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常州格林液压设备制造有限公司

CHANGZHOU GREEN HYDRAULIC CO.,LTD

电话（Tel）：0519-85954535　　电话（Mob）：（86）13685276555

传真（Fax）：0519-85954535　　Wechat：（86）13685276555

网址（Url）：www.gelinyy.com　　Cel/Whatsapp：（86）13685276555

邮箱（E-mail）：info@gelinyy.com

地址（Add）：中国江苏省常州市钟楼区新闸镇新旭路京东智能产业园西区15栋

Building 15, West Zone, Jingdong Intelligent Industrial Park, Xinxu Road, Xinzha Town, Zhonglou District, Changzhou City, Jiangsu Province, China

Serreen

·格林液压综合样本

Serreen

GREEN HYDRAULIC

TO CREAT GLOBAL ONE-STOP QUALITY SUPPLIER OF MACHINERY

常州格林液压设备制造有限公司

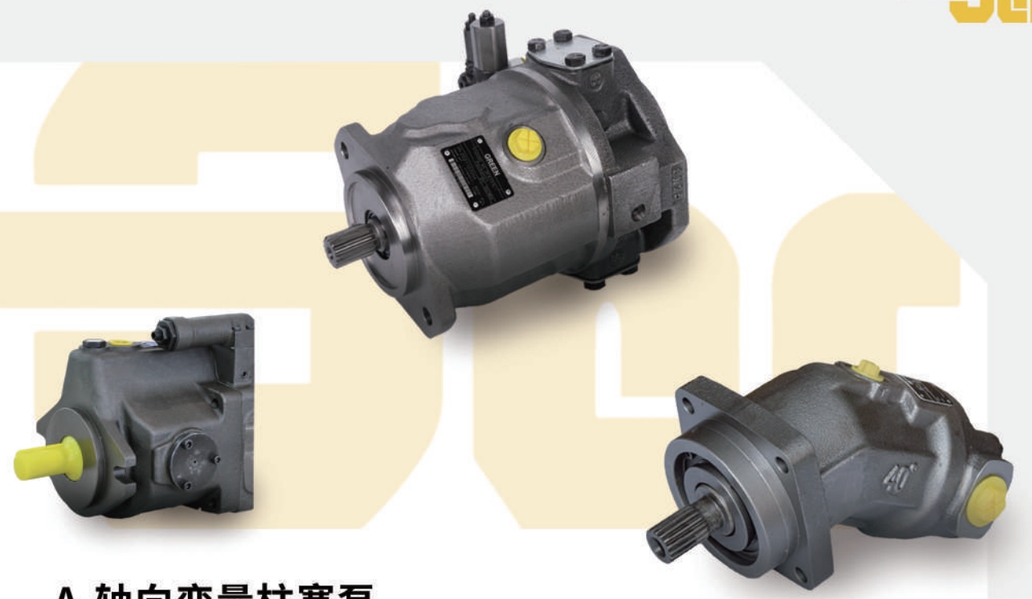
CHANGZHOU GREEN HYDRAULIC CO., LTD

HYDRAULIC MANUFACTURE

QUALITY PRODUCT SPREAD TO THE WORLD

TO CREAT GLOBAL ONE-STOP QUALITY SUPPLIER OF MACHINERY

格林液压



A.轴向变量柱塞泵

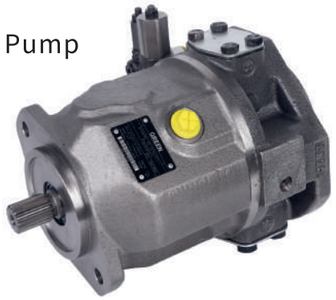
A10V系列轴向柱塞泵变量泵

A10V Series Axial Piston Pump Variable Displacement Pump

A

适用于开式回路液压系统

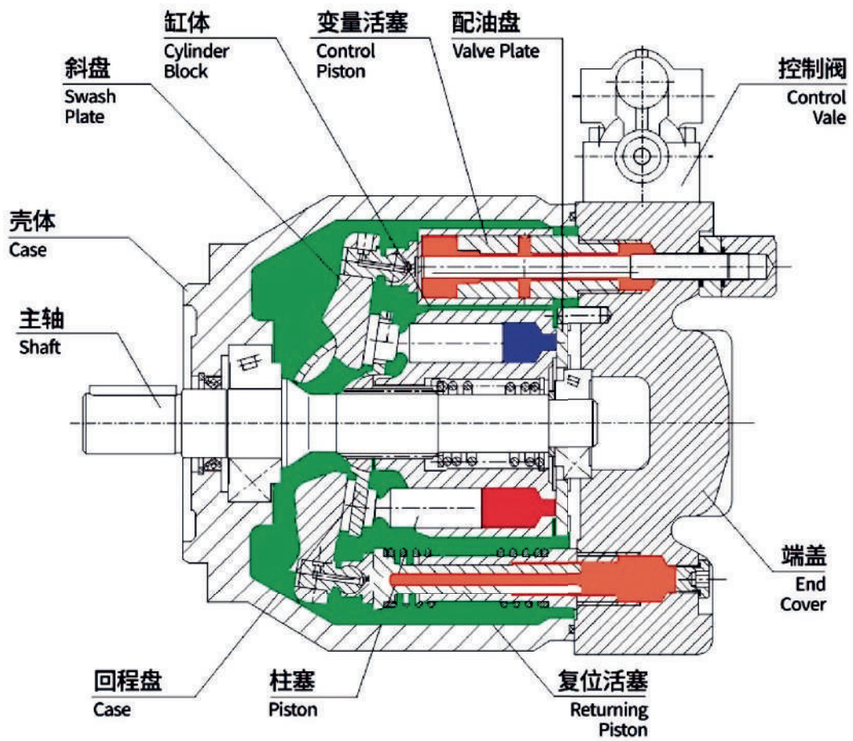
Suitable for open circuit hydraulic systems



概 述 Overview

A10V系列变量柱塞泵均为斜盘式轴向柱塞变量泵，分别为工业用和行走机械用设计，都是专为开式回路液压驱动设计的，采用通轴结构，额定工作压力可达28MPa。

A10V series variable displacement piston pump swash plate axial plunger variable pump,respectively for industrial use and for mobile machinery design, is designed for open loop hydraulic driven design, adopts a shaft structure, rated working pressure up to 28Mpa.



产品特点

- 泵的流量正比于泵的转速和排量，通过调节斜盘摆角调节排量，实现无级变量；
- 有多种变量控制形式，控制响应时间短；
- 允许连续运行的工作压力可达28MPA:
- 有两个壳体泄油口；
- 高的功率/重量比；
- 驱动轴能承受轴向及径向负载；
- 采用通轴结构，可形成组合泵；

Features

- The capacity of the pump is in proportion to its rotating speed and displacement;the stepless adjustment of the displacement can be materialized by regulating the swivel angle of its swash plate.
- There are many variable control forms, Fast control response
- Allows for continuous operating pressures up to 28MPa;
- There are two shell discharge ports;
- High power/weight ratio ;
- The drive shaft is able to bear the axial and radial load;
- With through-shaft structure,able to form combination pump

型号标识Type Code

	A10VS	O	28	DR	/	31	R	—	V	P	A	12	KB3
1	2	3	4	5		6	7		8	9	10	11	12

1-工作介质Operating Medium

矿物油 Mineral oil (无代号No Code)	

2-结构分类MachineryClassification

轴向柱塞，斜盘式，可变量，工业用Axial piston,swash plate design,variable,used in industry	A10VS
轴向柱塞，斜盘式，可变量，行走机械用 Axial piston,swash plate design,varable,usedin indusiny	A10V

3-运行模式Operational Mode

开式回路 Open circuit	O

4-规格 Siz.e

公称排量Nominal displa.cement mL/r	18	28	45	71	88	100	140	

5-控制机构 Control Devices

直接控制，两位调节Twopoini control,dire:ctlyoperatedDG	●	●	●	●	●	●	●	DG
压力控制 Pressure: Control DR	●	●	●	●	●	●	●	DR
远程压力控制Remote pressure control DRG	●	●	●	●	●	●	●	DRG
压力流量控制 Pressure and flow control DFR	●	●	●	●	●	●	●	DFR
压力流量控制Pressure and flow control DFR1	●	●	●	●	●	●	●	DFR1
压力功率控制 Pressure and power control DLR	●	●	●	●	●	●	●	DLR
压力流量功率控制 Pressure and flow and powei control DFLR	●	●	●	●	●	●	●	DFLR

6-系列 Series

	31

7-旋转方向(从轴端看)Rotating Direction(Viewon Shaft End)

顺时针 Clockwise	R
逆时针 Counterclockwise	L

8-密封 Seals

丁腈橡胶NBR，轴封氟橡胶ShaftsealFKM	P
氟橡胶VitonFKM	V

图表说明Chart shows: ●=可以供货Available，O=在准备中In preparation.-=无Not available

A

9-轴伸 Shaft End

平键轴伸Keyedshaft DIN6885	●	●	●	●	●	●	●	P
英制平键轴伸Parallelshaft SAE withkeyJ744(ISO3019-1)	●	●	●	●	●	●	●	K
花键轴神Splinedshaft ANSlB92.1a, standard shaft 花键轴伸Similartoshaft S 较高通轴驱动转矩	3/4″ 3/4″	7/8″ 7/8″	1″ 1″	11/4″ 11/4″	11/4″ 11/4″	1/2″ 1 —	3/4″ —	S R
花键轴伸Splinedshaft to SAEJ744,reduced diameter 不适用于通轴驱动not for through drive	3/8″	3/4″	7/8″	1″	1″	11/4″	—	U
花键轴伸Splinedshaft SAE	—	—	—	—	—	11/4″	—	W

10-安装法兰MountingFlange

	18	28	45	71	88	100	140	
ISO 2孔	●	●	●	●	●	●	—	A
SAE 2孔	●	●	●	●	●	●	—	C
ISO 4孔	—	—	—	—	—	—	●	B
SAE 4孔	—	—	—	—	—	—	●	D

11-工作油口 Service Line Ports

	18	28	45	71	88	100	140	
吸油口S和压力油口B在两侧，SAE法兰，公制螺纹 Port S and port B at opposite sides,SAE flanged ,metric	●	●	●	●	●	●	●	12
	—	—	—	●	●	—	—	42
吸油口S和压力油口B在两侧，SAE法兰，英制螺纹 Port S and port B at opposite sidesSAE flanged, UNC mounting bolts	●	●	●	●	●	●	●	62
	—	—	—	●	●	—	—	92

12-通轴驱动Through Drive

			18	28	45	71	88	100	140	
无通轴驱动 Without through drive			●	●	●	●	●	●	●	N00
带通轴驱动,从泵连接尺寸如下 With through drive, the second pump connection dimension as follows										
安装法兰 Mounting flange	轴伸 Spline shaft	可接受的从泵 The second pump								
SAE82,2孔	U轴5/8in9T16/32DP	CR10VS018/31	●	●	●	●	●	●	●	K01
SAE82,2孔	S轴3/4in11T16/32DP	CR10VS018/31	●	●	●	●	●	●	●	K52
SAE101,2孔	S轴7/8in13T16/32DP	CR10VO28/31		●	●	●	●	●	●	K68
SAE101,2孔	S轴7/8in13T16/32DP	CR		●	●	●	●	●	●	K02
SAE101,2孔	S轴1in15T16/32DP	CR 0VO45/31			●	●	●	●	●	K04
SAE127,2孔	S轴1 1/4in14T12/24DP	CR OV071/31				●	●	●	●	K07
SAE127,2孔	S轴1 1/2in17T12/24DP	CR OV0100/31						●	●	K24
SAE152,2孔	S轴1 3/4in13T8/16DP	CR OVO140/31							●	K17
SO80,2孔	S轴3/4in11T16/32DP	CR 0VSO18/31	●	●	●	●	●	●	●	KB2
S0100,2孔	S轴7/8in13T16/32DP	CR OVSO28/31		●	●	●	●	●	●	KB3
IS0100,2孔	S轴1in15T16/32DP	CR 0VSO45/31			●	●	●	●	●	KB4
S0125,2孔	S轴1 1/4in14T12/24DP	CR OVS071/31				●	●	●	●	KB5
IS0125,2孔	S轴1 1/2in17T12/24DP	CR OVSO100/31						●	●	KB6
IS0180,2孔	S轴1 3/4in13T8/16DP	CR OVSO140/31							●	KB7
IS0 80,2孔	平键轴φ18	CR OVS018/31	●	●	●	●	●	●	●	K51
SAE82,2孔	平键轴φ19.05	CR OVS018/31	●	●	●	●	●	●	●	K40
SAE100,2孔	平键轴φ19.05	CR OVS028/31		●	●	●	●	●	●	K25

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			18	28	45	71	88	100	140	
无通轴驱动 Without through drive			●	●	●	●	●	●	●	N00
带通轴驱动,从泵连接尺寸如下 With through drive, the second pump connection dimension as follows										
安装法兰 Mounting flange	轴伸 Spline shaft	可接受的从泵 The second pump								
SAE101,2孔	平键轴中22.225	CR10VS028/31	—	●	●	●	●	●	●	K03
ISO 100,2孔	平键轴中25	CR10VS045/31	—	—	●	●	●	●	●	K26
SAE101,2孔	平键轴 中25.4	CR10VSO45/31	—	—	●	●	●	●	●	K05
ISO 125,2孔	平键轴中闆队32	CR10VS071/31	—	—	—	●	●	●	●	K27
SAE127,2孔	平键轴中31.75	CR10VS071/31	—	—	—	●	●	●	●	K08
IS0 125,2孔	平键轴中40	CR10VSO100/31	—	—	—	—	—	●	●	K37
SAE127,2孔	平键轴中38.1	CR10VS0100/31	—	—	—	—	—	●	●	K38
ISO 180,4	平键轴中45	CR10VSO140/31	—	—	—	—	—	—	●	K59
SAE152,4孔	平键轴中44.45	CR10VSO140/31	—	—	—	—	—	—	●	K21

组合泵说明:两台泵首尾串联，即以通轴形式装配成一体，称为组合泵，串联的第二台称为从泵。
如果订购组合泵，组合泵的型号为第一台泵的型号+第二台的型号号。

Description of combination pump: Two pumps can be connedted in series by their head and end, namely integrated tobe a combination pump.by the means of through-shaft,and the se cond pump of the series combination is called the subordinate pump.

In case of placing an order, the combination pump model equals to the model of the first pump + the model of the second
组合泵型号示例Illustration of combination pump model:0S4VS045 DR/31R-PPA12KB3+OS10VSO28DR/31R_PSA12N00

技术参数Technical Data

■ 参数表 Parameters Table

规格Size				18	28	45	71	88	100	140
排量Displacement		$V_{g\ max}$	mL/r	18	28	45	71	88	100	140
吸入口S压力(绝对压力) Pressure at suction port S (Absolute pressure)	最低压力 Minimum pressure	P_{smin}	bar	0.8						
	最低压力 Minimum pressure	P_{smax}	bar	10						
出油口B压力(绝对压力) Pressure at Outlet portB(Absolute pressure)	额定压力 Rated pressure	P_N	bar	280						
	峰值压力 Peak pressure	P_{max}	bar	350						
	最小压力 Minimum pressure		bar	10						
压力变化速率 Rate of pressure change		R_A	bar/s	16000						
泄油口L、L1压力(绝对压力) Drain port L,Li pressure (Absolute pressure)		P_L	bar	⩽2						
最大转速1 Max. speed	Vg Vg max 时	$n_{o\ max}$	r/min	3300	3000	2600	2200	2100	2000	1800
Ps= 1bar	Vg Vg max 时		r/min	3900	3600	3100	2600	2500	2400	2100
最大流量Max. flow	n =no max时	$q_{vo\ max}$	L/min	59.4	84	117	156	185	200	252
	n =1500 r/min时		L/min	27	42	68	107	132	150	210

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规格Size				18	28	45	71	88	100	140
排量Displacement		$V_{g\ max}$	mL/r	18	28	45	71	88	100	140
最大功率 Maximum powel (Ap=280 bar)	最低压力 Minimum pressure	P_{omax}	kw	27.7	39	55	73	86	93	118
	最低压力 Minimum pressure		kw	12.6	20	32	50	62	70	98
扭矩 Torque (Vg= Vgmax)		T_{max}	Nm	80.1	125	200	316	392	445	623
		T	Nm	28.6	45	72	113	140	159	223
旋转刚度 Torsional stiffness	轴伸 P Shaft extension P		Nm/rad	13158	25656	41232	80627	80627	132335	188406
	轴伸 S Shaft extension S		Nm/rad	11087	22317	37500	71884	71884	121142	169537
	轴伸 R Shaft extension R		Nm/rad	14850	26360	41025	76545	76545	—	—
	轴伸 U Shaft extension U		Nm/rad	8090	16695	30077	52779	52779	91903	—
	最小压力 Minimum pressure		Nm/rad	13340	26189	43905	82112	82112	135303	196844
旋转总成转动惯量 Moment or inertia of the rotating assembly		J	kgm^2	0.0093	0.0017	0.0033	0.0083	0.0083	0.0167	0.0242
最大角加速度Max.angular acceleration			rsd/s^2	6800	5500	4000	3300	3300	2700	2700
壳体容积 Volume of case			L	0.4	0.7	1.0	1.6	1.6	2.2	3.0
重量 Weight			kg	12	15	21	33	33	45	60
驱动轴的允许负载 Drive shaft Allowable load	最大轴向力 Max. axial force		N	700	1000	1500	2400	2400	4000	4800
	最大径向力 Maximum radial force		N	350	1200	1500	1900	1900	2300	2800

1)Vg=Vgmax 时的数值适用于吸油口S的进口压力为Ps= 1bar(绝对压力)时的情况，当进口压力Ps增加或排量减小，则转速可增加，当进口压力为Psmin = 08bar时，转速应减小至90%。Vg<Vgmax 时的数值为转速极限。

1) OnceVg = Vgmax, the value is applicable to the inlet pressure at suction port S is Ps= 1bar (absolute pressurel,when the inlet pressure Ps increase or decrease the displacement the speed can be increased,when the inlet pressure Psmin=0.8bar.the speed should be reduced to 90%.Vg<Vgmax value when the speed limit.

技术参数Technical Data

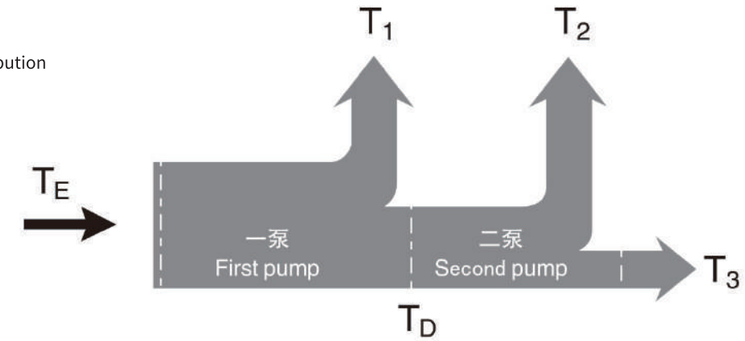
■ 允许的输入扭矩和通轴驱动扭矩Permissible input torque and through drive torque

规格Size				18	28	45	71	88	100	140
扭矩Torque (V△且 P=280bar时)		T_{max}	Nm	80	125	200	316	392	445	623
最大输入扭矩1) Max .input torque1)	轴伸 Shaft P	T_{Emax}	Nm	88	137	200	439	439	857	1206
		φ	mm	18	22	25	32	32	40	45
	轴伸 Shaft S	T_{Emax}	Nm	124	198	319	626	626	1104	1620
		φ	in	80	125	200	316	392	445	623

规格Size				18	28	45	71	88	100	140
扭矩Torque (V 且△P=280bar时)		T_{max}	Nm	80	125	200	316	392	445	623
最大输入扭矩1) Max .input torque1)	轴伸 Shaft R	T_{Emax}	Nm	160	250	400	644	644	—	—
		φ	mm	3/4	7/8	1	1 1/4	1 1/4	—	—
	轴伸 Shaft K	T_{Emax}	Nm	104	145	212	433	433	750	1186
		φ	in	80	125	200	316	392	445	623
最大通轴驱动扭矩 Max .Through drive torque	轴伸 Shaft S	T_{Dmax}	Nm	108	160	319	492	492	778	1266
	轴伸 Shaft R	T_{Dmax}	Nm	120	176	365	548	548	—	—
	轴伸 Shaft K	T_{Emax}	Nm	104	145	212	433	433	750	1186

1)适用于无径向力作用的传动轴 For drive shaft free ofradial load

扭矩分布 Torque Distribution



液压油 Hydraulic oil

工作粘度范围 Operating viscosity range

为了获得最佳效率和使用寿命，我们建议在以下最佳范围内选择工作粘度(工作温度下)

For optimum efficiency and service life, we recommend that the operating viscosity in the range of the following best (at operating temperature)

最佳工作粘度

Optimum operating viscosity vopt =16~36mm^2/s

粘度范围限制 Limits of viscosity range

在临界工作条件下，适用以下数值:

Under critical operating conditions the following values apply:
Vmin =10mm's 短时间Short time(ts1min)

最高允许壳体泄油温度为90°C

Max. permissible case drain temperature of 90°C

Vmax =1000mm^2/s 短时间Short time(t≤ 1min)

p≤30bar,n≤1000r/min，0≥-25°C

选择液压油的注意事项

Selection Considerations of hydraulic oil

为了选择正确的液压油，必须确定环境温度下油箱内的工作温度(开式回路)。在工作温度范围内选择液压油，以获得最佳粘度范围，建议选择相应情况下较高的粘度等级壳体泄油温度受压力和输入速度的影响，并且始终高于油箱温度。但是，柱塞泵任何部位的温度均不得超过90°C。轴承区域的油液温度一般比壳体平均泄油温度高5°C左右。

Inorder to select the correct hydraulic oil. it must be detemmined at ambient temperature within the tank temperature (open circuit). Select the hydraulic fluid in the working temperature range for optimum viscosity range,it recommended to choose where relevant, the higher viscosity grade.

The case drain temperature is influenced by pressure and input speed and is always higher than the tank temperature. However any part of the piston temperature shal not exceed 9o°C.The fuid temperature in the bearing area is generaly higher than the average case drain oil temperature high around 5°C

A

控制装置 Control Devices

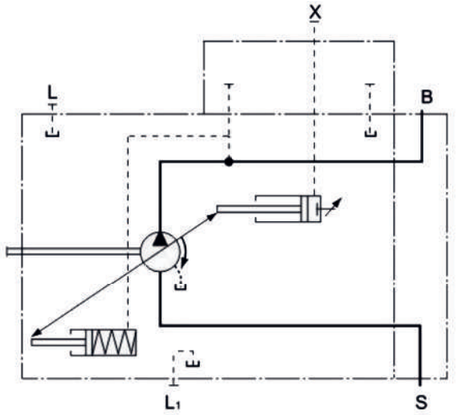
1、直接控制DG Direct Control DG

通过在油口X施加一个外部切换压力使变量泵达到最小摆角。控制油可直接供给控制活塞，需要的最小压力为50bar。变量泵只能在Vamax与Vamin之间切换。

注意:油口X所需的切换压力与压力油口B的实际工作压力直接相关。

An external switching pressure can be applied to Port X to minimize the swivel angle of the variable pump. Control oil can be supplied directly for the control piston under the necessary minimum pressure of 50 bar. The variable pump can only be shifted between Vgmax and Vgmin .

Note: the switching pressure needed at Port X is in direct correlation with the actual working pressure of Pressure Port B.

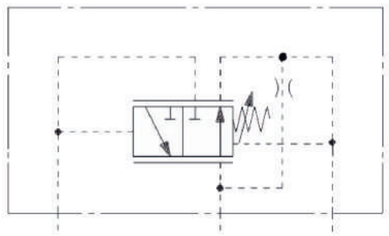


2、压力控制DR Pressure Control DR

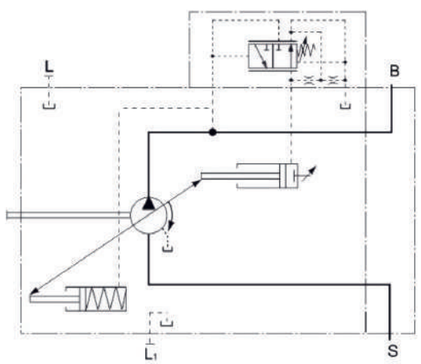
压力控制使泵的出口压力保持恒定，因此变量泵只提供液压系统的执行元件所需的液压油流量。出口压力可在控制阀上无级设定。

The pressure control will keep the outlet pressure constant Therefore, the variable pump only delivers as much fluidas required by the actuator elements of the hydraulic system. The outlet pressure can be set through stepless adjustment on the control valve.

规格 140



规格 18～100



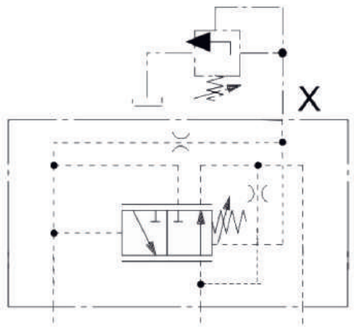
3、远程压力控制DRG Remote Pressure Control DRG

恒压控制的功能及装置与DR相同。可在外部将一个溢流阀与油口X相连来实现远程控制。

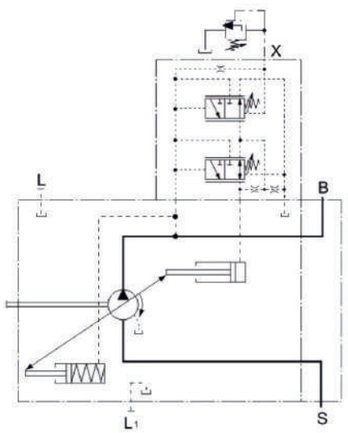
溢流阀不包括在DRG控制的供货范围内。

The function and equipment of constant control is slmilar to that of DR.The remote control can be realized by connecting an external relief valve with Port X. Relief valve is not included in the scope of supply for DRG control.

规格 140



规格 18～100



控制装置 Control Devices

4、压力流量控制DFR/DFR1

Pressure and Flow Control DFR/DFR1

除了压力控制功能之外，泵的输出流量可通过安装于供油管线上的节流阀上的压差进行调节，变量泵提供液压系统的执行元件实际需要的流量，不受工作压力变化的影响。压力控制优先于流量控制。

节流阀不包括在DFR/DFR1控制的供货范围之内。

DFR1控制阀的油口X与泵腔之间的节流孔被封闭。

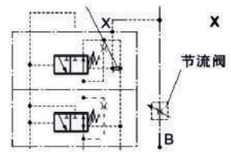
In addition to the pressure control function, the outlet flow of the pump can be adiusted by the differential pressure of the throttle valve installed on the oil supply pipe. The varlable pump delivers the fluid needed by the actuator elements of the hydraulic system and is free from the influence of the changes in actual working pressure. Pressure control takes precedence over flow control.

Relief valve is not included in the scope of supply for DFR/DFR1 control.

The throttle orifice between Port X of DFR1 control valve and the pump chamber is enclosed.

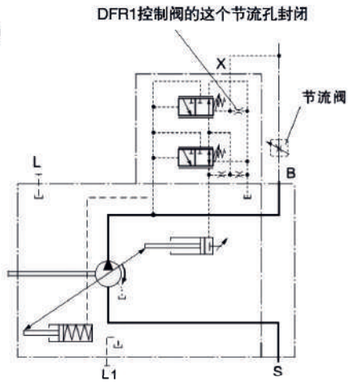
规格 140

DFR1控制阀的这个节流孔封闭



规格 18~100

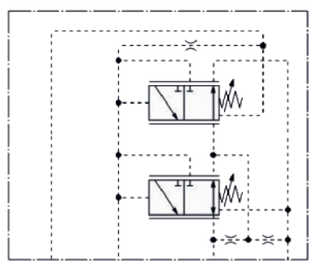
DFR1控制阀的这个节流孔封闭



6、压力功率控制 Pressure and Power control DLR

这种控制方式没有流量控制。Thecontrolunit no fow control

规格 140



5、压力流量功率控制 DFLR

Pressure and Flow and Power Control DFLR

除了压力控制功能之外，泵的输出流量可通过安装于供油管线上的节流阀上的压差进行调节，变量泵提供液压系统的执行元件实际需要的流量，不受工作压力变化的影响。压力控制优先于流量控制。

节流阀不包括在DFR/DFR1控制的供货范围之内。

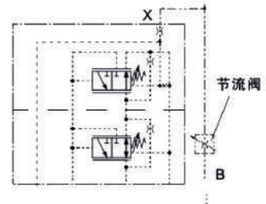
DFR1控制阀的油口X与泵腔之间的节流孔被封闭。

In order to gain constant driving torque under the working conditions with changeable working pressure, the output flow can be changed to keep the product of flow and pressure constant, namely to keep the output powerful of the pump constant.

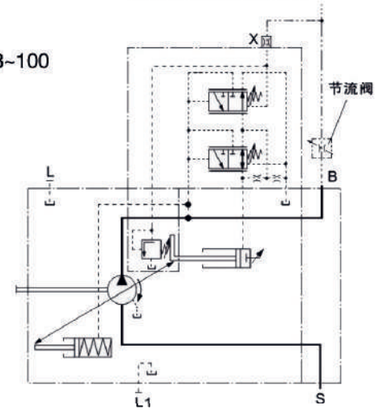
Flow control can only be conducted below the constant power control curve.

Relief valve is not included in the scope of supply for DFLF control.

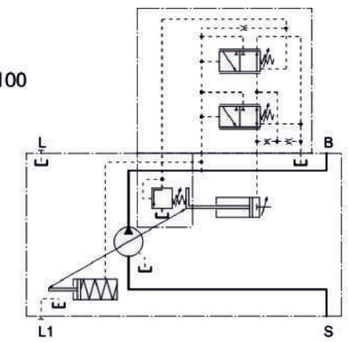
规格 140



规格 28~100

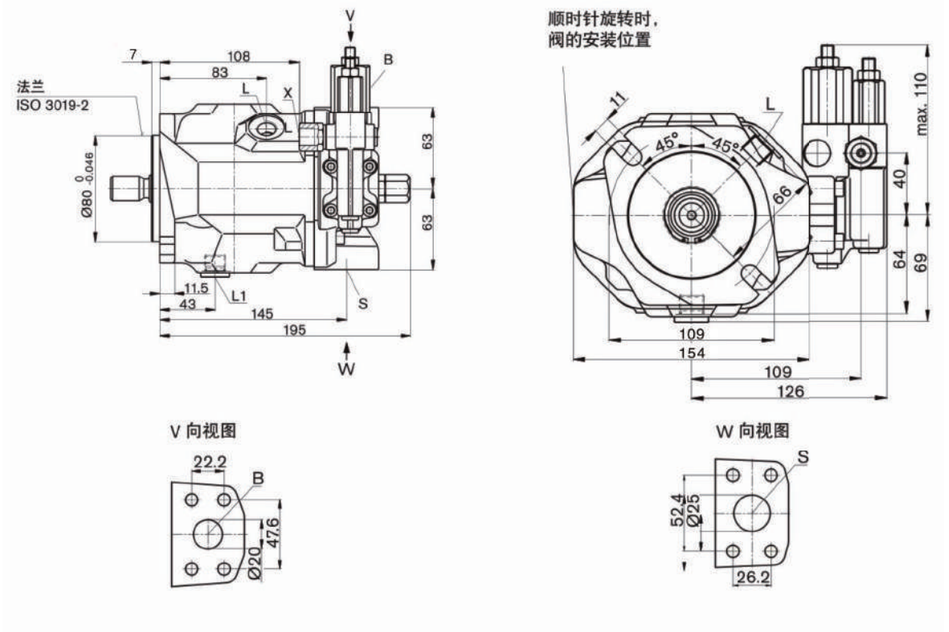


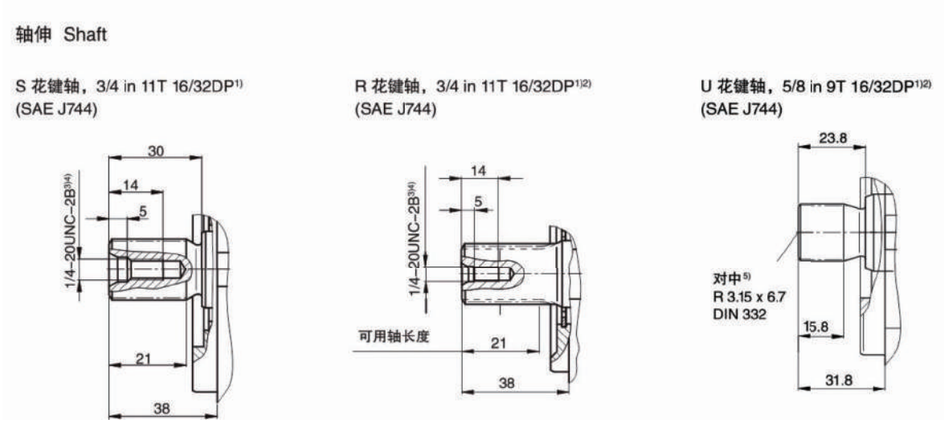
规格 28~100



A

外形尺寸规格18 A型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 18 Flange A (Control devices DR, DRG, DFR/DFR1)





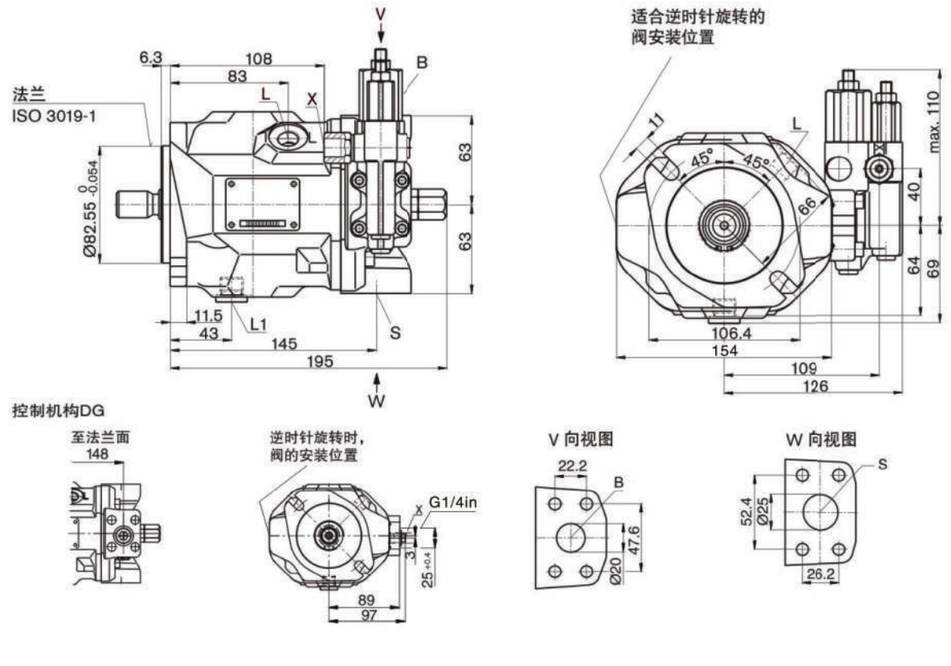
油口 Ports

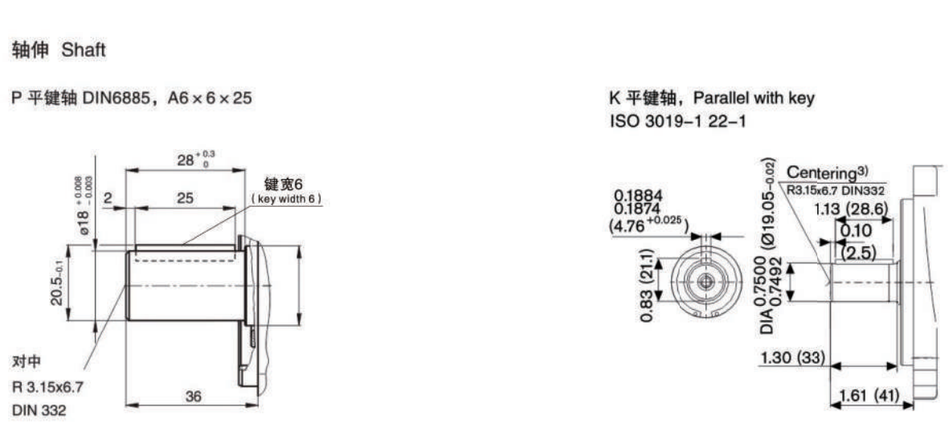
B	出油口Outlet port	法兰Flange SAEJ518 3/4in(标准系列Standardseries)螺钉孔Fixing thread M10深17
S	吸油口 Suction port	法兰Flange SAEJ518 1in(标准系列Standard series)螺钉孔Fixing thread M10深17
L	泄油口Drain port	M16x1.5深12
L1	泄油口Drain port	M16x1.5深12
X	控制油口Control pressure	M14x1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注:根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

外形尺寸规格18 C型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 18 Flange C(Control devices DR, DRG, DFR/DFR1)

A





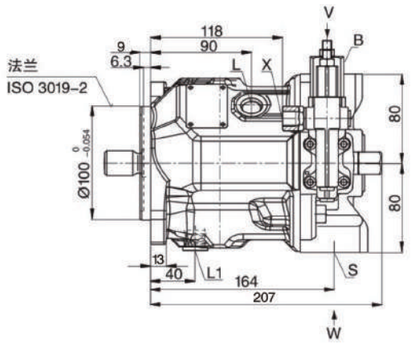
油口 Ports

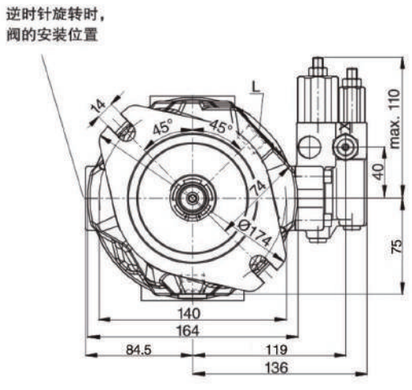
B	出油口Outlet port	法兰Flange SAEJ518 3/4in(标准系列Standardseries)螺钉孔Fixing thread 3/8-16UNC;20 deep
S	吸油口 Suction port	法兰FlangeSAEJ518 1in(标准系列Standard series)螺钉孔Fixing thread 3/8-16UNC;20 deep
L	泄油口Drain port	M16x1.5深12
L1	泄油口Drain port	9/16-18UNF-2B深12
X	控制油口Control pressure	M14x1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注:根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

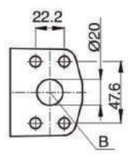
A

外形尺寸规格28 A型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 28 Flange A (Control devices DR, DRG, DFR/DFR1)

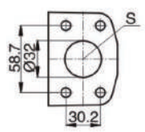




V 向视图

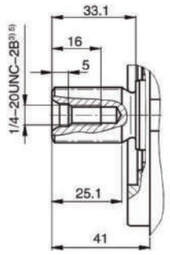


W 向视图

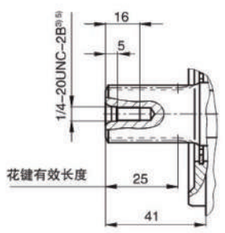


轴伸 Shaft

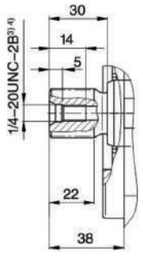
S 花键轴，7/8 in 13T 16/32DP[1] (SAE J744)



R 花键轴，7/8 in 13T 16/32DP[1][2] (SAE J744)



U 花键轴，3/4 in 11T 16/32DP[1] (SAE J744)



油口 Ports

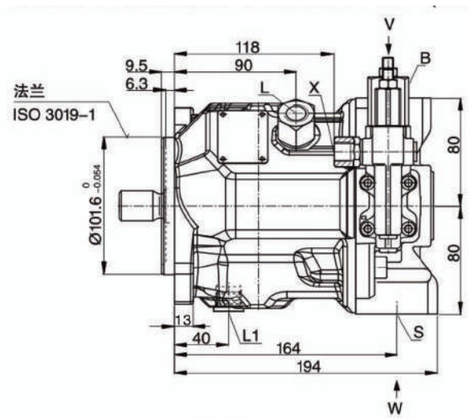
B	出油口Outlet port	法兰Flange SAEJ518 3/4in(标准系列Standardseries)螺钉孔Fixing thread M10深17
S	吸油口 Suction port	法兰Flange SAEJ518 1 1/4in(标准系列Standard series)螺钉孔Fixing thread M10深17
L	泄油口Drain port	M18x1.5深12
L1	泄油口Drain port	M18x1.5深12
X	控制油口Control pressure	M14x1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

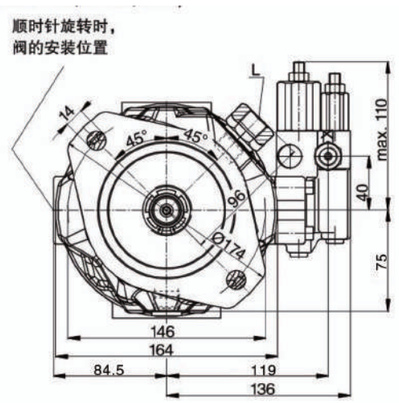
注:根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

外形尺寸规格28 C型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 28 Flange C(Control devices DR, DRG, DFR/DFR1)

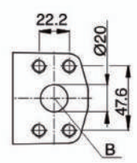
工作油口12(控制机构DG、DFLR、DLR)Port11(Control devices DG,DFLR, DLR)

A

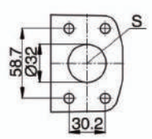




V 向视图

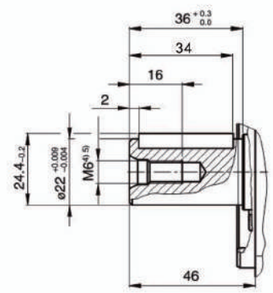


W 向视图

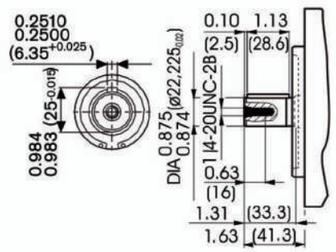


轴伸 Shaft

P 平键轴 DIN6885，A6×6×32



K 平键轴，Parallel with key ISO 3019-1 22-1



油口 Ports

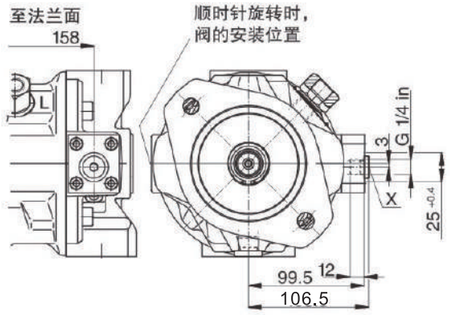
B	出油口Outlet port	法兰Flange SAE J518 3/4in(标准系列Standardseries)螺钉孔Fixing thread 3/8-16UNC;20 deep
S	吸油口 Suction port	法兰Flange SAEJ518 11/4in(标准系列Standard series)螺钉孔Fixing thread 7/16-14UNC;24 deep
L	泄油口Drain port	M18x1.5深12
L1	泄油口Drain port	3/4-16UNF-2B深14
X	控制油口Control pressure	M14x1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注:根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

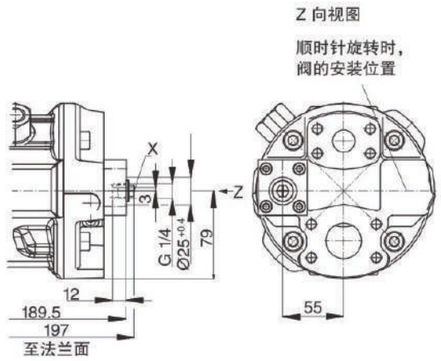
A

外形尺寸 规格28 Dimensions size 28

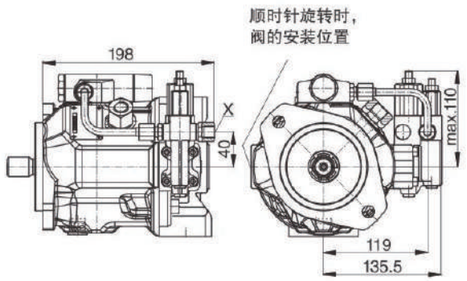
控制型式DG 工作油口12
Control devices DG port 12



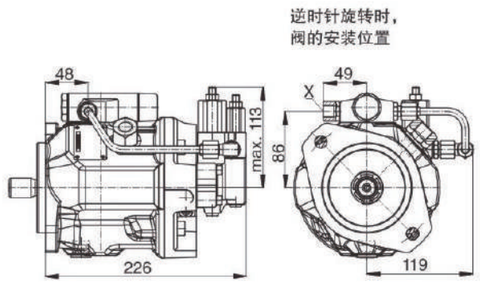
控制型式DG 工作油口11
Control devices DG port 11



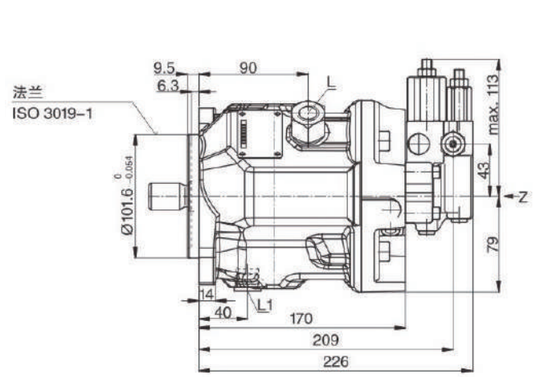
控制型式DFLR、DLR 工作油口12
Control devices DFLR, DLR port 12

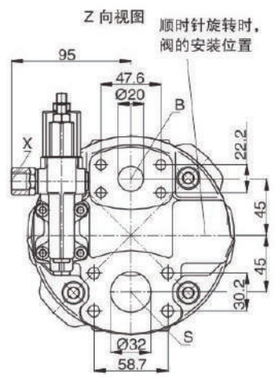


控制型式DFLR、DLR 工作油口11
Control devices DFLR, DLR port 11



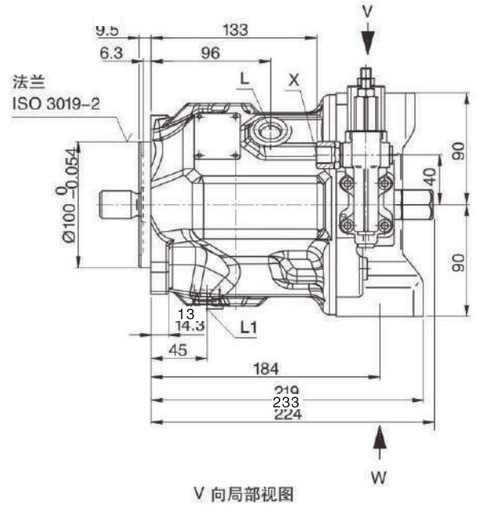
工作油口11（控制机构DG、DFLR、DLR）port 11 （Control devices DG,DFLR, DLR ）

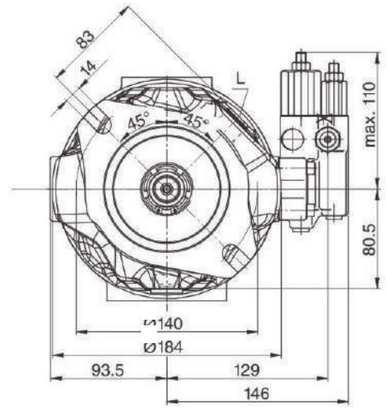




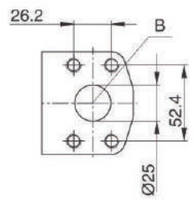
A

外形尺寸规格45 A型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 45 Flange A (Control devices DR, DRG, DFR/DFR1)

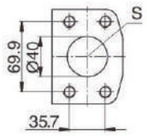




V 向局部视图

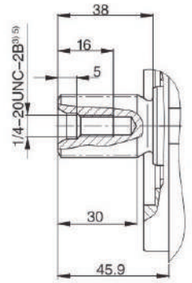


W 向视图

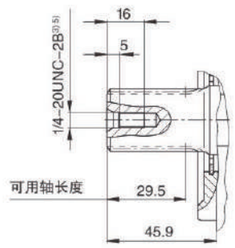


轴伸 Shaft

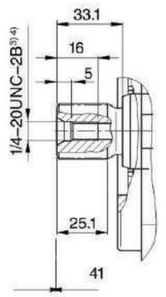
S 花键轴，1 in 15T 16/32DP[1]
(SAE J744)



R 花键轴，1 in 15T 16/32DP[1)2)]
(SAE J744)



U 花键轴，7/8 in 13T 16/32DP[1)]
SAE J744



油口 Ports

B	出油口 Outlet port	法兰Flange SAE J518 1in (标准系列Standardseries) 螺钉孔Fixing thread M10深17
S	吸油口 Suction port	法兰Flange SAE J518 1 1/4–1 1/2in (标准系列Standard series) 螺钉孔Fixing thread M12深20
L	泄油口Drain port	M22 x 1.5深14
L1	泄油口Drain port	M22 x 1.5深14
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

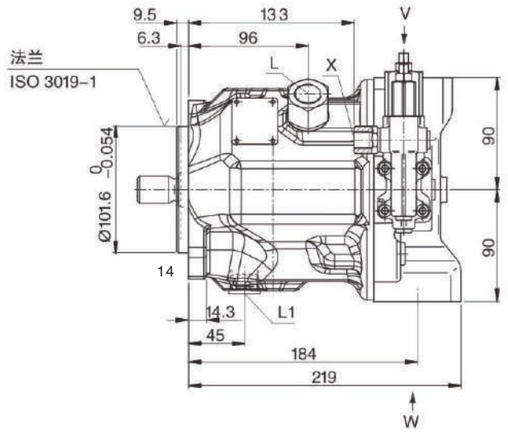
注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

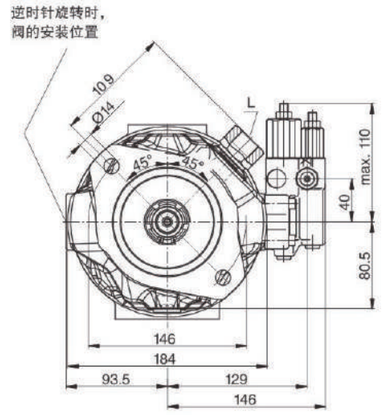
A

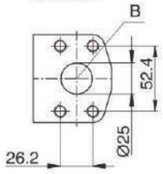
外形尺寸规格45 C型法兰(控制机构DR、DRG、DFR/DFR1)

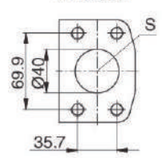
Dimensions size 45 Flange C(Control devices DR, DRG, DFR/DFR1)

工作油口12（控制机构DG、DFLR、DLR） Port 12 (Control devices DG, DFLR, DLR)



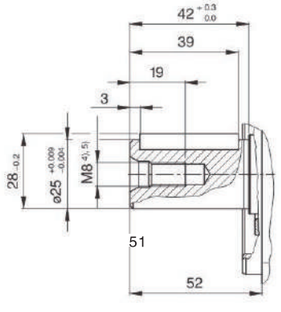




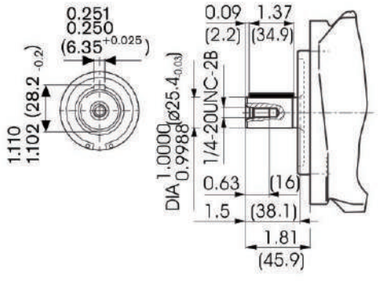


轴伸 Shaft

P 平键轴 DIN 6885，A8 × 7 × 36



K 平键轴，Parallel with key ISO 3019-1 25-1



油口 Ports

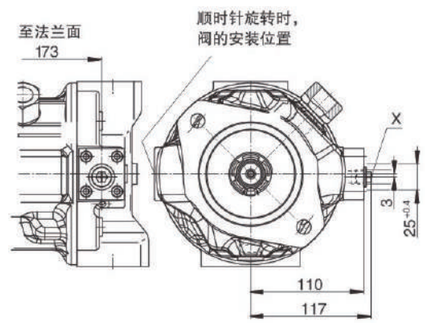
B	出油口 Outlet port	法兰Flange SAE J518 1in (标准系列Standardseries) 螺钉孔Fixing thread 3/8–16UNC;18 deep
S	吸油口 Suction port	法兰Flange SAE J518 1 1/2in (标准系列Standard series) 螺钉孔Fixing thread 1/2–13UNC;22 deep
L	泄油口Drain port	M22 x 1.5深14
L1	泄油口Drain port	7/8–14unf–2B深16
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注：根据安装位置选择L口或L1口，必须连接油箱。

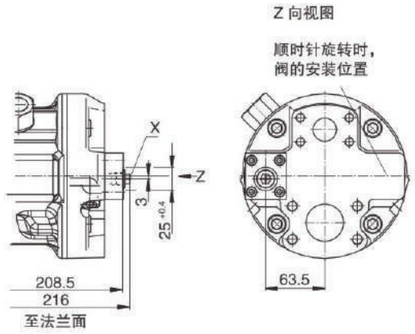
Dependent on the installation position,port L or port L1 must be connected.

外形尺寸 Dimensions

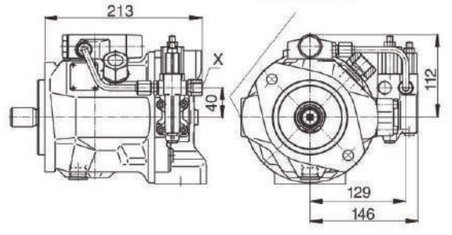
控制型式DG 工作油口12
Control device DG port 12



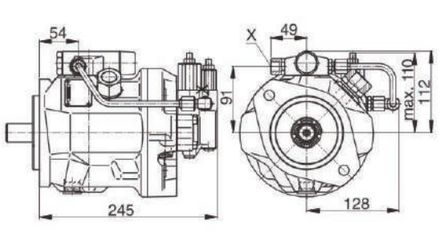
控制型式DG 工作油口11
Control device DG port 11



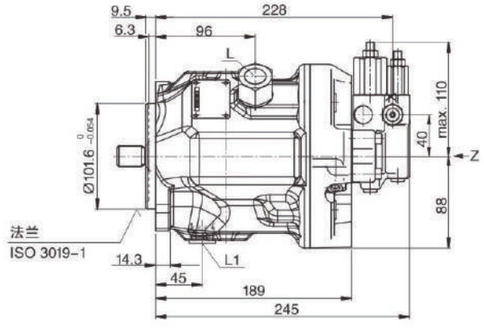
控制型式DFLR、DLR 工作油口12
Control device DFLR, DLR port 12

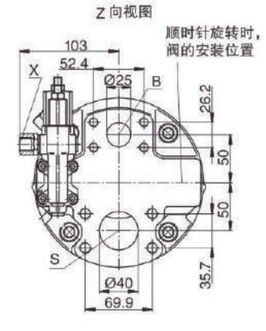


控制型式DFLR、DLR 工作油口11
Control device DFLR, DLR port 11



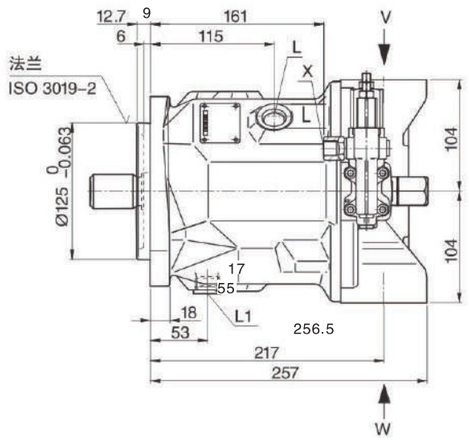
工作油口11（控制机构DG、DFLR、DLR） port 11（Control devices DG,DFLR, DLR）

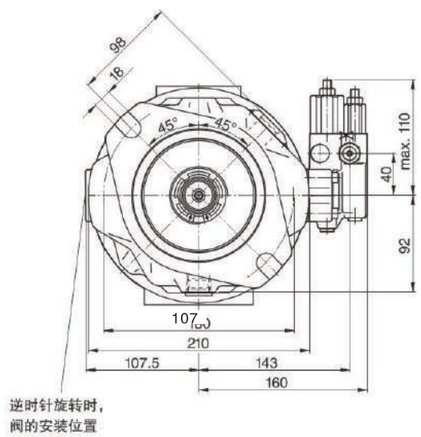




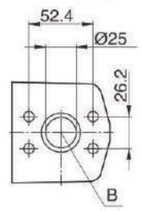
A

外形尺寸规格71 A型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 71 Flange C(Control devices DR, DRG, DFR/DFR1)

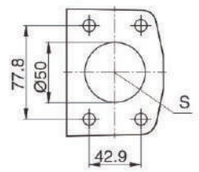




V 向局部视图

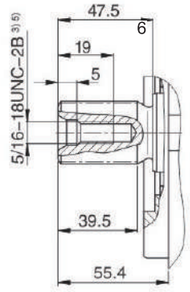


W 向局部视图

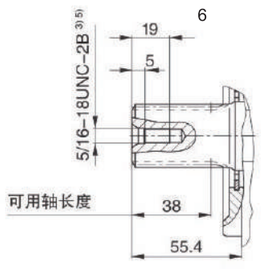


轴伸 Shaft

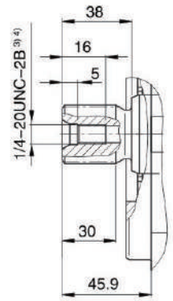
S 花键轴，1 1/4 in 14T 12/24DP[1] (SAE J744)



R 花键轴，1 1/4 in 14T 12/24DP[1,2] (SAE J744)



U 花键轴，1 in 15T 16/32DP[1] (SAE J744)



油口 Ports

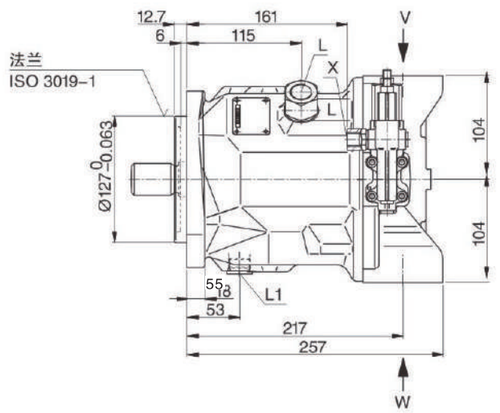
B	出油口 Outlet port	法兰Flange SAE J518 1in (标准系列Standardseries) 螺钉孔Fixing thread M10深17
S	吸油口 Suction port	法兰Flange SAE J518 2in (标准系列Standard series) 螺钉孔Fixing thread M12深20
L	泄油口Drain port	M22 x 1.5深14
L1	泄油口Drain port	M22 x 1.5深14
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

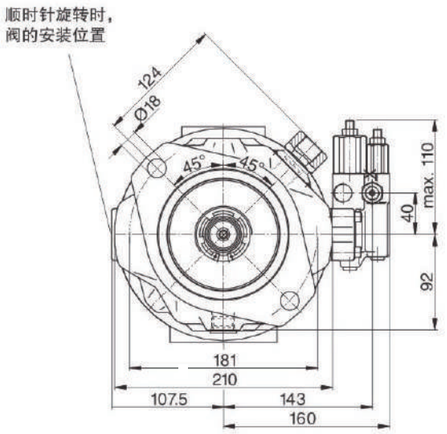
注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

外形尺寸规格71 C型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size71 Flange C (Control devices DR, DRG, DFR/DFR1)

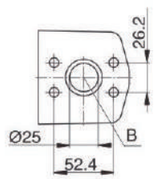
工作油口42（控制机构DG、DFLR、DLR） port 42（Control devices DG,DFLR, DLR）

A

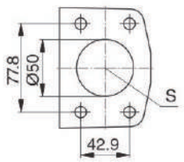




V 向局部视图

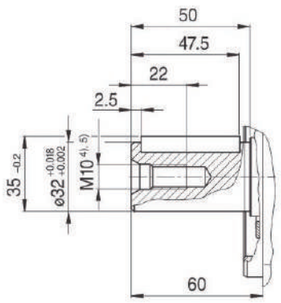


W 向局部视图

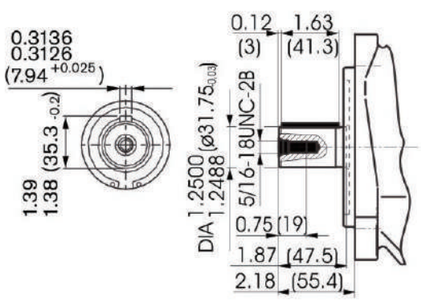


轴伸 Shaft

P 平键轴 DIN6885，A10 x 8 x 45



K 平键轴，Parallel with key ISO3019-1 32-1



油口 Ports

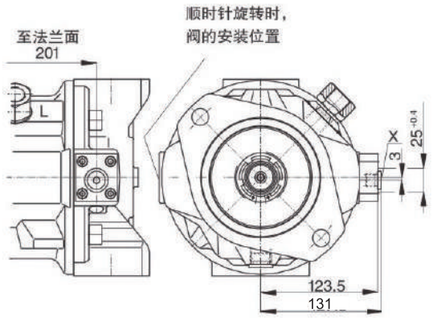
B	出油口 Outlet port	法兰Flange SAE J518 1in (标准系列Standardseries) 螺钉孔Fixing thread 3/8–16UNC;18 deep
S	吸油口 Suction port	法兰Flange SAE J518 2in (标准系列Standard series) 螺钉孔Fixing thread 1/2–13UNC;22 deep
L	泄油口Drain port	M22 x 1.5深14
L1	泄油口Drain port	7/8–14UNF–2B深16
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

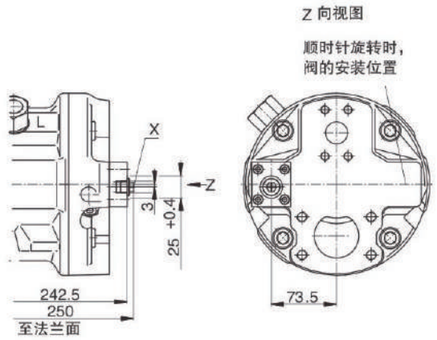
A

外形尺寸 规格71 Dimensions size 71

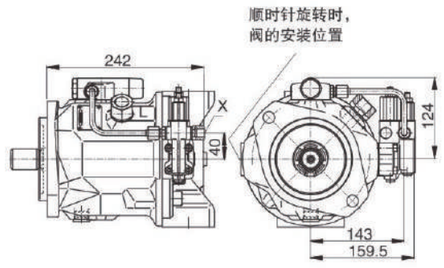
控制型式DG 工作油口42
Control device DG port 42



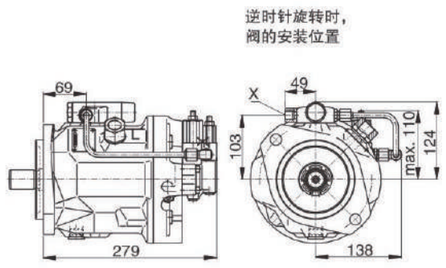
控制型式DG 工作油口41
Control device DG port 41



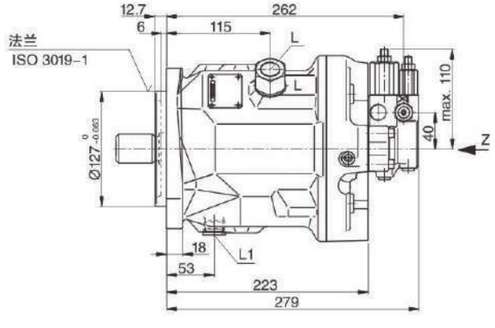
控制型式DFLR、DLR 工作油口42
Control device DFLR, DLR port 42

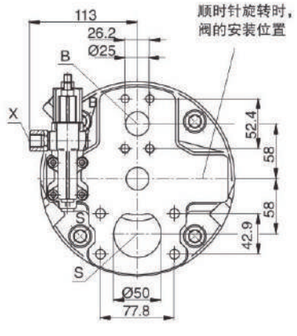


控制型式DFLR、DLR 工作油口41
Control device DFLR, DLR port 41

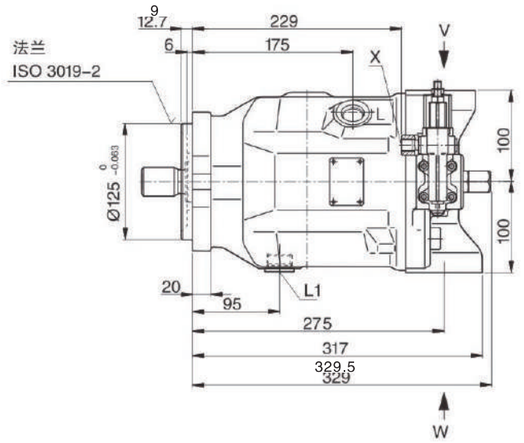


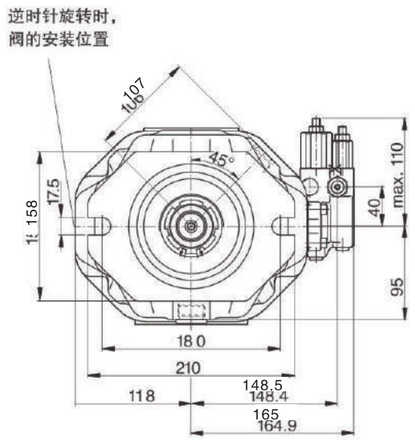
工作油口41（控制机构DG、DFLR、DLR） port 11（Control devices DG,DFLR, DLR）



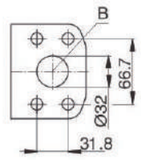


外形尺寸规格100 A型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 100 Flange A (Control devices DR, DRG, DFR/DFR1)

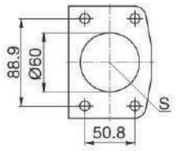




V向局部视图

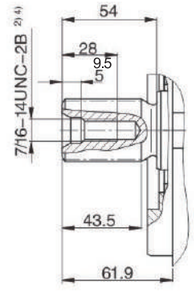


W 向局部视图

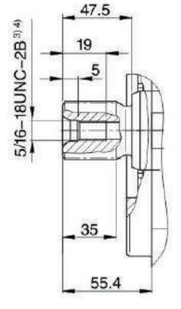


轴伸 Shaft

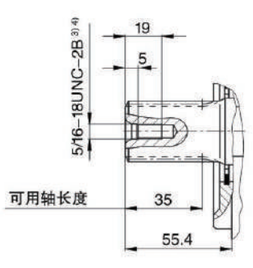
S 花键轴，1 1/2 in 17T 12/24DP[1]
(SAE J744)



U 花键轴，1 1/4 in 14T 12/24DP[1]
(SAE J744)



W 花键轴，1 1/4 in 14T 12/24DP[1][2]
(SAE J744)



油口 Ports

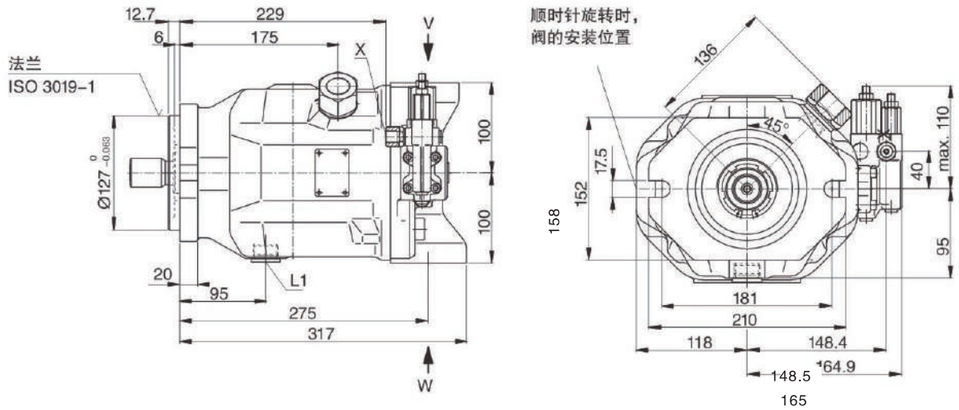
B	出油口 Outlet port	法兰Flange SAE J518 1 1/4in (高压系列High–pressure series) 螺钉孔Fixing thread M14深19
S	吸油口 Suction port	法兰Flange SAE J518 2 1/2in (标准系列Standard series) 螺钉孔Fixing thread M12深17
L	泄油口Drain port	M27 x 2深16
L1	泄油口Drain port	M27 x 2深16
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

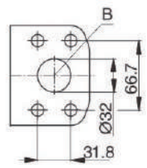
外形尺寸规格100 C型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 100 Flange C(Control devices DR, DRG, DFR/DFR1)

A

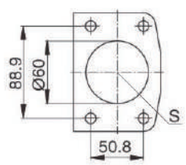
工作油口12（控制机构DG、DFLR、DLR） Port 12 (Control devices DG, DFLR, DLR)



V 向视图

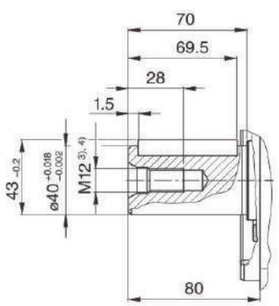


W 向视图

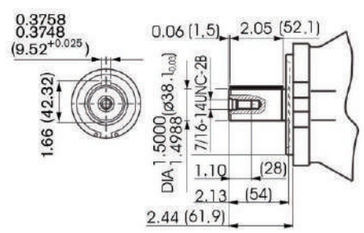


轴伸 Shaft

P 平键轴 DIN6885，A12×8×68



K 平键轴，Parallel with key ISO 3019-1 38-1



油口 Ports

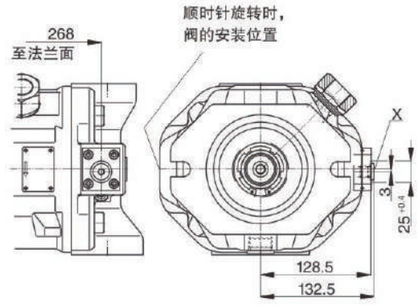
B	出油口 Outlet port	法兰Flange SAE J518 1 1/4in (高压系列High-pressure series) 螺钉孔Fixing thread 1/2-13UNC;19 deep
S	吸油口 Suction port	法兰Flange SAE J518 2 1/2in (标准系列Standard series) 螺钉孔Fixing thread 1/2-13UNC;27 deep
L	泄油口Drain port	M27 x 1.5深14
L1	泄油口Drain port	1/16-12unf-2B深18
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

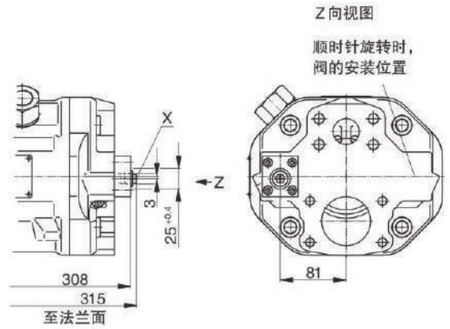
外形尺寸 规格100 Dimensions size 100

A

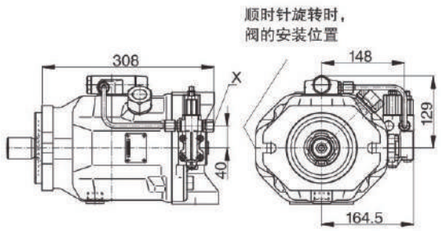
控制型式DG 工作油口12
Control device DG port 12



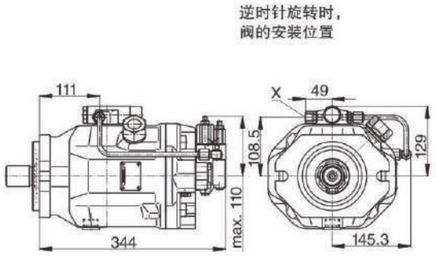
控制型式DG 工作油口11
Control device DG port 11



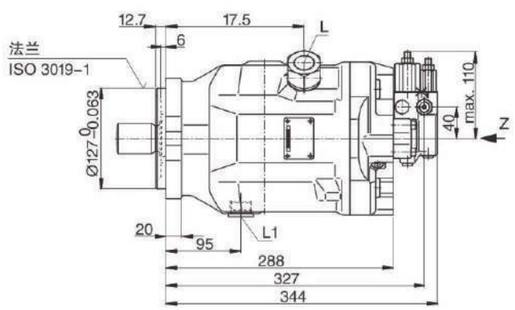
控制型式DFLR、DLR 工作油口12
Control device DFLR, DLR port 12

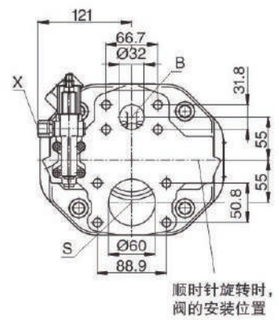


控制型式DFLR、DLR 工作油口11
Control device DFLR, DLR port 11



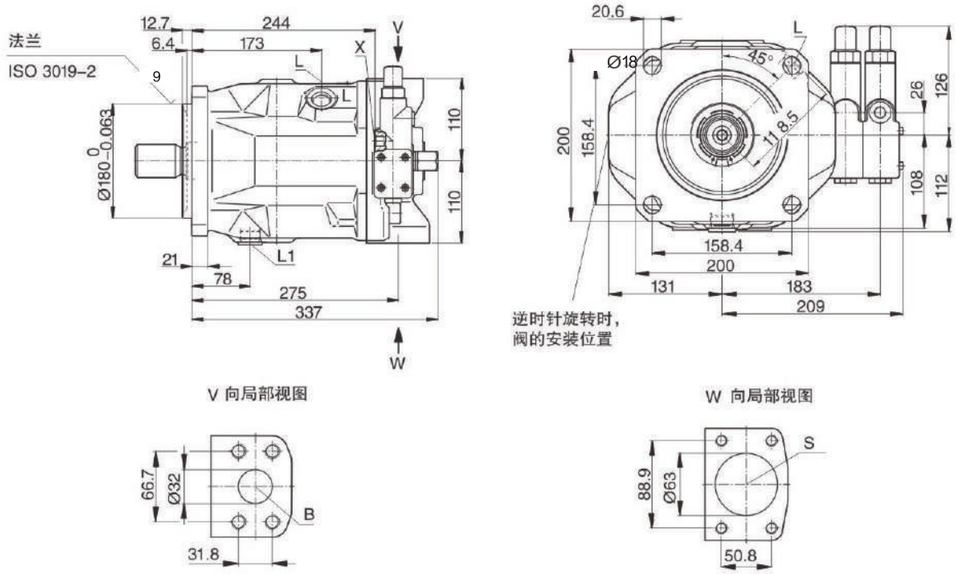
工作油口11（控制机构DG、DFLR、DLR） port 11（Control devices DG,DFLR, DLR）



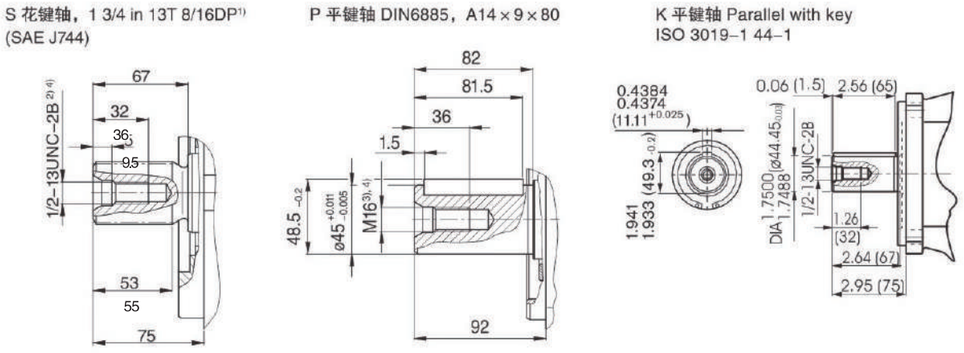


外形尺寸规格140 B型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 140 Flange B (Control devices DR, DRG, DFR/DFR1)

A



轴伸 Shaft



油口 Ports

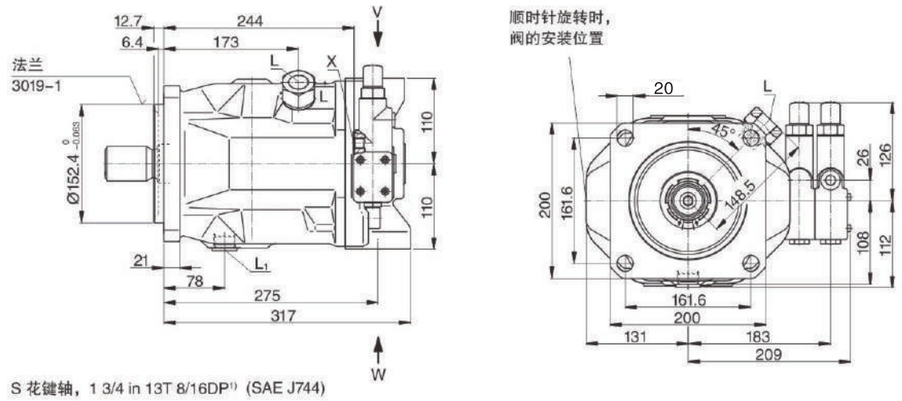
B	出油口 Outlet port	法兰Flange SAE J518 1 1/4in (高压系列High–pressure series) 螺钉孔Fixing thread M14深19
S	吸油口 Suction port	法兰Flange SAE J518 2 1/2in (标准系列Standard series) 螺钉孔Fixing thread M12深17
L	泄油口Drain port	M27 x 2深16
L1	泄油口Drain port	M27 x 2深16
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	G1/4深12用于DG控制For DG Control

注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

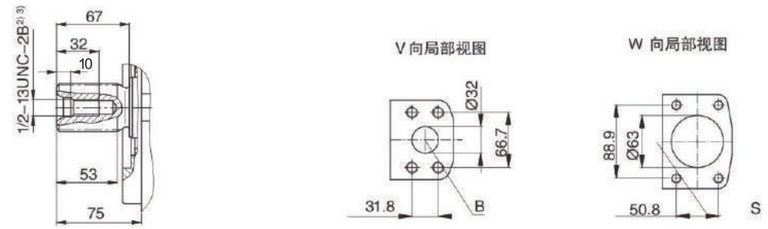
外形尺寸规格140 D型法兰(控制机构DR、DRG、DFR/DFR1)
Dimensions size 140 Flange D (Control devices DR, DRG, DFR/DFR1)

A

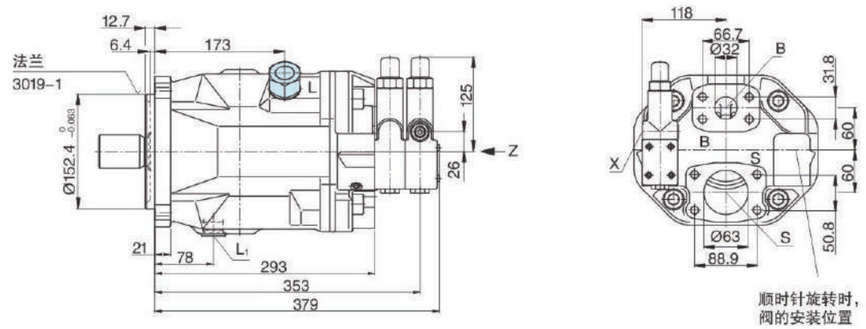
工作油口12（控制机构DG、DR、DFLR、DLR）port 12 (Control devices DG,DR,DFLR, DLR)



S 花键轴，1 3/4 in 13T 8/16DP1) (SAE J744)



工作油口11（控制机构DG、DR、DFLR、DLR）port 11 (Control devices DG,DR,DFLR, DLR)



油口 Ports

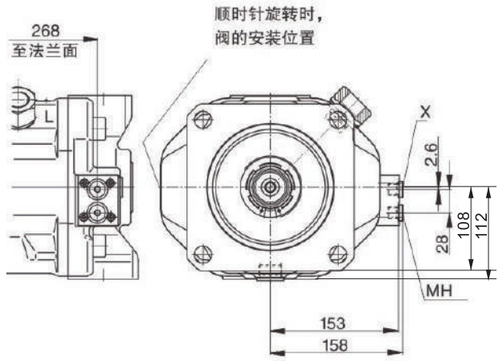
B	出油口 Outlet port	法兰Flange SAE J518 1 1/4in (高压系列High–pressure series)螺钉孔Fixing thread 1/2–13UNC;24 deep
S	吸油口 Suction port	法兰Flange SAE J518 2 1/2in (标准系列Standard series) 螺钉孔Fixing thread 1/2–13UNC;24 deep
L	泄油口Drain port	M27 x 2深16
L1	泄油口Drain port	1 1/16–12UNF–2B深18
X	控制油口Control pressure	M14 x 1.5深12
X1	控制油口Control pressure	M14 x 1.5深12用于DG控制For DG Control

注：根据安装位置选择L口或L1口，必须连接油箱。
Dependent on the installation position,port L or port L1 must be connected.

