

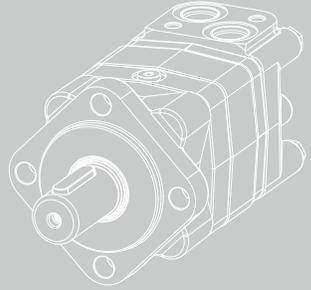
2.1



HSD series

Orbital hydraulic motor

The HSD series orbital hydraulic motor, it is a low-speed and high-torque hydraulic motor, the end face distribution makes it to have characteristics of high working pressure, low starting pressure, high efficiency and high reliability.



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Bearingless motor

Standard mount

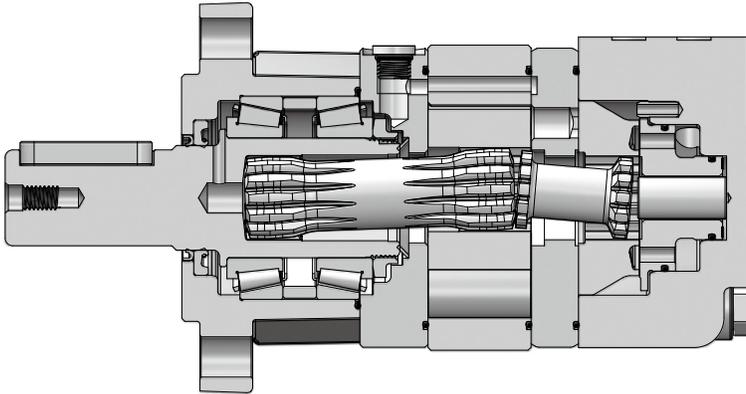
Overview

The HSD series orbital hydraulic motor, it is a low-speed and high-torque hydraulic motor, the end face distribution makes it to have characteristics of high working pressure, low starting pressure, high efficiency and high reliability. Customised product can be developed by different application requirement.

Advantages

- Using tapered roller bearing structure, can support larger axial and radial load.
- Advanced disc valve structure, high distribution accuracy, strong automatic compensation ability after wear, to ensure high volumetric efficiency, long life, efficient and stable work.
- Various displacements and installation dimensions are available.

Standard structure



P-0029

Specification

Type		80	100	125	160	200	230	250	315	400	500
Displacement (cm ³ /rev.)		80.2	99.6	124.9	159.2	199.4	232.1	249.3	314.0	391.9	488.3
Max.speed (rpm)	Continuous	773	739	592	465	372	318	298	236	188	153
	Intermittent	982	892	714	562	447	385	359	284	229	187
Max.torque (N·m)	Continuous	241	297	370	473	610	658	608	874	897	847
	Intermittent	316	390	485	580	727	812	855	987	1056	986
Max.output (kW)	Continuous	15.5	18.0	18.0	16.5	16.5	13.8	14.5	15.0	11.0	9
	Intermittent	19.5	22.5	22.5	23.0	22.0	17.2	18.0	17.0	12.5	10.5
Max.differential pressure (bar)	Continuous	210	210	210	210	210	200	200	200	160	120
	Intermittent	275	275	275	260	250	250	250	240	190	140
	Peak	295	295	295	280	270	270	270	260	210	160
Max.flow (L/min)	Continuous	65	75	75	75	75	75	75	75	75	75
	Intermittent	80	90	90	90	90	90	90	90	90	90
Max.no-load starting pressure (bar)		12	10	10	8	8	8	8	8	8	8
Min.starting torque (N·m)	Max.continuous differential pressure	145	215	283	359	460	530	554	734	796	781
	Max.Intermittent differential pressure	188	281	371	440	557	633	697	858	925	925
Weight (kg)	Bearingless	8.2	8.4	8.7	9	9.5	9.9	10.1	11.1	11.6	11.8
	Standard	9.9	10.1	10.4	10.7	11.2	11.6	11.8	12.8	13.3	13.5

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- Intermittent working condition: The working time should be less than 6 seconds per minute under the intermittent working condition.
- Peak differential pressure: At peak differential pressure, the operating time is less than 0.6 seconds per minute.
- It is not recommended for the motor to work at simultaneous maximum torque and maximum speed.
- The filtration standard of ISO 4406 cleaning standard 20/18/15 is recommended.
- High quality anti-wear hydraulic fluids are recommended.
- When the temperature is 50°, the minimum viscosity of the oil is recommended to be 20mm²/s.
- The recommended maximum operating temperature is 82°C .
- To assure best motor life, run motor 10-15 minutes in low speed high torque mode at approximately 50% of continuous pressure and 50% of continuous flow.

Ordering information

HSD	080	A3	H	S1	A	N	A
①	②	③	④	⑤	⑥	⑦	⑧

Orbital Hydraulic Series

①	Orbital Hydraulic Motor	HSD
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Type

②	Type	080	100	125	160	200	230	250	315	400	500
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Mount

③	SAE Type A 2×Ø13.5 mount Ø106.4, pilot Ø82.5×6.1	A3
	SAE Type A 4×Ø13.5 mount Ø106.4, pilot Ø82.5×6.1	A2
	SAE Type B 2×Ø14.3 mount Ø106.4, pilot Ø101.6×9.4	B2
	6×Ø13.5 Magneto mount Ø106.4, pilot Ø82.5×2.6	M0
	4×Ø11.55 Square mount Ø106.4, pilot Ø82.5×6.1	F1
	4×Ø11 Round mount Ø125, pilot Ø100×6, bearingless motor	B0
	4×Ø13.5 Square mount Ø127, pilot Ø101.6×6.3, bearingless motor	F0
	SAE Type A 2×Ø13.5 mount Ø106.4, pilot Ø82.5×6.1 with O-rings	A4
	4×Ø13.5 Magneto mount Ø106.4, pilot Ø82.5(-0.05/-0.1)×2.6	M2
	4×Ø13.5 Square mount 90°90, pilot Ø100×8	F5

Port

④	Port G1/2, drain port G1/4	H
	Port 7/8-14UNF, drain port 7/16-20UNF	2
	Port M22×1.5, drain port M14×1.5	3
	Port A unthreaded hole Ø12.7, port B unthreaded hole Ø15.88, 3×3/8-16UNC	7
	Port G1/2, drain port M14×1.5	B
	Rear oil port, port M22×1.5(ISO 6149), drain port M14×1.5	C
	Rear oil port, port 7/8-14UNF, drain port 7/16-20UNF	D
	Port M22×1.5(ISO 6149), drain port M14×1.5	M
	Port 9/16-18UNF, drain port 7/16-20UNF, without oil port countersink	T

