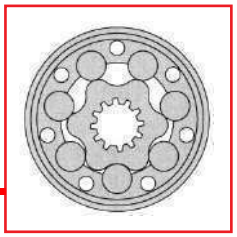
Model PHDR



The PHDR hydraulic geroler motor is a type of positive displacement motor that uses the principle of gerotor gear set to convert hydraulic fluid pressure into mechanical rotation. It is commonly used in mobile and industrial equipment due to its high power density, efficiency, and reliability.

The geroler motor consists of an outer and inner gear that mesh together to form a set of pockets, which trap and release fluid as the gears rotate. This movement creates a continuous flow of fluid, which generates torque and drives the output shaft. The size of the geroler set determines the displacement of the motor, which in turn affects its speed and torque output.

The PHDR series hydraulic geroler motor is designed to deliver high performance and durability in demanding operating conditions. It features a compact and robust construction, with a high-strength aluminum housing and reinforced end caps for added durability. The motor is equipped with high-precision geroler gears that provide smooth and efficient operation, and a self-lubricating bearing system that reduces maintenance requirements.

The PHDR hydraulic geroler motor is compatible with a variety of hydraulic fluids, including mineral-based and synthetic oils, and is available in a range of displacements to suit a variety of applications. It also features a flexible mounting system that allows for easy integration into a wide range of equipment.

Overall, the PHDR hydraulic geroler motor is a versatile and reliable solution for high-performance hydraulic systems, providing efficient and durable performance in a compact and easy-to-install package.

MAIN SPECIFICATIONS

			PHDR PHDRW PHDRS 50	PHDR PHDRW PHDRS 80	PHDR PHDRW PHDRS 100	PHDR PHDRW PHDRS 125	PHDR PHDRW PHDRS 160	PHDR PHDRW PHDRS 200	PHDR PHDRW PHDRS 250	PHDR PHDRW PHDRS 315	PHDR PHDRW PHDRS 400
Displacement		ml/r cc [in³./rev.]	51.7 [3.154]	80.5 [4.912]	100.5 [6.132]	126.3 [7.707]	160.8 [9.812]	200.9 [12.259]	252.6 [15.414]	321.5 [19.619]	401.9 [24.626]
Max.Pressure.Drop	cont.	bar [psi]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	115 [1675]	90 [1305]	70 [1015]
	int.	bar [psi]	175 [2537]	175 [2537]	175 [2537]	175 [2537]	175 [2537]	175 [2537]	140 [2030]	105 [1522]	90 [1305]
	peak.	bar [psi]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	160 [2320]	130 [1885]	110 [1595]
Max.Torque	cont.	n.m [Lb.in]	**93** [823]	**152** [1345]	**194** [1717]	**237** [2097]	**310** [2743]	**369** [3265]	**380** [3363]	**380** [3363]	**380** [3363]
	int.	n.m [Lb.in]	**118** [1044]	**189** [1672]	**236** [2088]	**296** [2619]	**378** [3345]	**450** [3982]	**470** [4159]	**470** [4159]	**470** [4159]
	peak.	n.m [Lb.in]	**135** [1194]	**216** [1911]	**270** [2389]	**338** [2991]	**433** [3832]	**509** [4505]	**540** [4779]	**540** [4779]	**540** [4779]
Max.Speed	cont.	r/min	770	745	595	475	370	295	235	185	150
Max.Flow	cont.	L/min [G/min]	**40** [10.56]	**60** [15.85]	**60** [15.85]	**60** [15.85]	**60** [15.85]	**60** [15.85]	**60** [15.85]	**60** [15.85]	**60** [15.85]
Max.Output.Power	cont.	kw [hp]	7 [9.38]	10 [13.41]	10 [13.41]	10 [13.41]	10 [13.41]	8 [10.72]	6 [8.04]	5 [6.70]	4 [5.36]
Weight		kg [lbs]	6.5 [14.33]	6.9 [15.21]	7.0 [15.43]	7.3 [16.09]	7.5 [16.53]	8.0 [17.63]	8.5 [18.73]	9.0 [19.84]	11 [24.25]

* Rated speed and rated torque: Output value of speed and torque under rated flow and rated pressure.
* 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.

MAIN SPECIFICATIONS

			PHDRY 50	PHDRY 80	PHDRY 100	PHDRY 125	PHDRY 160	PHDRY 200	PHDRY 250	PHDRY 315	PHDRY 400
Displacement		ml/r cc [in³./rev.]	51.7 [3.15]	80.5 [4.91]	100.5 [6.13]	126.3 [7.71]	160.8 [9.81]	200.9 [12.26]	252.6 [15.41]	321.5 [19.62]	401.9 [24.52]
Max.Pressure.Drop	cont.	bar [psi]	175 [2538]	175 [2538]	175 [2538]	175 [2538]	175 [2538]	175 [2538]	140 [2030]	120 [1740]	100 [1450]
	int.	bar [psi]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	190 [2755]	160 [2320]	140 [2030]	120 [1740]
	peak.	bar [psi]	220 [3190]	220 [3190]	220 [3190]	220 [3190]	220 [3190]	200 [2900]	180 [2610]	150 [2175]	140 [2030]
Max.Torque	cont.	n.m [Lb.in]	110 [973]	189 [1672]	236 [2088]	296 [2619]	378 [3345]	450 [3982]	470 [4159]	485 [4292]	500 [4425]
	int.	n.m [Lb.in]	135 [1194]	216 [1911]	270 [2389]	338 [2991]	433 [3832]	486 [4301]	540 [4779]	573 [5071]	614 [5434]
	peak.	n.m [Lb.in]	144 [1274]	225 [1991]	281 [2487]	353 [3124]	450 [3982]	511 [4522]	579 [5124]	614 [5434]	710 [6284]
Max.Speed	cont.	r/min	770	745	595	475	370	295	235	185	150
Max.Flow	cont.	L/min [G/min]	40 [10.56]	60 [15.85]	60 [15.85]	60 [15.85]	60 [15.85]	60 [15.85]	60 [15.85]	60 [15.85]	60 [15.85]
Max.Output.Power	cont.	kw [hp]	7.5 [10.05]	12 [16.09]	12 [16.09]	12 [16.09]	12 [16.09]	11 [14.75]	9.5 [12.74]	7.5 [10.06]	6.5 [8.72]
Weight		kg [lbs]	6.9 [15.2]	7.3 [16.1]	7.4 [16.3]	7.7 [16.9]	7.9 [17.4]	8.4 [18.5]	8.9 [16.6]	9.4 [20.7]	11.4 [25.1]

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

PERFORMANCE DATA

PHDR 50(51.7cc)

Flow [GPM] / L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	[1740] 120	[2030] 140	Max cont. [2320] 160	Max int. [2538] 175	[PSI] BAR
[1.32] 5	[300] **34** 94	[389] **44** 85	[513] **58** 77	[575] **65** 77	[663] **75** 72	[778] **88** 50			TORQUE [LB-IN]
[2.64] 10	[309] **35** 188	[398] **45** 179	[539] **61** 167	[601] **68** 163	[699] **79** 154	[831] **94** 137	[947] **107** 119	[1053] **119** 98	**TORQUE N•M**
[3.96] 15	[300] **34** 285	[424] **48** 279	[548] **62** 271	[637] **72** 263	[770] **87** 252	[885] **100** 232	[955] **108** 213	[1079] **122** 187	SPEED RPM
[5.28] 20	[300] **34** 379	[407] **46** 377	[531] **60** 367	[601] **68** 363	[725] **82** 348	[840] **95** 332	[964] **109** 304	[1106] **125** 272	
[7.92] 30	[283] **32** 578	[380] **43** 571	[522] **59** 563	[584] **66** 556	[699] **79** 544	[831] **94** 533	[947] **107** 502	[1070] **121** 467	
Max cont. [10.56] 40	[265] **30** 762	[354] **40** 760	[504] **57** 755	[575] **65** 752	[690] **78** 740	[805] **91** 726	[929] **105** 702	[1065] **120** 672	
[11.88] 45	[256] **29** 858	[345] **39** 855	[495] **56** 851	[566] **64** 847	[681] **77** 837	[787] **89** 817	[920] **104** 798	[1062] **120** 772	Max cont.
Max int. [13.20] 50	[221] **25** 952	[318] **36** 942	[460] **52** 927	[522] **59** 908	[637] **72** 882	[743] **84** 854	[867] **98** 834	[1000] **113** 803	Max int.

PHDR 80(80.5cc)

Flow [GPM] / L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	[1740] 120	[2030] 140	Max cont. [2320] 160	Max int. [2538] 175	[PSI] BAR
5 [1.32]	[424] **48** 61	[513] **58** 58	[743] **84** 52	[938] **106** 46	[1141] **129** 40				TORQUE [LB-IN]
10 [2.64]	[442] **50** 122	[654] **74** 116	[849] **96** 112	[938] **106** 108	[1115] **126** 106	[1283] **145** 99	[1504] **170** 60		**TORQUE N•M**
20 [5.28]	[447] **54** 243	[672] **76** 239	[885] **100** 231	[964] **109** 219	[1159] **131** 206	[1345] **152** 192	[1540] **174** 176	[1708] **193** 152	SPEED RPM
30 [7.92]	[442] **50** 362	[637] **72** 358	[849] **96** 356	[920] **104** 350	[1132] **128** 349	[1309] **148** 335	[1522] **172** 325	[1690] **191** 300	
40 [10.56]	[398] **45** 484	[619] **70** 480	[840] **95** 478	[920] **104** 476	[1106] **125** 470	[1292] **146** 468	[1513] **171** 440	[1663] **188** 438	
50 [13.20]	[362] **41** 610	[601] **68** 608	[805] **91** 606	[893] **101** 603	[1079] **122** 600	[1283] **145** 598	[1486] **168** 550	[1646] **186** 520	
Max cont. 60 [15.85]	[309] **35** 726	[575] **65** 723	[778] **88** 720	[849] **96** 718	[1062] **120** 710	[1256] **142** 700	[1451] **164** 698	[1619] **182** 680	Max cont.
70 [18.49]	[265] **30** 845	[513] **58** 834	[716] **81** 820	[823] **93** 802	[1008] **114** 789	[1203] **136** 767	[1398] **158** 754	[1548] **175** 730	Max int.
Max int. 75 [19.81]	[168] **19** 910	[424] **48** 895	[672] **76** 881	[778] **88** 867	[955] **108** 852	[1168] **132** 830	[1336] **151** 806	[1486] **168** 787	

PHDR 100(100.5cc)

Flow [GPM] / L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	[1740] 120	[2030] 140	Max cont. [2320] 160	Max int. [2538] 175	[PSI] BAR
5 [1.32]	[566] **64** 49	[796] **90** 48	[1044] **118** 46	[1186] **134** 42	[1363] **154** 38				TORQUE [LB-IN]
10 [2.64]	[575] **65** 96	[823] **93** 94	[1079] **122** 93	[1186] **134** 91	[1371] **155** 80	[1619] **183** 60	[1858] **210** 48		**TORQUE N•M**
20 [5.28]	[548] **62** 192	[823] **93** 188	[1070] **121** 184	[1194] **135** 178	[1354] **153** 171	[1628] **184** 168	[1840] **208** 158	[2088] **236** 146	SPEED RPM
30 [7.92]	[539] **61** 296	[796] **90** 294	[1044] **118** 290	[1150] **130** 290	[1327] **150** 288	[1593] **180** 282	[1770] **200** 270	[2053] **232** 258	
40 [10.56]	[486] **55** 387	[761] **86** 380	[1017] **115** 369	[1115] **126** 361	[1292] **146** 356	[1601] **181** 348	[1823] **206** 338	[2017] **228** 320	
50 [13.20]	[407] **46** 484	[681] **77** 479	[955] **108** 472	[1070] **121** 463	[1292] **146** 452	[1601] **181** 445	[1770] **200** 428	[1956] **221** 410	
Max cont. 60 [15.85]	[300] **34** 583	[548] **62** 567	[867] **98** 569	[973] **110** 555	[1203] **136** 540	[1504] **170** 536	[1646] **186** 528	[1761] **199** 516	
70 [18.49]	[265] **30** 680	[557] **63** 672	[858] **97** 662	[973] **110** 650	[1221] **138** 640	[1504] **170** 635	[1681] **190** 620	[1858] **210** 606	Max cont.
Max int. 75 [19.81]	[177] **20** 728	[486] **54** 720	[796] **90** 710	[938] **106** 695	[1150] **130** 681	[1460] **165** 667	[1663] **188** 650	[1770] **200** 634	Max int.

