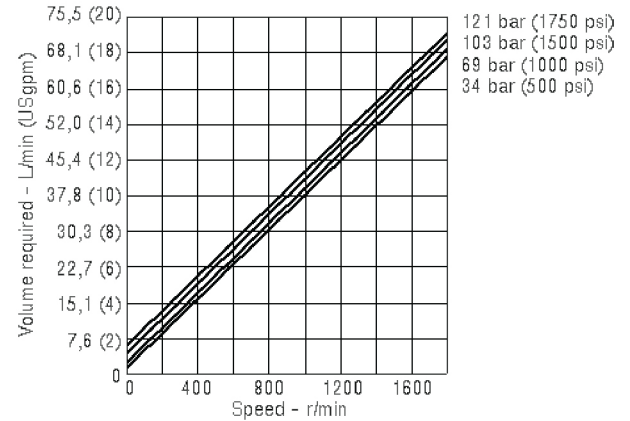
Performance Characteristics

Based on temperature 49 C (120 F), viscosity 32 cSt (150 SUS)

25 LB. IN. RING SIZE



35 LB. IN. RING SIZE



High Speed High Torque Vane Motor HM Series

Features and Handling

High speed and high-pressure motors ranging from 29.0 to 193.2 cm³/r with 172 bar of maximum pressure and 10 torques rating choices. The internal inlet chambers are equally and diametrically opposed resulting in balanced in radial loads.

Thus, the motors are hydraulically balanced which reduced wear and heat from friction.

These motors provide 90% efficiency due to dual pressure plates, which produced low internal leakage. Motors are bi-rotational, simply reversed by reversing in flow direction.



Specification

Model	Torque Nm/6, 9 bar (lb in/ 100 psi)	Displacement cm ³ /r (in ³ /r)	Flow input / required @1200 r/min L/min (USgpm)	Maximum speeds & Pressure	Max. Torque Nm (lb.in.) @ Max. Pressure	Approx Weight kg (lb)
25HM & 26HM	3.3 (30)	29.0 (1.77)	34.8 (9.19)	4000 r/min @ 34 bar (500 psi)	80.5 (725)	18.5 (40.7)
	4.7 (42)	43.9 (2.68)	52.6 (13.9)		115.8 (1025)	
	6.2 (55)	57.7 (3.52)	69.3 (18.3)		151.4 (1340)	
	7.3 (65)	68.7 (4.19)	82.5 (21.8)		180.8 (1600)	
35HM & 36HM	9.0 (80)	83.6 (5.10)	100.3 (26.5)	3000 r/min @ 172 bar (2500 psi)	221.5 (1960)	29.4 (64.7)
	10.7 (95)	100.3 (6.12)	120.4 (31.8)		264.4 (2340)	
	13.0 (115)	121.9 (7.44)	146.1 (38.6)		320.9 (2840)	
45HM & 46HM	14.7 (130)	138.0 (8.42)	165.4 (43.7)		361.6 (3200)	41.6 (91.5)
	17.5 (155)	163.2 (9.96)	195.7 (51.7)		429.4 (3800)	
	20.9 (185)	193.2 (11.79)	232.0 (61.3)		502.9 (4450)	

High Speed High Torque Vane Motor

25HM, 26HM Series

Ordering Code

25	HM	65	-	A	-	1	C	20
1	2	3		4		5	6	7

1. Model

25 -Standard bearing
 26 -Heavy duty bearing
 SAE B 2 bolts mounting flange J744

2. Series

HM - Vane Type Motor (Externally drained)

3. Ring size-Nominal torque Rating (lb.in./100psi)

30
 42
 55
 65

4. Mounting Flange and Port Connections

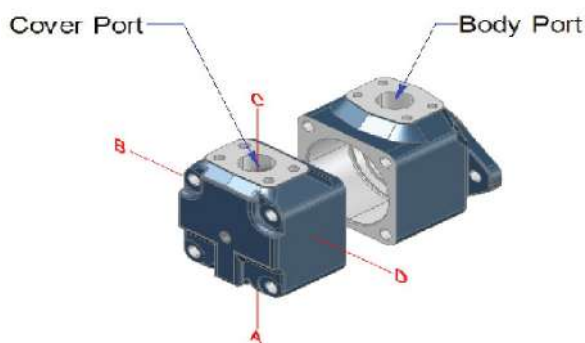
A - SAE type 2 - bolt mounting Flange and
 SAE 4 - bolt flange connections

5. Shaft

1 - Straight keyed shaft
 11 - Splined shaft

6. Cover Port positions (View from cover end)

A - Opposite body port
 B - 90° CCW from body port
 C - Inline with body port
 D - 90° CW from body port



7. Design

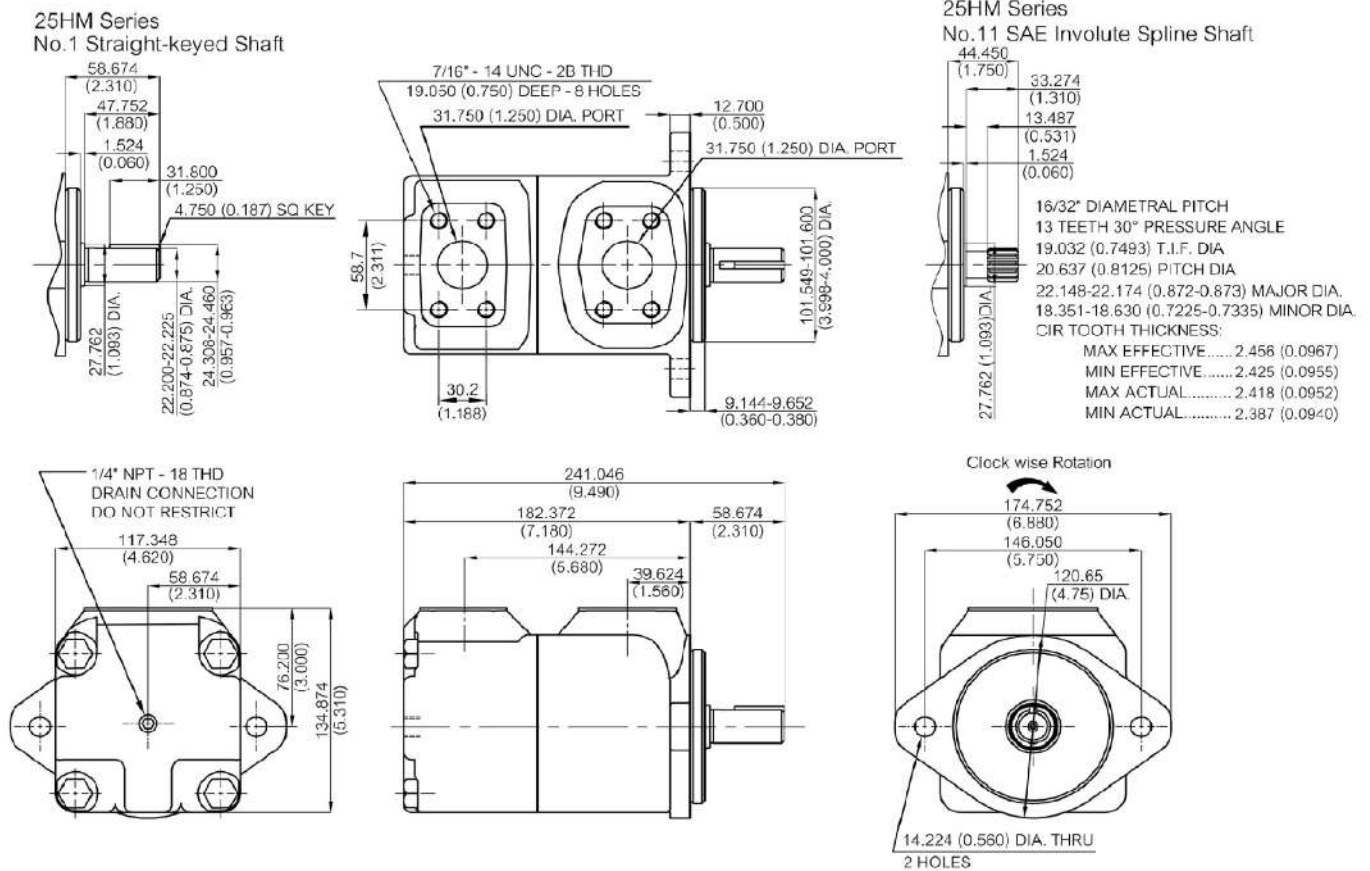
Subject to change. Installation dimensions
 remain the same for designs - 20 through -29

