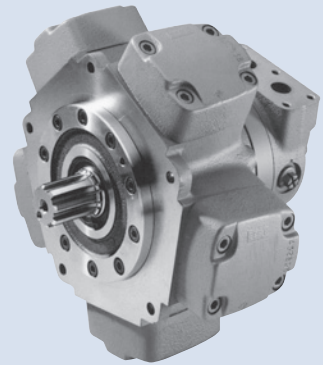
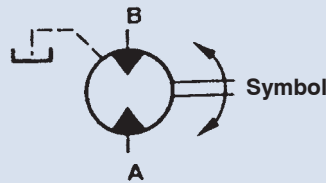


# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

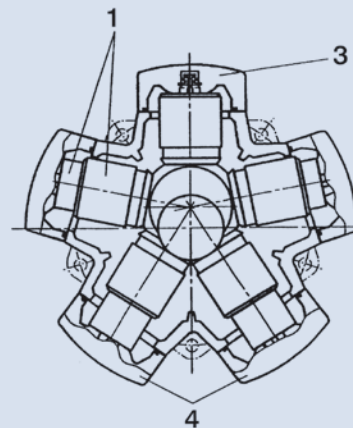
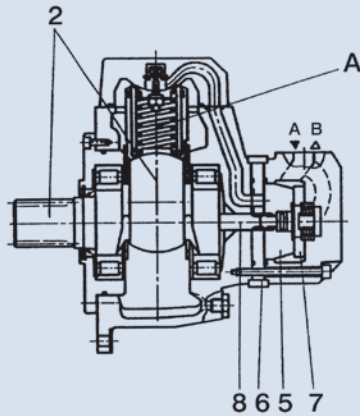


## How to order

**B\*\* - MRCN - \*\*\*\* - \* - \* - \***

1	2	3	4	5	6
1	Series number				
2	Model MRCN: 200~1250 cc/rev MRC: 1400~3500 cc/rev				
3	Normal displacement cc/rev				
4	Shaft type N: Splined shaft P: Parallel shaft				
5	Option None: No fix hole T: Shaft with fix hole				
6	Shaft rotation None: Clockwise L: Counter-clockwise				

## Dimensions



### Section-Functional Description

The outstanding performance of this motor is the result of an original and patented design. The principle is to transmit the effort from the stator to the rotating shaft (2) by means of a pressurized column of oil (A) instead of the more common connecting rods, pistons, pads and pins.

This oil column is contained by a telescopic cylinder (1) with a mechanical connection at the lips at each end which seal against the spherical surfaces (3) of the cylinder heads (4) and the spherical surface of the rotating shaft.

These lips retain their circular cross section when stressed by the pressure so there is no alteration in the sealing geometry. The particular selection of materials and optimisation of design has minimized both the friction and the leakage.

Another advantage of this design stems from the elimination of any connecting rods, the cylinder can only expand and retract linearly so there are no transverse components of the thrust. This means no oval wear on the moving parts and no side forces on the cylinder joints.

A consequence of this novel design is a significant reduction in weight and overall size compared with other motors of the same capacity.

The timing system is realized by means of a rotary valve (5) driven by the rotary valve driving shaft (8) that it is connected to the rotating shaft.

The rotary valve rotates between the rotary valve plate (6) and the reaction ring (7) which are fixed with the motor's housing. This timing system is also of a patented design being pressure balanced and self compensating for thermal expansion. The advantages of this type of valve coupled with a revolutionary cylinder arrangement produce a motor with extremely high values of mechanical and volumetric efficiency. The torque output is smooth even at very low speed and the motor gives a high performance starting under load.

# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

## Specifications

H

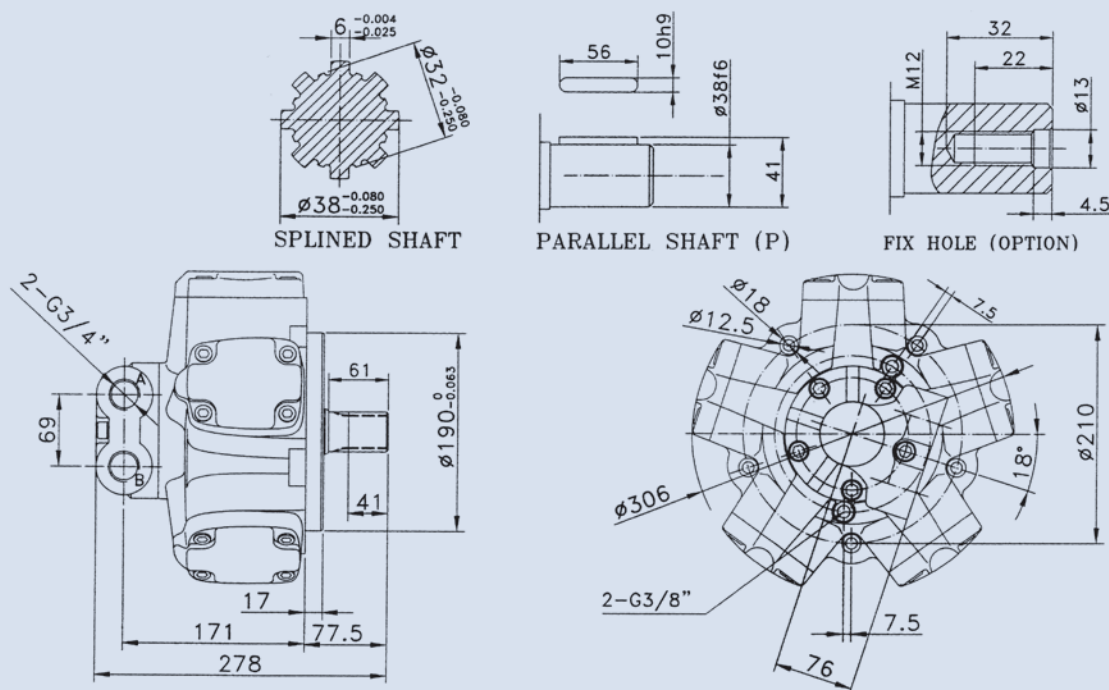
Model	Displacement (cc/rev)	Specific torque (nm/bar)	Max. Input Pressure (bar)			Max. Pressure Difference (intermittent)	Max. Case Pressure (bar)	Max. Speed (rpm)	Max. Power (kw)	Weight (kg)
			Continuous	Intermittent	Peak					
B1-MRCN200	199	3.2	210	250	300	210	5	450	27	40
B1-MRCN250	249	4.0	210	250	300	210	5	425	33	40
B1-MRCN300	299	4.8	210	250	300	210	5	403	38	40
B1-MRCN350	349	5.6	210	250	300	210	5	384	42	40
B1-MRCN400	382	6.1	210	250	300	210	5	350	42	42
B12-MRCN400	382	6.1	210	250	300	210	5	350	42	42
B2-MRCN400	410	6.5	210	250	300	210	5	470	61	72
B2-MRCN450	452	7.2	210	250	300	210	5	450	64	72
B2-MRCN500	495	7.9	210	250	300	210	5	430	67	72
B2-MRCN600	594	9.5	210	250	300	210	5	410	77	72
B2-MRCN700	693	11.0	210	250	300	210	5	390	85	72
B2-MRCN800	792	12.6	210	250	300	210	5	350	87	72
B23-MRCN800	792	12.6	210	250	300	210	5	350	87	74
B3-MRCN850	855	13.6	210	250	300	210	5	320	86	94
B3-MRCN900	896	14.3	210	250	300	210	5	320	90	94
B3-MRCN1000	998	15.9	210	250	300	210	5	290	91	94
B3-MRCN1100	1099	17.5	210	250	300	210	5	270	93	94
B3-MRCN1200	1201	19.1	210	250	300	210	5	250	95	94
B3-MRCN1250	1241	19.8	210	250	300	210	5	240	94	94
B4-MRC1400	1419	22.6	210	250	300	210	5	260	116	152
B4-MRC1600	1589	25.3	210	250	300	210	5	230	115	152
B4-MRC1800	1816	28.9	210	250	300	210	5	210	120	152
B4-MRC2000	1986	31.6	210	250	300	210	5	200	125	152
B4-MRC2100	2100	33.4	210	250	300	210	5	200	132	152
B41-MRC1400	1419	22.6	210	250	300	210	5	260	116	160
B41-MRC1600	1589	25.3	210	250	300	210	5	230	115	160
B41-MRC1800	1816	28.9	210	250	300	210	5	210	120	160
B41-MRC2000	1986	31.6	210	250	300	210	5	200	125	160
B41-MRC2100	2100	33.4	210	250	300	210	5	200	132	160
B42-MRC1400	1419	22.6	210	250	300	210	5	260	116	152
B42-MRC1600	1589	25.3	210	250	300	210	5	230	115	152
B5-MRC2400	2402	38.2	210	250	300	210	5	220	159	312
B5-MRC2800	2808	44.7	210	250	300	210	5	210	177	312
B5-MRC3000	2993	47.6	210	250	300	210	5	210	189	312
B5-MRC3100	3104	49.4	210	250	300	210	5	200	186	312
B5-MRC3200	3215	51.2	210	250	300	210	5	200	193	312
B5-MRC3500	3473	55.3	210	250	300	210	5	190	198	312
B51-MRC2400	2402	38.2	210	250	300	210	5	220	159	312
B51-MRC2800	2808	44.7	210	250	300	210	5	210	177	312
B51-MRC3000	2993	47.6	210	250	300	210	5	210	189	312
B51-MRC3100	3104	49.4	210	250	300	210	5	200	186	312
B51-MRC3200	3215	51.2	210	250	300	210	5	200	193	312
B51-MRC3500	3473	55.3	210	250	300	210	5	190	198	312

# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

## Dimensions

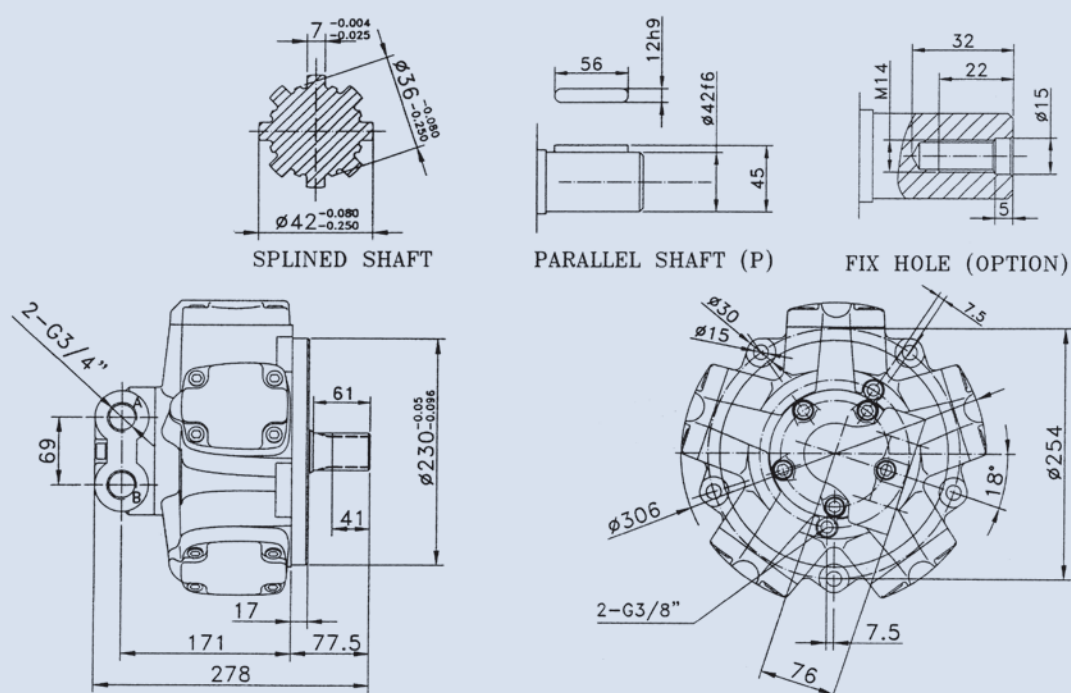
### B1-MRCN 200, 250, 300, 350, 400

Unit:mm



### B12-MRCN 400

Unit:mm

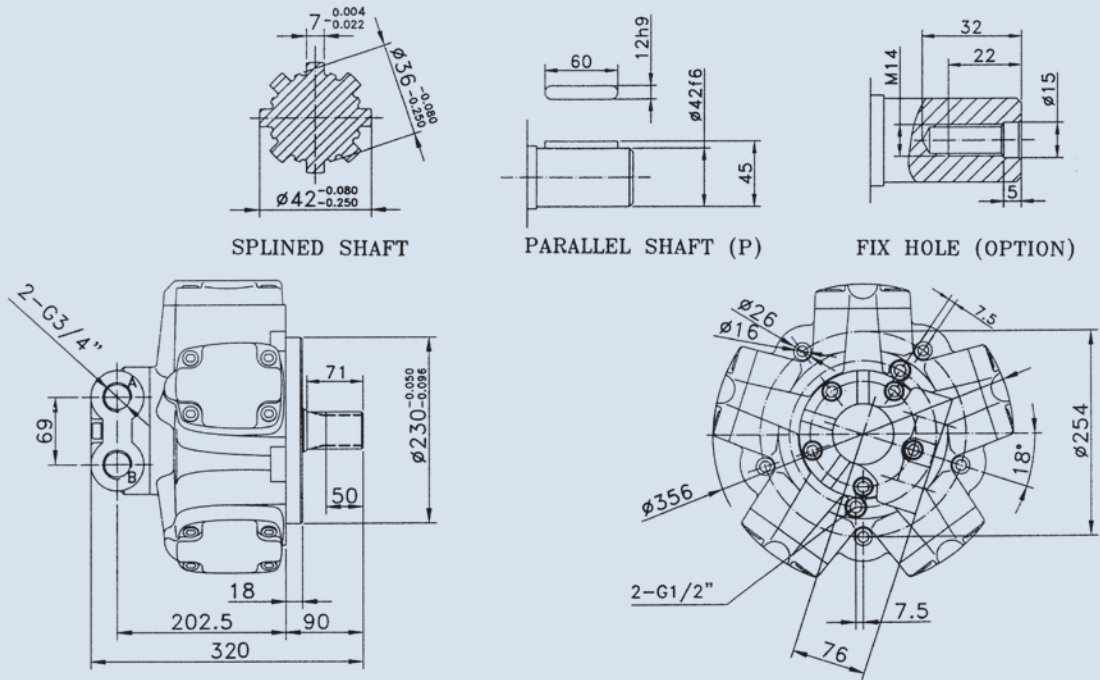


# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

## Dimensions

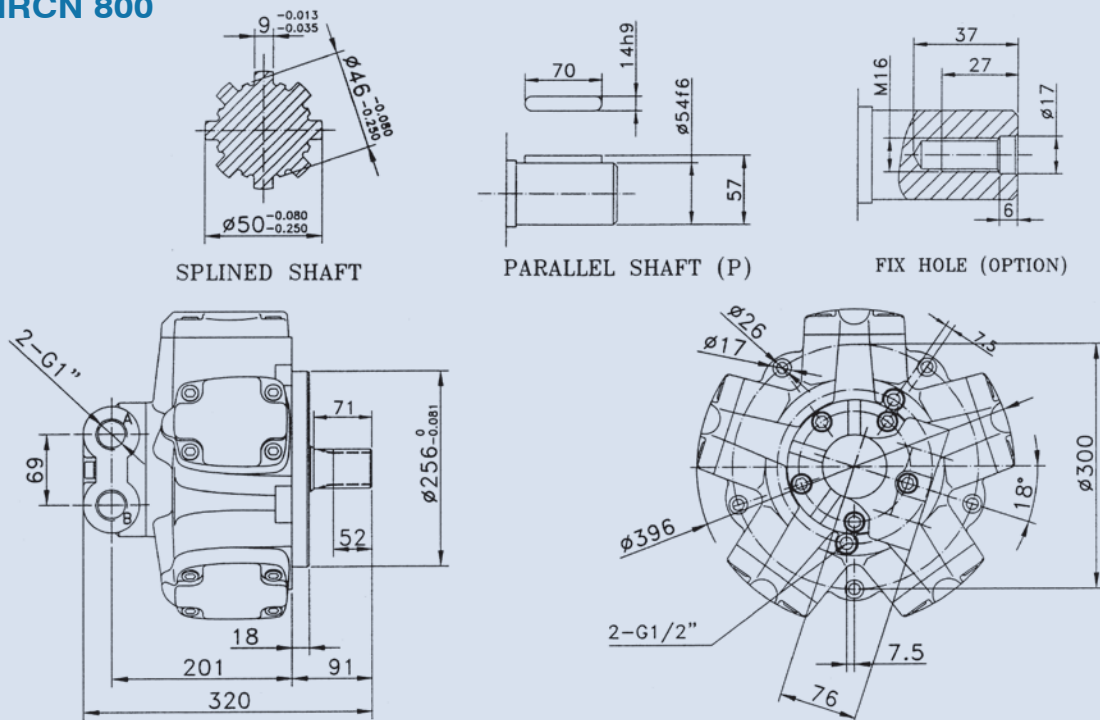
### B2-MRCN 400, 450, 500, 600, 700, 800

