

HY(F)150/HY(F)150K 电液伺服阀

HY(F)150/HY(F)150K electrohydraulic servo valve



动态特性图

Dynamic Characteristic Chart

高频响动态性能实测

Measured Dynamic Performance of High Frequency Response

数据曲线 Data curve			
产品型号 Product model	HY150K	产品名称 Product name	阀 Valve
产品编号 Product no.	082019	额定流量(L/min) Rated flow (L/min)	100
额定电流(mA) Rated current (mA)	40	额定压力(MPa) Rated pressure (MPa)	21
油液温度(°C) Oil temperature (°C)	30		
动态特性曲线 Dynamic Characteristic Curve			
项目名称 Item name	性能参数 Performance parameter	试验结论 Test conclusion	
频率 Hz(-3db) Frequency Hz (-3db)	70	(合格) (Qualified)	
频率 Hz(90°) Frequency Hz (90°)	80		
备注 Remarks			
试验人员 Tested by	试验员 1 Tester 1		

标准频响动态性能实测

Measured Dynamic Performance of Standard Frequency Response

数据曲线 Data curve			
产品型号 Product model	HY150	产品名称 Product name	阀 Valve
产品编号 Product no.	071040	额定流量(L/min) Rated flow (L/min)	100
额定电流(mA) Rated current (mA)	40	额定压力(MPa) Rated pressure (MPa)	21
油液温度(°C) Oil temperature (°C)	40		
动态特性曲线 Dynamic Characteristic Curve	<p>The figure contains two plots. The top plot, titled 'Amplitude Respond', shows Amplitude (dB) on the y-axis (0 to 15) versus Frequency (Hz) on the x-axis (10 to 100). A curve starts at approximately 10 dB at 10 Hz and decreases to about 2 dB at 100 Hz. A red annotation indicates 'Max Amplitude (dB) = 10.4146' and 'Frequency (-3dB) = 50'. The bottom plot, titled 'Frequency Respond', shows Phase (degree) on the y-axis (0 to 120) versus Frequency (Hz) on the x-axis (10 to 100). The curve starts at 0 degrees at 10 Hz and increases to about 120 degrees at 100 Hz. A red annotation indicates 'Frequency (90deg) = 60'.</p>		
项目名称 Item name	性能参数 Performance parameter	试验结论 Test conclusion	
频率 Hz(-3db) Frequency Hz (-3db)	50	(合格) (Qualified)	
频率 Hz(90°) Frequency Hz (90°)	60		
备注 Remarks			
试验人员 Tested by	试验员 1 Tester 1		

