



普林斯液压

DONGGUAN BLINCE HYDRAULICS CO.,LTD

转向器及液压阀
SCU & VALVE

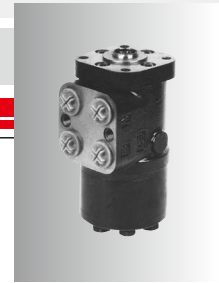


中国 东莞

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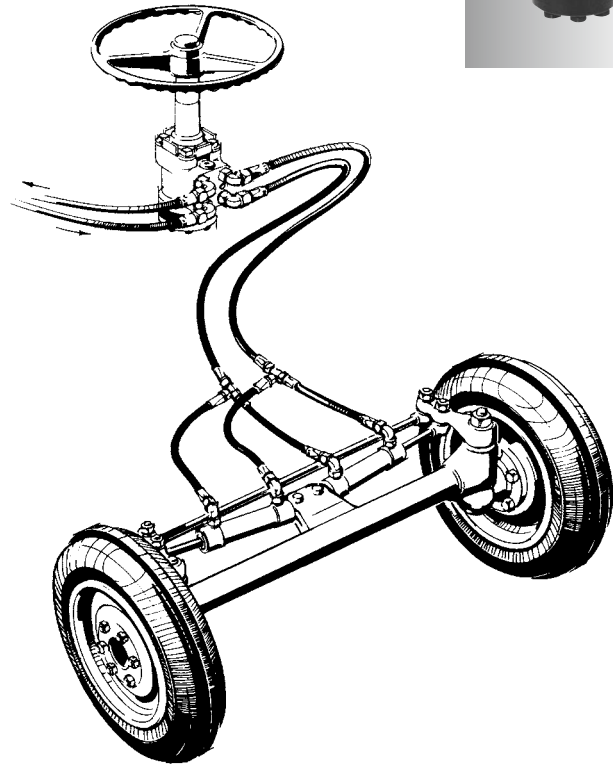
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BZZ 系列全液压转向器

BZZ Series Hydraulic Steering Control Units (SCU)



全液压转向器广泛用于工程车辆转向和船舶操舵。驾驶人员通过它可以用较小的操纵力，实现较大的转向力控制，并且在性能上安全、可靠，操纵上轻便、灵活。

BZZ1、BZZ2、BZZ3系列全液压转向器具有下列特点：

消除机械式连动装置，可降低主机成本，提供可靠轻便的结构；

操作灵活省力；

在发动机熄火时，可实现应急人力转向；

可用很小的力矩进行连续无级控制转动；

提供给控制回路以及主机尺寸广泛的选择面；

能和多种转向油泵及液压转向系统连接。

BZZ5系列负荷传感全液压转向器除具有上述特点外，还具备下述特点：

无论负荷压力大小、方向盘转速快慢，均能按转向油路要求，优先分配相应流量，保证转向可靠、灵敏、轻便；

油泵输出的流量，除向转向系统供给所需的流量外，剩余部分可供辅助油路使用，从而消除转向油路供油过多而造成的功率损失，提高了系统效率。

Hydraulic steering control unit(SCU) is widely used both in the steering system of vehicles and the marine rudder. The operator can obtain bigger steering control force with less steering force, and its function is more safety and reliable, its operation is more smooth and flexible. BZZ1, BZZ2, BZZ3 series SCU offers the advantages as follows:

This kind of SCU series can help you reduce the machinery cost without mechanical linkage device, and can offer reliable and light structure.

This kind of SCU series can operate more flexible with light steering torque.

This kind of SCU series can offer emergent manual steering in case of engine failure.

This kind of SCU series can be steering at the continuous speed with less steering torque.

This kind of SCU series can offer various hydraulic system and different mounting choice.

This kind of SCU series can link various steering pump and hydraulic steering system.

In addition to the advantages mentioned above, BZZ5 series SCU has the features as follows:

BZZ5 series SCU can supply priority relative flow to ensure reliable, sensitive and flexible steering according to the requirement of hydraulic steering system, whether the load pressure is big or small, or the steering wheel rotates quick or slow.

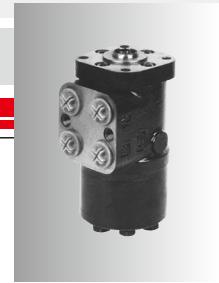
In addition to the necessary flow supply to the steering system, the remaining flow out of the pump can be supplied to subsidiary flow system, so that the system can avoid the power loss caused by surplus flow out of the steering flow system, and the system efficiency can be increased.

**BZZ 系列全液压转向器**

BZZ Series Hydraulic Steering Control Units (SCU)

通用资料 General Description

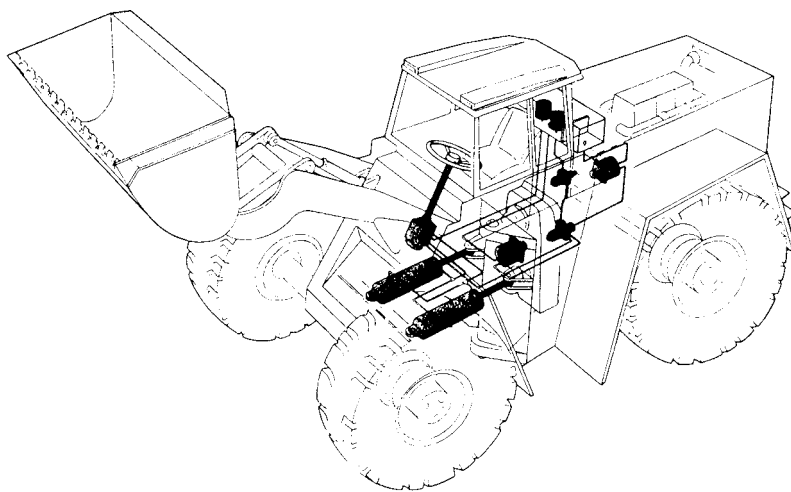
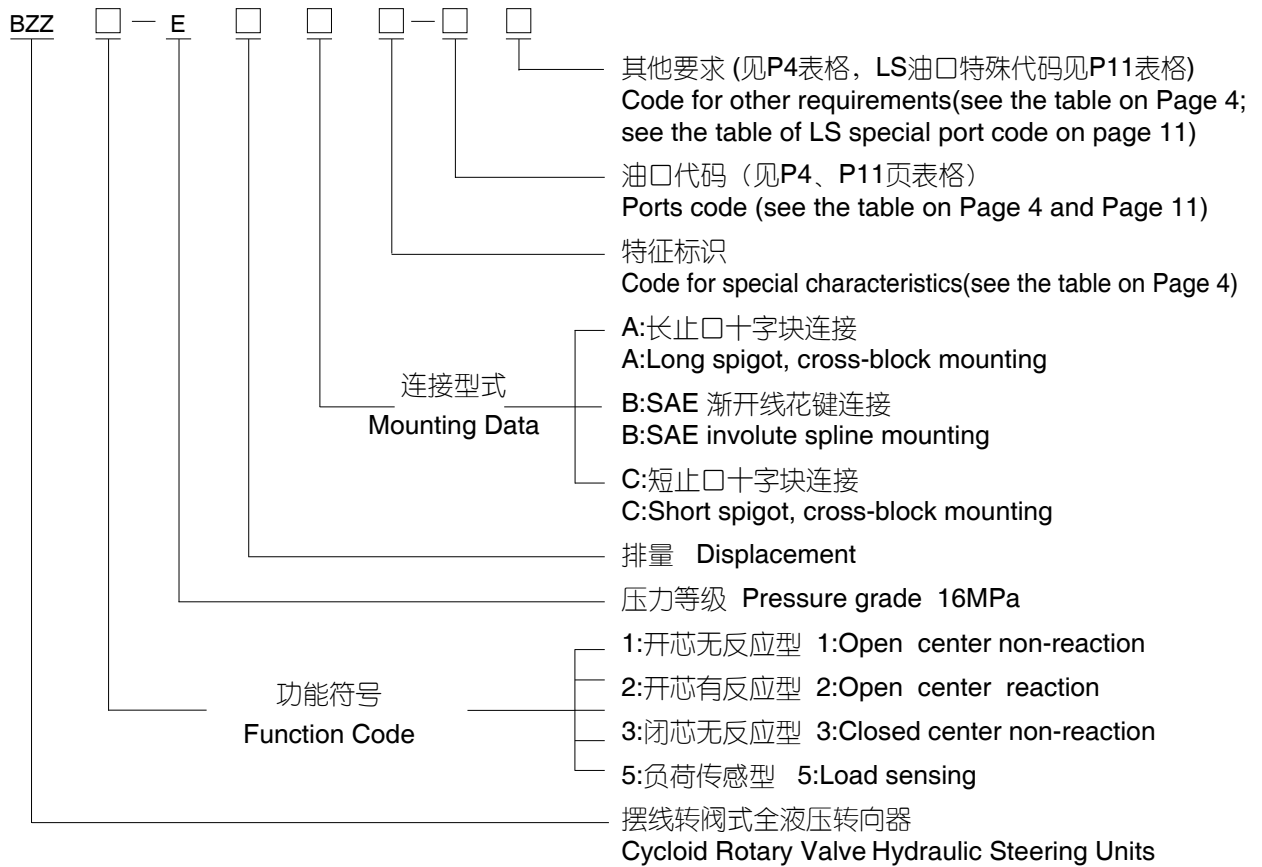
<p>BZZ 系列转向器的功能 BZZ Series Function</p>	<p>BZZ系列全液压转向器由一对旋转阀组和一对转定子啮合副组成。通过转向柱使转向器连接到车辆的方向盘上，当方向盘转动时，从转向系统供油泵来的油经旋转阀和转定子副流到油缸的左或右腔(取决于转动方向)。</p> <p>转定子副排出的油与方向盘的转角成正比。如果从转向系统供油泵来的油太少，该转向器则可当手动泵看待。</p> <p>BZZ series hydraulic steering unit is consisted of one pair of rotary valve and one pair of gerotor. Via the steering column, the steering unit links the steering wheel, when the steering wheel rotates, the oil flows out of the supply pump of the steering system , through the rotary valve and the gerotor , to the cylinder's port left or right (depend upon the rotation direction). The gerotor supplies the oil to the steering cylinder in proportion to the angular rotation of the steering wheel. If the oil flow out of the supply pump of the steering system is too small, the steering unit can work as the manual pump.</p>
<p>开芯系统 In open center system</p>	<p>释放方向盘，转向器中的旋转阀处于中位时，油泵和油箱之间是连通的。在中位开芯型转向系统中，一般使用定量油泵。</p> <p>Release the steering wheel, the rotary valve stays in the neutral position, the pump and the tank is linked in open circuit. The constant pump is normally used in the open center steering system when the valve stays in the neutral position.</p>
<p>闭芯系统 In closed center system</p>	<p>释放方向盘，转向器中的旋转阀处于中位时，转向器的进油端是关闭的。在中位闭芯型转向系统中，一般使用变量油泵。</p> <p>Release the steering wheel, the rotary valve stays in the neutral position,the input port is closed.the variable pump is normally used in the close center steering system when the valve stays in the neutral position.</p>
<p>对转向柱的配备要求 Technical requirement for steering column</p>	<p>转向柱的结构必须能保证不传递轴向负载到转向器的输入轴上，安装转向柱时应该使转向器在完成操纵动作以后，能自动回到中位位置。</p> <p>The structure of the steering column must ensure not to transfer the axial load to the output shaft of the steering unit. While the steering column is mounted, the steering unit should be able to return to the neutral position after its steering operation.</p>
<p>转向柱上的操纵力 Steering torque of the steering column</p>	<p>在正常操纵条件下，动力单元的油泵供给足够的液压油，方向盘的最大输入扭矩不会超过5N·m，如果动力单元的供油泵不能供油或供油量太少，转向器将自动切换成手动泵，在手动转向(即人力转向)状态下，方向盘的输入扭矩将会明显大于5N·m，但最大输入扭矩请勿大于120N·m，否则将会导致转向器内部部分零件损坏。</p> <p>Under the normal steering, the pump of the power unit supply enough oil , the max. torque of the steering wheel is no more than 5 N.m. If the pump fails to supply oil or supply insufficient oil, hydraulic steering unit will automatically change into manual steering.Under manual steering, the steering torque is obviously more than 5 N.m. However the max. torque cant be bigger than 120 N.m. or it will cause some damages inside the parts of steering unit.</p>

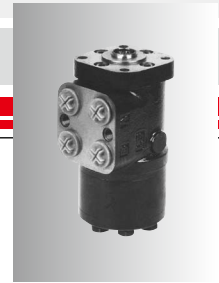


BZZ 系列全液压转向器

BZZ Series Hydraulic Steering Control Units (SCU)

型号说明 Order Code





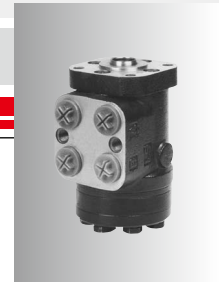
BZZ 系列全液压转向器

BZZ Series Hydraulic Steering Control Units (SCU)

类别 Category	符号 Code	含义 Definition	备注 Remark	
特征标识 Characteristic Code	(缺省) (omit)	普通型 Common Type	适合各类转向系统, 例如: 拖拉机、装载机、压路机等。 Fit various steering system, e.g. tractor, loader, and road roller, etc. mainly used in china.	
	D	输入扭矩: Input torque 1.6N·m~2.4 N·m	适合平坦路面的转向系统, 例如: 叉车。 fit steering system of vehicles that driving on flat road, such as forklift.	
	C	输入扭矩: Input torque ≤1.6N·m		
	其他性能特征要求的标识 (协议确定) Codes for the requirement of other performance characteristics (should be confirmed in an agreement)		例如: 人力转向、终点感、噪音、回位性能等方面, 或综合要求。 e.g. manual steering, lower terminal steering feeling, noise and back-to-the-neutral-position function etc., or comprehensive requirement.	
油口代码 Ports Code	代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Valve Mounting V
	(缺省) (omit)	M20×1.5	M10	M12
	A	M18×1.5	M10	M12
	B	G1/2	M10	M10×1
	C	3/4-16UNF O-ring	3/8-16UNC	3/8-24UNF
	D	M20×1.5 O-ring	M10	M12
	E	M18×1.5 O-ring	M10	M12
	G	M22×1.5	M10	M12
	Q	M22×1.5 O-ring	M10	M12
	U	G1/2 O-ring	M10	M10×1
	M	3/4-16UNF O-ring	M10	M12
	I	3/4-16UNF O-ring	M10	M10
	N	3/4-16UNF O-ring	M10×1.25	M10
R	P, T: M22×1.5 A, B: M18×1.5	M10	M12	
S	P, T: M22×1.5 O-ring A, B: M18×1.5 O-ring	M10	M12	
其他要求 Other Requirements	主要指协议规定的外观、油漆颜色等方面, 协议确定代码。 Mainly refers to the appearance, paint color etc. specified by agreement; the code will be listed in the agreement.			

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm.

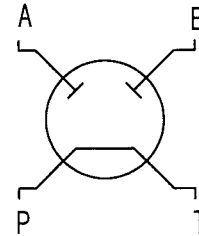
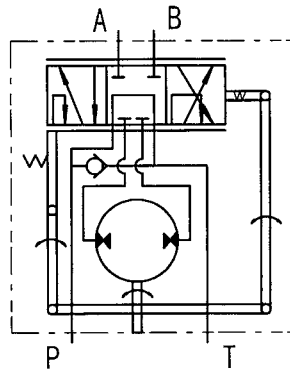


BZZ1、BZZ2、BZZ3 系列全液压转向器

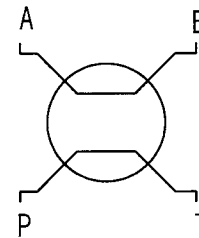
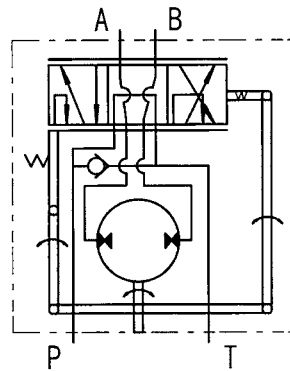
BZZ1, BZZ2, BZZ3 Series Hydraulic Steering Control Units (SCU)

功能符号 Function Code

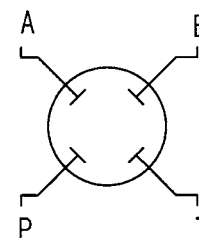
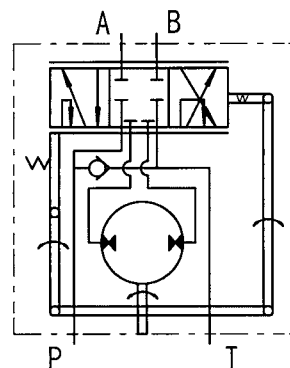
BZZ1
开芯无反应型
Open center non-reaction



BZZ2
开芯有反应型
Open center reaction



BZZ3
闭芯无反应型
Closed center non-reaction





BZZ1、BZZ2、BZZ3 系列全液压转向器

BZZ1, BZZ2, BZZ3 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

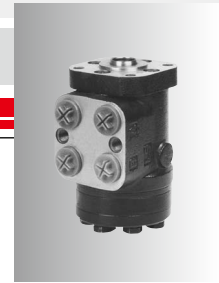
型号 Type	排量 Displacement (mL/r)	流量 Flow (L/min)	最大入口压力 Max.input pressure (MPa)	最大连续背压 Max. cont. back pressure (MPa)	重量 Weight (kg)
BZZ □ -E50 *	50	4	16	2.5	4.72
BZZ □ -E63 *	63	5			4.85
BZZ □ -E80 *	80	6			5.00
BZZ □ -E100 *	100	7.5			5.27
BZZ □ -E125 *	125	9.5			5.43
BZZ □ -E160 *	160	12			5.75
BZZ □ -E200 *	200	15			6.08
BZZ □ -E250 *	250	19			6.48
BZZ □ -E280 *	280	21			6.78
BZZ □ -E315 *	315	24			7.13
BZZ □ -E400 *	400	30			7.78
BZZ □ -E500 *	500	38			8.67
BZZ □ -E630 *	630	48			9.72
BZZ □ -E800 *	800	60			11.18
BZZ □ -E1000 *	1000	75			12.80

注1: □ 为功能符号; 其中BZZ2型转向器有50~200ml/r可供选择, BZZ1型和BZZ3型转向器有50~1000ml/r可供选择。

Note 1: □ represents Function Code, BZZ2 can be chosen for SCU with the displacement of 50-200mL/r. BZZ1 or BZZ3 can be chosen for SCU with the displacement of 50-1000mL/r.

注2: “流量”是方向盘转速为60r/min的1.25倍时的流量, 当系统设计不满足上述条件, 允许适量调整。

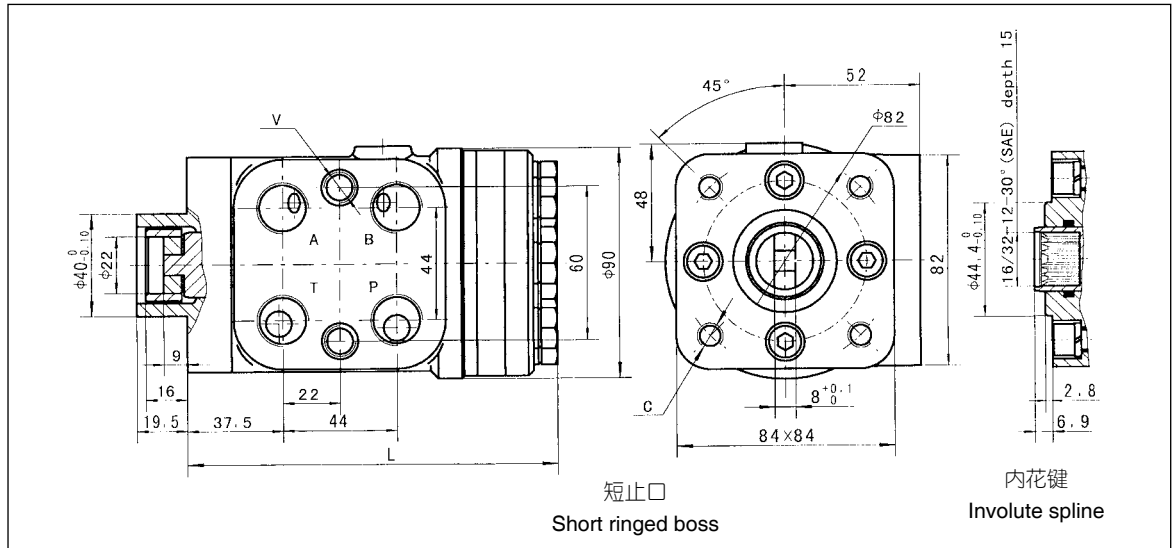
Note 2: “Flow” that we suggest to use is the flow of 1.25 times as much as that at the steering wheel's rotation speed of 60 r/min. If the design of the system can't meet the requirements, the flow is allowed to be adjusted a little bit.



BZZ1、BZZ2、BZZ3 系列全液压转向器

BZZ1, BZZ2, BZZ3 Series Hydraulic Steering Control Units (SCU)

连接尺寸 Mounting Data



注1: 图示短止口联接形式, 长止口联接形式分别将图示 9、16 和 19.5 变为 18、25 和 30.5;

Note1: Above is for short ringed boss connection dimension. When dimension is 18, 25, 30.5, instead of 9, 16, 19.5 long ringed boss connection is available for reference above.

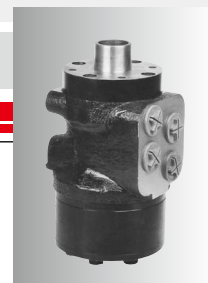
注2: 油口尺寸标识选择符合P4“油口代码”。

Note 2: please check Page 4 for the port code .

型号 Type	长度 Length L (mm)
BZZ □-E50 *	140
BZZ □-E63 *	141
BZZ □-E80 *	142.5
BZZ □-E100 *	145
BZZ □-E125 *	148
BZZ □-E160 *	153
BZZ □-E200 *	158
BZZ □-E250 *	164
BZZ □-E280 *	169
BZZ □-E315 *	174
BZZ □-E400 *	184
BZZ □-E500 *	197
BZZ □-E630 *	216
BZZ □-E800 *	236
BZZ □-E1000 *	262

注1: □为功能符号; BZZ2型转向器有50~200ml/r可供选择, BZZ1型和BZZ3型转向器有50~1000ml/r可供选择。

Note 1: □ represents Function Code, BZZ2 can be chosen for SCU with the displacement of 50-200mL/r . BZZ1 or BZZ3 can be chosen for SCU with the displacement of 50-1000mL/r.



BZZ1、BZZ3 系列特大排量全液压转向器

BZZ1, BZZ3 Series Hydraulic Steering Units (SCU) with Super Displacement

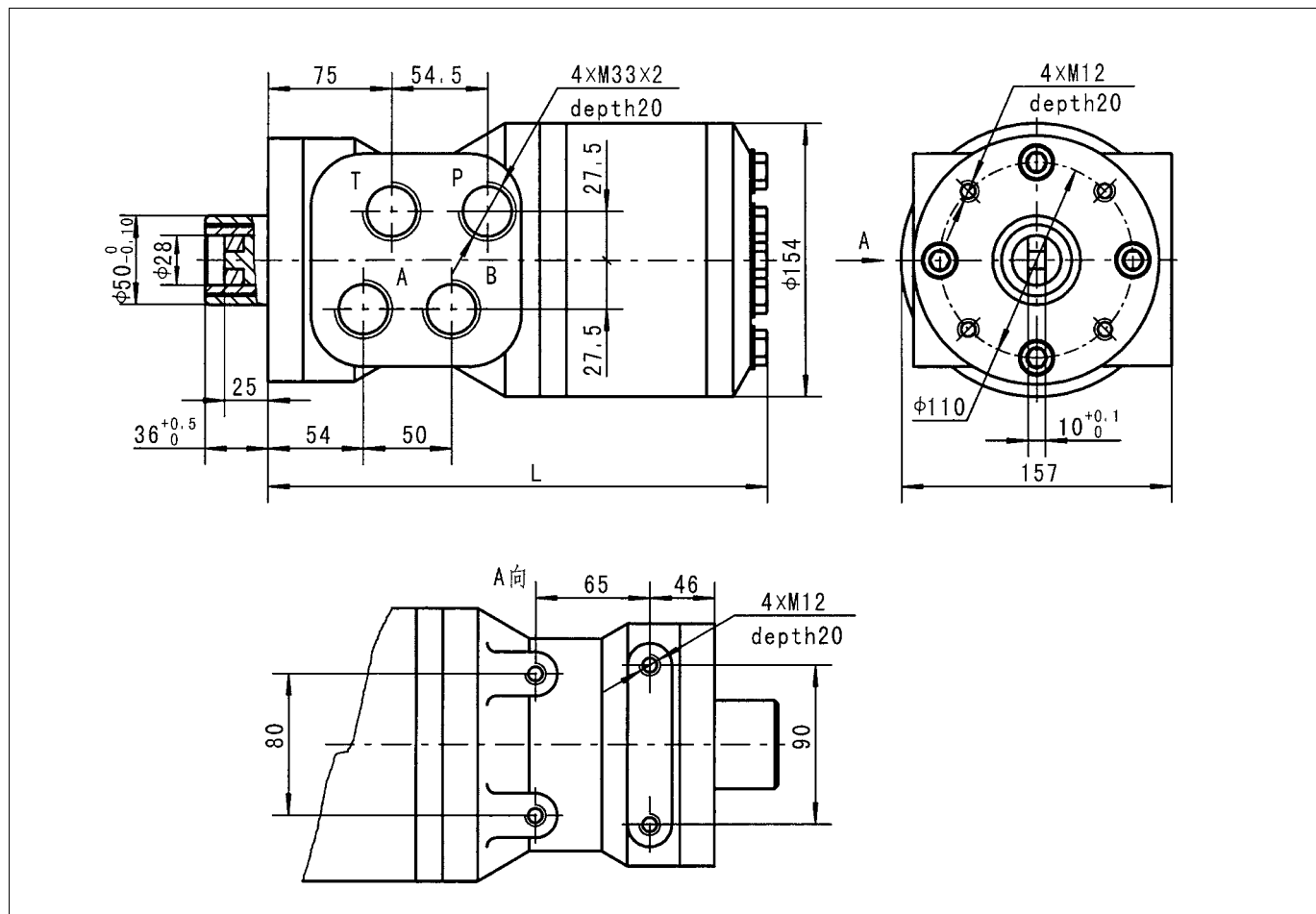
主要技术参数 Main Specification

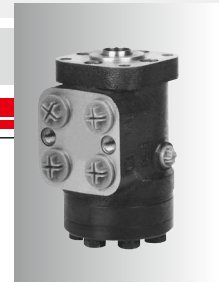
型号 Type	排量 Displacement (mL/r)	流量 Flow (L/min)	最大入口压力 Max. input pressure (MPa)	最大连续背压 Max. cont. back pressure (MPa)	总长 Length L(mm)	重量 Weight (kg)
BZZ □-E1000	1000	60	16	2.5	249	24.5
BZZ □-E1250	1250	75			261.5	25.5
BZZ □-E1600	1600	96			279	27.5
BZZ □-E2000	2000	120			299	28.5
BZZ □-E2500	2500	150			324	30

注：□为功能代码；只有BZZ1和BZZ3功能可供选择。功能代码详见第5页。

Note: □ represents Function Code, BZZ1 & BZZ3 can be chosen . please check Page 5 for Function Code explanation.

连接尺寸 Mounting Data





BZZ5 系列全液压转向器

BZZ5 Series Hydraulic Steering Control Units (SCU)

在负荷传感型的转向系统中，转向系统和工作系统通过优先阀可使用同一个油泵供油或实现系统合流。同时，若使用带负载感应的油泵，负荷传感系统将会体现明显的节能效果。

负荷传感型转向器有一个LS口必须连接到优先阀或负载感应油泵的LS口，使转向器的转向负载压力信号经油管(推荐管道长度 $\leq 2m$)传送到优先阀或负载感应油泵，用以控制系统供给转向器的供油量。

As for load sensing steering system, the steering system and the operational system may use the same pump through the priority valve or the load sensing system can distribute the surplus oil of the steering system into the operational system. Meanwhile, if the pump with load sensing is used, the load sensing will have obviously productive results.

The LS port of the load sensing steering unit has to connect with priority valve or LS port of load sensing pump, so that the signal of the steering load pressure of the steering unit can be transferred to priority valve or load sensing pump through oil hose (we suggest that the length of the hose is $\leq 2m$), to control the oil volume supplied to steering unit by the control system.

主要技术参数 Main Specification

型号 Type	排量 Displacement (mL/r)	长度 Length L(mm)	方向盘允许最高转速 Max. input speed (rpm)	最大入口压力 Max. input pressure (MPa)	最大连续背压 Max. cont. back pressure (MPa)	最大动力转向扭矩 Max. power steering torque (N·m)
BZZ5-E 50*	50	140	100	16	1.6	≤ 5
BZZ5-E 63*	63	141				
BZZ5-E 80*	80	142.5				
BZZ5-E 100*	100	145				
BZZ5-E 125*	125	148				
BZZ5-E 160*	160	153				
BZZ5-E 200*	200	158				
BZZ5-E 250*	250	164				
BZZ5-E 280*	280	169	75			
BZZ5-E 315*	315	174				
BZZ5-E 400*	400	184				
BZZ5-E 500*	500	197	60			
BZZ5-E 630*	630	216				
BZZ5-E 800*	800	236				
BZZ5-E 1000*	1000	262				

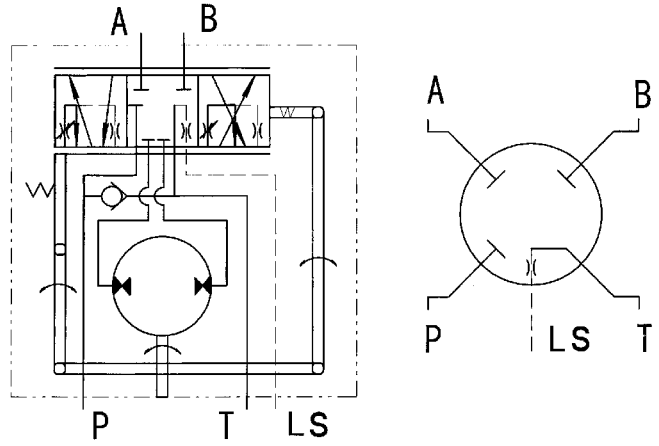


BZZ5 系列全液压转向器

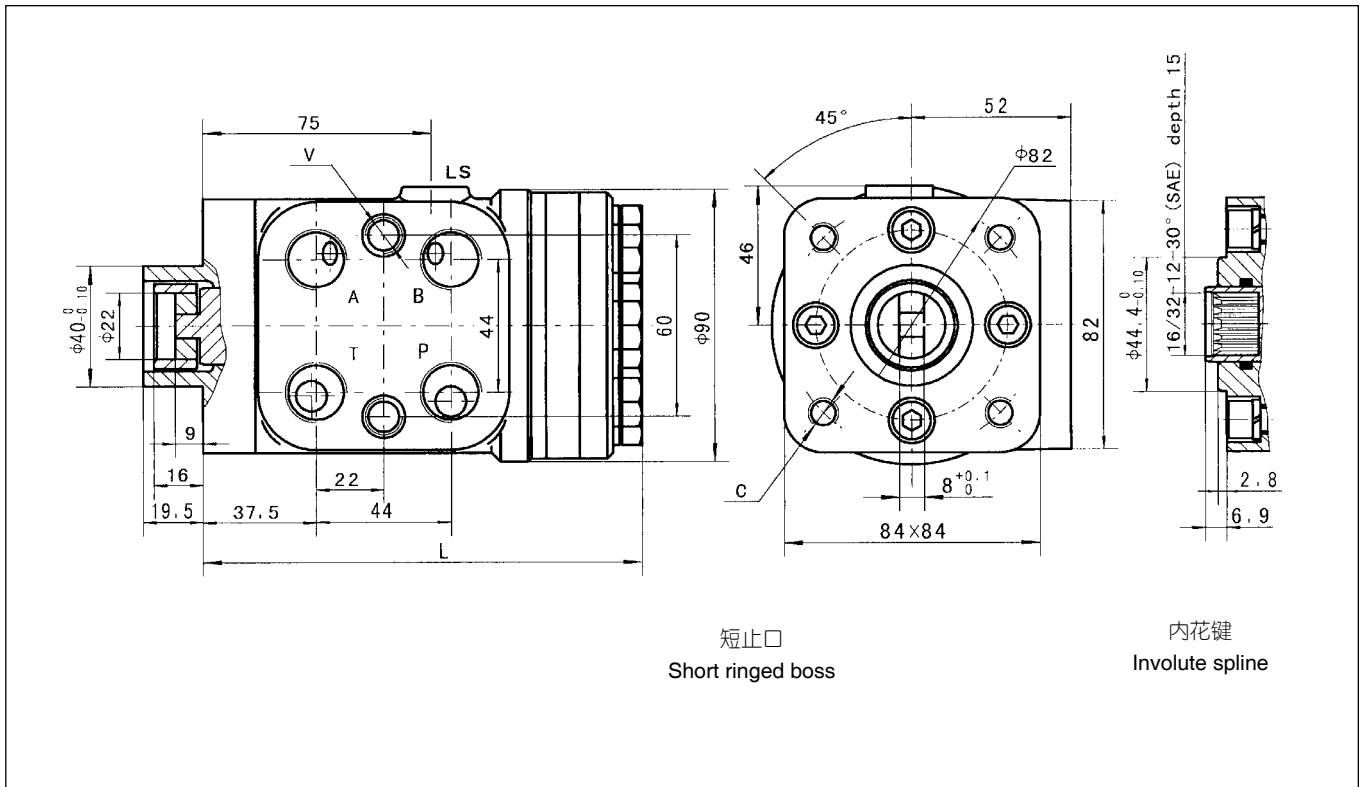
BZZ5 Series Hydraulic Steering Control Units (SCU)

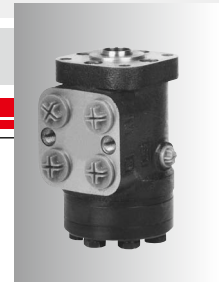
功能符号 Function Code

BZZ5
负荷传感型
Load sensing



连接尺寸 Mounting Data





BZZ5 系列全液压转向器

BZZ5 Series Hydraulic Steering Control Units (SCU)

油口代码

Ports Code

类别 Category	代码 Code	P、T、A、B油口 Ports P,T,A,B	连接螺纹C Column Mounting C	连接螺纹V Valve Mounting V	LS油口 Port LS
油口代码 Ports Code	(缺省) (omit)	M20×1.5	M10	M12	M12×1.5
	A	M18×1.5	M10	M12	M12×1.5
	B	G1/2	M10	M10×1	G1/4
	C	3/4-16UNF O-ring	3/8-16UNC	3/8-24UNF	7/16-20UNF O-ring
	D	M20×1.5 O-ring	M10	M12	M12×1.5 O-ring
	E	M18×1.5 O-ring	M10	M12	M12×1.5 O-ring
	G	M22×1.5	M10	M12	M12×1.5
	Q	M22×1.5 O-ring	M10	M12	M12×1.5 O-ring
	U	G1/2 O-ring	M10	M10×1	G1/4 O-ring
	M	3/4-16UNF O-ring	M10	M12	7/16-20UNF O-ring
	I	3/4-16UNF O-ring	M10	M10	7/16-20UNF O-ring
	N	3/4-16UNF O-ring	M10×1.25	M10	7/16-20UNF O-ring
	R	P,T: M22×1.5 A,B: M18×1.5	M10	M12	M12×1.5
S	P,T: M22×1.5 O-ring A,B: M18×1.5 O-ring	M10	M12	M12×1.5	

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm, 油口LS的深度12 mm。

Note 1: Ports P,T,A,B Depth : 14 mm; Column Mounting C & V Depth: 16 mm;Port LS Depth:12mm.

