

VNKM Series Hydraulic Motor

INTRODUCTION

VNKM series motor are small volume, economical type, which is designed with shaft distribution flow, which adapt the Gerotor gear set design and provide compact volume, high power and low weighth.

CHARACTERISTIC FEATURES

- * **Advanced manufacturing devices** for the Gerotor gear set, which provide small volume, high efficiency and long life.
- * **Shaft seal** can bear high pressure of motor of which can be used in parallel or in series.
- * **Advanced construction design**, high power and low weight.



SPECIFICATION Main Specification

Type		VNKM 8	VNKM 12.5	VNKM 20	VNKM 32	VNKM 40	VNKM 50
Geometric displacement (cm3/rev.)		8.2	12.9	19.9	31.6	39.8	50.3
Max. speed (rpm)	cont.	1950	1550	1000	630	500	400
	int.	2450	1940	1250	800	630	500
Max. torque (N·m)	cont.	11	16	25	40	45	46
	int.	15	23	35	57	70	88
	peak	21	33	51	64	82	100
Max. output (kW)	cont.	1.8	2.4	2.4	2.4	2.2	1.8
	int.	2.6	3.2	3.2	3.2	3.2	3.2
Max. pressure drop (MPa)	cont.	10	10	10	10	9	7
	int.	14	14	14	14	14	14
	peak	20	20	20	16	16	16
Max. flow (L/min)	cont.	16	20	20	20	20	20
	int.	20	25	25	25	25	25
Weight (kg)		1.9	2	2.1	2.2	2.3	2.4

Type		Max.inlet pressure
VNKM8-50 (MPa)	cont.	17.5
	int.	22.5

* **Continuous pressure:** Max. value of operating motor continuously.
* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.
* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



Performance Data

VNKM8 [8.2 cm3/rev.]

		Max. cont				Max. int	
		3.5	5	7	10	12	14
Flow (L/min)	2	3 228	5 218	8 206	10 156	12 111	14 58
	4	3 474	5 471	7 463	11 426	13 391	15 331
	8	3 953	5 946	7 926	11 884	13 855	15 816
	12	2 1444	5 1426	7 1402	10 1360	13 1324	15 1288
	15	4 1912		7 1900	10 1861	12 1833	14 1780
	20			6 2395	10 2350	11 2328	14 2281
Max. cont							
Max. int							

VNKM12.5 [12.9 cm3/rev.]

		Max. cont				Max. int	
		3.5	5	7	10	12	14
Flow (L/min)	2	6 140	8 136	11 119	16 68	19 35	
	4	6 296	8 289	12 274	17 229	19 200	23 145
	8	5 605	8 596	12 583	17 543	20 514	24 469
	12	5 912	8 905	11 895	16 859	20 834	24 784
	15	5 1152	7 1144	11 1136	16 1102	19 1078	23 1036
	20	3 1542	7 1532	10 1521	15 1500	19 1482	22 1437
Max. cont	25	2 1910	6 1891	9 1878	14 1848	18 1828	22 1788
	Max. int						

VNKM20 [19.9 cm3/rev.]

		Pressure (MPa)				Max. cont		Max. int
		1,7	3,5	5	7	10	12	14
Flow (L/min)	2	3 99	9 96	14 89	19 74	26 42	30 21	
	4	4 197	9 191	14 182	19 178	26 134	31 112	36 74
	8	4 398	9 395	13 391	19 377	27 340	31 319	36 288
	12	3 596	8 594	13 588	18 579	26 545	31 523	37 493
	15	3 745	8 741	12 738	17 728	25 695	30 684	36 660
	20	1 998	6 995	11 991	19 985	24 962	29 916	35 885
Max. cont	25		4 1247	9 1245	14 1242	23 1189	28 1180	33 1176
Max. int								

VNKM32 [31.6 cc/rev.]