Ordering information

Output Shaft

	A3/A2/B2/M0/F1/A4/ M2/F5	B0/F0	代号
Ø25.4 Straight, parallel key 6.35×6.35×31.75	●		S1
Ø31.75 Straight, parallel key 7.96×7.96×31.75	●		S5
Ø32 Straight, parallel key 10×8×45	●		S3
Ø22 Spline 13-DP16/32	●		R2
Ø25.4 Shaft, spline SAE 6B, center hole 1/4-20UNC	●		R1
Ø31.75 Spline 14-DP12/24, center hole 3/8-16UNC	●		R4
Ø31.75 Spline 14-DP12/24, center hole M8	●		R5
⑤ Ø31.75 Tapered, parallel key 7.96×7.96×31.75	●		T2
Ø25 Straight, parallel key 8×7×32, center hole M8	●		S2
Ø31.75 Spline 14-DP12/24, center hole 3/8-16UNC, with unloading groove	●		RA
Ø30 6B Spline, 30×26×6, with ring groove	●		R9
Ø31.75 Tapered, parallel key 7.96×7.96×22.6, with dust cover	●		TB
Ø25.4 Tapered, parallel key 7.96×7.96×31.75, shaft extension 12mm	●		T4
Cardan		●	C1

Rotation Direction

⑥	CW	A
	CCW	R

Paint Option

⑦	No Paint	N
	Black	B
	Hengli blue	C

Ordering information

Special Features

	Standard	A
	Free running	F
⑧	High temperature	V
	Low temperature	S
	Speed sensor, DT04-4P connector	S2

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Note: ● =Available;

- 1) The B0, F0 options are bearingless motor, and the shaft option is C1.
- 2) When using the order information, the user can select the motor series, displacement, installation flange, port, shaft and other information. If the selected specification is not in the table or has special requirements, please contact us.

Displacement performance

		Pressure(bar)					Max.Cont		Max.Inter	
80		30	70	105	140	175	210	225	250	275
80.2 cm ³ /rev.		Torque(N·m), Speed(rpm)								
Flow (L/min)	5	26	59	92	117	147				
		60	57	54	52	51				
10	33	72	110	146	183	218	233	254		
	121	118	115	111	105	98	93	86		
20	33	74	116	155	195	236	259	278	304	
	243	239	235	231	225	217	204	203	186	
30	29	76	118	159	199	241	268	287	316	
	367	362	357	352	345	335	330	319	303	
40	25	72	113	154	195	235	262	280	311	
	489	483	479	473	465	455	434	438	421	
50		67	108	150	190	232	260			
		608	602	595	586	574	550			
Max.Cont	65		66	105	146	189	230	259		
		773	766	758	747	733	696			
Max.Inter	80		62	102	143	185				
		982	974	964	953					

Overall Efficiency: 70-100% 40-69% 0-39% T - 0047

		Pressure(bar)					Max.Cont		Max.Inter	
100		35	70	105	140	175	210	225	250	275
99.6 cm ³ /rev.		Torque(N·m), Speed(rpm)								
Flow (L/min)	5	36	80	121	159	197	232	257		
		48	47	46	44	42	38	34		
10	37	82	125	166	227	257	276	306	337	
	97	95	93	91	85	84	82	74	69	
20	39	90	139	187	235	280	299	326	352	
	196	194	191	189	185	180	176	168	157	
30	41	93	143	193	244	292	316	352	383	
	295	292	288	284	280	276	269	260	249	
40	41	92	143	193	245	297	320	356	390	
	393	390	386	382	376	369	366	355	342	
50	37	88	140	192	241	293	316			
	494	488	485	481	474	466	463			
60	33	80	133	185	235	288	310			
	592	588	584	577	571	562	556			
Max.Cont	75	30	78	130	180	230	283	304		
		739	731	725	719	709	697	690		
Max.Inter	90		71	123	172	223				
		892	885	876	867					

Overall Efficiency: 70-100% 40-69% 0-39% T - 0048

Displacement performance

		Pressure(bar)				Max.Cont		Max.Inter		
		35	70	105	140	175	210	225	250	275
125		124.9cm ³ /rev.								
		Torque(N·m), Speed(rpm)								
Flow (L/min)	5	51	109	166	226	281	333			
		39	38	38	36	35	34			
10		57	120	182	244	301	353	373	405	
		78	77	76	74	73	69	67	62	
20		54	119	179	244	306	367	395	437	473
		158	156	155	153	150	145	143	135	123
30		50	115	177	243	306	370	396	441	483
		237	235	234	231	214	209	206	198	189
40		44	109	174	238	303	367	395	441	485
		318	315	313	310	305	299	296	288	277
50		41	106	170	234	298	364	392		
		394	396	392	389	384	377	373		
60		38	96	168	232	297	363	390		
		480	476	472	468	463	454	452		
Max.Cont 75		29	96	161	227	291	355	383		
		592	592	588	583	578	570	564		
Max.Inter 90			91	156	221	286				
			714	709	703	694				

Overall Efficiency: 70-100% 40-69% 0-39% T - 0049

		Pressure(bar)				Max.Cont		Max.Inter		
		35	70	105	140	160	175	210	225	260
160		159.2cm ³ /rev.								
		Torque(N·m), Speed(rpm)								
Flow (L/min)	5	63	131	200	291	332	358			
		31	29	28	28	28	27			
10		70	151	229	306	343	368	437	466	
		61	60	59	58	56	57	56	54	
20		67	145	226	308	355	388	467	498	
		123	122	120	119	118	117	113	109	
30		65	147	229	311	357	391	473	506	580
		185	184	182	180	179	178	173	171	169
40		61	143	224	306	353	386	467	501	579
		247	245	243	241	240	238	233	229	219
50		52	136	218	298	345	379	461	496	
		310	307	305	302	301	299	293	289	
60		46	127	208	289	335	369	450	486	
		373	370	367	347	361	359	353	347	
Max.Cont 75		39	113	193	275	321	356	439	473	
		465	458	455	451	448	446	438	433	
Max.Inter 90		26	103	183	265	312				
		560	562	558	552	549				

