



河北兆升液压机械有限公司

Hebei Zhaosheng Hydraulic Machinery Co.,Ltd

10系列整体式集成阀型全液压转向器

10 Series Hydraulic Steering Control Units



河北 · 宁晋

HEBEI NINGJIN

APPLICATION PRODUCTS

产品应用

公司生产的各类产品可广泛应用于矿山建筑工程机械、起重运输设备、重型冶金机械、石油煤矿机械、船舶甲板机械、机床、轻工、塑料机械、地质钻探设备、农业和林业机械、矿物机械、建筑设备和工作平台、割草机、特殊车辆、渔业卷扬机、工具机、木工和锯木机、橡胶机械等各种机械的液压传动系统中。特别适用于注塑机的螺杆驱动、提升绞盘、卷筒的驱动、各种回转机构的驱动履带和轮子行走机构的驱动。

All kinds of products manufactured by the Company can be widely applied in the hydraulic drive systems of mine construction machinery, cranes and transporting equipment, heavy-type metallurgic machinery, petroel eum and coal mine machinery, vessel deck machinery, machine tools, light industry, plastic machinery, geological drilling equipment, agricultural and forest machinery, mineral equipment, construction equipment and working platform, lawn mowers, special vehicles, fishery winches, machine tools, carpenter machinery and sawing machines, and rubber machinery. These products are especially applicable to screw drives of plastics injection machines, the drives of lifting winches and winding drums, and driving tracks of rotating mechanisms and the drive of wheel traveling mechanisms.



公司简介



河北兆升液压机械有限公司，是专业生产BM系列摆线液压马达、BZZ全液压转向器、FK组合阀块等液压元件的企业。产品广泛用于工程机械、矿山机械、冶金机械、石油机械、农业机械、注塑机械、渔业机械军事工程等领域。

我公司拥有多台进口设备及先进的生产工艺，拥有几十名高素质工程技术人员，并设有自己的研发团队，以雄厚的技术力量来保证产品质量。从员工上岗、原材料进厂、从零部件加工、装配检测直至产品出厂，有一套较为完善的产品质量保证体系。产品以高端的质量、亲民的价格、周到的服务深受国内外用户的青睐，公司并于2013年顺利通过ISO9001:2008质量管理体系认证。

本公司位于“全国第二大农机市场”河北·宁晋·大陆村农机市场。这里人杰地灵，交通便利，有着雄厚的机械生产和加工基础。

公司经营理念 宗旨：诚信至上，客户为尊；

方法：质量第一，服务周到；

目的：互惠双赢，友情长存。

河北兆升机械有限公司愿和您真诚合作！

COMPANY PROFILE

Hebei zhaosheng Hydraulic Machinery Co.,Ltd is specialized in the production of BZZ Hydraulic Steering Control Unit, FK combined valve block and BM series cycloid hydraulic motor, hydraulic components, covering the industry, agriculture, transportation, energy, construction, vehicle, marine, mining, metallurgical, aerospace, and other fields important for national economic development.

Hebei ZhaoSheng has strong capability of machining, metal material molding and overall coordination which provide comprehensive security for hydraulic system production. With years of development, Hebei ZhaoSheng has a team of more than 40 employees. The contingent is a younger, better educated, quality, efficient and vibrant team, three-quarters of which are professional technicians of various specialties. Our well-equipped facilities and excellent quality control throughout all stages of production enables us to guarantee total customer satisfaction. With excellent quality, reasonable price and integrated trade service , our products are greatly appreciated home and abroad.

Beyond that, we have been certified by ISO9001 Quality Management System in 2013.

Hebei Zhaosheng Hydraulic Machinery Co., Ltd. Is located in "the second national agricultural machinery market," Ningjin County Dalu Town agricultural machinery market, which provides us talent employees, convenient transportation access and a strong base of machinery production and processing.

Keeping the core values of "Quality is the eternal subject and the customer is the eternal God", We are stick to the high quality products as live, technologies as development. Adhering to the philosophy of " To persevere and to excel ", we provides with first-class credibility the first-class products and services to our clients.

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 accordance with 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.

