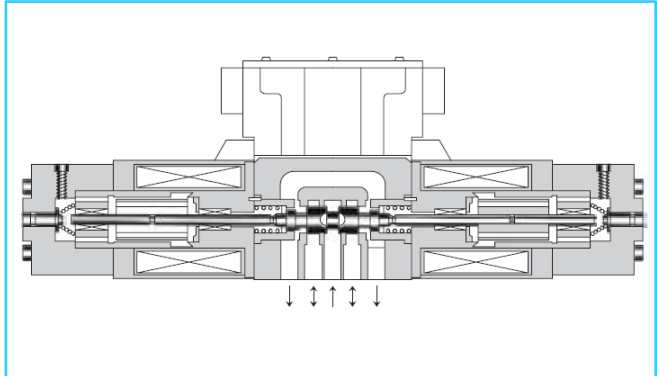


Proportional Electro-Hydraulic Directional and Flow Control Valves

These valves incorporate two control functions-flow and direction-which simplify the hydraulic circuit composition and therefore the cost of the system is reduced.



Specification

Model Numbers		EHDFG-01	EHDFG-03
Description			
Max. Operating Pressure	Kgf/cm ²	250	250
Max. Tank Line Pres.	Kgf/cm ²	70	70
Rated Flow	L/min.	30	60
[Value ΔP 70 Kgf/cm ²]			
Hysteresis		Less than 5%	
Repeatability		Less than 1% *	
Frequency Response	Hz	Frequency Response on Page. 585	
Coil Resistance	Ω	10.5	8.0
Supply electric Power		24 V DC (21 V DC to 28 V DC Included Ripple)	
Input Signal		0 ~ -5V for Sol a 0 ~ +5V for Sol b	
Input impedance	KΩ	10	10
Power Input (Max.)	W	40	45
Ambient Temperature		0-50 (with Circulated Air)	

* The repeatability of the valves is obtained by having it tested independently on the conditions similar to its original testing.

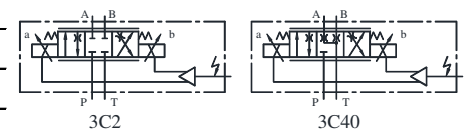
Model Number Designation

EHDF	G	-01	-30	-3C2	-Y	-30
Series Number	Type of Mounting	Valve Size	Rated Flow L/min	Spool *1	Direction of Flow	Design Number
EHDF: Proportional Electro-Hydraulic Directional and Flow Control Valves	G: Sub-Plate Mounting	01	30:30	3C2	X: Metre-out Y: Metre-in XY: Metre-out Metre-in	30
		03	60:60	3C40		30

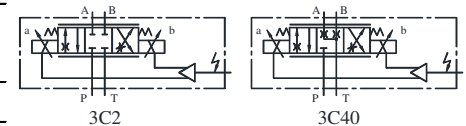
*1 Spool type shown in the column is for centre position.

Graphic Symbol

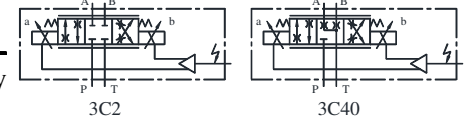
Metre-Out Control



Metre-In Control



Metre-In . Metre-Out Control



Attachment

Mounting Bolts

Model number	Socket Head Cap Screw	Qty.
EHDFG-01	M5x45Lg.	4
EHDFG-03	M6x35Lg.	4

Sub-Plate

Valve Model No.	Sub Plate Model No.	Pipe Connection Thd.	Mass Kg.
EHDFG-01	DSGM-01-3080 ^{*1}	1/8 BSP.F	0.8
	DSGM-01X-3080 ^{*1}	1/4 BSP.F	
	DSGM-01Y-3080 ^{*1}	3/8 BSP.F	
EHDFG-03	DSGM-03-2180 ^{*2}	3/8 BSP.F	3
	DSGM-03X-2180 ^{*2}	1/2 BSP.F	
	DSGM-03Y-2180 ^{*2}	3/4 BSP.F	4.7

- Sub-plates are available. Specify sub-plate model from the table left. When sub-plates are not used, the mounting surface shall have a good machined finished.

*1 Refer to page 358 in EIC-E-1001 .