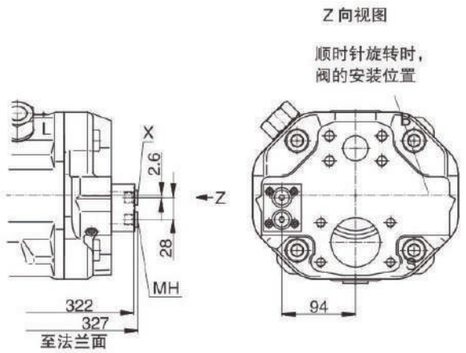
外形尺寸 规格140 Dimensions size 140

A

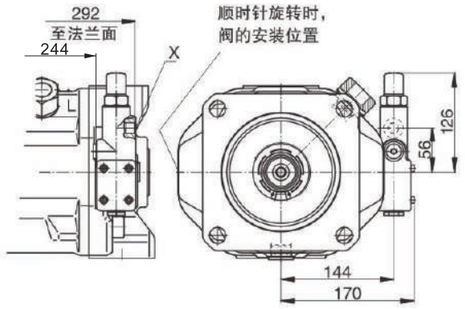
控制型式DG 工作油口12
Control device DG port 12



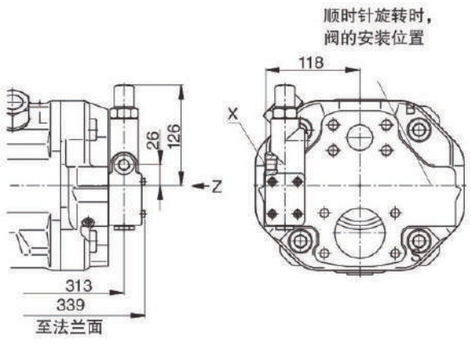
控制型式DG 工作油口11
Control device DG port 11



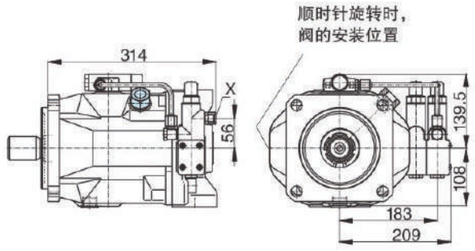
控制型式DR、DRG 工作油口12
Control device DR, DRG port 12



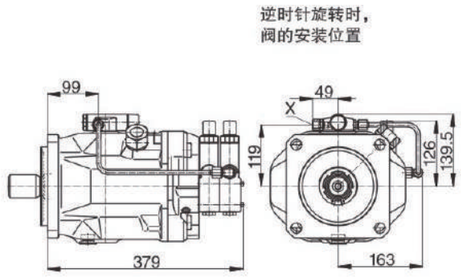
控制型式DR、DRG 工作油口11
Control device DR, DRG port 11



控制型式DFLR、DLR 工作油口12
Control device DFLR, DLR port 12



控制型式DFLR、DLR 工作油口11
Control device DFLR, DLR port 11

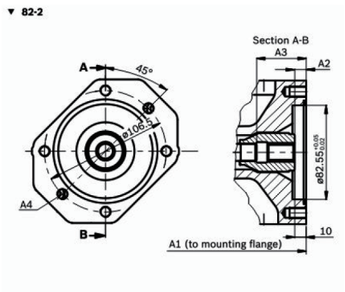


通轴尺寸 Dimensions,, throug drive

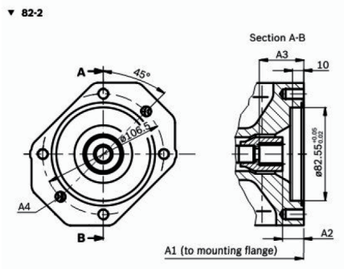
A

法兰Flange ISO 3019-1(SAE) 直径Diameter		Symbol	花键Hub for splined shaft[1] 直径Diameter		适用型号 Availability over sixes 18	28	45	71	88	100	140	代号 Code
82-2	(A)		5/8 in	9T 16/32DP	●	●	●	●	●	●	●	K01
			3/4 in	11T 16/32DP	●	●	●	●	●	●	●	K52

● = Available – = Not available



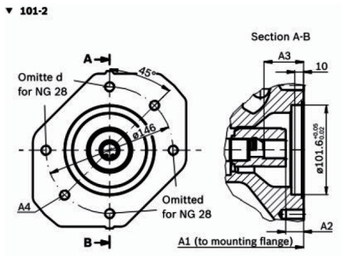
K01	NG	A1	A2	A3	A4[2]
(SAE J744 16-4(A)	18	182	10	43.3	M10x1.5;14.5 deep
	28	204	10	33.7	M10x1.5;16 deep
	45	229	10.7	53.4	M10x1.5;16 deep
	71	267	11.8	61.3	M10x1.5;20 deep
	88	267	11.8	61.3	M10x1.5;20 deep
	100	338	10.5	65	M10x1.5;16 deep
	140	350	10.8	77.3	M10x1.5;16 deep



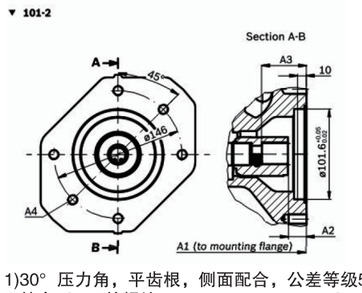
K52	NG	A1	A2	A3	A4[2]
(SAE J744 19-4(A-B))	18	182	18.8	38.7	M10x1.5;14.5 deep
	28	204	18.8	38.7	M10x1.5;16 deep
	45	229	18.9	38.7	M10x1.5;16 deep
	71	267	21.3	41.4	M10x1.5;20 deep
	88	267	21.3	41.4	M10x1.5;20 deep
	100	338	19	38.9	M10x1.5;16 deep
	140	350	18.9	38.6	M10x1.5;16 deep

法兰Flange ISO 3019-1(SAE) 直径DiameterSymbol			花键Hub for splined shaft[1] 直径Diameter		适用型号 Availability over sixes 18	28	45	71	88	100	140	代号 Code
101-2	(A)		7/8 in	13T 16/32DP	-	●	●	●	●	●	●	K68
			1 in	15T 16/32DP		-	●	●	●	●	●	K04

● = Available – = Not available



K68	NG	A1	A2	A3	A4[2]
(SAEJ744 22-4(B)	28	204	17.8	41.7	M12x1.75
	45	229	17.9	41.7	M12x1.75;18 deep
	71	267	20.3	44.7	M12x1.75;20 deep
	88	267	20.3	44.7	M12x1.75;20 deep
	100	338	18	41.9	M12x1.75;20 deep
	140	350	17.8	41.6	M12x1.75;20 deep



K04	NG	A1	A2	A3	A4[2]
(SAEJ744 25-4(B-B))	45	229	18.4	46.7	M12x1.75;18 deep
	71	267	20.8	49.1	M12x1.75;20 deep
	88	267	20.8	49.1	M12x1.75;20 deep
	100	338	18.2	46.6	M12x1.75;20 deep
	140	350	18.3	45.9	M12x1.75;20 deep

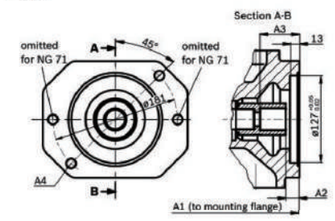
1)30° 压力角，平齿根，侧面配合，公差等级5 According to ANSI B92.1a,30° pressure angle, flat root, side fit,tolerance class
2)符合DIN13的螺纹 Thread according to DIN 13

A

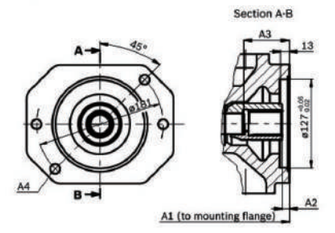
法兰Flange ISO 3019-1(SAE) 直径DiameterSymbol			花键Hub for splined shaft[1] 直径Diameter		适用型号 Availability over sixes							代号 Code
					18	28	45	71	88	100	140	
127-2	(C)		11/4in	14T 12/24DP	–	–	–	●	●	●	●	K07
			11/2 in	17T 12/24DP	–	–	–	–	–	●	●	K24

● = Available – = Not available

▼ 127-2



K07	NG	A1	A2	A3	A4[2]
(SAE J744 32-4(C))	71	267	21.8	58.6	M16x2
	88	267	21.8	58.6	M16x2
	100	338	19.5	56.4	M16x2
	140	350	19.3	56.1	M16x2;24 deep

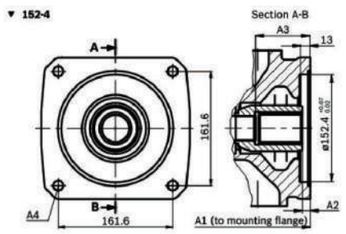


K24	NG	A1	A2	A3	A4[2]
(SAE J744 38-4(C-C))	100	338	10.5	65	M16x2
	140	350	7.9	73.3	M16x2;32 deep

法兰Flange ISO 3019-1(SAE) 直径DiameterSymbol			花键Hub for splined shaft[1] 直径Diameter		适用型号 Availability over sixes							代号 Code
					18	28	45	71	88	100	140	
152-4 63-4	(A)		1 3/4in	13T 8/16DP	–	–	–	–	–	–	●	K17
			Metric keyed shaft ⌀25		–	●	●	●	●	●	●	K57

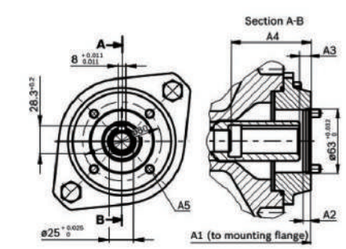
● = Available – = Not available

▼ 152-4



K17	NG	A1	A2	A3	A4[2]
(SAE J744 44-4(D))	140	350	11	77.3	M16x2

▼ 63-4 metric[4]



K57	NG	A1	A2	A3	A4	A5
(4-hole flange)	28	232	8	10.6	58.4	M8
	45	257	8	11	81	M8
	71	283	8	12.5	77	M10
	88	283	8	12.5	77	M10
	100	354	8	10.5	81	M10
	140	366	8	11	93	M8

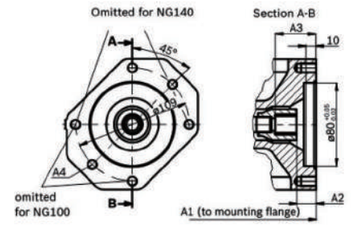
1)30° 压力角，平齿根，侧面配合，公差等级5 According to ANSI B92.1a,30° pressure angle, flat root, side fit,tolerance class 5
2)符合DIN13的螺纹 Thread according to DIN 13

A

法兰Flange ISO 3019-1(SAE) 直径DiameterSymbol			花键Hub for splined shaft[1] 直径Diameter		适用型号 Availability over sixes							代号 Code
					18	28	45	71	88	100	140	
80 100	2-hole 2-hloe		3/4 in	11T 16/32DP	●	●	●	●	●	●	●	KB2
			7/8 in	13T 16/32DP	–	●	●	●	●	●	●	KB3
			1 in	15T 16/32DP	–	–	●	●	●	●	●	KB4

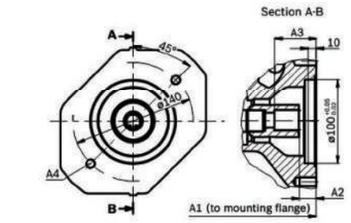
● = Available – = Not available

▼ 80, 2-hole



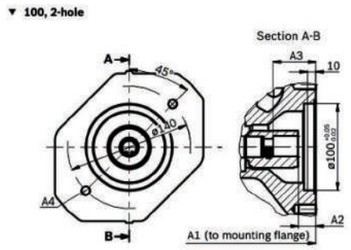
KB2	NG	A1	A2	A3	A4[2]
(SAE J744 19-4(A-B))	18	182	18.8	38.7	M10x1.5;14.5 deep
	28	204	18.8	38.7	M10x1.5;16 deep
	45	229	18.9	38.7	M10x1.5;16 deep
	71	267	21.3	41.4	M10x1.5;20 deep
	88	267	21.3	41.4	M10x1.5;20 deep
	100	338	19	38.9	M10x1.5;20 deep
	140	350	18.9	38.6	M10x1.5;20 deep

▼ 100, 2-hole



KB3	NG	A1	A2	A3	A4[2]
(SAE J744 22-4(B))	28	204	17.8	41.7	M12x1.5;
	45	229	17.9	41.7	M12x1.5;
	71	267	20.3	44.1	M12x1.5;20 deep
	88	267	20.3	44.1	M12x1.5;20 deep
	100	338	18	41.9	M12x1.5;20 deep
	140	350	17.8	41.6	M12x1.5;20 deep

▼ 100, 2-hole



KB4	NG	A1	A2	A3	A4[2]
(SAE J744 25-4(B-B))	45	229	18.4	46.7	M12x1.75
	71	267	20.8	49.1	M12x1.75;20 deep
	88	267	20.8	49.1	M12x1.75;20 deep
	100	338	18.2	46.6	M12x1.75;20 deep
	140	350	18.3	45.9	M12x1.75;20 deep

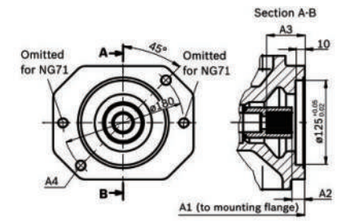
1)30° 压力角，平齿根，侧面配合，公差等级5 According to ANSI B92.1a,30° pressure angle, flat root, side fit,tolerance class 5
2)符合DIN13的螺纹 Thread according to DIN 13

A

法兰Flange ISO 3019-1(SAE) 直径DiameterSymbol			花键Hub for splined shaft[1] 直径Diameter		适用型号 Availability over sizes							代号 Code
					18	28	45	71	88	100	140	
125 180	2-hole 2-hloe		1 1/4 in	14T 12/24DP	–	–	–	●	●	●	●	KB5
			1 1/2 in	17T 12/24DP	–	–	–	–	–	●	●	KB6
			1 3/4 in	13T 8/16DP	–	–	–	–	–	–	●	KB7

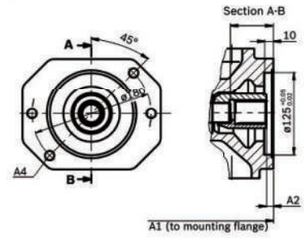
● = Available – = Not available

▼ 125, 2-hole



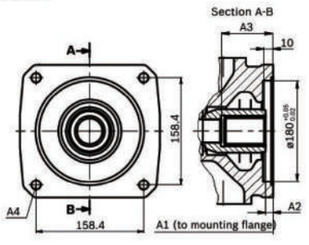
KB5	NG	A1	A2	A3	A4[2]
(SAE J744 32-4(C))	71	267	21.8	58.6	M16x2
	88	267	21.8	58.6	M16x2
	100	338	19.5	56.4	M16x2
	140	350	19.3	56.1	M16x2;24 deep

▼ 125, 2-hole



KB6	NG	A1	A2	A3	A4[2]
(SAE J744 38-4(C-C))	100	338	10.5	65	M16x2
	140	350	7.9	73.3	M16x2;32 deep

▼ 180, 4-hole



KB7	NG	A1	A2	A3	A4[2]
(SAE J744 44-4(D))	140	350	11.3	77.3	M16x2[2]

1)30° 压力角，平齿根，侧面配合，公差等级5 According to ANSI B92.1a,30° pressure angle, flat root, side fit,tolerance class 5
2)符合DIN13的螺纹 Thread according to DIN 13

A4V系列轴向柱塞泵变量泵

A4V Series Axial Piston Pump Variable Displacement Pump

A

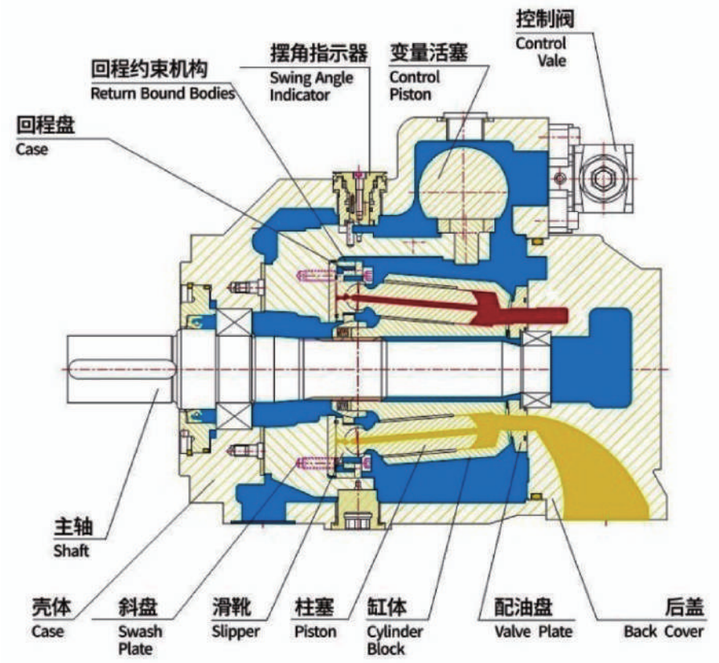
适用于开式回路液压系统

Suitable for open circuit hydraulic systems

概 述 Overview

本产品是一种斜盘式轴向柱塞变量泵，专为开式回路液压驱动设计的采用通轴结构，额定压力可达35MPa。

This product is an axial piston pump in swash plate design for hydrostaticdrives in open circuit operation. With through-shaft construction, its ratedpressure is up to 35MPa.



产品特点

- 泵的流量正比于泵的转速和排量，调节它的斜盘摆角可进行排量的无级调节;
- 通轴结构，可形成组合泵;
- 位置约束回程机构;
- 球面配流，柱塞围绕主轴倾斜布置;
- 配置有斜盘摆角指示器:;
- 无级变量;
- 优良的吸入性能;
- 额定工作压力可达35MPA;
- 控制响应时间短;
- 低噪声:
- 长寿命:
- 优良的功率/重量比;
- 模块化设计;
- 驱动轴能承受轴向及径向负载;
- 安装位置可选;
- 可用HF液体工作，但运行参数有所降低。

Features

- The capacity of the pump is in proportion to its rotating speed and displacement;the stepless adjustment of the displacement can be materialized by regulating the swive langle of its swash plate.
- With through-shaft structure, able to form combination pump;
- Position constraint return mechanism;
- Spherical flow distribution, the piston is inclined around the shaft;
- Equipped with swivel angle indicator of swash plate;
- Stepless variable displacement;
- Excellent suction performance;
- Rated working pressure of 35MPa;
- Fast control response,
- Low noise;
- Long lifespan;
- Excellent power/weight ratio
- Modular design;
- The drive shaft is able to bear the axial and radial load;
- Optional installation position;
- It can operate with HF fluid to lower the operating parameter.

A

型号标识 Type Code

E	A4V	S	O	125	DR	/	30	R	–	P	P	B	25	U	34
1	2	3	4	5	6		7	8		9	1	11	12	13	14

1–工作介质 Operating Medium

矿物油 Mineral oil（无代号 No Code）	
HFA、HFB、HFC液压油液 Hydraulic fluid	E

2–结构型式 Machinery Type

轴向柱塞，斜盘式，可变量 Axial piston，swash plate design，variable	A4V

3–转速 Speed

普通转速 Normol speed	S
高转速 High Speed	L

4–运行模式 Operational Mode

开式回路 Open circuit	O

5–规格Size

公称排量 Nominal displacement mL/r	40	71	125	180	200	250	280	355	

6–控制机构 Control devices

压力控制 Pressure control DR	●	●	●	●	●	●	●	●	DR
流量控制 Flow control FR	●	●	●	●	●	●	●	●	FR
压力流量控制 Pressure and flow control DFR	●	●	●	●	●	●	●	●	DFR
恒功率控制 Power control with hyperbolic curve LR2	●	●	●	●	●	●	●	●	LR2
恒功率远程压力控制 Constant power remote pressure control LR2G	●	●	●	●	●	●	●	●	LR2G
恒功率压力控制 Constant power pressure control LR2D	●	●	●	●	●	●	●	●	LR2D
手动控制 Manual control MA	●	●	●	●	●	●	●	●	MA
液压流量控制 Hydraulic flow control	○	○	●	●	●	●	●	●	E02

7–系列 Series

	●	●	–	–	–	–	–	–	10
	–	–	●	●	●	●	●	●	30

8–旋转方向（从轴端看）Rotating Direction（View on Shaft End）

顺时针 Clockwise	R
逆时针 Counterclockwise	L

9–密封 Seals

丁腈橡胶NBR，轴封氟橡胶 Shaft seal FKM	P
氟橡胶FKM	V

10–轴伸 Shaft End

平键轴伸 Keyed shaft DIN6885	P
花键轴伸 Splined shaft DIN5480	Z

图表说明 Chart shows：●=可以供货 Available，O=在准备中In preparation，–=无Not available

11–安装法兰Mounting Flange

ISO 4孔Hole	B

12,13–油口型式Ports Type

吸油口 Suction port S，压力油口 Pressure port B，辅助油口 Auxiliary port B_1	13
吸油口 Suction port S，压力油口 Pressure port B， 第二压力油口 The second pressure port B_1	25

14 –通轴驱动 Through Drive

			40	71	125	180	200	250	300	355	
无通轴驱动 Without through drive			●	●	●	●	●	●	●	●	N00
带通轴驱动，从泵连接尺寸如下 With through drive，mounting dimensions are as follows			●	●	–	–	–	–	–	–	K
通用通轴驱动，从泵连接尺寸如下 Universal through drive，mounting dimensions are as follows			–	–	●	●	●	●	●	●	U
法兰 Flange	花键轴伸 Splined shaft	可接受的从泵 To mount pump									
ISO125，4孔	W32x2x30x14x9g	–A4VSO40	●	●	●	●	●	●	●	●	31
ISO140，4孔	W40x2x30x18x9g	OS–A4VSO71	–	●	●	●	●	●	●	●	33
ISO160，4孔	W50x2x30x24x9g	OS–A4VSO125	–	–	●	●	●	●	●	●	34
ISO160，4孔	W50x2x30x24x9g	OS–A4VSO180/200		–	–	●	●	●	●	●	34
ISO224，4孔	W60x2x30x28x9g	OS–A4VSO250/280	–	–	–	–	–	●	●	●	35
ISO224，4孔	W70x3x30x22x9g	OS–A4VSO355	–	–	–	–	–	–	–	●	77
ISO80，2孔	3/4in11T16/32DP S轴	OS–A10VS018	●	●	○	○	○	○	○	○	B2
ISO100，2孔	7/8in13T16/32DP S轴	OS–A10VSO28	●	●	●	●	●	●	●	●	B3
ISO100，2孔	1in15T16/32DP S轴	OS–A10VS045	●	●	●	●	●	●	●	●	B4
ISO125，2孔	1 1/4in14T12/24DP S轴	OS–A10VS071/31	–	●	●	●	●	●	●	●	B5
ISO125，2孔	1 1/2in17T12/24DP S轴	OS–A10VS0100/31	–	–	●	●	●	●	●	●	B6
ISO180，4孔	1 3/4in13T8/16DP S轴	OS–A10VSO140	–	–	–	●	●	●	●	●	B7
ISO160，4孔	1 1/4in14T12/24DP S轴	OS–A10VSO71/32	–	○	○	○	○	○	○	○	B8
ISO180，4孔	1 1/2in17T12/24DP S轴	OS–A10VSO100/32	–	–	○	○	○	○	○	○	B9
SAE82，2孔	3/4in11T16/32DP S轴	OS–A10VSO18	●	●	○	○	○	○	○	○	52
SAE101，2孔	7/8in13T16/32DP S轴	OS–A10VO28	●	●	●	●	●	●	●	●	68
SAE101，2孔	1in15T16/32DP S轴	OS–A10VO45	●	●	●	●	●	●	●	●	04
SAE127，2孔	1 1/4in14T12/24DP S轴	OS–A10VO71	–	●	●	●	●	●	●	●	07
SAE127，2孔	1 1/2in17T12/24DP S轴	OS–A10V0100	–	–	●	●	●	●	●	●	24
SAE152，4孔	1 3/4in13T8/16DP S轴	OS–A10VO140	–	–	–	●	●	●	●	●	17
带通轴驱动的轴端，不带联轴节，盲盖封闭 With through drive shaft, wvithout coupler closed with blind flange.			●	●	●	●	●	●	●	●	99

两台泵首尾串联，即以通轴形式装配成一体，称为组合泵，串联的第二台泵称为从泵。
如果订购组合泵；组合泵的型号为第一台泵的型号+第二台泵的型号。
Two pumps can be connectec in series by their heac and end， namely integrated to be a combination pump by the means of through–shaft，and the second pump of the series combination is called the subordinate pump.
In case of placing an order，the combination pump model equals to the model of the first pump + the model of the second.
组合泵型号示例 Illustrat on of combination pump model:CR–A4VSO125DR/30R–PPB13U34+CR–A4VSO125DR/30R–PPB13N00

技术参数 Technical Data

A

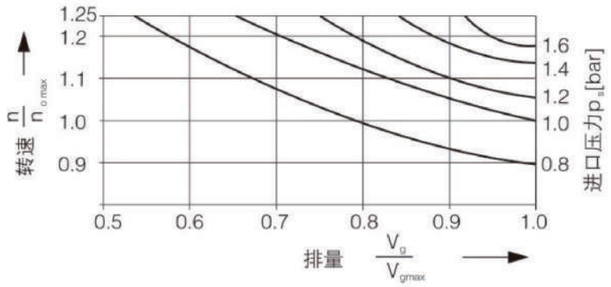
1、工作压力范围Range of operating pressure——进口侧 Side of inlet

吸入口S的压力（绝对压力）Pressure at suction port S（absolute pressure）

最低压力$p_{s\,min}$ …… 0.8bar

最高压力$p_{s\,max}$ …… 30bar

为了避免轴向柱塞泵损坏，吸入口S必须确保一个最低压力。这个最低进口压力取决于轴向柱塞泵的转速与排量:



进口压力为静态的输入压力或增压压力的最小动态值。

Inlet pressure is static input pressure or minimum dynamic value of boost pressure.

2、工作压力范围 Range of operating pressure——出口侧 Side of outlet

B口的压力 (绝对压力) Pressure at port B (absolute pressure)

额定压力p_n …… 350 bar

峰值压力p_{max} …… 400 bar

最低压力p_{min} …… 15 bar

3、流动方向Flowing Direction

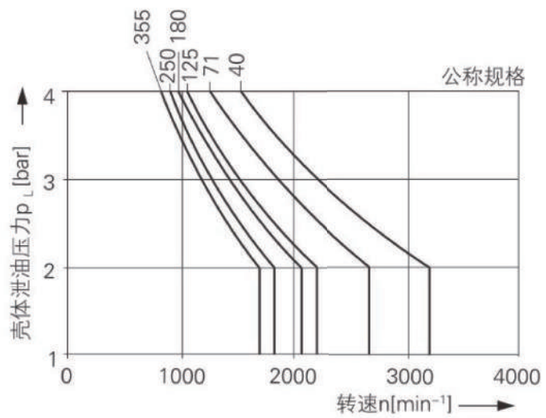
S→B

4、壳体泄油压力 Case Drain Pressure

最大允许壳体泄油压力(绝对压力) 取决于泵的转速，见图:

The allowed maximum case drain pressure (absolute pressure) depends on the rotating speed of the pump.

Please see the figure.



最大壳体泄油压力(绝对压力):

The maximum case drain pressure (absolute pressure)：

P_{Lmax} 4 bar

这是近似值，在某些工况下此值需减小。

This is approximate value. This value needs to be decreased under some operating conditions.

A

5、参数表（理论值）The Parameter List (theoretical values)

规格 Size				40	71	125	180/H	200	250/H	280	355/H
排量Displacement		$V_{g\,max}$	mL/r	40	71	125	180/180	200	250/250	280	355/355
最大转速[1] Max. Speed	$V_g = V_{g\,max}$时	$n_{o\,max}$	r/min	2600	2200	1800	1800/2000	1800	1500/1900	1500	1500/1700
	$V_g < V_{g\,max}$时		r/min	3200	2700	2200	2100/2200	2100	1800/2100	1800	1700
流量 Flow	$n = n_{o\,max}$时	$q_{vo\,max}$	L/min	104	156	225	324/360	360	375/475	420	533/604
	n = 1500 r/min时		L/min	60	107	186	270	420	375	504	533
功率 Power △p= 350 bar	$n = n_{o\,max}$时	$p_{o\,max}$	kW	61	91	131	189	210	219/277	245	311/352
	n = 1500 r/min 时		kW	35	62	109	158	245	219	294	311
扭矩 Torque $V_g = V_{g\,max}$	△ p=350 bar 时	T_{max}	Nm	223	395	696	1002	1114	1391	1560	1976
	△ p=100 bar 时	T	Nm	64	113	199	286	318	398	445	564
驱动轴上的惯性矩 Inertia moment of the drive shaft		J	kgm^2	0.0049	0.0121	0.03	0.055	0.055	0.0959	0.0959	0.19
壳体容积Volume of case			L	2	2.5	5	4	4	10	10	8
重量 Weight			kg	39	53	88	102	102	184	184	207
驱动轴上允许负载 Permissibleload of the drive shaft	最大轴向力 Max.axial force		N	600	800	1000	1400	1400	1800	1800	2000
	最大径向力 Max.radial force		N	1000	1200	1600	2000	2000	2000	2000	2200

1）$V_g = V_{gmax}$时的数值适用于吸油口S的进口压力为绝对压力1 bar时的情况，当进口压力p_s增加或排量减小，则转速可增加，$V_g = V_{gmax}$时的数值为转速极限。

1）Once $V_g = V_{gmax}$, the value is applicable for the condition in which inlet pressure at Suction Port S equals to 1 bar, the absolute pressure; when the inlet pressure p_s increases or the displacement decreases, the rotating speed will increase; once $V_g < V_{gmax}$, the value amounts to the limit of the rotating speed.

轴承的冲洗Bearing flushing

对于A4VSO型轴向柱塞变量泵，在下列工况必须冲洗轴承以确保其长期工作的正常功能。

——采用特定的工作油液（非矿物油），由于其有限的润滑性能和较狭窄的工作温度范围；

——当采用矿物油工作在极限温度和粘度区域且变量泵采用垂直安装时(驱动轴向上)。

推荐使用轴承冲洗，以便确保前轴承和轴封有足够的润滑。

For the axial piston variable pump A4VSO at the following operating conditions bearing flushing is required for a safe, continuons operation.

——Applications with special fluids (non mineral oils)due to limited lubricity and narrow operating temperature range.

——Operation at critical conditions of temperature and viscosity with mineral oil and vertical mounting (drive shaft facing upwards).

Flushingis recommended in order to ensure lubrication of the front bearing and shaft seal.

轴承的冲洗， 通过靠近变量泵前法兰的油口“U”进行。冲洗油液流过主轴轴承，并和泵的壳体泄漏油一起从泄油口排出。

对于30系列变量泵，当利用U口进行轴承冲洗时，U口内的节流螺钉必须拧得最大(拧到底)。

Flushing is carried out via port "U" located in the front bearing and leaves the pump together with the case drain flow.

Regarding series 30 when using external bearing flushing the throttle screw at port U must be turned in to the end stop.

各规格的泵所需的冲洗油液流量为(L/min):

Depending on pump size, the following flushing flows are recommended:

规格 Size	40	71	125	180/200	250/280	355
流量 Flow	3	4	5	7	10	15

为了达到此给定的流量，在 U口和壳体泄油口之间应分别保持约2bar。

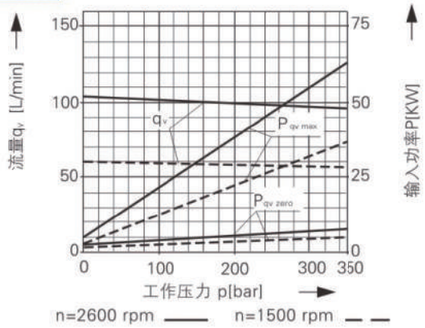
These recommended flushing flows will cause a pressure drop of approx. 2bar (series 10) and 3 bar (series 30) between the entrance to port U and the pump case

A

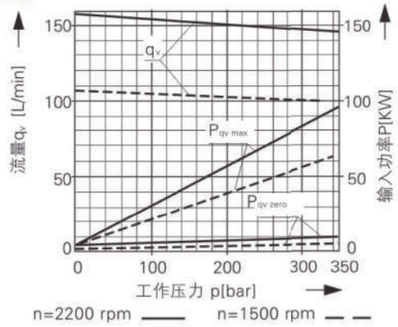
特性曲线 Characteristic curves

输入功率与流量 Drive power and flow

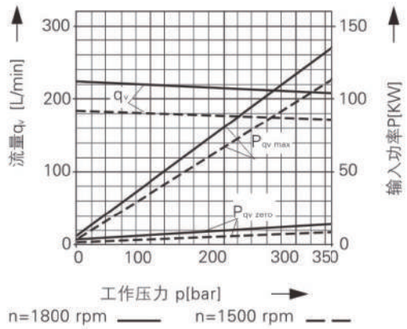
规格40



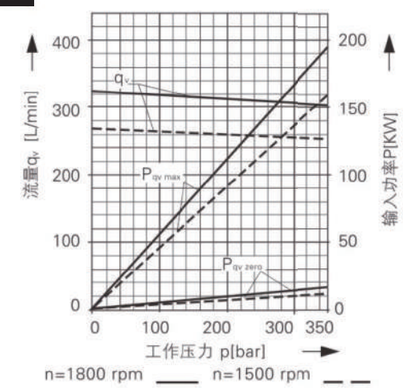
规格71



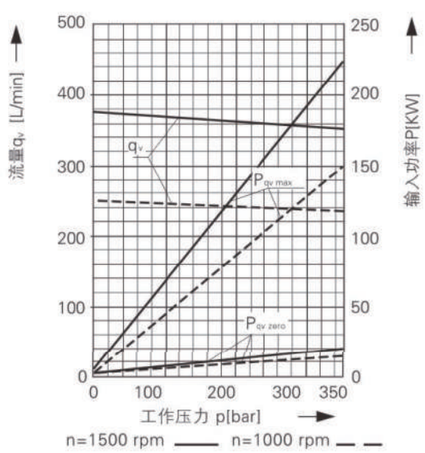
规格125



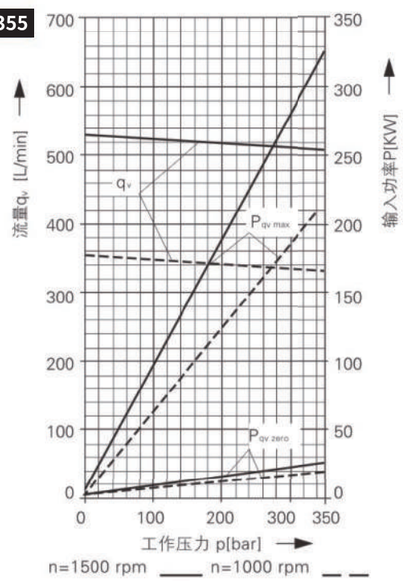
规格180



规格355

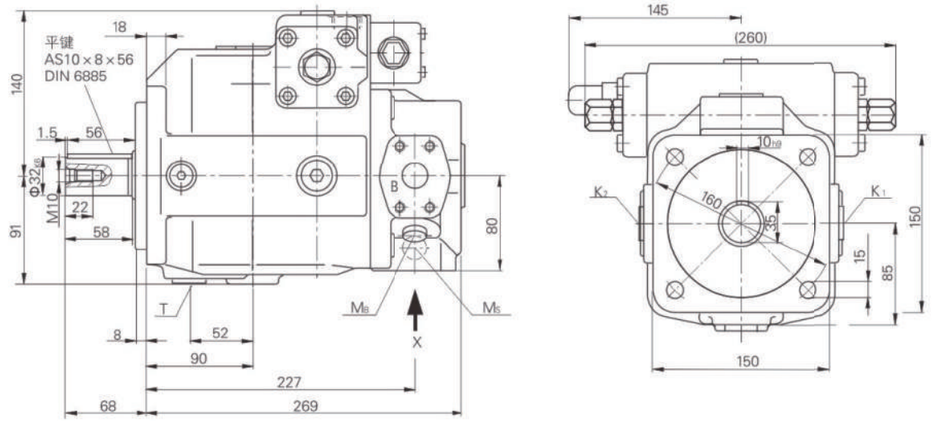


规格355



外形尺寸 规格40， 10系列（图中示例的控制机构是压力控制）

Dimension Size 40, Series 10 （Example: pressure control）



油口13型 Ports type 13

B	压力油口 pressure port	SAE3/4”（高压系列 high pressure series)
B_1	辅助油口 auxiliary port	M22 x 1.5 深depth14 （堵 plugged)

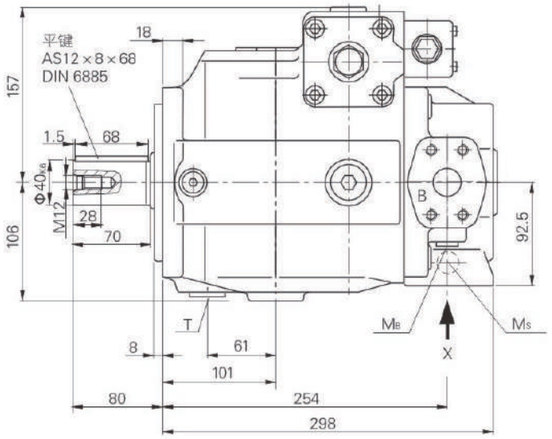
油口25型 Ports type 25

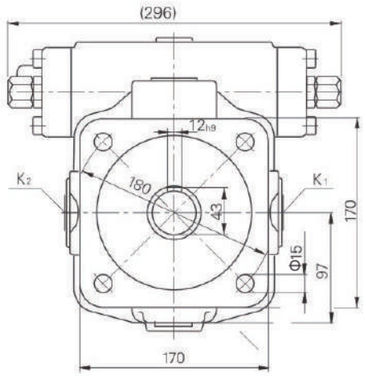
B	压力油口 pressure port	SAE3/4”（高压系列 high pressure series)
B_1	第二压力油口 second pressure port	SAE3/4”（高压系列 high pressure series)（封闭 closed)

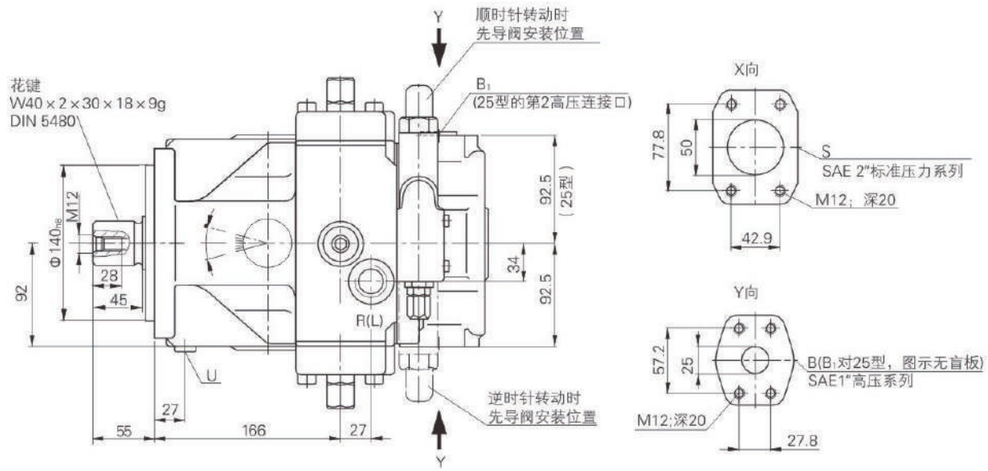
其他油口 Other ports

S	吸油口 suction port	SAE1 1/2”（标准系列 standard series)
K_1,K_2	冲洗油口 flushing port	M22 x 1.5 深depth14 （ 堵plugged)
T	泄油口 drain port	M22 x 1.5 深 depth14 （ 堵plugged)
M_B,M_S	测试点 measuring port	M14 x 1.5 深 depth12 (堵plugged)
R(L)	注油口 filling port + 排气口 bleed port	M22 x 1.5
U	冲洗油口 flushing port	M14 x 1.5 深 depth12 (堵 plugged)

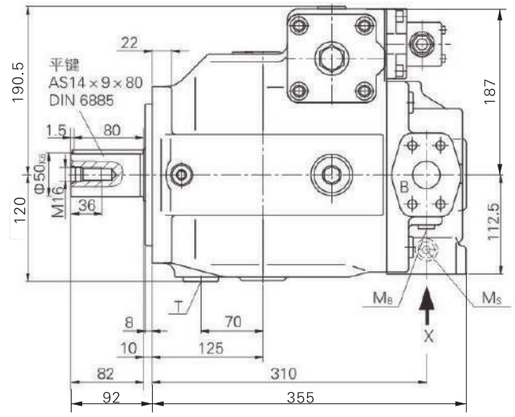
A

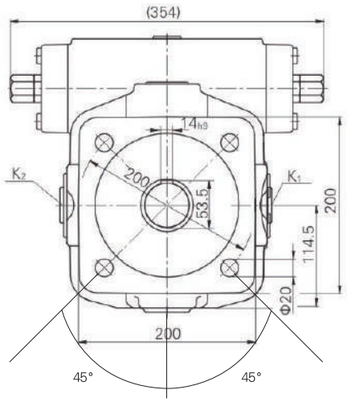


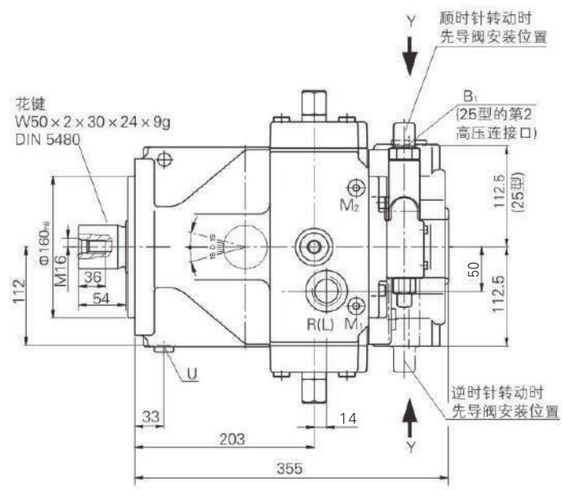


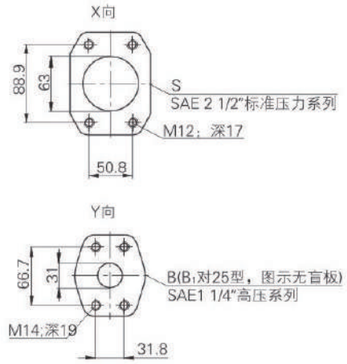


外形尺寸 规格125， 30系列（图中示例的控制机构是压力控制）
Dimension Size 125, Series 30 （Example: pressure control）









油口13型 Ports type 13

B	压力油口 pressure port	SAE1 1/4”(高压系列 high pressure series)
B_1	辅助油口 auxiliary port	M33 x 2 深depth18 (堵 plugged)

油口25型 Ports type 25

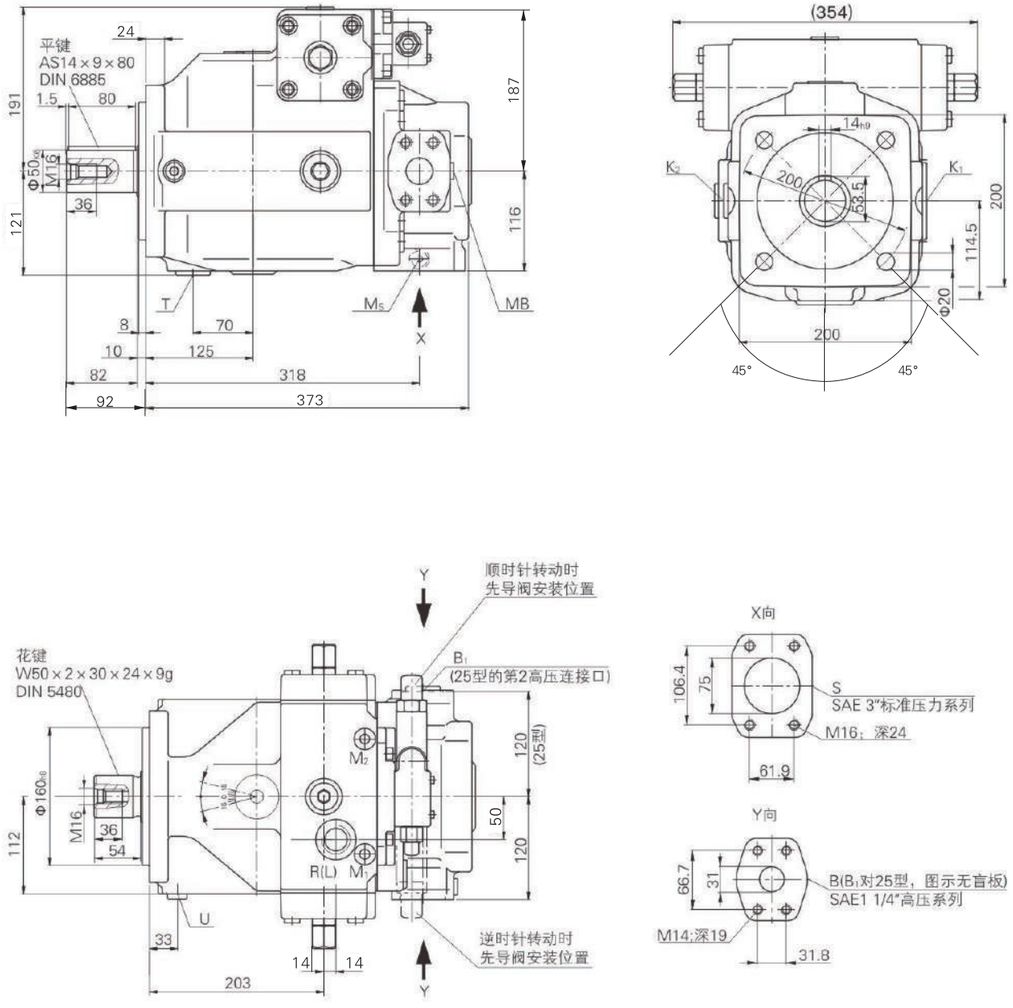
B	压力油口 pressure port	SAE1 1/4”(高压系列 high pressure series)
B_1	第二压力油口 second pressure port	SAE1 1/4”(高压系列 high pressure series) (封闭 closed)

其他油口 Other ports

S	吸油口 suction port	SAE2 1/2”(标准系列 standard series)
K_1,K_2	冲洗油口 flushing port	M33 x 2 深depth18 (堵plugged)
T	泄油口 drain port	M33 x 2 深 depth18 (堵plugged)
M_B,M_S	测试点 measuring port	M14 x 1.5 深 depth12 (堵plugged)
R(L)	注油口 filling port + 排气口 bleed port	M33 x 2
U	冲洗油口 flushing port	M14 x 1.5 深 depth12 (堵 plugged)
M_1,M_2	变量机构的测试点 measuring port control device	M14 x 1.5 (堵 plugged)

A

外形尺寸 规格180/200， 30系列（图中示例的控制机构是压力控制）
Dimension Size 180/200, Series 30 （Example: pressure control）



油口13型 Ports type 13

B	压力油口 pressure port	SAE1 1/4”（高压系列 high pressure series)
B_1	辅助油口 auxiliary port	M33 x 2 深depth18 （堵 plugged)

油口25型 Ports type 25

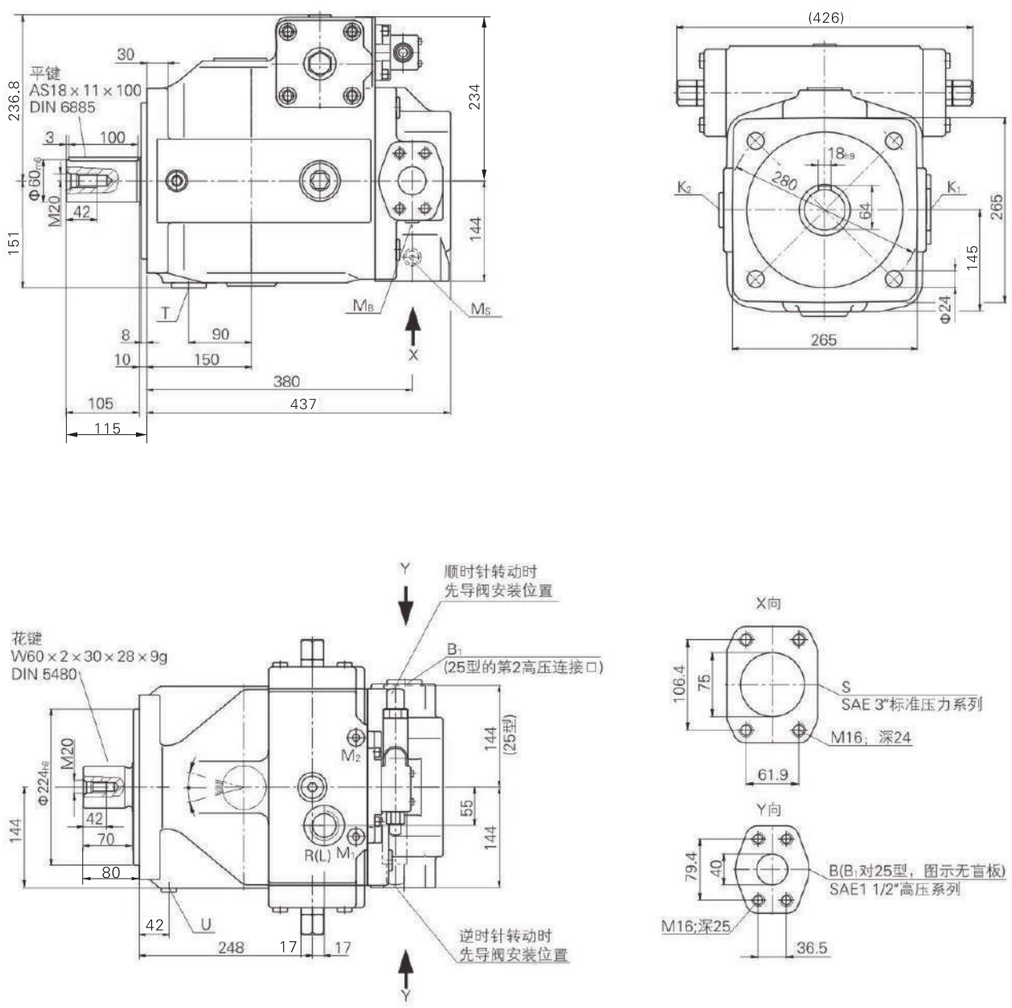
B	压力油口 pressure port	SAE1 1/4”（高压系列 high pressure series)
B_1	第二压力油口 second pressure port	SAE1 1/4”（高压系列 high pressure series) (封闭 closed)

其他油口 Other ports

S	吸油口 suction port	SAE3”（标准系列 standard series)
K_1,K_2	冲洗油口 flushing port	M33 x 2 深depth18 （ 堵plugged)
T	泄油口 drain port	M33 x 2 深 depth18 （ 堵plugged)
M_B,M_S	测试点 measuring port	M14 x 1.5 深 depth12 (堵plugged)
R(L)	注油口 filling port + 排气口 bleed port	M33 x 2
U	冲洗油口 flushing port	M14 x 1.5 深 depth12 (堵 plugged)
M_1,M_2	变量机构的测试点 measuring port control device	M14 x 1.5 (堵 plugged)

A

外形尺寸 规格250/280， 30系列（图中示例的控制机构是压力控制）
Dimension Size 250/280, Series 30 （Example: pressure control）



油口13型 Ports type 13

B	压力油口 pressure port	SAE1 1/2”（高压系列 high pressure series)
B_1	辅助油口 auxiliary port	M42 x 2 深depth20 （堵 plugged)

油口25型 Ports type 25

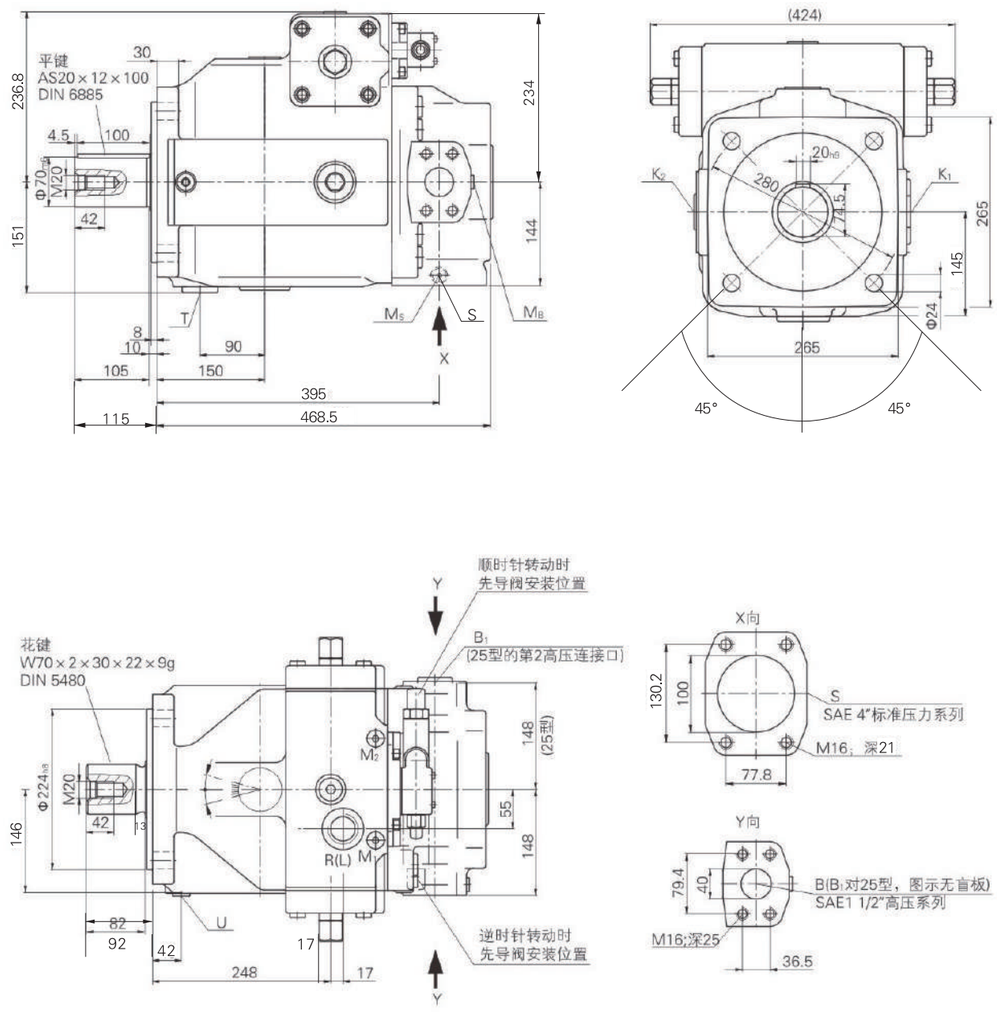
B	压力油口 pressure port	SAE1 1/2”（高压系列 high pressure series)
B_1	第二压力油口 second pressure port	SAE1 1/2”（高压系列 high pressure series) (封闭 closed)

其他油口 Other ports

S	吸油口 suction port	SAE3”（标准系列 standard series)
K_1,K_2	冲洗油口 flushing port	M42 x 2 深depth20 （ 堵plugged)
T	泄油口 drain port	M42 x 2 深 depth20 （ 堵plugged)
M_B,M_S	测试点 measuring port	M14 x 1.5 深 depth12 (堵plugged)
R(L)	注油口 filling port + 排气口 bleed port	M42 x 2
U	冲洗油口 flushing port	M14 x 1.5 深 depth12 (堵 plugged)
M_1,M_2	变量机构的测试点 measuring port control device	M18 x 1.5 (堵 plugged)

A

外形尺寸 规格355， 30系列（图中示例的控制机构是压力控制）
Dimension Size 355, Series 30 （Example: pressure control）



油口13型 Ports type 13

B	压力油口 pressure port	SAE1 1/2”（高压系列 high pressure series)
B_1	辅助油口 auxiliary port	M42 x 2 深depth20 （堵 plugged)

油口25型 Ports type 25

B	压力油口 pressure port	SAE1 1/2”（高压系列 high pressure series)
B_1	第二压力油口 second pressure port	SAE1 1/2”（高压系列 high pressure series) (封闭 closed)

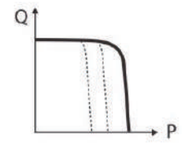
其他油口 Other ports

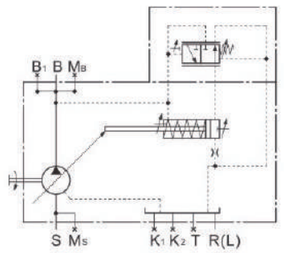
S	吸油口 suction port	SAE4”（标准系列 standard series)
K_1,K_2	冲洗油口 flushing port	M42 x 2 深depth20 （堵plugged)
T	泄油口 drain port	M42 x 2 深 depth20 （堵plugged)
M_B,M_S	测试点 measuring port	M14 x 1.5 深 depth12 (堵plugged)
R(L)	注油口 filling port + 排气口 bleed port	M42 x 2
U	冲洗油口 flushing port	M14 x 1.5 深 depth12 (堵 plugged)
M_1,M_2	变量机构的测试点 measuring port control device	M18 x 1.5 (堵 plugged)

控制装置 Control Devices

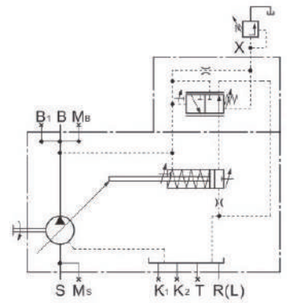
1、压力控制DR Pressure Control DR

压力控制保持泵的输出压力在压力设定值，因此，泵只输出执行机构所需的流量。
设定范围20~350bar，可选：带远程压力控制DRG
Pressure control keeps the pressure constant within the control range of the pump at the pump outlet. There fore, the pump only delivers as much fluid as required by the actuators.
Setting range 20 ~ 350bar.
Optional: with remote pressure control DRG





DR 原理图Schematic



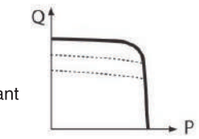
DRG 原理图Schematic

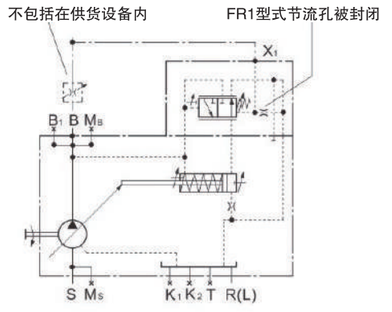
油口 Ports

X 先导压力油口，用于远程压力控制 Pilot pressure port, for remote pressure control M 14 x 1.5 深12

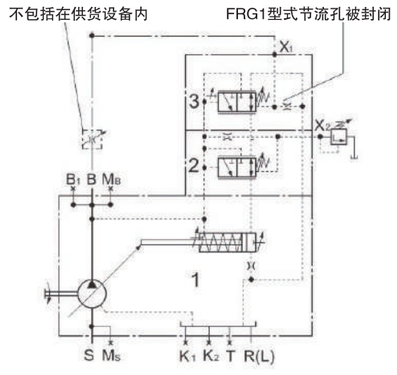
2、流量控制FR Flow Control FR

泵的流量可以通过节流阀调节并且维持流量恒定，
可选：带远程压力控制FRG。
FR1及FRG1型式的X油口内的节流孔被封闭。
Pump flow may be requlated by means of a differential pressure at an orifice and maintains a constant regulating flow in a hydraulic system.
Optional: with remote pressure control FRG
For model FR1 or FRG1 the orifice closed in the X port





FR 原理图Schematic



FRG 原理图Schematic

油口 Ports

X_1 先导压力油口，用于流量控制 Pilot pressure port, for flow control M 14 x 1.5 深12
X_2 先导压力油口，用于远程压力控制 Pilot pressure port, for remote pressure control M 14 x 1.5 深12

图中元件 Diagram components

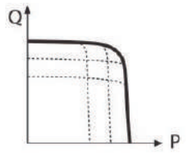
1. A4VSO轴向柱塞泵(带液压排量调节机构)Axial piston pump (with hydraulic positioning device)
2. 压力控制阀 Pressure control valve
3.流量控制阀 Flow controly valve

控制装置 Control Devices

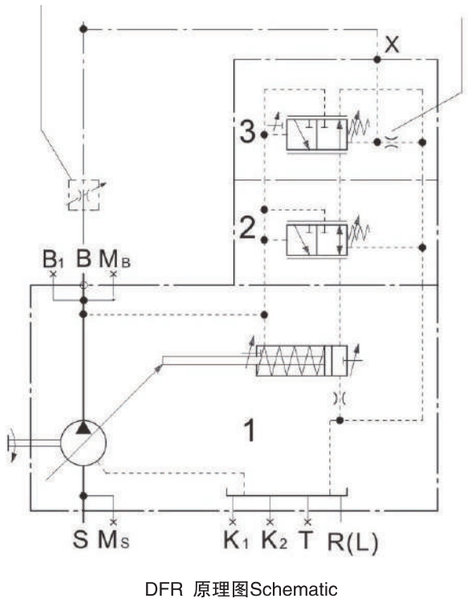
A

3、压力与流量控制DFR Pressure and Flow Control DFR

在不断变化的工况下，保持泵输出的流量恒定，压力控制优先于流量量控制
DFR1型式的X油口内的节流孔被封闭
This control maintains a constant flow from the pump even under varying oprerating conditions. Overriding this control is a mechanically adjustable pressure control.
Optional: For model DFR1 the orifice closed in the X port



不包括在供货设备内　　DFR1型式节流孔被封闭



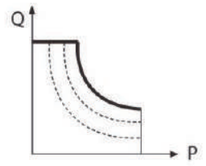
DFR 原理图Schematic

油口 Ports
X 先导压力油口，用于流量控制Pilot pressure port, for flow control M14 x 1.5深12

图中元件 Diagram components
1. A4VSO型轴向柱塞泵（带液压排量调节机构）Axial piston pump (with hydraulic positioning device)
2. 压力控制阀 Pressure control valve
3. 流量控制阀 Flow control valve

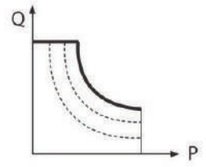
4、功率控制LR2 Pressure Control LR2

双曲线功率控制，能在泵的转速不变时，保持泵的驱动功率为不变的设定值。
可选：带压力控制LR2D，带远程压力控制LR2G
The hyperbolic power control maintains a constant preset drive power at the same input speed.
Optional: with pressure control LR2D, with remote pressure control LR2G



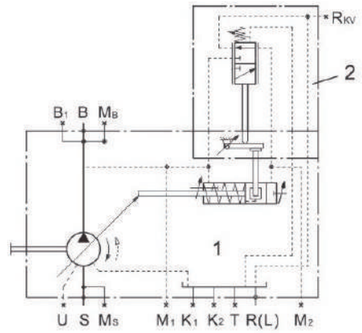
5、功率控制LR3 Pressure Control Lr3

双曲线功率控制，能在泵的转速不变时，保持泵的驱动功率为不变的设定值。
其功率特性曲线可远程进行调节。
可选：带压力控制LR3D，带远程压力控制LR3G
The hyperbolic power control maintains a constant preset drive power at the same input speed. The power characteristics can be adjusted remotely.
Optional: with pressure control LR3D, with remote pressure control LR3G

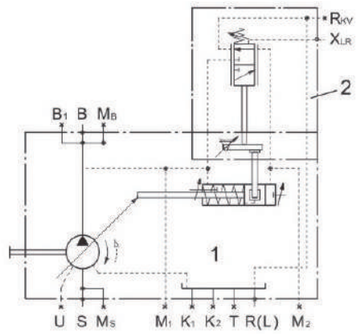


控制装置 Control Devices

A



LR2 原理图Schematic



LR3 原理图Schematic

油口 Ports
R_{KV} 控制油外部回油口 External control oil return port M18x1.5，深12
X_{LR} 先导压力油口，用于远程功率控制 Pilot pressure port, for rem ote power control M14 x 1.5 深12

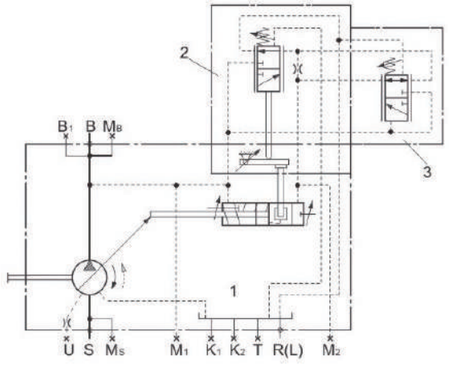
图中元件 Diagram components
1. A4VSO型轴向柱塞泵(带液压排量调节机构) Axial piston pump (with hydraulic positioning device)
2. 功率控制阀 Power control valve

…D 带压力控制 With Pressure Control

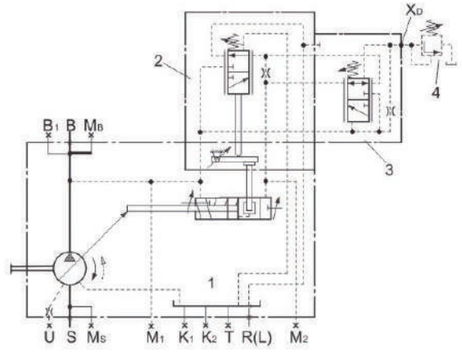
压力控制优先于功率控制，即：在设定压力值之下时按照功率控制工作。当达到压力控制阀上的设定压力时，泵进人压力控制模式，仅提供维持该压力所需的液压油液。
The pressure control overrides the power control, i.e. below the set pressure control level the unlt follwes the power control function. As soon as the pump output pressure reaches the pressure control level, the pump turns into the pressure control model and delivers only the amount of fluid as requlred to maintain this pressure.

…G 带远程压力控制With Remote Pressure Control

压力限制阀连接至油口X_D，用于远程控制。当达到设定压力（压力限制阀上的设定压力加压力控制阀上的压差）时，泵进入压力控制模式，仅提供维持该压力所需的液压油液。
Pressure rellef valve is connected to port X_D, for remote control. As soon as the pump output pressure(relief valve setting plus pressure differential over the pressure control valve spool) reaches the pressure control level, the pump turns into the pressure control model and delivers only the amount of fluid as required to maintain this pressure.



LR2D 原理图Schematic



LR2G 原理图Schematic

油口 Ports
X_D 先导压力油口，用于远程压力控制 Pilot pressure port, for remot e pressure control M14 x 1.5，深12

图中元件 Diagram components
1. A4VSO型轴向柱塞泵(带液压排量调节机构) Axial piston pump (with hydraulic positioning device)
2. 功率控制阀 Power control valve
3. 压力控制阀 Pressure control valve
4. 压力限制阀（不包括在供货范围之内）Pressure reliefl valve (not in scope of supply)

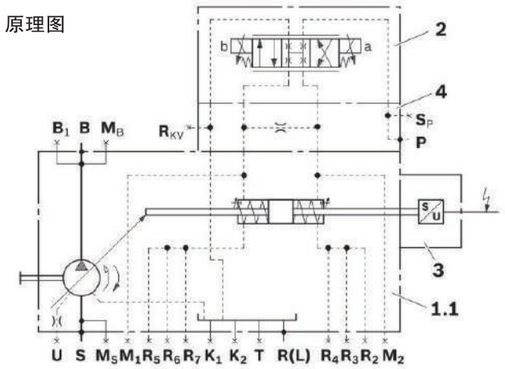
A

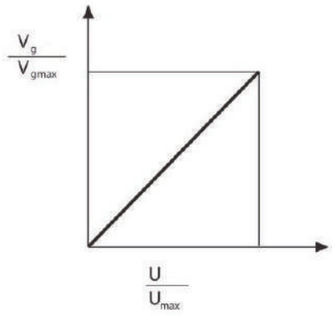
控制装置 Control Devices

6、液压流量控制EO2

借助于带斜盘摆角电反馈的比例阀，进行排量的无线调节。

原理图



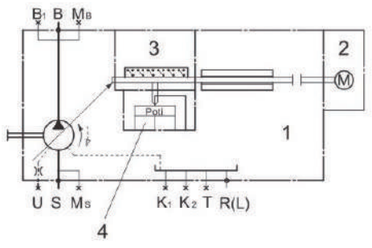


图中元件 Diagram components

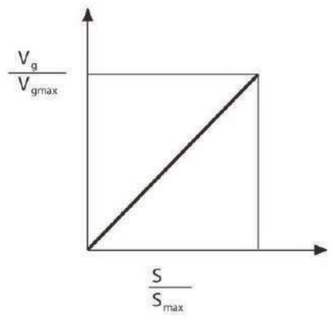
1.A4VSO型轴向柱塞泵（带机械排量调节机构） 1.A4VSO type axial piston pump
2.比例阀 2.Proportional valve
3.位置传感器 3. Position sensor
4.过渡板 4.Transition board

7、电机控制EM Motor Control EM

用电机进行排量的无级调节。带可编程的顺序控制，借助于内置的限位开关和电位器进行排量的有级调节。
Stepless adjustment of displacement via an electric motor. Various intermediate displacement values can be selected with a programmed sequence control, by means of built on limit switches and an optional potentiometer for feedback signal.



EM 原理图Schematic



图中元件 Diagram components

1. A4VSO轴向柱塞泵（带机械排量调节机构）Axial piston pump (with mechanical positioning device)
2. 电机 Motor
3. 限位开关 Limit switch
4. 电位器 Potentiometer

通轴驱动 Through Drive

A4VSO型轴向柱塞泵可提供通轴驱动，可提供的通轴驱动型式见第 31~32 页“型号标识”。
我们推荐通轴驱动最多可串联三级（主泵与从泵共三台）。
A4VSO axial piston pump can be equipped with a through drive, as shown in the type code on page 2–3
We recommend that no more than three pumps be coupled together(main pump and following pump a total of three).