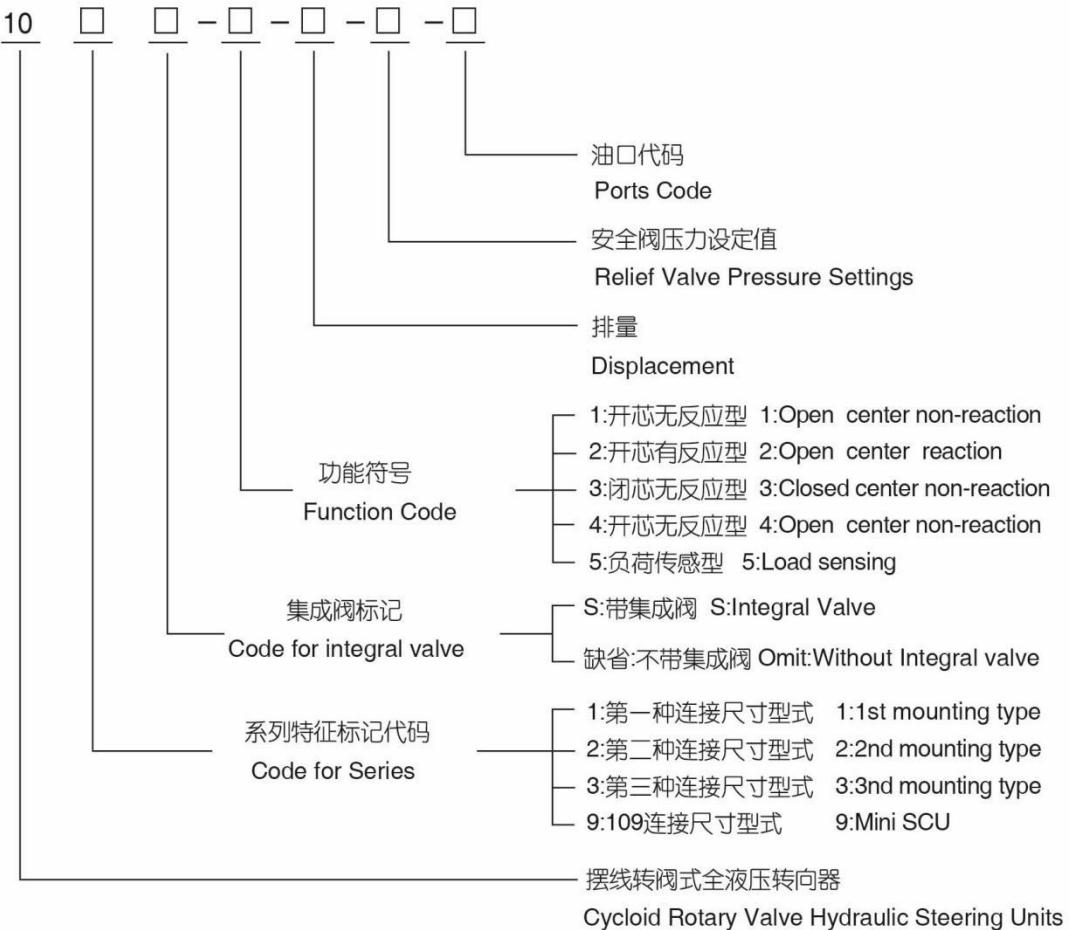
10 series SCU integrate inlet check Valve. Each series may be divided into 2 series according to if the steering unit integrating cartridge Valve or not. SCU without valve and SCU with S. SCU without valve doesn't integrate pressure valve,SCU with S integrates pressure valve. As for open center non reaction 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.