		Pressure (MPa)				Max. cont		Max. int	
		2	3,5	5	7	10	12	14	
Flow (L/min)	2	7 61	15 57	21 52	28 47	40 16			
	4	7 126	15 121	21 114	29 106	41 82	48 67	57 49	
	8	7 250	15 244	21 239	29 231	41 207	49 194	58 167	
	12	6 378	13 374	20 369	28 362	40 338	48 322	58 297	
	15	4 476	12 472	18 468	27 462	39 441	47 429	57 406	
	20	3 633	10 630	17 627	25 619	37 601	46 585	55 566	
Max. cont	25	1 791	8 789	15 787	23 783	35 766	43 753	52 732	
Max. int									

VNKM40 [39.8 cm3/rev.]

		Max. cont				Max. int	
		3	5	7	8,5	10	12
Flow (L/min)	2	16 45	27 40	36 34	44 28	51 17	
	4	16 96	27 93	37 85	44 79	52 65	62 52
	8	15 197	26 195	36 182	44 176	52 166	63 154
	12	14 293	25 287	35 282	43 277	51 268	62 257
	15	13 371	24 365	34 360	42 355	50 347	62 338
	20	10 497	21 492	31 487	39 480	48 472	59 463
Max. cont	25	7 622	19 617	29 612	37 607	44 600	56 591
	Max. int						

VNKM50 [50.3 cm3/rev.]

		Max. cont				Max. int	
		1.5	3	5	7	10	
Flow (L/min)	2	11 37	23 33	36 27	50 22		
	4	11 76	22 73	36 68	50 63	70 55	
	8	11 157	21 154	35 149	50 145	71 137	
	12	11 237	20 234	33 231	49 226	71 218	
	15	10 296	18 295	32 294	47 288	69 282	
	20	8 395	14 395	29 393	44 390	64 381	
Max. cont	25	4 498	10 496	25 494	40 490	59 484	
	Max. int						

