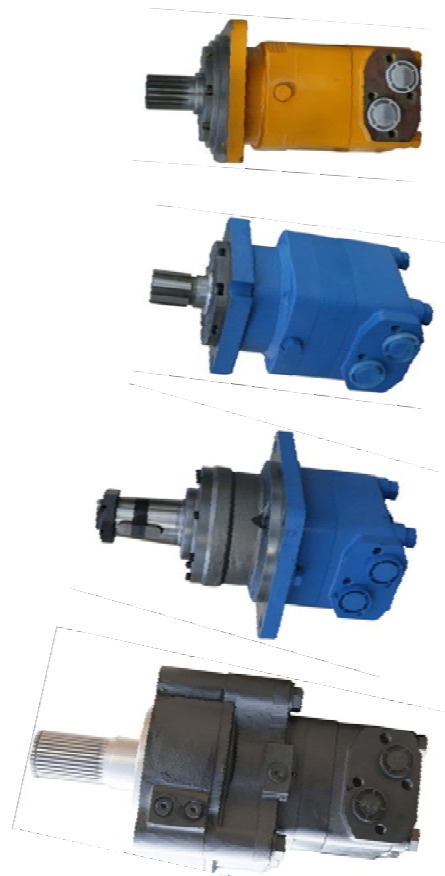




Low Speed High Torque Orbital Hydraulic Motors 低速大扭矩摆线液压马达

SMV Series Technical Information

SMV系列马达 技术参数



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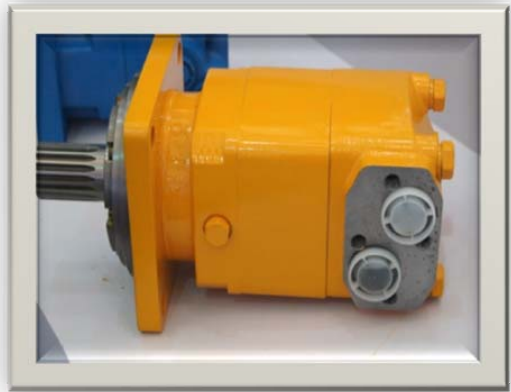
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2014-10

SMV Series

SMV系列



• Design Features

- 结构特点
- Roller bearings permit high radial loads
- 本系列马达采用重载锥滚轴承，输出轴可承受更大的径向力矩
- Stronger shaft and bigger displacement Output bigger torque
- 排量更大，输出轴强度更高，能输出更大的扭矩
- Wide variety of mounting flanges, shafts, and displacement provides design flexibility
- 可灵活选择不同的安装法兰，输出轴，排量等，为客户提供更宽泛的选择空间
- Direction of shaft rotation and speed can be controlled easily and smoothly
- 可灵活平滑地控制马达的旋转方向和转速
- Best combination of efficiency and economy in heavy duty applications
- 该系列马达适用于重载场合

• Specification Data

•性能参数

Displacement(排量) cc/r		310	400	500	630	800	1000	1250
Max.Speed	Continuous (连续)	510	500	400	315	250	200	160
	RPM							
最高转速	Intermittent (不连续)	630	600	480	380	300	240	190
Flow	Continuous (连续)	160	200	200	200	200	200	200
	LPM							
流量	Intermittent (不连续)	200	240	240	240	240	240	240
Torque N.m	Continuous (连续)	920	1180	1460	1660	1880	2340	2740
扭矩	Intermittent (不连续)	1110	1410	1760	1940	2110	2640	3120
Pressure drop	Continuous (连续)	200	200	200	180	160	160	150
	ΔBar							
压力 (两油口压差)	Intermittent (不连续)	240	240	240	210	180	180	170

Maximum Case Pressure -- Without Case Drain (不接外泄油口时，壳体最大承受压力) --20 Bar

Max. pressure is the allowed pressure at the inlet port. Rated pressure is the working pressure difference between inlet and outlet port.

A simultaneous maximum RPM and maximum pressure NOT recommended

Maximum pressure or maximum RPM operation: 10% of every minute

Recommended fluids: Anti-wear type of hydraulic oil. Viscosity recommended 37-73 cSt. Recommended filtration ISO18/13. Maximum operating temperature recommended 80°C

Special high pressure capacity shaft seal ensures back pressure up to 8 Mpa. Recommended preferable back pressure 5 Mpa. Case drain line is recommended when back pressure higher than 5 Mpa. When case drain line is used, make sure the motor is always filled with oil. The motor life is benefited from a case drain line.

It is highly recommended that the motor runs at 30% of rated pressure for at least one hour before application of full load. Be sure the motor is filled with fluid prior to any load applications.

•不连续压力是指马达进口允许承受的压力，连续压力指两油口连续工作时的压力差

•马达不允许同时在最大转速和最大压力的工况下使用

•不连续运行工况 --- 指马达在此工况下每分钟运行不超过10%

•推荐液压油：粘度为37-73cSt,过滤精度：ISO18/13,系统最高温度不超过80°C

•轴密封可承受8Mpa的背压，推荐马达背压不要超过5Mpa,超过5Mpa时，建议接外泄油管。马达在运行前和运行中，应保证腔体内始终充满液压油，以使马达得到良好的润滑和冷却

•强烈建议马达在满负荷运行前先以30%的负荷运行约1小时，以使马达得到充分的磨合

•SMV Series Motor Performance Data

SMV 系列马达性能参数

310 cc/r ΔBar 压差

	35	70	105	140	175	200	240
10	140 27	283 23	430 16	581 10			
25	140 78	283 74	430 71	581 68	734 64	839 59	1019 55
50	140 160	283 153	430 148	581 144	734 137	839 134	1019 127
75	140 237	283 235	430 227	581 223	734 218	839 213	1019 206
100	140 319	283 313	430 306	581 300	734 294	839 290	1019 287
125	140 399	283 391	430 383	581 375	734 371	839 367	1019 363
150	140 479	283 469	430 465	581 460	734 455	839 450	1019 440
160	140 511	283 501	430 495	581 490	734 485	839 480	1019 475
200	140 639	283 626	430 619	581 613	734 606		

