



**ULTRA HIGH PRESSURE GEAR PUMP
SERIES GP40**

超高压齿轮泵 GP40 系列

DESIGN FOR FUTURE.

PRODUCT FEATURES

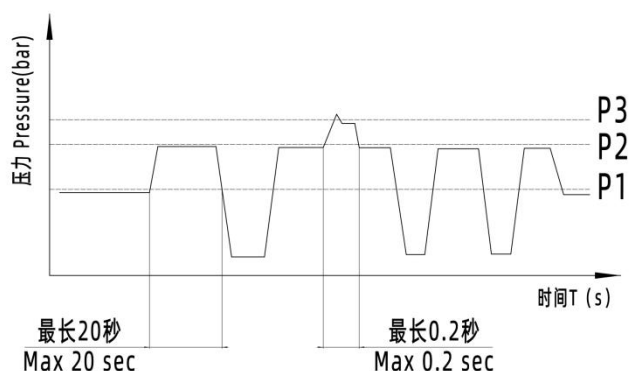
产品优势



- Heavy duty special DU bearing with long working life
使用喷涂特殊专利涂层的 DU 轴承可在重负载下具有长久的工作寿命
- Max working pressure up to 5500 PSI/ 38Mpa
极限工作压力可达 5500 磅力/平方英寸 (38 兆帕)
- Displacement from 25 to 200cc/rev
可选排量范围从每转 25 毫升直到每转 200 毫升
- High strength cast iron body with special designed structure
采用自主研发专利设计的内部结构，并采用高强度的蠕墨铸铁材质壳体
- High precision carburizing&quenching gears with extra hardness
高精度齿轮，特殊材质经过渗碳淬火达到超高硬度
- Copper pressure balanced wear plates maintain high pump efficiency throughout all operating ranges
铜质双金属压力平衡补偿板可在工作寿命内持续保证高容积效率
- 100% factory tested
产品出厂前 100%进行性能检测和跑合试验
- Customized mounting size and oil ports
安装尺寸和进出油口可根据客户需要定制生产

DEFINATION OF PRESSURES

关于压力的定义



P1:Constant operating pressure
持续工作压力
P2:System Pressure (Relief valve setting)
系统最高压力 (溢流阀设定压力)
P3:Peak Pressure
峰值压力

The peak of pressure is the max pressure allowed and it corresponds to the overshoot^① of the relief valve.

Please note that both relief valve setting and overshoot must be lower than their limits.

If the relief setting is compliant but the overshoot is higher than the limit, the relief setting must be decreased until the overshoot is compliant to Avenir limit.

For high frequency applications please consult our pre-sales department.

峰值压力是系统允许的最大压力，它对应的是溢流阀过载压力^①。

请注意，溢流阀设定压力和过载压力都必须低于泵的压力极限。

如果溢流的设定压力符合要求，但是超载压力高于泵的压力极限，那么必须降低溢流阀的压力设置，直到超载压力符合 Avenir 的标准限定。

对于工作频率比较高的应用场景，请咨询我们的售前部门。

① Overshoot: The actual pressure reading when a relief valve first opens to bypass fluid. (It can be up to twice the actual pressure setting.)

过载压力：当溢流阀刚开始开启时的瞬时压力（此压力有可能会比实际的设定压力高一倍以上）

FORMULAS USED FOR CALCULATION

液压系统计算公式

$$Q = \frac{V \cdot \eta_v \cdot n / 1000}{V \cdot \eta_v \cdot n / 231} \quad \begin{matrix} [\text{l/min}] \\ [\text{Gal/min}] \end{matrix}$$

$$M = \frac{\frac{\Delta p \cdot V}{62.83 \cdot \eta_m}}{\frac{\Delta p \cdot V}{2 \cdot 3.14 \cdot \eta_m}} \quad \begin{matrix} [\text{Nm}] \\ [\text{lbf.in}] \end{matrix}$$

$$P = \frac{\frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t}}{\frac{\Delta p \cdot V \cdot n}{395934 \cdot \eta_t}} \quad \begin{matrix} [\text{kW}] \\ [\text{HP}] \end{matrix}$$

$$\eta_v = \frac{Q_{\text{act.}}}{Q_{\text{theor.}}}$$

$Q_{\text{act.}}$: Actual flow rate 实际流量
 $Q_{\text{theor.}}$: theoretical flow rate 理论流量

It determines the amount of flow losses. Its value is $\eta_v = 0.92 \sim 0.98$ (depending on rotation speed, oil temperature, viscosity of working liquid and outlet pressure).

容积效率决定了泵的内泄漏量，数值一般取 0.92~0.98 (实际数值取决于转速，油温，油液粘性，工作压力等)

$$\eta_m = \frac{M_{\text{theo}}}{M_{\text{act.}}}$$

M_{theo} : theoretical torque 理论扭矩
 $M_{\text{act.}}$: Actual torque 实际扭矩

It determines mechanical losses. Its value is about $\eta_m = 0.85$

机械效率决定了泵的机械损失，数值一般取 0.85

$$\eta_t = \eta_v \cdot \eta_m = \frac{P_{\text{theo}}}{P_{\text{act.}}}$$

P_{theo} : Theoretical input power 理论输入功率

$P_{\text{act.}}$: Actual input power 实际输入功率

It is defined as product of η_v and η_m and determines difference between theoretical and actual required input power

总效率是容积效率和机械效率的乘积，他决定了理论输入功率和实际需要的输入功率的差别

Conversion factor 单位换算

SI units 国际单位制	US units 美国单位制
1 l/min	0.2641 US Gal/min
1 Nm	8.851 in-lbs
1 Nm	0.7375 ft-lbs
1 N	0.2248 lbs
1 kW	1.34 HP
1 cm ³ /giro	0.061 in ³ /rev
1 bar	14.5 psi
1 mm	0.0394 in
1 kg	2.205 lbs

Variables 参数

Q : FLOW RATE 流量 [l/min]
[Gal/min]

M : Torque 扭矩 [Nm]
[lbf.in]

P : Power 功率 [kW]
[HP]

V : Displacement 排量 [kW]
[HP]

n: Speed 转速 [min⁻¹]

η_v : Volumetric efficiency 容积效率

η_m : Mechanical efficiency 机械效率

η_t : Overall efficiency 总效率

WORKING LIQUID

工作介质

- Mineral oils for hydraulic drives
用于液压驱动的矿物油
- Hydraulic liquids based on plant oils suitable for hydraulic drives
用于液压驱动的植物基-液压油

LIQUID TEMPERATURE

工作油温

- $t = -20^{\circ}\text{C} \sim +80^{\circ}\text{C}$ (with NBR seals) (当密封件选用丁腈橡胶材质时)
 $t = 0^{\circ}\text{C} \sim +200^{\circ}\text{C}$ (with FKM seals) (当密封件选用氟橡胶材质时)
 $t = -50^{\circ}\text{C} \sim +120^{\circ}\text{C}$ (with HNBR seals) (当密封件选用氢化丁腈橡胶材质时)

CINEMATIC VISCOSITY

运动粘度

- Recommended (during continuous operation):
推荐粘度 (持续工作工况下) $v = 20\sim 80$ [mm²/s]
- Maximum (cold starting, at viscosity >1000, operating pressure <10 bar is permissible, speed <1500·min⁻¹):
最大可用粘度 (允许在粘>1000, 工作压力<10bar, 转速<1500r/min 时冷启动) $v = 1200$ [mm²/s]
- Minimum (operating mode at 10 up 20 should be consulted with manufacturer):
最小可用粘度 (如果在 10~20 的粘度下工作, 请咨询我公司技术部门) $v = 10$ [mm²/s]

Filtration coefficient β_α

过滤系数

- $\beta_{25} 75 \geq$ (for pressure $p_2 < 200$ bar)
 $\beta_{25} 75 \geq$ (当 p_2 压力 < 200 bar 时)
- $\beta_{10} 75 \geq$ (for pressure $p_2 > 200$ bar)
 $\beta_{10} 75 \geq$ (当 p_2 压力 > 200 bar 时)

Liquid contamination class according to ISO 4406

ISO4406 油液污染度等级

- 21/18/15 (for pressure $p_2 < 200$ bar)
21/18/15 (当 p_2 压力 < 200 bar 时)
- 20/17/14 (for pressure $p_2 > 200$ bar)
20/17/14 (当 p_2 压力 > 200 bar 时)

Liquid contamination class according to NAS 1638

NAS1638 油液污染度等级

- LEVEL 10 (for pressure $p_2 < 200$ bar)
10 级 (当 p_2 压力 < 200 bar 时)
- LEVEL 8 (for pressure $p_2 > 200$ bar)
8 级 (当 p_2 压力 > 200 bar 时)

DIRECTION OF ROTATION

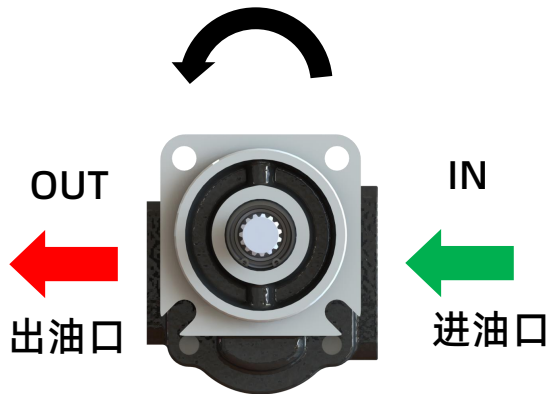
旋向

Determine direction of rotation by looking at the drive shaft.

The pump can only be used in the specified direction of rotation.

从轴端方向的视角来判断泵的旋向。泵只能在其相应旋向下工作

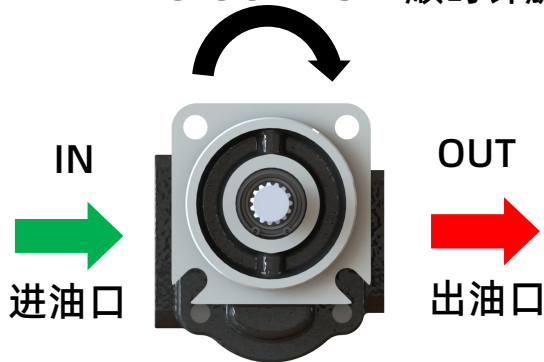
COUNTER-CLOCKWISE 逆时针旋转



LEFT ROTATION

左旋

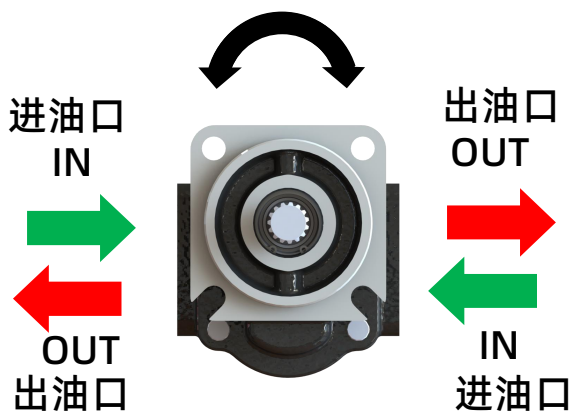
CLOCKWISE 顺时针旋转



RIGHT ROTATION

右旋

DUAL-ROTATION 双向旋转



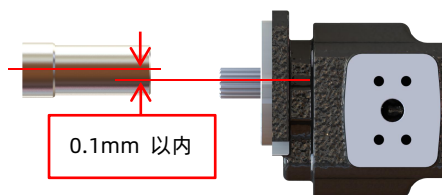
BI-DIRECTION

双向

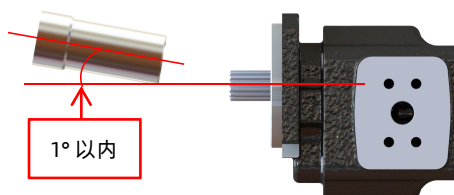
INSTALLATION PRECAUTIONS

安装注意事项

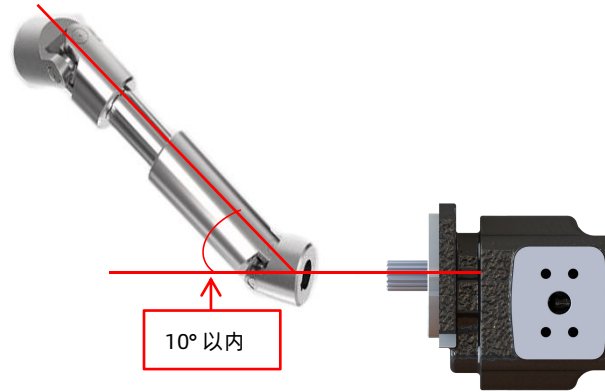
- Please use flexible coupling connection between engine shaft and pump shaft
电机与驱动轴的连接部分请使用柔性联轴器
联轴器有时会成为噪音源，建议使用橡胶等弹性材料组成的联轴器
- Axial force and radial force is not allow towards the pump shaft, if cannot avoid force, please choose the special bearing type of pump
请勿对泵的轴端施加轴向力和径向力，如无法避免，请选择带有前置轴承的型号
- Bad coaxiality will lead to pump's damage
泵轴与驱动轴的同轴度较差，会导致齿轮泵损坏
Coaxiality deviation should below 0.1mm
同轴度偏差不得超过 0.1mm



- Angle deviation should below 1°
角度偏差不得超过 1°



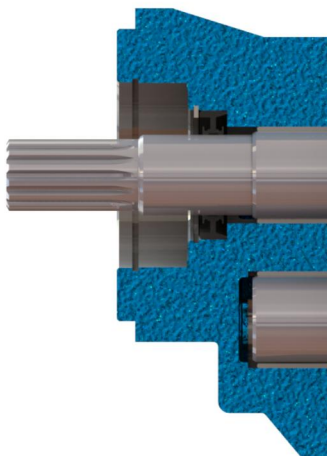
- Angle deviation when use universal joint should below 10°
万向节传动，角度偏差不得超过 10°



OUTBOARD BEARING OPTIONS

前置轴承选项

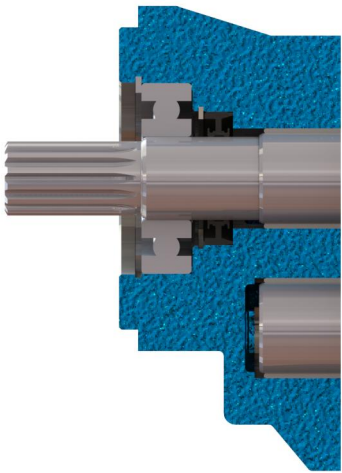
A



Version for applications without radial and axial load on the driveshaft

泵的轴端无轴向力和径向力时，选择此方案。

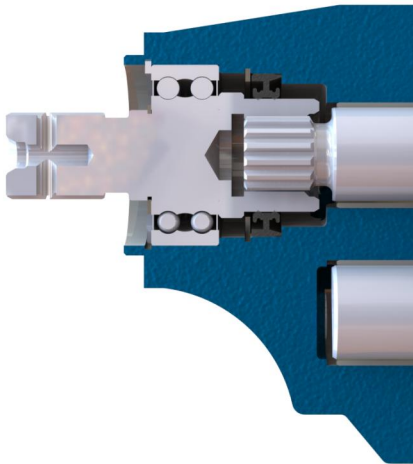
B



Version for applications with low radial load and without axial load on the drive shaft.

泵的轴端有轻微径向力，但无轴向力时，选择此方案。

C



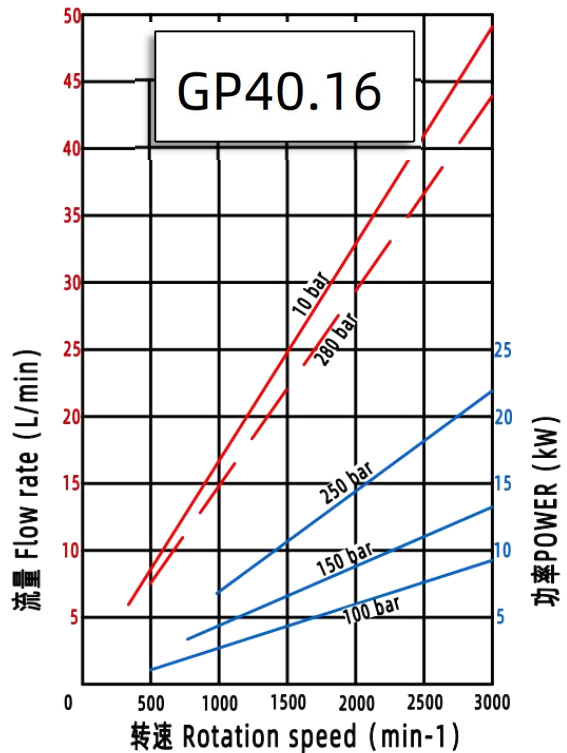
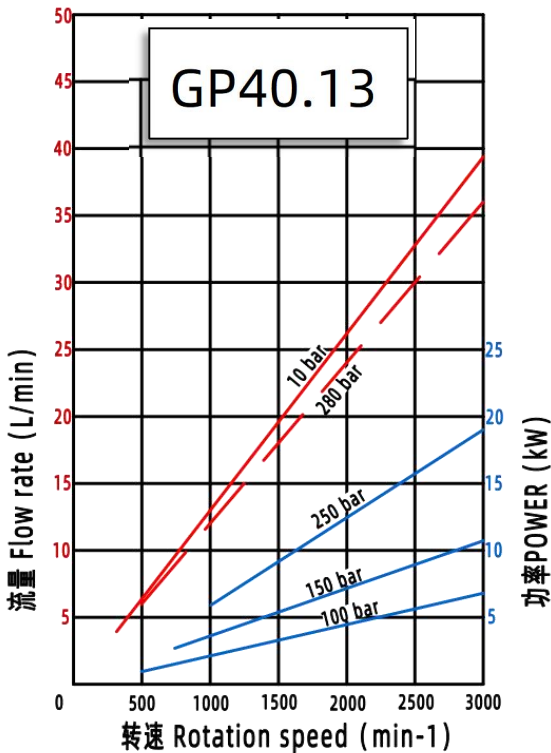
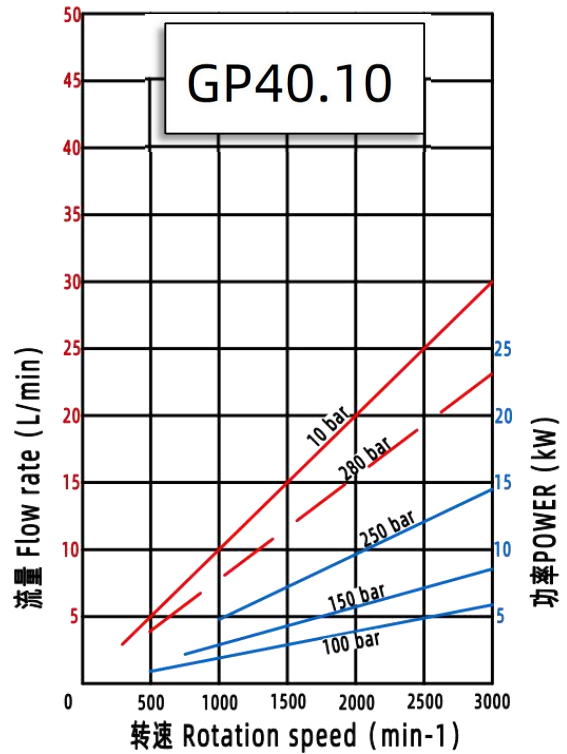
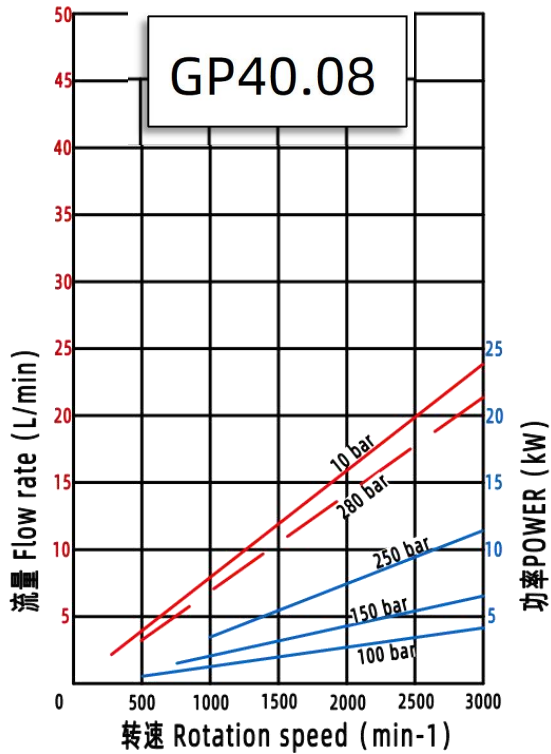
Version for applications with radial and axial load on the drive shaft

泵的轴端有径向力和轴向力时，选择此方案。

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



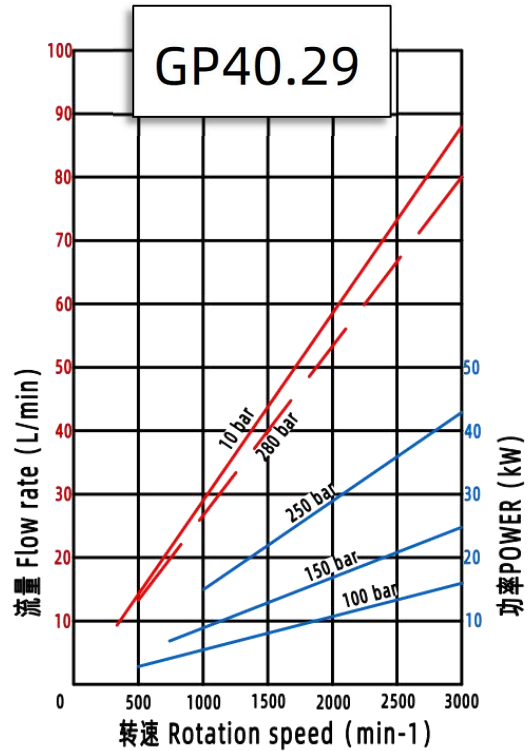
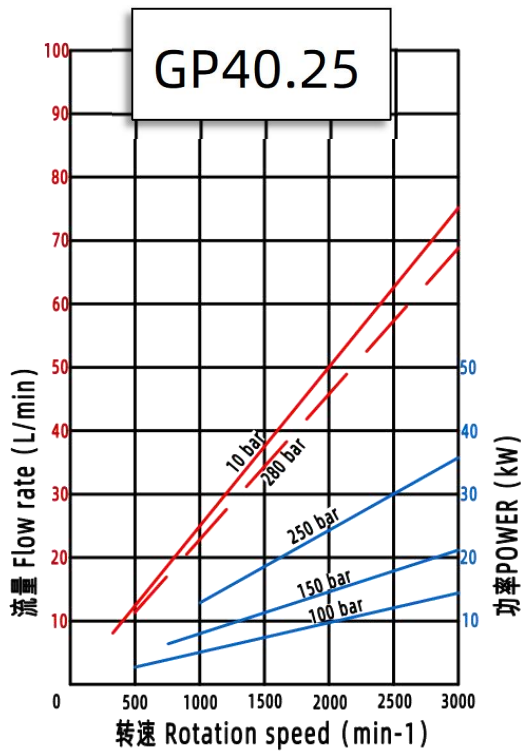
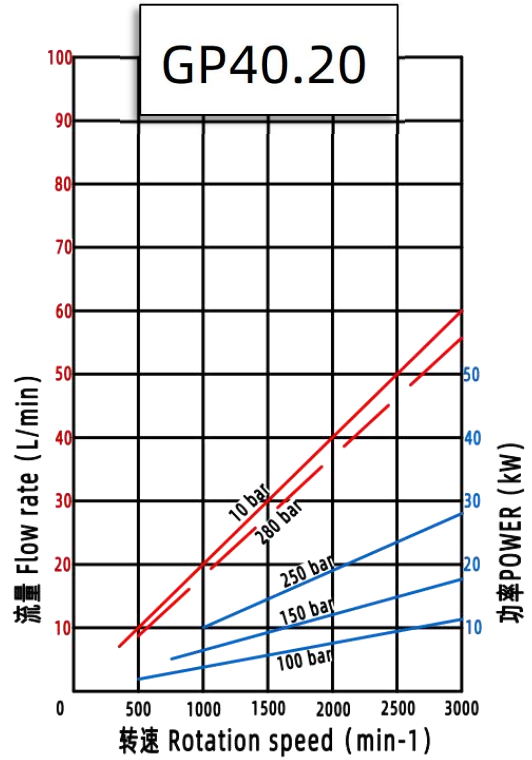
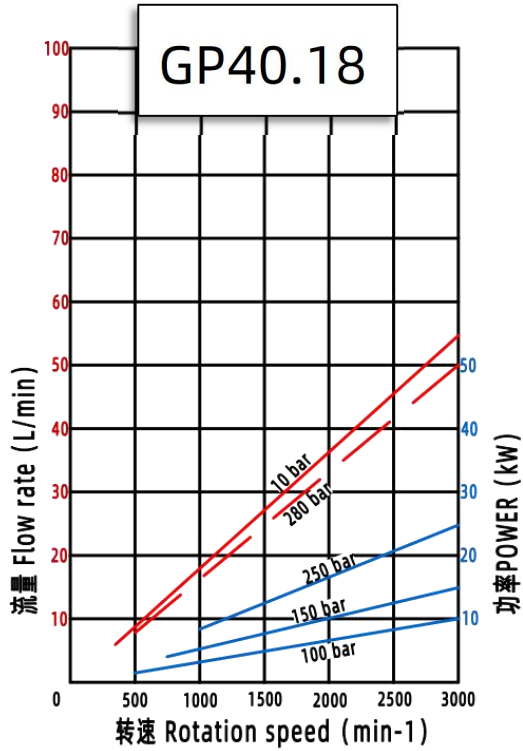
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power