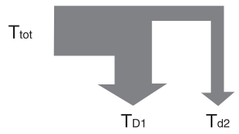
A

允许的输入转矩与通轴驱动转矩 Permissible input torque and through drive torque（单位Unit：Nm）

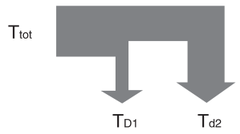
规格 Size		40	71	125	180/200	250/280	355
花键轴伸 Splined Shaft							
主泵的最大输入转矩 Maximum input torque of the main pump	$T_{tot\,max}$	446	790	1392	2004	2782	3952
A型式 允许的通轴驱动转矩 Permissible through drive torque	T_{D1max}	223	395	696	1002	1391	1976
	$T_{D2\,max}$	223	395	696	1002	1391	1976
B型式 允许的通轴驱动转矩 Permissible through drive torque	T_{d1max}	223	395	696	1002	1391	1976
	$T_{D2\,max}$	223	395	696	1002	1391	1976
平键轴伸 Keyed shaft							
主泵的最大输入转矩 Maximum input torque of the main pump	$T_{tot\,max}$	380	700	1392	1400	2300	3557
A型式 允许的通轴驱动转矩 Permissible through drive torque	T_{D1max}	223	395	696	1002	1391	1976
	$T_{D2\,max}$	157	305	696	398	909	1581
B型式 允许的通轴驱动转矩 Permissible through drive torque	T_{D1max}	157	305	696	398	909	1581
	$T_{D2\,max}$	223	395	696	1002	1391	1976

转矩分配形式 Torque Distribution Pattern

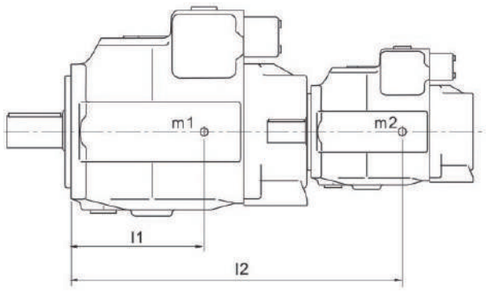
分配 形式A Distribution pattern A



分配 形式B Distribution pattern B



主泵安装法兰上的许用弯矩 Permissible mass moment of inertia referred to the mounting flange of the main pump



规格 Size	40	71	125	180/200	250/280	355
T_m	1800	2000	4200		9300	
$T_{m\,10g}$	180	200	420		930	
m	39	53	88	102	184	207
l_1	120	140	170	180	210	220

T_m–许用弯矩Nm
T_{m10g}–10g加速度时的许用弯矩Nm
m1–主泵质量Kg
m2–从泵质量kg
l_1–主泵重心与安装法兰的距离mm
l_2–从泵重心与主泵安装法兰的距离mm
弯矩$T = m_1 \times l_1 \times \frac{1}{102} + m_2 \times l_2 \times \frac{1}{102} < T_m$

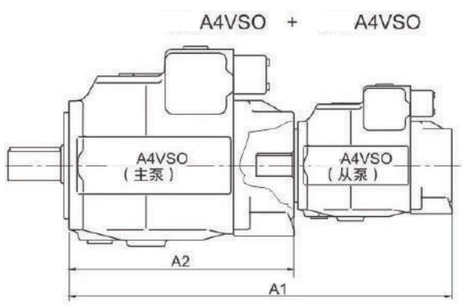
T_m–Perm. mass moment of inertia (Nm)
T_{m10g}–Perm. mass moment at dynam acceleration of 10g (Nm)
m_1–The quality of the main pump (kg)
m_2–The quality of the following pump (kg)
l_1–The distance between barycenter of main pump and mounting flange (mm)
l_2–The distance between barycenter of following pump and mounting flange of main pump (mm)

通轴驱动 Through Drive

A

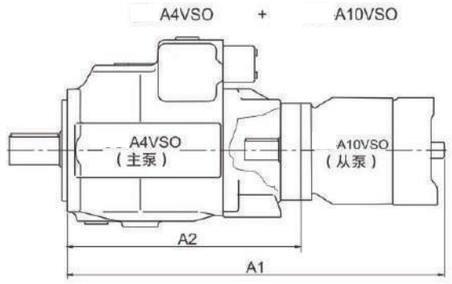
组合泵尺寸 Combination Pump Dimensions

从泵为A4VSO型的尺寸(mm)
Dimensions of following pumpsA4VSO



主泵 Main pump			40	71	125	180/200	250/280	355
从泵 Following pump	A_1	40	554	582	635	659	719	748
		71	–	611	664	688	748	777
		125	–	–	724	748	808	837
		180	–	–	–	768	828	857
		250	–	–	–	–	904	933
		355	–	–	–	–	–	962
	A_2	≤180	288	316	369	393	453	482
		≥250	–	–	–	–	469	498

从泵为A10VSO型及 A10VO型的尺寸(mm)
Dimensions of following pumps A10VOand A10VSO



主泵 Main pump			40	71	125	180/200	250/280	355
从泵 Following pump	A_1	18	458	486	564	588	648	677
		28	496	497	575	599	659	688
		45	514	540	593	617	677	706
		71	–	580	628	652	712	741
		100	–	–	698	722	782	801
		140	–	–	–	744	791	820
	A_2		288	316	369	393	453	482

主泵 A4VSO 180与从泵 A10VSO 140或 A10V0 140串联， 尺寸A2为406。
The dimension A2 is 406 for that OS–A4VSO180 pump couples OS–A10VSO 140 or OS–A10V0 140 pump

安装 Mounting

A

◆一般要求General requirements

安装位置任选。在试运行前，泵体必须灌满油液，并在工作时保持充满。
为了减少噪声，所有的连接管道(进油管、压力油管和壳体泄油管)需用柔性元件与油箱隔离必须避免在壳体泄油管道上装单向阀，泄漏油应直接回到油箱，而通流截面不得减小。
The mounting position is discretionary. Before trial running, the pump body must be filled with fluid and kept filledwhile working.
To reduce noise, all connecting pipes (inlet pipe, pressure pipe and casting drain pipe) must be separated fromthe tank by using flexible components. Avoid mounting check valve on the casting drain pipe. The leaked ol shallretum directly to the tank, but the through- flow section shall not be reduced.

◆垂直安装（轴端向上） Vertical mounting (with shaft end upward)

在垂直安装时，推荐轴承的冲洗如前所述，以确保前轴承的润滑。
In case of vertical mounting, we recommend flushing bearings as mentioned above to ensure the lubricatlon ofthe front bearings.

安装在油箱内 Mounting inside the tank

a)当油箱的最低液面与泵的法兰面等高或更高时，《R/L》口、《T》口和《S》口可开放(见图1)。
When the minimum level in the tankis as same as or larger than theheight ofthe flange face of the pump, port R/L, T and S can be open(see Figure 1)

b)如油箱的最低液面低于泵的法兰面，《R/L》口、《T》口以及可能包括《S》口必须用管道连接，如图2所示。此情况与本节《安装在油箱外》中所述的相同。
When the minimum level in the tank is lower than the flange face ofthe pump, port R/L,T and possible port S must be connected withpipes, as shown in Figure 2.This situation is same as what isspecified in Mounting outside of the Tank in this section.

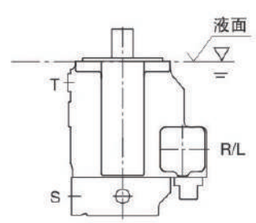


图1

安装在油箱外Mounting outside the tank
在安装前，泵水平卧置并灌满油液。《T》口通油箱，《R/L》口堵:
在安装时的灌油:通过《R/L》口灌油，通过《T》通气，然后将《R/L》口堵死(见图2)。
Before mounting, the pump shall be placed horizontally and filledwith fluid. PortTis connected with the tank and port R/L shall beblocked. Filling while mounting: Filing from port R/L and venting byport T and then blocking port R/L

条件:泵的最低进口压力(吸入压力)，必须不低于0.8bar绝对压力。
如果要求低噪声运行刚应避免将泵置于油箱之上。
Conditions: The minimum inlet pressure (absorption pressure) of thepump shall not be lower than 0.8 bar, the absolute pressure. If lownoise runningis required, the pump shall not be placed on the tank.

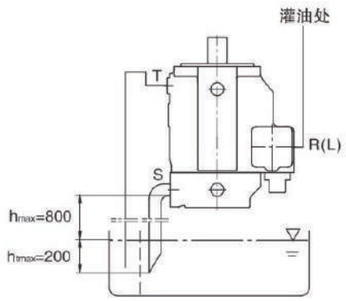


图2

A

◆卧置Horizontally placed

将《T》,《K1》,《K2》或《R/L》口置于最高位置,用于灌油/通气并用于与泄油管连接。
Place port T, K1, K2 or R/L higher than the highest position for filing /venting and for connecting with drain pipe

安装在油箱内Mountinginside the tank

a)当油箱的最低液面与泵的上端等高或更高,泄油口和《S》口可开放(见图3)。
When the minimum level in the tank is as same as or higher thanthe upper end of the drain port and port S can be open (see Figure 3)

b)当油箱的最低液面比泵的上端低时,泄油口以及可能包括《S》口必须用管道连接(见图4)。此情况如同本节《安装在油箱外面》中a)项所述。
When the minimum level in the tank is lower than the upper end ofthe pump, the drain port and possible port S must be connectedwith pipes.(See Figure4).This situation is same as what isspecified in a) Mounting outside of the Tank in this section.

在试运行前应用油液灌满泵体。
Before trial running, the pump body must be filled with fluid.

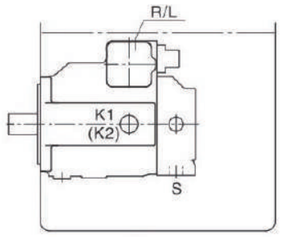


图3

安装在油箱外 Mounting outside the tank
在试运行前用油液灌满泵体。
Before trial running, the pump body must be filled with fluid.

如安装在油箱之上,请见图4。
For mounting on the tank, see Figure 4.

条件:泵的最低进口压力(吸入压力),必须不低于0.8bar绝对压力。
如果要求低噪声运行则应避免将泵置于油箱之上。
Conditions:The minimum inlet pressure (absorption pressure) ofthe pump shall not be lower than 0.8 bar, the absolute pressure. Iflow noise running is required, the pump shall not be placed on thetank.

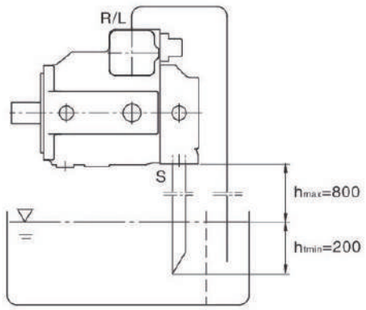


图4

b)如安装在油箱之下,《R/L》和《S》口用管道接,如图5所示。
For mounting under the tank, port R/L and S must be connectedwith pipes, as shown in Figure 5.

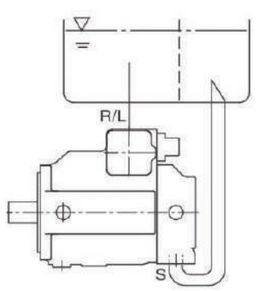


图5

A系列变量柱塞泵
A Series Variable Piston Pump

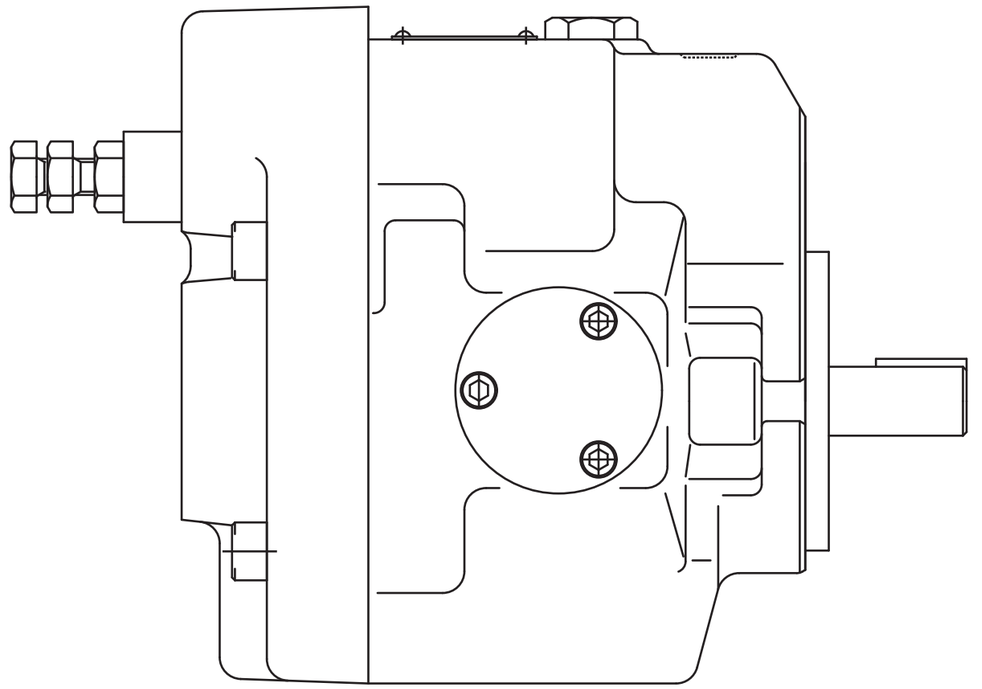
A

适用于开式回路液压系统
Suitable for open circuit hydraulic systems

概 述 Overview

本产品是斜盘式轴向柱塞泵,适用于开式回路的静液压驱动。公称压力16-25MPa 峰值压力28MPa

This product is an inclined-axis axial fixed displacement pump, suitable for hydrostatic drive in open circuits. Nominal pressure 40MPa Peak pressure 45MPa



特点:

排量:10.0cm3/rev~145cm3/rev

压力:额定压力16~25MPa,最高压力28MPa

转速:最高1800r/min

Features

Displacement:10.0cm3/rev~145cm3/rev

Pressure: Rated pressure 16~25 MPa; Max 28 MPa.

Speed:Maximum 1800 r/min.

说 明:

斜盘式轴向柱塞泵,高容积效率,功率损耗小,具有良好截流特性,节省输入功率;

发热少,因为功率损失小,油液的升温慢,可减小油箱的容量

扩展性能强,较丰富的控制方式,可简化油路设计。

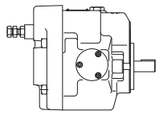
Description

Swash plate axial piston pump, high volumetric efficiency,low power loss, excellent shut-off characteristics, saving input power;

Low heat generation due to low power loss, slow oil temperature rise, reducing the size of the oil tank;Strong expandability with a variety of control methods,simplifying hydraulic circuit design.

A

A16～A56订货型号
A16～A56 Product Series



A16	-F	-R	-01	-B	-S	-K	-A100	-A	-32
01	02	03	04	05	06	07	08	09	10

01
- 规格排量 Displacement
- A16：15.8cm³/rev
- A22：22.2cm³/rev
- A37：36.9cm³/rev
- A56：56.2cm³/rev

02
- 安装方式 Mounting
- F：法兰安装 F: Flange Mounting
- L：脚架安装 L: Foot stand Mounting

03
- 旋转方向（从轴端看） Rotation direction (View from the shaft end)
- R：顺时针（标准） R: Clockwise

04
- 控制方式（详情查看B01~B22） Control option (Details are shown on page B01~B36)
- 01：压力补偿控制型 01: Pressure Compensator Type
- 02：电控两段压力控制型 02: Electric 2-stage pressure control & Flow control
- 03：电磁低压卸载+压力补偿控制型 03: Low tension unloading + Pressure control
- 04：电-液比例负载敏感控制型 04: Electro-Hydraulic Proportional Load-Sensitive Control
- 05：两段压力两段流量控制型 05: 2-stage pressure & Flow control
- 06：电控两段压力两段流量控制型 06: Electric 2-stage pressure control & Flow control
- 07：遥控压力补偿控制型 07: Remote pressure control
- 00：遥控两段压力两段流量控制型 00: 2-stage pressure & Flow control + Remote

05
- 压力调节范围 Pressure Adjusting Range
- B：1.2～7MPa
- C：1.2～16MPa
- H：1.2～16MPa

06
- 油口位置 Port position
- 无标记：后方油口 None：Rear port.
- S：侧面油口 S: Side port.

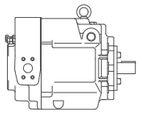
07
- 轴伸型式 Shaft type
- K：平键 None：Key

08
- 电磁阀电压 Voltage
- 交流AC：A100，A120，A200，A240
- 直流DC：D12，D24，D48
- 交流（交直整流）：R100，R200 AC (AC DC rectification)

09
- 无：不带比例背压控制 None:Without proportional back pressure control
- A：带比例背压控制 A: With proportional back pressure control

10
- 设计代号 Design No. 1

A10，A70～A145订货型号
A10，A70～A145 Product Series



A10	-F	R	01	B	S	A100	-60
01	02	03	04	05	06	07	08

01
- 规格排量 Displacement
- A10：10.0cm³/rev
- A70：70.0cm³/rev
- A90：91.0cm³/rev
- A100：100cm³/rev
- A145：145cm³/rev

02
- 安装方式 Mounting
- F：法兰安装 F: Flange Mounting
- L：脚架安装 L: Foot stand Mounting

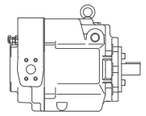
03
- 旋转方向（从轴端看） Rotation direction (View from the shaft end)
- R：顺时针（标准） R: Clockwise

04
- 控制方式（详情查看B01~B22） Control option (Details are shown on page B01~B36)
- 01：压力补偿控制型 01: Pressure Compensator Type
- 02：电控两段压力控制型 02: Electric 2-stage pressure control & Flow control
- 03：电磁低压卸载+压力补偿控制型 03: Low tension unloading + Pressure control
- 04：电-液比例负载敏感控制型 04: Electro-Hydraulic Proportional Load-Sensitive Control
- 05：两段压力两段流量控制型 05: 2-stage pressure & Flow control
- 06：电控两段压力两段流量控制型 06: Electric 2-stage pressure control & Flow control
- 07：遥控压力补偿控制型 07: Remote pressure control
- 00：遥控两段压力两段流量控制型 00: 2-stage pressure & Flow control + Remote

05
- 压力调节范围 Pressure Adjusting Range
- B：1.2～7MPa
- C：1.2～16MPa
- H：1.2～16MPa

A

A10，A70～A145订货型号
A10，A70～A145 Product Series



A10	-F	R	01	B	S	A100	-A	-60
01	02	03	04	05	06	07	08	09

06
- 油口位置 Port position
- S：侧面油口 S: Side port.

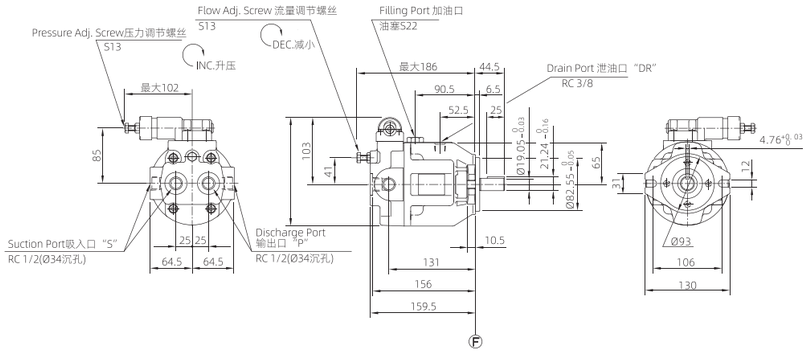
08
- 无：不带比例背压控制 None:Without proportional back pressure control
- A：带比例背压控制 A: With proportional back pressure control

07
- 电磁阀电压 Voltage
- 交流AC：A100，A120，A200，A240
- 直流DC：D12，D24，D48
- 交流（交直整流）：R100，R200 AC (AC DC rectification)

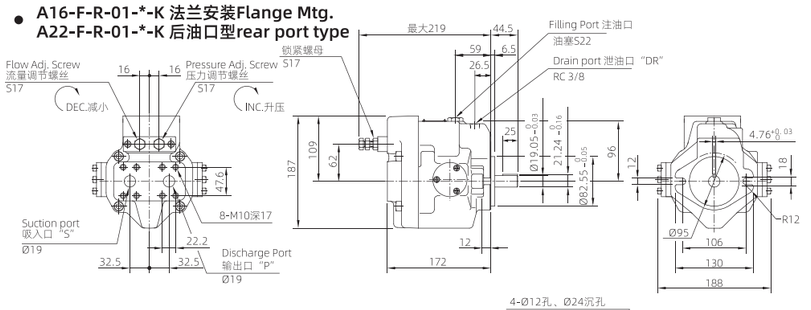
09
- 设计代号 Design No.

安装尺寸
Dimension

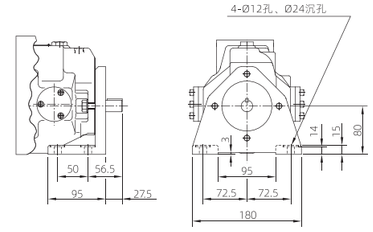
● **A10-FR01法兰安装型Flange Mtg.**



● **A16-F-R-01-*-K 法兰安装Flange Mtg.**
A22-F-R-01-*-K 后油口型rear port type



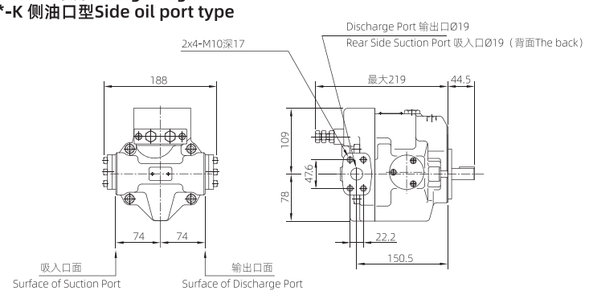
● **A16-F-R-01-*-K 底座安装型**
A22-F-R-01-*-K Foot Mtg.



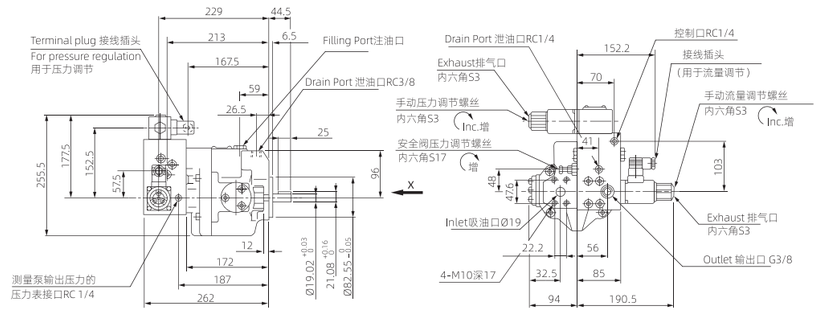
安装尺寸
Dimension

A

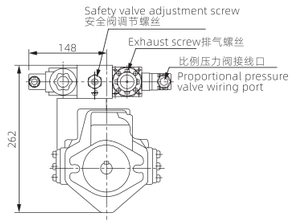
A16-F-R-01-*-K 法兰安装Flange Mtg.
A22-F-R-01-*-K 侧油口型Side oil port type

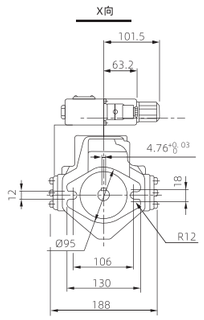


A16-F-R-04-*-K 法兰安装Flange Mtg.
A22-F-R-04-*-K 后油口型Rear port type



A16-F-R-04-*-K-A 带比例背压板
A22-F-R-04-*-K-A
With proportional back pressure control

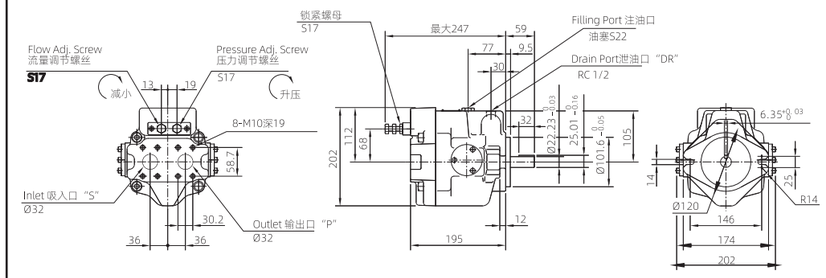




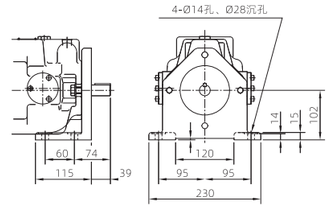
安装尺寸
Dimension

A

A37-F-R-01-*-K法兰安装Flange Mtg.
A45-F-R-01-*-K后油口型Rear oil port type

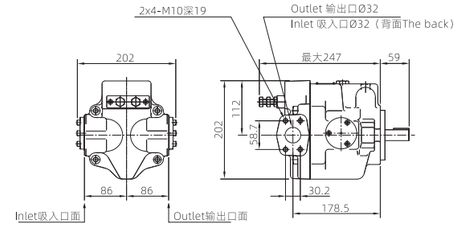


A37-F-R-01-*-K 底座安装型Foot Mtg.
A45-L-R-01-*-K



其余尺寸请参见 "法兰安装型"
For other dimensions, refer to "Flange Mtg.".

A37-F-R-01-*-S-K法兰安装Flange Mtg.
A45-F-R-01-*-S-K侧油口型side oil port type

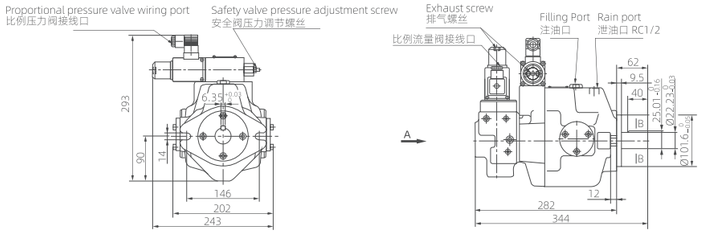


其余尺寸请参见 "法兰安装型"
For other dimensions, refer to "Flange Mtg.".

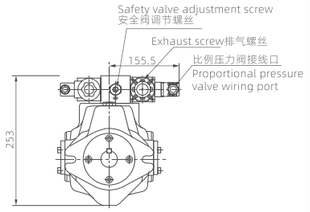
A

安装尺寸
Dimension

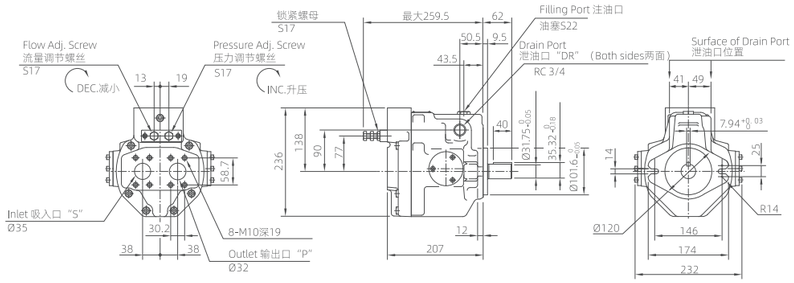
● A37-F-R-04-*-K法兰安装Flange Mtg.
A45-F-R-04-*-K侧油口型Side oil port type



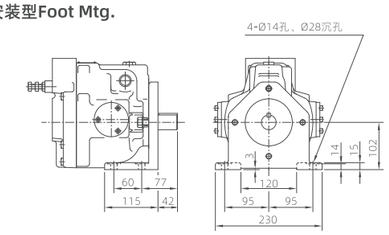
● A37-F-R-04-*-K-A 带比例背压板
A45-F-R-04-*-K-A
With proportional back pressure control



● A56-F-R-01-*-K法兰安装型Flange Mtg.



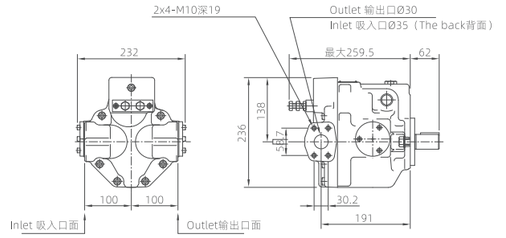
● A56-L-R-01-*-K底座安装型Foot Mtg.



其余尺寸请参见 "法兰安装型"
For other dimensions, refer to "Flange Mtg.".

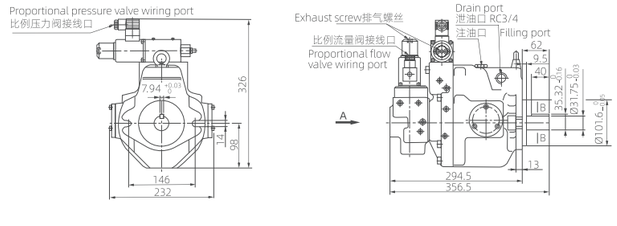
安装尺寸
Dimension

● A56-F-R-01-*-S-K法兰安装测油口型Flange mounting oil measuring port type

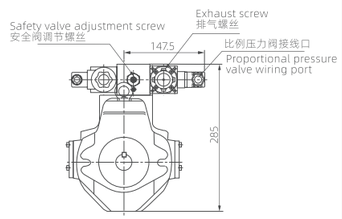


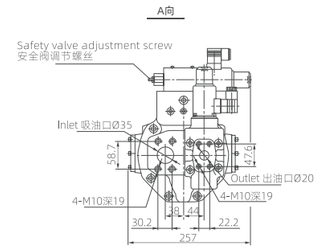
其余尺寸请参见 "法兰安装型"
For other dimensions, refer to "Flange Mtg.".

● A56-F-R-04-*-K法兰安装后油口型Flange mounting rear oil port type



● A56-F-R-04-*-K带比例背压板
With proportional back pressure control

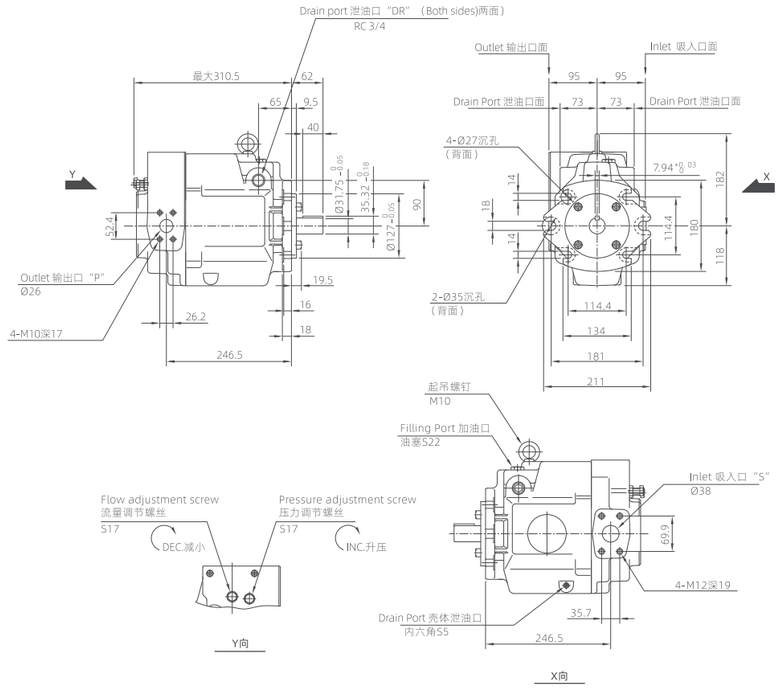




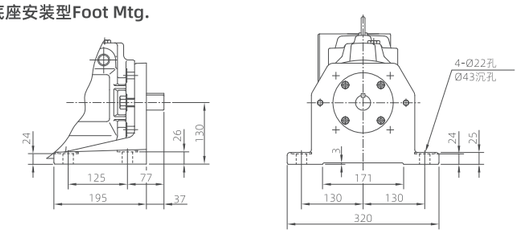
A

安装尺寸
Dimension

● A70-FR01*S法兰安装型Flange Mtg.



● A70-LR01*S底座安装型Foot Mtg.

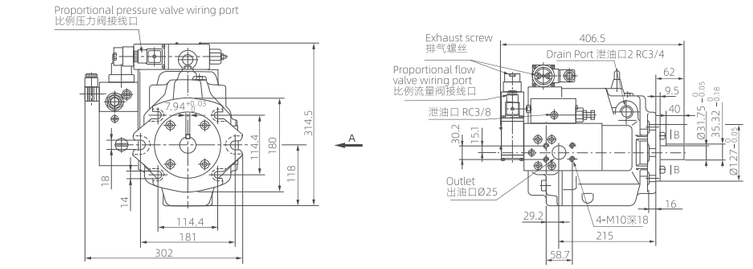


其余尺寸请参见"法兰安装型"
For other dimensions, refer to "Flange Mtg.".

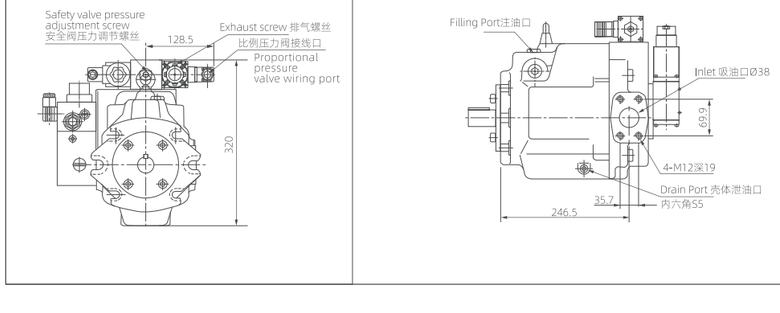
安装尺寸
Dimension

A

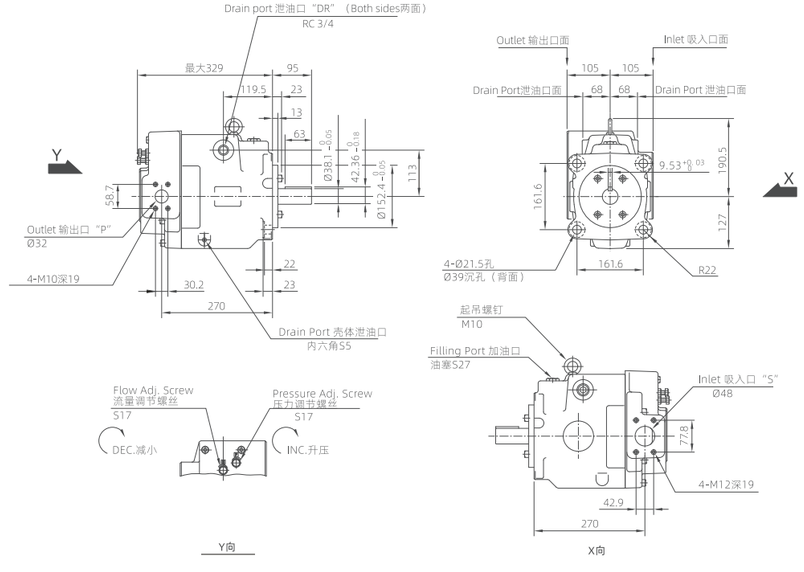
● A70-FR04*S法兰安装型Flange Mtg.



● A70-FR04*S-A带比例背压板
With proportional back pressure control



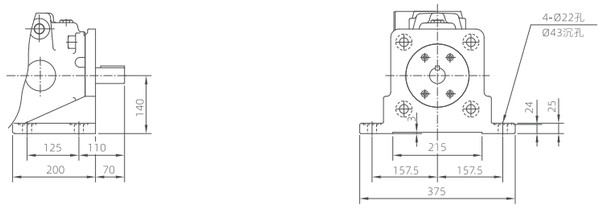
● A90-FR01*S 法兰安装型
A100-FR01*S Flange Mtg.



安装尺寸
Dimension

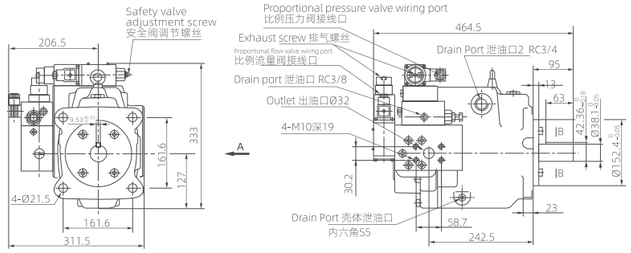
A

A90-LR01*S 底座安装型
A100-LR01*S Foot Mtg.

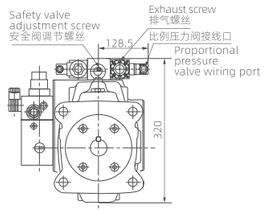


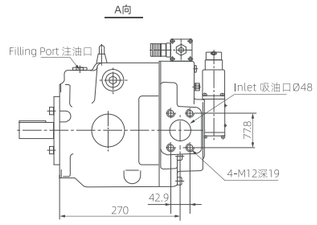
其余尺寸请参见“法兰安装型”
For other dimensions, refer to "Flange Mtg.".

A90-FR04*S 法兰安装型
A100-FR04*S Flange Mtg.



A90-FR04*S-A 带比例背压型
A100-FR04*S-A
With proportional back pressure control

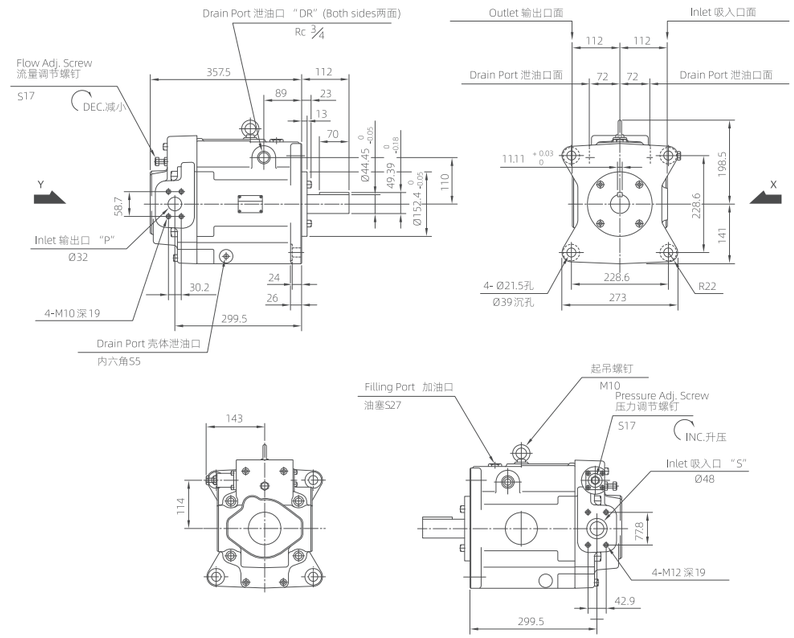




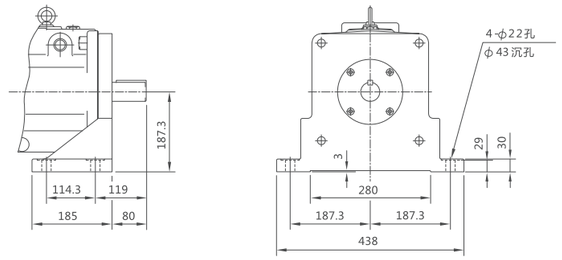
安装尺寸
Dimension

A

A145-FR01*S法兰安装型Flange Mtg.



A145-LR01*S底座安装型Foot Mtg.

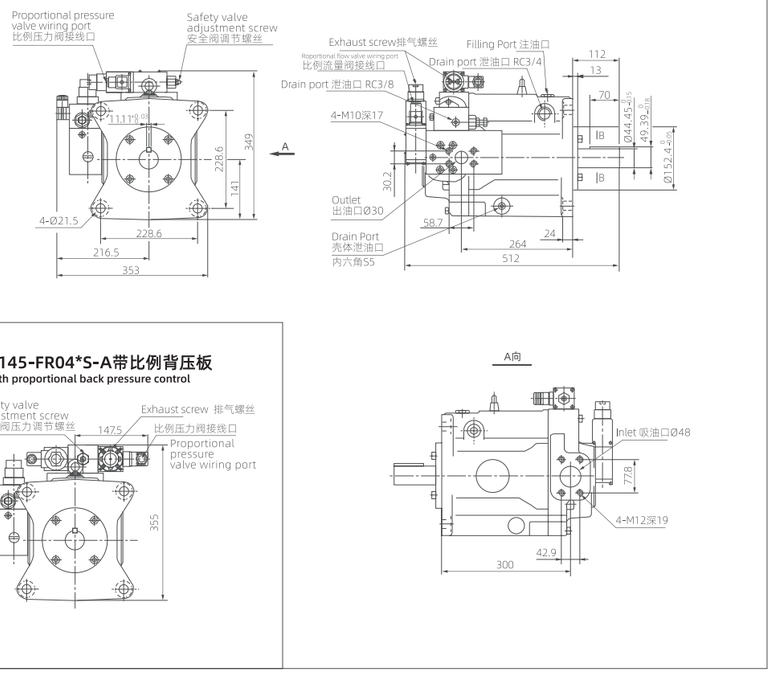


其余尺寸请参见“法兰安装型”
For other dimensions, refer to "Flange Mtg.".

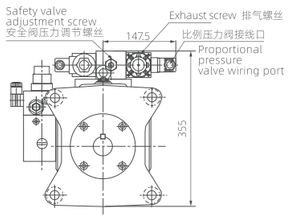
A

安装尺寸
Dimension

● A145-FR04*S法兰安装型Flange Mtg.



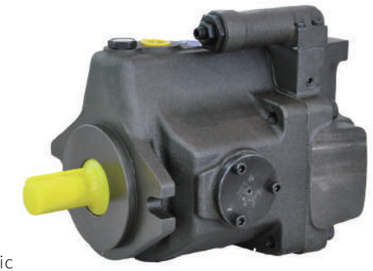
● A145-FR04*S-A带比例背压板
With proportional back pressure control



V系列变量柱塞泵

V Series Variable Piston Pump

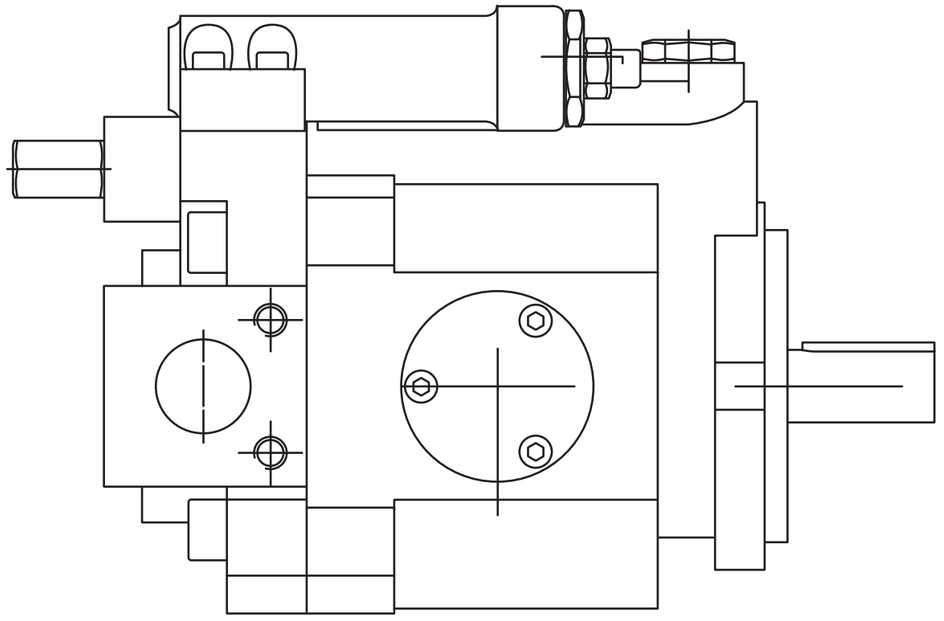
适用于开式回路液压系统
Suitable for open circuit hydraulic systems



概 述 Overview

本产品是斜盘式轴向柱塞泵,适用于开式回路的静液压驱动。公称压力21MPa
峰值压力28MPa

This product is swash plate axial piston pump, suitable for open circuit hydrostatic drive. Nominal pressure 21MPa
Peak pressure 28MPa



特点:

排量:15cm/rev~69.7cm3/rev

压力:容额定压力21MPa,最高压力28MPa

转速:最高1800r/min

说 明:

斜盘式轴向柱塞泵,容积效率高,快速截流,减少输入功率
经济高效,压力、流量大小控制灵敏度高,稳定可靠;
发热少噪音低,功率损失小,油液温升慢,可使用较小的油箱
扩展性超强,较丰富的控制方式和组合,有效简化油路设计。

Features
Displacement:15.8cm:/rev~22.2cm'/rev
Pressure: Rated up to 21Mpa, Max 28Mpa
Speed: Maximum up to1800r/min

Description
Swash plate axial piston pumps with high volumetric efficiency, quick cut-off and reduced power input;
Economical and efficient, high sensitivity of pressure and flow control, stable and reliable;Low heat generation,
low noise, minimal power loss, slow oiltemperature rise,smaller tanks can be used;
Superb extensibility, various control methods and combinations effectively simplify the design of the oil circuit.

A

V 订货型号
V-Product Series

V	15	A	3	R				10	X	
01	02	03	04	05	06	07	08	09	10	11

01 V系列变量柱塞泵
V-series piston pump

02 规格排量 Displacement
- 15：15cm³/rev
- 18：18cm³/rev
- 23：23.0cm³/rev
- 25：25.0cm³/rev
- 38：37.8cm³/rev
- 42：42.0cm³/rev
- 50：51.5cm³/rev
- 70：69.7cm³/rev

03 控制方式（详情查看B01~B36） Control option (Details are shown on page B01~B36)
- A：压力补偿控制型 A: Pressure Compensator Type
- G：遥控压力补偿控制型 G: Remote pressure control
- HL：负载敏感控制型 HL: Load-Sensing
  - 感应压力 Pressure
  - A：低压：7kg A: Low : 7kg
  - B：中压：14kg B: Mid : 14kg
  - C：高压：21kg C: High : 21kg
- B：无极变速，外接油缸，任意流量控制型 B: Muti-stage flow & Singe-stage pressure control (with cylinder)
- C：两段压力两段流量控制型 C: 2-stage pressure & Flow control
- CG：遥控两段压力两段流量控制型 CG: 2-stage pressure & Flow control + Remote
- CR：低压卸载+两段压力两段流量控制型 CR: 2-stage pressure & Flow control + Low tension unloading
- D：电磁低压卸载+压力补偿控制型 D: Low tension unloading + Pressure control
- DG：电磁低压卸载+遥控压力补偿控制型 DG: Low tension unloading + Pressure control + Remote
- E：电控两段压力控制型 E: Electric 2-stage pressure control
- EG：电控两段压力+遥控压力补偿控制型 EG: Electric 2-stage pressure control + Remote
- F：电控两段压力两段流量控制型 F: Electric 2-stage pressure control & Flow control
- FG：电控两段压力两段流量+遥控压力控制型 FG: Electric 2-stage pressure control & Flow control + Remote
- GM：遥控型调节器（含NG6接口） GM: Remote pressure compensator with NG6 interface
- GJ：遥控型调节器+比例压力控制型 GJ: Remote pressure compensator + Proportional pressure valve
- GR：遥控型调节器+电控卸载控制型 GR: Remote pressure compensator + Electrical unloading
- GB：遥控型调节器+电控两段压力控制型 GB: Remote pressure compensator + 2-stage pressure control
- GC：遥控型调节器+电控卸载+两段压力型 GC: Remote + Electrical unloading + 2-stage pressure control

04 压力调节范围 Pressure Adjusting Range
- 1：8～70bar
- 2：15～140bar
- 3：20～210bar
- 4：20～250bar

05 旋转方向 Rotation direction (View from the shaft end)
- R：顺时针 R: Clockwise
- L：逆时针 L: Counter clockwise

06 油口方向 Port position
- 无：两侧油口 None：Side port
- B：后方油口（法兰型） B: Side port
- B2：两侧油口+后方油口（法兰型） B2: Side Port + Rear Port(Flange)

07 轴伸型式 Shaft Extension
- 无：平键轴 None：Key
- S：花键轴 S: Splind shaft

08 电压 Voltage
- 无：无电压 None：None
- A：AC100V（50/60HZ）
- B：AC110V（60HZ）
- C：AC220V（50/60HZ）
- D：AC220V（60HZ）
- E：DC 12V
- F：DC 24V

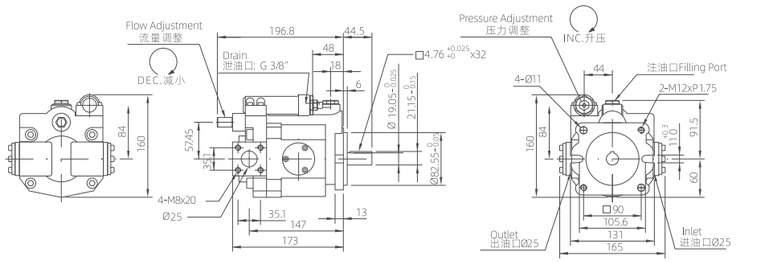
09 配管牙型 Piping Tooth Type
- 10：PT（RC）

10 规格代号 Specification code
- X：标准品 X: Standard

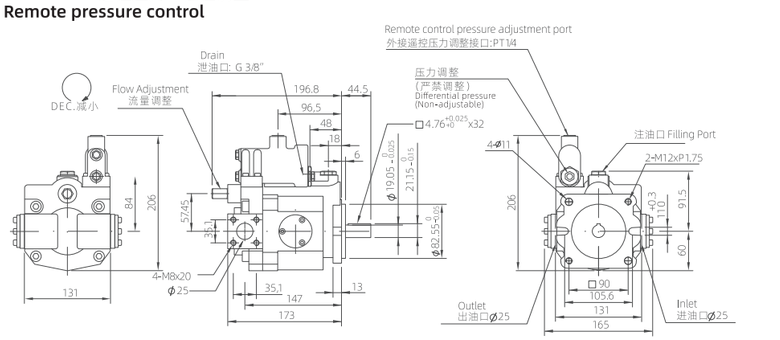
11 密封圈 Seals
- 无：丁腈橡胶 None：NBR
- V：氟橡胶 V：VITON

安装尺寸
Dimension

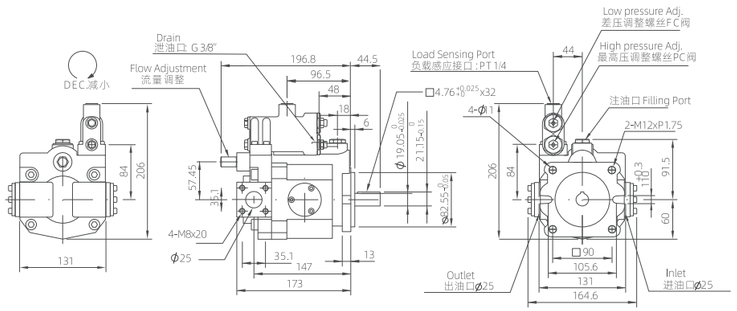
- **V15A/V18A压力补偿控制型**
  Pressure Compensator Type



- **V15G/V18G遥控压力补偿控制型**
  Remote pressure control



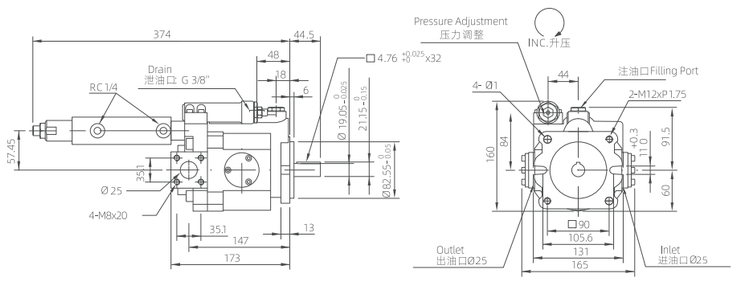
- **V15HL/V18HL负载敏感控制型**
  Load-Sensing



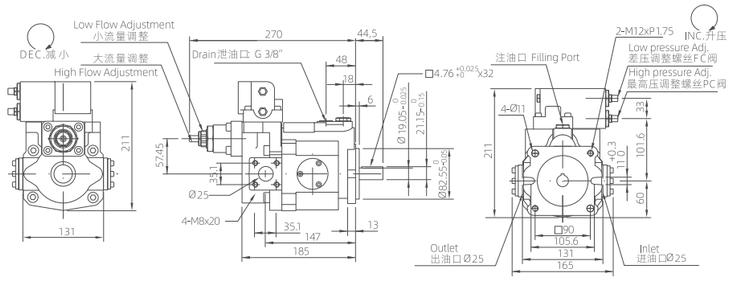
安装尺寸
Dimension

A

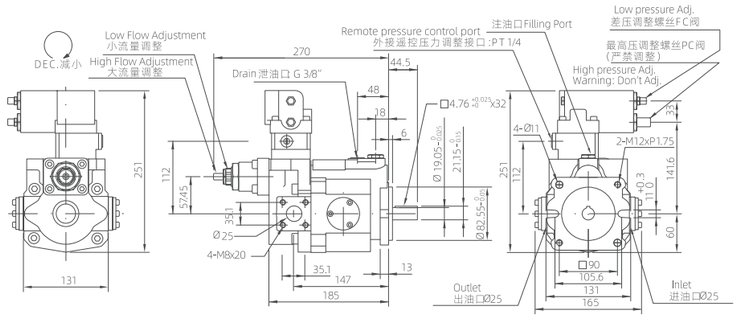
- **V15B/V18B无级变速控制型**
  Muti-stage flow & Singe-stage pressure control (with cylinder)



- **V15C/V18C两段压力两段流量控制型**
  2-stage pressure & Flow control



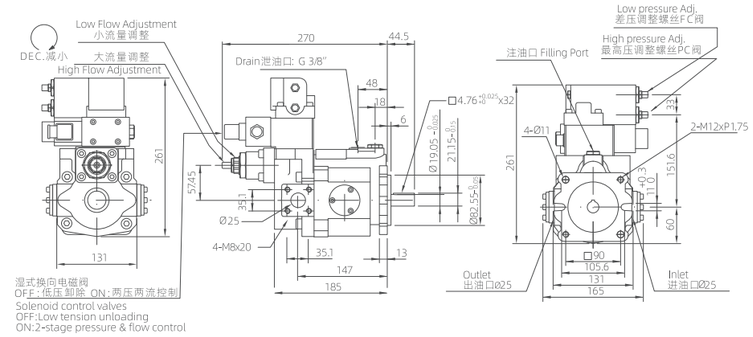
- **V15CG/V18CG遥控两段压力两段流量控制型**
  Low tension unloading + Pressure control + Remote



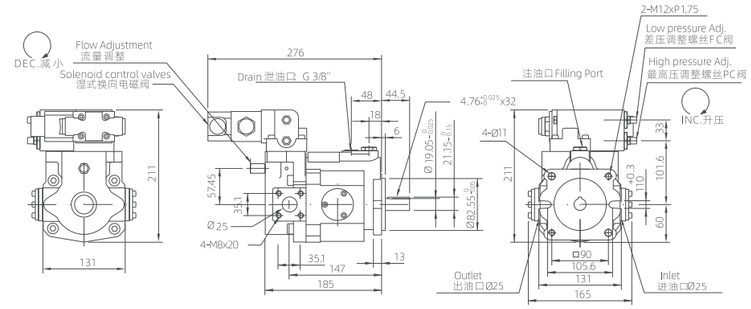
安装尺寸
Dimension

A

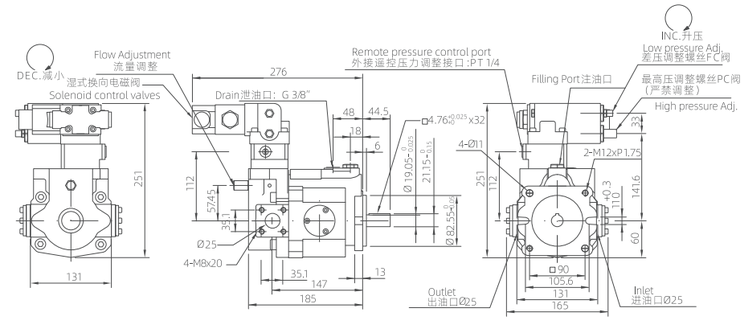
- **V15CR/V18CR低压卸载+两段压力两段流量控制型**
  2-stage pressure & Flow control + Low tension unloading



- **V15D/V18D电磁低压卸载+压力补偿控制型**
  Low tension unloading + Pressure control



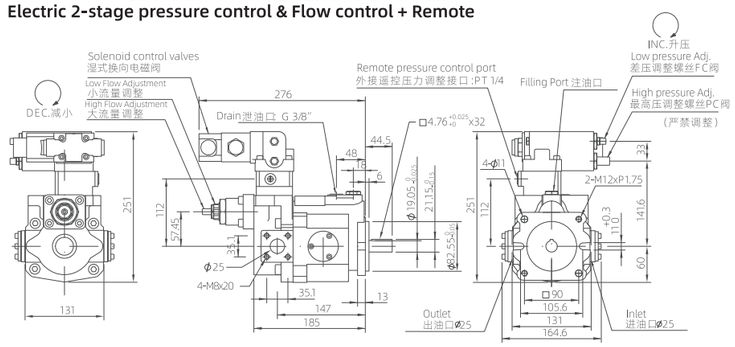
- **V15DG/V18DG电磁低压卸载+遥控压力补偿控制型**
  Low tension unloading + Pressure control + Remote



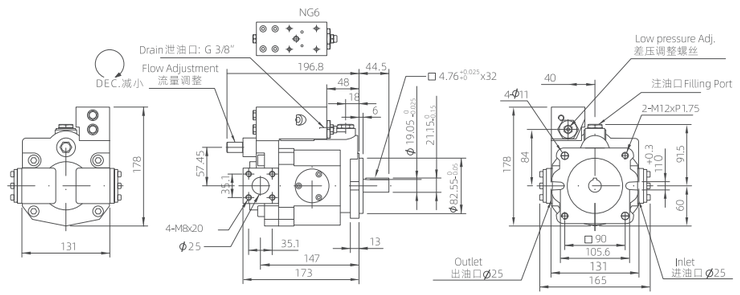
安装尺寸
Dimension

A

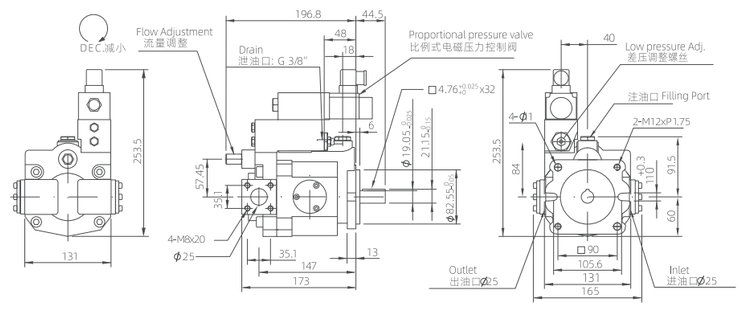
V15FG/V18FG电控两段压力两段流量+遥控压力补偿控制型
Electric 2-stage pressure control & Flow control + Remote



V15GM/V18GM遥控型调节器（含NG6接口）
Remote pressure compensator with NG6 interface



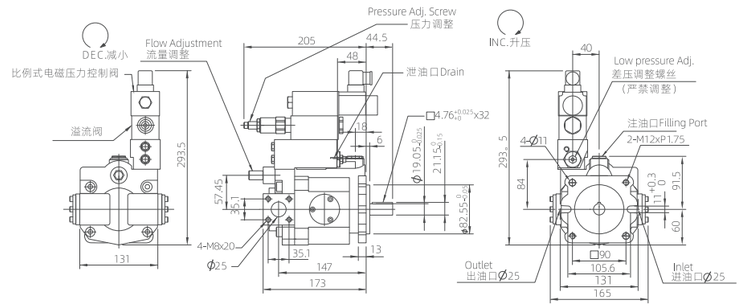
V15GJ/V18GJ遥控型调节器+比例压力控制型
Remote pressure compensator + Proportional pressure valve



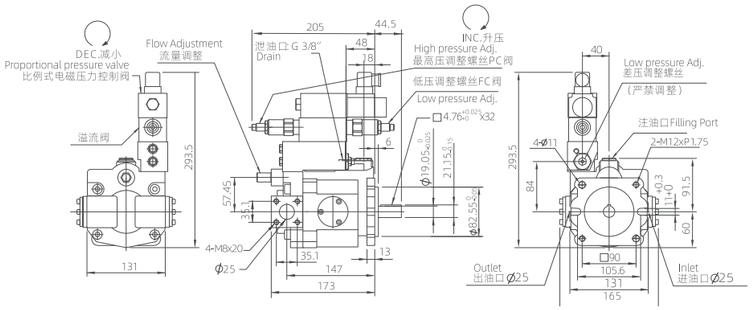
安装尺寸
Dimension

A

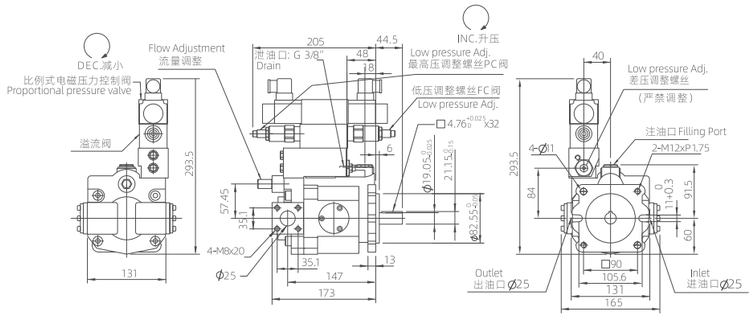
V15GR/V18GR遥控调节器+电控卸载控制型
Remote pressure compensator + Electrical unloading



V15GB/V18GB遥控调节器+电控两段压力控制型
Remote pressure compensator + 2-stage pressure control



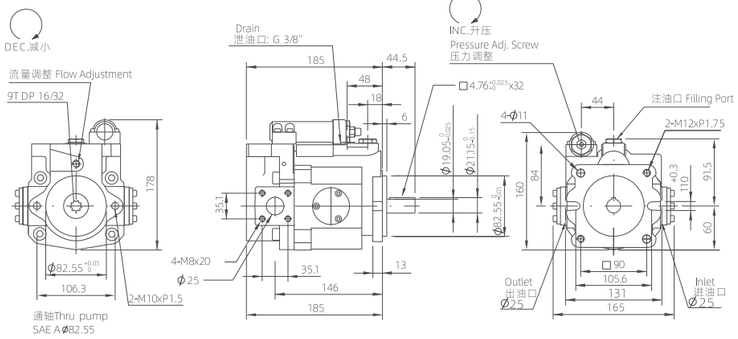
V15GC/V18GC遥控调节器+电控卸载+两段压力控制型
Remote + Electrical unloading + 2-stage pressure control



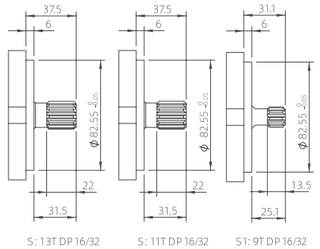
A

安装尺寸
Dimension

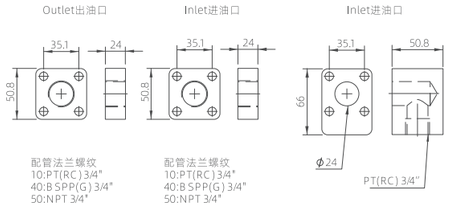
● V15/V18双联柱塞泵前泵安装尺寸
Double Piston Pump First pump Mounting Dimension



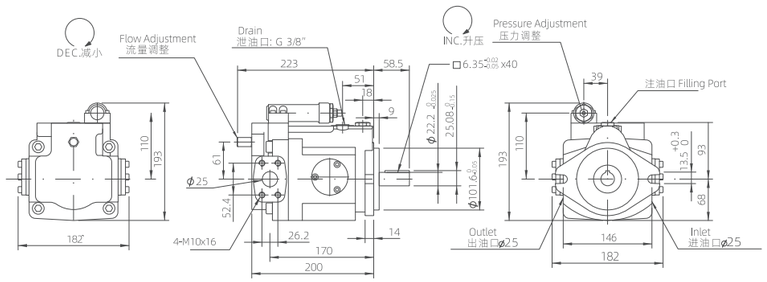
● V15/V18 梅花轴心型式
Splined shaft type



● V15/V18 进出油法兰
Inlet/Outlet port flange

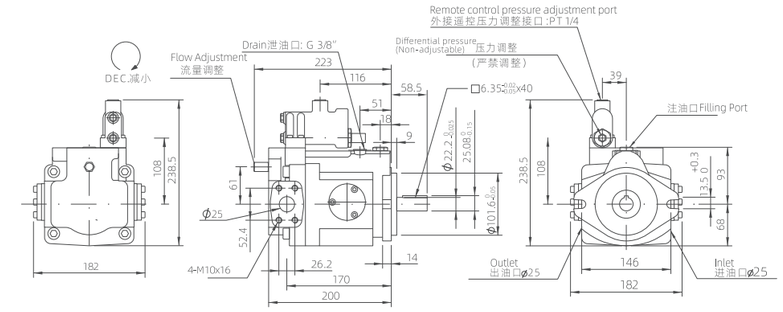


● V23A/V25A压力补偿控制型
Pressure Compensator Type

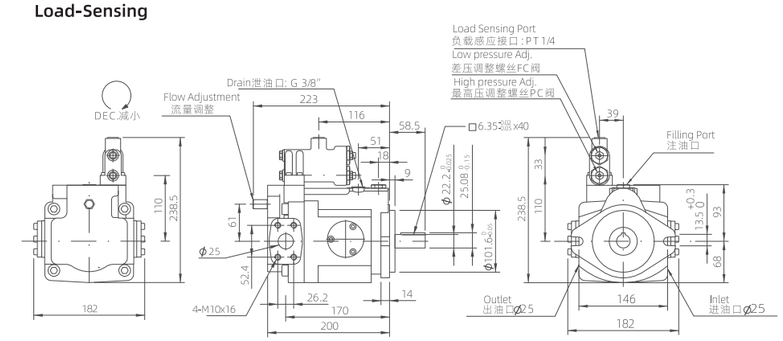


安装尺寸
Dimension

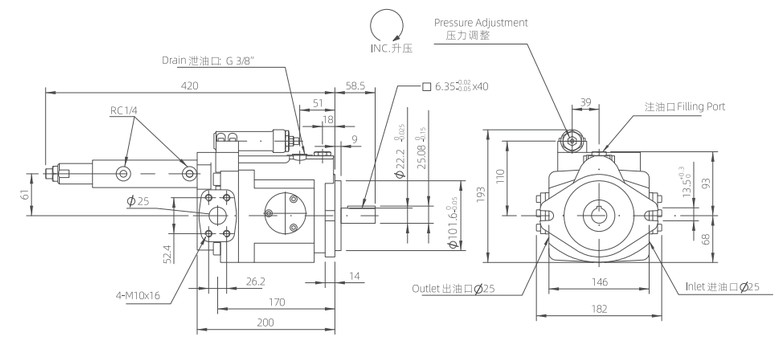
● V23G/V25G遥控压力补偿控制型
Remote pressure control



● V23HL/V25HL负载敏感控制型
Load-Sensing



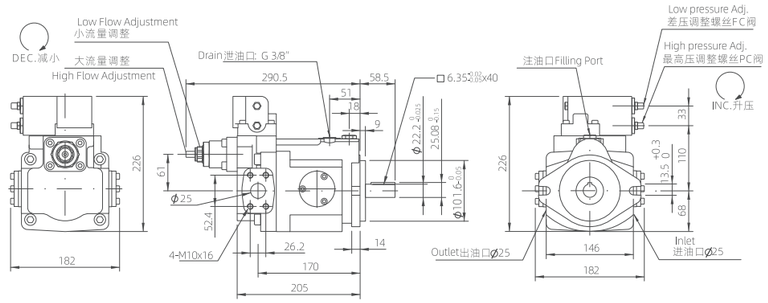
● V23B/V25B无级变速控制型
Muti-stage flow & Singe-stage pressure control (with cylinder)



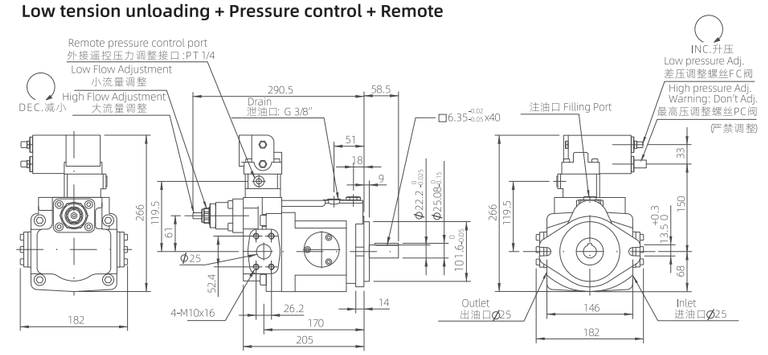
A

安装尺寸
Dimension

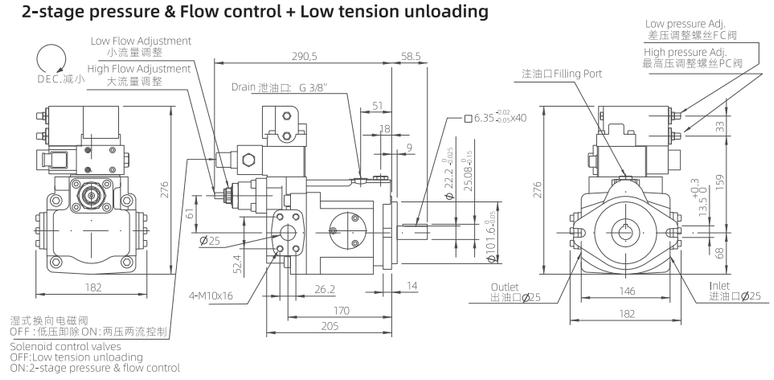
- **V23C/V25C两段压力两段流量控制型**
  2-stage pressure & Flow control



- **V23CG/V25CG遥控两段压力两段流量控制型**
  Low tension unloading + Pressure control + Remote



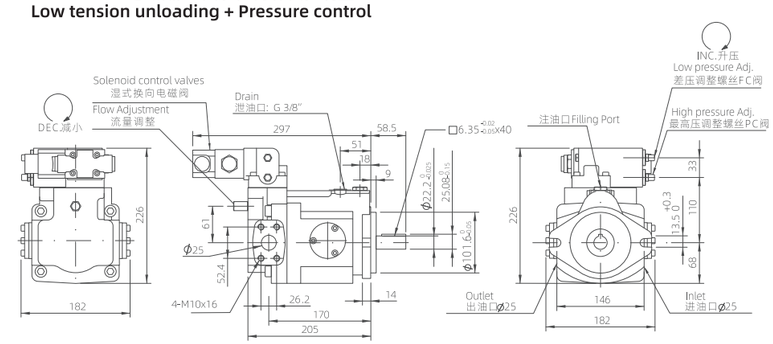
- **V23CR/V25CR低压卸载+两段压力两段流量控制型**
  2-stage pressure & Flow control + Low tension unloading



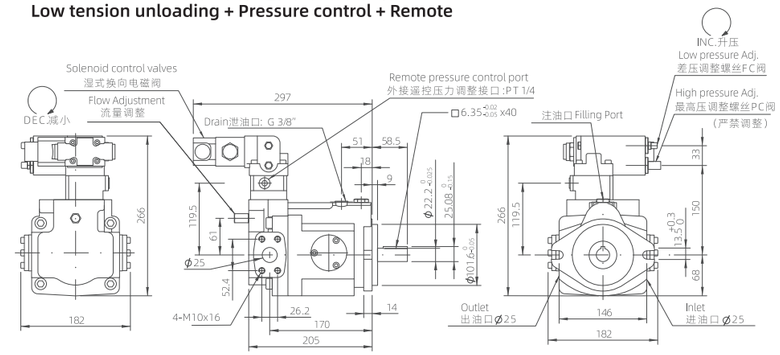
A

安装尺寸
Dimension

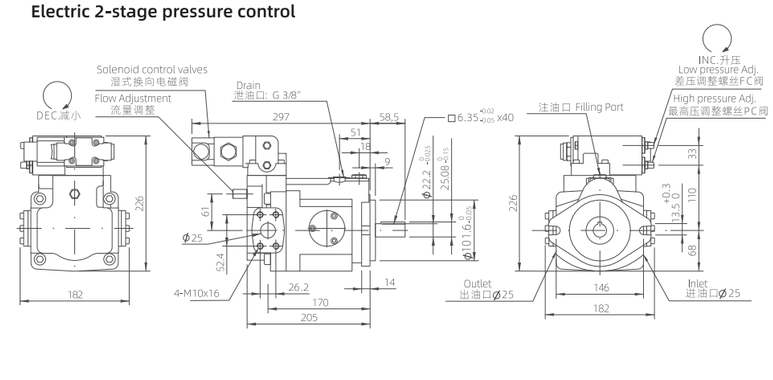
- **V23D/V25D电磁低压卸载+压力补偿控制型**
  Low tension unloading + Pressure control



- **V23DG/V25DG电磁低压卸载+遥控压力补偿控制型**
  Low tension unloading + Pressure control + Remote



- **V23E/V25E电控两段压力控制型**
  Electric 2-stage pressure control



安装尺寸
Dimension

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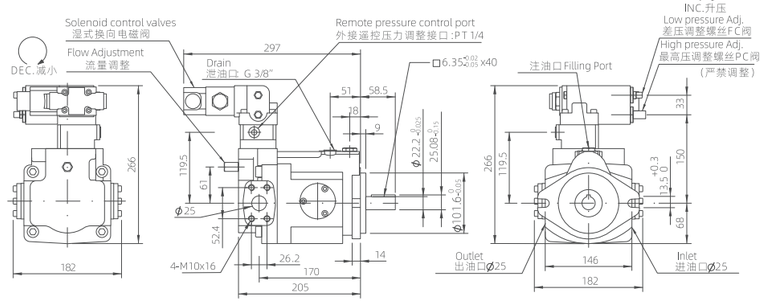
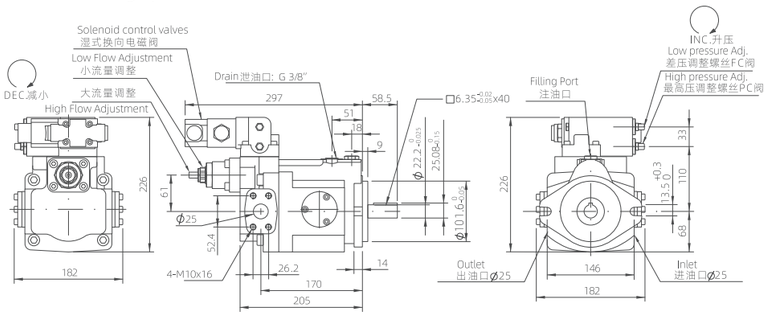
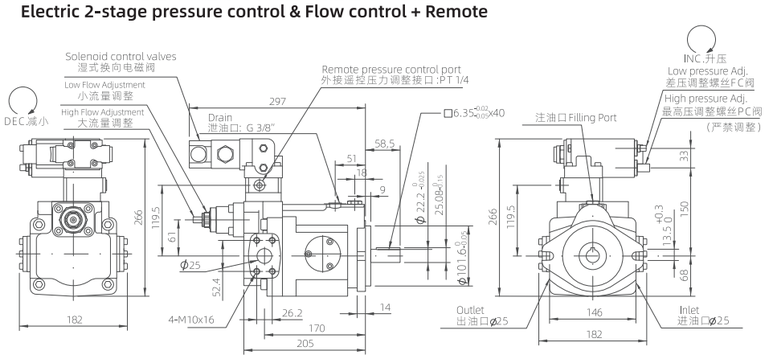
● **V23EG/V25EG电控两段压力+遥控压力补偿控制型**
Electric 2-stage pressure control + Remote



● **V23F/V25F电控两段压力两段流量控制型**
Electric 2-stage pressure control & Flow control



● **V23FG/V25FG电控两段压力两段流量+遥控压力补偿控制型**
Electric 2-stage pressure control & Flow control + Remote



安装尺寸
Dimension

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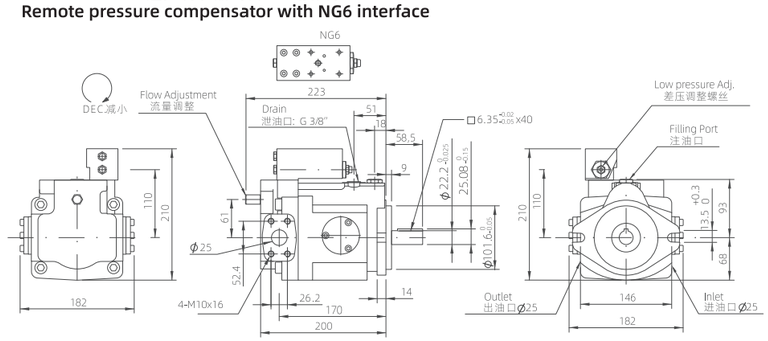
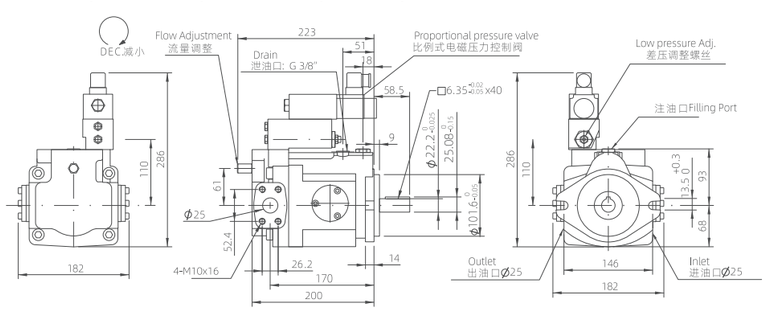
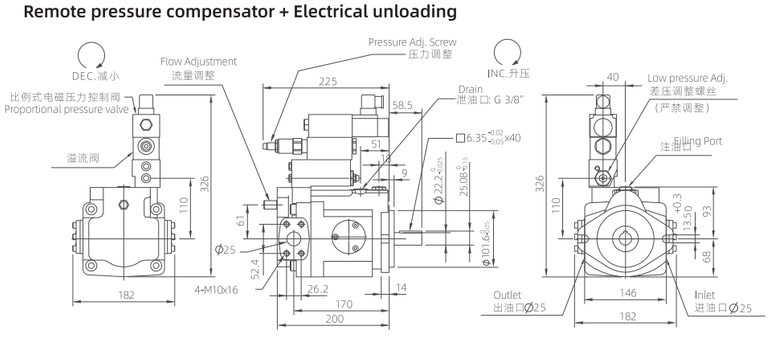
● **V23GM/V25GM遥控调节器（含NG6接口）**
Remote pressure compensator with NG6 interface



