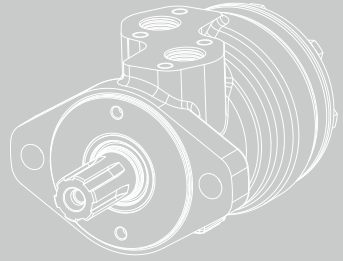


1.1



# HRD series Orbital hydraulic motor

HRD Series Orbital Hydraulic Motor, it is a spool distribution motor, adopts needle tooth ring and star design, low start-up pressure, high efficiency and high reliability.



## Contents

Overview .....	02
Advantages .....	02
Standard structure .....	02
Specification .....	03
Displacement performance .....	04-08
Installation size .....	09-11
Shaft end dimensions .....	11-13
Allowable shaft load/bearing curve	14
Permissible shaft seal pressure .....	14
Hydraulic diagram .....	14
Rotation direction .....	14
Ordering information .....	15



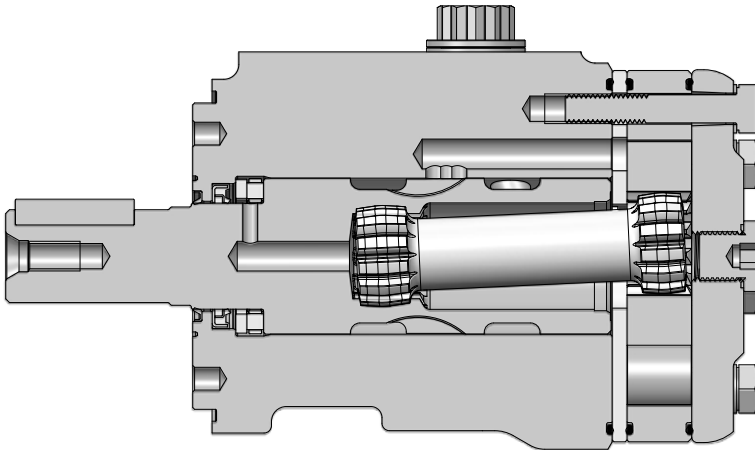
## Overview

HRD Series Orbital Hydraulic Motor, it is a spool distribution motor, adopts needle tooth ring and star design, low start-up pressure, high efficiency and high reliability. High-pressure shaft seals and 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.
- The high-pressure shaft seal can carry high back pressure and allow series and parallel use.
- It adopts advanced rotary stator parameter design, low starting pressure, high efficiency, and high reliability and smooth operation.
- Reinforced drive link design for long service life.
- Multiple displacements and mounting sizes are available.

## Standard structure



P-0061

## Specification

Type		50	80	100	125	160	200	250	315	375
Displacement (cm <sup>3</sup> /rev.)		51.6	80.3	99.8	124.1	155.4	198.2	248.1	310.1	363.5
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.speed (rpm)	Continuous	769	755	604	481	381	302	242	198	168
	Intermittent	965	946	756	605	477	378	303	247	206
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.torque (Nm)	Continuous	98	218	278	332	382	402	405	405	393
	Intermittent	117	238	303	362	436	481	544	555	554
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.no-load starting pressure (bar)		10	10	10	10	10	10	7	7	7
Min.starting torque (Nm)	Max.continuous differential pressure	86	179	222	277	312	331	346	346	324
	Max.Intermittent differential pressure	101	201	250	311	372	431	470	484	466

T - 0041

- 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° C , the minimum viscosity of the oil is recommended to be 20mm<sup>2</sup>/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.

## Displacement performance

		Pressure(bar)						Max.Cont	Max.Inter
		30	60	80	100	120	140	150	175
<b>50</b>		51.6 cm <sup>3</sup> /rev.							
		Torque(Nm), Speed(rpm)							
5	Max.Cont	16	37	52	66	79	93	96	112
		<b>93</b>	<b>84</b>	<b>77</b>	<b>70</b>	<b>54</b>	<b>41</b>	<b>35</b>	<b>13</b>
10	Max.Cont	17	39	53	67	81	95	97	115
		<b>190</b>	<b>182</b>	<b>173</b>	<b>166</b>	<b>150</b>	<b>140</b>	<b>131</b>	<b>108</b>
15	Max.Cont	18	39	53	68	82	96	98	115
		<b>288</b>	<b>282</b>	<b>273</b>	<b>265</b>	<b>252</b>	<b>237</b>	<b>232</b>	<b>210</b>
20	Max.Cont	18	39	53	68	82	96	98	116
		<b>388</b>	<b>376</b>	<b>371</b>	<b>358</b>	<b>347</b>	<b>331</b>	<b>325</b>	<b>302</b>
25	Max.Cont	17	38	53	68	82	95	98	117
		<b>479</b>	<b>473</b>	<b>464</b>	<b>453</b>	<b>446</b>	<b>429</b>	<b>426</b>	<b>398</b>
30	Max.Cont	16	37	52	68	82	96	98	116
		<b>579</b>	<b>573</b>	<b>564</b>	<b>551</b>	<b>542</b>	<b>528</b>	<b>517</b>	<b>501</b>
35	Max.Cont	15	36	51	66	81	94	96	114
		<b>677</b>	<b>670</b>	<b>659</b>	<b>656</b>	<b>637</b>	<b>623</b>	<b>614</b>	<b>597</b>
40	Max.Cont	13	35	50	65	79	93	95	113
		<b>769</b>	<b>764</b>	<b>758</b>	<b>746</b>	<b>735</b>	<b>723</b>	<b>713</b>	<b>688</b>
45	Max.Cont	12	33	48	64	78	93	94	112
		<b>871</b>	<b>860</b>	<b>855</b>	<b>840</b>	<b>833</b>	<b>820</b>	<b>810</b>	<b>779</b>
50	Max.Inter	10	32	47	62	77	90	93	110
		<b>965</b>	<b>954</b>	<b>952</b>	<b>944</b>	<b>936</b>	<b>912</b>	<b>909</b>	<b>886</b>