734 Torque (扭矩) N.m
606 Speed (转速) RPM

400 cc/r ΔBar 压差

	35	70	105	140	175	200	240
10	181 21	366 18	555 13	749 8			
25	181 61	366 58	555 55	749 53	947 49	1083 46	1315 43
50	181 124	366 119	555 115	749 111	947 106	1083 104	1315 99
75	181 184	366 182	555 176	749 173	947 169	1083 165	1315 159
100	181 248	366 243	555 238	749 233	947 228	1083 225	1315 223
125	181 309	366 303	555 297	749 291	947 288	1083 284	1315 281
150	181 371	366 364	555 360	749 356	947 353	1083 349	1315 341
175	181 433	366 424	555 420	749 416	947 411	1083 407	1315 403
200	181 495	366 485	555 480	749 475	947 470	1083 465	1315 460
240	181 594	366 582	555 576	749 570	947 564		

Motors run with high efficiency in all areas designated with a number for torque and speed. however for best motor life select a motor to run with a torque and speed range shown in the yellow area.
为使马达获得更长的寿命，请选择在黄色区域标注的工况下使用。

Continuous 连续工况
Intermittent 不连续工况

Performance data is typical at 120 SUS . Actual data may vary slightly from unit to unit in production

上表中的数据是标准马达在油液粘度120SUS工况下测得的数据，不同的马达实测数据会有差异。

500 cc/r ΔBar 压差

	35	70	105	140	175	200	240
10	226 17	457 14	694 10	936 6			
25	226 49	457 46	694 44	936 42	1184 40	1354 37	1643 34
50	226 99	457 95	694 92	936 89	1184 85	1354 83	1643 79
75	226 147	457 146	694 141	936 138	1184 135	1354 132	1643 128
100	226 198	457 194	694 190	936 186	1184 182	1354 180	1643 178
125	226 248	457 243	694 238	936 233	1184 230	1354 228	1643 225
150	226 297	457 291	694 288	936 285	1184 282	1354 279	1643 273
175	226 347	457 340	694 336	936 333	1184 329	1354 326	1643 322
200	226 396	457 388	694 384	936 380	1184 376	1354 372	1643 368
240	226 475	457 466	694 461	936 456	1184 451		

630 cc/r ΔBar 压差

	30	60	90	120	150	180	210
10	244 13	494 11	749 8				
25	244 38	494 37	749 35	1011 33	1279 31	1535 29	1812 27
50	244 79	494 75	749 73	1011 71	1279 67	1535 66	1812 63
75	244 117	494 115	749 112	1011 110	1279 107	1535 105	1812 101
100	244 157	494 154	749 151	1011 148	1279 144	1535 143	1812 141
125	244 196	494 192	749 188	1011 185	1279 183	1535 181	1812 179
150	244 236	494 231	749 229	1011 226	1279 224	1535 221	1812 217
175	244 275	494 269	749 267	1011 264	1279 261	1535 258	1812 256
200	244 314	494 308	749 305	1011 302	1279 298	1535 295	1812 292
240	244 377	494 370	749 366	1011 362	1279 358	1535 354	

800 cc/r ΔBar 压差

	25	50	75	100	130	160	180
12	258 12	522 11	793 8				
25	258 30	522 29	793 28	1070 26	1408 25	1732 23	1972 21
50	258 62	522 59	793 58	1070 56	1408 53	1732 52	1972 49
75	258 92	522 91	793 88	1070 86	1408 84	1732 83	1972 80
100	258 124	522 121	793 119	1070 116	1408 114	1732 113	1972 111
125	258 155	522 152	793 148	1070 145	1408 144	1732 142	1972 141
150	258 186	522 182	793 180	1070 178	1408 176	1732 174	1972 171
175	258 217	522 212	793 210	1070 208	1408 206	1732 203	1972 201
200	258 248	522 243	793 240	1070 238	1408 235	1732 233	1972 230
240	258 297	522 291	793 288	1070 285	1408 282	1732 279	

1000 cc/r ΔBar 压差

	25	50	75	100	130	160	180
15	322 12	653 11	991 8				
25	322 24	653 23	991 22	1338 21	1760 20	2166 18	2465 17
50	322 50	653 48	991 46	1338 45	1760 43	2166 42	2465 40
75	322 74	653 73	991 71	1338 69	1760 68	2166 66	2465 64
100	322 99	653 97	991 95	1338 93	1760 91	2166 90	2465 89
125	322 124	653 121	991 119	1338 116	1760 115	2166 114	2465 113
150	322 149	653 146	991 144	1338 143	1760 141	2166 140	2465 137
175	322 173	653 170	991 168	1338 166	1760 165	2166 163	2465 161
200	322 198	653 194	991 192	1338 190	1760 188	2166 186	2465 184
240	322 238	653 233	991 230	1338 228	1760 226	2166 223	

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range shown in the yellow area. 为使马达获得更长的寿命, 请选择在黄色区域标注的工况下使用。

Continuous 连续工况
 Intermittent 不连续工况

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production. 上表中的数据是标准马达在油液粘度120SUS工况下测得的数据, 不同的马达实测数据会有差异。

