1.1

HRD series

Orbital hydraulic motor

HRD series orbital hydraulic motor, it is a spool distrabution motor, adopts needle tooth ring and star design, low start-up pressure, high efficiency and smooth running.

Contents

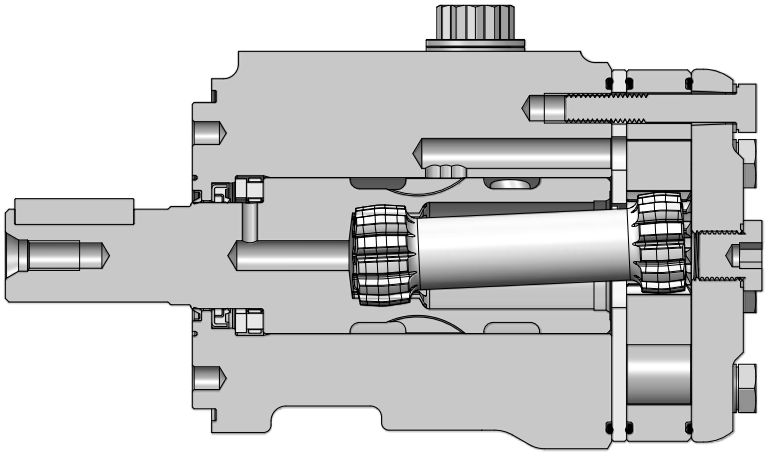
Overview

HRD series orbital hydraulic motor, it is a spool distrabution motor, adopts needle tooth ring and star design, low start-up pressure, high efficiency and smooth running. Check valves are used as standard options, so the HRD series hydraulic motors can withstand high back pressure without the use of case drain ports, and have excellent use option performance in series circuits that require synchronous drive.

Advantages

- It adopts spool distribution structure, small size and light weight.
- It adopts advanced rotary stator parameter design, low starting pressure, high efficiency, and smooth running.
- Multiple displacements and mounting sizes are available.

Standard structure



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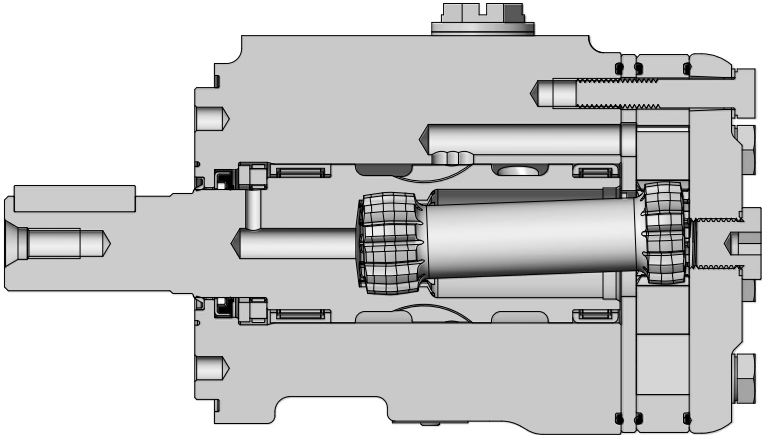

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Front Bearing Section

Specification

Type		50	80	100	125	160	200	250	315	375
Displacement (cm^3/rev.)		51.6	80.3	99.8	124.1	155.4	198.2	248.1	310.1	363.5
Max.speed (rpm)	Continuous	748	743	598	473	380	302	239	192	164
	Intermittent	942	921	739	595	476	374	302	240	206
Max.torque (N·m)	Continuous	111	226	273	338	382	399	411	417	389
	Intermittent	129	252	303	370	431	498	545	556	523
Max.output (kW)	Continuous	7.0	14.0	14.0	14.0	12.6	10.5	8.8	7.0	5.6
	Intermittent	8.8	15.8	17.5	17.5	15.8	13.1	10.5	8.9	7.8
Max. differential pressure (bar)	Continuous	150	200	200	200	180	150	125	100	80
	Intermittent	175	225	225	225	215	195	170	140	115
Max.flow (L/min)	Continuous	40	60	60	60	60	60	60	60	60
	Intermittent	50	75	75	75	75	75	75	75	75
Max.no-load starting pressure (bar)		10	10	10	10	10	10	7	7	7
Min.starting torque (N·m)	Max.continuous differential pressure	107	162	267	288	308	354	381	408	366
	Max.Intermittent differential pressure	124	189	298	319	371	456	500	537	504
Weight (kg)		7.1	7.3	7.7	7.9	8	8.5	8.9	9.3	9.7

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· Intermittent working condition: The working time should be less than 6 seconds per minute under the intermittent working condition.
· 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° C , the minimum viscosity of the oil is recommended to be 20mm^2/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

HRD	050	A23	S2	A	N	A
①	②	③	④	⑤	⑥	⑦

Orbital Hydraulic Series

①	Orbital Hydraulic Motor	HRD

Type

②	Type	050	080	100	125	160	200	250	315	375

Mount, Port

③	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.7, port G1/2, drain port G1/4	A23
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×5.2, port G1/2, drain port G1/4	A24
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port 7/8-14UNF, drain port 7/16-20UNF	A50
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port 7/8-14UNF, drain port 7/16-20UNF	A51
	SAE B 2×Ø13.1 Mount Ø146.05, pilot Ø101.5×6.1, port Ø10.4/Ø12.7 hole, drain port 7/16-20UNF	B22
	4×3/8-16UNC Square mount Ø82.55, pilot Ø44.4×2.6, port 7/8-14UNF, drain port 7/16-20UNF	F71
	4×M10 Square mount Ø82.55, pilot Ø44.4×2.6, port 7/8-14UNF, drain port 7/16-20UNF	F72
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×5.2, port 7/8-14UNF, drain port 7/16-20UNF, screw hole 4×5/16-18UNC, with speed sensor hole	A29
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×5.2, port G1/2, drain port G1/4, with speed sensor hole	A30
	SAE A Type 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.7, port M22×1.5, drain port M14×1.5	A26
	SAE A Type 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port Ø10.4/Ø12.7unthreaded holes, drain port 7/16-20UNF	A52
	SAE A Type 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port G1/2, drain port G1/4	A53
	SAE A Type 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port G1/2, drain port G1/4, height of port surface 44.7, flange vertical oil face	A55
	SAE A Type 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port G1/2, drain port G1/4, height of port surface 44.7, flange vertical oil face, oil port is 45mm away from the flange surface	A59