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

型号说明 Order Code



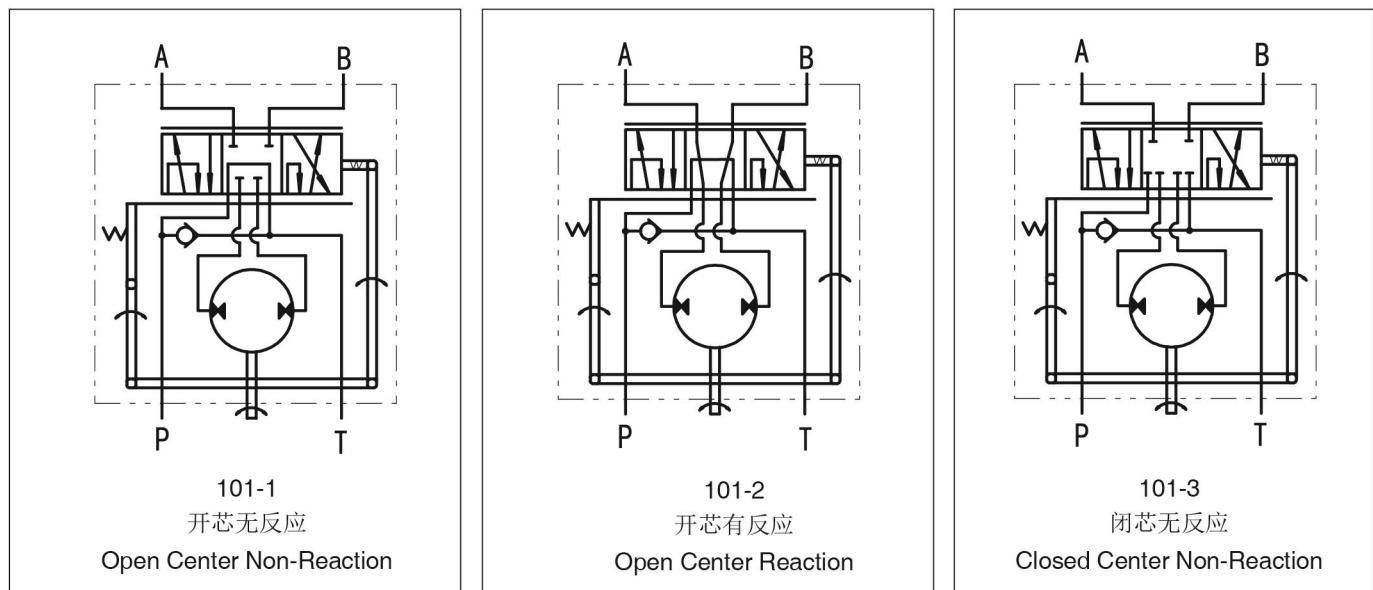
101-1、2、3 系列全液压转向器

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

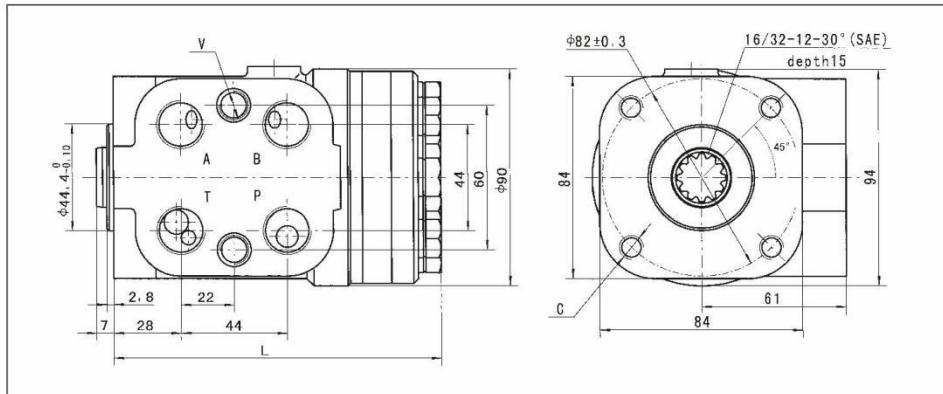
101-1,2,3 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 101-*****										
Function Code	1,2,3									1,3	
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	133	136	139	144	149	155	160	165	175

Note: L is the maximum length dimension of product. This dimension on some products may 2mm or 4mm shorter.

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			
U	G1/2 O-ring			
G	M22×1.5			
Q	M22×1.5 O-ring			
M	3/4-16UNF O-ring			
F	3/8-24 UNF			
I	M10			
N	M10×1.25	M10		

注1：油口P、T、A、B的深度15 mm，连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 15 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

101-1 - 125 - E

Ports:P,T,A,B G1/2; Column
Mounting Thread-C M10
Displacement: 125 mL/r
Open Center Non-Reaction