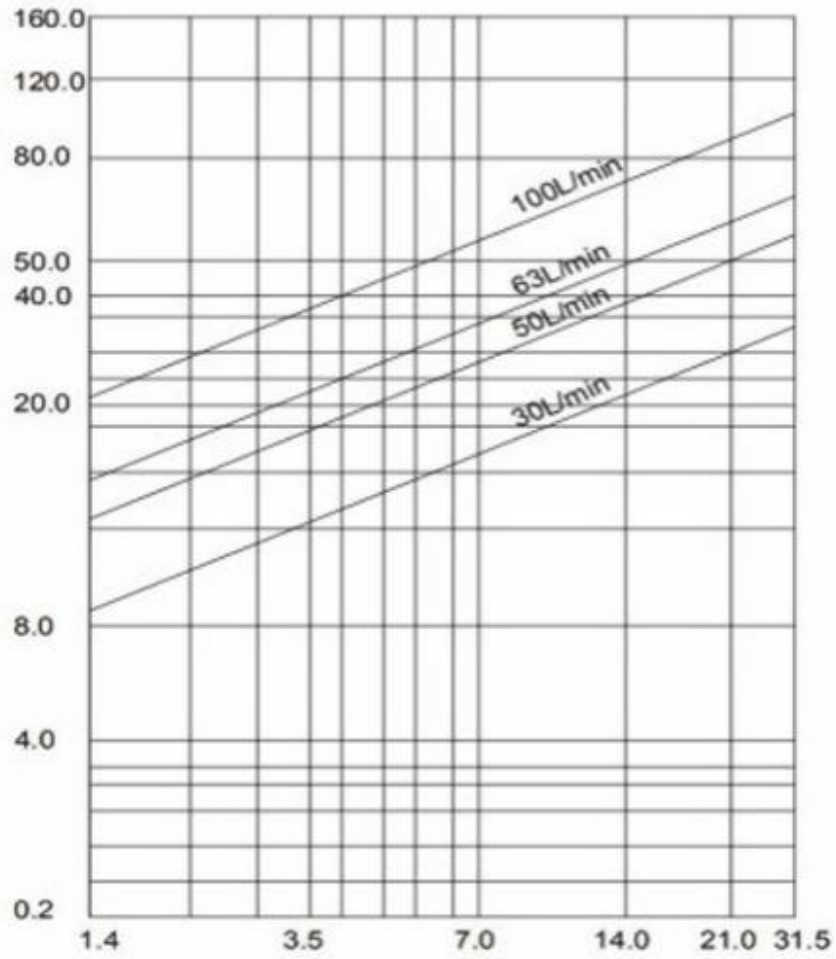
阀的负载流量图

Load Flow Diagram of Valve

阀口全开（100%给定指令信号）时阀的流量与阀压降的关系


Relationship between Valve Flow and Valve Pressure Drop with Fully-open Valve Port (100% Given Command Signal)

负载流量 (L/min)
Load flow (L/min)



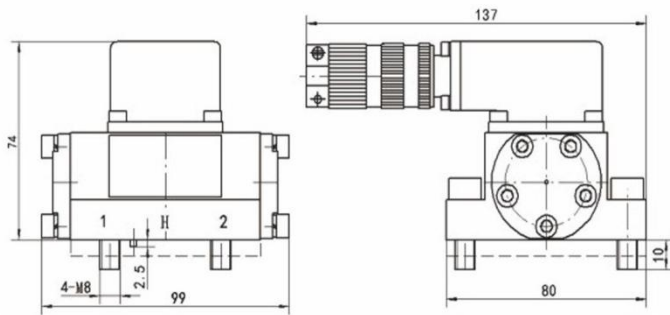
阀压降 ΔP (MPa)

Valve pressure drop ΔP (MPa)

Table of Connection Definitions of Electrical Connector 电连接器连接定义表	线圈连接方式 Coil connection mode	单线圈、串联、并联、差动 Single-coil, series connection, parallel connection and differential
	插座针号 Socket pin number	
	外引出导线颜色 Color of external lead wire	绿 红 黄 蓝 Green Red Yellow Blue
	控制电流的极性 Polarity of control current	单线圈: 2+, 1-或 4+, 3-; 串联线圈: 1 与 4 相连, 2+, 3- Single coil: 2+, 1-, or 4+, 3-; Series coil: 1 and 4 connected, 2+, 3- 并联线圈: 1 与 3、2 与 4 相连, (2, 4) +, (1, 3) - Parallel coil: 1 and 3 connected, 2 and 4 connected, (2, 4) +, (1, 3) - 差动联接: 当 1+时, 1 到 2 < 1 到 3; 当 1-时, 2 到 1 > 3 到 1; 用于串联时, 2+, 3- Differential connection: For 1+, 1 to 2 < 1 to 3; For 1-, 2 to 1 > 3 to 1; For series connection, 2+, 3-

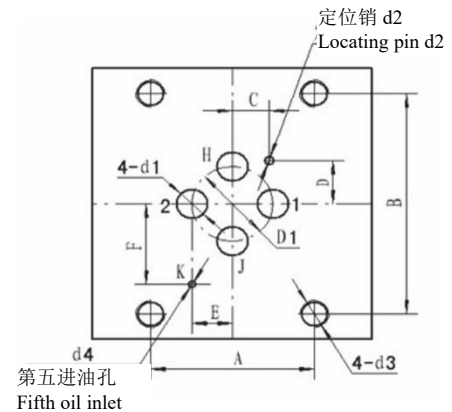
外形及安装尺寸图

Outline and Installation Dimension Drawing



油口连接面尺寸

Oil Port Connection Surface Dimensions



代号 Designation	D1	d1	d2	d3	d4	A	B	C	D	E	F
N	Φ22	Φ8.5	Φ2.5	M8	Φ2	44.5	65	9.9	12.7	11	23.8

