



VNKPLUS new series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure. The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

**Characteristic featurres:**

- \* The motor has the same dimensions and mounting data as the hydraulic motors type VNK.
- \* The motor is described with 15-20% higher technical data(Max. torque and Max. pressure drop), thereby higher power. The new motor is suitable for vehicles with greater loads and pressure drop.

### Main Specification

Type		VNKPLUS 80	VNKPLUS 100	VNKPLUS 125	VNKPLUS 160	VNKPLUS 200	VNKPLUS 250	VNKPLUS 315	VNKPLUS 400	VNKPLUS 475
Geometric displacement (cm <sup>3</sup> /rev.)		80.6	100.8	125	154	194	243	311	394	475
Max. speed (rpm)	cont.	800	748	600	470	375	300	240	185	155
	int.	988	900	720	560	450	360	280	225	185
Max. torque (N•m)	cont.	225	290	365	485	586	708	880	880	910
	int.	250	320	400	540	645	806	960	960	960
Max. output (kW)	cont.	16	18	18	18.1	18.1	18	17	11	9
	int.	20	22	23	25	24	23.8	20.2	12	11
Max. pres- sure drop (MPa)	cont.	20.5	20.5	20.5	21	21	20	20	16	14
	int.	22.5	22.5	22.5	22.5	22.5	22.5	22.5	17.5	15
	peak	29.5	29.5	29.5	28	27	27	26	21	17.5
Max. flow (L/min)	cont.	65	75	75	75	75	75	75	75	75
	int.	80	90	90	90	90	90	90	90	90
Max. inlet pressure (MPa)	cont.	25	25	25	25	25	25	25	25	25
	int.	30	30	30	30	30	30	30	30	30
Weight		9.8	10	10.3	10.7	11.1	11.6	12.3	13.2	14.3

- \* 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.



VNKSPLUS80 [80.6cm<sup>3</sup>/rev.]

		Pressure (MPa)						
		3.5	7	10.5	14	17.5	20.5	22.5
Flow (L/min)	15	35	80	120	158	195	228	249
	30	180	174	168	164	158	151	143
	40	35	80	120	158	195	232	260
	50	362	352	346	338	330	322	310
	60	35	79	119	155	193	227	250
	80	487	480	468	457	446	438	425
Max.cont.	65	30	77	117	153	192	224	248
	80	612	603	592	581	572	558	542
Max.int.	60	28	77	117	153	192	224	243
	80	735	726	718	703	687	673	646

VNKSPLUS100 [100.8cm<sup>3</sup>/rev.]

		Pressure (MPa)							
		3.5	7	10.5	14	17.5	20.5	22.5	
Flow (L/min)	15	48	95	150	200	250	282	310	
	30	146	144	139	135	130	120	105	
	40	45	94	146	198	250	290	317	
	50	291	289	278	274	269	258	242	
	60	43	89	142	196	248	288	316	
	90	387	384	374	359	350	335	320	
Max.cont.	75	40	88	135	194	247	286	315	
	90	486	483	473	462	450	430	420	
Max.int.	60	37	88	132	185	244	283	312	
	90	588	584	574	562	550	538	520	

VNKSPLUS125 [125cm<sup>3</sup>/rev.]

		Pressure (MPa)						
		3.5	7	10.5	14	17.5	20.5	22.5
Flow (L/min)	15	55	120	176	245	309	345	375
	30	115	113	110	104	98	90	84
	40	55	120	175	250	315	364	404
	50	231	228	223	214	202	188	172
	60	53	118	178	250	315	364	403
	90	312	309	290	289	278	262	235
Max.cont.	75	50	115	176	248	315	362	397
	90	391	386	378	365	352	339	308
Max.int.	60	45	113	171	241	308	358	397
	90	469	461	450	437	425	400	372

VNKSPLUS160 [154cm<sup>3</sup>/rev.]

		Pressure (MPa)							
		3.5	7	10.5	14	17.5	21	22.5	
Flow (L/min)	15	70	142	215	298	372	435	476	
	30	93	91	89	85	80	76	58	
	40	73	151	225	312	382	456	492	
	50	189	187	181	176	170	162	153	
	60	75	152	228	314	383	454	488	
	90	252	250	246	239	234	228	212	
Max.cont.	75	70	148	225	305	372	445	480	
	90	313	310	306	298	293	285	272	
Max.int.	60	68	143	218	296	370	442	480	
	90	378	376	370	362	353	346	332	

TORQUE(N·m) 301  
SPEED (r/min) 646

cont.  
int.