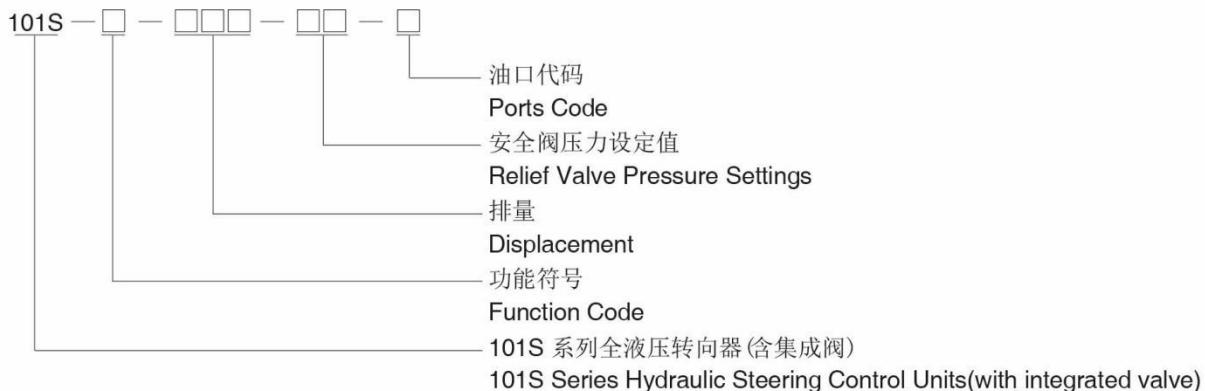
101S-1、2、4 系列全液压转向器

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

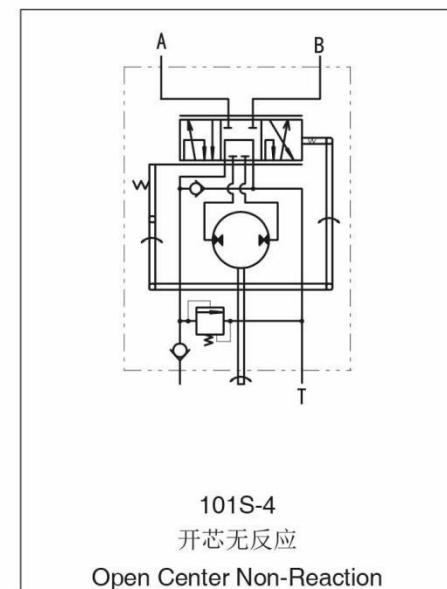
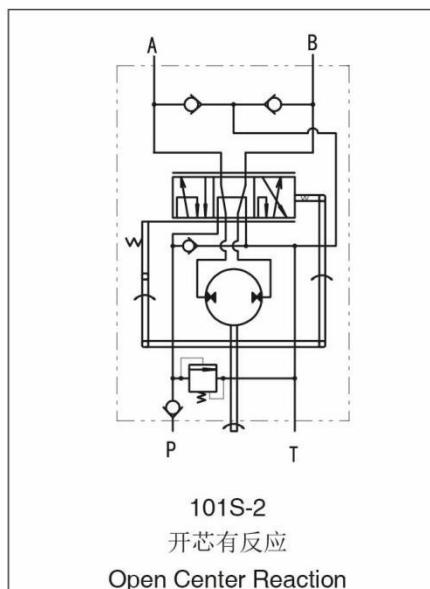
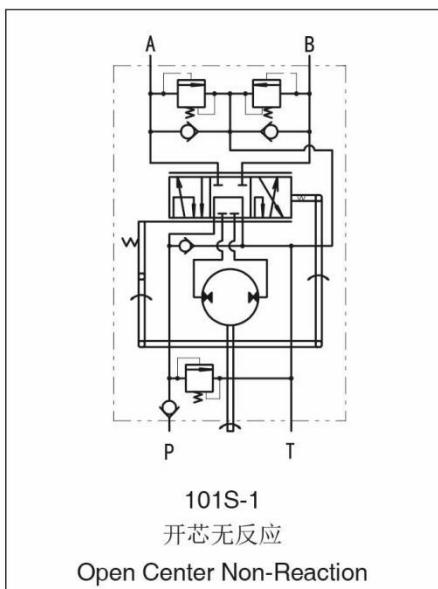
101S-1、2、4系列全液压转向器从结构到原理继承了101系列的全液压转向器的转向功能，101S系列转向器特点是在101系列的基础上将安全阀、缓冲阀、补油阀以及入口单向阀根据不同的要求设置在转向器阀体中，这种连接结构更加紧凑，使用更加方便。

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

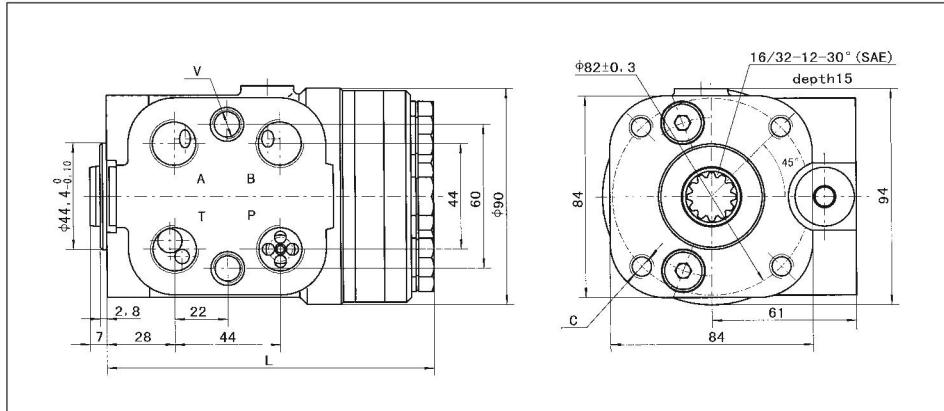
101S-1,2,4 Series Hydraulic Steering Control Units (SCU)

主要技术参数 Main Specification

Parameters	Type 101S-*****										
Function Code	1,2,4							1,4			
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	133	136	139	144	149	155	160	165	175

Note: L is the maximum length dimension of product. This dimension on some products may 2mm or 4mm shorter.