Ordering information

③	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port 7/8-14UNF, drain port 1/16-20 UNF, height of port surface 51, oil port is 34mm away from the flange surface	A60
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port G1/2(O-ring), drain port G1/4, height of port surface 55	A61
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port Ø10.4/Ø12.7unthreaded holes, drain port G1/4, height of port surface 55, threaded mounting holes 5/16-18UNC-2B	A62
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port Ø10.4/Ø12.7unthreaded holes, drain port G1/4, height of port surface 55, threaded mounting holes M8×1.25	A65
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×2.8, port 7/8-14UNF, drain port 7/16-20UNF, height of port surface 55, with speed sensor hole	A66
	SAE Type A 2-hole 2×Ø13.6 mount Ø106.4, pilot Ø82.5×8, port G1/2, drain port G1/4, height of port surface 55, rear mounted oil port	A5C
	4×Ø13.5 Magneto mount Ø106.4, pilot Ø82.5×8, port 7/8-14UNF, drain port 7/16-20UNF	M22
	4×Ø13.5 Magneto mount Ø106.4, pilot Ø82.5×5.2, port G1/2, drain port G1/4	M24
	4×3/8-16UNC square mount Ø82.55, pilot Ø44.4×2.6, port 1/2-14NPTF, drain port 7/16-20UNF	F74

01

Output Shaft

		A23/A24/A50/A51/B22/F71/F72/A26/A52/A53/A55/A59/A60/A61/A62/A65/A5C/M22/M24/F74	A29/A30/A66	Code
④	Ø25 Straight, parallel key 8×7×32	●		S2
	Ø25.4 Straight, parallel key 6.35×6.35×31.75	●		S4
	Ø25.4 Straight, parallel key 6.35×6.35×31.75	●		S6
	Ø22.22 Spline 13-DP16/32	●		R2
	Ø25.4, Spline SAE 6B, threaded M8*1.25	●		R1
	Ø25.4, Spline SAE 6B SAE 6B, threaded 1/4-20UNC	●		R8
	Ø25.4 Straight, parallel key 6.35×6.35×31.75, center hole M8, L=44.5		●	ST
	Ø25 Straight, parallel key 8×7×32, center hole M8		●	SY
	Ø25.4 Straight, parallel key 6.35×6.35×31.75, center hole 5/16-18UNC, L=44.5, induction teeth with speed sensor(30 teeth)		●	SP
	Ø25 Straight, parallel key 8×7×32, programme with bearings	●		SH
	Ø25.4 Straight, woodruff key 1/4x1", center hole 1/4-20UNC, short shaft, L=38.6, programme with bearings	●		SI
	Ø25 Straight, parallel key 7×7×31.5, center hole M6, pilot 2.8 shaft extension 49.6, L=43.1	●		SF
	Ø25.4 Straight, woodruff key 1/4*1", center hole1/4-20UNC, L=38.6	●		SG

Ordering information

Output Shaft

		A23/A24/A50/A51/B22/F71/F72/A26/A52/A53/A55/A59/A60/A61/A62/A65/A5C/M22/M24/F74	A29/A30/A66	Code
④	Ø25.4 Extended straight shaft, parallel key 6.35×6.35×31.75, center hole 5/16-18UNC，L=57.4, material stainless steel	●		SM
	Ø25.4 Straight, woodruff key 1/4*1", center hole 1/4-20UNC，L=38.6, induction teeth with speed sensor(30 teeth)		●	SQ
	Ø25.4 Shaft, spline 15-DP16/32, threaded 1/2-20UNF	●		R3
	Ø25.4 Shaft, spline SAE 6B, threaded 1/4-20UNC programme with bearings	●		R9
	Ø25.4 Tapered shaft, 1:8	●		T9
	Ø25.4 Tapered shaft, 1:8	●		TA

Rotation Direction

⑤	CW	A
	CCW	R

Paint Option

⑥	No Paint	N
	Black	B
	Hengli blue	C

Special Features

		A23/A24/A50/A51/B22/F71/F72/A26/A52/A53/A55/A59/A60/A61/A62/A65/A5C/M22/M24/F74	A29/A30	Code
⑦	Standard	●		A
	Free running	●		F
	High temperature	●		V
	Low temperature	●		S
	Speed sensor-3 loose wires out		●	S2

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Note: ● =Available；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

50 51.6 cm³/rev.	Pressure(bar) 30	60	80	100	120	140	Max.Cont 150	Max.Inter 175
Flow (L/min)	Torque(N·m), **Speed(rpm)**							
5	21	43	58	72	85	96		
	93	**84**	**79**	**71**	**63**	**57**		
10	21	44	59	74	89	103	110	127
	187	**178**	**170**	**164**	**156**	**145**	**140**	**121**
15	20	42	58	73	88	103	111	129
	282	**273**	**266**	**258**	**249**	**239**	**233**	**216**
20	18	41	56	72	86	102	109	128
	378	**367**	**361**	**352**	**344**	**332**	**326**	**308**
25	17	42	57	72	87	102	110	129
	472	**463**	**456**	**448**	**439**	**429**	**421**	**405**
30	16	41	56	71	86	101	109	127
	566	**557**	**549**	**539**	**529**	**518**	**511**	**493**
35	14	40	55	70	85	100	108	127
	660	**653**	**644**	**635**	**623**	**610**	**604**	**585**
Max.Cont 40		39	54	70	85	100	107	126
		748	**739**	**729**	**720**	**707**	**700**	**682**
45		38	53	66	83	98	106	124
		844	**835**	**827**	**813**	**800**	**793**	**775**
Max.Inter 50		36	51	66	81	95	103	122
		942	**930**	**920**	**907**	**894**	**887**	**869**