当LS油口尺寸不符合上述表格中规定时, 在油口代码后面加“-”, 按照下面表格选择LS代码。

If the dimension of LS port don't comply with the specifications in the above form, add "-" after the port code and then choose LS code according to the following form.

油口代码 Ports Code	LS油口 Port LS
1	M12×1.5 O-ring
3	G1/4
5	7/16-20UNF O-ring
6	G1/4 O-ring
7	M12×1.5



10系列全液压转向器 Hydraulic Steering Units 10 Series

10系列全液压转向器的阀体为集成式结构，产品可以集成插装阀，例如：集成系统压力控制阀。

10系列产品广泛应用于多种工农业自行走机械的主机和船舶操舵的转向系统，实现输入较小的力，控制较大阻力的转向油缸的动作；操纵轻便、灵活，安全可靠；集成的单向阀可以防止系统压力油的反向流动，并防止出现操作“打手”现象；集成的压力控制阀，可以实现转向系统的工作压力、缓冲压力的控制。

10系列产品的连接尺寸符合国际标准。10系列产品按照转定子啮合副的结构，可以分为6/7齿结构和4/5齿结构两大系列。

6/7齿结构系列：按照连接尺寸划分为101、102、103系列（其中：102系列的连接尺寸与BZZ系列的连接尺寸一致）；

4/5齿结构系列：定义为109系列，适应特殊用户的需求，派生出119、129系列。

10系列产品均集成入口单向阀；每个系列按照是否集成插装压力阀的情况又可以分为两个系列，即缺省和带S；缺省表示不带集成压力阀，带S表示带集成压力阀，对于开芯无反应型产品，集成安全阀和缓冲阀以代码1表示，仅集成安全阀以代码4表示。

101、102、103系列型号说明见P13，109系列型号说明见P47。

Hydraulic Steering Unit 10 series is integral hydraulic steering unit, the valve body of rotary valve is integral structure, then the steering unit can integrate with cartridge valve, such as the pressure control valve of the integral system.

Hydraulic Steering Unit 10 series is widely used in the steering control system of different kinds of engineering vehicles, such as the steering system of many kinds of industrial and agricultural mobile machinery forklift, loader, road roller, tractor, combine harvester, and the ship helm etc. The steering unit can control the steering cylinder with bigger resistance force by inputting minor force; It's easier, flexible and reliable; The integral check valve can prevent the system pressure oil from anti-vibration, and prevent from "hit-hand" during the steering operation; Integral pressure control valve can control the operation pressure and the shock pressure of the steering system.

The mounting dimensions of Hydraulic Steering Unit 10 series are consistent with the international standard. According to the structure of gerotor set, Hydraulic Steering Unit 10 series can be divided into 2 series: 6/7 teeth structure steering unit and 4/5 teeth structure steering unit.

Hydraulic steering unit with 6/7 teeth structure: according to the size, this series may be divided into 101,102,103 series (among these series, the mounting dimension of 102 series is consistent with that of BZZ series;) Hydraulic steering unit with 4/5 teeth structure: it's defined as 109 series; according to special requirement of special customers, then we develop 119 and 129 series on the base of 109 series.

10 series SCU integrate inlet check Valve;Each series may be divided into 2 series according to the steering unit integrating cartridge valve or not, SCU without valve and SCU with S,SCU without valve doesn't integrate pressure valve,SCU with s integrates pressure valve As for open center non reaction steering unit,"1" represents the SCU with relief valve and shock valves,"4"represents the SCU with relief valve. Please consult P13 for the introduction of 101 series,102 and 103 series, while P47 for 109 series.



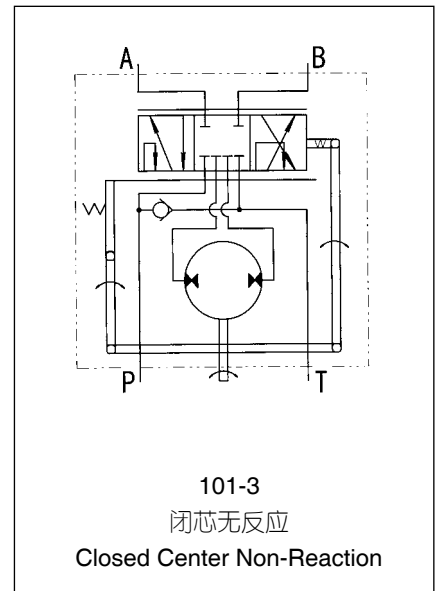
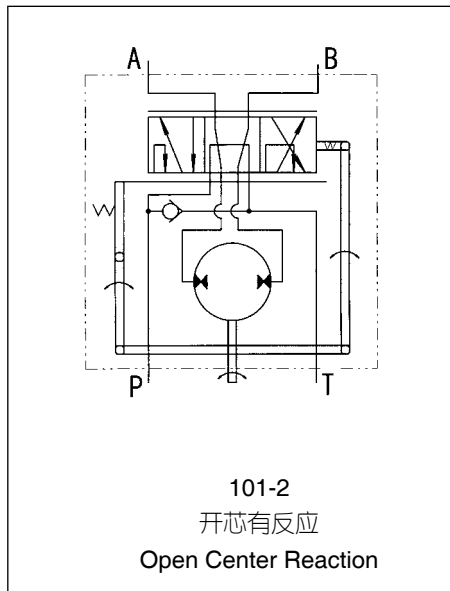
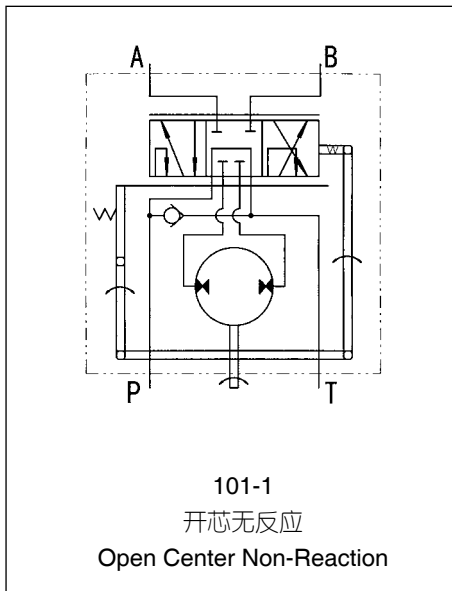
101-1、2、3 系列全液压转向器

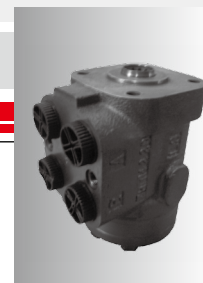
101-1,2,3 Series Hydraulic Steering Control Units (SCU)

型号说明 Order Code



功能符号 Function Code





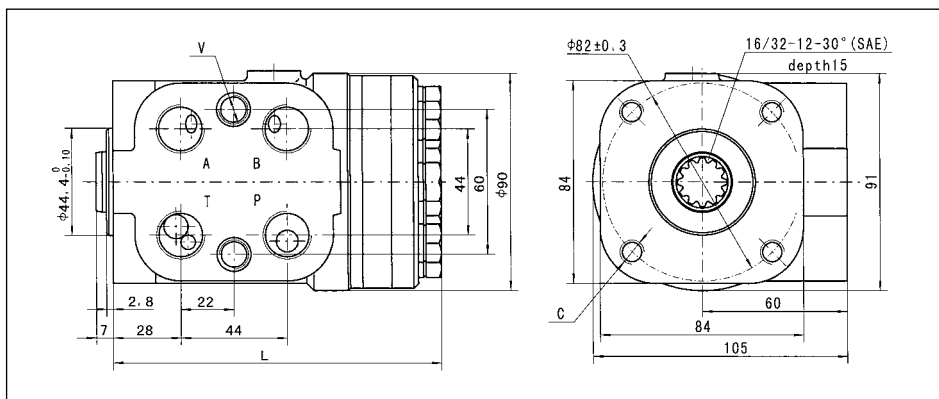
101-1、2、3 系列全液压转向器

101-1,2,3 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 101-*****											
	1,2,3							1,3				
Function Code												
Displacement(mL/r)	50	63	80	100	125	160	200	250	280	315	400	
Rated flow (L/min)	5	6	8	10	12.5	16	20	25	28	31.5	40	
Max. input pressure (MPa)	17.5											
Max. cont. back pressure (MPa)	2.5											
Weight (kg)	5.70	5.76	5.84	5.91	6.05	6.25	6.45	6.68	6.86	7.06	7.45	
Dimension L (mm)	130	132	134	137	140	145	150	156	161	166	176	

连接尺寸 Mounting Data



油口螺纹 Ports Threads

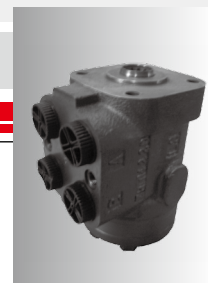
代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Valve Mounting V	
A	M20×1.5	M10	M12	
B	M20×1.5 O-ring			
C	M18×1.5			
D	M18×1.5 O-ring			
E	G1/2		M10×1	
U	G1/2 O-ring			
G	M22×1.5		M12	
Q	M22×1.5 O-ring			
M	3/4-16UNF O-ring			3/8-16 UNC
F			M10	M10
I		M10×1.25		
N				

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm.

注2: 其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



101-1、2、3 系列全液压转向器

101-1,2,3 Series Hydraulic Steering Control Units (SCU)

101-1、2、3 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3
101	-	*	-

Pos.1 - 功能符号 Function Code

- 其中: 1:开芯无反应 1:Open Center Non-Reaction
- 2:开芯有反应 2:Open Center Reaction
- 3:闭芯无反应 3:Closed Center Non-Reaction

Pos.2 - 排量 Displacement mL/r

- 50、63、80、100、125、160、200、250、280、315、400

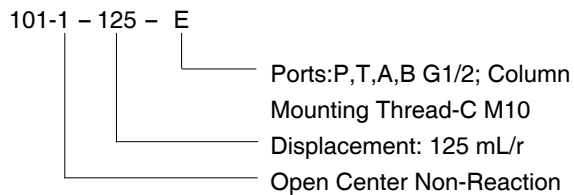
Pos.3 - 油口代码 Ports Code

- A、B、C、D、E、U、G、Q、M、F、I、N

应用举例:

101系列转向器, 开芯无反应, 排量125mL/r, 四油口螺纹为G1/2, 平面密封转向柱法兰连接螺纹M10。转向器订货编号为: 101-1-125-E

For example: Order code





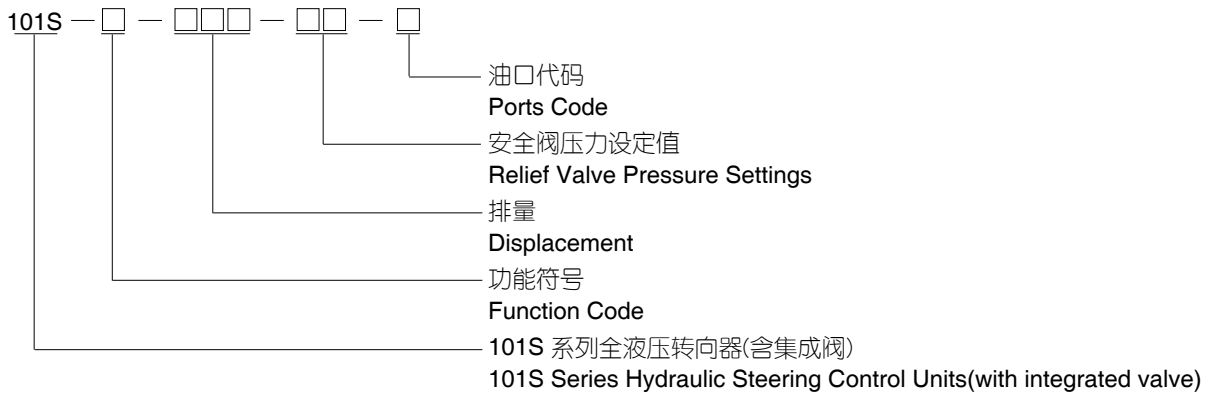
101S-1、2、4 系列全液压转向器

101S-1,2,4 Series Hydraulic Steering Control Units (SCU)

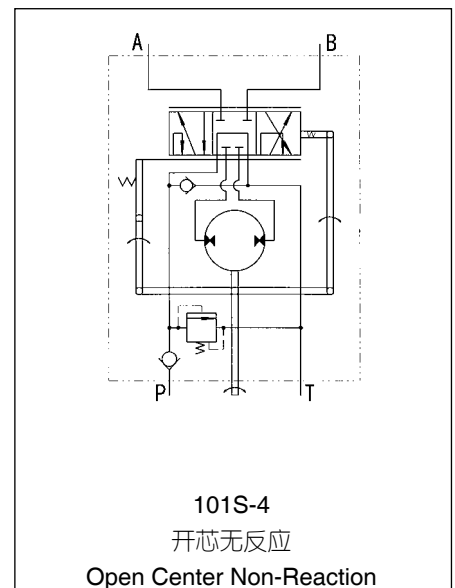
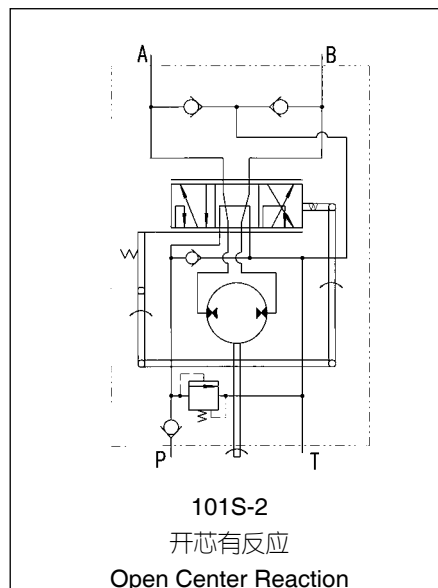
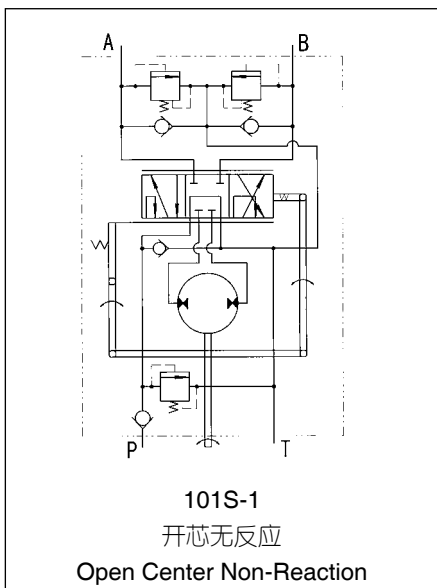
101S-1、2、4系列全液压转向器从结构到原理继承了101系列的全液压转向器的转向功能，101S系列转向器特点是在101系列的基础上将安全阀、缓冲阀、补油阀以及入口单向阀根据不同的要求设置在转向器阀体中，这种连接结构更加紧凑，使用更加方便。

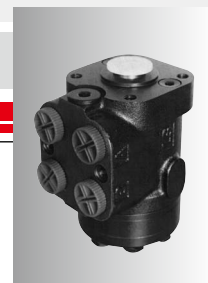
SCU 101S-1,2,4 series inherits the steering function of 101 series both in the structure and in the principle. The feature of 101S series is to have the following valves functions incorporated inside one housing as follows: the relief valve, the shock valves, the suction valves and the check valve according to the different requirement upon the base of the 101 series . This kind of structure is more compact, and it's more convenient in operation.

型号说明 Order Code



功能符号 Function Code





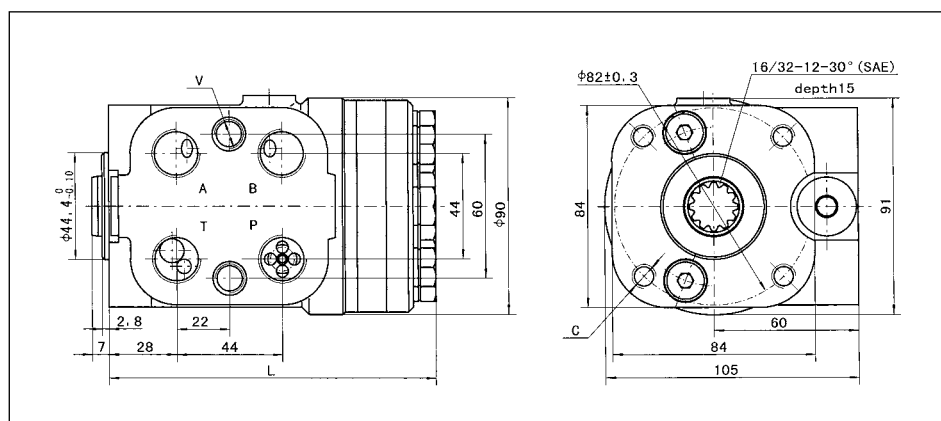
101S-1、2、4 系列全液压转向器

101S-1,2,4 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 101S-*****										
	1,2,4							1,4			
Function Code											
Displacement(mL/r)	50	63	80	100	125	160	200	250	280	315	400
Rated flow (L/min)	5	6	8	10	12.5	16	20	25	28	32	40
Max. input pressure (MPa)	17.5										
Relief Valve Pressure Settings (MPa)	06,07,08,10,12,14,15,16,17.5										
Shock Valves Pressure Settings (MPa)	12,13,14,16,18,20,21,22,23.5										
Max. cont. back pressure (MPa)	2.5										
Weight (kg)	5.75	5.81	5.89	5.96	6.1	6.3	6.5	6.73	6.91	7.1	7.5
Dimension L (mm)	130	132	134	137	140	145	150	156	161	166	176

连接尺寸 Mounting Data



油口螺纹 Ports Threads

代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Valve Mounting V	
A	M20×1.5	M10	M12	
B	M20×1.5 O-ring			
C	M18×1.5			
D	M18×1.5 O-ring			
E	G1/2		M10×1	
U	G1/2 O-ring		M12	
M	3/4-16UNF O-ring		3/8-16 UNC	3/8-24 UNF
F			M10	M10
I		M10×1.25		
N				

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm.

注2: 其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



101S-1、2、4 系列全液压转向器

101S-1,2,4 Series Hydraulic Steering Control Units (SCU)

101S-1、2、4 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4
101S	-	*	***	*

Pos.1 - 功能符号 Function Code

其中: 1:开芯无反应 1:Open Center Non-Reaction
 2:开芯有反应 2:Open Center Reaction
 4:开芯无反应 4:Open Center Non-Reaction

Pos.2 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.3 - 集成阀参数组合 Integrated Valve Parameter

安全阀压力设定值: Relief valve pressure settings (MPa):06、07、08、10、12、14、15、16、17.5
 (缓冲阀压力设定值比安全阀压力高6MPa)
 Shock valves pressure settings is 6 MPa higher than relief valve

Pos.4 - 油口代码 Ports Code

A、B、C、D、E、U、M、F、I、N

应用举例:

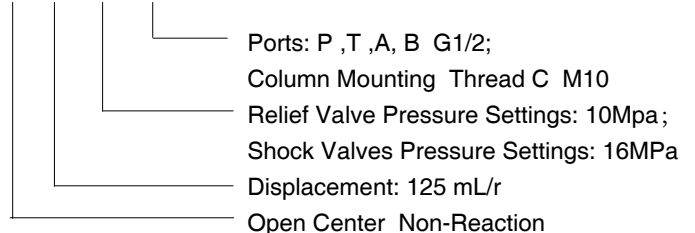
101S系列转向器, 开芯无反应, 排量125mL/r, 入口有单向阀, 安全阀压力10MPa, 缓冲阀压力16MPa, 四油口螺纹为G1/2, 平面密封, 转向柱法兰连接螺纹M10。

转向器订货编号为: 101S-1-125-10-E

For example:

Order code

101S-1-125-10-E





101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units(SCU)

101(S)-5(T)(TE)(L)(E)(TX)系列全液压转向器用于负荷传感型转向系统。

101S-5、101S-5L、101S-5E系列全液压转向器均为板式连接方式，与PVF*型优先阀采用板式连接后使用。

101S-5L系列全液压转向器在LL接口处引出了LS口的压力信号，将信号传送给电气控制系统；

101S-5E系列全液压转向器在EL接口处引出了A或B油口的压力信号，将信号传送给电气控制系统。

101S-5T、101S-5TE系列全液压转向器为管式连接方式，与PVL*或DYXL、YXL型优先阀采用管式连接后使用。

101S-5TE系列全液压转向器在EL接口处引出了A或B油口的压力信号，将信号传送给电气控制系统。

101-5T系列全液压转向器为管式连接方式，必须和DYXL、YXL型优先阀采用管式连接后使用，并且其系统安全阀设在优先阀上。

101-5TX系列全液压转向器处于中位时，其左右腔和回油是相连的，这种转向器和LFA、LFB型流量放大阀配套使用。

SCU 101(S)-5(T)(TE)(L)(E)(TX) series is used in the load sensing steering system.

SCU 101S-5,101S-5L,101S-5E series adopt modular mounting type and can only be used with PVF* type priority valve via modular mounting.

SCU 101S-5L series guides the pressure signal of port LS out of port LL, and transfers the pressure signal to the electrical control system.

SCU 101S-5E series guides the pressure signal of port A or B out of port EL. and then supplies the pressure signal to the electrical control system.

SCU 101S-5T,101S-5TE series adopts Pipe mounting and via pipe mounting can be used with PVL* or DYXL,YXL type priority valve.

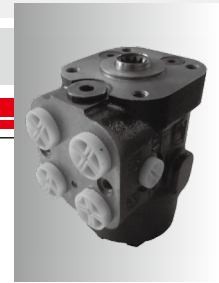
SCU 101S-5TE series guides the pressure signal of the port A or B out of port EL.and then supplies the pressure signal to the electrical control system.

SCU 101-5T series adopts the pipe mounting, it can be used only after the pipe mounted with the DYXL,YXL type priority valve. and the relief valve is integrated in the priority valve.

When the 101-5TX series SCU is in neutral position, both of its left and right cavity are connected with T port. This kind of SCU are used with LFA,LFB type flow amplifiers.

型号说明 Order Code

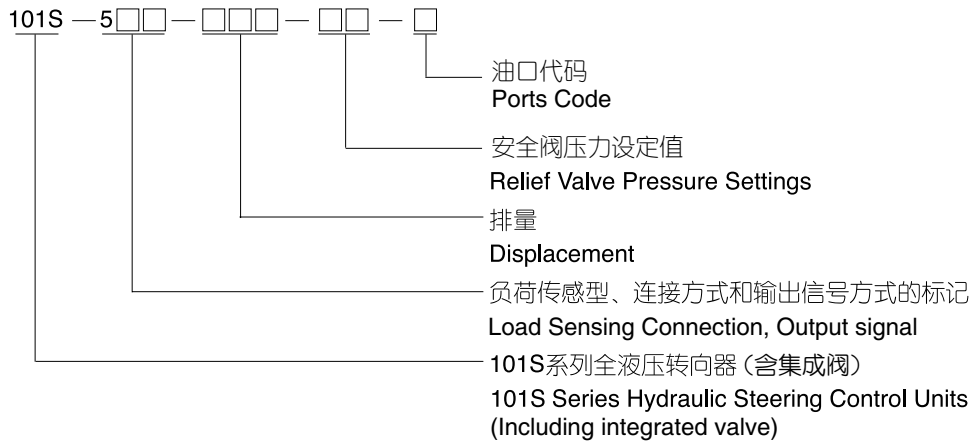
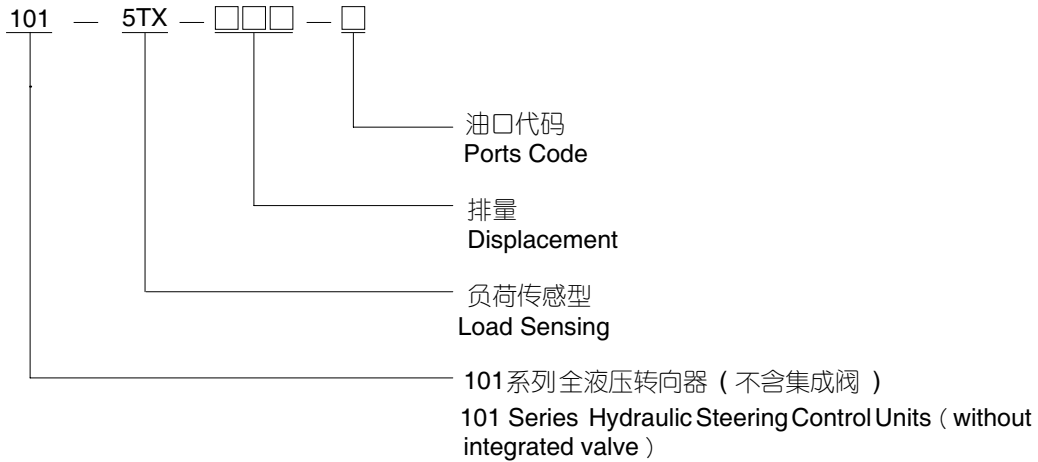




101(S)-5(T)(TE)(L)(E)(TX)系列全液压转向器

101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units(SCU)

型号说明 Order Code

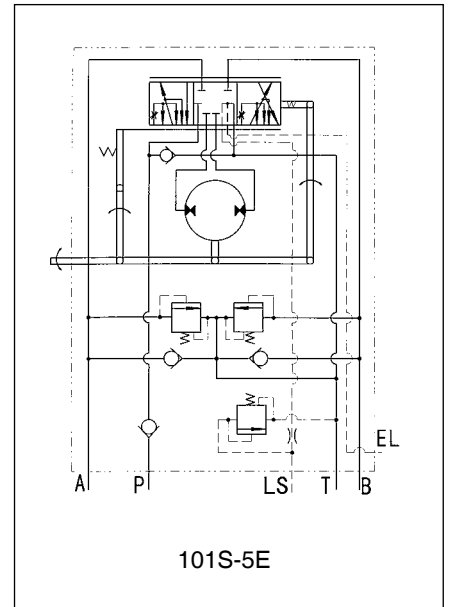
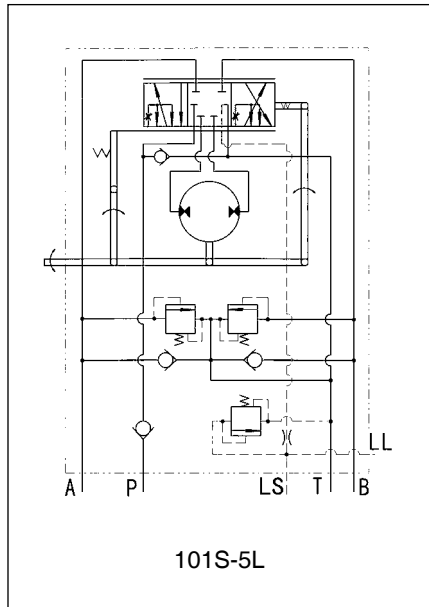
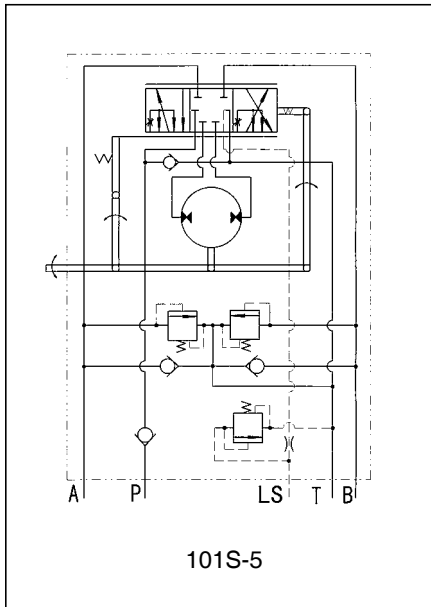




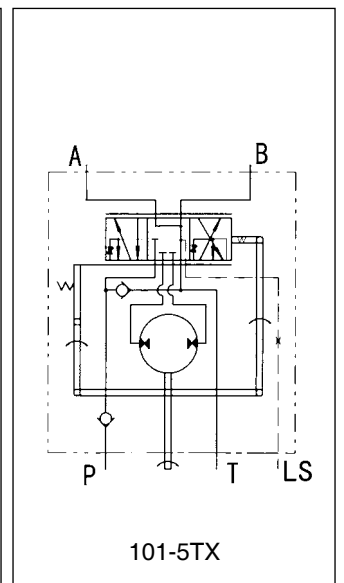
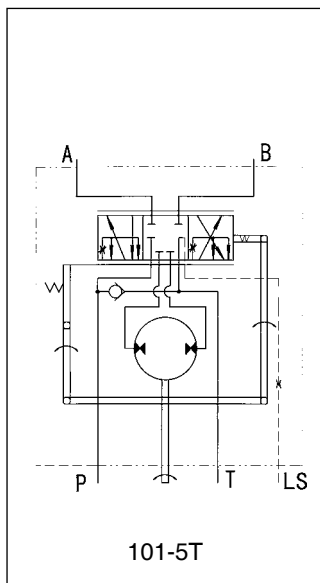
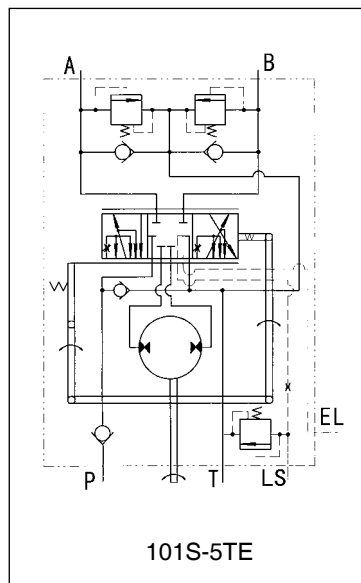
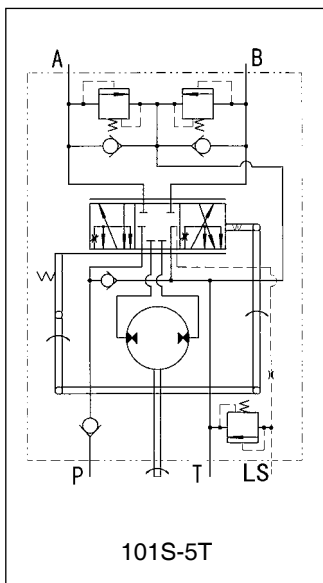
101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