High Speed High Torque Vane Motor

25HM, 26HM Series

Installation Dimension mm (inch)

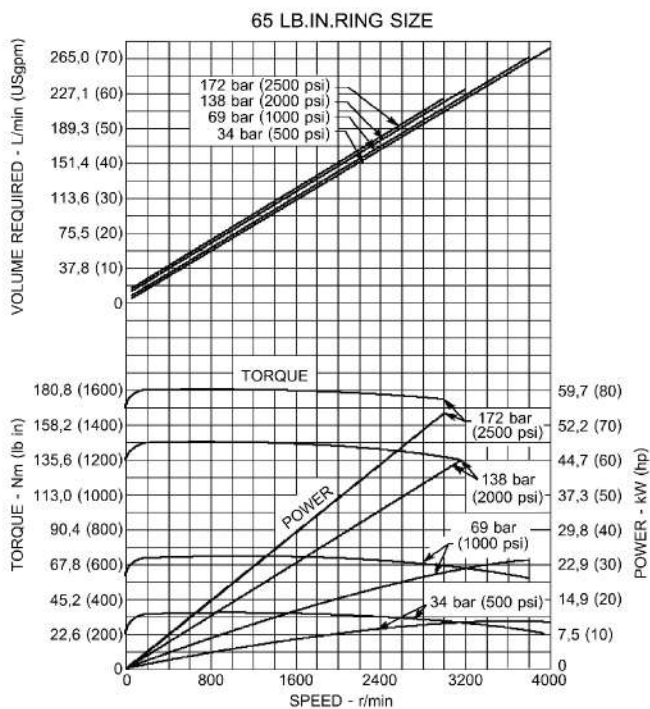
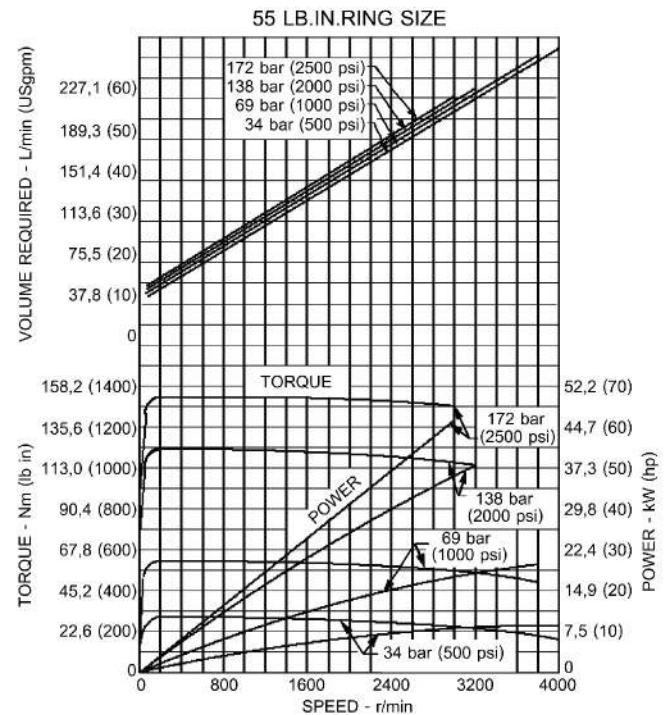
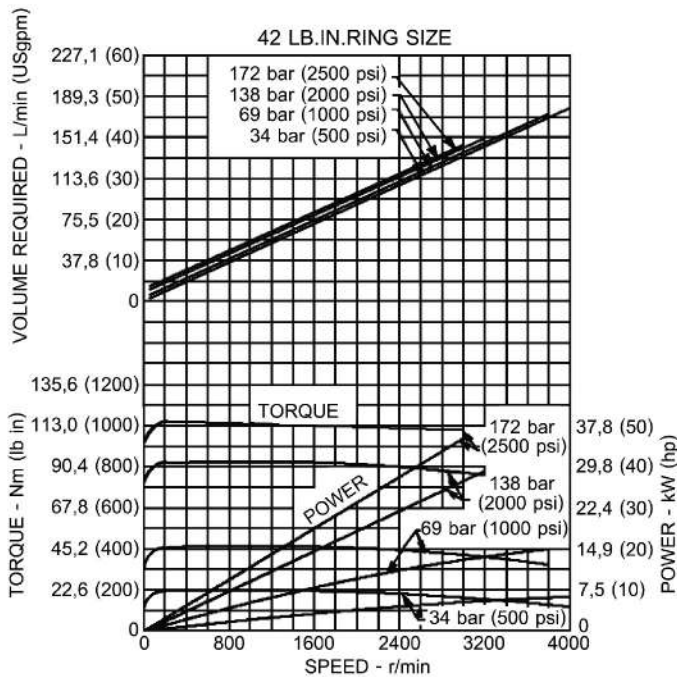
25HM & 26HM



High Speed High Torque Vane Motor 25HM, 26HM Series

Performance Characteristics

25HM & 26HM



High Speed High Torque Vane Motor

35HM, 36HM Series

Ordering Code

35	HM	95	-	A	-	1	C	20
1	2	3		4		5	6	7

1. Model

35 -Standard bearing
 36 -Heavy duty bearing
 SAE C 2 bolts mounting flange J744

2. Series

HM - Vane Type Motor (Externally drained)

3. Ring size-Nominal torque Rating (lb.in./100psi)

80
 95
 115

4. Mounting Flange and Port Connections

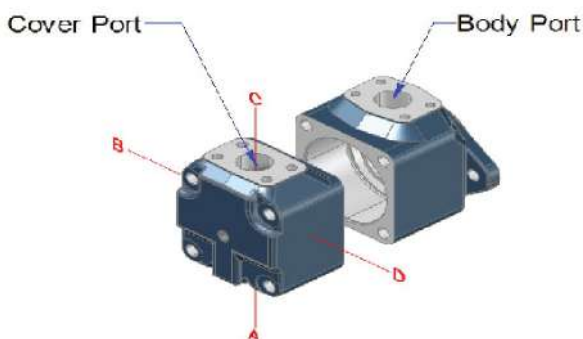
A - SAE type 2 - bolt mounting Flange and
 SAE 4 - bolt flange connections