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

T - 0068

		Pressure(bar)								Max.Cont	Max.Inter
		30	60	80	100	120	140	160	180	200	225
<b>80</b>		80.3 cm <sup>3</sup> /rev.									
		Torque(Nm), Speed(rpm)									
5	Max.Cont	27	58	80	102	124	145				
		<b>56</b>	<b>51</b>	<b>42</b>	<b>43</b>	<b>19</b>	<b>7</b>				
10	Max.Cont	28	61	83	104	126	148	168	188		
		<b>122</b>	<b>112</b>	<b>103</b>	<b>93</b>	<b>80</b>	<b>64</b>	<b>44</b>	<b>20</b>		
20	Max.Cont	29	62	85	105	129	151	172	191	218	229
		<b>247</b>	<b>236</b>	<b>226</b>	<b>217</b>	<b>206</b>	<b>192</b>	<b>173</b>	<b>149</b>	<b>116</b>	<b>54</b>
30	Max.Cont	29	61	86	106	129	152	174	193	211	232
		<b>373</b>	<b>363</b>	<b>353</b>	<b>341</b>	<b>328</b>	<b>309</b>	<b>294</b>	<b>271</b>	<b>234</b>	<b>175</b>
40	Max.Cont	26	58	82	105	128	150	173	191	211	238
		<b>495</b>	<b>486</b>	<b>476</b>	<b>464</b>	<b>455</b>	<b>435</b>	<b>420</b>	<b>395</b>	<b>356</b>	<b>296</b>
50	Max.Cont	22	54	77	101	124	147	169	191	210	230
		<b>619</b>	<b>607</b>	<b>594</b>	<b>589</b>	<b>576</b>	<b>561</b>	<b>543</b>	<b>522</b>	<b>480</b>	<b>424</b>
60	Max.Cont	15	49	73	95	119	143	165	189	210	228
		<b>755</b>	<b>729</b>	<b>723</b>	<b>712</b>	<b>702</b>	<b>687</b>	<b>666</b>	<b>640</b>	<b>635</b>	<b>543</b>
70	Max.Cont	8	43	66	92	114	139	162	186	209	224
		<b>865</b>	<b>855</b>	<b>844</b>	<b>834</b>	<b>826</b>	<b>805</b>	<b>792</b>	<b>765</b>	<b>743</b>	<b>672</b>
75	Max.Inter	4	39	60	88	112	137	160	182	206	222
		<b>946</b>	<b>919</b>	<b>907</b>	<b>897</b>	<b>887</b>	<b>871</b>	<b>851</b>	<b>826</b>	<b>809</b>	<b>730</b>

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

T - 0070

## Displacement performance

		Pressure(bar)							Max.Cont	Max.Inter
		30	60	80	100	120	140	175	200	225
<b>100</b>		99.8 cm <sup>3</sup> /rev.								
		Torque(Nm), Speed(rpm)								
5		32	72	99	126	154	181			
		<b>49</b>	<b>41</b>	<b>36</b>	<b>33</b>	<b>23</b>	<b>13</b>			
10		35	73	100	129	161	186	232	263	
		<b>97</b>	<b>93</b>	<b>87</b>	<b>80</b>	<b>73</b>	<b>64</b>	<b>34</b>	<b>8</b>	
20		38	75	106	132	161	189	236	278	296
		<b>197</b>	<b>190</b>	<b>183</b>	<b>181</b>	<b>174</b>	<b>162</b>	<b>132</b>	<b>105</b>	<b>66</b>
30		35	77	104	133	161	188	237	267	303
		<b>295</b>	<b>290</b>	<b>289</b>	<b>280</b>	<b>274</b>	<b>264</b>	<b>234</b>	<b>205</b>	<b>186</b>
40		32	73	102	129	158	186	233	268	296
		<b>398</b>	<b>391</b>	<b>382</b>	<b>381</b>	<b>374</b>	<b>361</b>	<b>334</b>	<b>306</b>	<b>266</b>
50		24	66	94	124	153	183	232	264	296
		<b>496</b>	<b>495</b>	<b>486</b>	<b>481</b>	<b>474</b>	<b>460</b>	<b>434</b>	<b>404</b>	<b>366</b>
Max.Cont	60	16	58	87	119	146	177	227	258	289
		<b>604</b>	<b>590</b>	<b>585</b>	<b>580</b>	<b>575</b>	<b>562</b>	<b>534</b>	<b>505</b>	<b>469</b>
70		6	49	79	111	140	171	221	256	284
		<b>694</b>	<b>691</b>	<b>686</b>	<b>683</b>	<b>670</b>	<b>661</b>	<b>634</b>	<b>606</b>	<b>566</b>
Max.Inter	75	3	45	76	106	136	167	218	253	283
		<b>756</b>	<b>743</b>	<b>737</b>	<b>730</b>	<b>722</b>	<b>711</b>	<b>686</b>	<b>656</b>	<b>616</b>