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			
M	3/4-16UNF O-ring		3/8-24 UNF	
F				
I			M10	
N				

注1：油口P、T、A、B的深度15 mm，连接螺纹C、V的深度16 mm。

Note 1: Ports P, T, A, B Depth : 15 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

Ports: P ,T ,A, B G1/2;
Column Mounting Thread C M10
Relief Valve Pressure Settings: 10Mpa ;
Shock Valves Pressure Settings: 16MPa
Displacement: 125 mL/r
Open Center Non-Reaction

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.

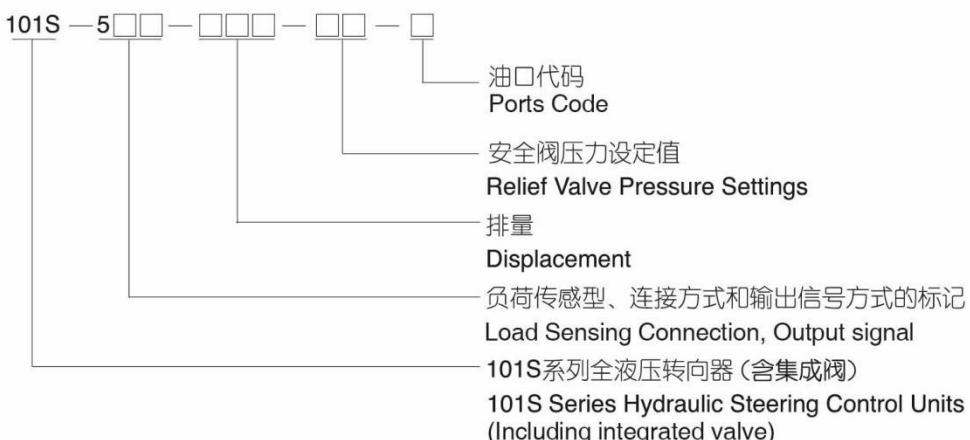
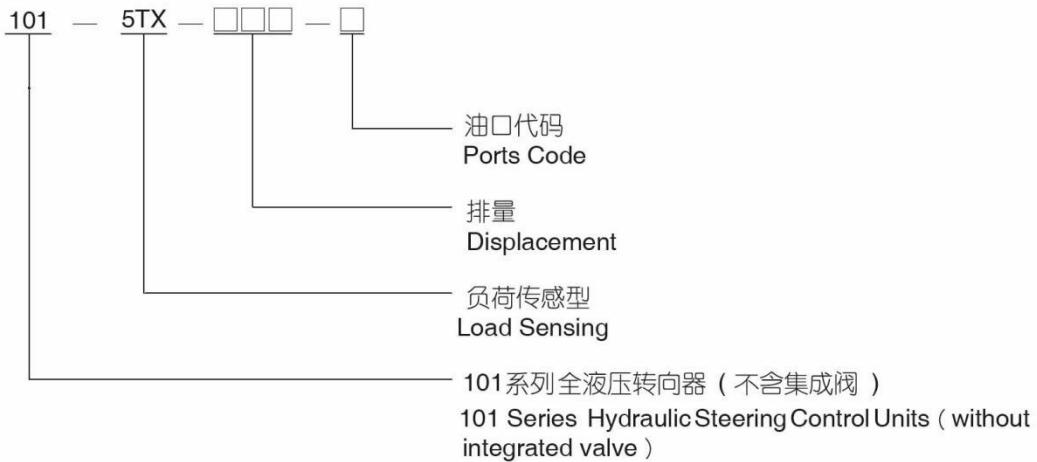
型号说明 Order Code



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)