5. Shaft

1 - Straight keyed shaft
 11 - Splined shaft

6. Cover Port positions (View from cover end)

A - Opposite body port
 B - 90° CCW from body port
 C - Inline with body port
 D - 90° CW from body port



7. Design

Subject to change. Installation dimensions
 remain the same for designs - 20 through -29

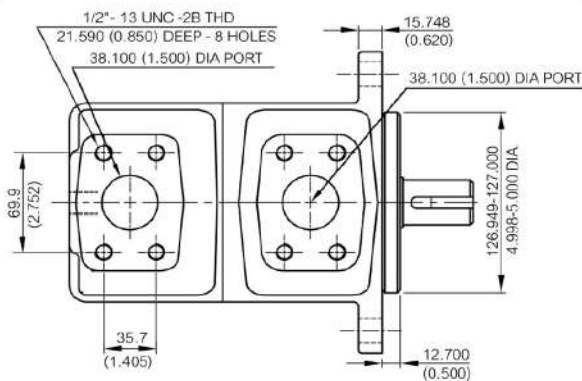
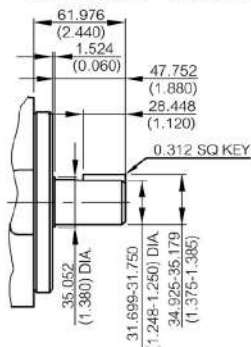
High Speed High Torque Vane Motor

35HM, 36HM Series

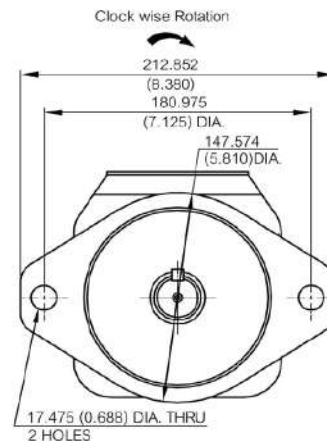
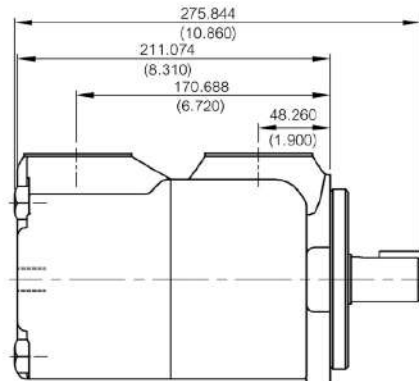
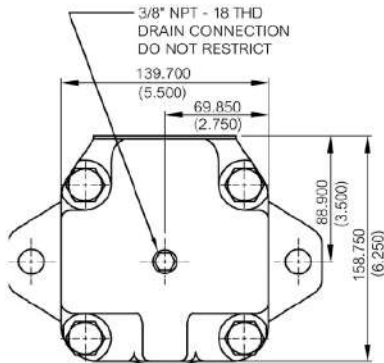
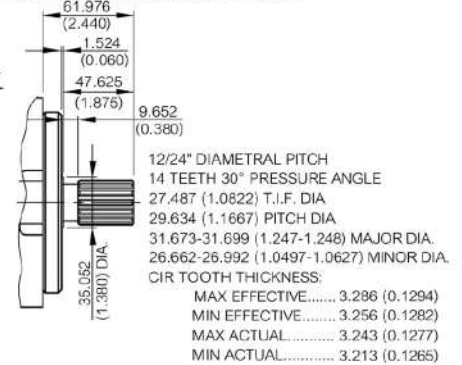
Installation Dimension mm (inch)