PHDR 125(126.3cc)

Flow [GPM] / L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	[1740] 120	[2030] 140	Max cont. [2320] 160	Max int. [2538] 175	[PSI] BAR
5 [1.32]	[654] 74 37	[938] 106 32	[1239] 140 27	[1442] 163 21					TORQUE [LB-IN]
10 [2.64]	[716] **81** 78	[1008] **114** 77	[1345] **152** 74	[1522] **172** 59	[1770] **200** 45	[1947] **220** 29	[2212] **250** 20		**TORQUE N•M**
20 [5.28]	[708] **80** 157	[1008] **114** 156	[1327] **150** 154	[1504] **170** 151	[1770] **200** 146	[1956] **221** 142	[2248] **254** 120	[2584] **292** 114	SPEED RPM
30 [7.92]	[690] **78** 232	[991] **112** 230	[1318] **149** 228	[1495] **169** 222	[1752] **198** 220	[1947] **220** 218	[2230] **252** 199	[2566] **290** 170	
40 [10.56]	[681] **77** 312	[982] **111** 311	[1301] **147** 307	[1486] **168** 300	[1734] **196** 298	[1929] **218** 284	[2212] **250** 270	[2549] **288** 252	
50 [13.20]	[548] **62** 391	[929] **105** 388	[1265] **143** 384	[1460] **165** 380	[1725] **195** 372	[1973] **223** 362	[2248] **254** 346	[2540] **287** 330	
Max cont. 60 [15.85]	[460] **52** 470	[867] **98** 468	[1203] **136** 464	[1416] **160** 459	[1690] **191** 448	[1947] **220** 434	[2212] **250** 412	[2495] **282** 405	
70 [18.49]	[362] **41** 548	[796] **90** 544	[1150] **130** 540	[1380] **156** 541	[1655] **187** 538	[1902] **215** 535	[2141] **242** 530	[2460] **278** 496	Max cont.
Max int. 75 [19.81]	[283] **32** 586	[699] **79** 583	[1115] **126** 578	[1309] **148** 570	[1593] **180** 560	[1840] **208** 546	[2071] **234** 532	[2318] **262** 520	Max int.

PERFORMANCE DATA

PHDR 160(160.8cc)

[GPM] L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	[1740] 120	[2030] 140	Max cont. [2320] 160	Max int. [2538] 175	[PSI] BAR
5 [1.32]	[885] **100** 29	[1256] **142** 26	[1663] **188** 21	[1832] **207** 19					
10 [2.64]	[920] **104** 62	[1292] **146** 60	[1690] **191** 58	[1867] **211** 49	[2168] **245** 45	[2495] **282** 32	[2920] **330** 25		TORQUE [LB-IN] **TORQUE N•M** SPEED RPM
20 [5.28]	[902] **102** 124	[1309] **148** 120	[1717] **194** 118	[1929] **218** 114	[2221] **251** 109	[2566] **290** 104	[2991] **338** 99	[3257] **368** 94	
30 [7.92]	[849] **96** 183	[1247] **141** 181	[1646] **186** 179	[1902] **215** 176	[2194] **248** 166	[2549] **288** 158	[2965] **335** 144	[3221] **364** 132	
40 [10.56]	[770] **87** 246	[1203] **136** 242	[1593] **180** 240	[1823] **206** 235	[2194] **248** 231	[2531] **286** 219	[2920] **330** 200	[3168] **358** 181	
50 [13.20]	[619] **70** 309	[1115] **126** 307	[1522] **172** 300	[1752] **198** 295	[2106] **238** 287	[2460] **278** 278	[2832] **320** 262	[3097] **350** 247	
60 [15.85] Max cont.	[513] **58** 367	[982] **111** 367	[1486] **168** 359	[1690] **191** 354	[2053] **232** 346	[2398] **271** 338	[2761] **312** 323	[3026] **342** 306	
70 [18.49]	[415] **47** 435	[920] **104** 430	[1416] **160** 421	[1681] **190** 415	[2017] **228** 403	[2363] **267** 393	[2664] **301** 381	[2991] **338** 365	Max cont.
75 [19.81] Max int.	[300] **34** 470	[805] **91** 463	[1327] **150** 450	[1593] **180** 441	[1956] **221** 431	[2310] **261** 420	[2575] **291** 405	[2903] **328** 389	Max int.

Flow

PHDR 200(200.9cc)

[GPM] L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	[1740] 120	[2030] 140	Max cont. [2320] 160	Max int. [2538] 175	[PSI] BAR
5 [1.32]	[1141] **129** 24	[1557] **176** 22	[2035] **230** 18	[2265] **256** 13					
10 [2.64]	[1177] **133** 49	[1610] **182** 47	[2088] **236** 45	[2310] **261** 43	[2743] **310** 38	[3115] **352** 33	[3540] **400** 24		TORQUE [LB-IN] **TORQUE N•M** SPEED RPM
20 [5.28]	[1159] **131** 99	[1601] **181** 97	[2053] **232** 94	[2265] **256** 92	[2726] **308** 88	[3133] **354** 83	[3540] **400** 74	[3814] **431** 64	
30 [7.92]	[1115] **126** 149	[1557] **176** 147	[2646] **299** 144	[2230] **252** 141	[2726] **308** 135	[3124] **353** 126	[3540] **400** 113	[3805] **430** 105	
40 [10.56]	[991] **112** 200	[1486] **168** 197	[1982] **224** 194	[2194] **248** 191	[2690] **304** 185	[3097] **350** 174	[3478] **393** 160	[3743] **423** 151	
50 [13.20]	[831] **94** 252	[1345] **154** 249	[1947] **220** 246	[2150] **243** 243	[2602] **294** 238	[3035] **343** 228	[3398] **384** 212	[3664] **414** 194	
60 [15.85] Max cont.	[690] **78** 304	[1274] **144** 301	[1885] **213** 298	[2088] **236** 294	[2540] **287** 286	[3000] **339** 276	[3380] **382** 262	[3628] **410** 243	
70 [18.49]	[593] **67** 355	[1194] **135** 353	[1823] **206** 349	[2017] **228** 340	[2451] **277** 329	[2973] **336** 316	[3319] **375** 300	[3611] **408** 288	Max cont.
75 [19.81] Max int.	[513] **58** 382	[1106] **125** 379	[1743] **197** 373	[1947] **220** 362	[2389] **270** 350	[2841] **321** 337	[3186] **360** 322	[3522] **398** 312	Max int.

Flow

PHDR 250 (252.6cc)

[GPM] L/min	[725] 50	[1015] 70	[1305] 90	[1450] 100	Max cont. [1595] 110	[1740] 120	Max int. [2030] 140	[PSI] BAR
5 [1.32]	[1522] **172** 20	[2124] **240** 19	[2655] **300** 18	[2991] **338** 16	[3115] **352** 15			
10 [2.64]	[1531] **173** 42	[2141] **242** 38	[2726] **308** 36	[3009] **340** 33	[3106] **351** 33	[3584] **405** 28	[4089] **462** 22	TORQUE [LB-IN] **TORQUE N•M** SPEED RPM
20 [5.28]	[1504] **170** 79	[2106] **238** 77	[2664] **301** 75	[3000] **339** 72	[3097] **350** 71	[3558] **402** 69	[4071] **460** 61	
30 [7.92]	[1416] **160** 117	[2044] **231** 114	[2637] **298** 111	[2920] **330** 109	[3071] **347** 108	[3522] **398** 103	[4027] **455** 95	
40 [10.56]	[1247] **141** 157	[1956] **221** 155	[2637] **298** 153	[2894] **327** 150	[3026] **342** 148	[3487] **394** 146	[3938] **445** 135	
50 [13.20]	[1079] **122** 196	[1823] **206** 193	[2540] **287** 190	[2841] **321** 177	[2938] **332** 175	[3380] **382** 170	[3876] **438** 163	
60 [15.85] Max cont.	[893] **101** 236	[1681] **190** 233	[2460] **278** 230	[2761] **312** 227	[2903] **328** 225	[3265] **369** 221	[3752] **424** 208	
70 [18.49]	[761] **86** 276	[1557] **176** 273	[2318] **262** 270	[2637] **298** 266	[2672] **302** 264	[3124] **353** 255	[3681] **416** 245	Max cont.
75 [19.81] Max int.	[531] **60** 297	[1442] **163** 294	[2248] **254** 290	[2531] **286** 286	[2575] **291** 282	[3053] **345** 277	[3628] **410** 266	Max int.

Flow

PHDR 315(321.5cc)

[GPM] L/min	[435] 30	[725] 50	[1015] 70	[1305] 90	Max cont. [1450] 100	Max int. [1595] 110	[PSI] BAR
5 [1.32]	[973] **110** 14	[1761] **199** 12					
10 [2.64]	[955] **108** 31	[1681] **190** 30	[2407] **272** 29	[3186] **360** 28	[3540] **400** 26	[3991] **451** 25	TORQUE [LB-IN] **TORQUE N•M** SPEED RPM
20 [5.28]	[973] **110** 61	[1734] **196** 60	[2469] **279** 59	[3150] **356** 57	[3522] **398** 55	[3965] **448** 53	
30 [7.92]	[938] **106** 91	[1646] **186** 90	[2389] **270** 89	[3142] **355** 86	[3451] **390** 84	[3912] **442** 82	
40 [10.56]	[885] **100** 123	[1584] **179** 122	[2318] **262** 120	[3097] **350** 117	[3380] **382** 112	[3858] **436** 110	
50 [13.20]	[814] **92** 154	[1495] **169** 153	[2230] **252** 151	[3026] **342** 147	[3301] **373** 140	[3823] **432** 136	
60 [15.85] Max cont.	[761] **86** 185	[1407] **159** 184	[2133] **241** 182	[3000] **339** 177	[3265] **369** 172	[3788] **428** 170	
70 [18.49]	[681] **77** 217	[1292] **146** 216	[2079] **235** 213	[2867] **324** 208	[3026] **342** 201	[3646] **412** 200	Max cont.
75 [19.81] Max int.	[584] **66** 232	[1168] **132** 231	[1876] **212** 228	[2681] **303** 222	[2938] **332** 216	[3558] **402** 214	Max int.