VNKSPPLUS200 [194cm³/rev.]

		Pressure (MPa)						
		3.5	7	10.5	14	17.5	21	22.5
Flow (L/min)	15	87	179	273	371	471	562	610
	30	74	73	71	68	64	60	48
	40	91	190	288	386	489	572	618
	50	150	148	143	140	134	128	119
	60	94	193	296	394	498	584	645
	75	198	195	192	188	183	178	167
Max.cont.	90	90	191	292	389	493	580	634
Max.int.	90	248	246	241	236	230	223	212
		85	185	279	382	483	575	622
		300	295	288	281	273	263	251
		78	176	271	370	472	561	610
		374	370	364	360	352	340	331
		68	163	265	361	456	545	599
		443	440	435	428	424	413	400

VNKSPPLUS250 [243cm³/rev.]

		Pressure (MPa)						
		3.5	7	10.5	14	17.5	20	22.5
Flow (L/min)	15	110	231	351	462	585	681	778
	30	59	58	56	53	50	46	35
	40	116	236	359	475	597	700	790
	50	119	117	114	108	102	92	80
	60	118	241	363	480	599	706	796
	75	162	159	156	150	143	134	121
Max.cont.	90	111	234	352	472	591	693	788
Max.int.	90	203	201	197	191	182	173	158
		106	224	345	462	582	685	772
		244	242	237	230	220	208	194
		101	214	340	454	570	670	760
		303	299	294	285	272	260	244
		93	209	335	447	559	657	749
		363	359	354	348	340	328	303

VNKSPPLUS315 [311cm³/rev.]

		Pressure (MPa)						
		3.5	7	10.5	14	17.5	20	22.5
Flow (L/min)	15	148	304	456	613	762	879	978
	30	48	47	45	43	41	39	27
	40	155	314	465	635	778	884	988
	50	95	93	91	89	86	82	67
	60	160	321	479	650	796	906	997
	75	127	125	121	117	115	109	91
Max.cont.	90	155	314	465	638	780	886	988
Max.int.	90	159	157	153	149	145	142	128
		151	306	453	620	765	886	976
		187	185	181	176	169	157	143
		146	300	445	613	755	875	966
		238	236	232	227	224	220	196
		135	284	436	601	740	863	952
		286	283	278	272	265	257	232

VNKSPPLUS400 [394cm³/rev.]