*2 Refer to page 370 in EIC-E-1002.

Instructions

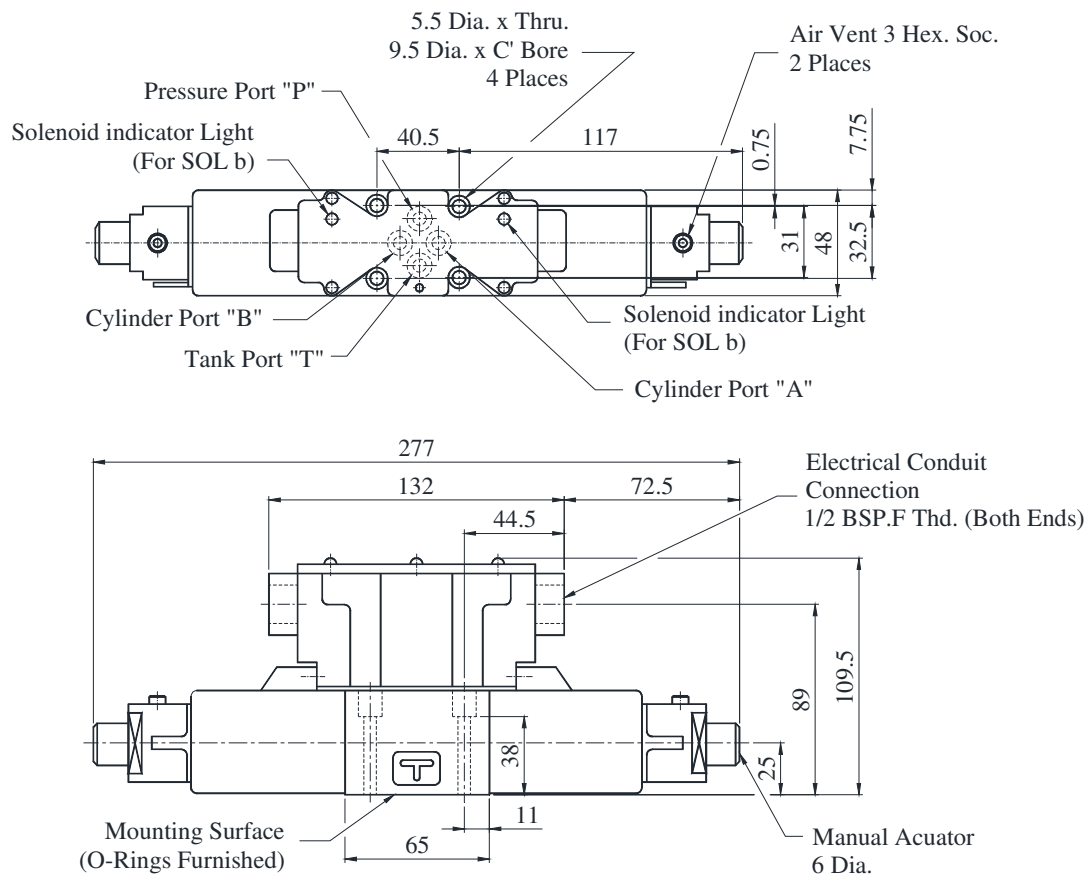
Take care of filling the valve tank port with the hydraulic oil at all the time.

However, check valve with cracking pressure 0.35Kg/cm² approx. shall be provided as required.

The pipe from the tank port should be connected to the reservoir directly and the edge of the pipe must always be immersed in the oil.