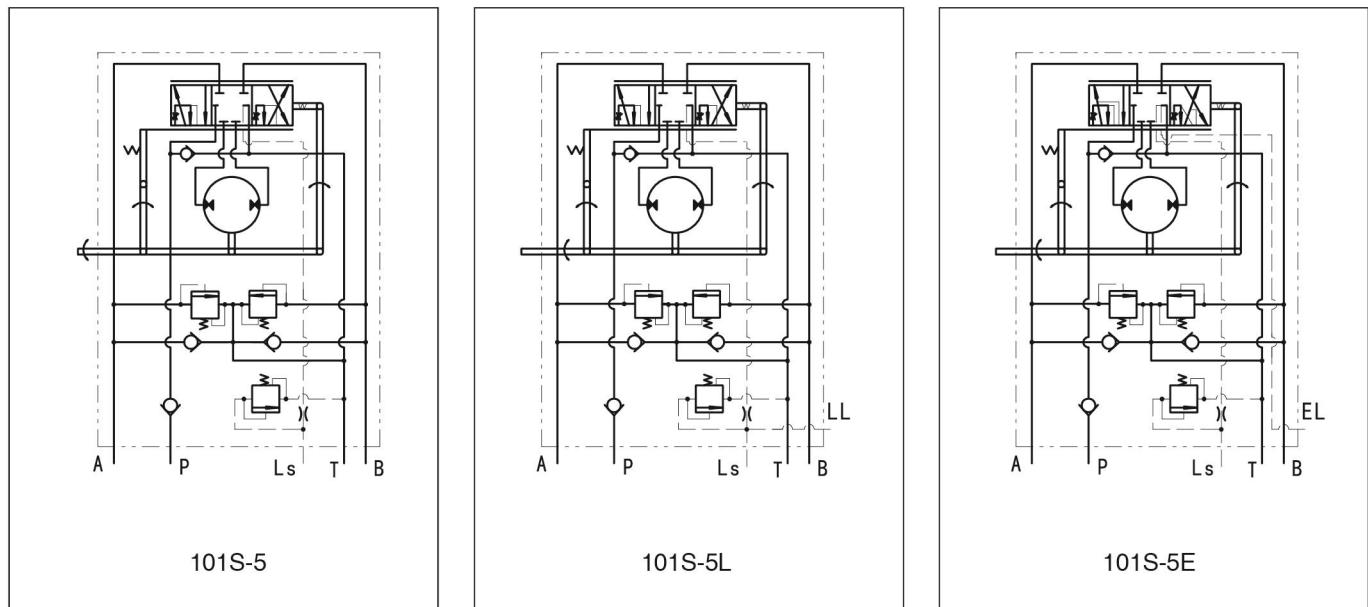
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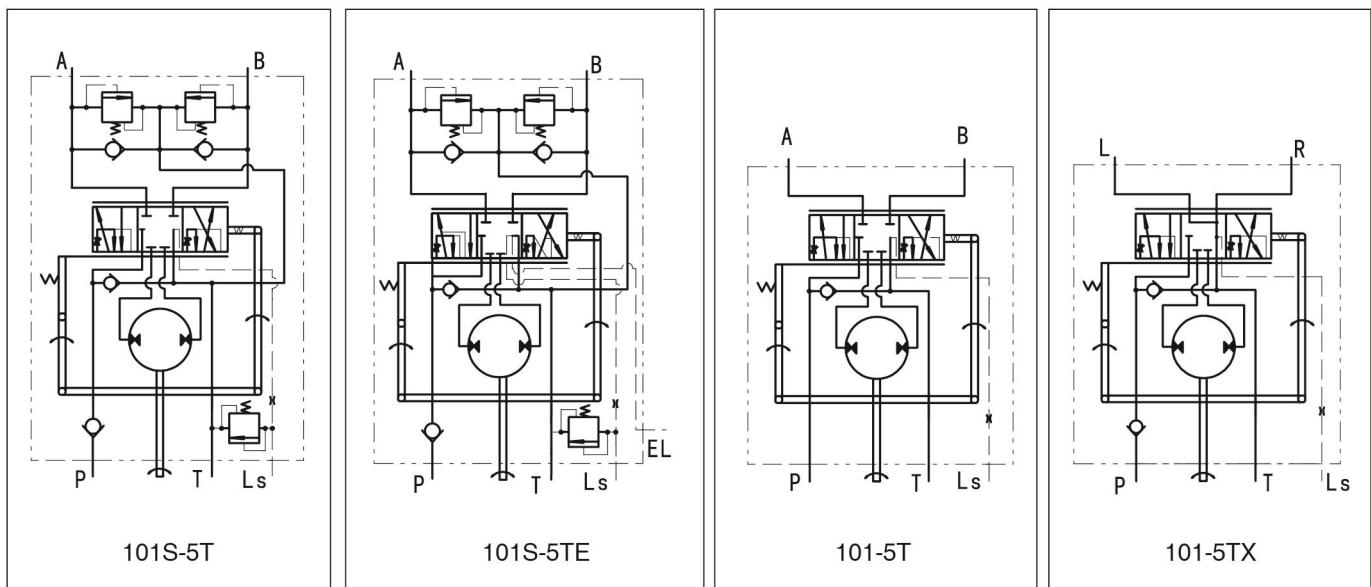
101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

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

功能符号 Function Code



板式连接
Modular 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)