Overall Efficiency: 70-100% 40-69% 0-39% T - 0050

Displacement performance

		Pressure(bar)						Max.Cont	Max.Inter	
200		35	70	105	140	160	175	210	225	250
199.4cm ³ /rev.		Torque(N·m), Speed(rpm)								
Flow (L/min)	5	71	163	257	368					
		24	24	23	23					
10	78	178	276	371	432	469	573			
	49	49	48	47	47	46	43			
20	85	188	291	396	459	501	604	646	713	
	98	96	95	93	90	89	82	76	68	
30	88	192	297	401	462	505	610	656	727	
	147	146	144	142	140	139	133	129	111	
40	75	181	285	390	451	494	600	644	716	
	197	194	192	190	188	187	181	176	169	
50	65	170	273	379	438	484	588	633		
	246	244	242	240	238	236	230	226		
60	53	159	262	368	426	472	576	622		
	297	294	291	289	287	285	279	276		
Max.Cont	75	44	150	254	359	420	464	569	612	
		372	369	366	363	361	359	353	349	
Max.Inter	90		138	254	343	401				
			447	442	438	435				

Overall Efficiency: 70-100% 40-69% 0-39% T - 0051

		Pressure(bar)						Max.Cont	Max.Inter		
230		35	70	95	125	140	155	175	200	225	250
232.1cm ³ /rev.		Torque(N·m), Speed(rpm)									
Flow (L/min)	5	88	187	258							
		21	20	18							
10	101	215	303	397	441	491					
	42	41	40	38	37	35					
20	102	219	305	407	450	509	577	658	736	812	
	84	82	80	79	79	77	76	74	71	66	
30	104	225	334	415	459	519	588	675	744		
	127	125	119	123	122	121	120	118	114		
40	102	226	333	413	459	518	588	648	732		
	169	167	159	165	165	164	162	160	157		
50	100	217	324	408	451	512	581				
	212	211	200	208	207	206	205				
60	85	205	310	395	439	499	568				
	255	253	241	251	250	248	247				
Max.Cont	75	76	197	300	387	430	488	498			
		256	318	302	315	314	312	310			
Max.Inter	90		185	289	391	425					
			385	365	364	372					

Overall Efficiency: 70-100% 40-69% 0-39% T - 0052

Displacement performance

		Pressure(bar)						Max.Cont		Max.Inter		
		35	70	95	125	140	155	175	200	225	250	
250		249.3 cm ³ /rev.										
		Torque(N · m), Speed(rpm)										
Flow (L/min)	5	87										
		20										
10		101	208	288	364	421	506					
		39	37	36	33	30	28					
20		103	229	315	417	463	513					
		78	76	74	73	72	70					
30		95	223	313	421	473	538	603	675	749	855	
		118	116	115	113	112	111	108	91	85	70	
40		83	213	304	414	467	538	608	676	760		
		157	155	154	152	151	149	147	142	135		
50		68	199	290	401	460	541	613				
		197	195	194	192	191	189	187				
60		51	180	273	384	439	529	600				
		238	235	234	232	230	229	226				
Max.Cont	75	21	150	241	353	408	519					
		298	296	294	295	290	288					
Max.Inter	90		110	203	321	369						
			359	356	358	350						

Overall Efficiency: 70-100% 40-69% 0-39%

T - 0053

		Pressure(bar)						Max.Cont		Max.Inter		
		35	70	100	120	140	160	175	200	225	240	
315		314.0cm ³ /rev										
		Torque(N · m), Speed(rpm)										
Flow (L/min)	5	127	254	339								
		15	14	14								
10		133	272	393	465	547	609					
		31	30	28	26	24	22					
20		141	305	441	528	613	669					
		62	61	59	58	55	50					
30		144	310	453	545	635	721	783	874	969	987	
		93	92	91	89	87	81	74	66	53	50	
40		134	297	440	535	627	719	785	873	949		
		125	123	122	121	119	116	113	102	95		
50		129	291	434	529	623	717	784				
		156	155	153	152	151	148	145				
60		108	272	414	509	604	697	767				
		188	186	185	184	182	180	177				
Max.Cont	75	85	254	395	490	585	679					
		236	234	232	231	229	226					
Max.Inter	90	60	228	370	464	559						
		284	283	281	279	277						

Overall Efficiency: 70-100% 40-69% 0-39%

T - 0054

Displacement performance

		Pressure(bar)						Max.Cont	Max.Inter	
		30	60	80	105	120	140	160	175	190
400		391.9cm ³ /rev.								
		Torque(N·m), Speed(rpm)								
Flow (L/min)	5	142 11	293 10							
	10	153 25	306 24	414 23	558 22					
Flow (L/min)	20	152 50	328 49	448 48	590 47	677 46	791 45	897 39	979 36	
	30	163 75	342 74	460 73	608 72	697 71	815 70	931 68	997 65	1056 60
Flow (L/min)	40	153 100	331 99	451 98	599 97	688 96	810 95	923 93	978 91	
	50	136 125	330 124	454 123	590 122	688 121	776 121			
Flow (L/min)	60	123 150	298 150	417 149	566 148	657 147	775 145			
	Max.Cont	75	96 188	278 188	399 187	544 185	635 185			
Max.Inter	90	68 225	248 229	367 227	517 224					

Overall Efficiency: 70-100% 40-69% 0-39%

T - 0055

		Pressure(bar)					Max.Cont	Max.Inter
		25	50	80	90	105	120	140
500		488.3cm ³ /rev.						
		Torque(N·m), Speed(rpm)						
Flow (L/min)	10	160 20	329 20					
	20	152 41	333 40	547 40	616 39	722 34		
Flow (L/min)	30	160 57	342 57	561 56	633 56	740 56	847 55	986 54
	40	153 81	337 81	557 80	629 80	736 79	842 79	
Flow (L/min)	50	132 102	316 101	538 100	613 100	723 100	835 99	
	60	121 122	304 122	526 121	597 121	708 135		
Max.Cont	75	92 153	260 153	478 152	552 151	664 151		
	Max.Inter	90	56 177	223 186	447 184	518 184		