● **V23GJ/V25GJ遥控型调节器+比例压力控制型**
Remote pressure compensator + Proportional pressure valve



● **V23GR/V25GR遥控调节器+电控卸载控制型**
Remote pressure compensator + Electrical unloading



安装尺寸
Dimension

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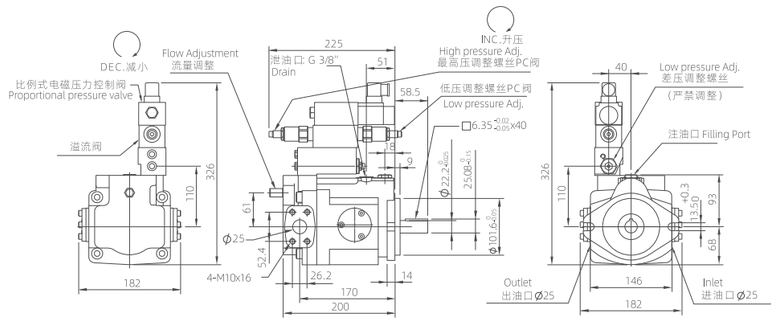
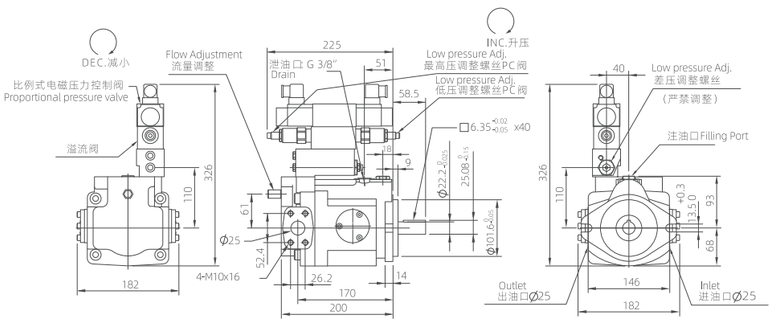
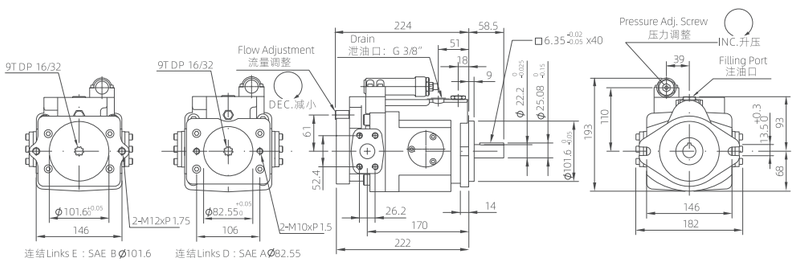
● V23GB/V25GB遥控调节器+电控两段压力控制型
Remote pressure compensator + 2-stage pressure control



● V23GC/V25GC遥控调节器+电控卸载+两段压力控制型
Remote + Electrical unloading + 2-stage pressure control

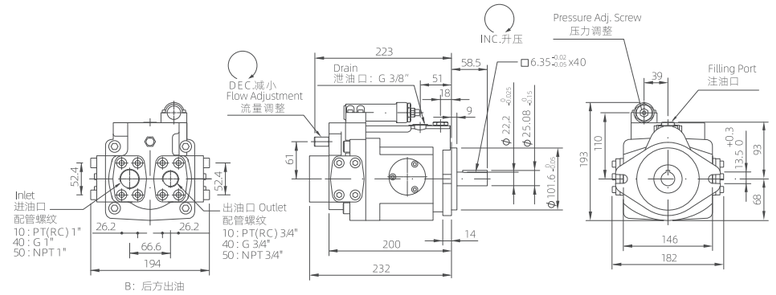


● V23/V25双联柱塞泵前泵
Double Piston Pump First pump Mounting Dimension

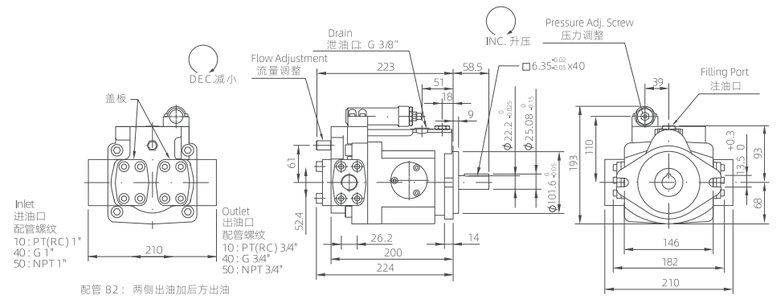


安装尺寸
Dimension

● V23/V25后方出油 Rear port

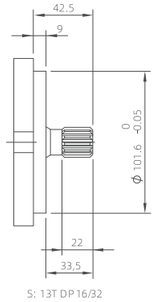


● V23/V25两侧出油+后方出油
4 Connections for rear port



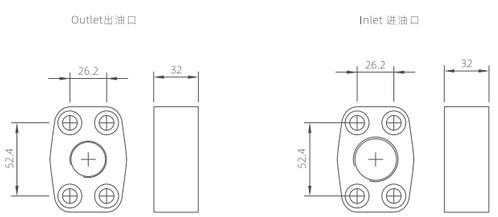
配管 B2： 两侧出油加后方出油
(侧出油与后方出油可互相置换)
Pipe code B2 : 4 connections for axial port(interchangeable for side and rear port)

● V23/V25梅花式轴心
Splined shaft type



S: 13T DP 16/32

● V23/V25进出油口法兰
Inlet/Outlet port flange



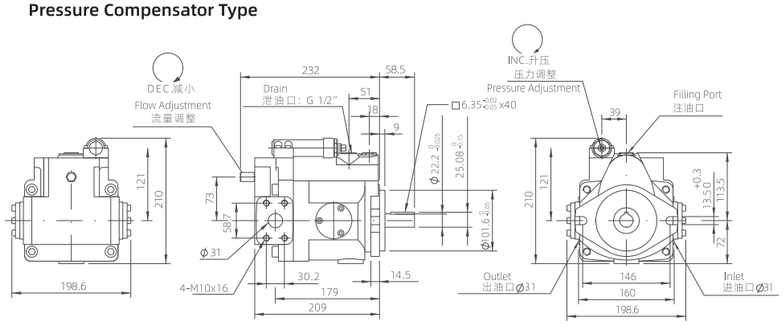
Outlet出油口
配管螺纹
10: PT(RC) 3/4"
40: BSPP(G) 3/4"
50: NPT 3/4"

Inlet 进油口
配管螺纹
10: PT(RC) 1"
40: BSPP(G) 1"
50: NPT 1"

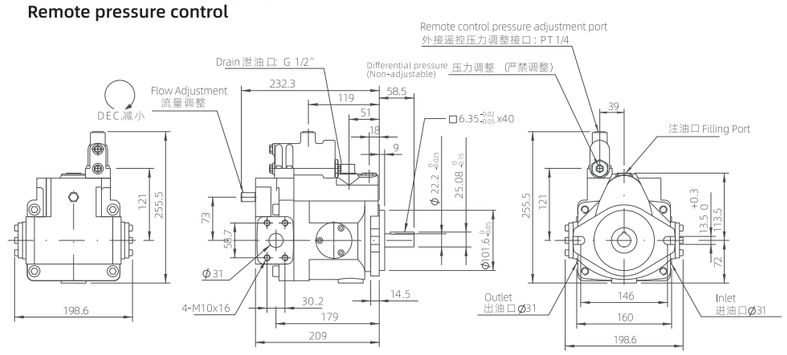
安装尺寸
Dimension

A

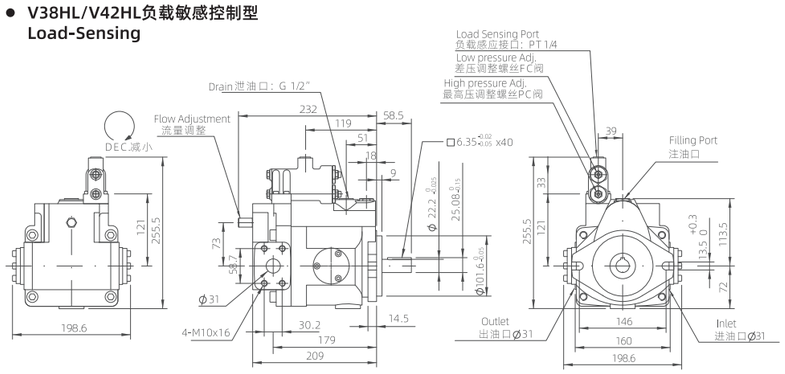
V38A/V42A压力补偿控制型
Pressure Compensator Type



V38G/V42G遥控压力补偿控制型
Remote pressure control



V38HL/V42HL负载敏感控制型
Load-Sensing



安装尺寸
Dimension

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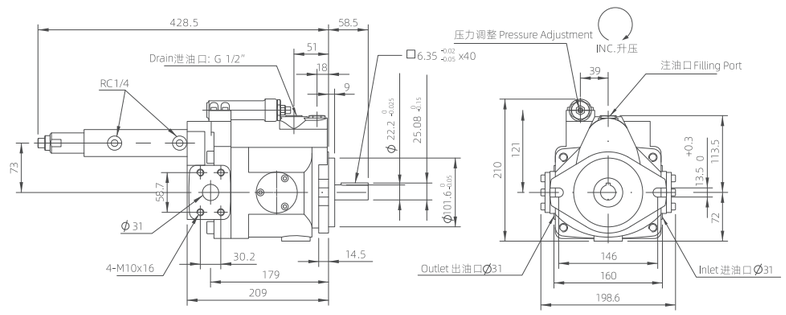
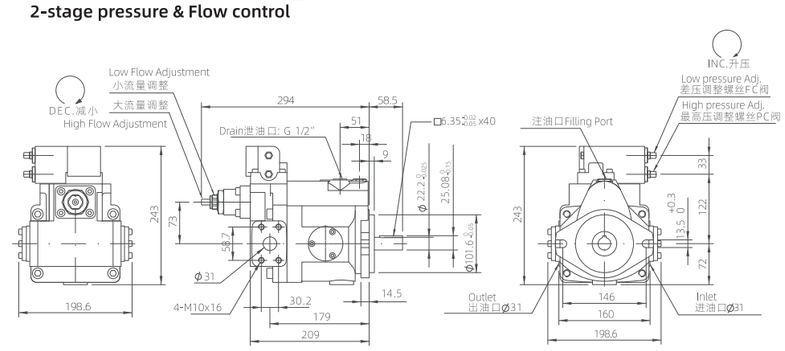
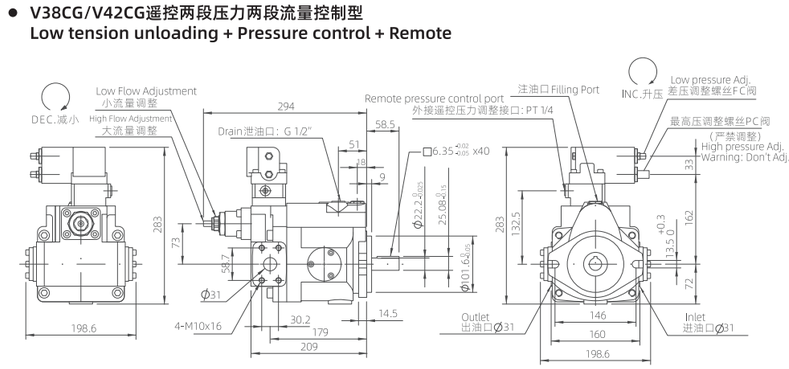
V38B/V42B无级变速控制型
Muti-stage flow & Singe-stage pressure control (with cylinder)



V38C/V42C两段压力两段流量控制型
2-stage pressure & Flow control



V38CG/V42CG遥控两段压力两段流量控制型
Low tension unloading + Pressure control + Remote



安装尺寸
Dimension

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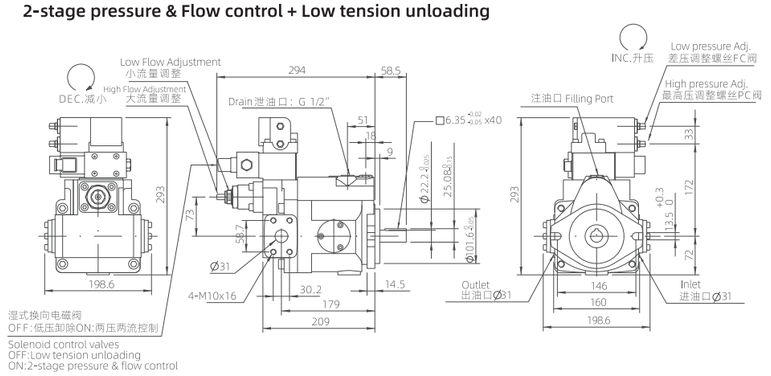
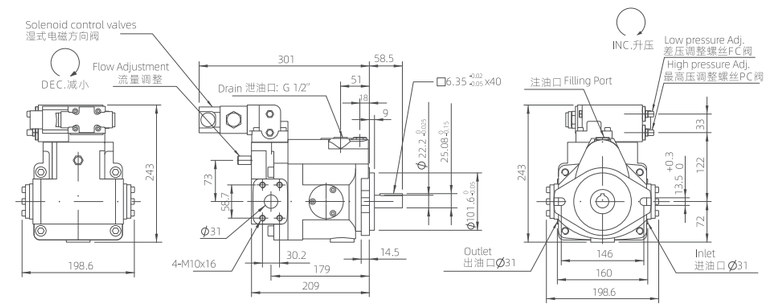
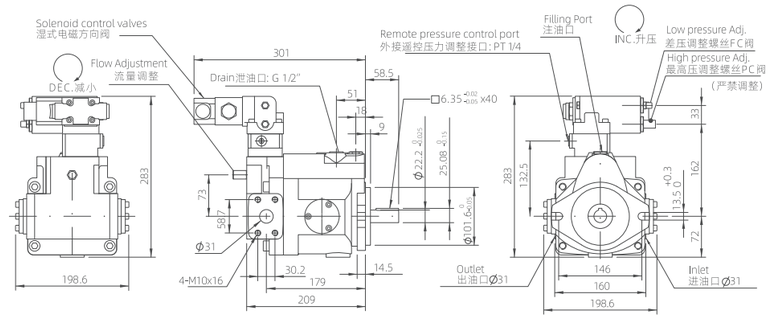
● V38CR/V42CR低压卸载+两段压力两段流量控制型
2-stage pressure & Flow control + Low tension unloading



● V38D/V42D电磁低压卸载+压力补偿控制型
Low tension unloading + Pressure control



● V38DG/V42DG电磁低压卸载+遥控压力补偿控制型
Low tension unloading + Pressure control + Remote



安装尺寸
Dimension

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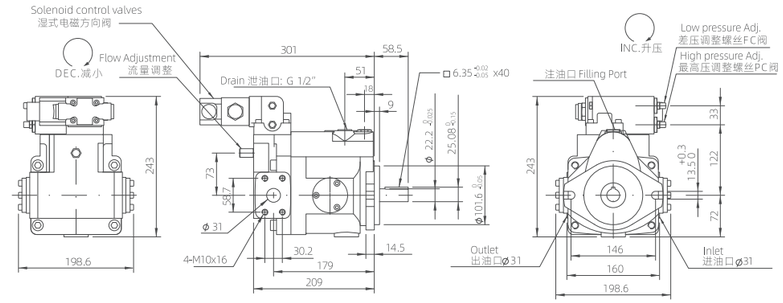
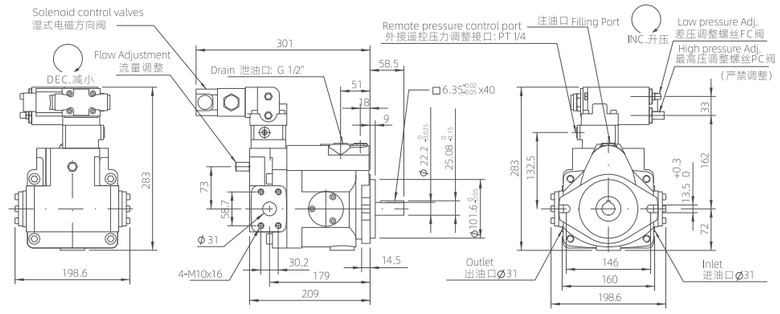
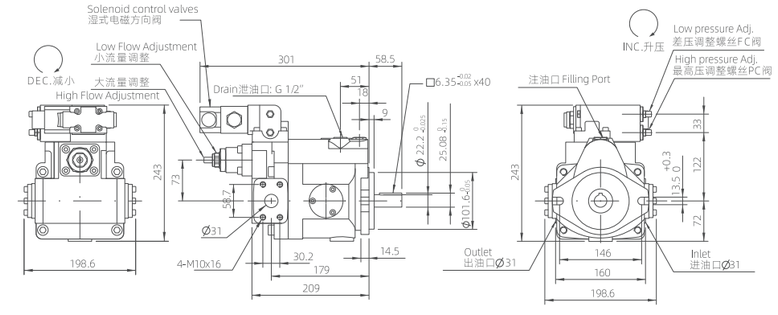
● V38E/V42E电控两段压力控制型
Electric 2-stage pressure control



● V38EG/V42EG电控两段压力+遥控压力补偿控制型
Electric 2-stage pressure control + Remote



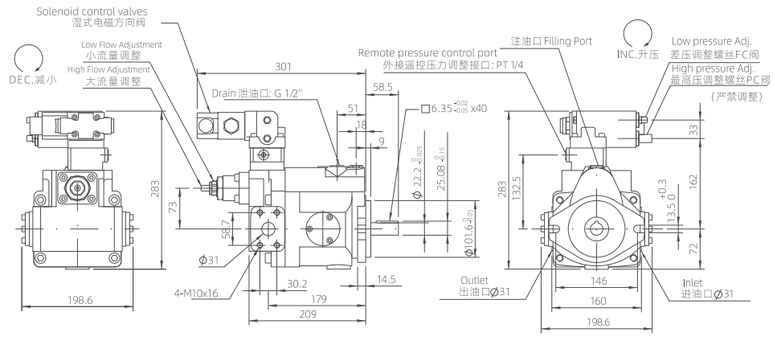
● V38F/V42F电控两段压力两段流量控制型
Electric 2-stage pressure control & Flow control



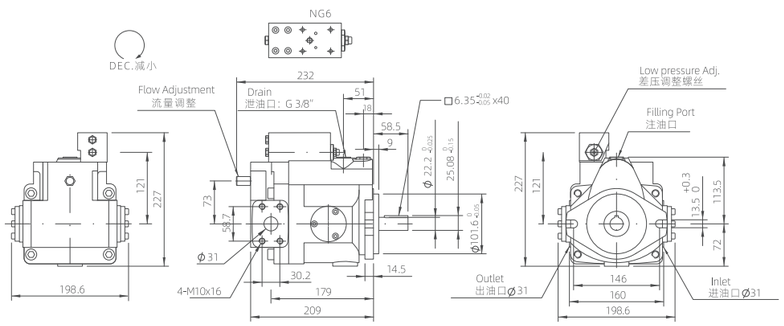
A

安装尺寸
Dimension

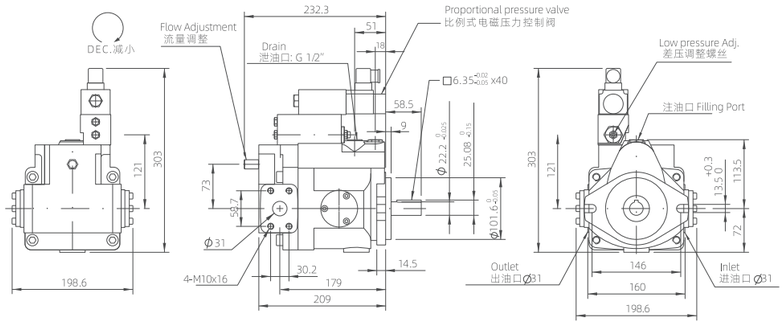
● V38FG/V42FG电控两段压力两段流量+遥控压力补偿控制型
Electric 2-stage pressure control & Flow control + Remote



● V38GM/V42GM遥控调节器（带NG6接口）
Remote pressure compensator with NG6 interface

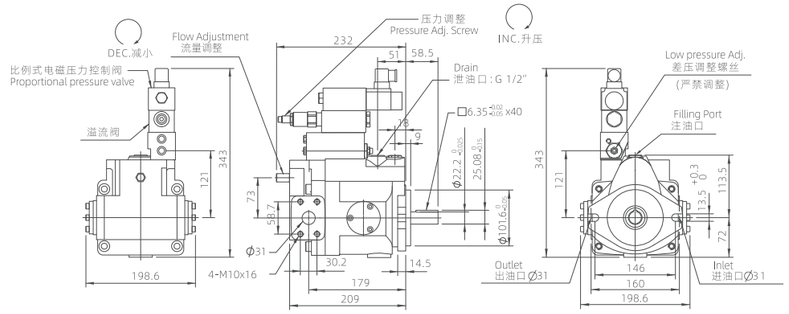


● V38GJ/V42GJ遥控型调节器+比例压力控制型
Remote pressure compensator + Proportional pressure valve

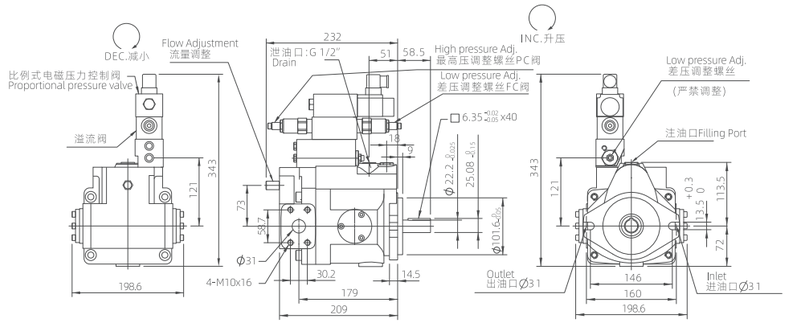


安装尺寸
Dimension

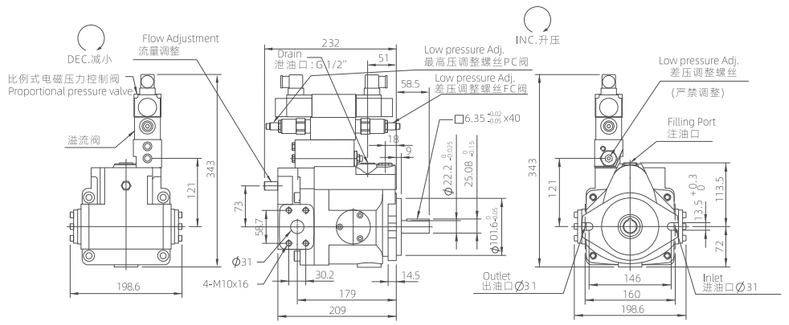
● V38GR/V42GR遥控调节器+电控卸载控制型
Remote pressure compensator + Electrical unloading



● V38GB/V42GB遥控调节器+电控两段压力控制型
Remote pressure compensator + 2-stage pressure control



● V38GC/V42GC遥控调节器+电控卸载+两段压力控制型
Remote + Electrical unloading + 2-stage pressure control



安装尺寸
Dimension

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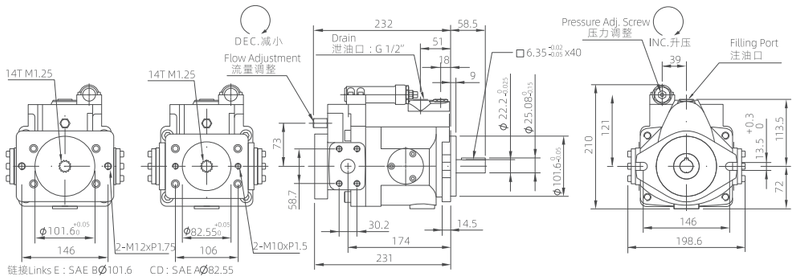
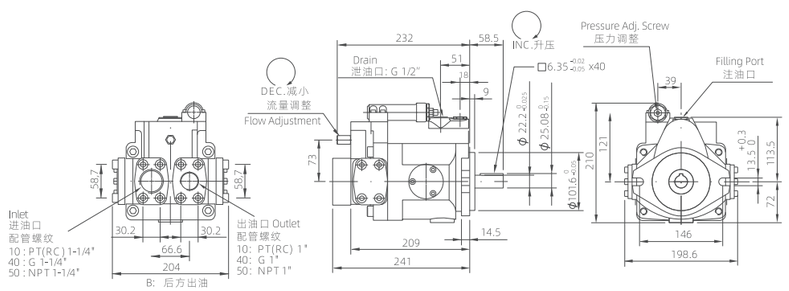
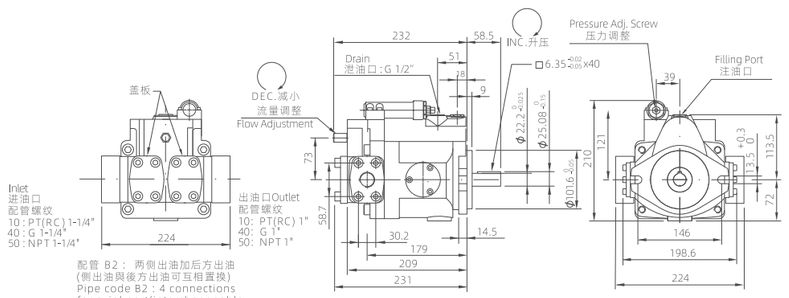
● V38/V42双联泵前泵
Double Piston Pump First pump Mounting Dimension



● V38/V42后方出油Rear port



● V38/V42两侧出油+后方出油
4 Connections for rear port



安装尺寸
Dimension

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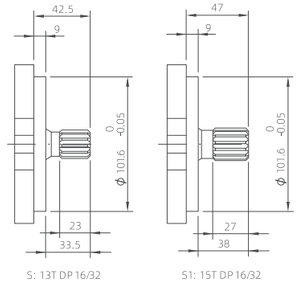
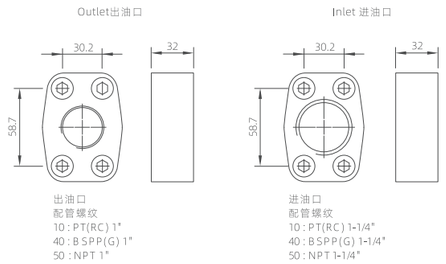
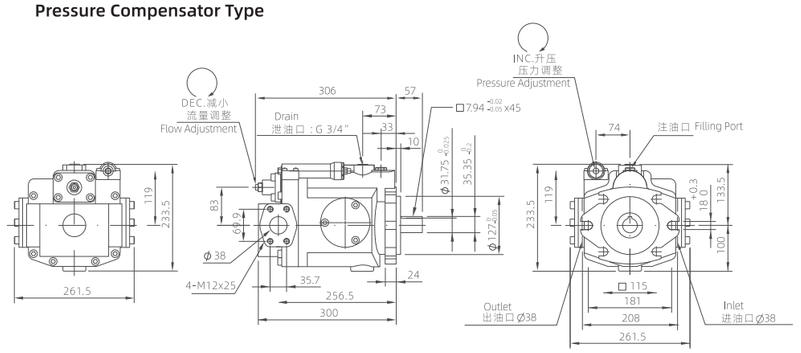
● V38/V42梅花式轴心
Splined shaft type



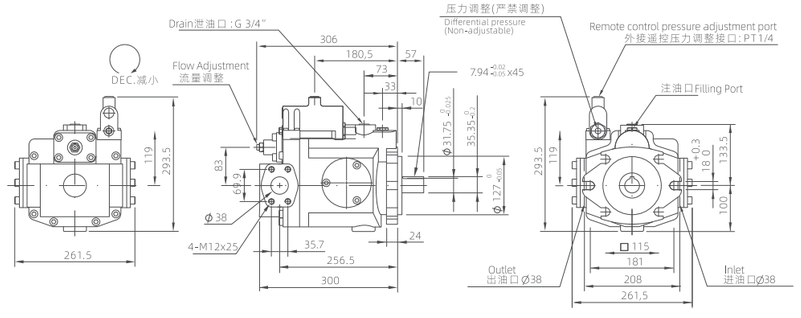
● V38/V42进出油口法兰
Inlet/Outlet port flange



● V50A/V70A压力补偿控制型
Pressure Compensator Type



● V50G/V70G遥控压力补偿控制型
Remote pressure control



安装尺寸
Dimension

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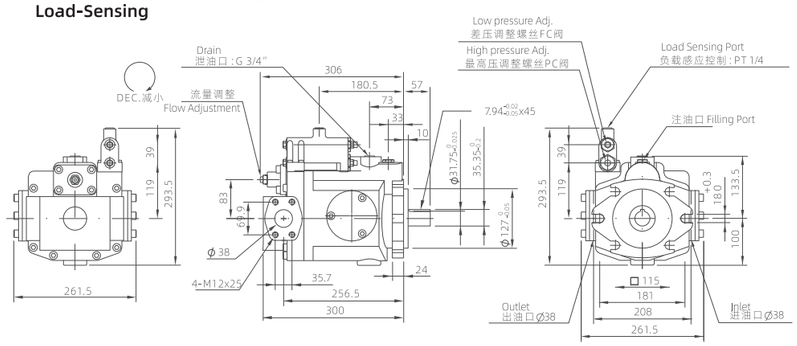
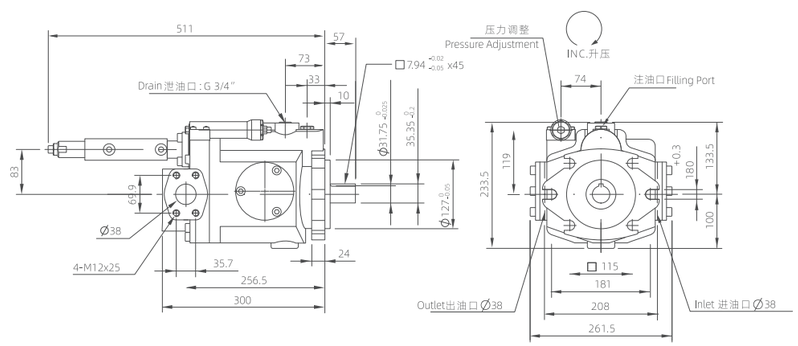
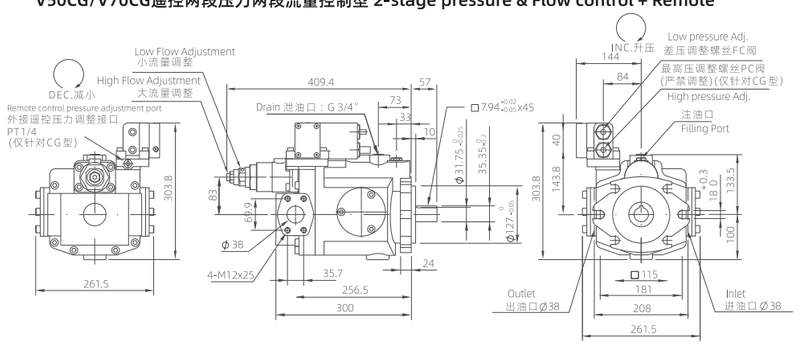
- **V50HL/V70HL负载敏感控制型**
  Load-Sensing



- **V50B/V70B无级变速控制型**
  Muti-stage flow & Singe-stage pressure control (with cylinder)



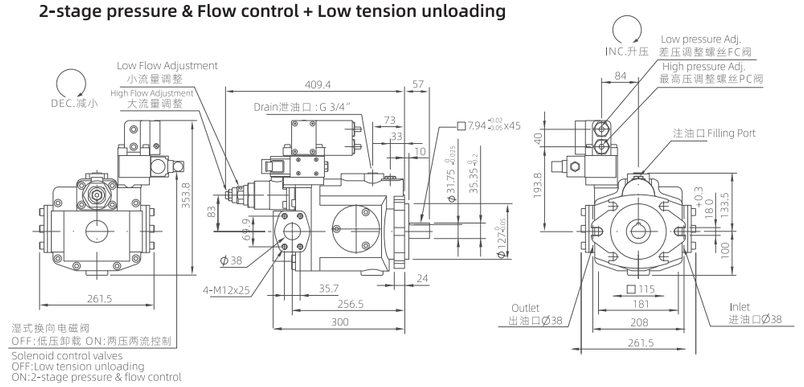
- **V50C/V70C两段压力两段流量控制型 2-stage pressure & Flow control**
  V50CG/V70CG遥控两段压力两段流量控制型 2-stage pressure & Flow control + Remote



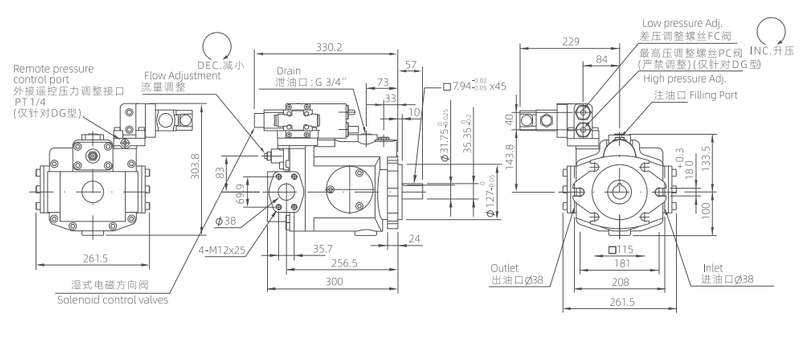
安装尺寸
Dimension

A

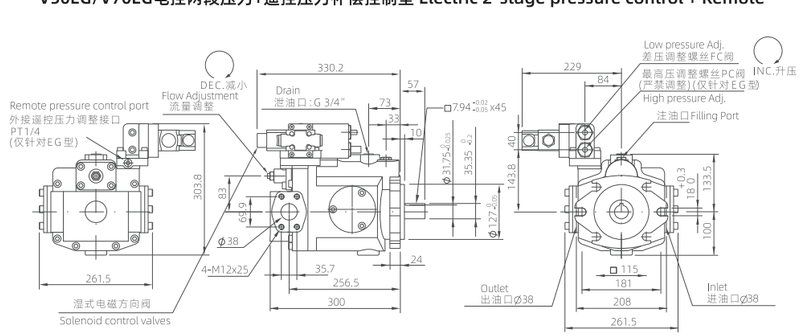
- **V50CR/V70CR低压卸载+两段压力两段流量控制型**
  2-stage pressure & Flow control + Low tension unloading



- **V50D/V70D电磁低压卸载+压力补偿控制型 Low tension unloading + Pressure control**
  V50DG/V70DG电磁低压卸载+遥控控制型 Low tension unloading + Pressure control + Remote



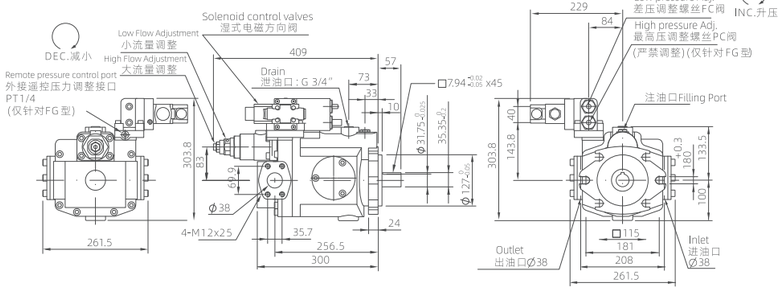
- **V50E/V70E电控两段压力控制型 Electric 2-stage pressure control**
  V50EG/V70EG电控两段压力+遥控压力补偿控制型 Electric 2-stage pressure control + Remote



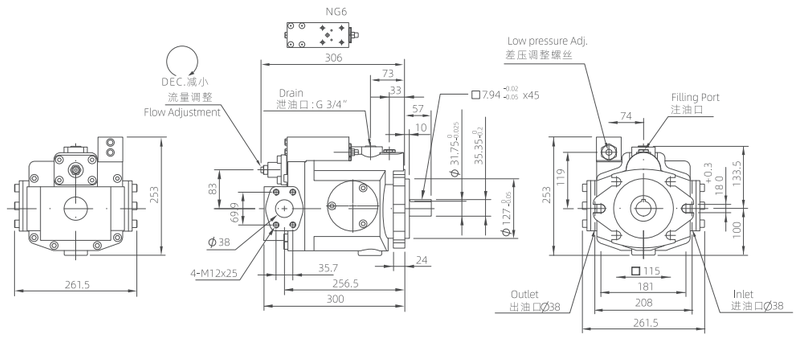
安装尺寸
Dimension

A

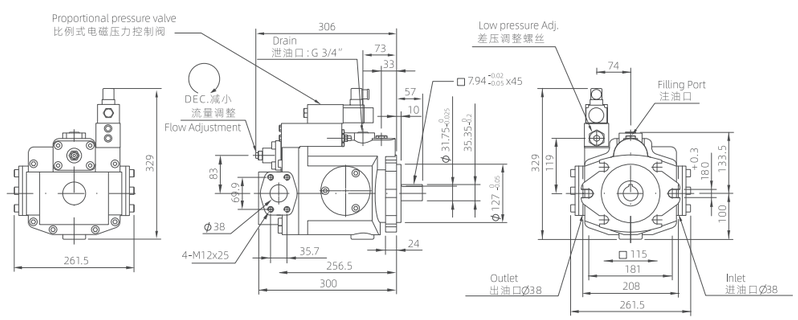
- **V50F/V70F电控两段压力两段流量控制型**
  V50FG/V70FG电控两段压力两段流量+遥控压力补偿控制型
  Electric 2-stage pressure control & Flow control
  Electric 2-stage pressure control & Flow control + Remote



- **V50GM/V70GM遥控调节器（含NG6接口）**
  Remote pressure compensator with NG6 interface



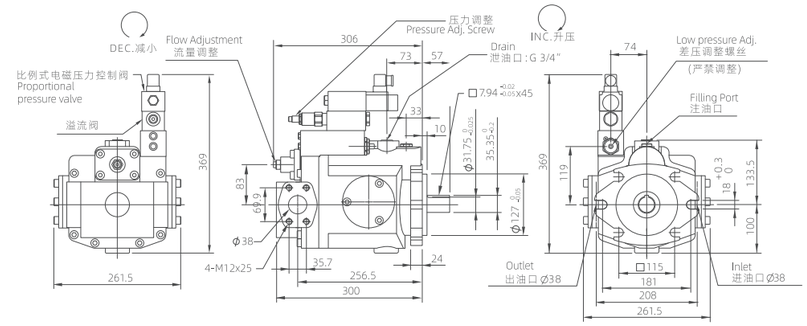
- **V50GJ/V70GJ遥控型调节器+比例压力控制型**
  Remote pressure compensator + Proportional pressure valve



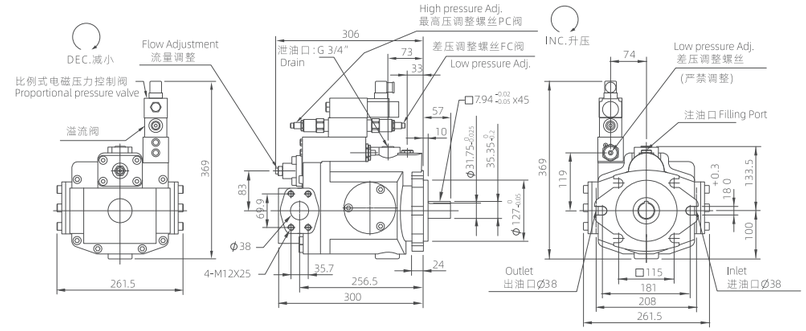
安装尺寸
Dimension

A

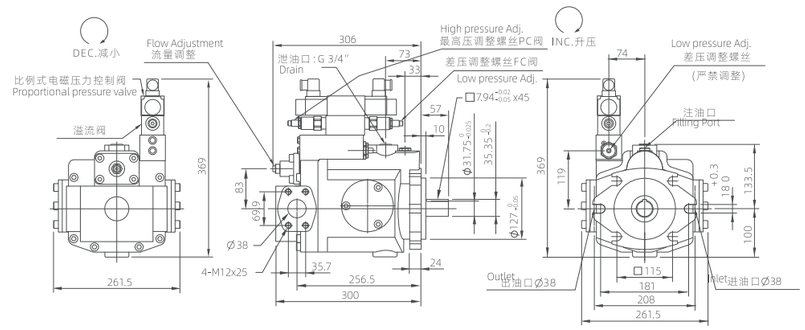
- **V50GR/V70GR遥控调节器+电控卸载控制型**
  Remote pressure compensator + Electrical unloading



- **V50GB/V70GB遥控调节器+电控两段压力控制型**
  Remote pressure compensator + 2-stage pressure control



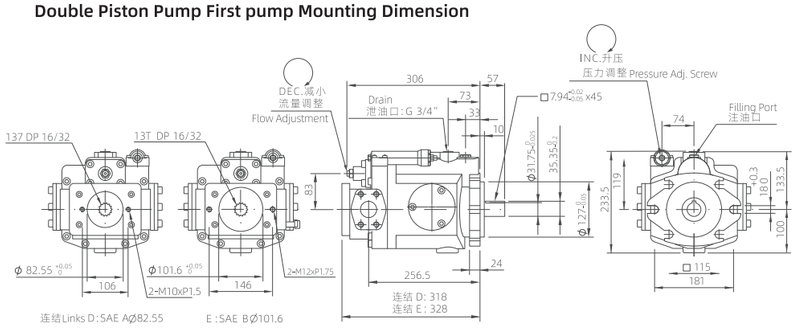
- **V50GC/V70GC遥控调节器+电控卸载+两段压力控制型**
  Remote + Electrical unloading + 2-stage pressure control



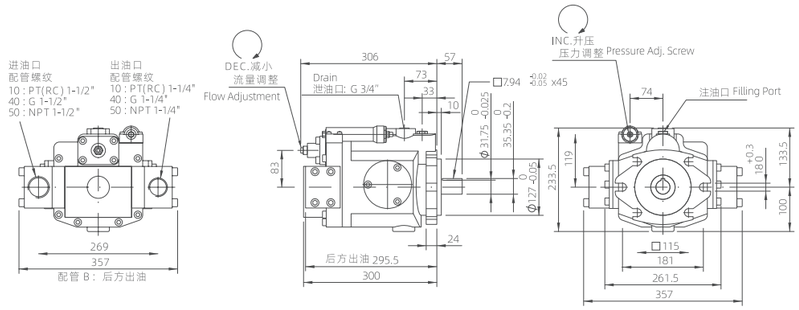
安装尺寸
Dimension

A

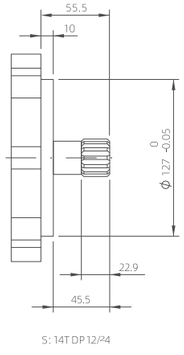
- **V50/V70双联泵前泵**
  Double Piston Pump First pump Mounting Dimension



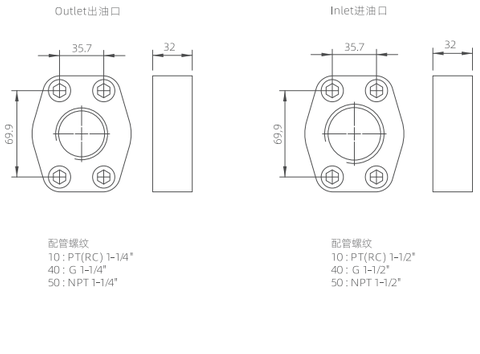
- **V50/V70后方油口Rear port**



- **V50/V70梅花式轴心**
  Splined shaft type



- **V50/V70进出油口法兰**
  Inlet/Outlet port flange



A2FO系列轴向柱塞泵变量泵(弯轴设计)

A2FO Series Axial Piston Pump Variable Displacement Pump(Bent Shaft Design)

A

适用于开式回路液压系统
Suitable for open circuit hydraulic systems

概 述 Overview

本产品是斜轴式轴向定量泵,适用于开式回路的静液压驱动。公称压力40MPa
峰值压力45MPa
This product is an inclined-axis axial fixed displacement pump, suitable for hydrostatic drive in open circuits. Nominal pressure 40MPa
Peak pressure 45MPa

A2FO型号说明

A2F	0	107	/	61	R	-	V	Z	B	5

结构形式 Structural form
斜轴式，定量 Oblique axis, Quantitative

工作方式 Working Method
泵（用于开式回路） Pump (for open circuit)

公称规格 Nominal Specifications

排量 Displacement	16	23	28	32	45	56	63
	80	90	107	125	160	180	

结构系列 Structure Series

旋转方向 Direction of Rotation

从轴端看 View from the shaft end

密封材料 Sealing Material

丁腈橡胶 Nitrile Rubber	
氟橡胶 Fluororubber	

轴伸结构 Shaft Structure

		16	23	28	32	45	56	63	80	90	107	125	160	180	
花键轴 (DIN5480)	标准 standard	+	+	+	+	+	+	+	+	+	+	+	+	+	A
	改型 Remodel		+	+		+	+		+		+		+		Z
平键轴 (GB1096-79)	标准 standard	+	+	+	+		+	+	+	+	+	+	+	+	B
	改型 Remodel		+	+		+	+		+		+		+		P

安装法兰 Mounting Flange

4孔法兰 4-hole Flange	B

安装法兰 Mounting Flange

	16	23	28	32	45	56	63	80	90	107	125	160	180	
油口A、B在侧面和后面，SAE法兰 Ports A and B on the side and rear, SAE flange		+	+	+	+	+	+	+	+	+	+	+	+	5
油口A、B在侧面和后面，螺纹口 Oil ports A and B are on the side and rear, threaded	+													6

注“+”可供货
Note: "+" is available

A

技术参数

a A2FO技术数据表（理论值未计 η_{mh}和η_v）

公称规格			16	23	28	32	45	56	63	80	90	107	125	160	180
排量	Vg	ml/r	16	22.9	28.1	32	45.6	56.1	63	80.4	90	106.7	125	160.4	180
最高转速 1)	n_{max}	r/min	3150	2500	2500	2500	2240	2000	2000	1800	1800	1600	1600	1450	1450
最高允许转速 2)	$n_{max允许}$	r/min	6000	4750	4750	4750	4250	3750	3750	3350	3350	3000	3000	2650	2650
最大流量（在nmax时）3)	q_{vmax}	L/min	49	56	69	78	100	110	123	141	158	167	196	228	255
最大功率（Δp=35Mpa）	Pmax	KW	30	33	41	46	59	65	74	84	95	100	116	136	152
最大功率（Δp=40Mpa）	Pmax	KW	34	38	47	53	68	75	84	96	108	114	133	155	174
最大扭矩（Δp=35Mpa）	Tmax	NM	88	126	156	178	254	312	350	445	501	595	697	889	1001
最大扭矩（Δp=40Mpa）	Tmax	NM	100	144	178	204	290	356	400	508	572	680	796	1016	1144
注油量		L	0.17	0.2	0.2	0.2	0.033	0.45	0.45	0.55	0.55	0.8	0.8	1.1	1.1
驱动轴的惯性矩	J	kgm^2	0.0004	0.0012	0.0012	0.0012	0.0024	0.0042	0.0042	0.0072	0.0072	0.0116	0.0116	0.022	0.022
重量（近似值）		kg	5.4	9.5	9.5	9.5	13.5	18	18	23	23	32	32	45	45

1）所示数值是在吸油口S的绝对压力为0.1MPa及矿物油工作介质时

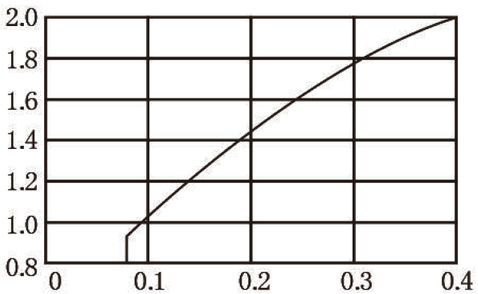
2）在提高吸油口S的绝对压力（大于0.1MPa）时所允许的最高转速（见图一）

3）预计流量损失3%

1) The values shown are when the absolute pressure at the suction port S is 0.1MPa and the working medium is mineral oil

2) The maximum speed allowed when the absolute pressure at the suction port S is increased (greater than 0.1MPa) (see Figure 1)

3) The estimated flow loss is 3%



进油压力Pabs(MPa)

Oil inlet pressure Pabs(MPa)

吸油口绝对压力与允许转速关系图

Relationship between absolute pressure at the oil inlet and allowable speed

规格的计算 Calculation of specifications

输出流量 Output flow $q_V = \frac{V_g \cdot n \cdot \eta_v}{1000}$ L/min

输入扭矩 Input Torque $T = \frac{V_g.\Delta P}{2\pi \cdot \eta_{mh}} = \frac{1.59 \cdot V_g \cdot \Delta P}{10 \cdot \eta_{mh}}$ NM

输入功率 Input power $P = \frac{2\pi \cdot T \cdot n}{60000} = \frac{T \cdot n}{9549} = \frac{q_V \cdot \Delta P}{60 \cdot \eta_t}$ KW

式中：Vg=排量 ml/r

ΔP = 压差 Pressure difference MPa

n = 转速 Speed r/min

η_v = 容积效率 Volumetric efficiency

η_{mh} = 机械效率 Mechanical efficiency

η_t = 总效率 Total efficiency

工作压力
Work Pressure

油口S的最低进油压力 Pabs min=0.08Mpa(绝对压力)
Minimum oil inlet pressure at port S

油口S的进油压力与泵的转速有关(见图一)
The oil inlet pressure of the oil port S is related to the speed of the pump (see Figure 1)

油口A或B的最高压力
Maximum pressure at port A or B

	轴伸A Shaft extension A	轴伸Z、B、P Shaft extension Z、B、P	轴伸Z、P Shaft extension Z、B、P （轴端有径向力）(Radial force at shaft end)
额度压力PN Rated Pressure PN	40MPa	35MPa	31.5MPa
最高压力Pmax Maximum Pressure Pmax	45MPa	40MPa	35MPa

壳体泄油压力(油口T)
Case drain pressure (port T)

PT≤0.1 Mpa

工作介质
Working medium

矿物油基本都可选用
Mineral oil can basically be used

油液温度
Oil temperature

工作温度范围:-25°C~80°C
Working temperature range: -25°C~80°C

油液粘度
Oil viscosity

最佳工作粘度:16~36mm/s(在工作温度范围内)
Optimum working viscosity: 16~36mm/s (within the working temperature range)

最大允许粘度:1000mm/s(在冷态启动时瞬时运行)
Maximum allowable viscosity: 1000mm/s (instantaneous operation at cold start)

最小允许粘度:10mm/s(在泄漏油温度为90°C时瞬时运行)
Minimum allowable viscosity: 10mm/s (instantaneous operation at a leaking oil temperature of 90°C)

油液过滤精度
Oil filtration accuracy

推荐过滤精度为10μm的滤油器，最粗不得超过25μm的精度。
The recommended filtration accuracy is 10μm for the oil filter, and the coarsest accuracy should not exceed 25μm.

安装位置
Installation location

任选，壳体内必须始终充满液压油。
Optionally, the housing must always be filled with hydraulic oil.

油流方向
Oil flow direction

从轴端观察 顺时针旋转S→B
View from the shaft end Clockwise rotation S→B

逆时针旋转S→A
Clockwise rotation S→B

驱动
Drive

驱动轴轴端允许有附加的轴向和径向载荷，许用轴向力和径向力值见表一，其最佳作用力方向见图二。

Additional axial and radial loads are allowed on the drive shaft end. The permissible axial force and radial force values are shown in Table 1, and the optimal force direction is shown in Figure 2.

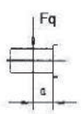
A

许用轴向力、径向力表 Table of allowable axial force and radial force

公称规格 Nominal specifications		16	23	28	32	45	56	63	80	90	107	125	160	180
a	mm	16	16	16	16	18	18	18	20	20	20	20	25	25
$F_{q\,max}$	N	3700	4300	5400	6100	8150	9000	10300	11500	12900	12900	15900	15900	20600
±	N	320	500	500	500	630	800	800	1000	1000	1250	1250	1600	1600
± $F_{ax\,zul/Mpa}$	N/Mpa	3.0	5.2	5.2	5.2	7.0	8.7	8.7	10.6	10.6	12.9	12.9	16.7	16.7

注:表中所示的数值是最大值,不能用于连续运转。
Note: The values shown in the table are maximum values and cannot be used for continuous operation.

符号说明:
Explanation of symbols:



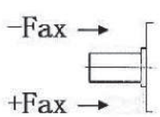
a = 从Fq至轴肩的距离
Distance from Fq to shaft shoulder

Fqmax = 间距为a时的最大允许径向力(间歇工作)
Maximum permissible radial force at spacing a (intermittent operation)

±Fax max = 当元件在静止或空载运转时最大允许轴向力
The maximum permissible axial force when the element is stationary or running without load

±Fax zul/bar = 单位工作压力允许的轴向力
Permissible axial force per unit working pressure

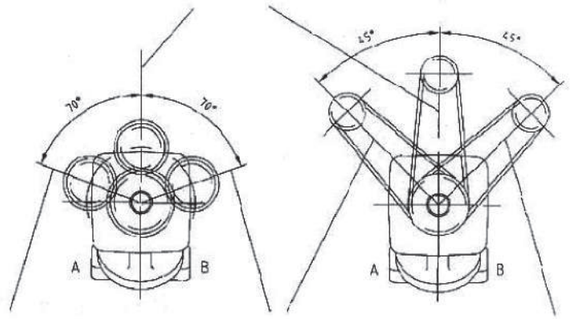
最佳轴向力Fax作用方向
Optimal axial force Fax action direction



-Fax =增加轴承寿命
Increase bearing life
+Fax =降低轴承寿命(尽可能避免)
Reduce bearing life (avoid as much as possible)

最佳轴向力Fq作用方向
合适的径向力作用方向可减小轴承的负荷,增加轴承寿命。
Optimal axial force Fq action direction
The appropriate radial force action direction can reduce the bearing load and increase the bearing life.

适用于双向旋转
Suitable for bidirectional rotation



适用于泵右旋、马达左旋
Applicable to right-hand rotation of pump and left-hand rotation of motor
(油口B为高压)
(Port B is high pressure)

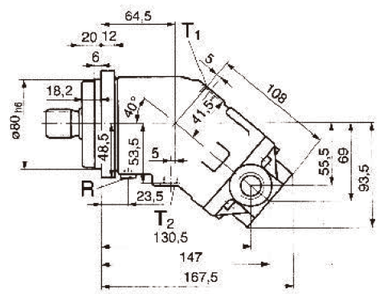
适用于泵左旋、马达右旋
Applicable to left-hand rotation of pump and right-hand rotation of motor
(油口A为高压)
(Port A is high pressure)

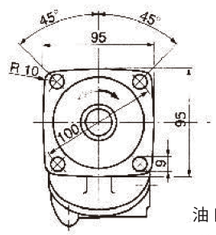
适用于泵右旋、马达左旋
Applicable to right-hand rotation of pump and left-hand rotation of motor
(油口B为高压)
(Port B is high pressure)

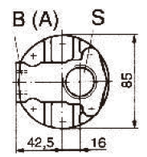
图二 最佳轴向力、径向力作用方向
Figure 2 Optimal axial force and radial force directions

定量泵

元件尺寸 规格16







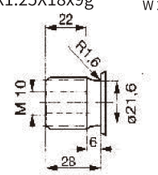
注意:
对于逆时针旋转
油口板要转过180°!
Note:
For counter-clockwise rotation,
the port plate must be rotated 180°!

油 口

B(A)	工作油口 Working oil port	M22x1.5
S	吸油油口 Oil suction port	M33x2
T1,T2	泄油油口(1个油口堵住) Oil drain port (1 port plugged)	M12x1.5
R	排气口(堵住) Exhaust port (blocked)	M8x1

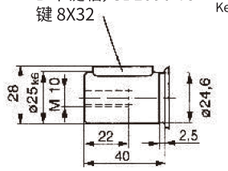
轴伸
Shaft extension

规格16
A 花键轴, DIN 5480
W 25X1.25X18x9g
Size 16
A Spline shaft, DIN 5480
W 25X1.25X18x9g



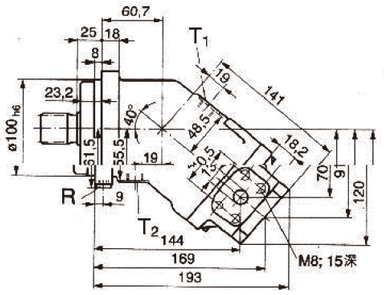
公称压力 P_N=40 MPa
Nominal pressure P_N=40 MPa

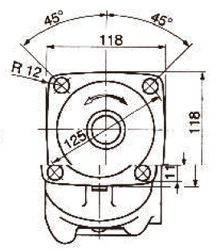
规格16
B 带键轴, GB1096-79
键 8X32
Size 16
B keyed shaft, GB1096-79
Key 8X32

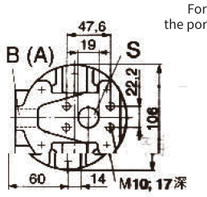


公称压力 P_N=35 MPa

元件尺寸 规格23, 28, 32







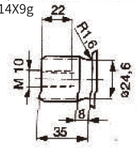
注意:
对于逆时针旋转
油口板要转过180°!
Note:
For counter-clockwise rotation,
the port plate must be rotated 180°!

油口

B(A)	工作油口 Working oil port	SAE1/2”
S	吸油油口 Oil suction port	SAE3/4”
T1, T2	泄油油口(1个油口堵住) Oil drain port (1 port plugged)	M16x1.5
R	排气口(堵住) Exhaust port (blocked)	M10x1

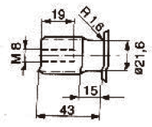
轴伸
Shaft extension

规格23, 28,32
A 花键轴, DIN 5480
W 30X2X30X14X9g
Size 23, 28, 32
A Spline shaft, DIN 5480
W 30X2X30X14X9g



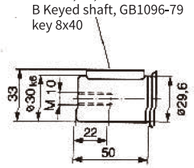
公称压力 P_N=40 MPa
Nominal pressure PN=40 MPa

规格23, 28
Z 花键轴, DIN 5480
W 25X1.25X30X18X9g
Size 23, 28, 32
A Spline shaft, DIN 5480
W 30X2X30X14X9g



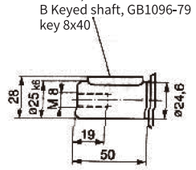
公称压力 P_N=35 MPa
Nominal pressure PN=35 MPa

规格23, 28, 32
B 带键轴, GB1096-79
键 8X40
Size 23, 28,32
B Keyed shaft, GB1096-79
key 8x40



公称压力 P_N=35 MPa
Nominal pressure PN=35 MPa

规格23, 28
B 带键轴, GB1096-79
键 8X40
Size 23, 28
B Keyed shaft, GB1096-79
key 8x40

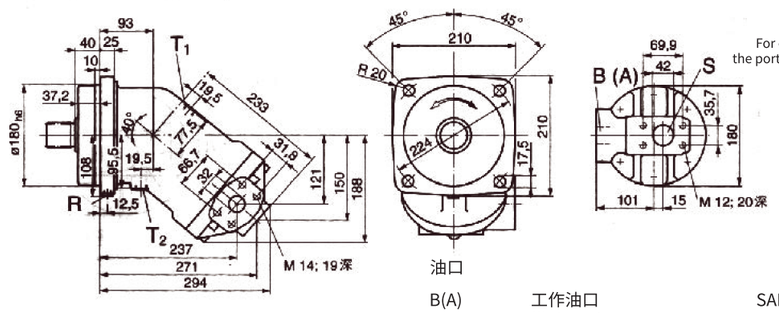


公称压力 P_N=35 MPa
Nominal pressure PN=35 MPa

A

定量泵

元件尺寸 规格160,180

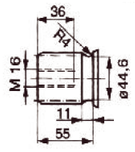


注意:
对于逆时针旋转
油口板要转过180°!
Note:
For counter-clockwise rotation,
the port plate must be rotated 180°!

油口		
B(A)	工作油口 Working oil port	SAE 1 1/4"
S	吸油油口 Oil suction port	SAE 1 1/2"
T1,T2	泄油油口(1个油口堵住) Oil drain port (1 port plugged)	M22x1.5
R	排气口(堵住) Exhaust port (blocked)	M14x1.5

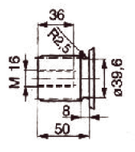
轴伸
Shaft extension

规格160，180
A 花键轴，DIN 5480
W 50x2x30x24x9g
Size 160, 180
A Spline shaft, DIN 5480
W 50x2x30x24x9g



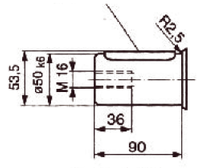
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格160
Z 花键轴，DIN 5480
W 45x2x30x21x9g
Size 160
Z Spline shaft, DIN 5480
W 45x2x30x21x9g



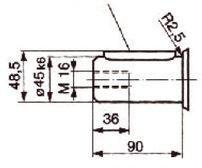
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格160，180
B 带键直轴，GB1096-79
键14X70
Size 160, 180
B Keyed straight shaft, GB1096-79
key14x70



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格160
P 带键直轴，GB1096-79
键14X70
Size 160
B Keyed straight shaft, GB1096-79
key14x70



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM系列斜轴式轴向锥形柱塞马达

A2FM Series Oblique Shaft Axial Tapered Piston Motor

适用于开式和闭式回路液压系统
Suitable for open and closed circuit hydraulic systems

概 述 Overview

本产品是斜轴式的轴向锥形柱塞马达，适合于开式和闭式静液压传动回路。公称压力400 MPa
尖峰压力450 MPa
This product is an inclined-axis axial tapered piston motor, suitable for open and closed hydrostatic transmission circuits. Nominal pressure 400 MPa
Peak pressure 450 MPa

A2FM型号说明

A2F | M | 107 | / | 61 | W | - | V | Z | B | 2

结构形式 Structural Form
斜轴式，定量 Oblique axis, Quantitative

工作方式 Working Method

马达 motor	M
泵（用于开式回路） Pump (for open circuit)	

公称规格 Nominal Specifications

排量 Displacement	16	23	28	32	45	56	63
	80	90	107	125	160	180	

结构系列 Structure Series

61

旋转方向 Direction of rotation

从轴端看 View from shaft end	用于马达 For motor	双向可逆 Bidirectional reversible	W
	用于闭式回路的泵 Pumps for closed circuits	顺时针 Clockwise	R
		逆时针 Counter Clockwise	L

密封材料 Sealing Material

丁腈橡胶 Nitrile Rubber	P
氟橡胶 Fluororubber	V

轴伸结构 Shaft Structure

		16	23	28	32	45	56	63	80	90	107	125	160	180	
花键轴 Spline shaft (DIN5480)	标准 standard	+	+	+	+	+	+	+	+	+	+	+	+	+	A
	改型 Modification		+	+		+	+		+		+		+		Z
平键轴 Flat key shaft (GB1096-79)	标准 standard	+	+	+	+		+	+	+	+	+	+	+	+	B
	改型 Modification		+	+		+	+		+		+		+		P

安装法兰 Mounting Flange

4孔法兰	B

后盖形式 Back cover type

	16	23	28	32	45	56	63	80	90	107	125	160	180	
油口A、B在后面，SAE法兰 Oil ports A and B at the back, SAE flange		+	+	+	+	+	+	+	+	+	+	+	+	1
油口A、B在相对两侧面，SAE法兰 Oil ports A and B are on opposite sides, SAE flange		+	+	+	+	+	+	+	+	+	+	+	+	2
油口A、B在相对两侧面，螺纹口 Oil ports A and B are on opposite sides, threaded ports	+	+	+	+										3
油口A、B在侧面和后面，螺纹口（4个油口） Oil ports A and B are on the side and rear, threaded ports (4 oil ports)	+	+	+	+	+	+	+							4
油口A、B在同侧，SAE法兰 Oil ports A and B on the same side, SAE flange		+	+	+	+	+	+	+	+	+	+	+	+	10

注“+”可供货
Note: "+" is available

A

技术参数

b A2FO技术数据表(理论值未计 η_{mh}和η_v)

b A2FO technical data sheet (theoretical values excluding ηmh and ηv)

公称规格 Nominal specifications	16	23	28	32	45	56	63	80	90	107	125	160	180
排量 Vg ml/r Displacement	16	22.9	28.1	32	45.6	56.1	63	80.4	90	106.7	125	160.4	180
最高转速 nmax r/min Maximum speed	6000	4750	4750	4750	4250	3750	3750	3350	3350	3000	3000	2650	2650
最大流量,(在nmax时) qvmax L/min Maximum flow rate, (at nmax)	96	109	133	152	194	210	236	269	301	320	375	425	477
扭矩常数 Tk Nm/MPa Torque constant	2.5	3.6	4.45	5.09	7.25	8.9	10	12.7	14.3	17	19.9	25.4	28.6
最大扭矩(ΔP=35Mpa) Tmax Nm Maximum torque (ΔP=35Mpa) Tmax Nm	88	126	156	178	254	312	350	445	501	595	697	889	1001
最大扭矩(ΔP=40Mpa) Tmax Nm Maximum torque (ΔP=40Mpa) Tmax Nm	100	144	178	204	290	356	400	508	572	680	796	1016	1144
最大功率(ΔP=35Mpa) Pmax KW Maximum power (ΔP=35Mpa) Pmax KW	56	63	78	89	113	123	138	157	176	187	219	248	278
最大功率(ΔP=40Mpa) Pmax KW Maximum power (ΔP=40Mpa) Pmax KW	64	73	89	101	129	140	157	180	201	213	250	283	318
注油量 L Oil filling amount	0.17	0.2	0.2	0.2	0.33	0.45	0.45	0.55	0.55	0.8	0.8	1.1	1.1
驱动轴的惯性矩 J kgm^2 Moment of inertia of drive shaft	0.0004	0.0012	0.0012	0.0012	0.0024	0.0042	0.0042	0.0072	0.0072	0.0116	0.0116	0.022	0.022
重量(近似值) kg Weight (approximate)	5.4	9.5	9.5	9.5	13.5	18	18	23	23	32	32	45	45

规格的计算 Calculation of specifications

输出流量 Output flow $q_v = \frac{V_g \cdot n}{1000 \cdot \eta_v}$ L/min

输出转速 Output flow $n = \frac{q_v \cdot 1000 \cdot \eta_v}{V_g}$ r/min

输入扭矩 Input Torque $T = \frac{V_g \cdot \Delta P \cdot \eta_{mh}}{2\pi}$

$= \frac{1.59 \cdot V_g \cdot \Delta P \cdot \eta_{mh}}{10}$ NM

或 $T = T_k \cdot \Delta P \cdot \eta_{mh}$ NM

输入功率 Input power $P = \frac{2\pi \cdot T \cdot n}{60000} = \frac{T \cdot n}{9549}$

$= \frac{q_v \cdot \Delta P \cdot \eta_t}{60}$ KW

式中:

V_g	=	排量 Displacement	ml/r
ΔP	=	压差 Pressure difference	MPa
T_k	=	扭矩常数 Torque constant	Nm/MPa
η_v	=	容积效率 Volumetric efficiency	
η_{mh}	=	机械效率 Mechanical efficiency	
η_t	=	总效率 Total efficiency	

工作压力

油口A或B的最高压力
Maximum pressure at port A or B

	轴伸A Shaft extension A	轴伸Z、B、P Shaft extension Z、B、F	轴伸Z、P Shaft extension Z、P (轴端有径向力) (Radial force on shaft end)
额定压力PN Rated pressure PN	40MPa	35MPa	31. 5MPa
最高压力Pmax Maximum pressure Pmax	45MPa	40MPa	35MPa

A和B进出油口的压力之和不允许超过70 MPa
油口A或B的最低进口压力Pmin=0.2~0.6 MPa (闭式回路泵工况)

The sum of the inlet and outlet pressures of A and B is not allowed to exceed 70 MPa.
The minimum inlet pressure of port A or B Pmin = 0.2~0.6 MPa (closed circuit pump working condition)

壳体泄油压力(油口T)
Case drain pressure (port T)

PT≤0.1 MPa

工作介质
Working medium

矿物油基本都可选用
Mineral oil can basically be used

油液温度
Oil temperature

工作温度范围:-25°C~80°C
Working temperature range: -25°C~80°C

油液粘度
Oil viscosity

最佳工作粘度:16~36mm/s(在工作温度范围内)
Optimum working viscosity: 16~36mm/s (within the working temperature range)

最大允许粘度:1000mm/s(在冷态启动时瞬时运行)
Maximum allowable viscosity: 1000mm/s (instantaneous operation at cold start)

最小允许粘度:10 mm/s(在泄漏油温度为90°C时瞬时运行)
Minimum allowable viscosity: 10 mm/s (instantaneous operation at a leakage oil temperature of 90°C)

油液过滤精度
Oil filtration accuracy

推荐过滤精度为10μm的滤油器,最粗不得超过25 μm的精度
The recommended filter is an oil filter with a filtration accuracy of 10 μm, and the coarsest filter should not exceed 25 μm.

安装位置
Installation location

任选,壳体内必须始终充满液压油。
Optionally, the housing must always be filled with hydraulic oil.

油流方向
Oil flow direction

从轴端观察 顺时针旋转A→B 逆时针旋转B→A
Observe from the shaft end Clockwise rotation A→B Counterclockwise rotation B→A

转速范围
Speed range

最低转速不限,如果要求匀速旋转,则最低转速nmin>50r/min。最高转速见技术数据表。
The minimum speed is not limited. If uniform rotation is required, the minimum speed nmin>50r/min. The maximum speed is shown in the technical data table.

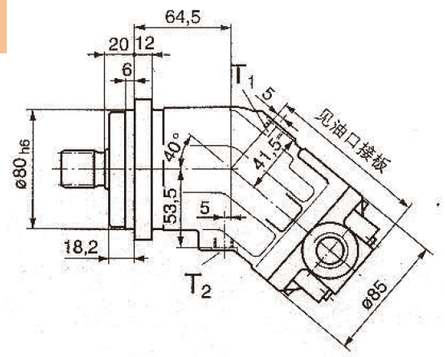
输出轴
Output shaft

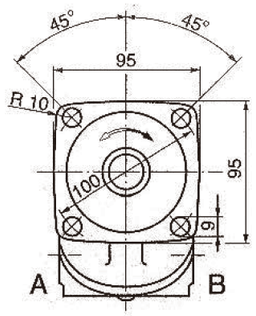
输出轴轴端允许有附加的轴向和径向载荷,许用轴向力和径向力值见表一,其最佳作用力方向见图二。
The output shaft end is allowed to have additional axial and radial loads. The permissible axial force and radial force values are shown in Table 1, and the optimal force direction is shown in Figure 2.