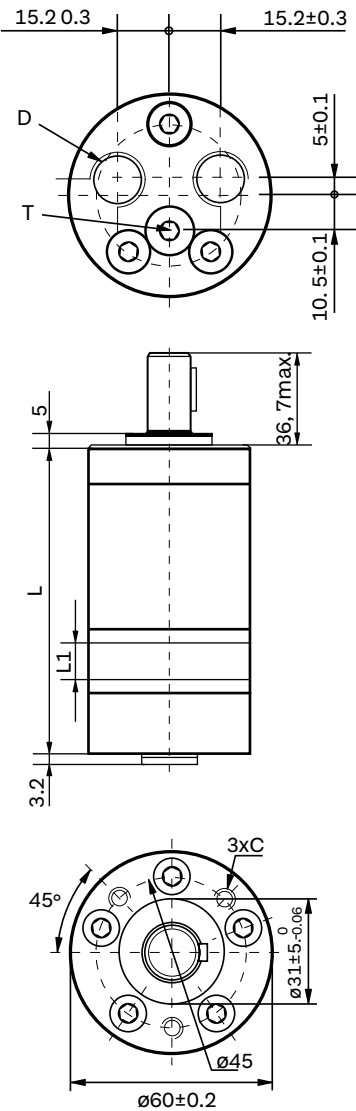
Torque (N·m) 37
Speed (rpm) 607



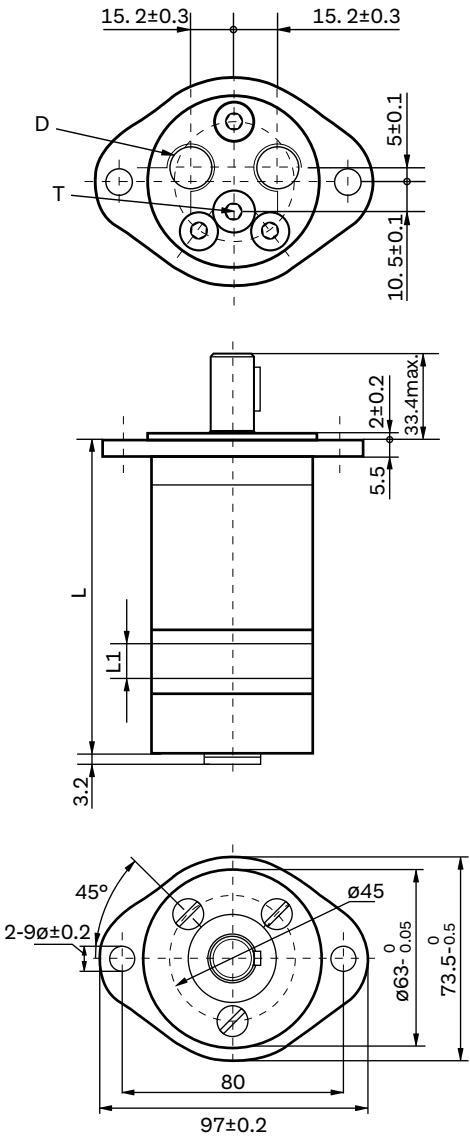
VNKM End Port Dimensions and Mounting Data

MOUNTING

Flange M, U



Flange F



Model	M, U Flange		F Flange	
	L	L1	L	L1
VNKM8	104	3.5	107.5	3.5
VNKM12.5	106	5.5	109.5	5.5
VNKM20	109	8.5	112.5	8.5
VNKM32	114	13.5	117.5	13.5
VNKM40	117.5	17	121	17
VNKM50	122	21.5	125.5	21.5

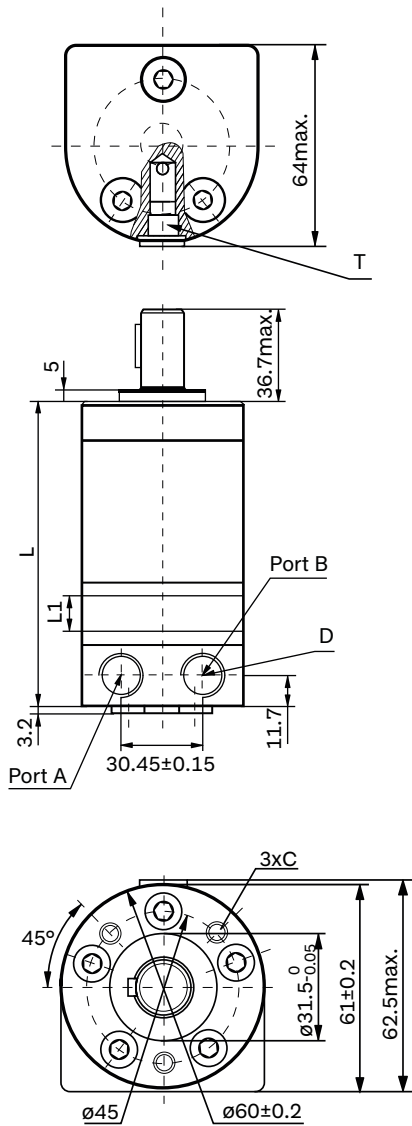
Code Mounting	M, U Flange		F Flange	
	1E (depth)	1U (depth)	1E (depth)	1U (depth)
C	[M]3-M6 (10)	[U]3-1/4-28UNF-2B(10)	[M]--	[U]--
D	G3/8 (12)	9/16-18UNF(12)	G3/8 (12)	9/16-18UNF(12)
T	G1/8 (8)	3/8-24UNF(8)	G1/8 (8)	3/8-24UNF(8)