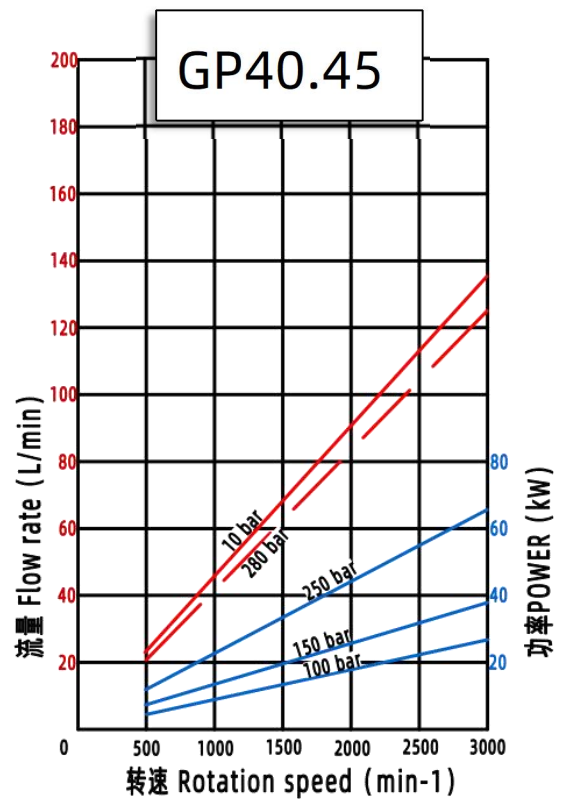
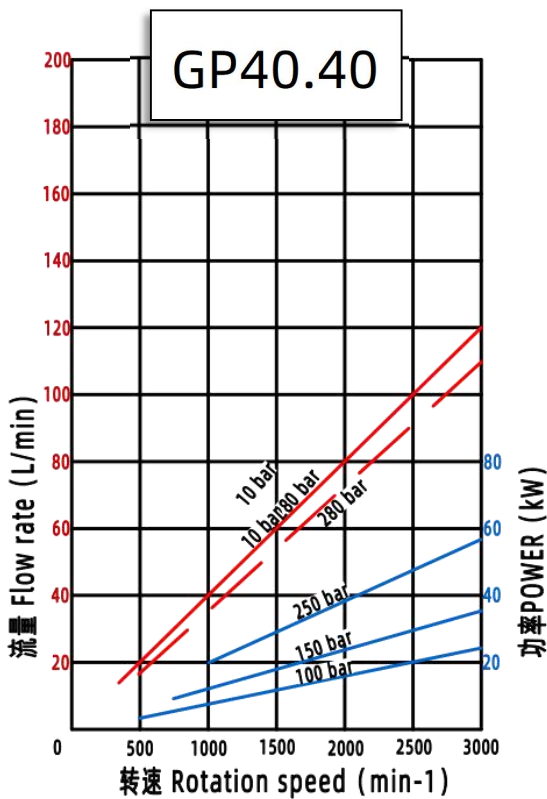
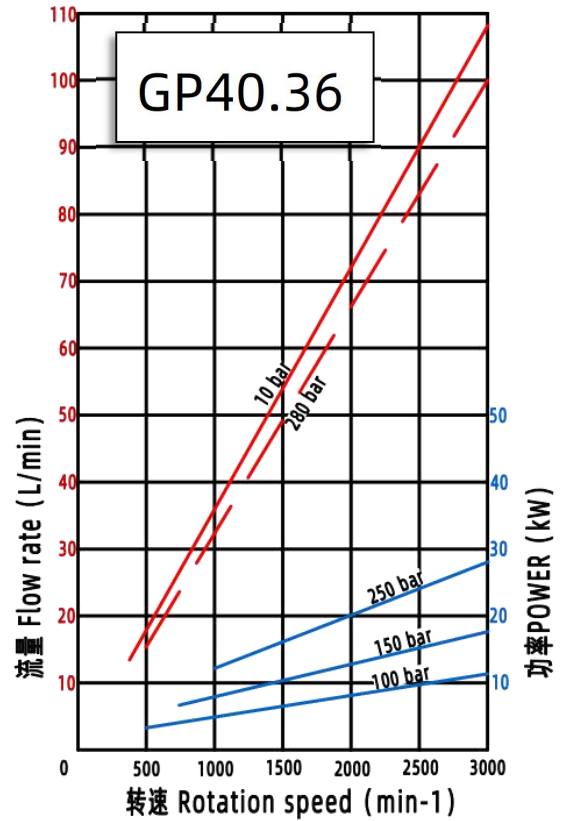
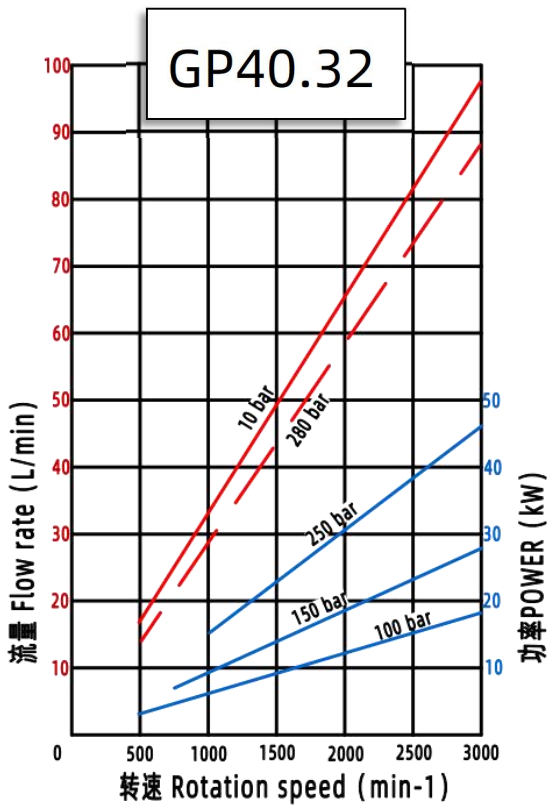


This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)
 此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



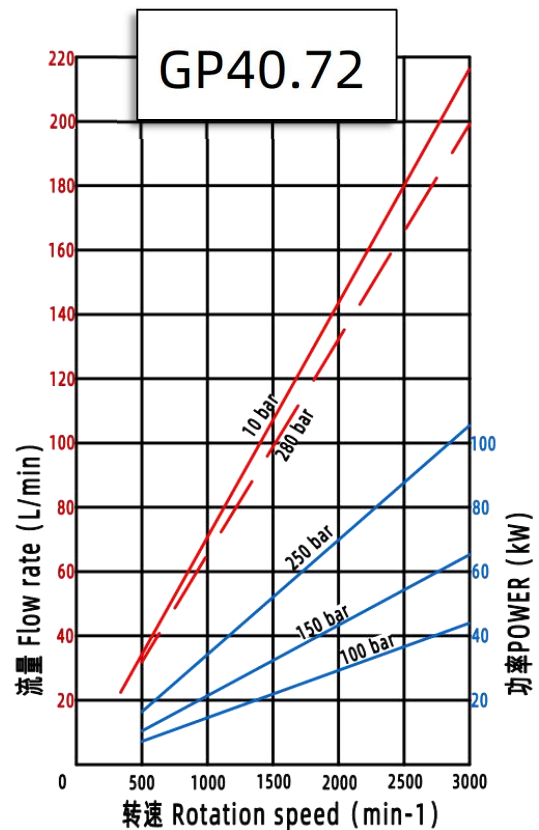
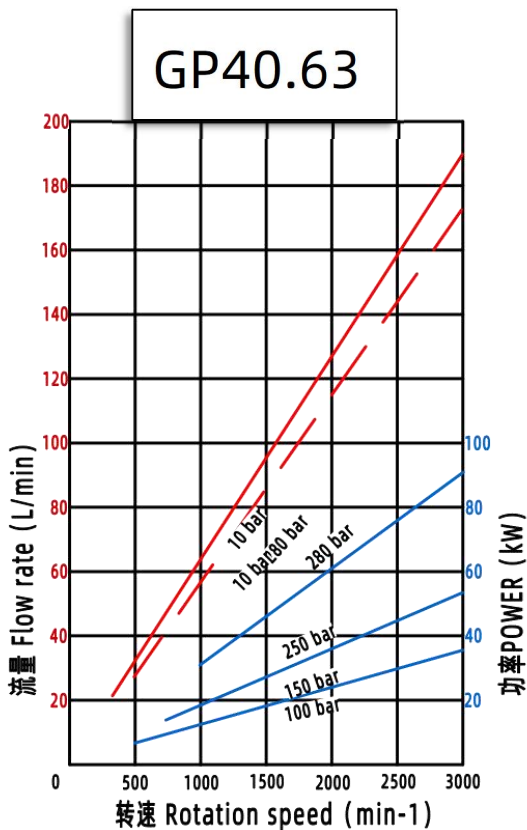
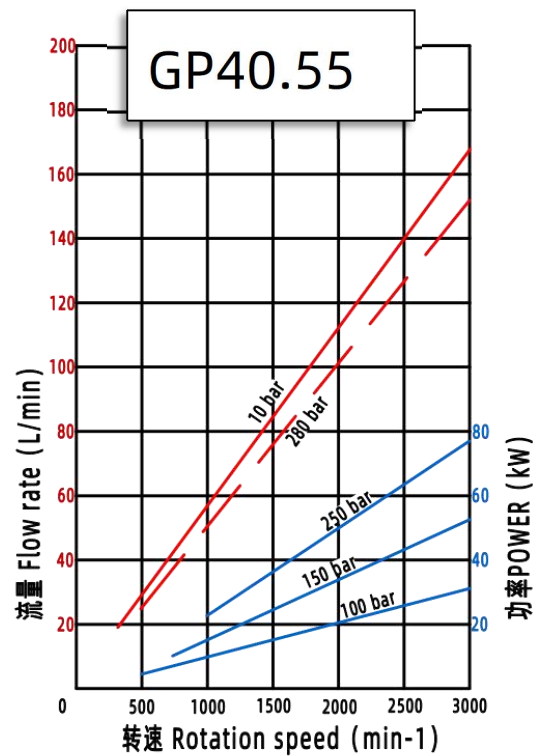
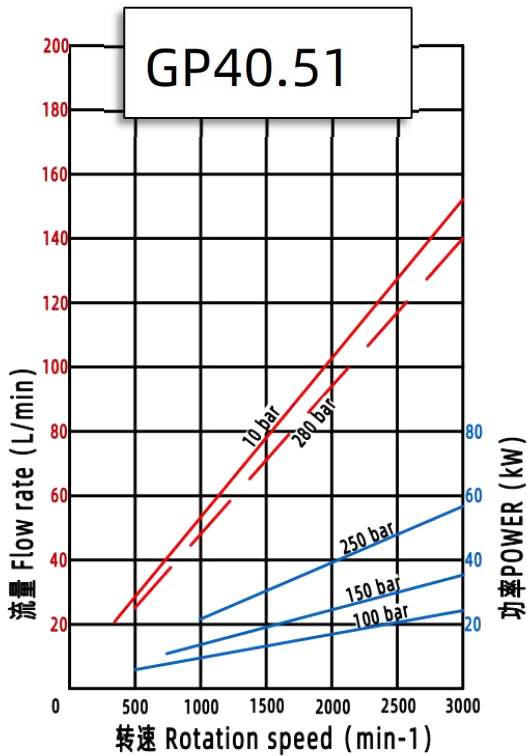
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



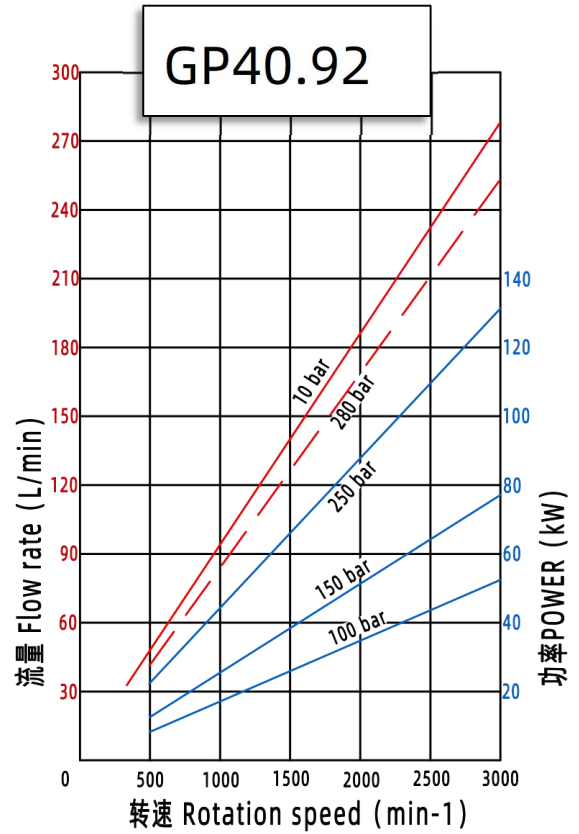
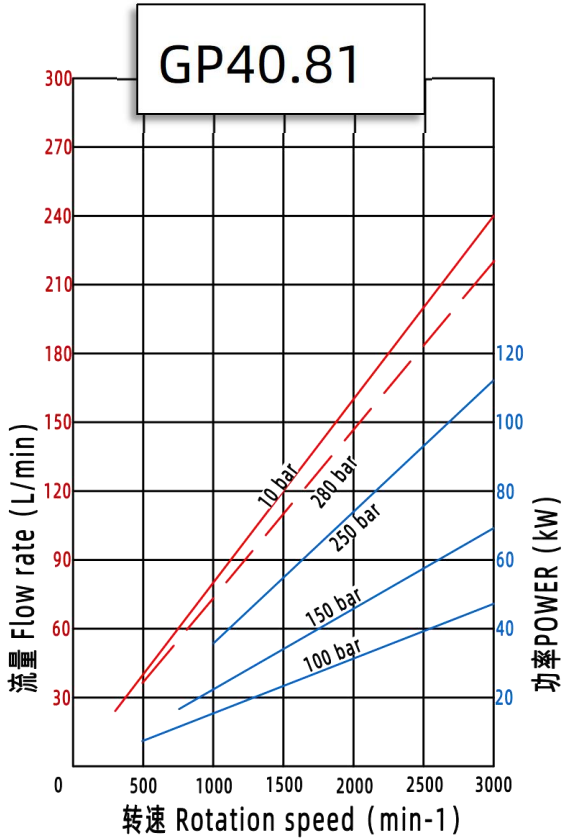
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

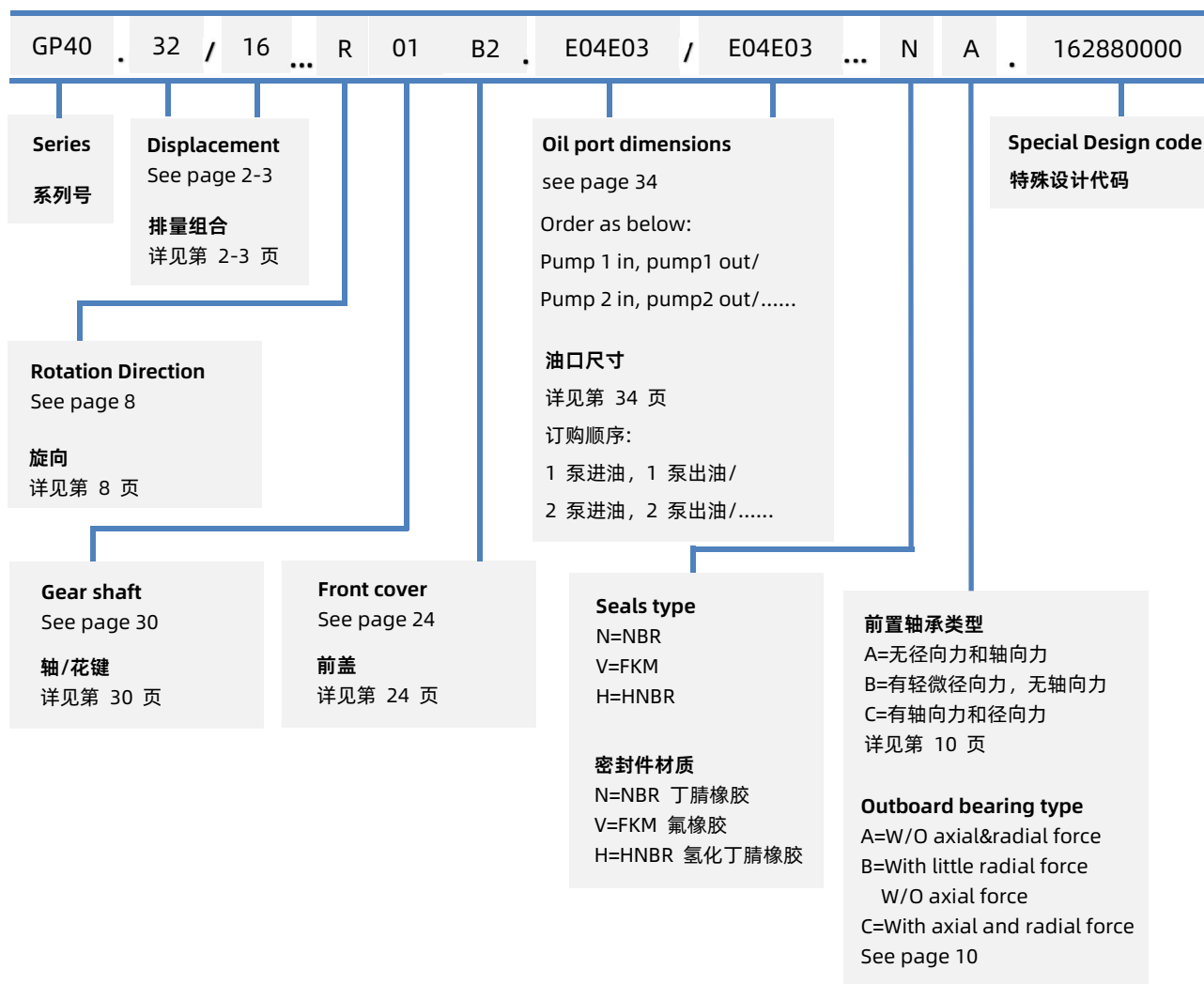
此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

ORDER KEY

如何订购

GP40 SERIES

GP40 系列



For any other dimensions or technical requirement, please feel free to contact us!
如有任何尺寸或者技术需求, 欢迎随时联系我们!

TECHNICAL SPECIFICATIONS

技术参数

Model 型号	Displacement 排量	Flow rate 流量 @1500RPM	Pressure 压力			Rotate Speed 转速		Input power @250bar &1500rpm 25MPa/1500 转时 的输入功率
			P1	P2	P3	Max 最高	Min 最低	
	cm ³ /rev	l/min	bar			rpm		kW
GP40.08	8	12	250	280	315	3000	350	5.7
GP40.10	10	15	250	280	315	3000	350	7.1
GP40.13	13	19.5	250	280	315	3000	350	9.2
GP40.16	16	24	250	280	315	3000	350	11.4
GP40.18	18	27	250	280	315	3000	350	12.8
GP40.20	20	30	250	280	315	3000	350	14.2
GP40.25	25	37.5	250	280	315	3000	350	17.8
GP40.29	29	43.5	260	300	330	3000	350	20.6
GP60.32	32	48	260	300	330	3000	350	22.7
GP60.36	36	54	260	300	330	3000	350	25.6
GP60.40	40	60	275	315	350	3000	350	28.4

For special displacement requirement please consult our pre-sales department.
如有其他排量需求，请咨询我公司售前部门

TECHNICAL SPECIFICATIONS

技术参数

Model 型号	Displacement 排量	Flow rate 流量 @1500RPM	Pressure 压力			Rotate Speed 转速		Input power @250bar &1500rpm 25MPa/1500 转时 的输入功率
			P1	P2	P3	Max 最高	Min 最低	
	cm ³ /rev	l/min	bar			rpm		kW
GP40.45	45	67.5	275	315	350	3000	350	32
GP40.51	51	76.5	275	315	350	3000	350	36.2
GP40.55	55	82.5	275	315	350	3000	350	39.6
GP40.63	63	94.5	250	280	315	3000	350	44.7
GP40.72	72	108	250	280	315	3000	350	51.1
GP40.81	81	121.5	230	275	315	3000	350	57.5
GP40.92	92	138	200	250	275	3000	350	65.3

For special displacement requirement please consult our pre-sales department.

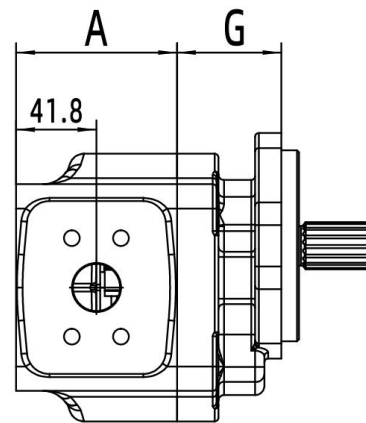
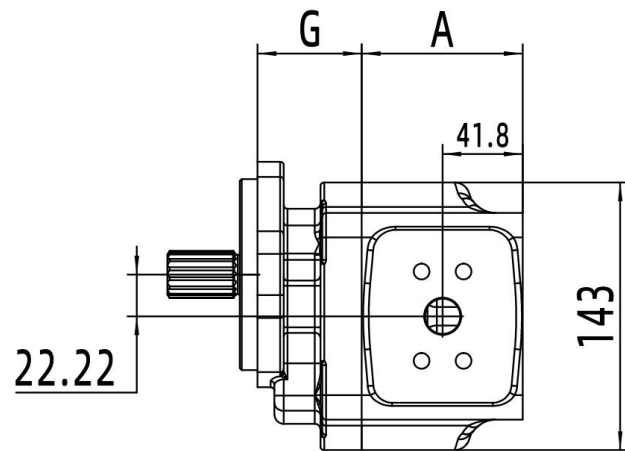
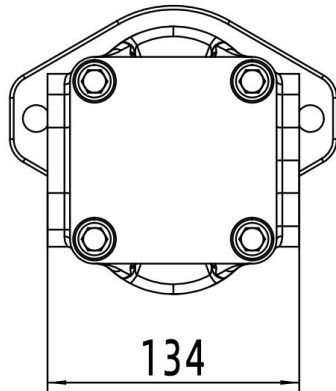
如有其他排量需求，请咨询我公司售前部门

DIMENSIONS

外形尺寸

GP40 SINGLE PUMP

GP40 单泵



GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	70	71.5	73.5	75.5	77	78.5	82.5	84.5	87.5	89.5	93	96.5	100.5
GP40	55	63	72	81	92								
A	103.5	109.5	116.5	121.5	129.5								

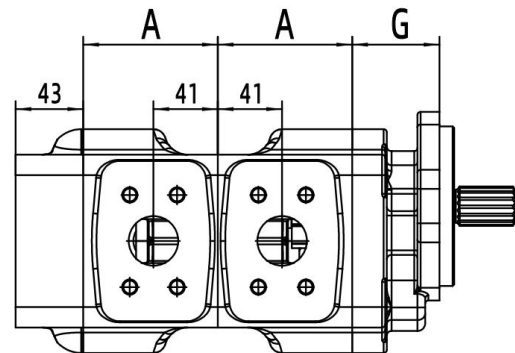
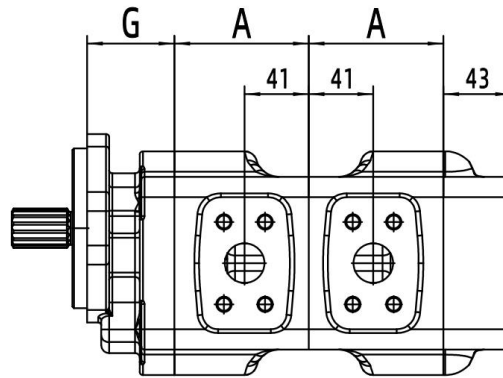
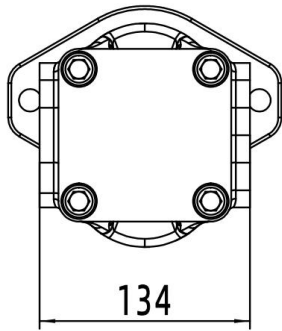
The "G" dimension please see page 23
G 尺寸请参考第 23 页

DIMENSIONS

外形尺寸

GP40 TANDEM PUMP

GP40 双联泵



GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	69.2	70.7	72.7	74.7	76.2	77.7	81.7	83.7	86.7	88.7	92.2	95.7	99.7
GP40	55	63	72	81	92								
A	102.7	108.7	115.7	120.7	128.7								

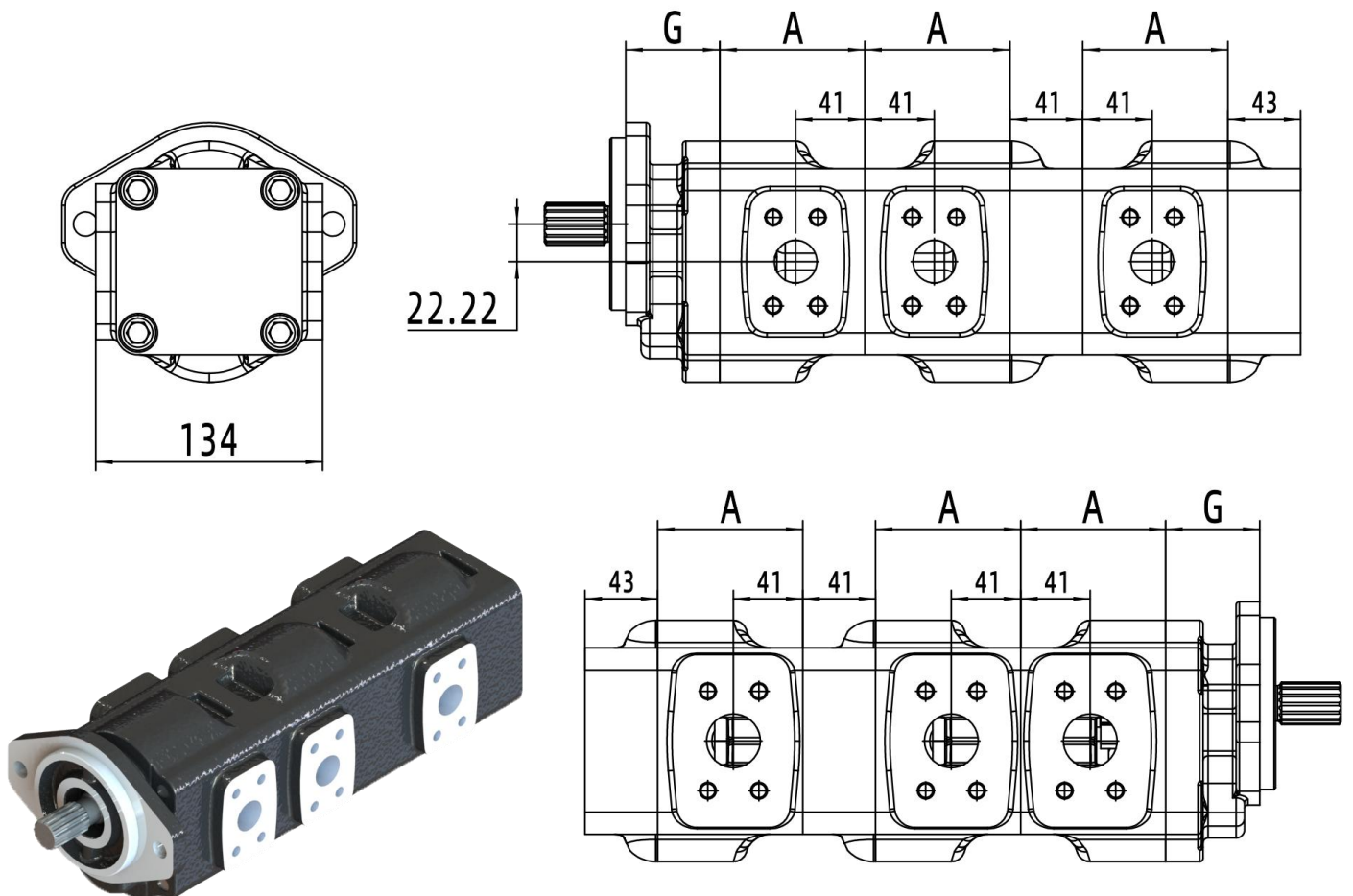
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP40 TRIPLE PUMP

GP40 三联泵



GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	69.2	70.7	72.7	74.7	76.2	77.7	81.7	83.7	86.7	88.7	92.2	95.7	99.7
GP40	55	63	72	81	92								
A	102.7	108.7	115.7	120.7	128.7								

