

## Proportional Electro-Hydraulic Flow Control (and Check) Valves

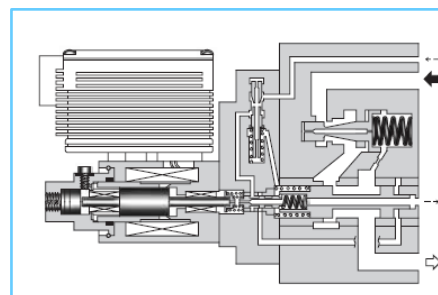
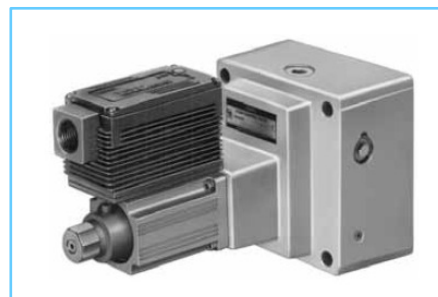
The system flow rate can be controlled remotely as desired by regulating input voltage. Further, since pressure and temperature compensation functions are provided the preselected flow rate is not affected by pressure (load) or temperature (fluid viscosity).

### Specification

| Model Number<br>Description                         | EHF※G-03-                                        | EHF※G-06-250         |
|-----------------------------------------------------|--------------------------------------------------|----------------------|
| Max. Operating Pres. Kg/cm <sup>2</sup>             | 210                                              | 250                  |
| Max. Metred Flow L/min.                             | 60: 60<br>125: 125                               | 250                  |
| Min. Metred Flow L/min.                             | 1                                                | 2.5                  |
| Min. Differential Pressure *1<br>Kg/cm <sup>2</sup> | 10                                               |                      |
| Free Flow L/min.<br>(only with check valves)        | 130                                              | 280                  |
| Pilot Flow                                          | At Normal 0.5 L/min.<br>At Transition 2.6 L/min. | 1 L/min.<br>4 L/min. |
| Min. Pilot Pressure Kg/cm <sup>2</sup>              | 1                                                | 1.5                  |
| Frequency Response                                  | Refer to Frequency Response on page 666          |                      |
| Hysteresis                                          | 3% or Less *2                                    |                      |
| Repeatability                                       | 1% or Less                                       |                      |
| Coil Resistance Ω                                   | 10                                               |                      |
| Supply Electric Power                               | 24V DC<br>(21 to 28V DC included Ripple)         |                      |
| Power Input (Max.) W                                | 28                                               |                      |
| Input Signal Voltage                                | Max. Metred Flow / 5 V DC                        |                      |
| Input Impedance kΩ                                  | 10                                               |                      |
| Ambient Temperature                                 | 0 – 50°C<br>(With Circulated Air)                |                      |

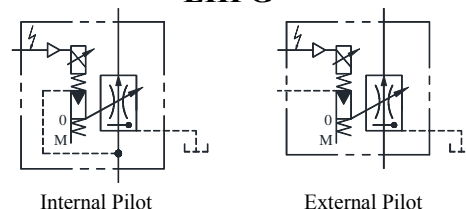
\*1 Minimum differential pressure means fine pressure compensation at inlet and outlet port.

\*2 The repeatability of the valve is obtained by having it tested independently On the conditions similar to its original testing.

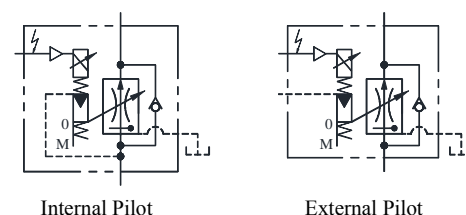


### Graphic Symbols

#### ● EHFG



#### ● EHFCG



### Model Number Designation

| F-                                                                               | EHF                                                                         | -G                           | -03        | -60                              | -E                             | -50           |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------|------------|----------------------------------|--------------------------------|---------------|
| Special Seals                                                                    | Series Number                                                               | Type of Mounting             | Valve Size | Max. Metred Flow L/min.          | Pilot Connection               | Design Number |
| <b>F:</b><br>Special Seals for Phosphate Ester Type Fluid (Omit if not required) | <b>EHF:</b><br>Proportional Electro-Hydraulic Flow Control Valve            | <b>G:</b> Sub-Plate Mounting | <b>03</b>  | <b>60: 60</b><br><b>125: 125</b> | <b>None:</b><br>Internal Pilot | <b>50</b>     |
|                                                                                  | <b>EHFC:</b><br>Proportional Electro-Hydraulic Flow Control and Check Valve |                              | <b>06</b>  | <b>250: 250</b>                  | <b>E :</b><br>External Pilot   |               |