1250 cc/r ΔBar 压差

	25	40	70	100	130	150	170	
Flow LMP 流量	25	403 19	653 18	1156 17	1672 14	2199 13	2538 12	2910 11
	50	403 40	653 38	1156 37	1672 36	2199 34	2538 33	2910 32
	75	403 59	653 58	1156 56	1672 55	2199 54	2538 53	2910 51
	100	403 79	653 78	1156 76	1672 74	2199 73	2538 72	2910 71
	125	403 99	653 97	1156 95	1672 93	2199 92	2538 91	2910 90
	150	403 119	653 116	1156 115	1672 114	2199 113	2538 112	2910 109
	175	403 139	653 136	1156 134	1672 133	2199 132	2538 130	2910 129
	200	403 158	653 155	1156 154	1672 152	2199 150	2538 149	2910 147
	240	403 190	653 186	1156 184	1672 182	2199 180	2538 179	

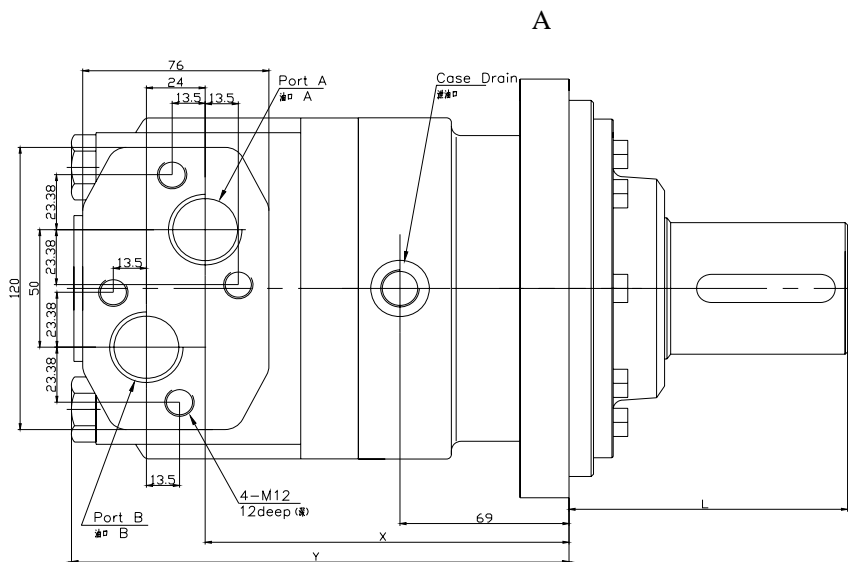
Motors run with high efficiency in all areas designated with a number for torque and speed. however for best motor life select a motor to run with a torque and speed range shown in the yellow area. 为使马达获得更长的寿命, 请选择在黄色区域标注的工况下使用。

Continuous 连续工况
 Intermittent 不连续工况

Performance data is typical at 120 SUS . Actual data may vary slightly from unit to unit in production 上表中的数据是标准马达在油液粘度120SUS工况下测得的数据, 不同的马达实测数据会有差异。

•SMV Series Dimensions
SMV 系列连接尺寸

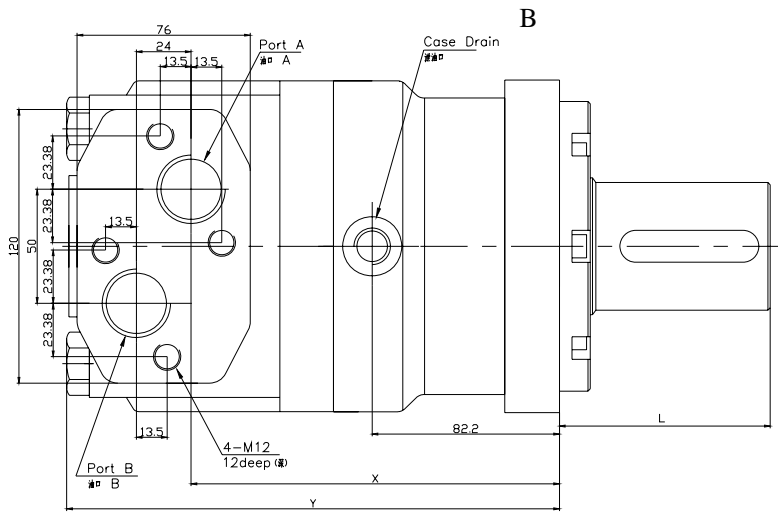
Standard Motor A Series
标准马达A系列



Standard Rotation
Viewed From Shaft End
Port A Pressurized --- CW
Port B Pressurized --- CCW
马达标准旋转方向
面对输出轴轴端
A 油口进油, 顺时针旋转
B 油口进油, 逆时针旋转

Standard Motor B Series

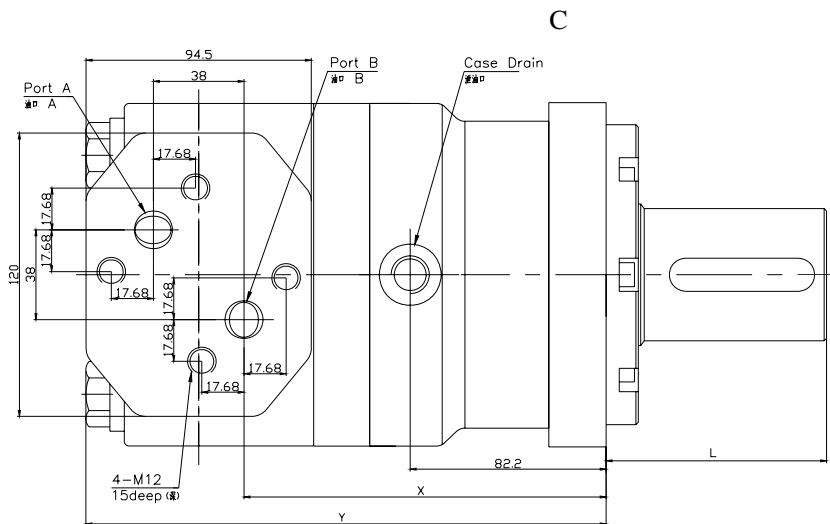
标准马达B系列



Standard Rotation
 Viewed From Shaft End
 Port A Pressurized --- CW
 Port B Pressurized --- CCW
 马达标准旋转方向
 面对输出轴轴端
 A 油口进油，顺时针旋转
 B 油口进油，逆时针旋转

