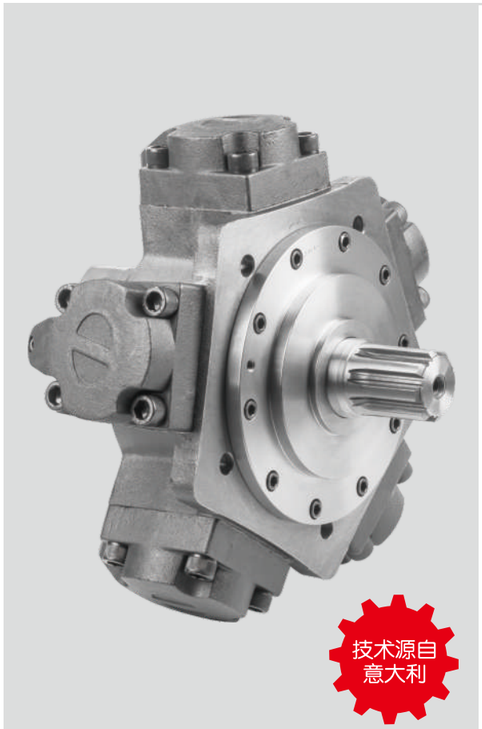
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DM系列/ DM Series

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产品特点

DM系列曲轴连杆式低速大扭矩液压马达按照意大利提供的技术和标准进行生产。在此基础上，我们还根据市场的需要不断进行技术改进来提高产品的使用性能。

其主要特点：

1、采用偏心轴及较低激振频率的五活塞结构，具有低噪音的特点;
2、起动扭矩大，低速稳定性好，能在很低的速度下平稳运转;
3、专利技术的平面补偿配油盘，可靠性好，泄漏少；活塞与柱塞套采用密封环密封，因而具有很高的容积效率;
4、曲轴与连杆间由滚柱支承，因而具有很高的机械效率;
5、旋转方向可逆，输出轴允许承受一定的径向和轴向外力;
6、具有较高的功率质量比，体积重量相对较少。

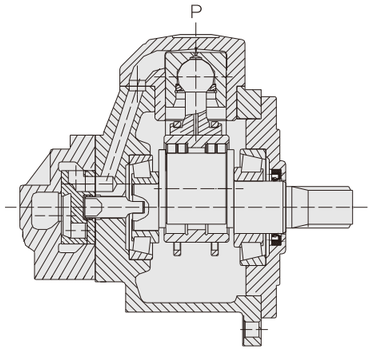
结构原理

通压力油的柱塞缸受液压力的作用，在柱塞体上产生推力P。该推力通过连杆作用在曲轴中心，使输出轴旋转，同时配油盘随着一起转动，当柱塞体所在位置到达下死点时，柱塞缸便由配油盘接通回油口，柱塞便被曲轴往上推。此时，做功后的液压油通过配油盘返回油箱。各柱塞体依次接通高低压力油，各柱塞体对输出轴中心所产生的驱动力矩同向相加，使马达输出轴获得连续而平稳的回转扭矩。当改变油流方向时，便可改变马达的旋转方向。如将配油盘转180°装配也可以实现马达的反转。

Product feature

DM series product is such kind of low speed high torque motor with crankshaft and connecting rod, produced in strict accordance with the technology and standard of Italy. Meanwhile,we also employ new technology to improve the motor performance according to the market requirements. The main features include:

1. Low noise due to an eccentric crankshaft and low excitation frequency of five-piston design;
2. Revolve steadily under very low speed due to high starting torque and good low-speed stability;
3. Good reliability and less leakage due to the patented flat compensation distributor, special sealing between piston and plunger bushing guarantees higher volumetrical effvciency;
4. High mechanical efficency due to roller bearing between crankshaft and connecting rod;
5. Reversible rotation, and the output shaft can bear certain extermal force from both radial and axial diredtions;
6. High power-mass ratio, small volume and light weight.



结构原理图
Structure Graph







设计中用到的几个计算公式

1、液压马达的实际输出扭矩：M=0.159（P1−P2）V・η_m(N.m)

式中：P1、P2----------分别为液压马达的入口和出口压力（MPa）
V----------液压马达的排量（ml/r）
η_m----------液压马达机械效率（%）

2、液压马达输出功率

$N=\frac{M.n}{9550}$(kw)　　$N=\frac{q(P_1-P_2)}{60000}\eta_m\eta_v$(kw)

式中：n----------液压马达转速（r/min）
q----------输入液压马达的流量（ml/min）
η_v ----------液压马达容积效率（%）

3、液压马达的转速

$n=\frac{q}{V}\eta_v$(r/min)

Calculation

1、Actual output torque：M=0.159（P1−P2）V・η_m(N.m)

Where：P1、P2----------Inlet and outlet pressure（MPa）
V----------Displacement（ml/r）
η_m----------Mechanical efficiency（%）

2、Output power

$N=\frac{M.n}{9550}$(kw)　　$N=\frac{q(P_1-P_2)}{60000}\eta_m\eta_v$(kw)

Where：n----------Speed（r/min）
q----------Input flow（ml/min）
η_v----------Volumetrical efficiency（%）

3、Speed

$n=\frac{q}{V}\eta_v$(r/min)

注意事项

1、过滤：正常的工业用过滤精度推荐为25微米，对低压、低速或间隙工况时可以允许精度为75微米。
2、粘度：最佳性能应在良好的粘度条件下才能获得，因此马达在大多数工况下，粘度应在15-1000厘范围内，该范围保证满意地工作。
3、首次启动前，必须向液压马达壳体内注满液压油，以防损坏。
4、泄漏：泄油口应单独地与油箱接通，一般壳体允许最大压力为0.1Mpa，用户有特殊要求时，该型马达 可以改进使之壳体能承受3-5Mpa压力。
5、泄油管的最高水平位置应高于马达壳体的最高水平位置，以防马达壳体内的油液排空。
6、液压马达可以任意位置安装，安装马达的支架必须有足够的刚性，安装时应保证液压马达所联接的传动主轴与液压马达的输出轴同心。
7、严格保证联接油口的清洁度，不允许任何固体异物进入。
8、减少液压马达输出轴所受径向、轴向负荷，可以使液压马达寿命延长。
9、该型马达应避免在泵工况下运转。

Note

1. Filtration: the recommended filtration precision for normal industrial use is 25 μ m, and 75 μ m is permitted for low pressure, low speed or intervallic setting.
2. Oil viscosity: the optimum performance could only be obtained under proper oil viscosity between 15-1000cst.
3. Before the first start-up, it must fill hydraulic oil in the hydraulic motor body, to avoid the damage.
4. Leakage: drain port should be connected separately to the tank. Normally the maximum pressure for the motor body is 0.1 Mpa, and it could also be improved to bear 3-5 Mpa, to meet special requirements.
5. The top line of the drain pipe should be higher than that of the motor body, in case empting oil storage.
6. Installation: motor can be installed in any position with rigid support, When installed, shafts of the motor and its transmission should be concentric.
7. Cleanness: Strictly maintain the cleanness of the oil port, and keep any solid particles away.
8. Release both the radial and axial loads of the output shaft to enable longer life of the motor.
9. DM motor could not work as a pump.

型号说明 Description of model

DM | 1 | 63 | B | D31 | 72°

丹顿系列曲轴连杆式低速大扭矩液压马达
Dan Dun crankshaft and connecting rod low speed high torque hydraulic motor

系列
Series

名义排量（ml/r）
Nominal displacement(ml/r)

输出轴形式
1、无字母表示标准矩形花键轴（以外径定心）
2、B表示平键轴：注脚数字表示同BM型摆线液压马达或其他品牌对应型号安装尺寸相同（带过渡法兰板）。
3、D表示安装联接尺寸与昆山液压件厂1JMD型同排量液压马达相同。
4、I 表示内花键轴（以内径定心）：注脚数字表示与QJM系列安装尺寸相同（带过渡法兰板）。
5、GM, SI表示安装尺寸与意大利SAI公司生产的M系列、L系列、GM系列液压马达相同，注脚数字表示不同种类安装尺寸。

Form of output shaft
1. no letter---standard rectangular spline shaft (the center is up to exterior diameter).
2. B---Flat key shaft: Footnote number ---the installation dimension is the same as BM motors series model (with flange).
3. D---installation dimension is the same as 1JMD series motors of the same displacement (KunShan HYD element plant).
4. I---internal spline shaft(the center is up to interior diameter). Footnote number---the installation dimension is the same as QJM series motors(with flange).
5. GM,SI indicates the installation dimension is the same as M series, L series, GM series of ITALY SAI company. Footnote number ---different kinds of installation dimension.

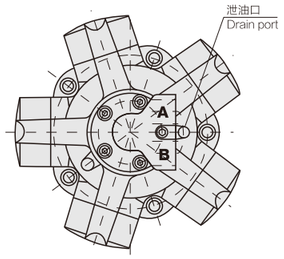
* 未写明表示马达安装孔位置与样本中图示一致
*“左偏”表示在无法兰连接的情况下其中一个安装孔在正下方(即马达安装时的两只角朝下)
*“右偏”表示在无法兰连接的情况下其中一个安装孔在正上方(即马达安装时的一只角朝下)
* Omit-mounting hole position, same as illustrated
* "Left deviation" indicates that one mounting hole is right below it when there is no flange. (I.e.: two corners face downward when installing the motor.)
* "Right deviation" indicates that one mounting hole is right above it when there is no flange. (I.e.: one corners face upward when installing the motor.)

配油器种类，订货时若不注明，则按标准配置（见各系列马达安装联接尺寸图）如有特殊需要，请参见48-53页，并在订货时注明。

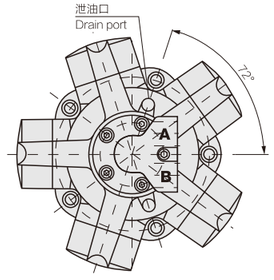
Oil distribution casing type: it will be configured with standard casing if there is no special requirement marked in the ordering. If you have special requirements, please mark your requirements in the order.

“左偏”“右偏”只适用于DM2~DM11系列马达，且进出油口处水平位置（与图示一样）
"Left deviation" and "Right deviation" are only applicable for DM2-DM11 series of motors, and oil inlet and outlet are horizontal. (Same as illustrated)

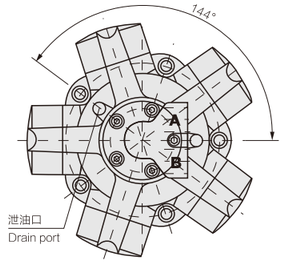
DM液压马达安装示意图 DM hydraulic motor install chart



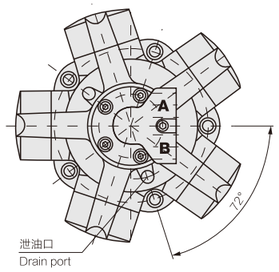
0° 位置安装



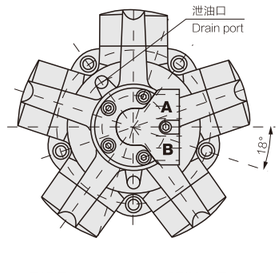
顺转72° 位置安装（标装安装）



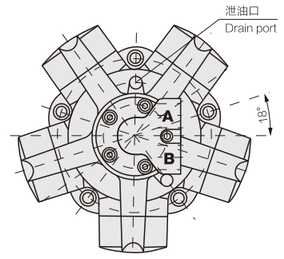
顺转144° 位置安装



逆转72° 位置安装

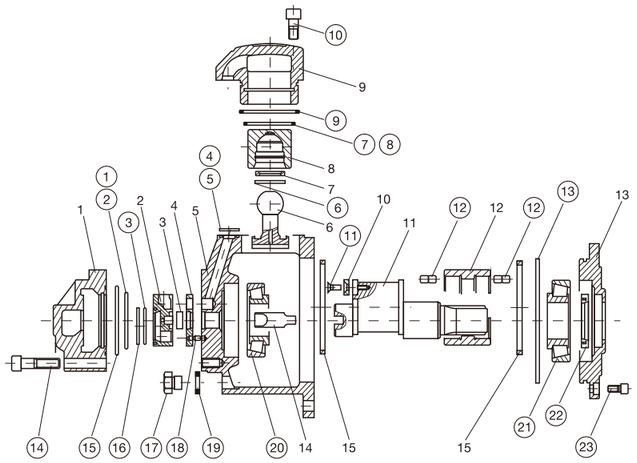


只适用于DM1-DM11系列液压马达
左偏18° 安装：马达的进出油口水平，
其中一个安装孔在正下方的安装方式。



顺转90° 位置安装

DM液压马达结构图 DM hydraulic motor structure chart



序号 NO.	零件名称 Name	序号 NO.	零件名称 Name
①	密封环 Seal	⑬	“O”型圈 “O” Ring
②	“O”型圈 “O” Ring	⑭	内六角螺钉 Soket head cap screws
③	“O”型圈 “O” Ring	⑮	“O”型圈 “O” Ring
④	密封环 Seal	⑯	密封环 Seal
⑤	“O”型圈 “O” Ring	⑰	堵头 Oil stopper
⑥	孔用弹性挡圈 Cirelips for holes	⑱	定位圆柱梢 Parallel pin
⑦	密封环 Cylinde seal	⑲	组合垫圈 Washer
⑧	“O”型圈 “O” Ring	⑳	后轴承 Bearing
⑨	“O”型圈 “O” Ring	㉑	前轴承 Bearing
⑩	内六角螺钉 Soket head cap screws	㉒	油封 Shaft seal
⑪	十字槽螺钉 Cross recessed head screws	㉓	内六角螺钉 Soket head cap screws
⑫	滚柱 Rollers		

序号 NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
零件名称 Name	通油盘 Distributor	配油盘 Oil pan	定位环 Bush	垫块 Disc	壳体 Motor body	连杆 Link rod	挡圈 Check ring	柱塞体 Piston	柱塞套 Oyl inder	滚柱封块 Press board for rollers	曲轴 Shaft crank	轴承套 Support ring	封盖 Flange	双头键 Drive pin	卡环 Retaining ring

技术参数 Technical data

型 号 Model	排量 Displacement	额定压力 Rated Pressure	尖峰压力 Peak Pressure	额定扭矩 Rated Torque	单位理论扭矩 Theoric Specific Torque	转速范围 Speed Range	重量 Weight
	ml/r	Mpa	Mpa	N.m	N.m/Mpa	r/min	kg
DM1-63	64	16	22	150	9	15-650	21
DM1-80	78	16	20	183	11	15-600	
DM1-100	96	16	20	225	14	15-550	
DM1-125	126	16	20	295	18	15-500	
DM1-160	159	14	18	326	23	15-500	
DM1-200	196	14	18	401	29	15-500	
DM2-100	113	16	20	264	17	10-500	28
DM2-150	159	16	20	372	23	10-500	
DM2-175	180	16	20	421	26	10-450	
DM2-200	206	16	20	482	30	8-450	
DM2-250	235	14	18	481	34	8-400	
DM2-280	276	14	18	565	40	8-400	
DM3-175	181	16	20	424	26	8～550	35
DM3-200	201	16	20	470	29	8～550	
DM3-250	254	16	20	594	37	8～520	
DM3-300	289	16	20	676	42	8～450	
DM3-350	340	14	18	696	50	6～400	
DM3-400	380	14	18	778	56	6～350	
DM6-400	397	16	20	939	59	5～450	58
DM6-450	452	16	20	1069	67	5～400	
DM6-500	491	16	20	1162	73	5～400	
DM6-600	594	16	20	1405	88	5～380	
DM6-700	683	16	20	1616	101	5～350	
DM6-750	754	14	18	1561	111	5～320	
DM8-600	617	16	20	1444	90	5～320	72
DM8-700	710	16	20	1662	104	5～320	
DM8-800	810	14	20	1659	118	5～300	
DM8-900	889	14	20	1821	130	5～300	
DM8-1000	1000	12	18	1755	146	5～280	

DM系列/ DM Series

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技术参数 Technical data

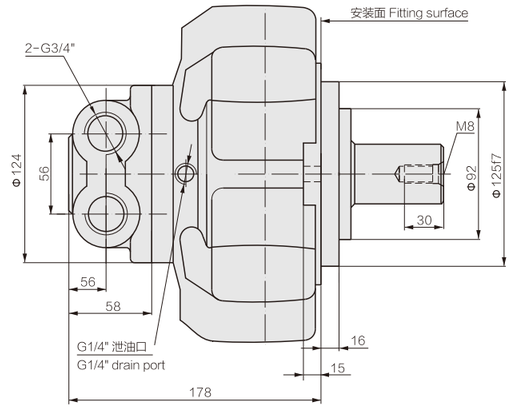
型 号 Model	排量 Displacement	额定压力 Rated Pressure	尖峰压力 Peak Pressure	额定扭矩 Rated Torque	单位理论扭矩 Theoric Specific Torque	转速范围 Speed Range	重量 Weight
	ml/r	Mpa	Mpa	N.m	N.m/Mpa	r/min	kg
DM11−700	701	16	20	1659	104	5～300	95
DM11−800	782	16	20	1850	116	5～300	
DM11−900	894	16	20	2115	132	5～300	
DM11−1000	981	16	20	2321	145	5～300	
DM11−1100	1104	16	20	2612	163	5～280	
DM11−1200	1234	14	18	2555	182	5～260	
DM11−1300	1301	14	18	2693	192	5～250	
DM16−1400	1413	16	20	3307	207	5～250	170
DM16−1600	1648	16	20	3857	241	5～240	
DM16−1800	1815	16	20	4248	265	5～220	
DM16−2000	2035	14	18	4168	298	5～220	
DM16−2400	2408	14	18	4931	352	5～200	
DM31−2500	2553	16	20	5975	373	5～200	298
DM31−2800	2683	16	20	6280	392	5～200	
DM31−3000	3063	16	20	7169	448	5～180	
DM31−3150	3218	16	20	7532	471	5～180	
DM31−3500	3461	16	20	8100	506	5～160	
DM31−4000	4153	16	20	9720	608	5～160	
DM31−4500	4522	14	18	9261	661	5～150	
DM31−5000	4828	14	18	9887	706	5～130	
DM70−4600	4604	16	20	10776	673	5～130	550
DM70−5000	4946	16	20	11576	724	5～125	
DM70−5400	5452	16	20	12760	798	5～125	

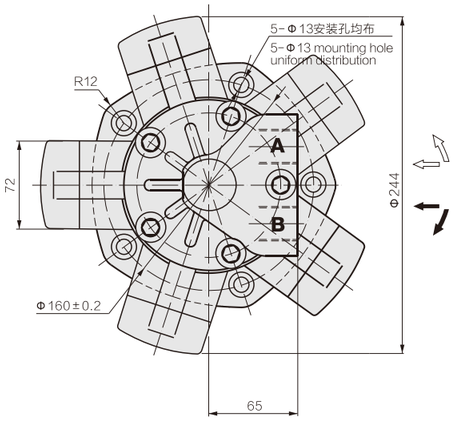
DM1系列/ DM1 Series

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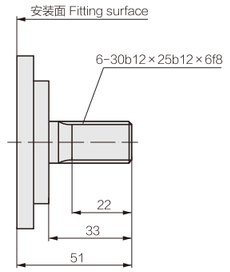
DM1−63~200 外形尺寸 Dimension

进出油口为D31的安装尺寸 / With D31 Distributor

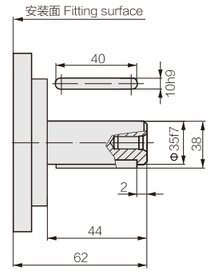




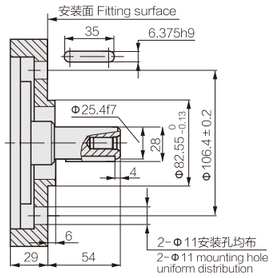
标准外花键：DM1−**
External spline



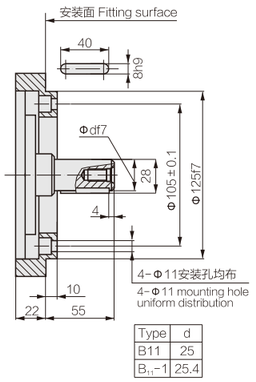
标准平键：DM1−**B
Flat key



标准内花键：DM1−B_3**
Internal spline

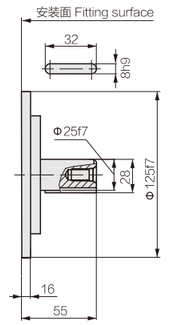


DM1−B_{11} B_{11}−1**

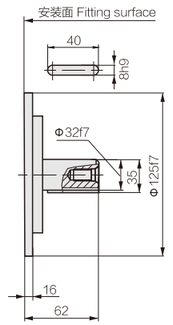


Type	d
B11	25
B_{11}−1	25.4

DM1−B_{28}**

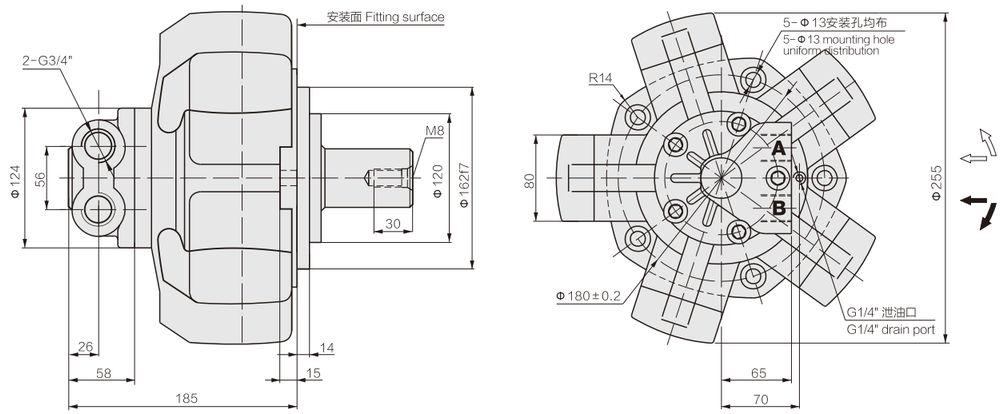


DM1−B_{31}**

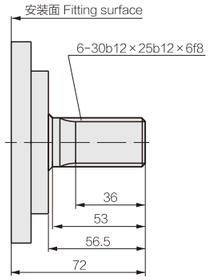


DM2-100~280 外形尺寸 Dimension

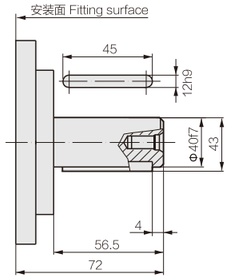
进出油口为D31的安装尺寸 / With D31 Distributor



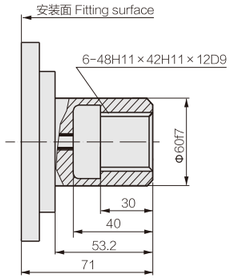
标准外花键：DM2-**
External spline



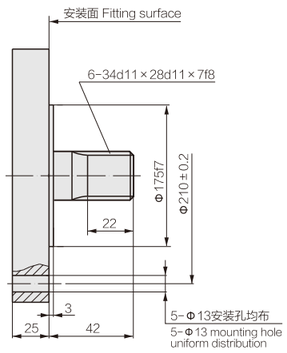
标准平键：DM2-B**
Flat key



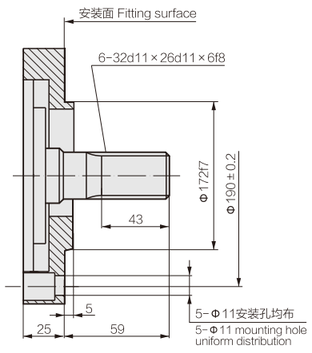
标准内花键：DM2-I**
Internal spline



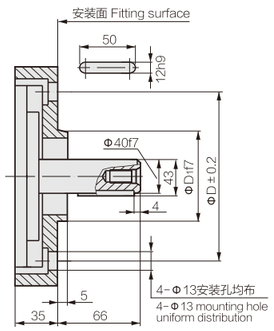
DM2-SL_1**



DM2-H_1**

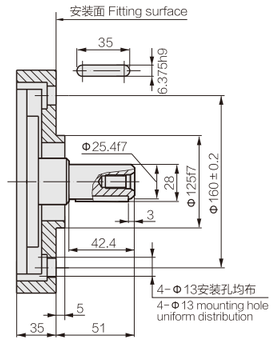


DM2-B_1、B_2**

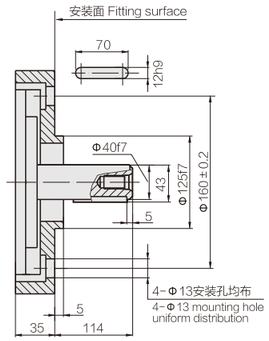


Type	D	D1
B_1	160	125
B_2	127	100

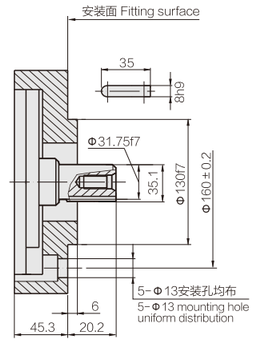
DM2-B_3**



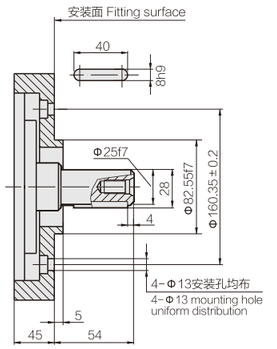
DM2-B_5**



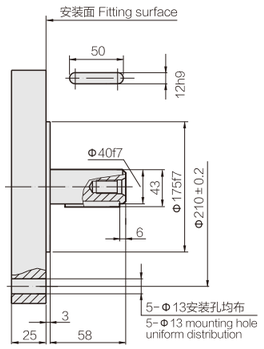
DM2-B_{14}**



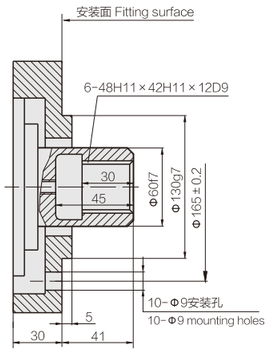
DM2-B_{24}**

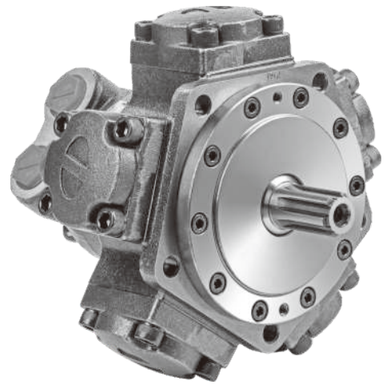


DM2-B_{43}**



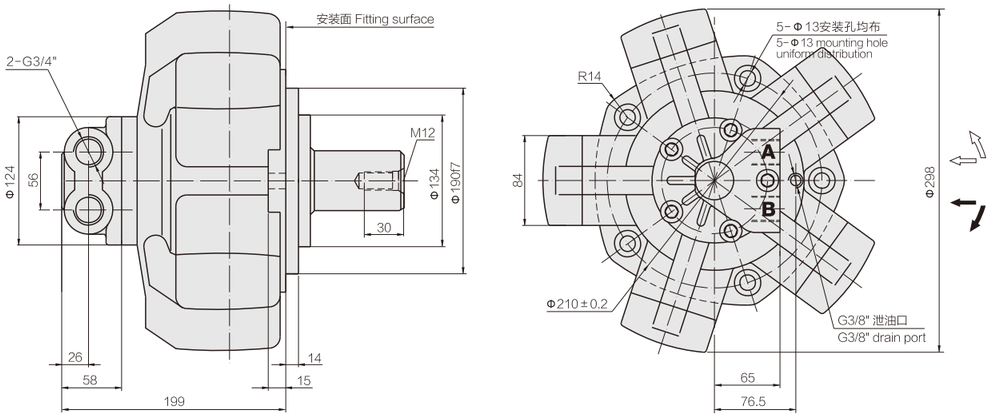
DM2-I_{01}、I_{02}**



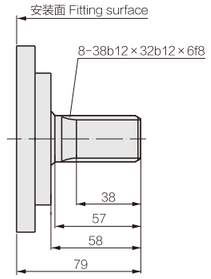


DM3-175~400 外形尺寸 Dimension

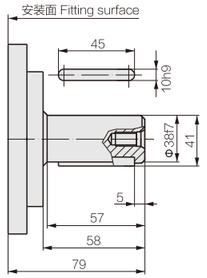
进出油口为D31的安装尺寸 / With D31 Distributor



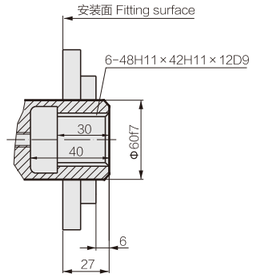
标准外花键：DM3-**
External spline



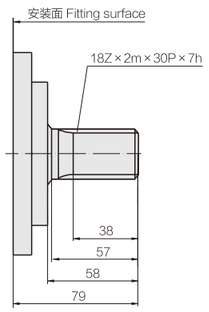
标准平键：DM3-B**
Flat key



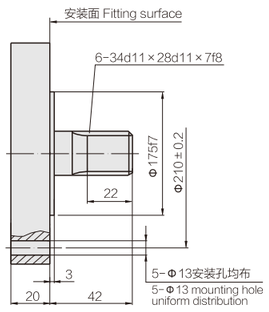
标准内花键：DM3-I**
Internal spline



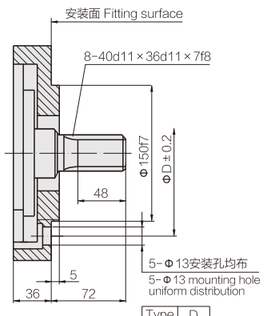
渐开线花键DM3-A**
Involute spline



DM3-SL_1**



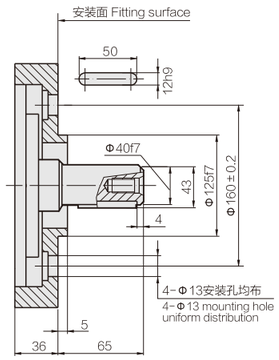
DM3-SL_2、SL_3**



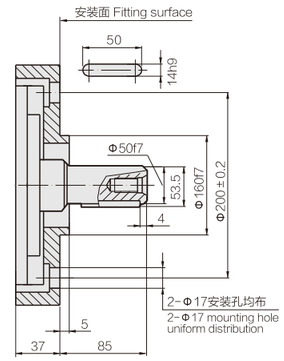
Type	D
SL_2	195
SL_3	250

DM3系列/ DM3 Series
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Cast of professional quality!