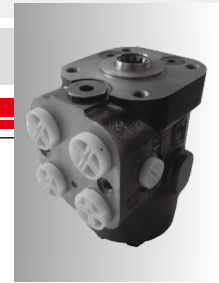
功能符号 Function Code



板式连接
Modularity Mounting



管式连接
Pipe Mounting



101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

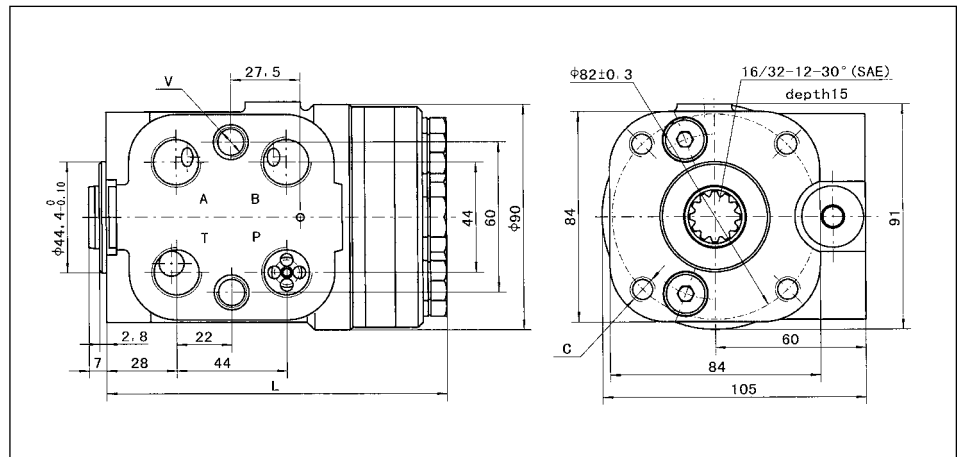
101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

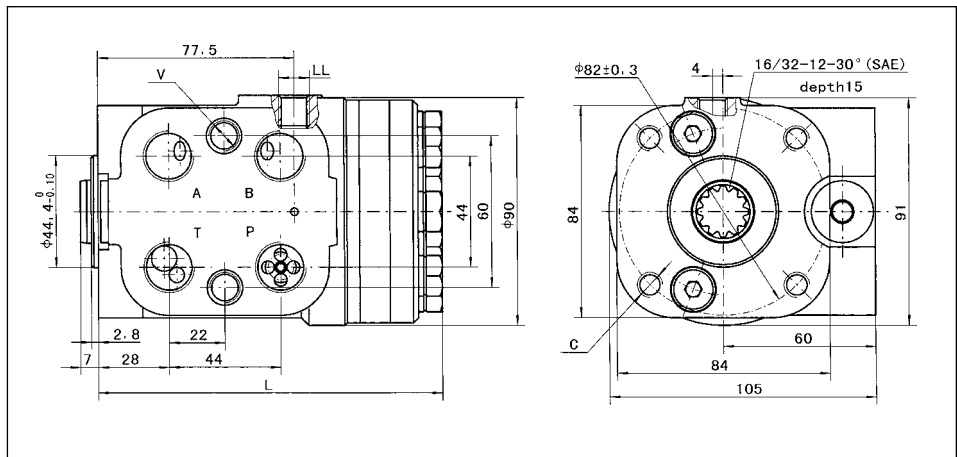
Parameters	Type 101-5T(TX)-*****, 101S-5(T)(TE)(L)(E)-*****											
Displacement(mL/r)	50	63	80	100	125	160	200	250	280	315	400	
Max. input speed (rpm)	100								75			
Max. input pressure (MPa)	17.5											
Relief Valve Pressure Settings (MPa)	06,07,08,10,12,14,15,16,17.5											
Shock Valves Pressure Settings (MPa)	12,13,14,16,18,20,21,22,23.5											
Max. Cont. Back pressure (MPa)	2.5											
Weight (kg)	5.75	5.81	5.89	5.93	6.1	6.3	6.5	6.73	6.91	7.1	7.5	
Dimension L (mm)	130	132	134	137	140	145	150	156	161	166	176	

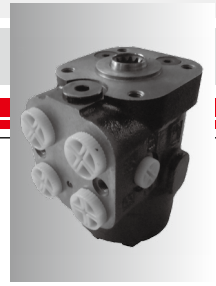
连接尺寸 Mounting Data

101S-5



101S-5L



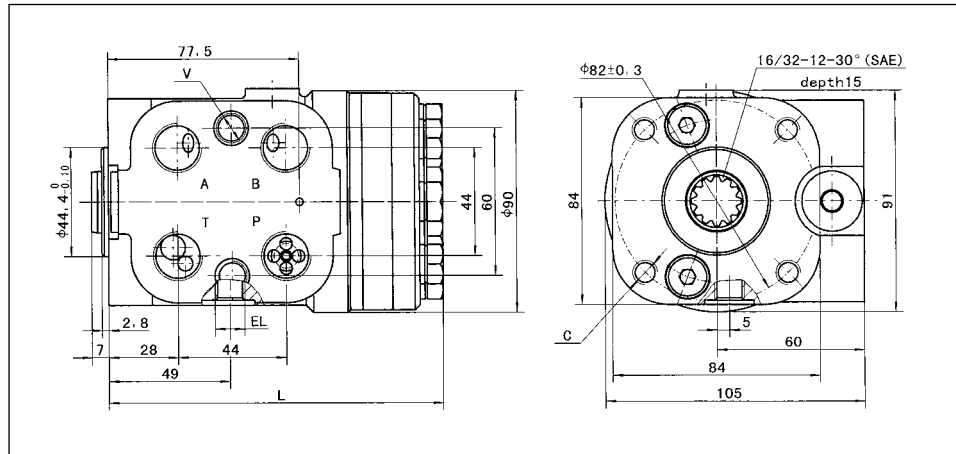


101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

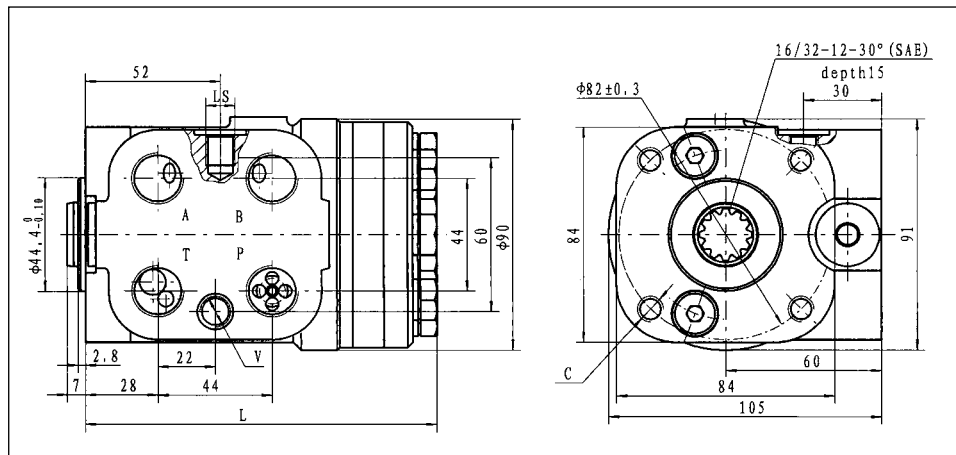
101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

连接尺寸 Mounting Data

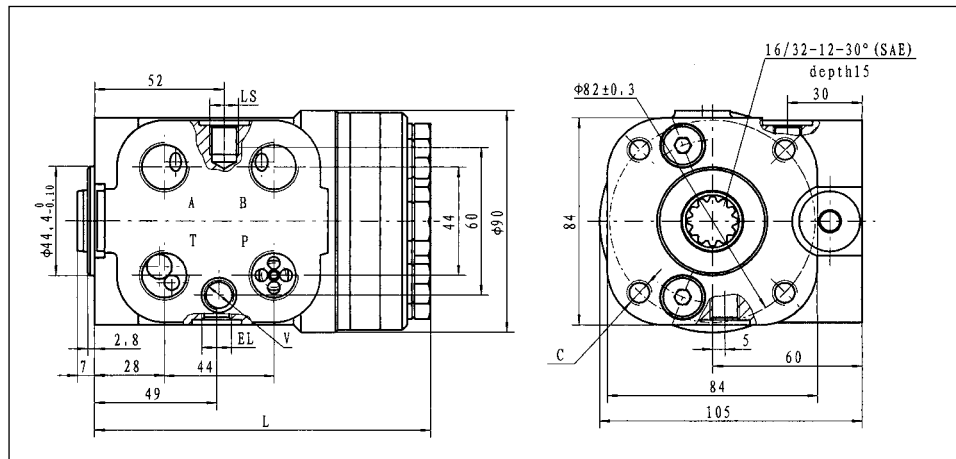
101S-5E

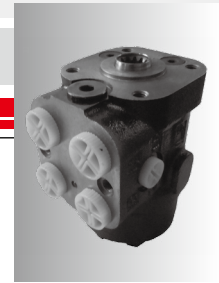


101S-5T



101S-5TE



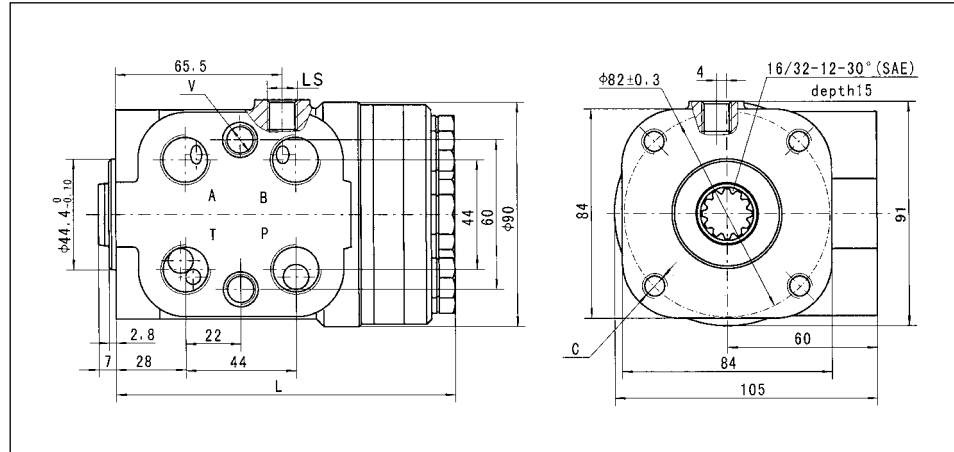


101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

连接尺寸 Mounting Data

101-5T
101-5TX



油口螺纹 Ports Threads

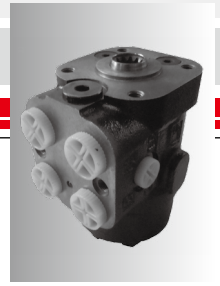
代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Column Mounting V	LS油口 Post LS	LL、EL油口 Ports LL, EL
A	M20×1.5	M10	M12	M12×1.5	
B	M20×1.5 O-ring			M12×1.5 O-ring	
C	M18×1.5			M12×1.5	
D	M18×1.5 O-ring			M12×1.5 O-ring	
E	G1/2		M10×1	G1/4	M10×1
U	G1/2 O-ring			G1/4 O-ring	M10×1 O-ring
M	3/4-16UNF O-ring	3/8-16 UNC	M12	7/16-20UNF O-ring	
F					
I		M10			
N			M10×1.25		
H	$\phi 18.5$	M10	M10	M12×1.5	

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm, LS、LL、EL的深度12 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm, LS, LL, EL Depth: 12 mm.

注2: 其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

101-5T 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4
101	-	5	T	-

Pos.1 - 功能符号 Function Code

5:负荷传感型 5:Load Sensing Type

Pos.2 - 优先阀连接形式 Priority Valve Connection

T:管式连接 T:Pipe Mounting

Pos.3 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.4 - 油口代码 Port Code

A、B、C、D、E、U、M、F、I、N

101-5TX 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4	Pos.5
101	-	5	T	X	-

Pos.1 - 功能符号 Function Code

5:负荷传感型 5:Load Sensing Type

Pos.2 - 优先阀连接形式 Priority Valve Connection

T:管式连接 T:Pipe Mounting

Pos.3 - 转向器中位机能 Neutral Function of SCU

X: 当转向器中位时, 转向器左右油口和T油口相连的。

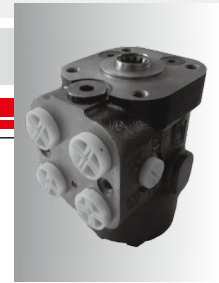
X: When the 101-5TX series SCU is in neutral position, both of its left and right cavity are connected with T port.

Pos.4 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.5 - 油口代码 Port Code

A、B、C、D、E、U、M、F、I、N



101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

101S-5 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4	Pos.5	Pos.6
101S	-	5		-	**	*

Pos.1 - 功能符号 Function Code

5: 负荷传感型 5: Load Sensing Type

Pos.2 - 优先阀连接形式 Priority Valve Connection

其中: 缺省: 板式连接 Omit: Modulary Mounting
T: 管式连接 T: Pipe Mounting

Pos.3 - 电液控制信号连接形式 Electrohydraulic Control Signal Connection

其中: 缺省: 没有电液信号: Omit: No electrohydraulic signal.

L: LL口引出的是LS口压力信号 L: The pressure signal at LS connection drawn forth from the LL connection.

E: EL口引出的A或B油口的压力信号 E: The pressure signal at the port A or B drawn forth from the EL connection.

Pos.4 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.5 - 集成阀参数组合 Integrated Valve Parameters

安全阀压力设定值: Relief valve pressure settings (MPa): 06、07、08、10、12、14、15、16、17.5
(缓冲阀压力设定值比安全阀压力高6 MPa)

Shock valves pressure settings is 6 MPa higher than relief valve

Pos.6 - 油口代码 Ports Code

A、B、C、D、E、U、M、F、I、N、W、H

应用举例:

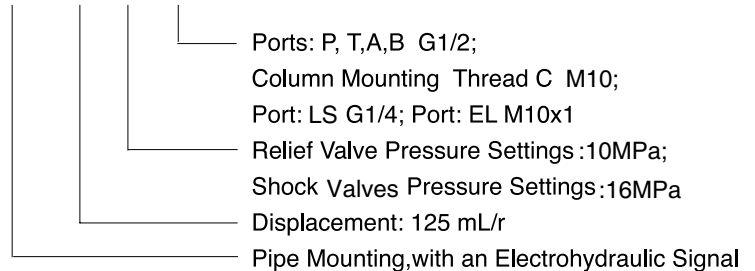
101S系列转向器, 负荷传感型, 配管式连接的优先阀, 电液控制信号从A或B油口引出, 排量125mL/r, 入口有单向阀, 安全阀压力10MPa, 缓冲阀压力16MPa, 四油口螺纹为G1/2, 转向柱法兰连接螺纹M10, LS信号口G1/4, EL信号口M10×1。

转向器订货编号为: 101S-5TE-125-10-E

For example:

Order code

101S-5TE - 125 - 10 - E





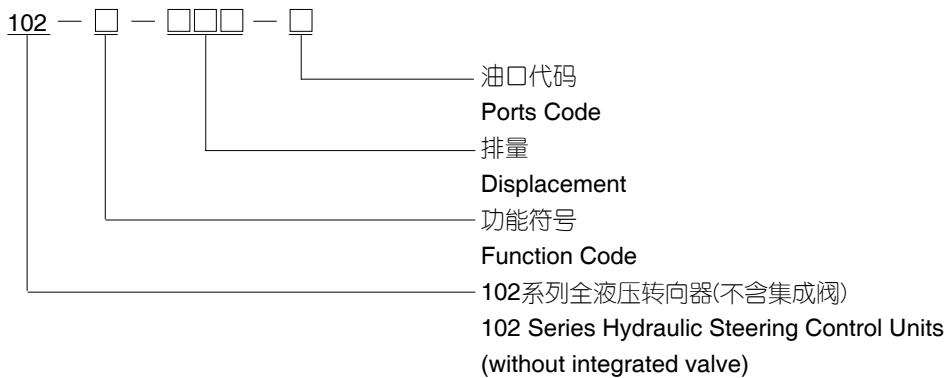
102-1、2、3 系列全液压转向器

102-1,2,3 Series Hydraulic Steering Control Units (SCU)

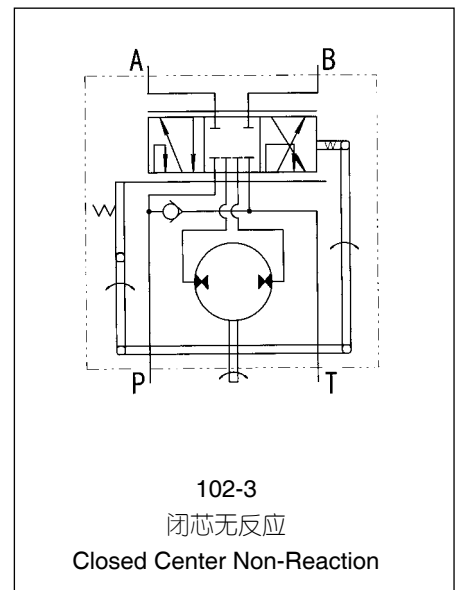
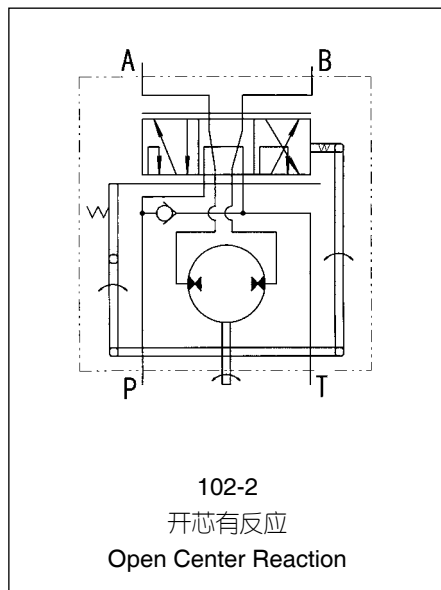
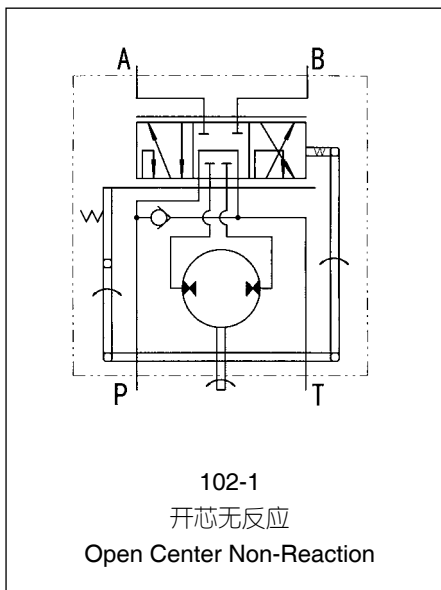
102-1、2、3系列全液压转向器油口至安装法兰端面的尺寸与BZZ系列转向器相同，其连接尺寸与101系列全液压转向器有差异。

SCU 102-1,2,3 series have the same dimension as BZZ series on flange and ports, but different connection compared with 101 series.

型号说明 Order Code



功能符号 Function Code





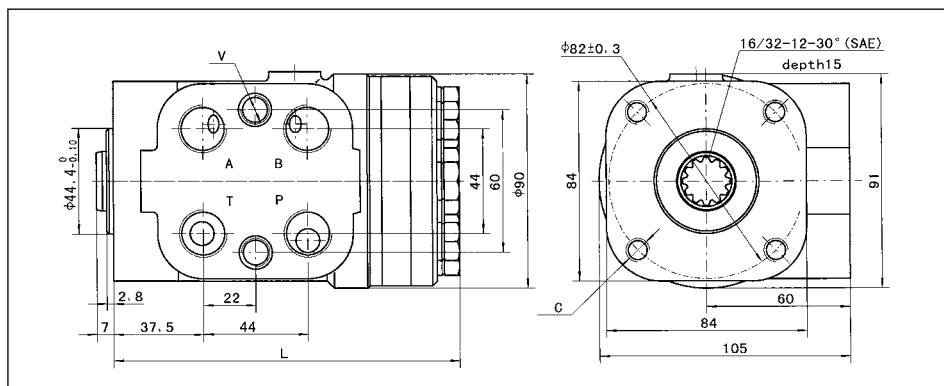
102-1、2、3 系列全液压转向器

102-1,2,3 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 102-*****											
	1,2,3								1,3			
Function Code												
Displacement(mL/r)	50	63	80	100	125	160	200	250	280	315	400	
Rated flow (L/min)	5	6	8	10	12.5	16	20	25	28	32	40	
Max. input pressure (MPa)	17.5											
Max. cont. back pressure (MPa)	2.5											
Weight (kg)	5.94	6.0	6.08	6.18	6.3	6.5	6.7	6.9	7.1	7.29	7.79	
Dimension L (mm)	140	142	144	146	149	154	159	165	170	175	185	

连接尺寸 Mounting Data



油口螺纹 Ports Threads

代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Valve Mounting V	
A	M20×1.5	M10	M12	
B	M20×1.5 O-ring			
C	M18×1.5		M10×1	
D	M18×1.5 O-ring			
E	G1/2		M12	
U	G1/2 O-ring			
G	M22×1.5		3/8-16 UNC	3/8-24 UNF
Q	M22×1.5 O-ring			
M	3/4-16UNF O-ring	M10	M10	
F		M10×1.25		
I				
N				

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm.

注2: 其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



102-1、2、3 系列全液压转向器

102-1,2,3 Series Hydraulic Steering Control Units (SCU)

102-1、2、3 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3
102	-	*	*

Pos.1 - 功能符号 Function Code

- 其中: 1:开芯无反应 1:Open Center Non-Reaction
- 2:开芯有反应 2:Open Center Reaction
- 3:闭芯无反应 3:Closed Center Non-Reaction

Pos.2 - 排量 Displacement mL/r

- 50、63、80、100、125、160、200、250、280、315、400

Pos.3 - 油口代码 Ports Code

- A、B、C、D、E、F、U、G、Q、M、N、I

应用举例:

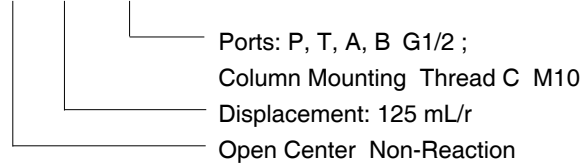
102系列转向器, 开芯无反应, 排量125mL/r, 四油口螺纹为G1/2, 转向柱法兰连接螺纹M10。

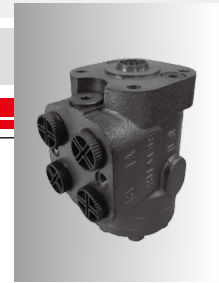
转向器订货编号为: 102-1-125-E

For example:

Order code

102-1 - 125 - E





102S-1、2、4 系列全液压转向器

102S-1,2,4 Series Hydraulic Steering Control Units (SCU)

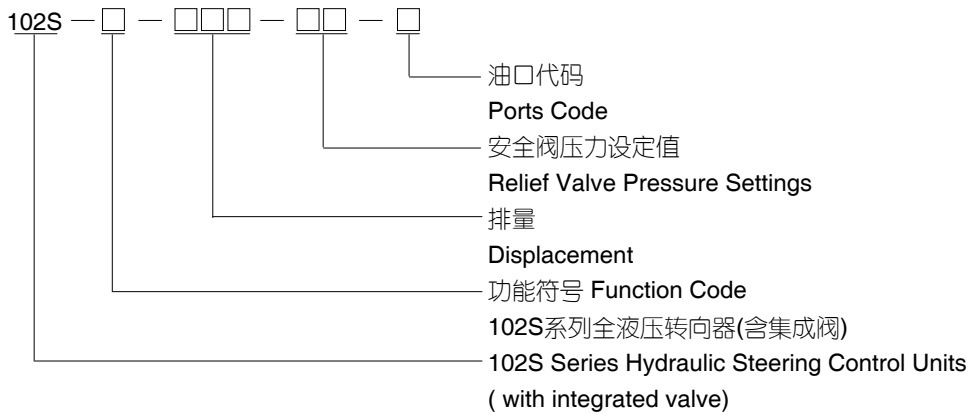
102S-1、2、4系列全液压转向器从结构到原理继承了102系列的全液压转向器的转向功能，102S系列转向器特点是在102系列的基础上将安全阀、缓冲阀、补油阀以及入口单向阀根据不同的要求设置在转向器阀体中，这种连接结构更加紧凑，使用更加方便。

102S-1、2、4系列转向器油口至安装法兰端面的尺寸与BZZ系列转向器相同，其连接尺寸与101系列全液压转向器有差异。

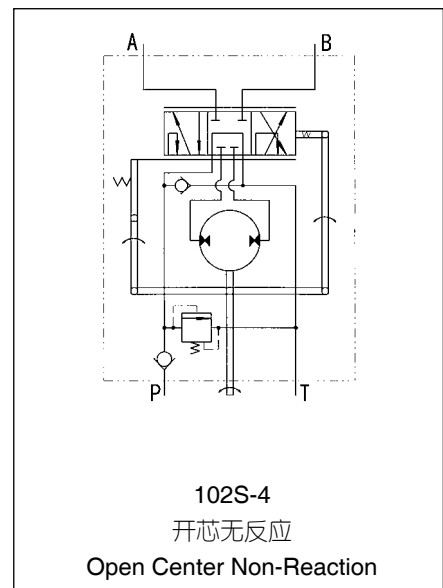
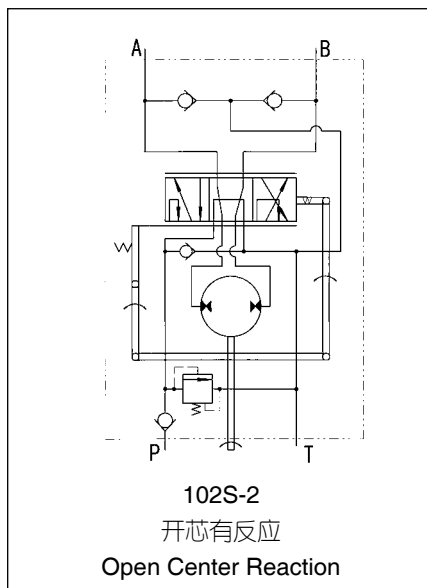
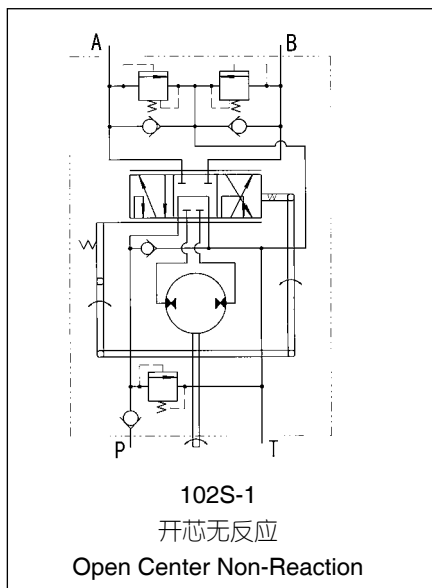
102S-1,2,4 series hydraulic steering control unit inherit the function of 102 series both in its structure and working principle. On the basis feature of 102 series SCU, 102S series SCU is to incorporate the relief valve, shock valves, suction valves and the inlet check valve inside the housing of SCU according to different requirement. This kind of structure is more compact with easier operation.

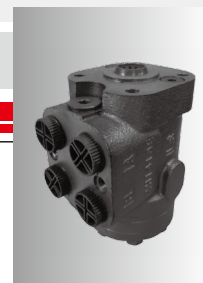
The dimension of 102S-1,2,4 series such as port and flang is as the same as BZZ series SCU, but different from 101 series SCU in connection dimensions.

型号说明 Order Code



功能符号 Function Code





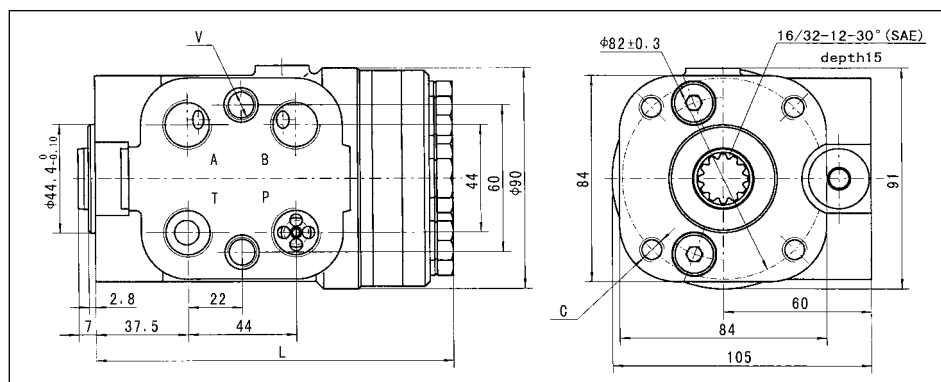
102S-1、2、4 系列全液压转向器

102S-1,2,4 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 102S-*-*-*-*											
	1,2,4								1,4			
Function Code												
Displacement(mL/r)	50	63	80	100	125	160	200	250	280	315	400	
Rated flow (L/min)	5	6	8	10	12.5	16	20	25	28	31.5	40	
Max. input pressure (MPa)	16											
Relief Valve Pressure Settings (MPa)	06, 07, 08, 10, 12, 14, 15, 16, 17.5											
Shock Valves Pressure Settings (MPa)	12, 13, 14, 16, 18, 20, 21, 22, 23.5											
Max. cont. back pressure (MPa)	2.5											
Weight (kg)	6.04	6.09	6.18	6.27	6.4	6.6	6.79	7.02	7.2	7.39	7.89	
Dimension L (mm)	140	142	144	146	149	154	159	165	170	175	185	

连接尺寸 Mounting Data



油口螺纹 Ports Threads

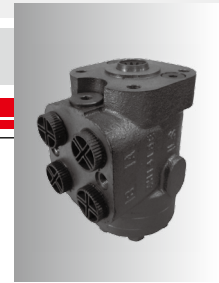
代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Valve Mounting V
A	M20×1.5	M10	M12
B	M20×1.5 O-ring		
C	M18×1.5		
D	M18×1.5 O-ring		M10×1
E	G1/2		
U	G1/2 O-ring		
M	3/4-16UNF O-ring	3/8-16 UNC	M12
F			3/8-24 UNF
I		M10	M10
N			

注1：油口P、T、A、B的深度14 mm，连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm.

注2：其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



102S-1、2、4 系列全液压转向器

102S-1,2,4 Series Hydraulic Steering Control Units (SCU)

102S-1、2、4 产品订货编号 Order Code

	Pos.1			Pos.2		Pos.3		Pos.4
102S	-	*	-	***	-	**	-	*

Pos.1 - 功能符号 Function Code

其中：1:开芯无反应 1: Open Center Non-Reaction
 2:开芯有反应 2: Open Center Reaction
 4:开芯无反应 4: Open Center Non-Reaction

Pos.2 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.3 - 集成阀参数组合 Integrated Valve Parameter

安全阀压力设定值: Relief valve pressure settings (MPa):06、07、08、10、12、14、15、16、17.5
 (缓冲阀压力设定值比安全阀压力高 6 MPa)
 Shock valves pressure settings is 6 MPa higher than relief valve.

Pos.4 - 油口代码 Ports Code

A、B、C、D、E、U、M、F、I、N

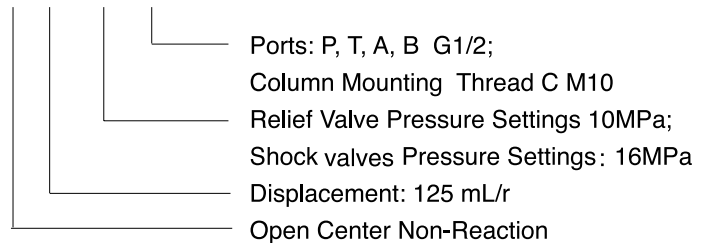
应用举例:

102S系列转向器, 开芯无反应, 排量
 125mL/r, 入口有单向阀, 安全阀压力10MPa,
 缓冲阀压力16MPa, 四油口螺纹为G1/2, 转
 向柱法兰连接螺纹M10。

转向器订货编号为: 102S-1-125-10-E

For example:
Order code

102S-1-125-10 - E





102(S)-5(T)(TE)(L)(E) 系列全液压转向器

102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

102S-5 (T) (TE) (L) (E)系列全液压转向器用于负荷传感型转向系统。

102S-5、102S-5L、102S-5E系列全液压转向器均为板式连接方式，与PVF*型优先阀采用板式连接后使用。

102S-5L系列全液压转向器在LL接口处引出了LS口的压力信号，将信号传送给电气控制系统；

102S-5E系列全液压转向器在EL接口处引出了A或B油口的压力信号，将信号传送给电气控制系统。

102S-5T、102S-5TE系列全液压转向器为管式连接方式，与PVL*或DYXL、YXL型优先阀采用管式连接后使用。

102S-5TE系列全液压转向器在EL接口处引出了A或B油口的压力信号，将信号传送给电气控制系统。

102-5T系列全液压转向器为管式连接方式，必须和DYXL、YXL型优先阀采用管式连接后使用，并且其系统安全阀设在优先阀上。

SCU 102(S)-5(T)(TE)(L)(E) series is used in the load sensing steering system.