Standard Motor C Series

标准马达C系列

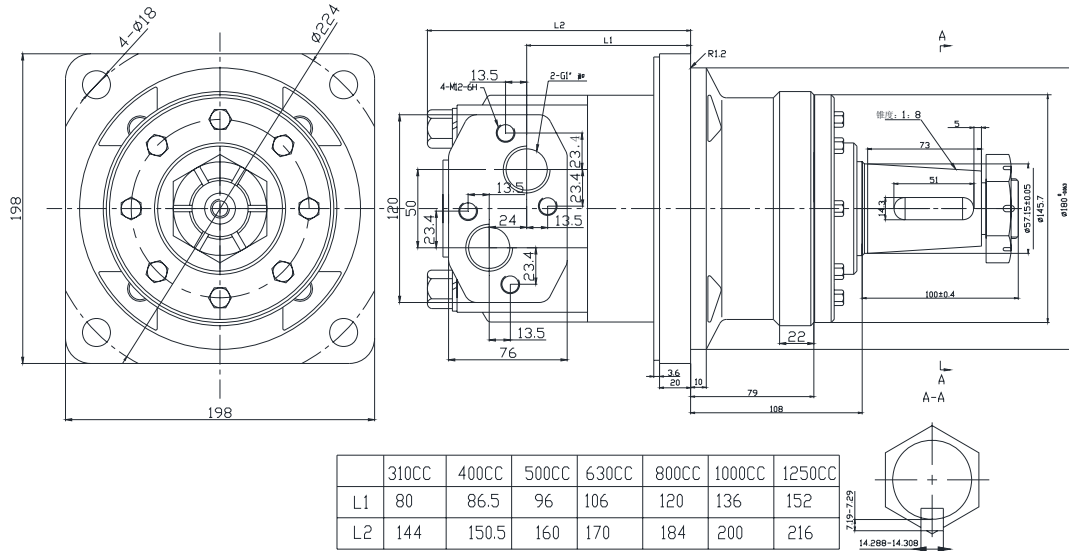


Standard Rotation
 Viewed From Shaft End
 Port B Pressurized --- CW
 Port A Pressurized --- CCW
 马达标准旋转方向
 面对输出轴轴端
 B 油口进油，顺时针旋转
 A 油口进油，逆时针旋转

Standard Motor D Series

标准马达D系列

D



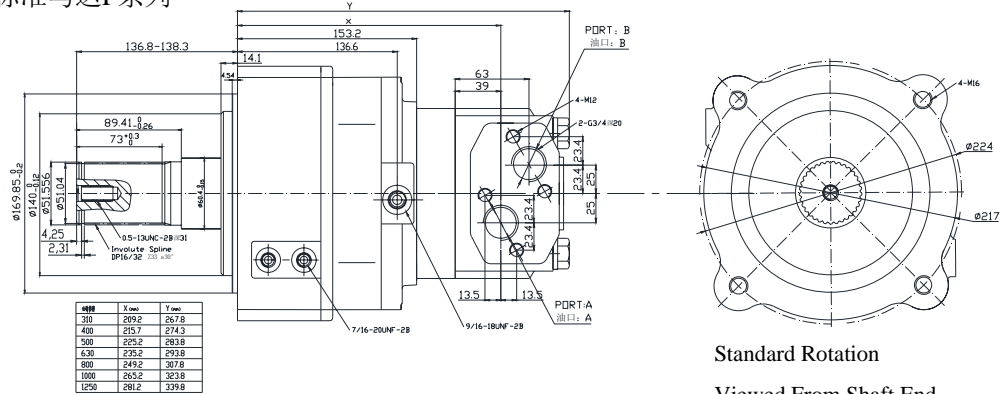
Standard Rotation: Viewed From Shaft End ,Port A Pressurized --- CW; Port B Pressurized --- CCW