Overall Efficiency: 70-100% 40-69% 0-39% T - 0068

80 80.3 cm³/rev.	Pressure(bar) 30	60	80	100	120	140	160	180	Max.Cont 200	Max.Inter 225
Flow (L/min)	Torque(N·m), **Speed(rpm)**									
5	33	67	89	111	132					
	60	**58**	**55**	**52**	**50**					
10	32	68	92	116	138	160	170	189		
	122	**119**	**116**	**114**	**111**	**108**	**117**	**115**		
20	28	64	88	111	134	157	181	204	226	252
	244	**240**	**238**	**236**	**232**	**229**	**225**	**221**	**214**	**204**
30	29	64	87	111	134	156	180	203	225	252
	314	**363**	**360**	**357**	**353**	**350**	**346**	**341**	**335**	**325**
40	25	61	85	108	131	153	177	199	222	250
	491	**534**	**481**	**477**	**474**	**469**	**465**	**459**	**453**	**443**
50	21	56	79	102	125	147	171	194	217	244
	616	**610**	**606**	**602**	**597**	**593**	**587**	**580**	**574**	**563**
Max.Cont 60	15	48	71	94	118	140	163	186	208	235
	743	**734**	**729**	**724**	**719**	**713**	**708**	**702**	**691**	**682**
70		42	66	89	112	135	158	180	202	229
		858	**853**	**848**	**842**	**836**	**830**	**823**	**816**	**807**
Max.Inter 75		38	62	86	109	131	154	176	198	226
		921	**916**	**910**	**905**	**898**	**891**	**884**	**876**	**864**

Overall Efficiency: 70-100% 40-69% 0-39% T - 0070

Displacement performance

Flow (L/min)	Pressure(bar) 30	60	80	100	120	140	175	Max.Cont 200	Max.Inter 225
100 99.8 cm³/rev.	Torque(N·m), **Speed(rpm)**								
5	41	83	110	137	161	184			
	49	**47**	**44**	**41**	**39**	**34**			
10	41	84	113	141	168	195	241	272	
	98	**95**	**93**	**91**	**87**	**82**	**70**	**60**	
20	36	80	109	138	165	193	240	273	303
	196	**194**	**191**	**188**	**184**	**179**	**167**	**154**	**122**
30	36	79	108	136	164	192	238	270	301
	295	**290**	**287**	**283**	**278**	**272**	**259**	**246**	**227**
40	32	75	104	132	161	188	235	268	298
	394	**390**	**386**	**382**	**376**	**370**	**355**	**342**	**323**
50	24	68	96	124	152	180	228	262	293
	493	**490**	**486**	**482**	**476**	**470**	**456**	**442**	**425**
Max.Cont 60	16	58	86	114	143	170	217	250	281
	598	**590**	**586**	**581**	**574**	**566**	**551**	**536**	**520**
70		50	79	107	135	162	211	244	276
		689	**685**	**679**	**673**	**666**	**650**	**634**	**615**
Max.Inter 75		45	74	102	130	158	205	239	272
		739	**734**	**730**	**724**	**716**	**701**	**687**	**670**

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

T - 0071

Flow (L/min)	Pressure(bar) 30	60	80	100	120	140	175	Max.Cont 200	Max.Inter 225
125 124.1cm³/rev.	Torque(N·m), **Speed(rpm)**								
5	51	105	140	173	206	236			
	39	**38**	**36**	**34**	**30**	**26**			
10	52	106	142	177	211	228	302		
	78	**76**	**74**	**72**	**69**	**64**	**50**		
20	47	101	138	173	208	226	300		
	157	**154**	**152**	**149**	**144**	**138**	**120**		
30	47	101	137	173	208	242	301	338	370
	237	**233**	**231**	**227**	**223**	**216**	**202**	**188**	**172**
40	41	94	130	165	199	233	290	329	368
	317	**314**	**310**	**306**	**301**	**295**	**283**	**270**	**252**
50	33	86	122	156	191	225	284	322	359
	397	**394**	**391**	**386**	**381**	**374**	**362**	**350**	**337**
Max.Cont 60	24	72	108	143	177	211	269	309	347
	480	**473**	**469**	**466**	**460**	**454**	**441**	**431**	**418**
70		64	98	133	168	201	259	300	338
		553	**548**	**544**	**539**	**533**	**520**	**509**	**496**
Max.Inter 75		57	93	128	162	197	254	295	334
		595	**590**	**585**	**580**	**574**	**561**	**550**	**536**

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

T - 0072

Displacement performance

	160	Pressure(bar) 30	60	80	100	120	140	160	Max.Cont 180	Max.Inter 215
	155.4 cm³/rev.	Torque(N·m), **Speed(rpm)**								
Flow (L/min)	5	66	129	170	212	237				
		31	**30**	**27**	**26**	**24**				
	10	65	133	178	221	265	306	291		
		63	**61**	**60**	**58**	**55**	**51**	**37**		
	20	59	127	172	217	258	301	343		
		126	**124**	**122**	**119**	**116**	**109**	**103**		
	30	59	126	171	214	257	300	341	382	
		190	**187**	**186**	**183**	**180**	**175**	**170**	**163**	
	40	53	120	164	207	250	292	333	373	431
		253	**251**	**249**	**247**	**244**	**239**	**232**	**223**	**209**
	50	41	108	151	194	236	277	317	357	423
		318	**316**	**314**	**311**	**308**	**303**	**297**	**290**	**275**
Max.Cont	60	27	92	135	178	221	261	302	342	407
		382	**380**	**378**	**375**	**371**	**367**	**361**	**354**	**340**
	70		80	111	167	209	250	290	330	396
			443	**441**	**439**	**435**	**431**	**425**	**419**	**407**
Max.Inter	75		73	116	159	202	244	284	323	389
			476	**473**	**471**	**468**	**463**	**458**	**452**	**440**