SCU 102S-5,102S-5L,102S-5E series adopt modular mounting type and can only be used with PVF* type priority valve via modular mounting.

SCU 102S-5L series guides the pressure signal of port LS out of port LL, and transfers the pressure signal to the electrical control system.

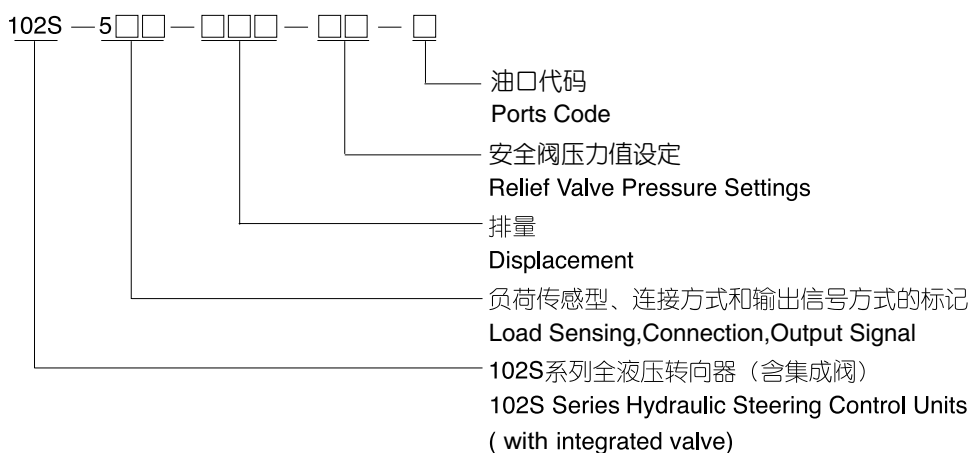
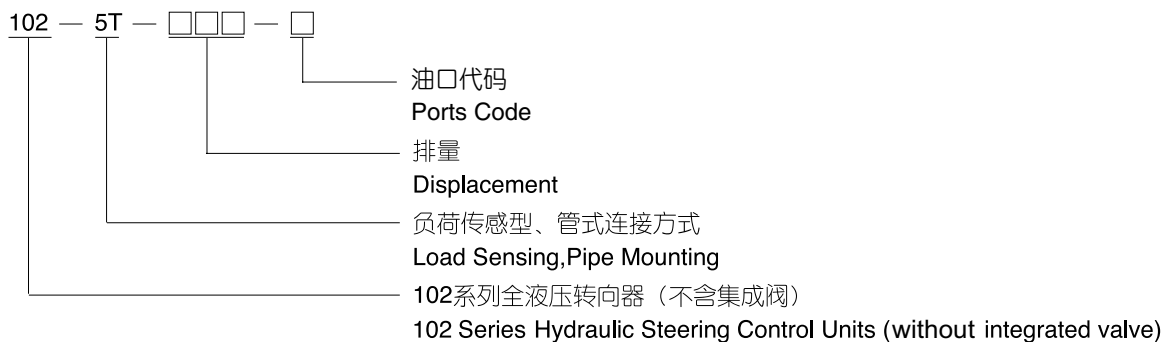
SCU 102S-5E series guides the pressure signal of port A or B out of port EL, and then supplies the pressure signal to the electrical control system.

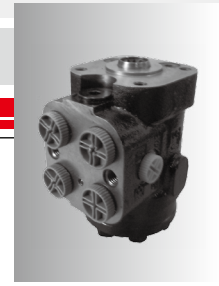
SCU 102S-5T,102S-5TE series adopts the Pipe mounting and via pipe mounting can be used with PVL* or DYXL, YXL type priority valve.

SCU 102S-5TE series guides the pressure signal of the port A or B out of port EL and then supplies the pressure signal to the electrical control system.

SCU 102-5T series adopts the pipe mounting, it can be used only after the pipe mounted with the DYXL, YXL type priority valve. and the relief valve is integrated in the priority valve.

型号说明 Order Code

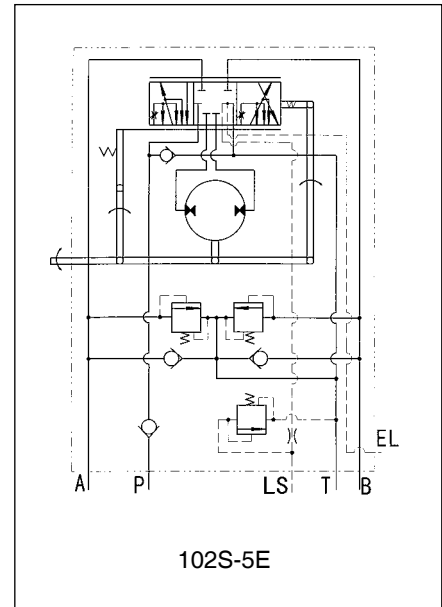
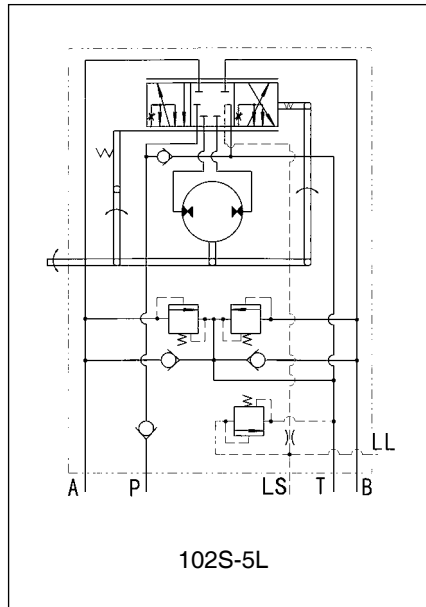
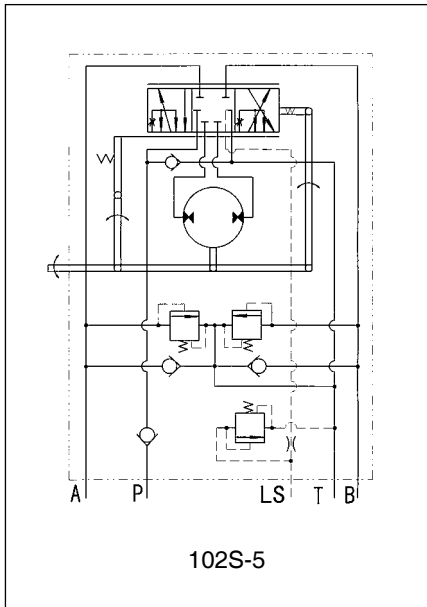




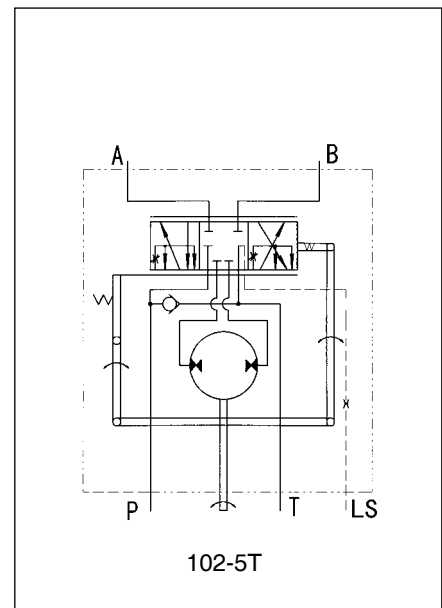
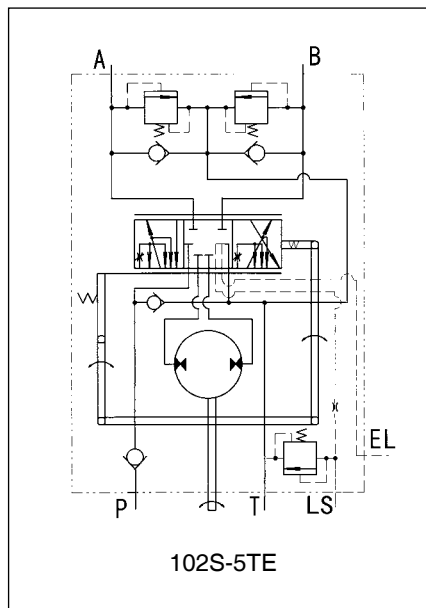
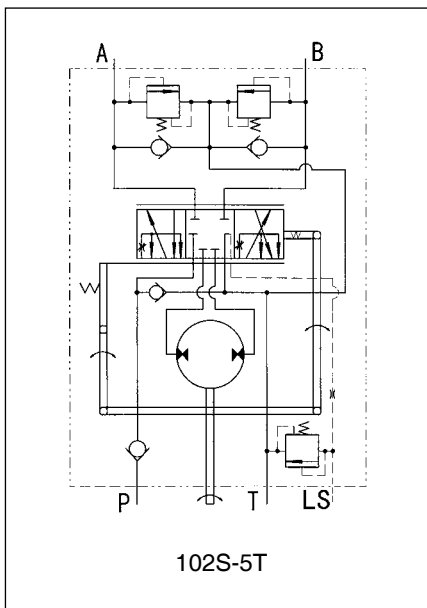
102(S)-5(T)(TE)(L)(E) 系列全液压转向器

102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

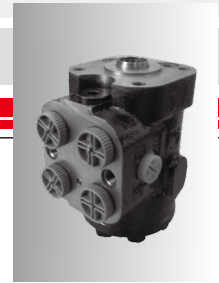
功能符号 Function Code



板式连接
Modularity Mounting



管式连接
Pipe Mounting



102(S)-5(T)(TE)(L)(E) 系列全液压转向器

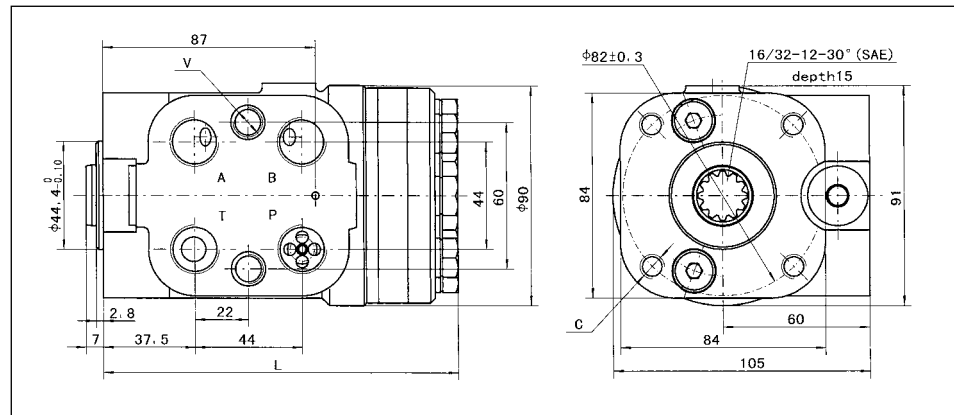
102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

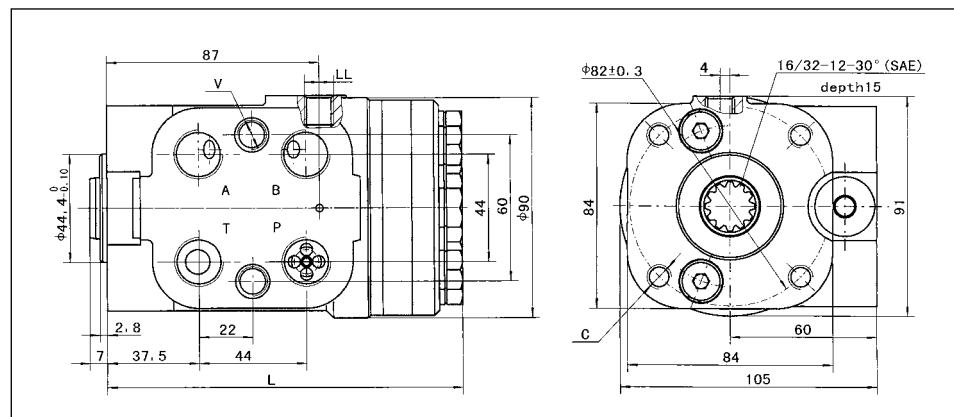
Parameters	Type 102-5T-****-, 102S-5(T)(TE)(L)(E)-****-***											
	50	63	80	100	125	160	200	250	280	315	400	
Displacement(mL/r)	50	63	80	100	125	160	200	250	280	315	400	
Max. input speed (rpm)	100								75			
Max. input pressure (MPa)	17.5											
Relief Valve Pressure Settings (MPa)	06,07,08, 10, 12, 14, 15, 16, 17.5											
Shock Valves Pressure Settings (MPa)	12, 13, 14, 16, 18, 20, 21, 22, 23.5											
Max. Cont. Back pressure (MPa)	2.5											
Weight (kg)	6.04	6.09	6.18	6.27	6.4	6.6	6.79	7.02	7.2	7.39	7.89	
Dimension L (mm)	140	142	144	146	149	154	159	165	170	175	185	

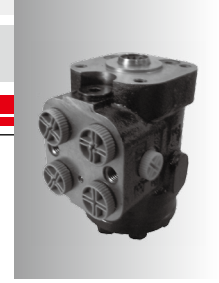
连接尺寸 Mounting Data

102S-5



102S-5L



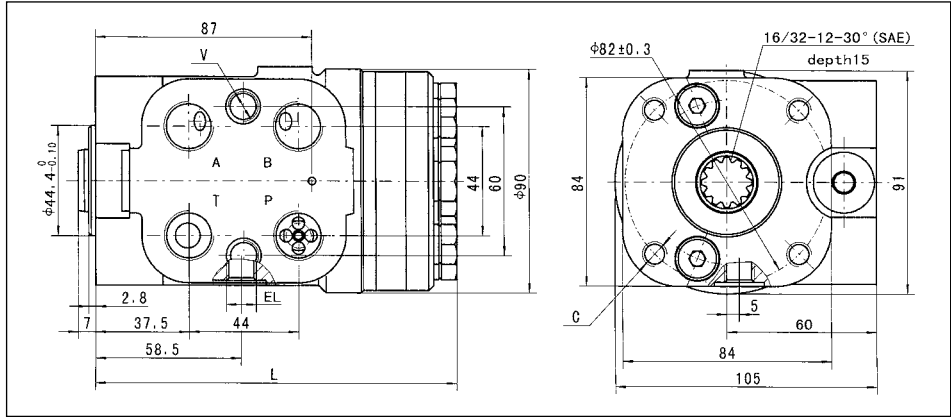


102(S)-5(T)(TE)(L)(E) 系列全液压转向器

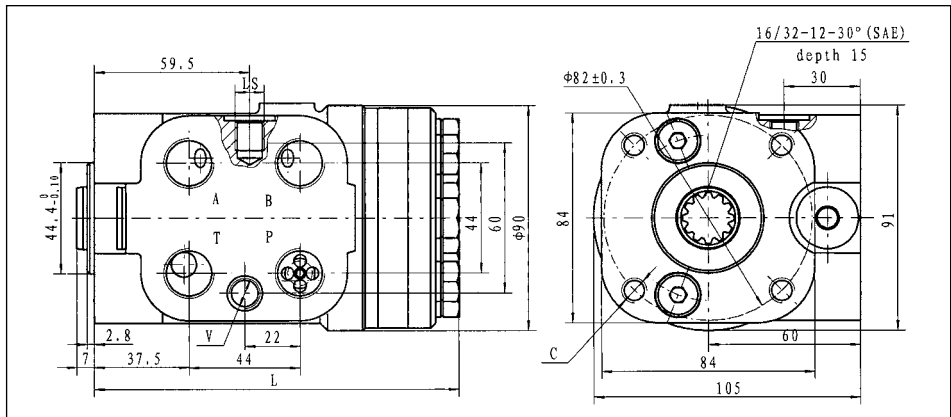
102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

连接尺寸 Mounting Data

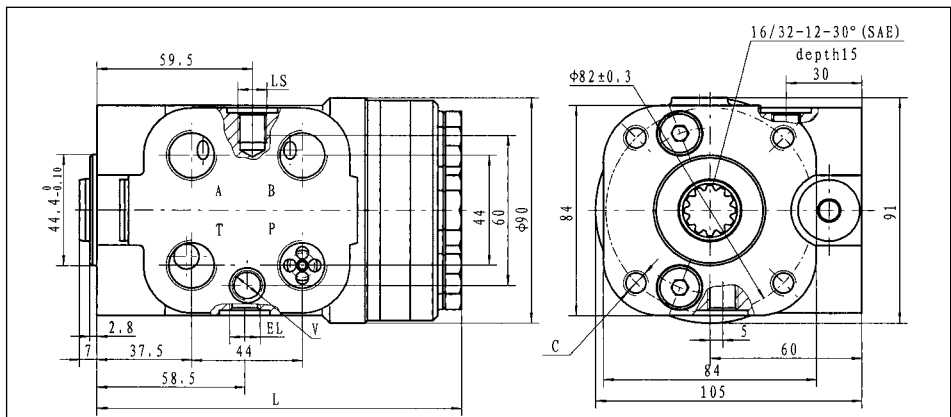
102S-5E

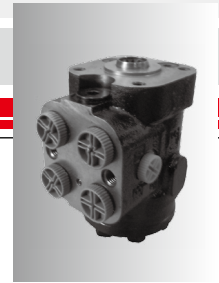


102S-5T



102S-5TE



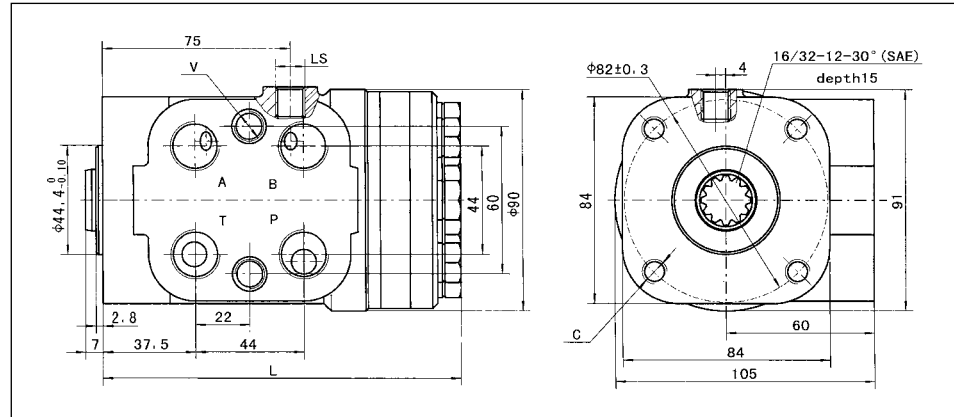


102(S)-5(T)(TE)(L)(E) 系列全液压转向器

102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

连接尺寸 Mounting Data

102-5T



油口螺纹 Ports Threads

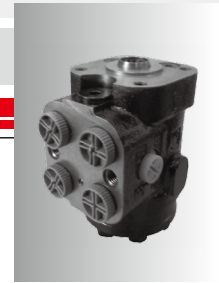
代码 Code	P、T、A、B油口 Ports P, T, A, B	连接螺纹C Column Mounting C	连接螺纹V Column Mounting V	LS油口 Port LS	LL、EL油口 Ports LL, EL
A	M20x1.5	M10	M12	M12x1.5	
B	M20x1.5 O-ring			M12x1.5 O-ring	
C	M18x1.5			M12x1.5	
D	M18x1.5 O-ring			M12x1.5 O-ring	
E	G1/2		M10x1	G1/4	M10x1
U	G1/2 O-ring			G1/4 O-ring	M10x1 O-ring
M	3/4-16UNF O-ring	3/8-16 UNC	M12	7/16-20UNF O-ring	
F					
I		M10			
N			M10x1.25		
H	$\phi 18.5$	M10	M10	M12x1.5	

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm, LS、LL、EL的深度12 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm; LS, LL, EL Depth: 12 mm.

注2: 其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



102(S)-5(T)(TE)(L)(E) 系列全液压转向器

102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

102-5T 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4
102	-	5	T	-

Pos.1 - 功能符号 Function Code

5: 负荷传感型 Load sensing type

Pos.2 - 优先阀连接形式 Priority Valve Connection

T: 管式连接 T: Pipe Mounting

Pos.3 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.4 - 油口代码 Ports Code

A、B、C、D、E、U、M、F、I、N



102(S)-5(T)(TE)(L)(E) 系列全液压转向器

102(S)-5(T)(TE)(L)(E) Series Hydraulic Steering Control Units (SCU)

102(S)-5(T)(TE)(L)(E) 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4	Pos.5	Pos.6
102S	-	5		-	***	-

Pos.1 - 功能符号 Function Code

5:负荷传感型 5:Load Sensing Type

Pos.2 - 优先阀连接形式 Priority Valve Connection

其中: 缺省: 板式连接 Omit: Modulary Mounting

T: 管式连接 T: Pipe Mounting

Pos.3 - 电液控制信号连接形式 Electrohydraulic Control Signal Connection

其中: 缺省: 没有电液信号: Omission: No electrohydraulic signal.

L: LL口引出的是LS口压力信号 L:The pressure signal at LS connection is drawn forth from LL connection.

E: EL口引出的A或B油口的压力信号 E:The pressure signal at the port A or B is drawn forth from EL connection.

Pos.4 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250、280、315、400

Pos.5 - 集成阀参数组合 Integrated valve parameters

安全阀压力设定值: Relief valve pressure settings (MPa):06、07、08、10、12、14、15、16、17.5

(缓冲阀压力设定值比安全阀压力高 6 MPa)

Shock valves pressure settings is 6 MPa higher than relief valve

Pos.6 - 油口代码 Ports Code

A、B、C、D、E、U、W、M、F、I、N、H

应用举例:

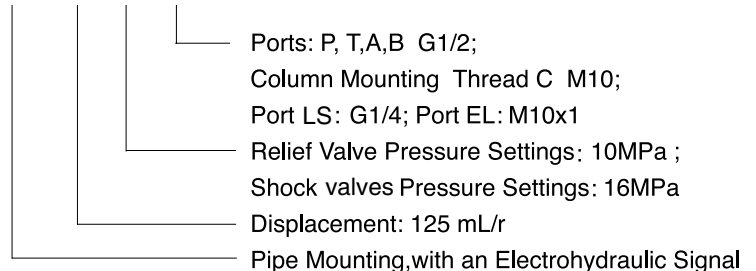
102S系列转向器, 负荷传感型, 配管式连接的优先阀, 电液控制信号从A或B油口引出, 排量125mL/r, 入口有单向阀, 安全阀压力10MPa, 缓冲阀压力16MPa, 四油口螺纹为G1/2, 转向柱法兰连接螺纹M10, LS信号口G1/4, EL信号口M10×1。

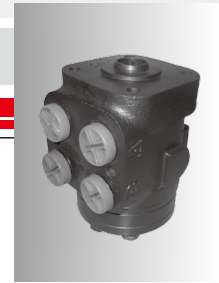
转向器订货编号: 102S-5TE-125-10-E

For example:

Order code

102S-5TE-125-10-E





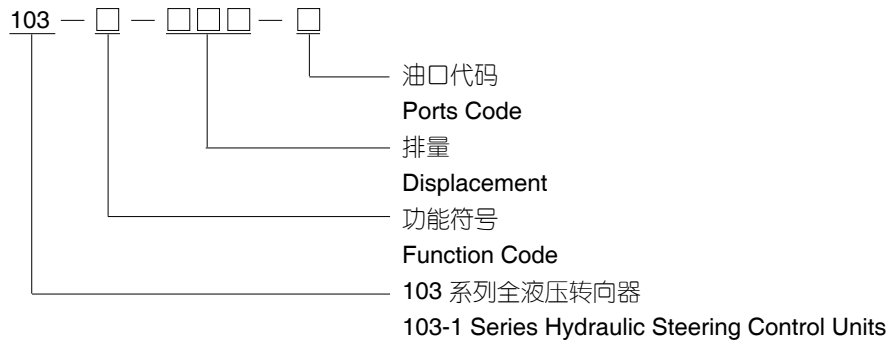
103-1系列全液压转向器

103-1 Series Hydraulic Steering Control Units(SCU)

103-1系列全液压转向器结构更加紧凑，连接尺寸符合国际标准,和101、102系列产品有差异,结构小巧紧凑,适合于狭空间装配,广泛应用于低速车辆的转向控制系统,如叉车、拖拉机、联合收割机,工程或道路建设设备、船舶舵机等,能够通过输入较小的力完成较大输出转向力的场合,操纵上轻便、灵活、可靠。

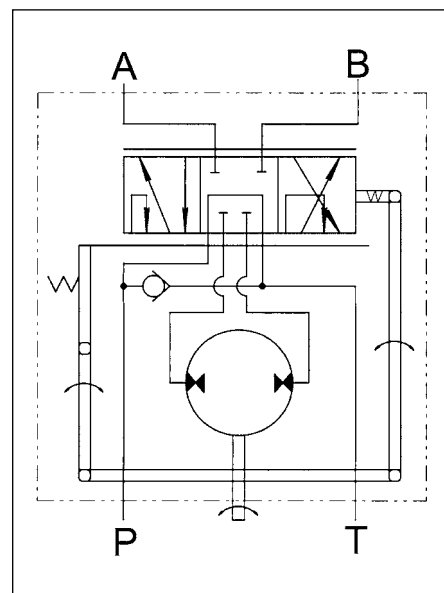
The structure of 103-1 series Hydraulic SCU is more compact and its connection dimension conforms to the international standard, while it is different from 101 and 102 series which are suitable for assembly in the narrow space. It's widely used in the low-speed vehicles, steering control system, such as forklift, tractor, combined harvester, engineering or road construction machinery, and the marine rudder, etc. It can obtain more powerful output steering force through the input force and it operates easily, flexibly and reliably.

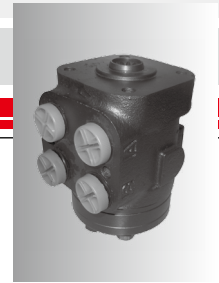
型号说明 Order Code



功能符号 Function Code

103-1
开心无反应
Open Center Non-Reaction





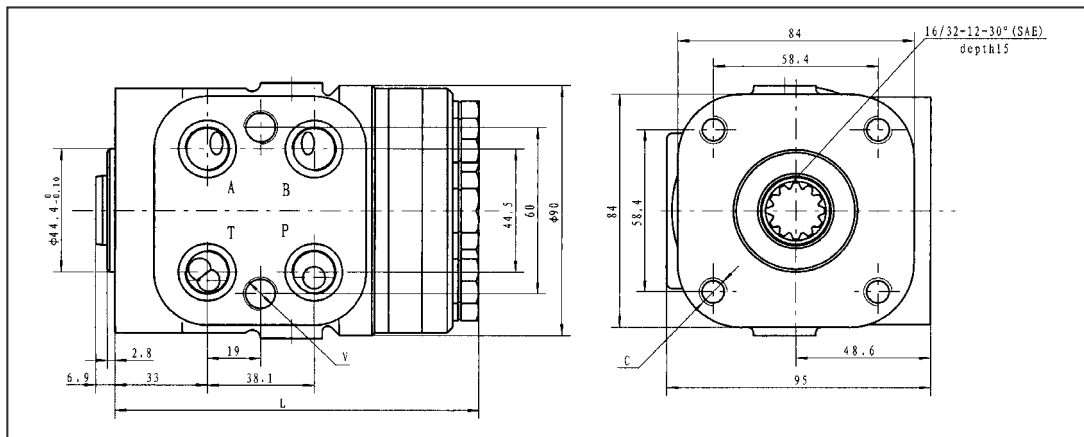
103-1系列全液压转向器

103-1 Series Hydraulic Steering Control Units(SCU)

主要技术参数 Main Specification

Parameters	Type 103-1-****							
Function Code	1	1	1	1	1	1	1	1
Displacement(mL/r)	50	63	80	100	125	160	200	250
Rated Flow (L/min)	5	6	8	10	12.5	16	20	25
Max.Input Pressure (MPa)	17.5							
Max.Cont.Back Pressure	2.5							
Weight (kg)	3.85	4.0	4.05	4.10	4.25	4.4	4.6	4.8
Dimension L (mm)	123	125	127	130	133	138	143	149

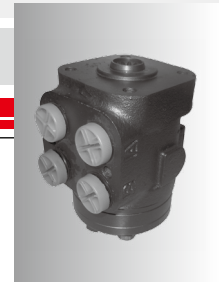
连接尺寸 Mounting Data



油口螺纹 Ports Threads

代码Code	P、T、A、B 油口 Ports P , T, A, B	连接螺纹C Column Mounting	连接螺纹V Valve Mounting
A	G3/8-19 O-ring	M10x1.25	M10
B	9/16-18UNF O-ring		
C	M18x1.5	M10	M12
D	M18x1.5 O-ring		
M	3/4-16UNF O-ring	3/8-16UNC	3/8-24UNF
F		M10	M10
I		M10x1.25	
N			

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm。
 Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm.
 注2: 其他油口连接方式协议确定代号。
 Note 2: The code of other ports dimensions will be listed in an agreement.



103-1系列全液压转向器

103-1 Series Hydraulic Steering Control Units(SCU)

产品订货编号 Order Code

		Pos.1		Pos.2		Pos.3
103	-	1	-	***	-	*

Pos.1 - 功能符号 Function Code

1: 开心无反应 1: Open Center Non-Reaction

Pos.2 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250

Pos.3 - 油口代码 Ports Code

A、B、C、D、F、M、I、N

应用举例:

103系列转向器，开心无反应，排量125mL/r，四油口螺纹为M18×1.5，转向柱法兰连接螺纹M10，油口面两连结螺纹M12。

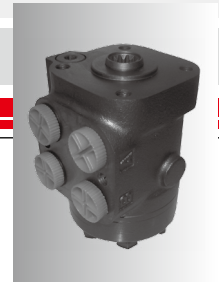
转向器订货编号为：103-1-125-C

For example:

Order code

103-1 - 125 - C

Ports: P, T, A, B M18×1.5;
 Column Mounting Thread C M10;
 Valve Mounting Thread V M12
 Displacement : 125 mL/r
 Open Center Non-Reaction



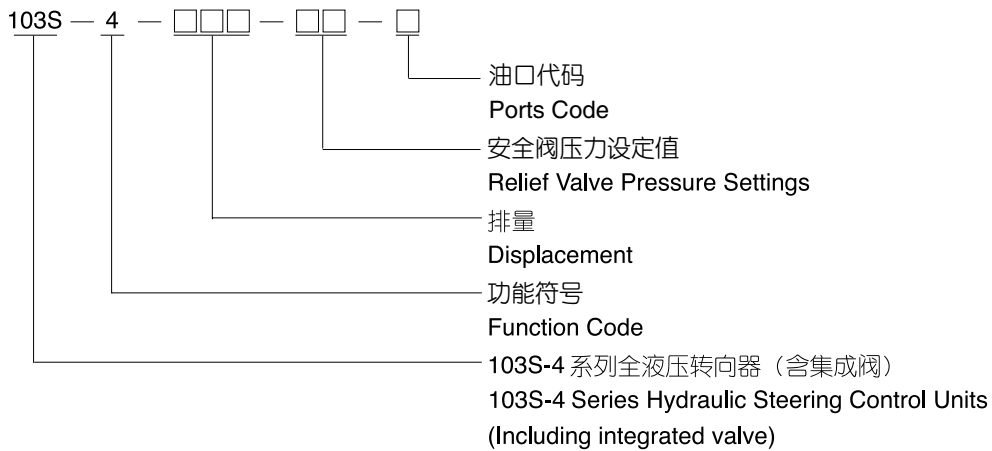
103S-4 系列全液压转向器

103S-4 Series Hydraulic Steering Control Units (SCU)

103S-4系列转向器除具备103-1系列转向器的功能外，还含有安全阀和入口单向阀的功能。

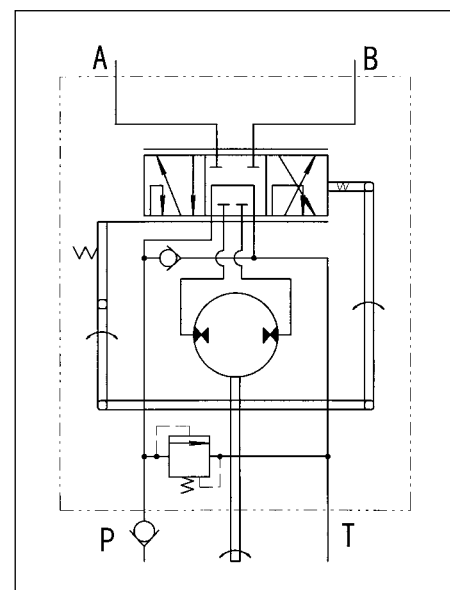
103S-4 series steering unit contains, in addition to the function of 103-1 series steering unit, also function of relief valve and inlet check valve.