A2FM 定量马达

A

元件尺寸 规格16
Component size Size 16





油口

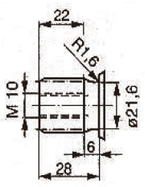
A ,B工作油口(见油口接板)
A, B working oil port (see oil port plate)

T , T泄油口(1油口堵住) M 12x1.5
T, T drain port (1 port blocked)

轴伸
Shaft extension

规格16
A 花键轴
W 25x1.25x30x18x9g
DIN 5480

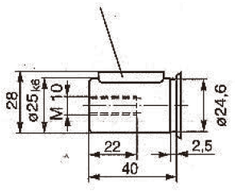
Size 16
A Spline shaft
W 25x1.25x30x18x9g
DIN 5480



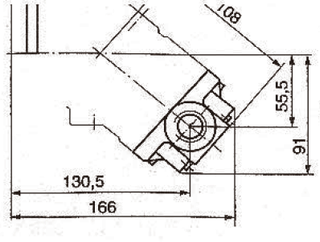
公称压力 P_N=40 MPa
Nominal pressure P_N=40 MPa

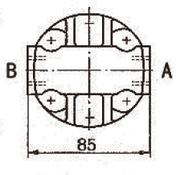
规格16
B 平键轴
键 8x32
GB1096-79

Size 16
B flat key axis
keys 8x32
gb1096-79



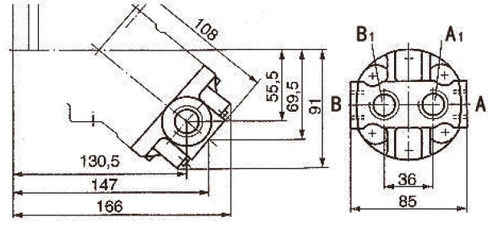
公称压力 P_N=35 MPa
Nominal pressure P_N=35 MPa





A.B 工作油口

M 22x1.5



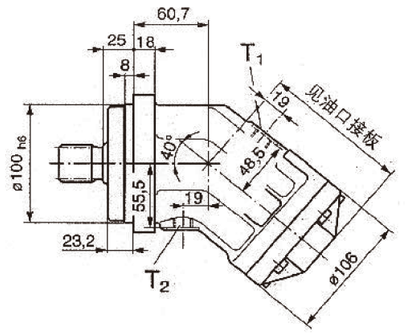
A,B,A_1,B_1 工作油口

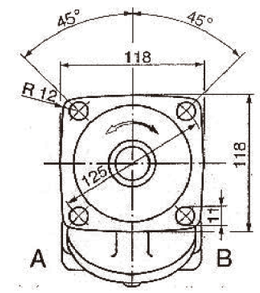
M 22x1.5

A2FM 定量马达

A

元件尺寸 规格23,28,32





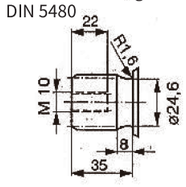
油口
Oil port

A,B 工作油口(见油口接板)
Working oil port

T1,T2 泄油油口(1个油口堵住) M16×1.5
Oil drain port (1 port plugged)

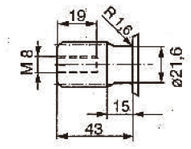
轴伸
Shaft extension

规格23, 28,32
A 花键轴
W 30x2x30x14x9g
DIN 5480
Size 23, 28,32
A Spline shaft



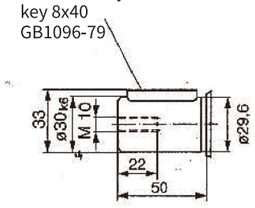
公称压力 P_N=40 MPa
Nominal pressure
P_N=40 MPa

规格23,28
Z 花键轴
W 25x1,25x30x18x9g
DIN 5480
Size 23,28
Z Spline shaft



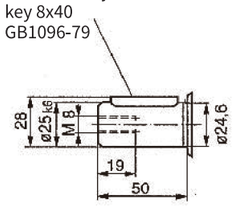
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格23,28, 32
P 平键轴
键 8X40
GB1096-79
Size 23,28
P Parallel key shaft



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格23,28
P 平键轴
键 8X40
GB1096-79
Size 23,28
P Parallel key shaft



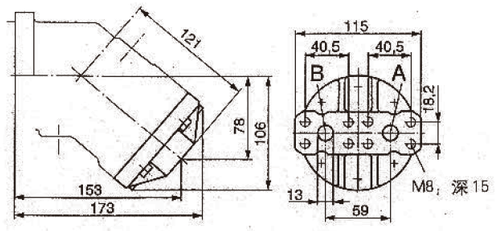
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM定量马达

A

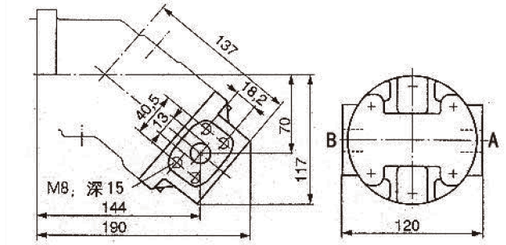
油口接板规格23，28，32

01



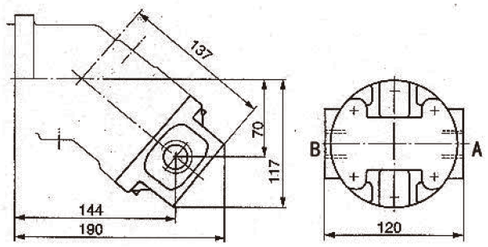
A，B 工作油口 SAE1 1/2"

02



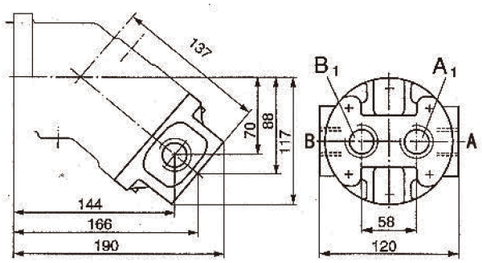
A，B 工作油口 SAE1 1/2"

03



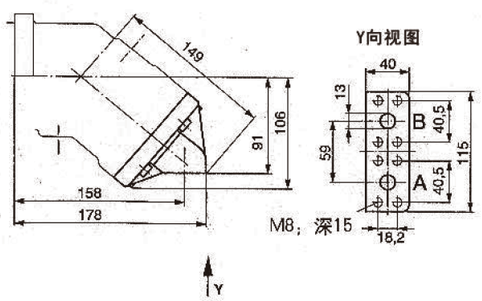
A，B 工作油口 M 27x2

04



A，B，A，B 工作油口 M 27x2

10

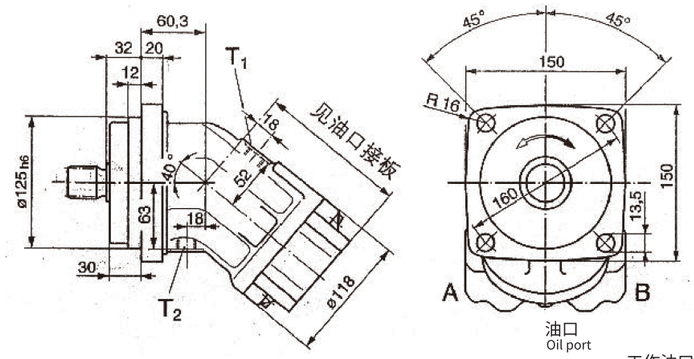


A，B 工作油口 SAE1 1/2"

A2FM定量马达

A

元件尺寸 规格56,63
Component size Specifications 56,63



油口
Oil port

A,B	工作油口(见油口接板) Working oil port	
T,T1	泄油口(1个油口堵住) Oil drain port (1 port plugged)	M18x1.5

轴伸
Shaft extension

A 花键轴
W 32x2x30x14x9g
DIN 5480

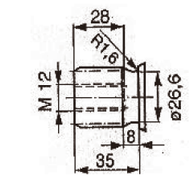
A Spline shaft
W 32x2x30x14x9g
DIN 5480

Z 花键轴
W 30x2x30x14x9g
DIN 5480

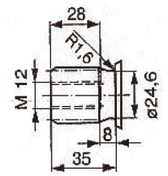
Z Spline shaft
W 30x2x30x14x9g
DIN 5480

B 平键轴
键 8X50
GB1096-79

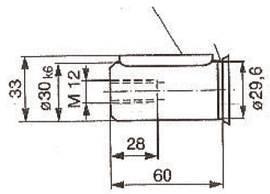
P keyed shaft
Key 8X50
GB1096-79



公称压力 P_N=40 MPa
Nominal pressure
P_N=40 MPa



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa



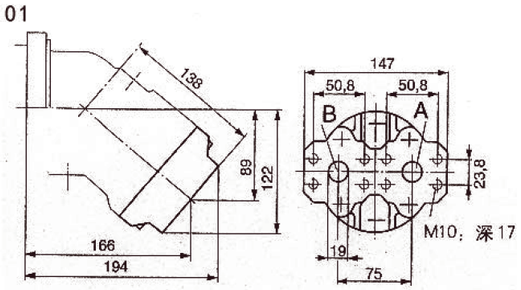
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM定量马达

A

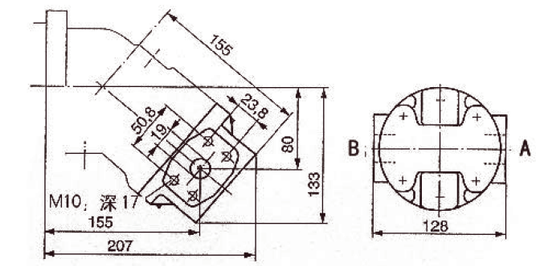
油口接板规格45

01



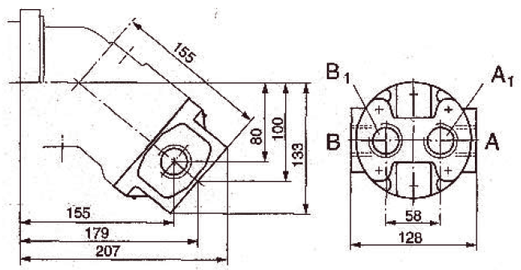
A，B 工作油口 SAE3/4"

02



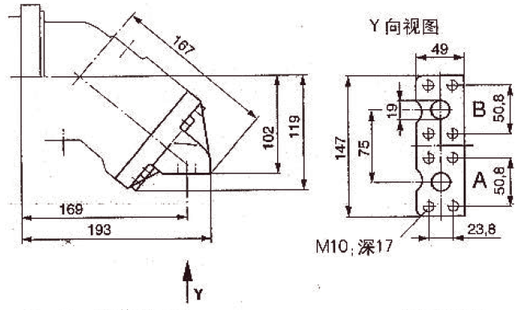
A，B 工作油口 SAE3/4"

04



A，B，A_1，B_1 工作油口 M 33x2

10

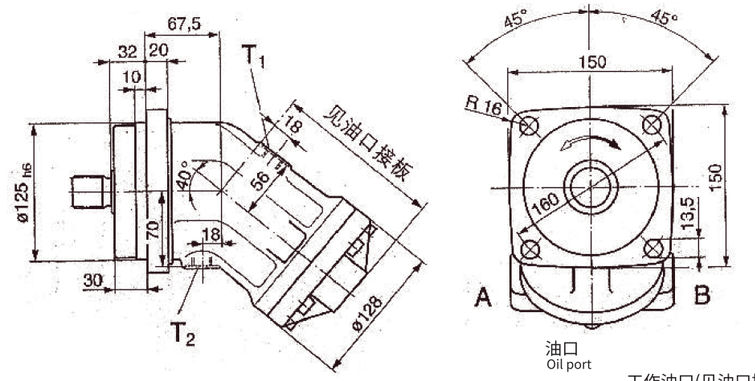


A，B 工作油口 SAE3/4"

A2FM定量马达

A

元件尺寸 规格56,63
Component size Specifications 56,63



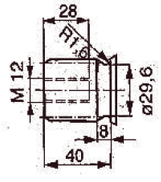
油口
Oil port

A,B	工作油口(见油口接板) Working oil port	
T,T1	泄油口(1个油口堵住) Oil drain port (1 port plugged)	M18x1.5

轴伸
Shaft extension

规格56,63
A 花键轴
W 35x2x30x16x9g
DIN 5480

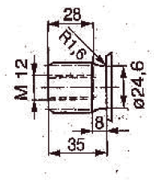
Size 56,63
A Spline shaft
W 35x2x30x16x9g
DIN 5480



公称压力 P_N=40 MPa
Nominal pressure
P_N=40 MPa

规格56
Z 花键轴
W 30x2x30x14x9g
DIN 5480

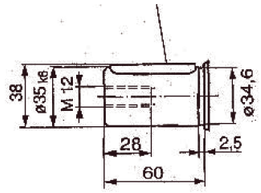
Size 56
Z Spline shaft
W 30x2x30x14x9g
DIN 5480



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格56,63
B 平键轴
键 10X50
GB1096-79

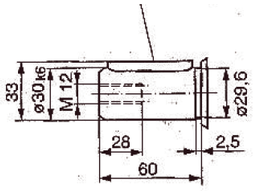
Size 56,63
P keyed shaft
Key 10X50
GB1096-79



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格56
P 平键轴
键 10X50
GB1096-79

Size 56
P keyed shaft
Key 10X50
GB1096-79



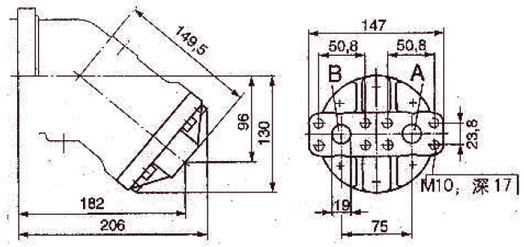
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM定量马达

A

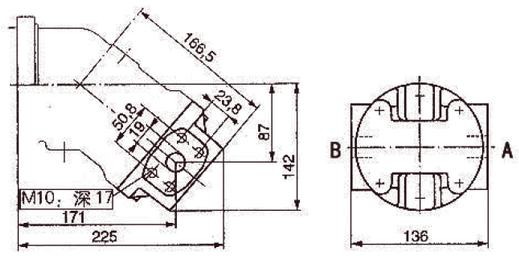
油口接板规格56，63

01



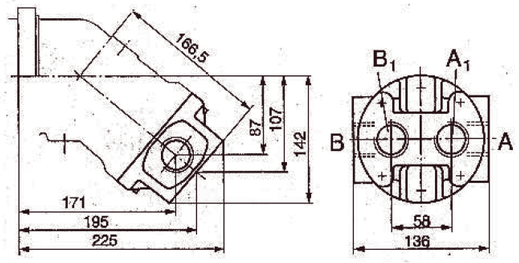
A,B 工作油口 A,B working oil port	SAE3/4'

02



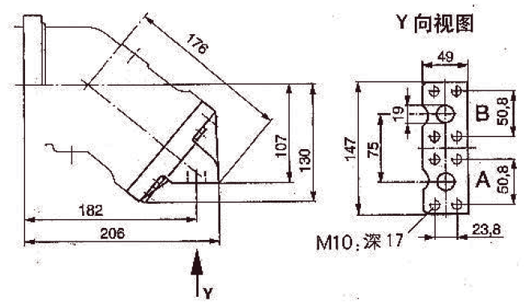
A,B 工作油口 A,B working oil port	SAE3/4'

04



A,B,A,B 工作油口 A,B,A,B working oil port	M 33×2

10

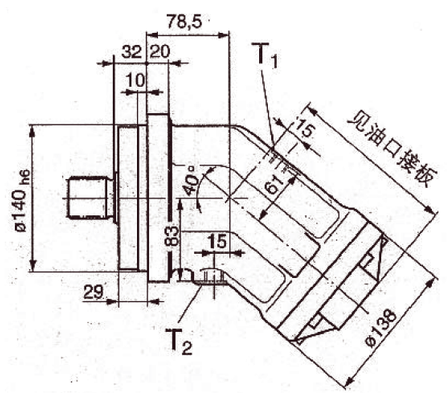


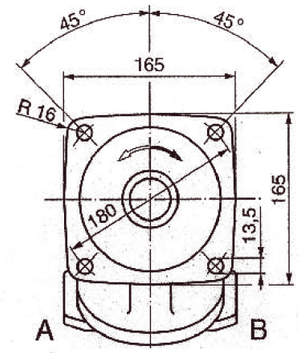
A,B 工作油口 A,B working oil port	SAE3/4'

A2FM定量马达

A

元件尺寸 规格80,90
Component size Specifications 80,90



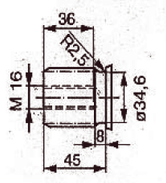


油口 Oil port		
A,B	工作油口(见油口接板) Working oil port	
T,T1	泄油油口(1个油口堵住) Oil drain port (1 port plugged)	M18x1.5

轴伸
Shaft extension

规格80,90
A 花键轴
W 40x2x30x18x9g
DIN 5480

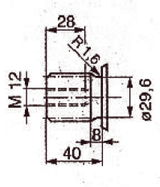
Size 80,90
A Spline shaft
W 40x2x30x18x9g
DIN 5480



公称压力 P_N=40 MPa
Nominal pressure
P_N=40MPa

规格80
Z 花键轴
W 35x2x30x16x9g
DIN 5480

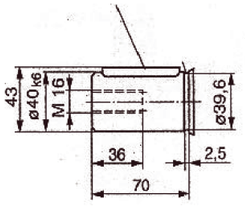
Size 107
Z Spline shaft
W 35x2x30x16x9g
DIN 5480



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格80,90
B 平键轴
键 12X56
GB1096-79

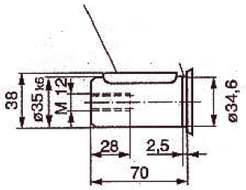
Size 80,90
P keyed shaft
Key 12X56
GB1096-79



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格80
P 平键轴
键 8X56
GB1096-79

Size 80
P keyed shaft
Key 8X56
GB1096-79



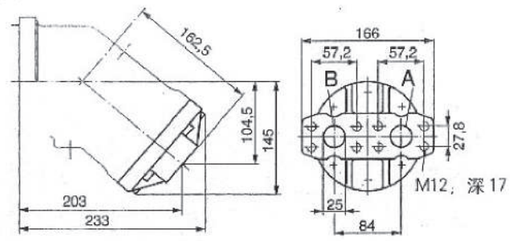
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM定量马达

A

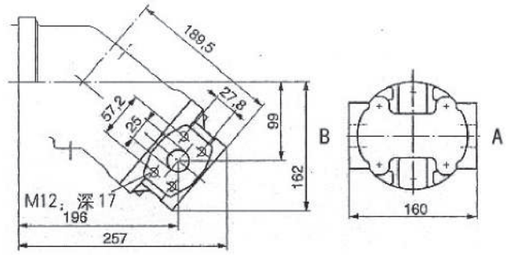
油口接板规格80，90

01



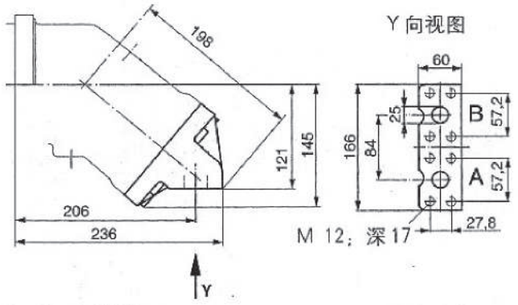
A，B 工作油口 SAE 1"

02



A，B 工作油口 SAE 1"

10



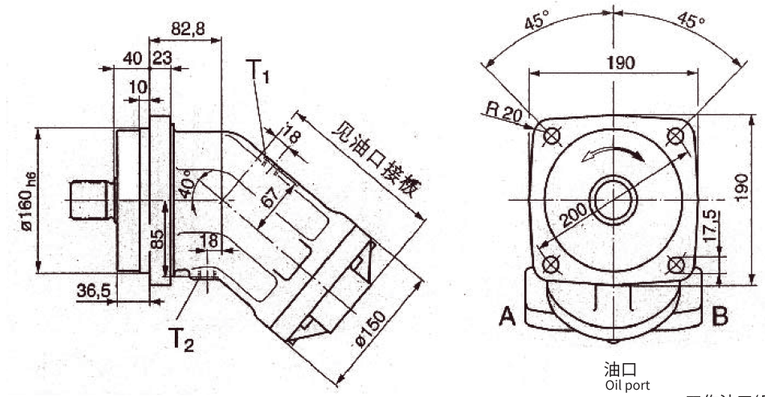
A，B 工作油口 SAE 1"

A2FM定量马达

A

元件尺寸 规格107,125
Component size Specifications 107,125

括号中的尺寸用于规格为107的马达
Dimensions in brackets are for size 107 motor



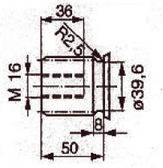
油口
Oil port

A,B	工作油口(见油口接板) Working oil port	
T,T1	泄油油口(1个油口堵住) Oil drain port (1 port plugged)	M22x1.5

轴伸
Shaft extension

规格107,125
A 花键轴
W 45x2x30x21x9g
DIN 5480

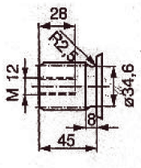
Size 160, 180
A Spline shaft
W 45x2x30x21x9g
DIN 5480



公称压力 P_N=40 MPa
Nominal pressure
P_N=35 MPa

规格107
Z 花键轴
W 40x2x30x18x9g
DIN 5480

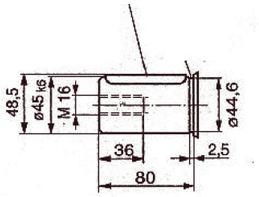
Size 107
Z Spline shaft
W 40x2x30x18x9g
DIN 5480



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格107,125
B 平键轴
键14X63
GB1096-79

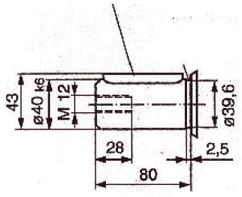
Size 160
P keyed shaft
Key 14X63
GB1096-79



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格107
P 平键轴
键12X63
GB1096-79

Size 107
P keyed shaft
Key 12X63
GB1096-79



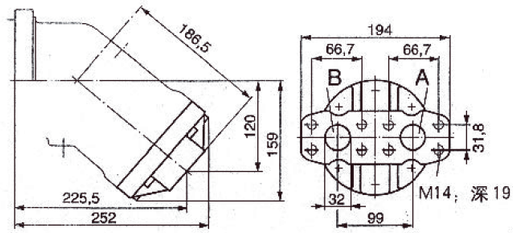
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM定量马达

A

元件尺寸 规格107,125

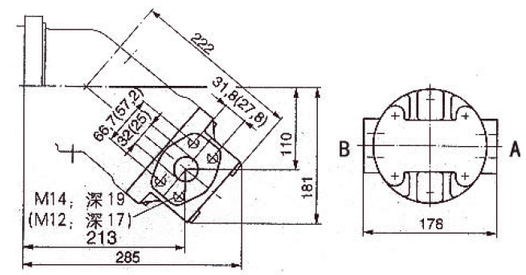
01



A,B 工作油口 SAE1 1/4'
A, B working oil port

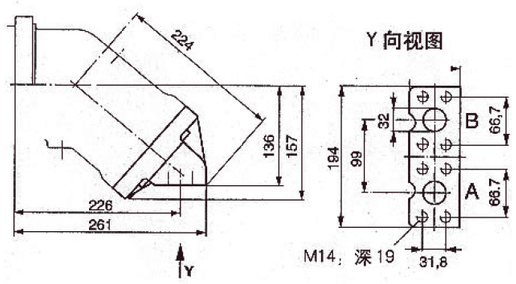
括号中的尺寸用于规格为107的马达
Dimensions in brackets are for size 107 motor

02



A,B 工作油口 SAE1 1/4'
A, B working oil port

10

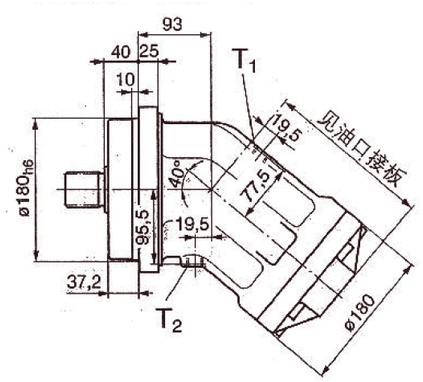


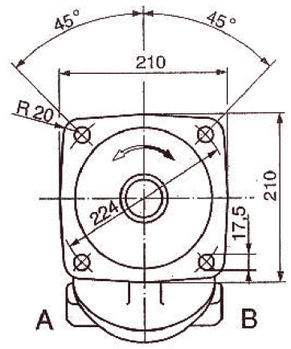
A,B 工作油口 SAE1 1/4'
A, B working oil port

A2FM定量马达

A

元件尺寸 规格160,180



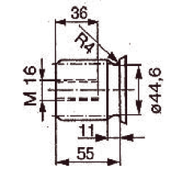


油口
Oil port

A,B	工作油口(见油口接板) Working oil port	
T,T1	泄油油口(1个油口堵住) Oil drain port (1 port plugged)	M22x1.5

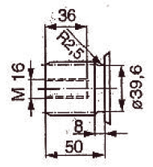
轴伸
Shaft extension

规格160, 180
A 花键轴
W 50x2x30x24x9g
DIN 5480
Size 160, 180
A Spline shaft
W 50x2x30x24x9g
DIN 5480



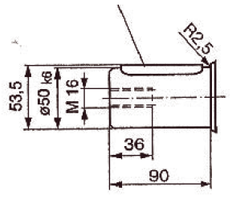
公称压力 P_N=40 MPa
Nominal pressure
P_N=35 MPa

规格160
Z 花键轴
W 45x2x30x21x9g
DIN 5480
Size 160
Z Spline shaft
W 45x2x30x21x9g
DIN 5480



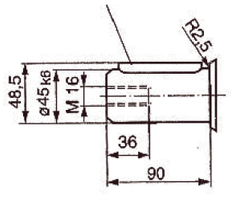
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格160, 180
B 带键轴
键14X70
GB1096-79
Size 160
P keyed shaft
Key 14X70
GB1096-79



公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

规格160
P 带键轴
键14X70
GB1096-79
Size 160
P keyed shaft
Key 14X70
GB1096-79



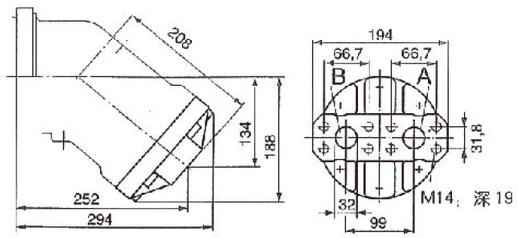
公称压力 P_N=35 MPa
Nominal pressure
P_N=35 MPa

A2FM定量马达

A

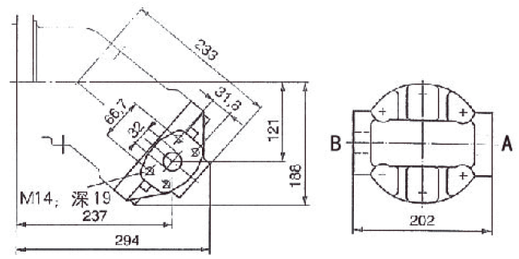
油口接板规格160，180

01



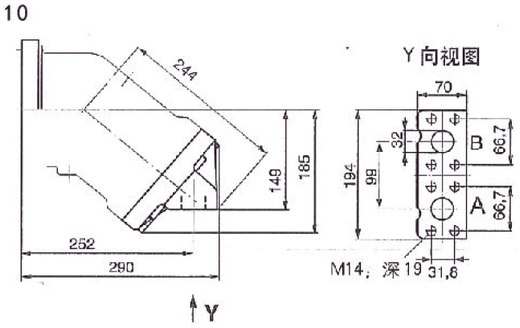
A,B 工作油口 SAE1 1/4'
A, B working oil port

02



A,B 工作油口 SAE1 1/4'
A, B working oil port

10



A,B 工作油口 SAE1 1/4'
A, B working oil port

A6V系列斜轴式柱塞马达

A6V Series Bent Axis Piston Motor

适用于闭式回路和开式回路的静液压传动

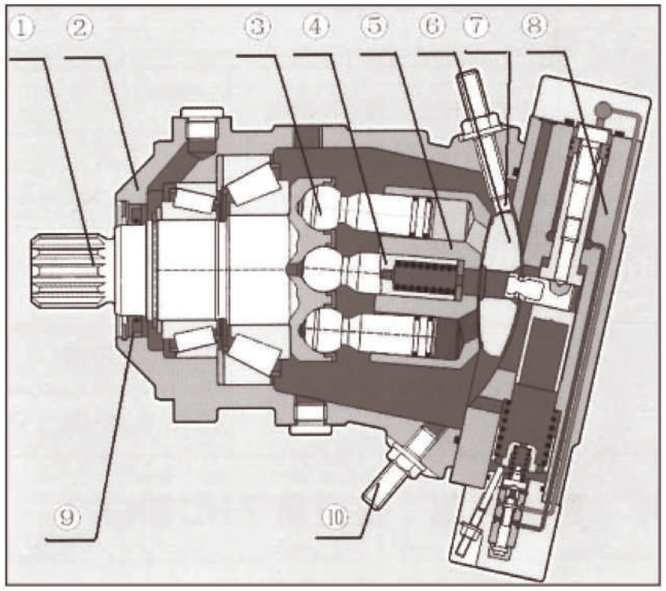
Hydrostatic transmission for closed and open circuits

A

概 述 Overview

本产品是斜轴式的结构轴向柱塞马达，适合于闭式回路和开式回路的静液压传动。公称压力40 MPa 分值压力45 MPa

This product is an axial piston motor with an oblique shaft structure, suitable for hydrostatic transmission of closed circuits and open circuits. Nominal pressure 40 MPa Fractional pressure 45 MPa



① 主 轴 ② 壳 体
③ 柱 塞 ④ 芯 轴
⑤ 缸 体 ⑥ 配流盘
⑦ 上限位螺钉 ⑧ 变量机构
⑨ 骨架油封 ⑩ 下限位螺钉

1.Spindle 2.Shell
3.Plunger 4.Mandrel
5.Cylinder 6.Distribution plate
7.Upper limit screw 8.Variable mechanism
9.Skeleton oil seal 10.Lower limit screw

特点

斜轴结构轴向杜塞安量马达，适用于闭式回路和开式回踏的静液压传动

应用于工程机械和工业领域

调节范国广，可使交量马达满足高转速和大扭矩的要求

输出特速与流量成正比，而与排量成反比

多种控制和变量装置

功率重量比大

Features

Inclined shaft structure axial Düsseldorf motor, suitable for hydrostatic transmission of closed

circuit and open return pedals

Used in construction machinery and industrial fields

Adjusting Fan Guoguang can make the crossover motor meet the requirements of high speed and large torque.

The output speed is directly proportional to the flow rate and inversely proportional to the displacement.

Various control and variable devices.

Great power to weight ratio.

A

订货型号 Order Model

A6V	M				/	63					B			
01	02	03	04	05		06	07	08	09	10	11	12	13	14

轴向柱塞泵/马达 Axial Piston Pumps/Motors

01	斜轴结构，可变量 Oblique axis structure, variable amount	A6V

工作方式 working method

02	马达 motor	M

规格 Specification

03	排量 Displacement	80	107	160	

变量方式 Variable method

			80	107	160	
04	液压控制（与外控压力有关） Hydraulic control (related to external control pressure)	ΔP=10bar	●	●	●	HD1
		ΔP=25bar	●	●	●	HZ2
	液压两点式控制 Hydraulic two-point control					HZ1
			●	●	●	HZ1
	电气控制，带比例电磁铁（规格80至160） Electrical control, with proportional solenoid(Specifications 80 to 160)	12V	●	●	●	EP1
		24V	●	●	●	EP2
	电气点控制，带开关 Electrical point control with switch	12V	●	●	●	EZ1
	电磁铁 Electromagnet	24V	●			EZ2
	自动控制与高压有关 Automatic control is related to high voltage	无压力增量 No pressure increase	●	●	●	HA1
		带压力增量ΔP=100bar With pressure increment ΔP=100bar	●	●	●	HA2
	压力控制（仅适用于HD和EP） Pressure Control (only for HD and EP)					
05	无压力控制（无标识） No pressure control (no logo)		●	●	●	
	压力控制 直控式 Pressure Control Direct Control		●	●	●	D

结构形式 Structural form

06	63结构 63 Structure	63

旋转方向 Direction of rotation

07	从轴端看，双向可逆 Viewed from the shaft end, bidirectionally reversible	W

最小排量 Min displacement

08	以四位数字代表最小排量V_{gmin}，例如：0813代表V_{gmin}=18.3ml/r,0750代表V_{gmin}=75ml/r Four digits represent the minimum displacement Vgmin, for example: 0813 represents Vgmin=18.3ml/r, 0750 represents Vgmin=75ml/r	

订货型号 Order Model

A6V	M				/	63					B			
01	02	03	04	05		06	07	08	09	10	11	12	13	14

A

密封

09	氟橡胶 Fluororubber	V

轴伸

		80	107	160	
10	花键轴DIN5480 Spline shaft DIN5480	●	●	●	A
		●	●	●	Z

安装法兰

11	4孔法兰 4-hole flange	●	●	●	B

后盖形式

12	SAE法兰油口A和B，在后面 SAE flange ports A and B, at the rear	●	●	●	010
	SAE法兰油口A和B，在两侧面 SAE flange ports A and B, on both sides	●	●	●	020
	可按要求提供用于安装平衡阀的油口接板 Port plates for mounting counterbalance valves available on request	●	●	●	080

转速测量

13	五转速测量（无代码） Five speed measurement (no code)	●	●	●	
	用于转速测量（HDD） For speed measurement (HDD)	○	○	○	F

标准/其他要求

14	无特殊要求 No special requirements	无代码
	特殊要求 Special Requests	请询问我司技术人员

注：
特殊后盖形式请咨询我司技术人员

● 是可供货 — 是不可供货 ○ 是按要求

A

技术参数

工作粘度范围
为了获得最佳效率和使用寿命，我们推荐工作粘度(工作温度下)在以下范围内选择
Vopt=最佳粘度 16~36mm2/s
闭式回路中针对回路温度，开式回路中针对油箱温度。

Working viscosity range
For optimal efficiency and service life, we recommend that the working viscosity (at working temperature) be selected within the following range
Vopt = optimal viscosity 16~36mm2/s
For closed circuits, for circuit temperature; for open circuits, for tank temperature.

粘度极限范围
极限粘度值如下
规格 28 至 200:
Vmin =5mm²/s
短时(t<3 分钟)，工作在最高允许温度
tmax = +115°C
Vmax=1600 mm²/s
短时(t< 3min) 冷启动时(p<30 bar,
n≤1000 rpm,
tmin = -40°C)
规格 250
Vmin=10mm²/s
短时(t<3 分钟)可工作在最高允许温度
tmax = +90°C
Vmax=1000mm²/s,
短时(t<3 分钟)冷启动(p≤30 bar
ns1000rpm,tmin=-25°C)

Viscosity limit range
Limiting viscosity values are as follows
Specifications 28 to 200:
Vmin = 5mm²/s
Short-term (t<3 minutes), working at the maximum permissible temperature
tmax = +115°C
Vmax=1600 mm²/s
Short-term (t< 3min) cold start (p<30 bar,
n≤1000 rpm,
tmin = -40°C)
Specification 250
Vmin=10mm²/s
Short-term (t<3 minutes) working at the maximum permissible temperature
tmax = +90°C
Vmax=1000mm²/s,
Short-term (t<3 minutes) cold start (p≤30 bar
ns1000rpm,tmin=-25°C)

清注意:最高液压油温度即使在同部也不可超过 115°C(例如轴承区)。轴承区的温度与压力和转速有关，它比平均壳体泄油温度高 12°C。温度在 -40°C°C和 -25°C°C之间时,需要采取特殊措施，请与我公司联系。
Note: The maximum hydraulic oil temperature must not exceed 115°C even in the same area (e.g. bearing area).
The temperature in the bearing area is related to pressure and speed and is 12°C higher than the average case drain temperature. When the temperature is between -40°C and -25°C, special measures need to be taken, please contact us.

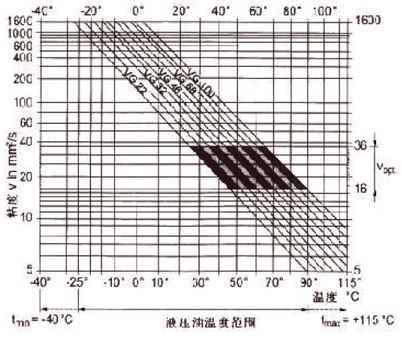
液压油选择说明
为了正确选择液压油，需要了解与环境温度有关的工作温度:在闭式回路中即为回路温度，在开式回路中指油箱温度。
液压油应该这样选择，即在工作温度范围内，工作粘度处于最佳范围之内(Vopt) 之内(见选择图中的阴影部分)。
我们建议在每种情况下均应尽可能选择最高的粘度范围。
示例:在X°C的环境温度下，回路中的工作温度为 60°C。在最佳的工作粘度范围(Vopt,见阴影面积)内，对应粘度级别 VG46
或 VG68，应选择 VG 68.
请注意:受压力和转速的影响,泄漏油的温度总是高于油箱温度。但是，系统中任何一点的温度都不能高于 115°C(规格 28 至 200)

Hydraulic oil selection instructions
To correctly select a hydraulic oil, it is necessary to know the operating temperature in relation to the ambient temperature: in a closed circuit this is the circuit temperature, in an open circuit this is the tank temperature.
The hydraulic oil should be selected so that within the operating temperature range the operating viscosity is within the optimum range (Vopt) (see shaded area in the selection diagram).
We recommend selecting the highest possible viscosity range in every case.
Example: At an ambient temperature of X°C, the operating temperature in the circuit is 60°C. Within the optimum operating viscosity range (Vopt, see shaded area), corresponding to viscosity grades VG46 or VG68, VG 68 should be selected.
Please note: Due to pressure and speed, the temperature of the leaking oil is always higher than the tank temperature. However, the temperature at any point in the system must not exceed 115°C (sizes 28 to 200)

过滤
液压油过滤得越干净，油液的清洁度越高，轴向柱塞元件的使用寿命就越长。
为了保证元件的正常工作，最低的清洁度等级至少为
按 ISO 4406的 20/18/15 级。
在液压油温度 90°C°C至 115°C时，液压油的清洁度等级至少应为
按 IS0 4406 的 19/17/14 级，
如果不能达到上述清洁度等级，请与我公司联系。

The cleaner the hydraulic oil is filtered, the higher the cleanliness of the oil, and the longer the service life of the axial piston element.
In order to ensure the normal operation of the components, the minimum cleanliness level is at least 20/18/15 according to ISO 4406.
When the hydraulic oil temperature is 90°C to 115°C, the cleanliness level of the hydraulic oil should be at least 19/17/14 according to IS0 4406.
If the above cleanliness level cannot be achieved, please contact our company.

选择图



A

技术参数

工作压力范围 油口A或B的最高压力（压力数值依据DIN24312） Working pressure range Maximum pressure of port A or B (pressure value according to DIN24312)	
对于规格28至200 For sizes 28 to 200	
额定压力Pn Rated pressure Pn	300bar
最高压力Pmax Maximum pressure Pmax	350bar
总压力（压力A+压力B)Pmax Total pressure (pressure A + pressure B) Pmax	700bar

请注意:
这些值适用于无径向力负载的情况。如存在附加的径向压力，请咨询我司技术人员。
Please note: These values apply when there is no radial force load. If there is additional radial pressure, please consult our technicians.

液流方向 Liquid flow direction

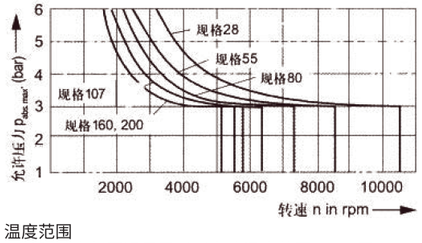
顺时针 Clockwise	逆时针 Counterclockwise
A→B	B→A

转速范围:
最小速度 nmin 无限制。如需匀速运动，nmin 不得少于 100rpm。
最大转速见数据表。
Speed range:
Minimum speed nmin unlimited. For uniform motion, nmin must not be less than 100rpm.
Maximum speed see data sheet.

轴密封圈
轴密封圈的使用寿命受马达的转速和壳体泄油压力的影响。建议工作温度下的平均持久壳体泄油压力不可超过 3bar
绝对压力(转速减小时，最高允许壳体泄油压力为 6bar,见图)。短时(t<0.1s)允许绝对压力峰值最高为 10bar。峰值压力出现的频率越高,轴密封圈的使用寿命越短。
壳体内的压力必须等于或大于外部对轴密封圈的压力。

Shaft seals
The service life of the shaft seals is affected by the motor speed and the case drain pressure. It is recommended that the average permanent case drain pressure at operating temperature should not exceed 3 bar absolute pressure (when the speed decreases, the maximum permissible case drain pressure is 6 bar, see figure). The maximum permissible absolute pressure peak for a short time (t<0.1s) is 10 bar. The more frequently the peak pressure occurs, the shorter the service life of the shaft seals.
The pressure in the housing must be equal to or greater than the external pressure on the shaft seals.

规格28至200



温度范围
氟橡胶轴密封圈适用于以下壳体温度范围 -25°C至 +115°C(规格 28 至 200)
注:低于 -25°°C的应用需要使用丁腈橡胶轴密封圈(允许温度范围-40°°C 至 +90°C)。
订货时请用文字说明丁腈橡胶轴密封圈。
请与我公司联系。

Temperature range
Fluororubber shaft seals are suitable for the following housing temperature ranges -25°C to +115°C (sizes 28 to 200)
Note: Applications below -25°C require nitrile rubber shaft seals (permissible temperature range -40°C to +90°C).
Please specify nitrile rubber shaft seals when ordering.
Please contact us.

壳体压力对控制起点的影响
当变量马达的控制开始时，壳体压力的增加对下列控制起点有影响:
控制起点在工厂中设置，壳体压力 Pab:=26(规格 28 至 200)。

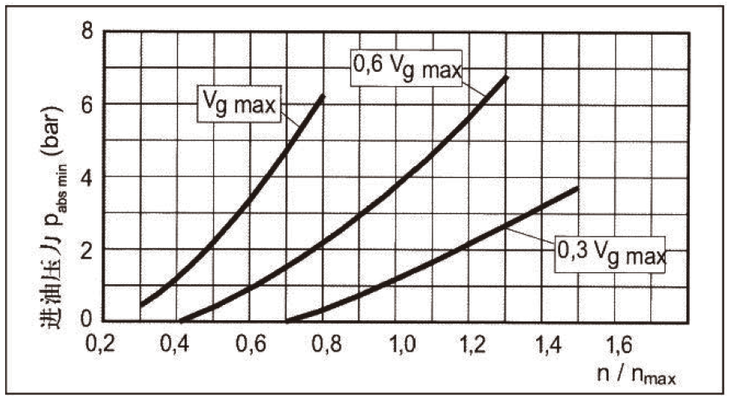
Influence of case pressure on control start
When the control of the variable motor starts, the increase in case pressure has the following influence on the control start:
The control start is set at the factory with case pressure Pab:=26 (sizes 28 to 200).

A

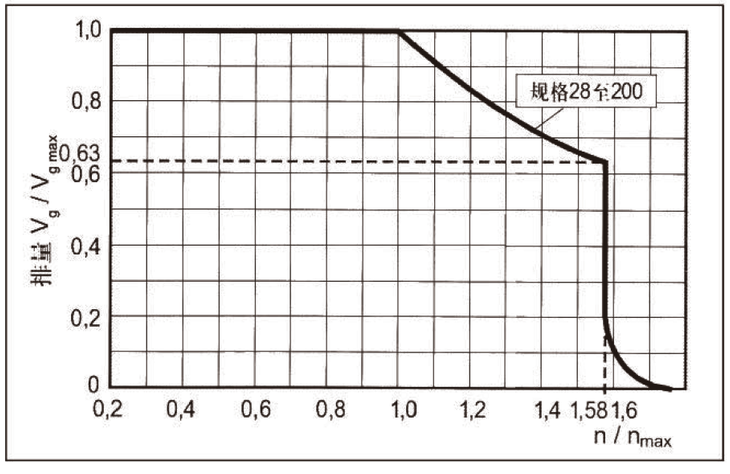
技术参数 Technical Parameters

技术数据表(理论值,效率忽略不计;数值经过圆整) Technical data sheet (theoretical values, efficiency neglected; values rounded)				
规格 Specification		80	107	160
排量(mi/r) Displacement (mi/r)	V_{gmax}	80	107	160
	V_{gmin}	0	0	0
最高转速(r/min) Maximum speed (r/min)	在V_{gmax}时	3000	2800	2400
	在$V_g<V_{gmax}$时	4800	4400	4000
最大流量(Nm/bar) Maximum flow rate (Nm/bar)	在V_{gmax}时,q_{vmax}	240	300	384
当量扭矩(Nm/bar) Equivalent torque (Nm/bar)	Tk	1.27	1.7	2.54
扭矩(Nm) Torque (Nm)	T_{max}	445	595	889
		508	680	1016
惯性矩(kgm^2) Moment of inertia (kgm^2)	J	0.008	0.0127	0.0253
质量(kg) Mass (kg)	m	34	47	64

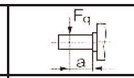
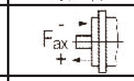
工作油口A(B)的最低进口压力



取决于转速的允许排量



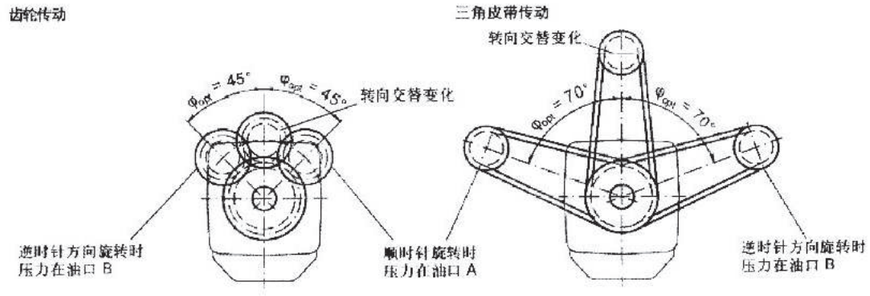
技术参数

驱动轴上的允许径向和轴向负载 Permissible radial and axial loads on the drive shaft							
规格 Specification					80	107	160
距离轴间a的最大径向力 Maximum radial force at distance a between axes		Fqmax	N		13114	15278	20320
		a	mm		17.5	20	22.5
最大径向力 Maximum radial force		+Fax max	N		710	900	1120
		-Fax max	N		710	900	1120
允许轴向力/bar Allowable axial force/bar 工作压力/bar Working pressure/bar		-Fax per/bar	N/bar		9.6	11.3	15.1

注:轴向柱塞马达处于静态或无压力循环工作时,如出现更高的力请与我司联系。
考虑轴向力时,必须考虑其力传递方向。
-Faxmax =延长轴承寿命
+Faxmax=缩短轴承寿命(尽可能避免)
径向力 Fq 对轴承使用寿命的影响
通过选择合适的 Fq 力传递方向,可以减少内部力传递作用在轴承上的力,这样可获得轴承的最佳使用寿命。
配对齿轮的建议位置取决于旋转方向。

Note: If higher forces occur when the axial piston motor is in static or unpressurized cyclic operation, please contact us.
When considering the axial force, its force transmission direction must be taken into account.
-Faxmax = extended bearing life
+Faxmax = shortened bearing life (avoid as much as possible)
Effect of radial force Fq on bearing service life
By selecting the appropriate Fq force transmission direction, the internal force transmission acting on the bearing can be reduced, so that the best bearing service life can be obtained.
The recommended position of the mating gear depends on the direction of rotation.

示例:



规格计算 Specification calculation

流量 flow	$q_{v=}\frac{Vg\cdot n}{6000}$	L/min	Vg=排量,单位:ml/r Δp=压差,单位:bar
转速 Speed	$n=\frac{q_v 1000\cdot \eta v}{Vg}$	rpm	n=转速,单位:rpm
扭矩 Torque	$T=\frac{V_g\cdot \Delta P\cdot \eta_{mh}}{20\cdot \pi}$	Nm	η_v=容积效率 η_{mh}=机械液压效率
功率 power	$qv=\frac{2\pi\cdot T\cdot n}{6000}=\frac{qv\cdot \Delta p\cdot \eta t}{600}$	KW	η_v=总效率

变量方式

A

HD-液压控制，与外控压力有关

马达的排量随外控压力信号无级变化。排量与作用在油口X上的外控压力成比例。

标准配置

控制起点位于 Vgrmer(最大扭矩，最小转速)控制终点位于Vgmn(最小扭矩，最大允许转速)

The motor displacement changes steplessly with the external control pressure signal. The displacement is proportional to the external control pressure acting on the oil port X.
Standard configuration
The control starting point is at Vgrmer (maximum torque, minimum speed) and the control end point is at Vgmn (minimum torque, maximum allowable speed)

请注意:

最大允许外控压力:100bar

为了获得稳定的控制，油口 A(8)上至少需要 30bar 的工作压力。如在工作压力 < 30 bar 时进行控制，

则必须通过-个外部单向阀在油口 G上施加一个至少 30bar 的辅助压力。某些情况下所需的压力可能会较低。

订货时，请用文字说明控制起点的设定值，例如:控制起点=10bar。以下仅适用于规格 250

壳体压力影响控制起点和 HD 特性曲线。壳体压力的增加使控制起点升高，从而使 HD 特性曲线平行移动。

由于内部泄油(工作压力>控制压力)在油口X处有流量约为 0.3/min 的油液溢出。为了防止外控压力增加 油口X必须与油箱相连。

HD1 外控压力增量 A p= 10bar

油口X上的外控压力增加 10bar，排量将从 Vgmax 降低至 0cm'(规格 28 至 200),或从 Vomaxo 降低至 0.2 Vomax(规格 250)。

控制起点，设定范围 2-20bar 标准设定:

控制起点3 bar(控制终点13bar)

HD2 外控压力增量 OPs=25bar

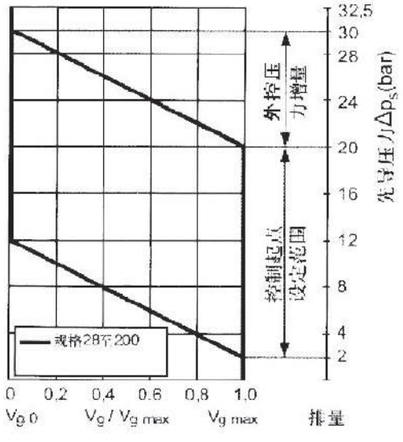
油口X上的外控压力增加 25bar,排量将从Voma,降低至0(规格 28至 200)或从 Vorar 降低至 0.2Vqmax(规格 250)控制起点

设定范围 5-50bar 标准设定:

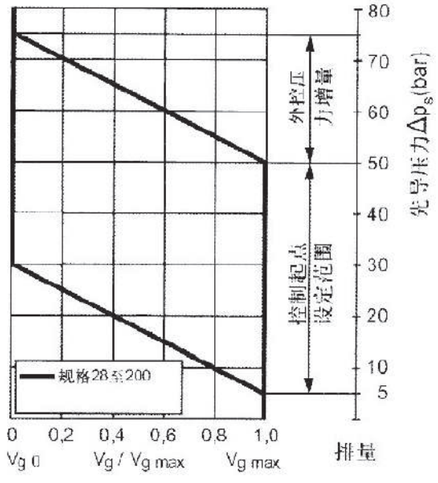
控制起点 10bar(控制终点 35bar)

Please note:
Maximum permissible external control pressure: 100 bar
For stable control, a minimum operating pressure of 30 bar is required at port A (8). For control at operating pressure < 30 bar,
an auxiliary pressure of at least 30 bar must be applied to port G via an external non-return valve. In some cases the required pressure may be lower.
When ordering, please specify the set value for the control start point, e.g.: control start point = 10 bar. The following applies only to size 250
The housing pressure influences the control start point and the HD characteristic curve. An increase in housing pressure raises the control start point
and thus shifts the HD characteristic curve parallel.
Due to internal oil leakage (operating pressure > control pressure), an oil flow of approx. 0.3/min is generated at port X. To prevent an increase in external
control pressure, port X must be connected to the tank.
HD1 External control pressure increment Ap= 10bar
When the external control pressure on port X increases by 10bar, the displacement will decrease from Vgmax to 0cm' (specifications 28 to 200), or from
Vomaxo to 0.2 Vomax (specification 250).
Control start point, setting range 2-20bar Standard setting:
Control start point 3 bar (control end point 13bar)
HD2 External control pressure increment OPs=25bar
When the external control pressure on port X increases by 25bar, the displacement will decrease from Voma to 0 (specifications 28 to 200) or from
Vorar to 0.2Vqmax (specification 250)Control start point
Setting range 5-50bar Standard setting:
Control start point 10bar (control end point 35bar)

HD1 特性曲线
HD1 characteristic curve



HD2 特性曲线
HD2 characteristic curve



HD-液压控制，与先导压力有关 HD-hydraulic control, related to pilot pressure

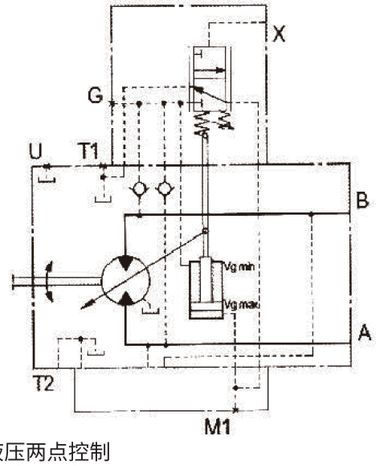
A

HD1,HD2原理图

HD1, HD2 schematic diagram

规格 28 至 200

Sizes 28 to 200

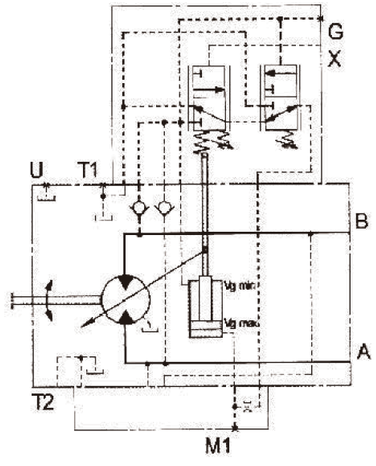


HD.D原理图

HD.D schematic diagram

规格 28 至 200

Sizes 28 to 200



HZ-液压两点控制

HZ-Hydraulic two-point control

液压两点控制可通过在油口 XiX 施加外控压力或不施加外控压力使马达的排量设定在 Vgmin 或 Vgmax 处

Hydraulic two-point control can set the motor displacement at Vgmin or Vgmax by applying external control pressure or not applying external control pressure to the oil port XiX.

无外控压力　　设定在 Vgmax
有外控压力(>10bar)　　设定在 Vgmin

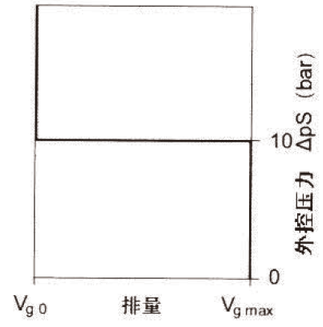
标准配置:

控制起点位于 Vgmax(最大扭矩，最小转速)

控制终点位于 Vgmin(最小扭矩，最大允许转速)

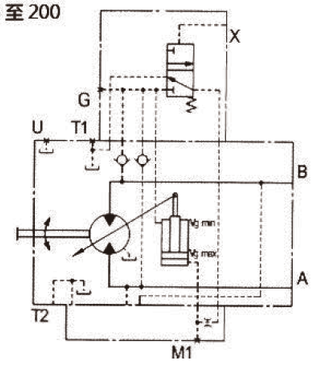
Standard configuration:
Control start point is at Vgmax (maximum torque, minimum speed)
Control end point is at Vgmin (minimum torque, maximum allowable speed)

HZ特性曲线



HZ原理图

规格 28 至 200



请注意:

最大允许外控压力:100bar

为了获得稳定的控制，油口 A(B)上至少需要 30bar 的工作压力。如在工作压力<30bar 时进行控制，则必须通过一个外部单向阀在油口G上施加-个至少 30bar 的辅助压力。某些情况下所需的压力可能会较低。

Please note:
Maximum permissible external control pressure: 100 bar
In order to obtain stable control, a working pressure of at least 30 bar is required at port A (B). If control is performed at a working pressure < 30 bar, an auxiliary pressure of at least 30 bar must be applied to port G via an external check valve. In some cases, the required pressure may be lower.

A2FM定量马达

A

EP-电气控制，带比例电磁铁 EP-Electrical control with proportional solenoid

使用比例电磁铁(规格 28至200)或比例阀(规格250)的电气控制可根据电气信号无级控制马达的排量。控制功能与所加电流成比例。对于规格 250，在油口P处需要 Pmin=30bar 的外部压力(Pmax= 100bar)。

Electrical control using a proportional solenoid (sizes 28 to 200) or a proportional valve (size 250) allows the displacement of the motor to be controlled infinitely according to an electrical signal. The control function is proportional to the applied current. For size 250, an external pressure of Pmin=30 bar (Pmax= 100 bar) is required at port P.

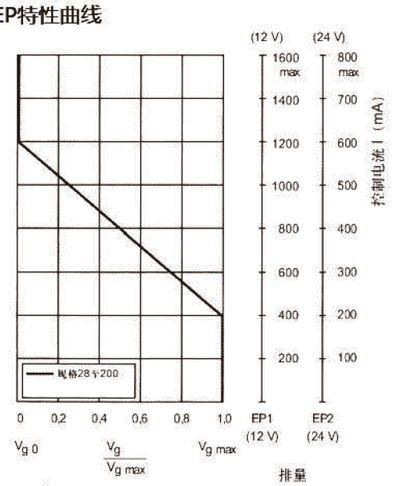
标准配置:

控制起点位于 Vgmax(最大扭矩，最小转速)

控制终点位于 Vgmin(最小扭矩，最大允许转速)

Standard configuration:
Control start point is at Vgmax (maximum torque, minimum speed)
Control end point is at Vgmin (minimum torque, maximum allowable speed)

EP特性曲线



请注意:

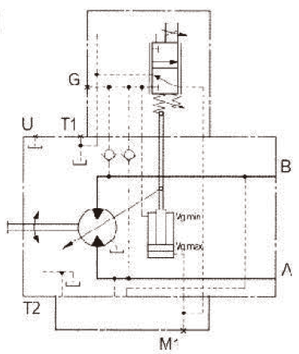
为了获得稳定的控制，油口 A(8)上至少需要 30 bar 的工作压力。如在工作压力<30 bar 时进行控制,则必须通过一个外部单向阀,在油口 G上施加--个至少 30 bar 的辅助压力。某些情况下所需的压力可能会较低。

Please note:
To achieve stable control, an operating pressure of at least 30 bar is required at port A (8). For control at operating pressures < 30 bar, an auxiliary pressure of at least 30 bar must be applied to port G via an external non-return valve. In some cases the required pressure may be lower.

技术参数，用于EP1、EP2比例电磁铁 Technical parameters for EP1 and EP2 proportional solenoids

规格28至200 Size 28 to 200	EP1	EP2
电压 Voltage	12V（±20%）	24V（±20%）
控制电流 Control current 控制起点位于Vgmax The control starting point is at Vgmax	400mA	200mA
控制终点位于Vgmin The control end point is at Vgmin	1200mA	600mA
极限电流 Limiting current	1.54A	0.77A
公称电阻(20°C时) Nominal resistance (at 20°C)	5.5Ω	22.7Ω
颤动频率 Vibration frequency	100Hz	100Hz
工作时间 Working time	100%	100%

EP1、EP2原理图
规格28至200



变量方式

A

EP.D-电气控制，带压力切断控制 EP.D-Electrical control with pressure cut-off control

EP.D-电气控制，带压力切断控制。压力控制控制优先于电气控制。如果由于负载扭矩或马达摆角减少而使系统压力升高，则在达到压力的设定点时，马达摆向较大的摆角。

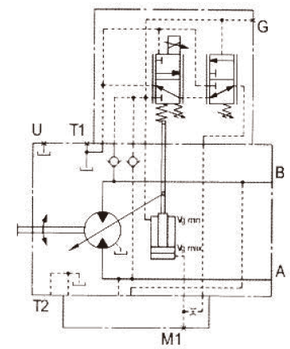
由于排量增大和压力减少，控制偏差减少。通过增大排量，马达在恒压下产生较大的扭矩。

压力设定范围

规格28至200_____80-400bar

EP.D - Electrical control with pressure cut-off control. Pressure control takes precedence over electrical control. If the system pressure increases due to load torque or motor swivel angle reduction, the motor swivels to a larger swivel angle when the set point for the pressure is reached. Due to the increased displacement and reduced pressure, the control deviation is reduced. By increasing the displacement, the motor produces a greater torque at constant pressure. Pressure setting range Specifications 28 to 200 80-400 bar

EP.D原理图
EP.D Schematic
规格28至200
Size 28 to 200



EZ-电气两点控制，带开关电磁铁
带开关电磁铁(规格28至200)或开关阀(规格250)的电气控制允许通过电磁铁或开关阀的通断电使排量达到Vgmax或Vgmin.

EZ - Electrical two-point control with switch solenoid
The electrical control with switch solenoid (sizes 28 to 200) or switch valve (size 250) allows the displacement to reach Vgmax or Vgmin by switching the solenoid or switch valve on and off.

请注意:

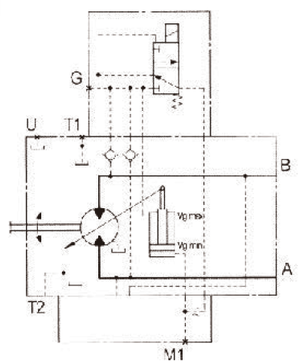
为了获得稳定的控制，油口A(8)上至少需要30bar的工作压力。如在工作压力<30bar时进行控制，则必须通过一个外部单向阀在油口G上施加一个至少30 bar的辅助压力。某些情况下所需的压力可能会较低。

Please note:
For stable control, an operating pressure of at least 30 bar is required at port A (8). For control at an operating pressure < 30 bar, an auxiliary pressure of at least 30 bar must be applied to port G via an external non-return valve. In some cases the required pressure may be lower.

规格28至200 Size 28 to 200	EZ1	EZ2
电压 Voltage	12V(±20%)	24V(±20%)
中位Vg max Median Vg max	断电	断电
位置Vg min Position Vg min	断电	断电
公称电阻（20°C时） Nominal resistance (at 20°C)	5.5Ω	21.7Ω
额定输出 Rated output	26.2Ω	26.5A
有效电流，最低要求 Effective current, minimum required	1.32A	0.67A
工作时间 Working time	100%	100%

EP1、EP2原理图
规格28至200

EP1, EP2 schematics
Specifications 28 to 200



A

变量方式

HA-自动控制，与高压有关 HA - automatic control, related to high pressure

使用与高压有关的自动控制，可根据工作压力自动调节马达排量。

此控制装置测量油口A或B的内部工作压力(不需要控制管路),一旦达到控制器设定压力值,随着工作压力增加,

马达由最小排量Vgmin向最大排量Vgmax摆动。

Using high pressure related automatic control, the motor displacement can be automatically adjusted according to the working pressure.
This control device measures the internal working pressure of oil port A or B (no control pipeline is required). Once the controller set pressure value is reached, as the working pressure increases,the motor swings from the minimum displacement Vgmin to the maximum displacement Vgmax.

HA1，HA2的标准配置:

控制起点位于Vgmin(最小扭矩，最大转速)

控制终点位于Vgmax(最大扭矩，最小转速)

Standard configuration of HA1 and HA2:
Control start point is at Vgmin (minimum torque, maximum speed)
Control end point is at Vgmax (maximum torque, minimum speed)

请注意:

对于卷扬驱动，出于安全考虑，不允许将控制起点设在Vgmin。

Please note: For winch drives, it is not permitted to set the control starting point at Vgmin for safety reasons.

HA1 几乎没有压力增量

工作压力增量△p≤10bar使排量从0ml/r增加到Vgmax(规格28至200).

控制起点，设定范围

规格28至200　　80-350bar

订货时，请用文字说明控制起点的设定值或在技术协议中注明。

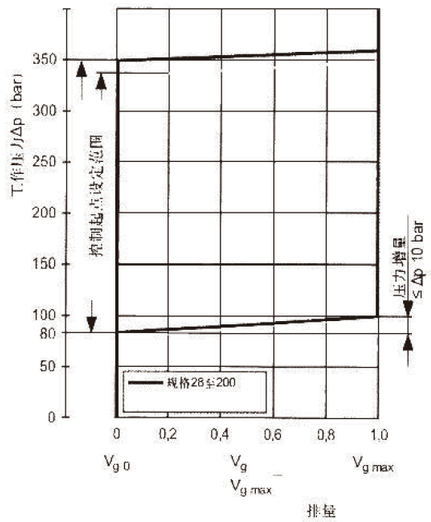
HA1 has almost no pressure increment
The working pressure increment △p≤10bar increases the displacement from 0ml/r to Vgmax (specifications 28 to 200).
Control starting point, setting range
Specifications 28 to 200　　80-350bar
When ordering, please indicate the setting value of the control starting point in words or in the technical agreement.

请注意:

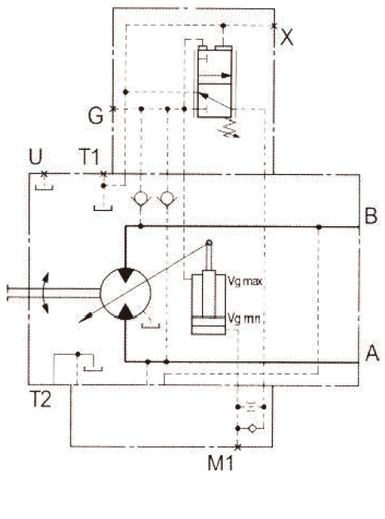
对于卷扬驱动，出于安全考虑，不允许将控制起点设在Vgmin。

Please note: For winch drives, it is not permitted to set the control starting point at Vgmin for safety reasons.

HA1特性曲线
HA1 characteristic curve



HA1原理图
规格 28至 200
HA1 schematics
Sizes 28 to 200



A

变量方式

HA-自动控制，与高压有关 HA - automatic control, related to high pressure

HA2 压力增量△p≤100bar

工作压力增量△p≤100bar使排量从0ml/r增加到Vgmax(规格28至200).

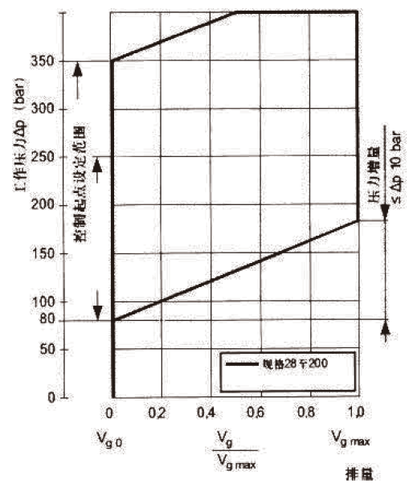
控制起点，设定范围

规格28至200

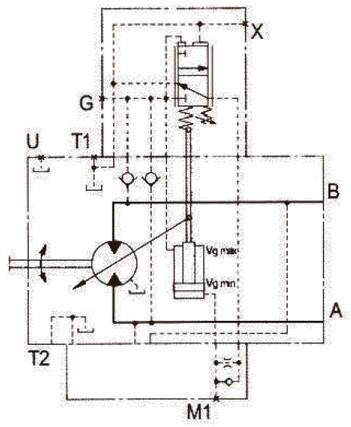
订货时，请用文字说明控制起点的设定值或在技术协议中注明。

HA2 pressure increment △p≤100bar
The working pressure increment △p≤100bar increases the displacement from 0ml/r to Vgmax (specifications 28 to 200).
Control starting point, setting range
Specifications 28 to 200
When ordering, please indicate the setting value of the control starting point in words or in the technical agreement.

HA1特性曲线
HA1 characteristic curve



HA1原理图
规格 28至 200
HA1 schematics
Sizes 28 to 200

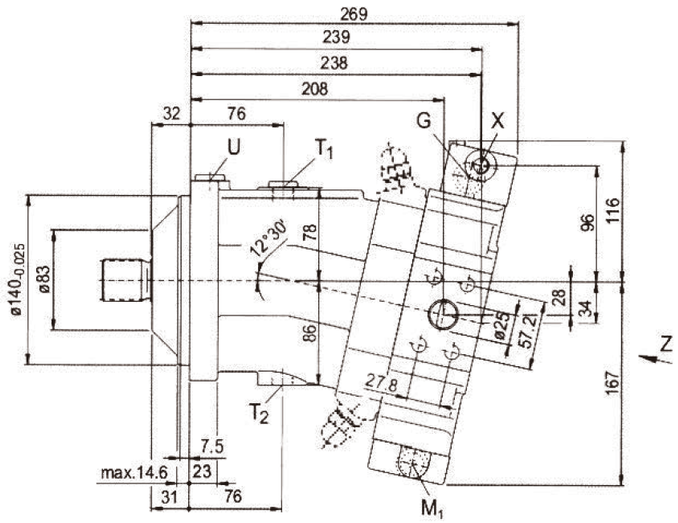


外形尺寸

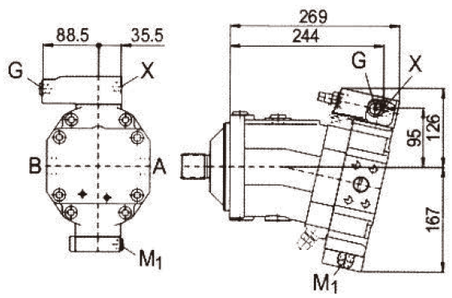
A

规格 80 外形尺寸
Size 80 Dimensions

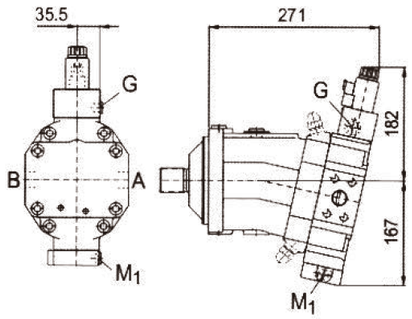
HD1，HD2液压控制，与外控压力有关
HD1, HD2 hydraulic control, related to external control pressure



HD.D波压控制，与外控压力有关,带压力切断控制
HD.D wave pressure control, related to external control pressure, with pressure cut-off control



EP1，EP2电气控制，带比例电磁铁
EP1, EP2 electrical control, with proportional solenoid

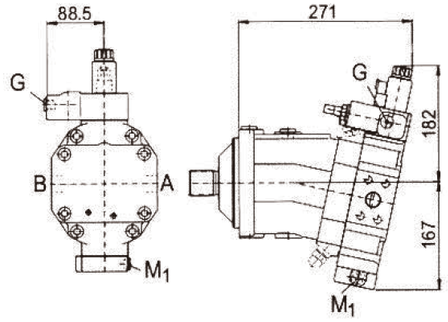


外形尺寸

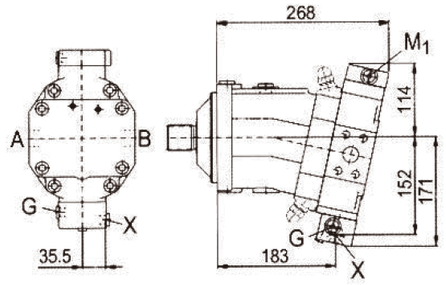
A

规格 80 外形尺寸
Size 80 Dimensions

EP.D电气控制，带比例电磁铁，带压力切断控制
HA1, HA2 automatic control, related to high pressure



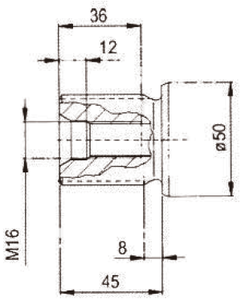
HA1，HA2自动控制，与高压有关
HA1, HA2 automatic control, related to high pressure



轴伸
Shaft extension

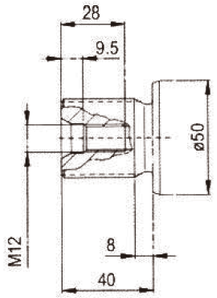
A 花键 DIN5480
W40x2x30x18x9g

A Spline DIN5480
W40x2x30x18x9g

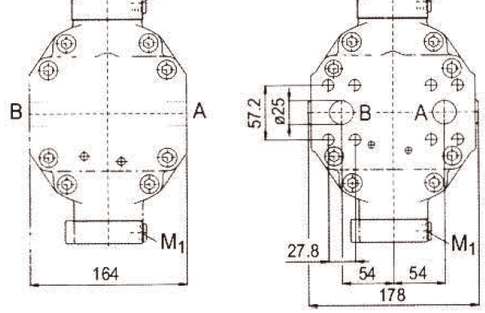


Z 花键 DIN5480
W35x2x30x16x9g

Z spline DIN5480
W35x2x30x16x9g



020后盖
020 Back cover



A、B	T1、T2	X	U	M1	G
SAE1”	M18×1.5	M14×1.5	M18×1.5	M14×1.5	M14×1.5

注:A、B 工作油口:T1、T2 壳体泄油口;X外控压力油口:U 冲洗油口;M1 控制压力测量口 G 远程控制压力油口:

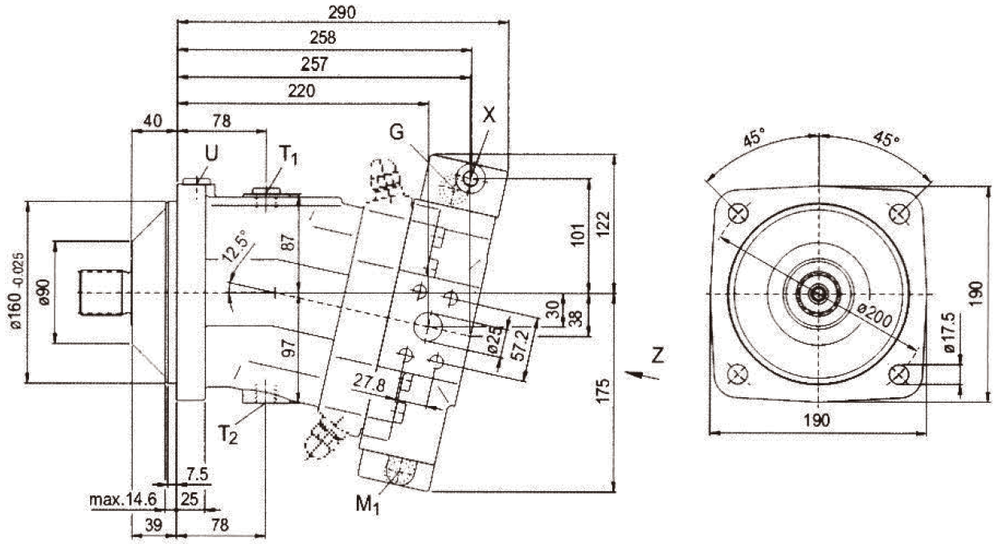
Note: A, B working oil port; T1, T2 shell oil drain port; X external control pressure oil port; U flushing oil port; M1 control pressure measurement port G remote control pressure oil port:

外形尺寸

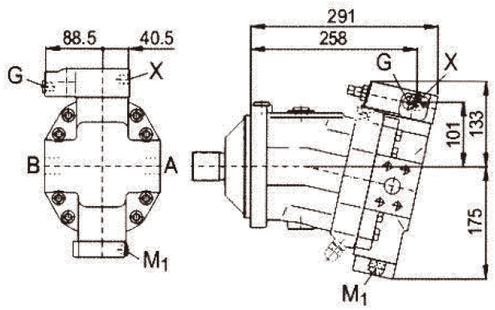
A

规格 107 外形尺寸
Size 107 Dimensions

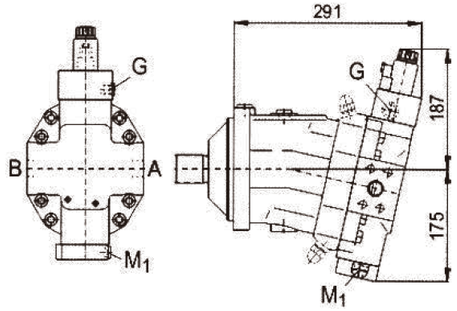
EP.D电气控制，带比例电磁铁，带压力切断控制
HA1, HA2 automatic control, related to high pressure



HD.D波压控制，与外控压力有关,带压力切断控制
HD.D wave pressure control, related to external control pressure, with pressure cut-off control



EP1，EP2电气控制，带比例电磁铁
EP1, EP2 electrical control, with proportional solenoid

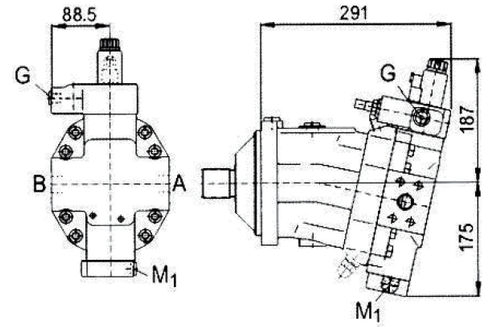


外形尺寸

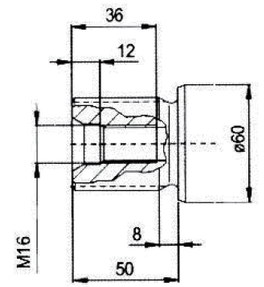
A

规格 107 外形尺寸
Size 107 Dimensions

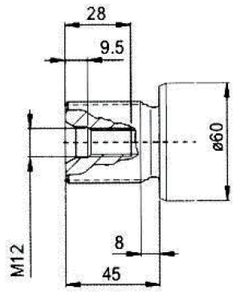
EP.D电气控制，带比例电磁铁，带压力切断控制
HA1, HA2 automatic control, related to high pressure



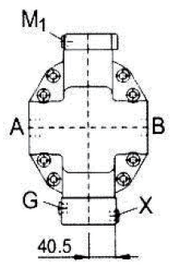
轴伸
Shaft extension
A 花键 DIN5480
W40x2x30x18x9g
A Spline DIN5480
W40x2x30x18x9g



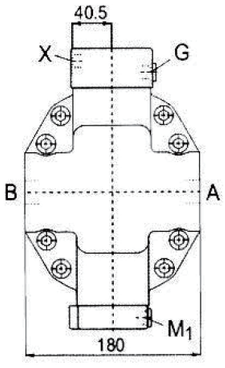
Z 花键 DIN5480
W35x2x30x16x9g
Z spline DIN5480
W35x2x30x16x9g

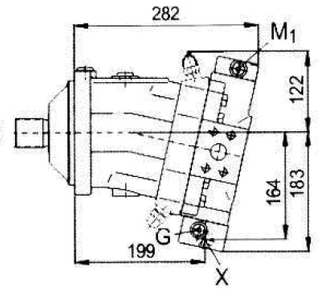


HA1，HA2自动控制，与高压有关
HA1, HA2 automatic control, related to high pressure

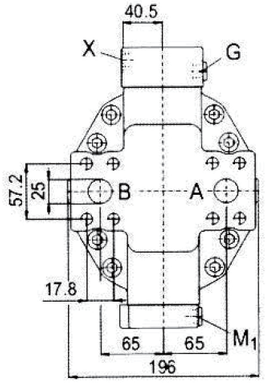


020后盖
020 Back cover





010后盖
010 Back cover



A、B	T1、T2	X	U	M1	G
SAE1”	M18×1.5	M14×1.5	M18×1.5	M14×1.5	M14×1.5

注:A、B 工作油口;T1、T2 壳体泄油口;X外控压力油口;U 冲洗油口;M1 控制压力测量口 G 远程控制压力油口;
HA1,HA2 变量方式时X口堵住

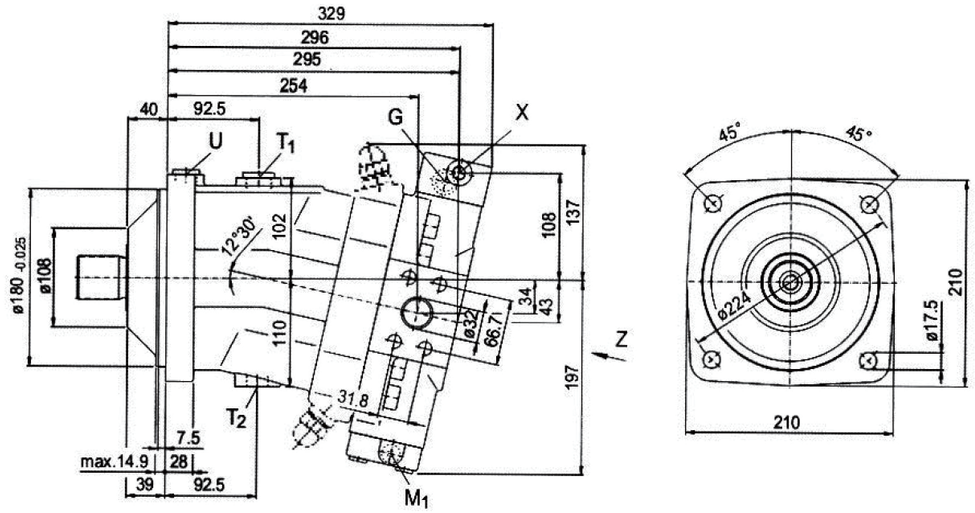
Note:
A, B working oil ports; T1, T2 housing oil drain ports; X external control pressure oil port; U flushing oil port; M1 control pressure measurement port G remote control pressure oil port;
HA1, HA2 X port is blocked in variable mode

外形尺寸

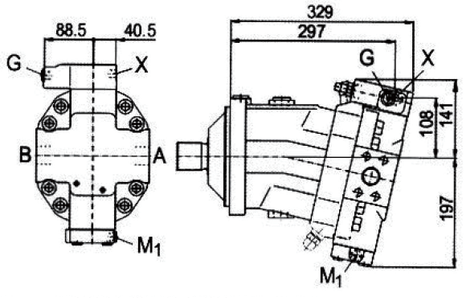
A

规格 160 外形尺寸
Size 107 Dimensions

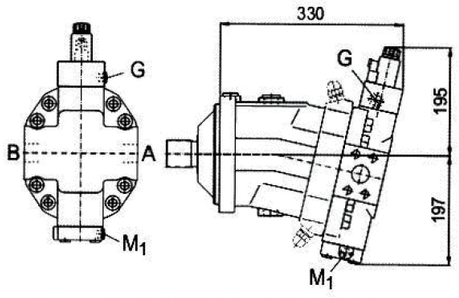
HD1.HD2液压控制，与外控压力有关HZ1液压两点控制
HD1.HD2 hydraulic control, related to external control pressure HZ1 hydraulic two-point control



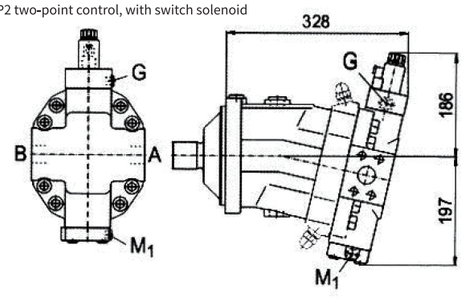
HD.D液压控制，与外控压力有关,带压力切断控制
HD.D hydraulic control, related to external control pressure, with pressure cut-off control



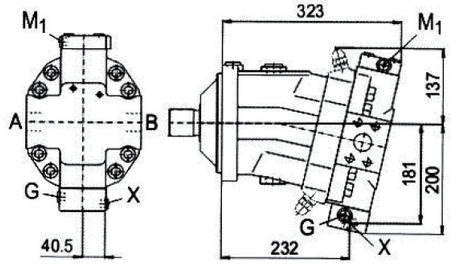
EP1，EP2电气控制，带比例电磁铁
EP1, EP2 electrical control, with proportional solenoid



EP1，EP2两点控制，带开关电磁铁
EP1, EP2 two-point control, with switch solenoid



HA1、HA2自动控制，与高压有关
HA1, HA2 automatic control, related to high pressure

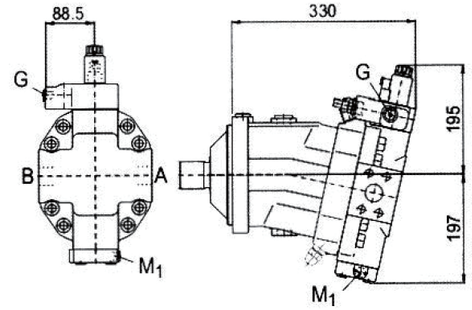


外形尺寸

A

规格 160 外形尺寸
Size 80 Dimensions

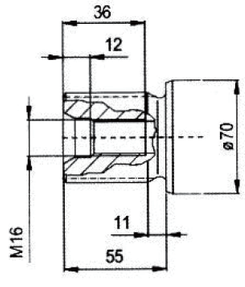
EP.D电气控制，带比例电磁铁，带压力切断控制
HA1, HA2 automatic control, related to high pressure



轴伸
Shaft extension

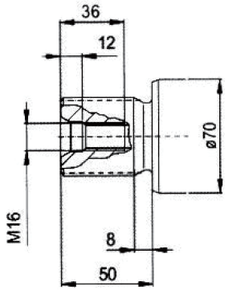
A 花键 DIN5480
W50x2x30x24x9g

A Spline DIN5480
W50x2x30x24x9g

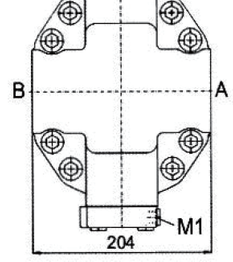


Z 花键 DIN5480
W45x2x30x21x9g

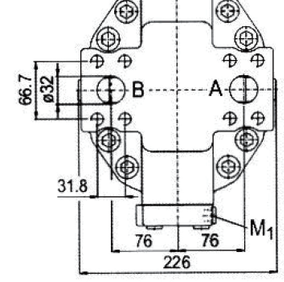
Z spline DIN5480
W45x2x30x21x9g



020后盖
020 Back cover



010后盖
010 Back cover



A、B	T1、T2	X	U	M1	G
SAE1 1/4”	M18×1.5	M14×1.5	M18×1.5	M14×1.5	M14×1.5

注:A、B 工作油口;T1、T2 壳体泄油口;X外控压力油口;U 冲洗油口;M1 控制压力测量口 G 远程控制压力油口;
HA1,HA2 变量方式时X口堵住

Note:
A, B working oil ports; T1, T2 housing oil drain ports; X external control pressure oil port; U flushing oil port; M1 control pressure measurement port G remote control pressure oil port;
HA1, HA2 X port is blocked in variable mode

A7V系列斜轴式轴向柱塞泵

A7V Series Inclined Axial Piston Pump

A

适用于开式回路静液压系统

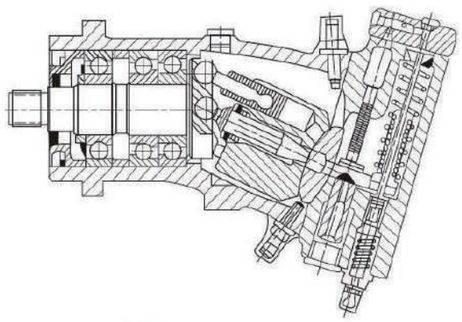
Suitable for open loop hydrostatic system

概 述 Overview

本产品是斜轴式轴向柱塞泵，用于开式回路静液压传动中。公称压力35MPa
峰值压力40MPa.