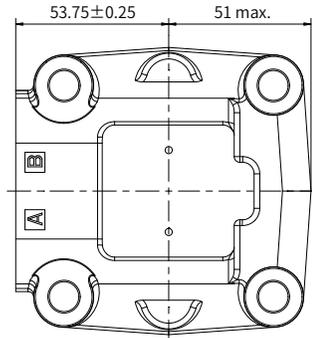
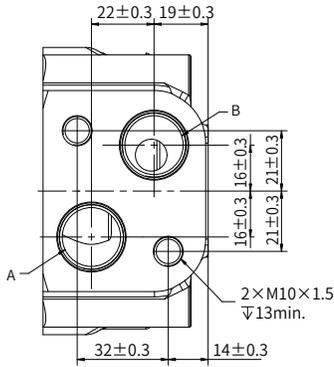
Torque (N·m):835
Speed (rpm):99

Overall Efficiency: 70-100% 40-69% 0-39%

T - 0056

Installation size

·Port Size

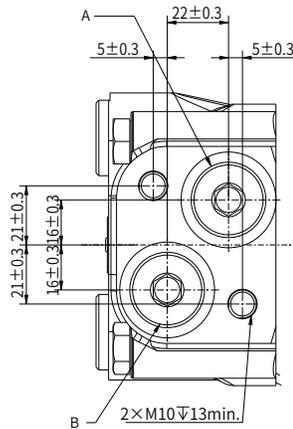
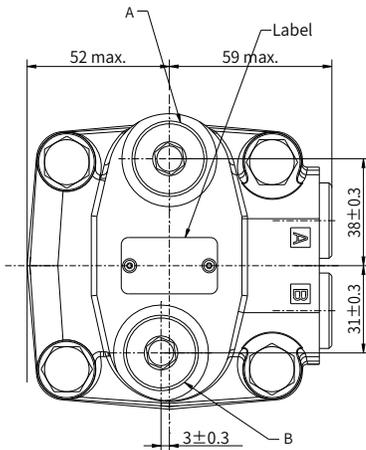


P - 0030

Code	A/B	C
H	G1/2	G1/4
2	7/8-14UNF	7/16-20UNF
3	M22x1.5	M14x1.5
7	Ø12.7/Ø15.88	7/16-20UNF
B	G1/2	M14x1.5
M	M22×1.5 (ISO 6149)	M14x1.5
T	9/16-18UNF	7/16-20UNF

T - 0232

·Rear Port Size



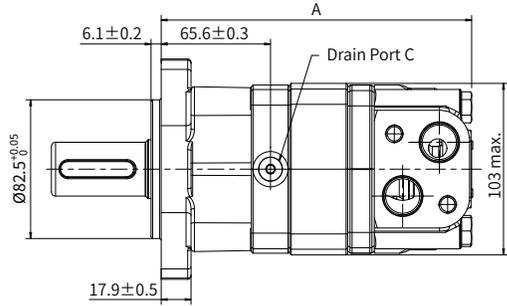
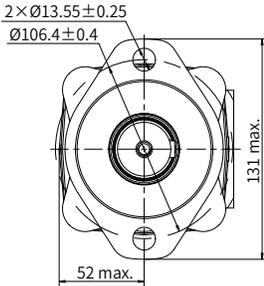
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Code	A/B	C
C	M22×1.5 (ISO 6149)	M14x1.5
D	7/8-14UNF	7/16-20UNF

T - 0233

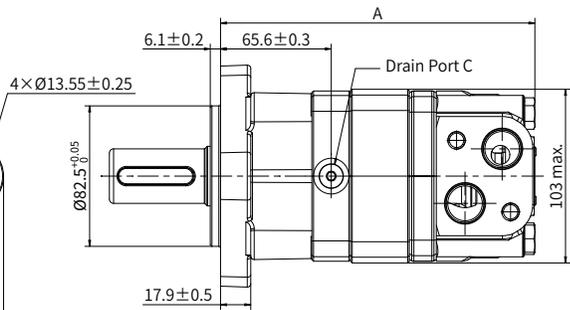
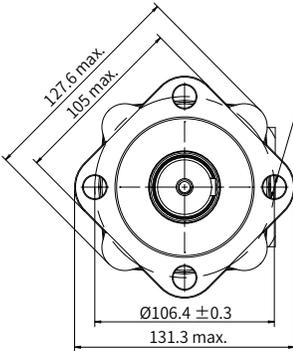
Installation size

A3/A4 2-HOLE, SAE A MOUNT



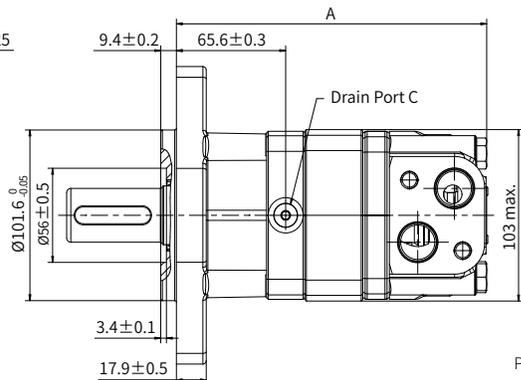
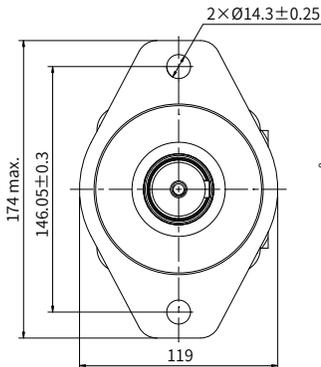
P - 0033