35HM & 36HM

35HM Series
No.1 Straight - keyed Shaft



35HM Series
No.11 SAE Involute Spline Shaft



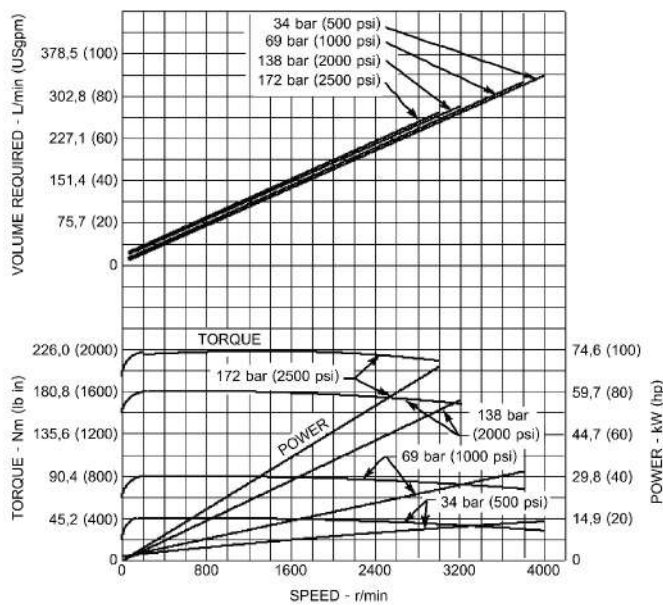
High Speed High Torque Vane Motor

35HM, 36HM Series

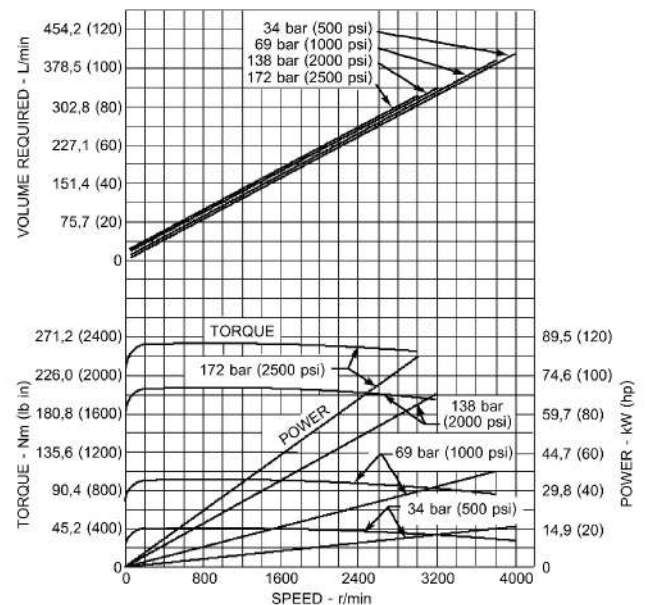
Performance Characteristics

35HM & 36HM

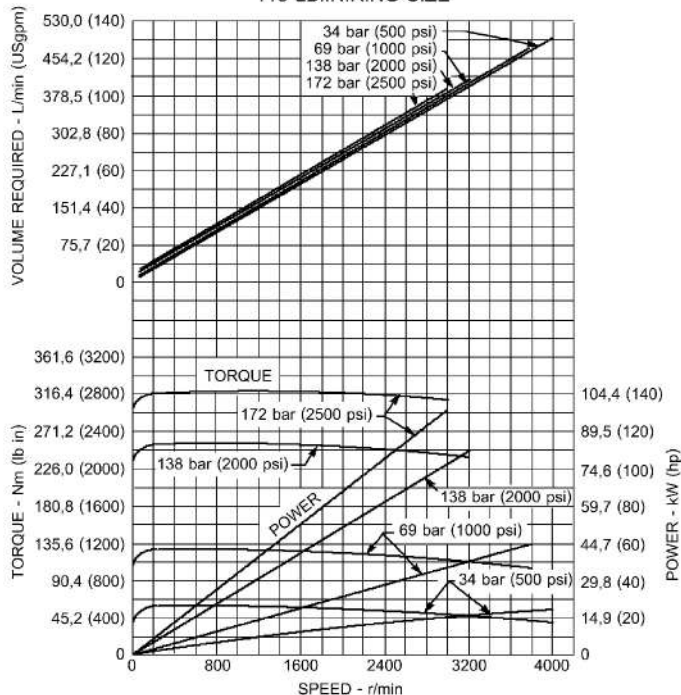
80 LB.IN.RING SIZE



95 LB.IN.RING SIZE



115 LB.IN.RING SIZE



High Speed High Torque Vane Motor

45HM, 46HM Series

Ordering Code

45	HM	155	- A	- 1	C	20
1	2	3	4	5	6	7

1. Model

45 -Standard bearing
 46 -Heavy duty bearing
 SAE C 2 bolts mounting flange J744

2. Series

HM - Vane Type Motor (Externally drained)

3. Ring size-Nominal torque Rating (lb.in./100psi)

130
 155
 185

4. Mounting Flange and Port Connections

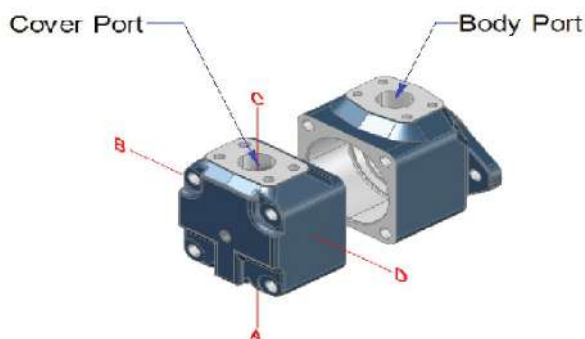
A - SAE type 2 - bolt mounting Flange and
 SAE 4 - bolt flange connections

5. Shaft

1 - Straight keyed shaft
 11 - Splined shaft

6. Cover Port positions (View from cover end)

A - Opposite body port
 B - 90° CCW from body port
 C - Inline with body port
 D - 90° CW from body port



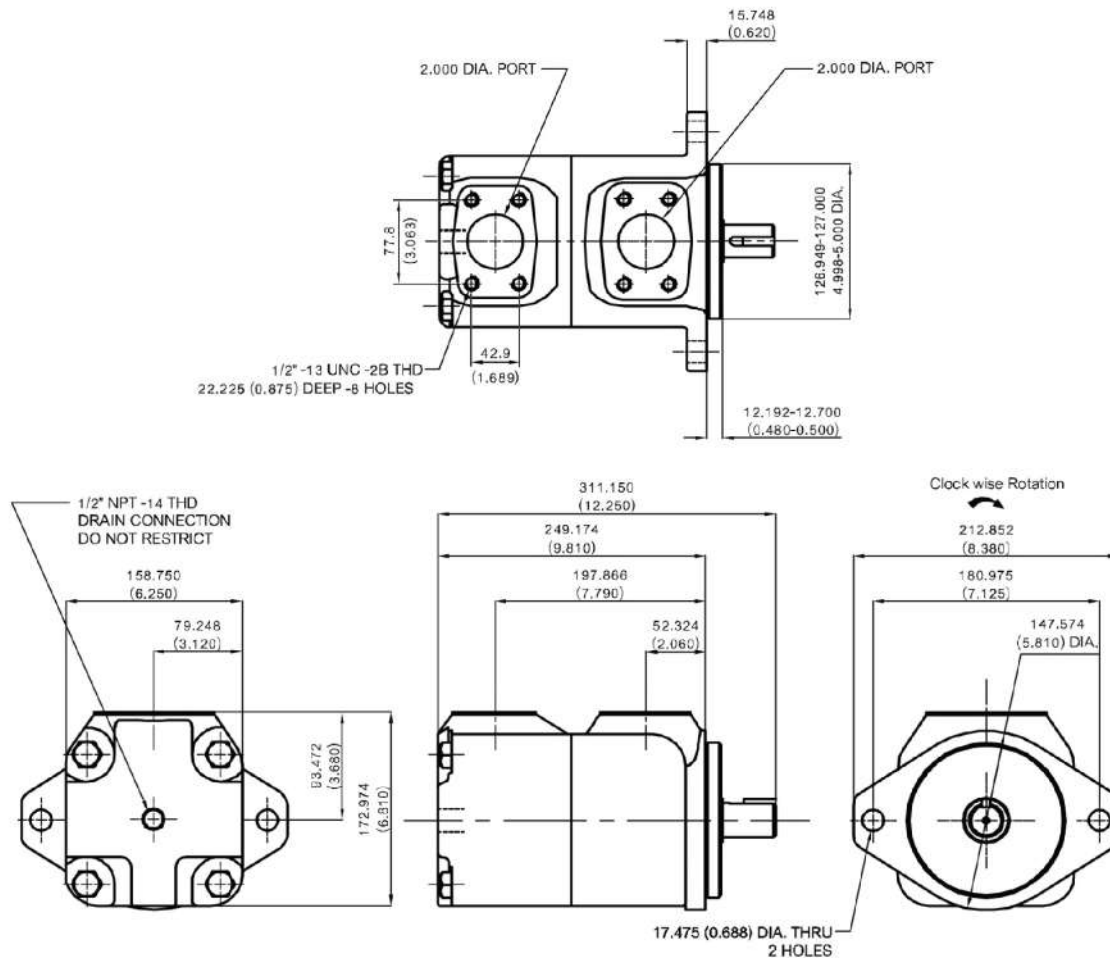
7. Design

Subject to change. Installation dimensions
 remain the same for designs - 20 through -29

High Speed High Torque Vane Motor 45HM, 46HM Series

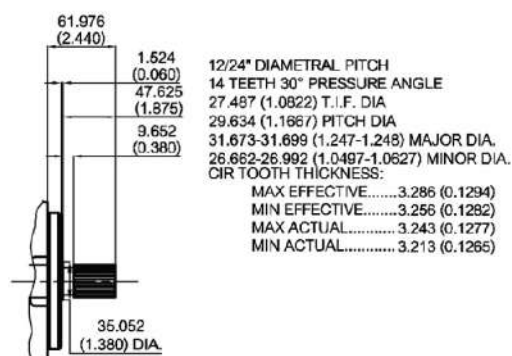
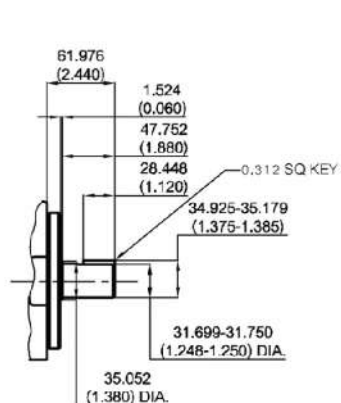
Installation Dimension mm (inch)