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

T - 0073

	200	Pressure(bar) 30	60	80	100	120	Max.Cont 150	Max.Inter 195
	198.2cm³/rev.	Torque(N·m), **Speed(rpm)**						
Flow (L/min)	5	79	153	205	256	303		
		25	**23**	**21**	**20**	**17**		
	10	82	167	222	258	325		
		49	**48**	**46**	**43**	**39**		
	20	74	162	217	274	328	399	498
		99	**97**	**92**	**84**	**79**	**67**	**60**
	30	74	157	213	267	318	393	497
		149	**147**	**146**	**141**	**134**	**125**	**96**
	40	66	151	205	258	308	385	492
		199	**197**	**195**	**191**	**186**	**178**	**168**
	50	54	137	191	246	279	371	475
		250	**248**	**246**	**244**	**240**	**232**	**216**
Max.Cont	60	38	117	172	226	277	352	456
		302	**298**	**297**	**294**	**290**	**284**	**273**
	70		103	158	211	263	338	442
			348	**346**	**345**	**341**	**335**	**325**
Max.Inter	75		94	150	203	256	332	435
			374	**372**	**369**	**367**	**360**	**351**

T - 0074

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

Displacement performance

Flow (L/min)	Pressure(bar) 30	60	80	100	125 (Max.Cont)	150	170 (Max.Inter)
250 248.1cm³/rev.	Torque(N·m), **Speed(rpm)**						
5	101	199	265	318	390		
	19	**19**	**18**	**17**	**14**		
10	105	211	279	345	410	474	
	39	**37**	**35**	**33**	**28**	**24**	
20	96	203	269	334	411	483	545
	78	**74**	**70**	**65**	**57**	**48**	**44**
30	86	186	253	318	392	464	518
	119	**118**	**116**	**108**	**96**	**84**	**82**
40	82	176	240	301	376	450	505
	160	**157**	**156**	**153**	**143**	**137**	**131**
50	68	166	226	290	363	432	485
	200	**197**	**195**	**194**	**188**	**182**	**173**
Max.Cont 60	52	145	206	268	343	415	467
	239	**238**	**236**	**236**	**231**	**219**	**217**
70	26	123	185	248	322	392	446
	280	**275**	**277**	**273**	**270**	**266**	**263**
Max.Inter 75	18	111	174	238	311	382	435
	302	**300**	**295**	**291**	**289**	**285**	**283**

T - 0075

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

Flow (L/min)	Pressure(bar) 30	60	80	100 (Max.Cont)	120	140 (Max.Inter)
315 310.1cm³/rev.	Torque(N·m), **Speed(rpm)**					
5	127	250	331	390		
	15	**14**	**13**	**11**		
10	130	261	342	417	478	556
	31	**29**	**26**	**22**	**19**	**17**
20	120	246	330	409	484	551
	63	**60**	**56**	**48**	**43**	**38**
30	110	238	320	397	465	539
	95	**92**	**86**	**71**	**65**	**61**
40	97	222	301	374	438	506
	128	**126**	**124**	**122**	**117**	**112**
50	79	201	283	353	419	486
	159	**159**	**158**	**155**	**151**	**146**
Max.Cont 60	59	182	263	339	405	469
	192	**190**	**189**	**187**	**183**	**180**
70	36	159	234	309	378	446
	224	**223**	**221**	**219**	**216**	**213**
Max.Inter 75	24	144	220	293	346	429
	240	**238**	**236**	**234**	**233**	**229**

T - 0076

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

Displacement performance

	Pressure(bar)		Max.Cont	Max.Inter
375	30	60	80	115
363.5cm³/rev.	Torque(N·m), **Speed(rpm)**			
5	149	287	371	486
	13	**11**	**10**	**7**
10	151	299	389	520
	26	**24**	**22**	**19**
20	140	285	377	523
	54	**51**	**48**	**39**
30	129	272	360	501
	81	**79**	**76**	**62**
40	110	252	340	482
	109	**109**	**107**	**101**
50	89	229	318	458
	137	**137**	**135**	**132**
Max.Cont 60	65	205	294	433
	164	**163**	**162**	**159**
70	37	178	265	405
	192	**191**	**190**	**186**
Max.Inter 75	28	161	251	389
	206	**205**	**203**	**199**

Flow (L/min)

Torque(N·m):482
Speed(rpm): 101

T - 0077

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

Installation size

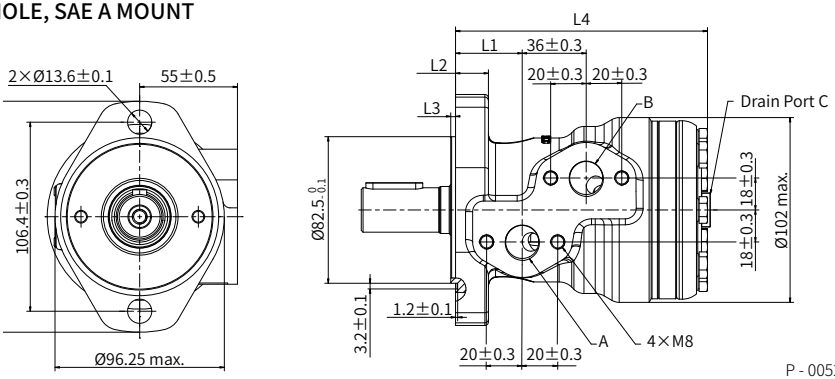
Displacement cm³/rev.	L_1 mm	L_2 mm	L_3 mm	L_4 mm
50	140.4	137.9	137.0	135.1
80	145.5	143.0	142.1	140.2
100	145.5	143.0	142.1	140.2
125	148.9	146.4	145.5	143.6
160	153.3	150.8	149.9	148.0
200	159.2	156.7	155.8	153.9
250	166.2	163.7	162.8	160.9
315	174.9	172.4	171.5	169.6
375	182.4	179.9	179.0	177.1

T - 0079

Note: Dimensions L_1、L_2、L_3、L_4 are the length from the flange mounting surface to the rear end of the motor, and the tolerance is ±0.8mm.