Flow

PHDR 400(401.9cc)

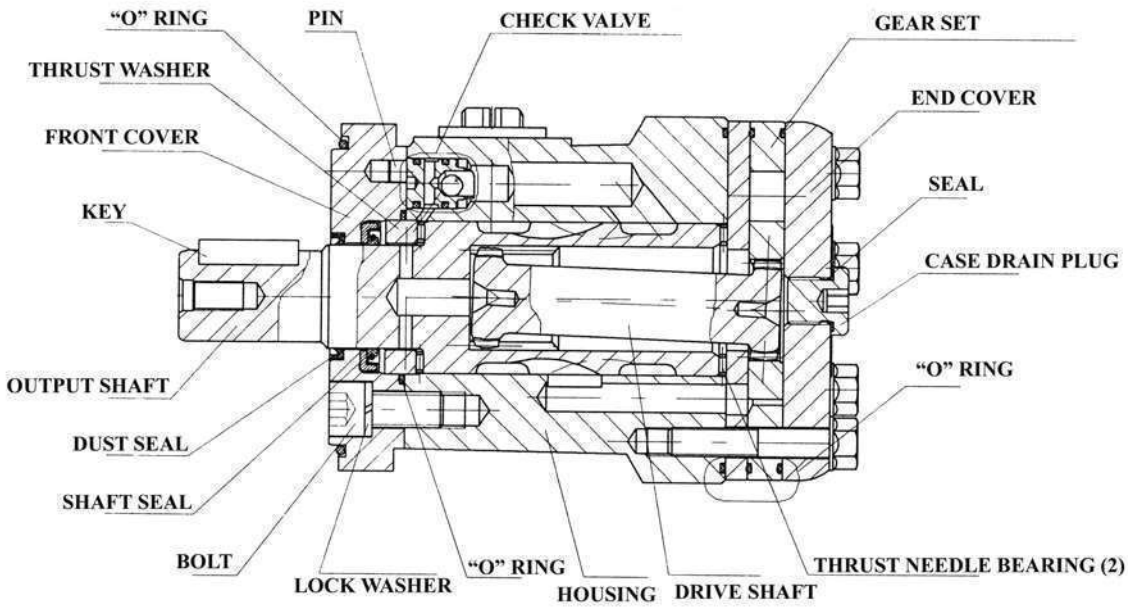
Max cont. | Max int.

Flow [GPM] / L/min	[435] 30	[580] 40	[870] 60	[1015] 70	[1160] 80	[1305] 90 [PSI] BAR
5 [1.32]	[1345] **152** 12					
10 [2.64]	[1363] **154** 24	[1814] **205** 21	[2726] **308** 18	[3088] **349** 17		
20 [5.28]	[1327] **150** 49	[1779] **201** 48	[2672] **302** 47	[3009] **340** 46	[3469] **392** 44	[3903] **441** 41
30 [7.92]	[1292] **146** 73	[1752] **198** 74	[2619] **296** 73	[2929] **331** 72	[3425] **387** 70	[3876] **438** 67
40 [10.5]	[1239] **140** 98	[1690] **191** 97	[2566] **290** 96	[2841] **321** 95	[3372] **381** 94	[3726] **421** 92
50 [13.2]	[1168] **132** 122	[1610] **182** 121	[2487] **281** 118	[2787] **315** 115	[3327] **376** 112	[3558] **402** 110
60 [15.8] Max cont.	[1132] **128** 146	[1557] **176** 145	[2407] **272** 143	[2761] **312** 140	[3203] **362** 138	[3442] **389** 132
70 [18.4]	[973] **110** 170	[1513] **171** 168	[2292] **259** 166	[2664] **301** 162	[3018] **341** 160	[3354] **379** 154
75 [19.8] Max int.	[867] **98** 182	[1433] **162** 180	[2053] **232** 178	[2584] **292** 176	[2832] **320** 174	[3150] **356** 170

TORQUE [LB-IN]
TORQUE N•M
SPEED RPM

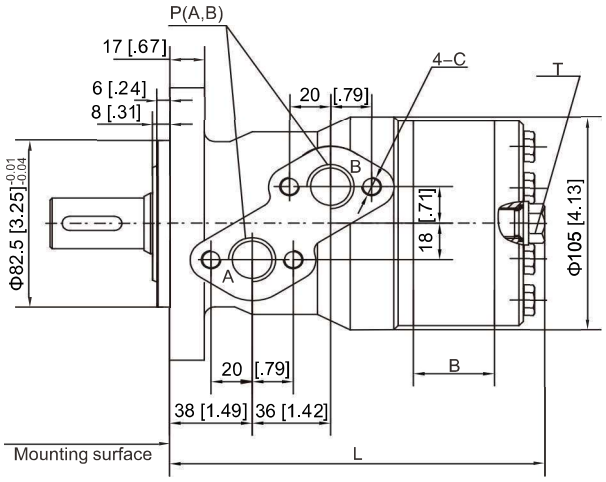
Max cont.
Max int.

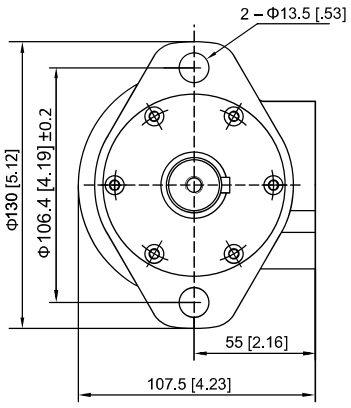
CROSS SECTION



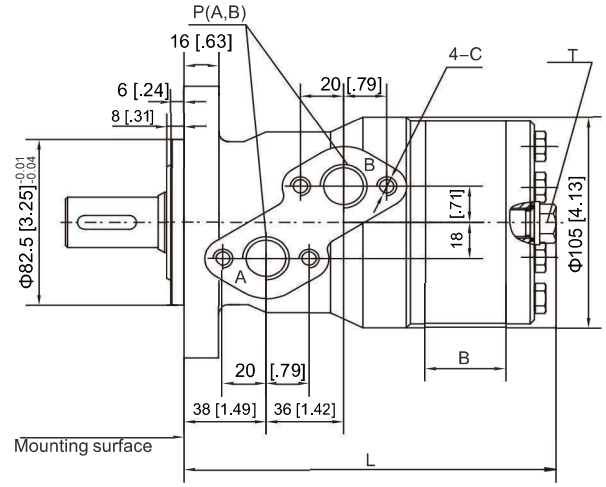
DIMENSION AND MOUNTING DATA

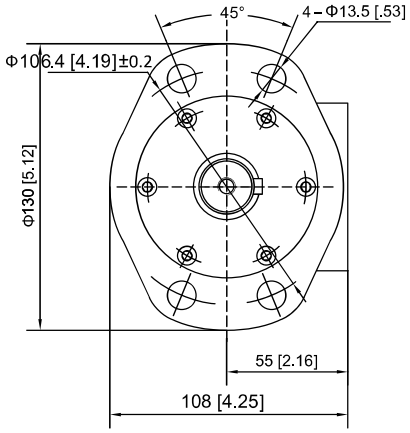
A2 : 2-hole oval flange





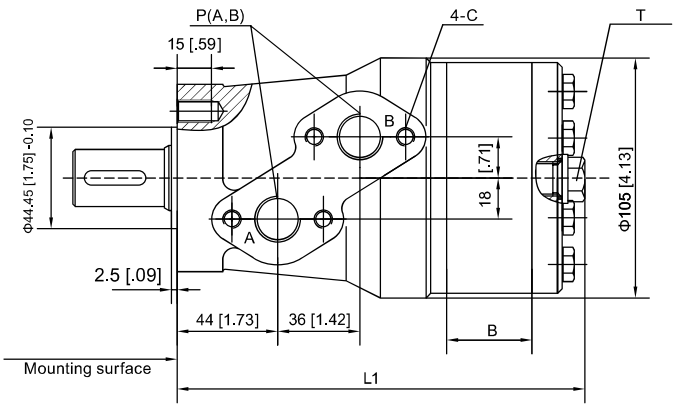
A4 : 4-hole oval flange

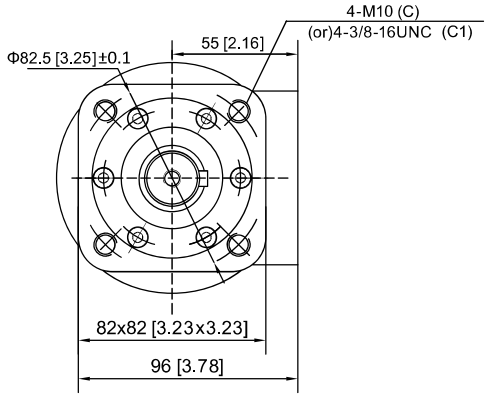




Note: C, C1 Mounting are assembling to PHDRS shaft.

C, C1 Square Flange

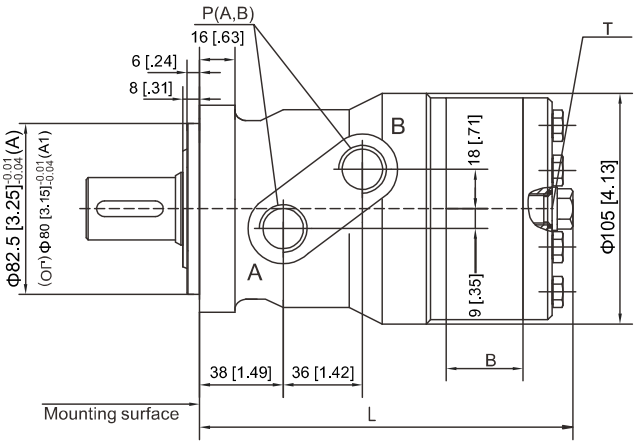


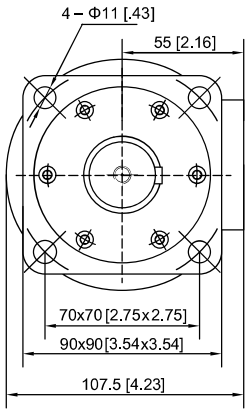


Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

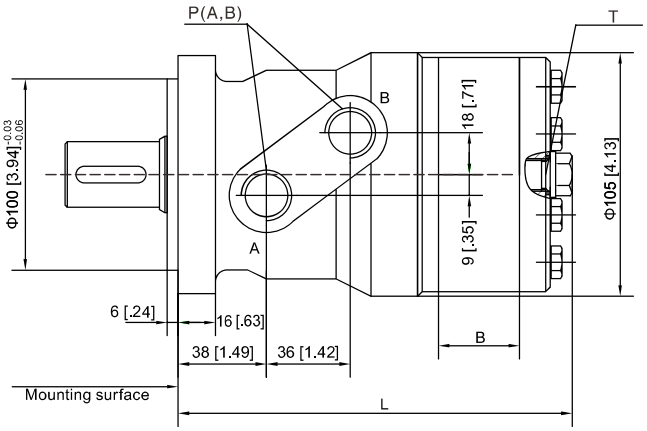
DIMENSION AND MOUNTING DATA

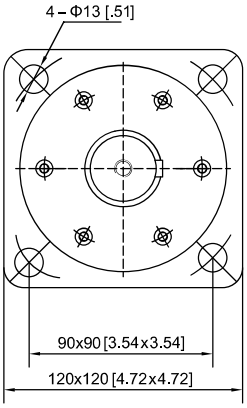
A1 : Square Flange A





A3 : Square Flange





	PHDR-50	PHDR-80	PHDR-100	PHDR-125	PHDR-160	PHDR-200	PHDR-250	PHDR-315	PHDR-400
L	143 [5.63]	148 [5.83]	151.5 [5.96]	156 [6.14]	162 [6.38]	169 [6.65]	178 [7.01]	190 [7.48]	204 [8.03]
L1	151 [5.94]	156 [6.14]	159.5 [6.28]	164 [6.46]	170 [6.69]	177 [6.97]	186 [7.32]	198 [7.79]	212 [8.35]
B	9 [.35]	14 [.55]	17.5 [.69]	22 [.87]	28 [1.10]	35 [1.38]	44 [1.73]	56 [2.20]	70 [2.75]

	PHDRY-50	PHDRY-80	PHDRY-100	PHDRY-125	PHDRY-160	PHDRY-200	PHDRY-250	PHDRY-315	PHDRY-400
L	150 [5.90]	155 [6.10]	158.5 [6.24]	163 [6.42]	169 [6.65]	176 [6.93]	185 [7.28]	197 [7.75]	211 [8.31]
L1	158 [6.22]	163 [6.42]	166.5 [6.55]	171 [6.73]	177 [6.97]	184 [7.24]	193 [7.59]	205 [8.07]	219 [8.62]
B	9 [.35]	14 [.55]	17.5 [.69]	22 [.87]	28 [1.10]	35 [1.38]	44 [1.73]	56 [2.20]	70 [2.75]