马达标准旋转方向：面对输出轴轴端，A油口进油，顺时针旋转；B油口进油，逆时针旋转

Standard Motor F Series

标准马达F系列

F



Standard Rotation

Viewed From Shaft End

Port B Pressurized --- CW

Port A Pressurized --- CCW

马达标准旋转方向

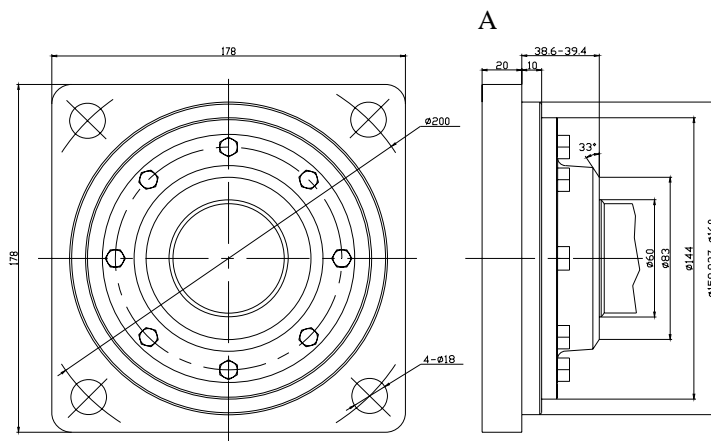
面对输出轴轴端

B油口进油，顺时针旋转

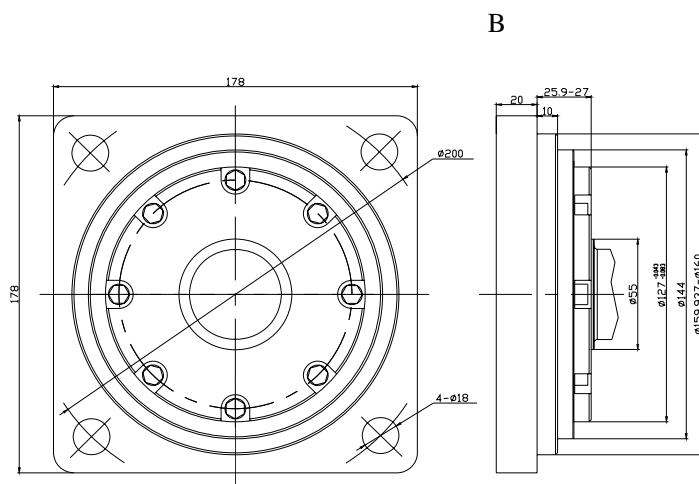
A油口进油，逆时针旋转

- 1、Static brake torque; 静态制动力矩: 1026Nm
- 2、Releasing pressure; 开启压力: $\geq 0.94\text{MPa}$
- 3、Must be the case drain with return pipe connection, 使用时泄油口必须接回油管