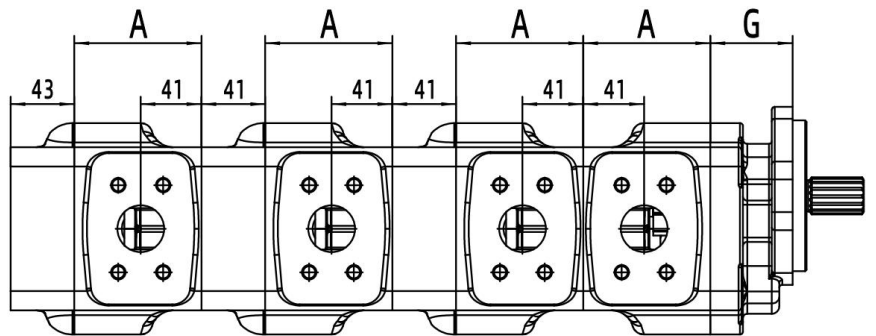
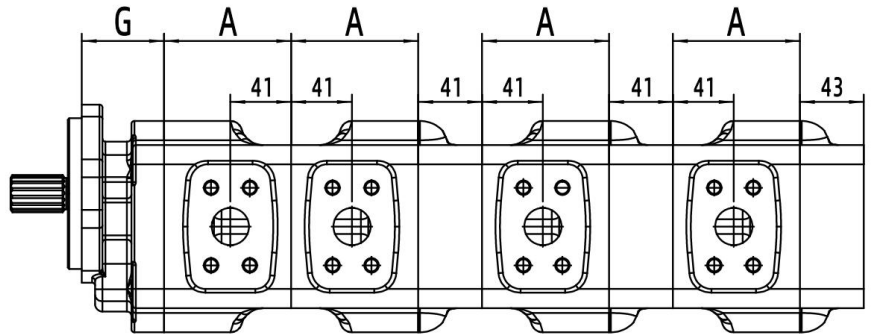
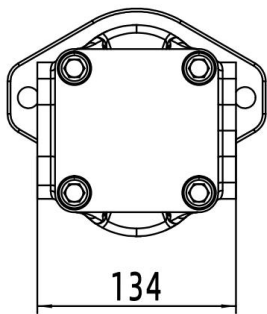
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

GP40 QUADRUPLE PUMP

外形尺寸

GP40 四联泵



GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	69.2	70.7	72.7	74.7	76.2	77.7	81.7	83.7	86.7	88.7	92.2	95.7	99.7
GP40	55	63	72	81	92								
A	102.7	108.7	115.7	120.7	128.7								

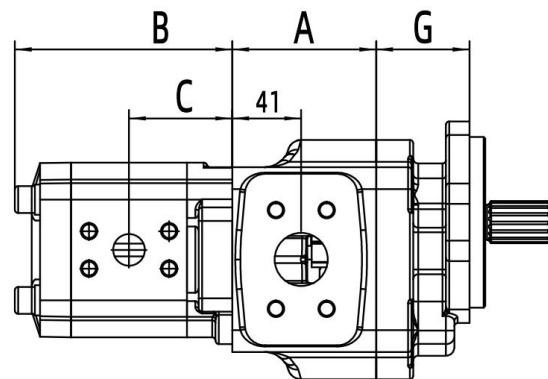
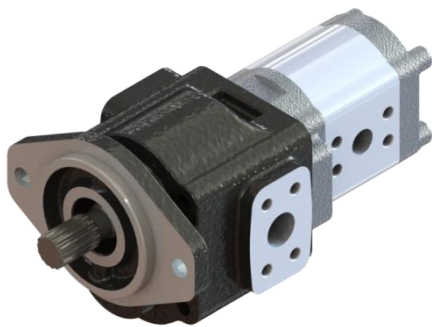
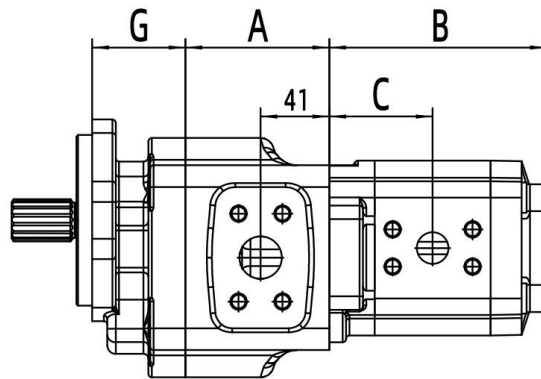
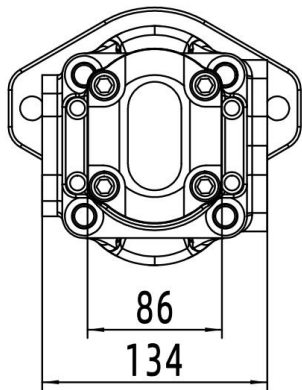
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP40/SP20 TANDEM PUMP

GP40/SP20 双联泵



GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	69.2	70.7	72.7	74.7	76.2	77.7	81.7	83.7	86.7	88.7	92.2	95.7	99.7
GP40	55	63	72	81	92								
A	102.7	108.7	115.7	120.7	128.7								
SP20	06	10	16	20	25								
B	114.5	120.5	129.5	136.5	143.5								
C	54	57	61.5	65	68.5								

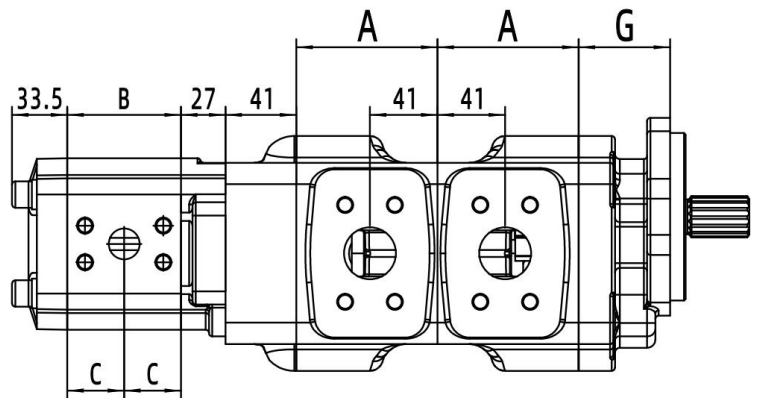
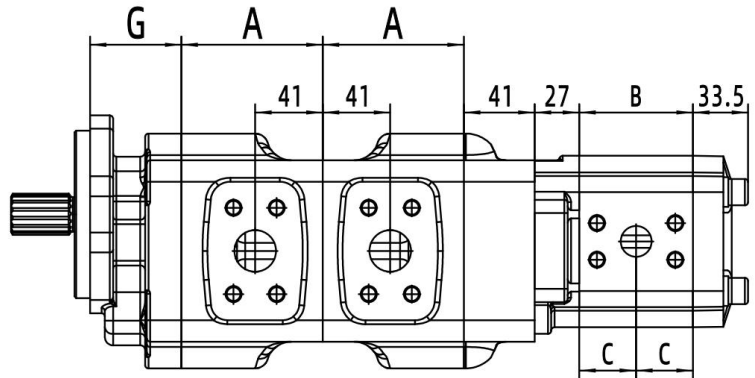
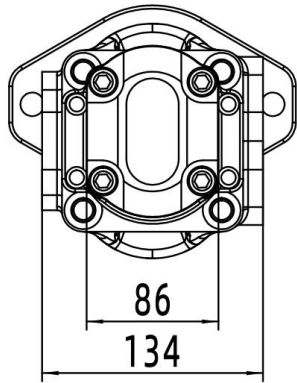
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP40/SP20 TRIPLE PUMP

GP40/SP20 三联泵



GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	69.2	70.7	72.7	74.7	76.2	77.7	81.7	83.7	86.7	88.7	92.2	95.7	99.7
GP40	55	63	72	81	92								
A	102.7	108.7	115.7	120.7	128.7								
SP20	06	10	16	20	25								
B	54	60	69	76	83								
C	27	30	34.5	38	41.5								

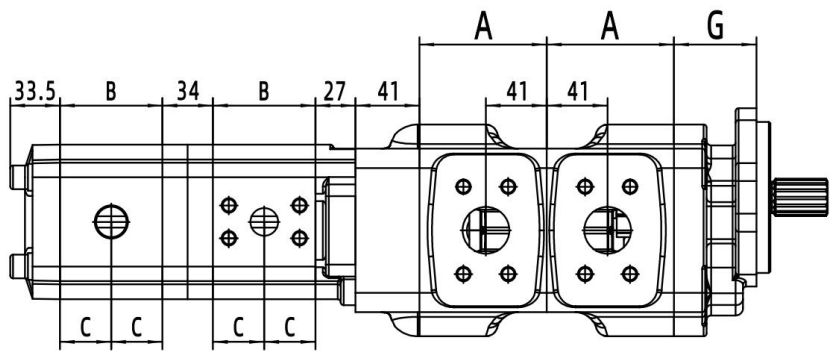
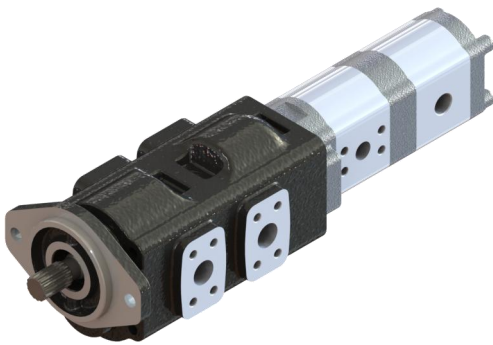
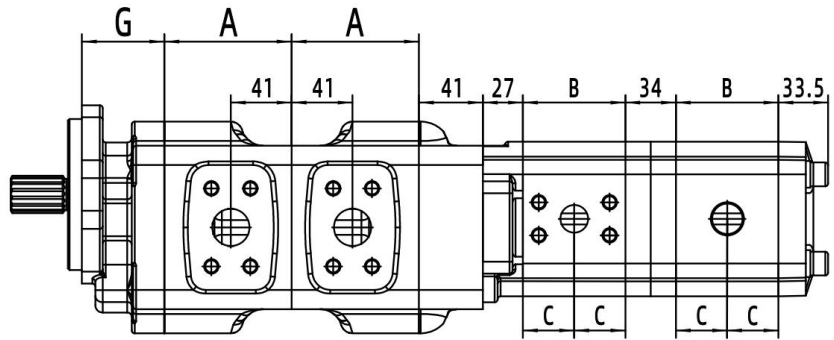
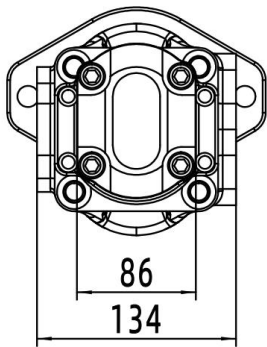
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP40/SP20 QUADRUPLE PUMP

GP40/SP20 四联泵



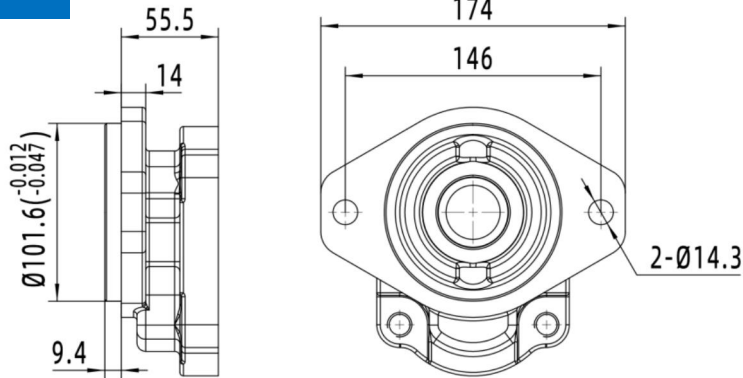
GP40	08	10	13	16	18	20	25	29	32	36	40	45	51
A	69.2	70.7	72.7	74.7	76.2	77.7	81.7	83.7	86.7	88.7	92.2	95.7	99.7
GP40	55	63	72	81	92								
A	102.7	108.7	115.7	120.7	128.7								
SP20	06	10	16	20	25								
B	54	60	69	76	83								
C	27	30	34.5	38	41.5								

The "G" dimension please see page 24
G 尺寸请参考第 24 页

FRONT COVER

前盖

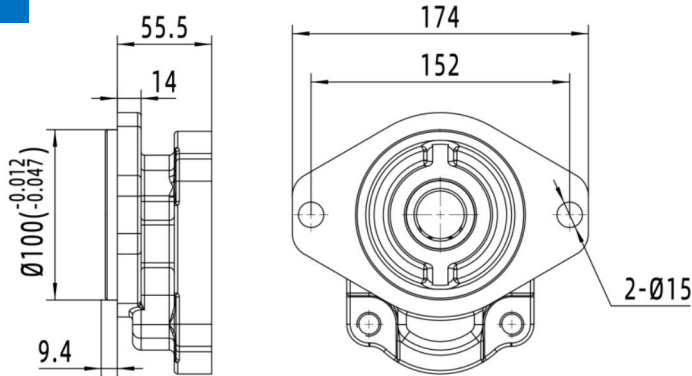
B2



SAE- "B" 2 holes
Conforms to SAE J744



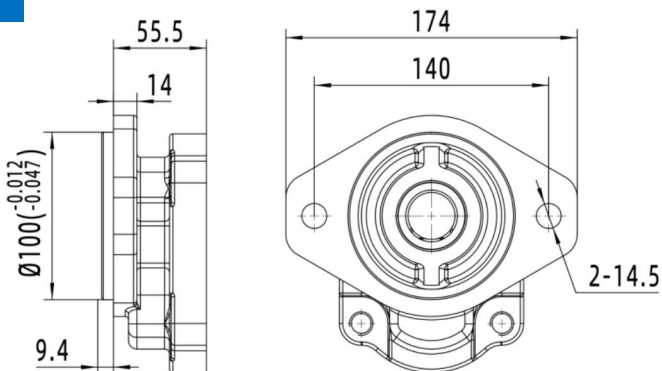
B2A



SAE- "B" 2 holes
Chinese standard



B2B



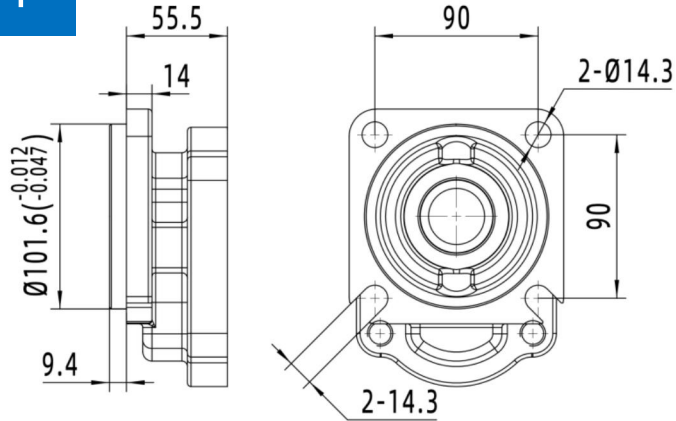
SAE- "B" 2 holes
Chinese standard-2



FRONT COVER

前盖

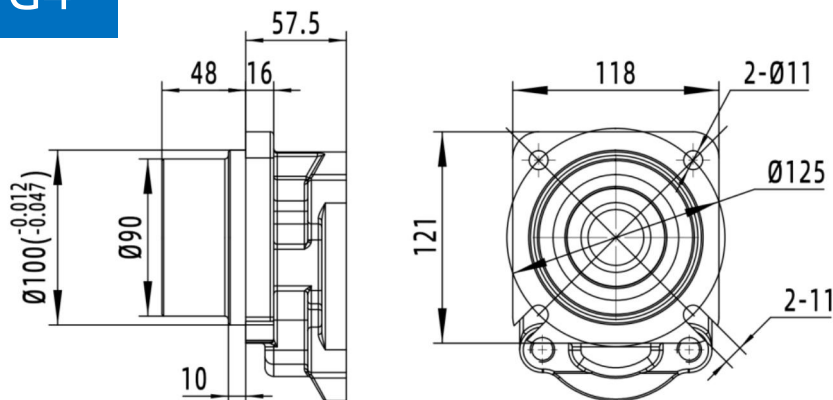
B4



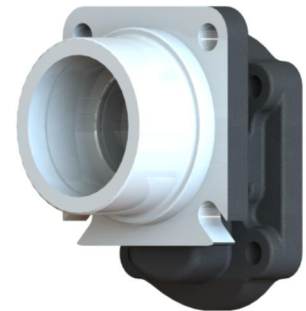
SAE- "B" 4 holes
Conforms to SAE J744



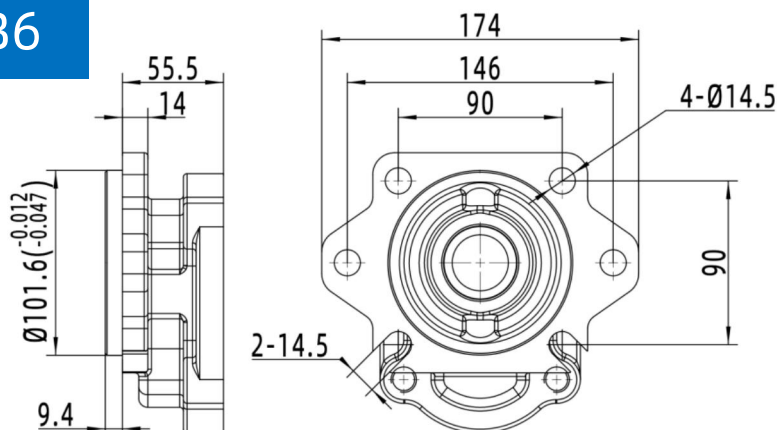
G4



SAE- "B" 4 holes
BEARING TYPE



B6



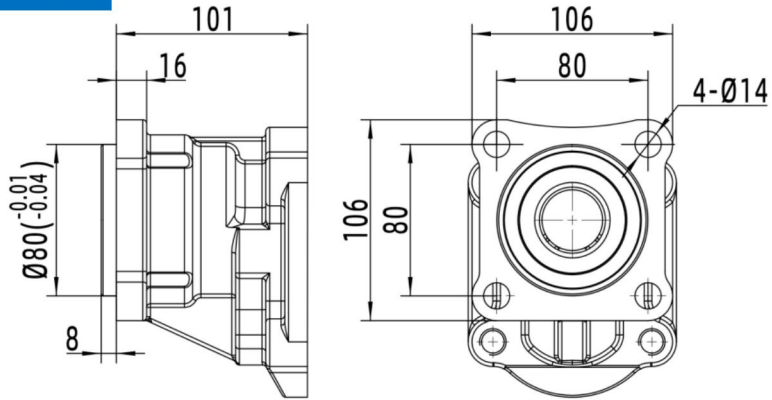
SAE- "B" 2-4 holes
Conforms to SAE J744



FRONT COVER

前盖

H4

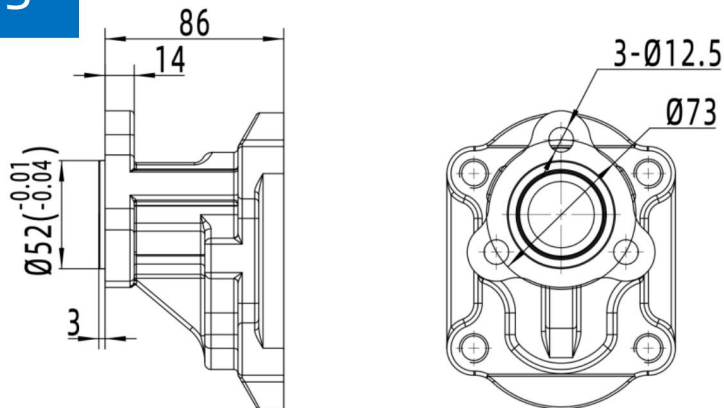


ISO - 4 holes

Conforms to UNI-ISO228



U3

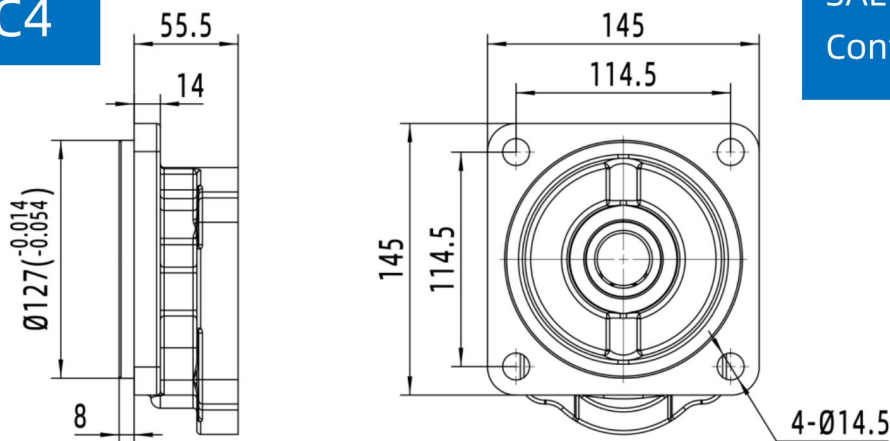


UNI- 3 holes

Conforms to UNI-ISO228



C4



SAE- "C" 4 holes

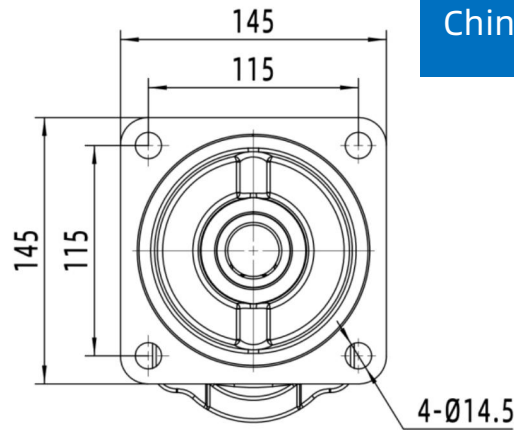
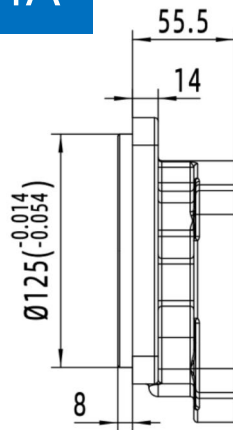
Conforms to SAE J744



FRONT COVER

前盖

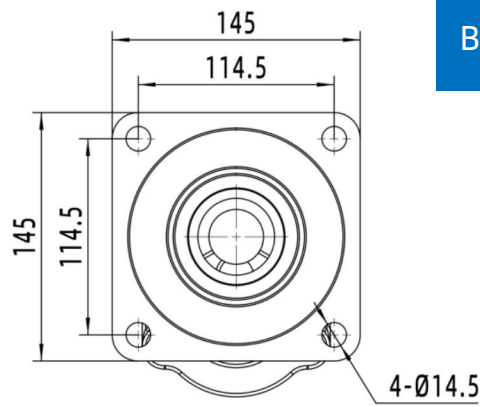
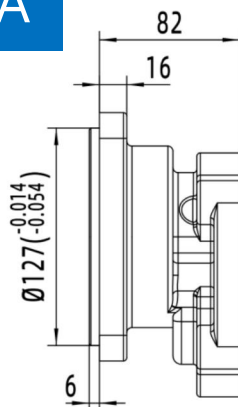
C4A



SAE- "C" 4 holes
Chinese standard



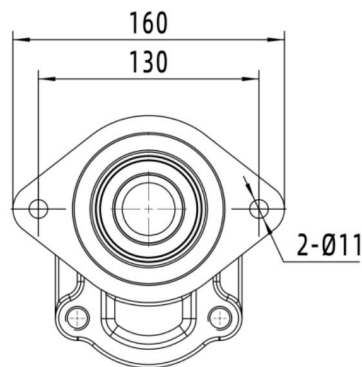
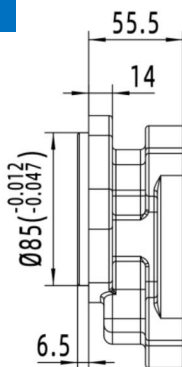
C4A



SAE- "C" 4 holes
BEARING TYPE



F2



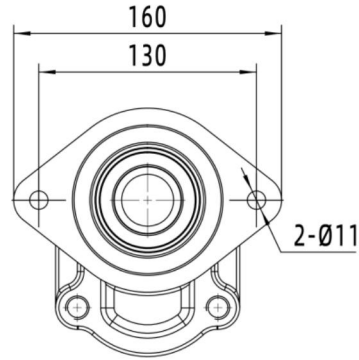
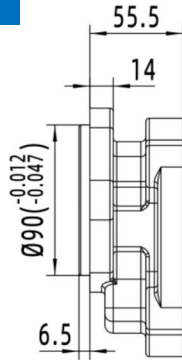
SAE- "B" 2 holes
RUSSIA STANDARD



FRONT COVER

前盖

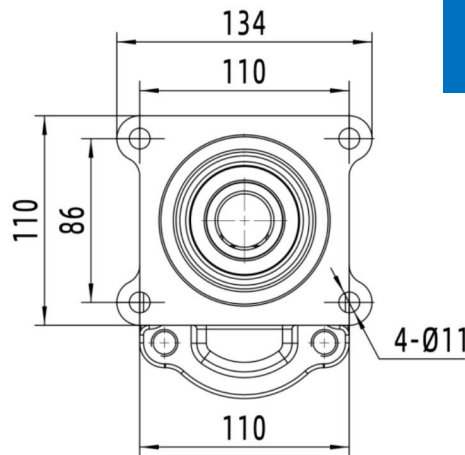
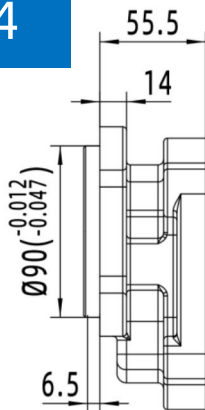
F2A



SAE- "B" 2 holes
CHINESE STANDARD



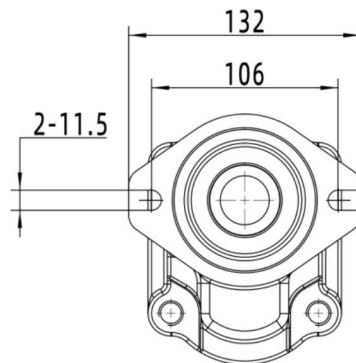
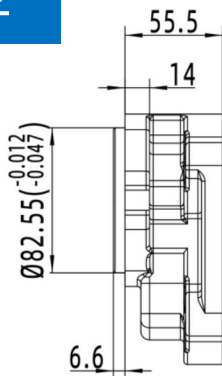
F4



SAE- "B" 4 holes
RUSSIA STANDARD



A2



SAE- "A" 2 holes
Conforms to SAE J744

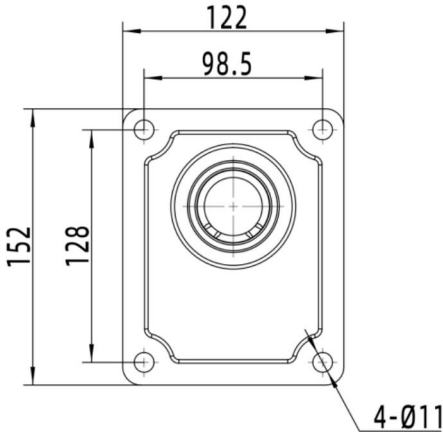
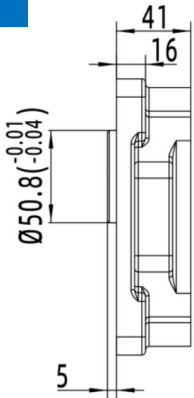


FRONT COVER

前盖

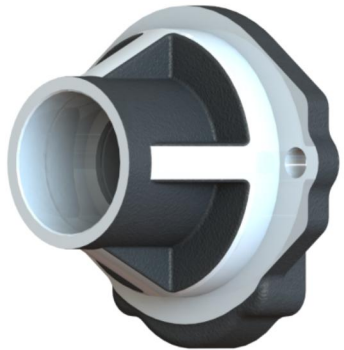
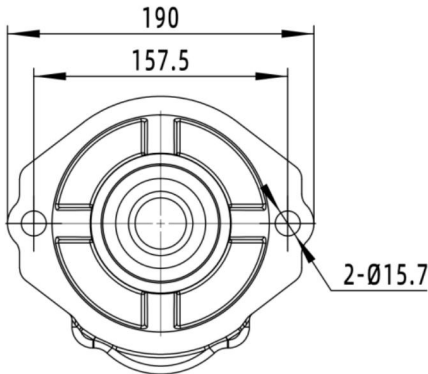
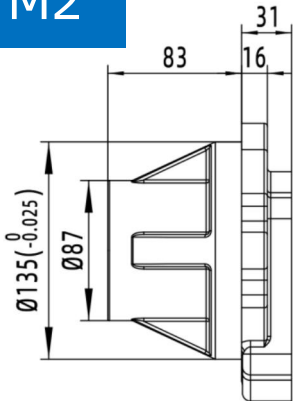
E4

EUROPEAN 4 holes



M2

CUSTOMIZE COVER

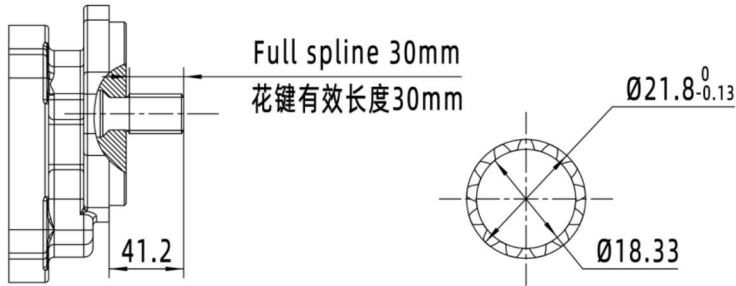


For other front cover requirement please contact our pre-sale department.