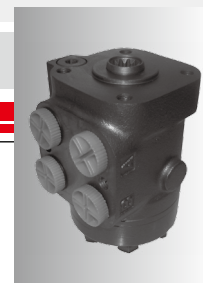
型号说明 Order Code



功能符号 Function Code

103S-4
开芯无反应
Open Center Non-Reaction





103S-4 系列全液压转向器

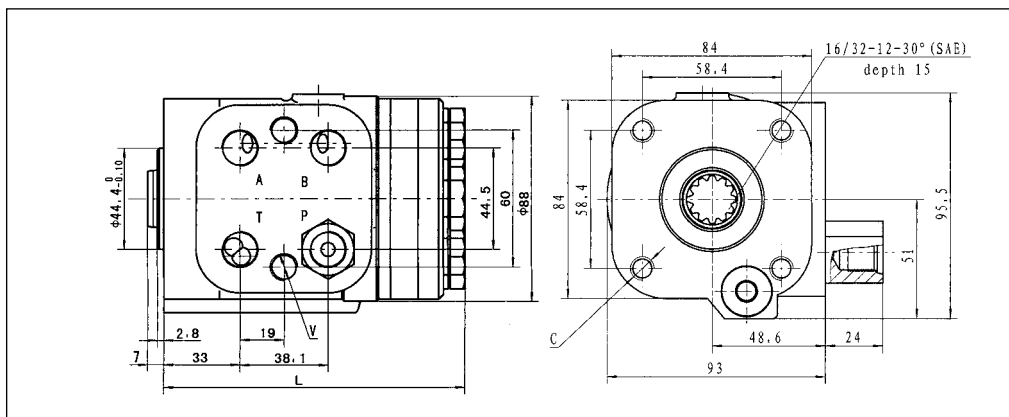
103S-4 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 103S-4-****-***							
Displacement(mL/r)	50	63	80	100	125	160	200	250
Rated flow (L/min)	5	6	8	10	12.5	16	20	25
Max. input pressure (MPa)	17.5							
Relief valve pressure settings (Mpa)	06,07,08,10,12,14,15,16,17.5							
Max. cont. back pressure (MPa)	2.5							
Weight (kg)	4.75	4.81	4.89	4.96	5.1	5.3	5.5	5.73
Dimension L (mm)	123	125	127	130	133	138	143	149

连接尺寸 Mounting Data

103S-4



油口螺纹 Ports Threads

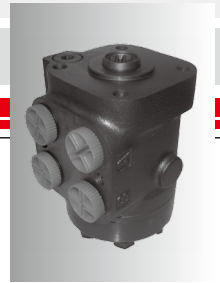
代码 Code	P、T、A、B油口 Ports P,T,A,B	连接螺纹 C Column Mounting C	连接螺纹 V Column Mounting V
A	G3/8-19 O-ring	M10×1.25	M10
B	9/16-18UNF O-ring		
C	M18×1.5	M10	M12
D	M18×1.5 O-ring		
M	3/4-16UNF O-ring	3/8-16 UNC	3/8-24 UNF
F			
I		M10	M10
N		M10×1.25	

注1: 油口P、T、A、B的深度14 mm, 连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 14 mm; Column Mounting C & V Depth: 16 mm .

注2: 其他油口连接方式协议确定代号。

Note 2: The code of other ports dimensions will be listed in an agreement.



103S-4 系列全液压转向器

103S-4 Series Hydraulic Steering Control Units (SCU)

产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4
103S	-	4	-	**

Pos.1 - 功能符号 Function Code

4:开芯无反应 4:Open Center Non-Reaction

Pos.2 - 排量 Displacement mL/r

50、63、80、100、125、160、200、250

Pos.3 - 安全阀压力设定值 Relief Valve Pressure Settings MPa

06、07、08、10、12、14、15、16、17.5

Pos.4 - 油口代码 Ports Code

A、B、C、D、F、M、I、N

应用举例:

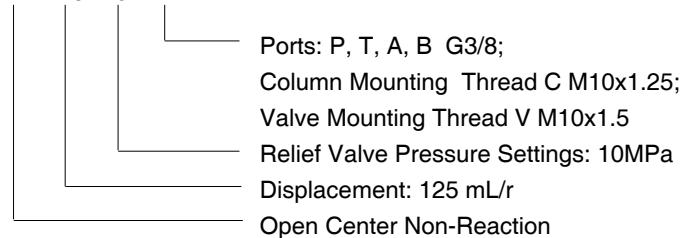
103S-4系列转向器, 开芯无反应, 排量 125 mL/r, 入口有单向阀, 安全阀压力 10MPa, 四油口螺纹为G3/8, 转向柱法兰连接螺纹M10x1.25, 油口面两连结阀用螺纹 M10x1.5。

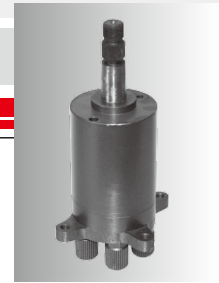
转向器订货编号为: 103S-4-125-10-A

For example:

Order code

103S-4 - 125-10 - A





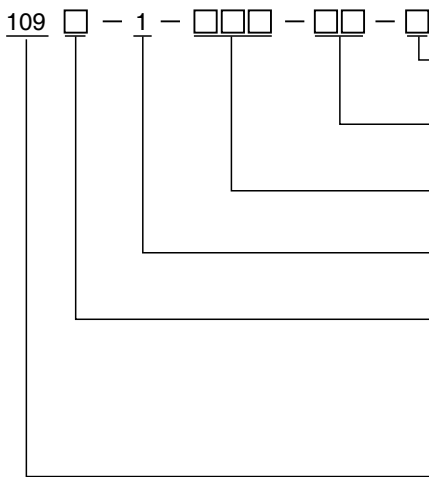
109 系列全液压转向器

109 Series Hydraulic Steering Control Units (SCU)

109系列全液压转向器是整体集成式4/5齿结构的摆线全液压转向器。可以集成单向阀、安全阀、缓冲阀，结构小巧玲，连接尺寸符合国际规范，产品广泛运用于微型非道路车辆，如：微型叉车、小型拖拉机(及其它农机)、微型土方机械、市政养护车辆等。能够通过输入较小的力，获得较大的输出转向力矩，具有操作轻巧、灵活、可靠等特点。

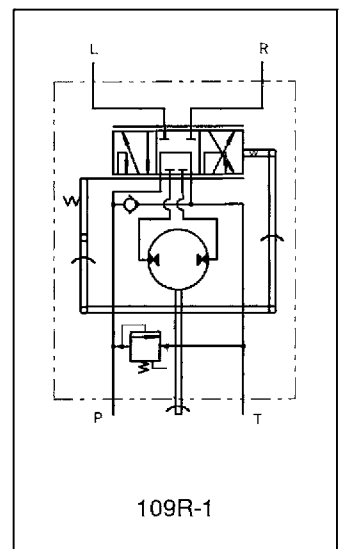
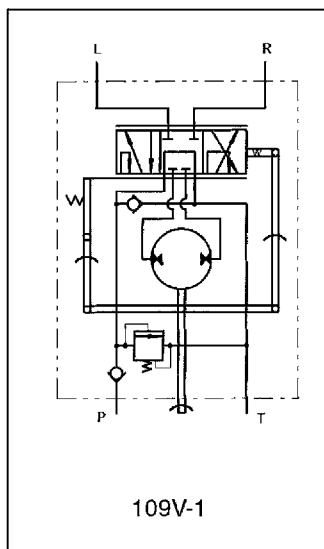
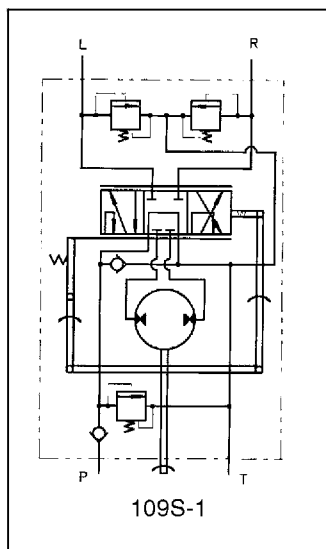
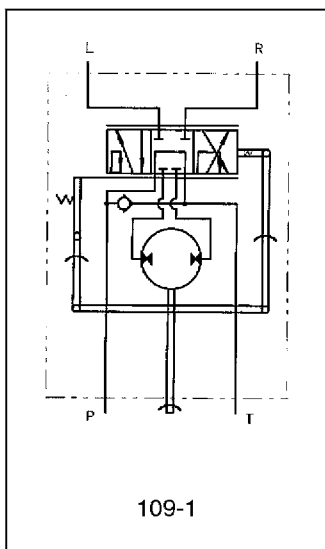
109 series hydraulic steering unit is an integrated orbital steering unit with 4/5 tooth structure. This kind of steering unit has a small and exquisite structure with integrated check valve, relief valve and shock valves and its mounting dimension conforms to international standard. This kind of steering unit is widely used in mini vehicles, such as mini forklift, mini tractor (and other agricultural machinery), mini earthmoving machinery, mini municipal vehicle, etc. It can obtain more steering output torque through input of less power, with features of easy, flexible and reliable operation.

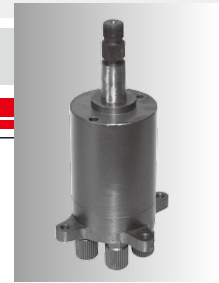
型号说明 Order Code



- 连接尺寸标记
Mounting Data
- 安全阀压力设定值
Relief Valves pressure settings
- 排量
Displacement
- 功能符号：开心无反应
Function Code: Open Center, Non-Reaction
- 缺省：表示不含集成阀；Omit: Without Integrated Valve
- S: 表示含入口单向阀、安全阀、缓冲阀
S: With Check Valve, Relief Valve, Shock Valves
- V: 表示含入口单向阀、安全阀 V: With Check Valve, Relief Valve
- R: 表示安全阀 R: With Relief Valve
- 109系列全液压转向器
109 Series Hydraulic Steering Control Units

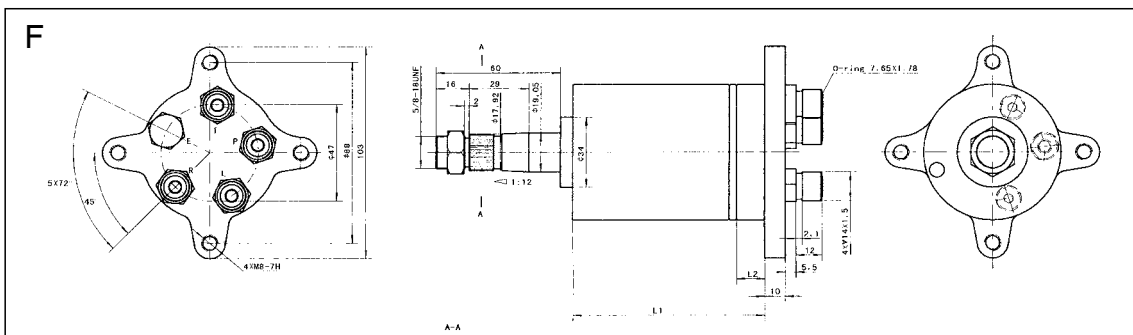
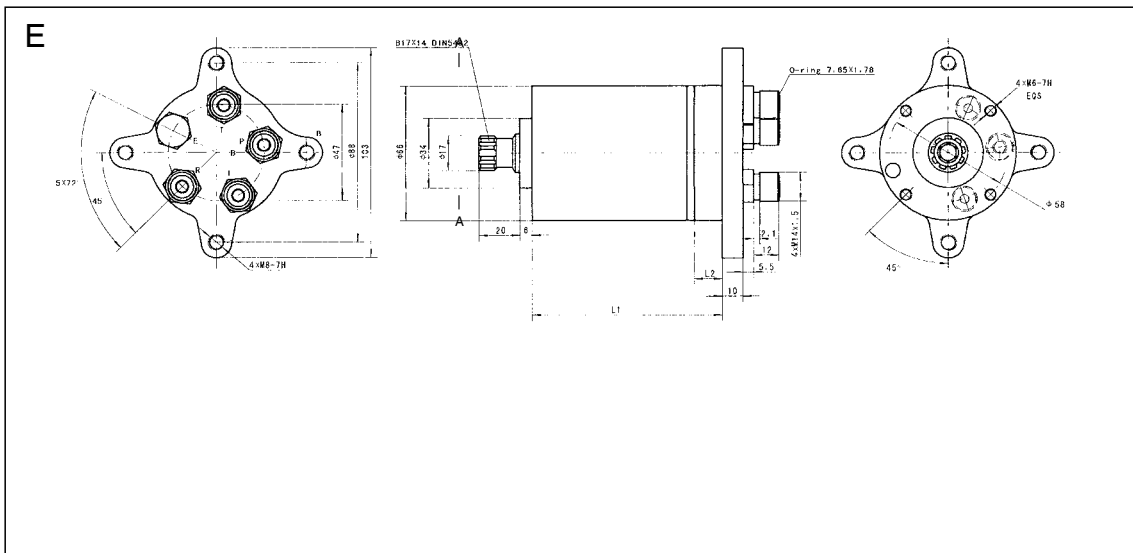
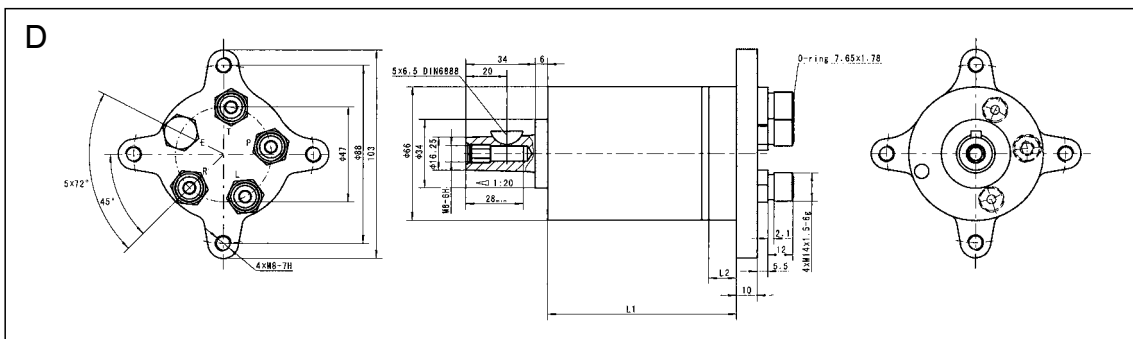
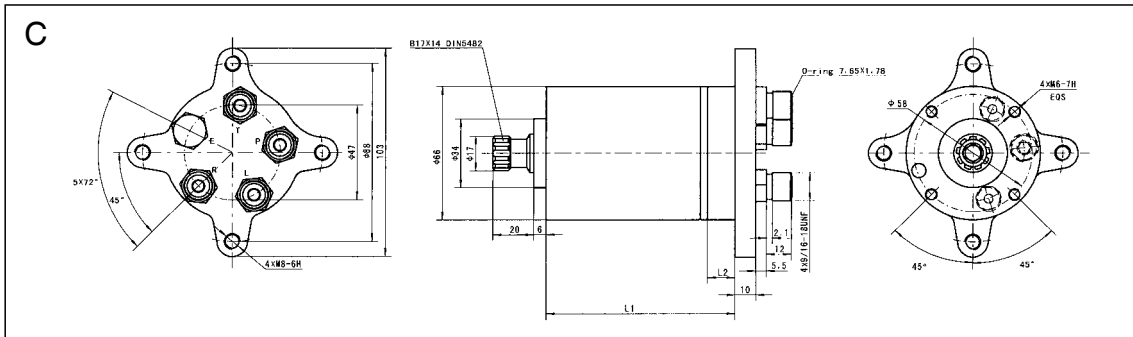
功能符号 Function Code

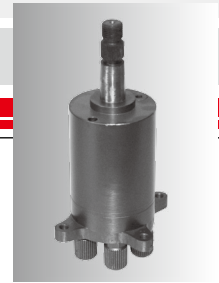




109 系列全液压转向器

109 Series Hydraulic Steering Control Units (SCU)





109 系列全液压转向器

109 Series Hydraulic Steering Control Units (SCU)

109 产品订货编号 Order Code

	Pos.1	Pos.2	Pos.3	Pos.4	Pos.5
109	*	-	1	-	**

Pos.1 - 集成阀参数组合 Integrated Valve Parameter

其中：缺省：不含阀

Omit: Without valve

S: 含安全阀、入口单向阀、缓冲阀

S: With Relief Valve, Check Valve, Shock Valves

V: 含安全阀、入口单向阀

V: With Relief Valve, Check Valve

R: 含安全阀

R: With Relief Valve

Pos.2 - 功能符号 Function Code

1: 开芯无反应 1: Open Center Non-Reaction

Pos.3 - 排量 Displacement mL/r

20、32、40、50、63、80

Pos.4 - 集成阀参数组合 Integrated Valve Parameter

安全阀压力设定值: Relief Valve Pressure Settings(MPa):06、07、08、09、10

(缓冲阀压力调定值比安全阀压力高 6 MPa)

Shock Valves Pressure Settings is 6 MPa Higher Than Relief Valve.

Pos.5 - 连接尺寸代号 Mounting Data

A、输入端和输出油口尺寸: A: Tapered 1:20, Key 5x6.5, Ports: 9/16-18UNF;

B、输入端和输出油口尺寸: B: Tapered 1:12, With 11/16 In-40 Serrations and 5/8-18UNF, Ports: 9/16-18UNF;

C、输入端和输出油口尺寸: C: DIN 5482 B17x14, Ports: 9/16-18UNF ;

D、输入端和输出油口尺寸: D: Tapered 1:20, Key 5x6.5, Ports: M14x1.5;

E、输入端和输出油口尺寸: E: Tapered 1:12, With 11/16 In-40 Serrations and 5/8-18UNF, Ports: M14x1.5;

F、输入端和输出油口尺寸: F: DIN 5482 B17x14, Ports: M14x1.5。

应用举例:

109系列转向器, 开芯无反应, 排量32mL/r, 含安全阀、入口单向阀、缓冲阀。安全阀压力8MPa, 连接尺寸A型。其转向器订货编号为: 109S-1-32-08-A。

For example:

Order code

109 S - 1 - 32 - 08 - A

Mounting Data: A

With Check Valve, Relief Valve Pressure Settings: 8 MPa, Shock Valves Pressure Settings: 14MPa

With Displacement: 32mL/r

Open Center Non-Reaction

With Relief Valve, Check Valve, Shock valves

109 Series Hydraulic Steering Control Units



TLF 型同轴流量放大转向器

TLF Type Coaxial Flow Amplifying Steering Units

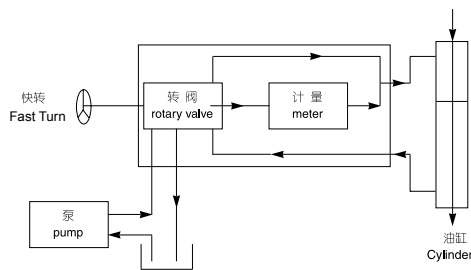
TLF型同轴流量放大转向器与BZZ5型负荷传感转向器同属于负荷传感型转向控制元件。在负荷传感转向系统中，只要这两种产品的排量相同即可实现产品的互换使用。但是TLF型同轴流量放大转向器作为转向控制元件使用时，其转向排量是随方向盘的输入转速而改变的。在低速转向时(方向盘的转速低于10rpm)，转向元件的有效排量与计量排量相同。方向盘的转速为10-40rpm范围内，其有效排量随方向盘输入转速增快而增大。当方向盘的输入转速大于40rpm时，转向元件的有效排量基本恒定在其标定的当量排量。这一特性在铰接工业车辆如：装载机、平地机、木材搬运车、拖拉机和各种小型车辆的转向性能上具有独特的优势。

采用TLF型流量放大转向器，在车辆行驶过程中，缓慢转动方向盘便不会使方向修正过头。在需快速改变车辆的行驶方向时，通过提高方向盘的输入转速可增大转向流量，使方向快转。

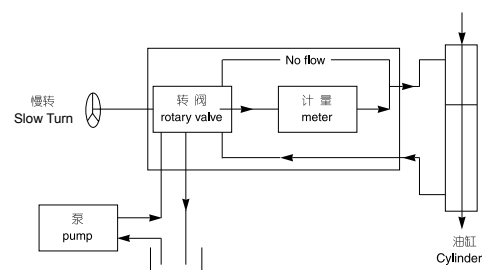
TLF type coaxial flow amplifying steering unit and BZZ5 type load sensing steering unit belong to the load sensing steering control unit. In the load sensing steering system, only if the displacement of these two models is the same, and then they can be replaced by each other. But when TLF type coaxial flow amplifying steering unit works as steering control unit, its steering displacement is changeable as the steering wheel's input rotation speed. under the low speed rotation (rotation speed of the steering wheel less than 10 rpm), the effective displacement of the steering unit is the same as the metering displacement. When the steering wheel's input speed increases (the steering wheel's rotation speed range : 10-40rpm), its effective displacement increases as the steering wheel's rotation speed increases. When the steering wheel's rotation speed is more than 40 rpm, the steering unit's effective displacement is basically rated on its constant volume. Such kind of feature has special advantages while it's used in the steering of the industrial vehicles, such as loader, grader, wood trolley, tractor and various mini vehicles.

By using TLF type amplifying steering unit, when the vehicle is driving, it will not cause over-correction of the steering to rotate slowly the steering wheel. When the driving vehicle needs to change the direction quickly, the direction can be changed quickly as well, by increasing the steering wheel's rotation speed and the steering flow.

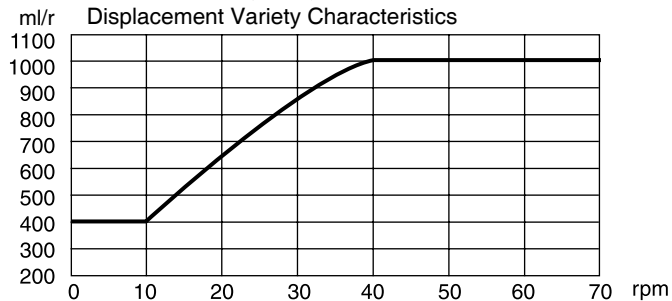
TLF 型同轴流量放大转向器的转向功能 - 快转
Steering Function-high speed

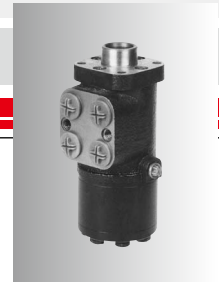


TLF 型同轴流量放大转向器的转向功能 - 慢转
Steering Function-low speed



TLF 型同轴流量放大转向器排量变化特性
Displacement Variety Characteristics





TLF1 型同轴流量放大转向器

TLF1 Type Coaxial Flow Amplifying Steering Units

TLF1型同轴流量放大转向器是一种具有流量放大能力的静液压转向元件。它可由恒流油源、恒压油源或负荷传感油源供油。通常与优先阀、双向缓冲补油阀等元件组成负荷传感流量放大液压转向系统。该系统具有操纵省力，转向灵敏，平稳，总体布置方便和系统效率高等优点，可用于各种大、中型装载机、推土机、平地机、铲运机、集材车、叉车、拖拉机、矿用汽车等低速行走机械，也可用于船舶和其它需要随动控制的场合。

与现有的全液压转向器比较，TLF1型同轴流量放大转向器具有体积小、重量轻、微调特性好、压力损失小、安装布置简便、价格便宜等优点，在几乎不改变系统结构和不更换其它液压元件的情况下，TLF1型同轴流量放大转向器可替代同排量的负荷传感全液压转向器。

TLF1 type coaxial flow amplifying steering unit is a hydrostatic steering unit with flow amplifying ability. It can be supplied by various flow suppliers, and composed various load sensing hydraulic steering systems with priority valves, crossover anticavitation relief valves and other elements, which have light operation, sensitive and smooth features, and used in large and medium loaders, bulldozers, tractors, architectural machinery, engineering machinery, lifting machinery and other off-the-highway vehicles as well as hydraulic rudder of ship. It also provides the following features:

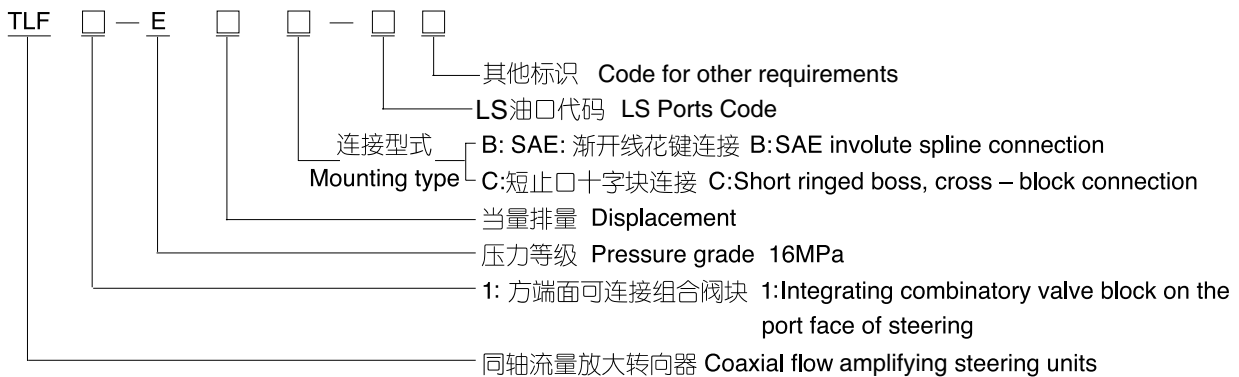
Compact volume and light weight

Good adjusting characteristic and small pressure loss

Convenient mounting and reasonable price

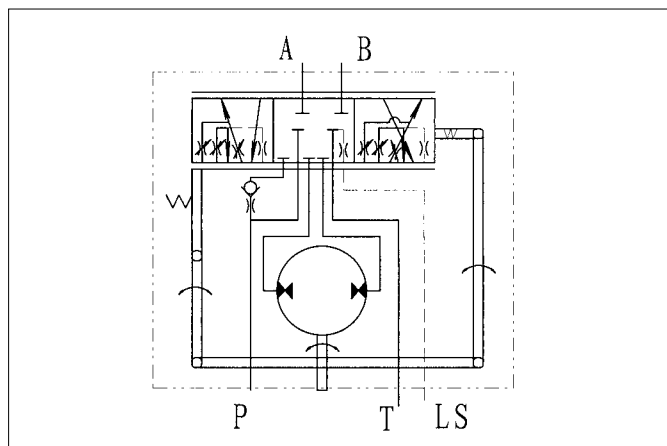
Instead of load sensing steering unit in same displacement without changing construction and exchanging other elements

型号说明 Order Code



功能符号 Function Code

TLF1





TLF1 型同轴流量放大转向器

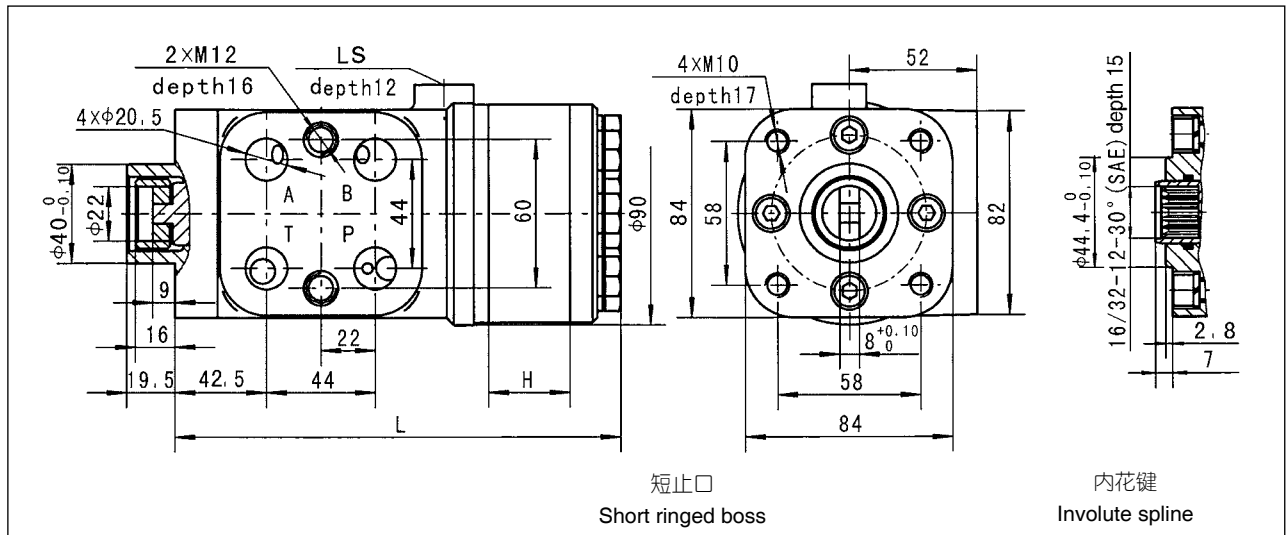
TLF1 Type Coaxial Flow Amplifying Steering Units

主要技术参数 Main Specification

型号 Type	排量 Displacement (mL/r)	最高转速 Max. speed (rpm)	最大入口压力 Max. input pressure (MPa)	最大连续背压 Max. cont. back pressure (MPa)	动力转向扭矩 Power steering torque (N·m)	长度L Length
TLF1-E1000 □	1000	60	16	1.6	≤5	199.5
TLF1-E1250 □	1250					212.5

注：□为连接形式，可以为B或C，含义见P52。 Note □: mounting type, only C or B for choice, please see P52 for reference.

连接尺寸 Mounting Data



LS油口代码: LS Port Code

油口代码 Ports Code	LS油口 Port LS
缺省 omit	M12x1.5
1	M12x1.5 O-ring
3	G1/4
5	7/16-20UNF O-ring
6	G1/4 O-ring



BNF 型扭矩放大器

BNF Type Torque Amplifiers

BNF型摆线转阀式扭矩放大器是一种输入较小扭矩而获得较大输出扭矩的液压元件。主要由控制转阀和摆线针轮啮合副组成。它具有操纵省力、灵活、平稳，结构紧凑，安装使用方便等特点，可用于轮式行走机械的转向系统，大型手动闸门及其它需要较大扭矩控制的机械。

控制阀为开心式结构。当不转动方向盘时，油流通过控制阀直接回油箱。当转动方向盘时，油流由控制阀进入摆线针轮啮合副，将液压能（压力、流量）转换成机械能（扭矩、转速）。输出转速与方向盘的转速相同，输出扭矩是手动输入扭矩和摆线针轮啮合副输出扭矩的总和。当方向盘停止转动时，控制阀停止向摆线针轮啮合副供油，扭矩放大器停止工作，如果油泵损坏无法供油，扭矩放大器就象机械转向器一样工作，但不产生扭矩放大作用。

BNF type torque amplifier is one of the hydraulic element, which can get high output torque with low input torque. It contains a distributor valve, cycloid pin pair, and a pressure relief valve with the features of comfortable operation, compact volume and easy installation. It can be used in the fields of wheeled vehicle, large manual gate as well as other machineries required high torque.

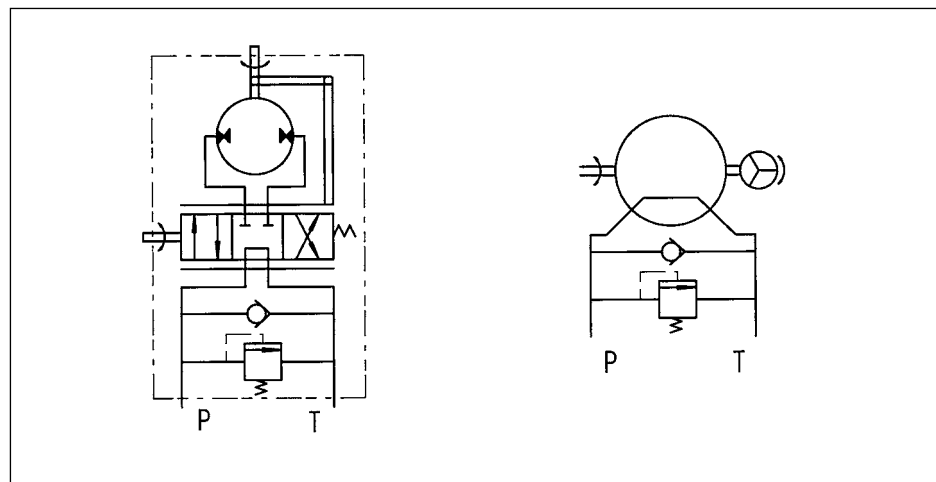
Distributor valve is open center and the power stream fluid circulates through the unit back to the tank at very low pressure when the system is not being steered. When the steering wheel is turned, fluid is led from the steering system pump via the distributor valve to the hydraulic energy (pressure, oil flow) into mechanical energy (torque, speed). The speed is controlled by the rate of rotation of the steering wheel. The torque on the output shaft is the sum of the manual input torque and the torque from the cycloid pin pair. When the steering wheel been stopped rotating, the distributor valve cuts off the fluid to the cycloid pin pair, and torque amplification is stopped.