Unit:mm



### B23-MRCN 800

Unit:mm

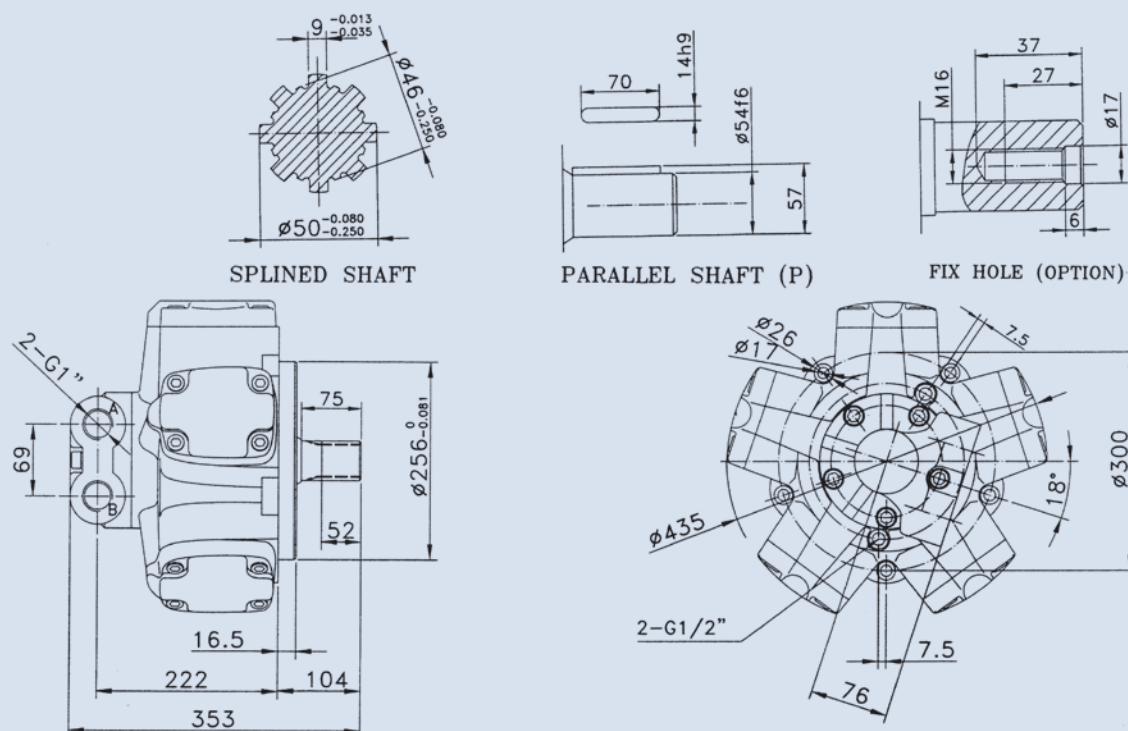


# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

## Dimensions

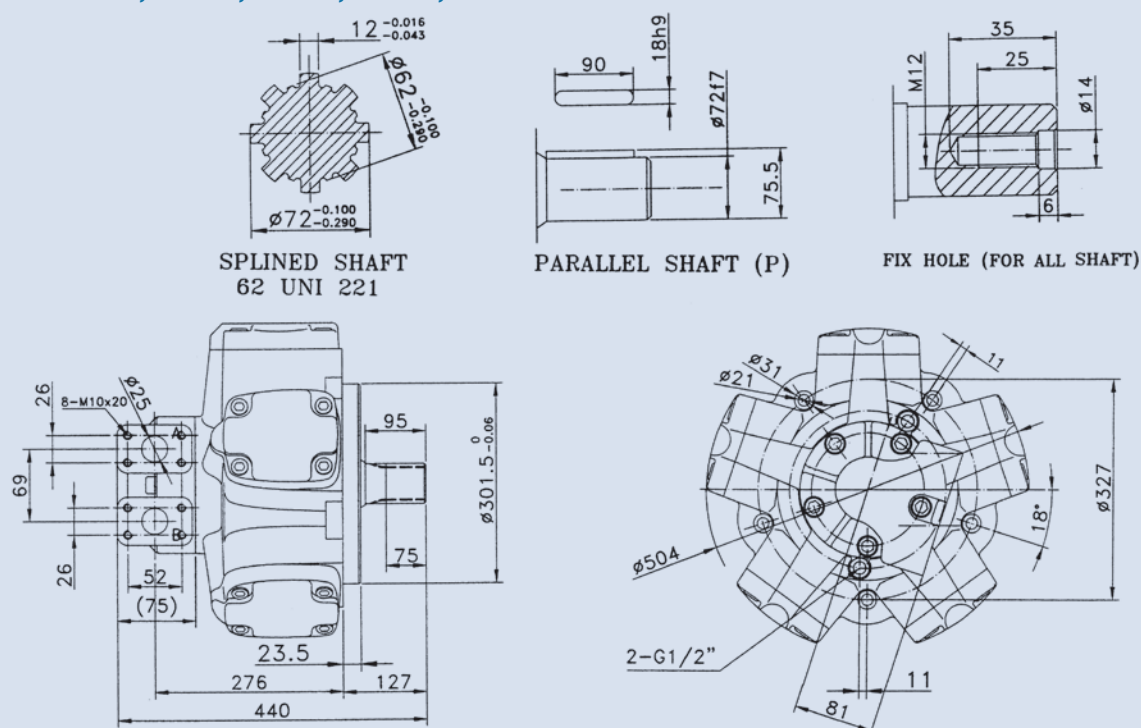
### B3-MRCN 850, 900, 1000, 1100, 1200, 1250

Unit:mm



### B4-MRC 1400, 1600, 1800, 2000, 2100

Unit:mm





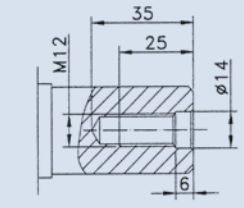
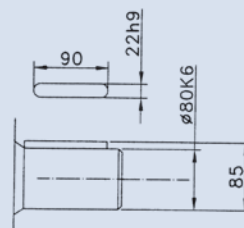
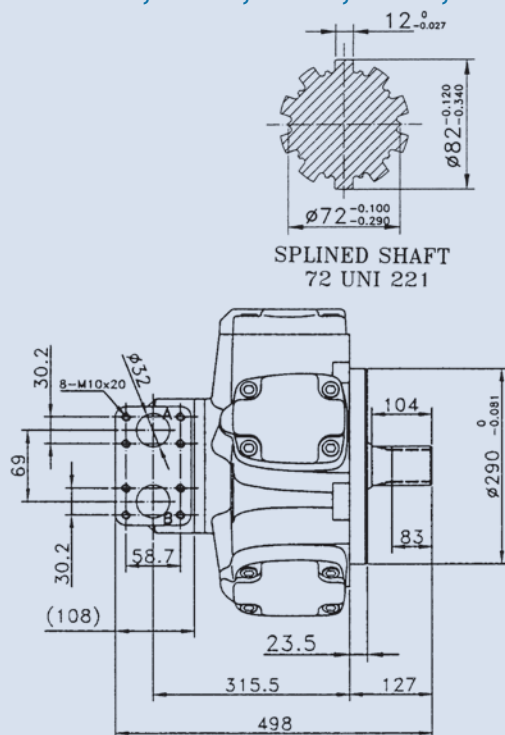
# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

## Dimensions

### B41-MRC 1400, 1600, 1800, 2000, 2100

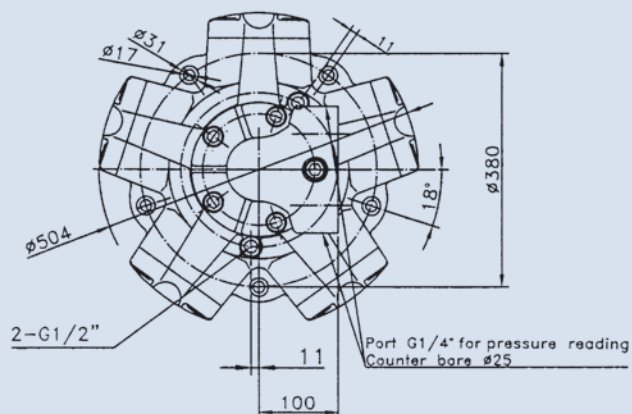
Unit:mm

H



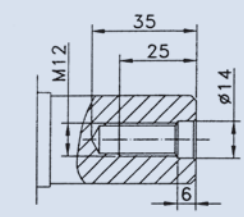
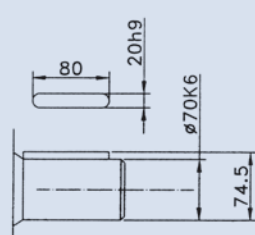
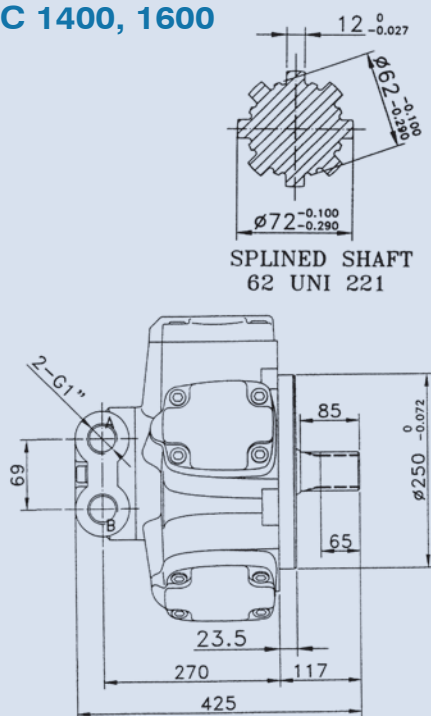
PARALLEL SHAFT (P)