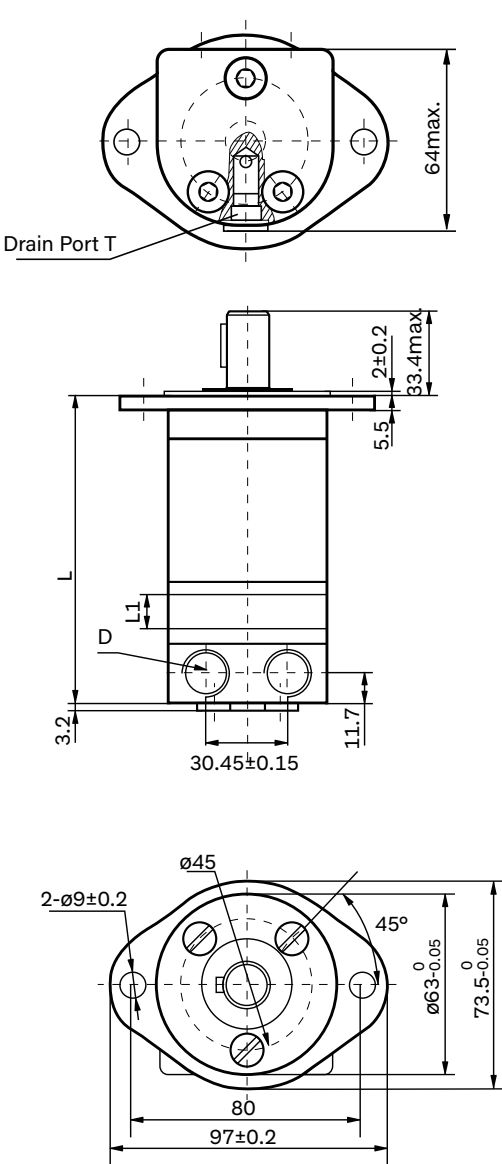
VNKM Side Port Dimensions and Mounting Data

MOUNTING

Flange M, U



Flange F

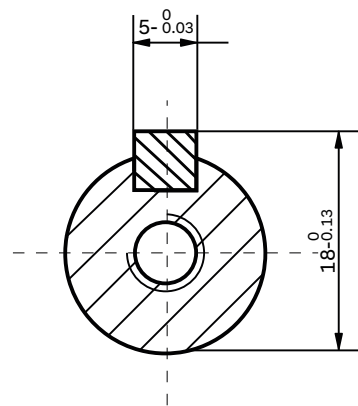
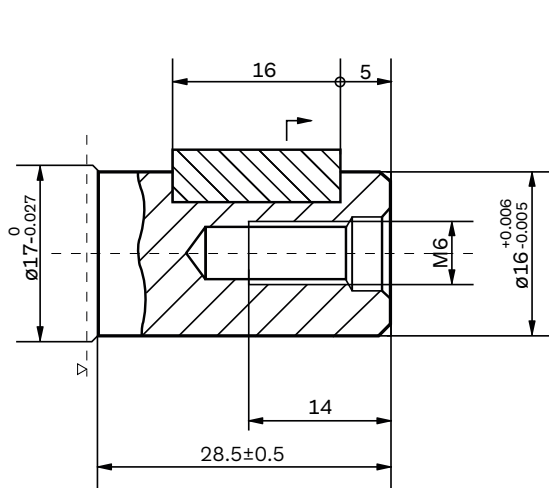


Model	M, U Flange		F Flange	
	L	L1	L	L1
VNKM8	105	3.5	108.5	3.5
VNKM12.5	107	5.5	110.5	5.5
VNKM20	110	8.5	113.5	8.5
VNKM32	115	13.5	118.5	13.5
VNKM40	118.5	17	122	17
VNKM50	123	21.5	126.5	21.5