EHDFG-01-30-※-※ 30

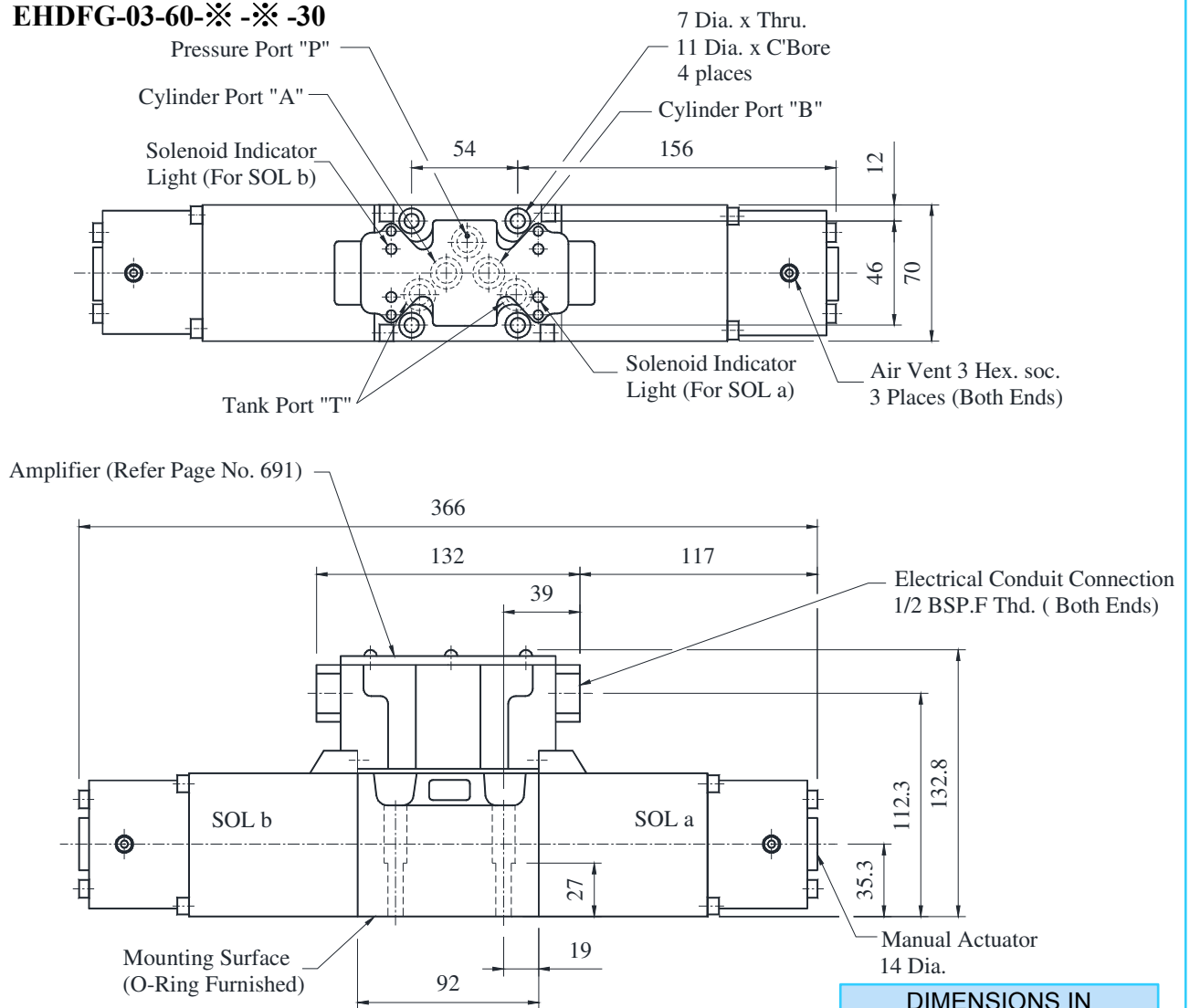
DIMENSIONS IN
MILLIMETRES



EH Series

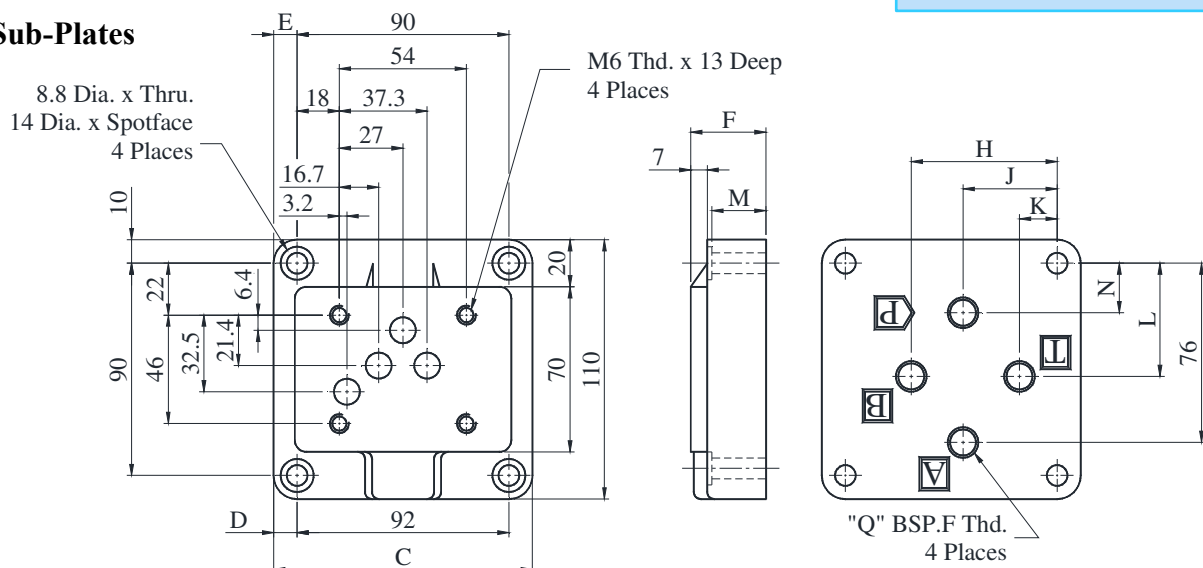
Proportional Electro-Hydraulic Directional and Flow Control Valve

EHDFG-03-60-※-※-30



**DIMENSIONS IN
MILLIMETRES**

Sub-Plates



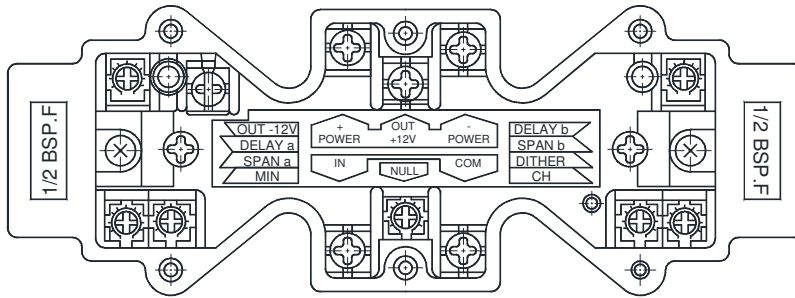
Sub-Plate Model Numbers	C	D	E	F	H	J	K	L	N	M	Q
DSGM-03-2180	110	9	10	32	62	40	16	48	21	24	3/8
DSGM-03X-2180											1/2
DSGM-03Y-2180	120	14	15	50	80	45	10	47	16	42	3/4

EH Series

Proportional Electro-Hydraulic Directional and Flow Control Valve