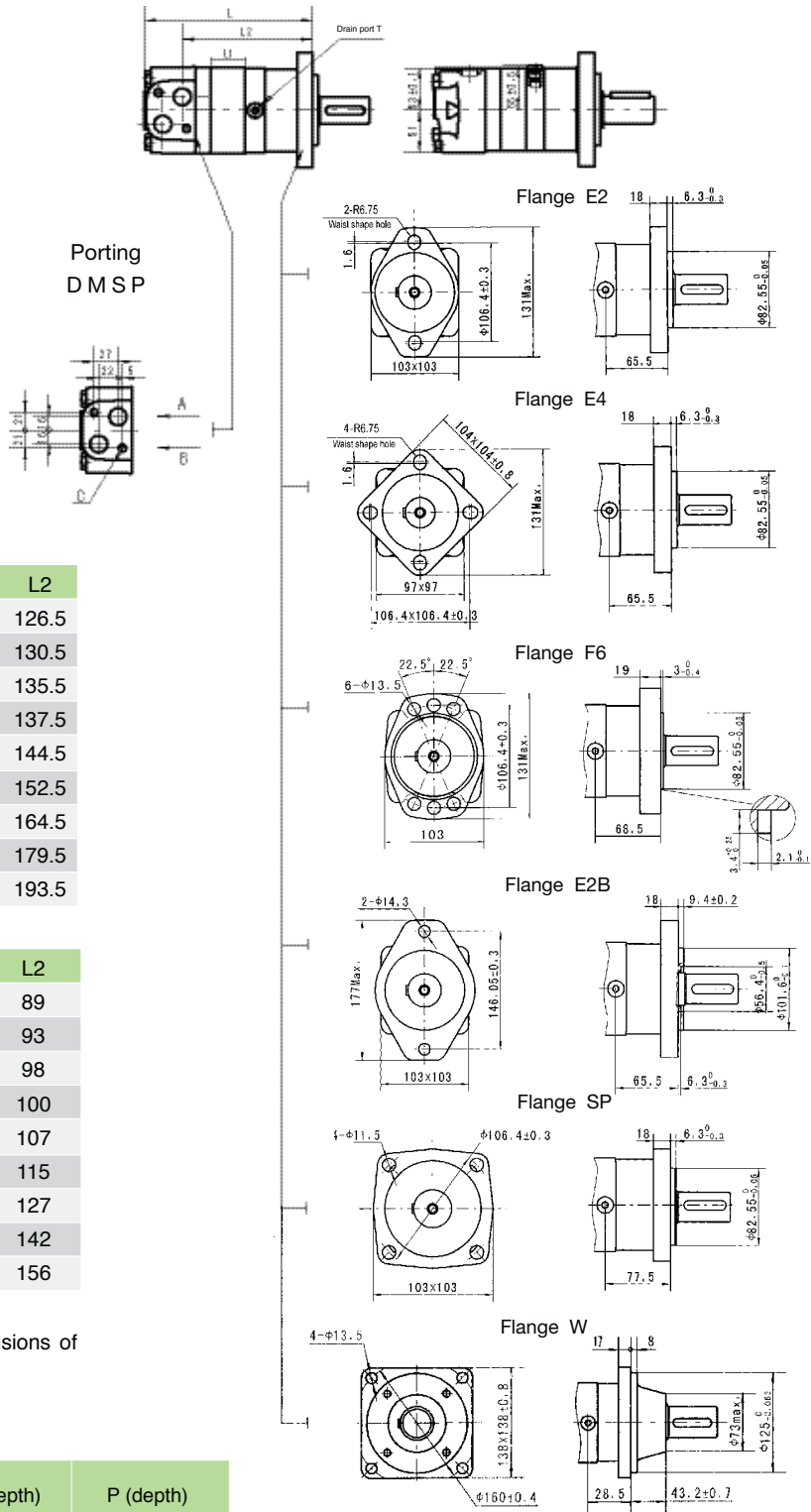
		Pressure (MPa)					
		3.5	7	10.5	14	16	17.5
Flow (L/min)	15	186	379	578	779	896	986
	30	37	36	35	33	31	29
	40	190	388	590	791	905	991
	50	75	73	71	68	65	61
	60	195	394	596	797	912	998
	75	99	97	95	93	90	85
Max.cont.	90	191	388	587	785	904	983
Max.int.	90	125	123	118	114	109	102
		186	388	587	785	904	983
		149	146	142	137	131	122
		181	372	576	770	891	973
		187	183	177	171	164	153
		176	367	571	766	883	965
		226	221	214	208	199	183

VNKSPPLUS475 [475cm³/rev.]

		Pressure (MPa)				
		3.5	7	10.5	14	15
Flow (L/min)	15	218	439	661	892	995
	30	30	29	28	27	25
	40	223	450	676	910	1002
	50	61	60	58	56	53
	60	228	461	689	927	1017
	75	82	80	77	74	68
Max.cont.	90	224	456	682	920	1008
Max.int.	90	103	101	97	92	86
		220	451	677	913	998
		123	121	118	112	105
		212	443	664	901	980
		155	153	147	140	132
		196	421	643	877	959
		186	184	178	170	157

TORQUE (N·m) 766  
SPEED (rpm) 208

cont.  
int.



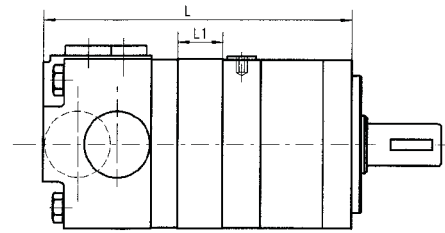
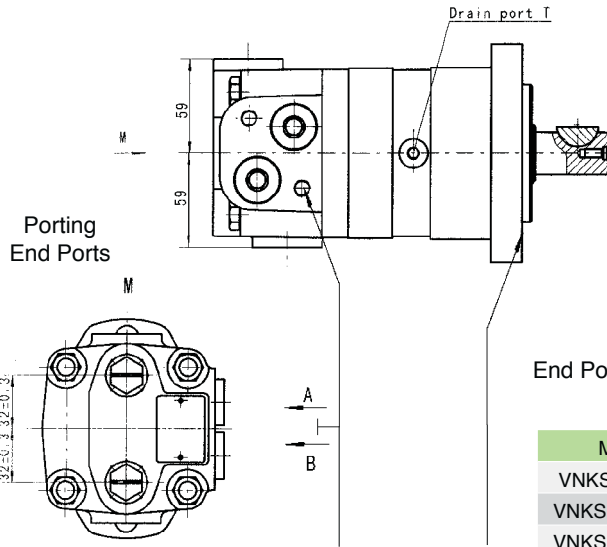
Model	L	L1	L2
VNKPLUS-80	170	16	126.5
VNKPLUS-100	174	20	130.5
VNKPLUS-125	179	25	135.5
VNKPLUS-160	181	27	137.5
VNKPLUS-200	188	34	144.5
VNKPLUS-250	196	42	152.5
VNKPLUS-315	208	54	164.5
VNKPLUS-400	223	69	179.5
VNKPLUS-475	237	83	193.5