FIX HOLE (FOR ALL SHAFT)



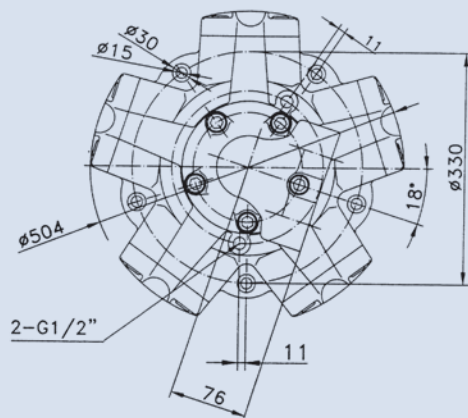
### B42-MRC 1400, 1600

Unit:mm



PARALLEL SHAFT (P)

FIX HOLE (FOR ALL SHAFT)

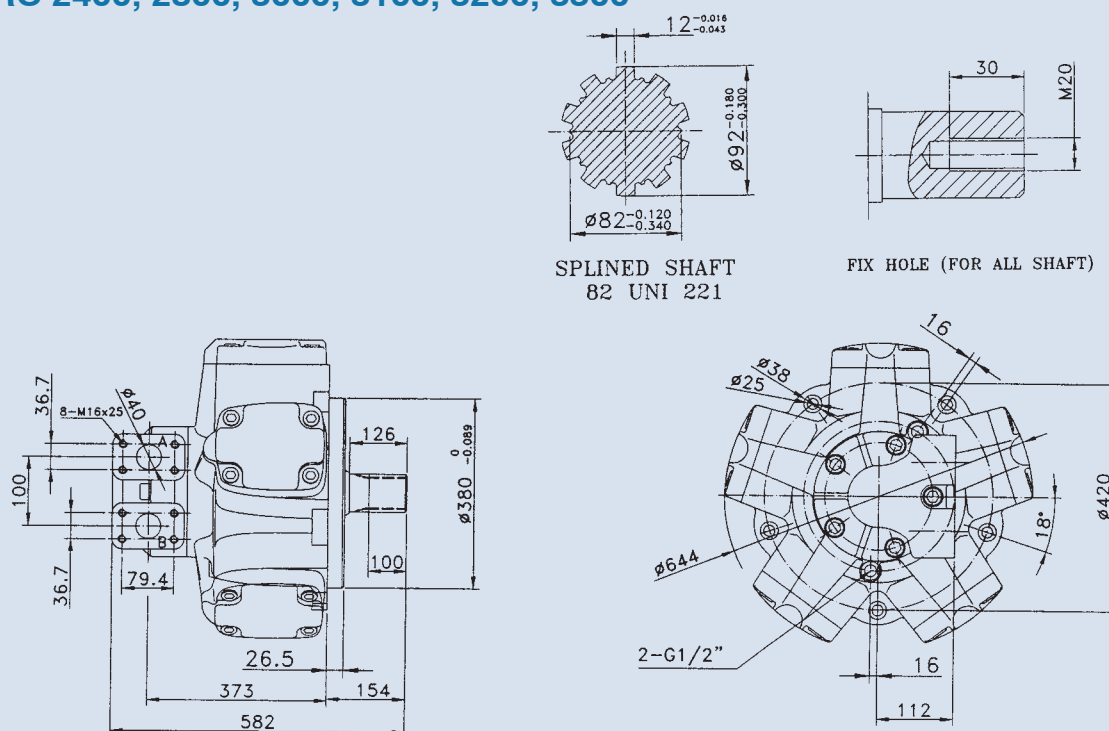


# RADIAL PISTON TYPE LOW SPEED HIGH TORQUE HYDRAULIC MOTOR

## Dimensions

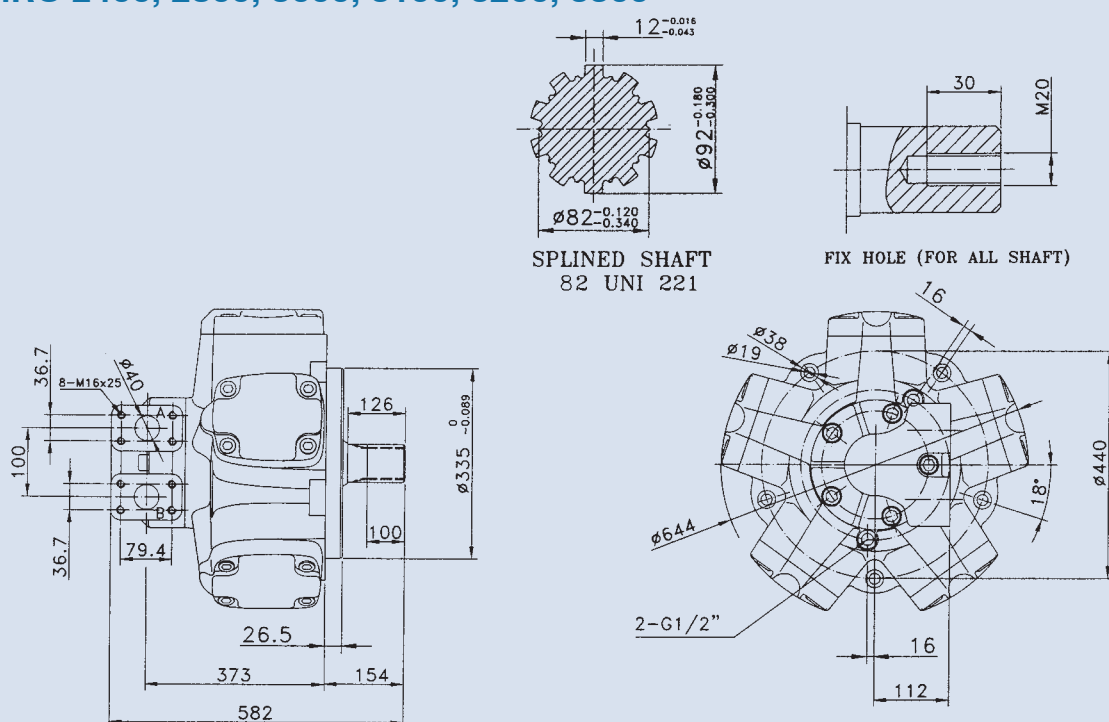
### B5-MRC 2400, 2800, 3000, 3100, 3200, 3500