Installation size

·2-HOLE, SAE A MOUNT

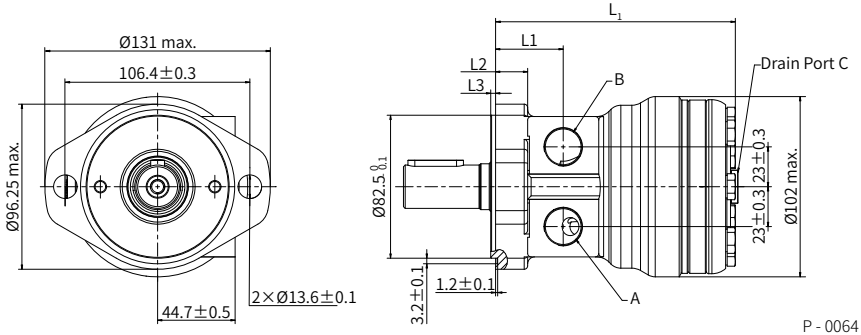


P - 0052

Code	A/B	C	L1	L2	L3	L4
A23	G1/2	G1/4	37.5±0.3	18.5±1	2.7±0.1	L_1
A24			35±0.3	16.0±1	5.2±0.1	L_2
A26	M22×1.5	M14×1.5	37.6±0.3	18.5±1	2.7±0.1	L_1
A29	7/8-14UNF	7/16-20UNF	35±0.3	16.0±1	5.2±0.1	L_2
A30	G1/2	G1/4				

T - 0225

·2-HOLE, SAE A MOUNT



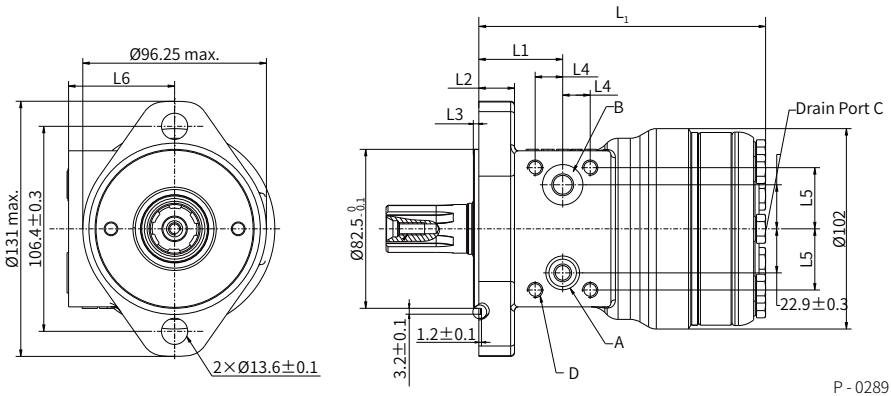
P - 0064

Code	A/B	C	L1	L2	L3
A51	7/8-14UNF	7/16-20UNF	39±0.3	18.5±1	2.8±0.1
A55	G1/2	G1/4			
A59			45±0.3	15.5±1	

T - 0226

Installation size

·2-HOLE, SAE A MOUNT



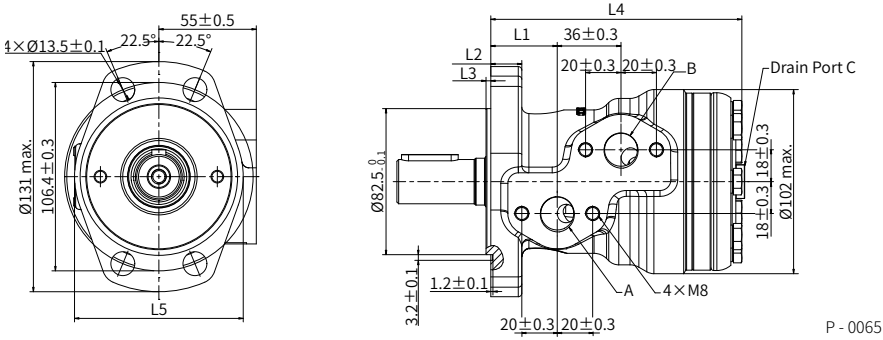
P - 0289

Code	A/B	C	D	L1	L2	L3	L4	L5	L6
A50	7/8-14UNF	7/16-20UNF	-	43.5±0.3	18.5±1	2.8±0.1	-	-	55±0.5
A52	Ø10.4/ Ø12.7		4x5/16-UNC-2B				14.3±0.3	31.75±0.3	
A53	G1/2	G1/4	-				-	-	
A60	7/8-14UNF	7/16-20UNF	-	34±0.3	15.24±1		-	-	51±0.5
A61	G1/2	G1/4	-	43.5±0.3	18.5±1		-	-	55±0.5
A62	Ø10.4/ Ø12.7	G1/4	4x5/16-UNC-2B				14.3±0.3	31.75±0.3	
A65		G1/4	4xM8						
A66	7/8-14UNF	7/16-20UNF	-				-	-	