Detail of Amplifier

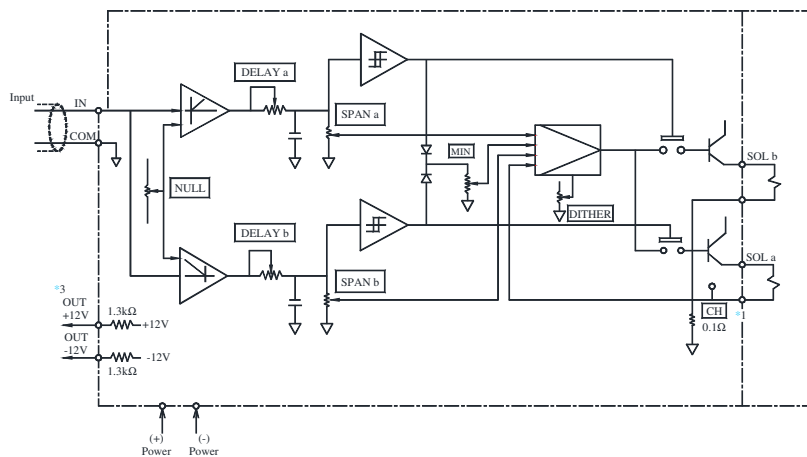
Connecting Terminals



Terminal	Name
Power +	24 V
Power -	Power Supply
IN	Input Signal
COM	Input Signal (COM)
OUT +12V	Internal Voltage Output +12V
OUT -12V	Internal Voltage Output -12V
CH	Sol. Output Current {com} check (to COM)

- *1 DITHER/SPAN/NULL/MIN.
Use as they are since they are factory-preset to the optimum position.
(Do not touch them in normal condition.)
- *2 DELAY
The adjusting volume is set to minimum at shipping. Set a delay time according to the machine conditions.