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

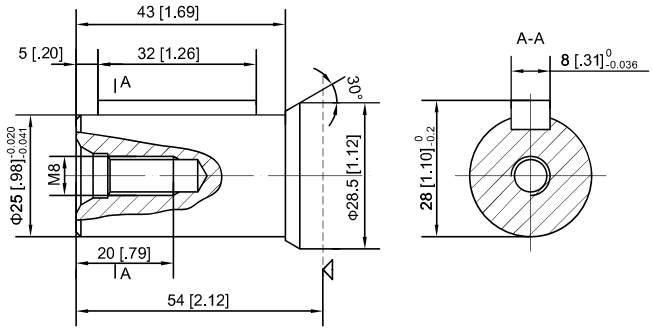
PORT CODES

Port Codes	Ports (A,B)	Mounting Thread (C)	Drain Connection (T)
Y	G1/2 (15)	M8 (13)	M14×1.5 (12)
Y1	M18×1.5 (15)	M8 (13)	M14×1.5 (12)
Y2	M22×1.5 (15)	M8 (13)	M14×1.5 (12)
Y4	ZG3/8 (15)	M8 (13)	M14×1.5 (12)
Y5	7/8–14UNF (15)	—	M14×1.5 (12)
Y7	ZG1/2 (15)	M8 (13)	M14×1.5 (12)
Y8	NPT1/2 (15)	M8 (13)	M14×1.5 (12)
Y9	NPTF1/2 (15)	5/16–18UNC (13)	7/16–20UNF (12)
Y10	G1/2 (15)	M8 (13)	G1/4 (12)
Y15	7/8–14UNF (15)	5/16–18UNC (13)	7/16–20UNF (12)

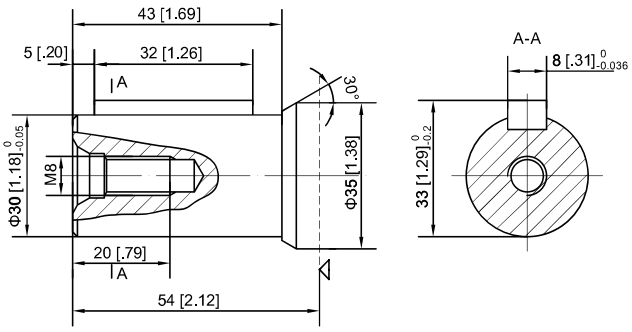
P(A,B)--Ports , C--Mounting Thread (---Indicates no thread) , T--Drain Connection

DIMENSIONS AND MOUNTING DATA

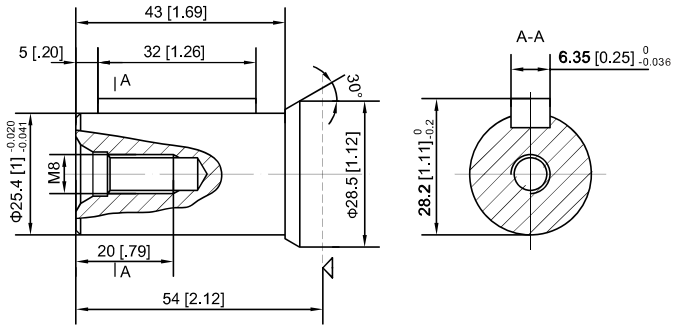
P1 : Φ[.98] Cylindrical shaft, parallel key [.31] x [.27] x [1.26]
Φ25 Cylindrical shaft，parallel key8×7×32



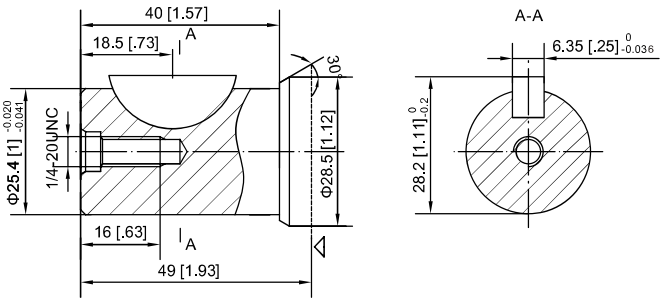
P2 : Φ[1.18] Cylindrical shaft, parallel key [.31] x [.27] x [1.26]
Φ30 Cylindrical shaft，parallel key8×7×32



P3 : Φ[1] Cylindrical shaft, parallel key [.25] x [.25] x [1.26]
Φ25.4 Cylindrical shaft，parallel key6.35×6.35×32



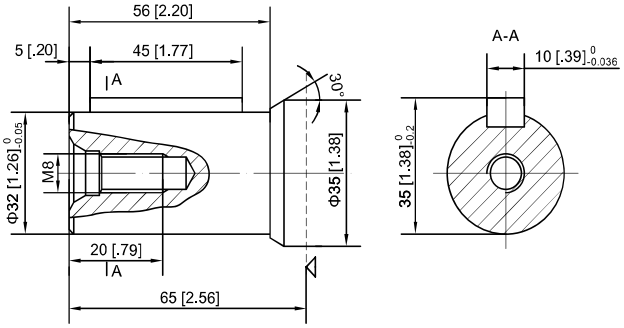
P4 : Φ[1] Cylindrical shaft, Woodruff key Φ[1] x [.25]
Φ25.4 Cylindrical shaft，Woodruff key Φ25.4×6.35



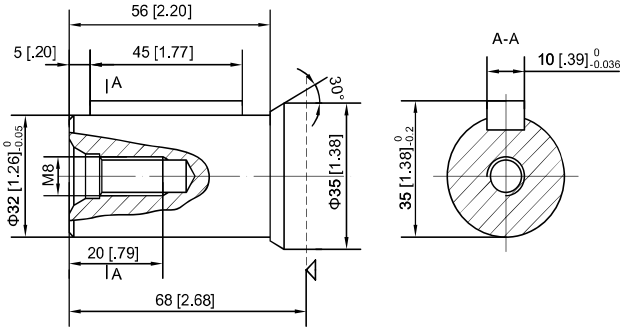
Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

DIMENSIONS AND MOUNTING DATA

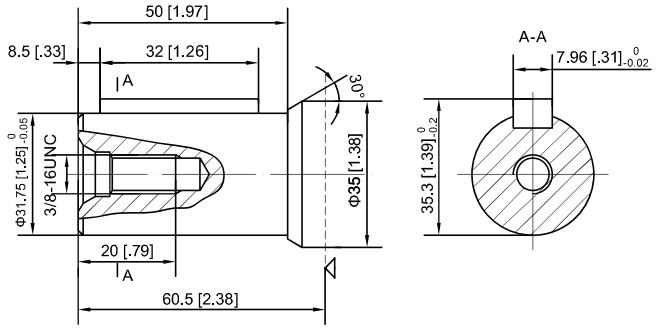
P5 : Φ[1.26] Cylindrical shaft, parallel key [.39] x [.31] x [1.77]
Φ32 Cylindrical shaft，parallel key10 × 8 × 45



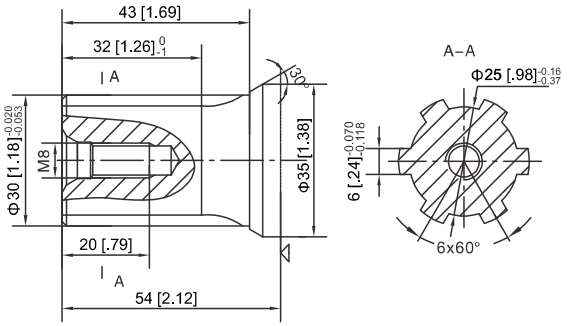
P52 : Φ[1.26] Cylindrical shaft, parallel key [.39] x [.31] x [1.77]
Φ32 Cylindrical shaft，parallel key10 × 8 × 45



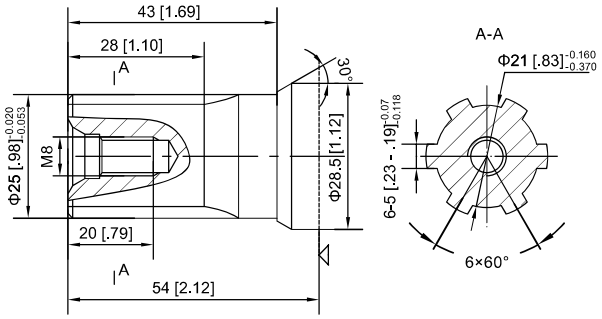
P6 : Φ[1.25] Cylindrical shaft, parallel key [.31] x [.31] x [1.26]
Φ31.75 Cylindrical shaft，parallel key7.96 × 7.96 × 32



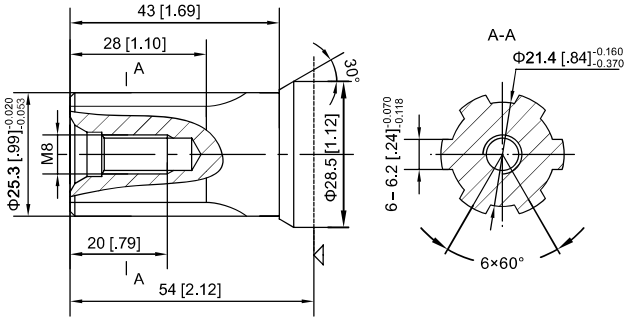
H1 : Φ[1.18] Splined shaft, 6 – [1.18] x [.98] x [.24]
Φ30 Splined shaft，6–30 × 25 × 6



H2 : Φ[.98] Splined shaft, 6 – [.98] x [.83] x [.19]
Φ25 Splined shaft，6–25 × 21 × 5



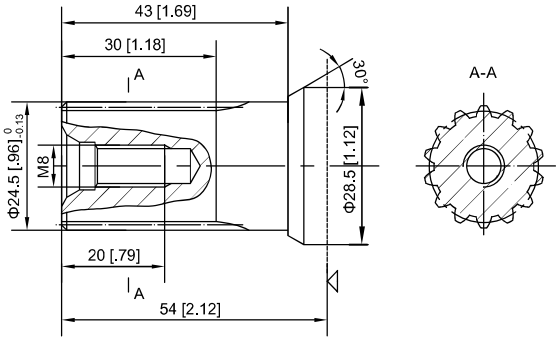
H3 : Φ[.99] Splined shaft, 6 – [.99] x [.84] x [.24]
Φ25.3 Splined shaft，6–25.3 × 21.4 × 6.2



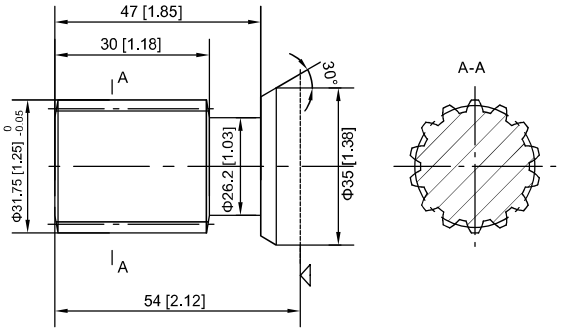
Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

DIMENSIONS AND MOUNTING DATA

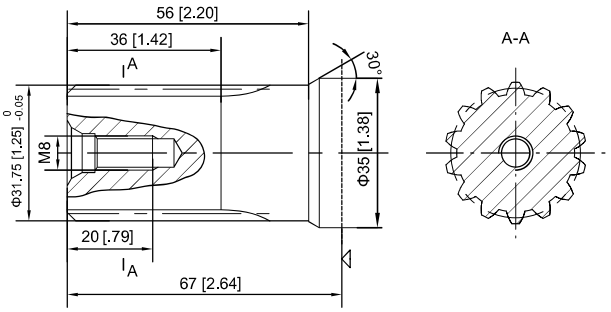
K4 : Φ[.96] Involute splined shaft B25 x 22 DIN 5482 m: 1.6 Z:14
Φ24.5 involute splined shaft B25 × 22 DIN5482 m: 1.6 Z:14