A2 4-HOLE, SAE A MOUNT



P - 0034

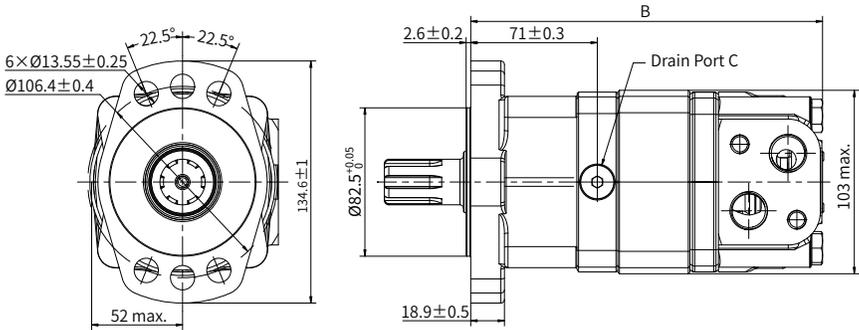
B2 2-HOLE, SAE B MOUNT



P - 0040

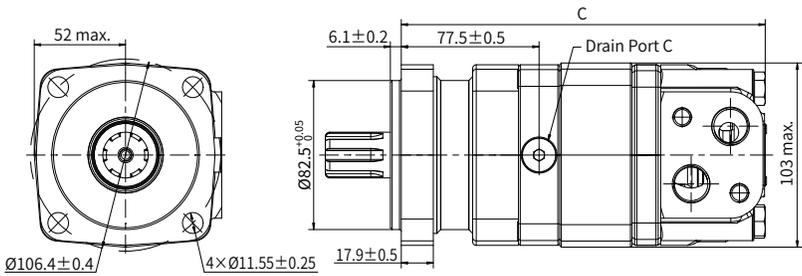
Installation size

M0 6-HOLE, MAGNETO MOUNT



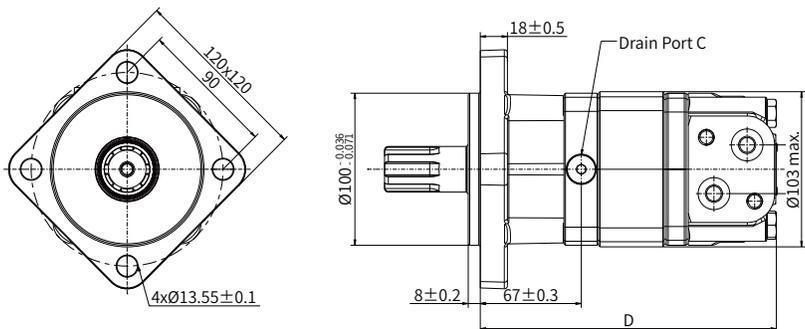
P - 0035

F1 SQUARE MOUNT



P - 0041

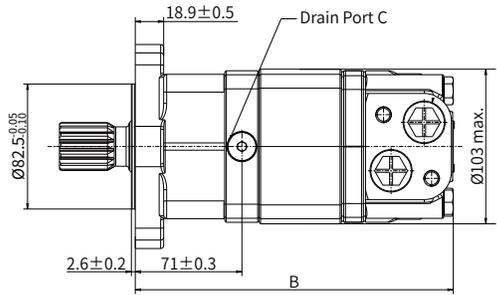
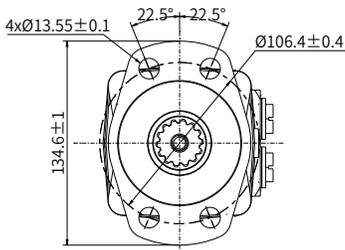
F5 SQUARE MOUNT



P - 0093

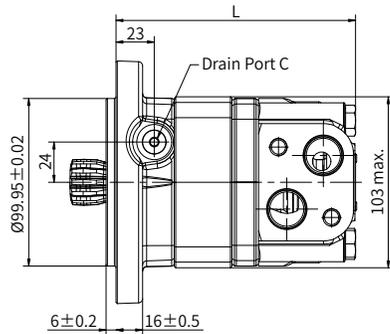
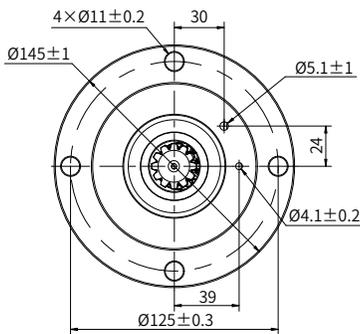
Installation size

M2 4-HOLE, MAGNETO MOUNT



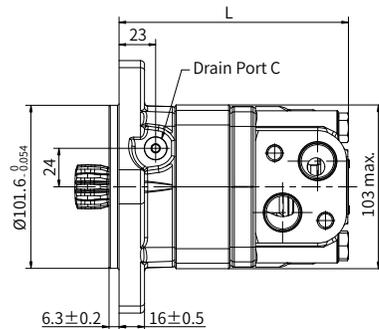
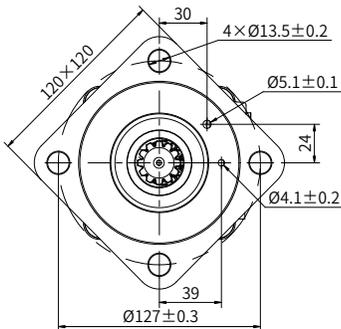
P - 0294

B0 ROUND MOUNT



P - 0031

F0 SQUARE MOUNT



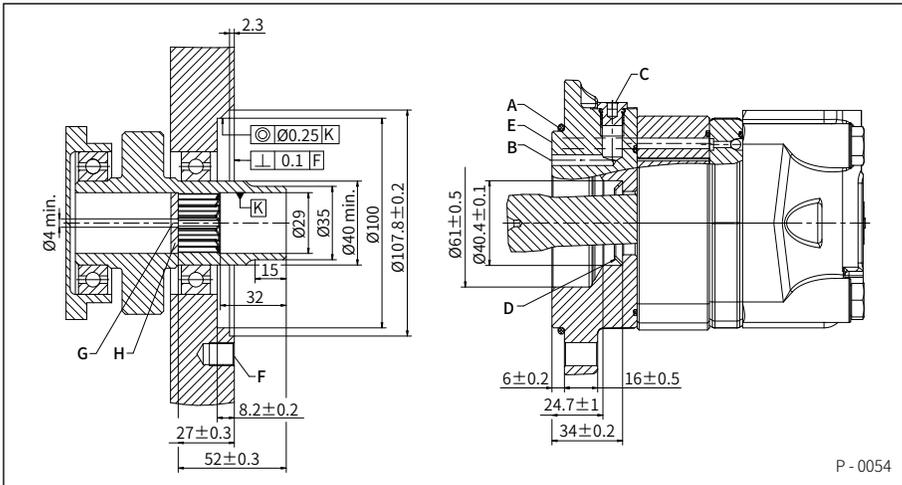
P - 0032

Installation size

Type	L mm	A mm	B mm	C mm	D mm
80	123.4	165.5	170.9	177.4	166.9
100	126.8	168.9	174.3	180.8	170.3
125	131.2	173.3	178.7	185.2	174.7
160	137.2	179.3	184.7	191.2	180.7
200	144.2	186.3	191.7	198.2	187.7
230	149.9	192.0	197.4	203.9	193.4
250	152.9	195.0	200.4	206.9	196.4
315	164.2	206.3	211.7	218.2	207.7
400	177.8	219.9	225.3	231.8	221.3
500	177.8	219.9	225.3	231.8	221.3

T - 0058

Note: Dimensions L, A, B, C are the length from the flange mounting surface to the rear end of the motor, and the tolerance is $\pm 0.61\text{mm}$.