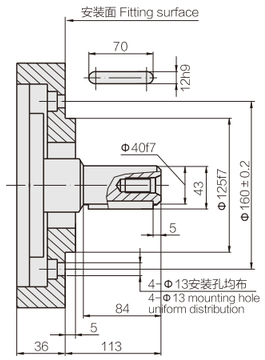
DM3-B_1**



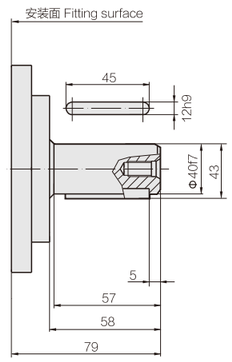
DM3-B_2**



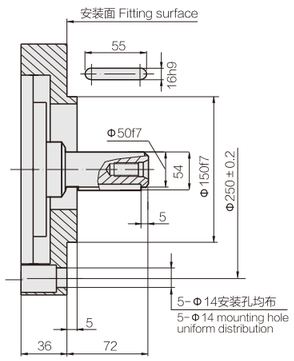
DM3-B_5**



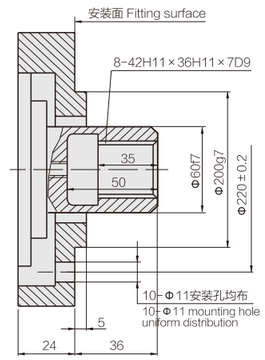
DM3-B_{32}**

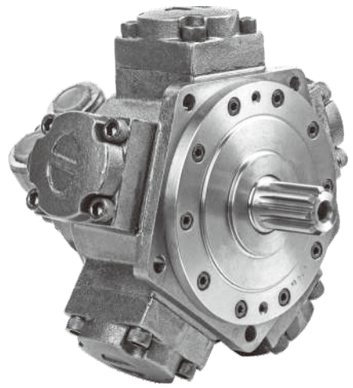


DM3-B_{44}**



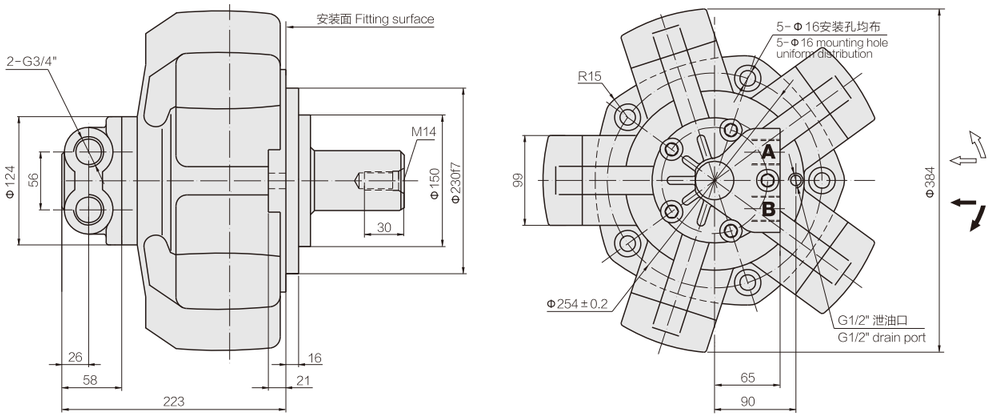
DM3-I_{1A1}**



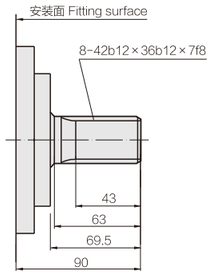


DM6-400~750 外形尺寸 Dimension

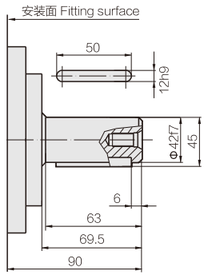
进出油口为D31的安装尺寸 / With D31 Distributor



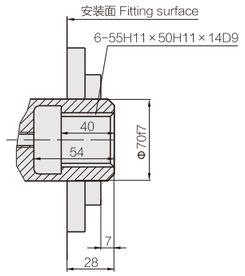
标准外花键：DM6-**
External spline



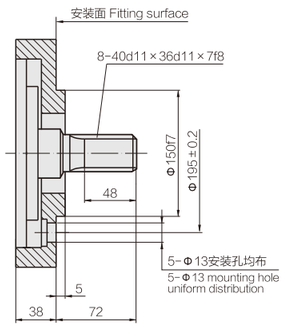
标准平键：DM6-B**
Flat key



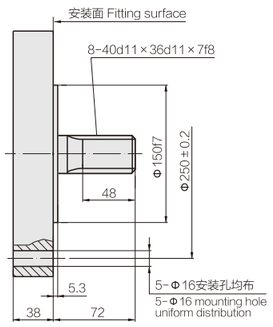
标准内花键：DM6-I**
Internal spline



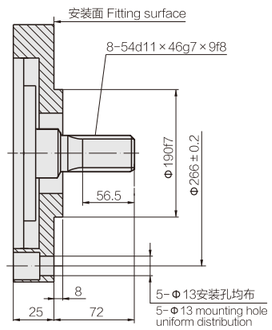
DM6-SL_2**



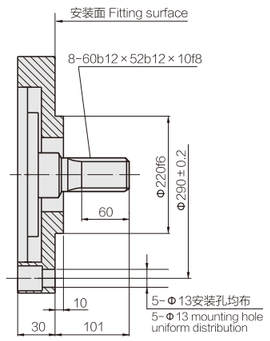
DM6-SL_3**



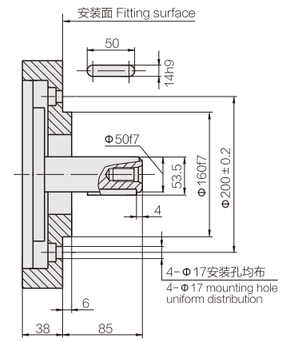
DM6-N**



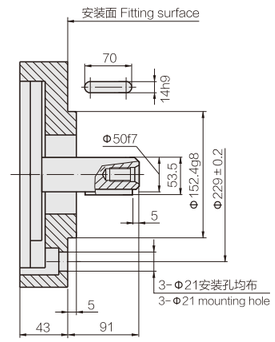
DM6-N_1**



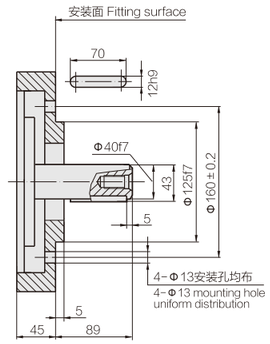
DM6-B_2**



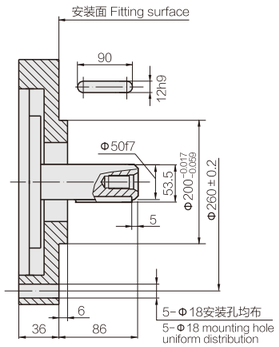
DM6-B_4**



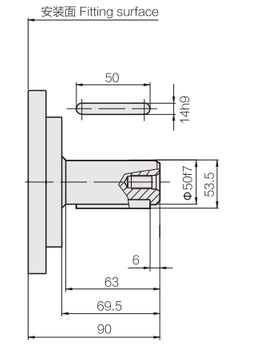
DM6-B_5**



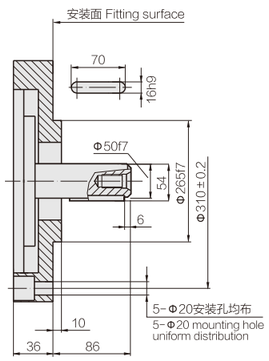
DM6-B_{13}**



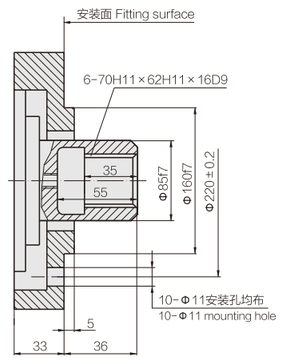
DM6-B_{33}**

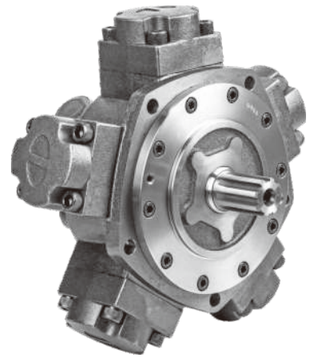


DM6-B_{45}**



DM6-I_{11}**



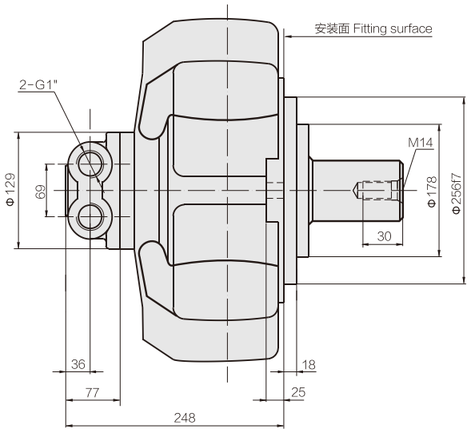


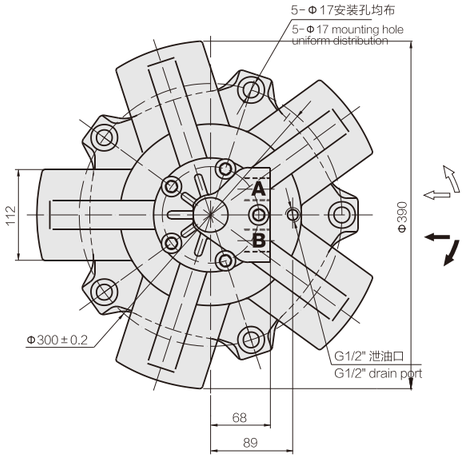
DM8系列/ DM8 Series

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Cast of professional quality!

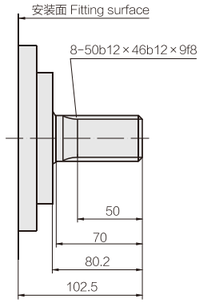
DM8-600~1000 外形尺寸 Dimension

进出油口为D40的安装尺寸 / With D40 Distributor

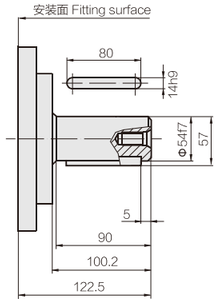




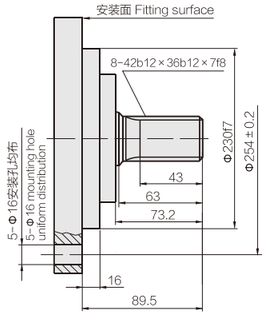
标准外花键：DM8-**
External spline



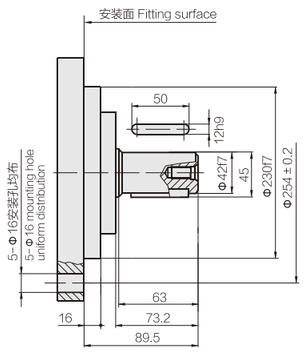
标准平键：DM8-B**
Flat key



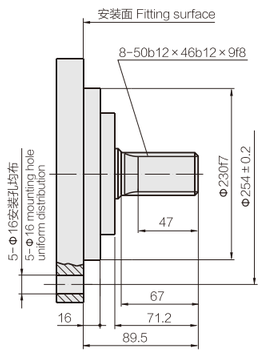
DM8-6M**



DM8-6MB**



DM8-a2**



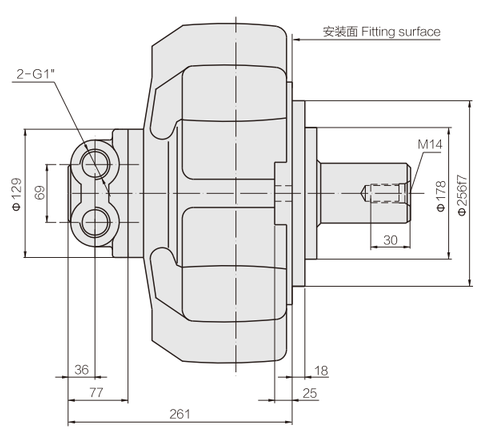


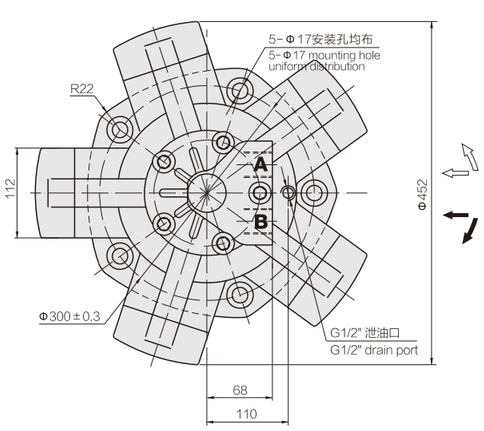
DM11系列/ DM11 Series

专业铸就品质!
Cast of professional quality!

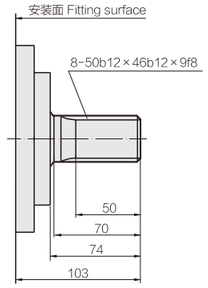
DM11-700~1300 外形尺寸 Dimension

进出油口为D40的安装尺寸 / With D40 Distributor

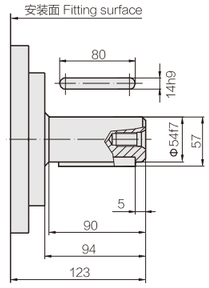




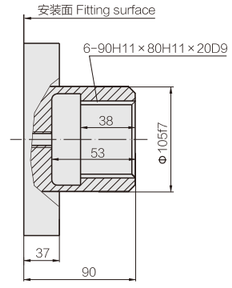
标准外花键：DM11-**
External spline



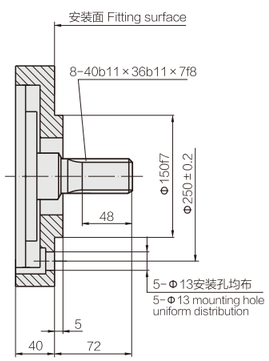
标准平键：DM11-B**
Flat key



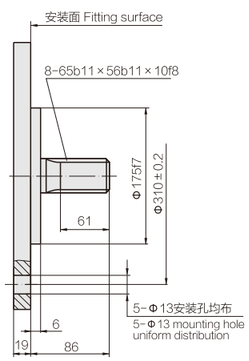
标准内花键：DM11-I**
Internal spline



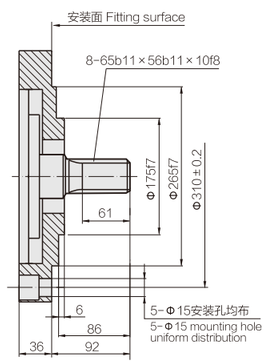
DM11-SL$_3$**



DM11-SL$_4$**



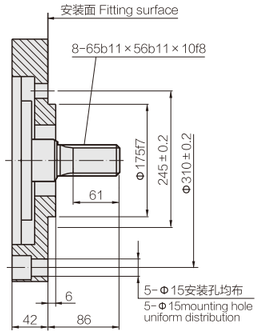
DM11-SL$_5$**



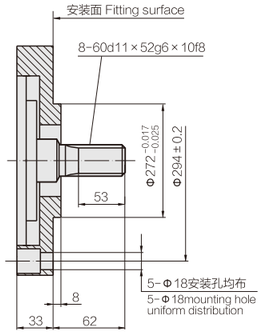
DM11系列/ DM11 Series

专业铸就品质!
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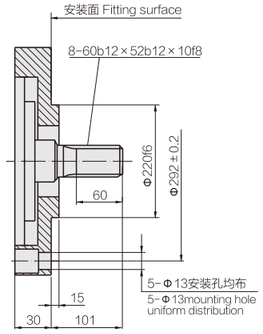
DM11−**SM$_4$



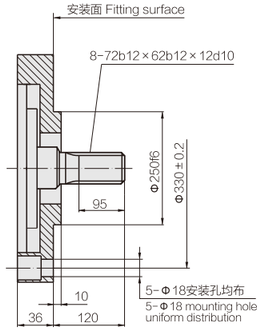
DM11−**N



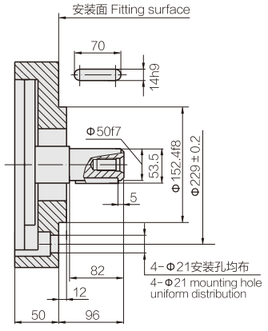
DM11−**N$_1$



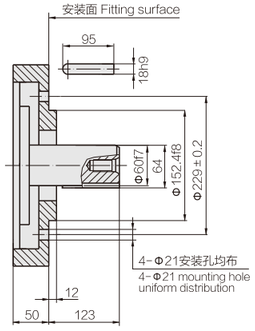
DM11−**K



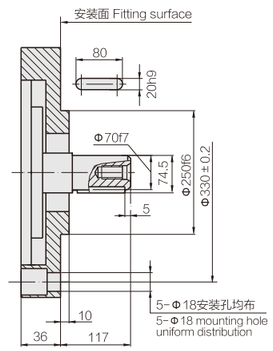
DM11−**B$_4$



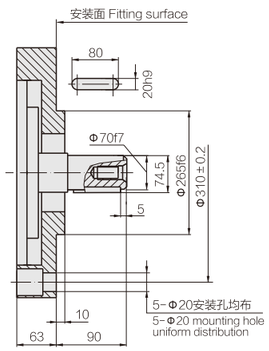
DM11−**B$_6$



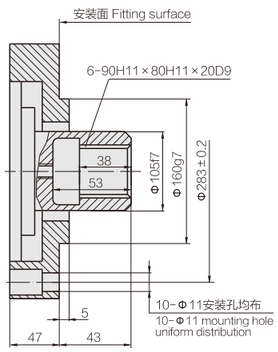
DM11−**B$_{35}$



DM11−**B$_{46}$



DM11−**I$_{21}$

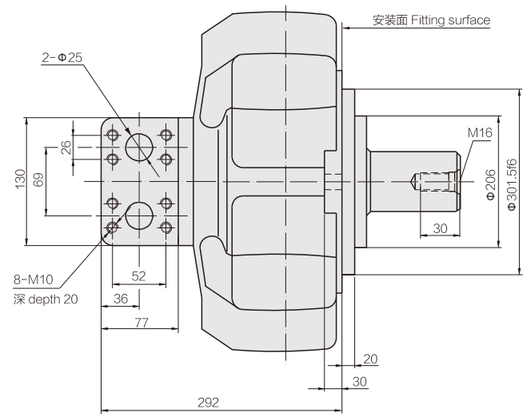


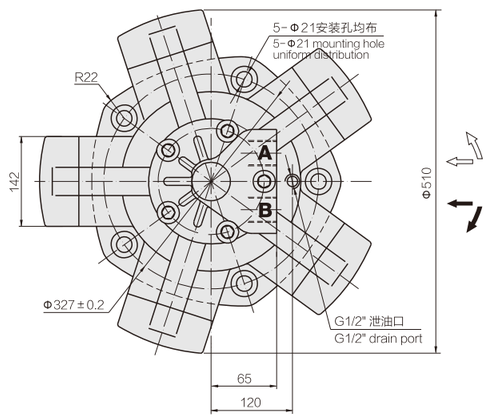
DM16系列/ DM16 Series

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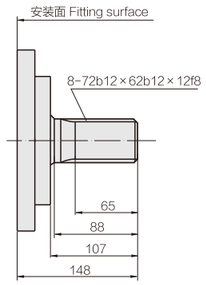
DM16−1400~2400 外形尺寸 Dimension

进出油口为D47的安装尺寸 / With D47 Distributor

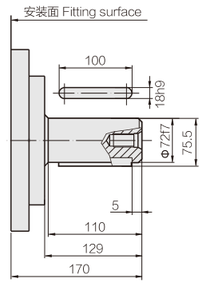




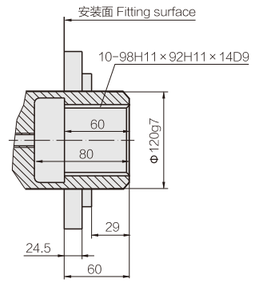
标准外花键：DM16−**
External spline



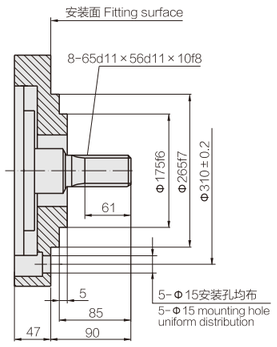
标准平键：DM16−B**
Flat key



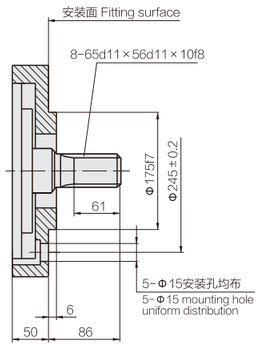
标准内花键：DM16−I**
Internal spline



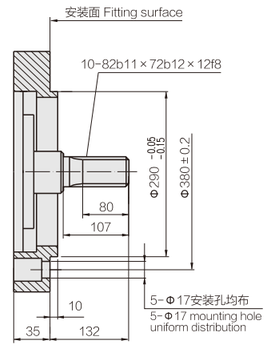
DM16−**SL$_5$



DM16−**SM$_4$



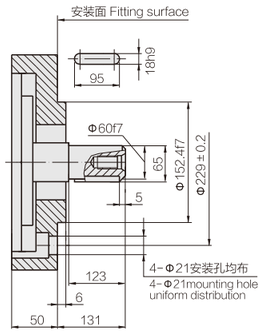
DM16−**N



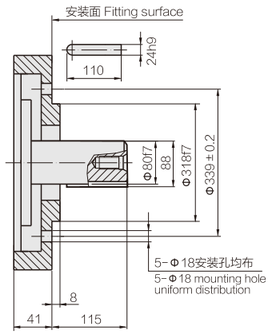
DM16系列/ DM16 Series

专业铸就品质!
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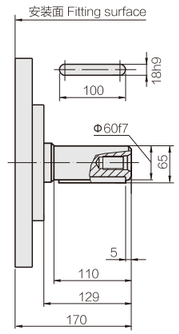
DM16−**B_6



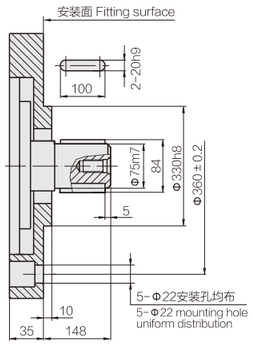
DM16−**B_{17}



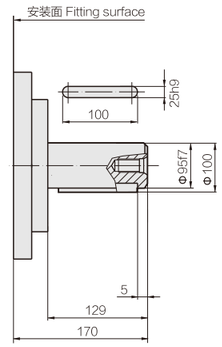
DM11−**B_{19}



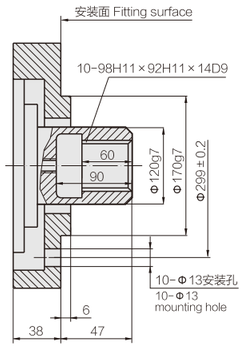
DM16−**D



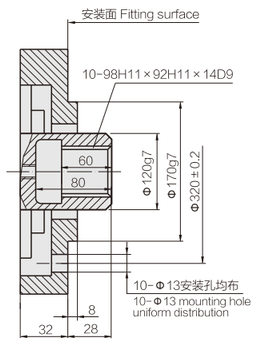
DM16−**B_{30}

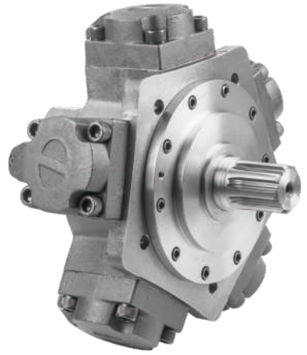


DM16−**I_{32}



DM16−**I_{42}



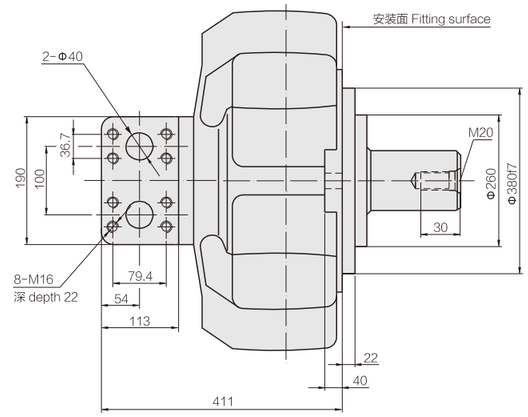


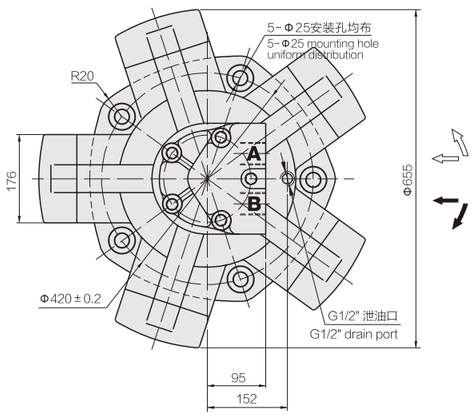
DM31系列/ DM31 Series

专业铸就品质!
Cast of professional quality!

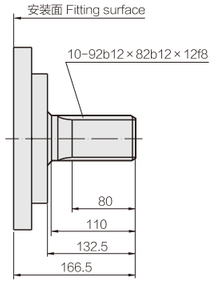
DM31−2500~5000 外形尺寸 Dimension

进出油口为D90的安装尺寸 / With D90 Distributor

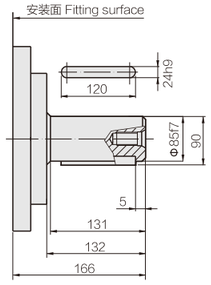




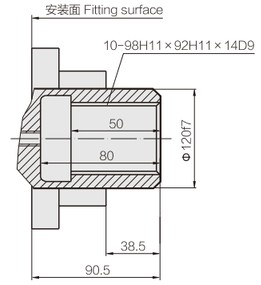
标准外花键：DM31−**
External spline



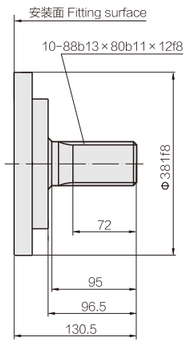
标准平键：DM31−**B
Flat key



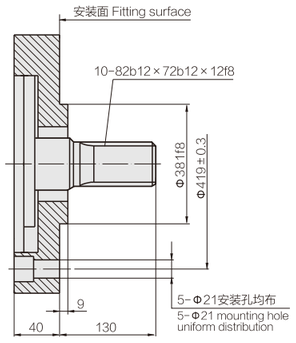
标准内花键：DM31−**I
Internal spline



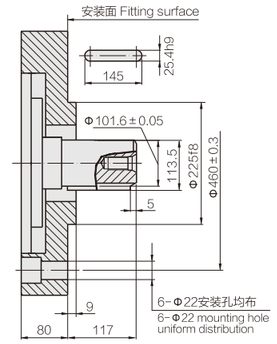
DM31−**SL_7



DM31−**NST



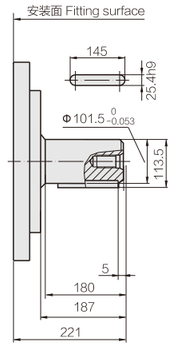
DM31−**B_8



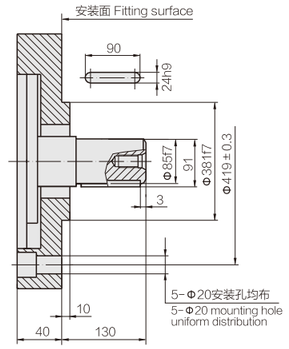
DM31系列/ DM31 Series

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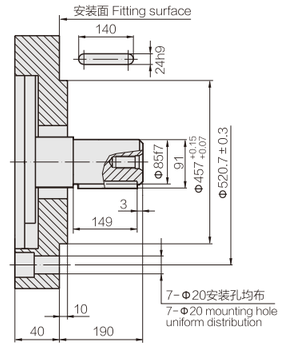
DM31−**B_{10}



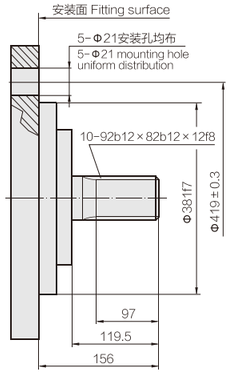
DM31−**B_{21}



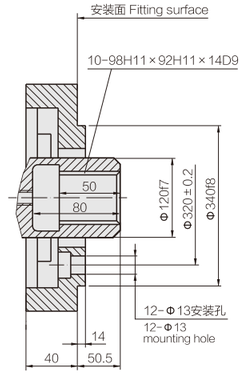
DM31−**B_{22}



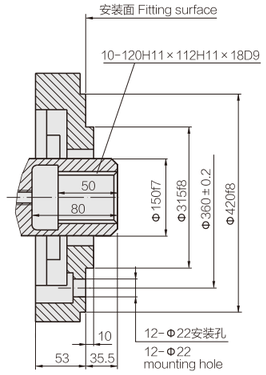
DM31−**H6



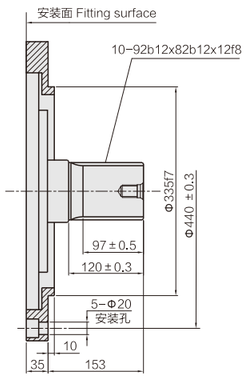
DM31−**I_{532}

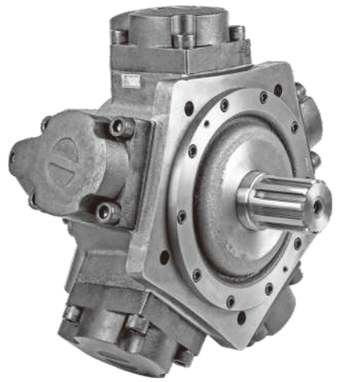


DM31−**I_{52}



DM31−**N



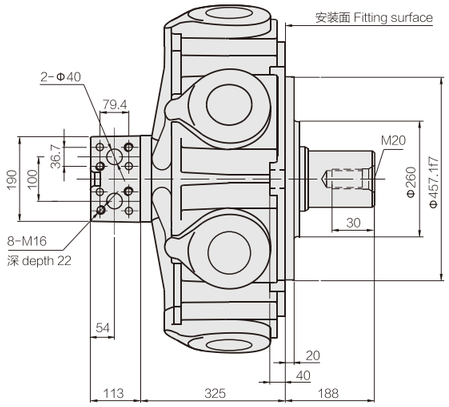


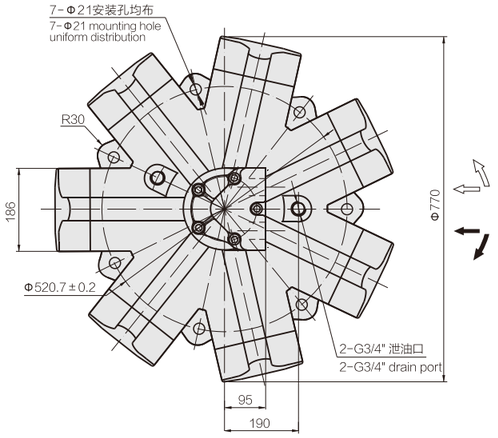
DM70系列/ DM70 Series

专业铸就品质!
Cast of professional quality!