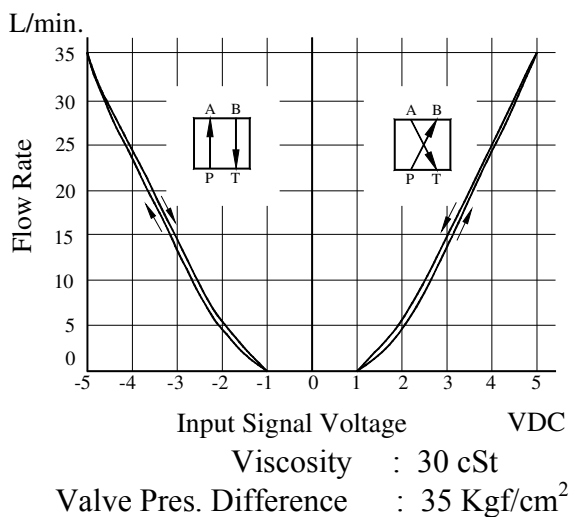
Circuit Schematic



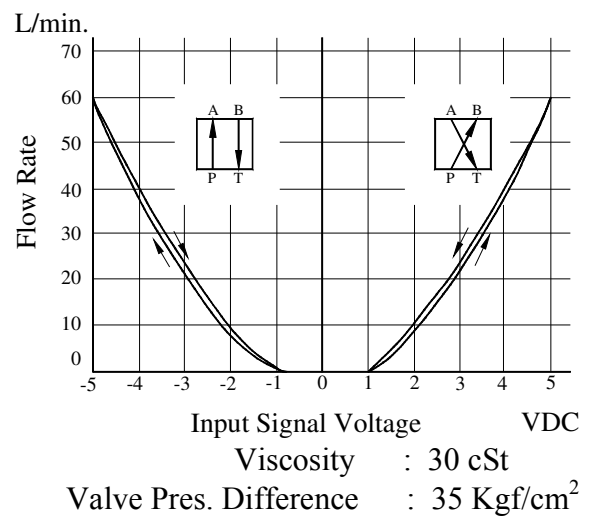
- *1 For "CH" terminal, external instruments should have input impedance of more than 10Ω.
- *2 Use shielded cable for "Input" connection.
- *3 Internal Output voltage $\pm 12V$ terminal is used when input signal voltage is controlled by variable resistor. Volume of 1kΩ-2kΩ should be used.

Input Signal Voltage vs Flow

EHDFG-01



EHDFG-03

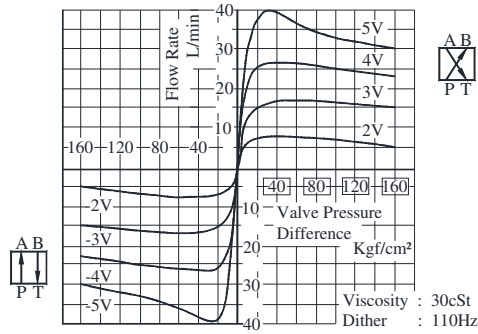


EH Series

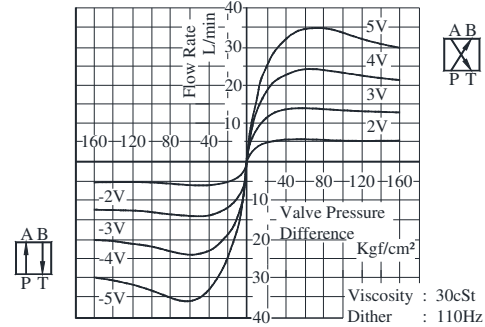
Proportional Electro-Hydraulic Directional and Flow Control Valve