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

T - 0071

		Pressure(bar)							Max.Cont	Max.Inter
		30	60	80	100	120	140	175	200	225
<b>125</b>		124.1cm <sup>3</sup> /rev.								
		Torque(Nm), Speed(rpm)								
5		43	94	129	166	203	239			
		<b>38</b>	<b>33</b>	<b>32</b>	<b>27</b>	<b>22</b>	<b>11</b>			
10		40	94	129	165	203	238	294		
		<b>76</b>	<b>75</b>	<b>70</b>	<b>67</b>	<b>60</b>	<b>52</b>	<b>32</b>		
20		41	94	131	166	203	239	295	332	
		<b>158</b>	<b>155</b>	<b>153</b>	<b>146</b>	<b>142</b>	<b>127</b>	<b>96</b>	<b>54</b>	
30		39	92	129	166	203	236	294	327	362
		<b>240</b>	<b>234</b>	<b>233</b>	<b>229</b>	<b>221</b>	<b>210</b>	<b>175</b>	<b>135</b>	<b>63</b>
40		34	89	125	164	198	234	289	324	352
		<b>318</b>	<b>318</b>	<b>312</b>	<b>309</b>	<b>301</b>	<b>290</b>	<b>257</b>	<b>215</b>	<b>142</b>
50		31	84	119	157	193	229	283	319	347
		<b>397</b>	<b>393</b>	<b>392</b>	<b>385</b>	<b>381</b>	<b>371</b>	<b>337</b>	<b>293</b>	<b>228</b>
Max.Cont	60	23	75	111	151	188	221	277	313	343
		<b>481</b>	<b>478</b>	<b>473</b>	<b>471</b>	<b>462</b>	<b>452</b>	<b>418</b>	<b>374</b>	<b>305</b>
70		13	67	105	142	179	212	272	305	332
		<b>559</b>	<b>558</b>	<b>552</b>	<b>549</b>	<b>543</b>	<b>532</b>	<b>493</b>	<b>430</b>	<b>389</b>
Max.Inter	75	10	62	100	136	173	209	266	300	329
		<b>605</b>	<b>596</b>	<b>592</b>	<b>587</b>	<b>583</b>	<b>569</b>	<b>539</b>	<b>494</b>	<b>429</b>

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

T - 0072

## Displacement performance

		Pressure(bar)							Max.Cont	Max.Inter
		30	60	80	100	120	140	160	180	215
<b>160</b>										
155.4 cm <sup>3</sup> /rev.		Torque(Nm), Speed(rpm)								
Flow (L/min)	5	49	116	160	204	246				
		<b>30</b>	<b>27</b>	<b>23</b>	<b>16</b>	<b>9</b>				
10	53	121	164	210	252	293	333			
	<b>62</b>	<b>58</b>	<b>53</b>	<b>48</b>	<b>40</b>	<b>29</b>	<b>14</b>			
20	58	123	169	213	256	299	338	382	423	
	<b>126</b>	<b>122</b>	<b>117</b>	<b>110</b>	<b>101</b>	<b>91</b>	<b>77</b>	<b>58</b>	<b>13</b>	
30	55	123	165	210	259	297	339	372	436	
	<b>189</b>	<b>184</b>	<b>181</b>	<b>178</b>	<b>168</b>	<b>154</b>	<b>145</b>	<b>122</b>	<b>76</b>	
40	49	112	160	205	250	292	336	369	422	
	<b>255</b>	<b>249</b>	<b>244</b>	<b>241</b>	<b>231</b>	<b>220</b>	<b>205</b>	<b>185</b>	<b>140</b>	
50	40	107	152	199	243	286	325	362	416	
	<b>316</b>	<b>311</b>	<b>307</b>	<b>304</b>	<b>295</b>	<b>284</b>	<b>270</b>	<b>251</b>	<b>205</b>	
Max.Cont 60	27	95	142	186	230	278	315	353	408	
	<b>381</b>	<b>379</b>	<b>371</b>	<b>369</b>	<b>359</b>	<b>348</b>	<b>333</b>	<b>318</b>	<b>268</b>	
Max.Inter 70	16	81	133	176	222	265	308	346	401	
	<b>446</b>	<b>441</b>	<b>438</b>	<b>431</b>	<b>424</b>	<b>413</b>	<b>399</b>	<b>379</b>	<b>335</b>	
75	10	76	126	173	218	264	304	338	396	
	<b>477</b>	<b>474</b>	<b>470</b>	<b>465</b>	<b>457</b>	<b>445</b>	<b>433</b>	<b>409</b>	<b>366</b>	