Unit:mm

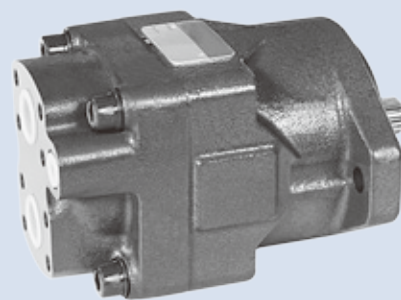
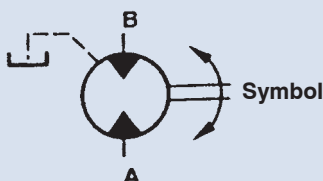


### B51-MRC 2400, 2800, 3000, 3100, 3200, 3500

Unit:mm



# HIGH PERFORMANCE VANE MOTOR

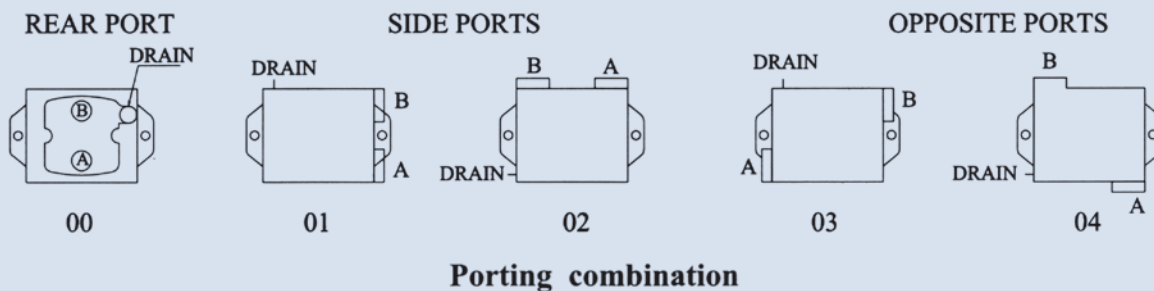


## How to order

**KVM4※C \ KVM4※CI - 055 - 1 N 00 - A 1 02 ※**

1 2 3 4 5 6 7 8 9 10

1	Series external drain ※=S: Severe duty type
2	Series internal drain ※=S: Severe duty type
3	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=1.13Nm/bar 075=1.27 Nm/bar
4	Shaft type 1-Keyed (SAE B) 2-Keyed (no SAE) 3-Splined (SAE B) 4-Splined (SAE BB) 5-Keyed
5	Rotation N-Bi-directional KVM4CI-KVM4SCI: Drain port is plugged Viewed from shaft end CW: Clockwise rotation A=inlet B=outlet CCW: Counter-clockwise rotation A=outlet B=inlet
6	Porting combination 00: Normal
7	Design letter
8	Seal class 1-S1 (KVM4C) 5-S5 (KVM4SC)
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
10	Modifications Weight: 18.2 kgs



## Specifications

Model	Series	Displacement (cc/rev)	Input flow at 2000 rpm		Torque T at 2000 rpm		Power output at 2000 rpm		Max. Pressure (bar)	Max. (rpm)
			Theoretical	at 175 bar	at 175 bar		at 175 bar			
			(ℓ/min)	(ℓ/min)	in.lbs	Nm	HP	kw		
KVM4C } KVM4SC	024	24.4	49.0	67.0	535.4	60.5	17.0	12.7	175	4000
	027	28.2	56.0	74.0	619.5	70.0	19.7	14.7		
	031	34.5	69.0	87.0	768.0	86.8	24.0	18.0		
	043	46.5	93.0	111.0	1062.0	120.0	33.6	25.1		
	055	58.8	118.0	136.0	1318.6	149.0	41.8	31.2		
	067	71.1	142.0	160.0	1504.5	170.0	47.7	35.6		
	075	80.1	160.0	178.0	1752.2	198.0	55.6	41.5		