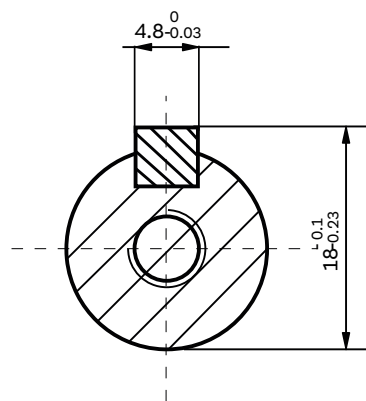
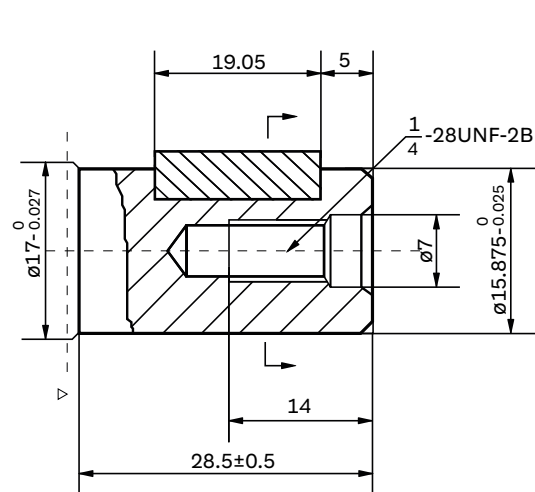
Code Mounting	M, U Flange		F Flange	
	E (depth)	U (depth)	E (depth)	U (depth)
C	[M]3-M6 (10)	[U]3-1/4-28UNF-2B(10)	[M]--	[U]--
D	G3/8 (12)	9/16-18UNF(12)	G3/8 (12)	9/16-18UNF(12)
T	G1/8 (8)	3/8-24UNF(8)	G1/8 (8)	3/8-24UNF(8)



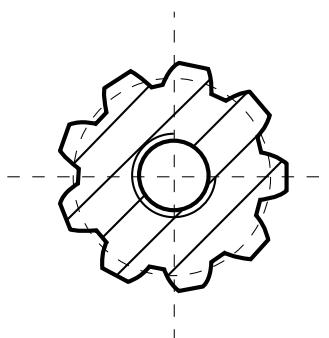
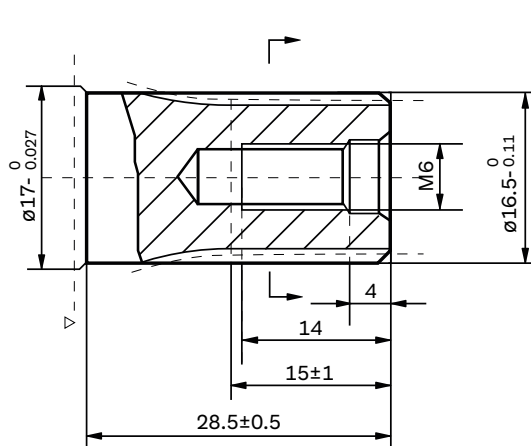
VNKM Shaft Extensions for BMM Motors