45HM & 46HM



45M Series
No.1 Straight-keyed Shaft

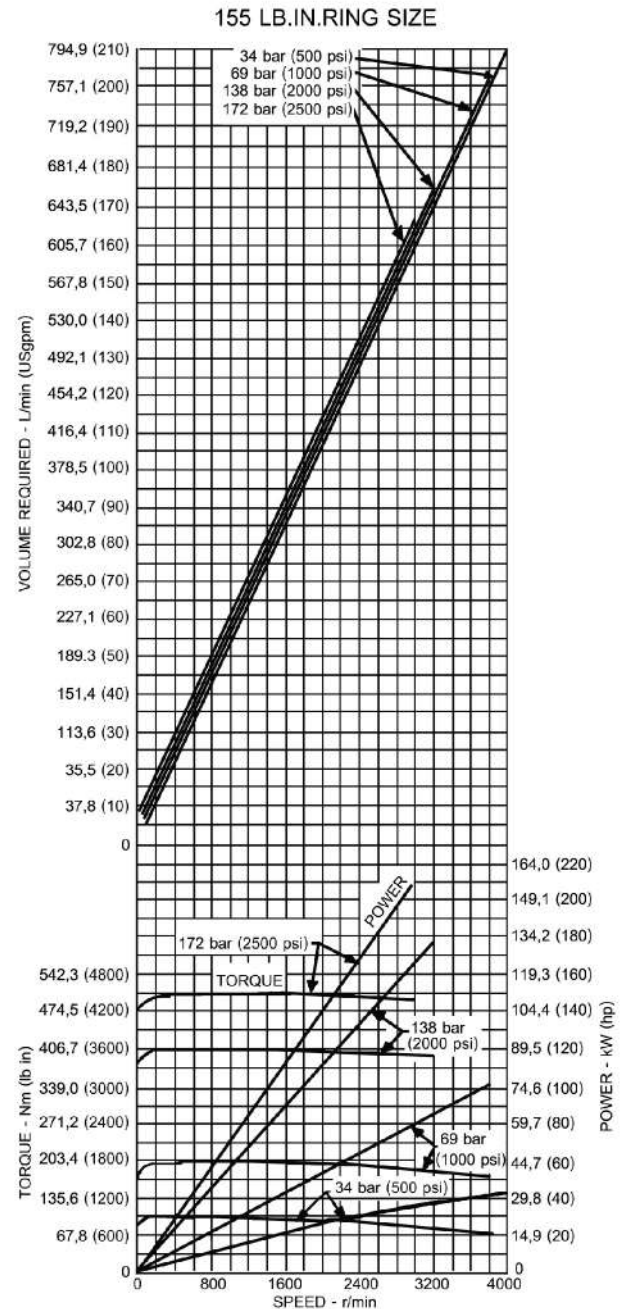
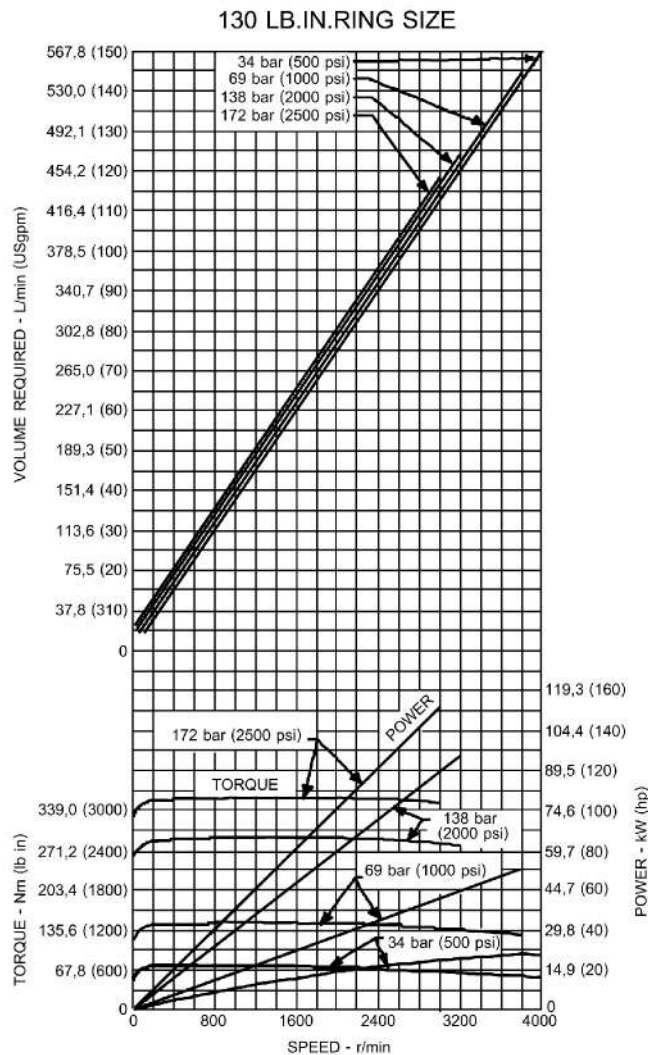
45M Series
No.11 SAE Involute Spline Shaft



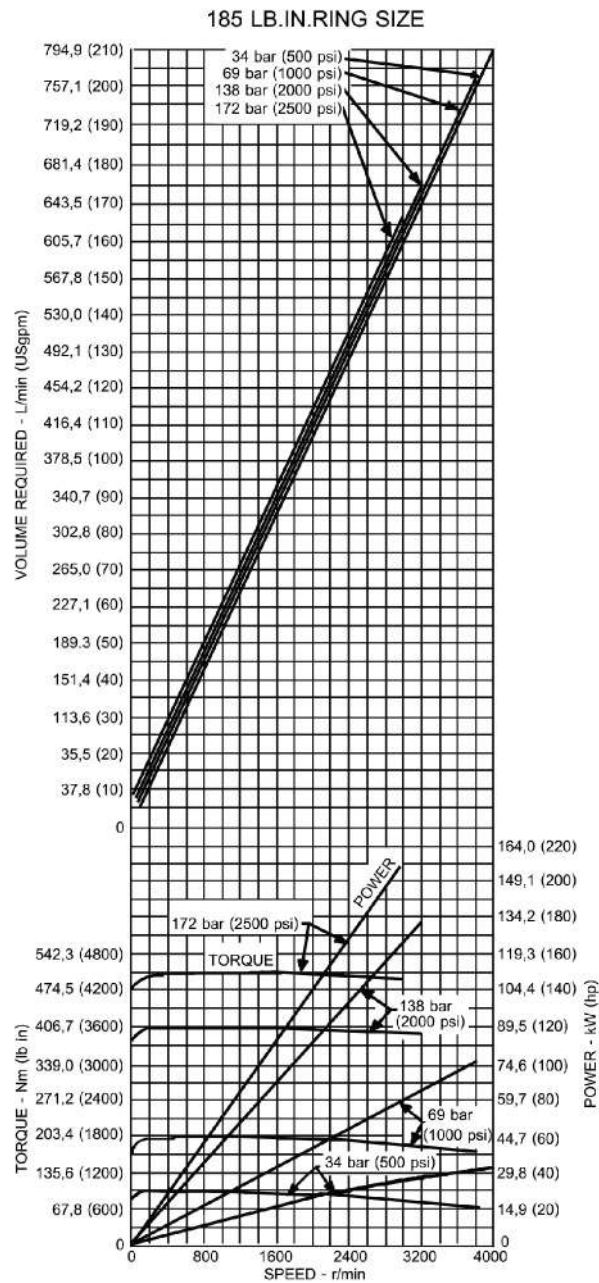
High Speed High Torque Vane Motor 45HM, 46HM Series

Performance Characteristics

45HM & 46HM



High Speed High Torque Vane Motor 45HM, 46HM Series



High Speed High Torque Vane Motor HM4C Series

Features

High speed and high-torque with maximum pressure of 175 bar, motors ranging from 24 to 80 cm³/r.