Flange Type to Fit Standard Motor A Series
与标准马达A系列匹配的法兰型式

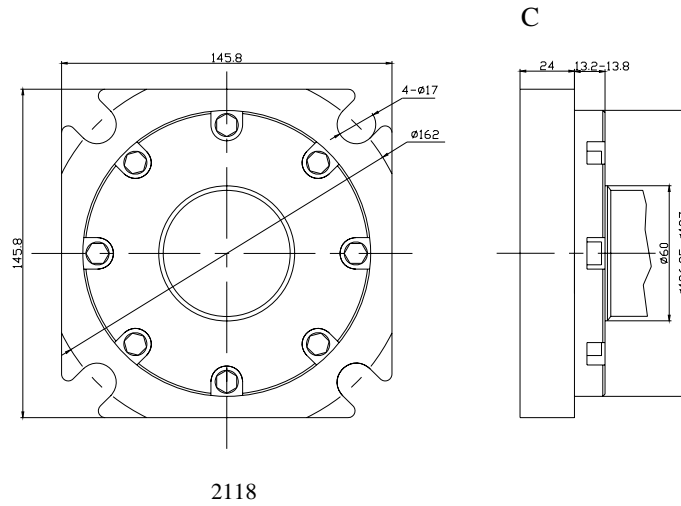


2119

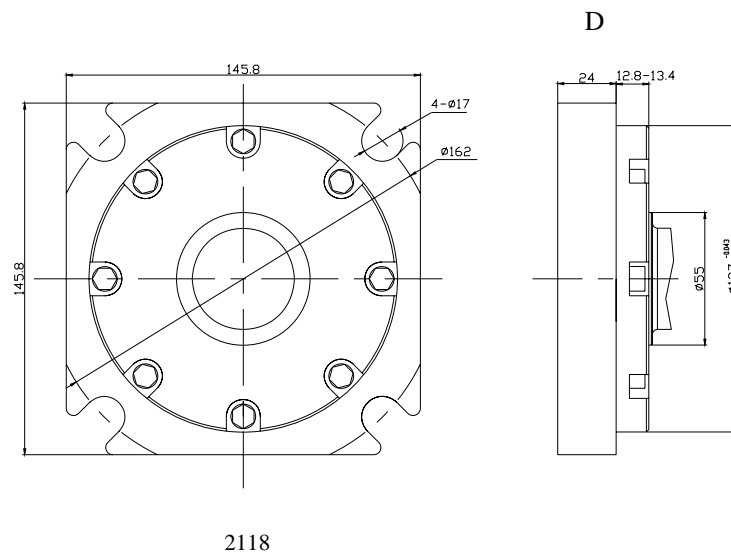


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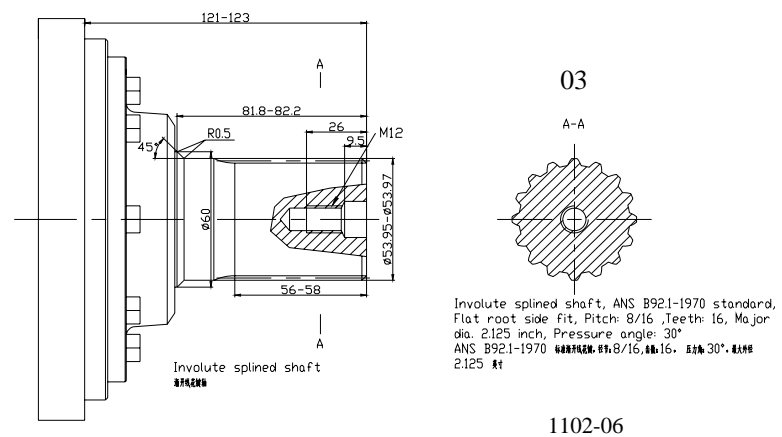
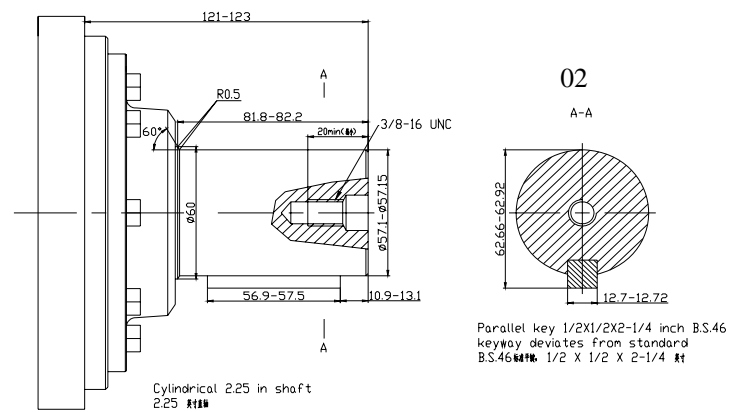
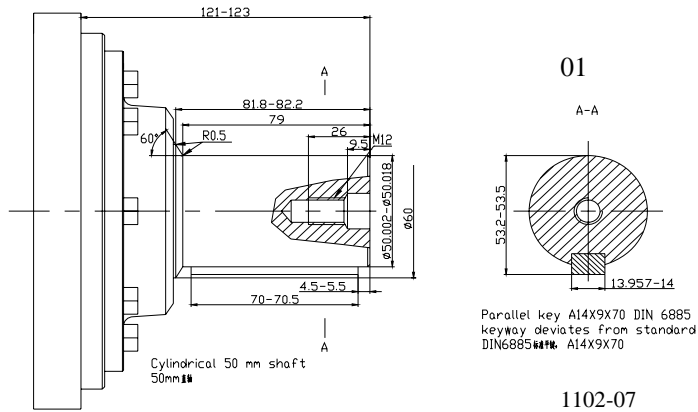
Flange Type to Fit Standard Motor B Series
与标准马达B系列匹配的法兰型式

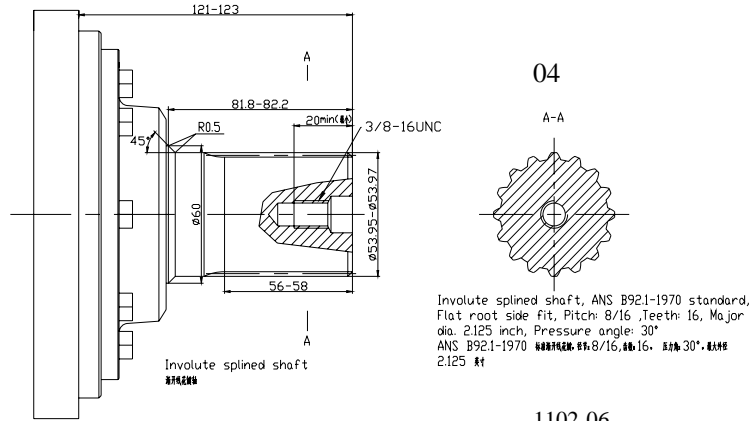


Flange Type to Fit Standard Motor C Series
与标准马达C系列匹配的法兰型式



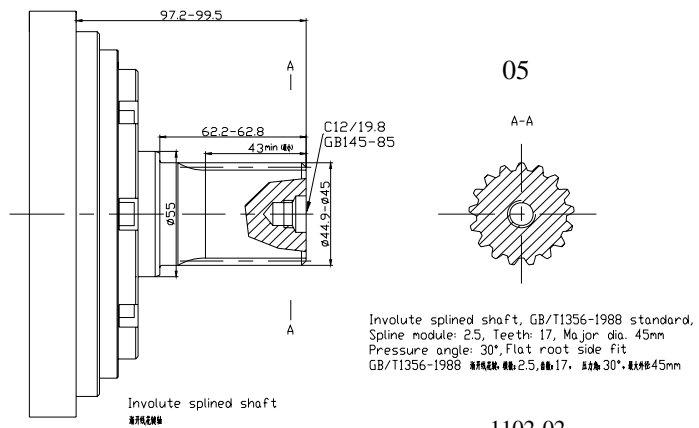
Output Shaft Type to Fit A Flange
与A型法兰匹配的输出轴型式





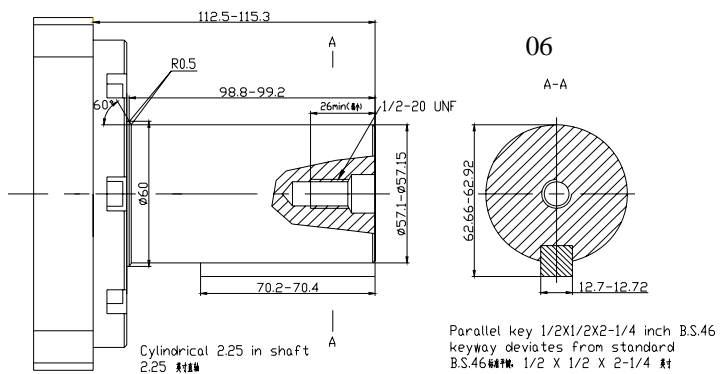
Output Shaft Type to Fit B Flange
与B型法兰匹配的输出轴型式