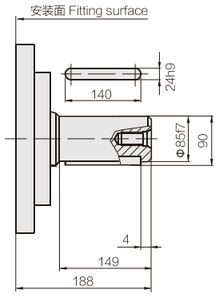
DM70−5000~7000 外形尺寸 Dimension

进出油口为D90的安装尺寸 / With D90 Distributor

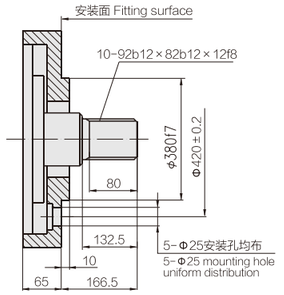




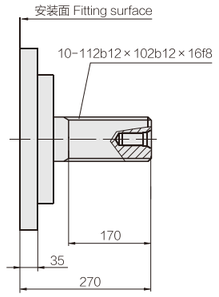
标准平键：DM70−**B
Flat key



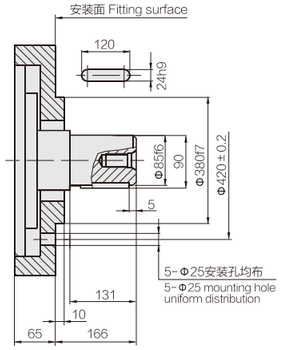
DM70−**a_1



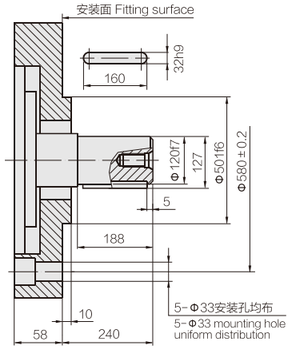
DM70−**a_3



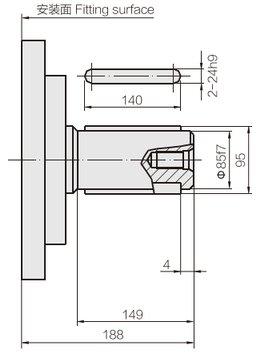
DM70−**B_1



DM70−**B_2



DM70−**BC



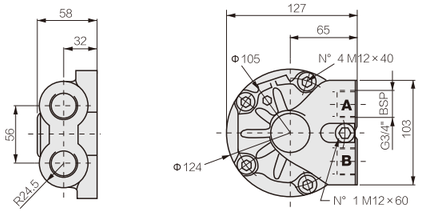
液压马达配流器
Hydraulic motors distributors

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D31
D31通油盘，油孔为G3/4"
D31 distributor with 3/4" ports.

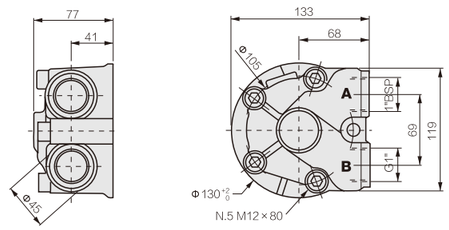
D310
与D31相同，油口为 G1"
重量: 4kg

Is the same as D31, oil port is G1"
Weight：4kg



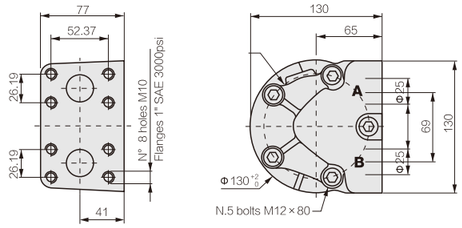
D40
标准配置用通油盘。
重量：5kg

Standard distributor for motors.
Weight：5kg



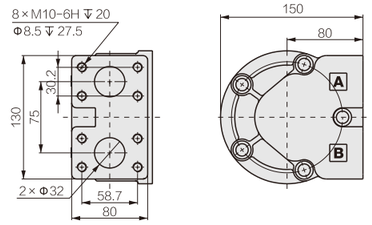
D47
油孔为Φ25 的法兰连接通油盘。
重量: 6kg

Distributor with SAE 1" 3000 psi flanges.
Weight：6kg



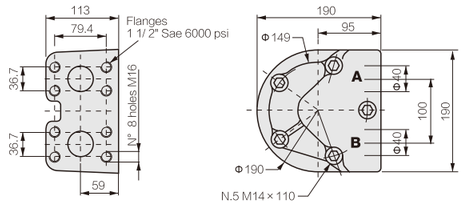
D75
油孔为Φ32的法兰连接通油盘
重量: 7 kg

Distribution with SAE 1-1/4" Flanges
Weight：7kg



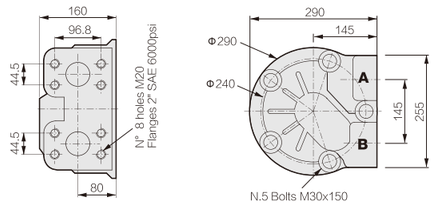
D90
DS6，DM31 系列标准通油盘。
重量: 14.5kg

Standard distributor for DS6, DM31 series motors.
Weight：14.5kg



D250
大流量通油盘
重量: 50kg

High flow distributor
Weight：50kg

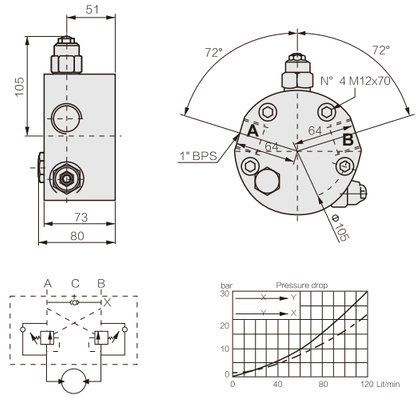


集成式液压配流器
Distributors with integration valve block

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D503
带有双向平衡阀和高压梭阀（C）的通油盘
最大流量120 lit/min
调节比 10: 1
最大压力 265 bar
压力设定=1.3x工作压力
压力设定范围从100bar 到350bar
B口背压可能对阀的作用产生不利影响
重量：5kg

Distributor with double overcentre valve and high pressure pilot line(C)
Max flow 120 lit/min
Pilot ratio 10:1
Max pressure 265 bar.
Pressure setting=1.3x working pressure.
Press.Setting range 100 to 350 bar
Back-pressure in port B may adversely affect operation of the valve
Weight: 5kg

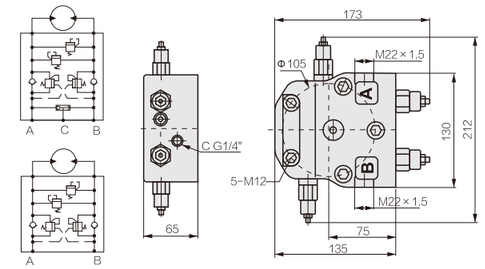


D60221
双向过载阀，双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为60L/min

Bidirectional overload valve
Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min

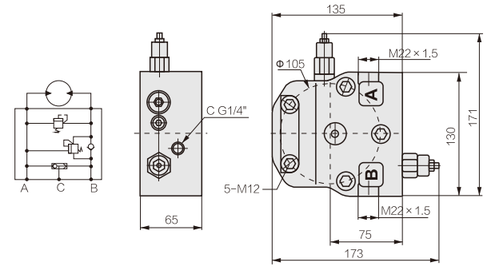
D6022
带双向过载阀，双向平衡阀
最高设定压力35MPa
最大流量为60L/min

Bidirectional overload valve
Bidirectional counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min



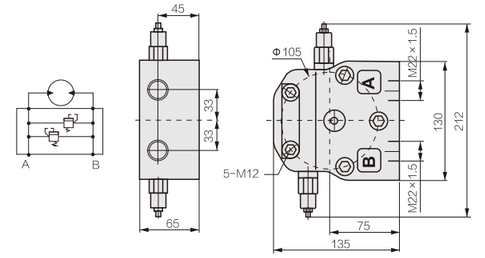
D60111
单向过载阀、单向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为60L/min

Single overload valve
Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min



D6002
双向过载阀
最高设定压力35MPa
最大流量为60L/min

Bidirectional overload valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min



D602

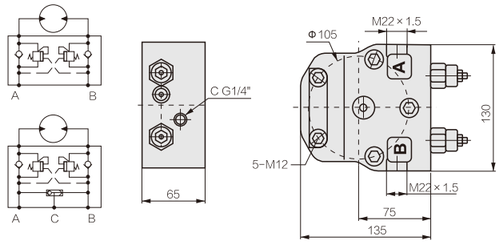
双向平衡阀
最高设定压力35MPa
最大流量为60L/min

Bidirectional counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min

D60201

双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为60L/min

Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min



D601

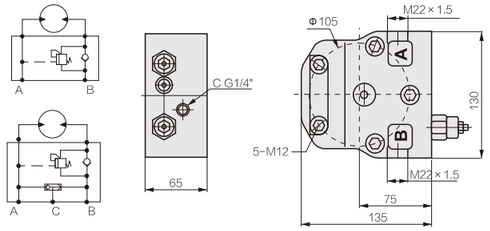
单向平衡阀
最高设定压力35MPa
最大流量为60L/min

Single counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min

D60101

单向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为60L/min

Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 60L/min



D60L

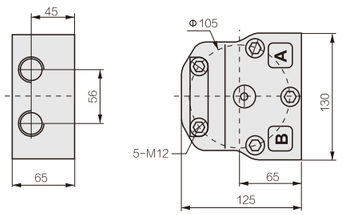
A、B油口为G3/4"
额定压力为32MPa
额定流量为100L/min
(相当于D31)

The diameter of port A and port B is G3/4"
Rated pressure is 32MPa
Rated flow is 100L/min
(Equal to D31)

D60LG

A、B油口为M27×2
额定压力为32MPa
额定流量为100L/min

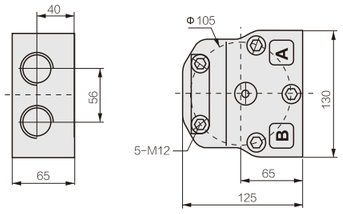
The diameter of port A and port B is M27×2
Rated pressure is 32MPa
Rated flow is 100L/min



D60L0

A、B油口为G1"
额定压力为32MPa
额定流量为100L/min
(相当于D310)

The diameter of port A and port B is G1"
Rated pressure is 35MPa
Rated flow is 100L/min
(Equal to D310)



D120221

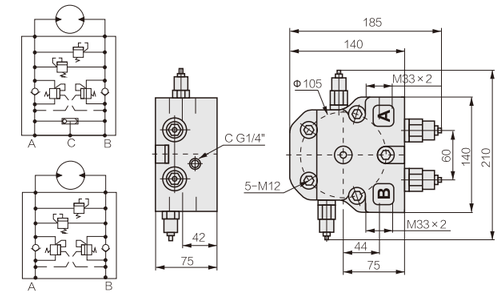
双向过载阀，双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为120L/min

Bidirectional overload valve
Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min

D12022

带双向过载阀，双向平衡阀
最高设定压力35MPa
最大流量为120L/min

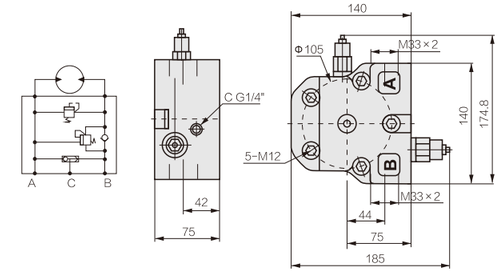
Bidirectional overload valve
Bidirectional counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min



D120111

单向过载阀、单向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为120L/min

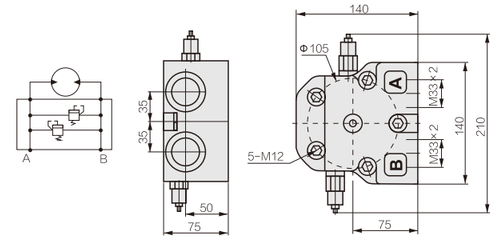
Single overload valve
Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min



D12002

双向过载阀
最高设定压力35MPa
最大流量为120L/min

Bidirectional overload valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min



D1202

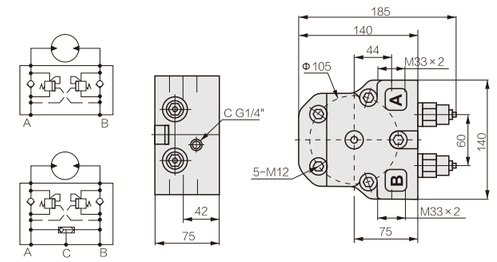
双向平衡阀
最高设定压力35MPa
最大流量为120L/min

Bidirectional counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min

D120201

双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为120L/min

Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min



D1201

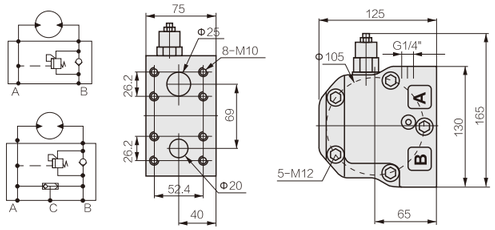
单向平衡阀
最高设定压力35MPa
最大流量为120L/min

Single counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min

D120101

单向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为120L/min

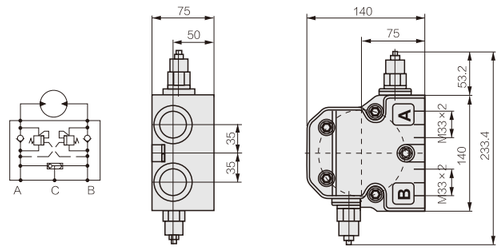
Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min



D120201

双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为120L/min

Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 120L/min



D2401

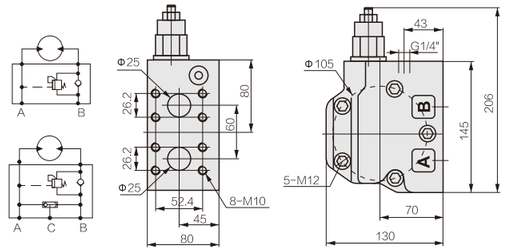
单向平衡阀
最高设定压力35MPa
最大流量为240L/min

Single counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min

D240101

单向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为240L/min

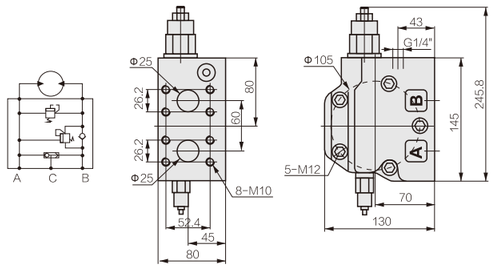
Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min



D240111

单向平衡阀及单向过载阀
高压梭阀
最高设定压力35MPa
最大流量为240L/min

Single overload valve
Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min



D240221

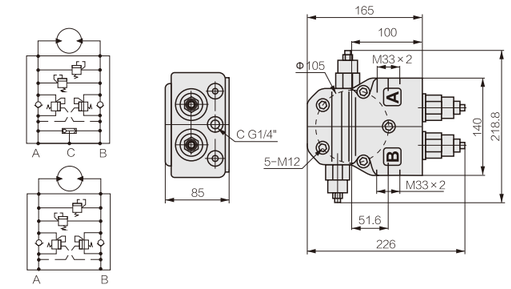
双向过载阀，双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为240L/min

Bidirectional overload valve
Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min

D24022

带双向过载阀及平衡阀
最高设定压力35MPa
最大流量为240L/min

Bidirectional overload valve
Bidirectional counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min



D2402

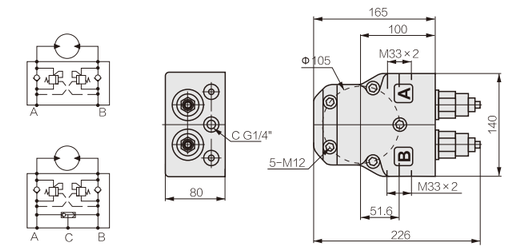
双向平衡阀
最高设定压力35MPa
最大流量为240L/min

Bidirectional counterbalance valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min

D240201

双向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为240L/min

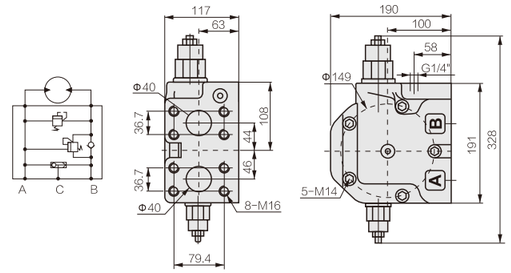
Bidirectional counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 240L/min



D480111

单向平衡阀及单向过载阀
高压梭阀
最高设定压力35MPa
最大流量为480L/min

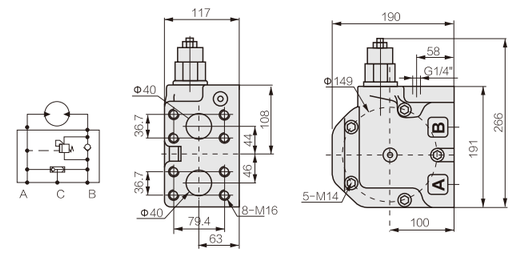
Single overload valve
Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 480L/min



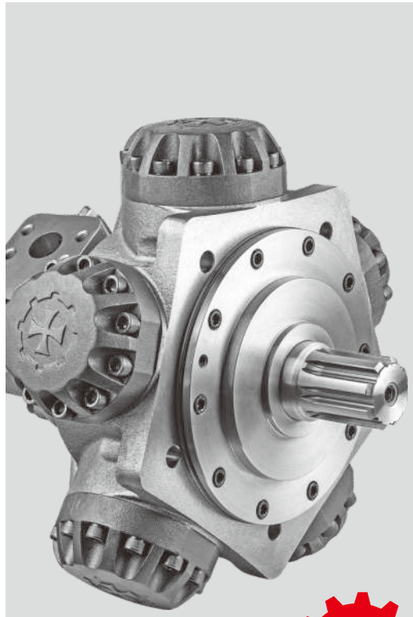
D480101

单向平衡阀
高压梭阀
最高设定压力35MPa
最大流量为480L/min

Single counterbalance valve
High pressure shuttle valve
Maximum setting pressure is 35MPa
Maximum flow is 480L/min



DMG 目录 / Contents



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DMG系列/ DMG Series

专业铸就品质!
Cast of professional quality!

产品特点/ Product Feature

DMG系列液压马达是我公司在DM系列基础上最新研发的高速耐高压大扭矩液压马达，马达外形采用新型圆形结构，内部零件采用特殊工艺处理，有效的提高了马达的综合性能等级。其主要性能特点如下：

1、采用新型圆形柱塞套、壳体，提高了液压马达的密封性和耐压力性；
2、高速大扭矩；
3、运转平稳；
4、宽排量范围可供选择；
5、马达的主要传动件采用特殊材料和先进的热处理工艺，提高了整体使用寿命；
6、该系列马达的安装尺寸与DM系列保持一致，是DM系列马达往高速、高压、高端发展的一款重要产品。

DMG series's hydraulic motor integrates the advantage of DM series' motor.It inherits the DM series hydrostatic balance structure ,and is features with high efficiency,high starting torque,high volumetric efficiency,etc.Main characteristics:

1、The use of a new round of the plunger, the housing, Improve the sealing performance and pressure resistance of hydraulic motor.
2、High speed,high−torque;
3、Stable performance;
4、Wide−range option of displacement;
5、Longer service life due to special materials and advanced heat treatment in main transmitting parts;
6、Same installation data as DM series;an ideal replacement of DM series in higher pressure &performance application.

产品标识说明/ Ordering Code

DMG | 6 | 2700 | B | D90 | 0°

DMG系列马达代号/ Model DMG

系列/ Series

名义排量（ml/r）/ Nominal displacement (ml/r)

输出轴形式/ Shaft options
（1）无字母表示标准矩形花键轴 / no letters spline shaft
（2）B表示平键轴 / B−flat key shaft
（3）I表示内花键轴 / I−internal spline shaft
（4）A表示渐开线花键轴 / A−Involute spline

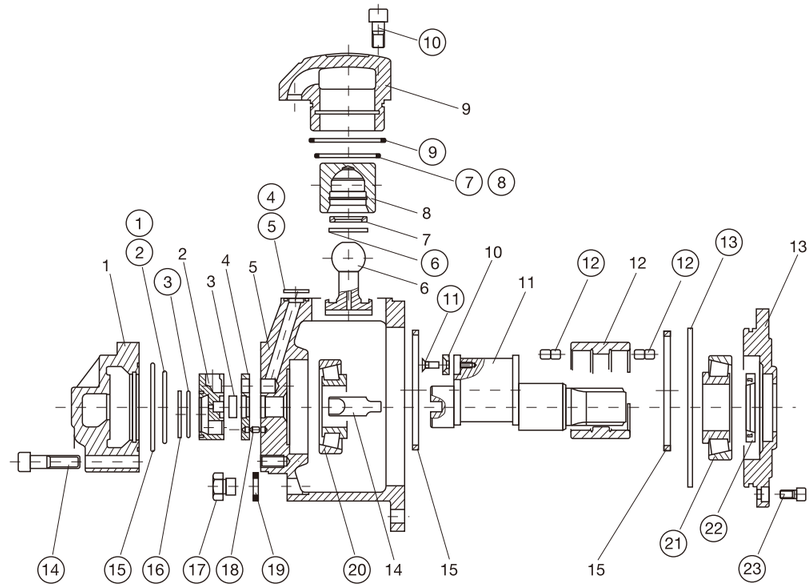
通油盘和进出油口螺纹/ Distributors and I / O port thread
订货时若不注明，则按标准配置，标准螺纹可不标，具体参考B−09页，并在订货时说明。
If you have special request of dimensions, please state it in order, or we will treat it as our standard.
(distributor options, see page B−09)

进出油口方向 / I / O Direction
未写明表示与马达外形图一致，因马达安装孔按72°等分变化，而进出油口方向按90°，180°位置变化，
具体要求可按油口方向图确定，参考B−09页
For I / O port direction, please refer to page B−09.

DM系列与DMG高速高压系列对比
DM series and DMG series of high speed contrast

	DM系列 / DM Series	DMG高性能系列 / DMG High Performance Series
外观 Outlook	传统方形柱塞套及壳体 Traditional square piston bushing and housing	采用新型圆形柱塞套及壳体，并加大了壳体、柱塞套厚度及深度，整体重量增加了10%以上，在外观上更加饱满圆润，部分细节上也更加合理。 With new round piston bushing and housing and increased thickness and depth of piston bushing and housing. 10% total weight increased with more beautiful outlook and reasonable details.
性能 Performance	普通工况下性能稳定 Performance is stable under general applications	1、该系列马达柱塞套和壳体强度增加，并采用我司新形式的柱塞体和柱塞套缸孔运动副，具有较高的功率质量比。有效提高马达综合性能等级。 2、由于采用圆形柱塞套，使柱塞套与壳体的连接紧固螺丝数量成倍增加，使柱塞体和壳体之间密封性加强，大大减少了高压、高速下马达的渗漏，增加了抗冲击力。 3、内部动态元件均采用特殊材料和先进的热处理工艺，并在垫块上增加了特殊喷涂工艺，使之耐磨性、防腐蚀性、抗高温性、抗氧化性都得到提高，使马达能在高速高压下更稳定的工作。 4、马达底部轴承加大采用了加强型满装滚子轴承，有效提高了马达的承载能力，并加强了马达的抗冲击能力。 5、马达封盖止口处增装“O”型圈，大大提高马达与预塑座配合的密封性，预防润滑油的渗漏油现象。 1. Strength of piston bushing and housing is increased. With new type of kinematic pair of piston and piston bushing, the motor has high power–mass ratio and high performance. 2. With new round piston bushing, the number of screws is increased and the connection between piston bushing and housing is strengthened. So the leakage can be avoided during high pressure and high speed. Improve the impact resistance. 3. All internal dynamic parts are treated with special material and advanced heating treatment. The block is treated with special spraying process and so the motor has strong wear resistance, high anti–corrosion, high temperature resistance and resistance to oxidation. The motor could work very stable under high pressure and speed. 4. The bearing on the bottom of the motor is changed to full roller bearing. Improving the capacity and impact resistance of the motor. 5. Additional O–ring is mounted on the motor cover and improving the tightness between motor and pre–plastic seat and to prevent the leakage of lubricating oil.
选型 Model Selection	每个系列马达的最大排量 MAX. displacement of each series DM3–400、DM6–700 DM11–1300、DM16–2400 DM31–5000	每个系列马达的最大排量 / MAX. displacement of each series DMG3–500、DMG4–800、DMG5–1500、DMG6–2700、DMG7–5700 该系列马达排量选用范围更广，且DMG3与DMG4系列马达不需要额外加装法兰板可直接对应大一级马达安装尺寸，对特殊机型可增加内冲洗装置。 The new model has more displacements. DMG3 and DMG4 can be used to replace bigger one without additional mounting plate and additional internal flushing device could be added.
应用领域 Application	普通工况 general applications	在快速机领域，如快餐盒机、PET机、水果筐机、制桶机有较大优势。 Has great advantages in fast–make–up machine, PET machine, fruit basket injection molding machine and barrel injection molding machine.

DMG液压马达结构图 / DMG hydraulic motor structure chart



序号 NO.	零件名称 Name
①	密封环 Seal
②	“O”型圈 “O” Ring
③	“O”型圈 “O” Ring
④	密封环 Seal
⑤	“O”型圈 “O” Ring
⑥	孔用弹性挡圈 Cirelips for holes
⑦	密封环 Cylinde seal
⑧	“O”型圈 “O” Ring

序号 NO.	零件名称 Name
⑨	“O”型圈 “O” Ring
★⑩	内六角螺钉（数量增多） Soket head cap screws
⑪	十字槽螺钉 Cross recessed head screws
⑫	滚柱 Rollers
⑬	“O”型圈 “O” Ring
⑭	内六角螺钉 Soket head cap screws
⑮	“O”型圈 “O” Ring
⑯	密封环 Seal

序号 NO.	零件名称 Name
⑰	堵头 Oil stopper
⑱	定位圆柱销 Parallel pin
⑲	组合垫圈 Washer
★⑳	加强后轴承 Bearing
㉑	前轴承 Bearing
★㉒	进口油封 Shaft seal
㉓	内六角螺钉 Soket head cap screws

序号 NO.	1	2	3	★4	★5	★6	7	8
零件名称 Name	通油盘 Distributor	配油盘 Oil pan	定位环 Bush	涂层铜垫块 Disc	加强壳体 Motor body	硬氮连杆 Link rod	挡圈 Chek ring	柱塞体 Piston
序号 NO.	★9	10	11	12	13	14	15	
零件名称 Name	圆形强化柱塞套 Oyl inder	滚柱封块 Press board for rollers	曲轴 Shaft crank	轴承套 Support ring	封盖 Flange	双头键 Drive pin	卡环 Retaining ring	

* 带★零件表示DMG系列主要区别DM系列部分

DMG系列/ DMG Series

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技术参数/ Technical Specification

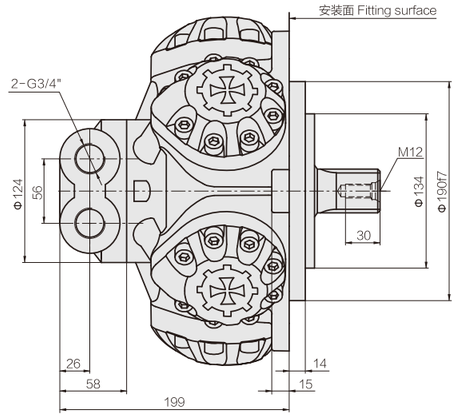
型 号 Model	排量 Displacement	额定压力 Rated Pressure	尖峰压力 Peak Pressure	额定扭矩 Rated Torque	单位理论扭矩 Theoric Specific Torque	转速范围 Speed Range	重量 Weight
	ml/r	Mpa	Mpa	N.m	N.m/Mpa	r/min	kg
DMG3-175	181	18	21	492	27	8～650	45
DMG3-200	201	18	21	546	30	8～600	
DMG3-220	222	18	21	604	34	8～550	
DMG3-250	254	18	21	691	38	8～500	
DMG3-300	289	18	21	786	44	8～450	
DMG3-350	340	16	18	822	51	6～450	
DMG3-400	380	16	18	918	57	6～400	
DMG3-450	437	16	18	1056	66	6～380	
DMG3-500	492	16	18	1189	74	6～350	
DMG4-350	346	18	21	941	52	5～450	71
DMG4-400	397	18	21	1079	60	5～450	
DMG4-450	452	18	21	1229	68	5～450	
DMG4-500	491	16	20	1187	74	5～420	
DMG4-600	594	16	20	1436	90	5～400	
DMG4-700	683	16	20	1651	103	5～380	
DMG4-750	754	16	20	1822	114	5～350	
DMG4-800	804	16	20	1943	121	5～320	
DMG5-700	701	18	21	1906	106	5～400	108
DMG5-800	782	18	21	2126	118	5～400	
DMG5-900	894	18	21	2431	135	5～380	
DMG5-1000	981	16	20	2371	148	5～320	
DMG5-1100	1104	16	20	2668	167	5～320	
DMG5-1200	1234	16	20	2982	186	5～320	
DMG5-1300	1301	16	20	3144	197	5～300	
DMG5-1350	1360	16	20	3287	205	5～280	
DMG5-1400	1397	16	20	3376	211	5～260	
DMG5-1500	1519	16	20	3671	229	5～250	
DMG6-1300	1339	18	21	3641	202	5～300	188
DMG6-1400	1413	18	21	3842	213	5～300	
DMG6-1600	1648	18	21	4481	249	5～280	
DMG6-1800	1815	18	21	4935	274	5～260	
DMG6-2000	2035	16	20	4918	307	5～250	
DMG6-2400	2267	16	20	5479	342	5～240	
DMG6-2500	2513	16	20	6073	380	5～230	
DMG6-2700	2708	16	20	6545	409	5～220	
DMG7-2500	2553	18	21	6941	386	5～230	316
DMG7-2800	2683	18	21	7295	405	5～220	
DMG7-3000	3063	18	21	8328	463	5～200	
DMG7-3150	3218	18	21	8749	486	5～180	
DMG7-3500	3461	18	21	9410	523	5～170	
DMG7-4000	4153	16	20	10037	627	5～170	
DMG7-4500	4522	16	20	10929	683	5～160	
DMG7-5000	4828	16	20	11668	729	5～140	
DMG7-5700	5704	14	18	12062	862	5～120	

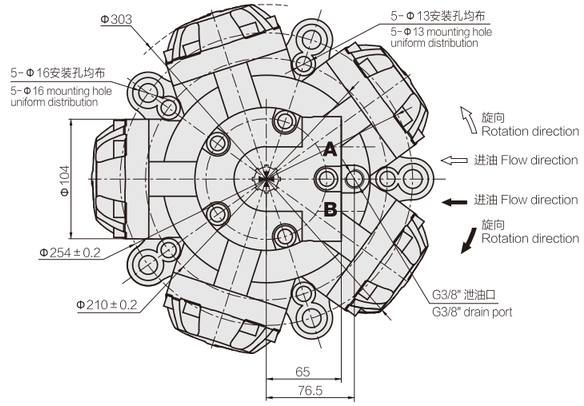
DMG3系列/ DMG3 Series

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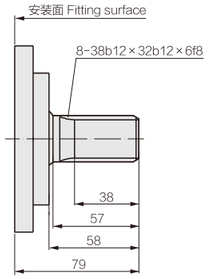
DMG3-175~500 外形尺寸 Dimension