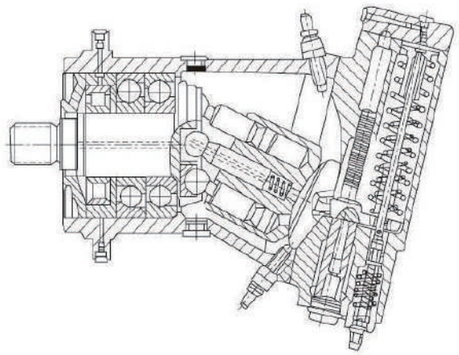
This product is an inclined axial piston pump for open loop hydrostatic transmission. Nominal pressure 35MPa
The peak pressure is 40MPa

剖视图：



结构 Series 1
规格 Size 20-160

Section



结构 Series 5.1
规格 Size 250-500

说 明:

·斜轴式轴向柱塞泵，用于开式回路静液压传动中。

·流量与驱动转速及排量成正比，在恒定驱动转速下，可以无级变化。

·控制装置品种齐全，用于每种控制和调节功能。

·用矿物油和抗燃液体工作。

Description

Variable displacement pump,axial piston, bent axis design,for hydrostatic transmissions in open circuits.
The flow is proportional to the drive speed and the displacement and is steplessh variable at constant drive speed.
comprehensive programme of control devices for every control and regulation function.
operation of both mineral.and fire-resistant fluids

结构特点:

结构1

·高性能的旋转组件及球面配油盘，可实现自动对中，低周速，高效率。

·驱动轴能承受径向载荷，

·长寿命。

·低噪声级。

结构5.1

·具有提高技术数据后的新型高性能

·旋转组件及经过考验的球面配油盘，

·结构紧凑。

Special Features

Structure 1

·High-performance rotating components and spherical oil distribution plate can achieve automatic centering, low peripheral speed and high efficiency.
·Drive shaft can withstand radial load,
·Long life.
·Low noise level.

Structure 5.1

· New high performance with improved technical data
· Rotating components and proven spherical oil distribution plate,
· Compact structure.

型号说明:Model Description

A

A7V	55	LV	2.0	L	Z	F	O	O

泵型号Pump Type

变量泵Axial piston variable Displacement pump	A7V

规格Size

0-20.5	20
8.1-28.1	28
0-40.1	40
15.8-54.8	55
0-58	58
23.1-80	80
0-78	78
30.8-107	107
0-107	117
46.2-160	160
0-170	170
18.5-190	190
0-250	250
0-355	355
0-500	500

(排量Displacement Vgmin-Vgmax ml/r)

结构形式Series

恒功率变量	Constant horsepower control	LV
恒压变量	Constant pressure control	DR
电控比例变量	Electrical control (with prop.solenoid)	EL
液控变量	Hydraulic control pressure related	HD
手动变量（带手轮）	Manual control (with handwheel)	MA
刹车变量	Brake control	SC
数字变量	Numerical control	NC
见剖视图	see section	2.0
		5.1

辅助元件Auxiliary Equipment

没有none	O
带压力截流（遥控） 对于LV、EL和HD所有规格 当Vgmin=0 （顺序阀和底板单独订货）	D
恒压控制，遥控 （顺序阀和底板单独订货）	F

油口连接Pipe Connections

压力油口：Pressure port. SAE法兰：在侧面SAE flange,on side 吸油口：Suction port: SAF法兰：在侧面SAF flange,on side	F
压力油口：Pressure port: 螺纹连接，在侧面SAE flange,on side 吸油口：Suction port: SAE法兰：在侧面SAE flange,on side	G

轴伸 shaft End

花键splined shaft DIN 5480	Z
花键splined shaft GB3478.1-83	S
平键keyed shaft GB1096-79	P

轴向（从轴端看）Direction of Rotation

(Viewed of shaft end)

顺时针clockwise	R
逆时针anti-clockwise	L

订货示例，A7V.55.LV.2.0.L.Z.F.O.O

轴向柱塞变量泵A7V，规格55，恒功率控制，结构2.0逆时针旋转，花键，SAE法兰连接，没有行程限位器和辅助元件。

Ordering Example:A7V.55.LV.2.0.L.Z.F.O.O

Axial piston variable displacement pump A7V,size55.With constant horsepower control,series 2.0.

anti-clockwise rotation,splined shaft
SAE side flange connections,without auxiliary equipment

A

进口工作压力(S口绝对压力)
Inlet Operation Pressure Absolite pressure at port S
Pabs min ----0.08MPa
Pabs max ----0.2MPa

粘度范围:Viscosity range
Vmin----10mm²/s
Vmax----(短时) (for short periods) 1000mm²/S

最佳工作粘度:Optimum Operating Viscosity
Vopt-16...36mm²/s
油液选择:Fluid Recommendation
工作温度 推荐粘度等级符号DIN51519
Operating Recommended Viscosity grade
temperature to DIN51519

出口工作压力范围Operating Pressure Range-Outlet Side
额定压力Nominal pressure---P_N=35MPa
最高压力Peak pressure---Pmax=40MPa
油温范围Fluid Temperature Range
tmin---25°
tmax---+80°

Range ISO(VG) (在40°C时, at40°C)

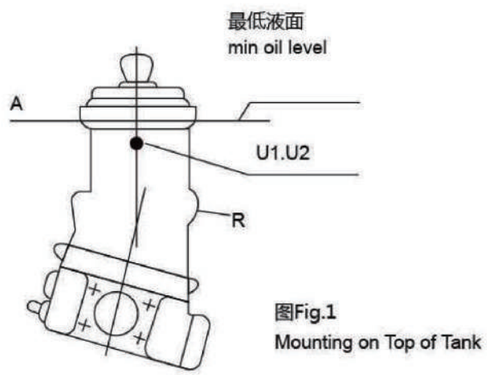
30-40°C	VG22.22mm²/S
40-50°C	VG32.32mm²/S
50-60°C	VG46.46mm²/S
60-70°C	VG68.68mm²/S
70-80°C	VG100.100mm²/S

液压油的过滤:Filtration of Hydraulic Fluid
推荐过滤精度为10μm。亦可使用25-40 μm的,但使用10μm 的可以延长使用寿命,元件磨损减少
Recommended filtration 10 μ m Coarser filtration of 25-40 μm is possible,but longer component life,wil be achievedusing 10 μ m fltration due to lowest component wear.

安装位置Mounting Position

任选。泵壳必须始终充满油液。当装于油箱内时,油口R的螺塞必须去下,此油口必须在顶部,并拧上一个90°的弯头(减少噪音)。
驱动轴朝上垂直安装:
对此必须定货带有油口U1和U2的型号(用文字说明带油口U1和U2)。最低液面不低于“A”线,如图1所示
该泵装于油箱内时油口U1和U2和R的螺塞必须取下,当装于油箱外时,泵在启动前必须在油口U1或U2排气。

Optional,The pump housing must always be filled with oil.
When mounting within a -tank the plug must be removed fom port R and this port must be atthe top.90'c pipebend to be screwed in(noise reducion)
Note:
Vertical mouning with drive shaft pointing upwards.for this case a model with ports U1 and U2 must be ordered (indicate in clear text"with pors Uf andU2").The minimum oil level must not fall below the"A"line,as shown in Figl.



图Fig.1
Mounting on Top of Tank

泵装于油箱顶部:

A7V变量泵装于油箱顶部应看作特殊安装,只能在特定的条件下实现,订货时请注明:用于油箱顶部安装。
这种安装要求吸油口位于上方,吸油管尽可能短,管端至少低于最低波面200mm见图2
管的内径应保证油的流速在0.8至 1m/s之间吸油

Mounting on Top of Tank Mounting of the A7V variable considered as a special pump installation and should only be reaized under specific conditions.
When ordering pumps for mounting on top of tank,state in clear text:
"To Be Used for Above Tank Mounting"
This instalation requires that the sucion port be at the top and the sucion pipe be kept as possible and the end of the pipe be at least 200mm below minimum oil level.see Fia2
The cross-cut of the suction pump should be so dimensioned to ensure that the iow velocity of the pressure fluid ies betveen 0.8 and 1m's.

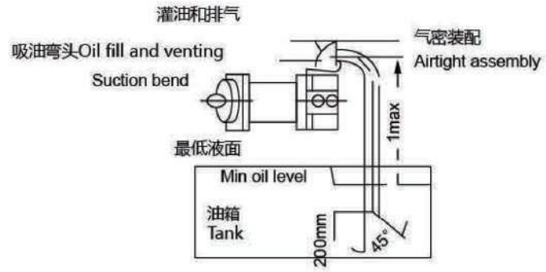


图 Fig.2

规格 Size	最高转速 Max speed n_{max} r/min	吸油管最大长度 Max length of suction pipe Lmax(mm)	在流速V=0.9m/s和下Vgmax 下算出的吸油管内径(mm) Calculated suction pipe 1.D. (mm) at flow velocity V=0.9m/s and Vgmax	
			speed转速 n_{max} (r/min)	speed转速 $n_{E=1450}$ (r/min)
20	3610	600	41.8	26.5
28	2660	600	42	31
40	3040	750	53.6	37
55	2240	750	53.8	43.3
58	2700	750	61.3	45
80	2015	750	61.3	52.3
78	2410	750	66.6	51.6
107	1800	750	67.5	60.5
117	2125	850	76.5	63.3
160	1565	850	77	74

1)此数值仅适用于吸油口绝对压力为0.09MPa,排量为Vgmax及用矿物油工作时。
1)The values shown are valid for Vgmax,with 0.09MPa absolute pressure at suction inlet S and when operated on mineral oil.

注Note :
A7V泵只能在泵处于最大摆角(Vgmax)时启动,对于调节从Vgmin开始的泵,
Qmin限位螺钉必须调到最小流量≥Vgmax5%处,以免在零位工最时吸油管方空。
Start-up of the pump with all controls is only possible when the pump is at its full swivel angle(Vgmax),For pumps with minimumfiow of 2596 of Vgmax,in order to avoid emptying of the suction line during zero position.

A

技术参数表：(理论值，未考虑机械效率金额容积效率) (theoretical values，without considering mech-hyd.and volumetric efficiency)

规格Size				20	28	40	55	58	80	78	107	117	160	170	190	250	355	500
变量方式control Device																		
LV恒功率变量Constant HP control				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
LVS恒功率负荷传感变量 Constant pressure control with load sending																		
DR恒压变量Constant pressure control				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DRS恒功率负荷传感变量 Constant pressure control with load sending																		
HD液压变量Hydraulic control				●	●	●	●	●	●	●	●	●	●					
EL电控比例变量Electric control (Proportional)						●	●	●	●	●	●	●	●	●	●	●		
MA手动变量Manual contraol				●	●	●	●	●	●	●	●	●	●	●	●	●		
SC刹车变量Brake control												●	●			●		
NC数字变量Numerical control										●	●							
排量Displacement		Vgmax	ml/r	20.5	28.1	40.1	54.8	58.8	80	78	107	117	160	170	190	250	355	500
		Vgmin	ml/r	0	8.1	0	15.8	0	23.1	0	30.8	0	46.2	0	18.5	0	0	0
最高转速Max.speed[3]	在0.09mpa[1]	nmax0.09	r/min	3800	2800	3200	2360	2850	2120	2540	1900	2240	1650	1650	1650	1400	1250	1120
	在0.1mpa[1]	nmax0.1	r/min	4100	3000	3400	2500	3000	2240	2700	2000	2360	1750	1750	1750	1500	1320	1200
	在0.15mpa[1]	nmax0.15	r/min	4750	3600	3750	3000	3350	2750	3000	2450	2650	2100	2100	2100	1850	1650	1500
最大流量Max.flow[2]	在N_{max}0.09	Qmax0.09	L/min	76	76	124	125	161	164	162	197	254	256	280	313	340	430	543
	在N_{max}0.1	Qmax0.1	L/min	82	82	132	133	170	174	204	208	267	271	297	332	364	455	582
	在N_{max}0.15	Qmax0.15	L/min	94	98	146	160	190	213	227	254	300	326	357	399	449	568	728
最大功率Max.Power (Δp=35MPa)	在N_{max}0.09	Pmax0.09	KW	45	46	75	75	97	99	116	119	153	154	163	182	204	259	326
	在N_{max}0.1	Pmax0.1	KW	49	49	80	80	102	105	123	125	161	163	173	193	218	273	350
	在N_{max}0.15	Pmax0.15	KW	57	59	88	96	114	128	136	153	181	196	208	232	270	342	437
流量FlowQ[2]	在NE=1450r/min		L/min	28.8	39.5	56.4	77.1	82.3	112.5	109.7	150.5	164.6	225	246	275	—	—	—
最大功率Max.Power (Δp=35MPa)	在NE=1450r/min		KW	17	24	34	46	50	68	66	91	99	135	143	160	—	—	—
扭转Torque M (Δp=10MPa)	在Vgmax在10MPa		Nm	32.6	44.6	63.7	87	93.2	127.5	124	169.7	186	254	270	302	397.5	564.5	795
	Vgmin在10MPa		Nm	—	12.9	—	25.1	—	36.8	—	49	—	73.5	—	29	—	—	—
扭转Torque M (Δp=35MPa)	Vgmax在35MPa		Nm	114	156	223	305	326	446	731	594	651	889	946	1057	1391	1975	2782
	Vgmin在35MPa	J	Nm	—	45	—	88	—	129	—	171	—	257	—	103	—	—	—
惯性距Moment			kgm2	0.0017	0.0017	0.0052	0.0052	0.0109	0.0109	0.0167	0.0167	0.0322	0.0322	0.064	0.064	0.088	0.1600	0.1600
重量Weight			kg	19	19	19												

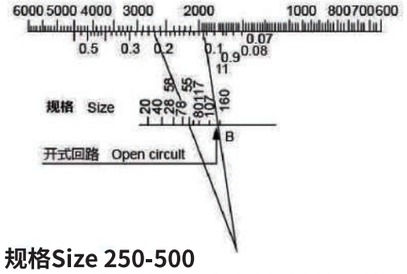
1) 所示值为吸油口S的绝对压力，且在Vgmax用矿物油工作。
2) 以容积效率97%算出。
3) 即使在更高的负载下，最高转速不得超过0.15MPa时的数值，但对于Vgmin＞0那些规格：28-20,55-40,80-85，107-78,160-117，通过减少排量（Vg＜Vgnax）和维持最大流量，最高转速可提高到Vgmin=0的那些规格的值。

1)The values shown are valid for Vgmax.with an absolute pressure at suction inlet S and wfien operated on mineral olil
2)Calculated with a volumetric efficiency of 97%.
3)The maximum speeds at 0.15MPa shown must not be exceeded,even with higher loading.On those sizes withi Vgmin > 0,however the maximum speeds can be increased to the values for those sizes with Vgmin=0 by reducing the displacement(Vg < Vgmaxjand malintalining max.flow.the relevant sizes are 28-20,55-40,80-85,107-78,160-117.

允许转速Nperm和吸油口压力Pabs可由诺模图确定，不过必须考虑最高转速（见参数表）及最低和最高吸油压力

Permissible speed Nperm and suction pressure pads can be read from the nomograph.However,the max,speeds(see table)and min.and max.suction pressure must be taken into account.

诺模图Nomograph　规格 Size20-160

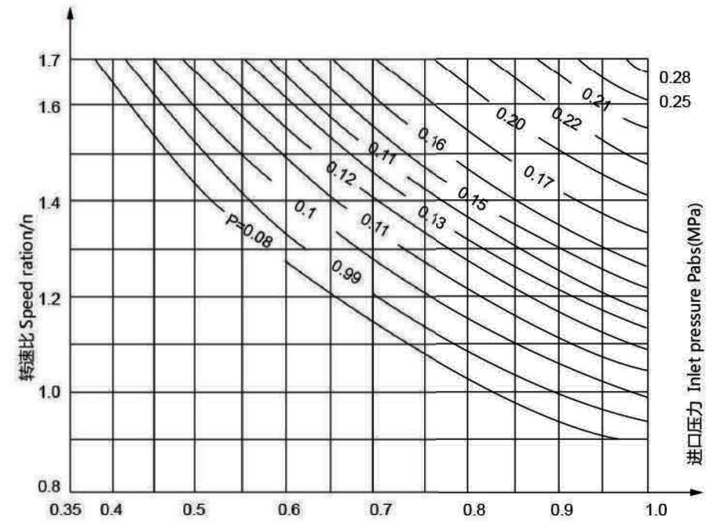


例：
给定:规格55，驱动转速2700r/min.
求:吸油口S出的绝对压力，Pabs.
解:从nperm刻度向规格联直线于线H相交于A点，再从A点向B点连直线l得到Pabs=0.177MPa.

Example:Given:size 55 drive speed 2700r/min
Required:pressure Pabs at the suction inlet.
Solution:Line if on scale npem drawn towards size 55 crosses line H at port A.Line ll from point A to point B(open circuit)gives the result pabs=0.117MPa

规格Size 250-500
吸油口S处的绝对压力和转速增加时排量减少值得计算

Calculation of linlet Pressure Pabs at Suction Inlet S and of Reduction in Displacement at Increased Speeds.



规格Size	250	355	500
$n_{maxpern}$ (T/min)	2500	2400	2000

示例
给定:规格500，驱动转速1320r/min
求:吸油口S的压力Pabs
解:转速比 $\frac{n}{nmax0.1} = \frac{1320}{1200} = 1.1$

在最大摆角下给出Pabs=0.12MPa
如果对本例说仅在Pabs=0.1MPa时能自流，则排量须减小到87.6%.

Example.
Given:
Size 500
Driven speed 1320rpm
Required.
pressure Pabs at suction inlet S
Solution:speed ration

$\frac{n}{n_{max0.1}} = \frac{1320}{1200} = 1.1$

gives an inlet pressure of Pabs=0.12MPa
at full swivel for example free fiow is only possible with Pabs=0.12MPa,the displacement must be reduced to 87.6%
nmax=最高允许转速Max,perm speed.

规格计算

流量Flow $Q = \frac{Vg.n.\eta v}{1000}\ 1.1$ [L/min]

驱动扭矩Drive Torque $M = \frac{1.59.Vg.\Delta P}{10.\eta mh}\ 1.1$ [Nm]

驱动功率Drive Power $P = \frac{M.n}{9549} = \frac{Q.\Delta P}{60\eta t}$ [kw]

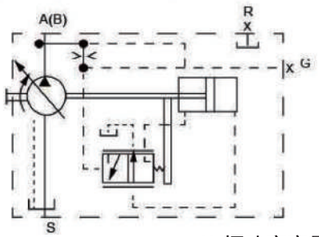
Vg=排量 geom.displacement per rev(ml/r)
ΔP=压差 differential pressure(MPa)
n=转速 speed(r/min)
ηv=容积效率 volumetric efficiency
ηmh=机械效率 mech .hyd.efficiency
η t=总效率 overall efficiency
[η t=η v.η mh]

恒功率变量是与压力有关的控制流量，以保持波压功率恒定(当驱动转速恒定时)
The constant HP conirols fiow in relation to pressure.thereby maintaining hydraulic power constant.(Provided that the drive speed is constant)

$P = \frac{P.Q}{60} = Constant$

P = 功率Power[KW]
P = 功率Power[KW]
Q = 流量flow[1/min]

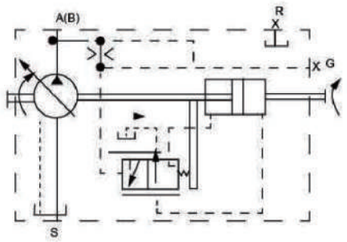
变量起点Commencement of control:min.5MPa
通过油口G的并联可实现总功率变量
Summation HP control posssible by throttles via port G



LV恒功率变量
Constant Horsepower Control

行程限位器 Stroke Limiter

通过机械行程限位器可无极的改变或限制最大排量，调节范围从Vgmax 到 Vgmin.
By means of mechanical or hydraulic stroke limiter, the max.displacement can be infinitely vanied or imilet.Adjustment range fom Vgmax to vgmin.



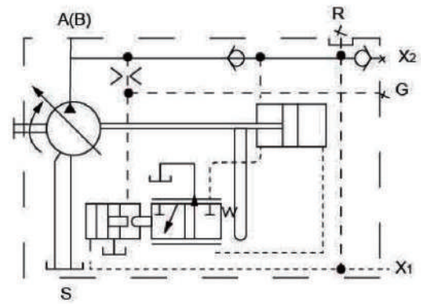
LV带机械行程限位的恒功率变量
Constant HP controllV with mechanical stroke limiter

规格 Size	20 28	40 55	58 80	78 107	117 160	250	355	500
螺纹转数 Spindle Revolutions	23	21	28	31	26	21.25	24	25
所需扭矩 Required Torque (approx.)Ncm	80	140	500	630	—	—	—	

液压行程限位器需要不小于工作压力10%的先导压力(X1油口)。油口X1的最高允许压力=20MPa(对所有规格)，如果需要限制工作压力<5MPa时的流量，则需要在油口X2施加不低于5MPa 的供油压力(油口X1压力为5.10%=0.5MPa)。

A Pilot pressurelport X1)of at least 109% of the operaing pressure is required for the hydraulic sroke limiter Max.,permissible pressure at por X1-20MPa (for all sizes)if it is required to limit the fiow at an operaing pressure<5MPa then a boost pressure of min 5MPa must be applied at port X2(at port X1 then,min10%-0.5MPa)

LV带液压行程限位的恒功率变量 Constant HP control LV with hydraulic stroke limiter



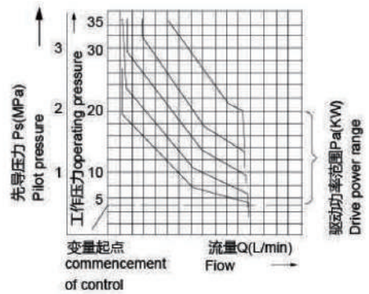
辅助元件:压力切断Auxiliary Equipment:Pressure Cut-Off

适用于Vgmin=0的所有规格
压力切断是叠加在恒功率控制的恒压控制，它借助于顺序阀，当到达设定的最高压力时(调节范围到31.5MPa)，该阀打开，流量自动减少至Q=0。顺序阀与泵翻开安装，可装于任何适当位置(遥控)的底板上。其连接管长(单管)不得大于5m,顺序阀与底板需要单独订货。
当采用带压力切断的恒功率变量时，泵变量时间将比恒压变量泵DR的长3倍。
注意:顺序阀油口T和先导同油口T1必须直接通问油。
在零位连接工作间DR恒压变量。

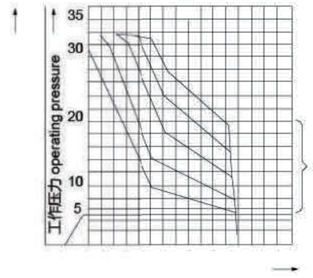
For all sizes with Vgmin=0
The pressure cu-of is a constant pressure control superposed on the constant HP control and is caried out by means of a sequence valve.when the sel maximum pressure is reached(adjustment range up to 315MPa),the valve opens and the flow is automatically reduced(to Q=0)
The sequence valve is mounted separately from the pump in any suitable location one subplate(remote control)
The max./single pipe length must not exceed 5m.order sequence vaive and subplate separately.
When using the constant HP conrol with pressure cuoffthe pump conrol times,wil be aproximately 3 times longer than those obtained with the constant pressure coniro! DR. lmportant:Por T from the sequence vaie and pilot ol relum line Ti must be piped direcl to tank(cooler,.Continuous operation in zero position see constant pressure control DR.

LV的Q-P特性曲线 Characteristics

不带压力切断 without Pressure Cut-off



带压力切断 with Pressure Cut-off 驱动功率范围Pa(KW)

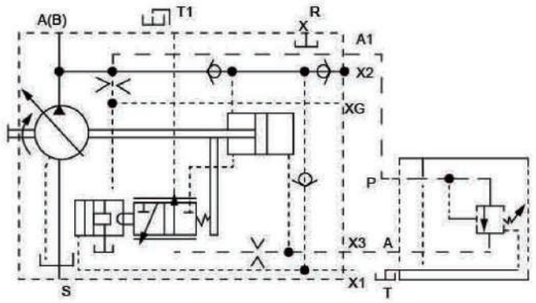


规格Size		20	28	40	55	58	80	78	107	117	160	250	355	500
转速speed	no r/min	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	980	980	980
最大流量Max.flow O在 at no	L/min	28	39	57	77	77	110.5	110	150	165	225	237	337	475
驱动率范围不断压力切断 Drive without pressure	Pomin	3	4	5.5	7.5	7.5	11	11	15	15	22	22	30	45
	Pomax	11	15	18.5	30	30	37	37	45	55	75	90	132	200
带压力切断 cut-off power range P(KW)with perssure cut-off	Pomin	3	—	5.5		7.5		11		15		22	30	45
	Pomax	10	—	18.5		27		37		55		90	132	200
当转速为n时换算如下Conversion to speeds n(rpm)other than n. 驱动功率Drive power		1) 以容积效率97%算出 Calculated with a volumetric efficiency of 97%												

A

LV带压力切断(遥控)和液压行程限位的恒功率变量

Constant HP control LV with pressure cutoff(remote controlled)and hydraulic stroke linhiter



接口connections
A.B工作油□service lines
S吸油口suction-ine
G总功率控制油口port for summation HP contro
X1先导压力口pilot pressure

X2遥控器remote contr.pressure
A1、X3遥控阀油口ports for remote control valve
T1先导回油口pilot oil return line
R排气air bleed

改变型:恒功率负荷传感变量(LVS)
Variation:Control HP Control with Load Sensing

负荷传感阀是个流量控制阀,它工作时作为负载压力的函数来调节泵的排量以使之与负载的需求相匹配,在低于功率曲线的整个范围内,泵的流量受装在泵与负载之间的外部节流孔(控制块,节流阀)的影响,而不受负载压力的影响。该阀比较节流孔前后的压力并用节流孔压降(压差ΔP)把泵向VgmaX变化。直到在阀中恢复平衡。

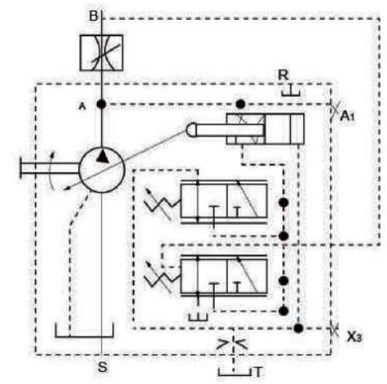
ΔP=Ppump-Pserviced unit

ΔP可设定成14-25bar,标准设定18bar(请用文字说明所需要设定值)。
零行程工作(节流阀关闭)时的启动压力比△P设定值高出2bar。
恒功率控制和压力切断越权于负荷传感阀,即负荷传感功能在低于设定功率曲线设定压力时工作。节流阀不包括在标准供货中。

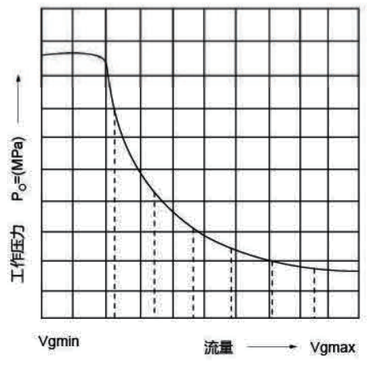
The load sensing valve is a fiow control valve which operates as function of the load pressure to regulate the pump displacement in order to match the requlrement of the consumer unit.The pump flow ls influenced by the extemal orifice(control black,throtle jfitted between pump and serviced unit,per curve.The valve compares pressure before and after the orifice and maintains the pressure before and after the orifice and maintains the pressure drop(diflerential pressureΔP)across the orifice-and therefore the pump fiow-constant,if differentlal pressure ΔP increases the pump is swivelled back towards Vgmin,and if ΔP decreases the pump is swivelled out towards Vgmax,unit a balance is restored within the valve.

ΔP=Ppump-Pserviced unit

ΔP may be set with the range 14 bar to 25 bar.The standard setting is 18 bar(please state required selting in clear text).The stand by pressure for zero stroke operation(orifice close)is approx.2 bar above the ΔP setting The constant power control and the pressure cut-off are super imposed on the load sensing valve,for example the set power hyperbola and set pressure the orifice is not included in the standard supply.



LVS恒功率负荷传感变量
Constant HP control with load sensing

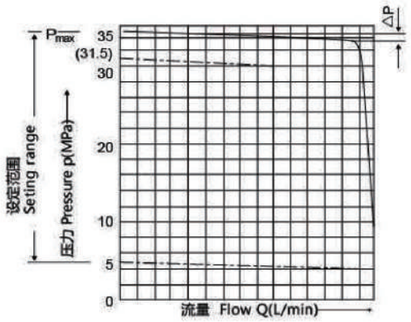


DR 恒压变量Constant Pressure Control

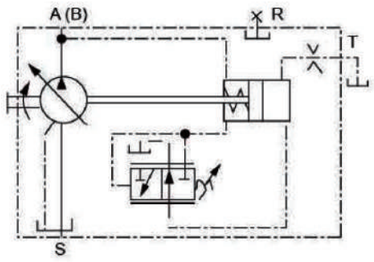
恒压变量在其变量范围内保持系统压力恒定不受泵流量变化的影响变量泵仅供应工作必须的油液体积。如果压力超过设定值,则泵自动摆回小角度。
所须压力可直接在泵上设定(阀内装,标准型),也可在用于带遥控型单独的顺序阀上设定。设定范围5-35MPa.

遥控的设定范围5-35MPa.
The setting range of the remote control is 5-35MPa.

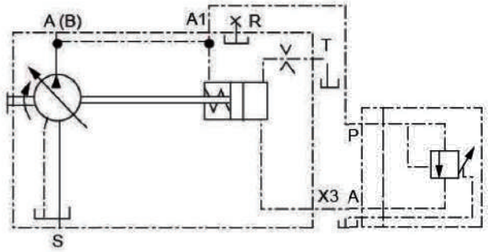
The constant pressure control maintains the pressure in a hydraulic system constant within its control range in spite of changing pump flow requirements. The varable pump supplies only the volume of fluid reguired by the services. Should operating pressure exceed the set pressure,the pump is automatically swivelled back to a smaller angle. The required pressure is set either direct at the pump(valve built in standard model)or at the separate sequence valve for the model with remote control.
Setting range from 5 to 35MPa.



规格	20-17	250-500
ΔP Max (MPa)	1	1.4



DR恒压变量(阀内装)
Constant Pressure control DR (valve built-in)



DR恒压变量(遥控)
Constant Pressure control DR (remote controlled)

注:
顺序阀和底板须单独定货。
最大遥控管单根长度不超过5m。
顺序阀油口T须单独接回油箱。
装于系统中用于压力保护的安全阀,其压力设定必须比恒压变量的压力设定值高2MPa。

Note.
Order sequence valve subplate separately The max.single pipe length should not exceed 5m.Port T from the sequence valve installed in the system for protection of the max.pressure must be set 2MPa above the setting of the pressure control.

规格Size	20	40	58	78	117
Vgmin-Vgmax te (s) 卸压35-5Mpa Pressure unloading	0.16	0.2	0.25	0.25	0.3
Vgmin-Vgmin ta (s) 升压35-5Mpa Pressure built-up	0.03	0.04	0.05	0.05	0.06

对于遥控,表中数值增大3倍。
The values is the table are increased by 3 times for remote control.

并联工作 Parallel Operation

几台A7V恒压变量泵并联工作时,其恒压曲线较陡。在订货时请注明“并联工作”。
并联工作时每台泵需要各自的顺序阀。
For parallel operation of several A7V pumps with constant pressure controla steeper curve is used for the constant pressure control.
please indicatethis requirement in text after the type code when order in("parallel operation").
For parallel operation each individual pump requires its own sequence valve.

A

行程限位 Stroke Limiter

借助机械行程限位器可把最大排量无级地限制在Vgmax与Vgmin之间，洋见LV变量。

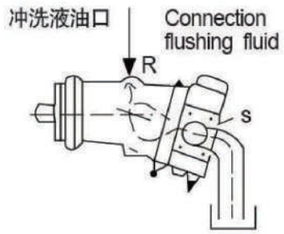
The max.displacement can be steplessly limited belween Vgmax to Vgmin by means of a mechanical stroke imiter

For details see controt device LV.

在零位连续工作 Continuous Operation in Zero Position

不带体积冲洗的零行程工作Zero stroke operation without fushing of housing.

短期 short periods＜10min (~50%ED)		长期 long periods		长期 long periods	
最高允许压力 max,perm pressure Pmax(MPa)	最高允许温度 max,perm tank temperature tmax(°C)	最高允许压力 max,perm pressure Pmax(MPa)	最高允许温度 max,perm tank temperature tmax(°C)	最高允许压力 max,perm pressure Pmax(MPa)	最高允许温度 max,perm tank temperature tmax(°C)
315	50	20	50	31.5	50
带壳体积冲洗的零行程工作 Zero stroke operation with flushing of housing					



冲洗流量 Flushing flow

规格Size	20	40	58	78	250	355	500
流量flow Qsp l/min		2	4	6	8	12.5	25

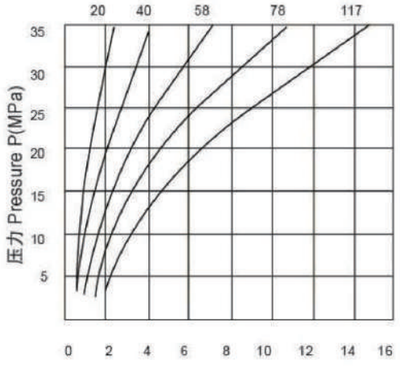
冲洗液温度≤油箱温度 Temperature offlushing fluid≤tank temperature

注:当所A7V汞装于油箱顶部在Pmax力31.5MPa下长时间零行程工作时，必须提供>上表对应规格的冲洗流量对壳体冲洗。

Note:when mounting the A7V on tank and at zero stroke operalion for longer periods of time at pressures up to Pmax 31.5MPa a minimum flow2corresponding to flushing flow as indicated for cach size in the above table must be set instead of case flushing.

零行程时的功率　Power at Zero Stroke

规格Size
在转速n=1450r/min油温
t=50°C时的典型曲线
Typical values at speed
n= 1450rpm
fluid temperature= 50C
要行程时的功率(KW)
Power at zero stroke(KW)



改变型:恒压负荷传感变量(DRS)Variation:Constant Pressure control with Load sensing

负荷传感阀是个流量控制阀，它工作时作为负载压力的函数来调节泵的排量以使之与负载的要求相匹配。在低于设定压力的整个范围内，泵的流量受装在泵与负载之间的外部节流孔(控制块，节流阀)的影响，该阀比较节流孔前后的压力并用节流孔压降(压差)ΔP使泵流保持恒定。

如果压差ΔP加大，则泵向Vgmin变量，而(如果)ΔP减小，则泵向Vgmax变量，直到在阀中恢复平衡。

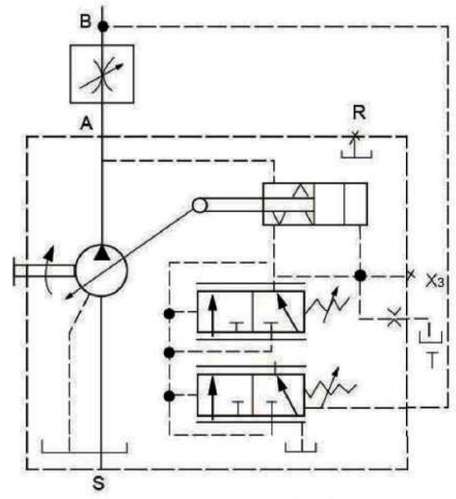
ΔP=Ppump-Pserviced unit

ΔP可设定为14-25bar，标准设定为18bar(请用文字注明所需设定值)。
零行程工作时(节流阀关闭)，启动压力约比ΔP设定值高出2bar。恒压力控制越权于负荷传感阀，即负荷传感功能在低于设定压力时工作。
节流阀不包括在标准供货中。

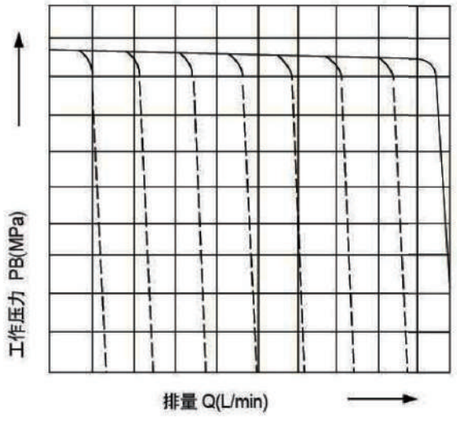
The load sensing valve is a flow control valve which operates as function of the load pesssure to regulate the pump displacement in order to match the requirement of the consumer unit. the pump flow is influenced by the extemal orifice(control black,throttle)fitted between pump and serviced unit, but is not affected by load pressure throuahout the range below the power curve,The valve compares before and after the orifice and maintains the pressure before and afer the orifice and maintains the pressure drop(differential pressureΔP) across the orifife-and the rcfore the pump flow -constant.if diferential pressure ΔP inceases,the pump is swivelled back towards Vgmin,and if ΔP decreases the pump is swivelled out towaards Vgmax,until abalance is restoreo with in the valve

ΔP=Ppump-Pserviced unit

ΔP may be set with the range 14 bar to 25 bar.The standard settngis 18 bar (please state required setting in clear text).The stand by pressure for zero stroke operaion (onifice close) is approx. 2 bar above the ΔP setting, The constant pressure control is superimposed on the load sensing function operates below the set pressure. The oridice is not included in the standard supply.



DRS 恒压带负荷传感变量
Constant Pressure control with load sensing valve



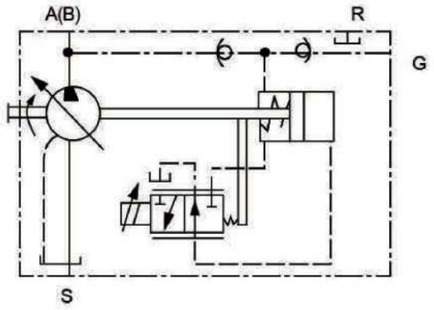
A

EL 电控比例变量Electiric Proportional control

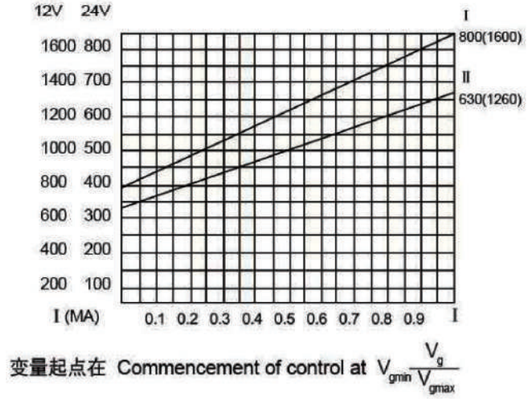
电控比例变量可以无级地按程序控制泵的排量。泵排量与电磁铁吸力成正比，即与电磁铁的电流成正比。变量活塞上的控制力由比例电磁铁产生。
比例电磁铁需要一个电流为300~630mA(600~1260mA)的24V(12V)，直流电源。

变量起点约在300mA(600mA)
变量终点约在630mA(1260mA)调节从Vgmin至Vgmax。如果需要反向控制(Vgmax 至Vgmin)请询问我厂。
如果泵在零位启动或工作压力<4MPa，则油口G须接入4MPa的先导压力。

The electic conrol pemits stepless ard programmabie adjusiment of the solenoid force i.e.the strength of solenoid current The control force on the control piston is generated by a proportional solenoid. The proportional solenoid need a 24V(12V)Dc power supply that the curent is 300_630mA(600_1260mA), commencement ofcontrol at approx.300m A(600mA).
End of control at approx.630mA(1260mA).Adjustment is from Vgmin to Vgmax.please consult us if control in the opposite direction (Vgmax to Vgmin)is required.if the pump is to be moved out of the zero position (Vg =0)or if the operating pressure< 4MPa, a pilot pressure of 4Mpa is necessary at port G.



EL电控比例变量 Electric pro.Control



变量起点在 Commencement of control at V_{gmin} $\frac{V_g}{V_{gmax}}$

注:
曲线I适用于Vgmax>250ml/r; 曲线工适用于Vgmax<250mlr.
Line I adapts for Vgmax≥250ml/r, line I adapts for<250ml/r.

规格Size	20	40	58	78	117
	28	55	80	107	160
Vgmin-Vgmax tmin(s)	0.16	0.2	0.25	0.25	0.3
Vgmax-Vgmin tmin(s)	0.12	0.16	0.2	0.2	0.25

※所示值仅适用于工作压力 Pb =20MPa时。
※The values shown are valid for operating pressure Pb=20MPa

滞 环 Hysteresis

由于电气/液压控制(对于Vgmin至Vgmax的整个调节范围内)，在控制中约有2.5-4% 的滞环。当从同一方向启动时泵位置的重复精度约为2-4%。

A hysteresis of+2.5 to 49(approx. is present in the control because of the electrichydrauic control(referred to the complete adjustment range Vgmin to Vgmax). The repeatability of pump position,when starting ftom the same direction,is around 2-4%.

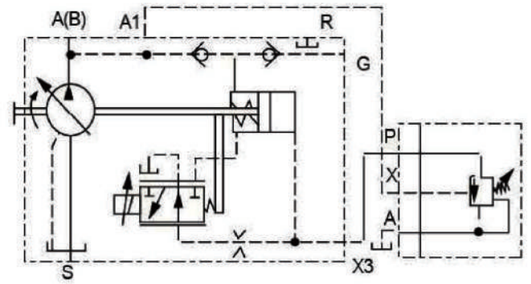
注Note:
只有当使用矿物油箱内最高油温不大于80°C时才能把EL变量泵装在油箱内。(如果把泵浸在油中，请在订货时说明)。

Mounting of the pump with EP.control inside the oil tank is possible.only when using mineral hydraulic oils and with a max oil temperalure in the tank of 80°C . if the pump is to be submerged in oil, please indicate in clear text when ordering).

辅助元件:压力切断Auxiliary Equipment:Pressure Cut-Off

用于 Vgmin=0的所有规格。说明见HD变量。顺序阀和底板需单独订货。

For all sizes with Vgmin=0.
For description see control device HD.
Order sequence valve and subplate separately

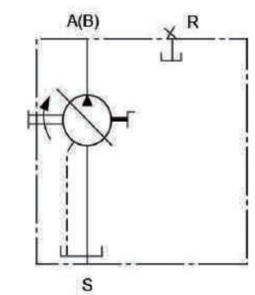


EL带压力切断的电控比例变量 Electric Pro.Control with pressure cut-off
接口 Connections
A.B 工作油口 Service lines
S.吸油口 suction line
G.遥控压力日 remote control pressure
R.排气口 air bleed
A_1,X_3,遥控阀油口 ports for remote control valve

MA手动变量 Manual Control

通过转动手轮借助于螺杆使变量活塞沿轴向运动，并经拔销使配油盘沿其滑动面运动,从而使泵在Vgmax范围内无级地改变其排量。

By turming the handwheel a piston is moved in an axial direcion by means of a threaded spindle A camer pin moves the control lens on its siding plane thus parmitina stepless vanialion of the oump displacament in the range Vamin to Vamax.The pummp position indicator is located in the handwheel



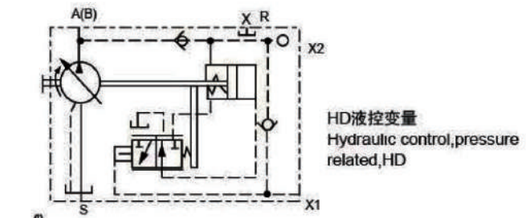
接口 Connections

A, B	工作油口	Service lines
S	吸油口	Suction line
R	排气口	air bleed

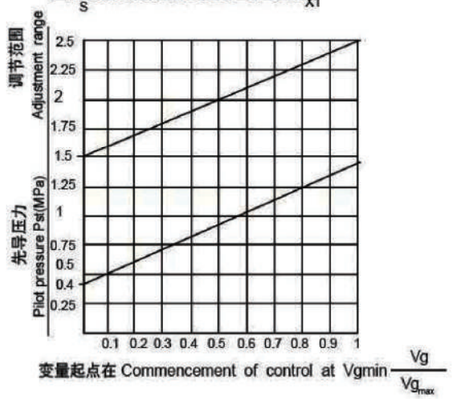
HD 液控变量 Hydraulic Control,Pressure Related

液控变量可按先导压力无级地调节泵的排量，调节量与油口X1的先导压力成正比。
当用HD作2位变量时(Vgmin 至Vgmax),X1口的先导压力不得超过4MPa调节从Vgmin至Vgmax.在整个变量范围内(min-max)先导压力压力升高1MPa.
变量起点的设定范围为0.4-1.5MPa。所需的控制油从高压回路取得，要求的最低工作压力为4MPa。若低于此值，需在油口X2通入4MPa的先导压力。

The hydrauic control prcssurc relatcd,permits the stepless adjustment of the pump displacement in relaion to pilot pressure.
Adjustment is proporional to the pilot pressure at por X1.When using the Hd control at 2-posion conlrol (V gmin to Vgmax) .
the pilot oil pressure on port X1 must not exced 4MPa. Adjustmen is from Vgmin to Vgmax.
The increase in pilot pressure over the complete adjustment range(min-max)is 1MPa.
The setting range for commencement of control is between 0.4 and 1.5MPa.
The necessary control oil is taken from the high pressure circut and a minimum operating pressure of 4MPa.is required if
necessary apply pilot pressure of 4MPa at port X2.
The oil flow at pilot X1 is approx 0.5L/min.



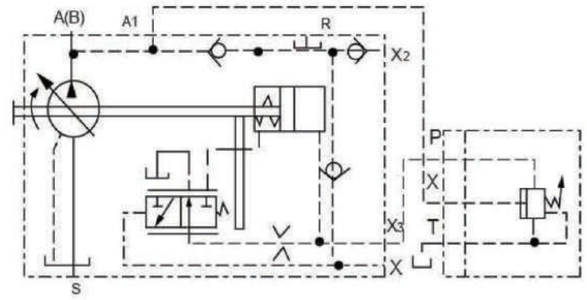
HD液控变量
Hydraulic control,pressure related,HD



附加功能： 压力切断 Additional Function:Pressure cut-0ff

用于Vgmin=0的所有规格。
压力切断用来把流量限制成高压的函数，以便不超过设定的工作压力。此功能由顺序阀实现。达到设定的最高压力(调节范围达31.5MPa)时，该阀打开，流量自动减小(到Q=0)。
顺序阀离开泵单独安装，借助于底板可装于任何适当的位置(遥控)。最大单管长度不大于5m。顺利阀与底板须单独订货。

For all sizes with VgminO.
The pressure cut-off serves to limit the flow as a funcion of the high pressure so that a predetermined operalion pressure is not exceeded.This funcion is carried out by a sequence valve,On reaching the set maximum pressure(adjustment range up to 31 5Mpa) , the valve opens and the flow is automatically reduced(to Q=0).
The sequence valve is mounted separately from the pump in any suitable pipe length should not exceed 5m
Order sequence valve and subplate separately.



HD 带压力切断的液控变量
Hydraulic Control,pressure related,HD with pressure cut-off

注意:顺序阀油口T必须单独通油箱
Important,port T from the sequence valve must be piped separately to tank

在零位连续工作:详见 DR 恒压变量。
Continuous Operations is Zero position
For details see constant pressure control DR

接口 Connections

A.B工作油口 service lines

S.吸油口 suction line

X_1先导压力油口 pilot pressure

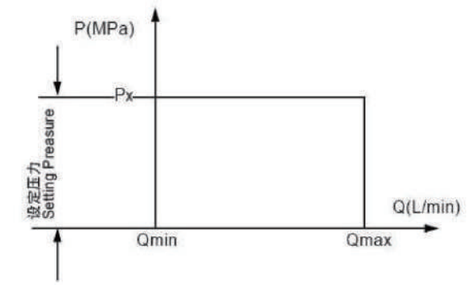
X_2遥控压力油口 remote control pressure

A_1,X_3,遥控阀油口 ports for remote control valve

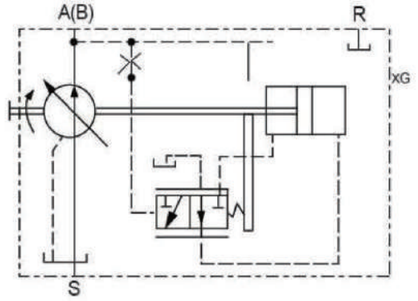
R.排气口 air bleed

SC 刹车变量 Brake Control

用于刹车系统，当系统压力达到一定值后(Px≥4MPa)，立刻使泵达到大摆角，即大流量，大扭矩。
When operation pressure goes up to the setting pressure(Px24MPa),the flow is max,and the torque is max.



SC的P-Q特性曲线 Characteristies

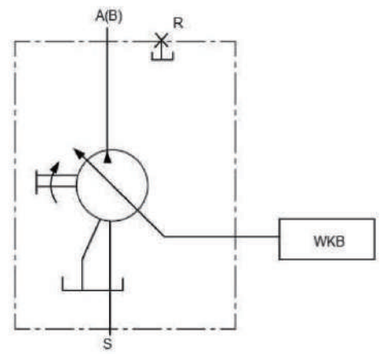


SC 刹车变量
Brake control.SC

NC数字变量 Numerieal Control

用步进电机来驱动泵的变量，可通过控制随意设定工作曲线。(如LV，DR，EL等)
调节时间不大于3秒。

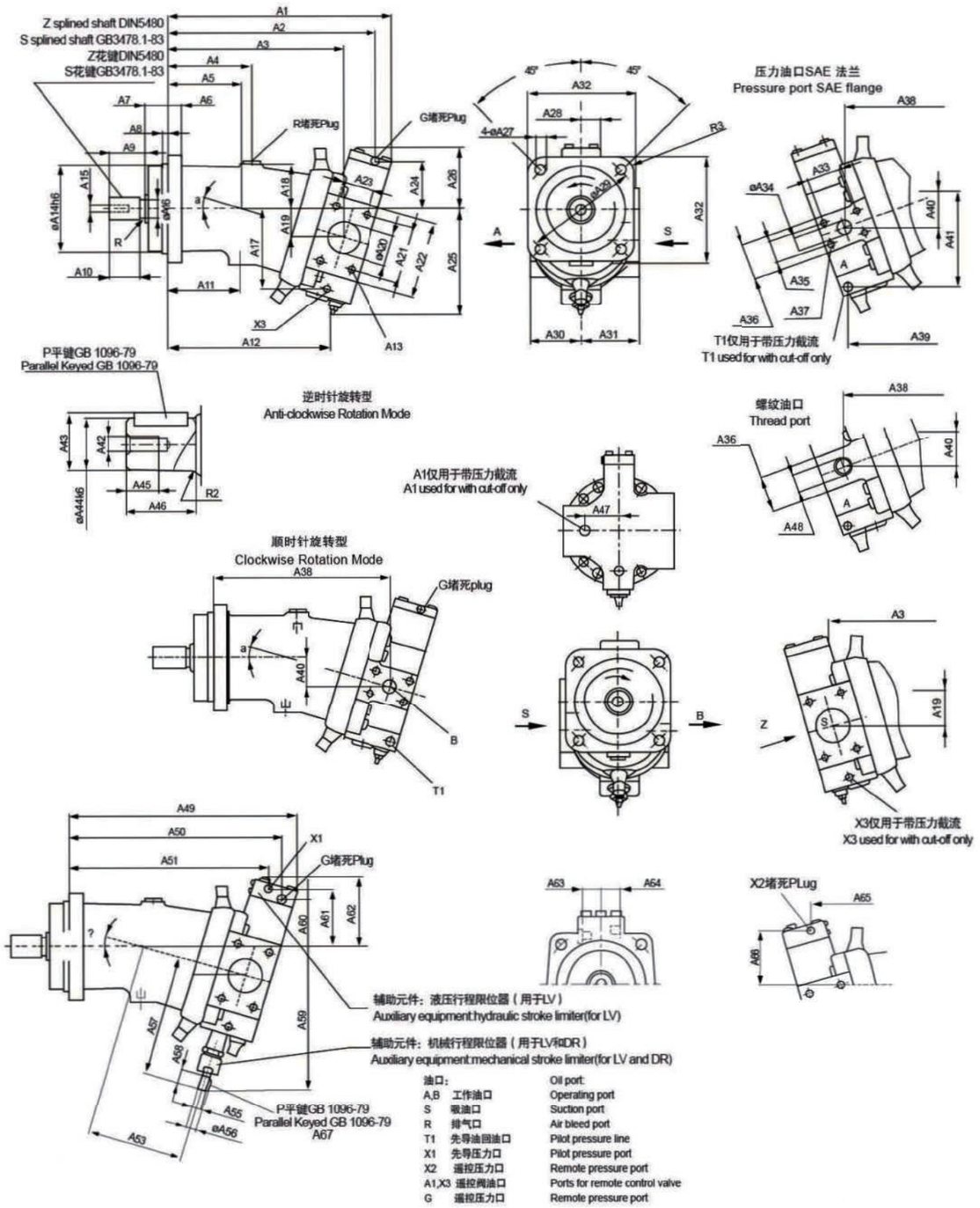
Varied displacement is driven by electric stepping motor.
The working curve is set optionally by control apparatus.
(i.e.LV.DR.EL.etc.)
Adjustment time is not longer than 3s.



A

元件外形尺寸 系列2.0规格20–160 Unit Dimensions Series 2.0 size 20–160

恒功率控制LV Constant horsepower control LV



A7V变量柱塞泵 Variable displacement plump A7V

元件外形尺寸系列2.0规格20-160 Unit Dimensions Series 2.0 size 20-160
恒功率控制LV 系列2.0规格20-160 Constant horsepower control Lv Series 2.0 size 20-160

规格Size	α°	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13深deep	A14	A15	A16	A17	A18	A19	A20
20	9	251	224	199	107	75	16	25	8	48	28	80	160	M12	20	100	M8	21.5	85	52	20	38
28	16	260	232	195	107	75	16	25	8	43	28	80	149	M12	20	100	M8	21.5	95	50	34	38
40	9	317	287	255	123	108	20	32	10	35	28	123	244	M12	20	125	M12	25	95	63	23	50
55	16	327	296	251	123	108	20	32	10	35	28	123		M12	20	125	M12	25	–	63	41	50
58	9	374	337	304	152	137	23	32	10	40	33	152	294	M12	18	140	M12	30	106	77	26.5	63
80	16	385	351	300	152	137	23	32	10	40	33	152	–	M12	18	140	M12	30	–	77	48	63
78	9	381	347	310	145	130	25	40	10	45	37.5	145	298	M12	17	160	M12	35	113	80	29	63
107	16	393	358	305	145	130	25	40	10	45	37.5	145		M12	17	160	M12	35	–	80	50	63
117	9	443	402	364	214	156	28	40	12	50	43	174.5	350	M16	24	180	M16	40	130	93	33	75
160	16	454	414	359	213	156	28	40	12	50	43	174.5	–	M16	24	180	M16	40	–	88	58	75
170	9	470	431	392	225	162	32	50	13	–	–	–	384	M16	27	200	–	–	–	101	36	88
190	11	474	435	391	162	162	32	50	13	–	–	–	377	M16	27	200	–	–	–	101	44	88

规格Size	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37深deep	A38	A39	A40	A41
20	69.9	94	35.7	78	132	95	11	23.5	125	58	58	118	50.8	19	23.8	46	M10	17	193	–	19	–
28	69.9	94	35.7	59	145	80	11	23.5	125	58	58	118	50.8	19	23.8	46	M10	17	189	–	33	–
40	77.8	102	42.9	87	166	109	13.5	29	160	71	81	150	50.8	19	23.8	53	M10	17	253	261	23	98
55	77.8	102	42.9	64	182	91	13.5	29	160	71	81	150	50.8	19	23.8	53	M10	17	249	–	40	–
58	88.9	115	50.8	93	168	113	13.5	33	180	86	92	165	57.2	25	27.8	64	M12	18	301	313	26	109
80	88.9	115	50.8	68	194		13.5	33	180	86	92	165	57.2	25	27.8	64	M12	17	300	–	48	–
78	88.9	115	50.8	101	180	120	17.5	34	200	89	93	190	57.2	25	27.8	64	M12	17	306	318	28	119
107	88.9	115	50.8	73	200	98	17.5	34	200	89	93	190	57.2	25	27.8	64	M12	17	301	–	49	–
117	106.4	135	60.9	114	195	127	17.5	36	224	104	113	210	66.7	32	31.8	72	M14	19	359	368	32	136
160	106.4	135	61.9	83	212	112	17.5	36	224	104	113	210	66.7	32	31.8	72	M14	19	354	–	57	–
170	120	153	70	124	209	169	22	43	250	113	122	230	66.7	32	31.8	72	M14	27	381	–	35	–
190	120	153	70	115	212	163	22	43	250	113	122	230	66.7	32	31.8	72	M14	27	380	–	42	–

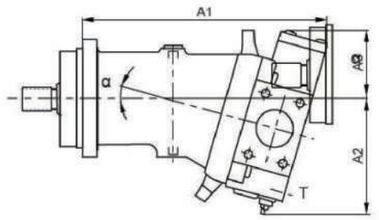
规格Size	A42	A43	A44	A45	A46	A47	A48	A49	A50	A51	A52	深deep	A53	A54	A55	A56	A57	A58	A59	A60	A61
20	M8	27.9	25	19	50	38	M27×2	257	226	23	M3	9	108	8	8.8	42	161	14	176	77	104
28	M8	27.9	25	19	50	38	M27×2	269	234	242	M3	9	108	8	8.8	42	161	14	186	58	84
40	M12	33	30	28	60	40	M33×2	323	290	279	M4	10	134	10	11.2	–	184	16	204	85	117
55	M12	33	30	28	60	40	M33×2	337	299	292	M4	10	134	10	11.2	–	184	16	215	62	98
58	M12	38	35	28	70	62	M42×2	378	344	330	M5	12	155.5	16	18	52	228	24	251	91	116
80	M12	38	35	28	70	62	M42×2	391	354	343	M5	12	155.5	16	18	52	228	24	265	65	91
78	M12	43	40	28	80	55	M42×2	385	352	338	M5	12	169	16	18	52	236	24	261	99	124
107	M16	43	40	28	80	55	M42×2	400	363	351	M5	12	169	16	18	52	236	24	276	71	98
117	M16	48.5	45	36	90	65	M42×2	445	408	384	M5	12.5	192	16	18	65	266	24	294	111	137
160	M16	48.5	45	36	90	65	M42×2	461	420	399	M5	12.5	192	16	18	65	266	24	310	79	108
170	M16	53.5	50	40	100		M42×2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
190	M16	53.5	50	40	100		M42×2	–	–	–	–	–	–	–	–	–	–	–	–	–	–

规格 Size	A62	A63	A64	A65	A66	平键 Keyed GB 1096-79	花键 spline DIN5480	花键 spline GB3478.1-83	R1	R2	R3
20	129	35	30	228	92	Keyed 8×40	W25×1.25×18×9g	EXT18Z×1.25M×30R×5f	1.2	0.8	12
28	114	35	30	228	73	Keyed 8×40	W25×1.25×18×9g	EXT18Z×1.25M×30R×5f	1.2	0.8	12
40	147	30	30	278	104	Keyed 8×50	W30×2×14×9g	EXT14Z×2M×30R×5f	1.6	1.5	16
55	128	30	30	288	83	Keyed 8×50	W30×2×14×9g	EXT14Z×2M×30R×5f	1.6	1.5	16
58	142	33	33	328	104	Keyed 10×56	W35×2×16×9g	EXT16Z×2M×30R×5f	1.6	1.6	16
80	120	33	33	339	80	Keyed 10×56	W35×2×16×9g	EXT16Z×2M×30R×5f	1.6	1.6	16
78	150	33	33	336	112	Keyed 12×63	W40×2×18×9g	EXT18Z×2M×30R×5f	2.5	1.6	20
107	126	33	33	348	86	Keyed 12×63	W40×2×18×9g	EXT18Z×2M×30R×5f	2.5	1.6	20
117	164	34	34	382	125	Keyed 14×70	W45×2×21×9g	EXT21Z×2M×30R×5f	2.5	2.5	20
160	137	34	34	398	96	Keyed 14×70	W45×2×21×9g	EXT21Z×2M×30R×5f	2.5	2.5	20
170	—	—	—	—	—	Keyed 14×80	—	—	—	2.5	20
190	—	—	—	—	—	Keyed 14×80	—	—	—	2.5	20

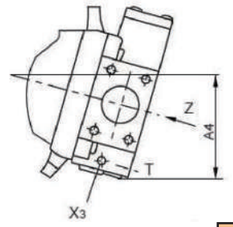
规格 Size	油口 Port								重量
	X1,X2	A1,X3	T	T1	R	G	A,B	S	Weight(kg)
20	M14×1.5	M12×1.5	M12×1.5	M12×1.5	M16×1.5	M14×1.5	SAE3/4"OR	M27×2	SAE11/2"	19
28	M14×1.5	M12×1.5	M12×1.5	M12×1.5	M16×1.5	M14×1.5	SAE3/4"OR	M27×2	SAE11/2"	19
40	M14×1.5	M18×1.5	M12×1.5	M18×1.5	M18×1.5	M14×1.5	SAE3/4"OR	M33×2	SAE12"	28
55	M14×1.5	M18×1.5	M12×1.5	M18×1.5	M18×1.5	M14×1.5	SAE3/4"OR	M33×2	SAE12"	28
58	M14×1.5	M18×1.5	M12×1.5	M18×1.5	M18×1.5	M14×1.5	SAE1"OR	M42×2	SAE21/2"	44
80	M14×1.5	M18×1.5	M12×1.5	M18×1.5	M18×1.5	M14×1.5	SAE1"OR	M42×2	SAE21/2"	44
78	M14×1.5	M18×1.5	M12×1.5	M18×1.5	M18×1.5	M14×1.5	SAE1"OR	M42×2	SAE21/2"	53
107	M14×1.5	M18×1.5	M12×1.5	M18×1.5	M18×1.5	M14×1.5	SAE1"OR	M42×2	SAE21/2"	53
117	M14×1.5	M20×1.5	M12×1.5	M18×1.5	M22×1.5	M14×1.5	SAE1/4"OR	M48×2	SAE3"	76
160	M14×1.5	M20×1.5	M12×1.5	M18×1.5	M22×1.5	M14×1.5	SAE1/4"OR	M48×2	SAE3"	76
170	—	—	—	—	M22×1.5	M14×1.5	SAE1/4"OR	M48×2	—	122
190	—	—	—	—	M22×1.5	M14×1.5	SAE1/4"OR	M48×2	—	122

A7V变量柱塞泵 Variable displacement plump A7V
元件外形尺寸系列2.0规格20-160 Unit Dimensions Series 2.0 size 20-160
恒压控制DR Constant pressure Control DR

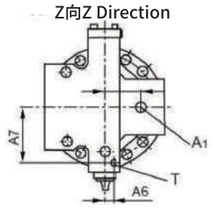
标准型 Standrad Model



遥控器 Remote Model



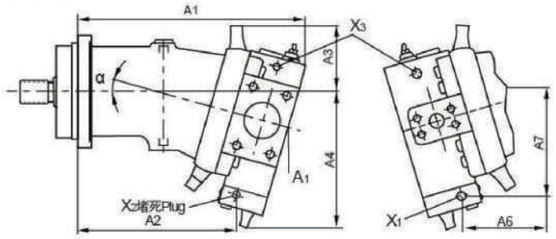
Z向Z Direction



规格20 A1和X3仅用于带压力截流者
其余规格 A1和X3用于遥控
Size 20 A1 and X3 use for with pressure cut-off only
Other sizes A1 and X3 used for remote control

规格Size	α°	A1	A2	A3	A4	A5	A6	A7
20	9	251	134	95	106	38	—	—
40	9	315	166	107	127	40	14	53
58	9	372	160	107	138	62	15	69
78	9	380	180	114	147	60	14	70
107	9	441	199	132	165	65	14	83
170	9	468	209	169	—	—	—	—

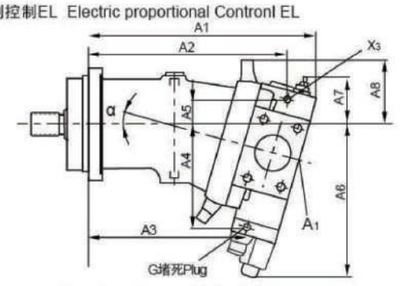
液压控制HD Hydraulic contron HD



A1和 X3仅用于带压力截流者
A1 and X3 used for with pressure cut-off only

规格Size	α°	A1	A2	A3	A4	A5	A6	A7
20	9	248	175	132	182	75	190	147
28	16	253	158	148	195	75	172	160
40	9	312	236	151	206	110	230	166
55	16	318	217	166	220	84	212	180
58	9	367	287	158	213	110	285	170
80	16	373	266	175	232	105	263	186
78	9	375	292	107	225	122	290	182
107	16	382	270	188	245	106	266	200
117	9	634	333	188	250	132	331	200
160	16	442	308	209	272	114	305	220

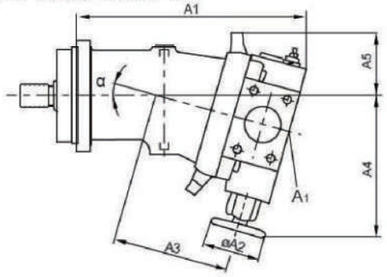
电气比例控制EL Electric proportional Contronl EL



规格20 A1和X3仅用于带压力截流者
其余规格 A1和X3用于遥控
Size 20 A1and X3 used for with pressure cut-off only
Other sizes A1 and X3 used for remote control

规格Size	α°	A1	A2	A3	A4	A5	A6	A7	A8
20	9	248	182	144	113	54	216	75	91
28	16	252	188	130	121	41	229	75	—
40	9	312	267	201	130	49	234	—	110
55	16	318	271	184	140	29	249	—	—
58	9	367	320	249	141	52	245	110	84
80	16	373	325	231	154	29	264	105	—
78	9	374	325	254	153	55	257	122	—
107	16	381	330	234	167	31	277	106	—
117	9	434	381	294	172	64	249	132	—
160	16	442	387	272	187	36	298	114	—
170	9	464	—	354	192	—	309	122	169
190	11	466	—	348	199	—	316	113	163

手动控制MA Manual Control MA

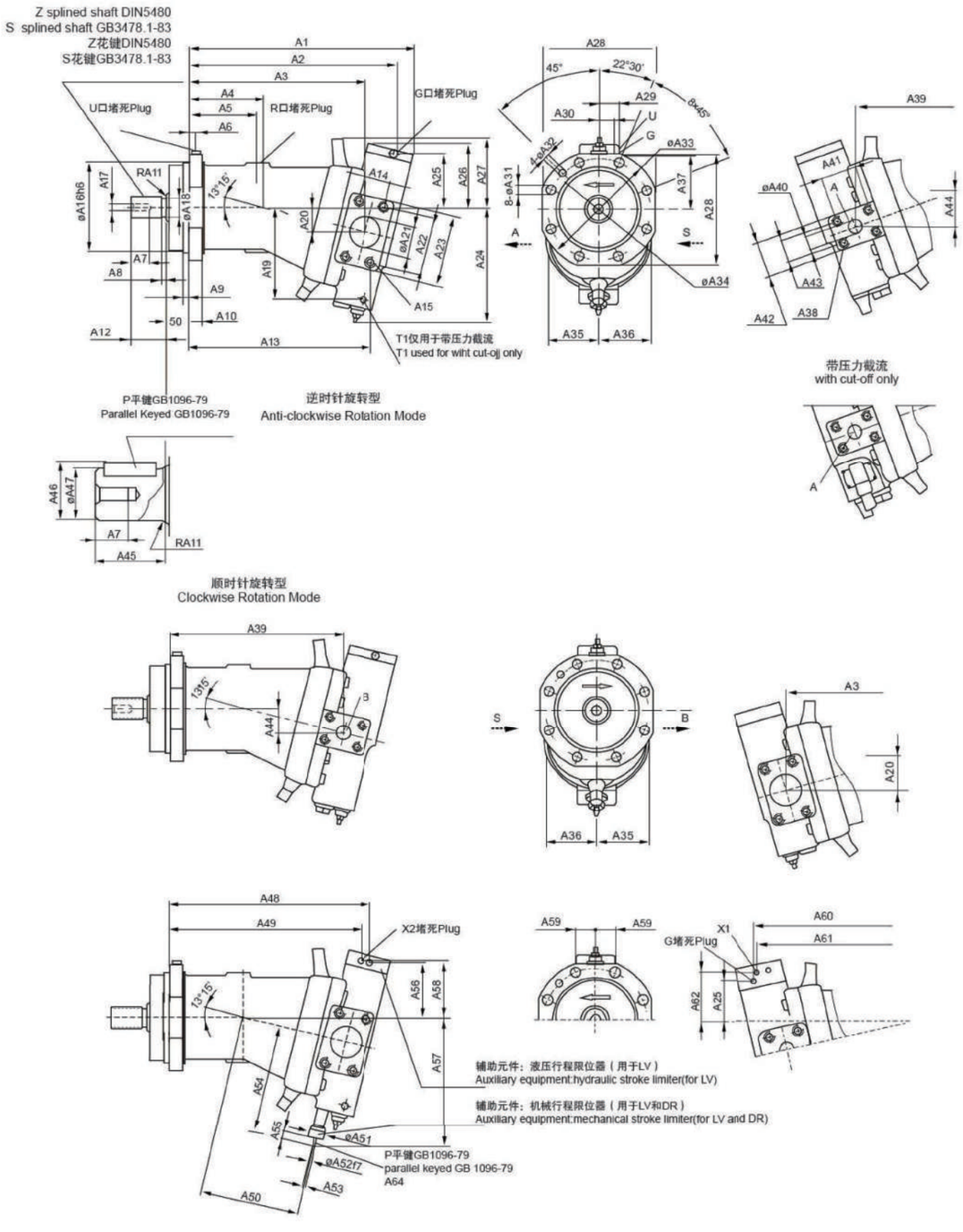


规格Size	α°	A1	A2	A3	A4	A5
20	9	251	180	108	175	95
28	16	260	100	108	190	80
40	9	315	102	134	197	107
55	16	323	102	134	215	89
58	9	372	102	155.5	215	107
80	16	380	102	155.5	235	86
78	9	380	125	169	246	114
107	16	390	125	169	270	92
117	9	441	125	192	261	132
160	16	450	125	192	285	107
170	9	468	100	211	242	169
190	11	472	100	211	251	163

A

元件外形尺寸 系列5.1 规格250–500 Unit dimensions Series 5.1 size 250–500

恒功率控制LVConstant pressure Control LV



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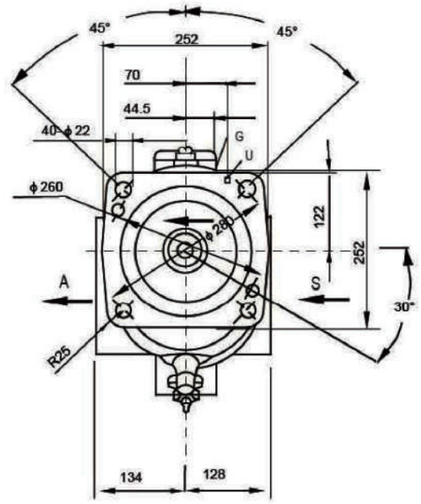
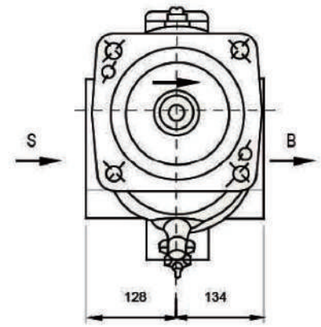
A7V变量柱塞泵 Variable displacement plump A7V

元件外形尺寸系列5.1规格250 Unit Dimensions Series5.1 size 250

顺时针旋转型
Clockwise Rotatian Mode



逆时针旋转型
Anti-clockwise Rotatian Mode



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恒功率控制LV 系列5.1 规格250~500 外形尺寸表

Constant horsepower control LV Series 5.1 size 250-500. Table of values for Unit Dimensions

规格 Size	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15深deep	A16	A17	A18	A19	A20 54	A21 100	A22 130	A23 180
250	491	450	364	134	120	13	36	6	12	25	1.2	58	371	77.8	M16	21	224	M16	45	223	59	100	1302	162
355	552	511	412	160	142	13	42	8	15	28	1.6	82	427	77.8	M16	21	280	M20	55	240	68	125	152.4	185
500	615	563	465	194	175	15	42	8	15	301	1.6	82	464	92.1	M16	24	315	M20	63	252				

规格 Size	A24	A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37	A38		A39	A40	A41	A42 95	A43 31.8	A44 51	A45 82
250	296	145	179	198	252	44.5	70	—	—	—	—	—	—	—	M14	19	354	32	66.7	80	36.5	58	105
355	328	157	194	206	335	48.5	35	18	M16	360	320	130	140	166	M20	21	407	40	79.4	80	36.5	64	105
500	343	194	230	—	375	53	35	22	M12	400	360	144	150	186	M20	24	446	40	79.4				

深deep 重Weight (kg)

规格 Size	A46	A47	A48	A49	A50	A51	A52	A53	A54	A55	A56	A57	A58	A59	A60	A61	A62	A63	12.5	105
250	53.5	50k6	498	411	223	90	16	18	366	24	175	407	210	44.5	450	433	169	M5	12.5	165
355	64	60m6	562	470	252	90	16	18	397	24	187	444	225	48.5	511	492	182	M5	16	245
500	74.5	70m6	617	513	271	100	18	20.5	418	22	215	471	240	53		535	210	M6		

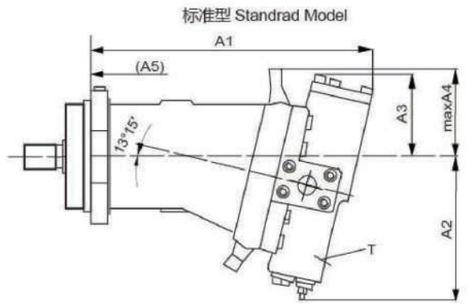
规格 Size	平键 Keyed GB1096-79	平键 Spline DIN5480	油口 Port							R	U
			A、B	S	G	X1、X2	A1、X3	T	T1	M22×2	M14×1.5
250	14×80	W50×2×24×9g	SAE1 1/4”	SAE4	M14×1.5	M14×1.5	M14×1.5	M16×1.5	M22×1.5	M33×2	M14×1.5
355	18×100	W60×2×28×9g	SAE1 1/2”	SAE4	M16×1.5	M16×1.5	M22×1.5	M16×1.5	M22×1.5	M33×2	M18×1.5
500	20×100	W70×3×22×9g	SAE1 1/2”	SAE5	M16×1.5	M16×1.5	M22×1.5	M16×1.5	M22×1.5		

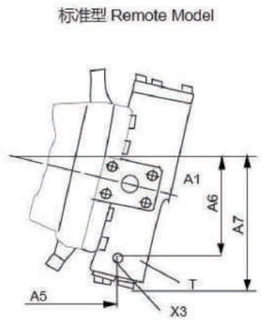
A

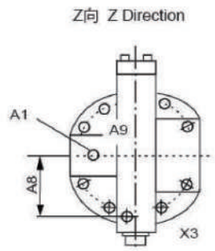
A7V变量柱塞泵Variable displacement PUMP A7v

元件外形尺寸系列5.1规格250-500 Unit Dimensions series 5.1 size 250-~500

恒压控制DR Constant Pressure Control DR





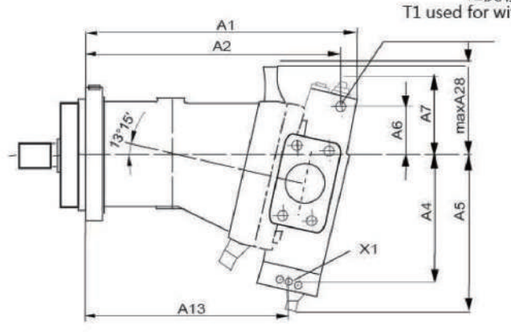


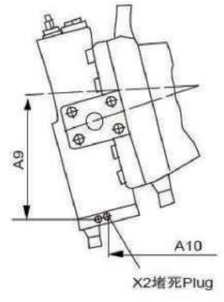
规格 Size	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
250	489	296	173	198	314	211	272	165	84	28
355	552	328	194	206	366	228	306	175	85	32
500	610	343	221	—	417	241	—	180	84	38

A1和X3仅用于带压力截留者
A1 and X3 used for with pressure cut-off only

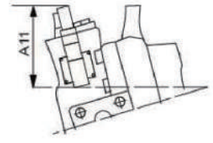
液压控制 HD Hydraulic ControL， Pressure Related， HD

T1仅用于带压力截流者
T1 used for with pressure cut-off only





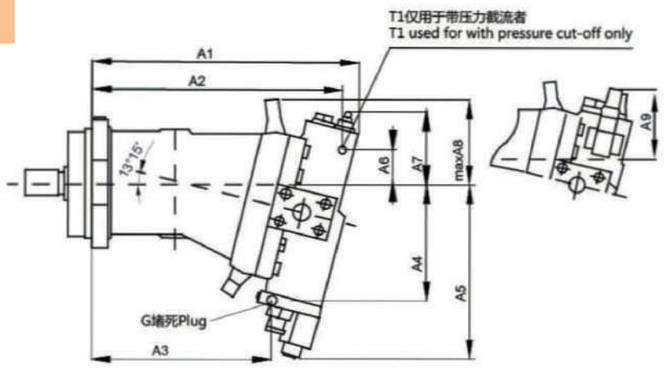
带压力截流者
with pressure cut-off only



规格Size	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A10
250	476	445	328	281	323	95	166	198	275	306	
355	537	506	377	311	358	97	187	206	305	355	213
500	586	546	409	382	382	98		216	335	379	

电气比例控制ELElectrional Control EL

A



规格Size	A1	A2	A3	A4	A5	A6	A7	A8	A9
250	476	445	307	271	391	95	166	198	–
355	537	506	308	284	416	97	187	206	213
500	586	546	346	308	455	98	–	216	–

油口	Oil ports
A,B 工作油口	Operating port
S 吸油口	Pilot pressure port
G 遥控压力口	Remote pressure port
(总功率控制)	(Port for summation HD control)
X1 先导压力口	Pilot pressure port
X2 遥控压力口	Remote pressure port
A1,X3遥控阀油口	Ports for remote control valve(HD)
T 先导油口	Pilot oil return line
T先导油回油11	Pilot oil return line
R 排气口	Air bleed port
U 冲洗口	Flushing port

PV系列变量柱塞泵

PV Series Variable Piston Pump

适用于开式回路液压系统

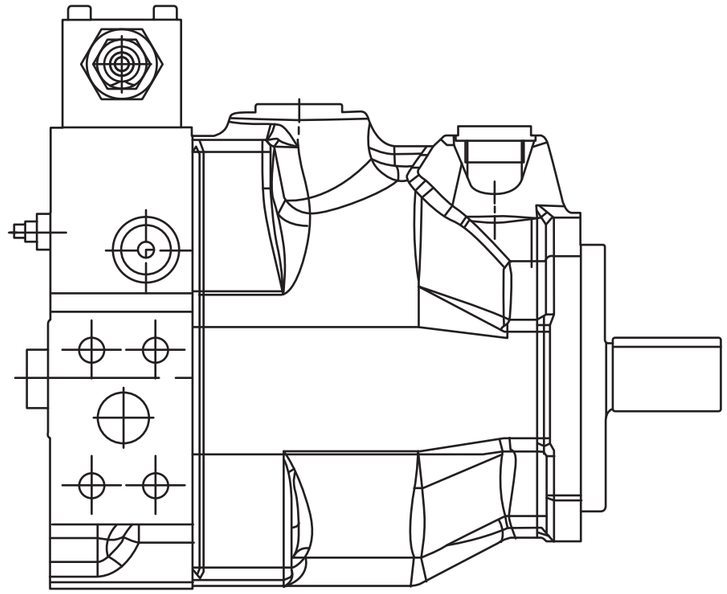
Suitable for open circuit hydraulic systems

A

概 述 Overview

本产品是斜盘式轴向柱塞泵,适用于开式回路的静液压驱动。公称压力16-25MPa
峰值压力28MPa

This product is an inclined-axis axial fixed displacement pump, suitable for hydrostatic drive in open circuits. Nominal pressure 40MPa
Peak pressure 45MPa



特点:

排量:10.0cm3/rev~145cm3/rev

压力:额定压力16~25MPa，最高压力28MPa

转速:最高1800r/min

说 明:

斜盘式轴向柱塞泵，容积效率高，有快速截流特性，节省功率;

刚性结构和高转速低摩擦构造，噪音低，使油泵寿命更长，

发热少，功率损失小，油液温升慢，

使用消音结构;使用模块化设计，使控制方式更加多元化，有效简化油路设计

具备通轴能力，可组合双联、多联泵或者与其他种类油泵连接，

Features

Displacement:10.0cm3/rev~145cm3/rev

Pressure: Rated pressure 16~25 MPa; Max 28 MPa.