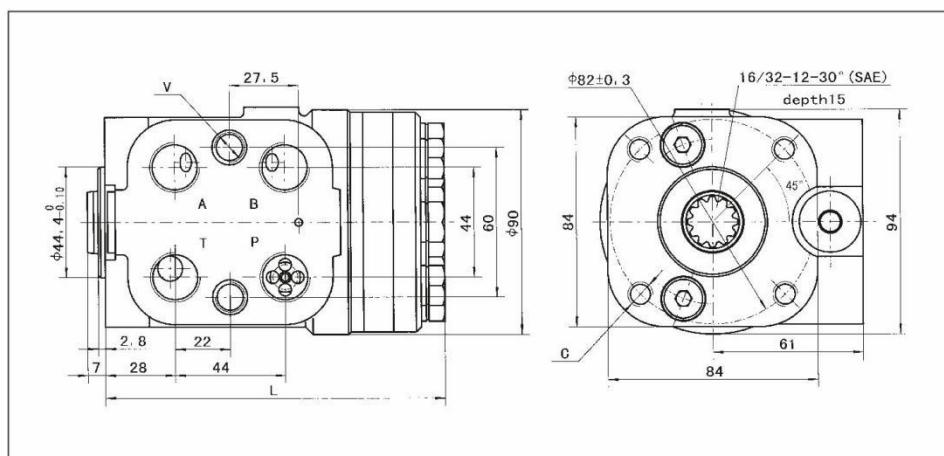
主要技术参数 Main Specification

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	133	136	139	144	149	155	160	165	175

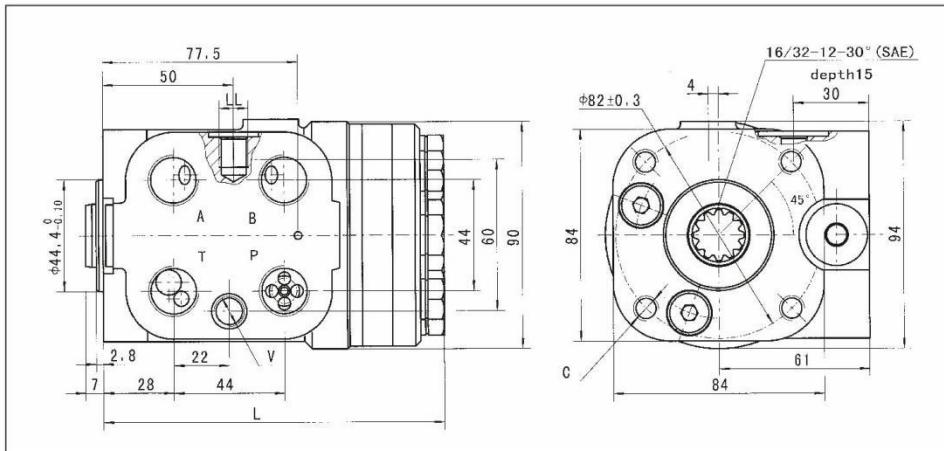
Note: L is the maximum length dimension of product. This dimension on some products may 2mm or 4mm shorter.