型号说明 Order Code



功能符号 Function Code

BNF





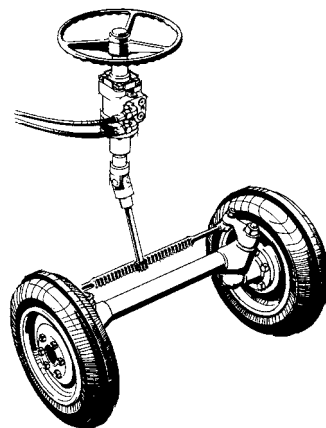
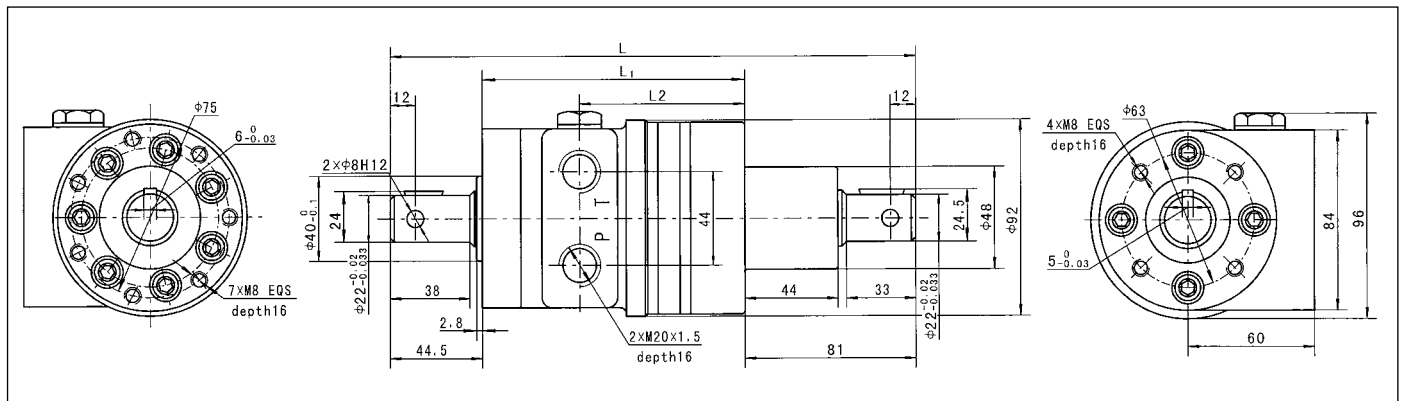
BNF 型扭矩放大器

BNF Type Torque Amplifiers

主要技术参数 Main Specification

排量 Displacement (mL/r)	输入扭矩 Input torque (N·m)	输出扭矩 Output torque (N·m)	安全阀压力设定值 Relief valve pressure settings (MPa)	额定流量 Rated flow (L/min)	最高转速 Max. speed (rpm)	最大输出扭矩 Max. output torque (N·m)	最大背压 Max.back pressure (MPa)	长度 Length		
								L1	L2	L
80	3~5	70	6.3~12.5	10	125	150	0.5	125	78.5	249.5
100		85		10	100			127.5	81	252
125		100		12	100			130.5	84	255
160		120		16	100			135.5	89	260

连接尺寸 Mounting Data





FK 型组合阀块

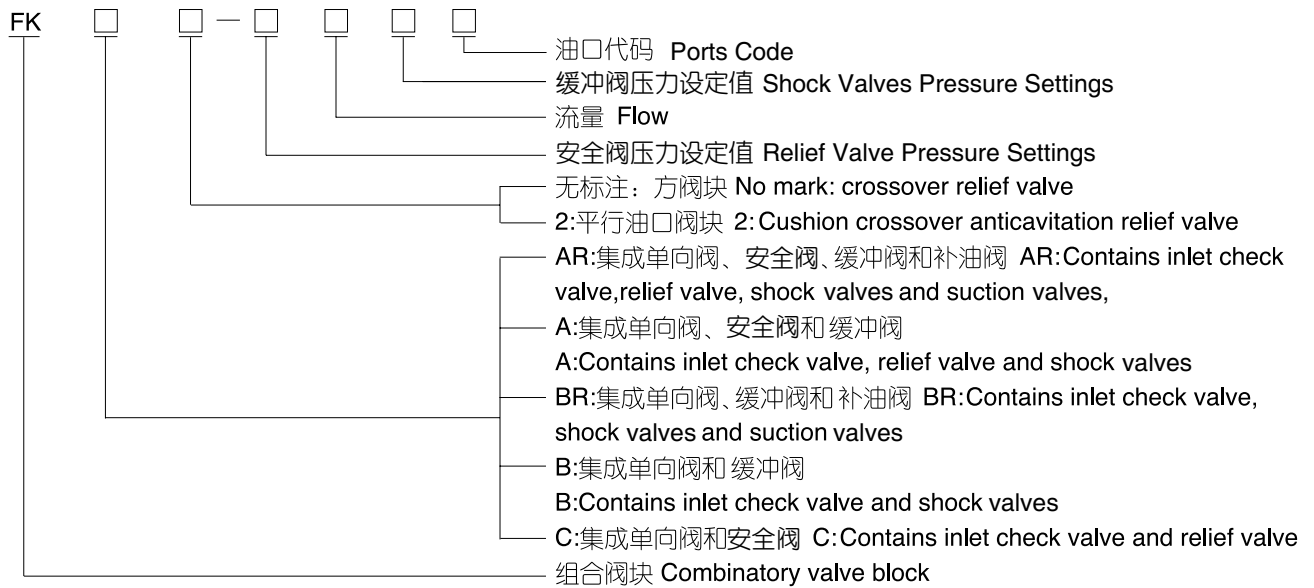
FK Type Combinatory Valve Blocks



FK型组合阀块，可分为：FKA、FKB、FKC、FKAR、FKBR系列方阀块，FKA2、FKB2、FKC2系列平行油口阀块。可直接安装在BZZ型转向器或TLF1型同轴流量放大液压转向器油口的平面上，配套使用。阀块内的缓冲阀使转向器到油缸之间的油路免受过载压力的冲击；补油阀是防止其系统产生吸空；单向阀是防止负载油路压力油倒流；安全阀是防止系统过载。

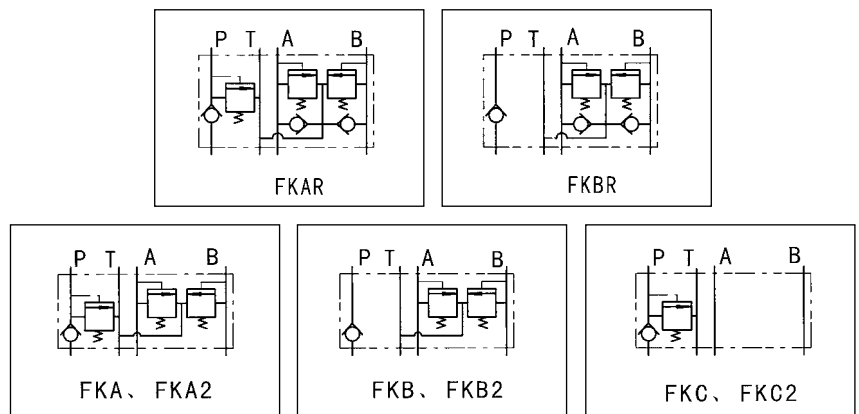
FKA, FKB, FKC, FKAR, FKBR type crossover relief valves and FKA2, FKB2, FKC2 type cushion crossover anticavitation relief valves. Being a combinatory valve, it can bolt directly to the port face of BZZ type steering unit to form a complete set, contains dual shock valves to protect the steering unit, hoses and steering cylinder from excessive system pressure due to sudden shock forces at the vehicle wheels and prevent such forces from being transmitted to the steering wheel, it also contains suction valves to help prevent cavitation at the low pressure side of the cylinder, an inlet check valve prevents reversed flow load circuit, a relief valve is the protection of the pump.

型号说明 Order Code



功能符号 Function Code

FK





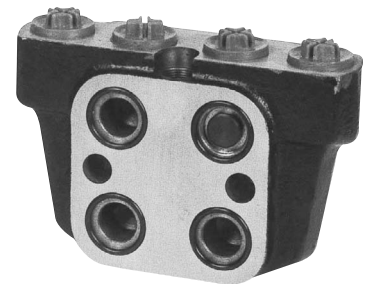
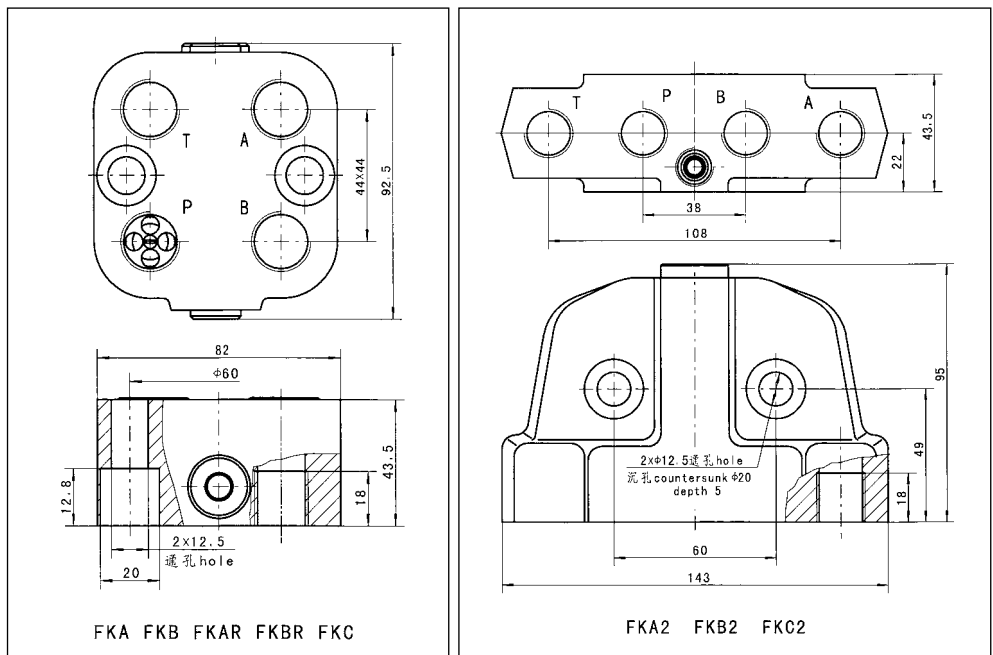
FK 型组合阀块

FK Type Combinatory Valve Blocks

主要技术参数 Main Specification

型号 Type	公称流量 Rated flow (L/min)	单向阀开启压力 Inlet check valve open pressure (MPa)	安全阀调压范围 Relief valve pressure range (MPa)	缓冲阀调压范围 Shock valves pressure range (MPa)	补油阀开启压力 Suction valves open pressure (MPa)
FKAR FKA FKA2	30/60	0.1	2.5 ~ 16	6.3 ~ 22	0.05
FKBR FKB FKB2	30		—	6.3 ~ 22	0.05
FKC FKC2	30/60		2.5 ~ 16	—	—

连接尺寸 Mounting Data





FK 型组合阀块

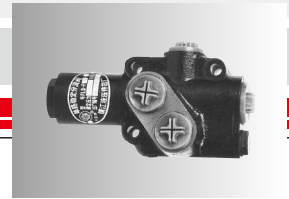
FK Type Combinatory Valve Blocks

油口螺纹 Ports Threads

型号 Type	代码 Code	P、T、A、B油口 Ports P, T, A, B
FK型阀块 FK Type Valves	缺省 omit	M20×1.5
	A	M18×1.5
	B	G1/2
	C	3/4-16UNF O-ring
	D	M20×1.5 O-ring
	E	M18×1.5 O-ring
	R	P, T: M20×1.5 A, B: M18×1.5
	S	P, T: M20×1.5 O-ring A, B: M18×1.5 O-ring
	G	M22×1.5
	Q	M22×1.5 O-ring
	U	G1/2 O-ring
FK型 平行油口阀块 FK Type Parallel Port Valves	缺省 omit	M18×1.5
	A	M20×1.5
	B	G1/2
	C	3/4-16UNF O-ring
	D	M20×1.5 O-ring
	E	M18×1.5 O-ring
	U	G1/2 O-ring

注：其他油口连接方式协议确定代号。

Note : The code of other ports dimensions will be listed in an agreement.



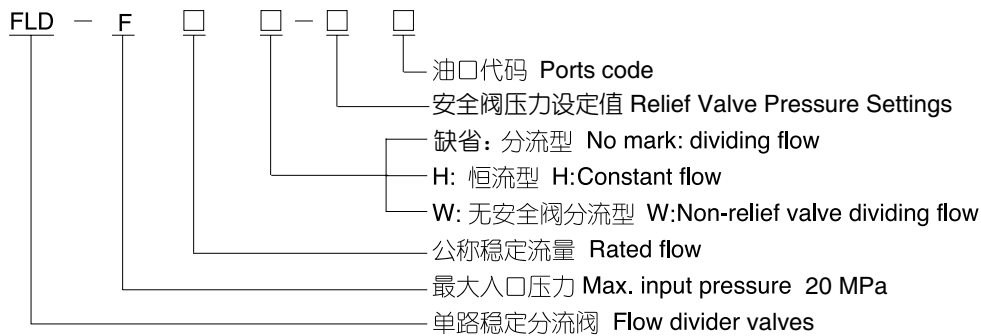
FLD 型单路稳定分流阀

FLD Type Flow Divider Valves

FLD型单路稳定分流阀主要用于液压转向系统在油泵供油量及系统负荷变化的情况下，通过分流阀来保证转向器所需的稳定流量，以满足主机转向性能的要求。它既可用于独立系统，也可用于共泵分流系统，从而简化系统，降低成本。

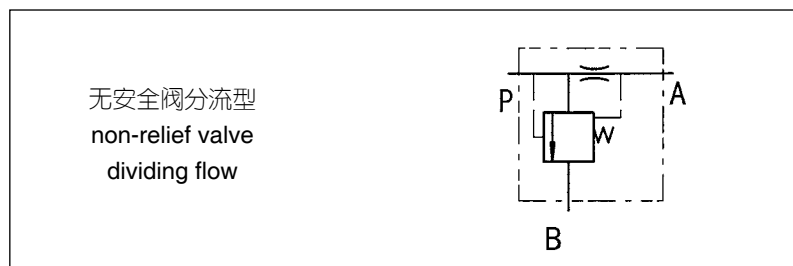
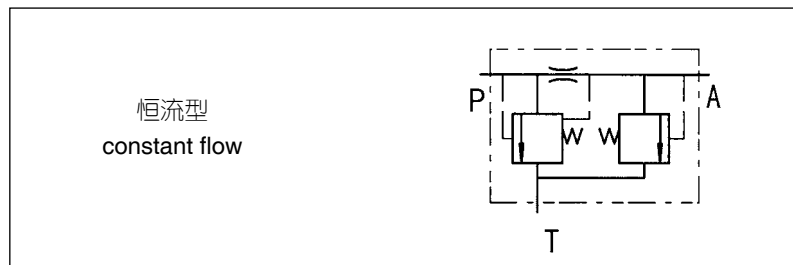
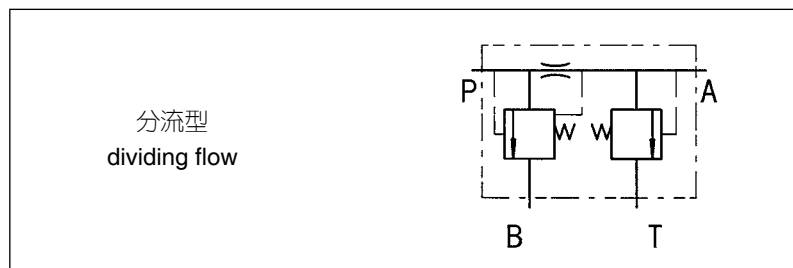
The FLD type flow divider valve is used to form a complete set of BZZ type steering control units. Under such conditions of variety oil volume or/and different pressure in steering system, FLD type can provide constant flow for the steering unit so as to meet the requirement of hydraulic steering performance of vehicle. FLD type not only can control steering system, but also it helps pump to divide flow so that to reduce cost and simplify system design.

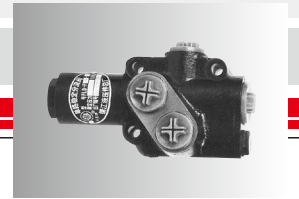
型号说明 Order Code



功能符号 Function Code

FLD





FLD 型单路稳定分流阀

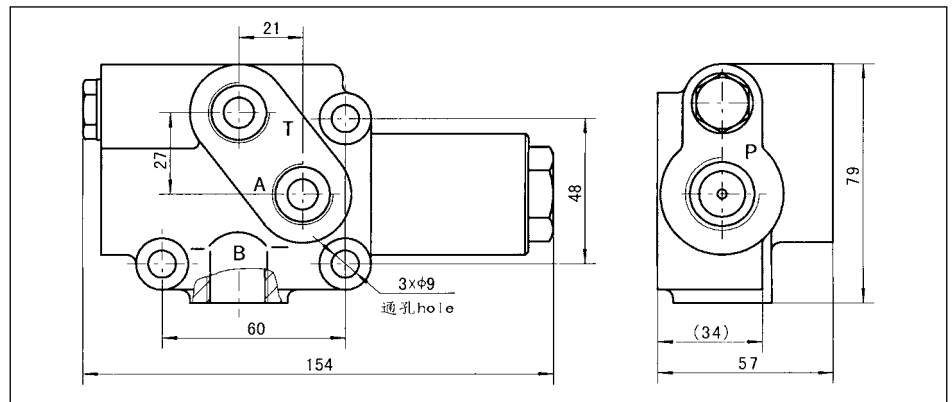
FLD Type Flow Divider Valves

主要技术参数 Main Specification

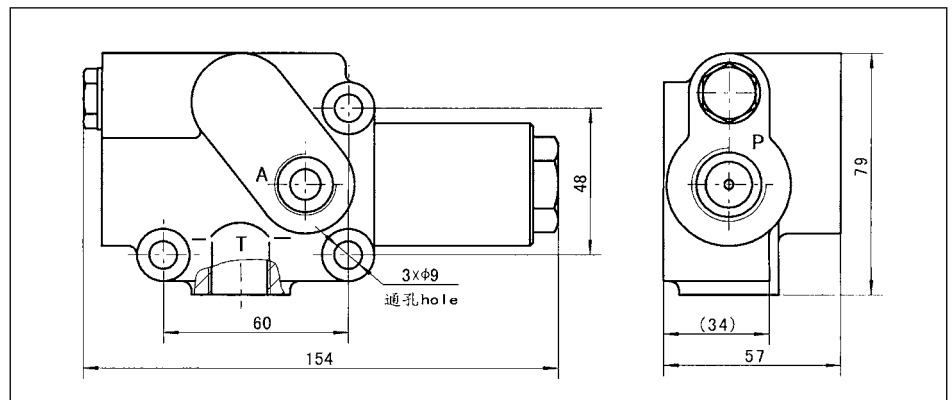
型号 Type	公称流量 Rated Flow (L/min)	最大入口流量 Max. input flow (L/min)	最大入口压力 Max. input pressure (MPa)	稳定油路安全 阀调压范围 Adjusting pressure range (MPa)	流量变化率 Variation of flow (%)	推荐配套转向器 Fit with steering unit
FLD-F4 *	4	45	20	6.3~16	15	BZZ1-E50
FLD-F5 *	5					BZZ1-E63
FLD-F6 *	6					BZZ1-E80
FLD-F7.5 *	7.5					BZZ1-E100
FLD-F9.5 *	9.5					BZZ1-E125
FLD-F12 *	12					BZZ1-E160
FLD-F15 *	15	120	20	6.3~16	20	BZZ1-E200
FLD-F19 *	19					BZZ1-E250
FLD-F21 *	21					BZZ1-E280
FLD-F24 *	24					BZZ1-E315
FLD-F30 *	30					BZZ1-E400
FLD-F38 *	38					BZZ1-E500
FLD-F48 *	48					BZZ1-E630
FLD-F60 *	60					BZZ1-E800
FLD-F75 *	75					BZZ1-E1000

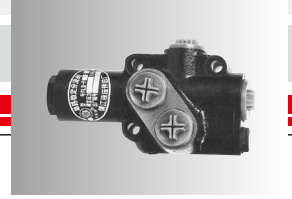
连接尺寸 Mounting Data

FLD-F4~15



FLD-F4~15H

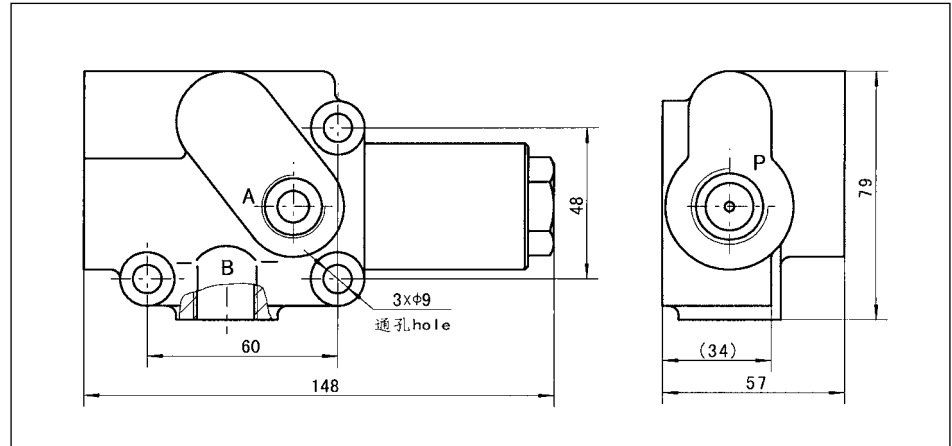




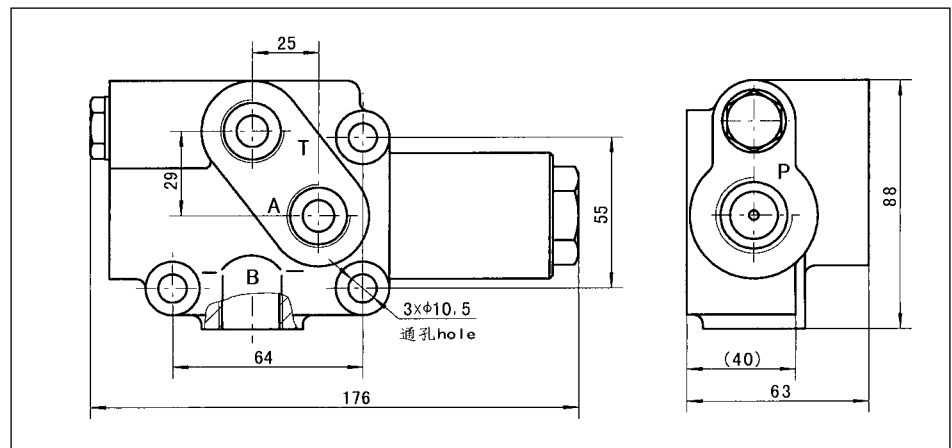
FLD 型单路稳定分流阀
FLD Type Flow Divider Valves

连接尺寸 Mounting Data

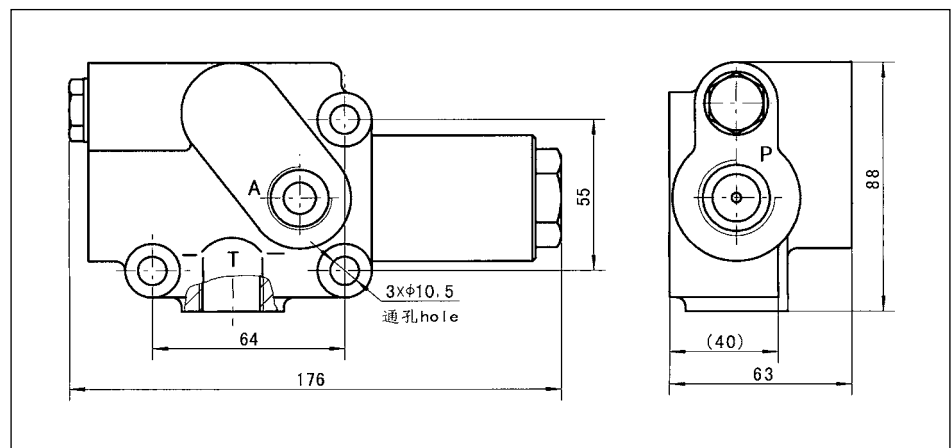
FLD-F4~15W

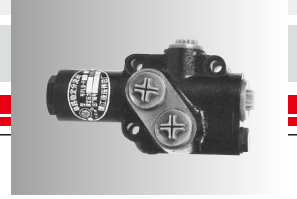


FLD-F19~30



FLD-F19~30H

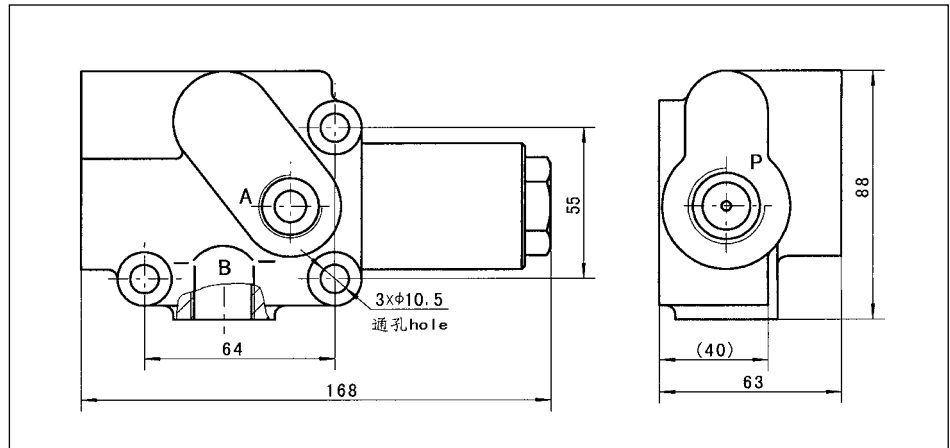




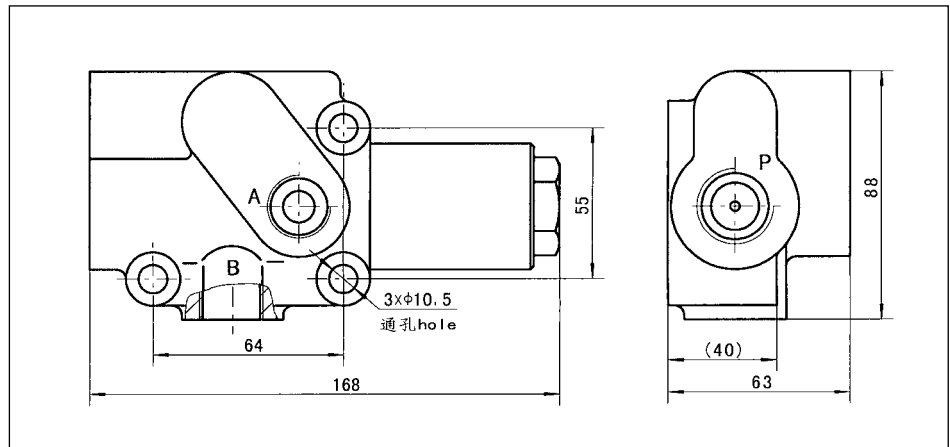
FLD 型单路稳定分流阀
FLD Type Flow Divider Valves

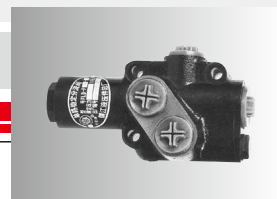
连接尺寸 Mounting Data

FLD-F19~30W



FLD-F38~75W





FLD 型单路稳定分流阀

FLD Type Flow Divider Valves

油口螺纹 Ports Threads

FLD4~15
FLD4~15H
FLD4~15W

代码 code	P油口 port P	A、(B)、(T) 油口 ports A, (B), (T)
缺省 omit	M24×1.5 Depth16	M20×1.5 Depth16
D	M24×1.5 O-ring Depth16	M20×1.5 O-ring Depth16
C	7/8-14UNF O-ring Depth16	3/4-16UNF O-ring Depth16

FLD19~30
FLD19~30H
FLD19~30W

代码 code	P油口 port P	A、(B)、(T) 油口 ports A, (B), (T)
缺省 omit	M27×1.5 Depth16	M24×1.5 Depth16
D	M27×1.5 O-ring Depth16	M24×1.5 O-ring Depth16
C	1 1/16-16UN O-ring Depth16	7/8-14UNF O-ring Depth16

FLD38~75W

代码 code	P油口 port P	A、(B) 油口 ports A, (B)
缺省 omit	M27×1.5 Depth16	M27×1.5 Depth16
D	M27×1.5 O-ring Depth16	M27×1.5 O-ring Depth16
C	1 1/16-16UN O-ring Depth16	1 1/16-16UN O-ring Depth16



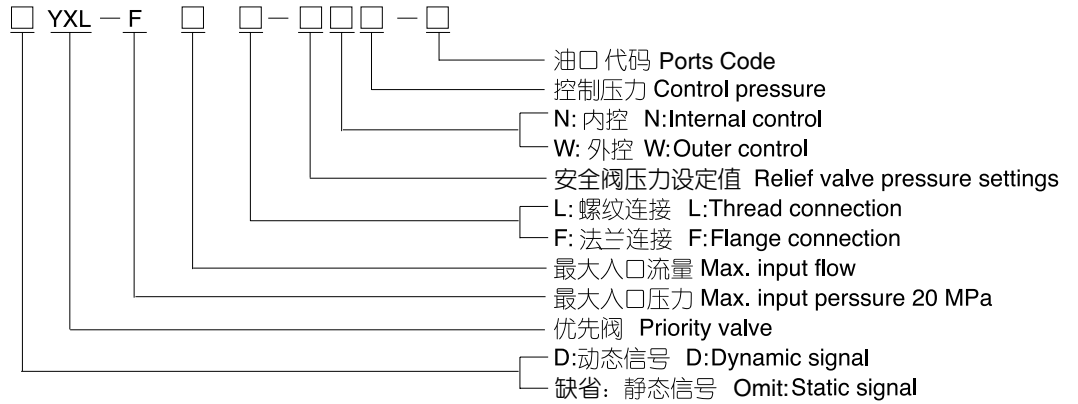
DYXL、YXL 型优先阀

DYXL,YXL Type Priority Valves

DYXL、YXL型优先阀与BZZ5型转向器或TLF1型同轴流量放大转向器配套，组成负荷传感液压转向系统。在系统负载变化或（和）方向盘转速变化的情况下，能优先保证转向器所需流量。

The DYXL,YXL type priority valve is used with BZZ5 type load sensing steering control unit or with TLF1 type coaxial flow amplifying steering unit, to form a load sensing power steering system, providing metered priority flow to the SCU.