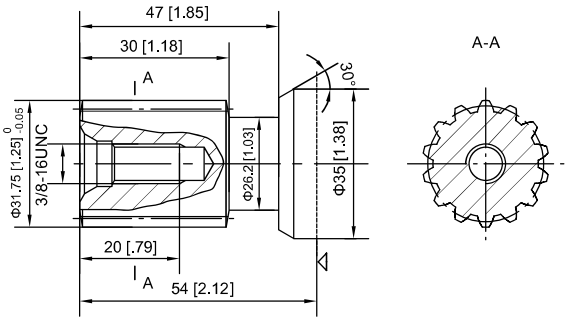
K10 : Φ[1.25] Involute splined shaft 14–DP12/24 a=30°
Φ31.75 involve splined shaft 14–DP12/24 a=30°



K13 : Φ[1.25] Involute splined shaft 14–DP12/24 a=30°
Φ31.75 involute splined shaft 14–DP12/24 a=30°



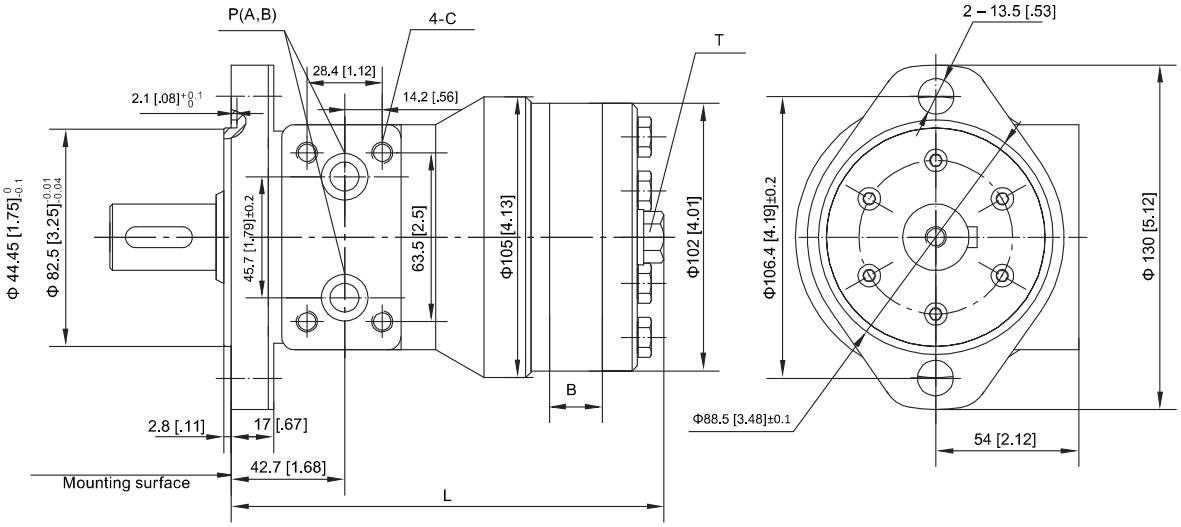
K14 : Φ[1.25] Involute splined shaft 14–DP12/24 a=30°
Φ31.75 involute splined shaft 14–DP12/24 a=30°



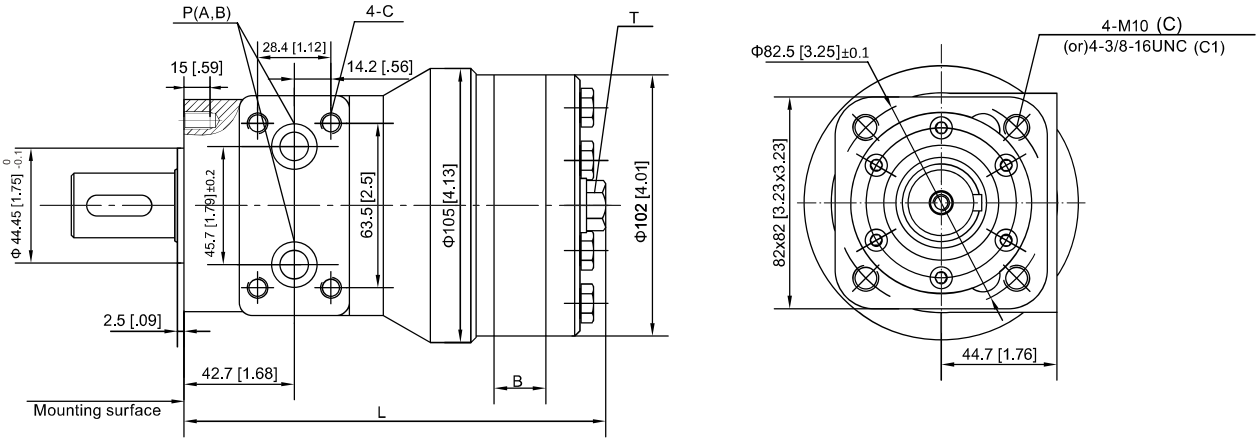
Note: PHDRY series motors don't include the following output shafts : P2, P5, P52, P6, H1, K4, K10, K13, K14

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

A2 : 2-hole oval flange



C, C1 Square Flange, Pilot Flange 44.45X2.5



	PHDRS-50	PHDRS-80	PHDRS-100	PHDRS-125	PHDRS-160	PHDRS-200	PHDRS-250	PHDRS-315	PHDRS-400
L	151 [5.94]	156 [6.14]	159.5 [6.28]	164 [6.46]	170 [6.69]	177 [6.97]	186 [7.32]	198 [7.79]	212 [8.35]
B	9 [.35]	14 [.55]	17.5 [.69]	22 [.87]	28 [1.10]	35 [1.38]	44 [1.73]	56 [2.20]	70 [2.75]

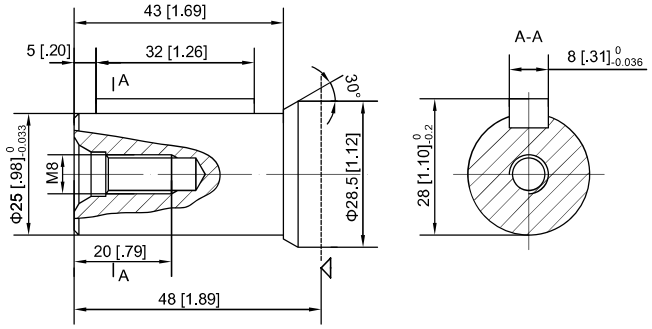
PORT CODES

Port Codes	Ports (A,B)	Mounting Thread (C)	Drain Connection (T)
Y	G1/2 (15)	—	M14 × 1.5(12)
Y5	7/8–14UNF(15)	—	7/16–20UNF(12)
Y7	ZG1/2(15)	—	G1/4(12)
Y9	NPTF1/2(15)	—	7/16–20UNF(12)
Y10	G1/2(15)	—	G1/4(12)
Y17	3/4–16UNF(15)	—	7/16–20UNF(12)
Y19	Φ11(15)	5/16–18UNC(13)	7/16–20UNF(12)
Y20	M18 × 1.5(15)	M8 (13)	G1/4(12)

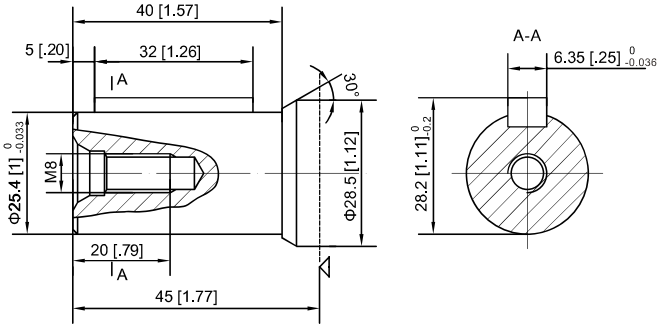
P(A,B)--Ports , C--Mounting Thread (---Indicates no thread) , T--Drain Connection

DIMENSIONS AND MOUNTING DATA

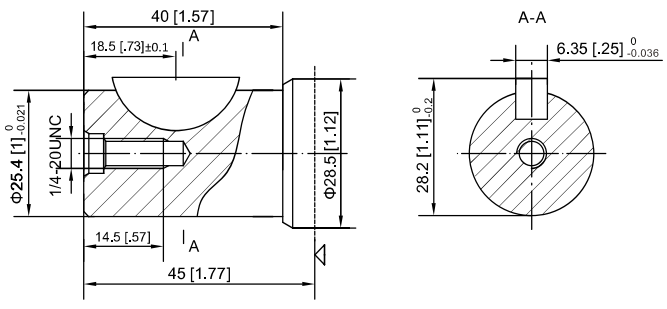
P1 : Φ[.98] Cylindrical shaft, parallel key [.31] x [.27] x [1.26]
Φ25 Cylindrical shaft，parallel key8 × 7 × 32



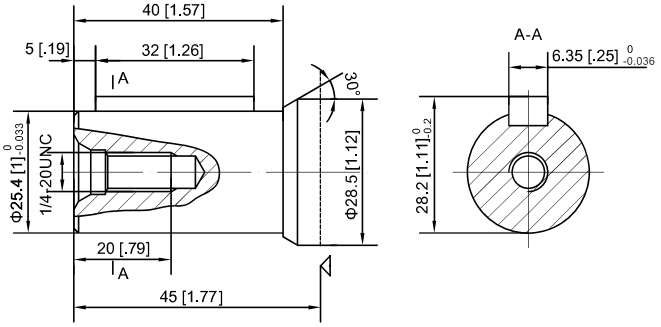
P3 : Φ[1] Cylindrical shaft, parallel key [.25] x [.25] x [1.26]
Φ25.4 Cylindrical shaft，parallel key6.35 × 6.35 × 32



P4 : Φ[1] Cylindrical shaft, Woodruff key Φ[1] x [.25]
Φ25.4 Cylindrical shaft，Woodruff key Φ25.4 × 6.35



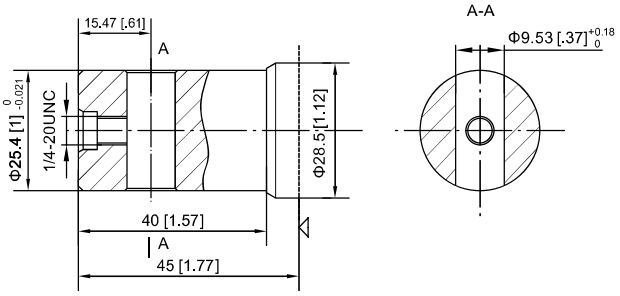
P33 : Φ[1] Cylindrical shaft, parallel key [.25] x [.25] x [1.26]
Φ25.4 Cylindrical shaft，parallel key6.35 × 6.35 × 32



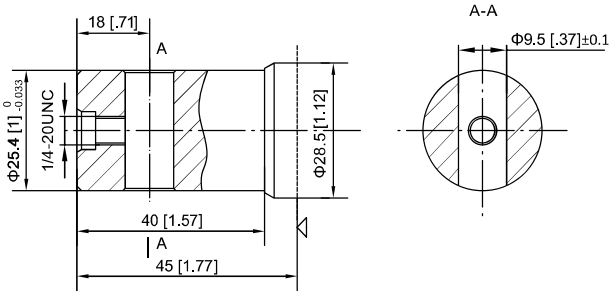
Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