连接尺寸 Mounting Data

101S-5



101S-5L

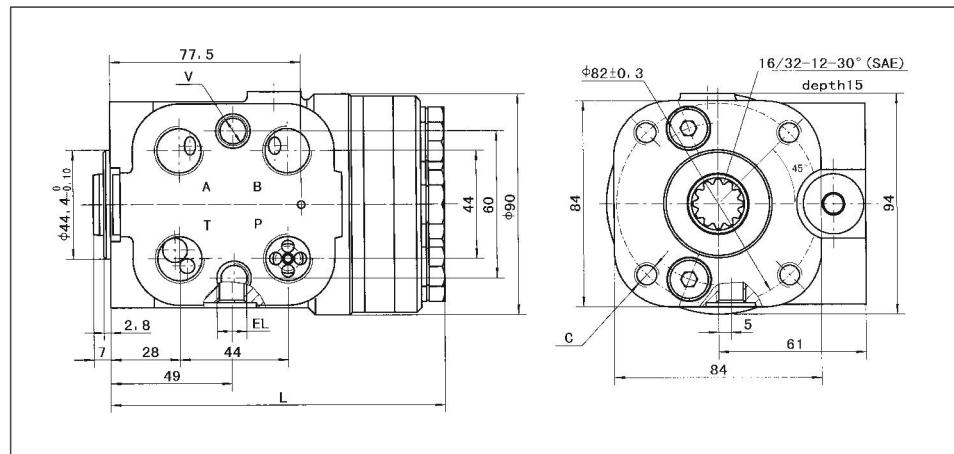


101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

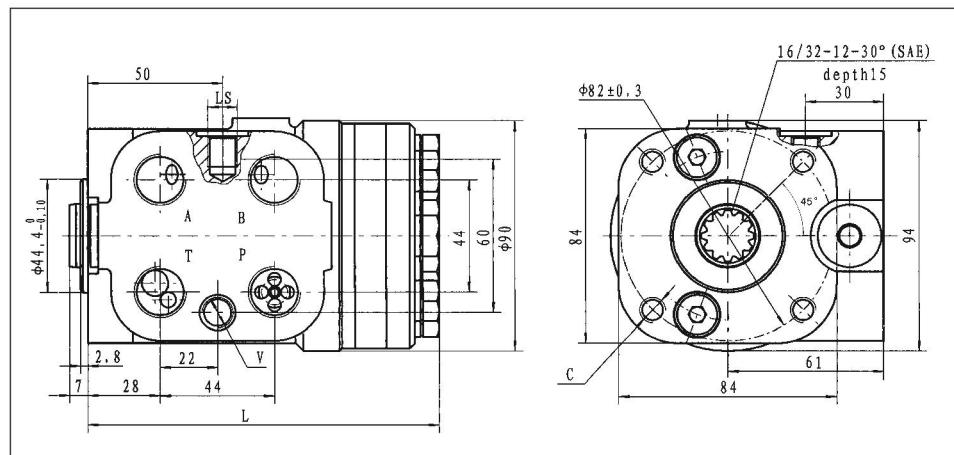
101(S)-5(T)(TE)(L)(E)(TX) Series Hydraulic Steering Control Units (SCU)

连接尺寸 Mounting Data

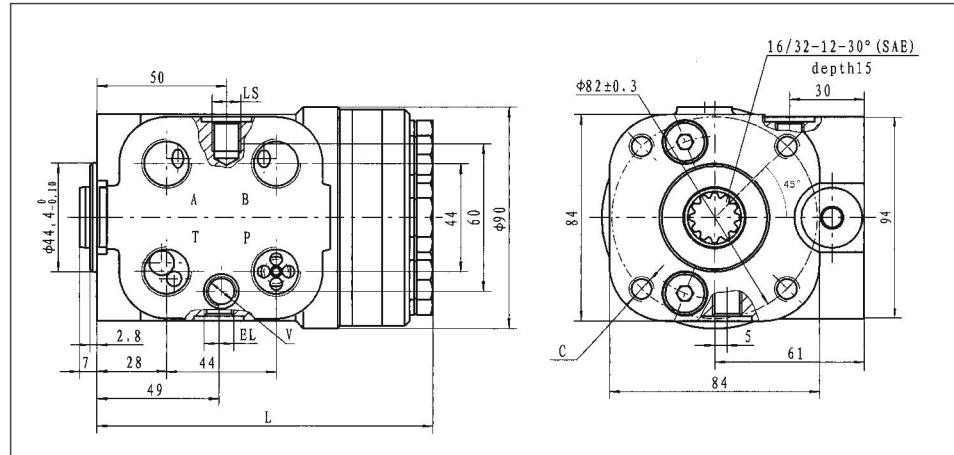
101S-5E



101S-5T



101S-5TE

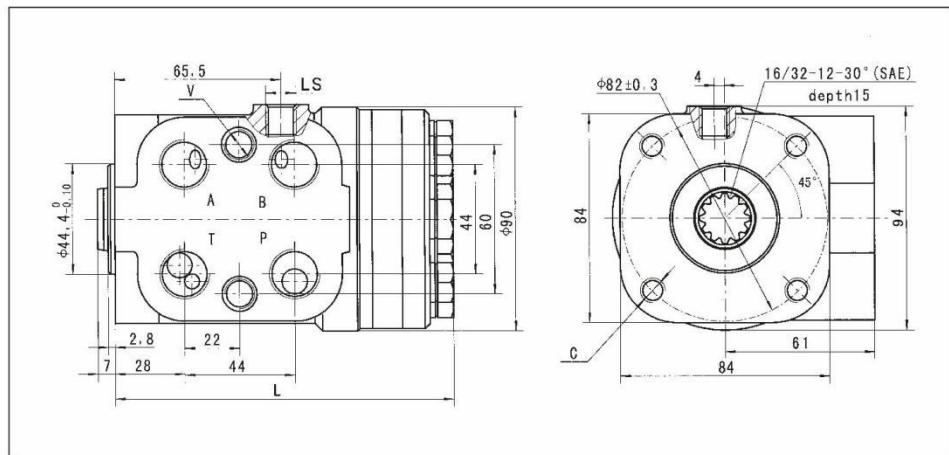


101(S)-5(T)(TE)(L)(E)(TX) 系列全液压转向器

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	M12	7/16-20UNF O-ring	7/16-20UNF O-ring	
F					
I		3/8-16 UNC	3/8-24 UNF		
N		M10	M10		
H	Φ18.5	M10	M10	M12×1.5	

注1：油口P、T、A、B的深度15 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 : 15 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: Modular 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、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

Ports: P, T,A,B G1/2;

Column Mounting Thread C M10;

Port: LS G1/4; Port: EL M10x1

Relief Valve Pressure Settings :10MPa;

Shock Valves Pressure Settings :16MPa

Displacement: 125 mL/r

Pipe Mounting,with an Electrohydraulic Signal

责任诚信铸就卓越

Responsibility Integrity Make Excellence

科技创新打造精品

Scientific And Technological Innovation Create Quality

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