型号说明 Order Code

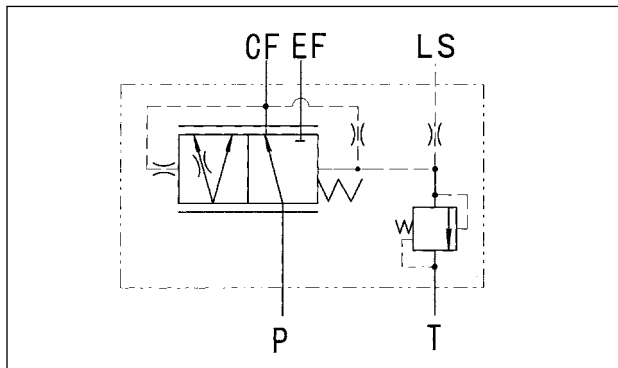


(D)YXL-F40、(D)YXL-F80、(D)YXL-F160

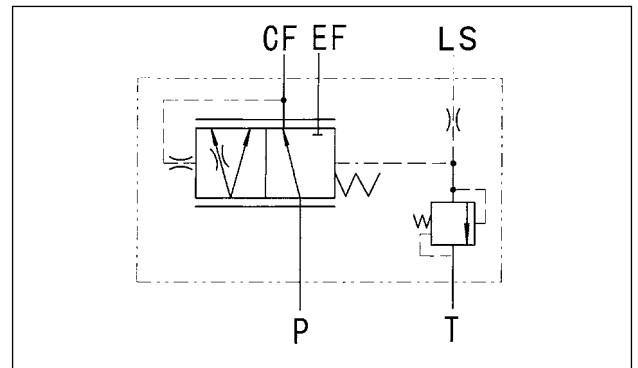


(D)YXL-F250

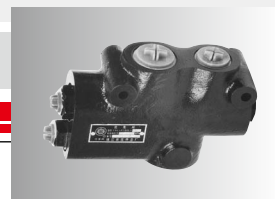
功能符号 Function Code



动态信号 Dynamic Signal



静态信号 Static Signal



DYXL、YXL 型优先阀

DYXL,YXL Type Priority Valves

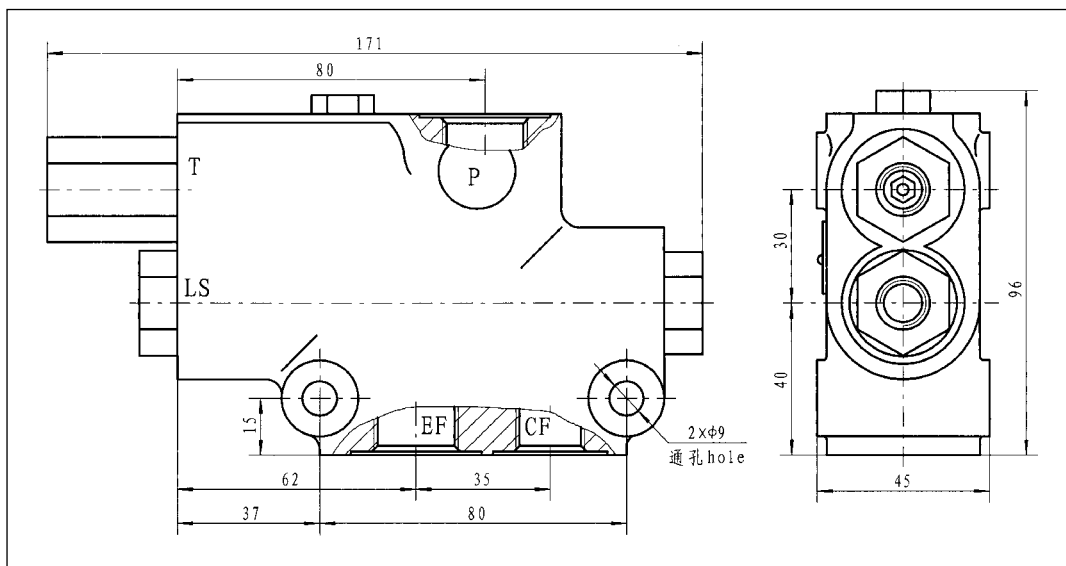
主要技术参数 Main Specification

型号 Type	控制压力 Control pressure (bar)	最大入口流量 Max. input flow (L/min)	最大入口压力 Max. input pressure (MPa)	转向安全阀 调压范围 Relief valve pressure range (MPa)
□YXL-F40L-□□4.5-□	4.5	40	20	6.3~17.5 出厂时根据用户要求调定 adjusted by customer's requirement
□YXL-F40L-□□7-□	7			
□YXL-F40L-□□10.5-□	10.5			
□YXL-F80L-□□4.5-□	4.5	80		
□YXL-F80L-□□7-□	7			
□YXL-F80L-□□10.5-□	10.5			
□YXL-F160L-□□4.5-□	4.5	160		
□YXL-F160L-□□7-□	7			
□YXL-F160L-□□10.5-□	10.5			
□YXL-F250□-□□7-□	7	250		
□YXL-F250□-□□10.5-□	10.5			

注：□内为单选值，其含义见P64型号说明。Note: □ Please see page 64 for reference

连接尺寸 Mounting Data

YXL-F40L
DYXL-F40L
YXL-F80L
DYXL-F80L



Code	Ports P, EF		Port CF		Ports Ls, T	
	Thread	Depth(mm)	Thread	Depth(mm)	Thread	Depth(mm)
A	M22x1.5	16	M18x1.5	16	M12x1.5	14
B	G1/2		G3/8			
C	7/8-14UNF O-ring		3/4-16UNF O-ring			
D	M22x1.5 O-ring		M18x1.5 O-ring			
E	G1/2 O-ring		G3/8 O-ring			

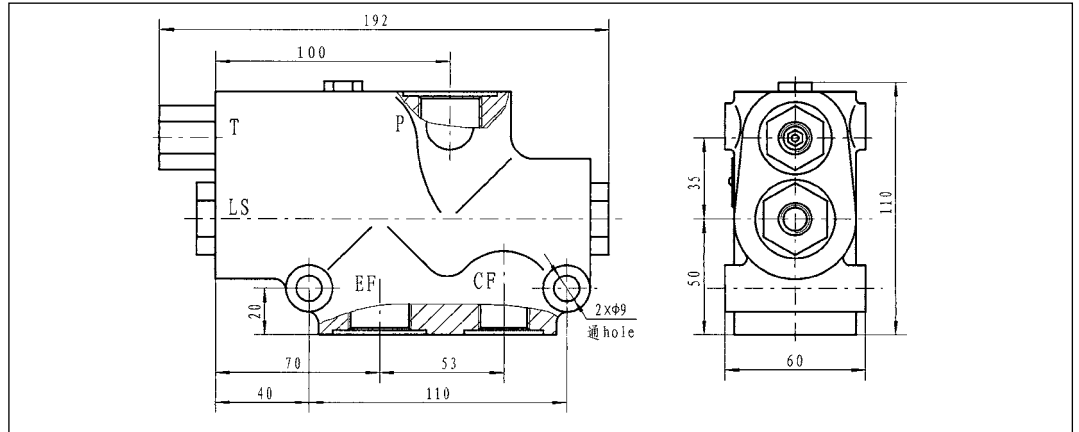


DYXL、YXL 型优先阀

DYXL,YXL Type Priority Valves

连接尺寸 Mounting Data

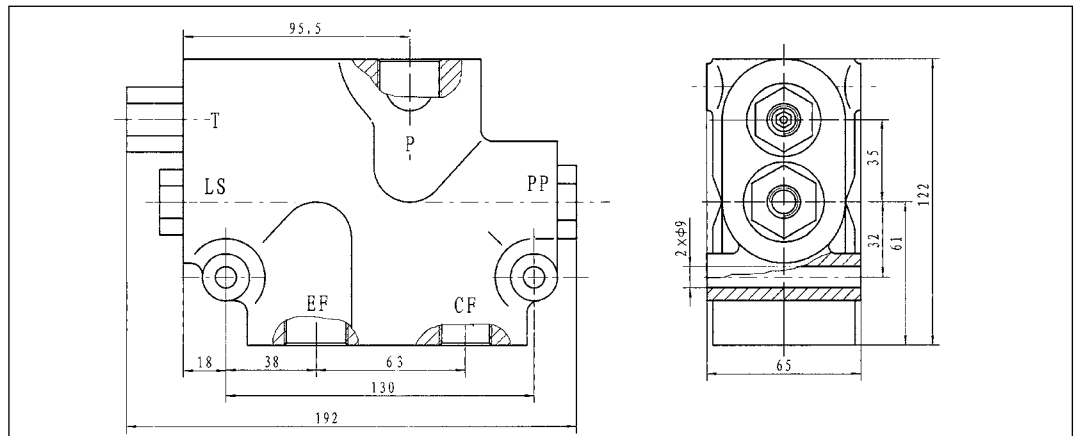
YXL-F160L



Code	Ports P, EF		Port CF		Ports LS, T	
	Thread	Depth(mm)	Thread	Depth(mm)	Thread	Depth(mm)
A	M27x2	22	M22x1.5	18	M12x1.5	14
B	G3/4		G1/2		G1/4	
C	1 1/16-12UN O-ring		3/4-16UNF O-ring		7/16-20UNF O-ring	
D	M27x2 O-ring		M22x1.5 O-ring		M12x1.5 O-ring	
E	G3/4 O-ring		G1/2 O-ring		G1/4 O-ring	

连接尺寸 Mounting Data

DYXL-F160L



Code	Ports P, EF		Port CF		Ports LS, T	
	Thread	Depth(mm)	Thread	Depth(mm)	Thread	Depth(mm)
A	M27x2	22	M22x1.5	18	M12x1.5	14
B	G3/4		G1/2		G1/4	
C	1 1/16-12UN O-ring		3/4-16UNF O-ring		7/16-20UNF O-ring	
D	M27x2 O-ring		M22x1.5 O-ring		M12x1.5 O-ring	
E	G3/4 O-ring		G1/2 O-ring		G1/4 O-ring	

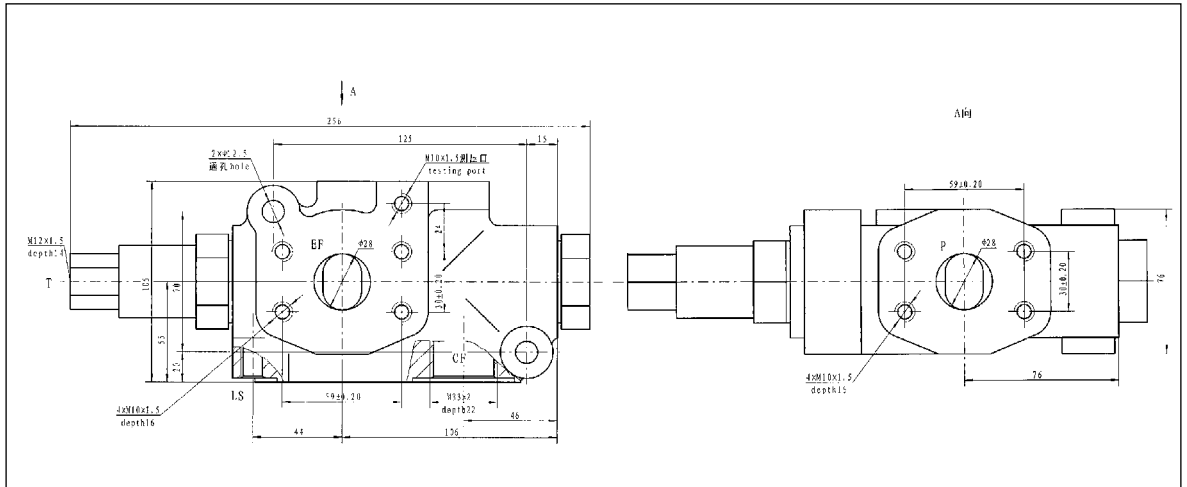


DYXL、YXL 型优先阀

DYXL,YXL Type Priority Valves

连接尺寸 Mounting Data

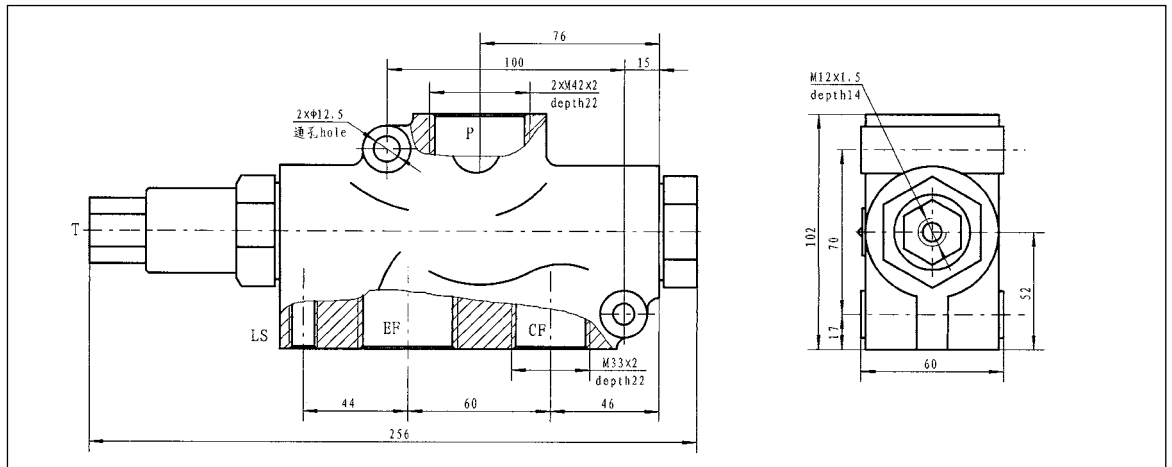
YXL-F250F
DYXL-F250F



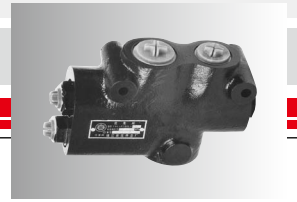
Code	Ports P,EF		Port CF		Ports LS,T	
	Aperture Size	Thread	Depth(mm)	Thread	Depth(mm)	
A	Φ28	M33×2	22	M12×1.5	14	
D	Φ28	M33×2 O-ring	22	M12×1.5 O-ring	14	

连接尺寸 Mounting Data

YXL-F250L
DYXL-F250L



Code	Ports P,EF		Port CF		Ports LS,T	
	Thread	Depth(mm)	Thread	Depth(mm)	Thread	Depth(mm)
A	M42×2	22	M33×2	22	M12×1.5	14
D	M42×2 O-ring	22	M33×2 O-ring	22	M12×1.5 O-ring	14



DYXL、YXL 型优先阀

DYXL,YXL Type Priority Valves

产品订货代号 Order Code

Pos.1	Pos.2	Pos.3	Pos.4	Pos.5	Pos.6	Pos.7					
*	YXL	-	F	***	*	-	**	*	**	-	*

Pos.1 - 信号型式 Signal Model

缺省: 静态信号 Omit: Static Signal

D: 动态信号 D: Dynamic Signal

Pos.2 - 最大入口流量 Max.input flow (L/min)

40、80、160、250

Pos.3 - 连接型式 Mounting type

L: 螺纹连接 L: Thread connection

F: 法兰连接 F: Flange connection

Pos.4 - 安全阀压力设定值 Relief valve pressure settings (MPa)

08、10、12、14、15、16、17.5

Pos.5 - 控制方式 Control type

N: 内控 N: Internal control

W: 外控 W: Outer control

Pos.6 - 控制压力 Control pressure (bar)

4.5、7、10.5

Pos.7 - 油口代码 Ports Code

A、B、C、D、E

应用举例:

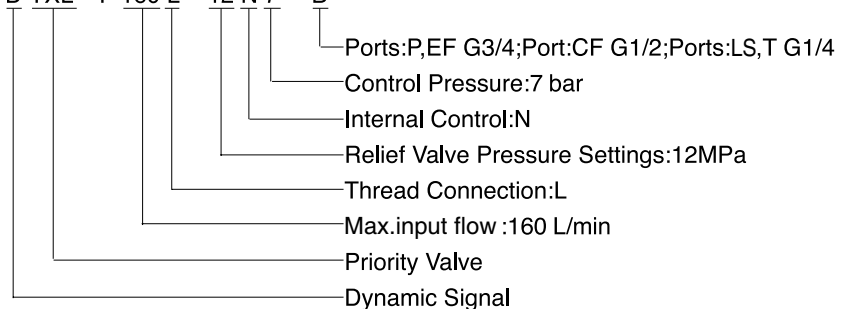
DYXL 系列优先阀, 动态信号, 最大入口流量 160L/min, 安全阀压力12MPa, 控制压力 7 Bar(0.7MPa), 内控, 油口连接尺寸: P、EF油口为G3/4, CF 油口为G1/2, LS、T油口为G1/4。

优先阀订货编号: DYXL-F160L-12N7-B

For example:

Order code

D YXL - F 160 L - 12 N 7 - B





PV型优先阀

PV Type Priority Valves

PV**-40、60、80型 优先阀和负荷传感型转向器配套使用，当系统主油路的油泵供来的液压油通过优先阀时，在系统负载变化或方向盘转速变化的情况下，优先保证转向油路所需流量。

PVF*-40、60、80 型优先阀为板式连接方式，与101S-5(L)(E)或102S-5(L)(E) 转向器组合成一体使用；PVF*-40、60、80优先阀分为静态信号PVFS-40、60、80和动态信号PVFD-40、60、80；

PVL*-40、60、80型 优先阀为管式连接方式，与101(S)-5T(TE) 或102(S)-5T(TE)转向器连接使用；PVL*-40、60、80分为静态信号PVLS-40、60、80和动态信号PVLD-40、60、80。

PV**-40、60、80 型 优先阀中不含LS口油路安全阀。

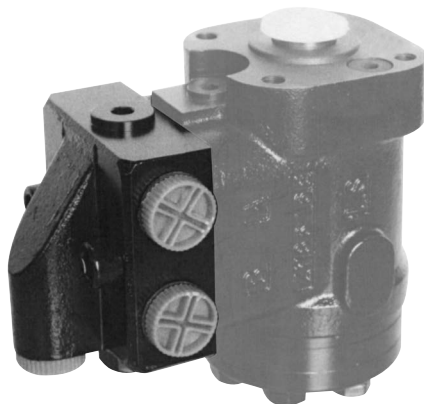
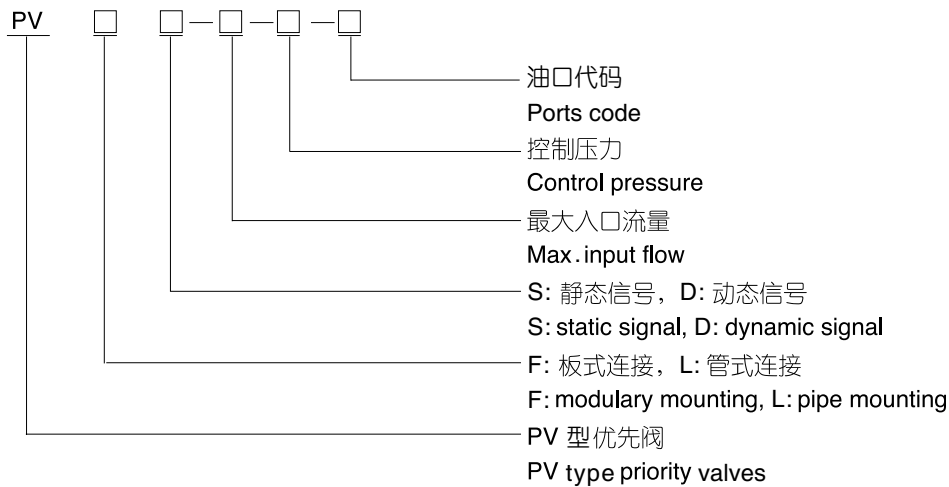
PV**-40,60,80 type priority valve is matched with the load sensing steering unit. When the hydraulic oil flow to the priority valve , and the load or revolution changed ,

PVF*-40,60,80 type priority valves is modular design. matched with the 101S-5(L)(E) or 102(S)-5(L)(E)SCU; PVF*-40,60,80 priority valve has 2 kind signals: PVFS-40,60,80 static signal,PVFD-40,60,80 dynamic signals.

PVL*-40,60,80 type priority valve is pipe design , matched with the 101(S)-5T(TE) or 102(S)-5T(TE) SCU, PVL*-40,60,80 type priority valve has 2 kind signals: PVLS-40,60,80 static signal,PVLD-40,60,80 dynamic signals.

PV**-40,60,80 type priority valve is not interchanged with the LS inlet pressure control relief valve, the relief valve integrated in the SCU.

型号说明 Order Code

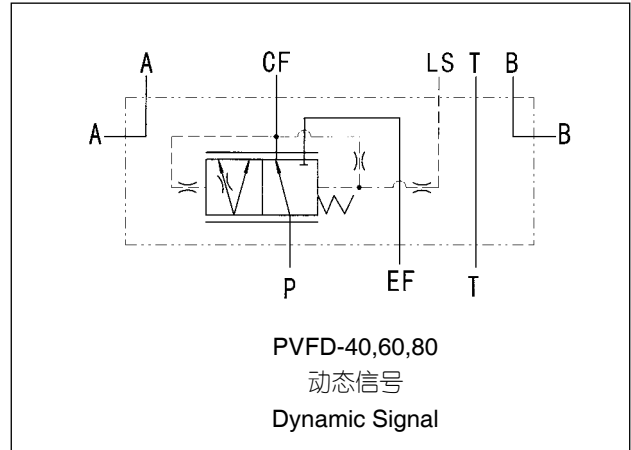
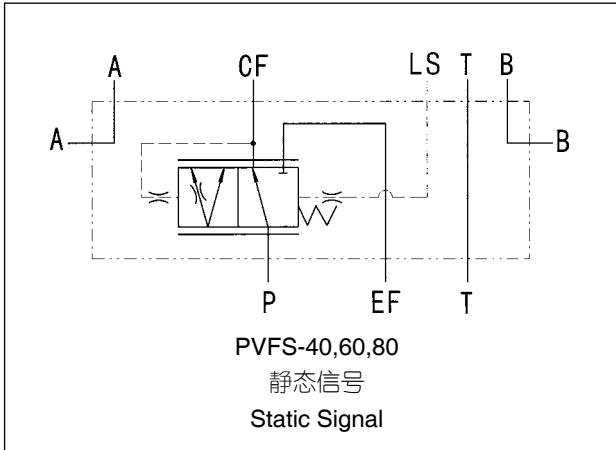




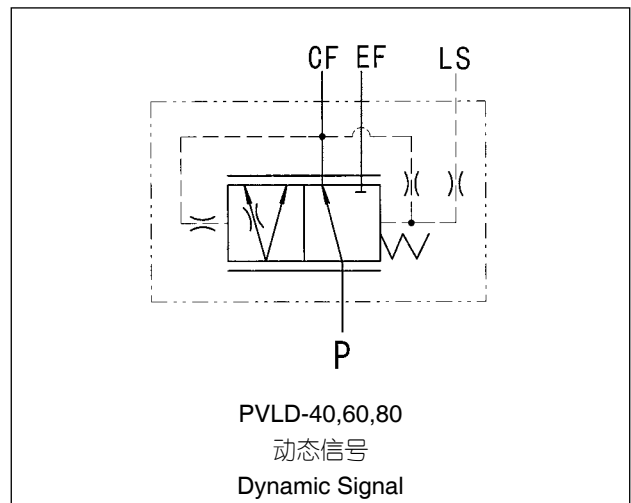
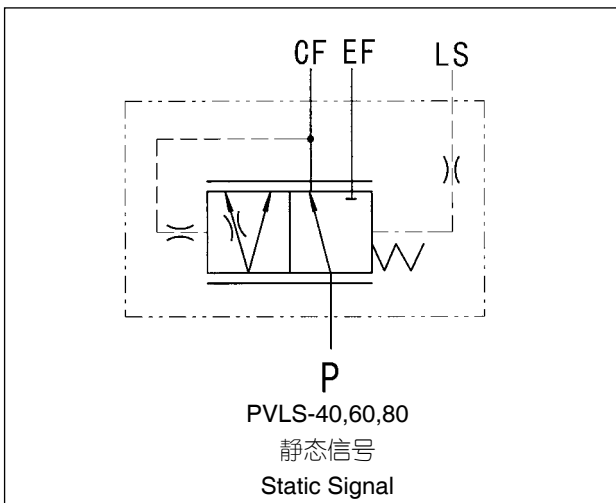
PV型优先阀

PV Type Priority Valves

功能符号 Function Code



板式连接 Modularity Mounting



管式连接 Pipe Mounting

主要技术参数 Main Specification

Parameters	Type PVFS(D) , PVLS(D)
Max. Input Flow (L/min)	40,60,80
Control Pressure (MPa)	0.45, 0.7, 1.05
Max. Pressure in Oil: P, EF (MPa)	20
Max. Pressure in Oil: LS, CF (MPa)	16

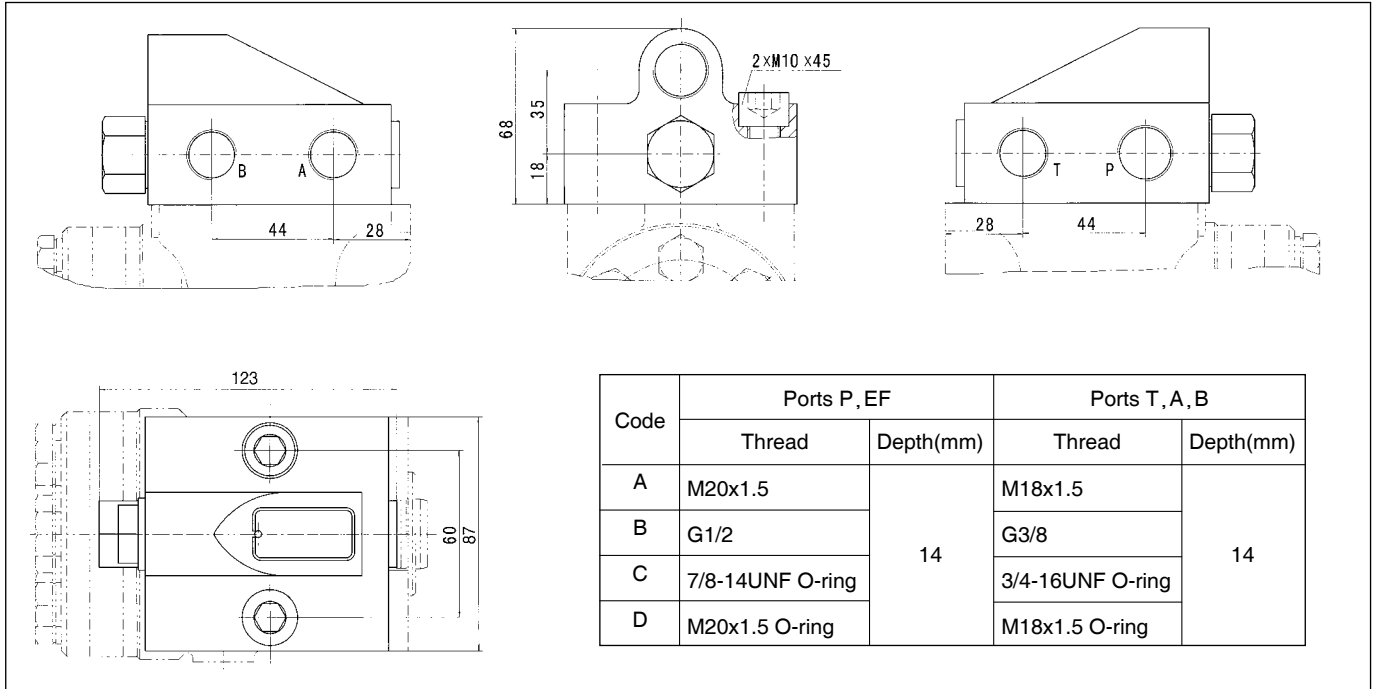


PV型优先阀

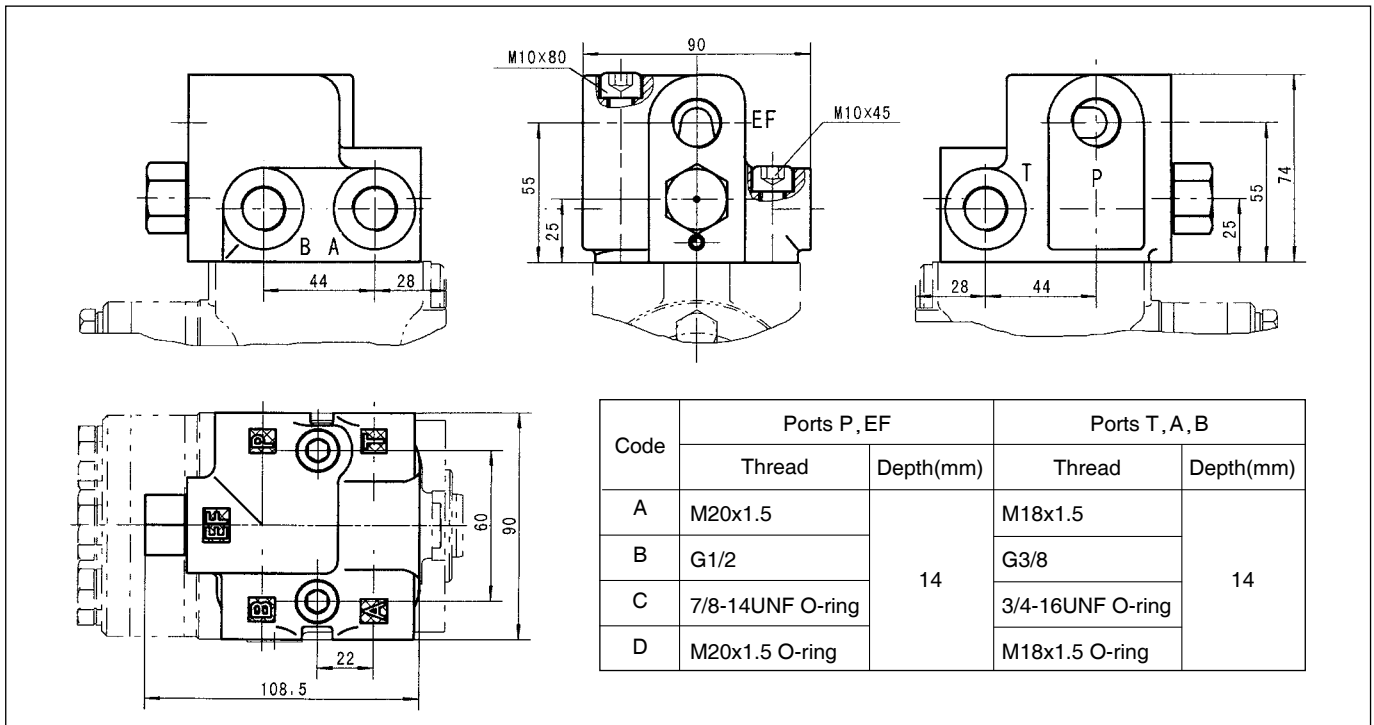
PV Type Priority Valves

连接尺寸 Mounting Data

PVFS(D)-40、60



PVFaS(D)-60



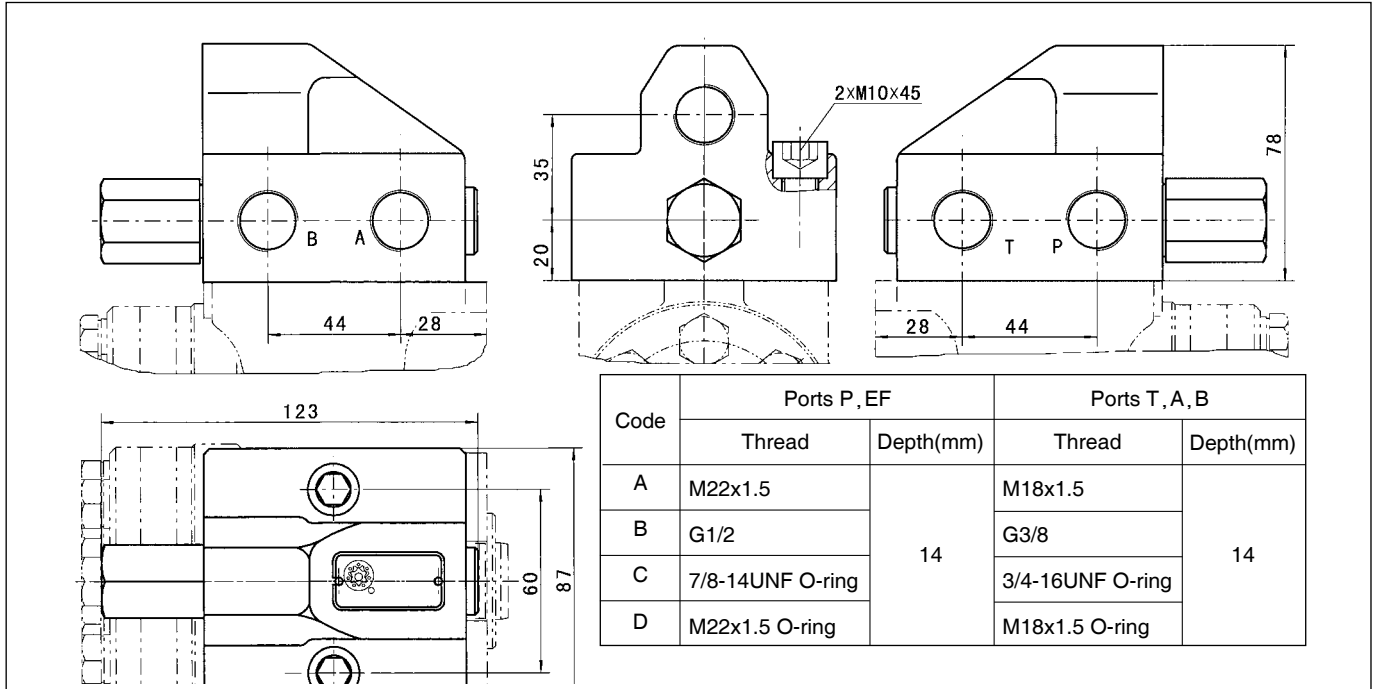


PV型优先阀

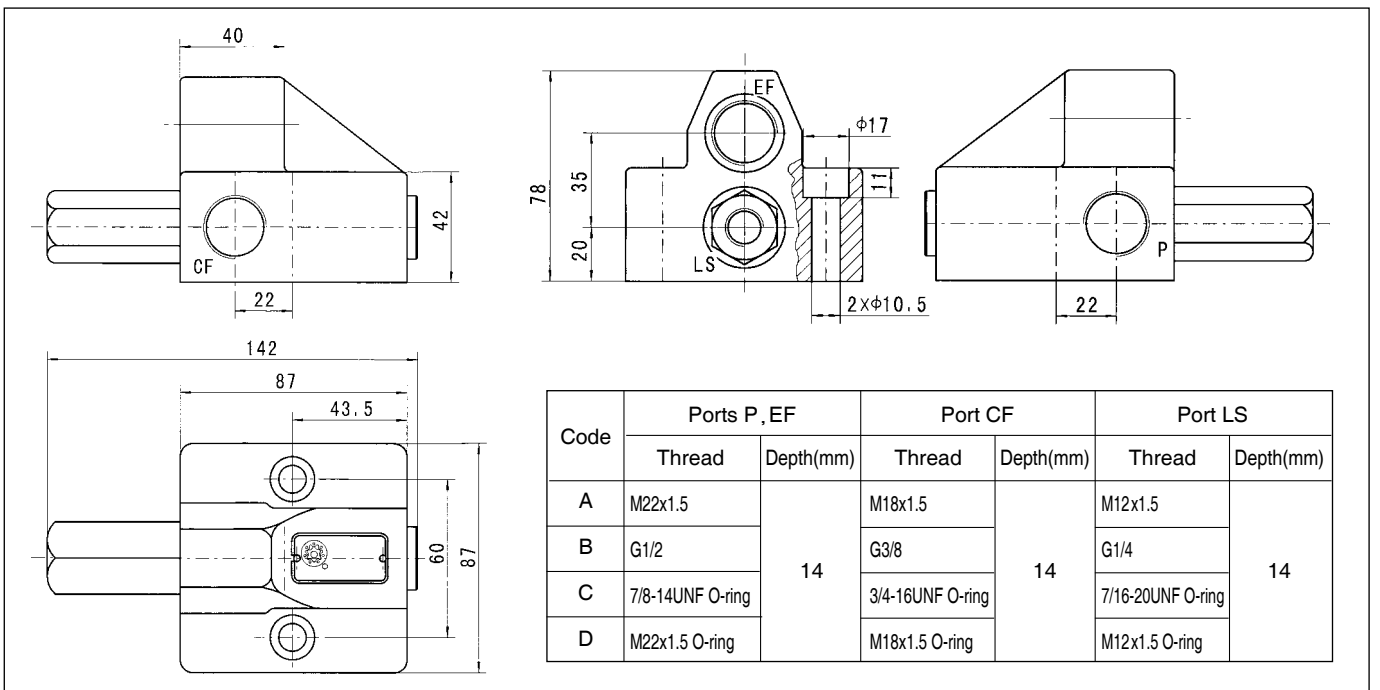
PV Type Priority Valves

连接尺寸 Mounting Data

PVFS(D)-80



PVLS(D)-80





PV型优先阀

PV Type Priority Valves

产品订货编号 Order Code

	Pos.1	Pos.2		Pos.3		Pos.4		Pos.5
PV	*	*	-	**	-	***	-	*

Pos.1 - 连接方式 Mounting

其中: F:板式连接 F:Modulary Mounting
L:管式连接 L:Pipe Mounting

Pos.2 - 信号型式 Signal Model

其中: S:静态信号 S:Static Signal
D:动态信号 D:Dynamic Signal

Pos.3 - 最大入口流量 Max.Input Flow (L/min)