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

T - 0073

		Pressure(bar)						Max.Cont	Max.Inter
		30	60	80	100	120	150	195	
<b>200</b>									
198.2cm <sup>3</sup> /rev.		Torque(Nm), Speed(rpm)							
Flow (L/min)	5	70	156	208	263	316			
		<b>24</b>	<b>22</b>	<b>19</b>	<b>17</b>	<b>8</b>			
10	74	156	213	269	319	387			
	<b>51</b>	<b>48</b>	<b>44</b>	<b>39</b>	<b>32</b>	<b>17</b>			
20	75	160	216	267	322	402	481		
	<b>98</b>	<b>98</b>	<b>94</b>	<b>90</b>	<b>82</b>	<b>69</b>	<b>33</b>		
30	71	154	211	264	317	387	473		
	<b>151</b>	<b>150</b>	<b>146</b>	<b>138</b>	<b>135</b>	<b>118</b>	<b>81</b>		
40	62	146	202	259	310	378	467		
	<b>200</b>	<b>197</b>	<b>197</b>	<b>192</b>	<b>185</b>	<b>167</b>	<b>130</b>		
50	50	136	194	252	296	371	457		
	<b>251</b>	<b>247</b>	<b>246</b>	<b>240</b>	<b>233</b>	<b>216</b>	<b>184</b>		
Max.Cont 60	37	122	181	233	288	358	445		
	<b>302</b>	<b>299</b>	<b>294</b>	<b>292</b>	<b>283</b>	<b>270</b>	<b>233</b>		
Max.Inter 70	24	112	172	222	274	345	438		
	<b>350</b>	<b>350</b>	<b>346</b>	<b>340</b>	<b>335</b>	<b>319</b>	<b>284</b>		
75	22	105	161	216	269	341	432		
	<b>378</b>	<b>374</b>	<b>371</b>	<b>368</b>	<b>360</b>	<b>346</b>	<b>309</b>		

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

T - 0074

## Displacement performance

		Pressure(bar)				Max.Cont	Max.Inter	
<b>250</b>		30	60	80	100	125	150	170
248.1cm <sup>3</sup> /rev.		Torque(Nm), Speed(rpm)						
5		90	194	260	326	401		
		<b>19</b>	<b>18</b>	<b>16</b>	<b>12</b>	<b>4</b>		
10		92	200	263	328	403	477	
		<b>39</b>	<b>39</b>	<b>37</b>	<b>32</b>	<b>22</b>	<b>10</b>	
20		96	198	268	334	405	482	544
		<b>80</b>	<b>78</b>	<b>76</b>	<b>71</b>	<b>63</b>	<b>50</b>	<b>37</b>
30		93	195	263	327	404	475	528
		<b>119</b>	<b>118</b>	<b>116</b>	<b>111</b>	<b>104</b>	<b>90</b>	<b>78</b>
40		80	185	251	314	393	464	514
		<b>160</b>	<b>159</b>	<b>156</b>	<b>152</b>	<b>144</b>	<b>131</b>	<b>117</b>
50		66	167	237	301	380	450	500
		<b>200</b>	<b>198</b>	<b>198</b>	<b>193</b>	<b>184</b>	<b>171</b>	<b>158</b>
Max.Cont 60		49	153	221	282	365	435	486
		<b>242</b>	<b>239</b>	<b>237</b>	<b>232</b>	<b>226</b>	<b>211</b>	<b>197</b>
Max.Inter 75	70	32	137	206	266	350	421	467
		<b>283</b>	<b>280</b>	<b>277</b>	<b>274</b>	<b>266</b>	<b>252</b>	<b>237</b>
	75	32	132	203	263	344	411	460
		<b>303</b>	<b>298</b>	<b>297</b>	<b>291</b>	<b>283</b>	<b>270</b>	<b>257</b>

T - 0075

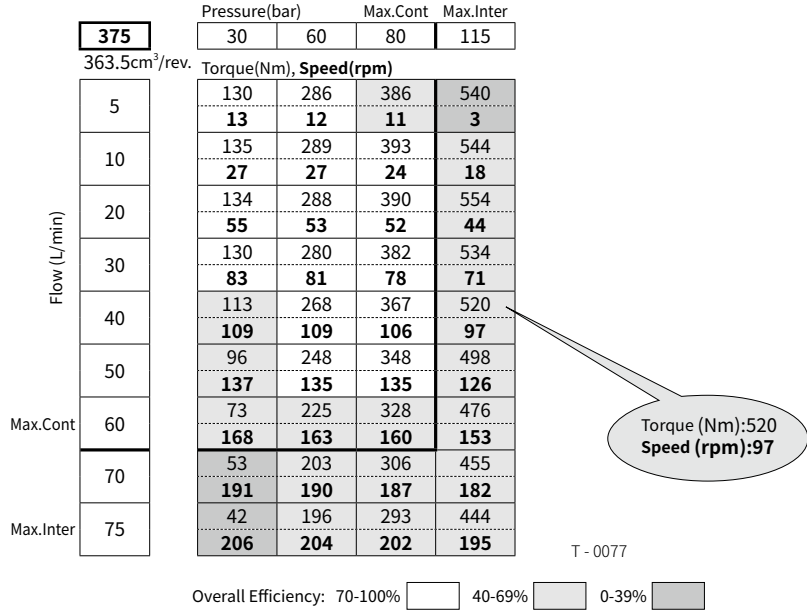
Overall Efficiency: 70-100%  40-69%  0-39%