Up to 4000 RPM with 7 torques rating at your choice with options of 4 connection ports and choice of external and internal drain.



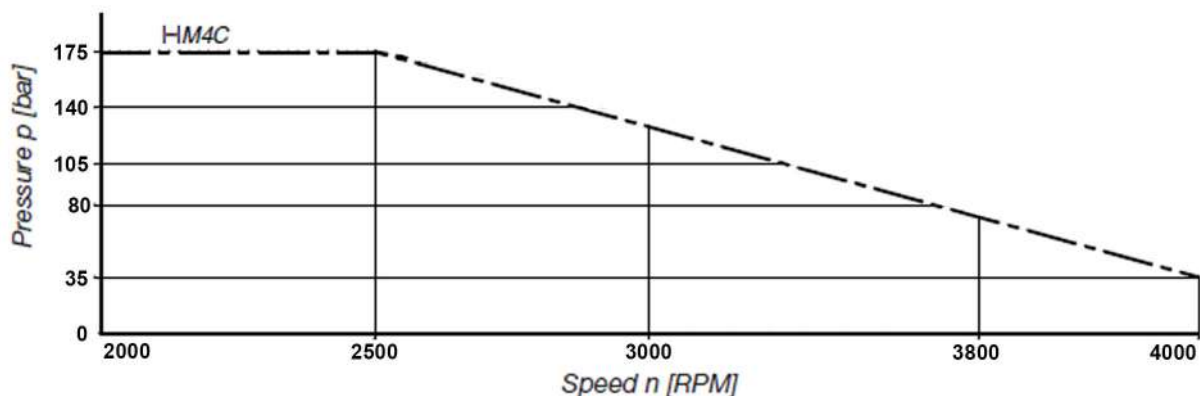
Specification

Model	Displacement	Theoretical, Displacement, V ₁	Torque T	Power at 100 RPM	Torque T	Power P
		n = 2000 RPM at Δ p 175 bar				
		ml/rev ₁	Nm/bar	kW/bar	N,m	kW
HM4C HM4C1	024	24,4	0,39	0,0040	60,5	12,7
	027	28,2	0,45	0,0047	70,0	14,7
	031	34,5	0,55	0,0058	86,8	18,0
	043	46,5	0,74	0,0078	120,0	25,1
	055	58,8	0,93	0.0098	149,0	31,2
	067	71,1	1,13	0,0120	170,0	35,6
	075	80,1	1,27	0,0130	198,0	41,5

Internal drain : All these motors may be equiped with internal drain. Then the model number will be HM4C1.

For further information or if the performance characteristics outlined above do not meet your own particular requirements, please consult your local Parker representative.

Maximum speed and maximum continue pressure



High Speed High Torque Vane Motor

HM4C Series

Ordering Code

HM4C	1	-	067	-	1	N	00	-	A	1	02	-
1	2	3	4	5	6	7	8	9	10			

1. Model : HM4C

7. Design letter

2. Option Series

Omit = External drain
1 = Internal drain (Drain port is plugged)

8. Seal class

1 = S1 - BUNA (HM4C)

3. Ring size - Nominal Torque Rating

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

9. 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

4. Shaft

1 = keyed (SAE B)
2 = keyed (non SAE)
3 = splined (SAE B)

10. Modification

5. Rotation

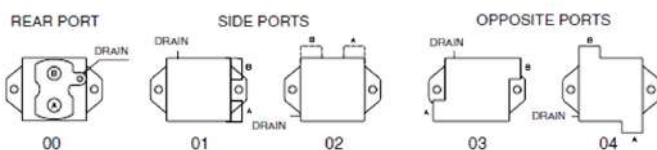
N = bi-directional

6. Porting combination

00 = standard

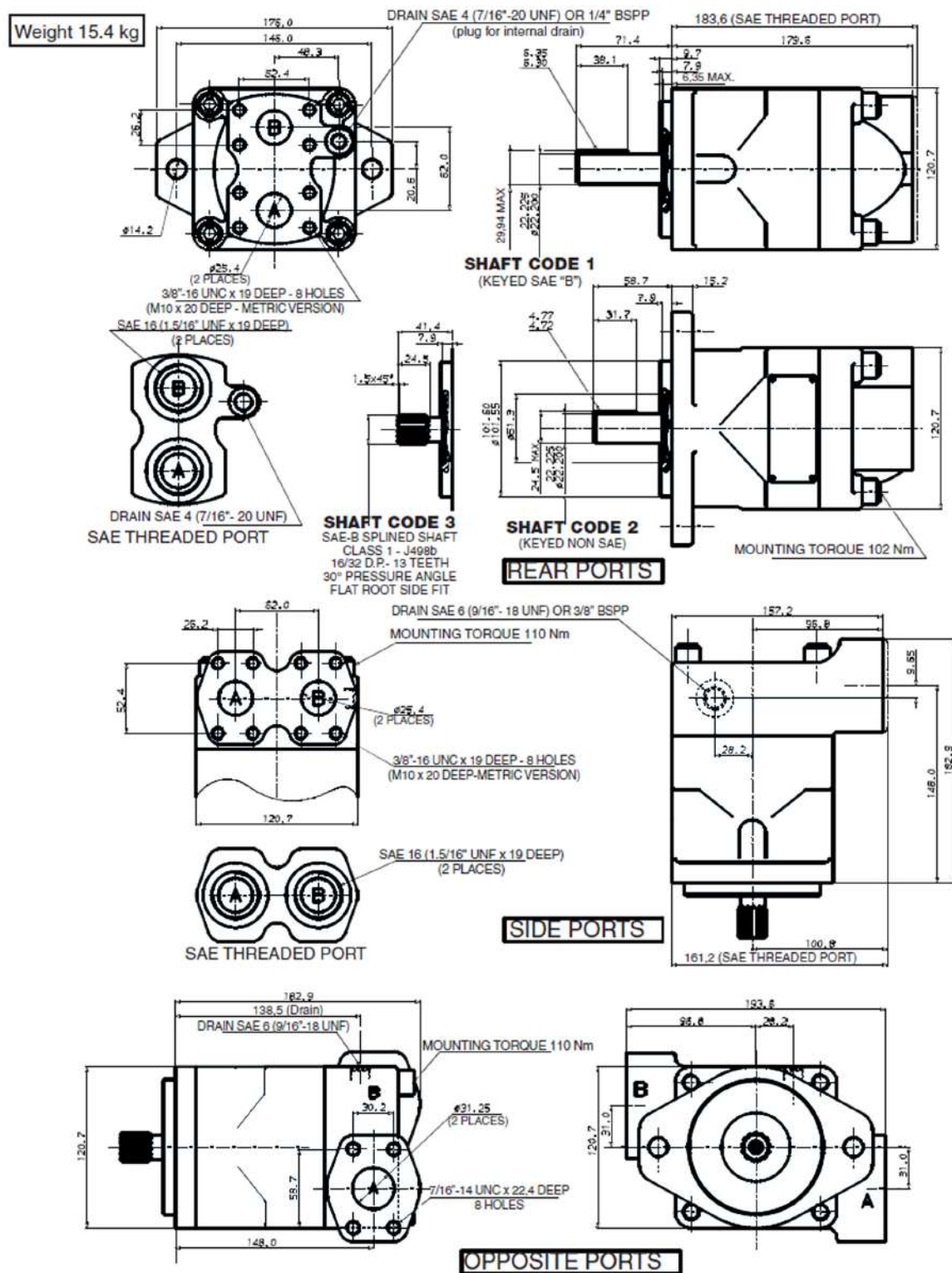
View from shaft end

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



High Speed High Torque Vane Motor HM4C Series

Installation Dimension mm (inch)