40、60、80

Pos.4 - 控制压力 Control Pressure (MPa)

0.45、0.7、1.05

Pos.5 - 油口代码 Ports Code

A、B、C、D

应用举例:

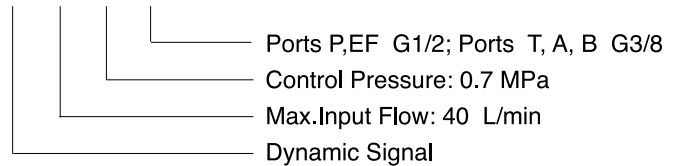
PV 型优先阀, 板式连接, 动态信号, 最大入口流量40 L/min, 控制压力 0.7 MPa, 油口连接尺寸: P、EF油口为G1/2, T、A、B油口为G3/8。

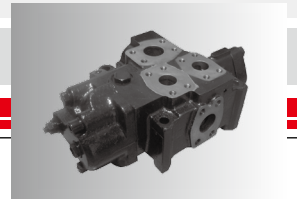
优先阀订货编号为: PVFD-40-0.7-B

For example:

Order code

PVFD - 40 - 0.7 - B





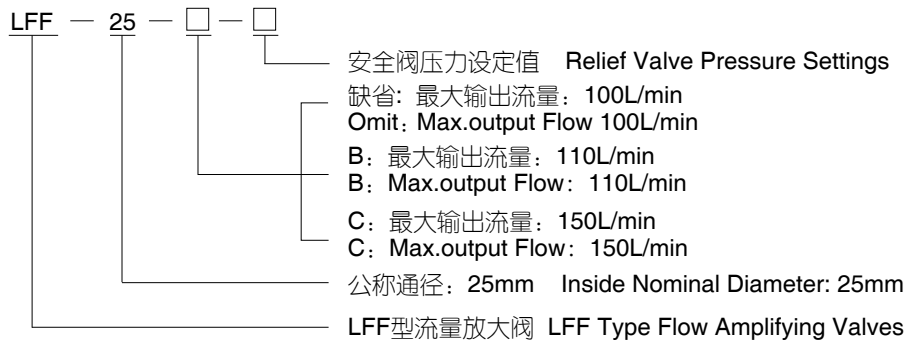
LFF型流量放大阀

LFF Type Flow Amplifying Valves

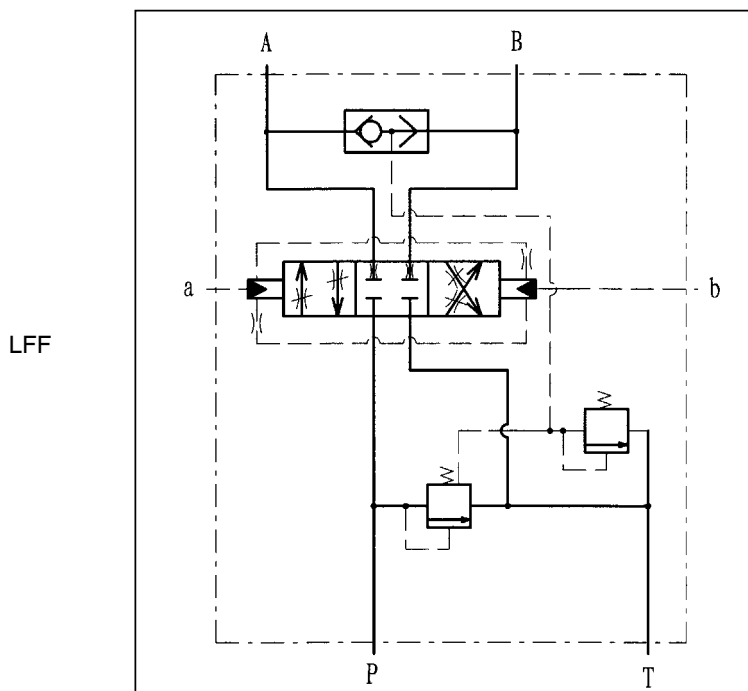
LFF-25型流量放大阀是一种利用低压小流量来控制高压大流量的液动换向阀，和BZZ3型转向器配套组成全液压转向系统。该阀采用了压力补偿装置，向转向油缸供给的流量基本不随负载而改变，保证了转向的平稳，节能效果明显。并具有转向功率大，轻便可靠等优点。适用于大中型轮式车辆和船舶舵机等液压转向系统。

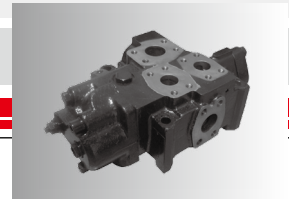
The LFF-25 Flow amplifying valve is a kind of hydraulic directional valve which can use low pressure and small flow to control high pressure and big flow. It can be used with BZZ3 type steering unit as hydraulic steering system. Through adopting pressure compensation device, the flow amplifier supplies oil flow for steering cylinder. The oil flow won't vary with the loading as to ensure steering reliability and energy saving. With the features of high steering power and flexible steering, this type Flow amplifying valve is applicable to steering system in large wheeled vehicles and marine rudder.

型号说明 Order Code



功能符号 Function Code





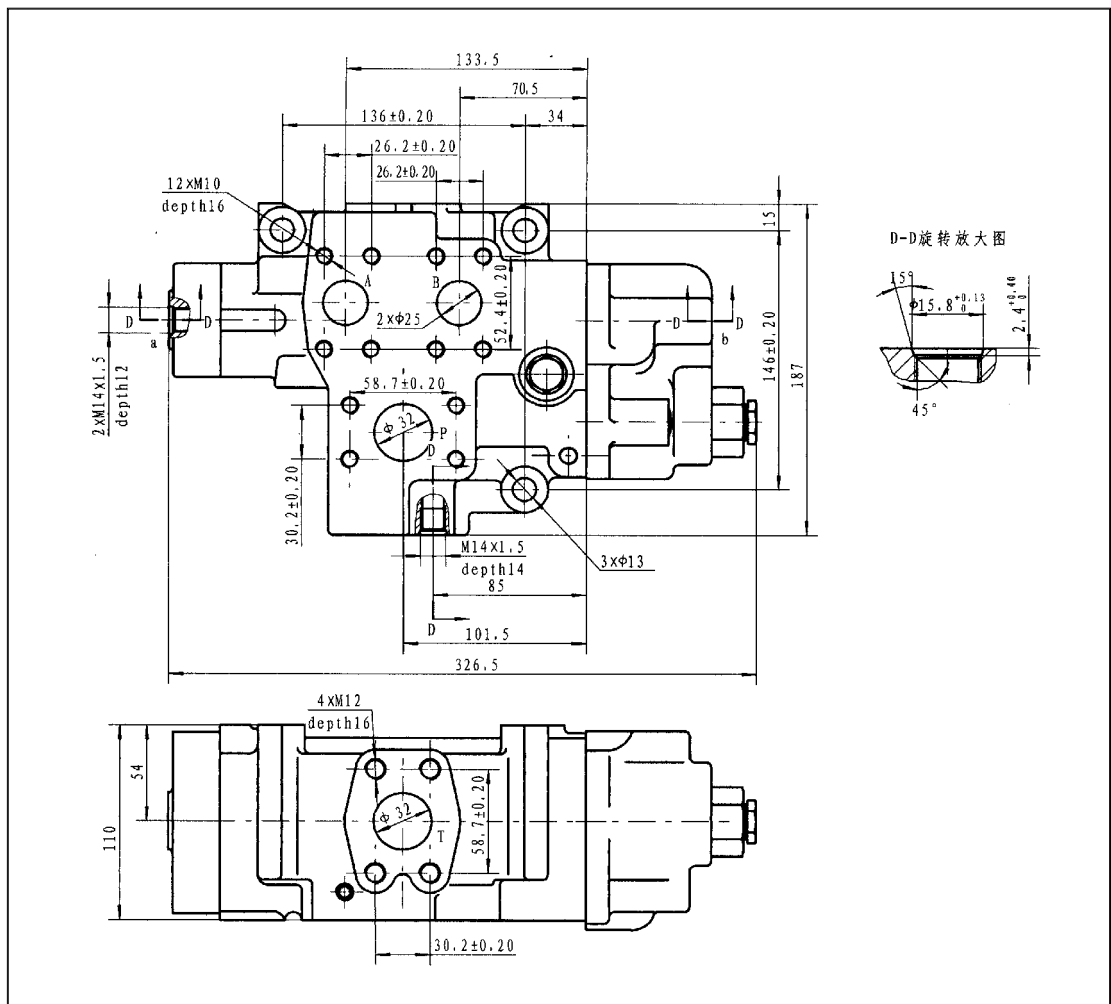
LFF型流量放大阀

LFF Type Flow Amplifying Valves

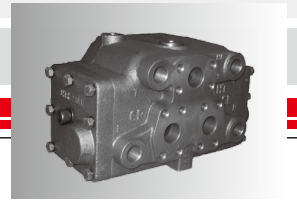
主要技术参数 Main Specification

型号 Type	公称压力 Nominal pressure (MPa)	公称流量 Nominal flow (L/min)	A、B口最大输出流量 Max.output flow (L/min)	安全阀调压范围 Relief valve pressure setting range (MPa)	卸荷压力 Unloading Pressure (MPa)	最大背压 Max.back pressure (MPa)
LFF-25	20	160	100±5	6.3~16	0.5	2
LFF-25B			110±10			
LFF-25C			150±10			

连接尺寸 Mounting Data



LFF



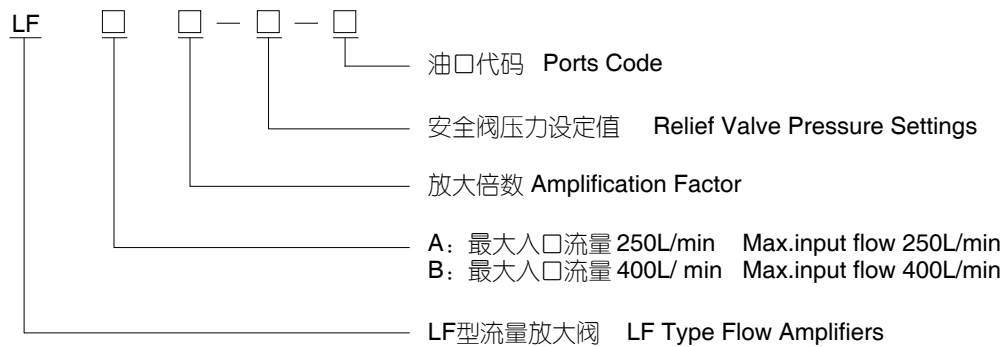
LFA、LFB 型流量放大阀

LFA, LFB Type Flow Amplifiers

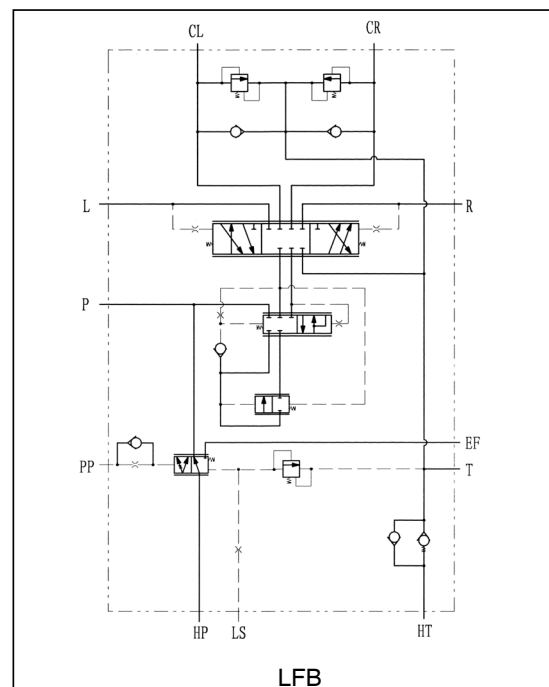
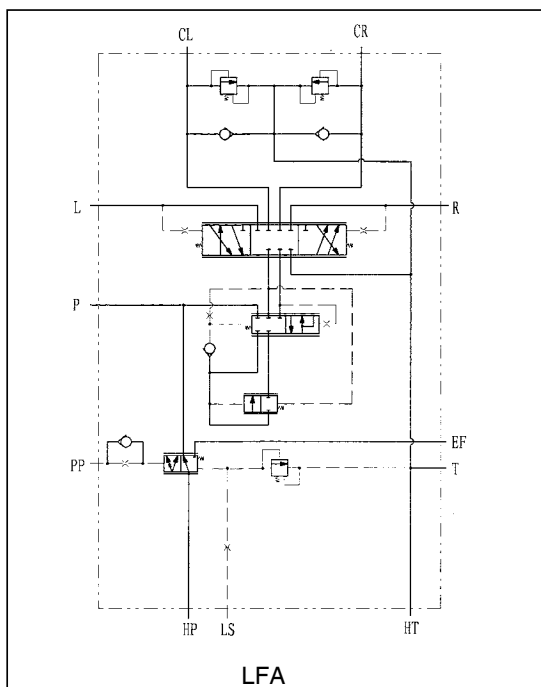
LFA、LFB型流量放大阀主要由优先阀、方向阀、放大阀、缓冲阀、补油阀等组成，和101-5TX型转向器组成负荷传感转向系统。该阀采用了按比例流量放大的特殊结构，以固定的放大倍数对转向器的输出流量进行放大，并由流量放大阀进入转向油缸，放大的流量和方向盘的转速成正比。该转向系统具有转向功率大，操作灵活省力，以及发动机熄火时能实现人力转向等优点。适用于大中型轮式车辆和船舶舵机等液压转向系统。

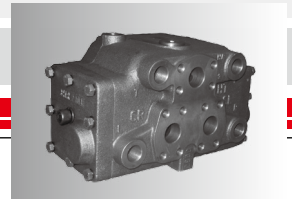
The LFA and LFB flow amplifiers mainly contain a priority valve, a directional valve, an amplification valve, shock valves, suction valves and etc, and they can be used with 101-5TX type steering unit as a loading sensing steering system. Through adopting proportional flow amplification special structure, the flow amplifier amplifies the oil flow from steering unit by a fixed amplification factor to steering cylinder. The amplified flow is proportional to the revolution speed of steering wheel. With the features of high steering power, flexible steering and manual steering in case of engine failure stops, this type steering system are applicable to large wheeled vehicles and marine rudder.

型号说明 Order Code



功能符号 Function Code





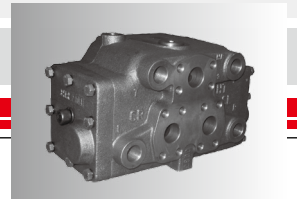
LFA、LFB 型流量放大阀

LFA, LFB Type Flow Amplifiers

主要技术参数 Main Specification

流量放大阀 Flow Amplifiers	放大倍数 Amplification Factor	101-5TX型转向器排量 Displacement of 101-5TX Type				
		160 mL/r	200 mL/r	250 mL/r	315 mL/r	400 mL/r
LFA	5	800	1000	1250	1575	2000
LFA	8	1280	1600	2000	—	—
LFB	5	800	1000	1250	1575	2000
LFB	8	1280	1600	2000	2520	3200

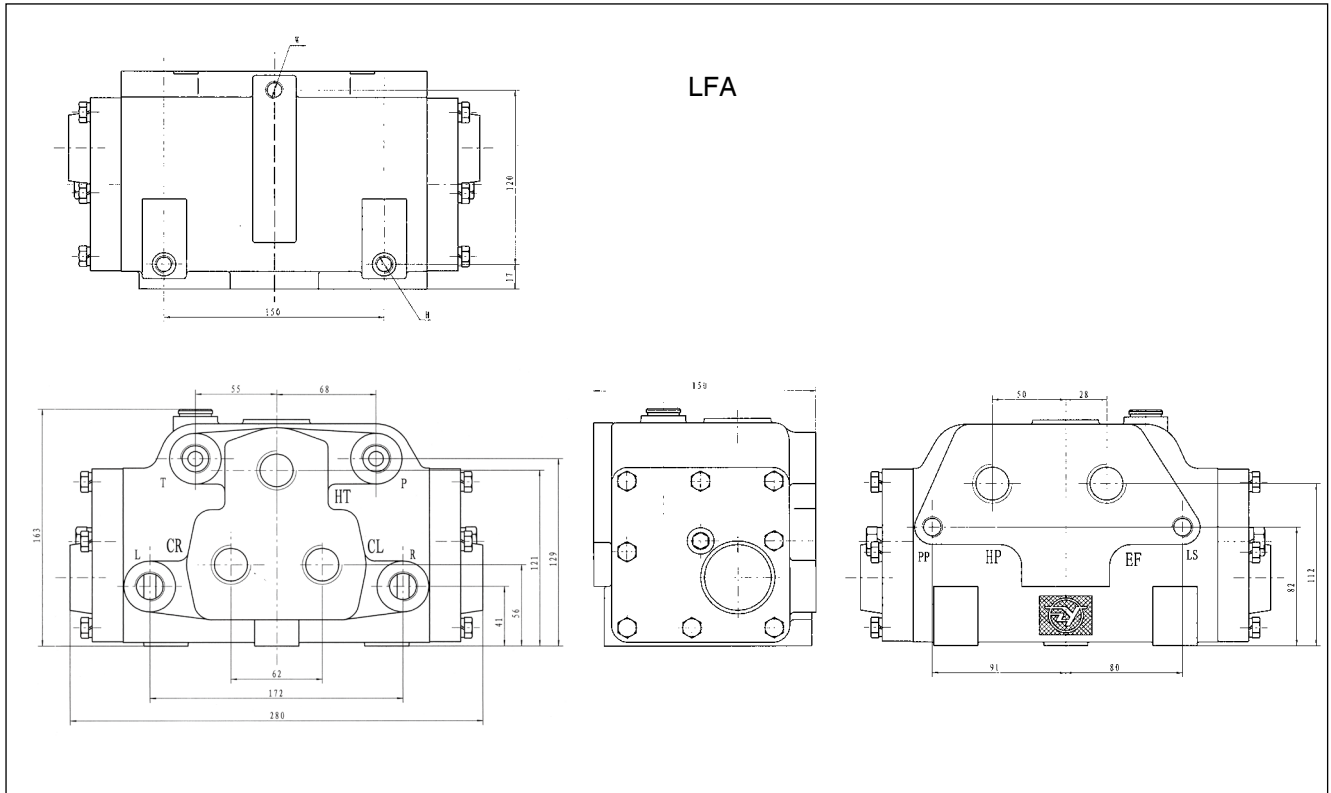
型号 Type	放大倍数 Amplification Factor	最大入口流量 Max. input Flow (L/min)	最大入口压力 Max. input Pressure (MPa)	转向安全阀 调压范围 Relief Valve Pressure Range (MPa)	缓冲阀 调压范围 Shock Valves Pressure Range (MPa)	弹簧控制压力 Control Spring Pressure (MPa)	背压阀开启 压力 Back Valve Opening Pressure (MPa)			
LFA5	5	250	25	10~17.5	16~25	0.7	—			
LFA8	8									
LFB5	5	400	25				10~17.5	16~25	0.7	0.5
LFB8	8									



LFA型流量放大阀

LFA Type Flow Amplifiers

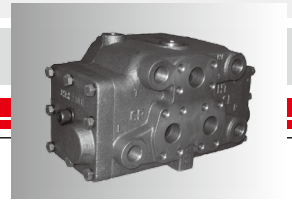
连接尺寸 Mounting Data



螺纹连接 Thread connection

油口螺纹 Ports Threads

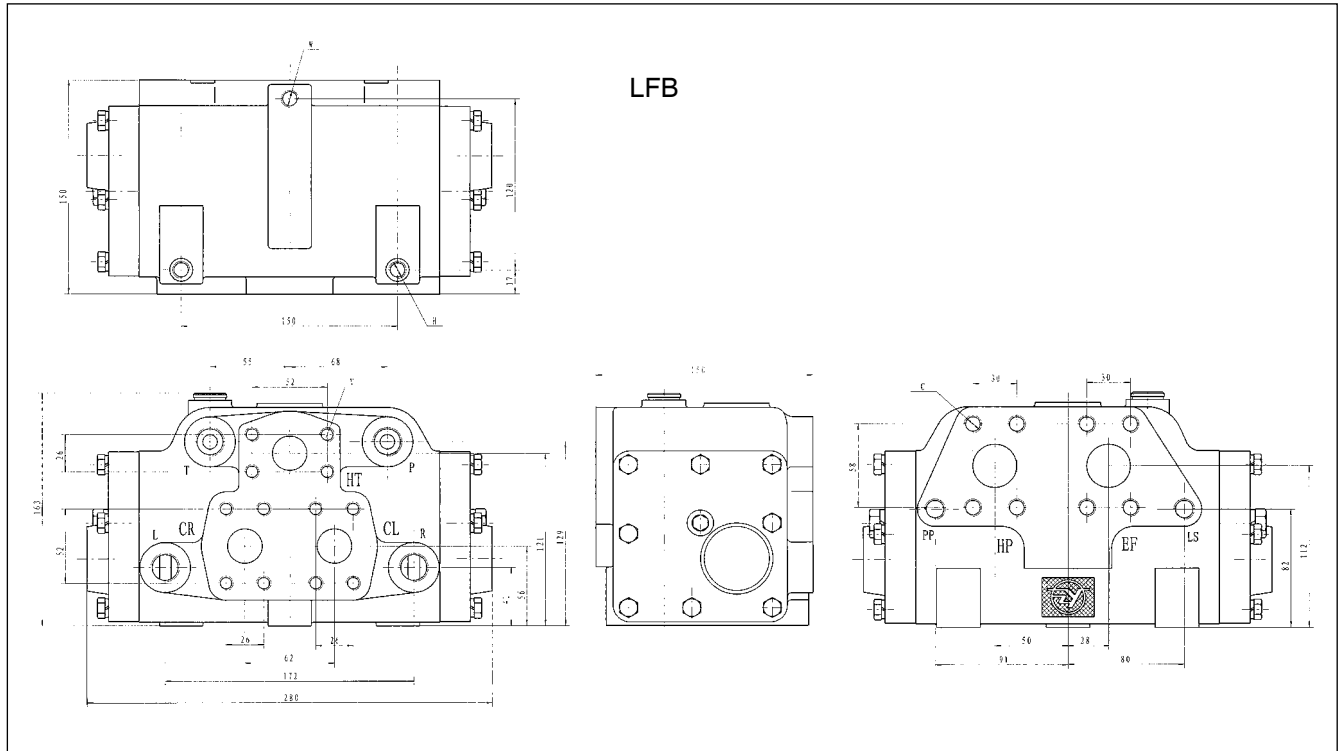
代码 Code	HP、EF油口 Ports HP, EF	HT、CL、CR油口 Ports HT, CL, CR	P、T、L、R、油口 Ports P, T, L, R	PP、LS油口 Ports PP, LS	连接螺纹W Mounting W	连接螺纹H Mounting H
A	M27×2 Depth 20	M27×2 Depth 20	M20×1.5 Depth 20	M12×1.5 Depth 14	M10×1.5 Depth 16	M10×1.5 Depth 20
B	G3/4 Depth 20	G3/4 Depth 20	G1/2 Depth 20	G1/4 Depth 14	M10×1.5 Depth 16	M10×1.5 Depth 20
C	1 1/16-12UN Depth 20	1 1/16-12UN Depth 20	3/4-16UNF Depth 20	7/16-20UNF Depth 14	7/16-14UNC Depth 16	7/16-14UNC Depth 20



LFB型流量放大阀

Model LFB Flow Amplifiers

连接尺寸 Mounting Data



法兰连接 Flange connection

油口螺纹 Ports Threads

代码 Code	HP、EF油口 Ports HP, EF	HT、CL、CR油口 Ports HT, CL, CR	P、T、L、R、油口 Ports P, T, L, R	PP、LS油口 Ports PP, LS	连接螺纹C Mounting C	连接螺纹V Mounting V	连接螺纹W Mounting W	连接螺纹H Mounting H
A	Φ30	Φ24	M20×1.5 Depth 20	M12×1.5 Depth 14	M12 Depth 14	M10 Depth 14	M10×1.5 Depth 16	M10×1.5 Depth 20
B	Φ30	Φ24	G1/2 Depth 20	G1/4 Depth 14	7/16-14UNC Depth 14	3/8-16UNC Depth 14	M10×1.5 Depth 16	M10×1.5 Depth 20
C	Φ30	Φ24	3/4-16UNF Depth 20	7/16-20UNF Depth 14	7/16-14UNC Depth 14	3/8-16UNC Depth 14	7/16-14UNC Depth 16	7/16-14UNC Depth 20



FZ 型转向柱

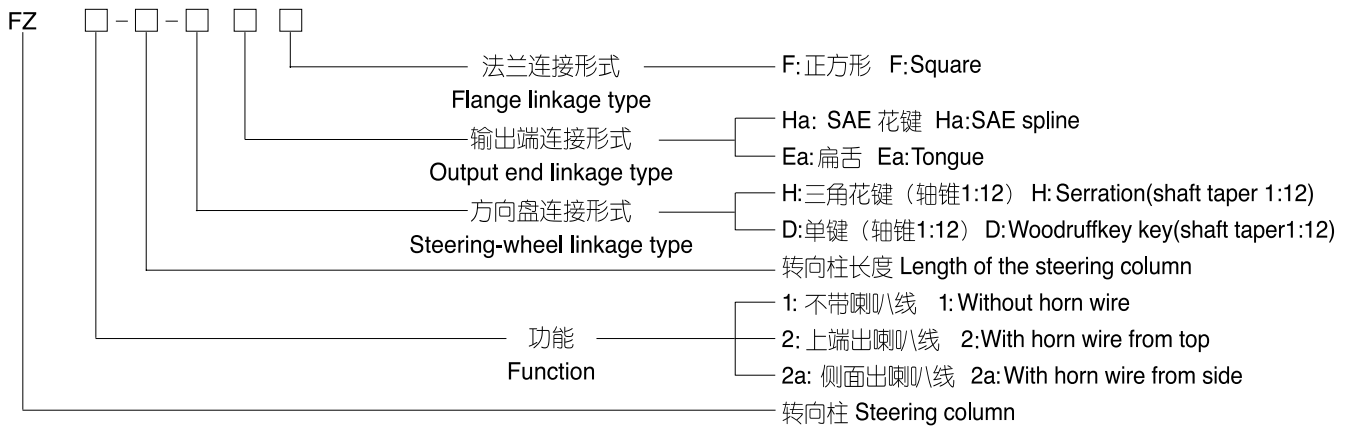
FZ Type Steering Columns

FZ型转向柱与我厂转向器配套使用，现有多种规格供用户选用。

FZ Type steering column suits all type of steering units.

We offer a wide range of specifications which are available to customers.

型号说明 Order Code

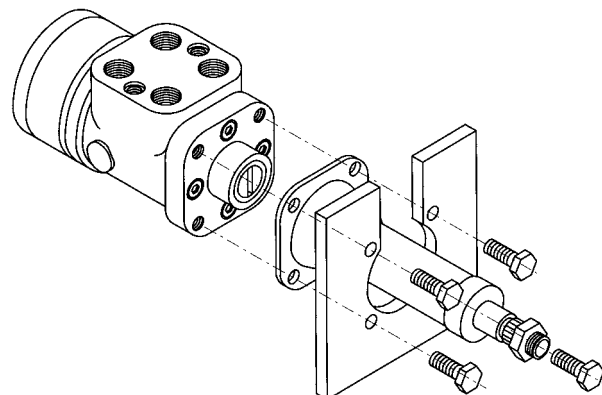


主要技术参数 Main Specification

型号 Type	长度系列 Length series (mm)	允许最大载荷 Max.permissible load (N·m)	
		动载荷 dynamic	静载荷 static
FZ1, FZ2, FZ2a	140 200 225 250 275 300 325 350 375 400 425 450 475 500 550 600 650 700 750 800 850 900 950 1000 1100 1200	80	300

推荐连接示意图 Recommendable Mounting Example

转向柱与转向器之间最好不夹装其它零件。
No other parts be mounted between steering unit and steering column.



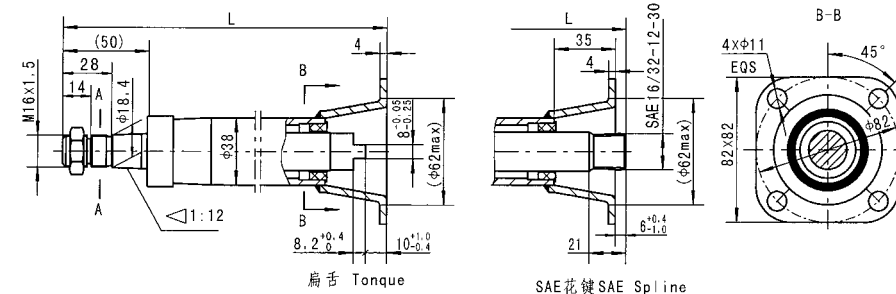


FZ 型转向柱

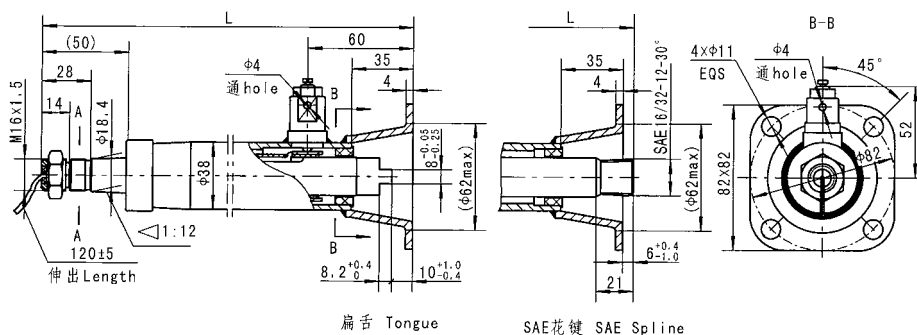
FZ Type Steering Columns

连接尺寸 Mouting Data

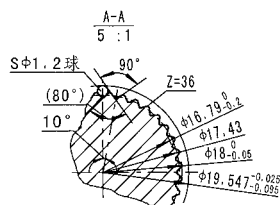
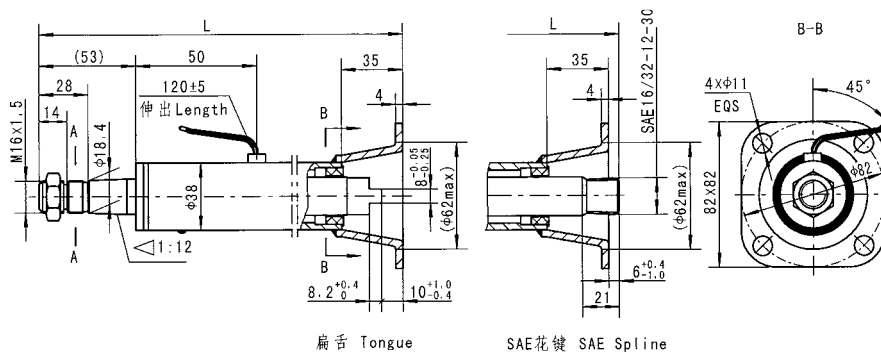
FZ1



FZ2



FZ2a



- 注: 1、样图尺寸为我厂转向柱基本型式的尺寸;
2、如有特殊要求请与厂家联系;
3、如有改动,恕不通知。

- Note: 1、All above is provided from our factory.
2、Please contact us if any require differs from this catalog offerings.
3、Due to improvement of product, please forgive us if we change at any time without notice.