		Pressure(bar)			Max.Cont	Max.Inter	
<b>315</b>		30	60	80	100	120	140
310.1cm <sup>3</sup> /rev.		Torque(Nm), Speed(rpm)					
5		108	241	317	396		
		<b>15</b>	<b>13</b>	<b>10</b>	<b>5</b>		
10		113	241	327	405	480	547
		<b>32</b>	<b>30</b>	<b>26</b>	<b>23</b>	<b>17</b>	<b>9</b>
20		115	239	323	403	478	555
		<b>63</b>	<b>60</b>	<b>57</b>	<b>54</b>	<b>47</b>	<b>39</b>
30		107	235	318	397	473	542
		<b>96</b>	<b>93</b>	<b>90</b>	<b>86</b>	<b>80</b>	<b>73</b>
40		100	221	307	387	457	516
		<b>128</b>	<b>125</b>	<b>122</b>	<b>118</b>	<b>112</b>	<b>104</b>
50		86	205	290	367	444	496
		<b>161</b>	<b>157</b>	<b>154</b>	<b>150</b>	<b>144</b>	<b>137</b>
Max.Cont 60		64	188	269	353	426	472
		<b>198</b>	<b>189</b>	<b>187</b>	<b>183</b>	<b>177</b>	<b>169</b>
Max.Inter 75	70	49	173	256	332	408	467
		<b>224</b>	<b>222</b>	<b>219</b>	<b>216</b>	<b>209</b>	<b>202</b>
	75	37	165	244	323	398	460
		<b>247</b>	<b>239</b>	<b>235</b>	<b>232</b>	<b>217</b>	<b>201</b>

T - 0076

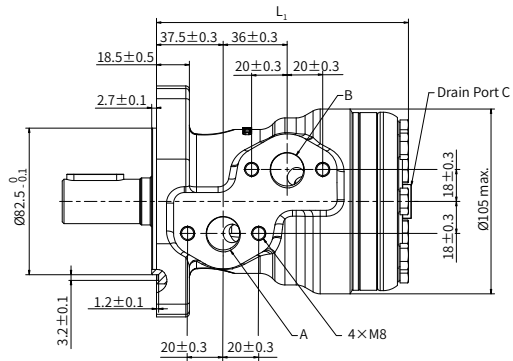
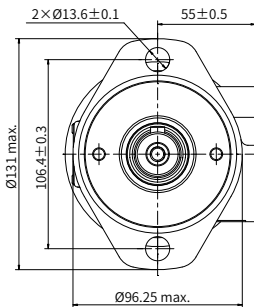
Overall Efficiency: 70-100%  40-69%  0-39%

## Displacement performance



## Installation size

### 2-HOLE, SAE A MOUNT



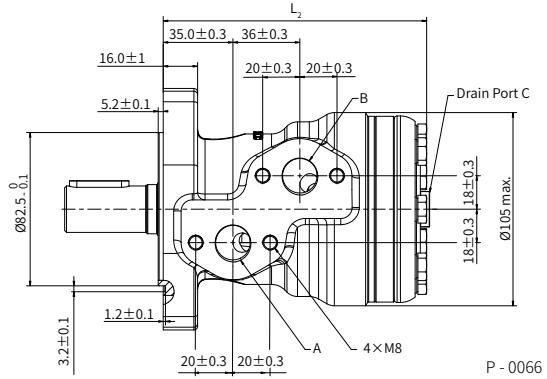
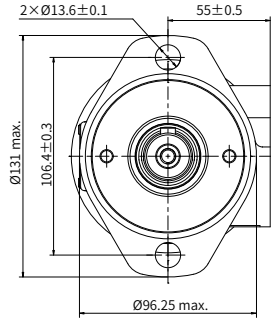
P - 0052

**A23** Main Port A, B: G1/2, Drain Port C: G1/4



## Installation size

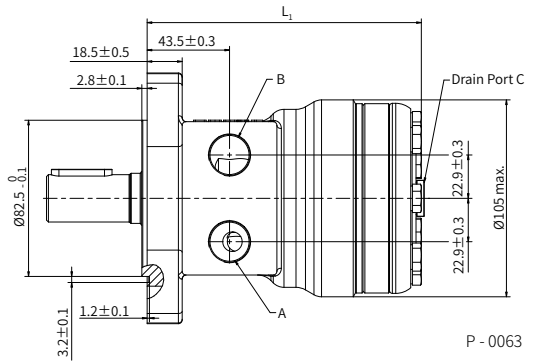
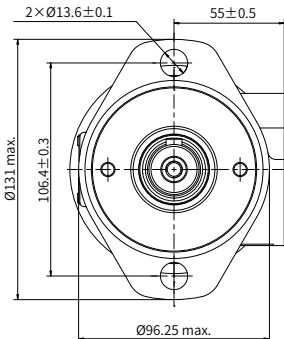
### 2-HOLE, SAE A MOUNT



P - 0066

**A24** Main Port A, B: G1/2, Drain Port C: G1/4

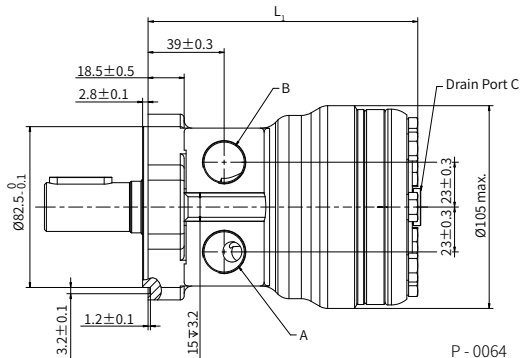
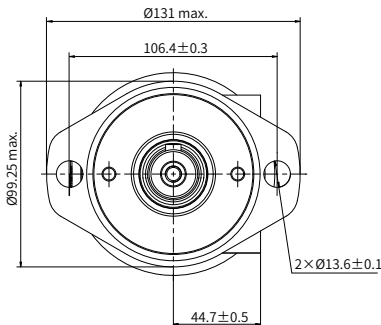
### 2-HOLE, SAE A MOUNT