如有其他前盖尺寸的需求，请联系我公司售前部门。

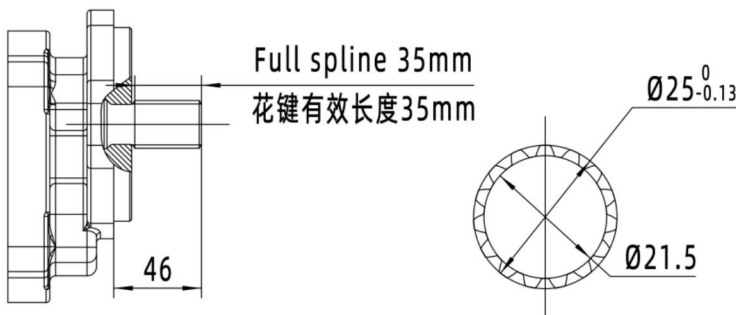
GEAR SHAFT

轴/花键



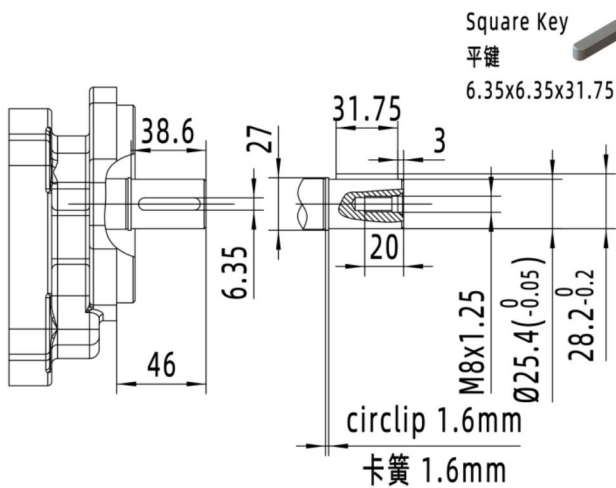
01

SAE INVOLUTE SPLINE
13 TEETH 16/32 PITCH
13 齿 $\text{Ø}21.8$ 渐开线花键



02

SAE INVOLUTE SPLINE
15 TEETH 16/32 PITCH
15 齿 $\text{Ø}25$ 渐开线花键

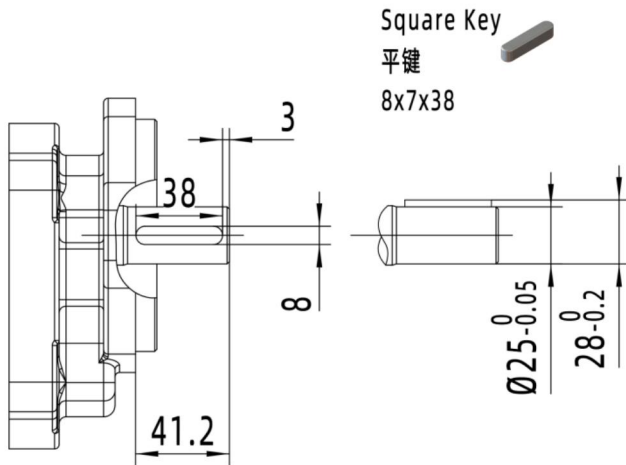


03

SAE- 1 inch KEYED SHAFT
 $\text{Ø}25.4$ 平键

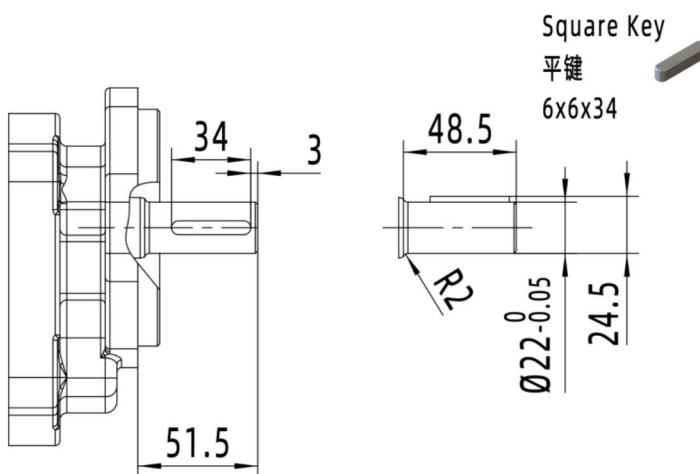
GEAR SHAFT

轴/花键



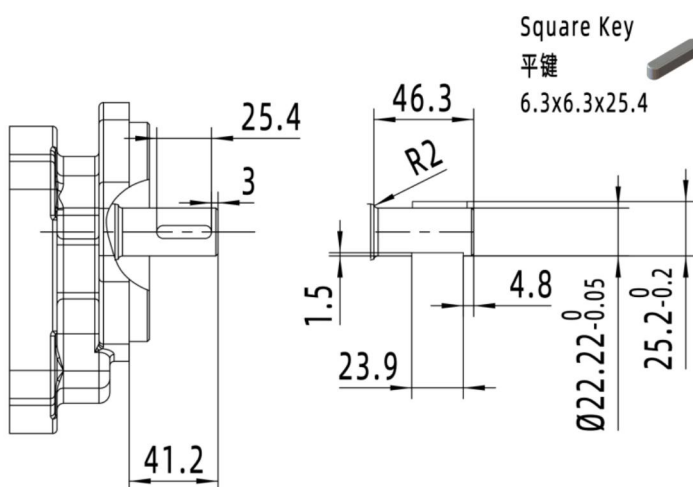
04

Φ25 KEYED SHAFT
Φ25 平键



05

Φ22 KEYED SHAFT
Φ22 平键

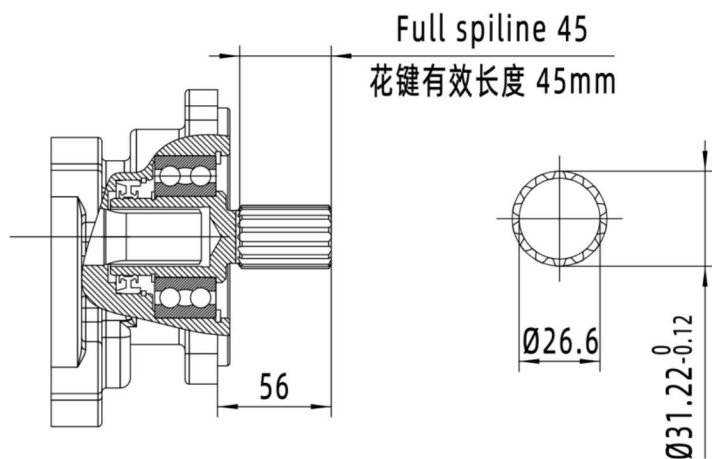


06

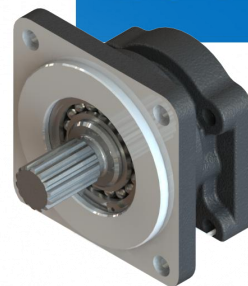
SAE-7/8 inch KEYED SHAFT
Φ22.22 平键

GEAR SHAFT

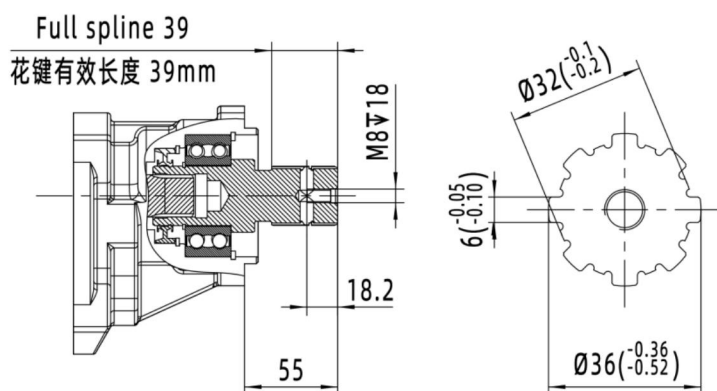
轴/花键



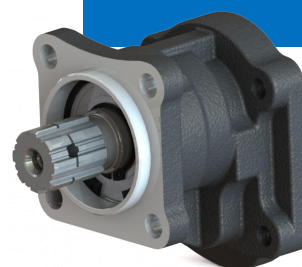
07.00



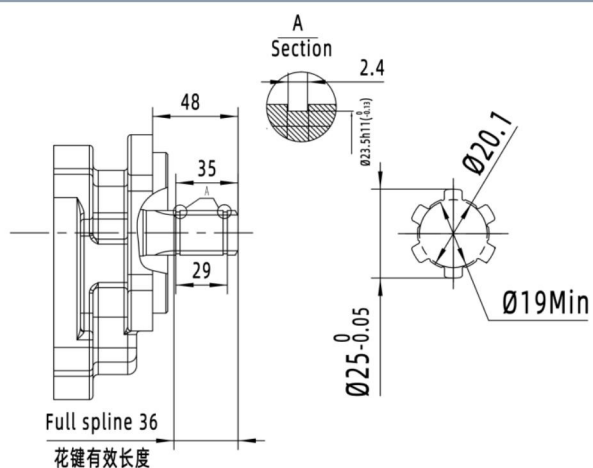
SAE INVOLUTE SPLINE
14 TEETH 12/24 PITCH
14 齿 $\varnothing 31.2$ 渐开线花键



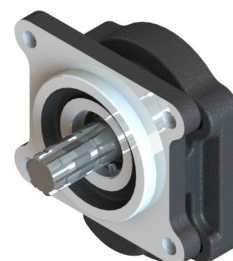
07.01



ISO STANDARD
A8x32x36x6 DIN5462
ISO 8 齿矩形花键



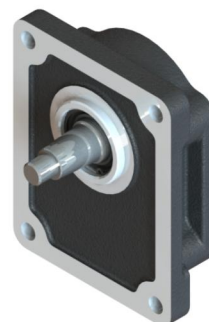
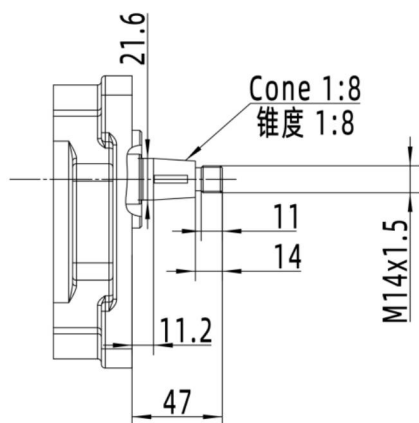
09



RECTANGLE SPLINE
6 齿矩形花键- $\varnothing 25$

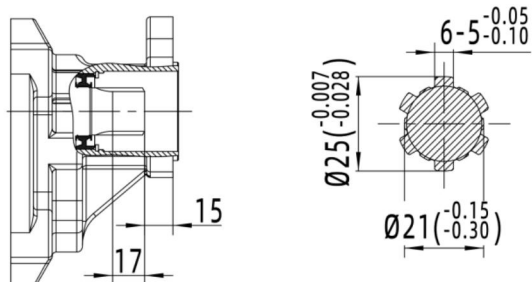
GEAR SHAFT

轴/花键



12

1:8 CONE SHAFT
1:8 锥度轴



13

UNI 221 RECTANGLE SPLINE
6 齿矩形花键- $\varnothing 25$

For other gear shaft requirement please contact our pre-sale department.

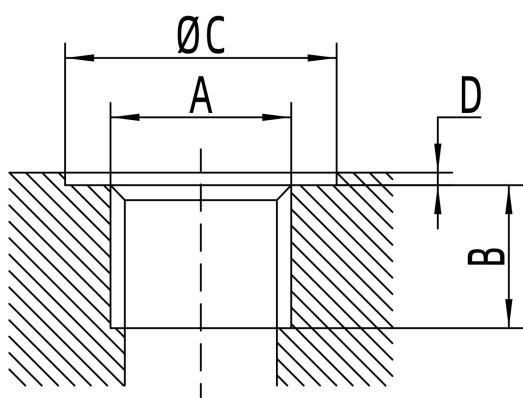
如有其他轴/花键尺寸的需求，请联系我公司售前部门。

OIL PORT DIMENSIONS

油口尺寸

Metric thread according to ISO 6149

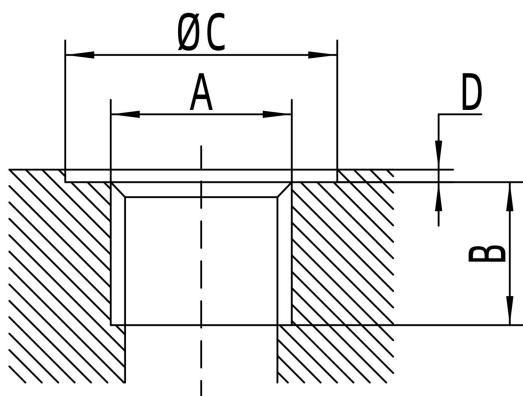
公制螺纹 ISO 6149



CODE	A	B	C	D
M01	M10x1	10	20	1
M02	M12x1.5	11.5	23	1.5
M03	M14x1.5	11.5	25	1.5
M04	M16x1.5	13	28	1.5
M05	M18x1.5	14.5	30	2
M06	M22x1.5	15.5	33	2
M07	M24x1.5	19	34	2
M08	M27x1.5	19	40	2
M09	M27x2	19	40	2
M10	M30x2	19	44	2
M11	M33x1.5	19	49	2.5
M12	M33x2	19	49	2.5
M13	M36x2	19.5	53	2.5
M14	M42x2	19.5	58	2.5
M15	M48x2	22	63	2.5
M16	M60x2	27.5	74	2.5

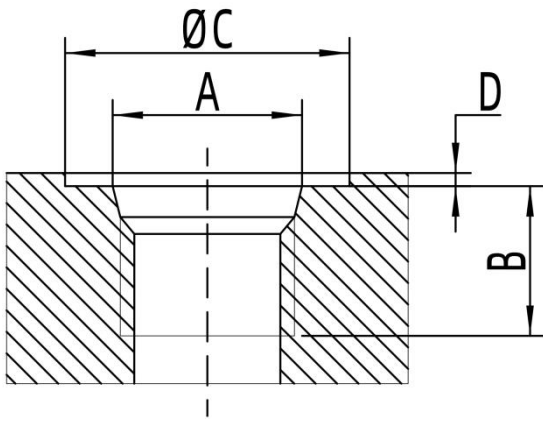
BSPP pipe thread according to ISO 228-1

英制 G 螺纹 ISO 6149



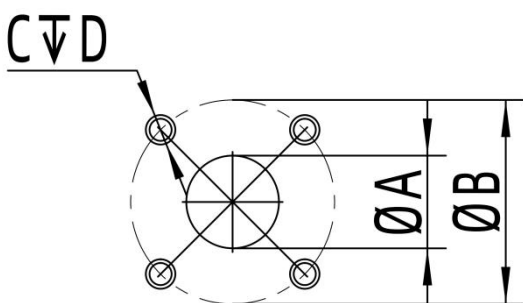
CODE	A	B	C	D
G01	G1/4	13	20	1 Max
G02	G3/8	21	33	1 Max
G03	G1/2	21	33	1 Max
G04	G3/4	21	39	1 Max
G05	G1	21	45	1 Max
G06	G1-1/4	21	58	1 Max
G07	G1-1/2	26	64	1 Max
G08	G2	26	78	1 Max

UNF thread according to SAE
美制螺纹



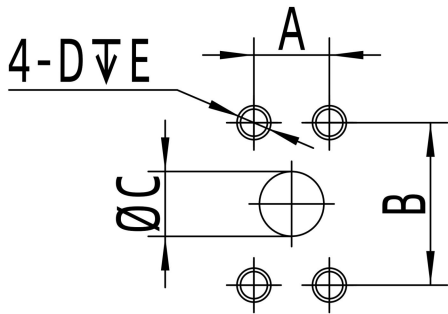
CODE	A	B	C	D
U01	7/16-20 UNF	13	21	1Max
U02	9/16-18 UNF	13	25	1 Max
U03	3/4-16 UNF	13	30	1 Max
U04	7/8-14 UNF	17	34	1 Max
U05	1-1/16-12 UNF	19	41	1 Max
U06	1-5/16-12UNF	23	49	1 Max
U07	1-5/8-12UN	23	58	1 Max
U08	1-7/8-12UN	23	65	1 Max

Flanged fittings according to DIN 8901/8902
欧标法兰



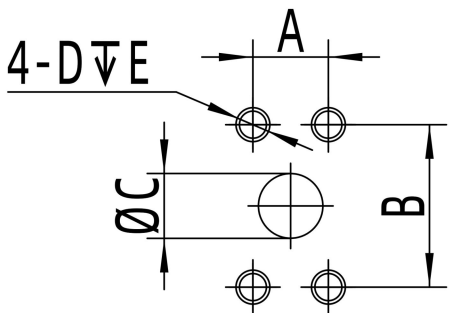
CODE	A	B	C	D
H01	8	26	M5	12
H02	10	26	M5	12
H03	8	30	M6	12
H04	12	30	M6	12
H05	15	35	M6	13
H06	20	40	M6	13
H07	13.5	30	M8	16
H08	20	40	M8	16
H09	18	55	M8	16
H10	25	55	M8	16
H11	26	51	M10	16

Flanged fittings according to SAE, metric thread
SAE 法兰, 公制螺纹



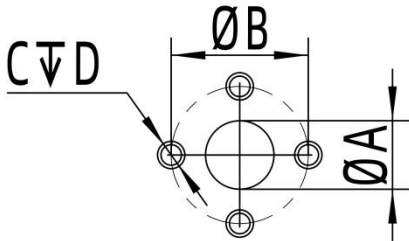
CODE	A	B	C	D	E
E01	17.5	38.1	13	M8	16
E02	22.2	47.6	19	M10	21
E03	26.2	52.4	25.4	M10	21
E04	30.2	58.7	31.8	M10	21
E05	35.7	69.8	38.1	M12	21
E06	42.9	77.8	50.8	M12	21
E07	50.8	88.9	63.5	M12	21

Flanged fittings according to SAE, UNC thread
SAE 法兰, 美制螺纹



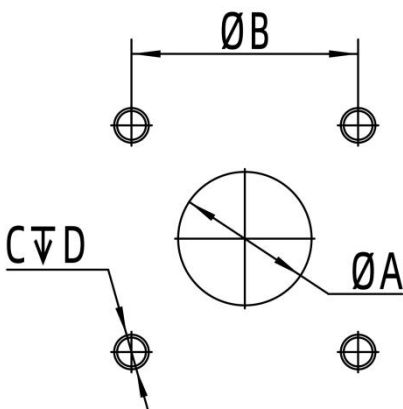
CODE	A	B	C	D	E
A01	17.5	38.1	13	5/16-18 UNC	16
A02	22.2	47.6	19	3/8-16 UNC	21
A03	26.2	52.4	25.4	3/8-16 UNC	21
A04	30.2	58.7	31.8	7/16-14 UNC	21
A05	35.7	69.8	38.1	1/2-13 UNC	21
A06	42.9	77.8	50.8	1/2-13 UNC	21
A07	50.8	88.9	63.5	1/2-13 UNC	21

Flanged fittings - "cross" 十字安装法兰



CODE	A	B	C	D
K01	13.5	30	M6	13
K02	20	40	M8	16
K03	18	40	M8	16
K04	26	51	M10	18
K05	18	55	M8	16
K06	25	55	M8	16
K07	14	38	M8	16
K08	19	38	M8	16

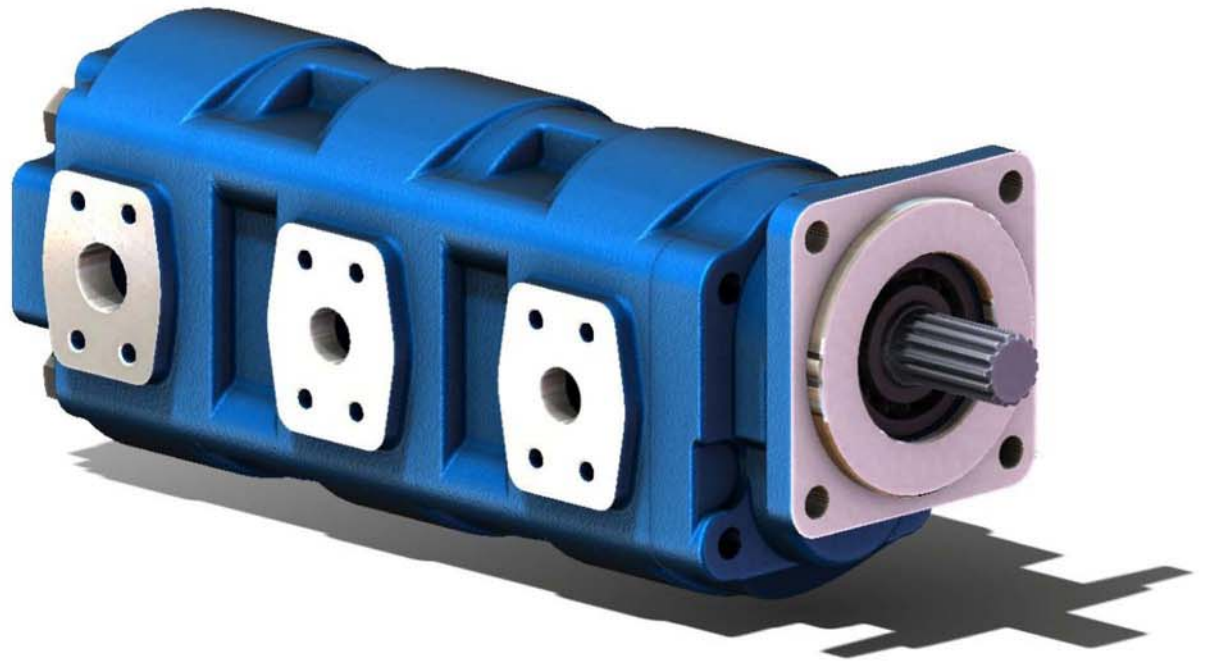
Flanged fittings - "square" 方形安装法兰



CODE	A	B	C	D
S03	60	78	M12	24
S04	46	78	M12	24
S05	22	48	M10	22
S06	30	48	M10	22
S08	19	54	M10	22
S09	27	54	M10	22
S10	16	46	M8	20
S11	23.5	46	M8	20

For other oil port dimension requirement please contact our pre-sale department.

如有其他油口尺寸的需求，请联系我公司售前部门。



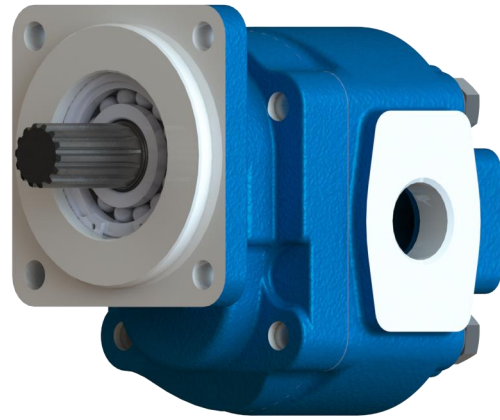
**ULTRA HIGH PRESSURE GEAR PUMP
SERIES GP60**

超高压齿轮泵 GP60 系列

DESIGN FOR FUTURE.

PRODUCT FEATURES

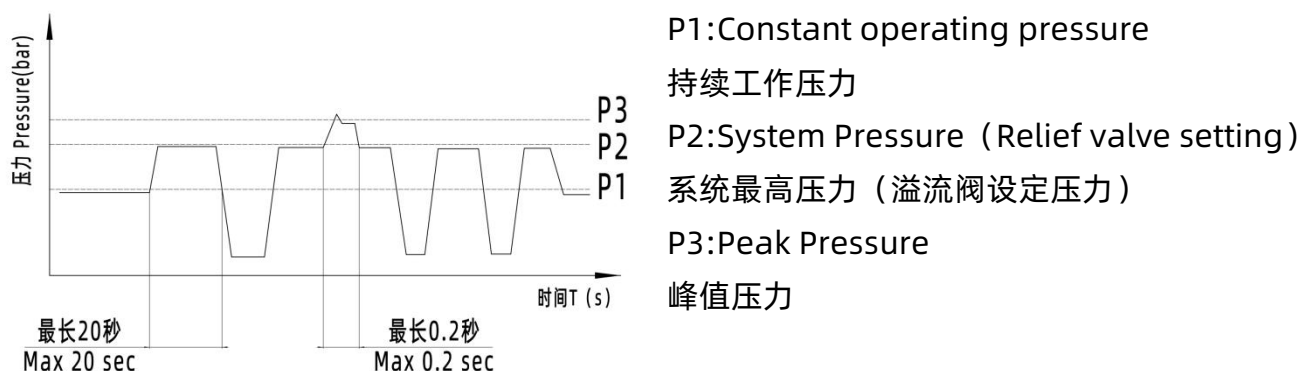
产品优势



- Heavy duty special DU bearing with long working life
使用喷涂特殊专利涂层的 DU 轴承可在重负载下具有长久的工作寿命
- Max working pressure up to 5500 PSI/ 38Mpa
极限工作压力可达 5500 磅力/平方英寸 (38 兆帕)
- Displacement from 25 to 200cc/rev
可选排量范围从每转 25 毫升直到每转 200 毫升
- High strength cast iron body with special designed structure
采用自主研发专利设计的内部结构，并采用高强度的蠕墨铸铁材质壳体
- High precision carburizing&quenching gears with extra hardness
高精度齿轮，特殊材质经过渗碳淬火达到超高硬度
- Copper pressure balanced wear plates maintain high pump efficiency throughout all operating ranges
铜质双金属压力平衡补偿板可在工作寿命内持续保证高容积效率
- 100% factory tested
产品出厂前 100%进行性能检测和跑合试验
- Customized mounting size and oil ports
安装尺寸和进出油口可根据客户需要定制生产

DEFINATION OF PRESSURES

关于压力的定义



The peak of pressure is the max pressure allowed and it corresponds to the overshoot^① of the relief valve.