P - 0054

A: O-ring: 100×3

B: External drain channel

C: Drain connection 12mm

D: Conical seal ring

E: Internal drain channel

F: 15 mm deep

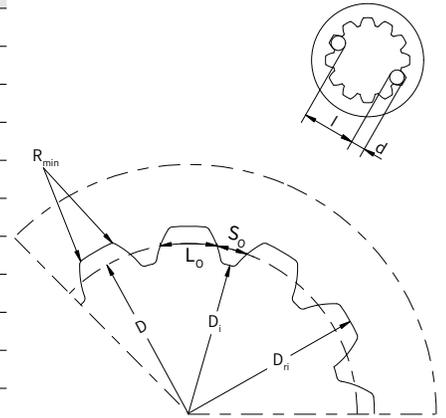
G: Oil circulation hole

H: Hardened stop plate

Installation size

Spline parameters

Side Fit		mm
Number of teeth	Z	12
Pitch	DP	12/24
Pressure angle	α_0	30°
Pitch dia	D	Ø25.4
Major dia	D_{ri}	Ø28 ⁰ _{-0.1}
Minor dia	D_i	Ø23 ^{+0.033} ₀
Tip radius	R_{min}	0.2
Tooth thickness	S_0	2.341
Space width	L_0	4.308±0.02
Pin dia	d	4.835±0.001
Dimension between two pins	l	17.62 ^{+0.15} ₀

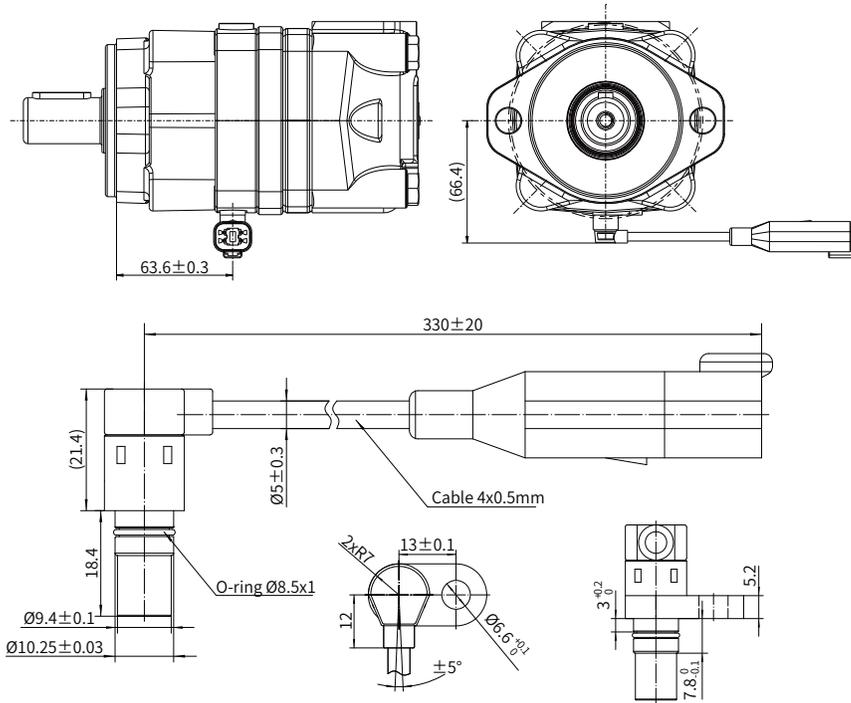


T - 0059

P - 0055

02

Speed sensor



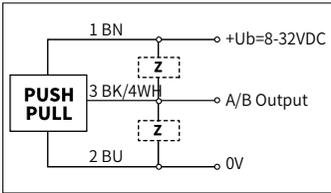
P - 0235

Dimensions	$\varnothing 10.25$ /L=18.4mm
Voltage	8-32VDC
Input Current	<15mA
Sensing distance	0.2~2mm
Power reverse protection (Y/N)	Yes
Power input overcurrent and overvoltage protection (Y/N)	Yes
Maximum output current	50mA
Voltage drop	≤ 3 VDC
Working frequency	0-20KHz
Output signal	A, B
Operating temperature	-40°C ~ +125°C
Protection	IP69K
Shell material	Copper/plastic
Pressure resistance of measuring surface	10bar
Connector	Cable 0.33m, Injection 4-core DEUTSCH DT04-4P-EP04 plug
PPR	28

T - 0192

Speed sensor

■ WIRING DIAGRAM



P - 0236

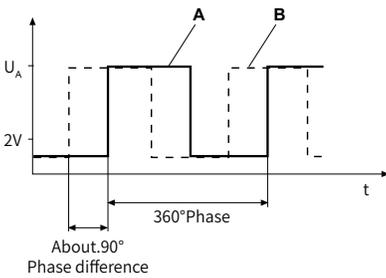
■ TERMINAL ASSIGNMENT

Signal		+Ub	0V	A	B
Color		BN	BU	BK	WH
4 core plug DT04		1	2	3	4

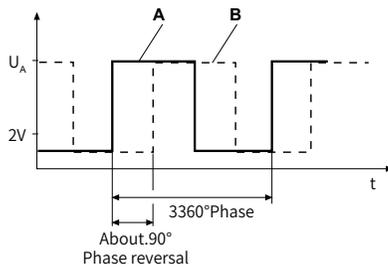
P - 0237

■ OUTPUT SIGNAL

⌚ The measured gear rotates clockwise



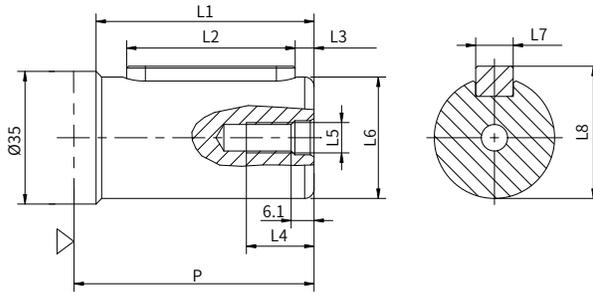
⌚ The measured gear rotates counterclockwise