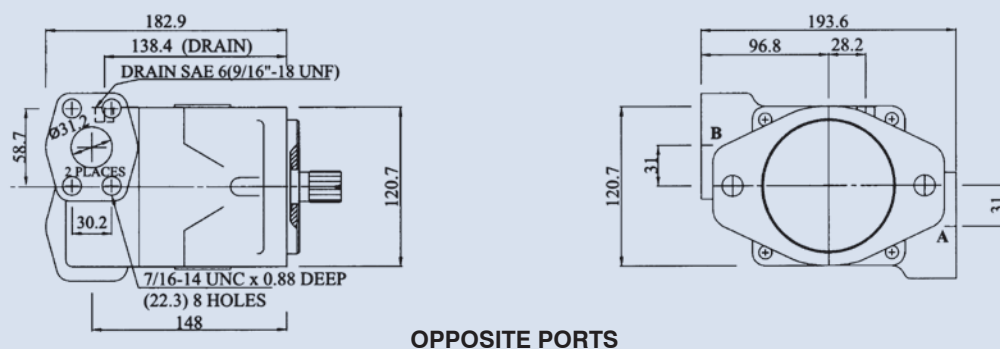
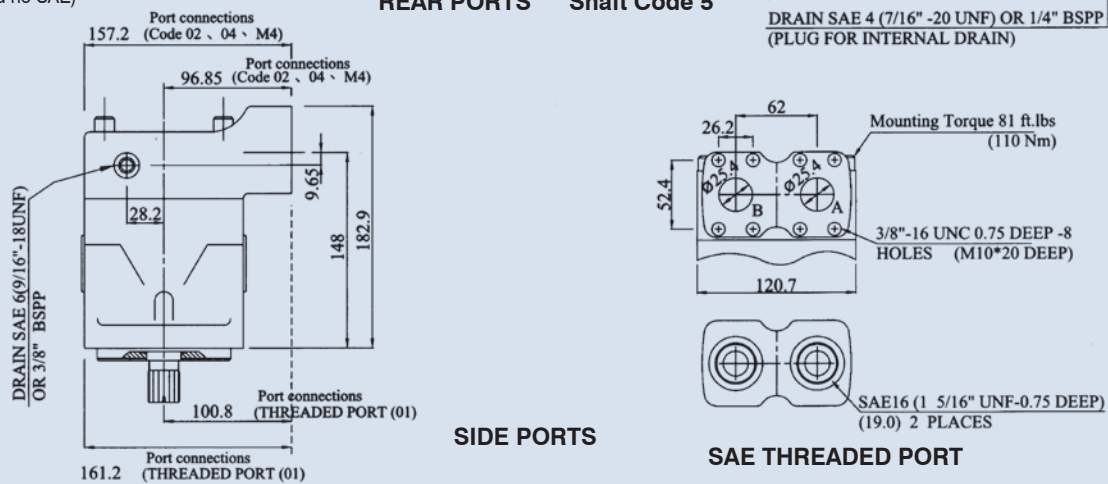
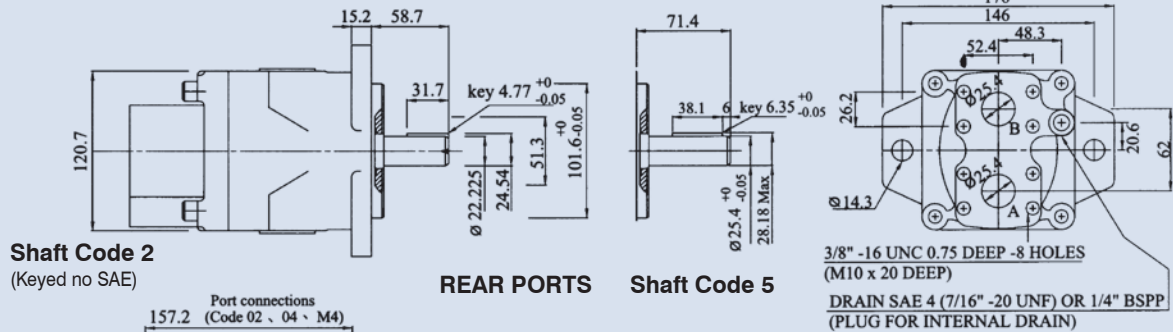
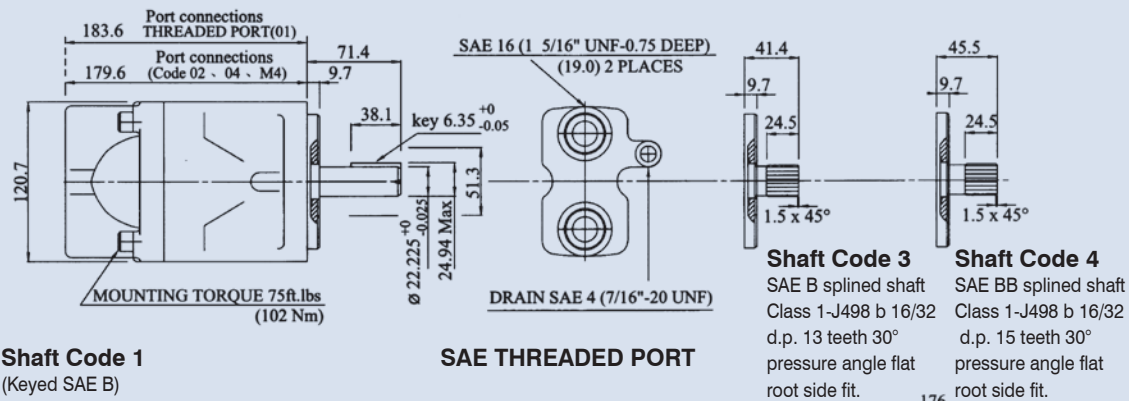


# HIGH PERFORMANCE VANE MOTOR

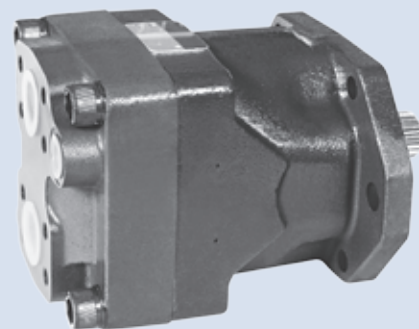
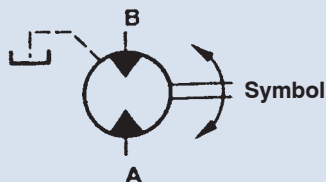
## Dimensions

KVM4✳C

Unit:mm



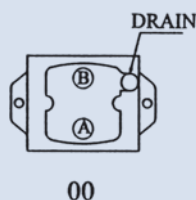
# HIGH PERFORMANCE VANE MOTOR



## How to order

**KVM4※D \ KVM4※DI - 138 - 1 N 00 - B 1 02 ※**

1	2	3	4	5	6	7	8	9	10
1	Series external drain ※=S: Severe duty type								
2	Series internal drain ※=S: Severe duty type								
3	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								
4	Shaft type 1-Keyed (SAE C) 3-Splined (SAE C) S-Splined (SAE J718C)								
5	Rotation N-Bi-directional KVM4DI-KVM4SDI: Drain port is plugged Viewed from shaft end CW: Clockwise rotation A=inlet B=outlet CCW: Counter-clockwise rotation A=outlet B=inlet								
6	Porting combination 00: Normal								
7	Design letter								
8	Seal class 1-S1 (KVM4D) 5-S5 (KVM4SD)								
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								
10	Modifications Weight: 29.91 kgs								



**Porting combination**  
00-Normal

## Specifications

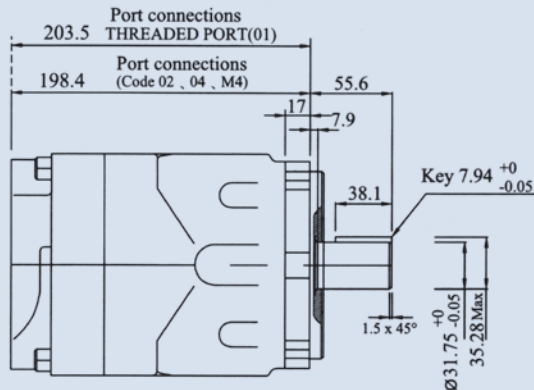
Model	Series	Displacement (cc/rev)	Input flow at 2000 rpm		Torque T at 2000 rpm		Power output at 2000 rpm		Max. Pressure (bar)	Max. (rpm)
			Theoretical	at 175 bar	at 175 bar		at 175 bar			
			(ℓ/min)	(ℓ/min)	in.lbs	Nm	HP	kw		
KVM4D } KVM4SD	062	65.1	130.0	154.0	1460.0	165.0	46.4	34.6	175	4000
	074	76.8	154.0	178.0	1770.0	200.0	56.2	41.9		
	088	91.1	182.0	206.0	2088.5	236.0	66.2	49.4		
	102	105.5	211.0	241.0	2336.3	264.0	74.1	55.3		
	113	116.7	233.0	257.0	2655.0	300.0	84.2	62.8		
	128	132.4	265.0	289.0	3009.0	340.0	95.5	71.2		
	138	144.4	289.0	313.0	3292.0	372.0	104.5	77.9		