Please note that both relief valve setting and overshoot must be lower than their limits.

If the relief setting is compliant but the overshoot is higher than the limit, the relief setting must be decreased until the overshoot is compliant to Avenir limit.

For high frequency applications please consult our pre-sales department.

峰值压力是系统允许的最大压力，它对应的是溢流阀过载压力^①。

请注意，溢流阀设定压力和过载压力都必须低于泵的压力极限。

如果溢流的设定压力符合要求，但是超载压力高于泵的压力极限，那么必须降低溢流阀的压力设置，直到超载压力符合 Avenir 的标准限定。

对于工作频率比较高的应用场景，请咨询我们的售前部门。

^① Overshoot: The actual pressure reading when a relief valve first opens to bypass fluid. (It can be up to twice the actual pressure setting.)

过载压力：当溢流阀刚开始开启时的瞬时压力（此压力有可能会比实际的设定压力高一倍以上）

FORMULAS USED FOR CALCULATION

液压系统计算公式

$$Q = \frac{V \cdot \eta_v \cdot n / 1000}{V \cdot \eta_v \cdot n / 231} \quad \begin{matrix} [\text{l/min}] \\ [\text{Gal/min}] \end{matrix}$$

$$M = \frac{\frac{\Delta p \cdot V}{62.83 \cdot \eta_m}}{\frac{\Delta p \cdot V}{2 \cdot 3.14 \cdot \eta_m}} \quad \begin{matrix} [\text{Nm}] \\ [\text{lfb.in}] \end{matrix}$$

$$P = \frac{\frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t}}{\frac{\Delta p \cdot V \cdot n}{395934 \cdot \eta_t}} \quad \begin{matrix} [\text{kW}] \\ [\text{HP}] \end{matrix}$$

$$\eta_v = \frac{Q_{\text{act.}}}{Q_{\text{theor.}}}$$

$Q_{\text{act.}}$: Actual flow rate 实际流量
 $Q_{\text{theor.}}$: theoretical flow rate 理论流量

It determines the amount of flow losses. Its value is $\eta_v = 0.92 \sim 0.98$ (depending on rotation speed, oil temperature, viscosity of working liquid and outlet pressure).

容积效率决定了泵的内泄漏量，数值一般取 0.92~0.98 (实际数值取决于转速，油温，油液粘性，工作压力等)

$$\eta_m = \frac{M_{\text{theo}}}{M_{\text{act.}}}$$

M_{theo} : theoretical torque 理论扭矩
 $M_{\text{act.}}$: Actual torque 实际扭矩

It determines mechanical losses. Its value is about $\eta_m = 0.85$

机械效率决定了泵的机械损失，数值一般取 0.85

$$\eta_t = \eta_v \cdot \eta_m = \frac{P_{\text{theo}}}{P_{\text{act.}}}$$

P_{theo} : Theoretical input power 理论输入功率

$P_{\text{act.}}$: Actual input power 实际输入功率

It is defined as product of η_v and η_m and determines difference between theoretical and actual required input power

总效率是容积效率和机械效率的乘积，他决定了理论输入功率和实际需要的输入功率的差别

Conversion factor 单位换算

SI units 国际单位制	US units 美国单位制
1 l/min	0.2641 US Gal/min
1 Nm	8.851 in-lbs
1 Nm	0.7375 ft-lbs
1 N	0.2248 lbs
1 kW	1.34 HP
1 cm ³ /giro	0.061 in ³ /rev
1 bar	14.5 psi
1 mm	0.0394 in
1 kg	2.205 lbs

Variables 参数

Q : FLOW RATE 流量 [l/min]
[Gal/min]

M : Torque 扭矩 [Nm]
[lfb.in]

P : Power 功率 [kW]
[HP]

V : Displacement 排量 [kW]
[HP]

n: Speed 转速 [min⁻¹]

η_v : Volumetric efficiency 容积效率

η_m : Mechanical efficiency 机械效率

η_t : Overall efficiency 总效率

WORKING LIQUID

工作介质

- Mineral oils for hydraulic drives
用于液压驱动的矿物油
- Hydraulic liquids based on plant oils suitable for hydraulic drives
用于液压驱动的植物基-液压油

LIQUID TEMPERATURE

工作油温

- $t = -20^{\circ}\text{C} \sim +80^{\circ}\text{C}$ (with NBR seals) (当密封件选用丁腈橡胶材质时)
 $t = 0^{\circ}\text{C} \sim +200^{\circ}\text{C}$ (with FKM seals) (当密封件选用氟橡胶材质时)
 $t = -50^{\circ}\text{C} \sim +120^{\circ}\text{C}$ (with HNBR seals) (当密封件选用氢化丁腈橡胶材质时)

CINEMATIC VISCOSITY

运动粘度

- Recommended (during continuous operation):
推荐粘度 (持续工作工况下) $v = 20\sim 80$ [mm²/s]
- Maximum (cold starting, at viscosity >1000, operating pressure <10 bar is permissible, speed <1500·min⁻¹):
最大可用粘度 (允许在粘>1000, 工作压力<10bar, 转速<1500r/min 时冷启动) $v = 1200$ [mm²/s]
- Minimum (operating mode at 10 up 20 should be consulted with manufacturer):
最小可用粘度 (如果在 10~20 的粘度下工作, 请咨询我公司技术部门) $v = 10$ [mm²/s]

Filtration coefficient β_{α}

过滤系数

- $\beta_{25} 75 \geq$ (for pressure $p_2 < 200$ bar)
 $\beta_{25} 75 \geq$ (当 p_2 压力 < 200 bar 时)
- $\beta_{10} 75 \geq$ (for pressure $p_2 > 200$ bar)
 $\beta_{10} 75 \geq$ (当 p_2 压力 > 200 bar 时)

Liquid contamination class according to ISO 4406

ISO4406 油液污染度等级

- 21/18/15 (for pressure $p_2 < 200$ bar)
21/18/15 (当 p_2 压力 < 200 bar 时)
- 20/17/14 (for pressure $p_2 > 200$ bar)
20/17/14 (当 p_2 压力 > 200 bar 时)

Liquid contamination class according to NAS 1638

NAS1638 油液污染度等级

- LEVEL 10 (for pressure $p_2 < 200$ bar)
10 级 (当 p_2 压力 < 200 bar 时)
- LEVEL 8 (for pressure $p_2 > 200$ bar)
8 级 (当 p_2 压力 > 200 bar 时)

DIRECTION OF ROTATION

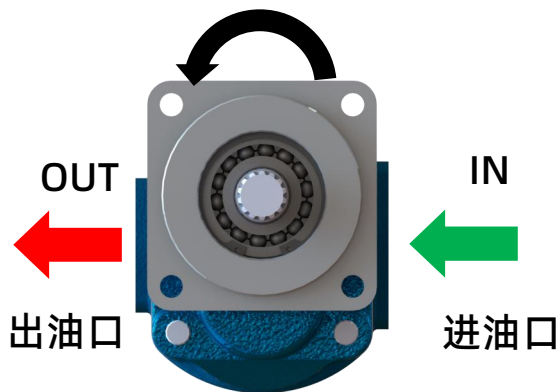
旋向

Determine direction of rotation by looking at the drive shaft.

The pump can only be used in the specified direction of rotation.

从轴端方向的视角来判断泵的旋向。泵只能在其相应旋向下工作

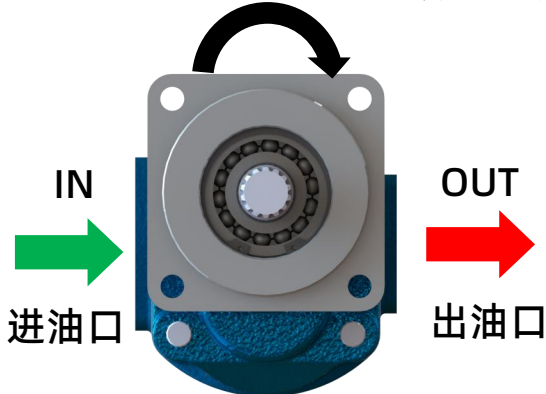
COUNTER-CLOCKWISE 逆时针旋转



LEFT ROTATION

左旋

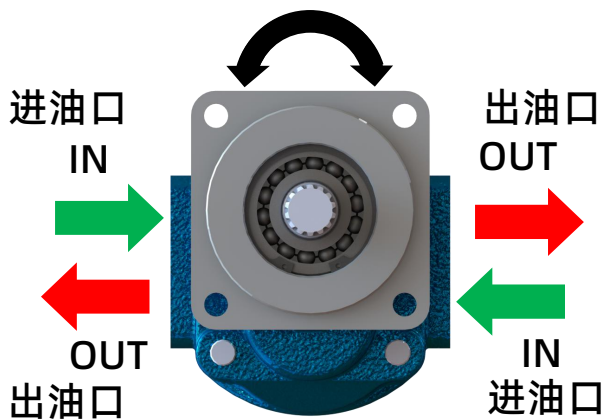
CLOCKWISE 顺时针旋转



RIGHT ROTATION

右旋

DUAL-ROTATION 双向旋转



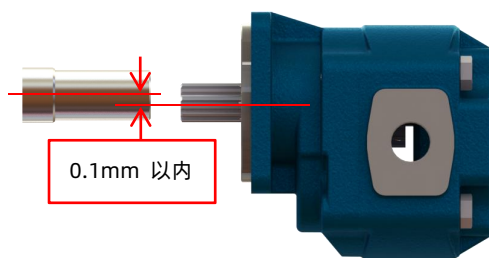
BI-DIRECTION

双向

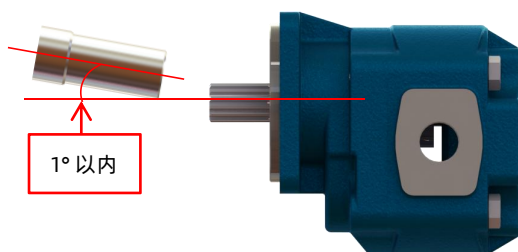
INSTALLATION PRECAUTIONS

安装注意事项

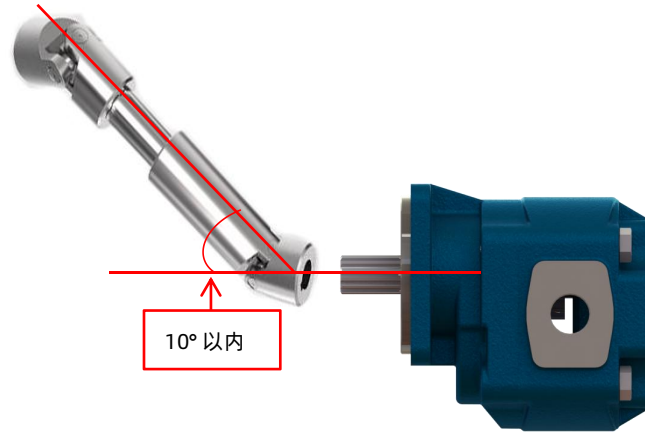
- Please use flexible coupling connection between engine shaft and pump shaft
电机与驱动轴的连接部分请使用柔性联轴器
- The coupling may cause noise, please choose the coupling with elastic material like rubber
联轴器有时会成为噪音源，建议使用橡胶等弹性材料组成的联轴器
- Axial force and radial force is not allow towards the pump shaft, if cannot avoid force, please choose the special bearing type of pump
请勿对泵的轴端施加轴向力和径向力，如无法避免，请选择带有前置轴承的型号
- Bad coaxiality will lead to pump's damage
泵轴与驱动轴的同轴度较差，会导致齿轮泵损坏
Coaxiality deviation should below 0.1mm
同轴度偏差不得超过 0.1mm



- Angle deviation should below 1°
角度偏差不得超过 1°



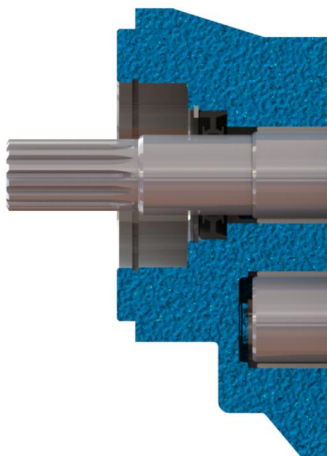
- Angle deviation when use universal joint should below 10°
万向节传动，角度偏差不得超过 10°



OUTBOARD BEARING OPTIONS

前置轴承选项

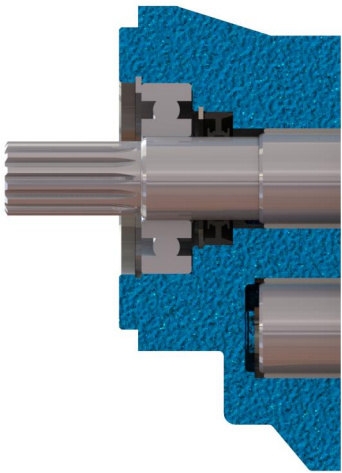
A



Version for applications without radial and axial load on the driveshaft

泵的轴端无轴向力和径向力时，选择此方案。

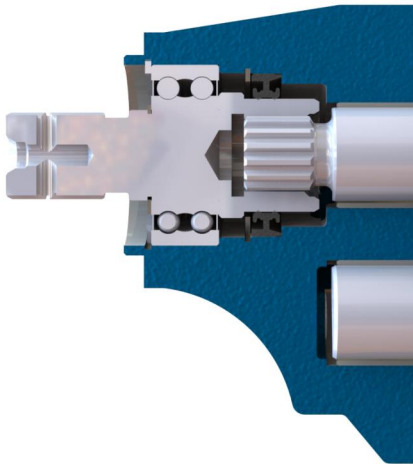
B



Version for applications with low radial load and without axial load on the drive shaft.

泵的轴端有轻微径向力，但无轴向力时，选择此方案。

C



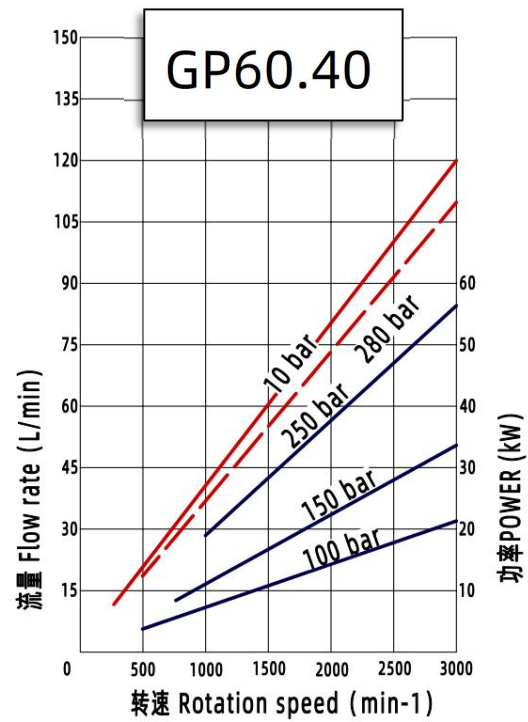
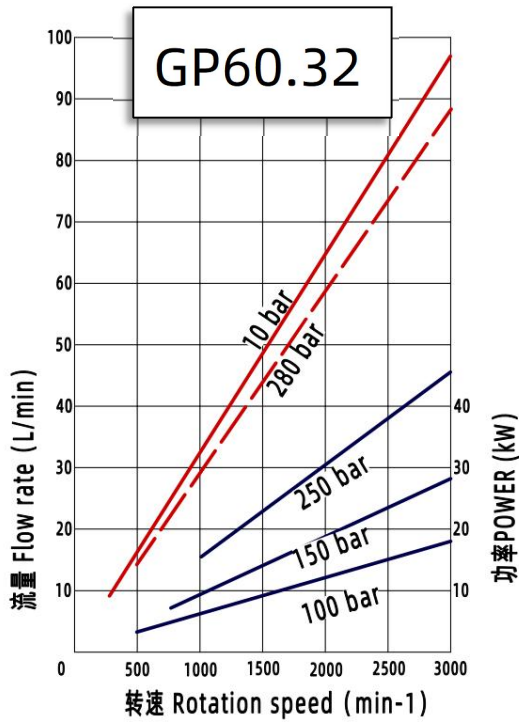
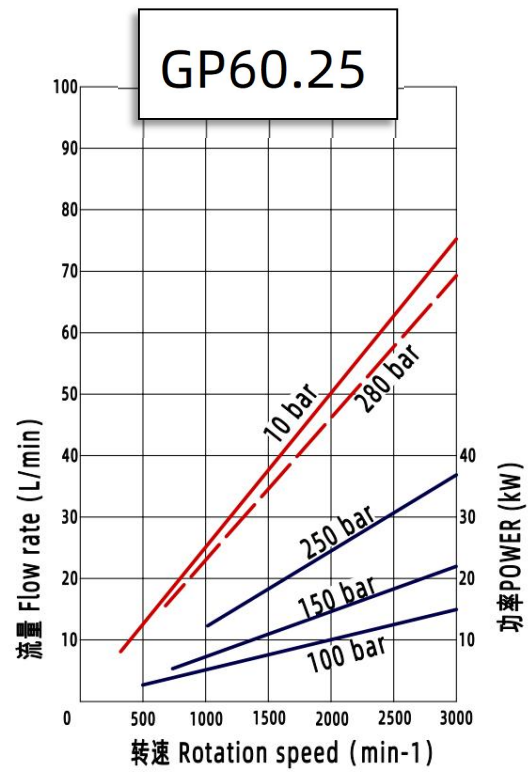
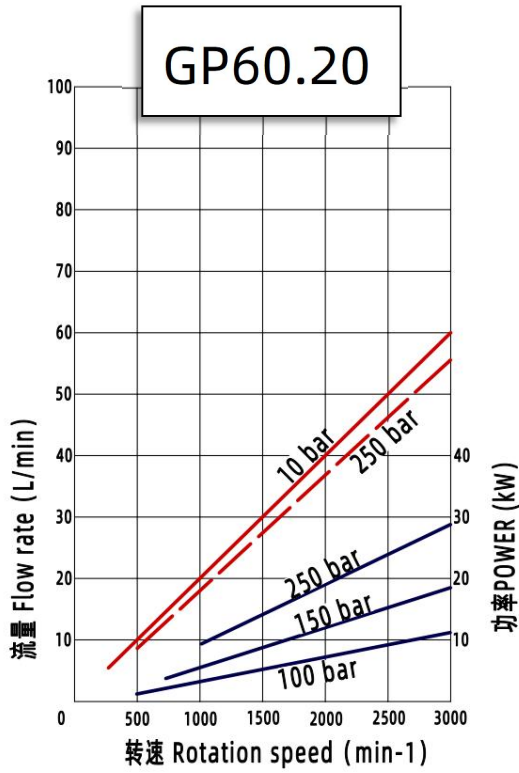
Version for applications with radial and axial load on the drive shaft

泵的轴端有径向力和轴向力时，选择此方案。

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



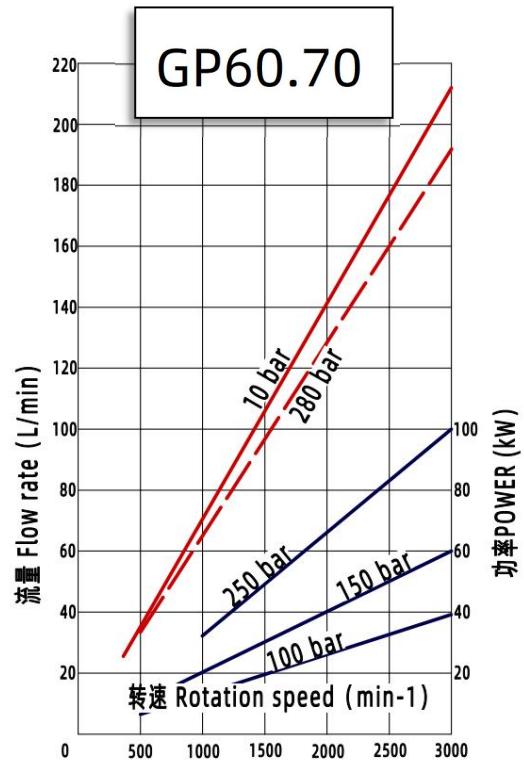
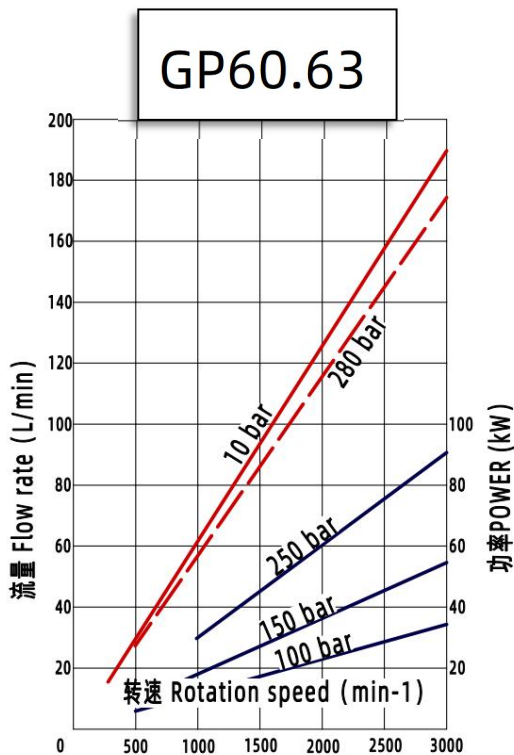
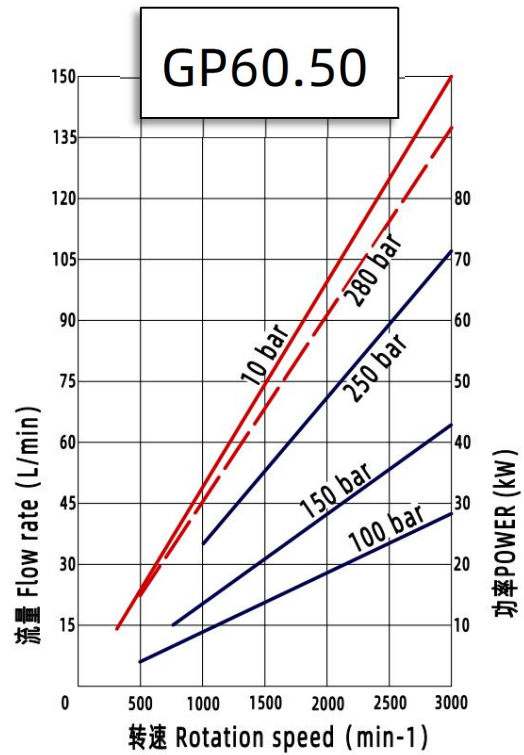
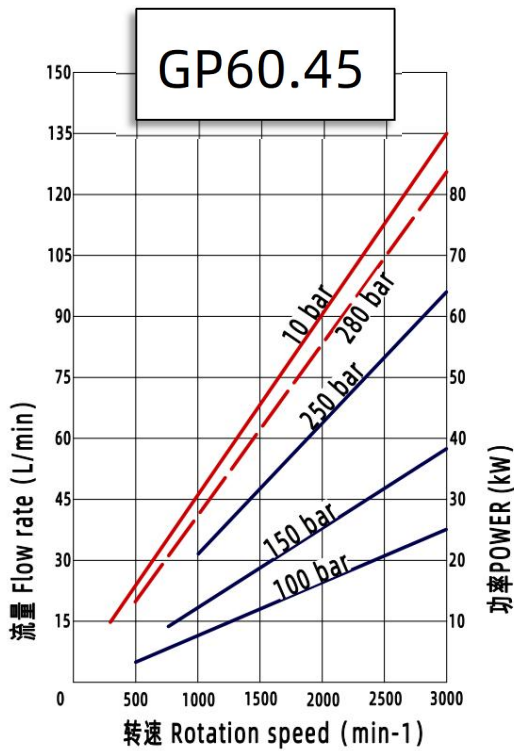
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



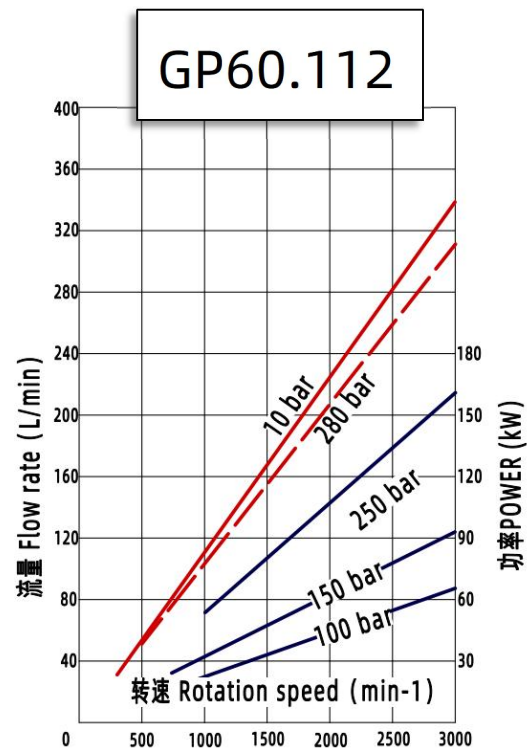
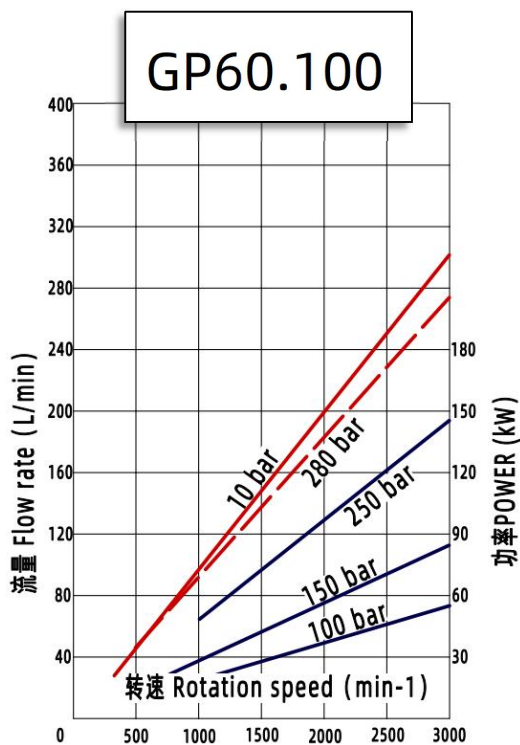
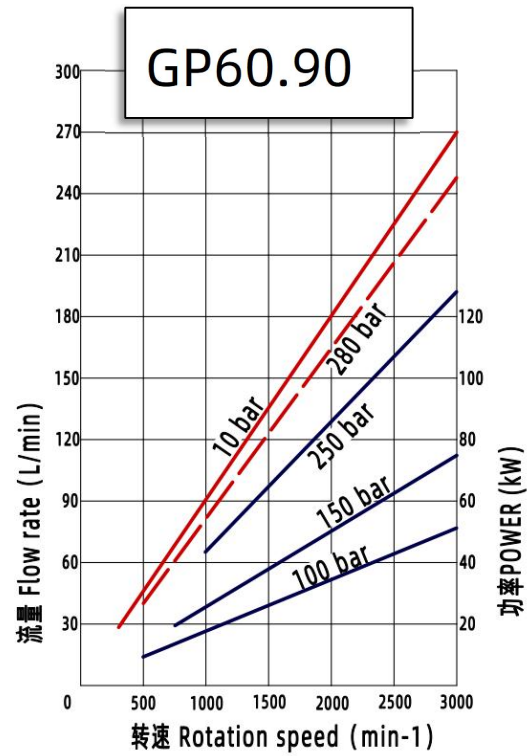
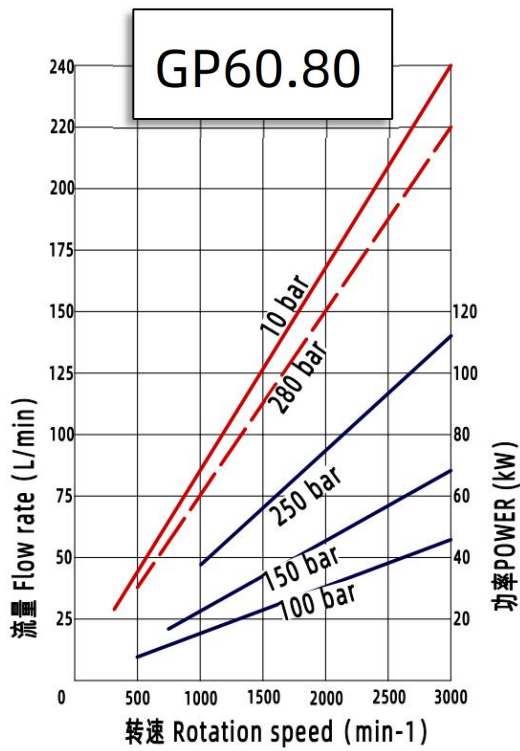
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