Model	L	L1	L2
VNKPLUS-80-W	132.5	16	89
VNKPLUS-100-W	136.5	20	93
VNKPLUS-125-W	141.5	25	98
VNKPLUS-160-W	143.5	27	100
VNKPLUS-200-W	150.5	34	107
VNKPLUS-250-W	158.5	42	115
VNKPLUS-315-W	170.5	54	127
VNKPLUS-400-W	185.5	69	142
VNKPLUS-475-W	199.5	83	156

Note: If the mounting SP is used, the dimensions of L and L2 should plus 12 mm.

Code Mounting	D (depth)	M (depth)	S (depth)	P (depth)
P(A,B)	G1/2(18)	M22x1.5(18)	7/8-14 O-ring (18)	1/2-14NPTF (15)
T	G1/4(12)	M14x1.5(12)	7/16-20UNF(12)	7/16-20UNF(12)
C	2-M10(13)	2-M10 (13)	2-3/8-16UNC (13)	2-3/8-16UNC (13)

VNKSPLUS DIMENSIONS AND MOUNTING DATA

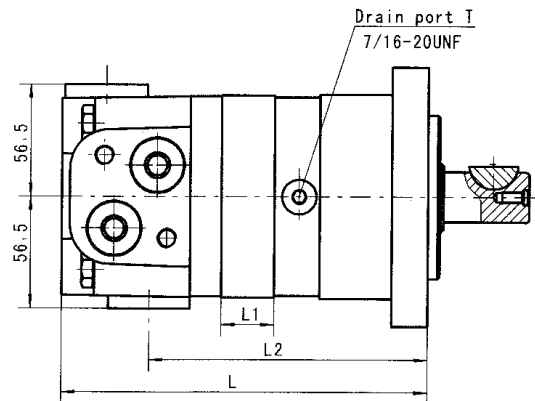
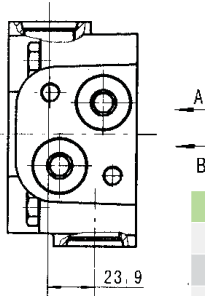


End Ports P(A\B)

Code	EE-D (depth)	EE-M2 (depth)	EE-S2 (depth)
P(A,B)	G1/2 (18)	M22 x 1.5 (18)	7/8-14 O-ring (18)
T	G1/4 (12)	M14 x 1.5 (12)	7/16-20UNF(12)