进出油口为D31的安装尺寸 / With D31 Distributor

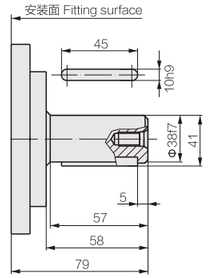




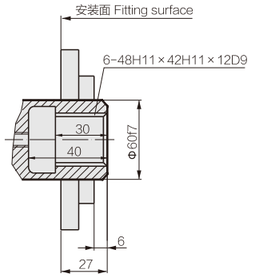
标准外花键：DMG3-**
External spline



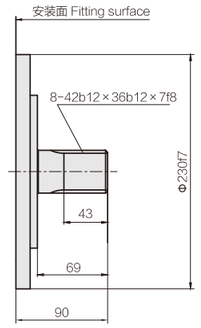
标准平键：DMG3-B**
Flat key

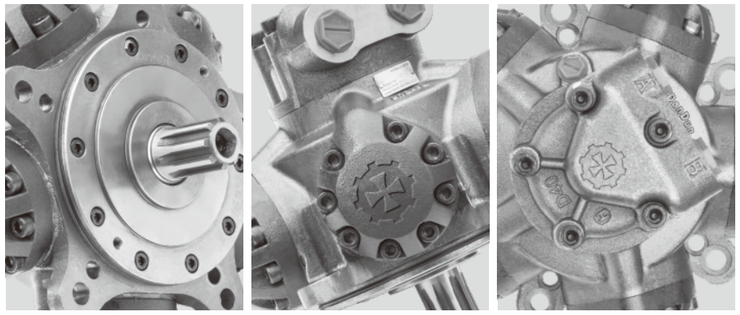


标准内花键：DMG3-I**
Internal spline



DMG3--6M**



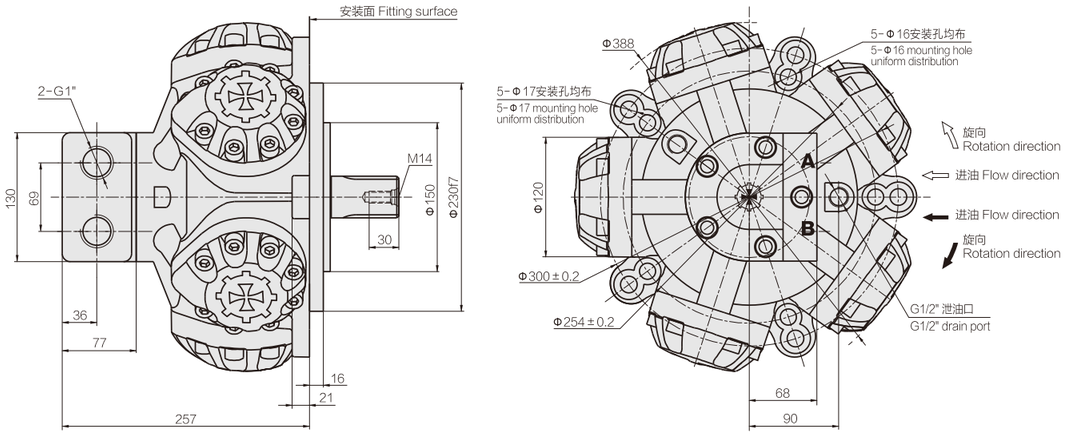


DMG4系列/ DMG4 Series

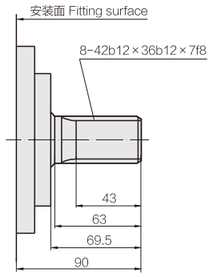
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DMG4-350~800 外形尺寸 Dimension

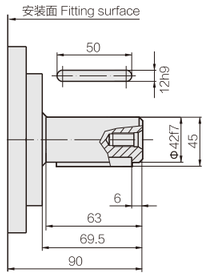
进出油口为D40的安装尺寸 / With D40 Distributor



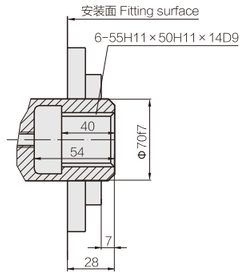
标准外花键：DMG4-**
External spline



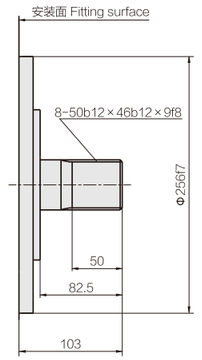
标准平键：DMG4-B**
Flat key

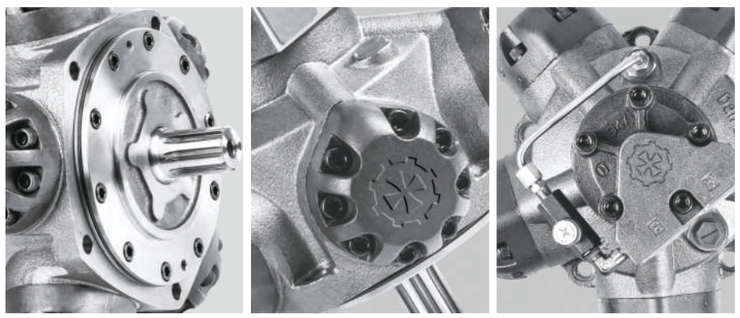


标准内花键：DMG4-I**
Internal spline



DMG4-**-11M





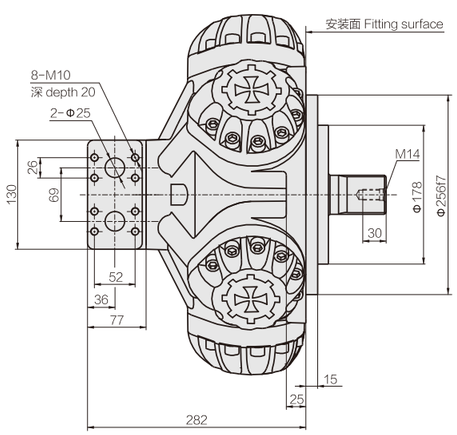
带冲洗装置
Has the cleaning device

DMG5系列/ DMG5 Series

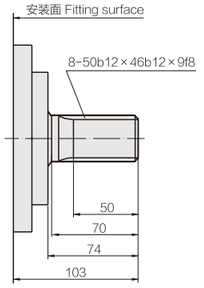
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DMG5-700~1500 外形尺寸 Dimension

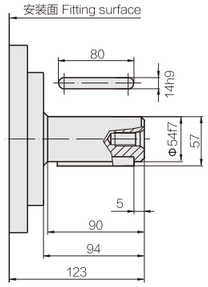
进出油口为D47的安装尺寸 / With D47 Distributor



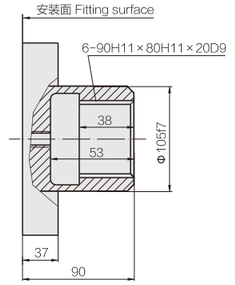
标准外花键：DMG5-**
External spline



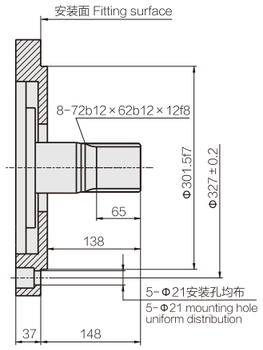
标准平键：DMG5-B**
Flat key

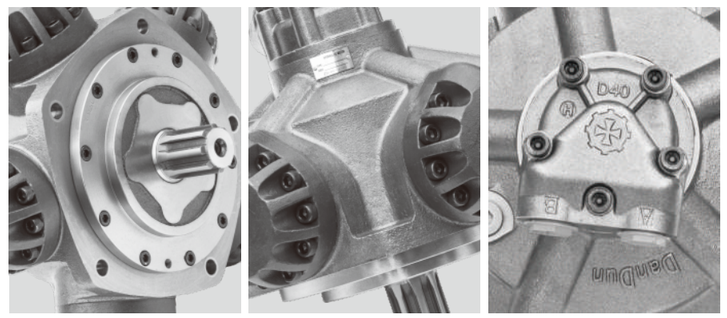


标准内花键：DMG5-I**
Internal spline



DMG5-**-16M



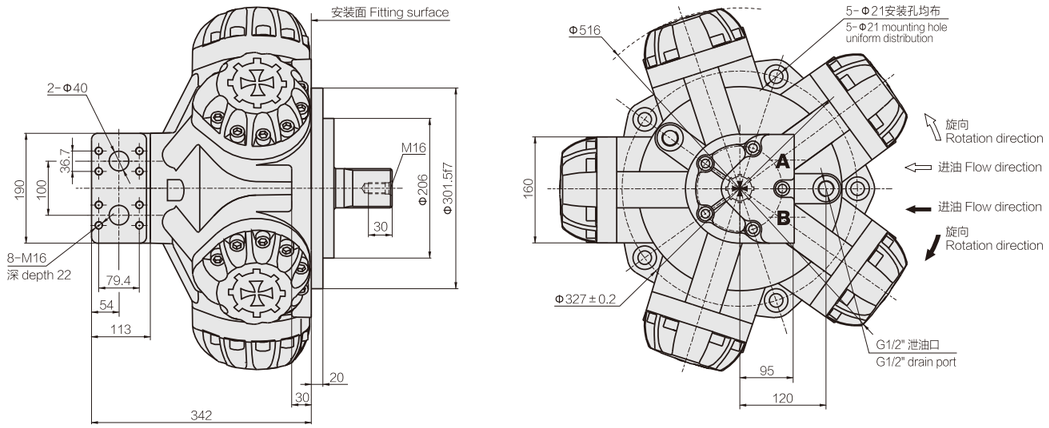


DMG6系列/ DMG6 Series

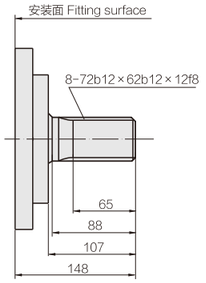
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DMG6-1300~2700 外形尺寸 Dimension

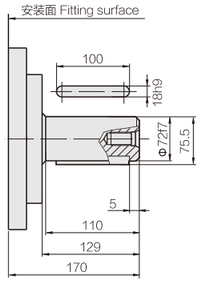
进出油口为D90的安装尺寸 / With D90 Distributor



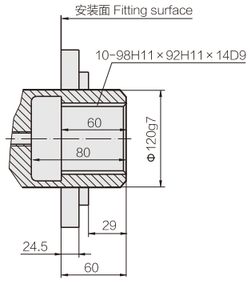
标准外花键：DMG6-**
External spline



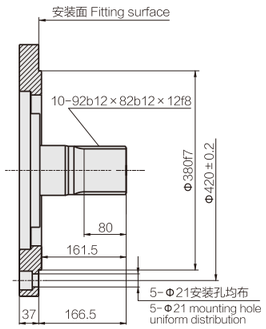
标准平键：DMG6-B**
Flat key

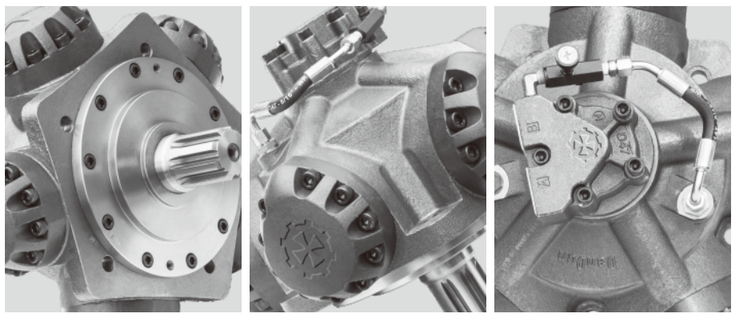


标准内花键：DMG6-I**
Internal spline



DMG6-**-31M





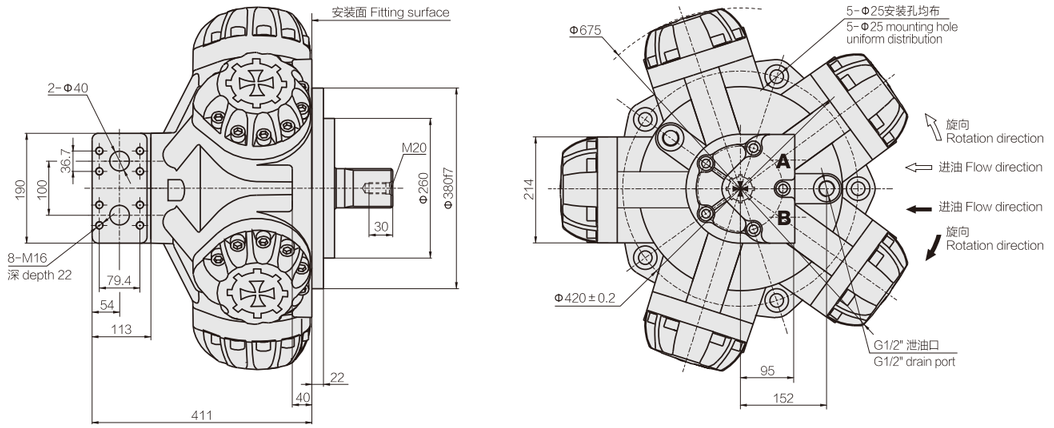
带冲洗装置
Has the cleaning device

DMG7系列/ DMG7 Series

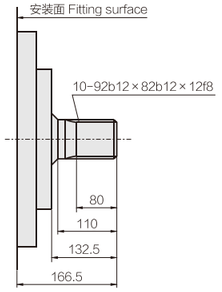
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DMG7-2500~5700 外形尺寸 Dimension

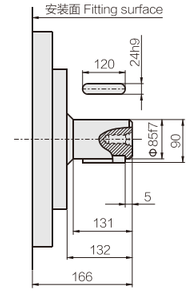
进出油口为D90的安装尺寸 / With D90 Distributor



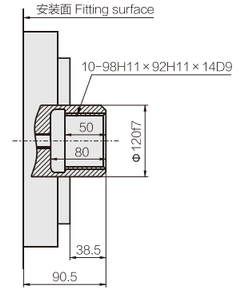
标准外花键：DMG7-**
External spline



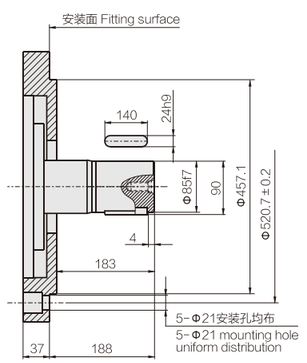
标准平键：DMG7-B**
Flat key

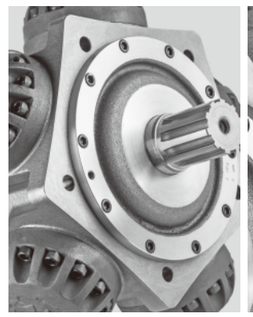


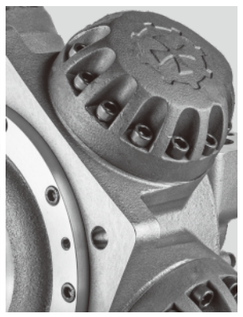
标准内花键：DMG7-I**
Internal spline

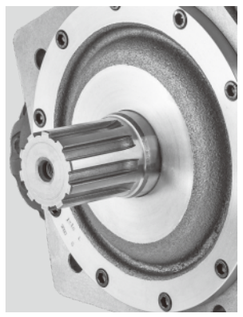


DMG7-**-70M





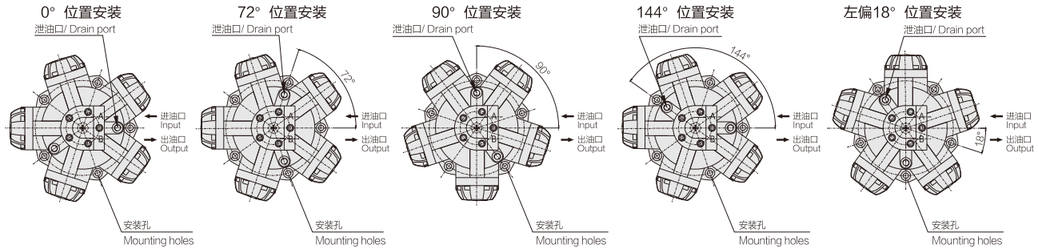




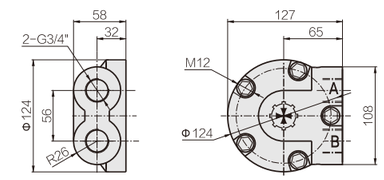
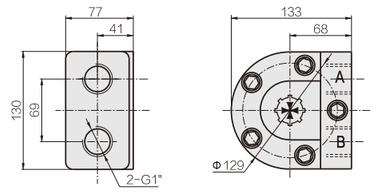
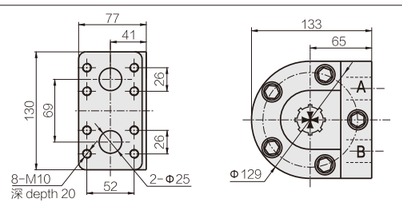
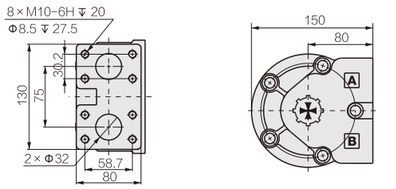
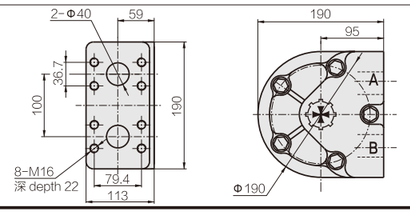
通油盘 / Distributor

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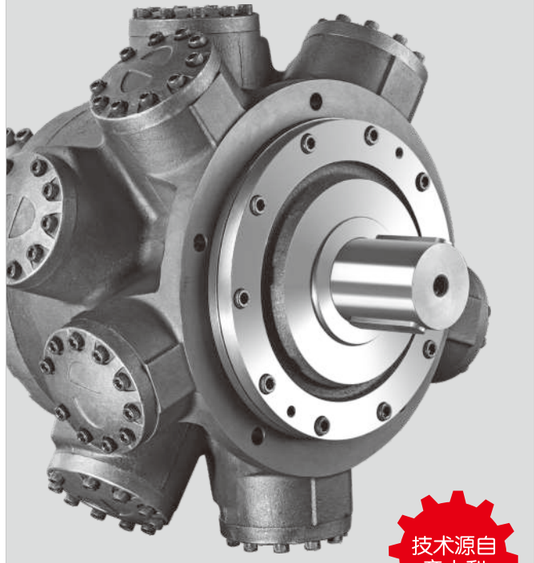
进出油口与泄漏油口的相对位置 / Port Direction



通油盘 / Distributor

型号 Type	标准螺纹 Standard Thread	可选用螺纹 Thread Options	尺寸 DImenslons
D31	G3/4"	G1" Z3/4" Z1" ZG3/4" ZG1" M27×2 M33×2	
D40	G1"	G3/4" Z3/4" Z1" ZG3/4 ZG1" M27×2 M33×2	
D47	Φ25	需配连接法兰 Need to be equipped with connection flange	
D75	Φ32	需配连接法兰 Need to be equipped with connection flange	
D90	Φ40	需配连接法兰 Need to be equipped with connection flange	

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DF700系列 / DF700 Series	C-05

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产品特点/ Product Feature

DF 系列液压马达在吸取了国内外曲轴连杆式马达静压平衡优点的基础上，经过了不断试验、改进、提高而成。该系列马达壳体强度高，内部动态元件承载能力大。由于采用静压平衡的形式，减少了内部摩擦力，因此减少了热量产生以及与此相关的负面效应。

其主要特点如下：

1、由于柱塞、连杆、偏心套设计成静压平衡，减少了连杆与偏心套的摩擦力及柱塞体的侧向力，降低了球铰副的接触比压，这些均减少了传动过程中的摩擦损失。因而DF系列液压马达具有高的机效率及高的起动扭矩（起动时的机械效率0.90以上）的特点；
2、马达的主要传动件采用特殊材料和先进的热处量工艺，提高了整体使用寿命；
3、密封环采用特殊材料及结构，减少了泄漏，提高了容积效率；
4、采用静压平衡技术的轴配流器，防止了配流器的倾斜，密封性能好，泄漏少，可在高压（最高压力可达29MPa）下进行连续工作；
5、该系列马达的外形及安装尺寸与原装Staffa基本相同，性能参数与原装Staffa相近，是替代进口Staffa马达的理想选择。

由于DF系列液压马达具有上述一系列特点，因而可广泛应用于塑料机械、船舶甲板机械、矿山建筑工和机械、起重运输设备、重型冶金机械、石油煤矿机械、机床、轻工设备、钻机等各种机械的液压传动系统中，特别使用于液压塑机的螺杆驱动、提升绞盘、卷筒的驱动、各种回转机械的驱动等传动机械中。

DF series' hydraulic motor is the achievement of our year's experience of hydrostatic balance technology. It features with higher intensity of casing and larger carrying capacity of internal dynamic components. Reduced internal friction, heat, and all negative effects are realized by hydrostatic balance technology.

Main Characteristics:

1. The hydrostatic balance built between the piston, con-rod and eccentric sets reduces the friction between con-rod and eccentric sets, and also reduce the lateral friction on pistons, and contact pressure on ball the socket, thus to reduce the friction loss while on load. With above, DF series' motor features with high mechanical efficiency and starting torque (The Mechanical efficiency while starting is up to 90%);
2. Special materials and advanced treatment on main driving parts prolong the overall service life;
3. Special materials and structure of seals reduce the leakage and improve the volumetric efficiency;
4. Hydrostatic balance shaft distributor prevents the shaft from tilting, thus to get excellent sealing, less leakage, and continuous running under high pressure(Max.pressure reaches to 29Mpa);
5. Ideal replacement of STAFFA motor with interchangeable mounting and performance.

DF series' motor is widely applied in all kinds of hydraulic transmission systems, such as plastic injection molding machines, deck machinery, construction machinery, hoist, transport vehicle, heavy metallurgical machinery, petroleum & mining machinery, light industrial equipments, drilling machinery, and so on.



产品标识说明/ Ordering Code

DF | 400 | 6800 | P | FM4 | **

1、DF系列马达代号 / Model DF
2、系列 / Series
3、名义排量（ml/r）/ Nominal displacement (ml/r)
4、输出轴形式 / Shaft options
（1）P表示平键轴 / P-flat key shaft
（2）Q表示内花键轴 / Q-internal spline shaft
（3）S&Z表示渐开线花键轴 / S&Z-involute spline
（4）a表示标准矩形花键轴 / a-standard rectangle spline shaft
5、进出油口的形式 / Distributor
6、其他设计参数 / Other

技术参数/ Technical Specification

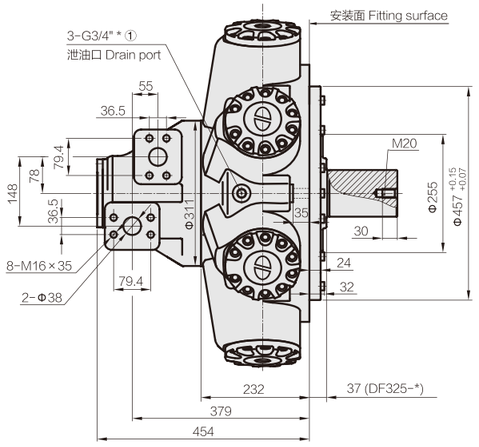
型 号 Model	排量 Displacement	额定压力 Rated Pressure	尖峰压力 Peak Pressure	额定扭矩 Rated Torque	单位理论扭矩 Theoric Specific Torque	转速范围 Speed Range	重量 Weight
	ml/r	Mpa	Mpa	N.m	N.m/Mpa	r/min	kg
DF325-3150	3290	20	25	9416	472	8-125	550
DF325-3500	3517	20	25	10062	503	8-125	
DF325-4000	3971	20	25	11362	568	8-125	
DF325-4300	4311	20	25	12338	617	8-120	
DF325-5300	5309	20	25	15194	759	8-100	
DF400-6000	6158	20	25	17625	881	5-120	720
DF400-6800	6807	20	25	19481	974	5-120	
DF400-8000	8066	20	25	23085	1154	5-120	
DF700-9000	8990	20	25	25744	1287	5-100	1032
DF700-10000	10004	20	25	28631	1432	5-100	
DF700-11600	11590	20	25	33170	1658	5-100	
DF700-12600	12599	20	25	37261	1863	5-100	

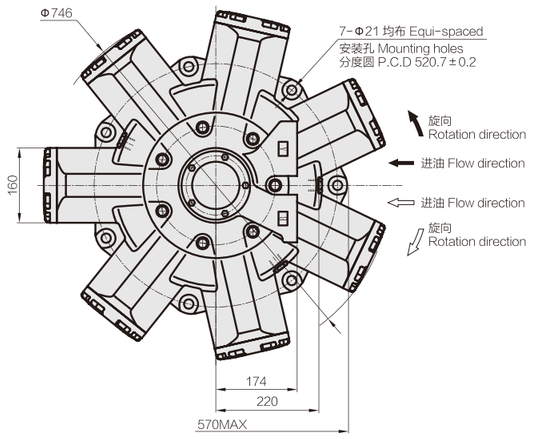
DF325系列/ DF325 Series

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DF325-3150~5300 外形尺寸 Dimension

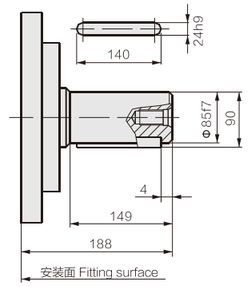
进出油口为FM4的安装尺寸 / With FM4 Distributor



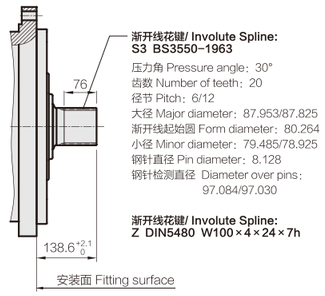


* ①可选配UNF3/4"-16接头 / Option: UNF3/4"-16

DF325-P



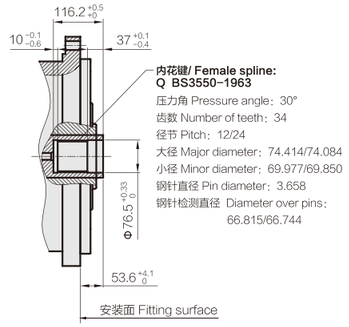
DF325-S3&Z



渐开线花键/ Involute Spline:
S3 BS3550-1963
压力角 Pressure angle：30°
齿数 Number of teeth：20
径节 Pitch：6/12
大径 Major diameter：87.953/87.825
渐开线起始圆 Form diameter：80.264
小径 Minor diameter：79.485/78.925
钢针直径 Pin diameter：8.128
钢针检测直径 Diameter over pins：
97.084/97.030

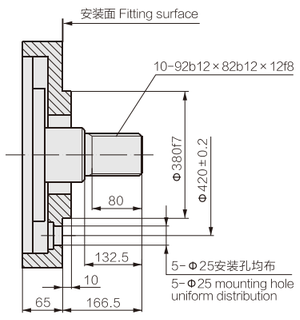
渐开线花键/ Involute Spline:
Z DIN5480 W100×4×24×7h

DF325-Q

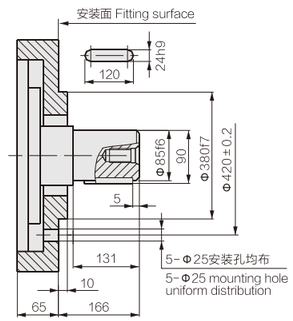


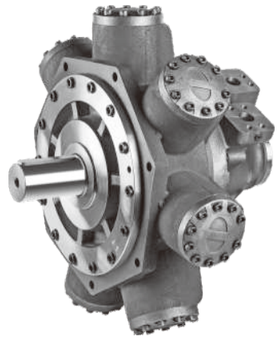
内花键/ Female spline:
Q BS3550-1963
压力角 Pressure angle：30°
齿数 Number of teeth：34
径节 Pitch：12/24
大径 Major diameter：74.414/74.084
小径 Minor diameter：69.977/69.850
钢针直径 Pin diameter：3.658
钢针检测直径 Diameter over pins：
66.815/66.744

DF325-****a1**



DF325-****B1**



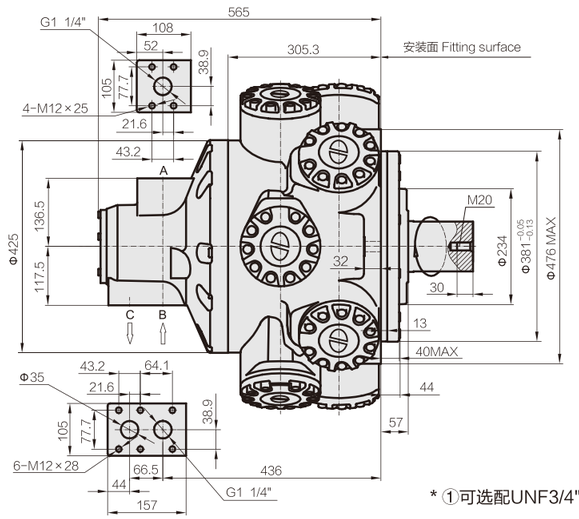


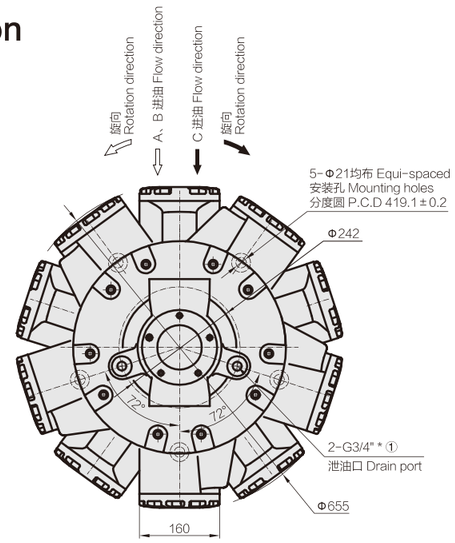
DF400系列/ DF400 Series

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DF400-6000~8000 外形尺寸 Dimension

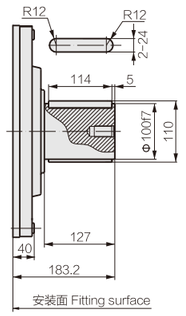
进出油口为F04的安装尺寸 / With F04 Distributor



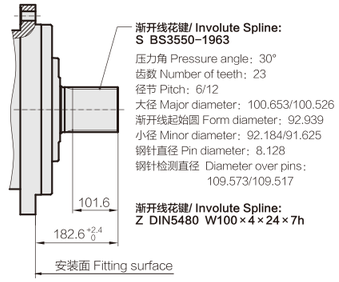


* ①可选配UNF3/4"-16接头 / Option: UNF3/4"-16

DF400-P



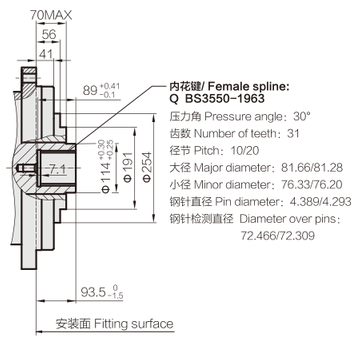
DF400-S&Z



渐开线花键/ Involute Spline:
S BS3550-1963
压力角 Pressure angle：30°
齿数 Number of teeth：23
径节 Pitch：6/12
大径 Major diameter：100.653/100.526
渐开线起始圆 Form diameter：92.939
小径 Minor diameter：92.184/91.625
钢针直径 Pin diameter：8.128
钢针检测直径 Diameter over pins：
109.573/109.517

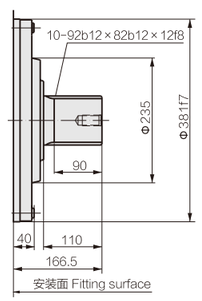
渐开线花键/ Involute Spline:
Z DIN5480 W100×4×24×7h