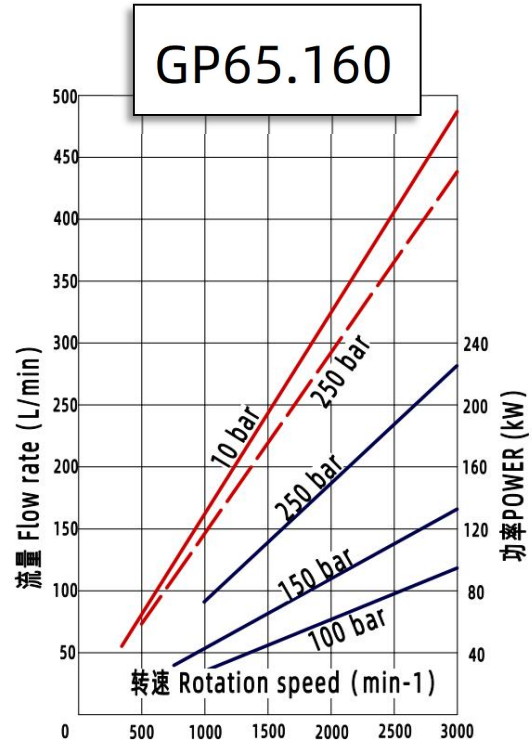
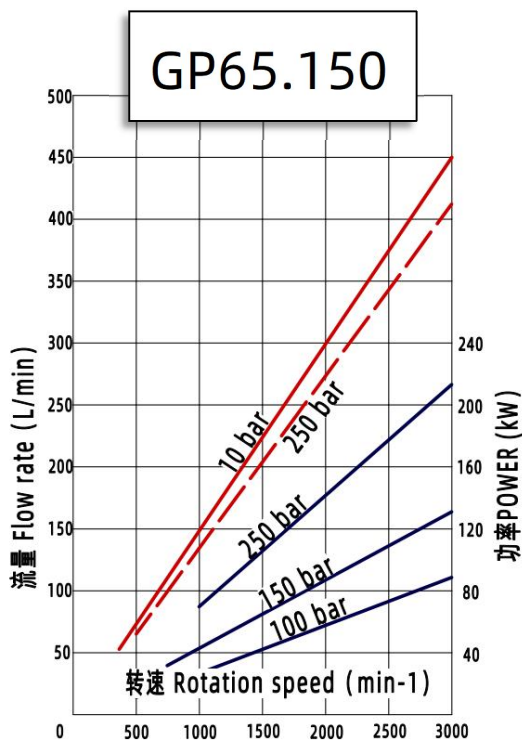
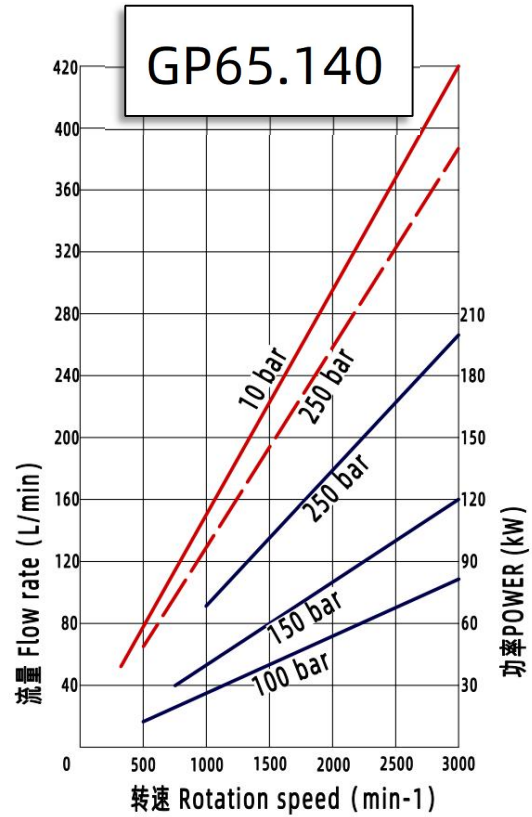
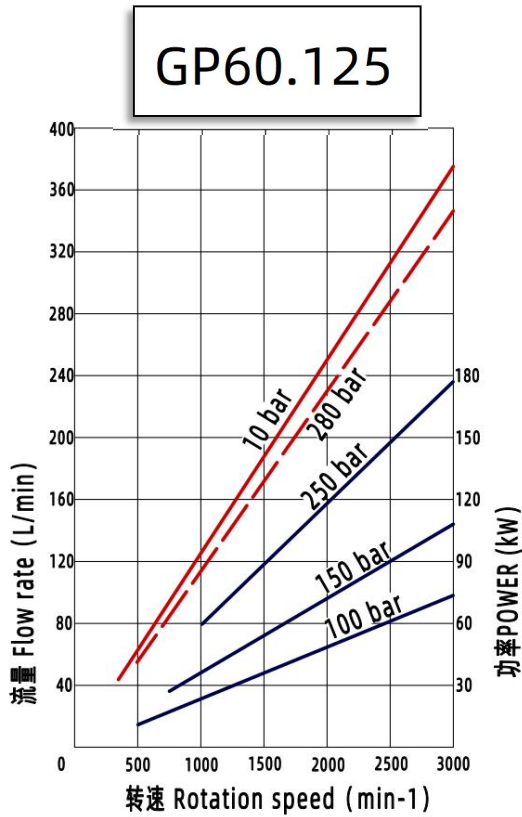
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



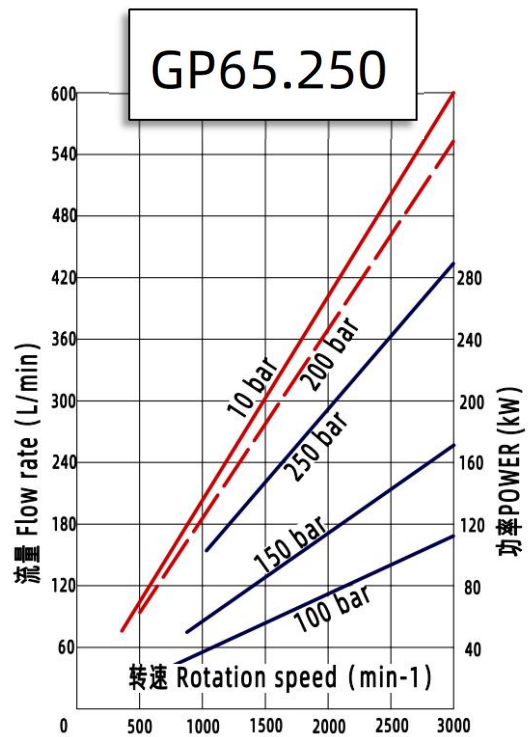
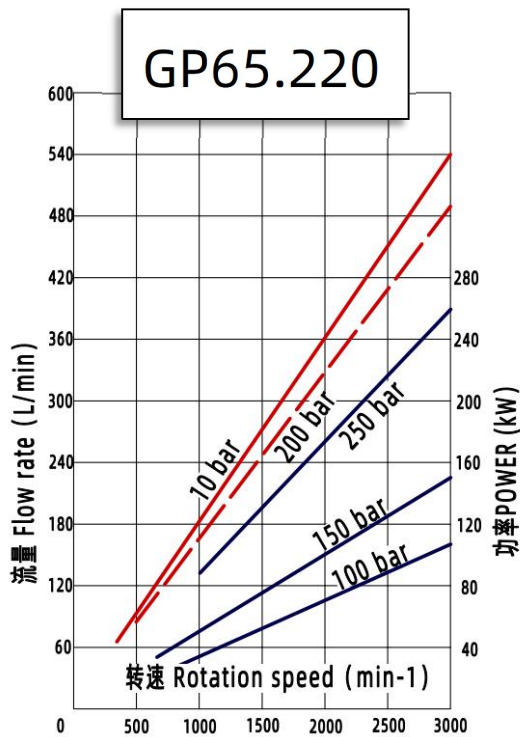
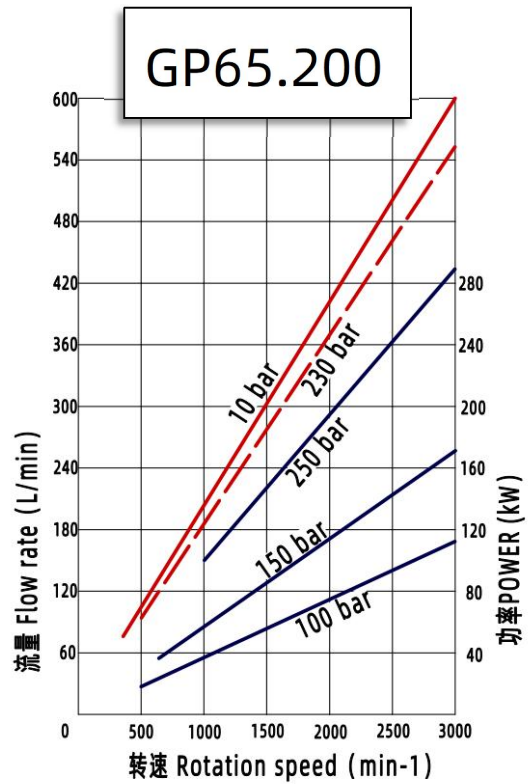
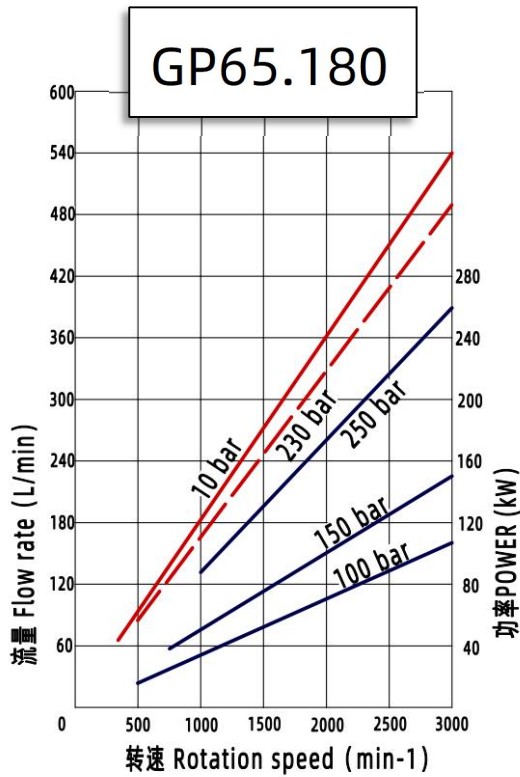
This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

PERFORMANCE CURVES

性能曲线

- 空载流量 Flow rate unload
- - - 额定压力下的流量 Flow rate loaded
- 输入功率 Input power



This curve is tested under 50°C (122 °F) using oil with viscosity 30 cSt (137 SSU)

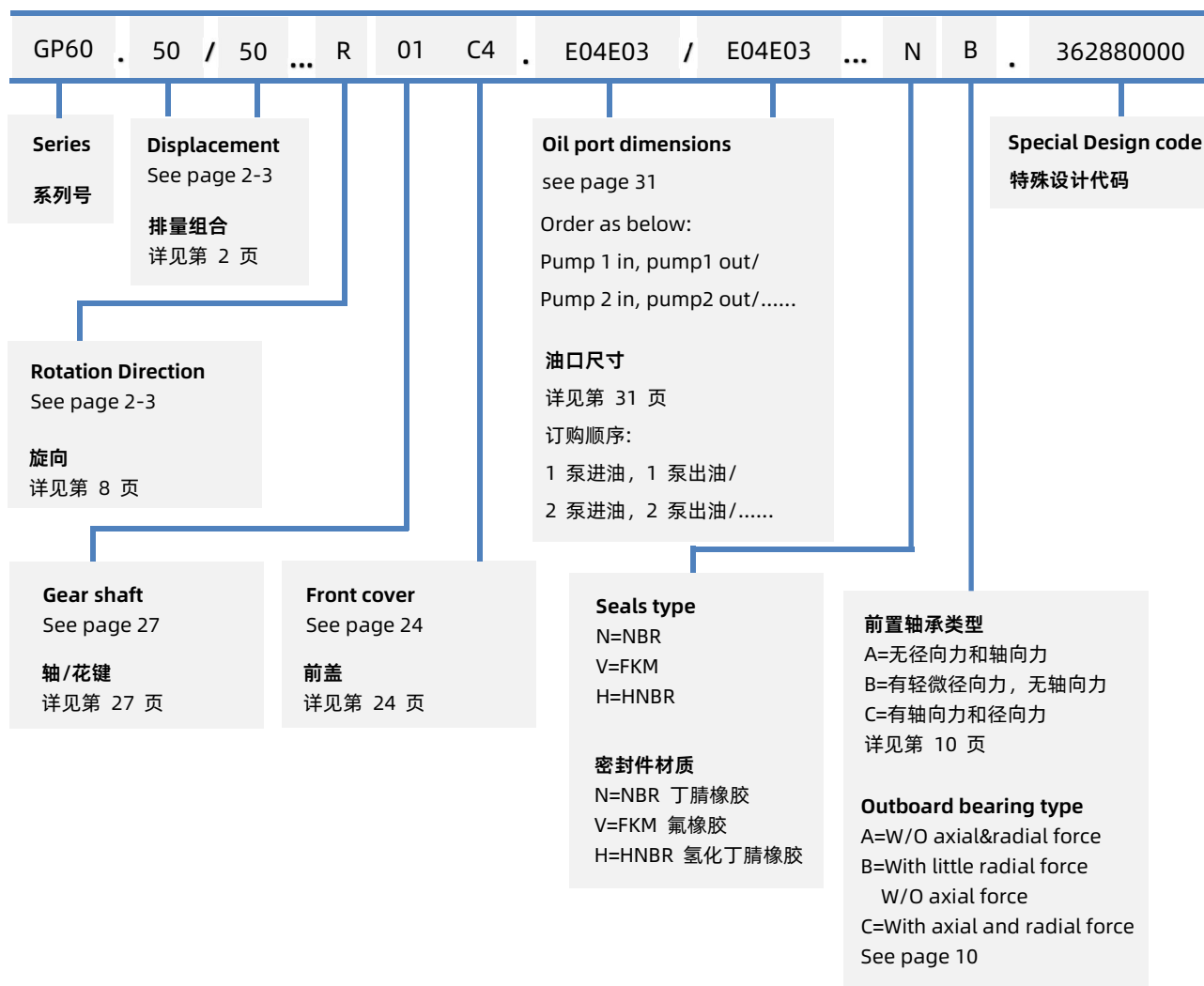
此曲线是在 50 摄氏度油温下，使用粘度为 30 cSt 液压油为介质测得

ORDER KEY

如何订购

GP60 SERIES

GP60 系列



For any other dimensions or technical requirement, please feel free to contact us!
如有任何尺寸或者技术需求, 欢迎随时联系我们!

TECHNICAL SPECIFICATIONS

技术参数

Model 型号	Displacement 排量	Flow rate 流量 @1500RPM	Pressure 压力			Rotate Speed 转速		Input power @250bar &1500rpm 25MPa/1500 转时 的输入功率
			P1	P2	P3	Max 最高	Min 最低	
	cm ³ /rev	l/min	bar			rpm		kW
GP60.20	20	30	250	315	350	3000	350	14.20
GP60.25	25	37.5	250	315	350	3000	350	17.76
GP60.32	32	48	280	350	400	3000	350	22.73
GP60.40	40	60	280	350	400	3000	350	28.41
GP60.45	45	67.5	280	350	400	3000	350	31.96
GP60.50	50	75	280	350	400	3000	350	35.51
GP60.63	63	94.5	280	350	400	3000	350	44.74
GP60.70	70	105	280	350	400	3000	350	49.72
GP60.80	80	120	280	350	400	3000	350	56.82
GP60.90	90	135	280	350	400	3000	350	63.92
GP60.100	100	150	280	350	400	3000	350	71.02

For special displacement requirement please consult our pre-sales department.
如有其他排量需求，请咨询我公司售前部门

TECHNICAL SPECIFICATIONS

技术参数

Model 型号	Displacement 排量	Flow rate 流量 @1500RPM	Pressure 压力			Rotate Speed 转速		Input power @250bar &1500rpm 25MPa/1500 转时 的输入功率
			P1	P2	P3	Max 最高	Min 最低	
	cm ³ /rev	l/min	bar			rpm		kW
GP60.112	112	168	280	350	400	3000	350	79.55
GP60.125	125	187.5	280	350	400	3000	350	88.78
GP65.140	140	210	250	315	350	3000	350	99.43
GP65.150	150	225	250	315	350	3000	350	106.53
GP65.160	160	240	250	315	350	3000	350	113.64
GP65.180	180	270	250	315	350	3000	350	127.84
GP65.200	200	300	230	280	315	3000	350	142.05
GP65.220	220	330	230	280	315	3000	350	156.25
GP65.250	250	375	200	250	280	3000	350	177.56

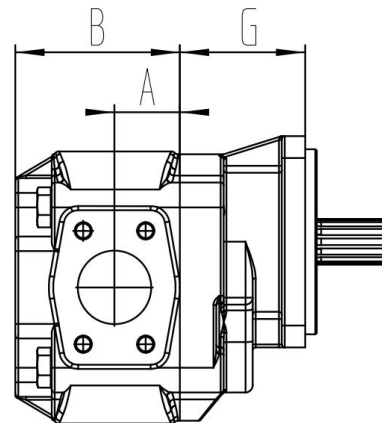
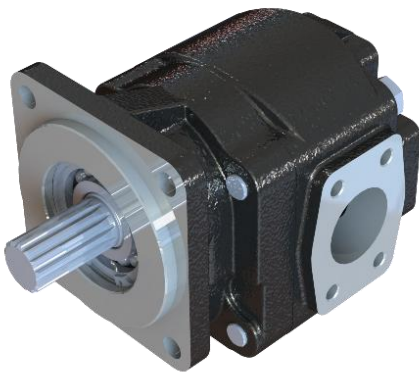
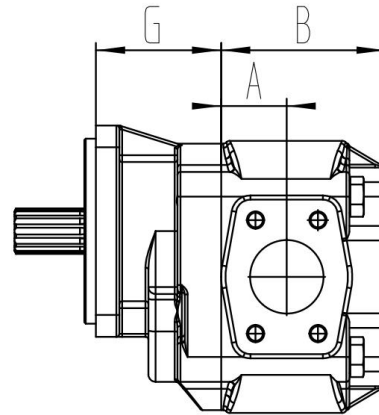
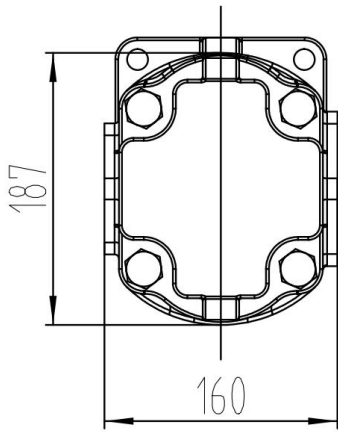
For special displacement requirement please consult our pre-sales department.
如有其他排量需求，请咨询我公司售前部门

DIMENSIONS

外形尺寸

GP60 SINGLE PUMP

GP60 单泵



GP60	20	25	32	40	45	50	63	70	80	90	100	112	125
A	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5
B	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133
GP65	140	150	160	180	200	220	250						
A	72.7	75.6	81.4	86.4	93.1	100.1	110.9						
B	125.7	128.6	134.4	139.4	146.1	153.1	163.9						

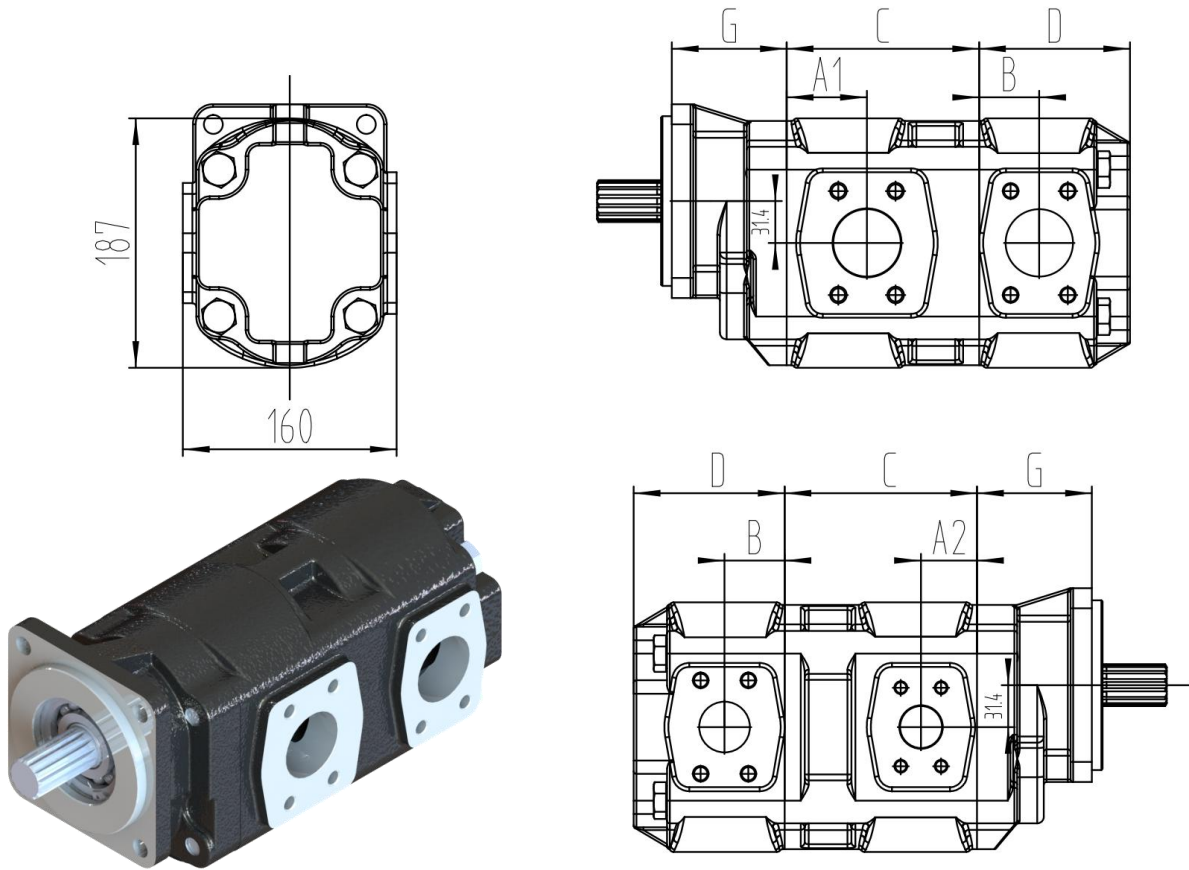
The "G" dimension please see page 23
G 尺寸请参考第 23 页

DIMENSIONS

外形尺寸

GP60 TANDEM PUMP

GP60 双联泵



GP60	20	25	32	40	45	50	63	70	80	90	100	112	125
A1	-	57.2	60	56.5	58	60	60	56	60	57	60	54.8	60
A2	-	34	37	35.5	36	38	42	38	42	39	42	42	42
B	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5
C	-	119	121.8	125.5	128	130	136	140	144	150	153	158.8	164
D	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133
GP65	140	150	160	180	200	220	250						
A1	52.7	55.6	60	60	60	60	60						
A2	40	38	42	42	42	42	42						
B	72.7	75.6	81.4	86.4	93.1	100.1	110.9						
C	125.7	128.6	134.4	139.4	146.1	153.1	163.9						
D	89.5	91.5	94.3	94.5	97	99	105						