T - 0227

Installation size

·4-HOLE, MAGNETO MOUNT

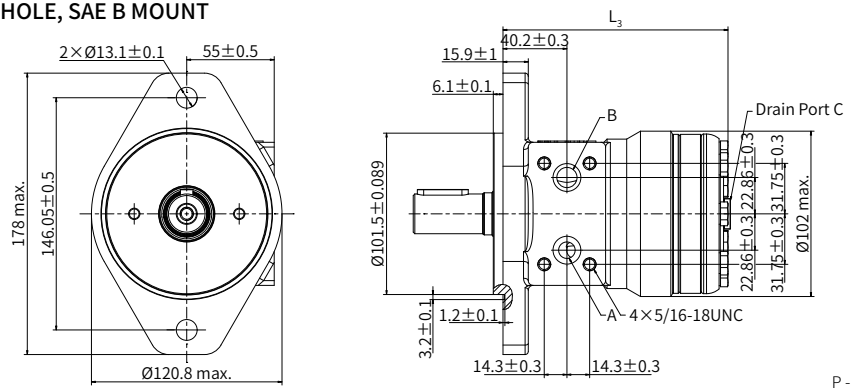


P - 0065

Code	A/B	C	L1	L2	L3	L4
M22	7/8-14UNF	7/16-20UNF	32.2±0.3	13.2±1	8±0.1	L_4
M24	G1/2	G1/4	35±0.3	16±1	5.2±0.1	L_2

T - 0228

2-HOLE, SAE B MOUNT

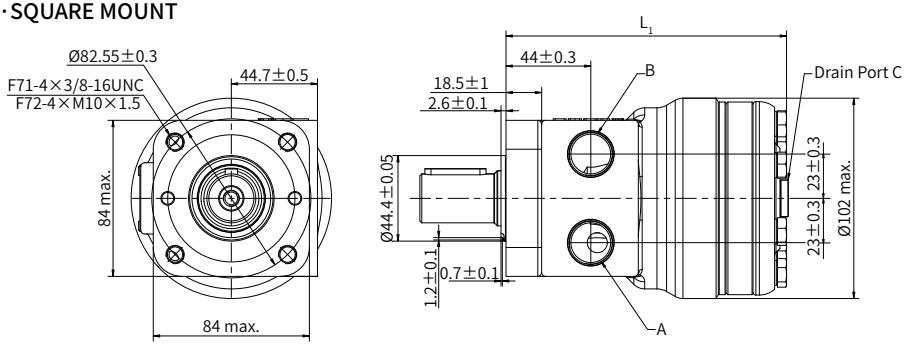


P - 0068

B22 Main Port A, B: Ø10.4/Ø12.7 Unthreaded hole; Drain Port C: 7/16-20UNF

Installation size

·SQUARE MOUNT

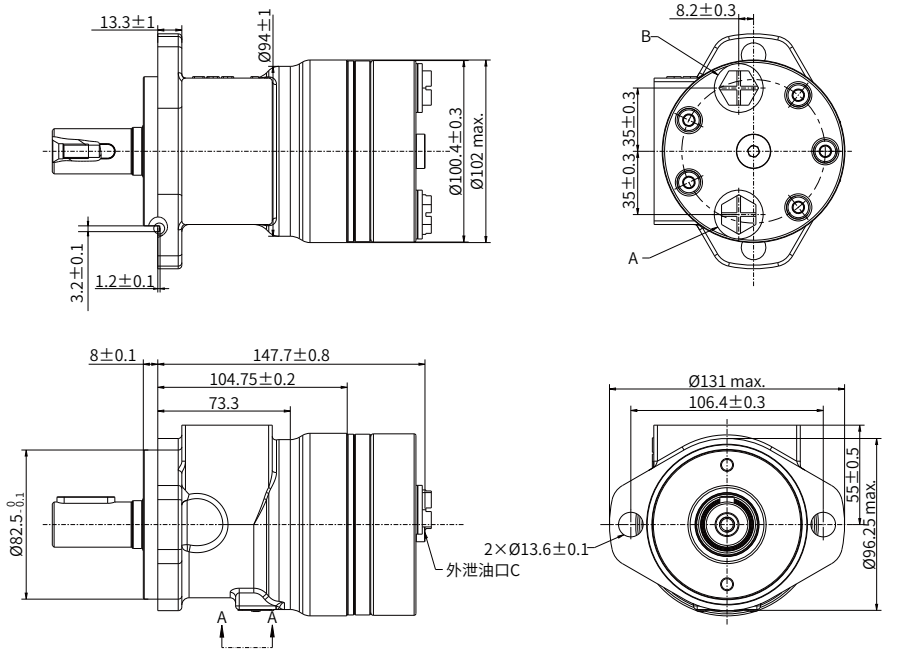


P - 0069

Code	A/B	C
F71	7/8-14UNF	7/16-20UNF
F72		
F74	1/2-14NPTF	

T - 0229

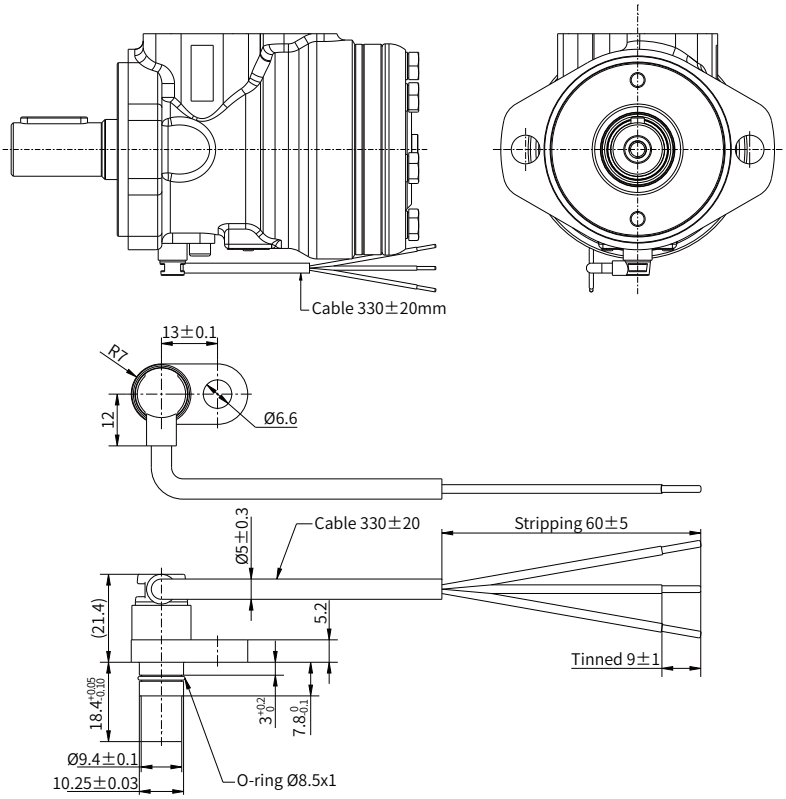
·2-HOLE, SAE A MOUNT(REAR OIL PORT)



P - 0290

A5C Main Port A, B: G1/2; Drain Port C: G1/4

Speed sensor



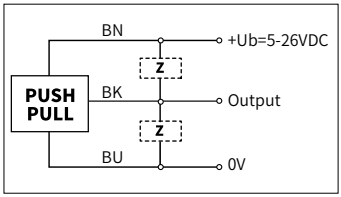
P - 0239

Speed sensor

Dimensions	Ø10.25 /L=18.4mm
Voltage	5-26VDC
Input Current	<15mA
Sensing distance	0.2~1.7mm
Power reverse protection（Y/N）	Yes
Power input overcurrent and overvoltage protection（Y/N）	Yes
Maximum output current	40mA
Voltage drop	＜ 3VDC
Working frequency	0-20KHz
Output signal	Impulse(HTL)
Operating temperature	-40°C ~125°C
Protection	IP67/IP69K
Shell material	Stainless steel/plastic
Pressure resistance of measuring surface	175bar
Connector	Cable 0.33m
Number of counting teeth	30