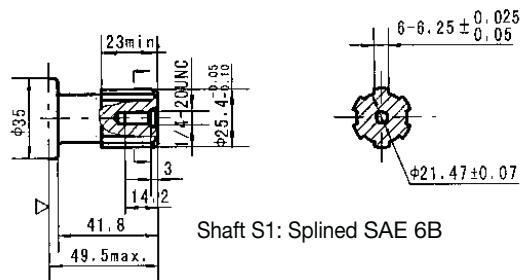
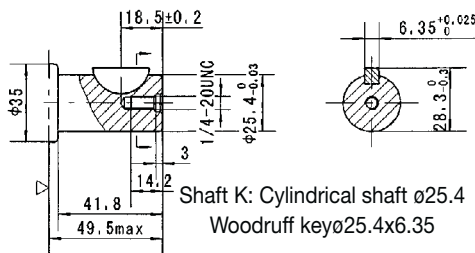
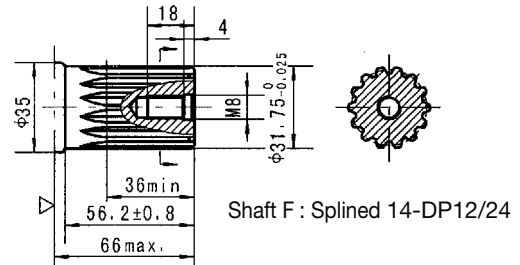
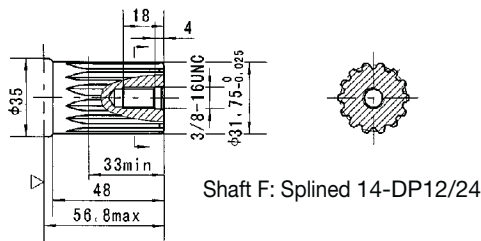
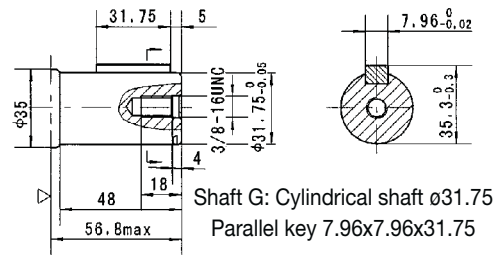
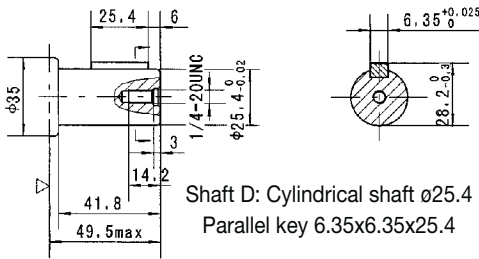
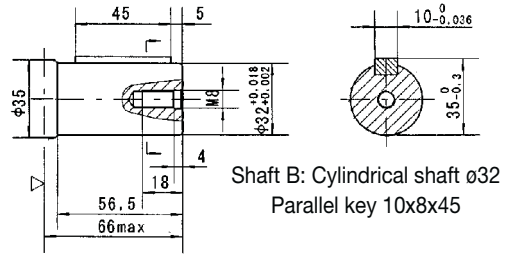
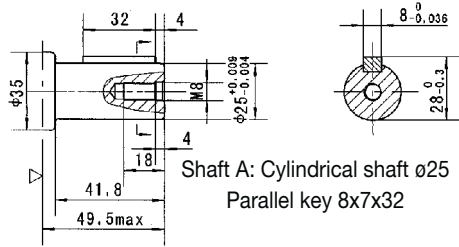
Model	L	L1	Model	L	L1
VNKSPLUS-80	176	16	VNKSPLUS-80-WE	148	16
VNKSPLUS-100	180	20	VNKSPLUS-100-WE	152	20
VNKSPLUS-125	185	25	VNKSPLUS-125-WE	157	25
VNKSPLUS-160	187	27	VNKSPLUS-160-WE	159	27
VNKSPLUS-200	194	34	VNKSPLUS-200-WE	166	34
VNKSPLUS-250	202	42	VNKSPLUS-250-WE	174	42
VNKSPLUS-315	214	54	VNKSPLUS-315-WE	186	54
VNKSPLUS-400	229	69	VNKSPLUS-400-WE	201	69
VNKSPLUS-475	243	83	VNKSPLUS-475-WE	215	83

Porting ED 1-1/16-12UN 0-ring 180° Apart ports

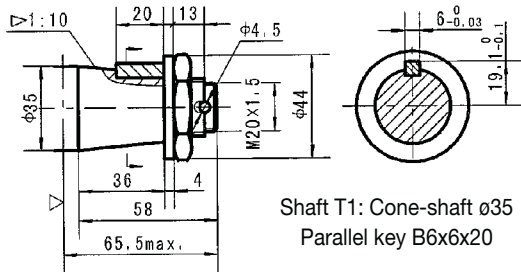


Code	ED (depth)
P(A,B)	1-1/16-12UN (18)
T	7/16-20UNF (12)