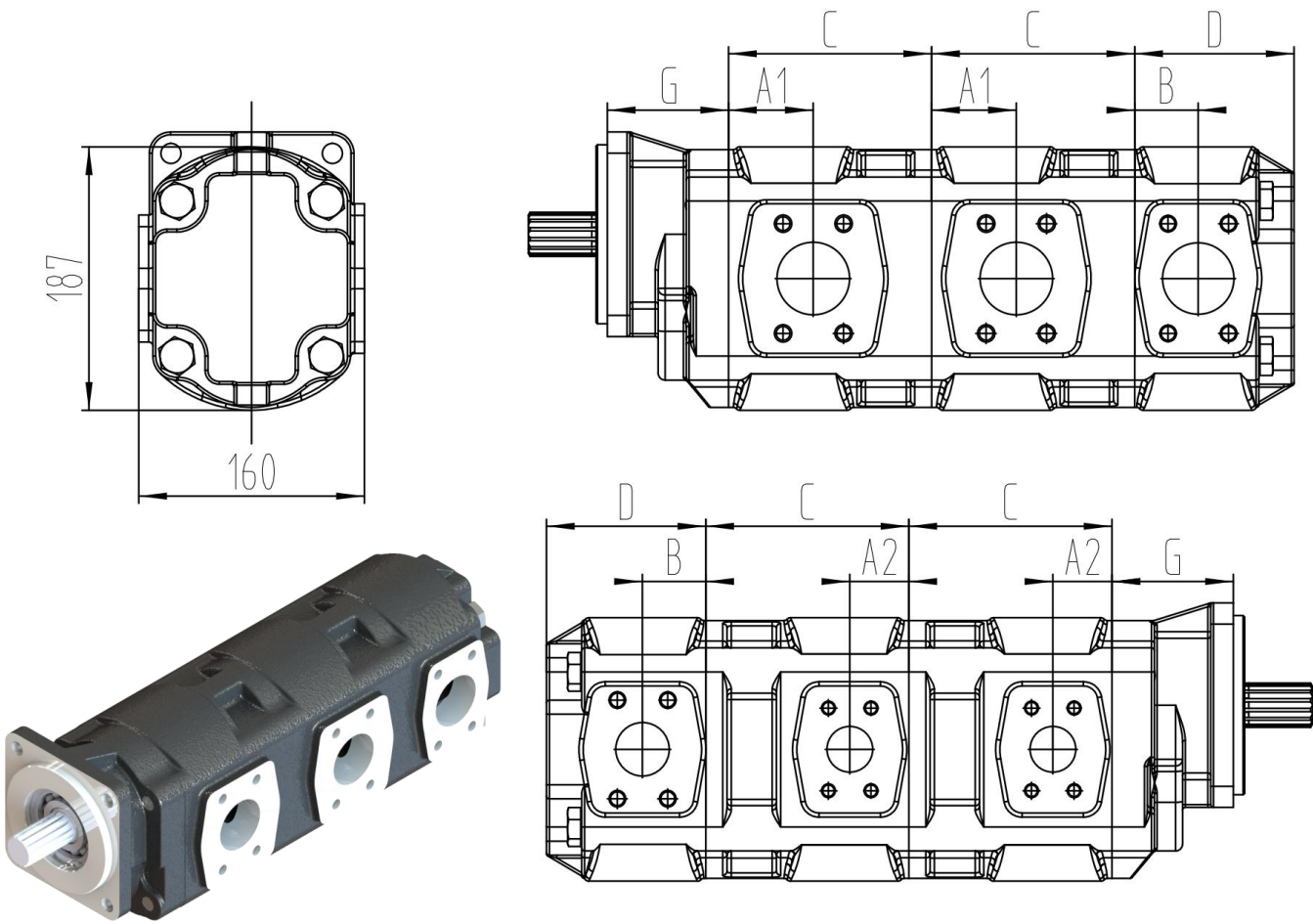
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP60 TRIPLE PUMP

GP60 三联泵



GP60	20	25	32	40	45	50	63	70	80	90	100	112	125
A1	-	57.2	60	56.5	58	60	60	56	60	57	60	54.8	60
A2	-	34	37	35.5	36	38	42	38	42	39	42	42	42
B	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5
C	-	119	121.8	125.5	128	130	136	140	144	150	153	158.8	164
D	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133
GP65	140	150	160	180	200	220	250						
A1	52.7	55.6	60	60	60	60	60						
A2	40	38	42	42	42	42	42						
B	72.7	75.6	81.4	86.4	93.1	100.1	110.9						
C	125.7	128.6	134.4	139.4	146.1	153.1	163.9						
D	89.5	91.5	94.3	94.5	97	99	105						

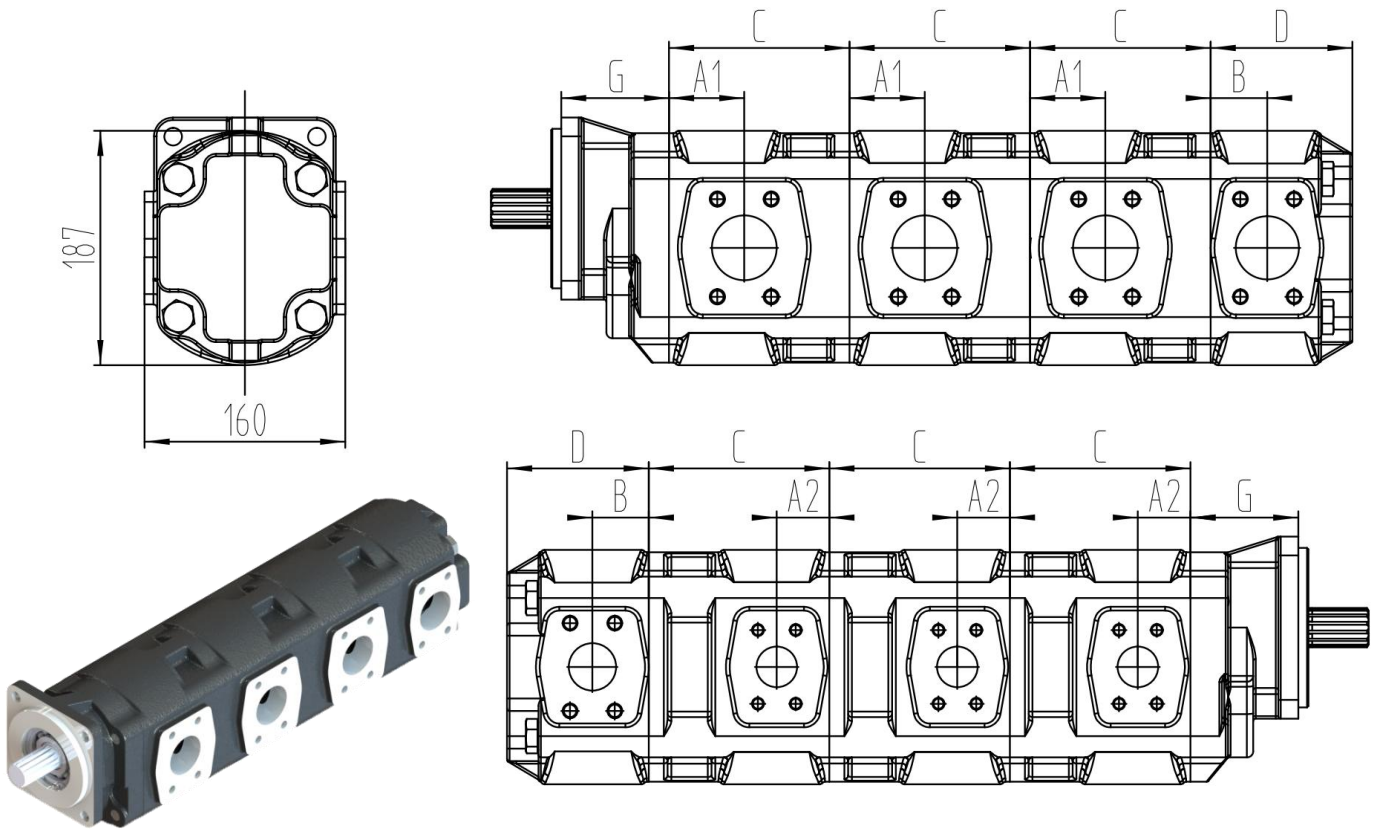
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

GP60 QUADRUPLE PUMP

外形尺寸

GP60 四联泵



GP60	20	25	32	40	45	50	63	70	80	90	100	112	125
A1	-	57.2	60	56.5	58	60	60	56	60	57	60	54.8	60
A2	-	34	37	35.5	36	38	42	38	42	39	42	42	42
B	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5
C	-	119	121.8	125.5	128	130	136	140	144	150	153	158.8	164
D	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133
GP65	140	150	160	180	200	220	250						
A1	52.7	55.6	60	60	60	60	60						
A2	40	38	42	42	42	42	42						
B	72.7	75.6	81.4	86.4	93.1	100.1	110.9						
C	125.7	128.6	134.4	139.4	146.1	153.1	163.9						
D	89.5	91.5	94.3	94.5	97	99	105						

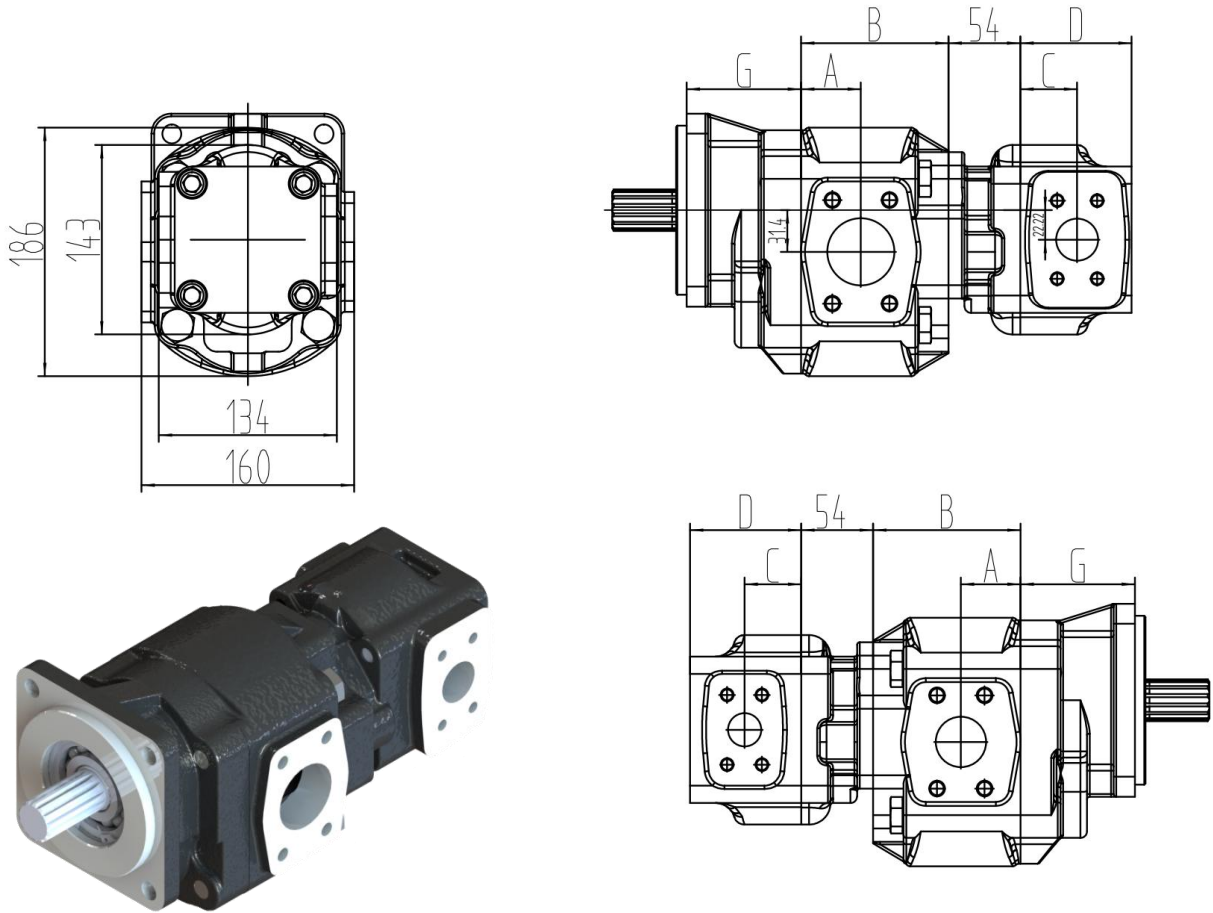
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP60/GP40 TANDEM PUMP

GP60/GP40 双联泵



GP60	20	25	32	40	45	50	63	70	80	90	100	112	125			
A	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5			
B	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133			
GP65	140	150	160	180	200	220	250									
A	72.7	75.6	81.4	86.4	93.1	100.1	110.9									
B	125.7	128.6	134.4	139.4	146.1	153.1	163.9									
GP40	08	10	13	16	20	25	29	32	36	40	45	51	55	63	72	80
C	28.2	29.7	31.7	33.7	36.7	40.7	42.7	45.7	47.7	51.2	54.7	58.7	61.7	67.7	74.7	79.7
D	70	71.5	73.5	75.5	78.5	82.5	84.5	87.5	89.5	93	96.5	100.5	103.5	109.5	116.5	121.5

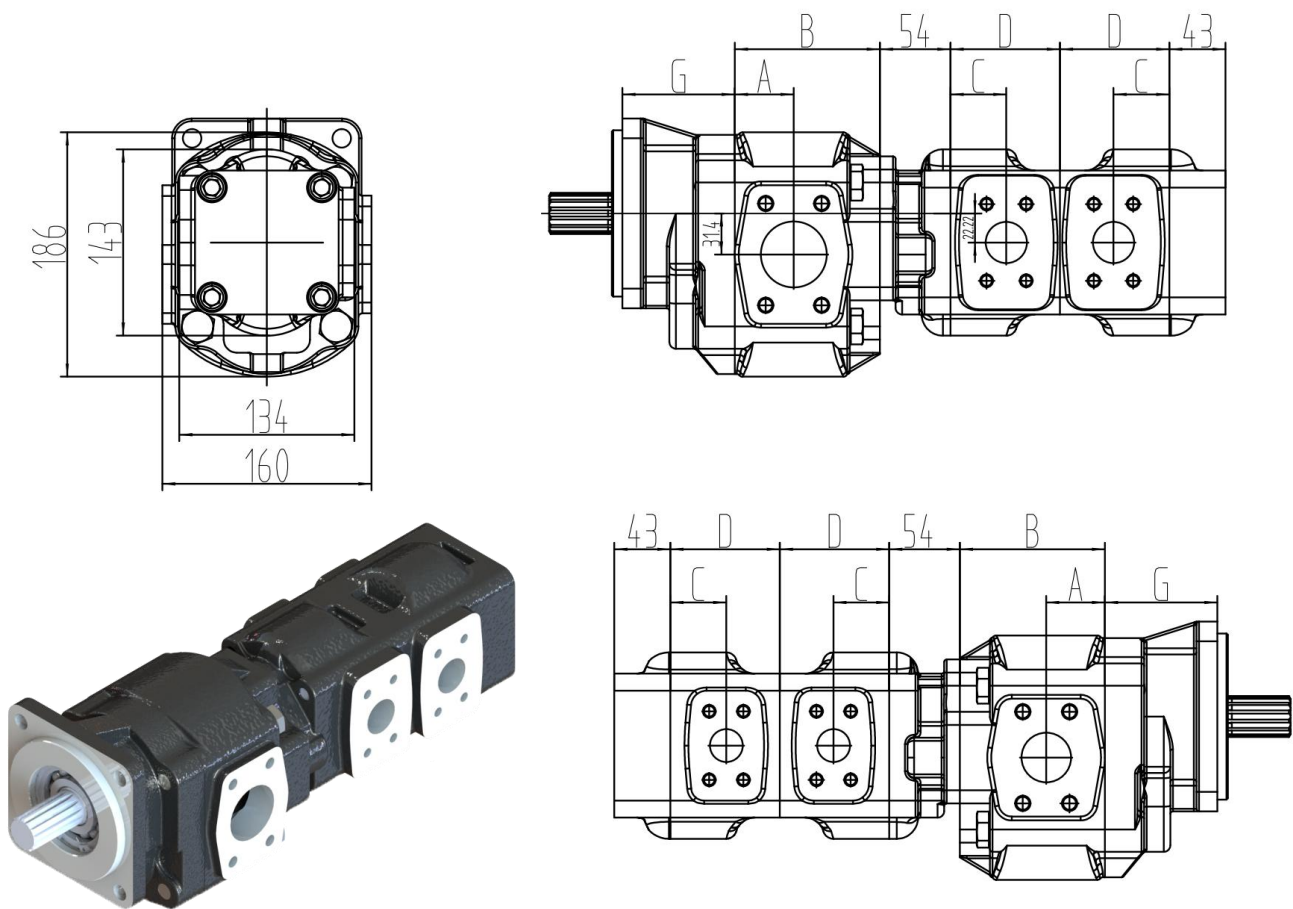
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP60/GP40 TRIPLE PUMP

GP60/GP40 三联泵



GP60	20	25	32	40	45	50	63	70	80	90	100	112	125			
A	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5			
B	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133			
GP65	140	150	160	180	200	220	250									
A	72.7	75.6	81.4	86.4	93.1	100.1	110.9									
B	125.7	128.6	134.4	139.4	146.1	153.1	163.9									
GP40	08	10	13	16	20	25	29	32	36	40	45	51	55	63	72	80
C	28.2	29.7	31.7	33.7	36.7	40.7	42.7	45.7	47.7	51.2	54.7	58.7	61.7	67.7	74.7	79.7
D	70	71.5	73.5	75.5	78.5	82.5	84.5	87.5	89.5	93	96.5	100.5	103.5	109.5	116.5	121.5

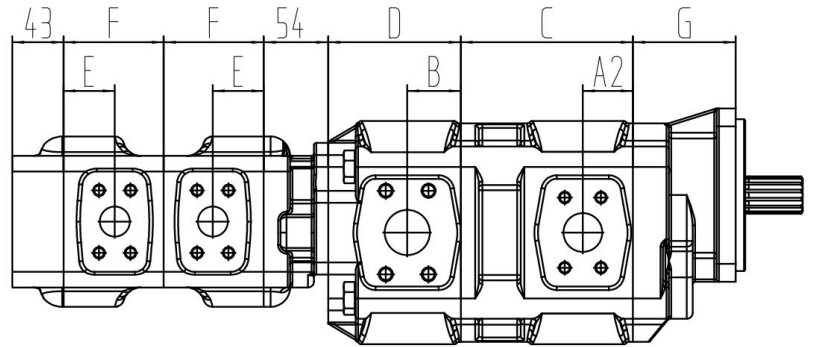
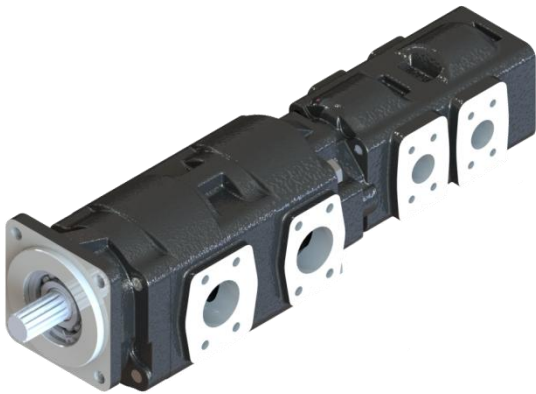
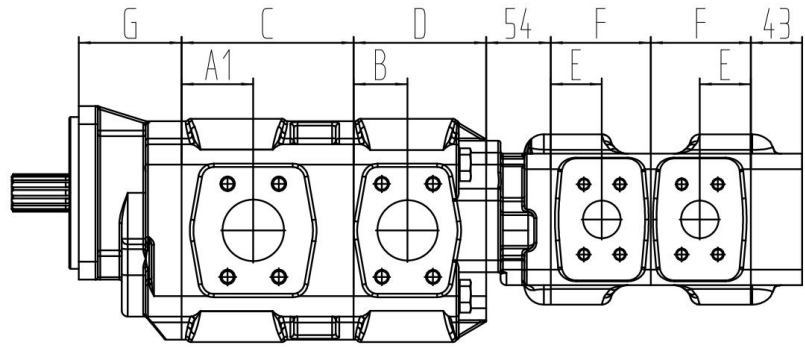
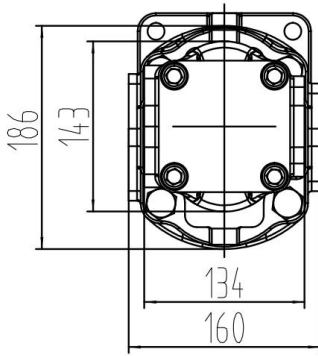
The "G" dimension please see page 24
G 尺寸请参考第 24 页

DIMENSIONS

外形尺寸

GP60/GP40 QUADRUPLE PUMP

GP60/GP40 四联泵



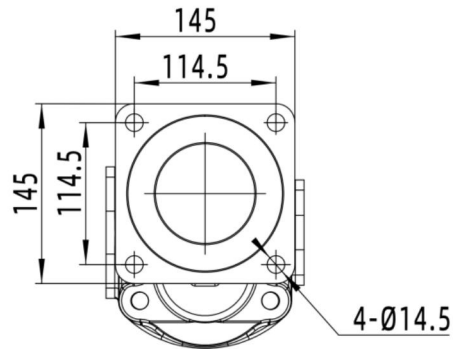
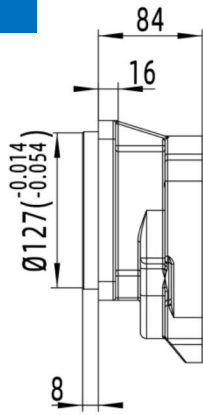
GP60	20	25	32	40	45	50	63	70	80	90	100	112	125			
A1	-	57.2	60	56.5	58	60	60	56	60	57	60	54.8	60			
A2	-	34	37	35.5	36	38	42	38	42	39	42	42	42			
B	32	34	36.8	37	36	38	41	41	45	48	51	52.5	52.5			
C	-	119	121.8	125.5	128	130	136	140	144	150	153	158.8	164			
D	89.5	91.5	94.3	94.5	97	99	105	105	113	119	122	127.8	133			
GP65	140	150	160	180	200	220	250									
A1	52.7	55.6	60	60	60	60	60									
A2	40	38	42	42	42	42	42									
B	72.7	75.6	81.4	86.4	93.1	100.1	110.9									
C	125.7	128.6	134.4	139.4	146.1	153.1	163.9									
D	89.5	91.5	94.3	94.5	97	99	105									
GP40	08	10	13	16	20	25	29	32	36	40	45	51	55	63	72	80
C	28.2	29.7	31.7	33.7	36.7	40.7	42.7	45.7	47.7	51.2	54.7	58.7	61.7	67.7	74.7	79.7
D	70	71.5	73.5	75.5	78.5	82.5	84.5	87.5	89.5	93	96.5	100.5	103.5	109.5	116.5	121.5

The "G" dimension please see page 24
G 尺寸请参考第 24 页

FRONT COVER

前盖

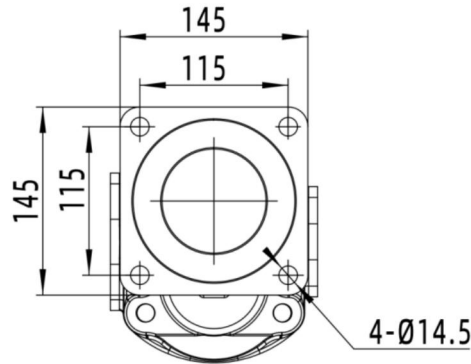
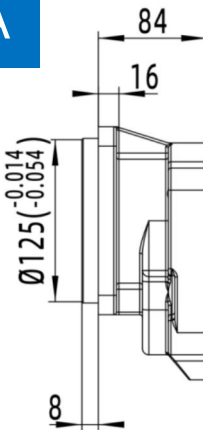
C4



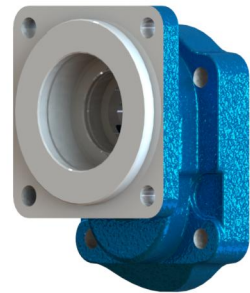
SAE- "C" 4 holes
Conforms to SAE J744



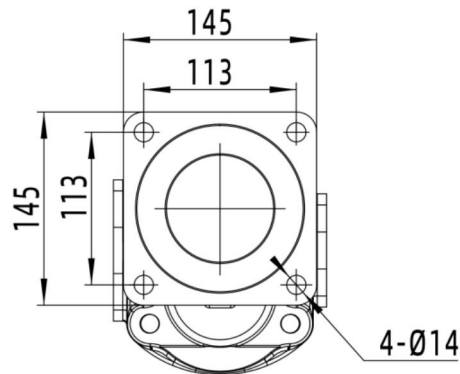
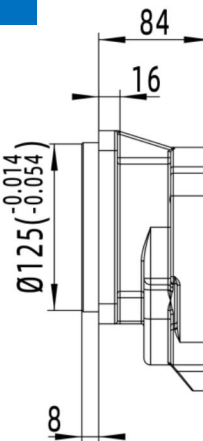
C4A



SAE- "C" 4 holes
Chinese standard



C4B



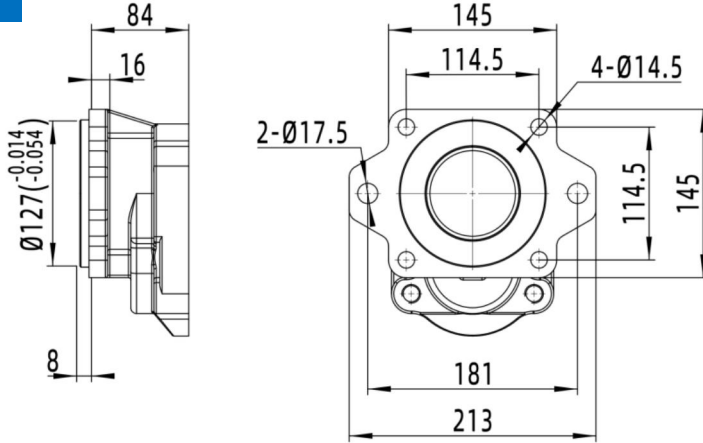
SAE- "C" 4 holes
Chinese standard-2



FRONT COVER

前盖

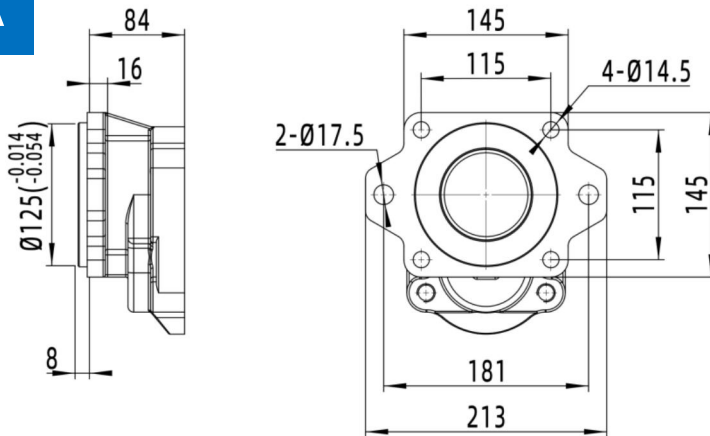
C6



SAE- "C" 2-4 holes
Conforms to SAE J744



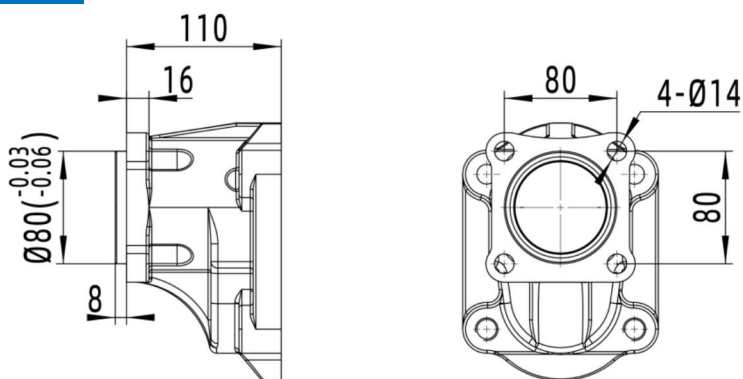
C6A



SAE- "C" 2-4 holes
Chinese standard



H4



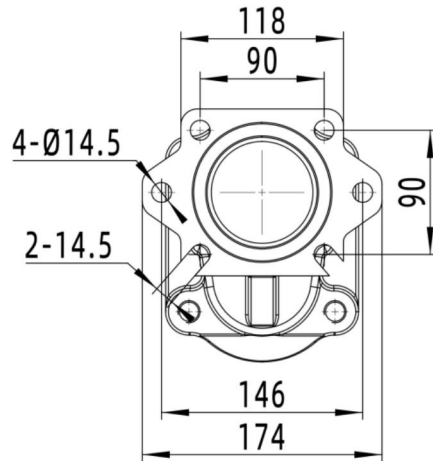
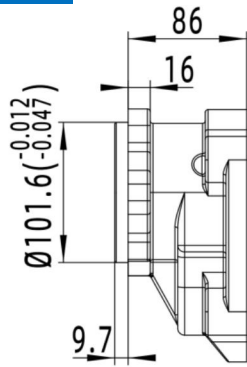
ISO - 4 holes
Conforms to UNI-ISO228



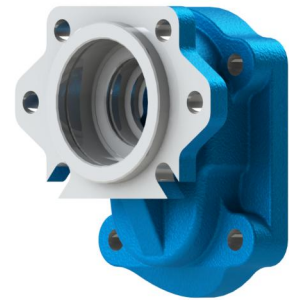
FRONT COVER

前盖

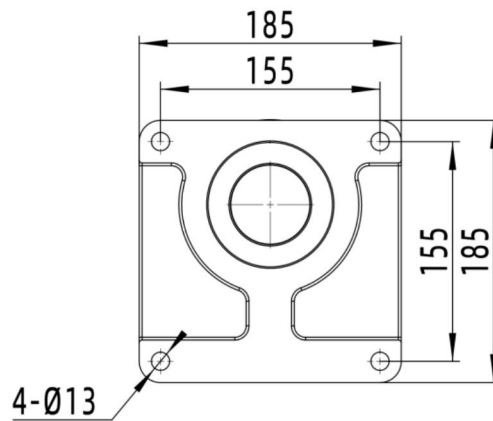
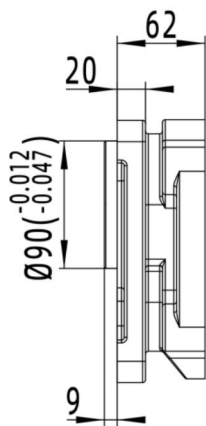
B6



SAE- "B" 2-4 holes
Conforms to SAE J744



R1



RUSSIA- 4 holes

RUSSIA STANDARD

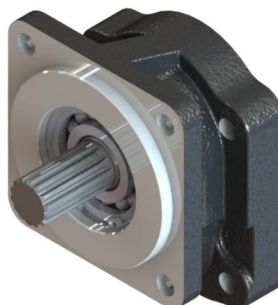
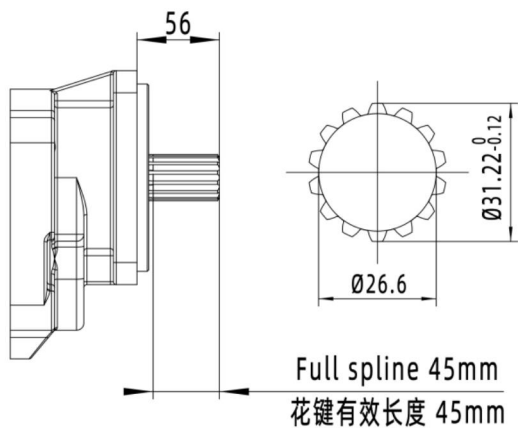


For other front cover requirement please contact our pre-sale department.