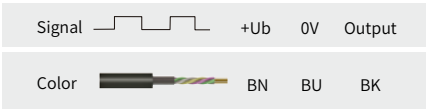
T - 0193

■ WIRING DIAGRAM



P - 0240

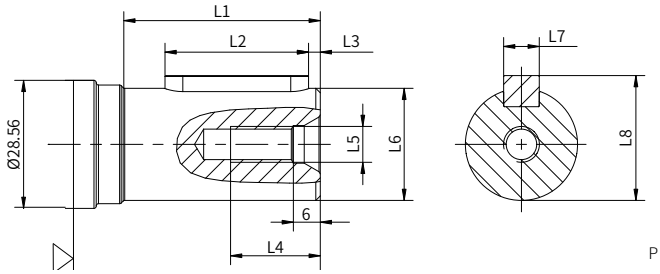
■ TERMINAL ASSIGNMENT



P - 0241

Shaft end dimensions

·Straight Shaft—Paralley Key



P - 0070

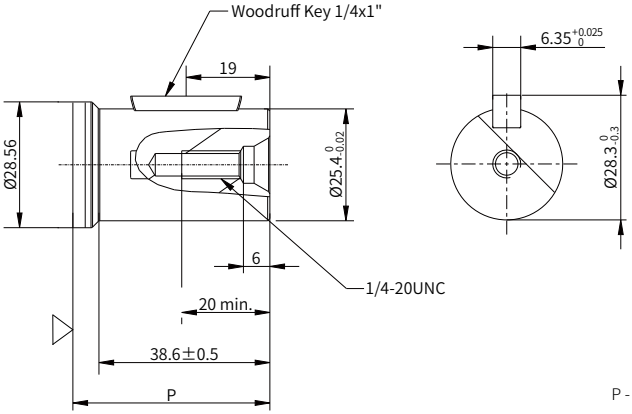
Code	L1	L2	L3	L4	L5	L6	L7	L8	Max.torque
S2	$43^{+0.8}_{-0.05}$	$32^{-0.30}_{-0.62}$	2.6±0.1	20 min.	M8	$Ø25^{+0.02}_{0}$	7.94±0.01	27.84±0.01	678 N·m
S4		$31.75^{0}_{-0.38}$	4.5±0.1	18 min.	5/16-18UNC	$Ø25.4^{0}_{-0.02}$	$6.35^{+0.05}_{0}$	$28.2^{0}_{-0.3}$	655 N·m
S6				20 min.					
ST					M8				
SY		$32^{-0.30}_{-0.62}$	2.6±0.1			$Ø25^{+0.02}_{0}$	7.94±0.01	27.84±0.01	678 N·m
SH									
SP		$31.75^{0}_{-0.38}$	4.5±0.1		5/16-18UNC	$Ø25.4^{0}_{-0.02}$	$6.35^{+0.05}_{0}$	$28.2^{0}_{-0.3}$	655 N·m
SF	43.1±0.5	$31.5^{+0.3}_{+0.1}$	5±0.1	16 min.	M6x1	$Ø25^{+0.02}_{0}$	$7^{0}_{-0.036}$	$28.1^{0}_{-0.3}$	678 N·m
SM	57.44±0.5	$31.75^{0}_{-0.38}$	5±0.1	25.4 min.	5/16-18UNC	$Ø25.4^{0}_{-0.02}$	$6.35^{+0.05}_{0}$	$28.2^{0}_{-0.3}$	655 N·m