DIMENSIONS AND MOUNTING DATA

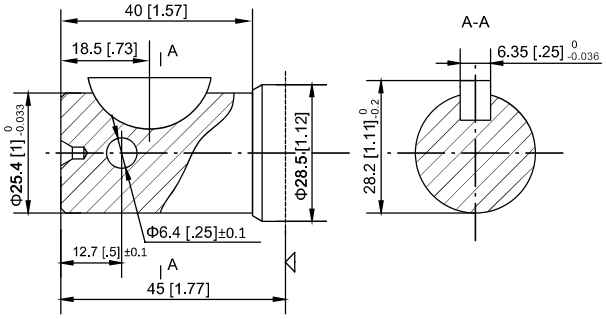
P89 : Φ[1] Cylindrical shaft pin hole Φ[.37]
Φ25.4Cylindrical shaft pin hole Φ9.53



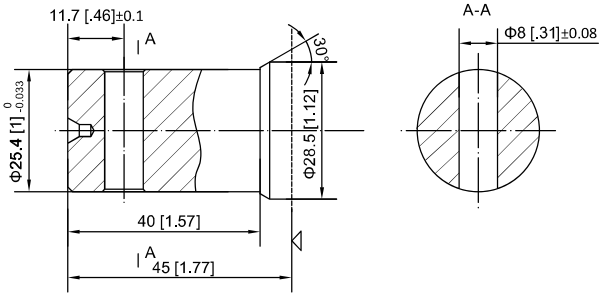
P93 : Φ[1] Cylindrical shaft pin hole Φ[.37]
Φ25.4Cylindrical shaft pin hole Φ9.5



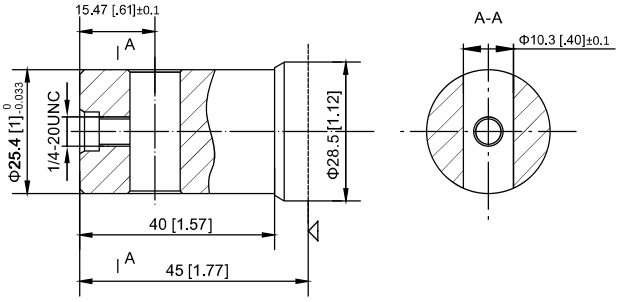
P95 : Φ[1] Cylindrical shaft pin hole Φ[.25], Woodruff key Φ[1] x [.25]
Φ25.4Cylindrical shaft pin hole Φ6.4， Woodruff key Φ25.4 x 6.35



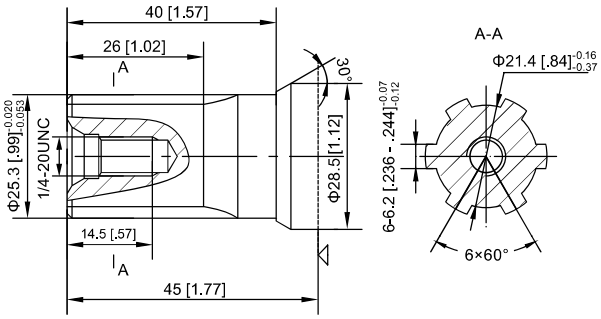
P96 : Φ[1] Cylindrical shaft pin hole Φ[.31]
Φ25.4Cylindrical shaft pin hole Φ8



P97 : Φ[1] Cylindrical shaft pin hole Φ[.40]
Φ25.4Cylindrical shaft pin hole Φ10.3



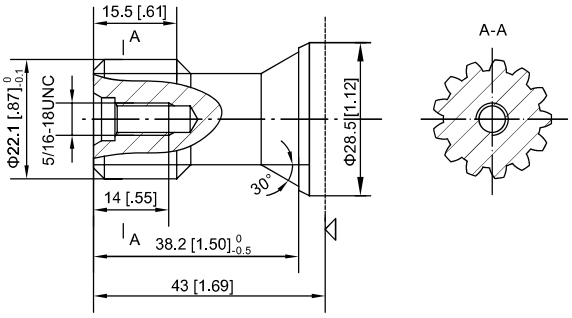
H4 : Φ[.99] Splined shaft, 6 – [.99] x [.84] x [.24]
Φ25.3 Splined shaft， 6–25.3 x 21.4 x 6.2



Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

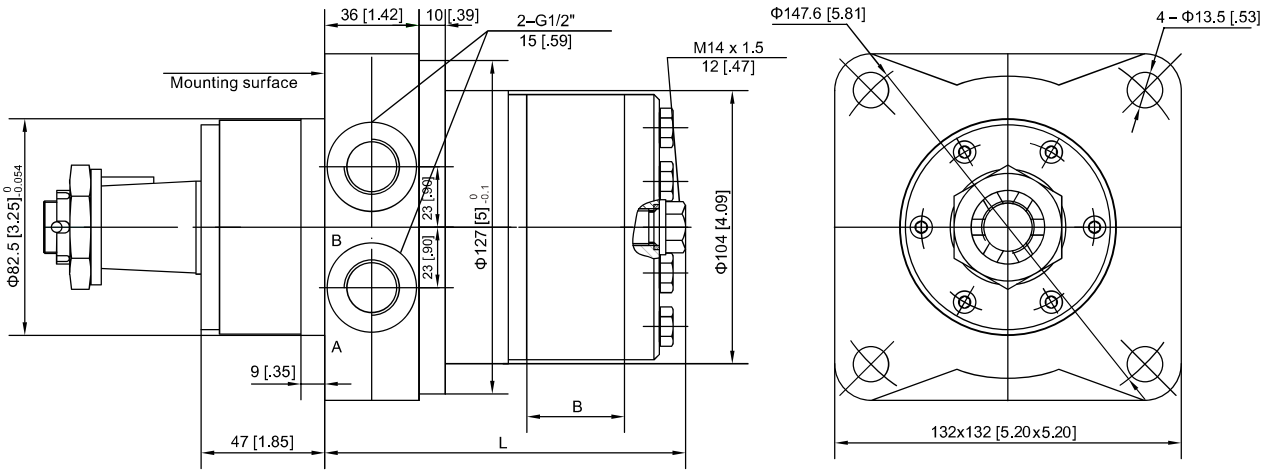
DIMENSIONS AND MOUNTING DATA

K8 : Φ[.87] Involute splined shaft, 13–DP16/32
Φ22.1 involute splined shaft，13–DP16/32



Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

DIMENSIONS AND MOUNTING DATA

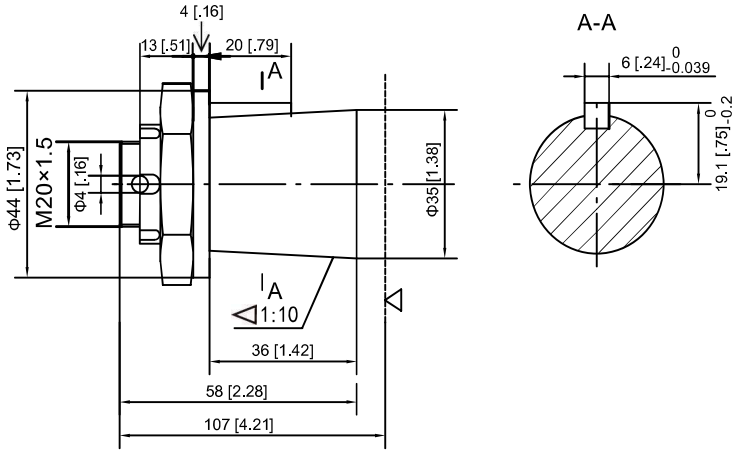


	PHDRW-50	PHDRW-80	PHDRW-100	PHDRW-125	PHDRW-160	PHDRW-200	PHDRW-250	PHDRW-315	PHDRW-400
L	108 [4.25]	113 [4.45]	117 [4.61]	121 [4.76]	127 [5]	134 [5.27]	143 [5.63]	155 [6.10]	169 [6.65]
B	9 [.35]	14 [.55]	17.5 [.69]	22 [.87]	28 [1.10]	35 [1.38]	44 [1.73]	56 [2.20]	70 [2.75]

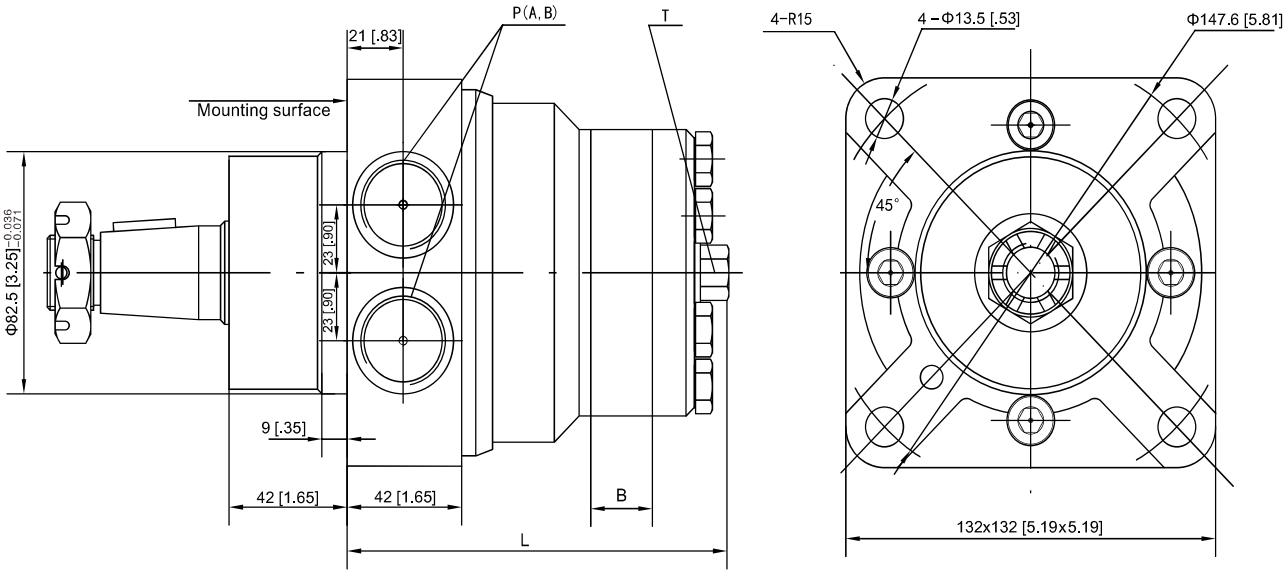
Port Codes	Ports (A,B)	Mounting Thread (C)	Drain Connection (T)
Y	G1/2 (15)	—	M14 x 1.5(12)

P(A,B)--Ports , C--Mounting Thread (---Indicates no thread) , T--Drain Connection

Z : Φ[1.38] Tapered shaft, taper 1:10, parallel key B6 x [.24] x [.79]
Φ35 Tapered shaft，taper1:10，parallel key B6 x 6 x 20



DIMENSIONS AND MOUNTING DATA



	PHDRW1-50	PHDRW1-80	PHDRW1-100	PHDRW1-125	PHDRW1-160	PHDRW1-200	PHDRW1-250	PHDRW1-315	PHDRW1-400
L	125 [4.92]	130 [5.12]	134 [5.27]	138 [5.43]	144 [5.67]	151 [5.94]	160 [6.29]	172 [6.77]	186 [7.32]
B	9 [.35]	14 [.55]	17.5 [.69]	22 [.87]	28 [1.10]	35 [1.38]	44 [1.73]	56 [2.20]	70 [2.75]