1102-06



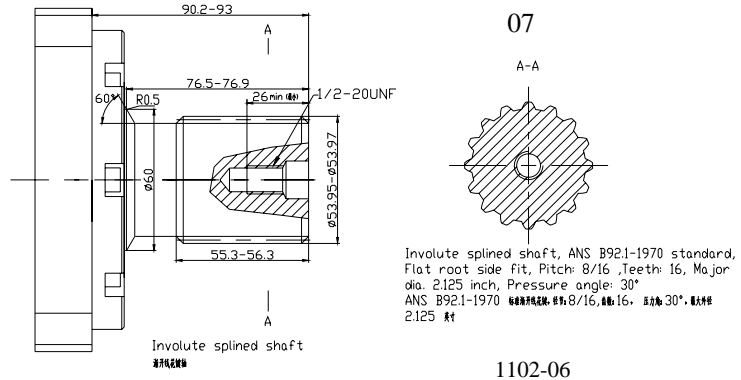
Output Shaft Type to Fit C Flange
与C型法兰匹配的输出轴型式

1102-02

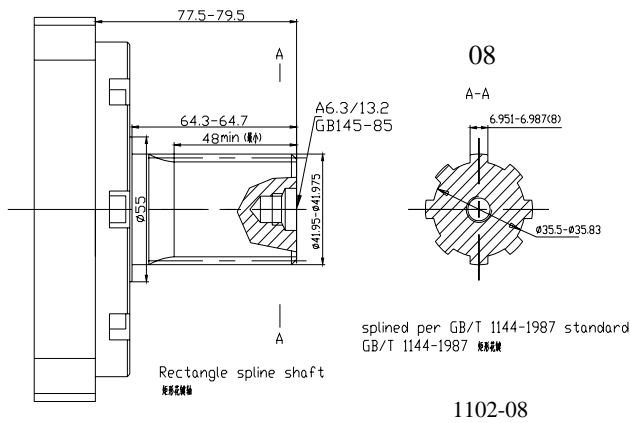


1102-03





Output Shaft Type to Fit D Flange
与D型法兰匹配的输出轴型式



Allowed Combinations of Flange and Shaft

允许的法兰和输出轴的不同组合

Standard Motor A Series

标准马达A系列

Flange Type 法兰类型	Output Shaft No. 输出轴编号	L	Displacement 排量													
			310cc		400cc		500cc		630cc		800cc		1000cc		1250cc	
			X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
A	01	121-123	144	202	150	208	160	218	170	228	184	242	200	258	216	274
A	02	121-123	144	202	150	208	160	218	170	228	184	242	200	258	216	274
A	03	121-123	144	202	150	208	160	218	170	228	184	242	200	258	216	274
A	04	121-123	144	202	150	208	160	218	170	228	184	242	200	258	216	274
B	05	97.2-99.5	144	202	150	208	160	218	170	228	184	242	200	258	216	274

Standard Motor B Series
标准马达B系列

Flange Type 法兰类型	Output Shaft No. 输出轴编号	L	Displacement 排量													
			310cc		400cc		500cc		630cc		800cc		1000cc		1250cc	
			X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
C	06	112.5-115.3	157	212	163	218	173	228	183	238	197	252	213	268	229	284
C	07	90.2-93	157	212	163	218	173	228	183	238	197	252	213	268	229	284

Standard Motor C Series
标准马达C系列

Flange Type 法兰类型	Output Shaft No. 输出轴编号	L	Displacement 排量													
			310cc		400cc		500cc		630cc		800cc		1000cc		1250cc	
			X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
D	08	77.5-79.5	147	217	153	223	163	233	173	243	187	257	203	273	219	289

Order Information
订货信息

1	2	3	4	5	6	7	8	9	10	11	12	13
S	M	V										

Position 1,2,3 ---SMV Series Motor

第1,2,3位数字, 表示SMV系列马达

Position 4 ---Motor Type

第4位数字, 表示马达类型

A ----Standard Motor A Series, 标准马达A系列

B ----Standard Motor B Series, 标准马达B系列

C -----Standard Motor C Series, 标准马达C系列

D ----Wheel Motor Series 车轮马达系列

E ----Bearingless Motor Series No Produce, 无轴承马达系列 暂不生产

F -----Brake Motor Series, 制动马达系列

Position 5, 6 ---Displacement, cc/r

第5, 6 位数字, 表示马达排量

01 ----310

02 ----400

03 ----500

04 ----630

05 ----800

06 ----1000

07 ----1250

Position 7 ----Flanges and Pilot

第7位数字, 表示法兰和止口尺寸

A ----A Flange A型法兰

B ----B Flange B型法兰

C ----C Flange C型法兰

D ----D Flange D型法兰

Position 8, 9 ----Output Shaft

第8, 9位数字, 表示输出轴尺寸

01 ----Cylindrical 50 mm Shaft 50mm 直轴

02 ----Cylindrical 2.25 in Shaft 2.25 英寸 直轴

03 ----Involute Splined Shaft 渐开线花键轴

04 ----Involute Splined Shaft 渐开线花键轴

05 ----Involute Splined Shaft 渐开线花键轴

06 ----Cylindrical 2.25 in Shaft 2.25 英寸 直轴

07 ----Involute Splined Shaft 渐开线花键轴

08 ----Rectangle Spline Shaft 矩形花键轴

Position 10 ----Port, Case Drain Port

第10位数字, 表示 油口和泄油口尺寸

- A ----G 1 Ports, Case Drain Ports: G 1/4
G 1 油口, 外泄油口: G 1/4
- B ----1 5/16 – 12 UN -2B O-RING Ports, Case Drain Ports: 9/16 - 18 UNF-2B O-RING
1 5/16 – 12 UN-2B O-RING 油口, 外泄油口: 9/16 – 18 UNF-2B O-RING
- C ----2 - \varnothing 16 Manifold Mount With M12 Mounting Threads (4), Case Drain Ports: G 1/4. (Used for Standard Motor C Series)
2 - \varnothing 16 板式连接油口, 带4-M12连接螺纹, 外泄油口: G 1/4。(适用于标准马达 C 系列)
- D ----M33X2Ports, Case Drain Ports: M14X1.5
M33X2油口, 外泄油口: M14X1.5
- E ----G 3/4 Ports, Case Drain Ports: G 1/4
G3/4油口, 外泄油口: G 1/4