T - 0230

·Straight Shaft—Woodruff Key

SI/SG/SQ

Ø25.4mm Straight
Woodruff key: 1/4x1"
Max. Torque: 360N·m



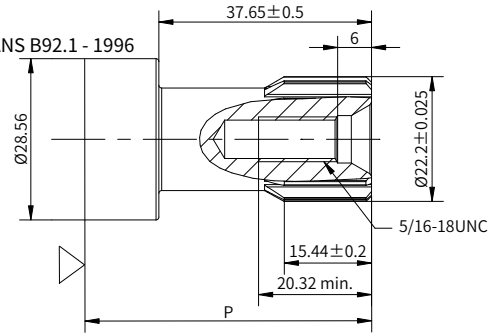
P - 0281

Shaft end dimensions

·13 Teeth Spline

R2

Ø22.2mm Shaft
Spline: 13-DP16/32，ANS B92.1 - 1996
Max. Torque: 170N·m

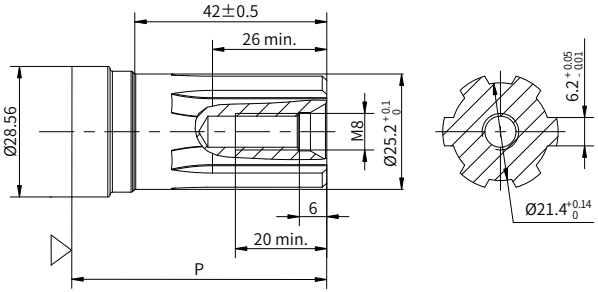


P - 0075

·SAE 6B Spline

R1/R8/R9

Ø25.4mm Shaft
Spline: SAE 6B（B.S.2059）
Max. Torque: 678N·m

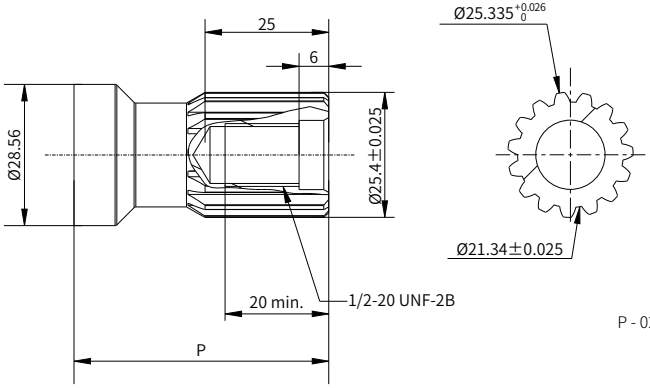


P - 0073

·15 Teeth Spline

R3

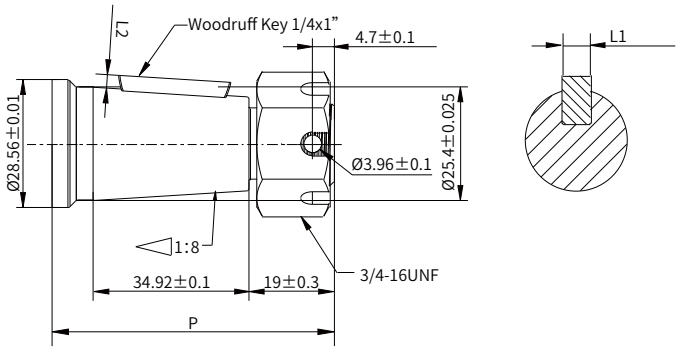
Ø25.4mm
Spline: 16-DP16/32，
ANS B92.1 - 1996
Max. Torque: 678N·m



P - 0291

Shaft end dimensions

·Tapered Shaft



P - 0292

Code	L1	L2	Tightening Torque	Max.torque
T9	$6.35^{+0.025}_{0}$	$3^{0}_{-0.2}$	200±10 N·m	655 N·m
TA	$4.76^{0}_{-0.02}$	$2.13^{0}_{-0.12}$		

T - 0229

P mm	Pilot 3mm	Pilot 5.2mm	Pilot 6.1mm	Pilot 8mm
S2	53.0	55.5	56.4	58.3
S4	53.0	55.5	56.4	58.3
S6	53.0	55.5	56.4	58.3
R1	48.0	50.5	51.4	53.3
R2	40.7	43.2	44.1	46.0
R8	48.0	50.5	51.4	51.4
SH	53.0	55.5	56.4	58.3
SI	44.9	47.1	48.0	49.9
ST	53.4	55.6	-	-
SY	53.4	55.6	-	-
SP	53.0	55.4	-	-
SF	49.8	52.0	52.9	54.8
SG	44.9	47.1	48.0	49.9
SM	63.7	65.9	66.8	68.7
SQ	38.8	41.0	-	-
R3	47.9	50.1	51.0	52.9
R9	48.3	50.5	51.4	53.3
T9	62.7	64.9	65.8	67.7
TA	62.7	64.9	65.8	67.7

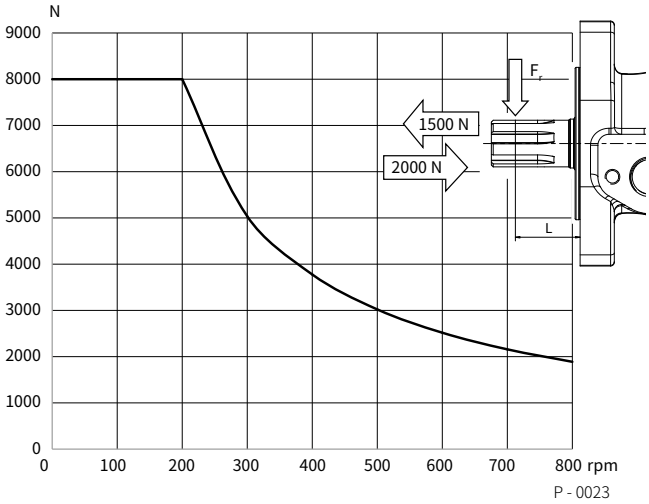
T - 0085

Note: Dimension P is the overall distance from the flange mounting surface to the end of the shaft, and the tolerance is ±0.8mm.

Allowable shaft load/bearing curve

HRD series products adopt optimized output shaft design, improve the wear resistance between output shaft and housing, when not exceeding its rated load for continuous operation, the life of dynamic pressure bearings can fully meet customer use.

Note: For frequent start-stop working conditions, you need to contact Hengli's sales or technical personnel for consultation. in the fixed position, the comparison between the side load and the rotational speed is referred to the figure below.

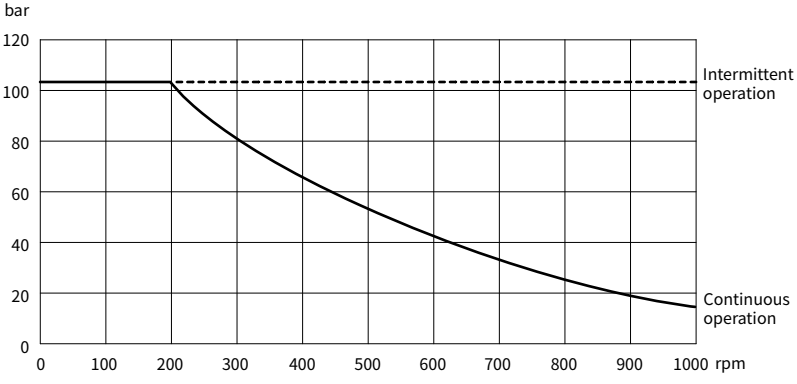


P - 0023

$$F_r = \frac{800}{n} \cdot \frac{250000}{102.4 + L} \text{ N}$$

F_r= Radial force（N）
L= Distance（mm）
n= Speed（rpm）
Diamond flange L=30mm
Square mount L=24mm

Permissible shaft seal pressure

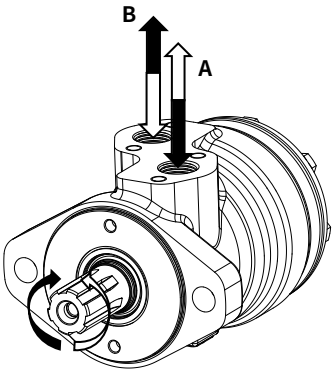


P - 0024

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.

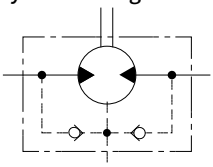
Rotation direction：CW

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



P - 0060

Hydraulic diagram



P - 0021