DF400-Q

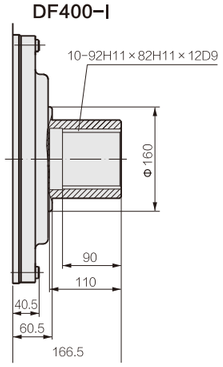


内花键/ Female spline:
Q BS3550-1963
压力角 Pressure angle：30°
齿数 Number of teeth：31
径节 Pitch：10/20
大径 Major diameter：81.66/81.28
小径 Minor diameter：76.33/76.20
钢针直径 Pin diameter：4.389/4.293
钢针检测直径 Diameter over pins：
72.466/72.309

DF400-a1

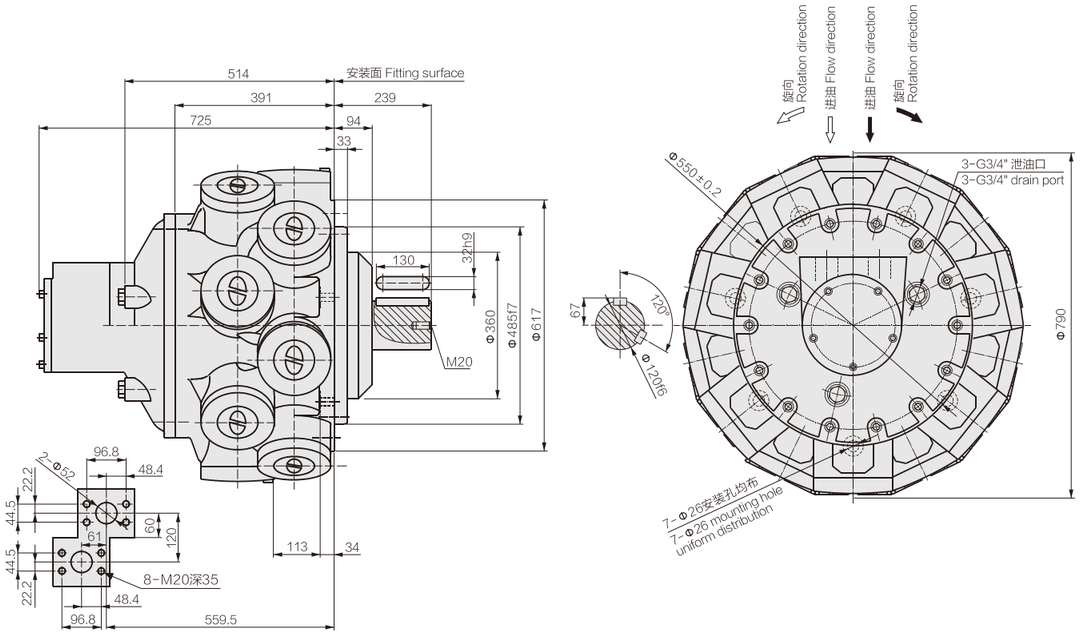


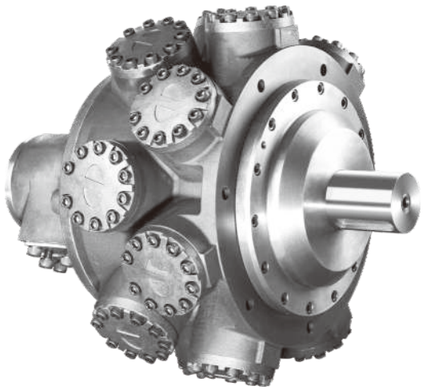
DF400-I



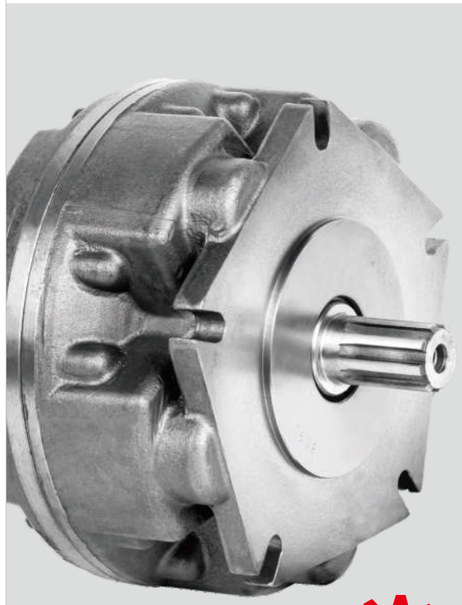


DF700-9000~12600 外形尺寸 Dimension





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DANDUN

产品概述

DS系列液压马达是本公司集合多年生产实践经验，在原有的技术基础上进行了设计改进。使DS系列马达壳体强度增加，内部动态元件承载能力增强。这一特点使该系列马达具有很高的连续功率范围。由于机械效率和容积效率高，同时又减少了内部单位负载力，因此减少了热量产生及与此相关的负面效应。其主要特点如下：

1、由于活塞与摆缸不存在侧向力，活塞底部设计成静压平衡，活塞与曲轴之间通过滚动轴承传递扭力，这些均减少了传力过程中的摩擦损失。因而 DS 系列液压马达具有很高的机械效率、高的启动扭矩 (启动时机械效率 92% 以上) 的特点。

2、平面配流器简单可靠，密封性好，泄漏很少。活塞与摆缸之间用塑料活塞密封无泄漏，因而有很高的容积效率 (可达98%）。

3、由于结构上减少了摩擦损失，提高了密封性能，因而低速稳定性好，可以在 10r/min 工况下平稳运转，调速范围大（速度调节比可达1000）。

4、由于活塞与轴承套通过卡环贴牢不存在间隙，因而该系列液压马达可以作泵工况下运转，当进油口封闭后马达可在自由轮工况下高速动转。

5、该系列液压马达压力高，最高压力可达31.5MPa。重量轻、体积小、功率高。

6、由于结构简单，设计合理，采用符合能力大的轴承，因而工作可靠，寿命长、噪音低，传动轴允许承受径向力，旋转方向可逆。

产品适用范围

由于DS系列液压马达具有上述一系列特点，故广泛用于塑料机械，轻工机械、冶金机械、矿山机械、起重运输设备、重型机械、石油煤矿机械、船舶甲板机械、机床、塑料、地质钻探设备等各种机械的液压传动系统中。特别适用于提升绞盘、卷筒机械、各种回转机械驱动、履带和轮子行走机构的驱动等传动机械中。

Product overview

DS series hydraulic motor is a new type of product of our company, which is based on years practical experience. The design is improved in the foundation on the original technologies. DS hydraulic motor mainly has the following characteristics:

As the piston and the tilt cylinder have no side force ,the piston bottom is designed to be static pressure balance. The torsional force is transferring between the piston and the crankshaft through rolling bearing, so the friction loss during the transferring process of force is reduced. Therefore, DS series hydraulic motor has such features as: very high mechanical efficiency and comparatively high startup torque (mechanical efficiency of over 0.92 during startup).

The plane distributor (patented technology)is simple and reliable with perfect seal performance and almost no leakage. The plastic piston ring is used to seal between the piston and the tilt cylinder, so it has very high volumetric efficiency (can be as high as 0.98).

As the structure of this product has reduced friction loss and enhanced the seal performance, the product has perfect stability at low speed. It can stably run at 10r/min working condition and has big speed regulation range.

As the piston is jointed closely with bearing bushing without any clearance, this series of hydraulic motor can run at pump working condition.

This series of hydraulic motor has high pressure, (the highest pressure can reach 31.5 Mpa) light weight, small bulk and high specific power.

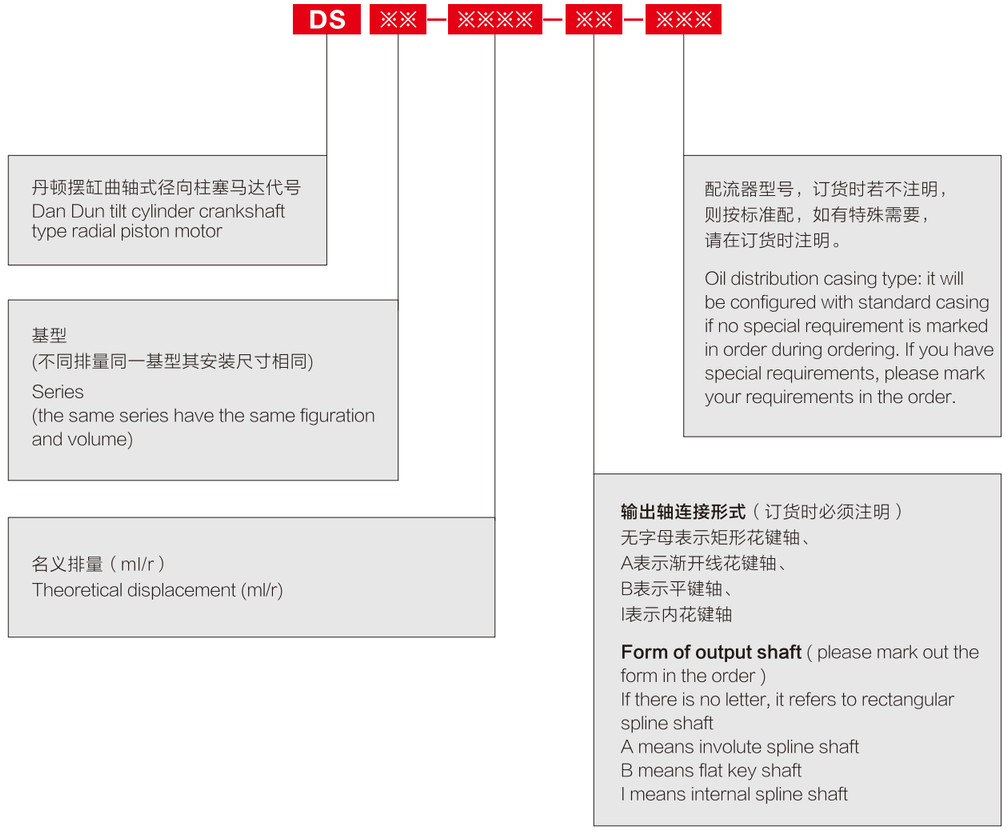
As this series hydraulic motor has simple structure, reasonable design and adopts bearing with big load ability, it can work reliably and has long life and low noise; the transmission shaft allows endure radial load and the rotational direction is reversible.

Products application range

As DS series hydraulic motor has the above characteristics, it has wide application range. It can be applied in the hydraulic transmission systems of various types of machinery in plastic injection machine, light industry machine, engineering machine, metallurgical equipment, petroleum, coal mine, geological prospecting, railway, ship, environment protection, machine tool and agricultural machine industries.

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型号说明 Description of model



型号举例

DS2-420BD31表示基型为2系列DS液压马达，其名义排量为 425ml/r；输出轴为平键轴，配油器型号为 D31。订货时请按此填写完整的型号，若有特殊要求请在订货合同中详细说明。

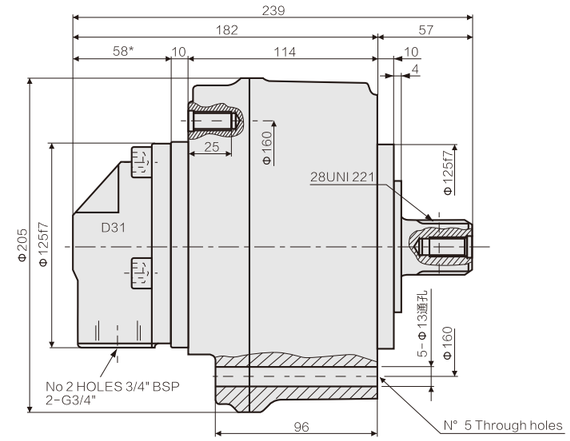
Example of model selection

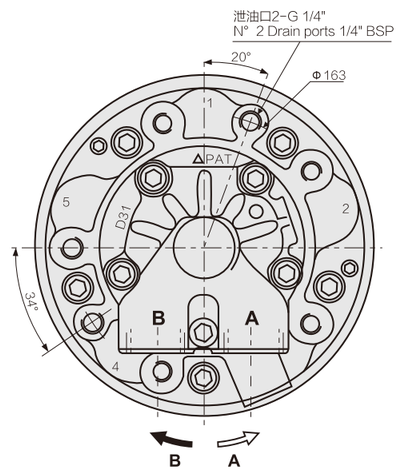
DS2-420BD31 means the basic type is 2 series DS hydraulic motor, and it's theoretical displacement is 425ml/r; output shaft 's type is flat key shaft, the distributor 's type is D31. When you place an order, please fill in the complete model according to this form. If you have special requirements please give a detailed description in the order contract.

技术参数 Technical data

型 号 Model	理论排量 Displacement (ml/r)	额定压力 Rated Pressure (Mpa)	尖峰压力 Peak Pressure (Mpa)	额定扭矩 Rated Torque (N.m)	单位扭矩 Theoric Specific Torque (N.m/Mpa)	连续转速 Speed range (r/min)	最高转速 Max.cont Speed (r/min)	重量 Weight (kg)
DS05-60	59	21	25	193	9	1~700	1000	22
DS05-75	74	21	25	242	12	1~700	1000	
DS05-90	86	21	25	281	13	1~700	1000	
DS05-110	115	21	25	376	18	1~650	900	
DS05-130	129	21	25	422	20	1~650	900	
DS05-150	151	21	25	494	24	1~650	900	
DS05-170	166	21	25	543	26	1~600	800	
DS05-200	191	21	25	625	30	1~600	800	
DS1-100	99	21	25	324	15	1~550	1000	31
DS1-150	154	21	25	504	24	1~550	1000	
DS1-175	172	21	25	563	27	1~550	900	
DS1-200	201	21	25	658	31	1~550	800	
DS1-250	243	21	25	795	38	1~450	700	
DS1-300	290	21	25	949	45	1~350	650	
DS1-320	314	21	25	1027	49	1~350	600	
DS1-350	340	21	25	1113	53	1~350	600	
DS2-200	192	21	25	628	30	1~550	800	51
DS2-250	251	21	25	821	39	1~550	800	
DS2-300	304	21	25	995	47	1~500	750	
DS2-350	347	21	25	1135	54	1~500	750	
DS2-420	425	21	25	1391	66	1~450	750	
DS2-500	493	21	25	1613	77	1~450	700	
DS2-600	565	21	25	1849	88	1~450	700	
DS2-630	623	21	25	2039	97	1~400	650	
DS3-425	426	21	25	1394	66	1~500	650	87
DS3-500	486	21	25	1590	76	1~450	650	
DS3-600	595	21	25	1947	93	1~450	575	
DS3-700	690	21	25	2258	108	1~400	500	
DS3-800	792	21	25	2592	123	1~400	500	
DS3-900	873	21	25	2857	136	1~350	400	
DS3-1000	987	21	25	3230	154	1~300	350	
DS4-600	616	21	25	2016	96	1~400	550	120
DS4-800	793	21	25	2595	124	1~350	550	
DS4-900	904	21	25	2958	141	1~325	450	
DS4-1000	1022	21	25	3344	159	1~300	400	
DS4-1100	1116	21	25	3652	174	1~275	400	
DS4-1300	1316	21	25	4306	205	1~225	350	
DS5-800	807	21	25	2641	126	1~325	450	175
DS5-1000	1039	21	25	3400	162	1~300	450	
DS5-1200	1185	21	25	3878	185	1~300	400	
DS5-1300	1340	21	25	4385	209	1~300	400	
DS5-1450	1462	21	25	4784	228	1~275	350	
DS5-1600	1634	21	25	5347	255	1~250	300	
DS5-1800	1816	21	25	5942	283	1~250	300	
DS5-2000	2007	21	25	6567	313	1~200	250	
DS6-1700	1690	21	25	5530	263	1~250	400	275
DS6-2100	2127	21	25	6960	331	1~225	350	
DS6-2500	2513	21	25	8223	392	1~200	300	
DS6-3000	3041	21	25	9951	474	1~175	250	

外形尺寸图 Contour dimension

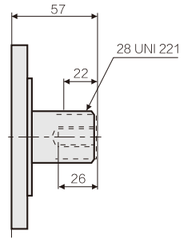




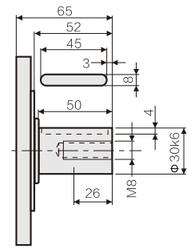
配油器长度 D31=58mm; D40(标准)=77mm
Distributor lenght：D31=58mm; D40(standard)=77mm

DS05液压马达可完全替代GM05, INM05, XHS05
Ds05 can completely replace GM05, INM05,and XHS05.

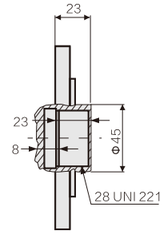
标准外花键：DS05-**
External spline



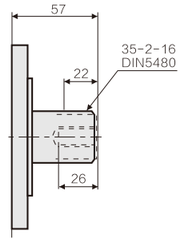
标准平键：DS05-B**
Flat key



标准内花键：DS05-I**
Internal spline

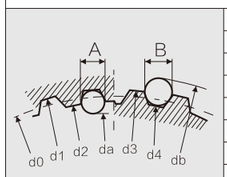


渐开线花键：DS05-A**
Involute spline



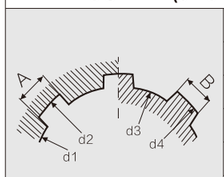
花键参数 Spline parameters

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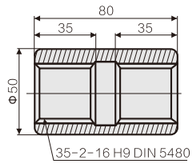
d0	Φ32.0	
d1	Φ35.0 $^{+0.520}_{+0}$	H14
d2	Φ31.0 $^{+0.160}_{+0}$	H11
A	Φ3.5	
da	Φ27.711	H11
d3	Φ34.6 $^{-0}_{-0.160}$	h11
d4	Φ30.6 $^{-0}_{-0.520}$	h14
B	Φ4.0	
db	Φ39.000	f8

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d1	Φ28.0 $^{+0.021}_{+0}$	H7
d2	Φ34.1 $^{+0.016}_{+0}$	H11
A	7.0 $^{+0.028}_{+0.013}$	F7
d3	Φ28.0 $^{-0.007}_{-0.020}$	g6
d4	Φ34.0 $^{-0.065}_{-0.160}$	h14
B	7.0 $^{-0.013}_{-0.026}$	f7

联轴器 Couplings



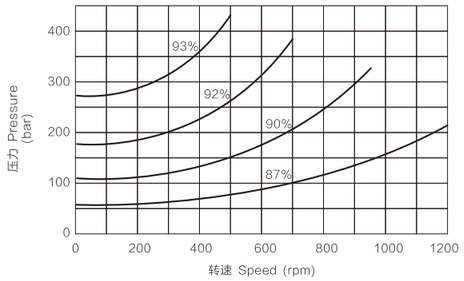
DS05系列/ DS05 Series

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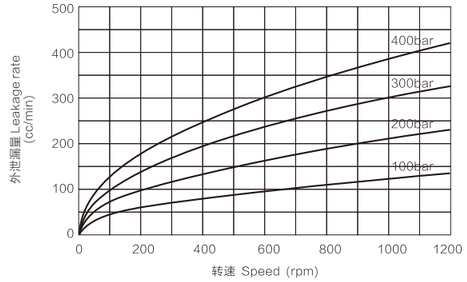
特性曲线 Performance

下列表为排量150cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 150 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

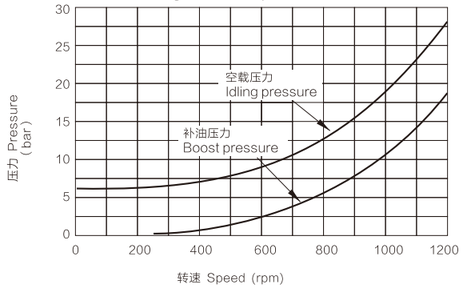
机械效率
Mechanical efficiency



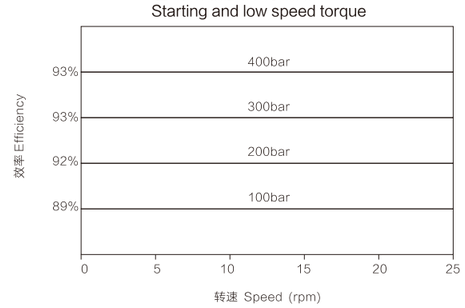
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



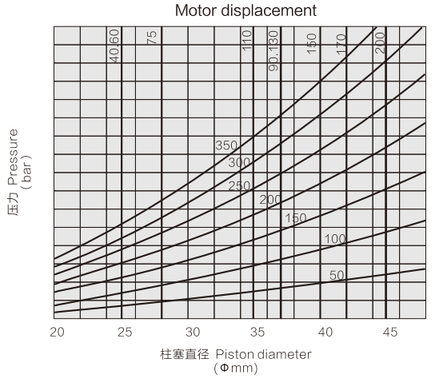
起动和低速时机械效率
Starting and low speed torque



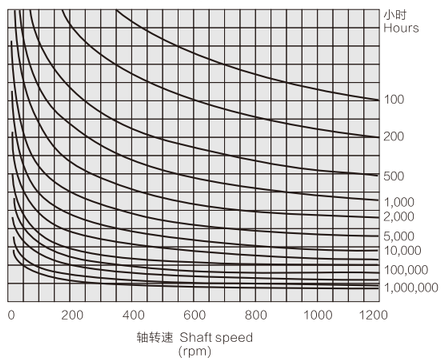
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B_{50}寿命）大约是B_{10}寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B_{50} lifetime) is approximately 5 times longer than B10's.

马达排量
Motor displacement



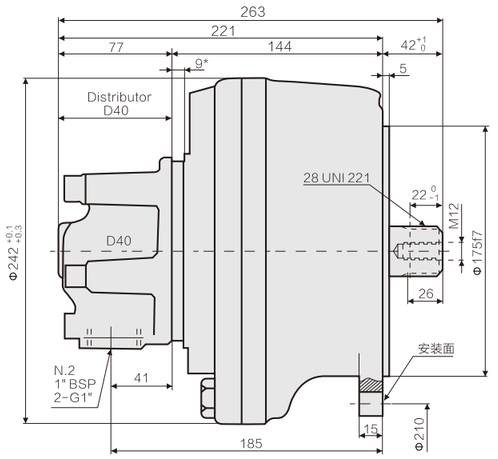
B_{10} 寿命
B_{10} Lifetime

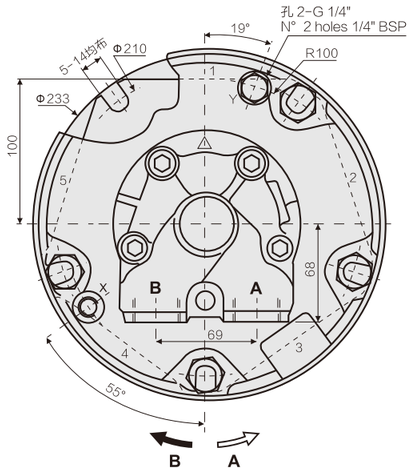


DS1系列/ DS1 Series

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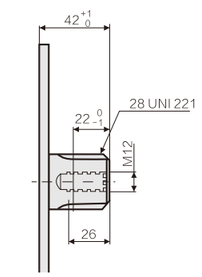
外形尺寸图 Contour dimension



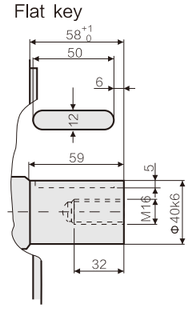


DS1液压马达可完全替代GM1, INM1, XHS1
DS1 can completely replace GM1, INM1,and XHS1.

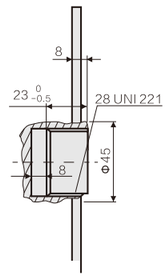
标准外花键：DS1−**
External spline



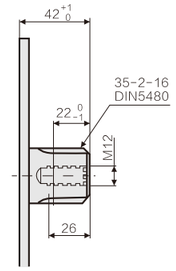
标准平键：DS1−B**
Flat key



标准内花键：DS1−I**
Internal spline

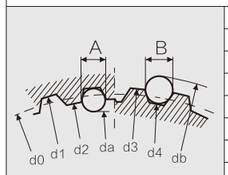


渐开线花键：DS1−A**
Involute spline



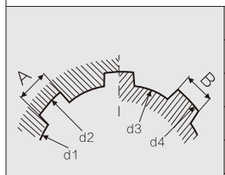
花键参数 Spline parameters

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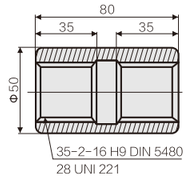
d0	Φ32.0	
d1	Φ35.0 +0.520 +0	H14
d2	Φ31.0 +0.160 +0	H11
A	Φ3.5	
da	Φ27.711	H11
d3	Φ34.6 −0 −0.160	h11
d4	Φ30.6 −0 −0.520	h14
B	Φ4.0	
db	Φ39.000	f8

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d1	Φ28.0 +0.021 +0	H7
d2	Φ34.1 +0.016 +0	H11
A	7.0 +0.028	F7
d3	Φ28.0 −0.007 −0.020	g6
d4	Φ34.0 −0.065 −0.160	h14
B	7.0 −0.028	f7

联轴器 Couplings



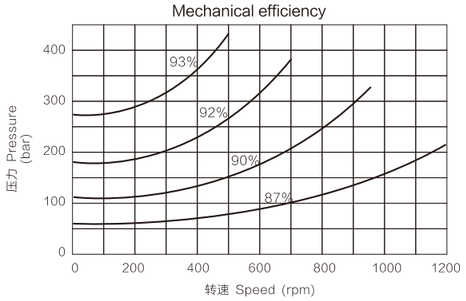
DS1系列/ DS1 Series

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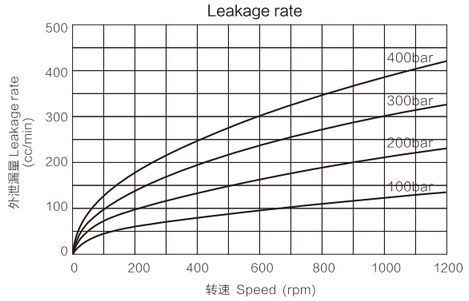
特性曲线 Performance

下列表为排量150cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 150 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

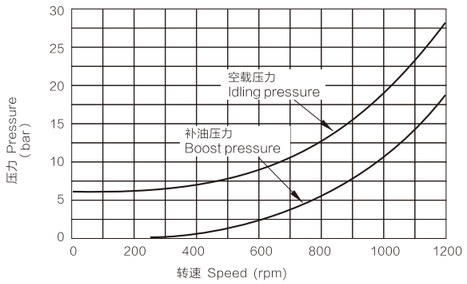
机械效率
Mechanical efficiency



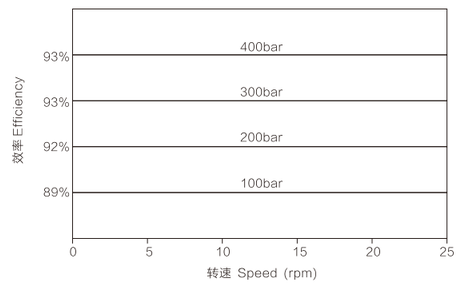
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



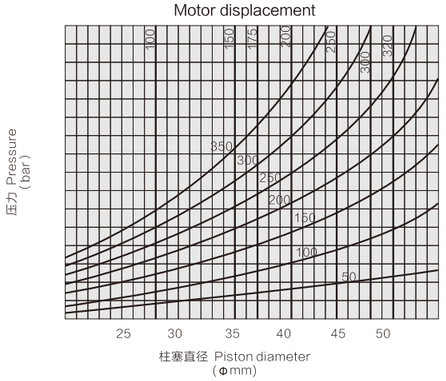
起动和低速时机械效率
Starting and low speed torque



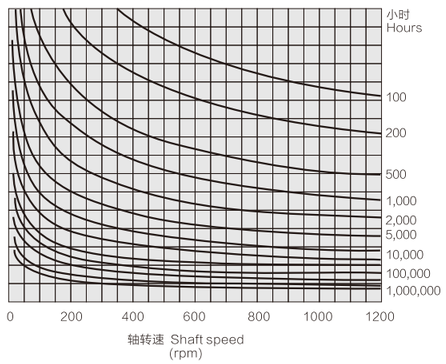
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B_{50}寿命）大约是B_{10}寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B_{50} lifetime) is approximately 5 times longer than B10's.

马达排量
Motor displacement



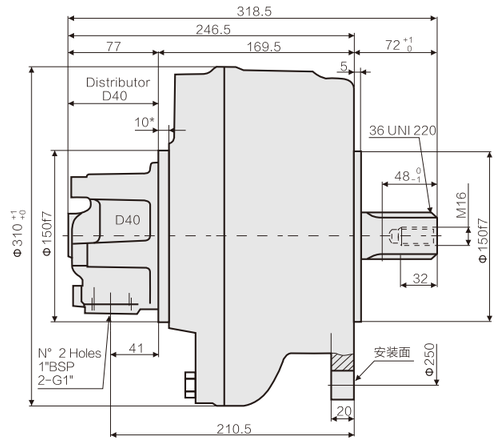
B_{10} 寿命
B_{10} Lifetime

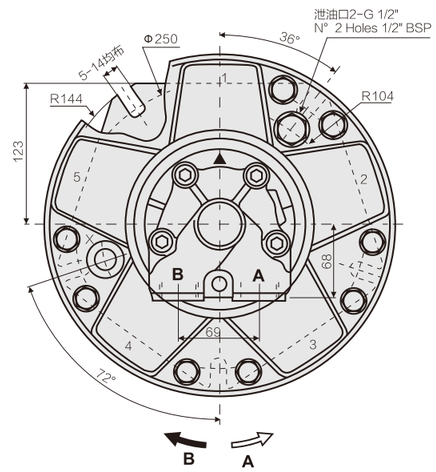


DS2系列/ DS2 Series

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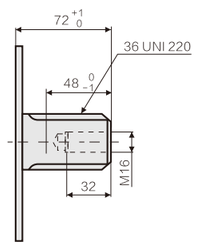
外形尺寸图 Contour dimension



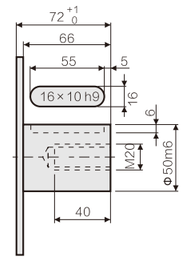


DS2液压马达可完全替代GM2, INM2, XHS2
DS2 can completely replace GM2, INM2,and XHS2.