Position 11 ----Paint

第11位数字, 表示喷漆要求

- 0 ----No Paint 不喷漆
- 1 ----Blue 喷标准蓝漆
- 2 ----Black 喷标准磷化黑漆
- 3 ---- Others, Please Note on PO 其它要求,请下订单时注明

Position 12 ----Specical Features

第12位数字, 表示一些特殊要求

- 0 ----None
无其它要求
- 1 ----Viton Shaft Seal
轴密封材质为氟橡胶
- 2 ----Vition Seals
密封圈材质为氟橡胶
- 3 ----Viton Shaft Seal and Viton Seals
轴密封和其它密封圈材质均为氟橡胶

Position 13 ----Motor Rotation 马达旋转方向

Viewed From Shaft End 面对输出轴轴端

- A ----Port A Pressurized CW A 油口进压力油, 顺时针旋转
- B ----Port A Pressurized CCW A 油口进压力油, 逆时针旋转

Order Information

Port	Output Shaft	Flang&Pilot	Displacement cc/r						
			310	400	500	630	800	1000	1250
Port G1", Case Drain G1/4" BSP, (A)	Involute Spline, 17 Teeth, Pressure Angle 30 (05)	Standard 4 Bolt Large Flang, Pilot Φ180 (D1)	198m1002	1003	1004	1005	1006	1007	1008
Port M33X2, Case Drain M14X1.5, (D)	Square Spline 6D-40X35X10-40 (07)	Standard 4 Bolt Flang, Pilot Φ127 (B1)	198m1033	1034	1035	1036	103A	1037	1038
Port G1", Case Drain G1/4", (A)	Involute Spline, 17 Teeth, Pressure Angle 30 (05)	Standard 4 Bolt Large Flang, Pilot Φ127 (A1)	198m2102	2103	2104	2105	2106	2107	2108
Port G1", Case Drain G1/4", (A)	Straight F50, Flat Key 14 (01)	Standard 4 Bolt Large Flang, Pilot Φ127 (A2)	198m2113	2114	211A	2115	2116	2117	2118
Port1-5/16-12UN O-ring, Case Drain9/16-18UNF, (B)	Straight F50, Flat Key 14 (01)	Standard 4 Bolt Large Flang, Pilot Φ127 (A2)	198m2213	2214	221A	2215	2216	2217	2218
	Involute Spline, 16 Teeth, Pressure Angle 30, 8/16DP (03)	Standard 4 Bolt Flang, Pilot Φ127 (B1)	198m3003	3004	3005	3006	3007	3008	3009
Port1-5/16-12UN O-ring, Case DrainG1/4, (B)	Straight F57, Flat Key 12.7 (06)	Standard 4 Bolt Flang, Pilot Φ127 (B1)	198m3102	3103	3104	3106	310A	3107	3108
Port G1", Drain G1/4" BSP, (A)	Tapered shaft F 57.15, in Conel:8, Flat Key	4 Bolt Wheel Motor, Pilot Φ180 (D1)	198m4002	4003	4004	4005	4006	4007	4008
Port G3/4", Case Drain G1/4", (E)	Square Spline 8D-40X35X7-48 (08)	Standard 4 Bolt Large Flang, Pilot Φ127 (A2)	198m9043	9044	9045	9046	9047	9048	9049

订货信息

油口	外联尺寸	法兰止口	排量						
			310	400	500	630	800	1000	1250
油口G1", 外泄油口 G1/4BSP (A)	渐开线外花键, 17 齿, 压力角30 (05)	标准4孔大法 兰, 止口Φ 180 (D1)	198m1002	1003	1004	1005	1006	1007	1008
油口M33X2, 外泄油口 M14X1.5 (D)	矩形花键6D-40X35X10-40 (07)	标准4孔法兰, 止 口Φ127 (B1)	198m1033	1034	1035	1036	103A	1037	1038
油口G1", 外泄油口 G1/4 (A)	渐开线外花键, 17 齿, 压力角30° (05)	标准4孔大法 兰, 止口Φ 127 (A1)	198m2102	2103	2104	2105	2106	2107	2108
油口G1", 外泄油口 G1/4 (A)	Φ50直轴, 平键14 (01)	标准4孔大法兰, 止口Φ127 (A2)	198m2113	2114	211A	2115	2116	2117	2118
油口1-5/16-12UN, 锥 口密封, 外泄油口 9/16-18UNF-2B (B)	Φ50直轴, 平键14 (01)	标准4孔大法兰, 止口Φ127 (A2)	198m2213	2214	221A	2215	2216	2217	2218
	渐开线外花键, 16 齿, 压力角30°, 径 节8/16 (03)	标准4孔法兰, 止 口Φ127 (B1)	198m3003	3004	3005	3006	3007	3008	3009
油口1-5/16-12UN, 锥 口密封, 外泄油口 G1/4 (B)	Φ57直轴, 平键12.7 (06)	标准4孔法兰, 止 口Φ127 (B1)	198m3102	3103	3104	3106	310A	3107	3108
油口G1", 外泄油口 G1/4BSP (A)	Φ57.15锥轴, 锥度 1:8, 平键14.3 (09)	4孔车轮马达, 止 口Φ180 (D1)	198m4002	4003	4004	4005	4006	4007	4008
油口G3/4, 外泄油口 G1/4 (E)	矩形花键8D-40X35X7-48 (08)	标准4孔大法兰, 止口Φ127 (A2)	198m9043	9044	9045	9046	9047	9048	9049