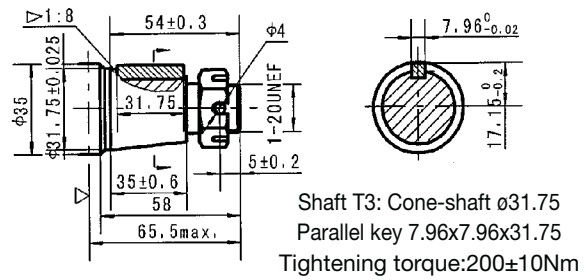
Model	L	L1	L2	Model	L	L1	L2
VNKSPLUS-80	176	16	130	VNKSPLUS-80-WE	148	16	102
VNKSPLUS-100	180	20	134	VNKSPLUS-100-WE	152	20	106
VNKSPLUS-125	185	25	139	VNKSPLUS-125-WE	157	25	111
VNKSPLUS-160	187	27	141	VNKSPLUS-160-WE	159	27	113
VNKSPLUS-200	194	34	148	VNKSPLUS-200-WE	166	34	119
VNKSPLUS-250	202	42	156	VNKSPLUS-250-WE	178	42	127
VNKSPLUS-315	214	54	168	VNKSPLUS-315-WE	190	54	139
VNKSPLUS-400	229	69	183	VNKSPLUS-400-WE	205	69	154
VNKSPLUS-475	243	83	197	VNKSPLUS-475-WE	219	83	168



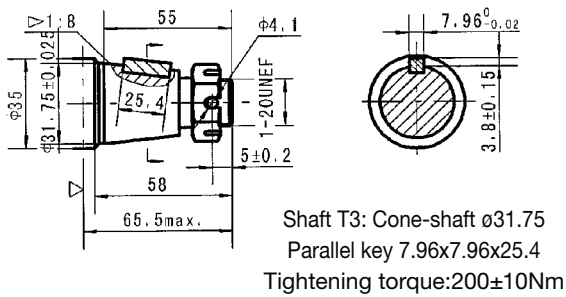
Motor Mounting Surface →  
(Dimension corresponding mounting E2, by analogy with others)



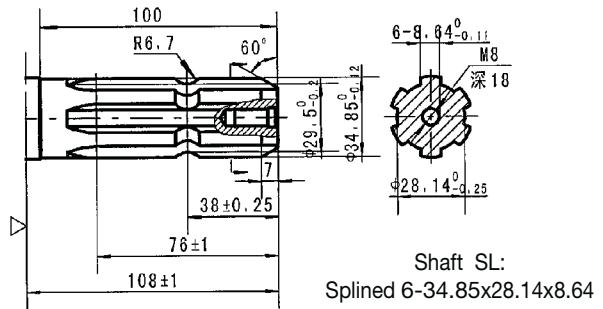
Shaft T1: Cone-shaft ø35  
Parallel key B6x6x20



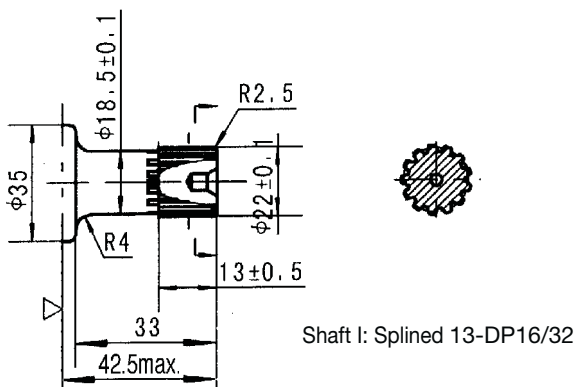
Shaft T3: Cone-shaft ø31.75  
Parallel key 7.96x7.96x31.75  
Tightening torque:200±10Nm



Shaft T3: Cone-shaft ø31.75  
Parallel key 7.96x7.96x25.4  
Tightening torque:200±10Nm



Shaft SL:  
Splined 6-34.85x28.14x8.64



Shaft I: Splined 13-DP16/32

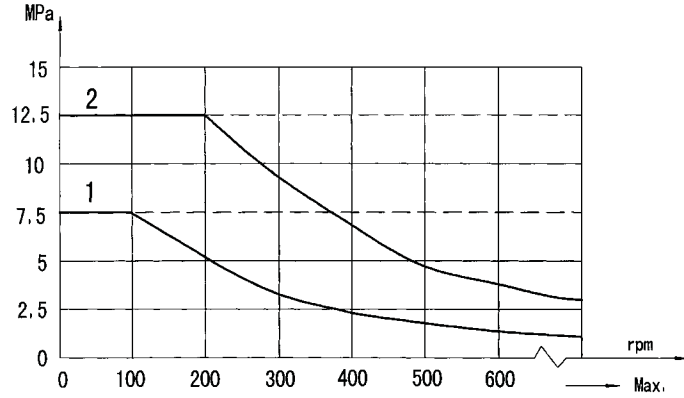
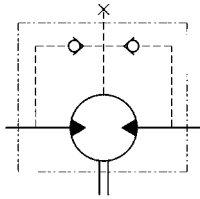
Motor Mounting Surface →

(Dimension corresponding mounting E2, by analogy with others)

Note:Mounting SP is the same with shaft modle T1, D,B, F and G.