- 进油腔 J, 回油腔 H, 负载腔 1、2, 第五进油孔可按需提供
Oil supply port J, oil return port H, load ports 1 & 2, and the fifth oil inlet may be provided as required.
- A、B、C、D、D1、E、F 理论值尺寸公差均为±0.1mm
Theoretical dimension tolerances of A, B, C, D, D1, E and F are all ±0.1mm.
- 定位销可根据用户需要选配
Locating pin is optional depending on user demand

电液伺服阀配件及附件清单

List of Parts and Accessories of Electrohydraulic Servo Valve

必要配件 Necessary parts						可选附件 Optional accessories			
型号 Model	J、H、1、2口 密封圈规格 (数量 4 件) Specification of sealing ring for ports J, H, 1 and 2 (quantity: 4 pieces)	先导级独立 进油口密封 圈规格 (数 量 1 件) Specification of sealing ring for pilot-stage independent oil inlet (quantity: 1 piece)	电连接器 插头(数量 1 件) Electrical connector plug (quantity: 1 piece)	护板 Guard plate (数量 1 件) (quantity: 1 piece)	安装螺钉规 格 Specification of mounting screw (数量 4 件) (quantity: 4 pieces)	冲洗板 Flushing plate	转接板 Adapter board	屏蔽线 Shielded wire	SVC 伺服阀控 制器 SVC servo valve controller
HY150	Φ10.3x2	Φ6x2	Q14	HY150-103 护板 HY150-103 guard plate	GB70 M8x25	●	●	●	●

技术参数

Technical Parameters

产品型号 Product model	HY150		HY150K	
供油压力 Oil supply pressure	2-31.5		2-31.5	
额定流量 Qn (L/min) Rated flow Qn (L/min)	ρPN=21MPa	30、50、63、100	30、50、63、100	
	ρPN=7MPa	17、29、36、58	17、29、36、58	
额定流量容差 (%) Rated flow tolerance (%)	±10		±10	
额定电流 In (mA) Rated current In (mA)	15	40	15	40
线圈电阻 (Ω) Coil resistance (Ω)	200	80	200	80
滞环 (%) Hysteresis (%)	≤4		≤2	
分辨率 (%) Resolution (%)	≤1		≤0.5	
非线性度 (%) Nonlinearity (%)	≤7.5		≤3	
不对称度 (%) Asymmetry (%)	≤10		≤10	
零偏 (%) Zero bias (%)	≤±2		≤±2	

重叠 (%) Lap (%)		$\leq \pm 2.5$	$\leq \pm 2.5$
内漏(L/min) Internal leakage (L/min)		$\leq 1.9 \sim 3.0$	$\leq 2.4 \sim 3.5$
压力增益 (%Ps/1%ln) Pressure gain (%Ps/1%ln)		> 30	> 50
温度零漂 ($\rho T=40^{\circ}\text{C}$) (%) Temperature zero drift ($\rho T=40^{\circ}\text{C}$) (%)		$\leq \pm 2$	$\leq \pm 2$
供油压力零漂(80%~100%) P_N (%) Oil supply pressure zero drift (80%~100%) P_N (%)		$\leq \pm 2$	$\leq \pm 2$
回油压力零漂(0~20%) P_N (%) Return pressure zero drift (0~20%) P_N (%)		$\leq \pm 2$	$\leq \pm 2$
加速度零漂 $\Delta a=10g$ (%) Acceleration zero drift $\Delta a=10g$ (%)		$\leq \pm 2$	$\leq \pm 2$
频率特性 Frequency characteristic	幅频宽 (-3dB) (Hz) Amplitude bandwidth (-3dB) (Hz)	$\geq 50(30 \sim 63\text{L/min})$ $\geq 40(100\text{L/min})$	$\geq 80(30 \sim 63\text{L/min})$ $\geq 60(100\text{L/min})$
	相频宽(-90°)(Hz) Phase bandwidth (-90°) (Hz)	$\geq 50(30 \sim 63\text{L/min})$ $\geq 40(100\text{L/min})$	$\geq 80(30 \sim 63\text{L/min})$ $\geq 60(100\text{L/min})$
温度范围 (°C) Temperature range (°C)		-25-105	-25-105
质量 (Kg) Mass (kg)		≤ 1.6	≤ 1.6

测试油温 $40 \pm 6^{\circ}\text{C}$; 测试供油压力 21MPa

Oil temperature under test: $40 \pm 6^{\circ}\text{C}$; Oil supply pressure under test: 21MPa