Shaft A:
Cylindrical shaft $\varnothing 16$
Parallel key 5x5x16



Shaft B:
Cylindrical shaft $\varnothing 15.875$
Parallel key 4.8x4.8x19.05



Shaft C:
Involute splined shaft B17x14
DIN5482

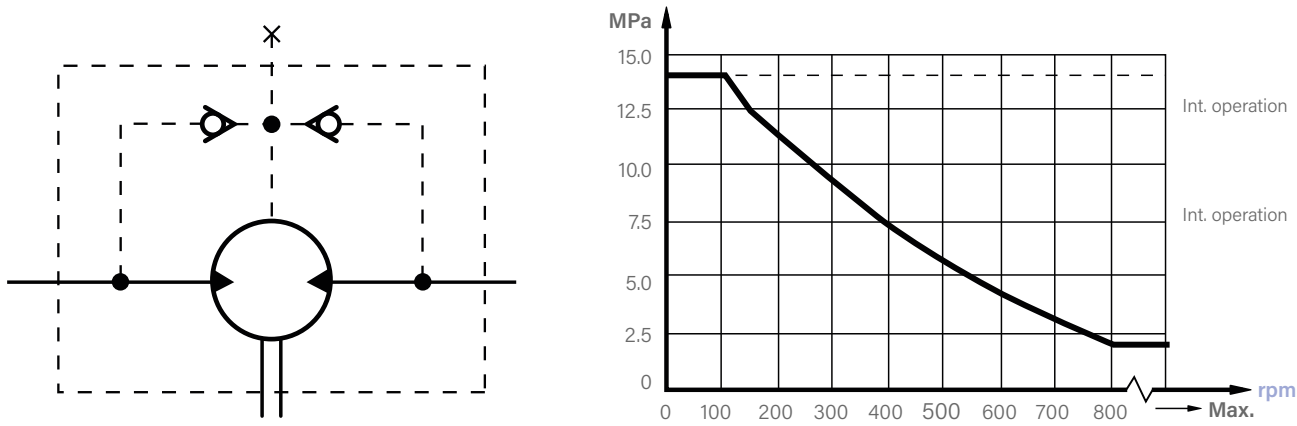


Motor Mounting
Surface



VNKM Series Hydraulic Motor

PERMISSIBLE SHAFT SEAL PRESSURE



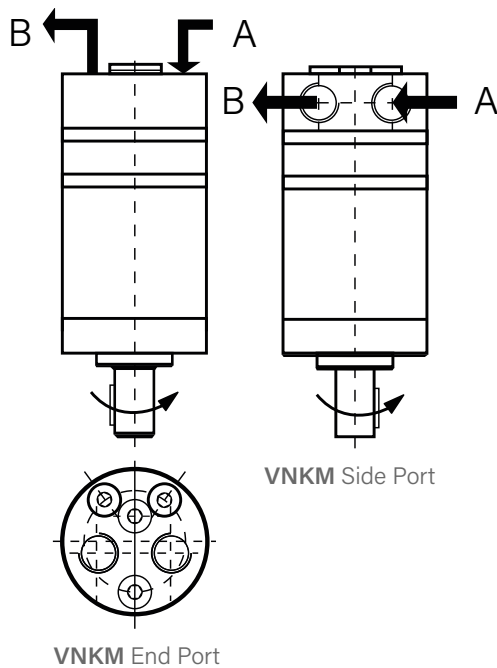
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

DIRECTION OF SHAFT ROTATION: Standard

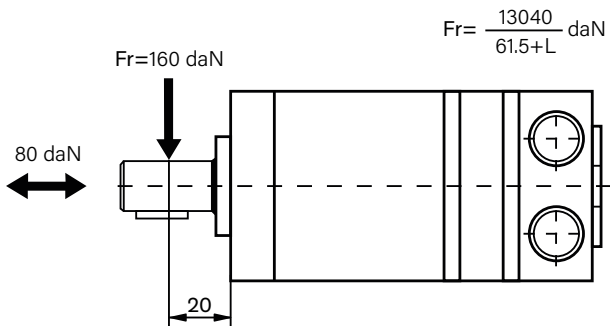
When facing shaft end of motor, shaft to rotate:

Clockwise when port "A" is pressurized.

Counter-clockwise port "B" is pressurized.



STATUS OF THE SHAFT'S RADIAL FORCE



Fr = Radial Force (daN)
 L = Distance (mm)
 n = Speed (rpm)
Max. force load
Rhomb-flange L = 15 mm
Square-flange L = 20mm



Order Information

Pos.1

VNKM

1

2

3

4

5

6

7

8

Pos.1	2	3	4	5	6	7	8			
Code	Displacement	Flange	Output shaft	Ports and drain port	Rotation direction	Paint	Unusually function			
	8	M	3-M6 Circle-flange, pilot Ø31.5×5 3-1/4-28UNF Circle flange, pilot Ø31.5×5 2-Ø9 Rhomb-flange, pilot Ø63×2	A	Shaft Ø16, parallel key 5×5×16	E	G3/8, G1/8	Omit	Standard	
	12.5									
	20	U		B	Shaft Ø15.875, parallel key 4.8×4.8×19.05	U	9/16-18UNF, 3/8-24UNF	Standard	Omit	No case drain
	32					1E	End port G3/8, G1/8	R	B	Black
40	F	C		Shaft Ø16.5, involute B17×14, DIN5482	1U	End port 9/16-18UNF, 3/8-24UNF	S	SD	Speed Sensor	
Omit	50									

Note: When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.