Speed:Maximum 1800 r/min.

Description

Swash plate axial piston pumps with high volumetric efficiency quick cut-off and input power-saving;

Rigid structure and low-friction design at high speeds for reduced noise and extended pump life;

Low noise,minimal power loss, slow oiltemperature rise, and equipped with a silencing structure;

Modular design enhances various control methods and combinations, effectively simplify the design of the oil circuit;

With thru-drive characteristic, it could be connected with multi-stage pumps.

A

PV系列订货型号
PV-Product Series

PV	063	GA	1	R	M	1	A	0	N	
01	02	03	04	05	06	07	08	09	10	11

01
- 系列：PV
  PV-series piston pump

02 规格排量 Displacement
- 016：16cm³/rev
- 020：20cm³/rev
- 023：23cm³/rev
- 028：28cm³/rev
- 032：32cm³/rev
- 040：40cm³/rev
- 046：46cm³/rev
- 056：56cm³/rev
- 065：65cm³/rev

03 控制方式（详情查看B01~B23） Control option (Details can be found on page B01~B36)
- A0：压力补偿控制型 A0: Standard pressure control
- LN：无调节器（定量泵） LN: None pressure compensator
- LS：定量电控两段流量控制型 LN: None pressure compensator
- LC：定量自压两段流量控制型 LC: Fixed displacement 2-stage flow compensator
- GM：遥控型调节器（含NG6） GM: Remote pressure compensator with NG6 interface
- GA：遥控型调节器+溢流阀 GA: Remote pressure compensator + Relief valve
- GJ：遥控型调节器+比例压力 GJ:Remote pressure compensator + Proportional pressure valve
- GR：遥控型调节器+电控卸载 GR: Remote pressure compensator + Electricalun loading
- GB：遥控型调节器+电控两段压力 GB: Remote pressure compensator + 2-stage pressure control
- GC：遥控型调节器+电控卸载+两段压力 GC: Remote + Electrical unloading + 2-stage pressure control
- HM：负载敏感型调节器（含NG6界面） HM: Load-sensing compensator (with NG6 interface)
- HA：负载敏感型调节器+溢流阀 HA: Load-sensing compensator + Relief valve
- HJ：负载敏感型调节器+比例压力 HJ: Load-sensing compensator + Proportional pressure valve
- HR：负载敏感型调节器+电控卸载 HR: Load-sensing compensator + Electrical unloading
- HB：负载敏感型调节器+电控两段压力 HB: Load-sensing compensator + 2-stage pressure control
- HC：负载敏感型调节器+电控卸载+两段压力 HC: Load-sensing + Electrical unloading + 2-stage pressure control
- HQ：负载敏感型调节器+比例流量+溢流阀 HQ: Load-sensing + Proportional flow valve + Relief valve
- HK：负载敏感型调节器+比例压力+比例流量 HK: Load-sensing + Proportional pressure valve & flow valve
- BQ：无级变速控制（油缸控制） BQ: Infinitely variable speed control (cylinder control)

04 压力调节范围 Pressure Adjustment Range
- 2：10～140bar
- 3：35～250bar
- 4：40～280bar
- 5：50～315bar
- 6：50～315bar

05 旋转方向 Direction of Rotation
- R：顺时针 R: Right Hand
- L：逆时针 L: Left Hand

06 连接型式 Mounting
- 公制 Mounting：平键：M/R Parallel keyed: M/R；花键：K/S/P Splined Shaft: K/S/P
- 英制 Imperial：平键：N/J Parallel keyed: N/J；花键：D/U/G Splined Shaft: D/U/G

07 螺纹 Thread
- 1：BSPP（G）
- 2：PT（RC）
- 3：UNF（SAE）
- 7：ISO 6149（M）

08 通轴装配 Thru drive
- A：单泵 A: Single Pump
- B：单泵、带通轴孔 B: Single Pump, Prepared for thru drive
- 单泵（带通轴孔、连接附件） Single Pump(Prepared for thru drive, Connect accessories)
- 英制 Imperial：C：ø50.8mm；D：ø82.55mm；E：ø101.6mm；F：ø127mm
- 公制 Metric：I：ø63mm；J：ø80mm；K：ø100mm；L：ø125mm

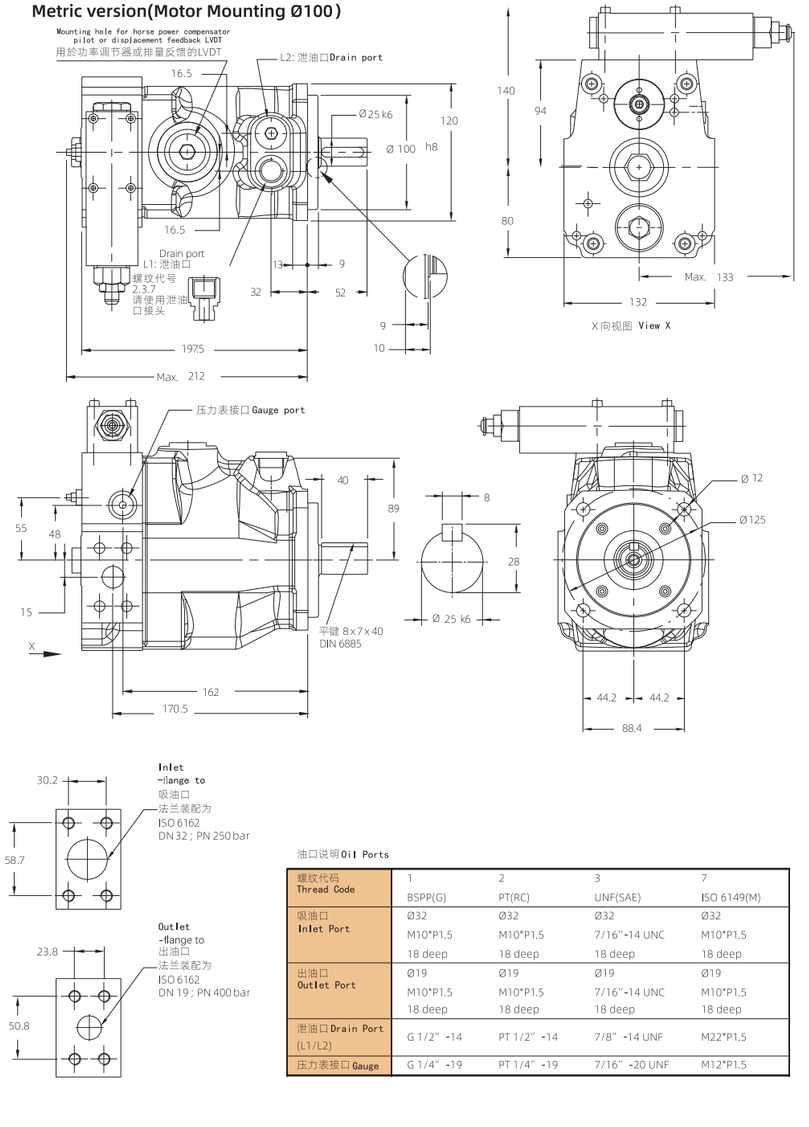
09 电压 Metric
- 0：无电压 0: No voltage
- A：AC100V（50/60HZ）
- B：AC110V（60HZ）
- C：AC200V（50/60HZ）
- D：AC220V（60HZ）
- E：DC 12V
- F：DC 24V

10 油封 Oil Seal
- N：丁腈橡胶 N: NBR
- V：氟橡胶 V: FKM

安装尺寸
Dimension

A

- **PV016~PV028**
  公制连接（止口Ø100）
  Metric version(Motor Mounting Ø100)



油口说明 Oil Ports

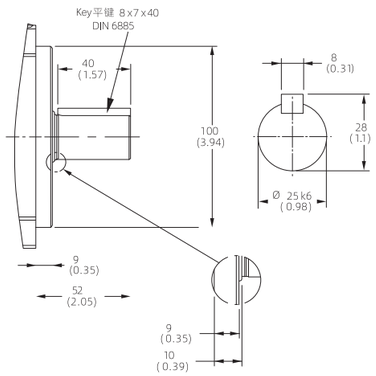
螺纹代码 Thread Code	1 BSPP(G)	2 PT(RC)	3 UNF(SAE)	7 ISO 6149(M)
吸油口 Inlet Port	Ø32 M10*P1,5 18 deep	Ø32 M10*P1.5 18 deep	Ø32 7/16"-14 UNC 18 deep	Ø32 M10*P1,5 18 deep
出油口 Outlet Port	Ø19 M10*P1,5 18 deep	Ø19 M10*P1.5 18 deep	Ø19 7/16"-14 UNC 18 deep	Ø19 M10*P1,5 18 deep
泄油口 Drain Port (L1/L2)	G 1/2" -14	PT 1/2" -14	7/8" -14 UNF	M22*P1.5
压力表接口 Gauge	G 1/4" -19	PT 1/4" -19	7/16" -20 UNF	M12*P1.5

安装尺寸
Dimension

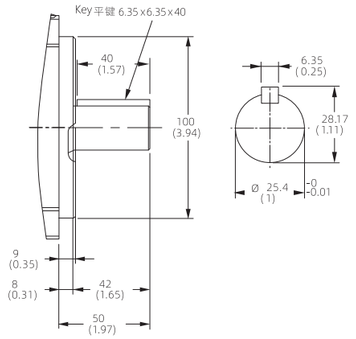
A

- **PV016~PV028**
  公制连接（止口Ø100）Metric version(Motor Mounting Ø100）
  可选择的轴端型式 Shaft Type

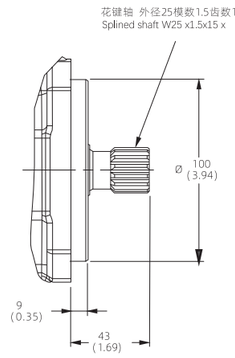
连结代码：M



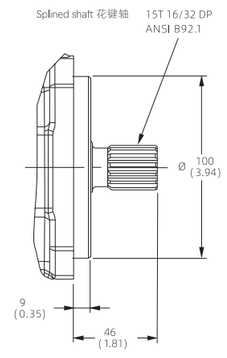
连结代码：R



连结代码：K



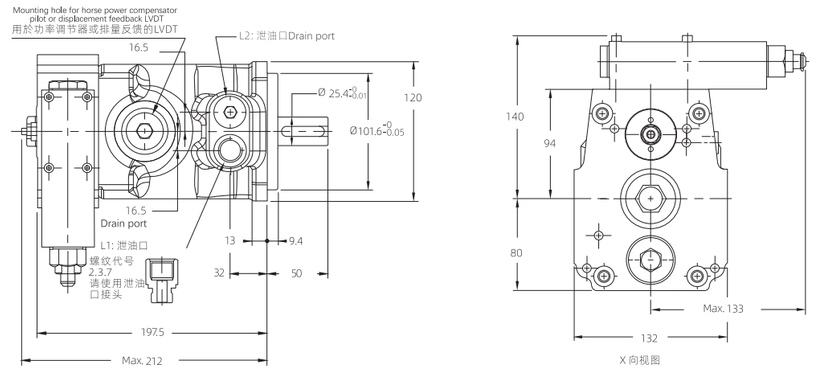
连结代码：S

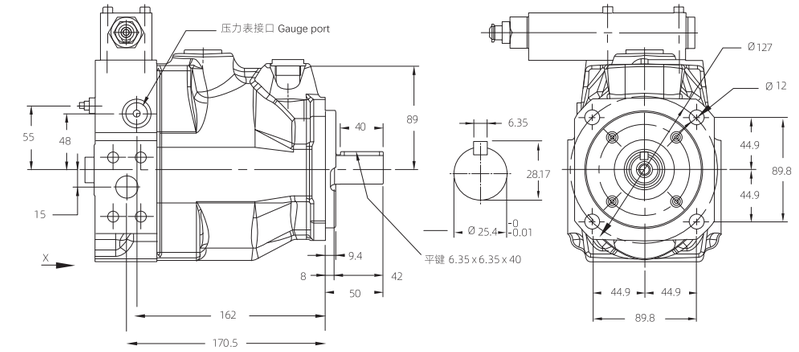


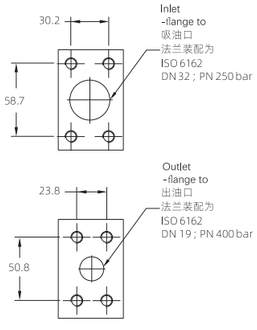
安装尺寸
Dmension

A

- **PV016~PV028**
  SAE连接（止口Ø101.6）
  SAE version(motor mounting Ø101.6）







油口说明 Oil Ports

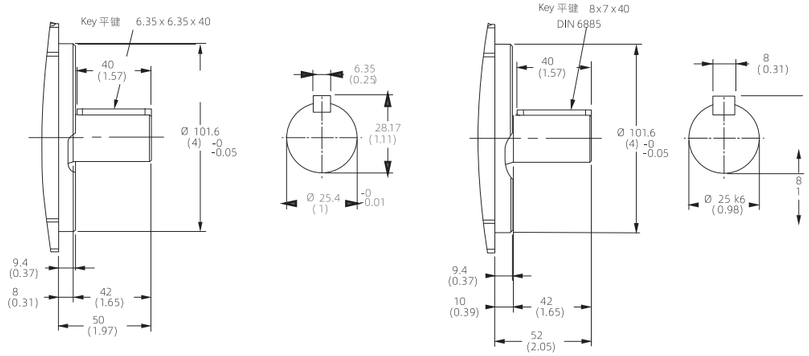
螺纹代码 Thread Code	1 BSPP(G)	2 PT(RC)	3 UNF(SAE)	7 ISO 6149(M)
吸油口 Inlet Port	Ø32 M10*P1.5 18 deep	Ø32 M10*P1.5 18 deep	Ø32 7/16"-14 UNC 18 deep	Ø32 M10*P1.5 18 deep
出油口 Outlet Port	Ø19 M10*P1.5 18 deep	Ø19 M10*P1.5 18 deep	Ø19 7/16"-14 UNC 18 deep	Ø19 M10*P1.5 18 deep
泄油口 Drain Port (L1/L2)	G 1/2" -14	PT 1/2" -14	7/8" -14 UNF	M22*P1.5
压力表接口 Gauge	G 1/4" -19	PT 1/4" -19	7/16" -20 UNF	M12*P1.5

A

安装尺寸
Dimension

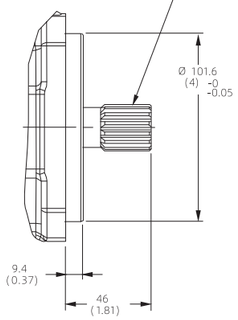
- **PV016~PV028**
  SAE连接（止口Ø101.6）SAE version(motor mounting Ø101.6）
  可选择的轴端型式 Shaft Type

连结代码：N

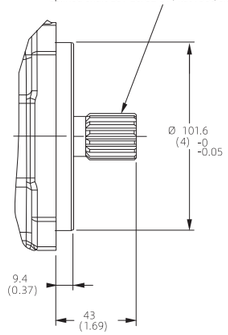


连结代码：J

连结代码：D

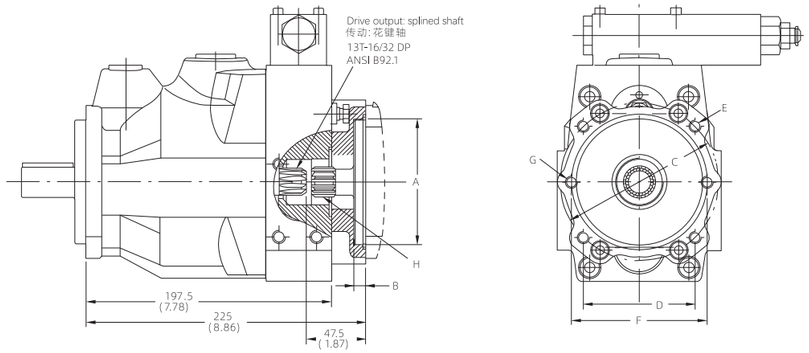


连结代码：U



安装尺寸
Dimension

- **PV016~PV028通轴结构 Thru Drive**
  通轴结构代码Thru Code：C、D、E、I、J、K

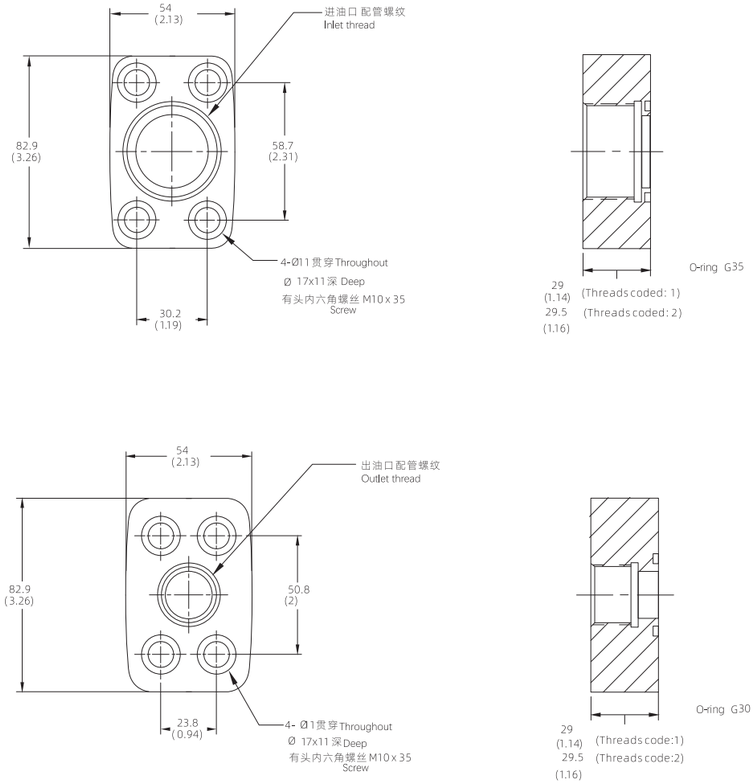


通轴转接件可按照下列连接尺寸供货 Thru shaft adaptors are available with the following dimensions							
通轴代码 Thru Code	A	B	C	D	E	F	G
I	63	10	85	-	M8	100	M8
J	80	10	103	-	M8	109	M10
K	100	10.5	125	-	M10	n.avail.	n.avail.
C	50.8	10	-	-	-	82	M8
D	82.55	10	-	-	-	106	M10
E	101.6	10.5	-	89.8	M10	n.avail.	n.avail.

A

安装尺寸
Dimension

- **PV016~PV028进出油口法兰Inlet / Outlet Flange**



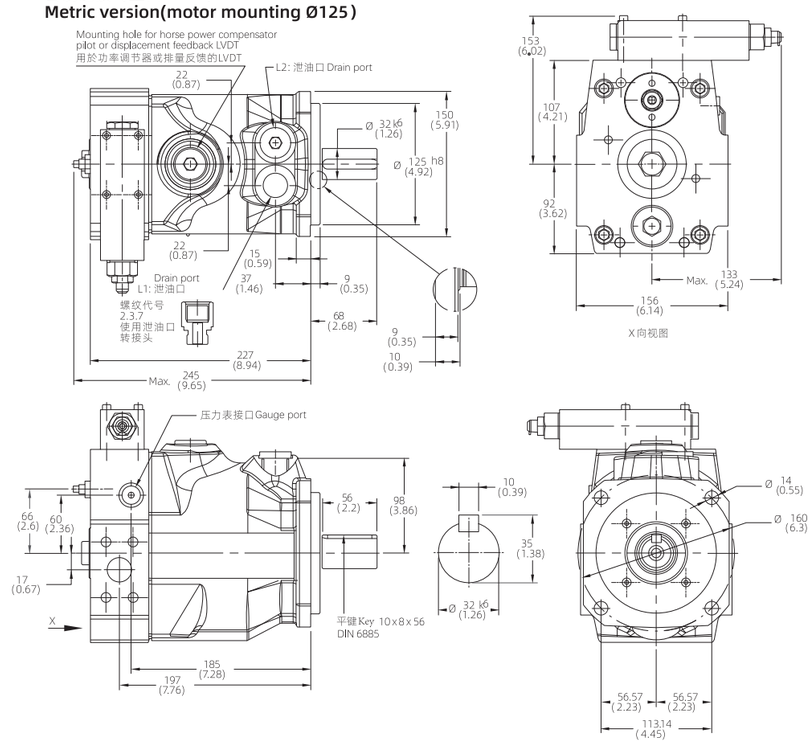
油口说明Oil Ports

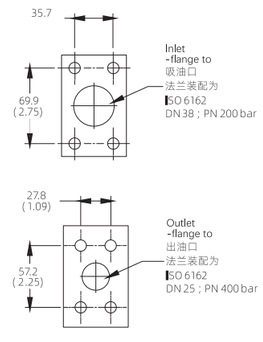
螺纹代码 Thread Code	1 BSPP(G)	2 PT(RC)	3 UNF(SAE)	7 ISO 6149(M)
吸油口Inlet Port	G 1 1/4" -11	PT 1 1/4" -11	1 5/8"-12 UN	M42*P2.0
出油口Outlet Port	G 3/4" -14	PT 3/4" -14	1 1/16"-12 UN	M27*P2.0

A

安装尺寸
Dimension

- **PV032~PV046、PV056、PV065**
  公制连接（止口Ø125）
  Metric version(motor mounting Ø125)





油口说明Oil Ports

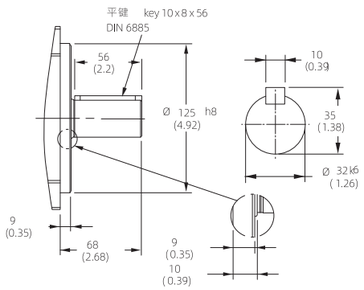
螺纹代码 Thread Code	1 BSPP(G)	2 PT(RC)	3 UNF(SAE)	7 ISO 6149(M)
吸油口 Inlet Port	Ø38 M12*P1.75 18 deep	Ø38 M12*P1.75 18 deep	Ø38 1/2"-13 UNC 18 deep	Ø38 M12*P1.75 18 deep
出油口 Outlet Port	Ø25 M12*P1.75 18 deep	Ø25 M12*P1.75 18 deep	Ø25 1/2"-13 UNC 18 deep	Ø25 M12*P1.75 18 deep
泄油口 Drain Port (L1/L2)	G 3/4" -14	PT 3/4" -14	1 1/16" -12 UNF	M27*P2.0
压力表接口 Gauge Port	G 1/4" -19	PT 1/4" -19	7/16" -20 UNF	M12*P1.5

安装尺寸
Dimension

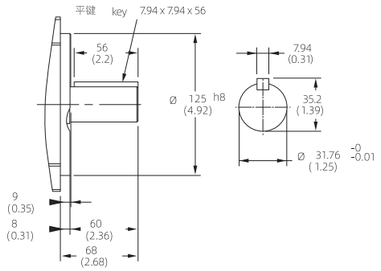
A

- **PV032~PV046、PV056、PV065**
  公制连接（止口Ø125）Metric version(motor mounting Ø125)
  可选择的轴端型式 Shaft type

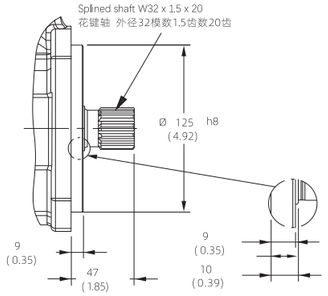
连结代码：M



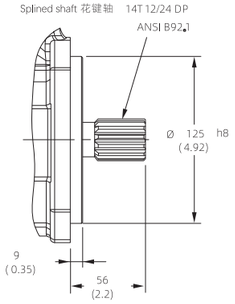
连结代码：R



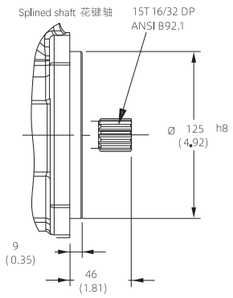
连结代码：K



连结代码：S



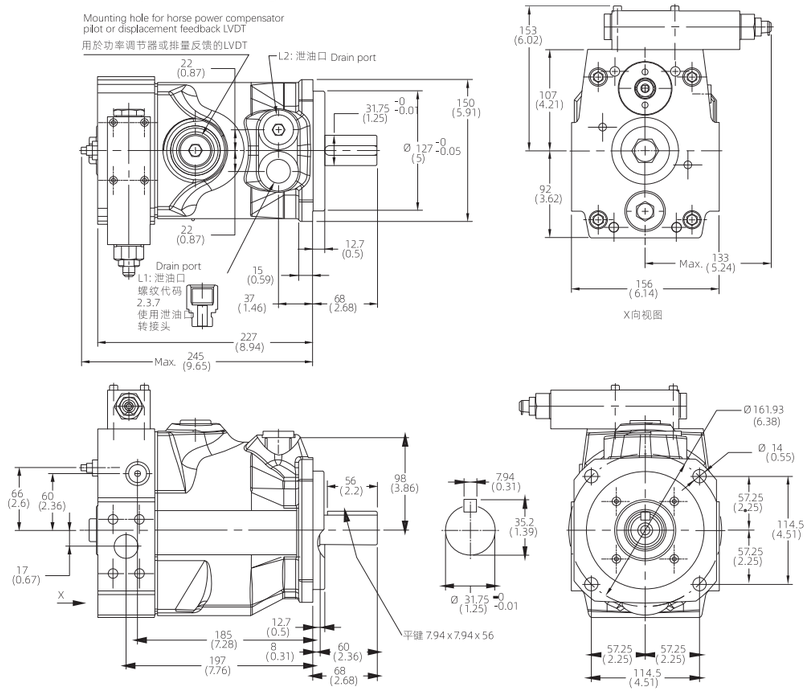
连结代码：P

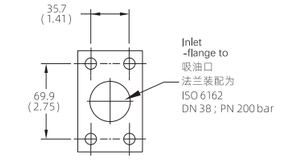


安装尺寸
Dimension

A

- **PV032~PV046、PV056、PV065**
  SAE连接（止口Ø127）
  SAE version(motor mounting Ø127)





油口说明 Oil Ports

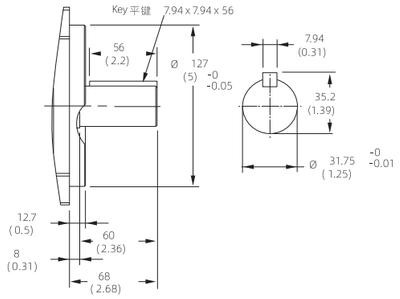
螺纹代码 Thread Code	1 BSPP(G)	2 PT(RC)	3 UNF(SAE)	7 ISO 6149(M)
吸油口 Inlet Port	Ø38 M12*P1.75 18 deep	Ø38 M12*P1.75 18 deep	Ø38 1/2"-13 UNC 18 deep	Ø38 M12*P1.75 18 deep
出油口 Outlet Port	Ø25 M12*P1.75 18 deep	Ø25 M12*P1.75 18 deep	Ø25 1/2"-13 UNC 18 deep	Ø25 M12*P1.75 18 deep
泄油口 Drain Port (L1/L2)	G 3/4" -14	PT 3/4" -14	1 1/16" -12 UNF	M27*P2.0
压力表接口 Gauge Port	G 1/4" -19	PT 1/4" -19	7/16" -20 UNF	M12*P1.5

A

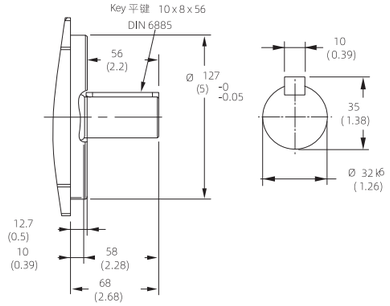
安装尺寸
Dimension

- **PV032~PV046、PV056、PV065**
  SAE连接（止口Ø127）SAE version(motor mounting Ø127）
  可选择的轴端型式 Shaft type

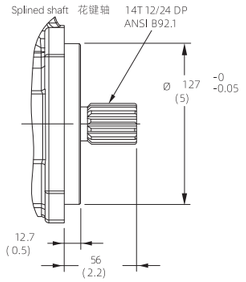
连结代码：N



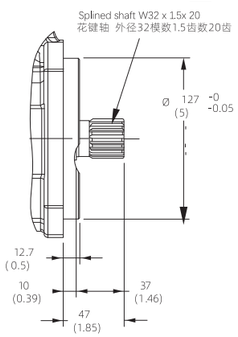
连结代码：J



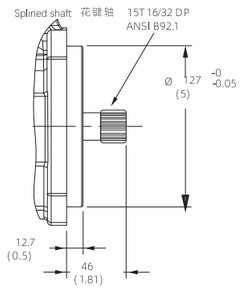
连结代码：D



连结代码：U



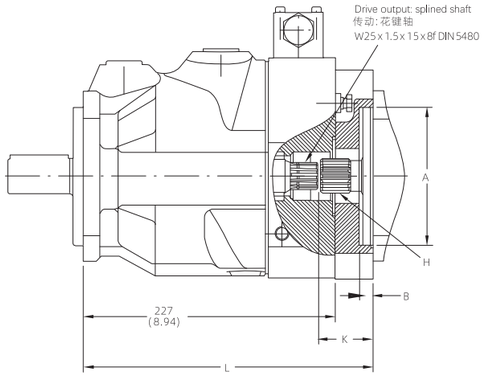
连结代码：G

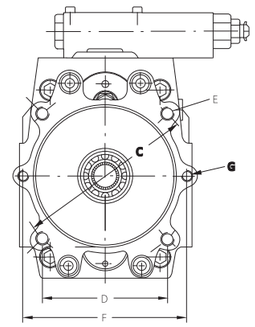


A

安装尺寸
Dimension

- **PV032~PV046、PV056、PV065**
  通轴结构代码Thru Code：D、E、I、J、K、L





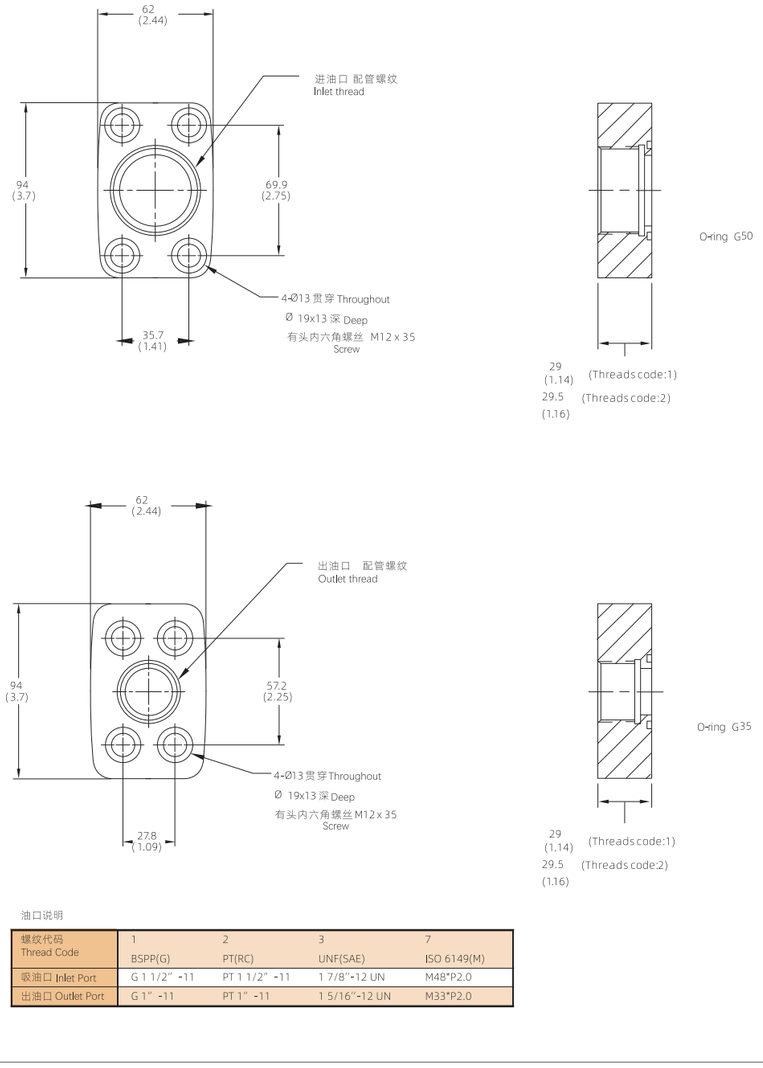
通轴转接件可按照下列连接尺寸供货
Thru shaft adaptors are available with the following dimensions

通轴代码 Thru Code	A	B	C	D	E	F	G	K	L
I	63	8.5	85	-	M8	100	M8	49	261
J	80	8.5	103	-	M8	109	M10	49	261
K	100	10.5	125	-	M10	140	M12	49	261
L	125	12	160	-	M12	n.avail.	n.avail.	49	261
D	82.55	8	-	-	-	106	M10	49	261
E	101.6	11	-	89.8	M10	146	M12	49	261
F	127	13.5	-	114.5	M12	n.avail.	n.avail.	64	276

A

安装尺寸
Dimension

● **PV032~PV046、PV056、PV065进出油口法兰 Inlet / Outlet Flange**



油口说明

螺纹代码 Thread Code	1	2	3	7
	BSPP(G)	PT(RC)	UNF(SAE)	ISO 6149(M)
吸油口 Inlet Port	G 1 1/2" -11	PT 1 1/2" -11	1 7/8"-12 UN	M48*P2.0
出油口 Outlet Port	G 1" -11	PT 1" -11	1 5/16"-12 UN	M33*P2.0

PVH系列变量柱塞泵
PVH Series Variable Piston Pump

适用于开式回路液压系统
Suitable for open circuit hydraulic systems

概 述 Overview

大流量、高性能泵是变量直轴柱塞泵中的一个家庭
高质量制造技术及工作特征
体形较小、重量较轻
经专门设计以满足新一代设备设计的250 bar连续运行的性能需要

High flow, high performance pumps are a family of variable displacement straight shaft piston pumps.
High quality manufacturing technology and working characteristics.
Small size and light weight.
Specially designed to meet the performance needs of 250 bar continuous operation of the new generation of equipment design.

型号说明

PVH***(QI)*-*(*)*-** *-10-** ** (**) (**) ** -** *
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯

1、泵系列

2、最大几何排量

7 =57,4cm³/r	(3.5 in³/r)
74 =73,7cm³/r	(4.5 in³/r)
98 = 98.3 cm³/r	(6.0 in³/r)
131 =131,1 cm³/r	(8.0 in³/r)

3、设计/应用

空白=用于行走用途的设计
OI=用于工业用途的低噪声设计

4、安装法兰，原动机端

C = SAE"C" 4-螺栓型
(SAE J744-127-4)
M =ISO301912-125B4HW
(仅用于PVH57和PVH74)

5、轴转向，从原动机端看
R =顺时针L=逆时针

6、配置

空白=非通轴驱动(单联泵)
A= 通轴驱动泵，带SAE"A"2螺栓后法兰安装(SAEJ744-82-2)
B= 通轴驱动泵，带SAE"A"2螺栓和4螺栓后法兰安装 SAEJ744-101-2/4)
C= 通轴驱动泵，带SAE"C"2螺栓和4螺栓后法兰安装 (SAEJ744-127-214)
S= 可调最大排量挡铁 (仅非通轴驱动和非扭矩控制型)

7、主油口F

C= SAE 4-螺栓法兰油口
M= SAE 4-螺栓法兰油口 带米制安装螺纹

8、轴伸型式，在原动机端 (扭矩限制见22页，安装连接尺寸见21页)

N=ISD 3019/2-带键短直轴 E32N
1 =SAE "C"带键直轴 (J744-32-1)
2=SAE"C"花键轴14齿 (J744-32-4)12/24径节
3=SAE"CC"花键轴17齿 (J744-38-4)12/24 径节
12= SAE "D"花键轴13齿 (J744-44-4)8/16径节
13= SAE "CC"带键直轴 (J744-38-1)
16=SAE "D" 带键直轴 (J744-44-1)

9、轴密封件，原动机短

S= 一道，单向
D= 二道，双向

推荐用于串联组件(PVH**/ PVH**)的第二泵及"湿安装"场合

10、泵设计号
可能改变，对于设计号10-19 安装连接尺寸不变

11、压力补偿器

C=70-250bar(1015-3625 psi)(标准型)
CM=40-130bar(580-1885psi)(可选的 QI型)
IC=工业用控制，设定250bar(290psi) 压差

12、压力补偿器工厂设定值，以10bar为单位
2 =常规工厂设定值250bar(3625psi)用于C型
7= 常规工厂设定值70 bar(1015psi)用于CM型

13、附加控制功能

空白=无附加控制

V=负载传感，设定20bar(290psi)压差
T = 扭矩限制器
VT= 负载传感和扭矩限制器

14、扭矩限制器工厂设定值

**=客户想要的扭矩限制器设定值按10 bar(145psi)
例如:
8=80 bar (1160psi)
18=180bar(2610 psi)

15、控制设计号 =

31 C, CM, C**V,或IC 控制
13 =C**T 控制
14 =C**VT 控制

16、控制设计号 =

027=复合2螺栓/4 螺栓安装符合SAE "C"(除PVH131外)
031 =通轴驱动SAE"A"座盖
041=不带壳体到进油口溢流阀(用于升压回路)。最高进口压力 3.4bar(50 psi)
057=轴身朝上运行(垂直安装)

A

技术参数 Technical Parameter

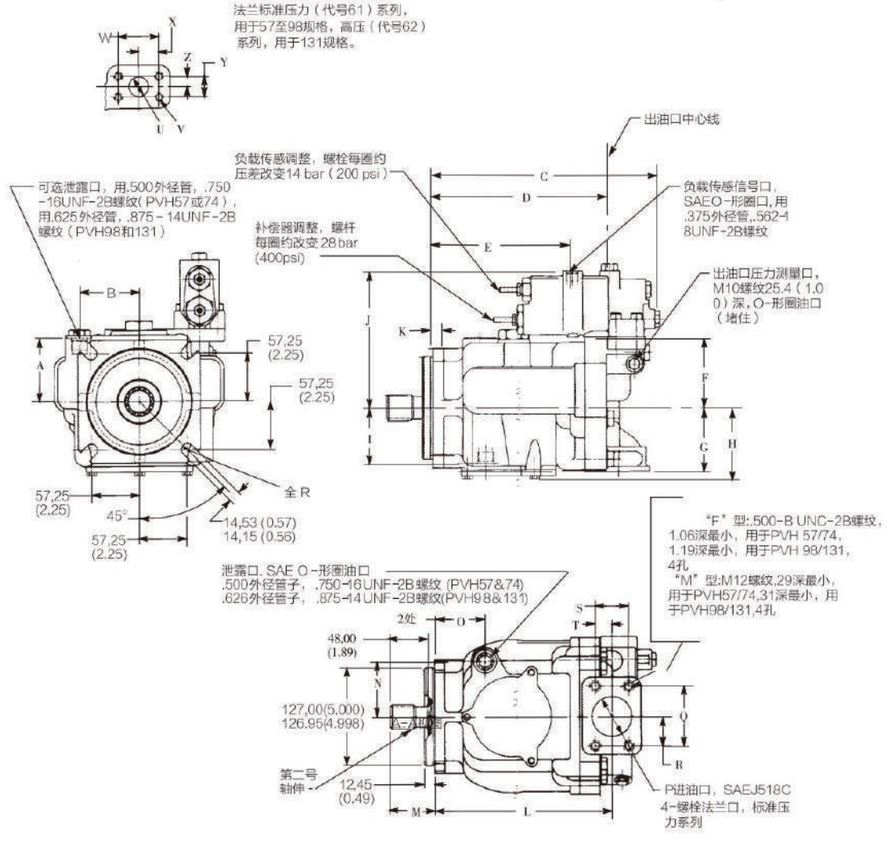
PVH***Ql工业用泵额定特性

参数	HZ-PVH57Q1	HZ-PVH74Q1	HZ-PVH98Q1	HZ-PVH131Q1
最大几何排量 cm^3/r (in^3/r)	57，4 (3.5)	73,7 (4.5)	98,3 (6.0)	131,1 (8.0)
额度压力 bar(psi)	250 (3625)	250 (3625)	250 (3625)	250 (3625)
不同进口压力下的额定转速(r/min.)				
127mmHg(5”Hg)	1500	1500	1500	1200
0进油口压力	1800	1800	1800	1500
0,48 bar (7 psi)	1800	1800	1800	1800
典型的有效流量				
当1500r/min	83 (22)	102 (27)	140 (37)	186 (49)
当1800r/min	98 (26)	125 (33)	170 (45)	223 (59)

安装结构图 Installation Structure Diagram

尺寸mm (in)

带压力补偿器和负载传感控制的基本泵



PVH泵安装尺寸表PVH Pump Installation Size Table

带压力补偿器和负载传感控制的基本泵

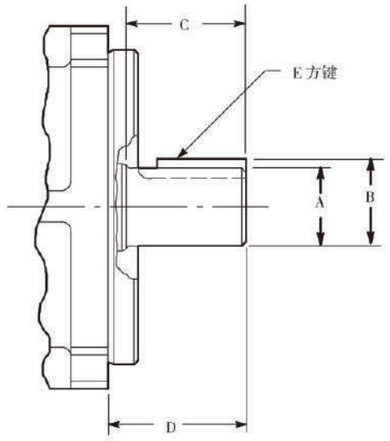
	A	B	C	D	E	F	G	H	I
PVH57	76,0 (2.99)	71,0 (2.79)	293,0 (11.54)	216,5 (8.52)	171,3 (6.74)	86.0 (3.39)	79,0 (3.11)	88,0 (3.46)	69,0 (2.71)
PVH74	88,0 (3.46)	70,0 (2.79)	306,6 (12.07)	241,2 (9.50)	194,3 (7.65)	92.0 (3.62)	94,0 (3.70)	95,0 (3.74)	80,1 (3.19)
PVH98	93，1 (3.67)	85,0 (3.35)	323,5 (12.74)	251,3 (9.89)	206,1 (8.11)	94,5 (3.72)	87,5 (3.44)	97,1 (3.82)	80,1 (3.15)
PVH131	109,4 (4.31)	88,8 (3.50)	377,0 (14.84)	280,4 (11.04)	230,4 (9.07)	120,0 (4.72)	109,0 (4.29)	107,4 (4.23)	84,8 (3.34)

	J	K	L	M	N	O	P	Q	R
PVH57	168,0 (6.6)	14,0 (0.55)	227,4 (8.95)	56,1 (2.21)	71,0 (2.80)	64,8 (2.55)	50,8 (2.0)	77,77 (3.06)	38，88 (1.53)
PVH74	174,0 (6.85)	15,0 (0.59)	250,1 (9.85)	56,0 (2.20)	70,0 (2.75)	68,0 (2.68)	50,8 (2.0)	77,77 (3.06)	38，88 (1.53)
PVH98	176,5 (6.95)	16,0 (0.63)	269,3 (10.60)	55,5 (2.18)	85,0 (3.35)	74,2 (2.92)	63,5 (2.5)	88,9 (3.50)	44,45 (1.75)
PVH131	202,0 (7.95)	15,0 (0.59)	298,6 (11.75)	62,0 (2.44)	88,8 (3.50)	70,6 (2.78)	63,5 (2.5)	88,9 (3.50)	44,45 (1.75)

	S	T	U	V	W	X	Y	Z
PVH57	42,88 (1.69)	21,44 (0.84)	25,4 (1.0)	M10×1,5 (375-16)	52,37 (2.06)	26,18 (1.03)	26,19 (1.03)	13,10 (0.52)
PVH74	42,88 (1.69)	21,44 (0.84)	25,4 (1.0)	M10×1,5 (375-16)	52,37 (2.06)	26,18 (1.03)	26,19 (1.03)	13,10 (0.52)
PVH98	50,8 (2.0)	25,4 (1.0)	25,4 (1.0)	M10×1,5 (375-16)	52,37 (2.06)	26,19 (1.03)	26,19 (1.03)	13,10 (0.52)
PVH131	50,8 (2.0)	25,4 (1.0)	31,75 (1.25)	M14×2,0 (500-13)	66,68 (2.63)	33,34 (1.31)	31，75 (1.25)	15,88 (0.63)

A

PVH泵安装尺寸表PVH Pump Installation Size Table



平键轴*

轴伸代码	轴伸标记	A	B	C	D	E
1	SAE“C”(J744-32-1)	31,75 (1.25)	35,32 (1.38)	48,0 (1.89)	56,0 (2.20)	7,93 (312)
13	SAE“CC”(J744-38-1)	38,10 (1.50)	42,39 (1.67)	54,0 (2.12)	62,0 (2.44)	9,52 (375)
16	SAE“D”(J744-44-1)	44,45 (1.75)	49,46 (1.95)	67,0 (2.64)	75,0 (2.95)	11,11 (438)
N	ISO 3019/2-E32N	32,0 (1.26)	35,0 (1.38)	58,0 (2.28)	68,1 (2.68)	10,00 (393)
		31,75 (1.25)	35,32 (1.38)	48,0 (1.89)	56,0 (2.20)	7,93 (312)

花键轴*

轴伸代码	轴伸标记	齿数	C	D
2	SAE“C”(J744-32-4)	14	48,0 (1.89)	56,0 (2.20)
3	SAE“CC”(J744-38-4)	17	54,0 (2.13)	62,0 (2.44)
12	SAE“D”(J744-44-4)	13	67,0 (2.64)	75,0 (2.95)

YCY系列变量柱塞泵

YCY Series Variable Piston Pump

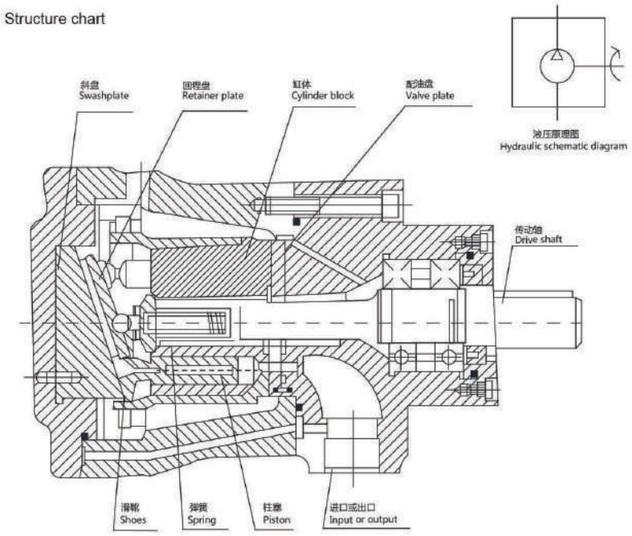
A

适用于开式回路液压系统
Suitable for open circuit hydraulic systems

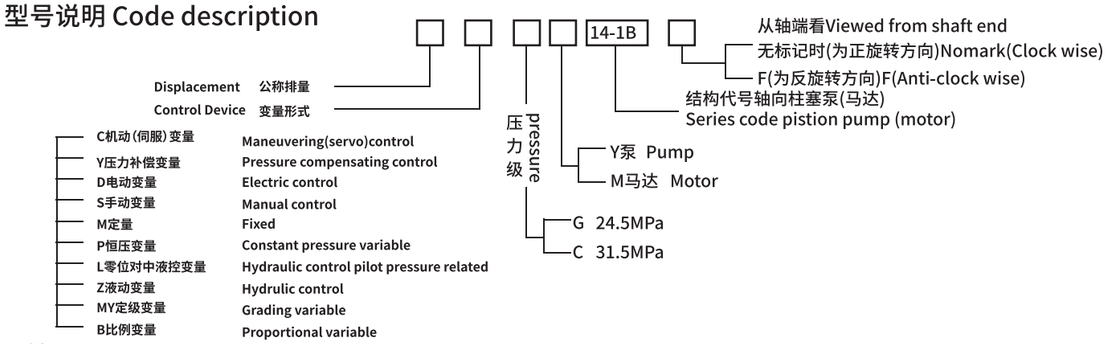
概 述 Overview

本产品是轴向柱塞泵,适用于开式回路的静液压驱动。公称压力31.5MPa
This product is an axial piston pump, suitable for open circuit hydrostatic drive. Nominal pressure 31.5MPa

结构图 Structure chart



型号说明 Code description



示例:eg:63 SCY14-1B
表示:排量为63毫升/转,压力为31.5MPa的手动变量的轴向柱塞油泵。63ml/r displacement,315bar pressure,manual control piston pump.
(即1000r/min 时公称流量为 63L/min)

说 明:

本系列轴向柱塞泵将具有31.5MPa压力的纯净的液压油输入到各种油压机、液动机等液压系统中,以产生巨大的工作动力。同时该油泵可以作为液压马达使用。根据需要,本油泵有多种变量形式。本油泵,油马达广泛用于船舶、航空、矿山、冶 金、压铸、锻造、机床的各类机械中,其特点是体积小、效率高、寿命长、设计先进、结构紧凑、维护方便。

Description

This series of axial piston pumps delivers pure hydraulic fluids with a pressure of 31.5MPa to a variety of pumps Hydraulic press, hydraulic motor and other hydraulic systems to produce huge working power. Simultaneous oil pump Can be used as a hydraulic motor. According to the need, the oil pump has a variety of variable forms. This oil pump,Oil motor is widely used in ships, aviation, mining, metallurgy, die casting, forging, machine tools of all kinds of machines It is characterized by small size, high efficiency, long life, advanced design, compact structure and easy maintenance.

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油泵系列规格Technical parameters

公称排量Displacement		1.25	2.5	5	10	25	40	63	160	250
额定压力(MPa) Pressure										
理论(空载)排量Displacement Vg(ml/r)		1.74	3.49	5.5	10.9	26.9	39.4	67.8	165.2	253.8
1000r/min的公称流量(l/min)Flow rate		1.25	2.5	5	10	25	40	63	160	250
公称转速(r/min) Speed		1500	1500	1500	1500	1500	1500	1500	1000	1000
最高转速(r/min) Max speed		特定								
最大理论扭矩(Nm) Max torque		8.7	17.5	27.4	54.6	134.9	197.3	339.6	827.4	1271.1
1000r/min的最大理论功率Max power(KW)		0.9	1.8	2.9	5.7	14.1	20.7	35.6	86.7	133.2
变量形式 Control device	CCY14-1B				0	0	0	0	0	0
	DCY14-1B				√	√	√	√	√	√
	YCY14-1B				√	√	√	√	√	√
	SCY14-1B				√	√	√	√	√	√
	MCY14-1B	√	√	√	√	√	√	√	√	√
	PCY14-1B				√	√	√	√	√	√
	LCY14-1B				0	0	0	0	0	0
	ZCY14-1B				0	0	0	0	0	0
	MYCY14-1B				√	√	√	√	√	√
	BCY14-1B				√	√	√	√	√	√

※注:经技术洽谈后订货,有“0”者表示油流可以换向,有、者表示油流不可换向,空白者表示无该品种。

PS: After technical negotiation, the order will be placed. "0" indicates that the oil flow can be reversed, "and" indicates that the oil flow cannot be reversed, and blank indicates that the product is not available.

表2 14.1B (CM4-18)出向村要(马达)系列参数pistom euomp motor semeshechnial data

公称排量Displacement		16	32	80	400
额定压力(MPa) Pressure		25			
理论(空载)排量Displacement Vg(ml/r)		17	34.1	80.7	365.5
1000r/min的公称流量(l/min)Flow rate		16	32	80	400
公称转速(r/min) Speed		1500		1500	1000
最高转速(r/min) Max speed					
最大理论扭矩(Nm) Max torque		67.6	135.5	320.8	
1000r/min的最大理论功率Max power(KW)		7.1	14.1	33.6	
变量形式 Control device	CGY14-1B	0	0	0	0
	YGY14-1B	√	√	√	√
	DGY14-1B	√	√	√	√
	SGY14-1B	√	√	√	√
	MGY14-1B	√	√	√	√
	PGY14-1B	√	√	√	√
	LGY14-1B	0	0	0	0
	ZGY14-1B	0	0	0	0
	BGY14-1B	√	√	√	√
	MYGY14-1B	√	√	√	√

※注:本表产品属CY系列派生系列 PS:Derivative product of CY series

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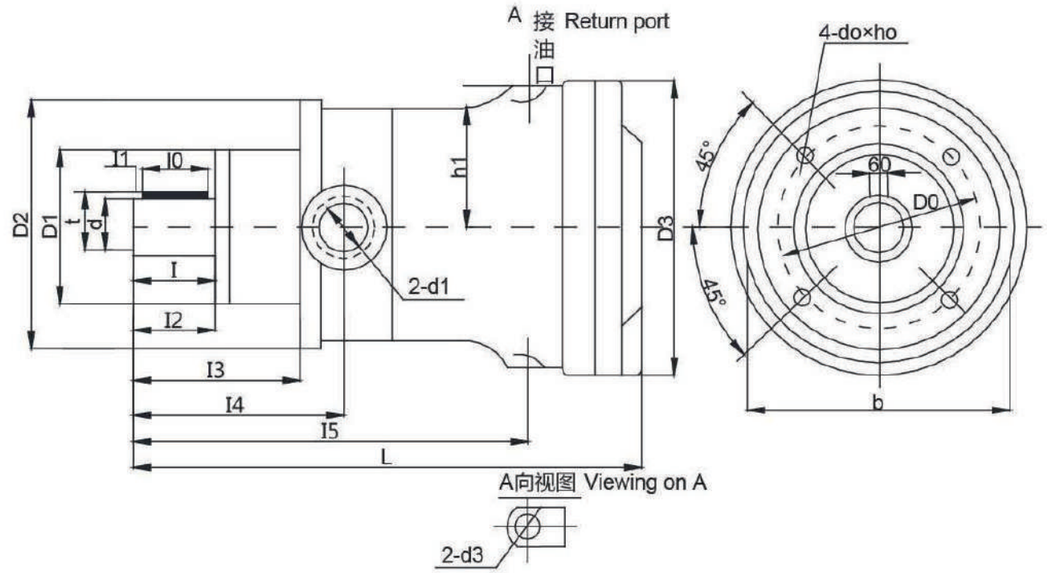
1.25，2.5，5MCY14-1B



推荐管道尺寸 Recommend pipeline size

推荐管道尺寸(不可逆泵用) Recommend pipeline size(can’ t use in anti-clockwise)		
规格 Type	进出口油管 Input&output pipeline	回油口 Rerurn port
1.25,2.5MCY14-1B	18×13	10×8
5MCY14-1B	22×16	14×12

型号 Type	b	b_0 (N9)	D_0	D_1 (f9)	D_2	D_3	d (h_6)	d_1	d_3	h_1
1.25,2.5MCY14-1B	85	5	80	52	94	98	14	M18×1.5	M10×1	44
5MCY14-1B	95	6	90	60	97	102	20	M22×1.5	M14×1.5	48
型号 Size	L	l	l_0	l_1	l_2	l_3	l_4	l_5	t	d_0×h_0
1.25,2.5MCY14-1B	175	25	20	3	26	63	79	123	16	M8×14深
5MCY14-1B	196.5	32	28	3	34	73	90	142.5	22.5	M8×20深

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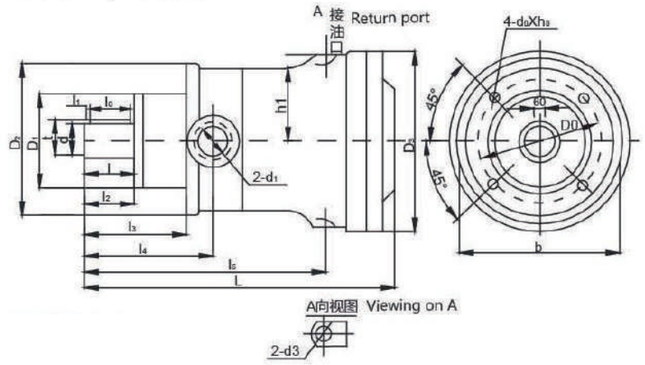
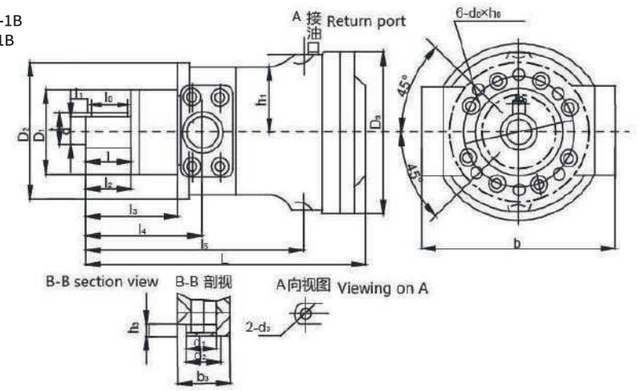
10.25.(32).40.63.(80I MCY14-1B(括号内为 MGY)

10,25,(32)40,63,(80)MCY14-1B“()"is MGY



推荐管道尺寸
1.MCY-14-1B可采用SCY14-1B的管道尺寸。
2.CM14-1B可采用CCY14-1B的管道尺寸。

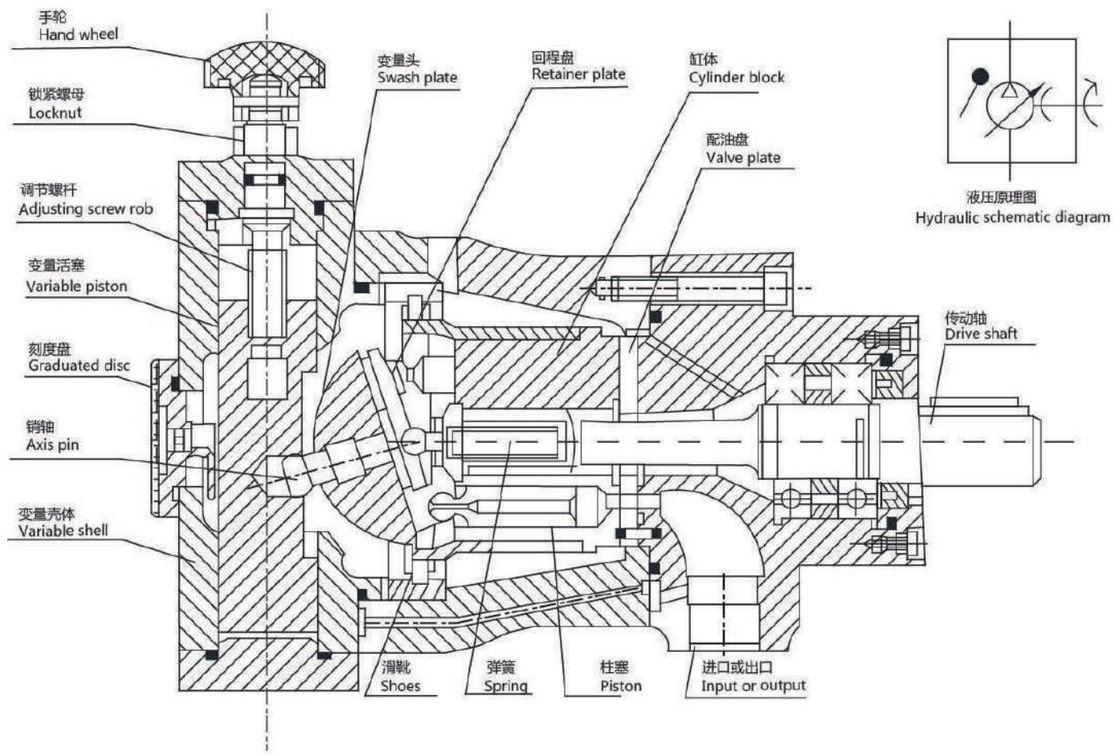
Recommend pipeline size
1.Pipeline size of MCY14-1B is same as SCY14-1B
2.Pipeline size of CM14-1B is same as CCY14-1B



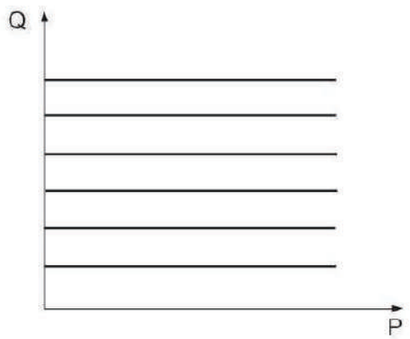
型号Type	b	b_0 (N_9)		D_0	D_1 (fg)	D_2	D_3	d_1 (h_6)	d_1	d_2	d_3	H
10MCY 14-1B	142	8		100	75	125	150	25	M22×1.5		M14×1.5	71
25_(32)MCY14-1B	172	8		125	100	150	170	30	M33×2		M14×1.5	83
40MCY14-1B	180	10		135	100	164	182	32	M39×2		M18×1.5	87
63_(80)MCY14-1B	200	12		155	120	190	225	40	(M42×2) (M48×2)		M18×1.5	108
160MCY14-1B	340	16	96	198	150	240	300	55	50	64	M22×1.5	141
250_(400)MCY14-1B	420	18	110	230	180	280	360	60	55	76	M22×1.5	170
型号Type	h3	L	l	l_0	l_1	l_2	l_3	l_4	l_5	t	d_0×h_0	
10MCY 14-1B		253	40	30	4	44	86	109	194	28	M10×25深	
25_(32)MCY14-1B		308	52	45	4	54	104	134	246	32.5	M10×25深	
40MCY14-1B			49	45	4	54	104	136	236	35	M10×25深	
63_(80)MCY14-1B		385	60	50	4	62	122	152	300	42.8	M12×35深	
160MCY14-1B	25	525	106	100	4	140	180	230	411	59	M16×35深	
250MCY14-1B	25	622	110	100	5	112	212	272	492	63.9	M20×45深	
400MCY14-1B	25	632	110	100	5	112	212	272	502	63.9	M20×45深	

SCY 型轴向柱塞泵 SCYseries piston pump

结构图 Structure chart



特性曲线 Characteristic curve



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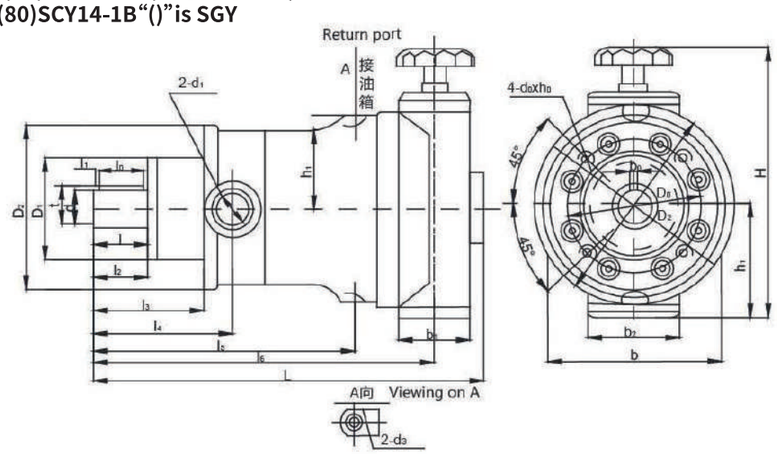
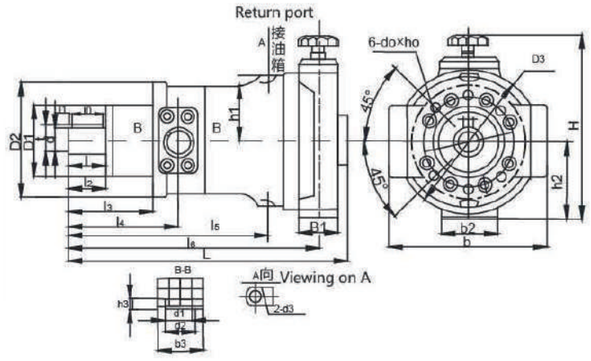
10.25.(32).40.63.(80)SCY14-1B (括号内为 SGY)
10.25.(32)40.63.(80)SCY14-1B“()”is SGY





推荐管道尺寸(不可逆泵用) Recomend pipeline size (canlt used in anti-clockwise)			
型号Size	进口Input	出口Output	回油口 Return port
10SCY14-1B	22×16	18×13	10×8
25(32)SCY14-1B	34×24	28×20	10×8
40SCY14-1B	42×30	34×24	12×10
63(80)SCY14-1B	50×38	42×30	12×10
160SCY14-1B	63×46	50×38	18×15
250SCY14-1B	75×55	63×46	18×15
400SCY14-1B	90×66	75×55	22×18

型号 Type	b	b_0 (N_9)	b_1	b_2	b_3	D_0		D_2	D_3	d_1 (h_9)	d_1	d_2	d_3	H
10SCY14-1B	142	8	50	88		100	75	125	150	25	M22×1.5		M14×1.5	231
25(32)SCY14-1B	172	8	66	100		125	100	150	170	30	M33×2		M14×1.5	266
40SCY14-1B	180	10	66	100		135	100	164	182	24	M39×2		M18×1.5	274
63(80)SCY14-1B	200	12	74	104		155	120	190	225	40	(M42×2)(M48×2)		M18×1.5	305
160SCY14-1B	340	16	100	120	90	198	150	240	300	55	50	64	M22×1.5	393
250(400)SCY14-1B	420	18	100	140	110	230	180	280	360	60	55	76	M22×1.5	470

型号 Type	h_1	h_2		L	l	l_0	l_1	l_2	l_3	l_4	l_5	l_6	t	d_0×h_0
10SCY14-1B	71	91		295	40	30	4	41	86	109	194	258	28	M10×25深
25(32)SCY14-1B	83	101		362	52	45	4	54	104	134	246	317	32.5	M10×25深
40SCY14-1B	87	112		362	49	45	4	54	104	136	236	317	35	M10×25深
63(80)SCY14-1B	108	130		440	60	50	4	62	122	157	300	389	42.8	M12×25深
160SCY14-1B	141	165	25	595	106	100	4	110	180	230	411	533	59	M16×25深
250SCY14-1B	170	203	25	691	110	100	5	112	212	272	492	629	63.9	M20×25深
400SCY14-1B	170	203	25	701	110	100	5	112	212	277	502	639	63.9	M20×25深