# HIGH PERFORMANCE VANE MOTOR

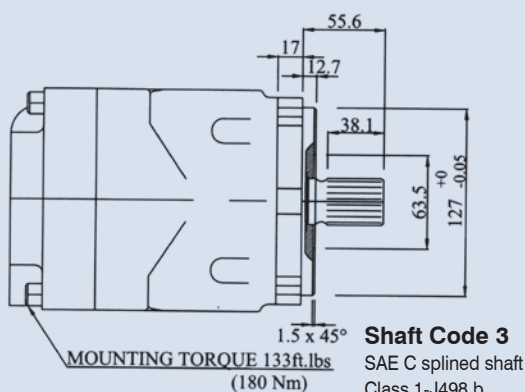
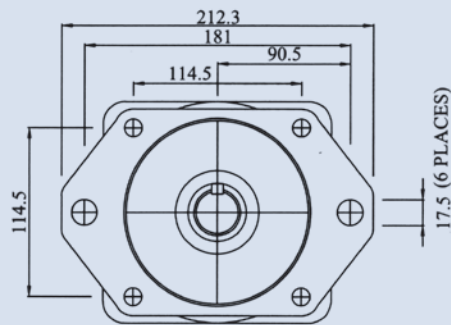
## Dimensions

KVM4✳D

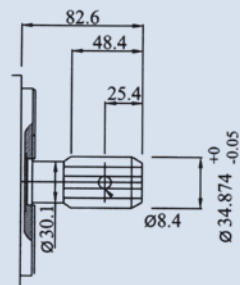
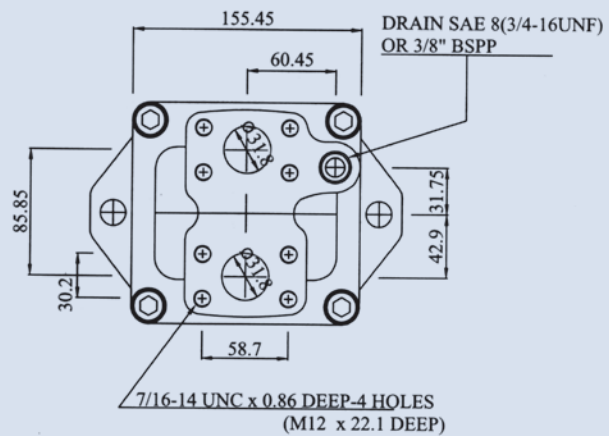
Unit:mm



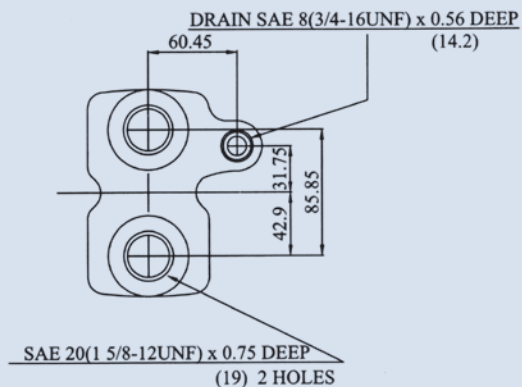
**Shaft Code 1**  
(Keyed SAE B)



**Shaft Code 3**  
SAE C splined shaft  
Class 1-J498 b  
12/24 d.p. 14 teeth  
30° pressure angle  
flat root side fit.

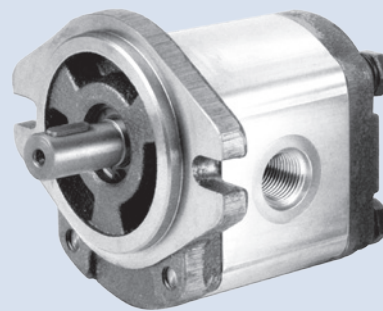
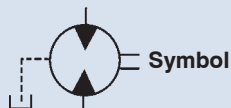


**Shaft Code S**  
ISO 500-3 splined  
shaft 16/32 d.p.  
21 teeth 30°  
pressure angle  
flat root side fit.



**SAE THREADED PORT**

# HIGH PRESSURE GEAR MOTOR



H

## How to order

**2M - M - 2 - U - ✖**

1	2	3	4	5
1	Model	Covers: Cast iron	Body: Aluminum	
2	Mounting type	M: Flange type 2-bolt		
3	Shaft type	1: Parallel shaft	2: Splined shaft	
4	Port size			
5	Displacement cc/rev			

## Specifications

Model	Displacement (cc/rev)	Pressure (bar)		Speed (rpm)	At 100 bar, 1000 rpm		Dimensions inch (mm)		Port Size	Weight (kg)
		Continuous	Max.		Power (kw)	Toque (Nm)	A	L		
05	5.0	250	300	600-4000	0.70	6.7	1.687 (42.86)	3.493 (88.71)	UNF-12 1-1/16"-12	4.17
07	7.0				0.98	9.4	1.746 (44.36)	3.611 (91.71)		4.25
08	8.4				1.18	11.3	1.796 (45.61)	3.709 (94.21)		4.31
09	9.5				1.33	12.7	1.825 (46.36)	3.768 (95.71)		4.38
11	11.3				1.59	15.2	1.884 (47.86)	3.886 (98.71)		4.55
14	14.0				1.97	18.8	1.963 (49.86)	4.044 (102.71)		4.72
16	16.0				2.25	21.5	2.022 (51.36)	4.162 (105.71)		4.81
18	18.0				2.53	24.1	2.081 (52.86)	4.280 (108.71)		4.95
20	19.5				2.74	26.2	2.160 (54.86)	4.437 (112.71)		5.03
22	21.5				3.02	28.8	2.180 (55.36)	4.477 (113.71)		5.12
24	23.5	180	210	600-2500	3.30	31.5	2.258 (57.36)	4.634 (117.71)	UNF-16 1-5/16"-12	5.20
26	25.0				3.51	39.0	2.317 (58.86)	4.752 (120.71)		5.26
28	28.0				3.93	37.6	2.396 (60.86)	4.910 (124.71)		5.32
30	30.0				4.22	40.3	2.475 (62.86)	5.067 (128.71)		5.39
33	33.0				4.63	44.3	2.554 (64.86)	5.225 (132.71)		5.45

## Dimensions