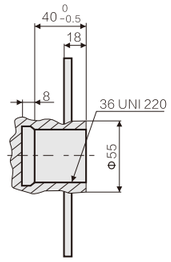
标准外花键：DS2-**
External spline



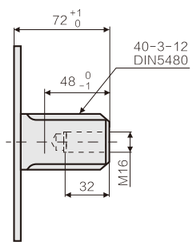
标准平键：DS2-B**
Flat key



标准内花键：DS2-I**
Internal spline

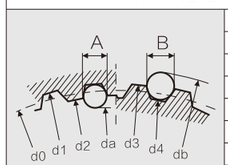


渐开线花键：DS2-A**
Involute spline



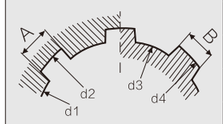
花键参数 Spline parameters

40-3-12 DIN5480



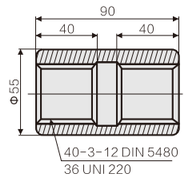
d0	Φ36.0	
d1	Φ40.0 $^{+0.620}_{+0}$	H14
d2	Φ34.0 $^{+0.160}_{+0}$	H11
A	Φ5.25	
da	Φ28.964	H11
d3	Φ39.4 $^{-0}_{-0.160}$	h11
d4	Φ33.4 $^{-0}_{-0.620}$	h14
B	Φ6.0	
db	Φ45.989	f8

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d1	Φ36.0 $^{+0.025}_{+0}$	H7
d2	Φ40.0 $^{+0.016}_{+0}$	H11
A	7.0 $^{+0.028}$	F7
d3	Φ36.0 $^{-0.009}_{-0.025}$	g6
d4	Φ40.0 $^{-0.065}_{-0.160}$	d11
B	7.0 $^{-0.028}$	f7

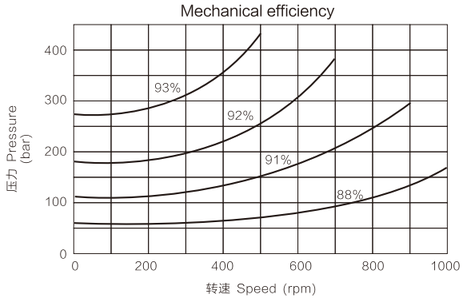
联轴器 Couplings



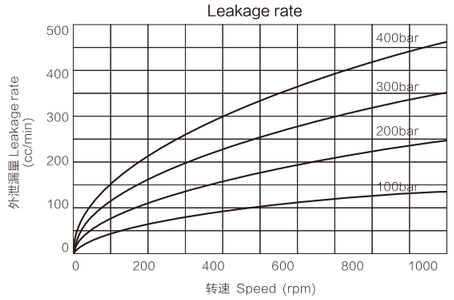
特性曲线 Performance

下列表为排量300cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 300 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

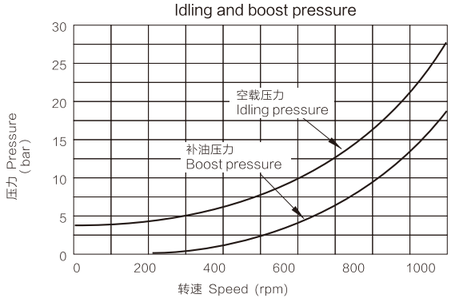
机械效率
Mechanical efficiency



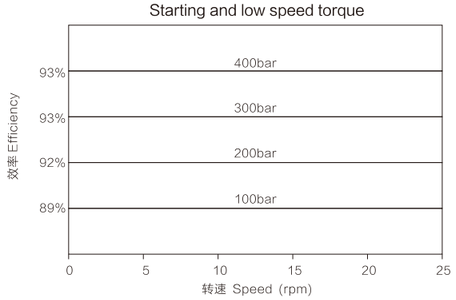
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



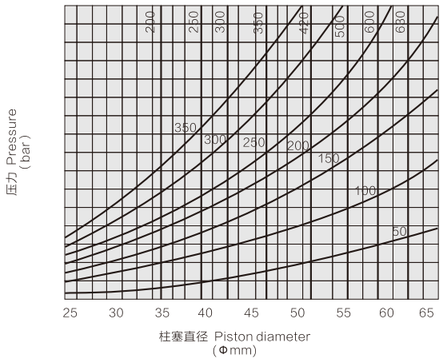
起动和低速时机械效率
Starting and low speed torque



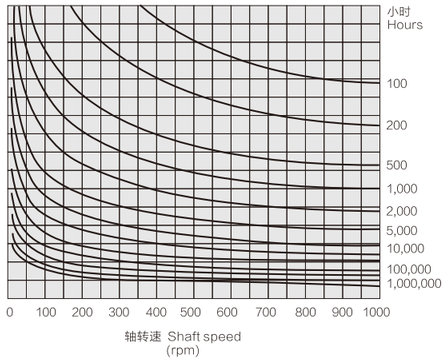
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B50寿命）大约是B10寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B50 lifetime) is approximately 5 times longer than B10's.

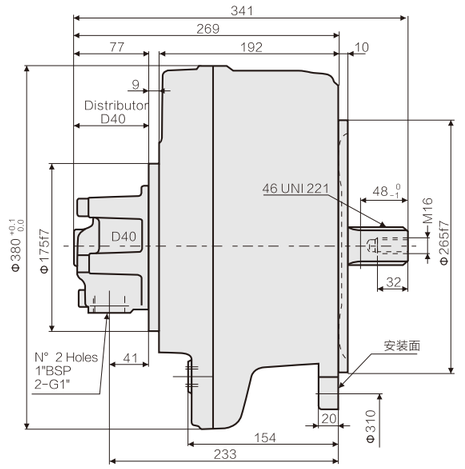
马达排量
Motor displacement

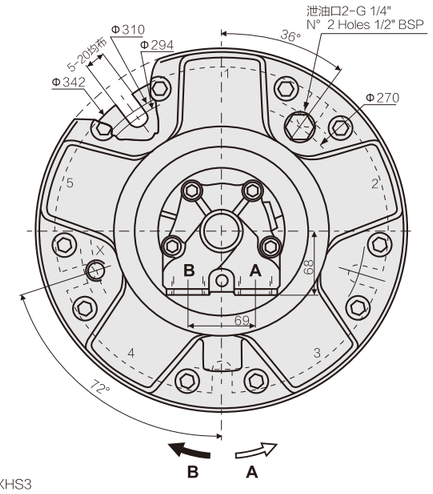


B10 寿命
B10 Lifetime



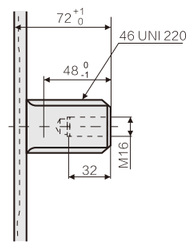
外形尺寸图 Contour dimension



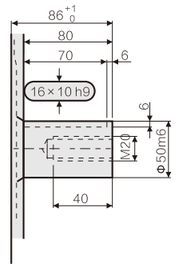


DS3液压马达可完全替代GM3, INM3, XHS3
DS3 can completely replace GM3, INM3,and XHS3.

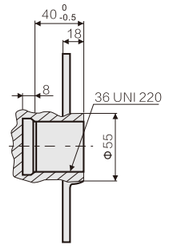
标准外花键：DS3−**
External spline



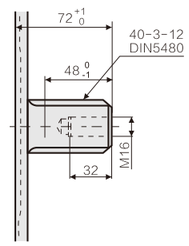
标准平键：DS3−B**
Flat key



标准内花键：DS3−I**
Internal spline

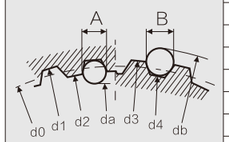


渐开线花键：DS3−A**
Involute spline



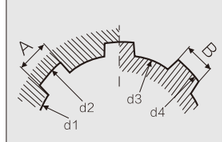
花键参数 Spline parameters

40-3-12 DIN5480



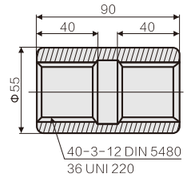
d0	Φ36.0	
d1	Φ40.0 +0.620 +0	H14
d2	Φ34.0 +0.160 +0	H11
A	Φ5.25	
da	Φ28.964	H11
d3	Φ39.4 −0 −0.160	h11
d4	Φ33.4 −0 −0.620	h14
B	Φ6.0	
db	Φ45.989	f8

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d1	Φ46.0 +0.030 +0	H7
d2	Φ54.0 +0.190 +0	H11
A	9.0 +0.028	F7
d3	Φ46.0 −0.009 −0.025	g6
d4	Φ54.0 −0.100 −0.290	d11
B	7.0 −0.028	f7

联轴器 Couplings



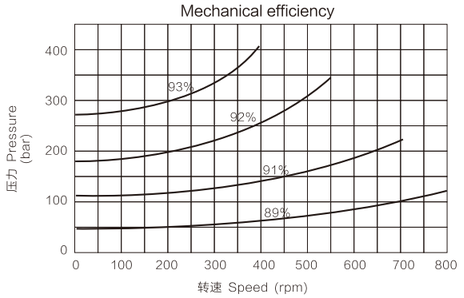
DS3系列/ DS3 Series

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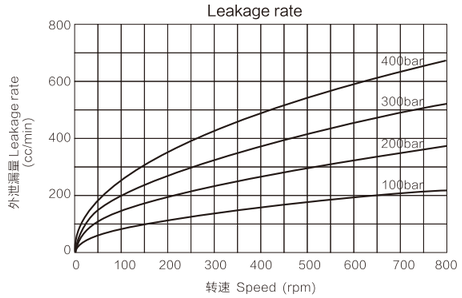
特性曲线 Performance

下列表为排量600cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 600 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

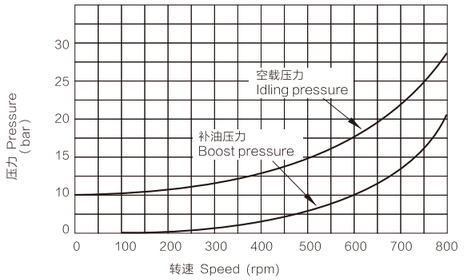
机械效率
Mechanical efficiency



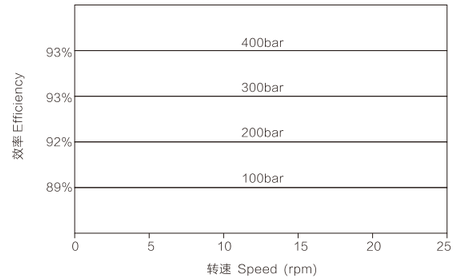
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



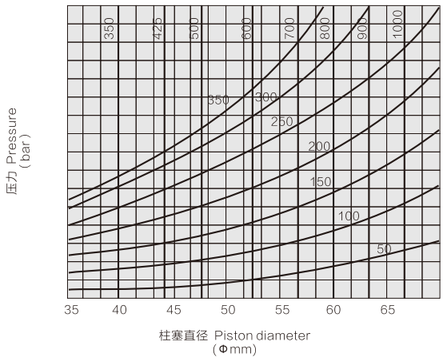
起动和低速时机械效率
Starting and low speed torque



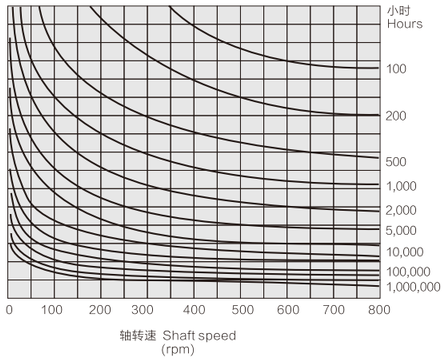
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B_{50}寿命）大约是B_{10}寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B_{50} lifetime) is approximately 5 times longer than B10's.

马达排量
Motor displacement



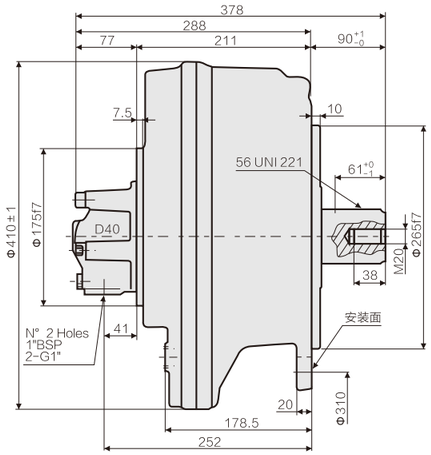
B_{10} 寿命
B_{10} Lifetime

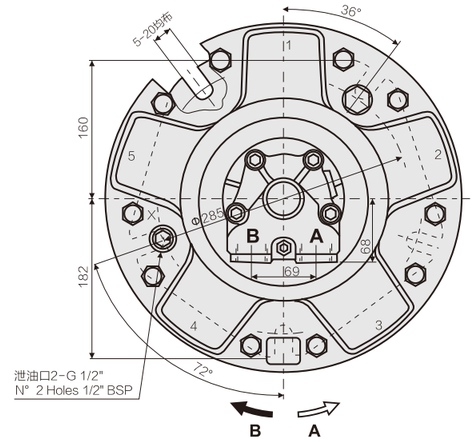


DS4系列/ DS4 Series

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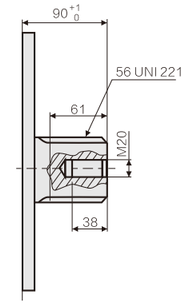
外形尺寸图 Contour dimension



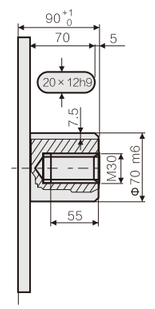


DS4液压马达可完全替代GM4, INM4, XHS4
DS4 can completely replace GM4, INM4,and XHS4.

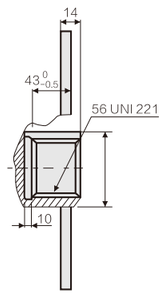
标准外花键：DS4−**
External spline



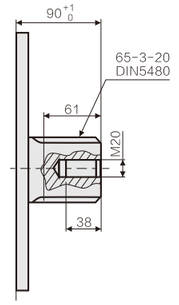
标准平键：DS4−B**
Flat key



标准内花键：DS4−I**
Internal spline

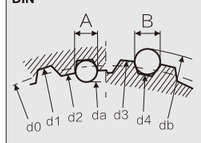


渐开线花键：DS4−A**
Involute spline

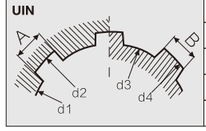


花键参数 Spline parameters

DIN

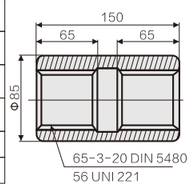


UIN



	65-3-20 DIN5480	55-3-26 DIN5428	55-3-17 DIN5428	56 UNI 221(10-56-65 DIN 5428)	
d0	Φ60.0	Φ52.0	Φ51.0	d1	Φ56.0 +0.030 +0 H7
d1	Φ65.0 +0.740 +0 H14	Φ55.0 +0.300 +0 H12	Φ55.0 +0.740 +0 H14	d2	Φ65.0 +0.190 +0 H11
d2	Φ59.0 +0.190 +0 H11	Φ50.0 +0.160 +0 H11	Φ49.0 +0.160 +0 H11	A	10.0 +0.028 +0.013 F7
A	Φ5.25	Φ3.5	Φ5.25	d3	Φ56 −0.010 −0.029 g6
da	Φ54.101 H11	Φ46.902 H10	Φ43.807 H11	d4	Φ65.0 −0.100 −0.190 H11
d3	Φ64.4 −0 −0.190 h11	Φ54.5 −0 −0.190 h11	Φ54.4 −0 −0.190 h11	B	10 −0.028 −0.013 f7
d4	Φ58.4 −0 −0.740 h14	Φ49.0 −0 −0.300 h12	Φ48.4 −0 −0.620 h14		
B	Φ6.0	Φ3.5	Φ6.0		
db	Φ70.999 f8	Φ56.953 e9	Φ60.873 f8		

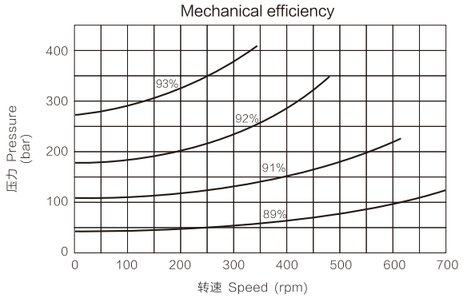
联轴器 Couplings



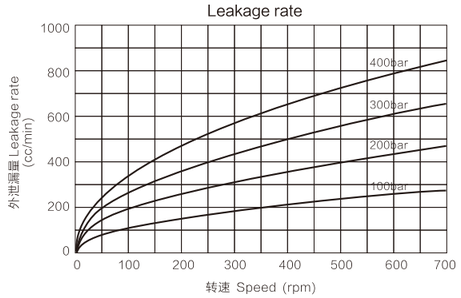
特性曲线 Performance

下列表为排量900cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 900 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

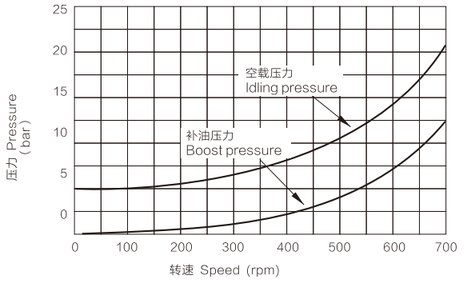
机械效率
Mechanical efficiency



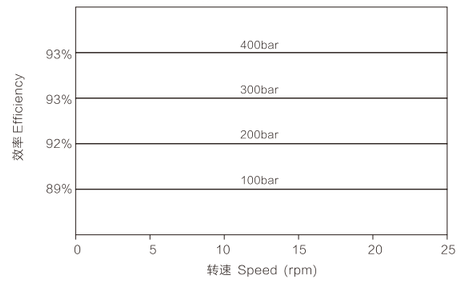
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



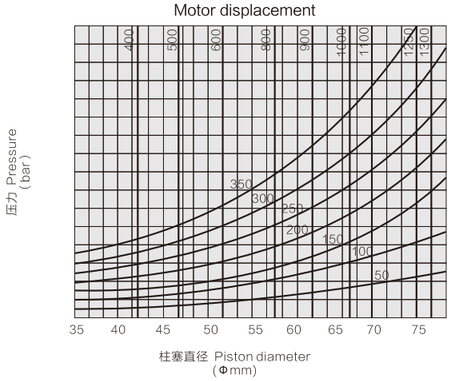
起动和低速时机械效率
Starting and low speed torque



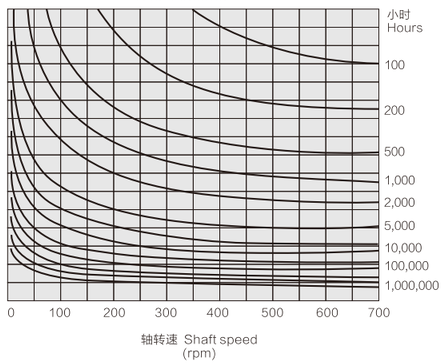
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B_{50}寿命）大约是B_{10}寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B_{50} lifetime) is approximately 5 times longer than B10's.

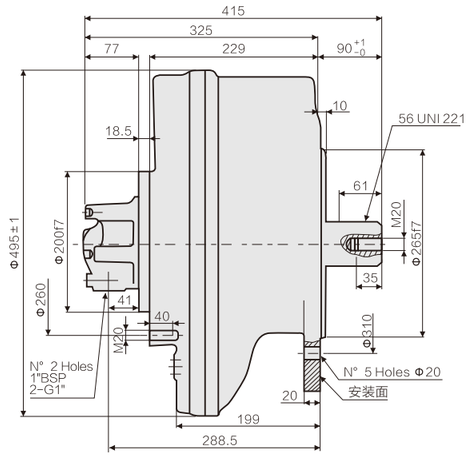
马达排量
Motor displacement

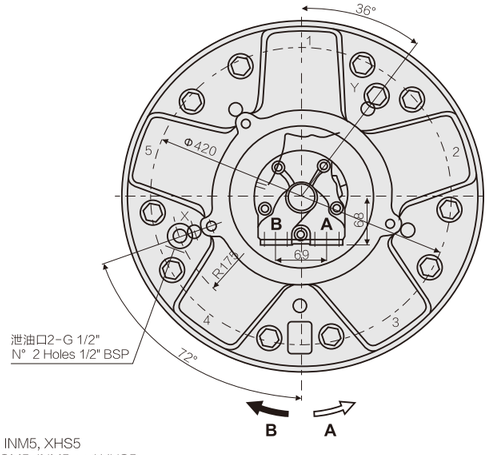


B_{10} 寿命
B_{10} Lifetime



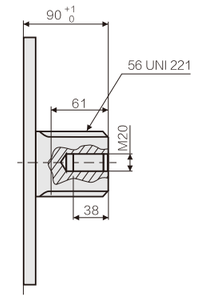
外形尺寸图 Contour dimension



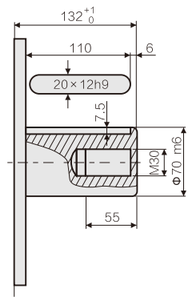


DS5液压马达可完全替代GM5, INM5, XHS5
DS5 can completely replace GM5, INM5,and XHS5.

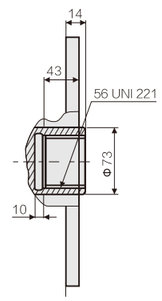
标准外花键：DS5−**
External spline



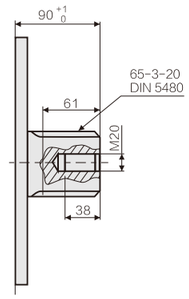
标准平键：DS5−B**
Flat key



标准内花键：DS5−I**
Internal spline

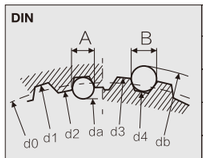


渐开线花键：DS5−A**
Involute spline

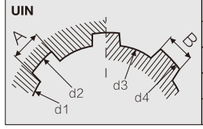


花键参数 Spline parameters

DIN

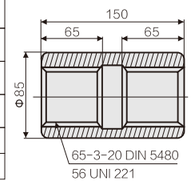


UIN



	65-3-20 DIN5480	55-3-26 DIN5428	55-3-17 DIN5428	56 UNI 221(10-56-65 DIN 5428)
d0	Φ60.0	Φ52.0	Φ51.0	**d1** Φ56.0 $^{+0.030}_{+0}$ H7
d1	Φ65.0 $^{+0.740}_{+0}$ H14	Φ55.0 $^{+0.300}_{+0}$ H12	Φ55.0 $^{+0.740}_{+0}$ H14	**d2** Φ65.0 $^{+0.190}_{+0}$ H11
d2	Φ59.0 $^{+0.190}_{+0}$ H11	Φ50.0 $^{+0.160}_{+0}$ H11	Φ49.0 $^{+0.160}_{+0}$ H11	**A** 10.0 $^{+0.028}_{+0.013}$ F7
A	Φ5.25	Φ3.5	Φ5.25	**d3** Φ56 $^{-0.010}_{-0.029}$ g6
da	Φ54.101 H11	Φ46.902 H10	Φ43.807 H11	**d4** Φ65.0 $^{-0.100}_{-0.190}$ H11
d3	Φ64.4 $^{-0}_{-0.190}$ h11	Φ54.5 $^{-0}_{-0.190}$ h11	Φ54.4 $^{-0}_{-0.190}$ h11	**B** 10 $^{-0.013}_{-0.028}$ f7
d4	Φ58.4 $^{-0}_{-0.740}$ h14	Φ49.0 $^{-0}_{-0.300}$ h12	Φ48.4 $^{-0}_{-0.620}$ h14	
B	Φ6.0	Φ3.5	Φ6.0	
db	Φ70.999 f8	Φ56.953 e8	Φ60.873 f8	

联轴器 Couplings



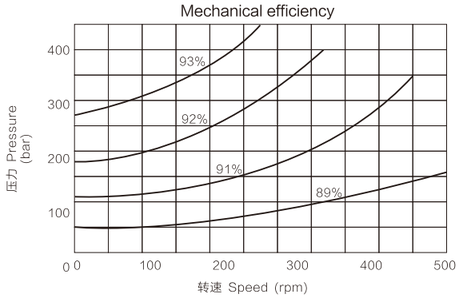
DS5系列/ DS5 Series

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Cast of professional quality!

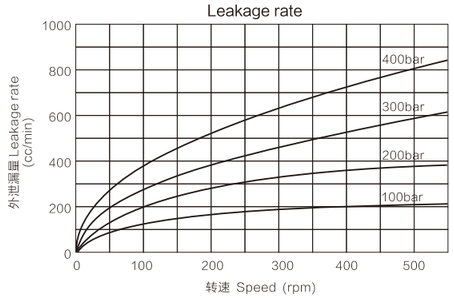
特性曲线 Performance

下列表为排量1200cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 1200 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

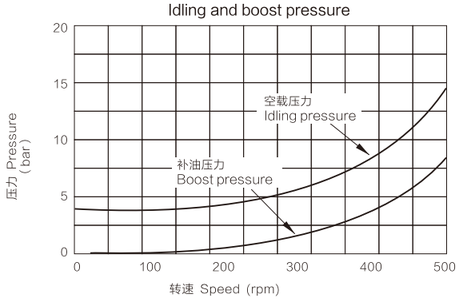
机械效率
Mechanical efficiency



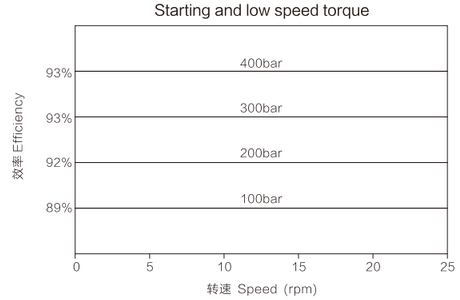
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



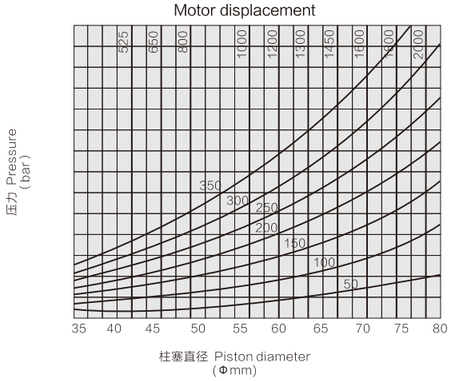
起动和低速时机械效率
Starting and low speed torque



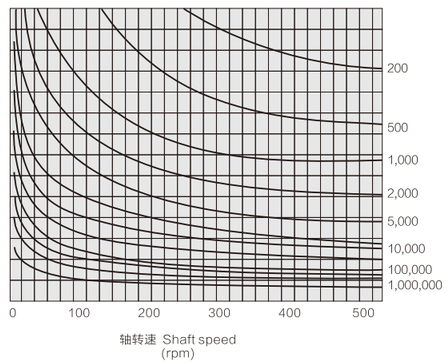
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B_{50}寿命）大约是B_{10}寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B_{50} lifetime) is approximately 5 times longer than B10's.

马达排量
Motor displacement



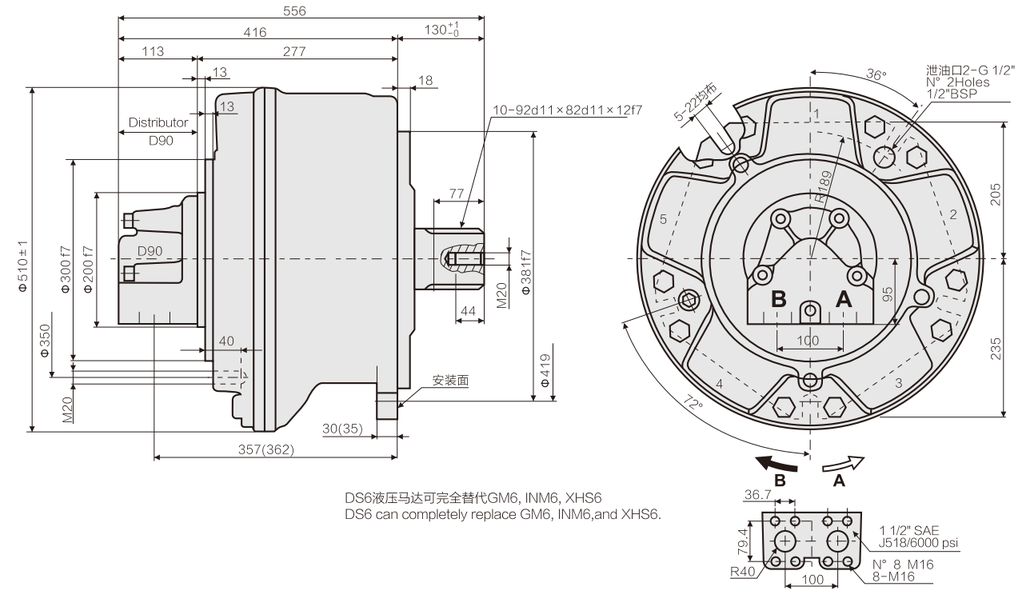
B_{10} 寿命
B_{10} Lifetime



DS6系列/ DS6 Series

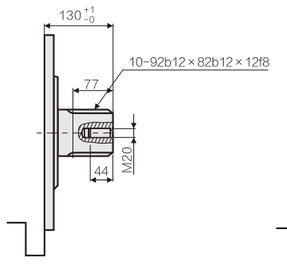
专业铸就品质!
Cast of professional quality!

外形尺寸图 Contour dimension

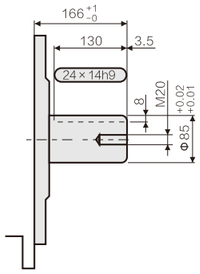


DS6液压马达可完全替代GM6, INM6, XHS6
DS6 can completely replace GM6, INM6,and XHS6.

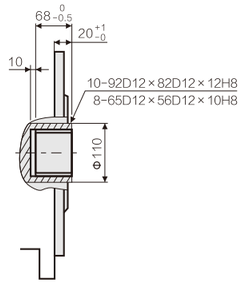
标准外花键：DS6−**
External spline



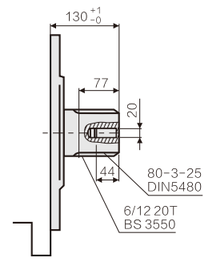
标准平键：DS6−B**
Flat key



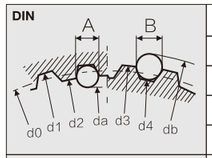
标准内花键：DS6−I**
Internal spline



渐开线花键：DS6−A**
Involute spline

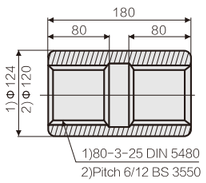


花键参数 Spline parameters



	80-3-25 DIN5480		Pitch 6/12 BS3550
d0	Φ75.0	A	Φ88.0
d1	Φ80.0 +0.870 +0 H14	B	Φ84.6 -0.047 -0.17
d2	Φ74.0 +0.190 +0 H11	C	Φ80.0 -0.480 -0.670
A	Φ5.25	D	Φ97.0 +0.082 +0.030
da	Φ68.9 H9	E	Φ8.12
d3	Φ79.4 -0 -0.190 h11		
d4	Φ73.4 -0 -0.870 h14		
B	Φ6.0		
db	Φ85.9 f8		

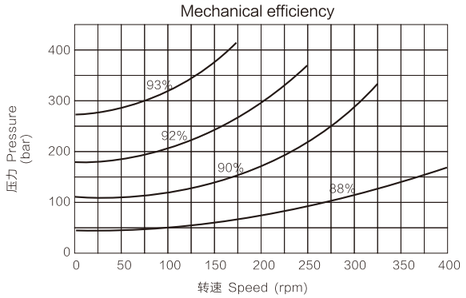
联轴器 Couplings



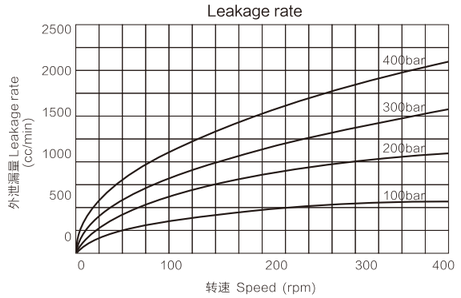
特性曲线 Performance

下列表为排量2500cc的马达，在工作液采用矿物油，粘度40cSt，油温50℃工作时的典型特性曲线。
The graphs indicate the typical performance characteristics of the 2500 cc motor operating with mineral oil with viscosity 40 cSt at 50 ℃

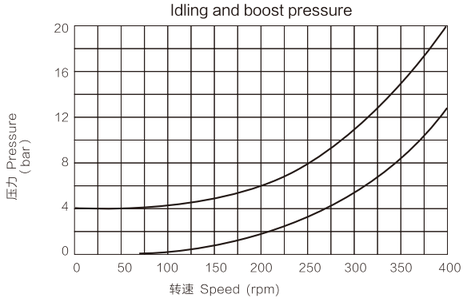
机械效率
Mechanical efficiency



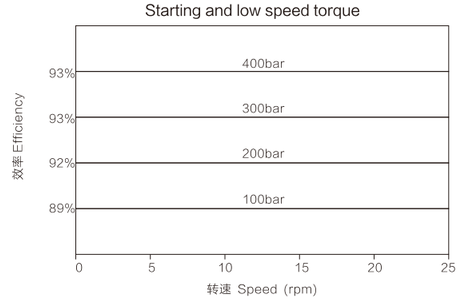
外泄漏
Leakage rate



空载和补油压力
Idling and boost pressure



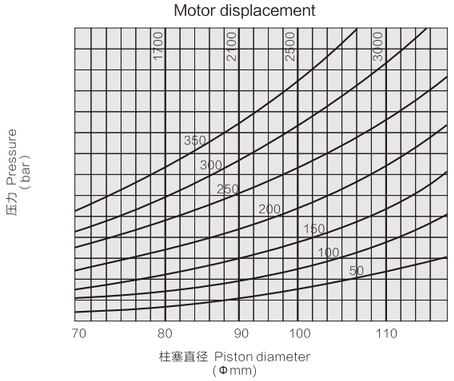
起动和低速时机械效率
Starting and low speed torque



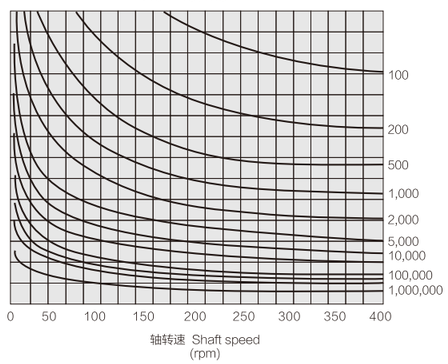
轴承寿命 Bearing lifetime

该图表示用配置滚柱轴承（代号H）的马达。注意轴承平均寿命（B50寿命）大约是B10寿命的5倍。
The graph refers to the motor with the standard bearings. Note that the average lifetime of a bearing (B50 lifetime) is approximately 5 times longer than B10's.