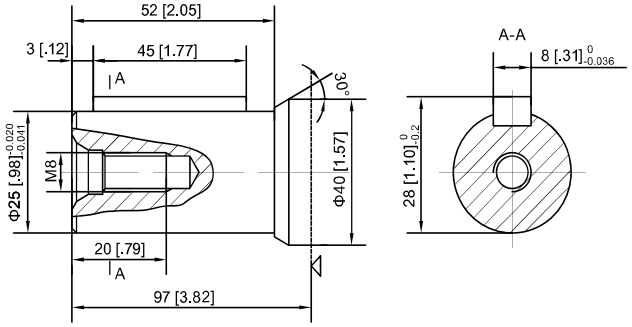
PORT CODES

Port Codes	Ports (A,B)	Mounting Thread (C)	Drain Connection (T)
Y	G1/2 (15)	—	M14 × 1.5(12)
Y5	7/8–14UNF(15)	—	M14 × 1.5(12)
Y10	G1/2 (15)	—	G1/4 (12)

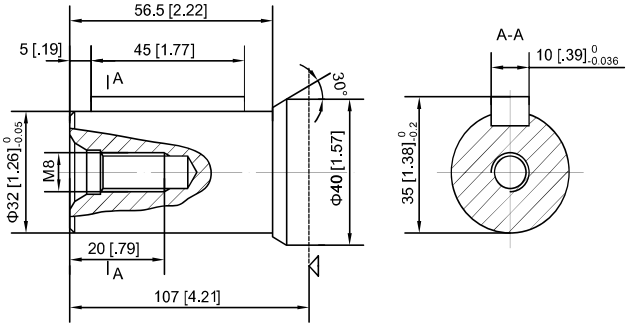
P(A,B)--Ports , C--Mounting Thread (---Indicates no thread) , T--Drain Connection

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

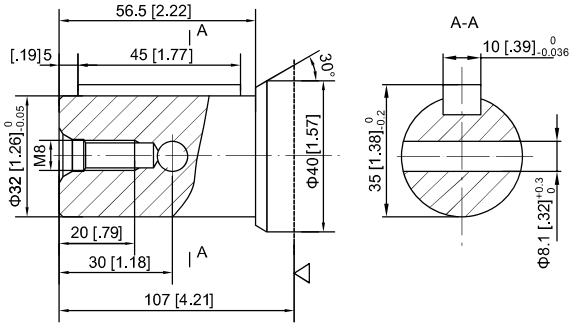
P1 : Φ[.98] Cylindrical shaft, parallel key [.31] x [.27] x [1.77]
Φ25 Cylindrical shaft，Parallel key 8 × 7 × 45



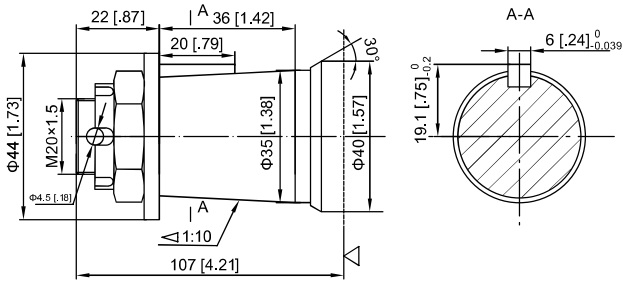
P5 : Φ[1.26] Cylindrical shaft, parallel key [.39] x [.31] x [1.77]
Φ32 Cylindrical shaft，parallel key 10 × 8 × 45



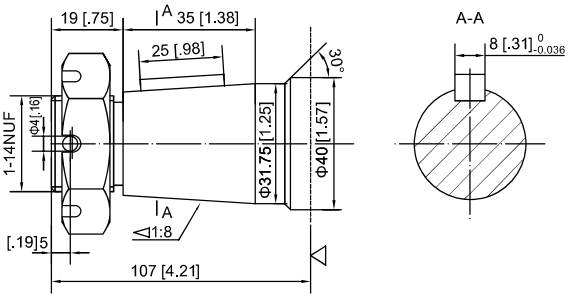
P6 : Φ[1.26] Cylindrical shaft, cylindrical shaft pin hole Φ[.32], parallel key [.39] x [.31] x [1.77]
Φ32 Cylindrical shaft，Cylindrical shaft pin hole Φ 8.1, parallel key 10 × 8 × 45



Z : Φ[1.38] Tapered shaft, taper 1:10, parallel key B6 x [.24] x [.79]
Φ35 Tapered shaft，taper1:10，parallel key B6 × 6 × 20

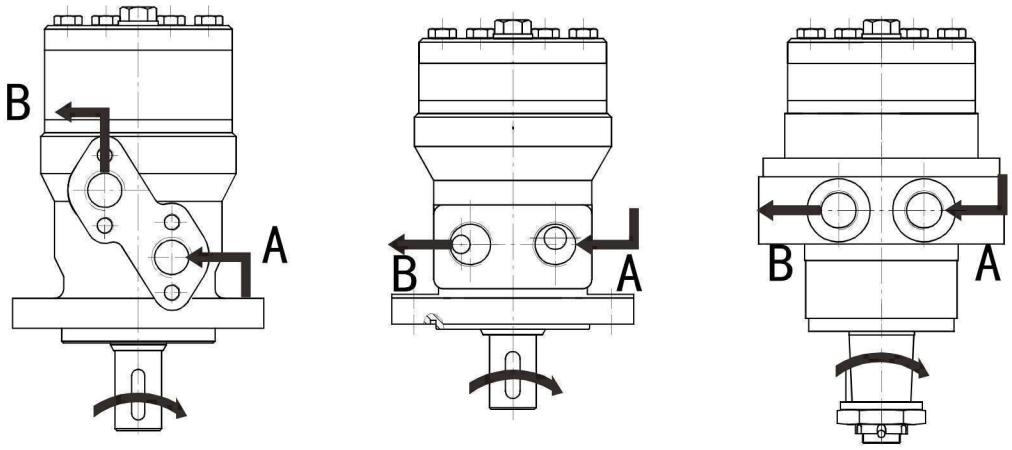


Z1 : Φ[1.25] Tapered shaft, taper 1:8, parallel key [.31] x [.27] x [.98]
Φ31.75 Tapered shaft，taper1:8，parallel key 8 × 7 × 25

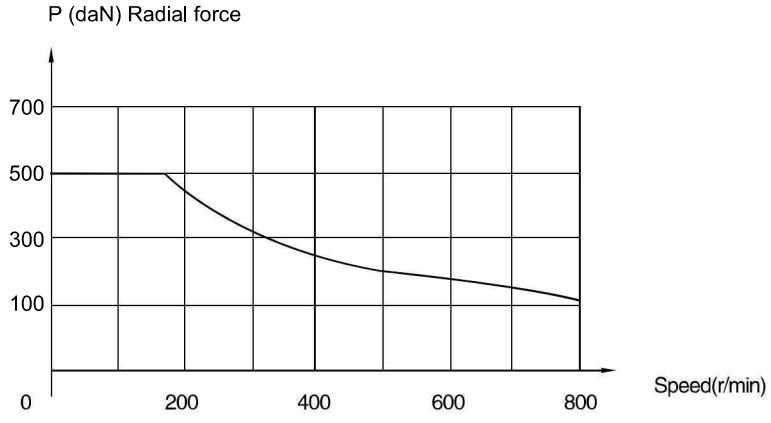


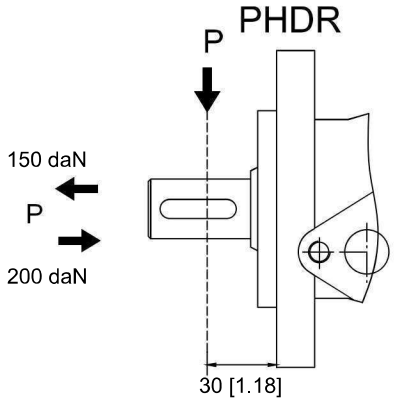
Direction of shaft ration：Standard

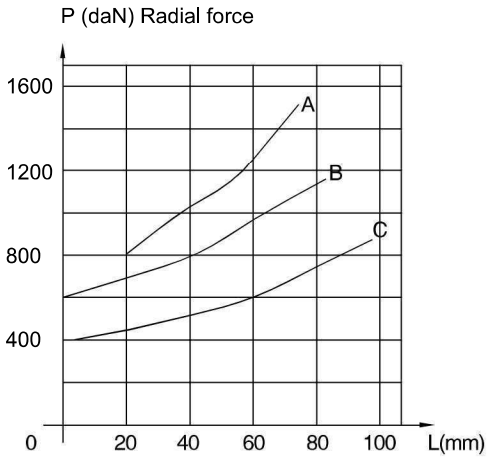
When facing shaft end of motor，shaft to rotate：
Clockwise when port “A” is pressurized.
Counter–clockwise port “B” is pressurized.



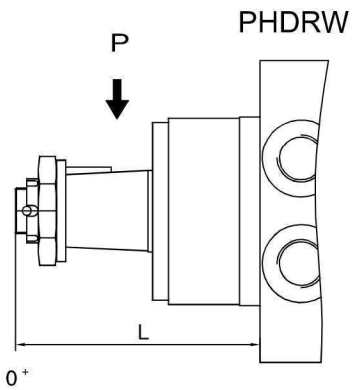
PHDR, PHDRW PERMISSIBLE SHAFT LOADS



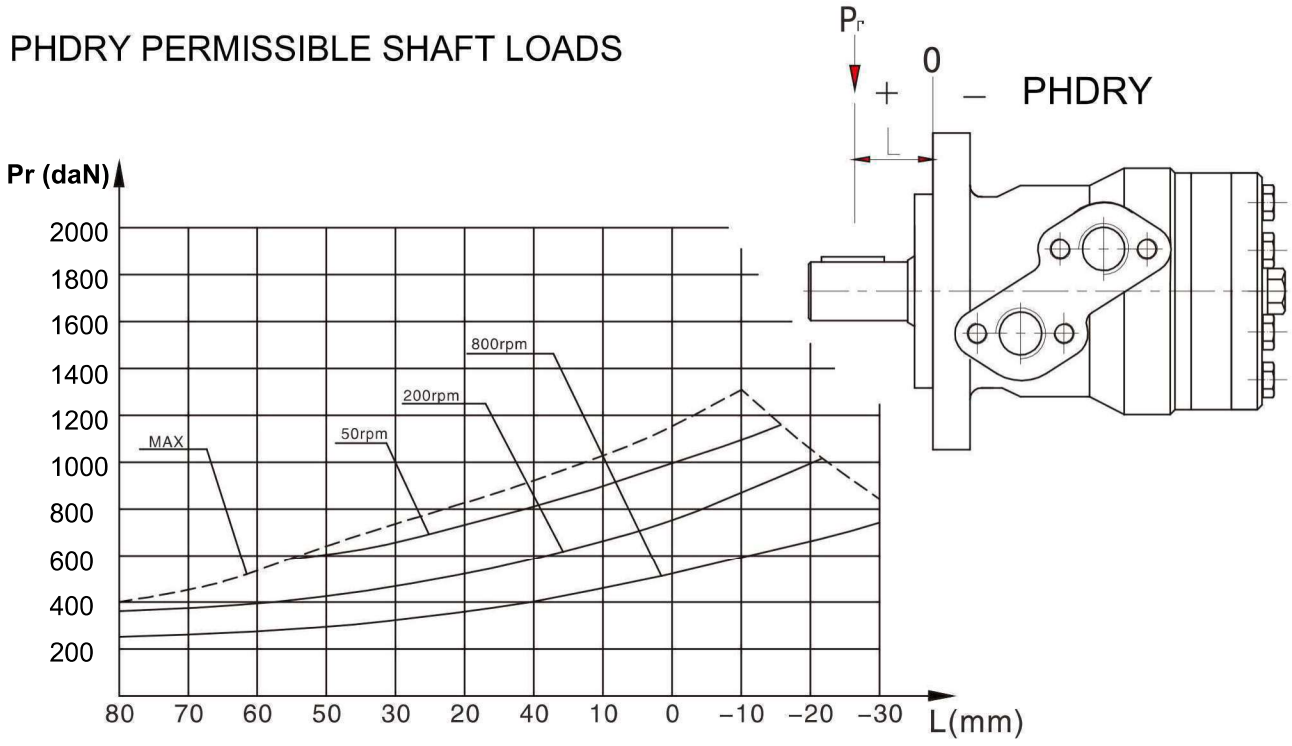




A:n=50 r/min
B:n=200 r/min
C:n=800 r/min



PHDRY PERMISSIBLE SHAFT LOADS



IN APPLICATIONS WITHOUT A DRAIN LINE, THE PRESSURE EXERTED ON THE SHAFT SEAL WILL EXCEED THE PRESSURE IN THE RETURN LINE. IN APPLICATIONS USING A DRAIN LINE, THE PRESSURE ON THE OUTPUT SHAFT SEAL CAN EQUAL THE PRESSURE IN DRAIN LINE.