CCY型轴向柱塞泵 CCYseries piston pump

结构图 Structure chart

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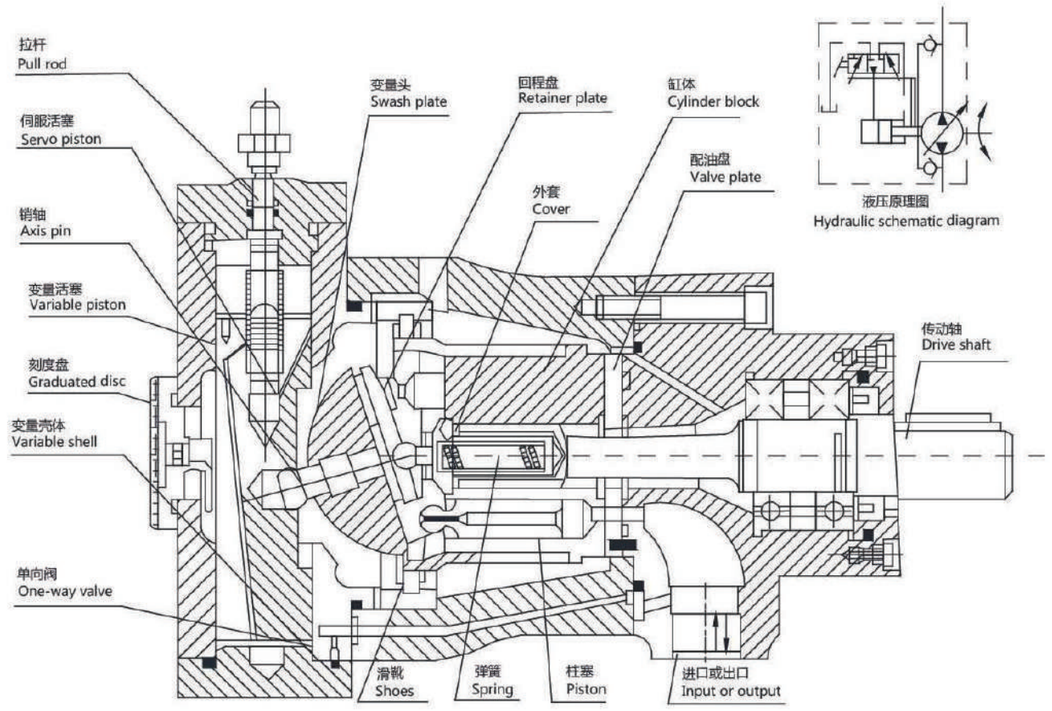
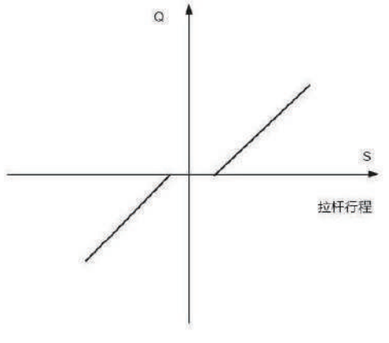
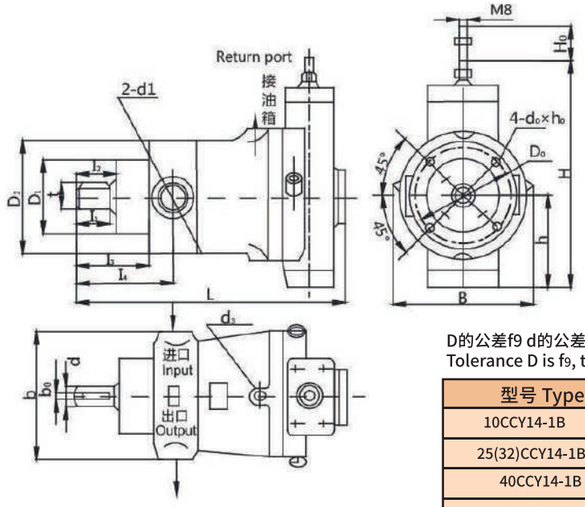


特性曲线 Characteristic curve



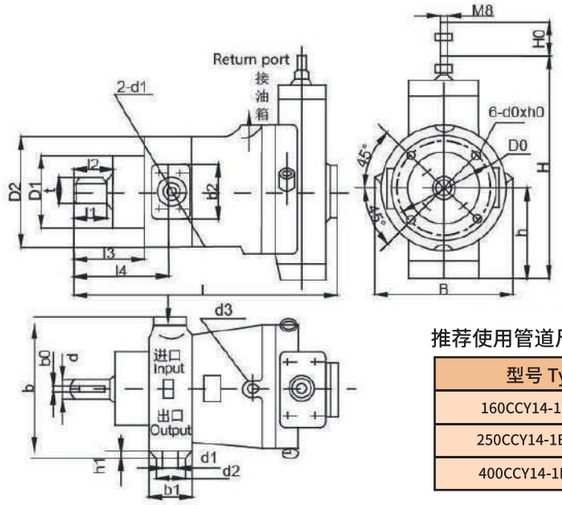
A



D的公差f9 d的公差h6
Tolerance D is f9, tolerance d is h6

型号 Type	进口Input	出口Output
10CCY14-1B	22×16	22×16
25(32)CCY14-1B	34×24	34×24
40CCY14-1B	42×30	42×30
63CCY14-1B	50×38	50×38

160、250、（400) CCY14-1B



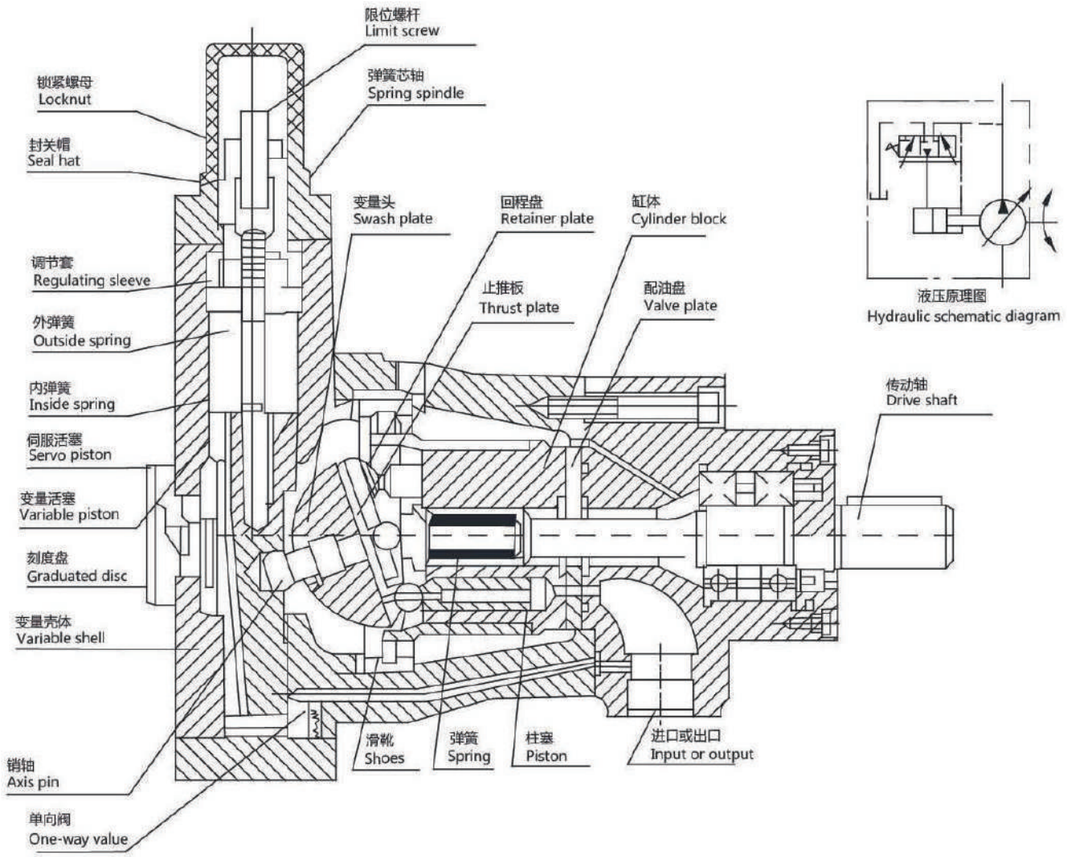
推荐使用管道尺寸(d外xd内)Recommend pipeline size

型号 Type	进口Input	出口Output
160CCY14-1B	63×46	63×46
250CCY14-1B	75×55	75×55
400CCY14-1B	90×66	90×66

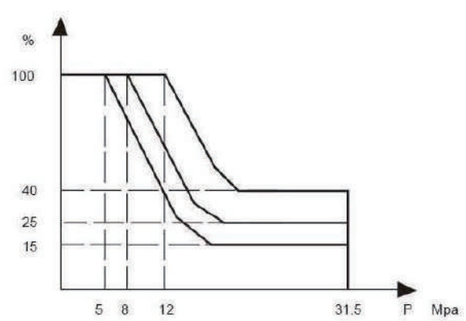
型号Type \ 尺寸Size		B	b	b_0	b_1	b_2	D_0	D_1	D_2	d	d_1	d_2	d_3	H	h	h_1	L	l_1	l_2	l_3	l_4	t	$d_0×h_0$	
10		172	142	8			100	75	125	25	(M22×1.5)		M14×1.5	227	92		295	40	41	86	109	28	M10×25	23.4
25(52)		198	172	8			125	100	150	30	(M33×2)		M14×1.5	295	125		362	52	54	104	134	32.5	M10×25	34.6
40	CCY14-1B	198	172	10			135	100	160	32	(M39×2)		M18×1.5	295	125		362	52	54	104	134	35	M10×25	34.6
63(80)		258	200	12			155	120	190	40	(M42×2) (M48×2)		M18×1.5	337	140		440	60	62	122	157	42.5	M12×25	41.4
160		322	340	16	90	160	198	150	240	55	50	64	M22×1.5	391	172	25	595	108	110	180	230	59.5	M16×35	42.8
250	CGY14-1B	385	420	18	110	180	230	180	280	60	55	76	M22×1.5	458	210	25	691	110	112	212	272	63.9	M20×45	55.6
400		385	420	18	110	180	230	180	280	60	60	76	M22×1.5	458	210	25	701	110	112	212	277	63.9	M20×45	55.6

YCY型轴向柱塞泵 YCYseries piston pump

结构图 Structure chart



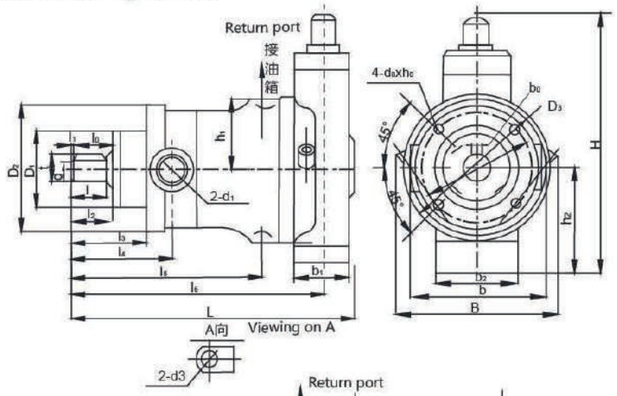
特性曲线 Characteristic curve



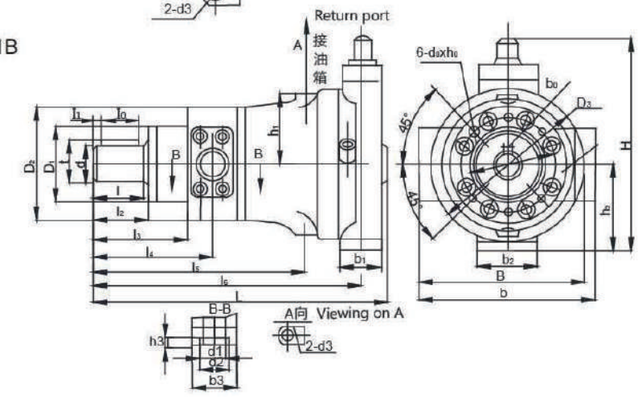
A

A

10.25(32)40.63(80)YCY14-1B (括号内为 YGY)
10.25(32)40.63(80)YCY14-1B "()" is YGY



160.250. (400) YCY14-1B



推荐管道尺寸（不可逆泵用）Recommend pipeline size(can' t use in anti-clockwise)			
型号 Type	进口Input	出口Output	回油口 Return port
10YCY14-1B	22×16	18×13	10×8
25(32)YCY14-1B	34×24	28×20	10×8
40YCY14-1B	42×30	34×24	12×10
60(80)YCY14-1B	50×38	42×30	12×10
160YCY14-1B	63×46	50×38	18×15
250YCY14-1B	75×55	63×46	18×15
400YGY14-1B	90×66	75×55	22×18

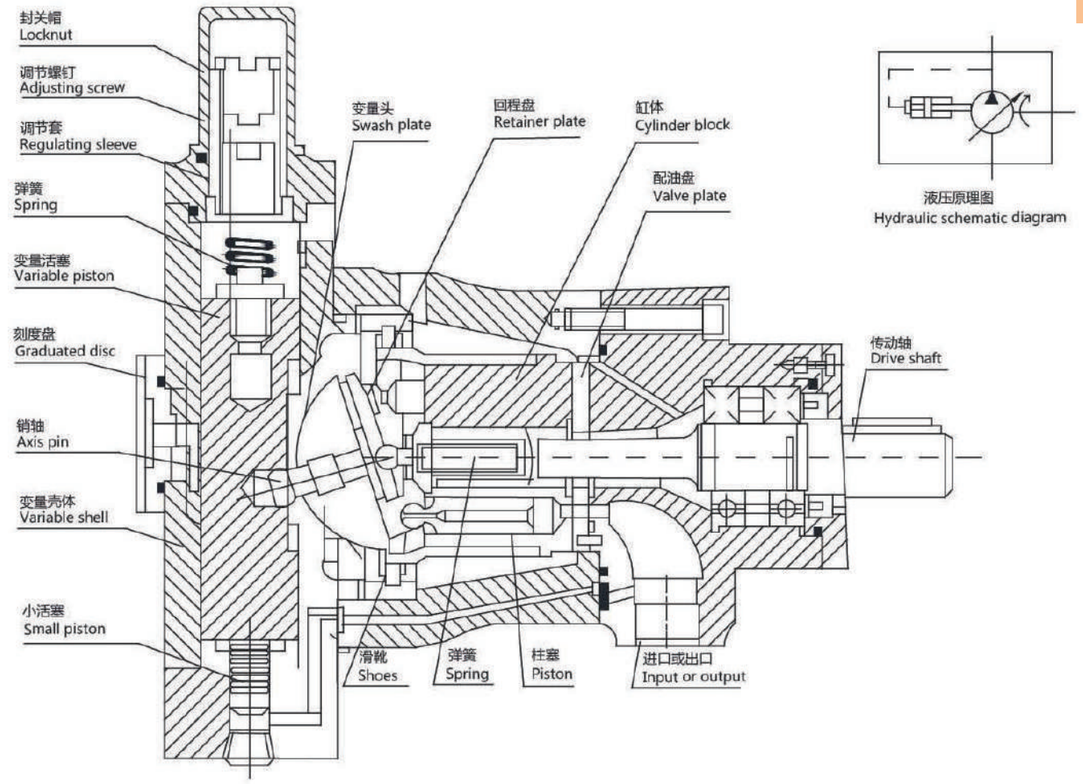
型号Type	B	b_0	b_0 (N9)	b_1	b_2	b_3	D_0	D_2 (f9)	D_3	D_4	d (h6)	d1	d2	d3
10YCY14-1B	172	142	8	50	88		100	75	125	150	25	M22×1.5		M14×1.5
25(32)YCY14-1B	198	172	8	66	100		125	100	150	170	30	M39×2		M14×1.5
40YCY14-1B	210	172	10	66	100		135	100	150	182	32	M39×2		M18×1.5
60(80)YCY14-1B	258	200	12	74	104		155	120	190	225	40	(M42×2) (M48×2)		M18×1.5
160YCY14-1B	329	340	16	100	120	90	198	150	240	300	55	50	64	M22×1.5
250(400)YCY14-1B	385	420	18	100	140	110	230	180	280	360	60	55	76	M22×1.5

型号Type	H	h_1	h_2		L	l	l_0	l_1	l_2	l_3	l_4	l_5	l_6	t	d_0×h_0
10YCY14-1B	288	71	100		295	40	30	4	41	86	109	194	258	28	M10×25深
25(32)YCY14-1B	351	83	120		362	52	45	4	54	104	134	246	317	32.5	M10×25深
40YCY14-1B	373	83	120		362	52	45	4	54	104	136	246	317	35	M10×25深
60(80)YCY14-1B	400	108	140		440	60	50	4	62	122	157	300	389	42.8	M12×25深
160YCY14-1B	448	141	173	25	595	106	100	4	110	180	230	411	533	59	M16×25深
250YCY14-1B	576	170	210	25	691	110	100	5	112	212	272	492	629	63.9	M20×45深
400YGY14-1B	576	170	210	25	701	110	100	5	112	212	272	502	639	63.9	M20×45深

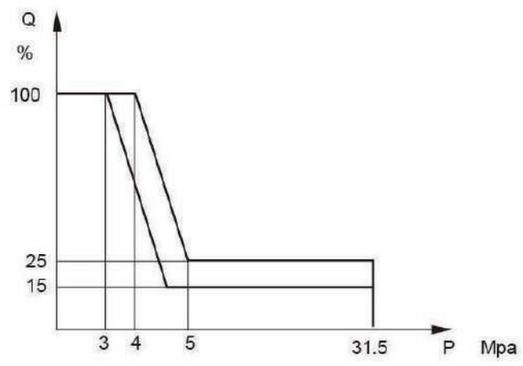
MYCY型轴向柱塞泵 MYCYseries piston pump

A

结构图 Structure chart



特性曲线 Characteristic curve



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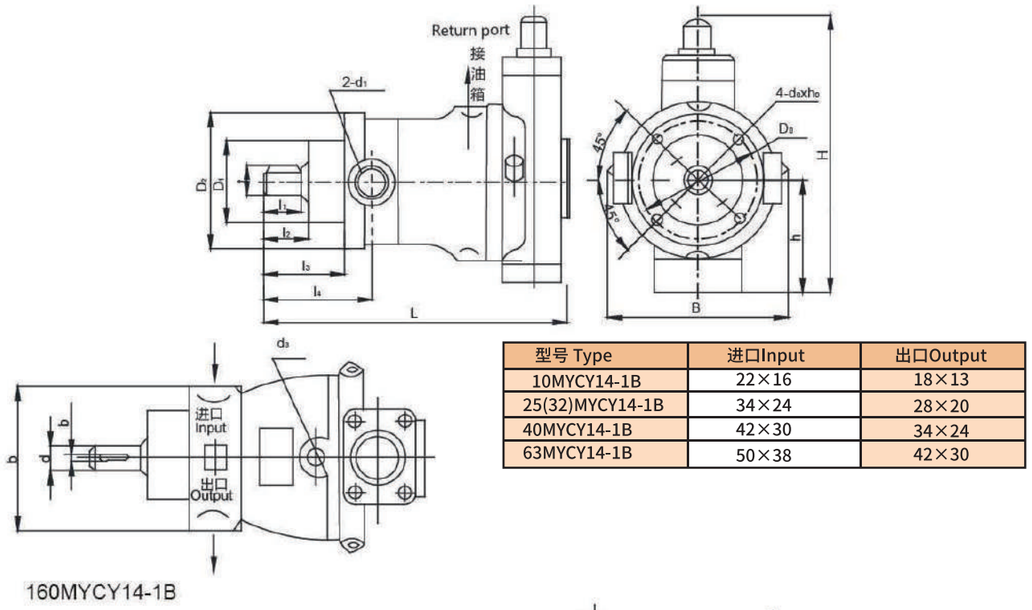
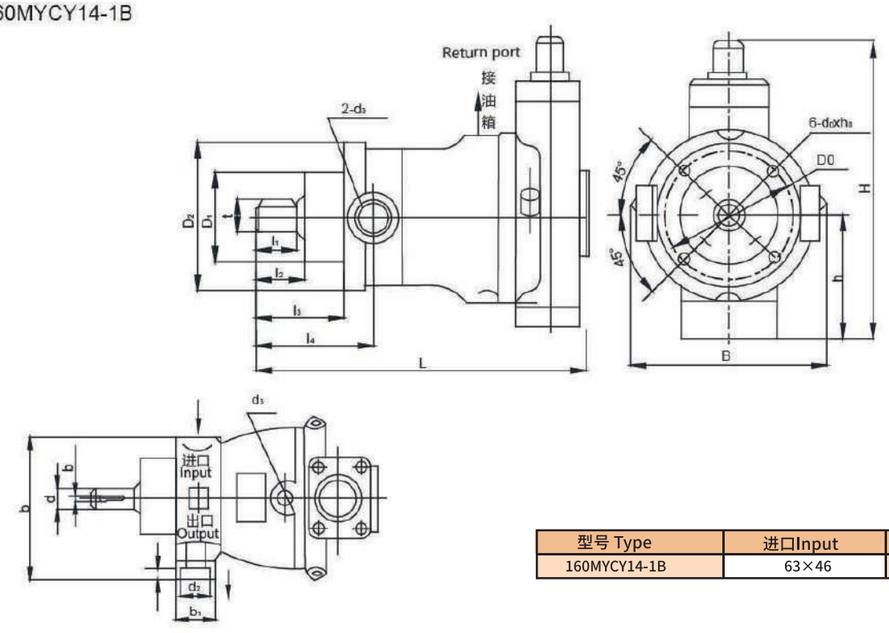
10、25、32、（40）63(80)MYCY14-1B



型号 Type	进口Input	出口Output
10MYCY14-1B	22×16	18×13
25(32)MYCY14-1B	34×24	28×20
40MYCY14-1B	42×30	34×24
63MYCY14-1B	50×38	42×30

160MYCY14-1B



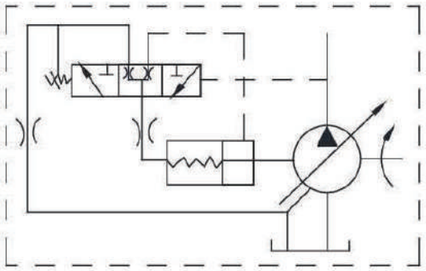
型号 Type	进口Input	出口Output
160MYCY14-1B	63×46	50×38

型号Type \ 尺寸Size		B	b	b_0 (N_1)	b_1	D_0	D_1 (f9)	D_2	d_1 (h_6)	d_1	d_2	H	h	h_1	L	l_1	l_2	l_3	l_4	t	$d_0 \times h_0$
10	MYCY 14-1B	172	142	8		100	75	125	25	(M22×1.5)		282	127		295	40	41	86	109	28	M10×25
25(52)		198	172	8		125	100	150	30	(M33×2)		335	153		362	52	54	104	134	32.5	M10×25
40		198	180	10		135	100	164	32	(M39×2)		344	168		362	52	54	104	134	35	M10×25
63(80)		258	200	12		155	120	190	40	(M42×2) (M48×2)		382	188		440	60	62	122	157	42.5	M12×25
160		322	340	16	90	198	150	240	55	50	64	515	222	25	595	108	110	180	230	59	M16×35

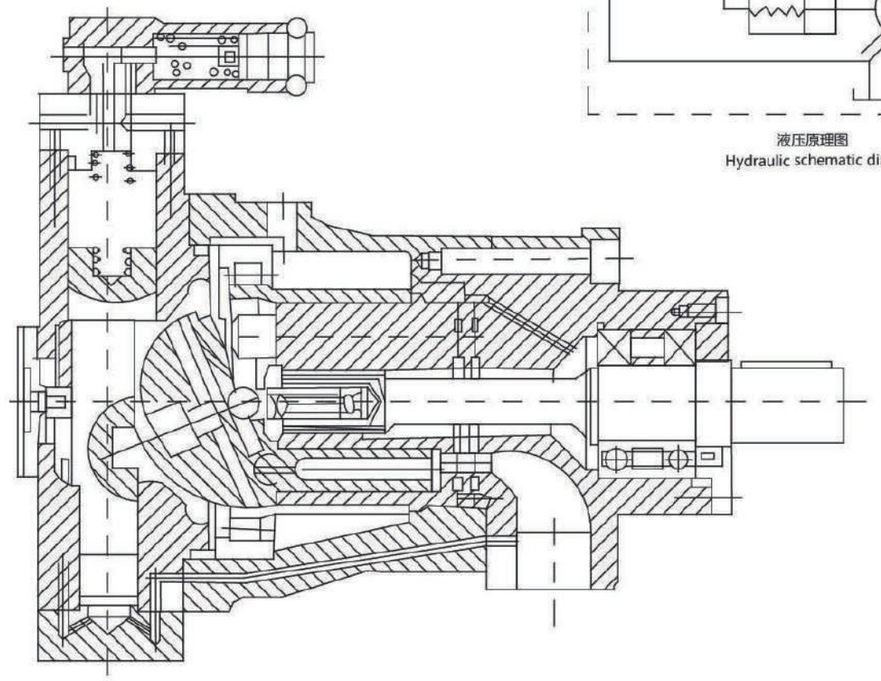
PCY型轴向柱塞泵 PCYseries piston pump

A

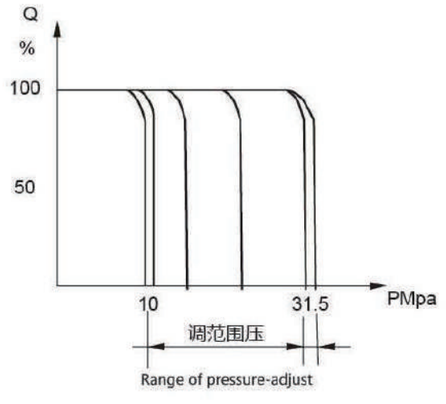
结构图 Structure chart



液压原理图
Hydraulic schematic diagram



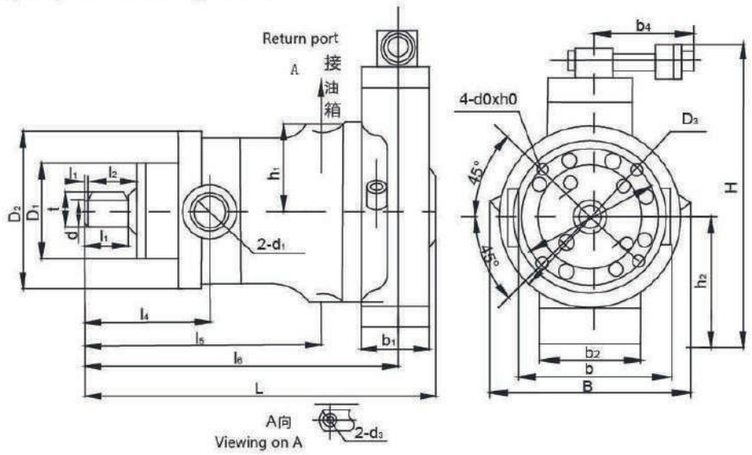
特性曲线 Characteristic curve



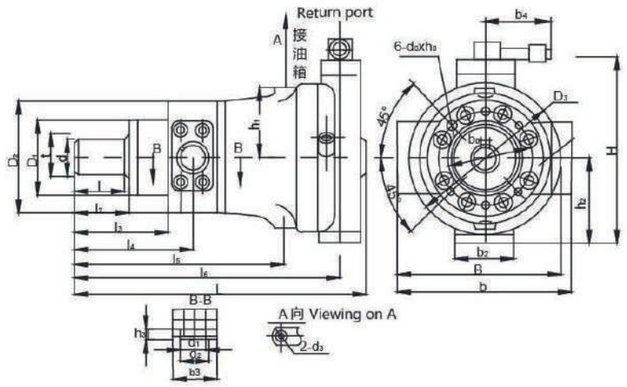
A

10，25，(32)40，63，(80)PCY14-1B 括号内为 PGY

10,25,(32)40,63,(80)PCY14-1B "()" is PGY



160.250. (400) PCY14-1B



型号 Type	进口Input	出口Output	回油口 Return port
10PCY14-1B	22×16	18×13	10×8
25(32)PCY14-1B	34×24	28×20	10×8
40PCY14-1B	42×30	34×24	12×10
60(80) PCY14-1B	50×38	42×30	12×10
160PFCY14-1B	63×46	50×38	18×15
250PCY14-1B	75×55	63×46	18×15
400PGY14-1B	90×66	75×55	22×18

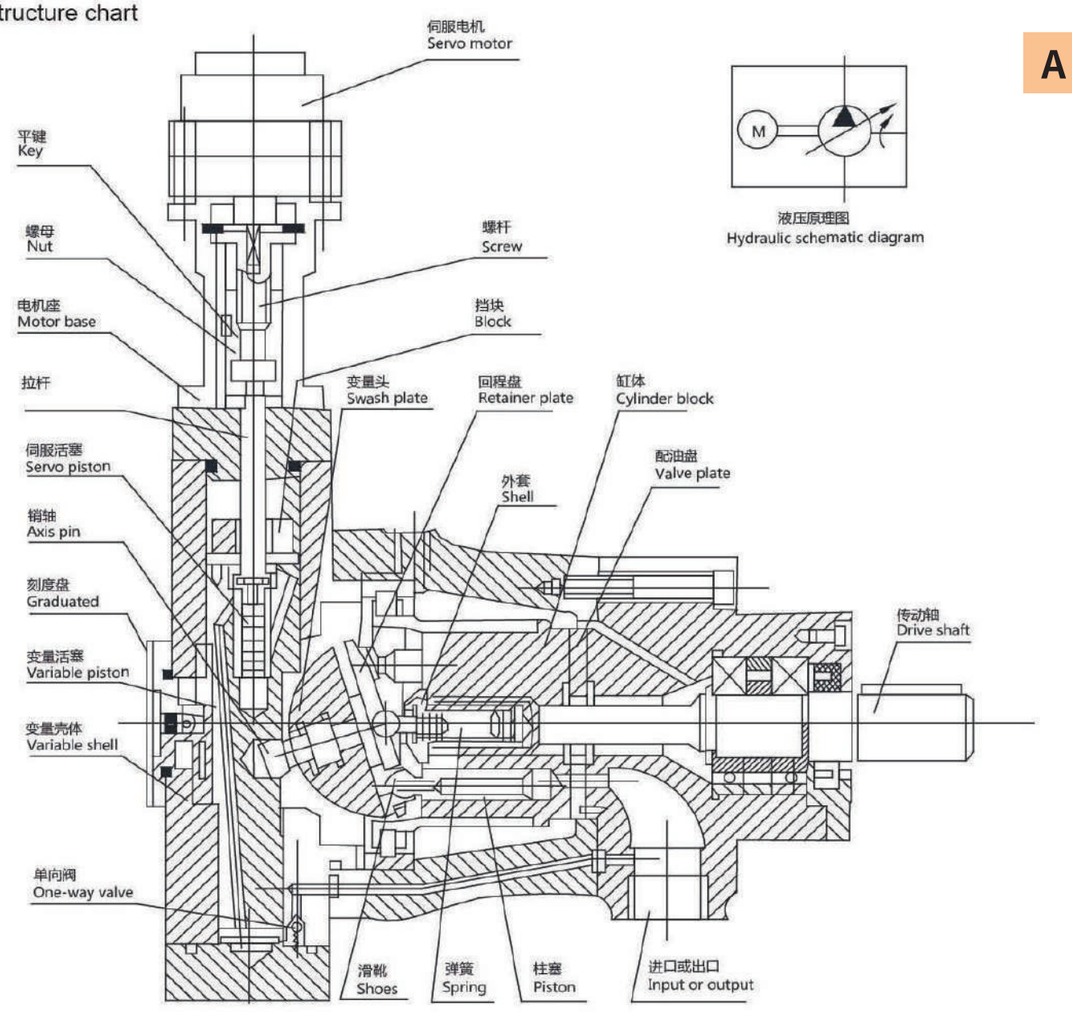
型号Type	B	b_0 (N9)	b_1	b_2	b_3	b_4	D_0	D_1 (f9)	D_2	D_3	d (h6)	d1	d2	d3
10PCY14-1B	180	142	8	50	88		110	100	75	125	150	25	M22×1.5		M14×1.5
25(32)PCY14-1B	191	172	8	66	100		110	125	100	150	170	30	M39×2		M14×1.5
40PCY14-1B	191	172	10	66	100		110	135	100	150	170	32	M39×2		M18×1.5
60(80) PCY14-1B	258	200	12	74	104		110	155	120	190	225	40	(M42×2) (M48×2)		M18×1.5
160PCY14-1B	322	340	16	100	120	90	110	198	150	240	300	55	50	64	M22×1.5
250PCY14-1B	385	420	18	100		110	110	230	180	280	360	60	55	76	M22×1.5
400PGY14-1B	385	420	18	100	140	110	110	230	180	280	360	60	65	76	M22×1.5

型号Type	H	h_1	h_2	h_3	L	1	l_0	l_1	l_2	l_3	l_4	l_5	l_6	t	d_0×h_0
10PCY14-1B	255	71	101		295	40	30	4	41	86	109	194	258	28	M10×25深
25(32)PCY14-1B	280	83	120		362	52	45	4	54	104	134	246	317	32.5	M10×25深
40PCY14-1B	280	83	120		362	52	45	4	54	104	134	246	317	35	M10×25深
60(80) PCY14-1B	329	108	140		440	60	50	4	62	122	157	300	389	42.8	M12×25深
160PCY14-1B	396	141	173	25	595	106	100	4	110	180	230	411	533	59	M16×25深
250PCY14-1B	465	170	210	25	691	110	100	5	112	212	272	492	629	63.9	M20×45深
400PGY14-1B	465	170	210	25	701	110	100	5	112	212	277	502	629	63.9	M20×45深

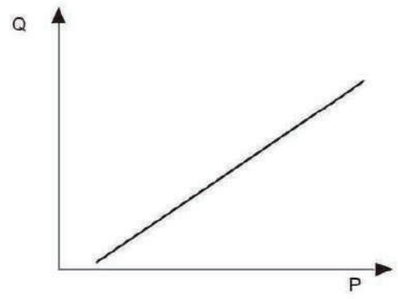
DCY型轴向柱塞泵 DCYseries piston pump

A

结构图 Structure chart

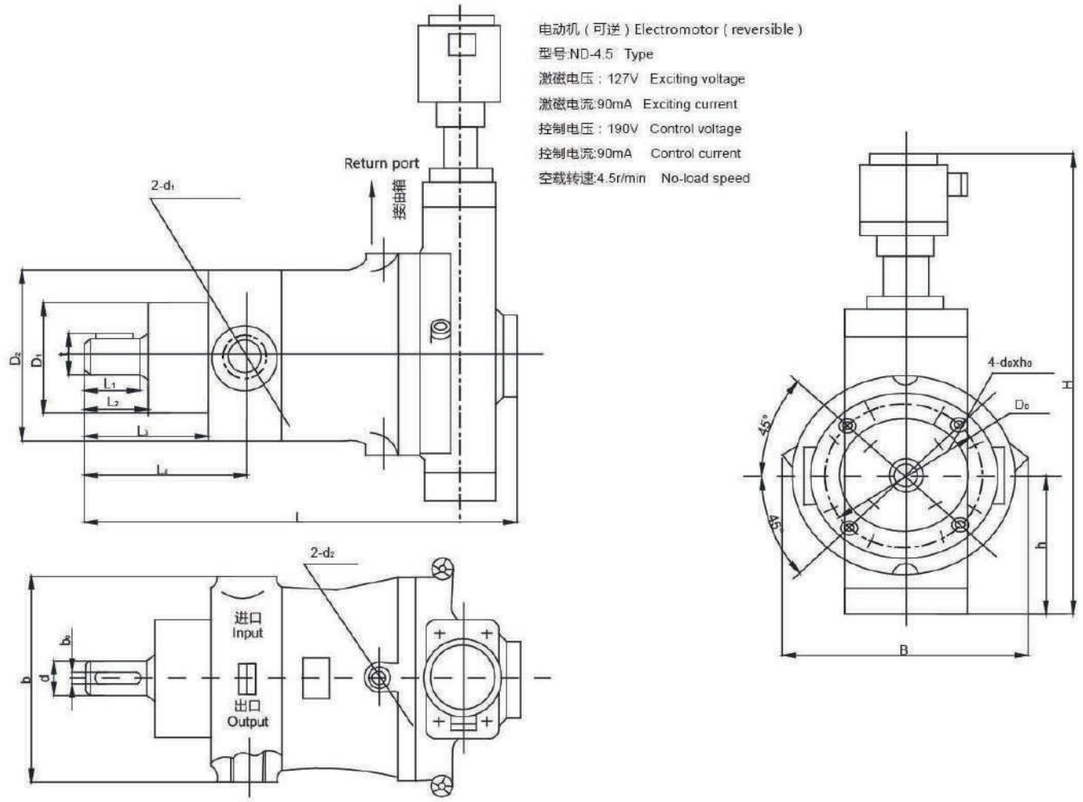


特性曲线 Characteristic curve



外形尺寸 Installment size

A



推荐使用管道尺寸（$d_{外}$x$d_{内}$） Recommend pipeline size (d_{inside} × $d_{outside}$)

泵的型号 Type	进口Input	出口Output
10DCY14-1B	22×16	18×13
25DCY14-1B	34×24	28×20
63DCY14-1B	42×30	34×24

型号Type \ 尺寸Size		B	b	b_1 (N9)	t	D_1 (f9)	D_2	D_0	d	d_1	d_2	d_0×h_0	L	L_1	L_2	L_3	L_4	h	H
10	DCY14-1B	175	142	8	28	75f9	125	100	25h6	M22×1.5	M14×1.5	M10×25	295	40	41	86	109	92	340
25		198	172	8	32.5	100f9	150	125	30h6	M33×2	M14×1.5	M12×25	365	52	54	104	134	125	420
63		259	200	12	42.8	120f9	190	155	40h6	M42×2	M18×1.5	M12×25	440	60	62	122	157	140	480

BCY型轴向柱塞泵 BCYseries piston pump

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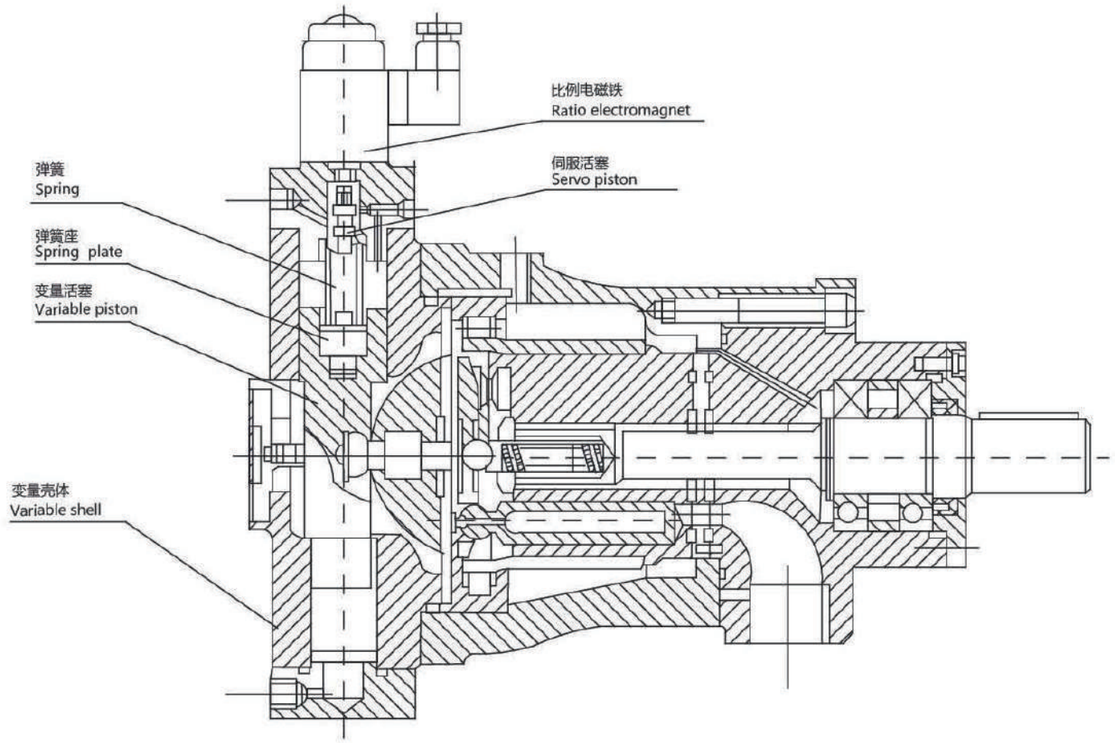

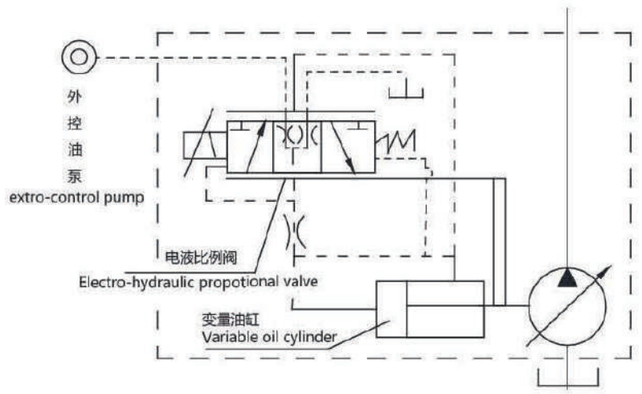

图 8-1 液压原理符号

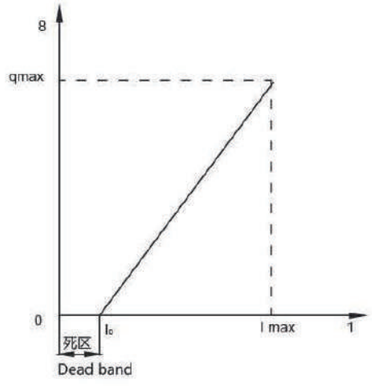

图 8-2 变量特性曲线

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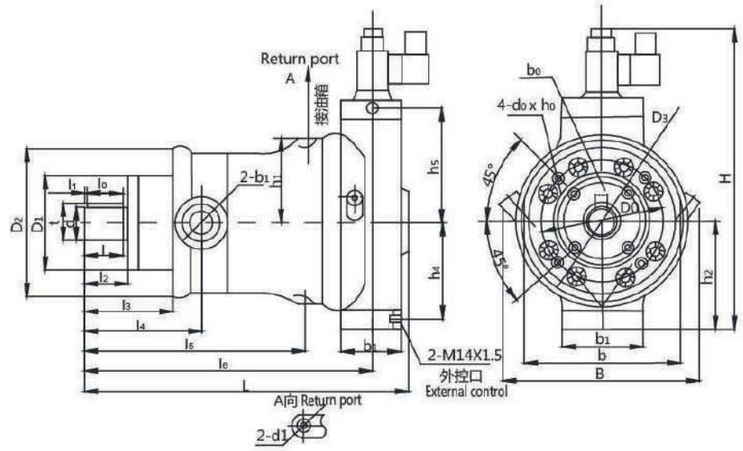
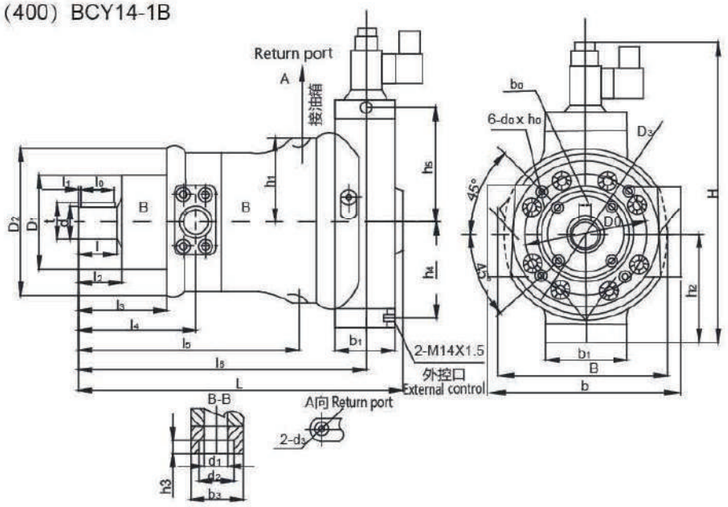
10、25、(32).40.63(80)YCY14-1B



160、250、（400）BCY14-1B



型号Type	B	b	b_0 (N9)	b_1	b_2	b_3	D_0	D_1 (f9)	D_2	D_3	d (h_6)	d_1	d_2	d_3
10BCY14-1B	172	142	8	1500	100		100	75	125	150	25	M22×1.5		M14×1.5
25 (32) BCY14-1B	198	172	8	66	100		125	100	150	170	30	M33×2		M14×1.5
40BCY14-1B	198	172	10	66	100		135	100	150	170	32	M39×2		M18×1.5
63 (80) BCY14-1B	258	200	12	74	104		155	120	190	225	40	(M42×2)(M48×2)		M18×1.5
160BCY14-1B	332	340	16	100	120	90	198	150	240	300	55	50	64	M22×1.5
250BCY14-1B	385	420	18	100	140	110	230	180	280	360	60	55	76	M22×1.5
400BGY14-1B	385	420	100	100	140	110	230	180	280	360	60	65	76	M22×1.5

型号Type	H	h_1	h_2	h_3	h_4	h_5	L	l	l_0	l_1	l_2	l_3	l_4	l_5	l_6	t	d_0×h_0
10BCY14-1B	300	71	100		65		295	40	30	4	41	86	109	194	258	28	M10×25深
25 (32) BCY14-1B	318	83	110		80	112	362	52	45	4	54	104	134	246	317	32.5	M10×25深
40BCY14-1B	318	83	110		80	112	362	52	45	4	54	104	134	246	317	35	M10×25深
63 (80) BCY14-1B	350	108	140		127	126	440	60	50	4	62	122	157	300	389	42.8	M12×25深
160BCY14-1B	415	141	173	25	157	159	595	106	100	4	110	180	230	411	533	59	M16×35深
250BCY14-1B	485	170	210	25	193	193	691	110	100	5	112	212	272	492	629	63.9	M20×45深
400BGY14-1B	485	170	210	25	193	193	701	110	100	5	112	212	277	502	639	63.9	M20×45深

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概述 Overview

CY-Y系列油泵电动组是CY14-1B系列高压轴向柱塞泵和Y系列异步电动机的机电一体化元件，它于传统的油泵-联轴器-电动传动装置相比，省去了联轴器和泵支架，安装底板可缩小12以上，轴向总长度可减小1/3~14、具有结构紧凑、体积小、重量轻、振动小、噪音低使用方便等优点，因此，油泵电机组具有显著的技术经济效益。它可广泛用于机床、锻压、矿山、冶金、船舶、注塑机等用异步电机驱动的液压设备。

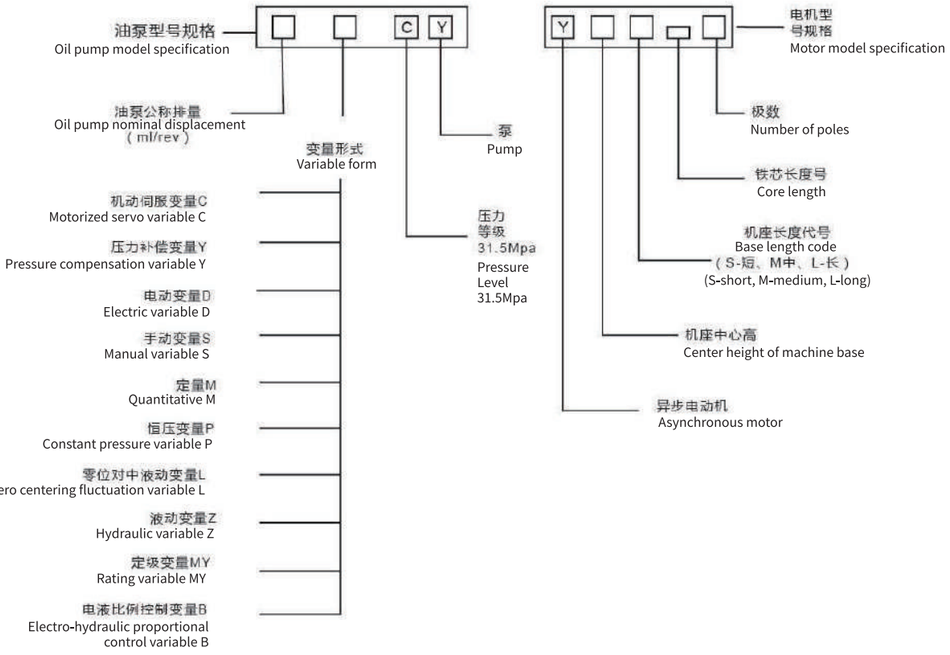
CY-Y series oil pump motor unit is a mechatronic component of CY14-1B series high-pressure axial piston pump and Y series asynchronous motor. Compared with the traditional oil pump-coupling-electric transmission device, it saves the coupling and pump bracket, the installation base can be reduced by more than 12, the total axial length can be reduced by 1/3~14, and it has the advantages of compact structure, small size, light weight, low vibration, low noise, and easy use. Therefore, the oil pump motor unit has significant technical and economic benefits. It can be widely used in hydraulic equipment driven by asynchronous motors such as machine tools, forging, mining, metallurgy, ships, and injection molding machines.

主要工作参数和变量形式： Main working parameters and variable forms:

CY-Y油泵电机组具有CY14-1B系列泵相同的工作参数和变量形式,可根据用户的实际需要、配以不同功率的电机，组成相应规格型号的油泵电机组。

CY-Y oil pump motor unit has the same working parameters and variable forms as CY14-1B series pumps. It can be equipped with motors of different powers according to the actual needs of users to form oil pump motor units of corresponding specifications and models.

型号标志：Model mark:



示例:63YCY-Y200L$_2$-6
即:排量63mlrev、工作压力31.5MPa、压力补偿变量、Y系列异步电动机、中心高200、长机座、第2种铁芯长、6极。

Example: 63YCY-Y200L2-6
That is: displacement 63mlrev, working pressure 31.5MPa, pressure compensation variable, Y series asynchronous motor, center height 200, long base, second core length, 6 poles.

规格品种及外形尺寸

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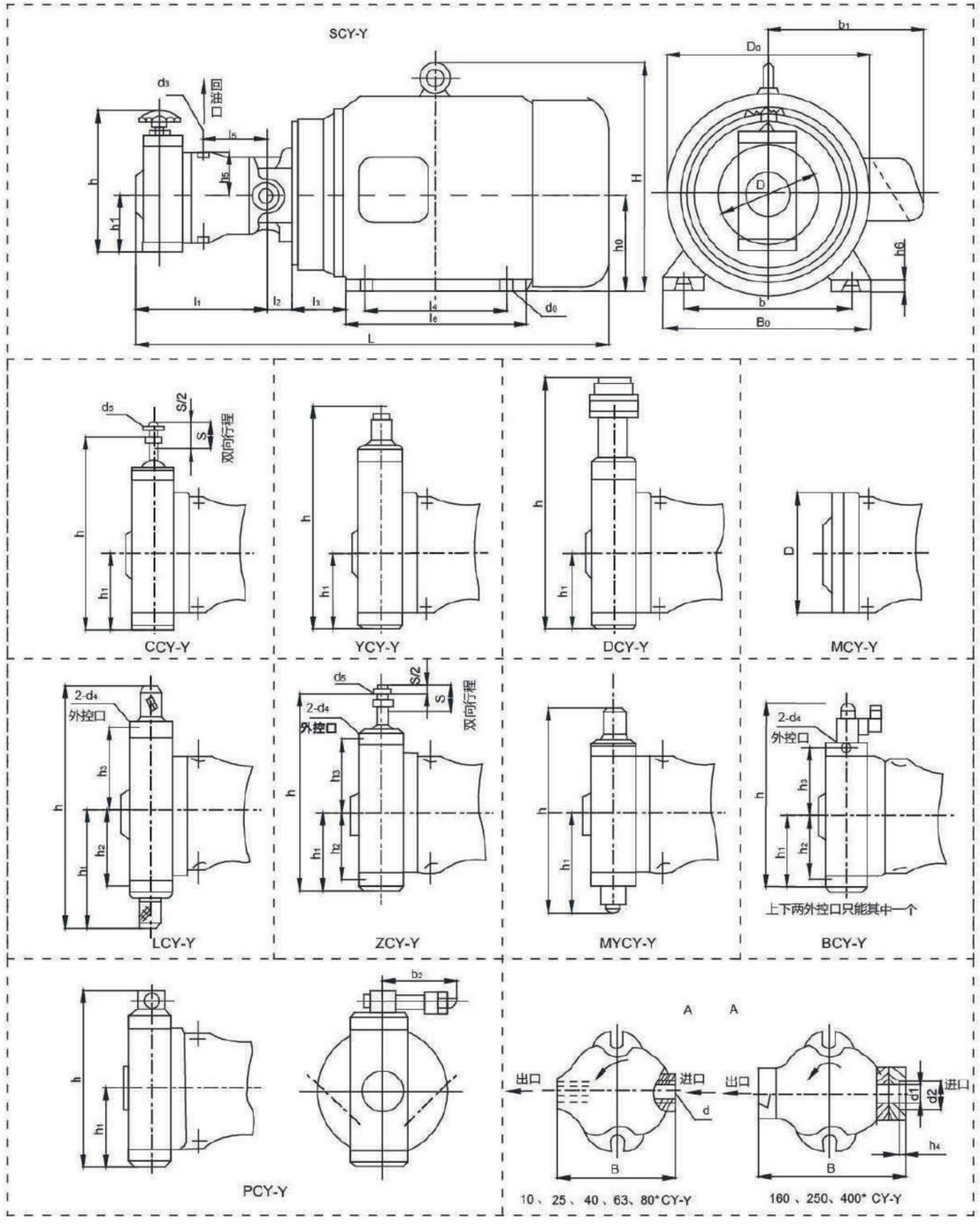

油泵电机组型号 Model	电机功率 (kw)	同步转速 (r/min)	推荐油泵使用压力和流量 Recommended oil pump pressure and flow rate		油泵变量型式 Oil pump variable type			安装外形尺寸(mm) Installation dimensions																
			额定压力 (Mpa)	最大流量 (l/min)	SMC DPL ZB	Y	MY	l_1	l_2	l_3	l_4	l_5	l_6	L	H_0	H	h_5	h_6	D_0	B_0	b	b_1	d_0
10*CY-Y112M-6	2.2	1000	8	10	√			186	40	92	140	85	180	586	112	265	71	15	240	245	190	190	12
			8~31.5	10~2.5		√	√																
10*CY-Y132S-6	3.0	1000	12	10	√			186	40	107	140	85	200	636	132	315	71	18	275	280	216	210	12
			12~31.5	10~4		√																	
10*CY-Y132M$_1$-6	4.0	1000	20	10	√			186	40	107	178	85	238	671	132	315	71	18	275	280	216	210	12
10*CY-Y132M$_2$-6	5.5	1000	25	10	√			186	40	107	178	85	238	671	132	315	71	18	275	280	216	210	12
10*CY-Y160M-6	7.5	1000	31.5	10	√			186	40	119	210	85	270	726	160	385	71	20	335	330	254	265	15
10*CY-Y100L$_2$-4	3.0	1500	8	16	√			186	40	74	140	85	176	556	100	245	71	14	245	205	160	180	12
			8~31.5	16~4		√	√																
10*CY-Y112M$_2$-4	4.0	1500	12	16	√			186	40	92	140	85	180	586	112	265	71	15	240	245	190	190	12
			12~31.5	16~6		√																	
10*CY-Y132S-4	5.5	1500	16	16	√			186	40	107	140	85	200	636	132	315	71	18	275	280	216	210	12
10*CY-Y132M-4	7.5	1500	25	16	√			186	40	107	178	85	238	671	132	315	71	18	275	280	216	210	12
10*CY-Y160M-4	11	1500	31.5	16	√			186	40	119	210	85	270	771	160	385	71	20	335	330	254	265	15

油泵电机组型号 Model	电机功率 (kw)	同步转速 (r/min)	推荐油泵使用压力和流量 Recommended oil pump pressure and flow rate		油泵变量型式 Oil pump variable type			安装外形尺寸(mm) Installation dimensions																
			额定压力 (Mpa)	最大流量 (l/min)	SMC DPL	Y	MY	l_1	l_2	l_3	l_4	l_5	l_6	L	H_0	H	h_5	h_6	D_0	B_0	b	b_1	d_0
25*CY-Y132S-6	3.0	1000	5	25	√			230	45	107	140	112	200	685	132	315	83	18	275	280	216	210	12
			5~31.5	25~4		√	√																
25*CY-Y132M$_1$-6	4.0	1000	8	25	√	√		230	45	107	178	112	238	720	132	315	83	18	275	280	216	210	12
			8~31.5	25~6			√																
25*CY-Y132M$_2$-6	5.5	1000	12	25	√			230	45	107	178	112	238	720	132	315	83	18	275	280	216	210	12
			12~31.5	25~10		√																	
25*CY-Y160M-6	7.5	1000	16	25	√			230	45	119	210	112	270	820	160	385	83	20	335	330	254	265	15
25*CY-Y160L-6	11	1000	25	25	√			230	45	119	254	112	314	865	160	385	83	20	335	330	254	265	15
25*CY-Y180L-6	15	1000	31.5	25	√			230	45	133	279	112	349	935	180	430	83	22	380	355	279	285	15
25*CY-Y112M-4	4.0	1500	5	40	√			230	45	92	140	112	180	635	112	265	83	15	240	245	190	190	12
			5~31.5	40~6		√	√																
25*CY-Y132S-4	5.5	1500	8	40	√			230	45	107	140	112	200	685	132	315	83	18	275	280	216	210	12
			8~31.5	40~10		√	√																
25*CY-Y132M-4	7.5	1500	12	40	√			230	45	107	178	112	238	720	132	315	83	18	275	280	216	210	12
			12~31.5	40~15		√																	
25*CY-Y160M-4	11	1500	16	40	√			230	45	119	210	112	270	820	160	385	83	20	335	330	254	265	15
25*CY-Y180M-4	18.5	1500	25	40	√			230	45	133	241	112	311	885	180	430	83	22	380	355	279	285	15
25*CY-Y180L-4	22	1500	31.5	40	√			230	45	133	279	112	349	935	180	430	83	22	380	355	279	285	15

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油泵电机组型号 Model	电机功率 (kw)	同步转速 (r/min)	推荐油泵使用压力和流量 Recommended oil pump pressure and flow rate		油泵变量型式 Oil pump variable type			安装外形尺寸(mm) Installation dimensions															
			额定压力 (Mpa)	最大流量 (l/min)	SMC DPL	Y	MY	l_1	l_2	l_3	l_4	l_5	l_6	L	H_0	H	h_5	h_6	D_0	B_0	b	b_1	d_0
63*CY-Y160M-6	7.5	1000	6.3	63	√			283	53	119	210	143	270	881	160	385	108	20	335	330	254	265	15
			6.3~31.5	63~12		√	√																
63*CY-Y160L-6	11	1000	10	63	√			283	53	119	254	143	314	926	160	385	108	20	335	330	254	265	15
			10~31.5	63~20		√	√																
63*CY-Y180L-6	15	1000	12	63	√			283	53	133	279	143	349	996	180	430	108	22	380	355	279	285	15
			12~31.5	63~25	√	√																	
63*CY-Y200L$_2$-6	22		20	63	√			283	53	150	305	143	379	1011	200	475	108	25	420	395	318	315	19
63*CY-Y225M-6	30		25	63	√			283	53	143	311	143	393	1041	225	530	108	28	475	435	356	345	19
63*CY-Y250M-6	37	1000	31.5	63	√			283	53	161	349	143	455	1120	250	575	108	30	515	490	406	385	24
63*CY-Y160M-4	11	1500	6.3	100	√			283	53	119	210	143	270	881	160	385	108	20	335	330	254	265	15
			6.3~31.5	100~20		√	√																
63*CY-Y180L-4	22	1500	12	100	√			283	53	133	279	143	349	996	180	430	108	22	380	355	279	285	15
			12~31.5	100~40		√																	
63*CY-Y225S-4	37	1500	20	100	√			283	53	143	286	143	368	1016	225	530	108	28	475	435	356	345	19
63*CY-Y225M-4	45	1500	25	100	√			283	53	143	311	143	393	1041	225	530	108	28	475	435	356	345	19
63*CY-Y250M-4	55	1500	315	100	√			283	53	161	349	143	455	1120	250	575	108	30	515	490	406	385	24

油泵电机组型号 Model	电机功率 (KW)	同步转速 (r/min)	推荐油泵使用压力和流量 Recommended oil pump pressure and flow rate		油泵变量型式 Oil pump variable type			安装外形尺寸(mm) Installation dimensions															
			额定压力 (Mpa)	最大流量 (l/min)	SMC DPL	Y	MY	l_1	l_2	l_3	l_4	l_5	l_6	L	H_0	H	h_5	h_6	D_0	B_0	b	b_1	d_0
250*CY-Y225M-6	30	1000	6.3	250	√			419	71	143	311	220	393	1195	225	530	170	28	475	435	356	345	19
			6.3~31.5	250~50		√	√																
250*CY-Y250M-6	37	1000	8	250	√			419	71	161	349	220	455	1274	250	575	170	30	575	490	406	385	2.4
			8~31.5	250~65		√																	
250*CY-Y280S-6	45	1000	10	250	√			419	71	200	368	220	530	1366	280	640	170	35	580	550	457	410	24
			10~31.5	250~80		√																	
250*CY-Y280M-6	55	1000	12	250	√			419	71	200	419	220	581	1417	280	640	170	35	580	550	457	410	24
			12~31.5	250~95	√	√																	
250*CY-Y315S-6	75	1000	16	250	√			419	71	222	406	220	609	1610	315	865	170	45	645	640	508	576	28
250*CY-Y315M-6	90	1000	20	250	√			419	71	222	457	220	720	1660	315	865	170	45	645	640	508	576	28
250*CY-Y315L$_1$-6	110	1000	25	250	√			419	71	222	508	220	720	1660	315	865	170	45	645	640	508	576	28
250*CY-Y315L$_2$-6	132	1000	29	250	√			419	71	222	508	220	720	1660	315	865	170	45	645	640	508	576	28

油泵电机组型号 Model	电机功率 (kw)	同步转速 (r/min)	推荐油泵使用压力和流量 Recommended oil pump pressure and flow rate		油泵变量型式 Oil pump variable type			安装外形尺寸(mm) Installation dimensions															
			额定压力 (Mpa)	最大流量 (l/min)	SMC DPL	Y	MY	l_1	l_2	l_3	l_4	l_5	l_6	L	H_0	H	h_5	h_6	D_0	B_0	b	b_1	d_0
160*CY-Y200L2-6	22	1000	8	160	√			365	59	150	305	181	379	1099	200	475	141	25	420	395	318	315	19
			8~31.5	160~40		√	√																
160*CY-Y225M-6	30	1000	10	160	√			365	59	143	311	181	393	1129	225	530	141	28	475	435	356	345	19
			10~31.5	160~50		√																	
160*CY-Y250M-6	37	1000	12	160	√			365	59	161	349	181	455	1208	250	575	141	30	515	490	406	385	24
			12~31.5	160~60		√																	
160*CY-Y280S-6	45	1000	16	160	√			365	59	200	368	181	530	1300	280	640	141	35	580	550	457	410	24
160*CY-Y280M-6	55	1000	20	160	√			365	59	200	419	181	581	1351	280	640	141	35		550	457	410	24
160*CY-Y315S-6	75	1000	25	160	√			365	59	222	406	181	609	1544	315	865	141	45	645	744	508	576	28
160*CY-Y315M-6	90	1000	31.5	160	√			365	59	222	457	181	720	1594	315	865	141		645		508	576	28

油泵电机组型号 Model	电机功率 (KW)	同步转速 (r/min)	推荐油泵使用压力和流量 Recommended oil pump pressure and flow rate		油泵变量型式 Oil pump variable type			安装外形尺寸(mm) Installation dimensions															
			额定压力 (Mpa)	最大流量 (l/min)	SMC DPL	Y	MY	l_1	l_2	l_3	l_4	l_5	l_6	L	H_0	H	h_5	h_6	D_0	B_0	b	b_1	d_0
400*CY-Y250M-6	37	1000	5.5	360	√			429	71	161	349	230	455	1284	258	575	170	30	515	490	405	385	24
			5.5~21	360~90		√																	
400*CY-Y280S-6	45	1000	7	360	√			429	71	200	369	230	530	1276	280	640	170	35	580	550	457	410	24
			7~21	360~120		√																	
400*CY-Y280M-6	55	1000	8	360	√			429	71	200	419	230	581	1427	280	640	170	35	580	550	457	410	24
			8~21	360~145		√																	
400*CY-Y315S-6	75	1000	11	360	√			429	71	222	406	230	609	1620	315	865	170	45	645	640	508	576	28
400*CY-Y315M-6	90	1000	14	360	√			429	71	222	457	230	720	1670	315	865	170	45	645	640	508	576	28
400*CY-Y315L$_1$-6	110	1000	16	360	√			429	71	222	508	230	720	1670	315	865	170	45	645	640	508	576	28
400*CY-Y315L$_2$-6	132	1000	20	360				429	71	222	508	230	720	1670	315	865	170	45	645	640	508	576	28

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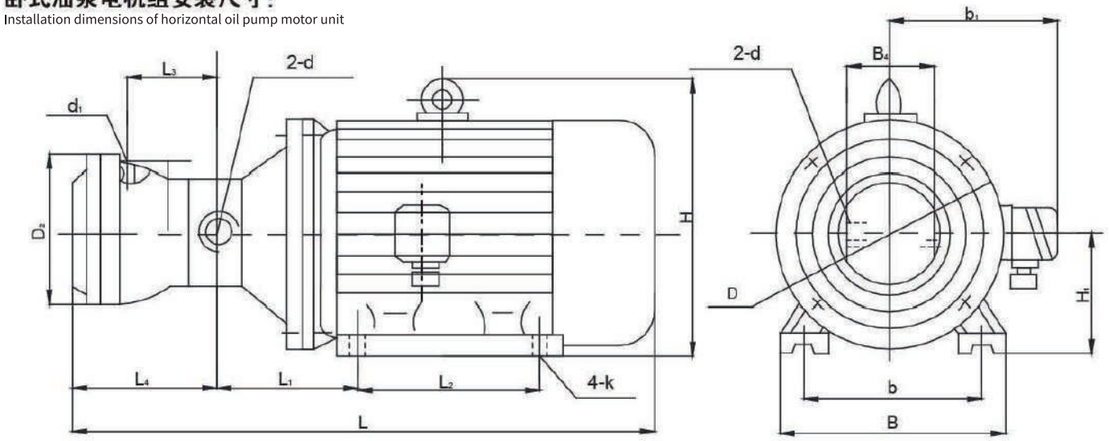
型号 Model	D	h	h_1	b_2	型号 Model	D	h	h_1	h_2	h_3	d_4	d_5	s
10SCY-Y	150	233	91	/	10CCY-Y	150	239	92	/	/	/	M5	23.4
25SCY-Y	170	263	101	/	25CCY-Y	170	315	125	/	/	/	M8	34.6
63SCY-Y	225	312	130	/	63CCY-Y	225	359	140	/	/	/	M8	41.4
160SCY-Y	300	395	165	/	160CCY-Y	300	415	172	/	/	/	M8	42.8
250SCY-Y	360	371	203	/	250CCY-Y	360	489	210	/	/	/	M8	55.6
10YCY-Y	150	288	100	/	10LCY-Y	150	324	154	62	78	M14×1.5	/	/
25YCY-Y	170	351	120	/	25LCY-Y	170	400	190	85	105	M18×1.5	/	/
63YCY-Y	225	400	140	/	63LCY-Y	225	462	216	98	128	M18×1.5	/	/
160YCY-Y	300	448	173	/	160LCY-Y	300	524	245	160	194	M18×1.5	/	/
250YCY-Y	360	516	210	/	250LCY-Y	360	606	283	188	228	M18×1.5	/	/
10DCY-Y	150	340	92	/	10ZCY-Y	150	235	94	85	95	M10×1	M6	23.4
25DCY-Y	170	420	125	/	25ZCY-Y	170	304	123	110	122	M14×1.5	M8	34.6
63DCY-Y	225	480	140	/	63ZCY-Y	225	357	142	128	144	M14×1.5	M8	41.4
160DCY-Y	300	535	172	/	160ZCY-Y	300	398	169	155	160	M18×1.5	M8	42.8
250DCY-Y	360	614	210	/	250ZCY-Y	360	465	203	187	192	M18×1.5	M8	55.6
10MCY-Y	150	/	/	/	10MYCY-Y	150	282	128	/	/	/	/	/
25MCY-Y	170	/	/	/	25MYCY-Y	170	334	152	/	/	/	/	/
63MCY-Y	225	/	/	/	63MYCY-Y	225	382	181	/	i	/	/	/
160MCY-Y	300	/	/	/	160MYCY-Y	300	515	222	/	/	/	/	/
250MCY-Y	360	/	/	/	250MYCY-Y	/	/	/	/	/	/	/	/
10PCY-Y	150	255	101	~115	10BCY-Y	150	300	104	65	/	M14×1.5	/	/
25PCY-Y	170	288	120	~115	25BCY-Y	170	318	109	80	/	M14×1.5	”	/
63PCY-Y	225	329	140	~115	63BCY-Y	225	350	140	127	126	M14×1.5	/	/
160PCY-Y	300	396	173	~115	160BCY-Y	300	416	173	157	159	M14×1.5	/	/
250PCY-Y	360	465	210	~115	250BCY-Y	360	487	210	193	193	M14×1.5	/	/

注：400*CY-Y变量部分的有关尺寸与表2中250*CY-Y的尺寸完全相同
Note: The relevant dimensions of the variable part of 400*CY-Y are exactly the same as those of 250*CY-Y in Table 2

卧式油泵电机组安装尺寸：
Installation dimensions of horizontal oil pump motor unit



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油泵电机组型号 Model	电机功率 KW	额定转速 (r/min)	输出流量 L/min	使用压力 Mpa	安装外形尺寸(mm) Installation dimensions														
					L	L_1	L_2	k	H	H_1	B	b	b_1	D	d	d_1	D_2	L_3	L_4	B_3
1.25MCY-Y90S-6-A	0.75	910	1.0	31.5	490	190			190	90	180	140	155							
1.25MCY-Y801-4-A	0.55	1390	1.5	16	475	184	100	10	170	80	165	125	150	200	M18×1.5	M10×1	φ98	44	96	85
1.25MCY-Y802-4-A	0.75			22																
1.25MCY-Y90S-4-A	1.1	1400		31.5	490	190			190	90	180	140	155							
2.5MCY-Y90S-6-A	0.75	910	2.0	16																
2.5MCY-Y90L-6-A	1.1			25	515		125													
2.5MCY-Y100L-6-A	1.5	940		31.5	560	207	140	12	245	100	205	160	180	250						
2.5MCY-Y801-4-A	0.55	1390	3.0	8	475	184	100	10	170	80	165	125	150	200						
2.5MCY-Y802-4-A	0.75			12																
2.5MCY-Y90S-4-A	1.1	1400		16	490	190			190	90	180	140	155							
2.5MCY-Y90L-4-A	1.5			22	515		125													
2.5MCY-Y100L₁-4-A	2.2	1430		31.5	560	207	140	12	245	100	205	160	180	250						
5MCY-Y90S-6-A	0.75	910	4.0	8	511.5	201	100	10	190	90	180	140	155	200	M22×1.5	M14×1.5	φ102	52.5	106.5	95
5MCY-Y90L-6-A	1.1			12	536.5		125													
5MCY-Y100L-6-A	1.5	940		16	581.5	218	140	12	245	100	205	160	180	250						
5MCY-Y112M-6-A	2.2			25	601.5	225			265	112	245	190	190							
5MCY-Y132S-6-A	3.0	960		31.5	676.5	264			315	132	280	216	210	300						
5MCY-Y802-4-A	0.75	1390	6.0	6	496.5	195	100	10	170	80	165	125	150	200						
5MCY-Y90S-4-A	1.1	1400		8	511.5	201			190	90	180	140	155							
5MCY-Y90L-4-A	1.5			12	536.5		125													
5MCY-Y100L₁-4-A	2.2	1420		16	581.5	218	140	12	245	100	205	160	180	250						
5MCY-Y100L₂-4-A	3.0			22																
5MCY-Y112M-4-A	4.0	1440		31.5	601.5	225			265	112	245	190	190							

立式油泵电机组安装尺寸：
Vertical oil pump motor installation dimensionsVertical oil pump motor installation dimensions

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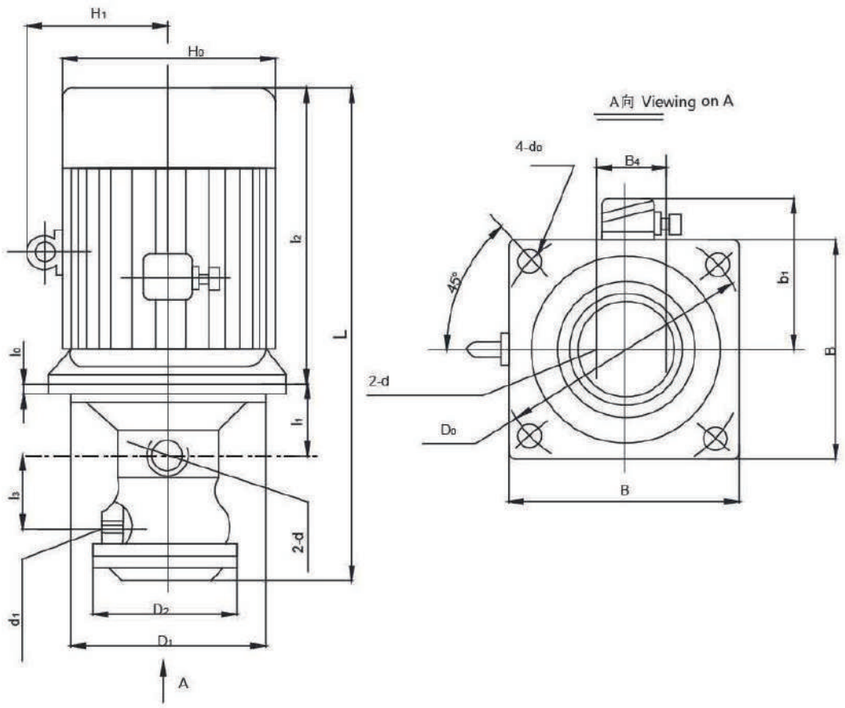

油泵电机组型号 Model	电机功率 KW	额定转速 (r/min)	输出流量 L/min	使用压力 Mpa	安装外形尺寸(mm) Installation dimensions													
					L	l_0	l_1	l_2	H_0	H_1	B	b_1	D_0	D_1 (fg)	d_0	d	d_2	D_2	l_3
1.25MCY-Y90S-6B$_5$-A	0.75	910	1.0	31.5	490			260	175	108		155							
1.25MCY-Y801-4B$_5$-A	0.55	1390	1.5	16	475	12	134	245	165	103	200	150	230	185		M18×1.5	M10×1	φ98	44
1.25MCY-Y802-4B$_5$-A	0.75			22															
1.25MCY-Y90S-6B$_5$-A	1.1	1400		31.5	490			260	175	108		155							
2.5MCY-Y90S-6B$_5$-A	0.75	910	2.0	16															
2.5MCY-Y90L-6B$_5$-A	1.1			25	515			285											
2.5MCY-Y100L-6B$_5$-A	1.5	940		31.5	560	13	144	320	205	143	250	180	280	235					
2.5MCY-Y801-4B$_5$-A	0.55	1390	3.0	8	475	12	134	245	165	103	200	150		185					
2.5MCY-Y802-4B$_5$-A	0.75			12															
2.5MCY-Y90S-4B$_5$-A	1.1	1400		16	490			260	175	108		155							
2.5MCY-Y90L-4B$_5$-A	1.5			22	515			285											
2.5MCY-Y100L$_1$-4B$_5$-A	2.2	1420		31.5	560	13	144	320	205	143	250	180		235	14				
5MCY-Y90S-6B$_5$-A	0.75	910	4.0	8	511.5	12	135	260	175	108	200	155		185	12	M22×1.5	M14×1.5	φ102	52.5
5MCY-Y90L-6B$_5$-A	1.1			12	531.5			285											
5MCY-Y100L-6B$_5$-A	1.5	940		16	581.5	13	145	320	205	143	250	180		235	14				
5MCY-Y112M-6B$_5$-A	2.2			25	601.5			340	230	150		190							
5MCY-Y132S-6B$_5$-A	3.0	960		31.5	676.5	15	165	395	270	180	290	210		290	16				