Permissible shaft seal pressure

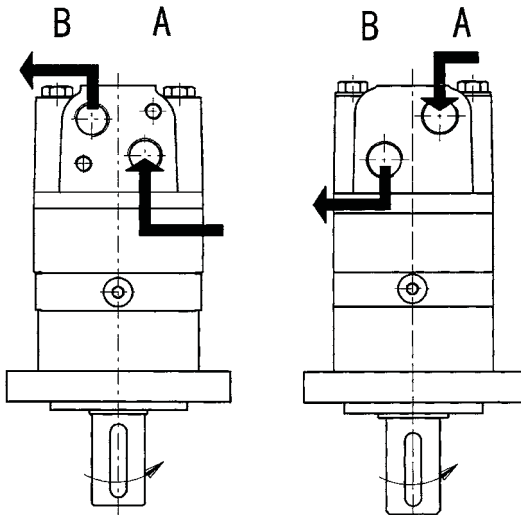


Note:1.Chart for standard shaft seal;  
2.Chart for high pressure shaft seal.

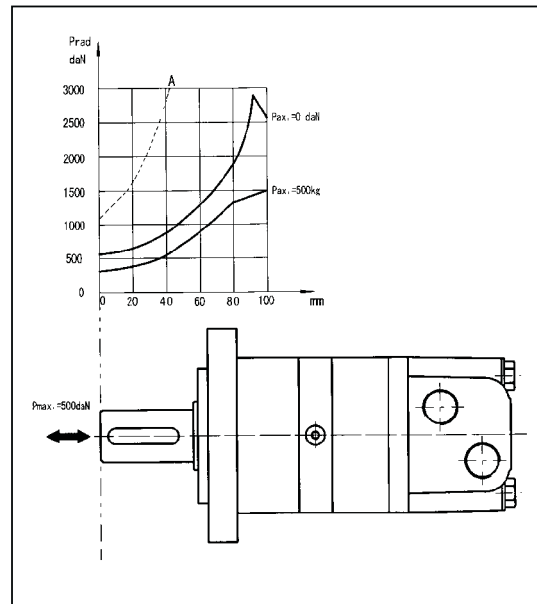
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard 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.



Axial and Radial forces



The output shaft runs in tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.





VNKSPLUS ORDER INFORMATION

VNKSPLUS	1	2	3	4	5	6	7	8
Pos.1	2	3	4	5	6	7	8	
Code	Disp.	Flange, Pilot, Port	Output Shaft	Ports and Drain Port	Rotation Direction	Paint	Unusually Function	
	E2 E4 F6 W E2B SP	2-Ø13.5 Rhomb-flange Ø106.4, Pilot Ø82.5×6.3 4-Ø13.5 Rhomb-flange Ø106.4, Pilot Ø82.5×6.3 6-Ø13.5 Rhomb-flange Ø106.4, Pilot Ø82.5×6.3 4-Ø13.5 Wheel-flange Ø160, Pilot Ø125×8 2-Ø14.3 Rhomb-flange Ø146.05, Pilot Ø101.6×9.4 4-Ø11.5 Square-flange Ø106.4, Pilot Ø82.5×6.3	A B D G F FD SL T1 T3 S1 I	D M S P EE-D EE-M2 EE-S2 ED	G1/2 Manifold Mount 2-M10,G1/4 M22×1.5 Manifold Mount 2-M10, M14×1.5 7/8-14UNF O-ring manifold 2-3/8-16,7/16-20UNF 1/2-14NPTF manifold 2-3/8-16UNC,7/16-20UNF G1/2,G1/4(end port) M22×1.5,M14×1.5(end port) 7/8-14UNF O-ring,7/16-20 UNF(end port) 1-1/16-12 UN O-ring, 7/16-20 UNF(180°Aparrt.ports)	Omit R Standard Opposite	00 Omit B S No paint Blue Black Silver Grey	Omit F LS Standard Free Running Low Speed

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.The informations of mounting flange,output shaft and fronts are the same as VNK series.The SP flange afflies to shafts of T1, D, B, F, G. If the specification is not in the table or you have specific requirements, please contact us.