P - 0063

**A50** Main Port A, B: 7/8-14UNF, Drain Port C: 7/16-20UNF

### 2-HOLE, SAE A MOUNT

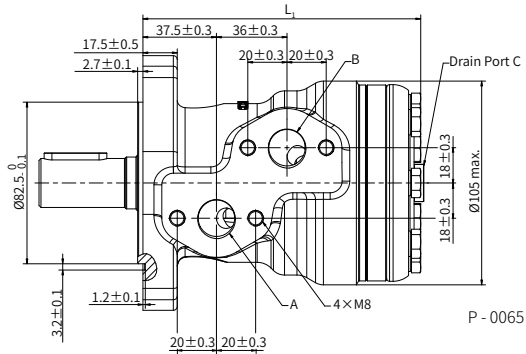
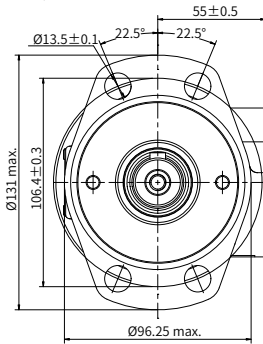


P - 0064

**A51** Main Port A, B: 7/8-14UNF, Drain Port C: 7/16-20UNF

## Installation size

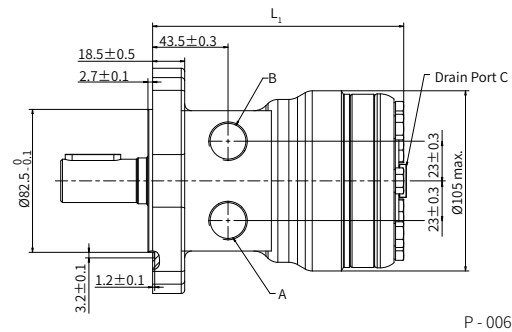
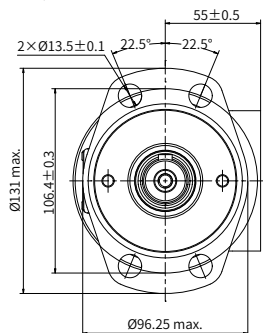
### 4-HOLE, MAGNETO MOUNT



**M01** Main Port A, B: G1/2, Drain Port C: G1/4

**M02** Main Port A, B: 7/8-14UNF, Drain Port C: 7/16-20UNF

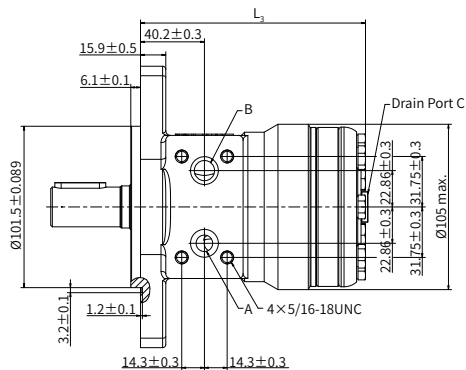
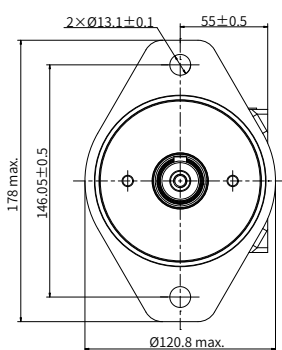
### 4-HOLE, MAGNETO MOUNT



**M11** Main Port A, B: G1/2, Drain Port C: G1/4

**M12** Main Port A, B: 7/8-14UNF, Drain Port C: 7/16-20UNF

### 2-HOLE, SAE B MOUNT

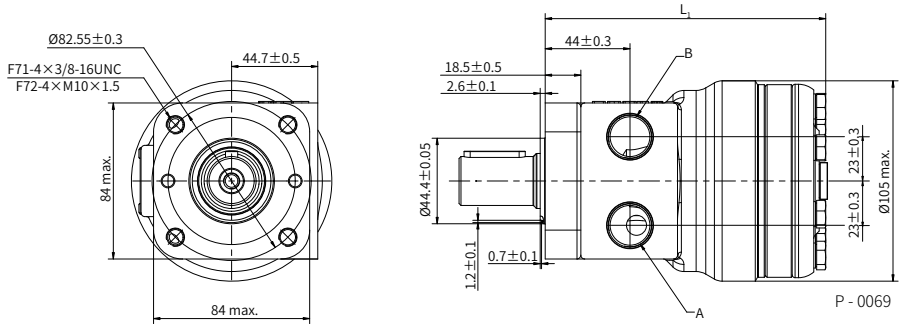


**B22** Main Port A, B: Ø10.8 Hole, Drain Port C: 7/16-20UNF

P - 0068

# Installation size

## SQUARE MOUNT



**F71** **F72** Main Port A, B: 7/8-14UNF, Drain Port C: 7/16-20UNF

Displacement $\text{cm}^3/\text{rev.}$	$L_1$ mm	$L_2$ mm	$L_3$ mm
50	140.4	137.9	137.0
80	145.5	143.0	142.1
100	145.5	143.0	142.1
125	148.9	146.4	145.5
160	153.3	150.8	149.9
200	159.2	156.7	155.8
250	166.2	163.7	162.8
315	174.9	172.4	171.5
375	182.4	179.9	179.0