Case Drain

In applications without a motor drain line, the pressure exerted on the shaft seal is marginally in excess of the return line pressure. When the drain line is used, the pressure exerted on the shaft seal is equal to the return line pressure

ORDERING INFORMATION

1		2	3	4	5		6		7
PHDR/ PHDRY	—					—		—	

Pos.1	2	3		4			5		6		7	
Series	Disp	Output Shaft		Flange Style			Ports		Special features		Rotation direction	
							Port codes (A,B)	Drain Port (T)				
PHDR/ PHDRY	50	P1	Φ[.98] Cylindrical shaft, parallel key [.31] x [.27] x [1.26] Φ25 Cylindrical shaft，parallel key8 × 7 × 32	A2	2 – Φ[.53] Oval flange, pilot Φ[3.25] x [.24] 2–Φ13.5 Oval flange, pilot Φ82.5 × 6	Y	G1/2(15)	M14 × 1.5(12)	Omit	Standard	Omit	Standard
		P2	Φ[1.18] Cylindrical shaft, parallel key [.31] x [.27] x [1.26] Φ30 Cylindrical shaft，parallel key8 × 7 × 32			Y1	M18 × 1.5(15)	M14 × 1.5(12)				
	80	P3	Φ[1] Cylindrical shaft, parallel key [.25] x [.25] x [1.26] Φ25.4 Cylindrical shaft，parallel key6.35 × 6.35 × 32	A4	4 – Φ[.53] Oval flange, pilot Φ[3.25] x [.24] 4–Φ13.5 Oval flange, pilot Φ82.5 × 6	Y2	M22 × 1.5(15)	M14 × 1.5(12)				
		P4	Φ[1] Cylindrical shaft, woodruff key Φ[1] x [.25] Φ25.4 Cylindrical shaft，Woodruff key Φ25.4 × 6.35									
	100	P5	Φ[1.26] Cylindrical shaft, parallel key [.39] x [.31] x [1.77] Φ32 Cylindrical shaft，parallel key10 × 8 × 45			Y4	ZG3/8(15)	M14 × 1.5(12)				
		P52	Φ[1.26] Cylindrical shaft, parallel key [.39] x [.31] x [1.77] Φ32 Cylindrical shaft，parallel key10 × 8 × 45	C	4 – M10 Square flange, pilot Φ[1.75] x [.09] 4–M10 Square flange, pilot Φ44.45 × 2.5				T7	With dustproof ring	L	Opposite
	125	P6	Φ[1.25] Cylindrical shaft, parallel key [.31] x [.31] x [1.26] Φ31.75 Cylindrical shaft，parallel key7.96 × 7.96 × 32			Y5	7/8–14UNF(15)	M14 × 1.5(12)				
	160	H1	Φ[1.18] Splined shaft, 6 – [1.18] x [.98] x [.24] Φ30 Splined shaft， 6–30 × 25 × 6	C1	4–3/8–16UNC Square flange, pilot Φ[1.75] x [.09] 4–3/8–16UNC Square flange, pilot Φ44.45 × 2.5							
		H2	Φ[.98] Splined shaft, 6 – [.98] x [.83] x [.19] Φ25 Splined shaft， 6–25 × 21 × 5			Y7	ZG1/2(15)	M14 × 1.5(12)	T10	With high pressure seals		
	200	H3	Φ[.99] Splined shaft, 6 – [.99] x [.84] x [.24] Φ25.3 Splined shaft， 6–25.3 × 21.4 × 6.2	A	4–Φ[.43] Square flange, pilot Φ[3.25] x [.24] 4–Φ11Square flange, pilot Φ82.5 × 6	Y8	1/2NPT(15)	M14 × 1.5(12)				
		K4	Φ[.96] Involute splined shaft, B25 x 22 DIN5482 Φ24.5 involute splined shaft，B25 × 22 DIN5482									
	250	K10	Φ[1.25] Involute splined shaft, 14–DP12/24 a=30° Φ31.75 involute splined shaft，14–DP12/24 a=30°	A1	4–Φ[.43] Square flange, pilot Φ[3.15] x [.24] 4–Φ11 Square flange, pilot Φ80 × 6	Y9	1/2NPTF(15)	7/16–20UNF(12)				
		K13	Φ[1.25] Involute splined shaft, 14–DP12/24 a=30° Φ31.75 involute splined shaft，14–DP12/24 a=30°			Y10	G1/2(15)	G1/4(12)				
	315	K14	Φ[1.25] Involute splined shaft, 14–DP12/24 a=30° Φ31.75 involute splined shaft，14–DP12/24 a=30°	A3	4–Φ[.51] Square flange, pilot Φ[3.94] x [.24] 4–Φ13 Square flange, pilot Φ100 × 6							
	400	Z1	Φ[1.12] Tapered shaft, taper 1:10, parallel key [.19] x [.19] x [.55] Φ28.56 Tapered shaft，taper1:10，parallel key 5 × 5 × 14			Y15	7/8–14UNF(15)	7/16–20UNF(12)				

Note: PHDRY motors don't include the following output shafts: P2, P5, P52, P6, H1, K4, K10, K13, K14

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

1		2	3	4	5		6		7
PHDRS	–					–		–	

Pos.1	2	3			4		5		6		7	
Series	Disp	Output Shaft			Flange Style		Ports		Special features		Rotation direction	
							Port Codes (A,B)	Drain Port (T)				
PHDRS	50	P1	Φ[.98] Cylindrical shaft, parallel key [.31] x [.27] x [1.26] Φ25 Cylindrical shaft，parallel key8 x 7 x 32	A2	2–Φ[.53] Oval flange, pilot Φ[3.25] x [.11] 2–Φ13.5 Oval flange, pilot Φ82.5 x 2.8	Y	G1/2(15)	M14 x 1.5(12)	Omit	Standard	Omit	Standard
	80	P3	Φ[1] Cylindrical shaft, parallel key [.25] x [.25] x [1.26] Φ25.4 Cylindrical shaft，parallel key6.35 x 6.35 x 32			Y5	7/8–14UNF(15)	7/16–20UNF(12)				
		P4	Φ[1] Cylindrical shaft, Woodruff key Φ[1] x [.25] Φ25.4 Cylindrical shaft，Woodruff key Φ25.4 x 6.35			Y7	ZG1/2(15)	G1/4(12)				
	100	P33	Φ[1] Cylindrical shaft, parallel key [.25] x [.25] x [1.26] Φ25.4 Cylindrical shaft，parallel key6.35 x 6.35 x 32									
	125	P89	Φ[1] Cylindrical shaft pin hole Φ[.37] Φ25.4 Cylindrical shaft pin hole Φ 9.53			Y9	1/2NPTF(15)	7/16–20UNF(12)	T21	No case drain	L	Opposite
	160	P93	Φ[1] Cylindrical shaft pin hole Φ[.37] Φ25.4 Cylindrical shaft pin hole Φ 9.5	C	4–M10 Square flange, pilot Φ[1.75] x [.11] 4–M10 Square flange, pilot Φ44.45 x 2.8							
		P95	Φ[1] Cylindrical shaft pin hole Φ[.25] , Woodruff key Φ[1] x [.25] Φ25.4 Cylindrical shaft pin hole Φ6.4，Woodruff key Φ25.4 x 6.35			Y10	G1/2(15)	G1/4(12)				
	200	P96	Φ[1] Cylindrical shaft pin hole Φ[.31] Φ25.4 Cylindrical shaft pin hole Φ8			Y17	3/4–16UNF(15)	7/16–20UNF(12)				
	250	P97	Φ[1] Cylindrical shaft pin hole Φ[.40] Φ25.4 Cylindrical shaft pin hole Φ10.3	C1	4–3/8–16UNC Square flange, pilot [1.75] x [.11] 4–3/8–16UNC Square flange, pilot Φ44.45 x 2.8	Y19	Φ11(15)	7/16–20UNF(12)				
	315	H4	Φ[.99]Splined shaft, 6–[.99] x [.84] x [.24] Φ25.3 Splined shaft， 6–25.3 x 21.4 x 6.2									
	400	K8	Φ[.87] Involute splined shaft, 13–DP16/32 Φ22.1 involute splined shaft，13–DP16/32			Y20	M18 x 1.5(15)	G1/4(12)				

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.

ORDERING INFORMATION

1	2	3	4	5	6	7
PHDRW	—				—	—

Pos.1	2	3		4		5			6		7	
Series	Disp	Output Shaft		Flange Style		Code	Ports		Special features		Rotation direction	
							Port Codes (A,B)	Drain Port (T)				
PHDRW	50 80 100 125 160 200 250 315 400	Z	Φ[1.38] Tapered shaft, taper 1:10, parallel key B6 x [.24] x [.79] Φ35 Tapered shaft, taper1:10, parallel key B6 x 6 x 20	A	4 – Φ[.53] Square flange, pilot Φ[3.25] x [.35] 4 – Φ13.5 Square flange, pilot Φ82.5 x 9	Y	G1/2(15)	M14 x 1.5(12)	Omit	Standard	Omit	Standard
											L	Opposite

1	2	3	4	5	6	7
PHDRW1	—				—	—

Pos.1	2	3		4		5			6		7	
Series	Disp	Output Shaft		Flange Style		Code	Ports		Special features		Rotation direction	
							Port Codes (A,B)	Drain Port (T)				
PHDRW1	50 80 100 125 160 200 250 315 400	P1	Φ[.98] Cylindrical shaft, parallel key [.31] x [.27] x [1.77] Φ25 Cylindrical shaft, parallel key 8 x 7 x 45	A	4 –Φ[.53] Square flange, pilot Φ[3.25] x [.35] 4 – Φ13.5 Square flange, pilot Φ82.5 x 9	Y	G1/2(15)	M14 x 1.5(12)	Omit T7	Standard With dustproof ring	Omit L	Standard Opposite
		P5	Φ[1.26] Cylindrical shaft, parallel key [.39] x [.31] x [1.77] Φ32 Cylindrical shaft, parallel key 10 x 8 x 45			Y5	7/8–14UNF(15)	M14 x 1.5(12)				
		P6	Φ[1.26] Cylindrical shaft, Cylindrical shaft pin hole Φ[.32] , parallel key [.39] x [.31] x [1.77] Φ32 Cylindrical shaft, Cylindrical shaft pin hole Φ8.1, parallel key 10 x 8 x 45									
		Z	Φ[1.38] Tapered shaft, taper 1:10, parallel key B6 x [.24] x [.79] Φ35Tapered shaft, taper1:10, parallel key B6 x 6 x 20									
		Z1	Φ[1.25] Tapered shaft, taper 1:8, parallel key [.31] x [.27] x [.98] Φ31.75Tapered shaft, taper1:8, parallel key 8 x 7 x 25			Y10	G1/2(15)	G1/4(12)				

Measurements in brackets [ ] are in inches, while measurements without brackets are in millimeters. Unless specified otherwise.