如有其他前盖尺寸的需求，请联系我公司售前部门。

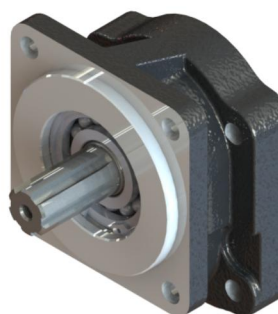
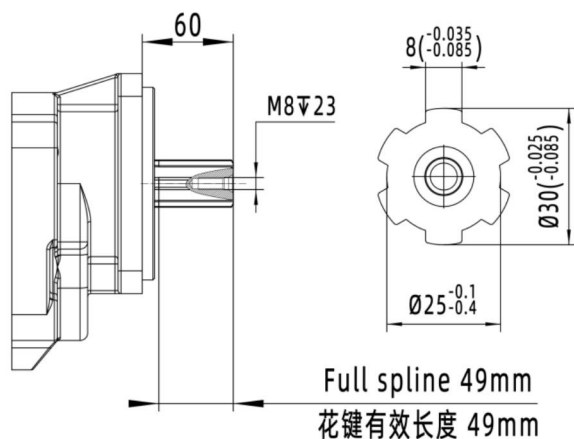
GEAR SHAFT

轴/花键



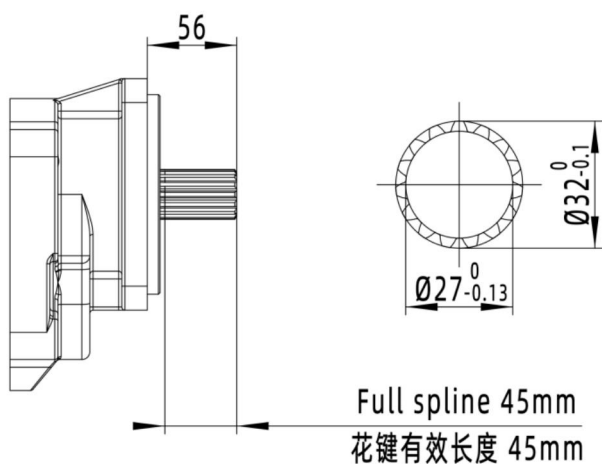
01

SAE INVOLUTE SPLINE
14 TEETH 12/24 PITCH
14 齿 Ø31.2 渐开线花键



02

RECTANGLE SPLINE
6 齿矩形花键-Ø30

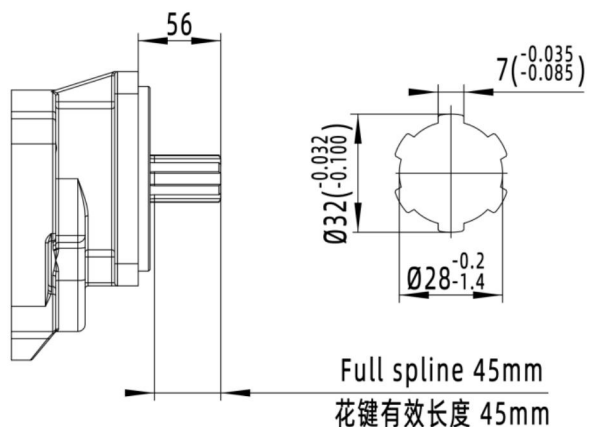


03

INVOLUTE SPLINE
15 TEETH M-2
15 齿 Ø32 渐开线花键

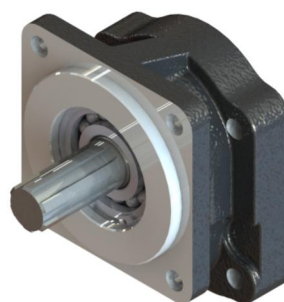
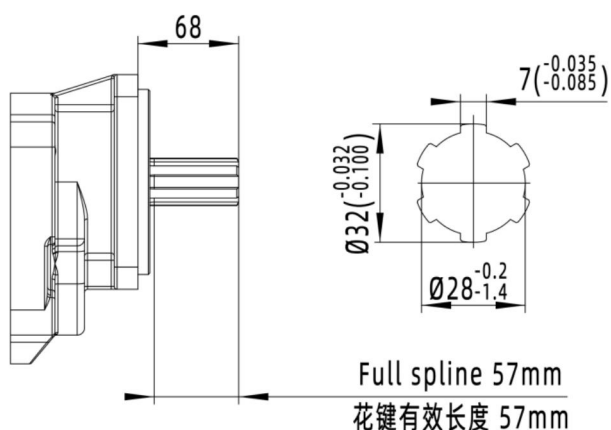
GEAR SHAFT

轴/花键



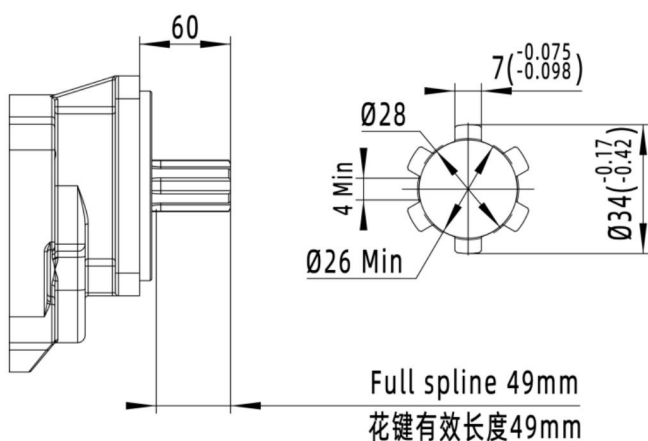
04

RECTANGLE SPLINE
6 齿矩形花键-Φ32



04C

RECTANGLE SPLINE
6 齿矩形花键-Φ32 加长

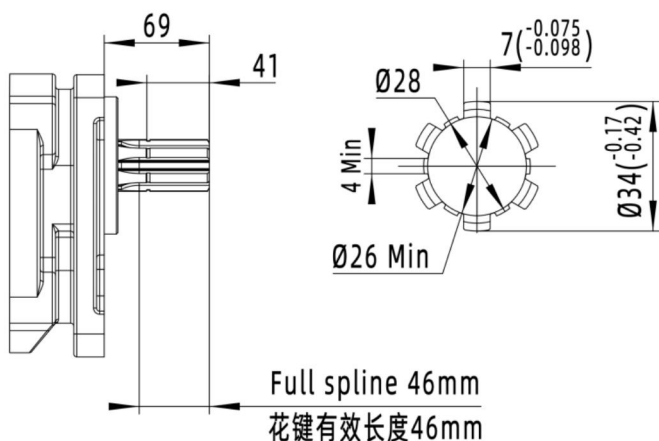


05

RECTANGLE SPLINE
6 齿矩形花键-Φ34

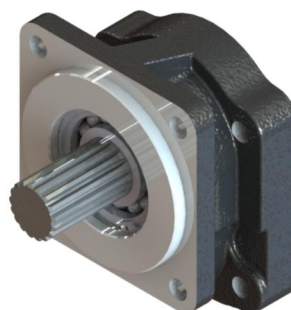
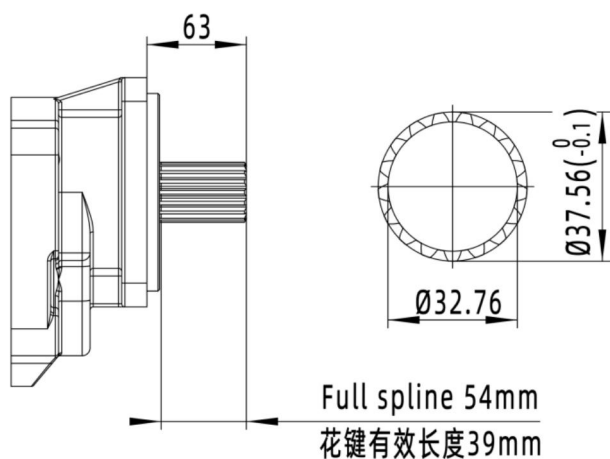
GEAR SHAFT

轴/花键



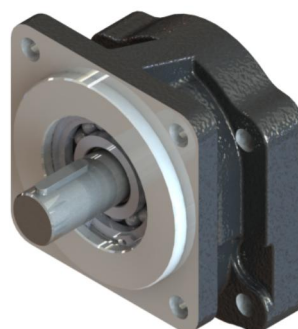
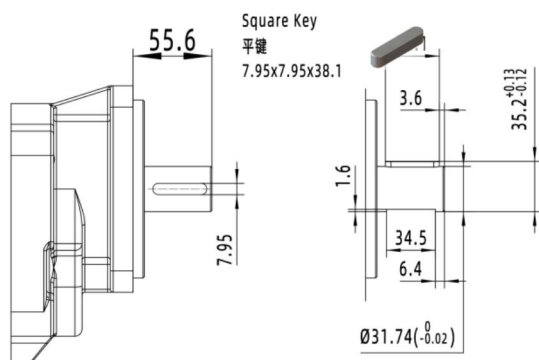
05jk

RECTANGLE SPLINE
6 齿矩形花键-Φ34



06

SAE INVOLUTE SPLINE
17 TEETH 12/24 PITCH
17 齿Φ38.1 渐开线花键

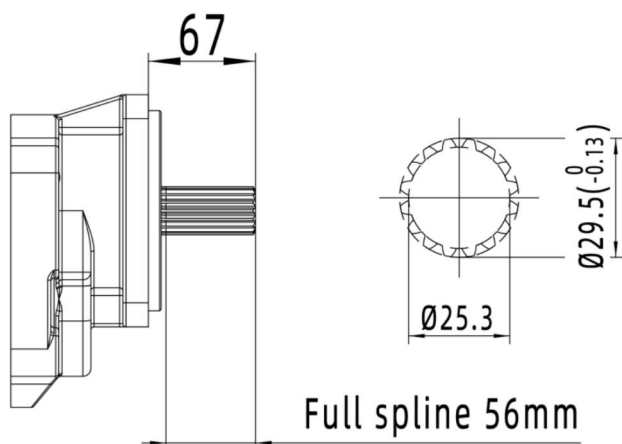


07

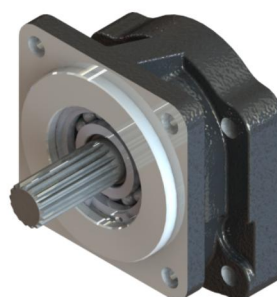
SAE-" C" 1-1/4 KEYED SHAFT
Φ31.75 平键

GEAR SHAFT

轴/花键

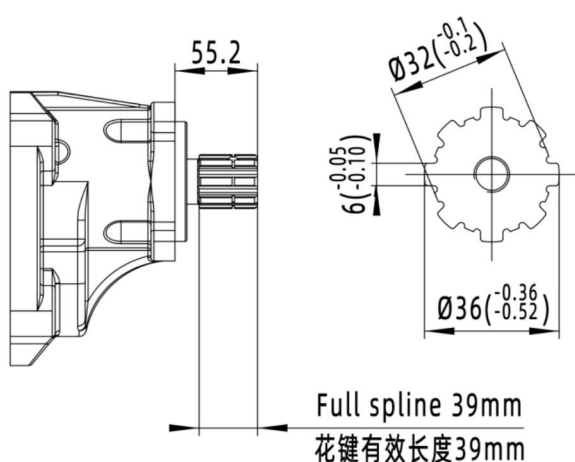


Full spline 56mm
花键有效长度56mm



07

SAE INVOLUTE SPLINE
16 TEETH M-1.75
16 齿 Φ 29.5 渐开线花键



Full spline 39mm
花键有效长度39mm



10.0

ISO STANDARD
A8x32x36x6 DIN5462
ISO 8 齿矩形花键

For other gear shaft requirement please contact our pre-sale department.

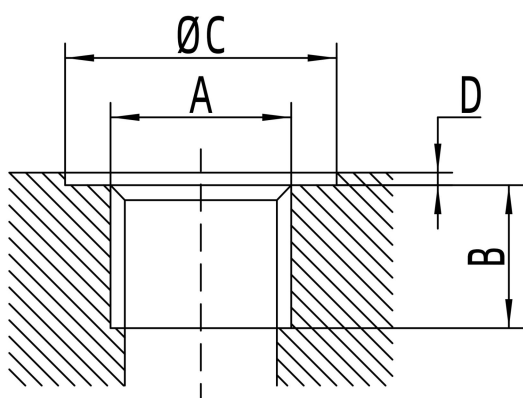
如有其他轴/花键尺寸的需求，请联系我公司售前部门。

OIL PORT DIMENSIONS

油口尺寸

Metric thread according to ISO 6149

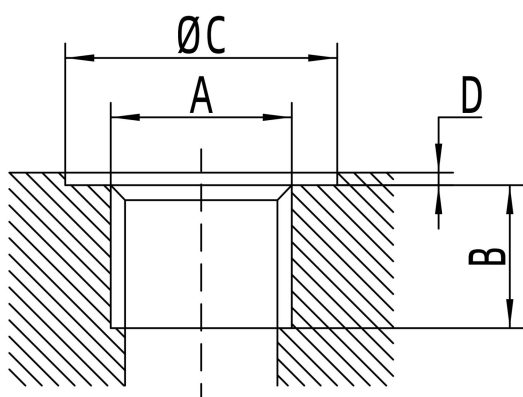
公制螺纹 ISO 6149



CODE	A	B	C	D
M01	M10x1	10	20	1
M02	M12x1.5	11.5	23	1.5
M03	M14x1.5	11.5	25	1.5
M04	M16x1.5	13	28	1.5
M05	M18x1.5	14.5	30	2
M06	M22x1.5	15.5	33	2
M07	M24x1.5	19	34	2
M08	M27x1.5	19	40	2
M09	M27x2	19	40	2
M10	M30x2	19	44	2
M11	M33x1.5	19	49	2.5
M12	M33x2	19	49	2.5
M13	M36x2	19.5	53	2.5
M14	M42x2	19.5	58	2.5
M15	M48x2	22	63	2.5
M16	M60x2	27.5	74	2.5

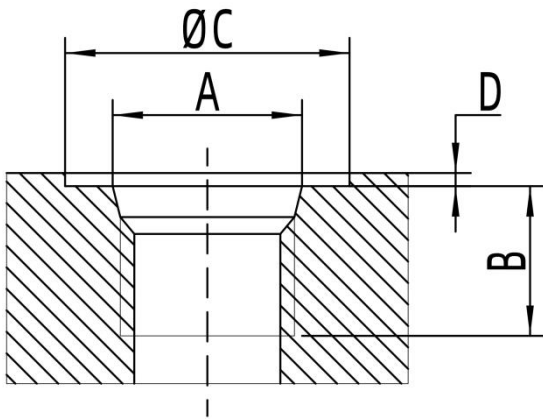
BSPP pipe thread according to ISO 228-1

英制 G 螺纹 ISO 6149



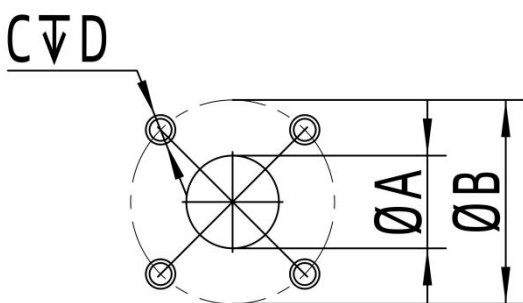
CODE	A	B	C	D
G01	G1/4	13	20	1 Max
G02	G3/8	21	33	1 Max
G03	G1/2	21	33	1 Max
G04	G3/4	21	39	1 Max
G05	G1	21	45	1 Max
G06	G1-1/4	21	58	1 Max
G07	G1-1/2	26	64	1 Max
G08	G2	26	78	1 Max

UNF thread according to SAE 美制螺纹



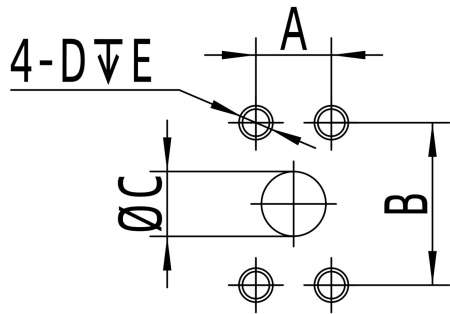
CODE	A	B	C	D
U01	7/16-20 UNF	13	21	1Max
U02	9/16-18 UNF	13	25	1 Max
U03	3/4-16 UNF	13	30	1 Max
U04	7/8-14 UNF	17	34	1 Max
U05	1-1/16-12 UNF	19	41	1 Max
U06	1-5/16-12UNF	23	49	1 Max
U07	1-5/8-12UN	23	58	1 Max
U08	1-7/8-12UN	23	65	1 Max

Flanged fittings according to DIN 8901/8902 欧标法兰



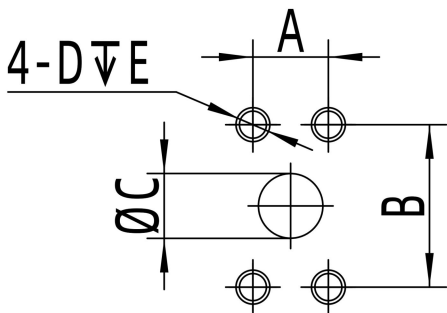
CODE	A	B	C	D
H01	8	26	M5	12
H02	10	26	M5	12
H03	8	30	M6	12
H04	12	30	M6	12
H05	15	35	M6	13
H06	20	40	M6	13
H07	13.5	30	M8	16
H08	20	40	M8	16
H09	18	55	M8	16
H10	25	55	M8	16
H11	26	51	M10	16

Flanged fittings according to SAE, metric thread
SAE 法兰, 公制螺纹



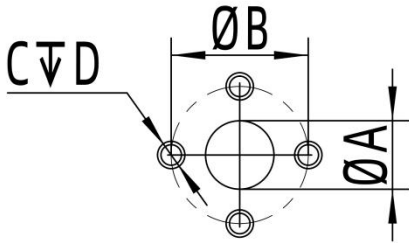
CODE	A	B	C	D	E
E01	17.5	38.1	13	M8	16
E02	22.2	47.6	19	M10	21
E03	26.2	52.4	25.4	M10	21
E04	30.2	58.7	31.8	M10	21
E05	35.7	69.8	38.1	M12	21
E06	42.9	77.8	50.8	M12	21
E07	50.8	88.9	63.5	M12	21

Flanged fittings according to SAE, UNC thread
SAE 法兰, 美制螺纹



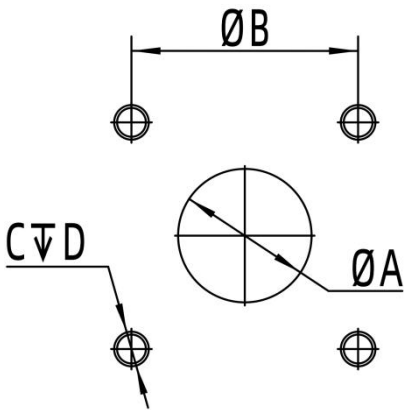
CODE	A	B	C	D	E
A01	17.5	38.1	13	5/16-18 UNC	16
A02	22.2	47.6	19	3/8-16 UNC	21
A03	26.2	52.4	25.4	3/8-16 UNC	21
A04	30.2	58.7	31.8	7/16-14 UNC	21
A05	35.7	69.8	38.1	1/2-13 UNC	21
A06	42.9	77.8	50.8	1/2-13 UNC	21
A07	50.8	88.9	63.5	1/2-13 UNC	21

Flanged fittings - "cross" 十字安装法兰



CODE	A	B	C	D
K01	13.5	30	M6	13
K02	20	40	M8	16
K03	18	40	M8	16
K04	26	51	M10	18
K05	18	55	M8	16
K06	25	55	M8	16
K07	14	38	M8	16
K08	19	38	M8	16

Flanged fittings - "square" 方形安装法兰



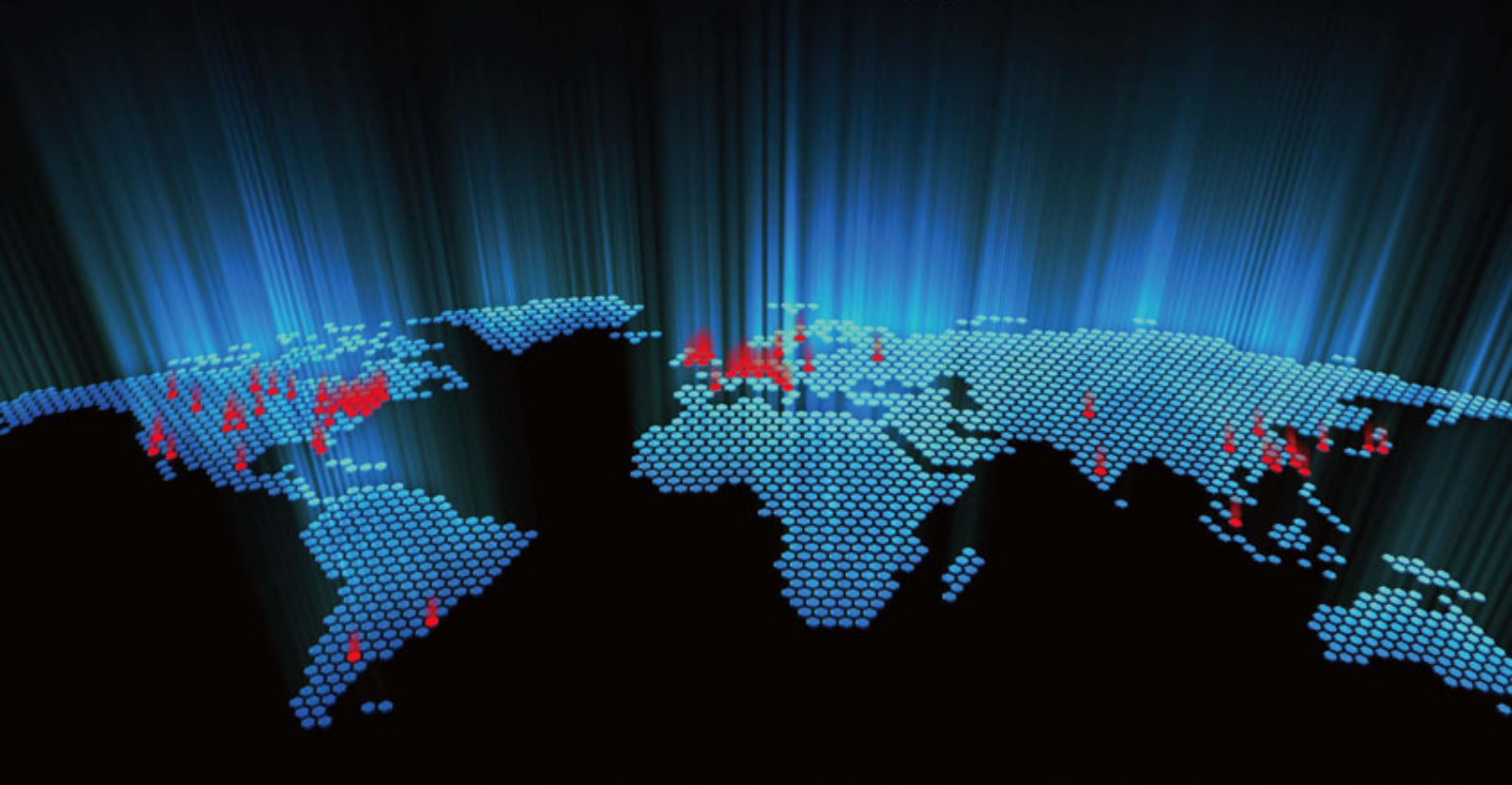
CODE	A	B	C	D
S03	60	78	M12	24
S04	46	78	M12	24
S05	22	48	M10	22
S06	30	48	M10	22
S08	19	54	M10	22
S09	27	54	M10	22
S10	16	46	M8	20
S11	23.5	46	M8	20

For other oil port dimension requirement please contact our pre-sale department.

如有其他油口尺寸的需求，请联系我公司售前部门。



Experience The Power
Of Global Support



**Motors and Fluid-moving Pruducts
From Gaudenttech for Many Applications**