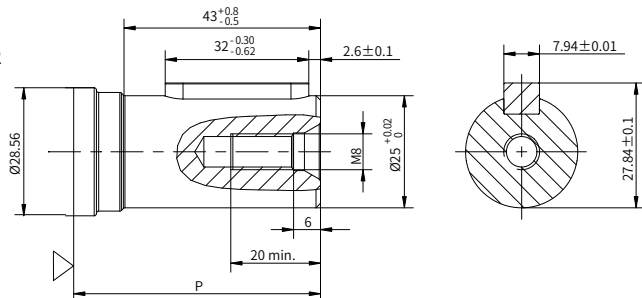
T - 0079

Note: Dimensions  $L_1$ 、 $L_2$ 、 $L_3$  are the length from the flange mounting surface to the rear end of the motor, and the tolerance is  $\pm 0.75\text{mm}$ .

## Shaft end dimensions

**S2**

$\varnothing 25\text{mm}$  Straight  
Parallel key  $8 \times 7 \times 32$   
Max. Torque: 678Nm

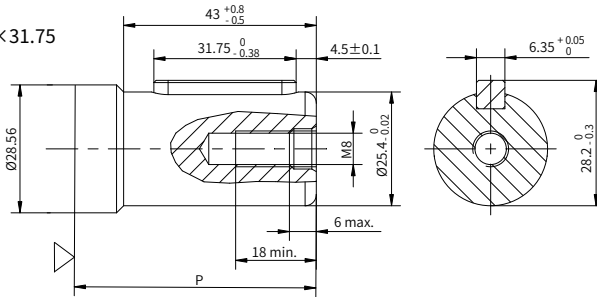


P - 0070

## Shaft end dimensions

**S4**

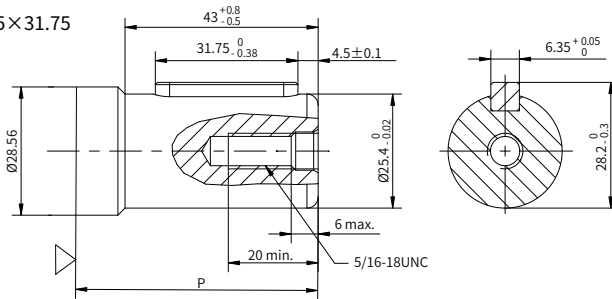
Ø25.4mm Straight  
Parallel key 6.35×6.35×31.75  
Max. Torque: 655Nm



P - 0071

**S6**

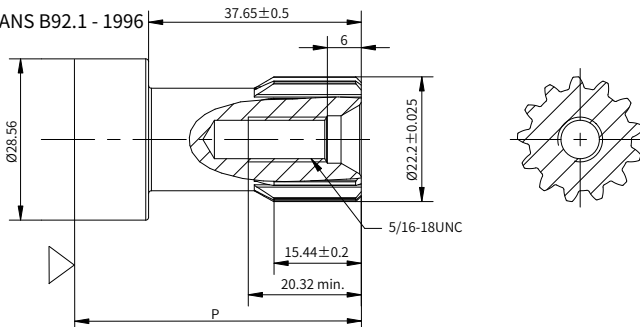
Ø25.4mm Straight  
Parallel key 6.35×6.35×31.75  
Max. Torque: 655Nm



P - 0072

**R2**

Ø22.2mm  
Spline 13-DP16/32, ANS B92.1 - 1996  
Max. Torque: 170Nm

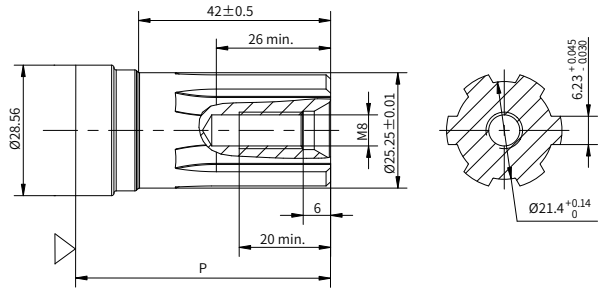


P - 0075

## Shaft end dimensions

### R1

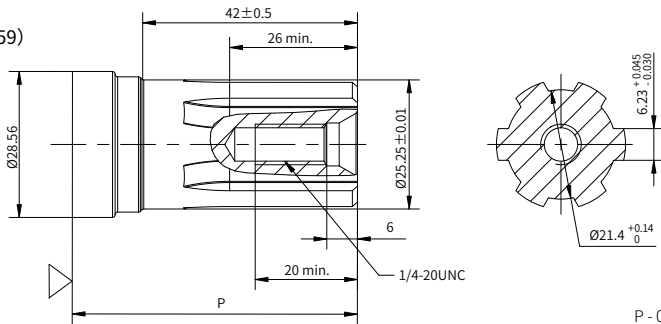
Ø25.4mm  
Spline SAE 6B (B.S.2059)  
Max. Torque: 678Nm



P - 0073

### R8

Ø25.4mm  
Spline SAE 6B (B.S.2059)  
Max. Torque: 678Nm



P - 0074

P mm	Pilot 3mm	Pilot 5.2mm	Pilot 6.1mm
S2	53.0	55.5	56.4
S4	53.0	55.5	56.4
S6	53.0	55.5	56.4
R1	48.0	50.5	51.4
R2	40.7	43.2	44.1
R8	48.0	50.5	51.4