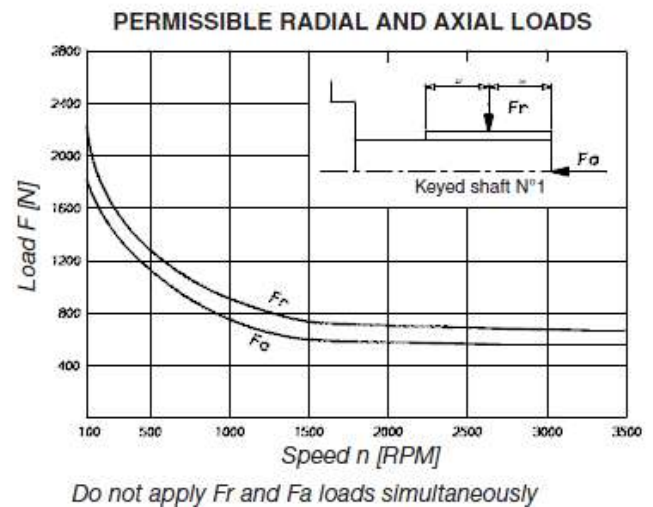
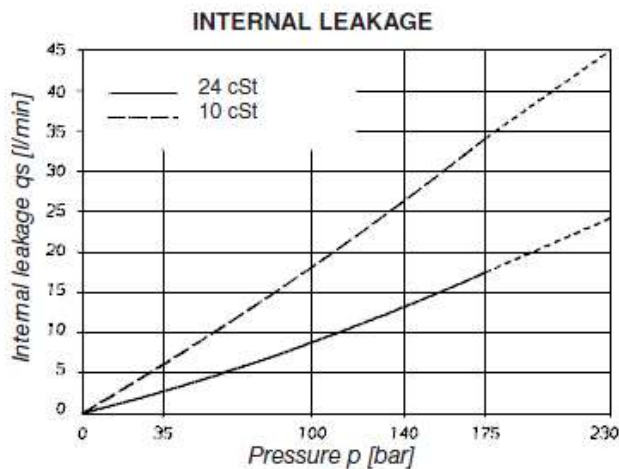


High Speed High Torque Vane Motor HM4C Series

Performance Characteristics

OPERATING CHARACTERISTICS - TYPICAL [24 cSt]

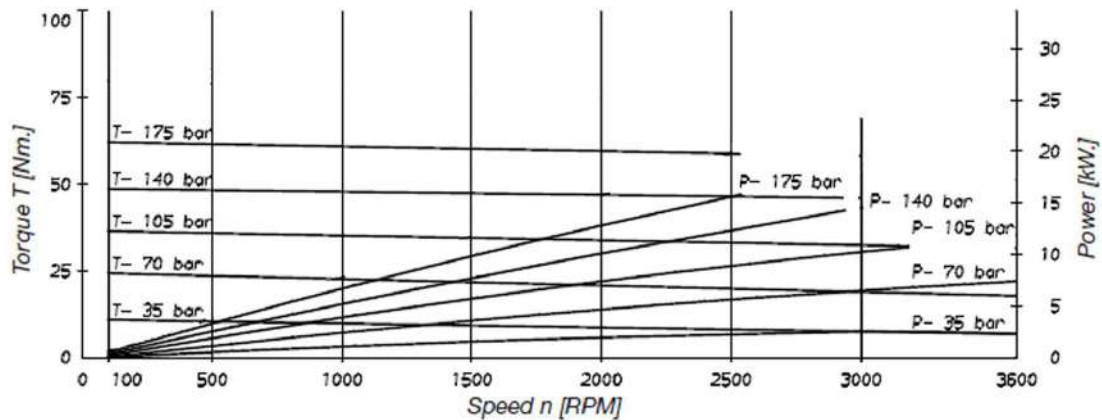
Series	Volumetric Displacement V_1	Input flow at $n = 2000$ RPM		Torque T at $n = 2000$ RPM	Power output at $n = 2000$ RPM
		Theoretical	at 175 bar Δp	at 175 bar Δp	at 175 bar Δp
	ml/rev.	l/min	l/min	Nm	kW
024	24,4	49,0	67,0	60,5	12,7
027	28,2	56,0	74,0	70,0	14,7
031	34,5	69,0	87,0	86,8	10,8
043	46,5	93,0	110,0	120,0	25,1
055	58,8	118,0	136,0	149,0	31,2
067	71,1	142,0	160,0	170,0	35,6
075	80,1	160,0	178,0	198,0	41,5



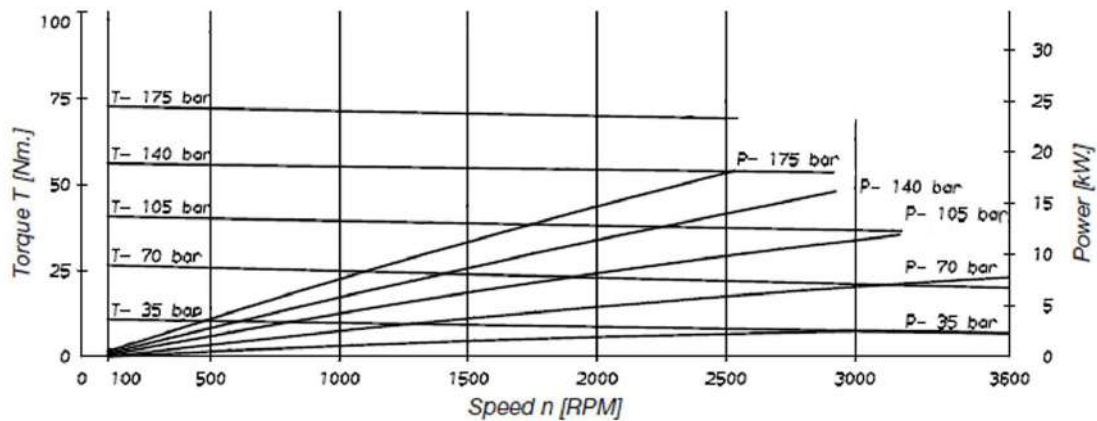
High Speed High Torque Vane Motor HM4C Series