马达排量
Motor displacement



B10 寿命
B10 Lifetime



DA 目录 / Contents



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丹 顿
DANDUN

产品特点/ Product Feature

DA 系列内曲线液压马达是我公司针对高端市场开发的新产品，该马达能在各种恶劣工况下稳定工作，具有大扭矩输出，耐高工作压力，低速稳定等性能，在结构上，马达采用端面配流，径向柱塞内曲线形式，由于马达转子中空，能方便的根据用户要求配置制动器、测速器，及通过马达中孔的特殊设备，大大简化用户对主机结构的要求。

其主要特点如下：

1、多种安装方式及中空轴设计，方便用户配置；
2、抗冲击能力强，稳定性好；
3、旋转方向可逆；
4、可靠性好，维修方便；
5、能实现自由轮工况；
6、具有良好的低速稳定性，能在很低的转速下平稳运转；
7、大输出扭矩、宽转速范围，可直接替代高速马达减速机装置，结构紧凑（体积小）；
8、可实现安全平稳的变量及停车制动；
9、功率质量比高；
10、具有较高的机械效率和容积效率。

DA series cam-ring piston hydraulic motor is what we design for high-end application. With advantage of hollow rotor, DA motor can be mounted with brake, speed encoder, and some special equipments mounted through the center of motor, according to the user's requirements. It shows its striking features of high pressure endurance, stability at low speed, and high output torque in various inferior working conditions.

Main characteristics:

1. Multi-mounting options; hollow shaft design;
2. Strong anti-shock capability and stability;
3. Reversible rotation;
4. High reliability; easy maintenance.
5. Enable free running working condition;
6. Stable performance at low speed;
7. Large output torque; wide speed range; directly replace combinated devices of high speed motor and gearbox; compact structure;
8. Stable variable swtich and parking brake;
9. High power-mass ratio;
10. Higher mechanical and volumetric efficiency;

产品标识说明/ Ordering Code

**** - *** - *** - * - * - * - ***

DA马达代号 DA Motor Model

型号 Type

单位扭矩 Specific Torque (Nm/bar)

安装形式 Mounting alternatives, shaft
锁紧盘C Shrink disc couping
内花键S Splines
其它O Others

安制动器和其它部件 Multi disc brake or tandem kit
不带制动器或其它部件A Motor without brake or TA kit
带制动器或其它部件B Motor prepared for brake of TA kit

通孔 Through Hole
带通孔H With Through Hole
不带通孔O Without Through Hole

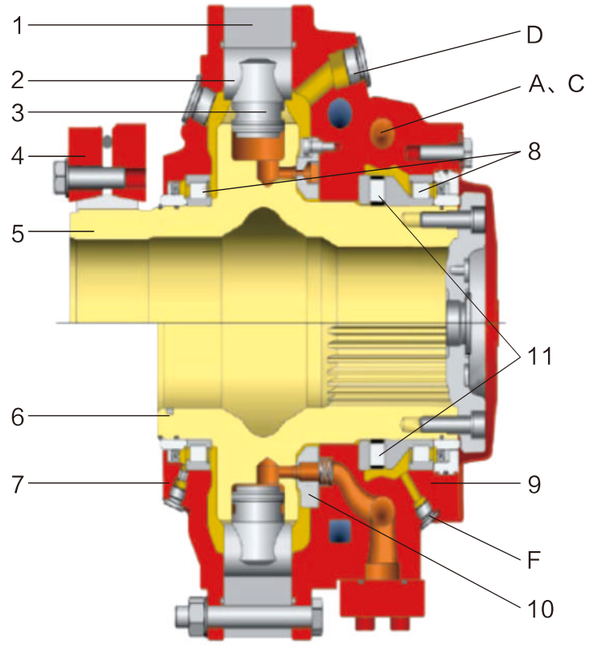
结构及工作原理/ Structure & Operationthery

DA 系列低速大扭矩内曲线液压马达采用端面配油，壳体固定，径向柱塞内曲线形式，利用马达转子的中空结构输出扭矩。偶数个柱塞均布于转子的径向缸孔中，配流盘实现对工作柱塞的准确配油。柱塞都作用在滚柱上。当液压力作用在柱塞上，滚柱将力传递到曲线导轨的内曲面上，曲线导轨与安装法兰板、连接板、配油封盖固定在一起，产生扭矩。滚柱将反作用力传递到转子缸孔中的柱塞上，产生旋转，且扭矩正比于系统压力。系统主油管接到配油封盖的油口 A和C，而泄油管则接到油口 D上。马达通过转子的中空结构，以花键或锁紧盘式与被驱动轴连接传递扭矩。马达的对称性设计使它可以成为一个双排量马达，即在给定流量下可以得到两种不同转速，安装一个相应的阀在油口上即可实现排量的改变。

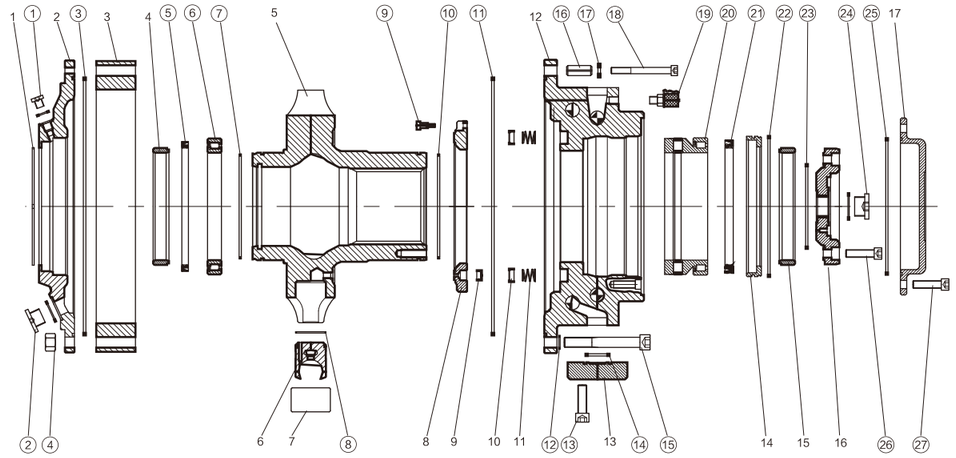
Our DA series cam ring motor use in the low speed and high torque with the facing distribution. Which is a kind of the radial-piston type motor with arotating cylinder block hollow shaft and a stationary housing. An even number of pistons are radially located in bores inside the cylinder block, and the valve plate directs the incoming and outgoing oil to and from the working pistons. Each piston is working against a cam roller. When the hydraulic pressure is acting on the pistons, the cam rollers are pushed against the slope on the cam ring that is rigidly connected to the housing, the movement curve、connection block、flange and the seal cover get together, there by producing a torque. The cam rollers transfer the reaction force to the piston which are guided in the rotating cylinder block. Rotation therefore occurs, and the torque available is proportional to the pressure in the system. Oil main lines are connected to ports A and C and drain lines to ports D. The motor is connected to the shaft of the driven machine through the hollow shaft of the cylinder block. The torque is transmitted by using a mechanical shaft coupling, or alternatively by splines. The symmetrical design of the motor has made it possible to design it as a two displacement motor. This means that two different speeds can be obtained for a given flow. The simplest way of performing displacement change is by connecting a special valve, direct to the flange face on the connection block.

1、曲线导轨/ Movement curve
2、滚柱/ Cam roller
3、柱塞/ Piston
4、锁紧盘/ Shrink disc coupling
5、中空轴/ Solid shaft
6、内花键/ Spline
7、输出封盖/ The output block
8、圆柱滚子轴承/ Cylindrical roller bearing
9、配油封盖/ Seal cover
10、配油盘/ Valve plate
11、滚柱止推轴承/ Thrust bearing

A、进油口或出油口/ A=Inlet or outlet
C、进油口或出油口/ C=Inlet or outlet
D、壳体泄油口/ Drain port
F、冲洗油口/ Flushing port



DA系列结构图 / DA motor structure chart



序号 NO.	零件名称 Name
①	内六角螺塞 Soket head cap screws
②	内六角螺塞 Soket head cap screws
③	"O"型圈 "O"Ring
④	螺母 Nut
⑤	输出封盖油封 Output block shaft seal
⑥	圆柱滚子轴承 Roller bearing
⑦	"O"型圈 "O"Ring
⑧	柱塞环 Seal
⑨	塞打螺钉 Head shoulder screw

序号 NO.	零件名称 Name
⑩	"O"型圈 "O"Ring
⑪	"O"型圈 "O"Ring
⑫	平垫 Gasket
⑬	内六角螺钉 Soket head cap screws
⑭	"O"型圈 "O"Ring
⑮	外六角螺栓 Hexagon bolt
⑯	弹性圆柱销 Cylindrical pin
⑰	垫片 Gasket
⑱	内六角螺钉 Soket head cap screws

序号 NO.	零件名称 Name
⑲	测压接头 Axial radial bearings
⑳	轴向径向组合轴承 Axial radial bearings
㉑	配油封盖油封 Seal cover shaft seal
㉒	"O"型圈 "O"Ring
㉓	"O"型圈 "O"Ring
㉔	内六角螺塞 Soket head cap screws
㉕	"O"型圈 "O"Ring
㉖	内六角螺钉 Soket head cap screws
㉗	内六角螺钉 Soket head cap screws

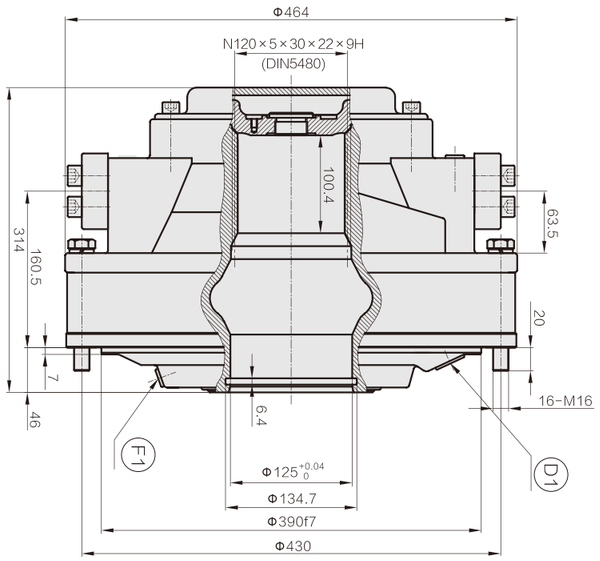
序号 NO.	1	2	3	4	5	6	7	8	9
零件名称 Name	钢丝挡圈 Steel ring	输出封盖 The output block	曲线导轨 Movement curve	输出封盖油封内圈 Output block inner ring	转子 Piston	柱塞 Piston	滚柱 Roller	配油盘 Valve plate	平衡孔盖 Balance cap
序号 NO.	10	11	12	13	14	15	16	17	
零件名称 Name	弹簧座 Spring seat	预压弹簧 Spring	配油封盖 Seal cover	油口法兰盖板 Oil drain cover	配油封盖油封座 Shaft seal seat	配油封盖油封内圈 Seal cover inner ring	转子后盖端 Rotor rear cover	后端盖 Rear cover	

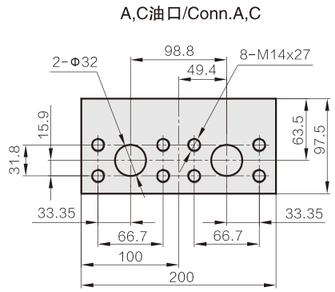
技术参数/ Technical Specification

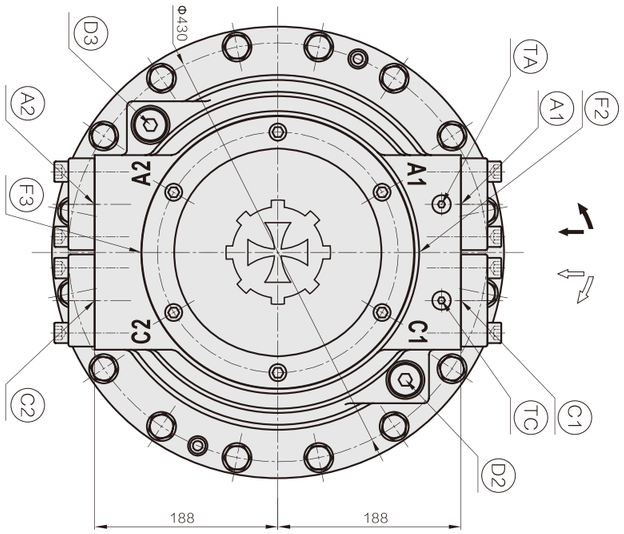
型 号 Model	排量 Displacement	额定压力 Rated Pressure	尖峰压力 Peak Pressure	额定扭矩 Rated Torque	单位理论扭矩 Theoric Specific Torqu	额定转速 Rated Speed	最大转速 MAX.Speed	重量(花键) Weight (Spline)	重量(锁紧盘) Weight (Shrink disc couping)
	ml/r	Mpa	Mpa	N.m	N.m/Mpa	r/min	r/min	kg	kg
DA50-20	1256	21	25	4194	200	300	340	175	203
DA50-25	1570	21	25	5242	250	260	280		
DA50-32	2010	21	25	6711	320	220	250		
DA50-40	2512	21	25	8388	399	180	230		
DA50-50	3140	21	25	10484	499	160	200		
DA70-40	2512	21	25	8388	399	220	260	205	232
DA70-50	3140	21	25	10484	499	180	240		
DA70-60	3771	21	25	12591	600	160	220		
DA70-70	4400	21	25	14692	700	150	200		
DA100-40	2512	21	25	8388	399	270	300	265	310
DA100-50	3140	21	25	10484	499	250	280		
DA100-64	4020	21	25	13423	639	210	260		
DA100-80	5024	21	25	16775	799	180	230		
DA100-100	6280	21	25	20969	999	150	200		
DA140-80	5024	21	25	16775	799	140	170	305	347
DA140-100	6280	21	25	20969	999	130	160		
DA140-120	7543	21	25	25186	1199	120	150		
DA140-140	8800	21	25	29383	1399	110	130		
DA210-160	10051	21	25	33560	1598	95	105	395	456
DA210-180	11314	21	25	37777	1799	90	100		
DA210-210	13200	21	25	44075	2099	80	95		

* 马达处于制动方式时需要12bar的背压力。(大于额定速度时要认真考虑背压力、冷却和液压系统的选择，更高速度时需使用4个油口)。
** 马达按照DNV船级社规范设计。容许试验压力420bar。
峰值/瞬态压力420bar最大，允许发生10000次。
*** 转速在280rmp最大，要使用氟橡胶密封，连续工作时壳体允许最大压力2bar。

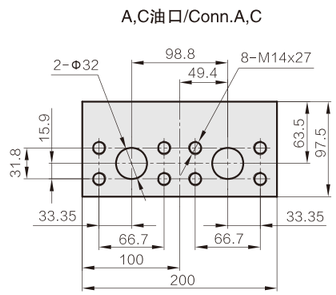
*) All motor types can be tandem mounted.
**) Special considerations regarding charge pressure, cooling and choice of hydraulic system for speeds above rated.
***) The motors are designed according to DNV-rules. Test pressure 420 bar/6000 psi. Peak/transient pressure 420 bar/6000 psi maximum, allowed to occur 10 000 times.
More options with different torques and sppeeds are available. This data covers the main sizes of our Compact motors.

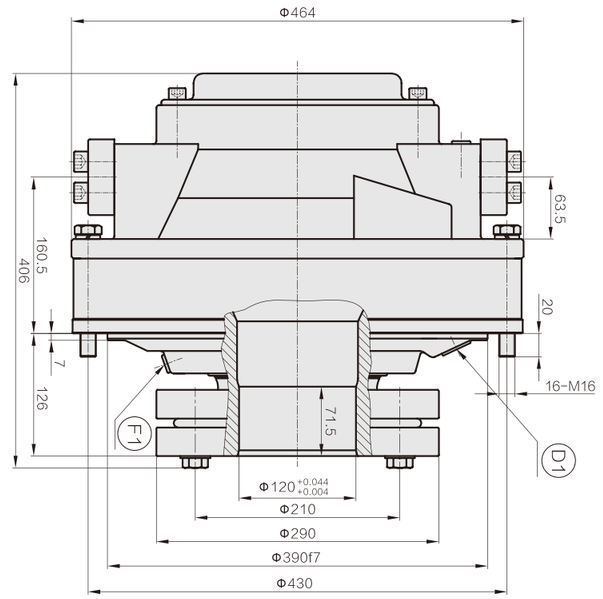


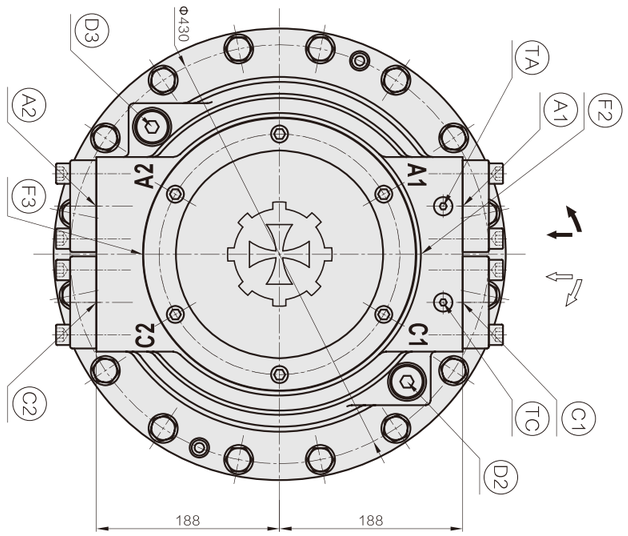




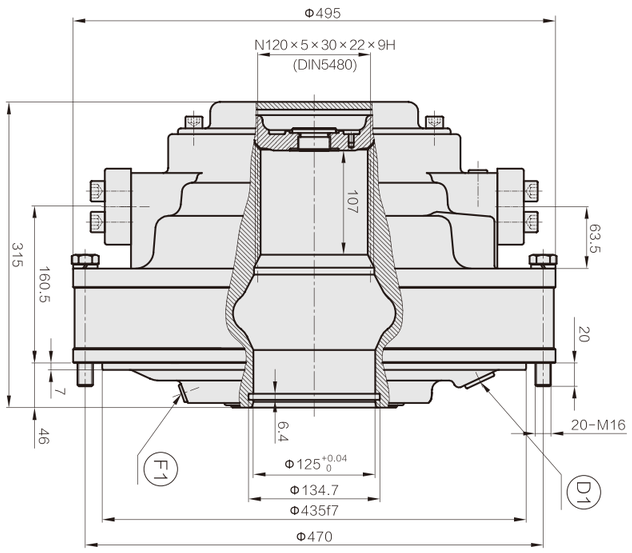
油口尺寸/Connection		
主油口A Main Conn.A	A1	SAE 1 1/4"
	A2	SAE 1 1/4"
主油口C Main Conn.C	C1	SAE 1 1/4"
	C2	SAE 1 1/4"
测压口 Test Conn.	TA、TC	BSP 1/4"
泄油口 Drain Conn.	D1、D2、D3	BSP 3/4"
冲洗油口 Flushing Conn.	F1、F2、F3	BSP 1/4"

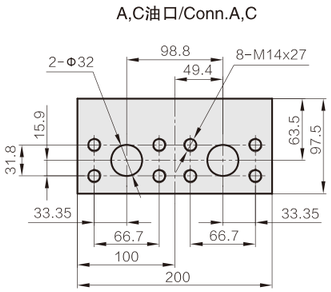


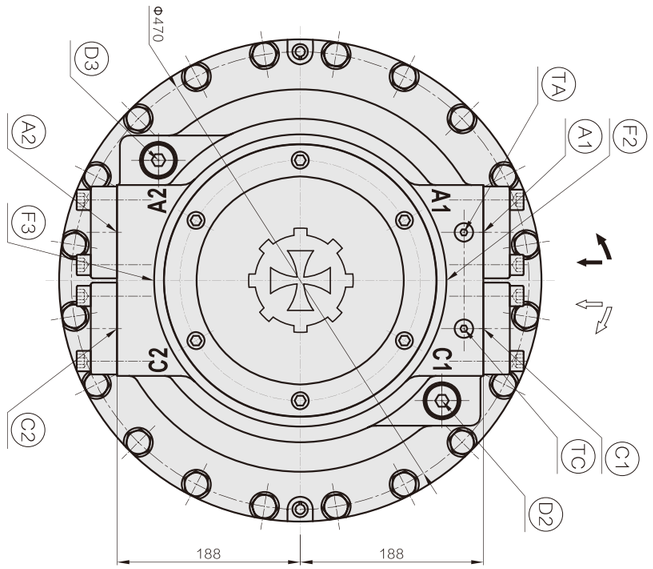




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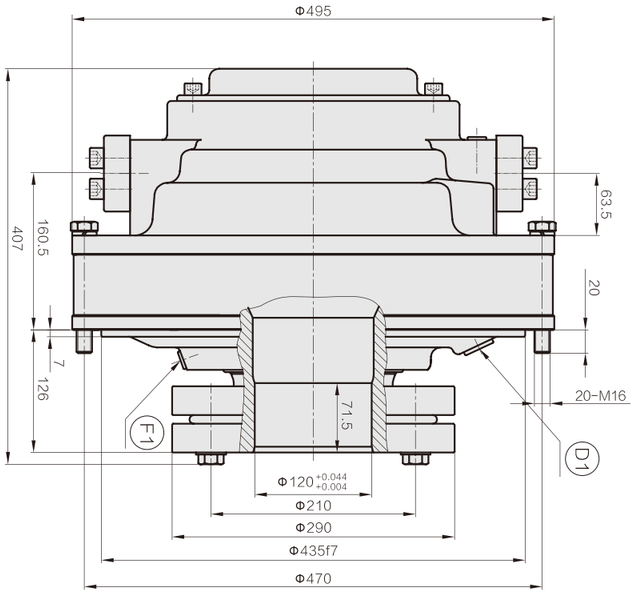


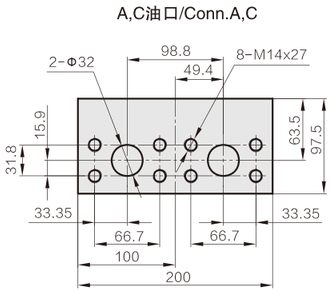


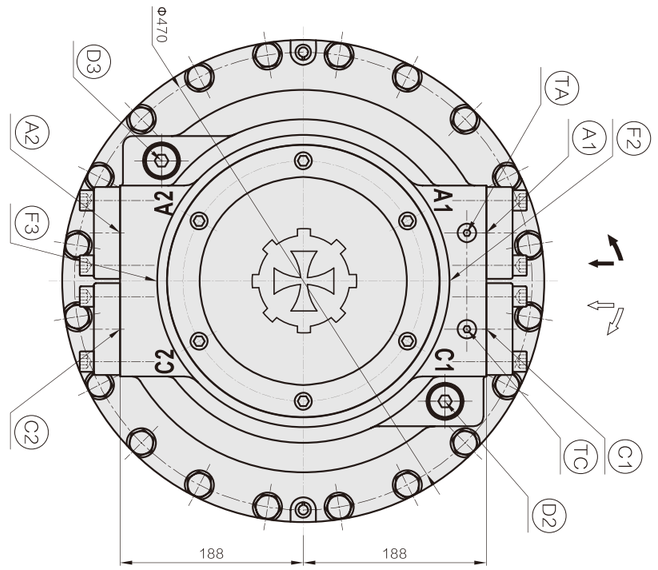


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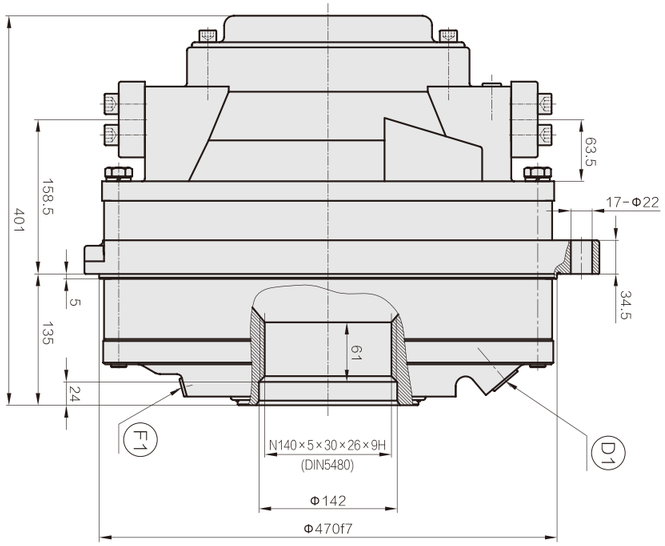
DA70系列/ DA70 Series
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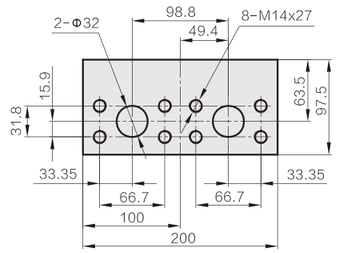


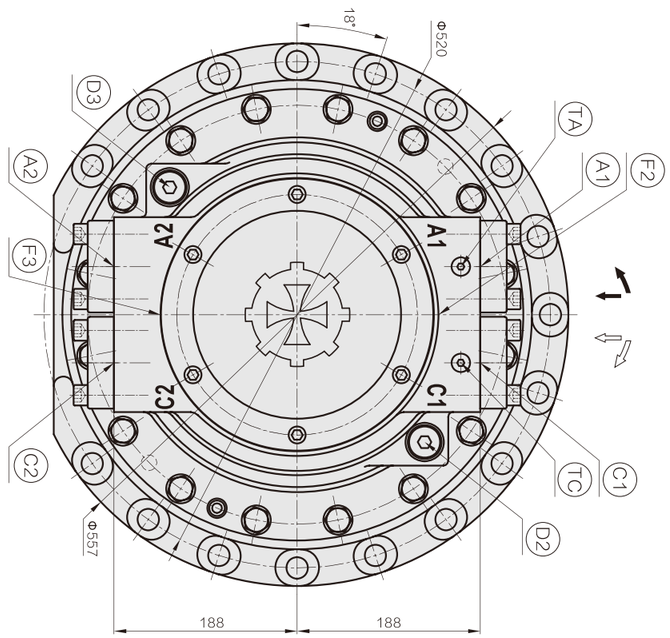


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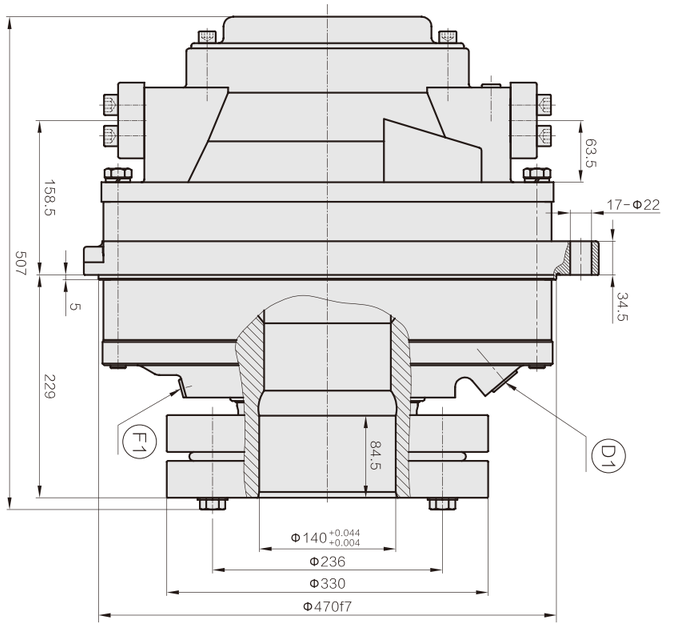


A,C油口/Conn.A,C

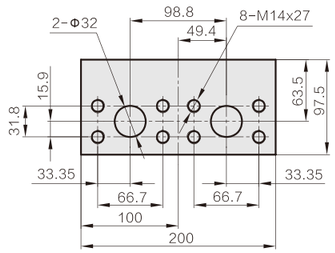


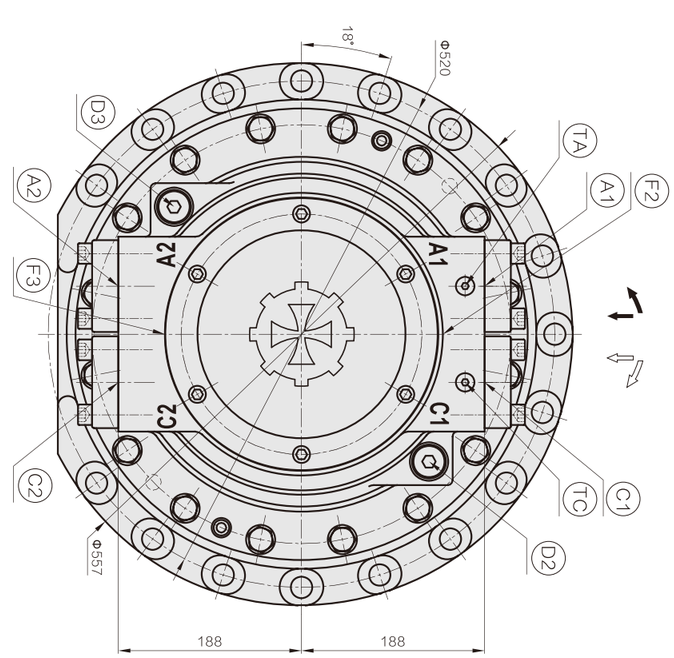


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A,C油口/Conn.A,C

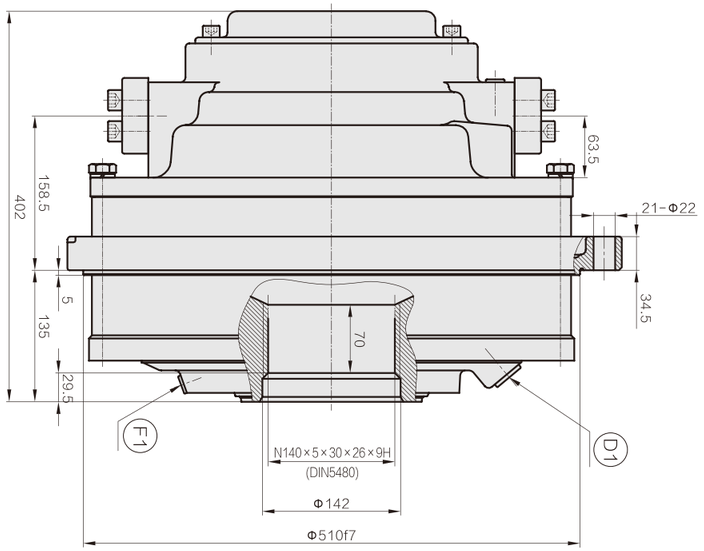




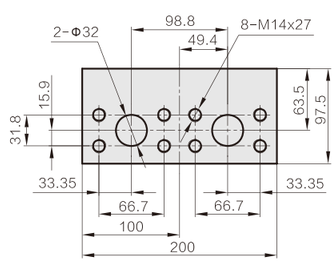
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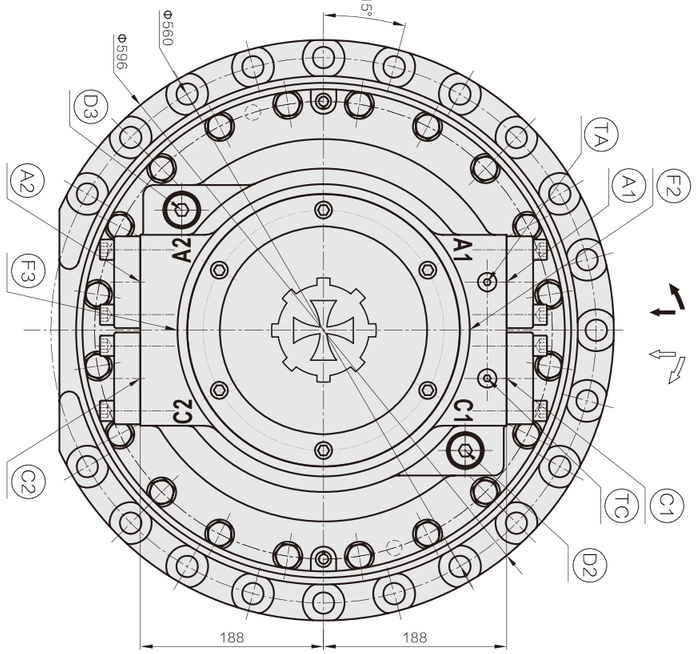
DA140系列/ DA140 Series

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Cast of professional quality!