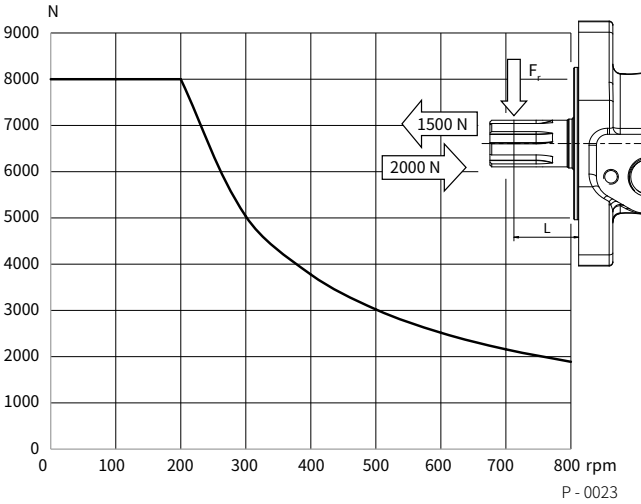
T - 0085

Note: Dimension P is the overall distance from the flange mounting surface to the end of the shaft, and the tolerance is  $\pm 0.79\text{mm}$ .

## 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.



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

$F_r$  = Radial force (N)

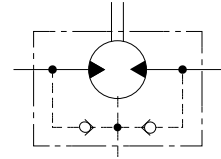
$L$  = Distance (mm)

$n$  = Speed (rpm)

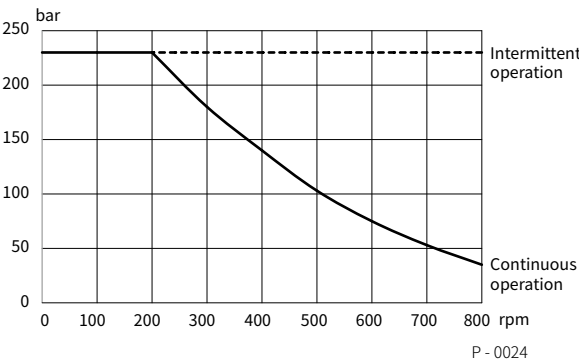
Diamond flange  $L=30\text{mm}$

Square mount  $L=24\text{mm}$

### Hydraulic diagram



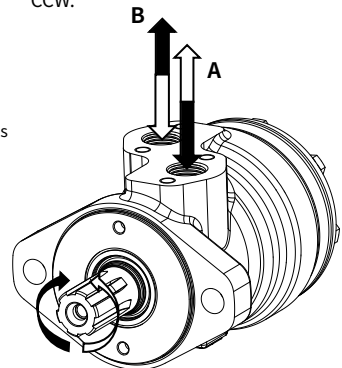
## Permissible shaft seal pressure



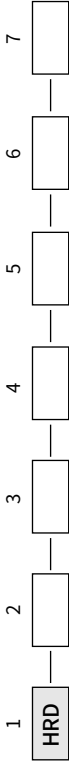
When case drain port is not working, the pressure on the output shaft seal is slightly higher than the pressure in the return line. When using a drain line, the pressure on the shaft seal of the output shaft is the same as the pressure in the drain line.

## 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.



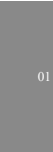
# Ordering information



Pos.1	2	3	4	5	6	7
Series code	Displacement	Mount, Port	Output shaft	Rotation direction	Paint option	Special features
A23	050	SAE A 2×Ø13.6 MountØ106.4, pilot Ø82.5×2.7, Port G1/2, Drain Port G1/4	S2	A	N	A
A24	080	SAE A 2×Ø13.6 MountØ106.4, pilot Ø82.5×5.2, Port G1/2, Drain Port G1/4	S4	R	B	F
A50	100	SAE A 2×Ø13.6 MountØ106.4, pilot Ø82.5×2.8, Port 7/8-14UNF, Drain Port 7/16-20UNF	S6	A	C	V
A51	125	SAE A 2×Ø13.6 MountØ106.4, pilot Ø82.5×2.8, Port 7/8-14UNF, Drain Port 7/16-20UNF	R2	R		S
M01	160	4×13.5 Magneto Mount Ø106.4, pilot Ø82.5×2.7, Port G1/2, Drain Port G1/4	R1			
M02	200	4×13.5 Magneto Mount Ø106.4, pilot Ø82.5×2.7, Port 7/8-14UNF, Drain Port 7/16-20UNF	R8			
M11	250	4×13.5 Magneto Mount Ø106.4, pilot Ø82.5×2.7, Port G1/2, Drain Port G1/4				
M12	315	4×13.5 Magneto Mount Ø106.4, pilot Ø82.5×2.7, Port 7/8-14UNF, Drain Port 7/16-20UNF				
B22	375	SAE B 2×Ø13.1 MountØ146.05, pilot Ø101.5×6.1 Port Ø10.8 hole, Drain Port 7/16-20UNF				
F71		4×3/8-16UNC Square Mount Ø82.55, pilot Ø44.4×2.5, Port 7/8-14UNF, Drain Port 7/16-20UNF				
F72		4×M10 Square Mount Ø82.55, pilot Ø44.4×2.5, Port 7/8-14UNF, Drain Port 7/16-20UNF				

T - 0038

Note: 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.



01