P - 0238

Shaft end dimensions

· Straight Shaft—Parallel Key



P - 0043

Code	L1	L2	L3	L4	L5	L6	L7	L8	Max.torque
S1	43±0.4	31.75 ⁰ _{-0.38}	2.5±0.3	20 min.	3/8-16UNC	Ø25.4 ⁰ _{-0.02}	6.35 ^{+0.050} ₀	28.2 ⁰ _{-0.3}	655N·m
S2	43±0.3	32 ^{-0.30} _{-0.62}	5±0.3	18	M8	Ø25 ^{+0.02} ₀	7.94±0.01	27.84±0.1	678N·m
S3	58±0.3	45 ⁰ _{-0.3}							
S5	48±0.4	31.75 ⁰ _{-0.38}	5±0.3	18	3/8-16UNC	Ø31.75 ⁰ _{-0.05}	7.96 ⁰ _{-0.02}	35.3 ⁰ _{-0.3}	881N·m

T - 0234

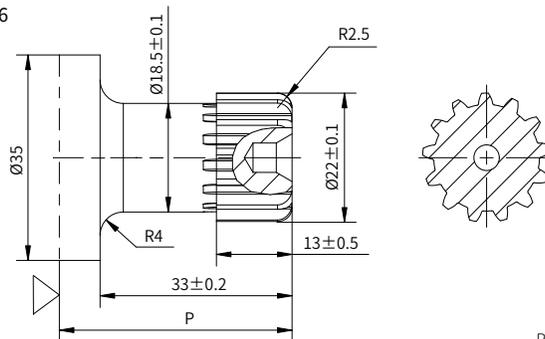
· 13 Teeth Spline

R2

Ø22mm

Spline: 13-DP16/32, ANS B92.1 - 1996

Max. Torque: 170N·m



P - 0049

Shaft end dimensions

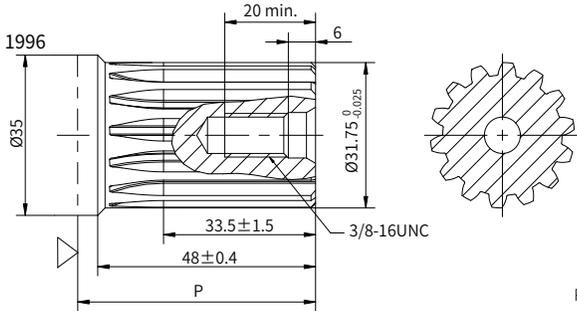
· 14 Teeth Spline

R4/RA

Ø31.75mm

Spline: 14-DP12/24, ANS B92.1 - 1996

Max. Torque: 881N·m



P - 0046

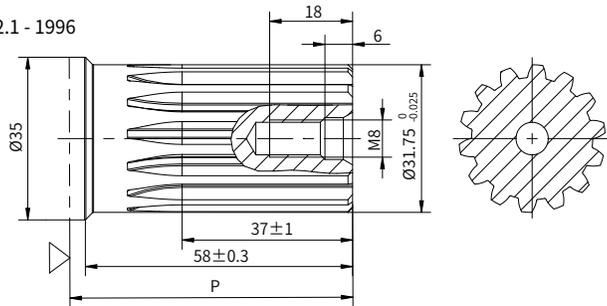
· 14 Teeth Spline

R5

Ø31.75mm

Spline: 14-DP12/24, ANS B92.1 - 1996

Max. Torque: 881N·m



P - 0047

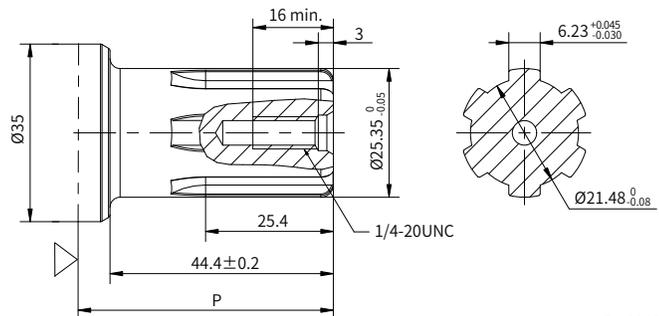
· SAE 6B Spline

R1

Ø25.4mm

Spline: SAE 6B (B.S.2059)

Max. Torque: 678N·m



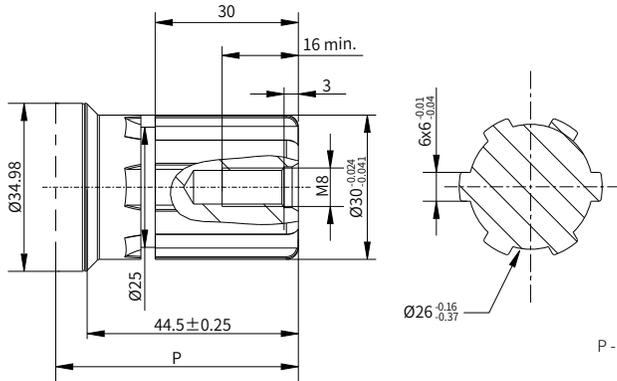
P - 0048

Shaft end dimensions

· SAE 6B Spline

R9

Ø30.0mm
Spline: SAE 6B (B.S.2059)
Max. Torque: 768N·m

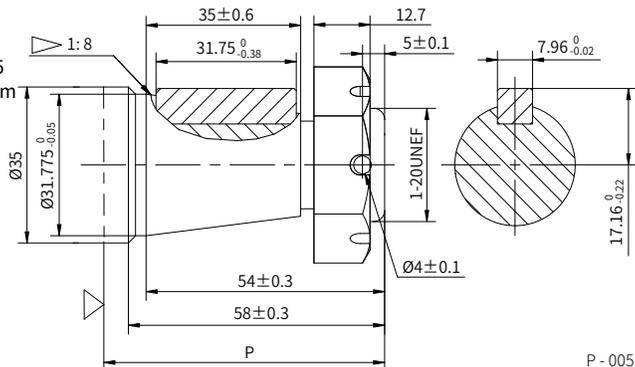


P - 0295

· Tapered Shaft

T2

Ø31.75mm Tapered
Parallel key: 7.96×7.96×31.75
Tightening torque: 200±10N·m
Max. Torque: 881N·m