Differential Pressure Vs Metered Flow

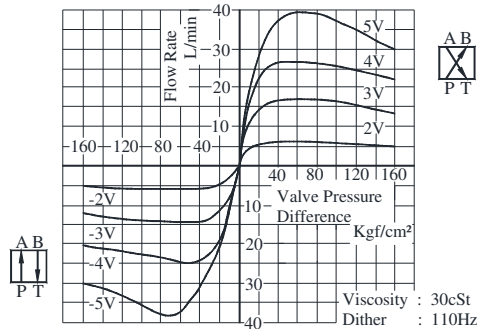
EHDFG-01-30-※-X-30



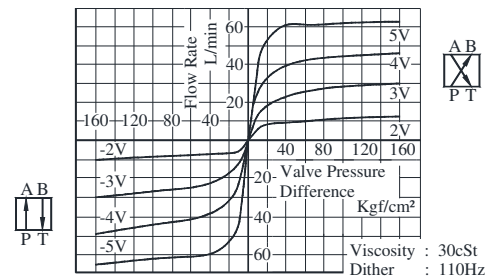
EHDFG-01-30-※-Y-30



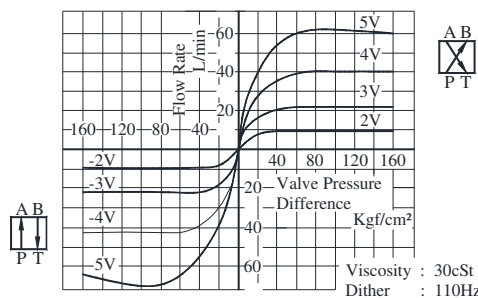
EHDFG-01-30-※-XY-30



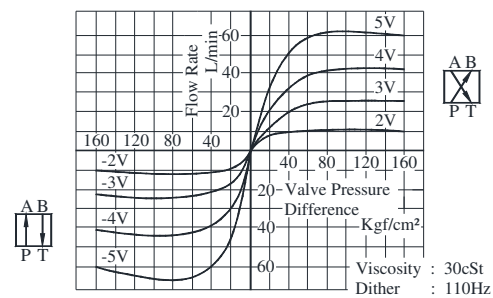
EHDFG-03-60-※-X-30



EHDFG-03-60-※-Y-30

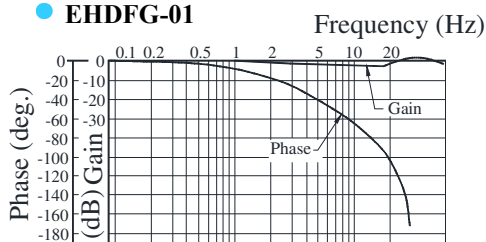


EHDFG-03-60-※-XY-30



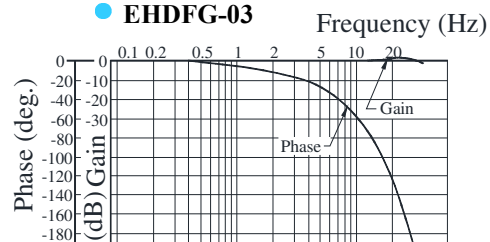
Frequency Response (Travel of Spool)

EHDFG-01



Model Number : EHDFG-01-30-※-Y-30
Viscosity : 30 cSt
Supply Pressure : 70 Kgf/cm²
Flow Rate : 15±3 L/min.

EHDFG-03

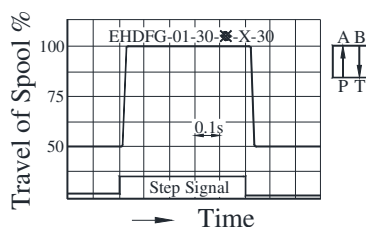


Model Number : EHDFG-03-60-※-Y-30
Viscosity : 30 cSt
Supply Pressure : 70 Kgf/cm²
Flow Rate : 30±6 L/min.

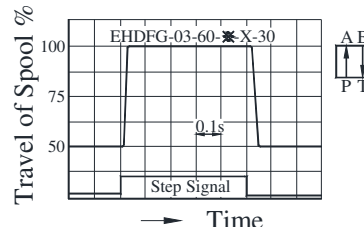
Step Response

[The step responses below are those obtained when the valve itself is tested independently.
The step responses may differ when the valve is issued in combination with other control valves.]

EHDFG-01



EHDFG-03



EH Series

Proportional Electro-Hydraulic Directional and Flow Control Valve