A,C油口/Conn.A,C

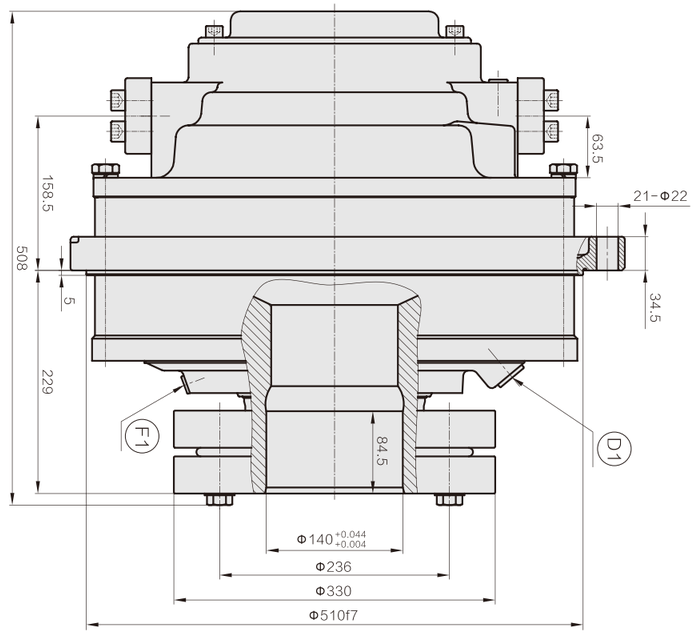




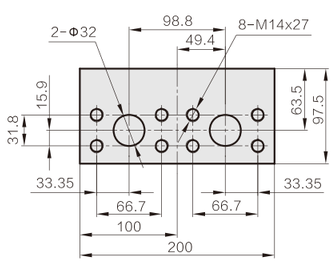
油口尺寸/Connection		
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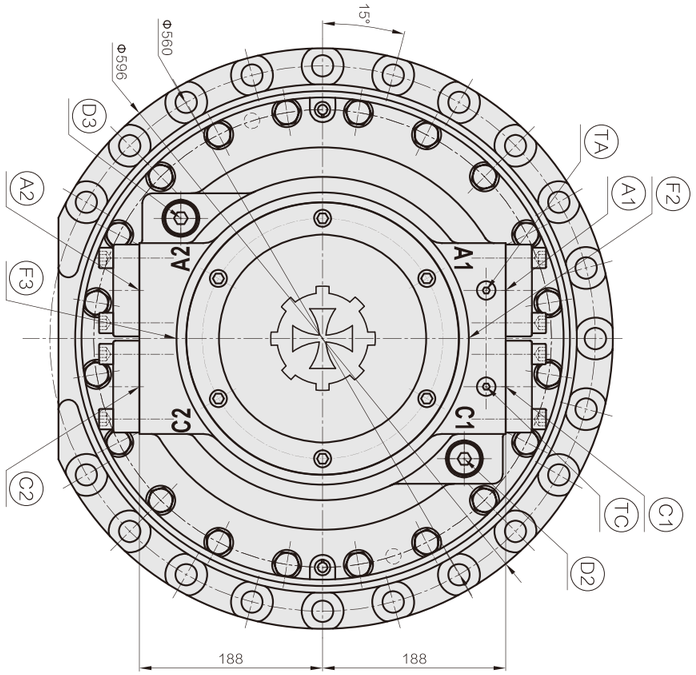
DA140系列/ DA140 Series

专业铸就品质!
Cast of professional quality!



A,C油口/Conn.A,C

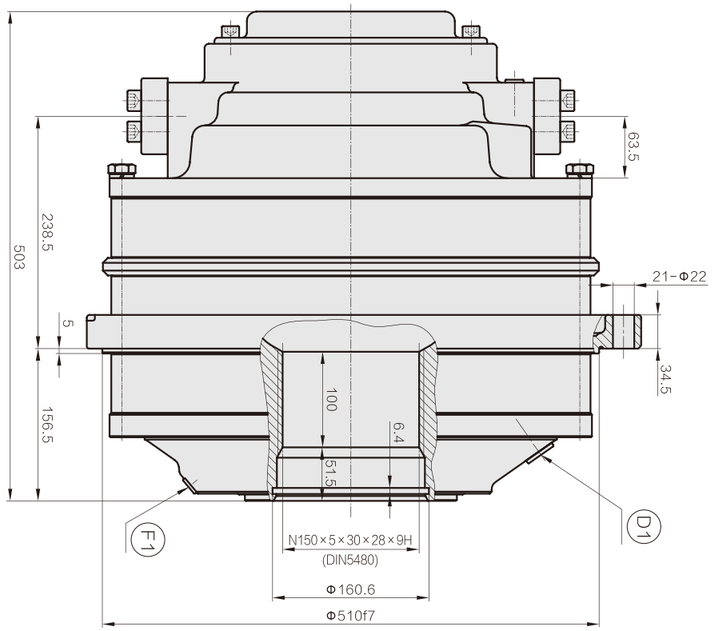




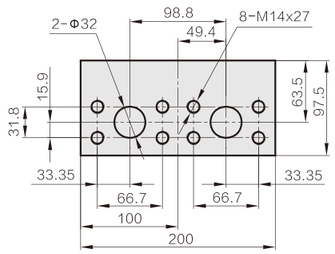
油口尺寸/Connection		
主油口A Main Conn.A	A1	SAE 1 1/4"
	A2	SAE 1 1/4"
主油口C Main Conn.C	C1	SAE 1 1/4"
	C2	SAE 1 1/4"
测压口 Test Conn.	TA、TC	BSP 1/4"
泄油口 Drain Conn.	D1、D2、D3	BSP 3/4"
冲洗油口 Flushing Conn.	F1、F2、F3	BSP 1/4"

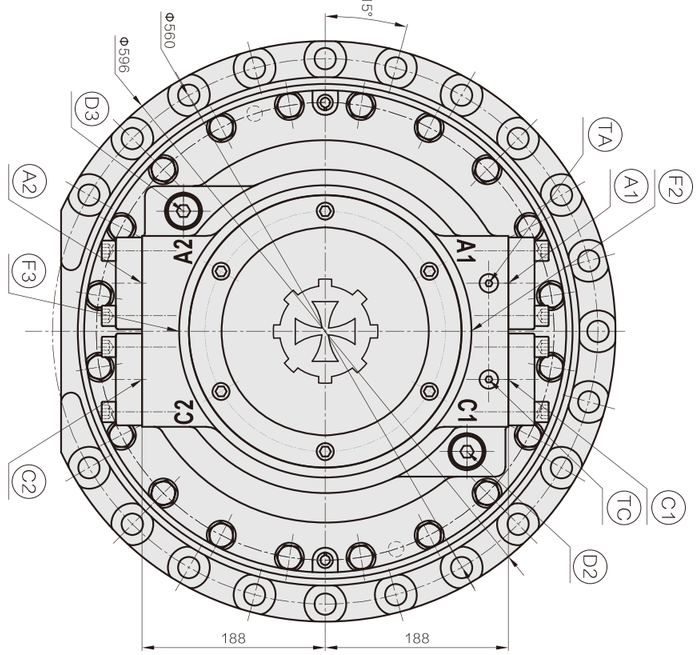
DA210系列/ DA210 Series

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A,C油口/Conn.A,C

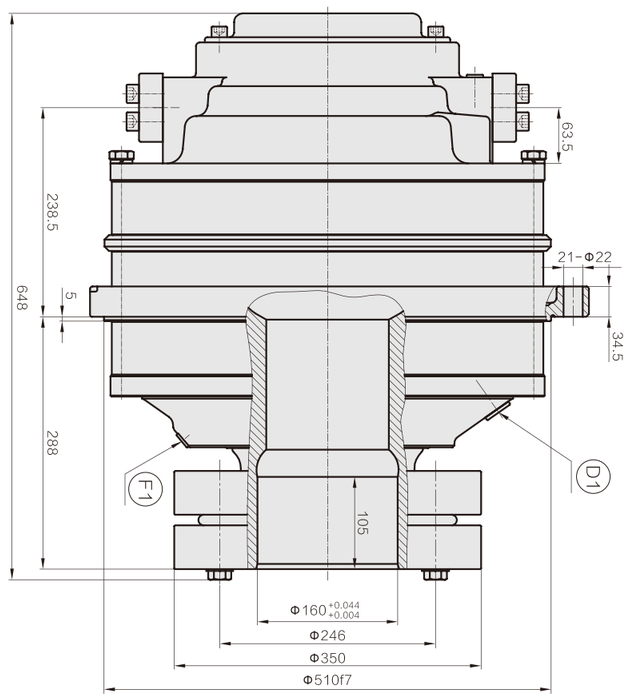




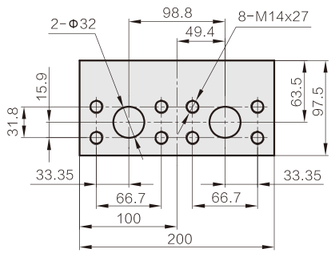
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	C2	SAE 1 1/4"
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泄油口 Drain Conn.	D1、D2、D3	BSP 3/4"
冲洗油口 Flushing Conn.	F1、F2、F3	BSP 1/4"

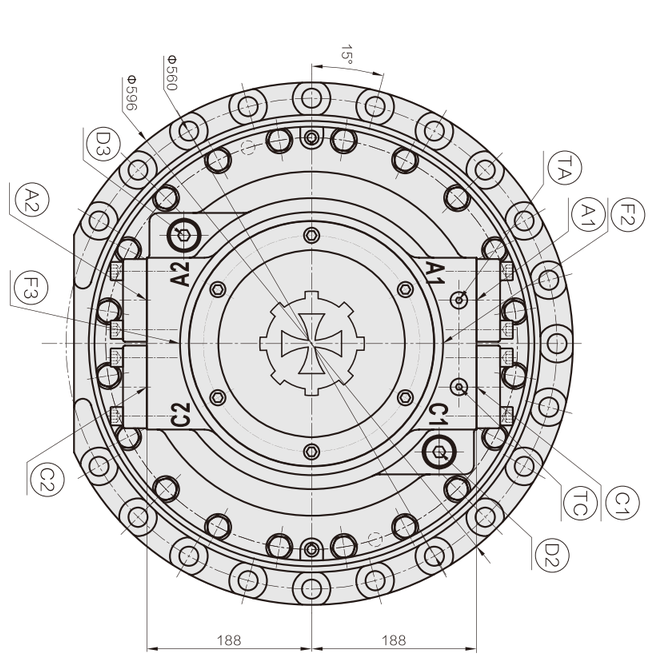
DA210系列/ DA210 Series

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A,C油口/Conn.A,C

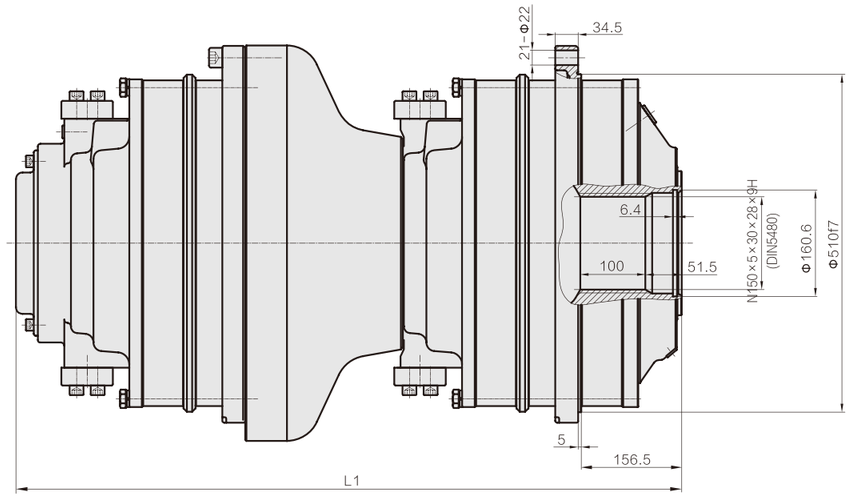


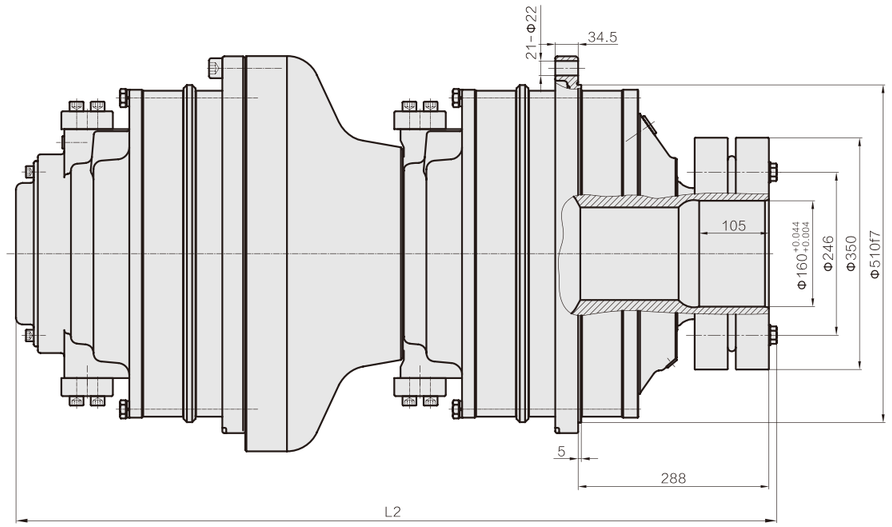


油口尺寸/Connection		
主油口A Main Conn.A	A1	SAE 1 1/4"
	A2	SAE 1 1/4"
主油口C Main Conn.C	C1	SAE 1 1/4"
	C2	SAE 1 1/4"
测压口 Test Conn.	TA、TC	BSP 1/4"
泄油口 Drain Conn.	D1、D2、D3	BSP 3/4"
冲洗油口 Flushing Conn.	F1、F2、F3	BSP 1/4"

DA210系列/ DA210 Series

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型 号 Model	最大压力 Max. Pressure	最大转速 Max. Speed	重量 (花键) Weight (Spline)	重量 (锁紧盘) Weight (Shrink disc coupling)	尺寸 A Size A	尺寸 B Size B
	bar	r/min	kg	kg	mm	mm
DA210+DA50	240	100	623	683	828	970
DA210+DA70	220	100	655	715	828	970
DA210+DA100	200	100	770	830	926	1068
DA210+DA140	180	100	810	870	926	1068
DA210+DA210	160	100	900	961	1008	1150

DA系列/ DA Series

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液压油的选用/ Choice of Hydraulic Fluid

液压油必须要加有抗氧化性、防锈和抗泡等添加剂，矿物油的粘度很大程度上取决于温度。油液的最终选择决定于锁期望的运行温度或在系统中，而不是在油箱中确立的温度。系统中的高温大大降低油液和橡胶密封的使用寿命，同时使粘度降低，从而使润滑性能下降。水的含量小于0.1%。对使用寿命有较高要求的工业应用中，水含量应小于0.05%。

The oil must have wear–resisting, prevent bubble, anti–oxidation, good stability and other characteristics. The oil must also contain inhibitors to prevent oxidation, corrosion and foaming.
Content of water shall be less than 0.1%.In Industrial applications with high demands for service life, the content of water shall be less than 0.05%.

1、推荐粘度

在运行温度下：40 – 150cst
如转速低于5rpm,则要使用有涂层
的活塞或者高粘度油

2、粘度范围/ Vissosity limits

粘度指数Viscosity index	= 100 推荐值/recommended = 150 对运行温差很大的工况/for operationwith large temperaturedifference
连续工况下允许的最小值/Min. permitted in continuous duty	40cSt/187 SSU
瞬时工况下允许的最小值/Min. permitted in continuous duty	20cSt/98 SSU**
允许的最大值/Min. permitted in continuous duty	10000cSt/48000 SSU

3、温度范围/ Temperature limits

正常运行温度应低于/Normal operating temperature: + 50℃	
丁晴橡胶（标准马达）/Nitrile seals(std motor) 氟橡胶/Viton seals	– 35℃~ + 70℃ – 20℃~ + 100℃
瞬时工况下允许的最小值 Min. permitted in continuous duty	– 31° F ~ + 158° F – 4° F ~ + 212° F

过滤/ Filtrution

油 液	使用允许	密 封	内部油漆
植物油HTG*	允许	丁晴橡胶（标准马达）	–
合成酯HE**	允许	丁晴橡胶（标准马达）	–

*植物油润滑性能较好且随温度的变化粘度变化较小。植物油每三个月检查而且温度应低于 + 45℃，以得到较长的油液使用寿命。
*环境容许油液对设备使用寿命无影响，和矿物油一样。

液压系统中的油液需要一直进行过滤，向系统中加注新油时也需要先过滤才能加注。液压系统的过滤等级是一个使用寿命相对于过滤成本的问题。为获得标明的使用寿命，就需要遵从我们关于污染度等级的建议。选择过滤器时，需要考虑滤器的纳污容量。因此我们推荐使用带堵塞指示器的过滤器，以便在需要更换滤芯时能及时给出信号。

过滤推荐:
起动前，检查系统是否完全清洁。
1. 一般马达中的污染度等级不应超过ISO 4406 19/15 （NAS 10）。
2. 对重载工况污染度等级不应超过ISO 4406 16/13（NAS 7）。
3. 当向油箱和马达壳体加油时，推荐使用过滤器的过滤等级为 β 10 = 75。

“过滤等级”的说明

过滤等级 β 10＝**75** 表明下列含义：
β **10** 表示尺寸≥**10um** 的颗粒将被过滤器滤掉。
＝**75** 表示上述尺寸颗粒的过滤等级。过滤等级被定义为过滤前油液中颗粒的数目与过滤后油液中颗粒的数目的比值。

示例：过滤等级为 β **10**＝**75**。
过滤前油液包含N 个尺寸≥10um 的颗粒，而经过一次过滤后油液包含N/75 个尺寸≥10um 的颗粒。
这表示N – N/75 = 74N/75 个颗粒被滤掉（98.6%）。

The oil in a hydraulic system must always be filtered and also the oil from your supplier has to be filtered when adding it to the system. Before start–up, check that the system is thoroughly cleaned.
Filtering recommendations：
–In general the contamination level in our motors should not exceed ISO 4406 19/15.(NAS 10)
–For heavy–duty industrial applications the contamination level should not exceed ISO4406 16/13. (NAS 7)
–When filling the tank and motor housing, we recommend the use of a filter with the grade of filtration β 10=75.
Explanation of"GRADE OF FILTRATION": β 10 means the size of particle ≥10 μ m that will be removed by filtration. “=75” means the grade of filtration of above mentioned size of particle. The grade of filtration is defined as number of particles in the oil before

冲洗说明/ Flushing Instruction

为避免马达壳体温度过高，必须对马达进行冷却。高温会降低油液粘度，导致马达磨损加大，使用寿命下降，同时，低粘度也会降低马达的最大输出功率。
环境温度为＋20℃的连续工况，当输出功率超过下列数值时，马达壳体需要冲洗。

To avoid high temperature in the motor case the heat must be cooled away. Because high temperature gives lower viscosity and that gives reduction in basic rating life. Low viscosity also gives reduced permitted out put power from the motor.
For continuous duty in applications with an ambient temperature of +20°C, the motor case must be flushed when the output power exceeds the values shown below.

不需冲洗的最大功率/Max.power without flushing

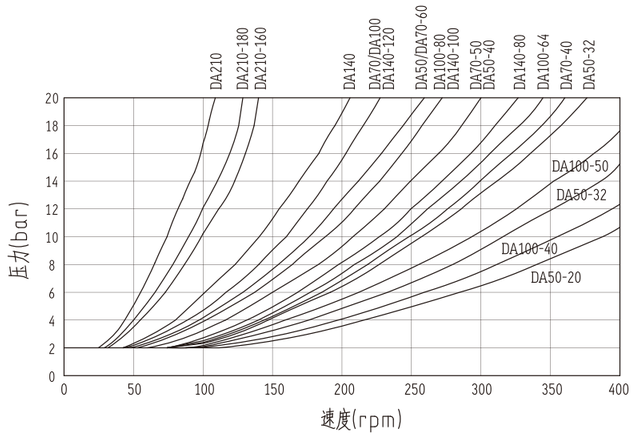
DA50/70	60 kW
DA100/140/210	120 kW

背压要求/ Back Pressure Requirements

液压系统必须做到使马达的低压油口始终有足够的背压，这适用所有形式的安装。
马达工作于制动方式，马达进油口背压根据以下曲线图。
马达只作用于驱动方式时，要求马达出油口背压为下图曲线值的30%，但不低于2bar。

The hydraulic system must be able to ensure that the motor's low pressure oil port always has sufficient backpressure.
The motor operates in the braking mode, and the back pressure of the oil inlet of the motor is shown in the following diagram.
When the motor is only used in the driving mode, it is required that the back pressure of the motor oil outlet is 30% of the following curve, but not less than 2bar.

DA马达推荐背压/ DA Recommend Back Pressure
2油口/4油口连接对应油液粘度 40cst/187ssu



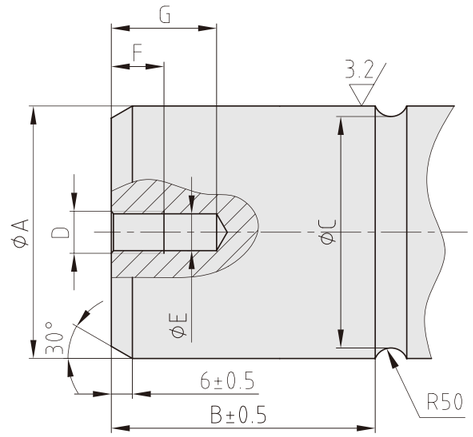
注意：如果壳体压力增加则背压必须相应增加。最高壳体压力为3bar(对1%的运行时间均分，最长5秒钟时间的压力峰值允许达到8bar)。停机时允许的最大壳体压力为8bar。
Note: If the pressure increases, the pressure must be increased. The maximum pressure of the shell is 3bar (equal to 1% of the running time, the maximum pressure peak of up to 5 seconds to allow 8bar). Maximum allowable casing pressure at 8bar。

安装/ Installation

1、安装说明/Mounting instructions
液压马达必须以最大可能的精确度安装才能正常的工作。
与马达连接的任何一项不符合下列说明提出的要求都将导致应力，反过来它又影响液压马达的使用寿命。
通常马达必须完全充满油液。当将马达安装成轴处于水平方向时，两个泄油口必须位于垂直方向，并且必须使用两个泄油口中最高的一个。
当将马达安装成轴处于垂直方向时，泄油口D1、D2必须连接到配油封盖或输出封盖的泄油孔。
需要装一个单向阀在泄油管路上以确保马达充满油液。
泄油口管路规格必须适当以使马达壳体压力最高不超过3bar。

Motors must be installed with the greatest possible accuracy to work properly. Any of the motors that do not conform to the following requirements will cause stress, which in turn will affect the service life of the hydraulic motor.
Motors must be completely filled with oil. When the motor is mounted in a horizontal direction, the two oil outlets must be located in the vertical direction and must use the highest of the two oil outlets. When the motor is mounted in a vertical direction, the drain port D1 and D2 must be connected to the drain hole of the oil distribution cap or output cap. A one–way valve is to be installed on the drain line to ensure that the motor is filled with oil.
Drain port piping specifications must be appropriate to make the motor casing pressure up to 3bar.

2、被驱动轴端设计/Design of the end of the driven shaft
若被驱动轴为重载且承受高应力，比如旋转方向和负载改变，则建议在轴上开一个消除应力槽(如图右图）。
When the driven shaft is heavily loaded and is subject to high stresses,for example on changes in the direction of rotation,it is recommended that the driven shaft should have a stress relieving groove.
若被驱动轴旋转、负载为单向，且轴上应力为中等，则可做成光轴。
If the drive shaft is rotated, the load is unidirectional, and the axial stress is medium, the optical axis can be made into an optical axis.



3、为使安装马达到被驱动轴端或从驱动轴上卸马达更加轻松，建议在被驱动轴中心打螺纹孔。
In order to make the installation of the motor to the drive shaft end or from the drive shaft unloading motor more easily, it is recommended to drive the shaft center hole.

以下图形及表格数据可供参考
The following graphic data for reference

Dim	DA50/70	DA100/140	DA210
A mm	$120^{0}_{-0.025}$	$140^{0}_{-0.025}$	$160^{0}_{-0.025}$
B mm	71.5	84.5	105
C mm	116	133	153
D	M20		
E mm	>17		
F mm	25		
G mm	50		
单向驱动 钢屈服强度 Rel=300N/mm			
双向驱动 钢屈服强度 Rel=450N/mm			

DA系列/ DA Series

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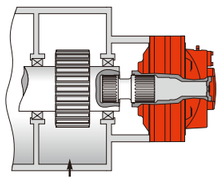
花键轴端参数/The Spline Shaft Parameter

花键需要被润滑，可在装配时用液压油润滑，或加齿轮传动油。为保证正常有效安装，使马达能有效工作，花键参数必须在下图公差范围内。如果没有轴向及径向受力，亦可以采用润滑油脂。
Splines need to be lubricated, can be used in assembly with hydraulic oil lubrication, or gear transmission oil. In order to ensure the normal and effective installation, so that the motor can work effectively, spline parameters must be within the tolerance range. If there is no axial and radial force, you can also use grease.

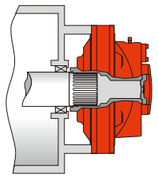
花键参数/The data of the spline

马达型号/Type		DA50/70	DA100/140	DA210
公差等级/Grade of tolerance		DIN5480–8f	DIN5480–8f	DIN5480–8f
齿数/Number of teeth	z	22	26	28
模数/Module	m	5	5	5
压力角/Pressure angle	a	30°	30°	30°
变位系数/Odification coefficient	x	–0.45	–0.45	–0.45
渐开线终止圆直径/Minor diameter	D_{Ff1min}	109.90	129.90	139.90
量棒检测距离Measure over measuring pins	M_i	$129.781^{-0.083}_{-0.1474}$	$149.908^{-0.085}_{-0.150}$	$159.961^{-0.085}_{-0.150}$
量棒直径Diameter of measuring pins	D_M	10	10	10

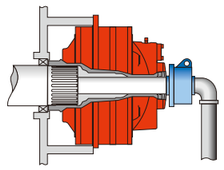
多种安装示意/Installation diagram



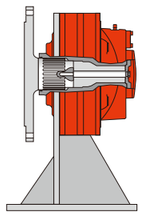
法兰安装型马达，配有花键，并有来自从动轴的较高径向负载。
Flange mounted motor with splines and radial load from the driven shaft.



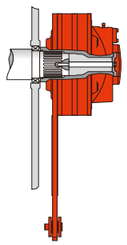
法兰安装型马达，配有花键，并有来自从动轴的较低径向负载。
Flange mounted motor with splines and lower radial load from the driven shaft.



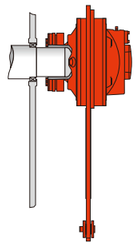
法兰安装型马达，配有花键，并有从动机器冷却的通孔。
Flange mounted motor, equipped with spline, and driven machine cooling through hole.



支架安装型马达，配有法兰适配器。
Bracket mounted motor with flange adapter.



扭矩臂安装型马达， 配有花键。
Torque arm mounted motor with spline.



扭矩臂安装型马达， 配有锁紧盘。
Torque arm mounted type motor, equipped with locking plate.

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3、BMTZ1系列马达 / BMTZ1 Series Motor F–05
4、BMTZ2系列马达 / BMTZ2 Series Motor F–06
5、BMTZ3系列马达 / BMTZ3 Series Motor F–08
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9、BMTZ系列使用指南 / User Guide of BMTZ Series F–15

丹 顿
DANDUN