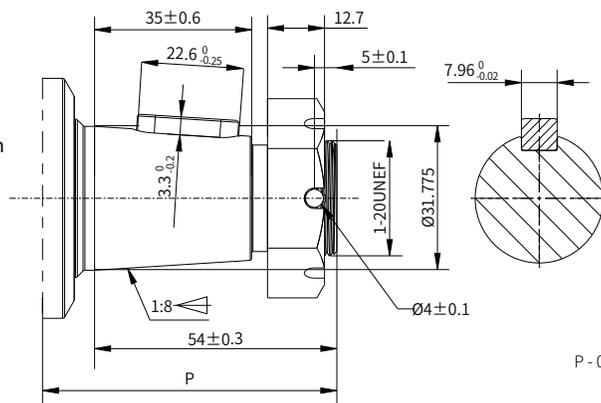


P - 0051

· Tapered Shaft

TB

Ø31.75mm Tapered
Parallel key: 7.96×7.96×22.6
Tightening torque: 200±10N·m
Max. Torque: 881N·m



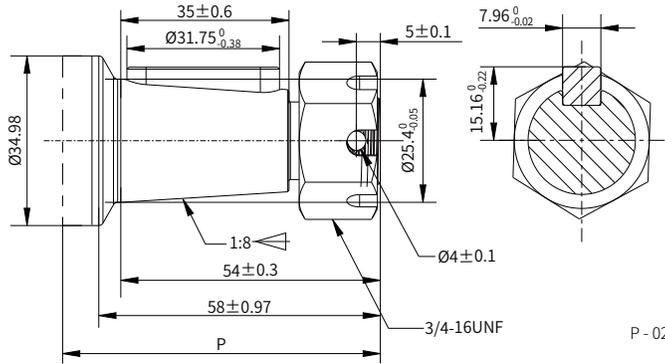
P - 0296

Shaft end dimensions

·Tapered Shaft

T4

Ø31.75mm Tapered
 Parallel key:
 7.96×7.96×22.6
 Tightening torque:
 200±10N·m
 Max. Torque: 881N·m



P - 0297

P mm	SAE Mount	Magneto Mount	F1 Square Mount	F5 Square Mount
S1	51.0	45.6	39.1	50
S5	56.0	50.6	44.1	55
S3	66.0	60.6	54.1	65
R2	41.0	35.6	29.1	40
R1	53.9	48.5	42.0	52.9
R4	56.0	50.6	44.1	55
R5	66.0	60.6	54.1	65
T2	66.0	60.6	54.1	65
S2	51.0	45.6	39.1	50
RA	55.9	50.5	44	54.9
R9	52.62	47.22	40.72	51.62
TB	71	65.6	59.1	70
T4	78	72.6	66.1	77

T - 0064

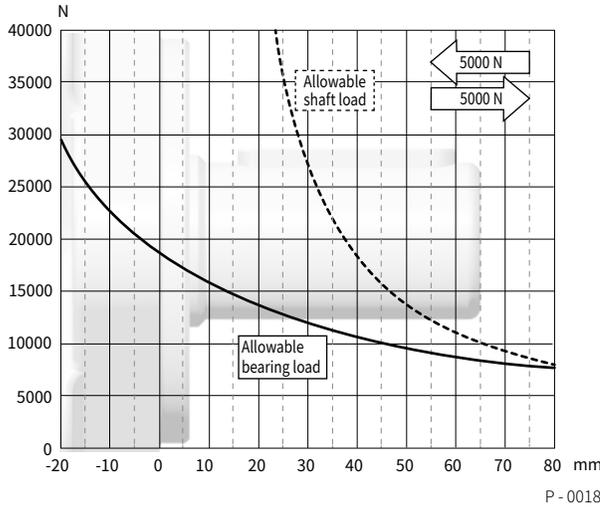
Note: Dimension P is the overall distance from the flange mounting surface to the end of the shaft, and the tolerance is ±0.97mm.

Allowable shaft load/bearing curve

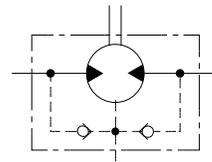
As shown in the figure, when the axial load is 0, the radial allowable load of the output shaft is related to the distance from the flange mounting surface to the load action point.

The solid line shows the allowable radial load of the bearing. It is based on L_{10} bearing life 2000 hrs at 100 RPM with rated output torque.

The dash line shows max radial shaft load. Any shaft load exceeding the values quoted in the curve will involve a risk of failure.



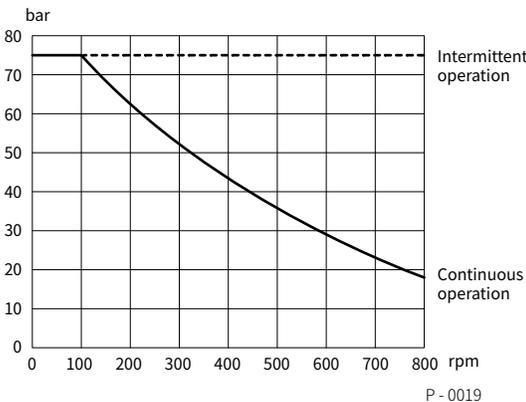
Hydraulic diagram



P - 0018

P - 0020

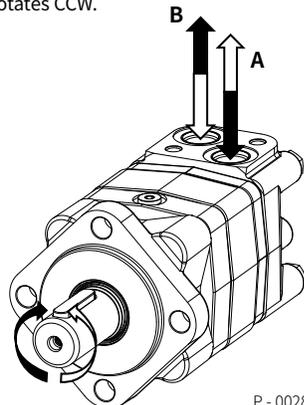
Permissible shaft seal pressure



P - 0019

Rotation direction: CW

When facing the motor shaft extension direction, port A is high pressure oil, the output shaft rotates CW; Otherwise, it rotates CCW.



P - 0028

When case drain port is not working, the pressure on the output shaft seal is slightly higher than the pressure in the return line. When using a drain line, the pressure on the shaft seal of the output shaft is the same as the pressure in the drain line.