Performance Graph Viscosity 24 cSt 45°

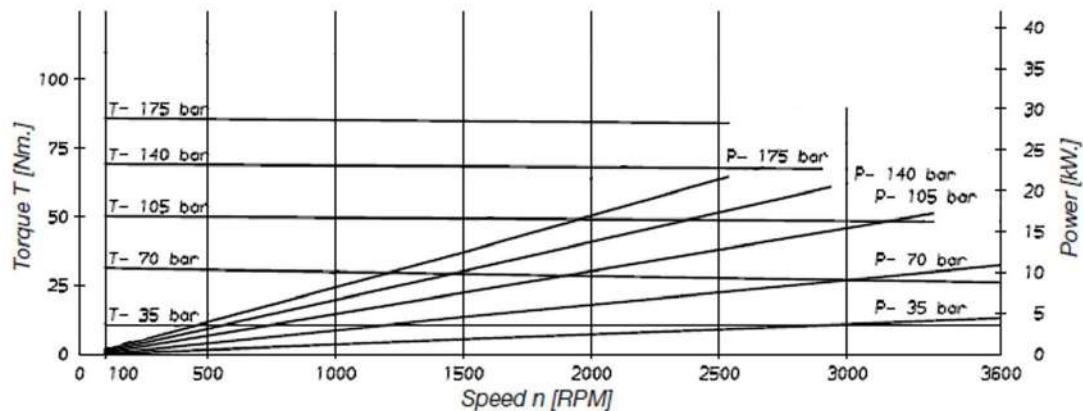
HM4C 024



HM4C 027

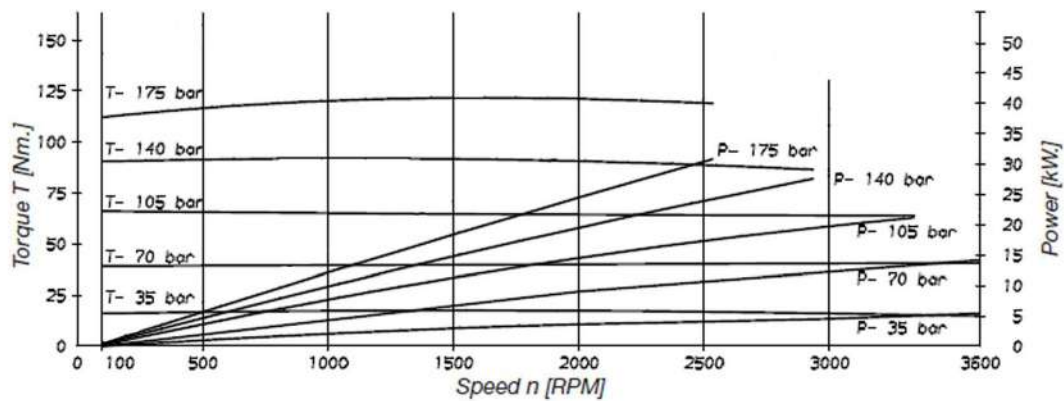


HM4C 031

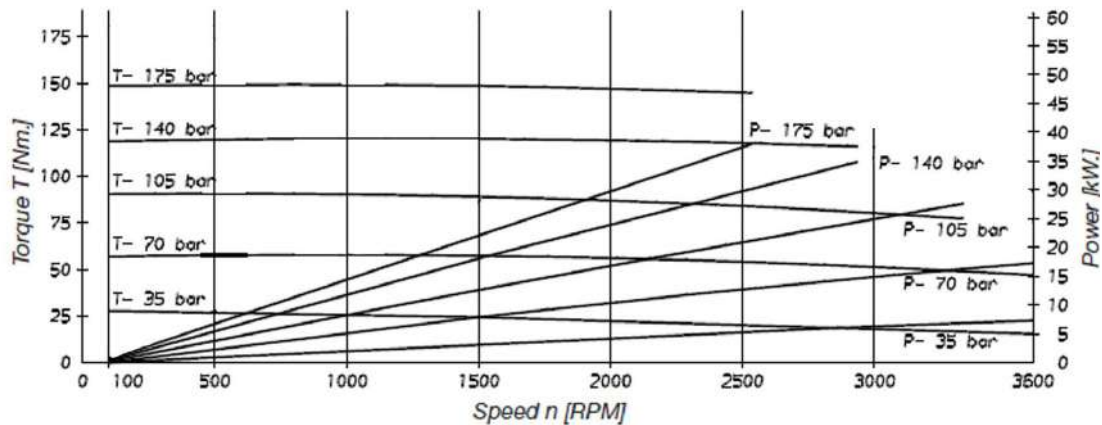


High Speed High Torque Vane Motor HM4C Series

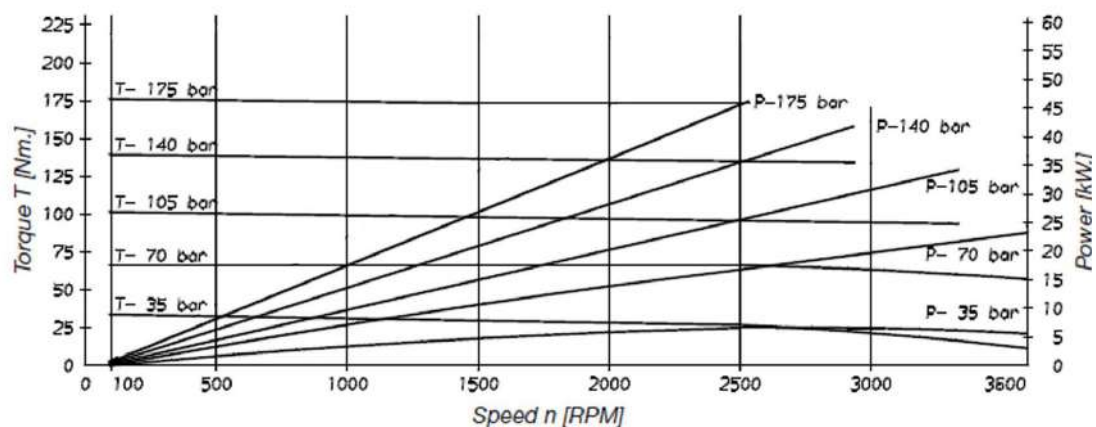
HM4C 043



HM4C 055

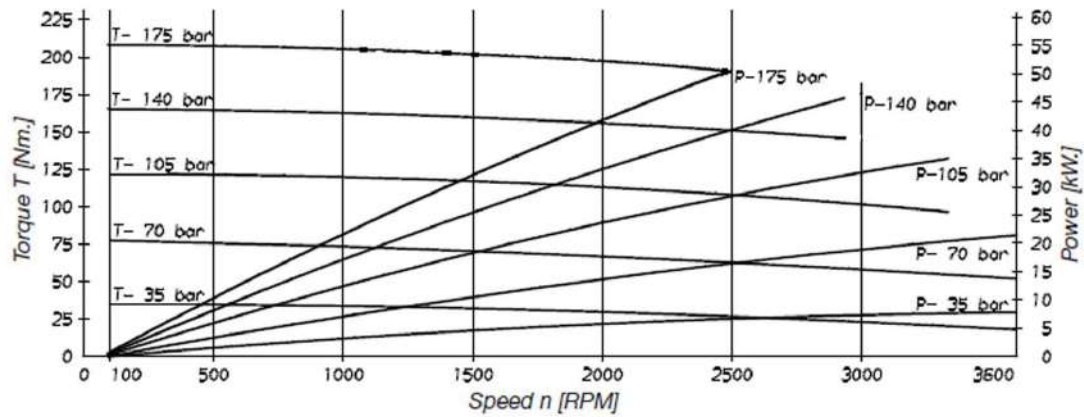


HM4C 067



High Speed High Torque Vane Motor HM Series

HM4C 075



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