### EH Series

### Proportional Electro-Hydraulic Flow Control and Check Valves

## Mounting Bolts

| Model Number        | Socket head cap Screw | Qty | Bolt Kit Model Number |
|---------------------|-----------------------|-----|-----------------------|
| EHFG-03<br>EHFCG-03 | M10 x 80Lg.           | 4   | BKEHFG-03-50          |
| EHFG-06<br>EHFCG-06 | M16 x 130Lg.          |     | BKEHFG-06-50          |

## Sub-Plate

| Sl. No. | Model Number        | Sub-Plate Model Numbers | Thread size | Mass Kg. |
|---------|---------------------|-------------------------|-------------|----------|
| 1       | EHFG-03<br>EHFCG-03 | EFGM-03Y-2080           | 3/8 BSP.F   | 5.7      |
|         |                     | EFGM-03Z-2080           | 1 BSP.F     | 5.6      |
| 2       | EHFG-06<br>EHFCG-06 | EFGM-06Y-2080           | 1 BSP.F     | 12.5     |
|         |                     | EFGM-06Z-2080           | 1 1/4 BSP.F | 16       |

- Sub-plates are available. Specify sub-plate model number from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.
- For Sub-plates details please refer page no. 583.

## Instructions

### Drain Back Pressure

Check that the drain back pressure does not exceed 2 Kg/cm<sup>2</sup>.

### Pilot Type Selection

This valve is constructed so as to operate at a predetermined pilot pressure, for the 03, a pilot pressure of 10 Kg/cm<sup>2</sup> or higher is required. For the 06, the required pilot pressure is 15 Kg/cm<sup>2</sup> or higher.

To obtain such a required pilot pressure, select the pilot type according to the circuit examples on the right.

①②

Use the external pilot type (type symbol E) whether a meter-in or meter-out circuit is employed.

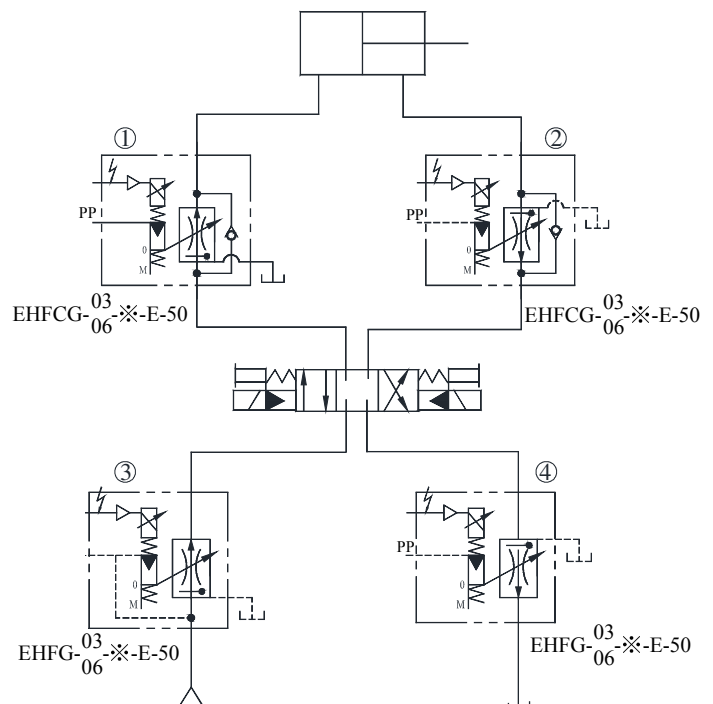
③

Use the internal pilot type (type symbol: None)

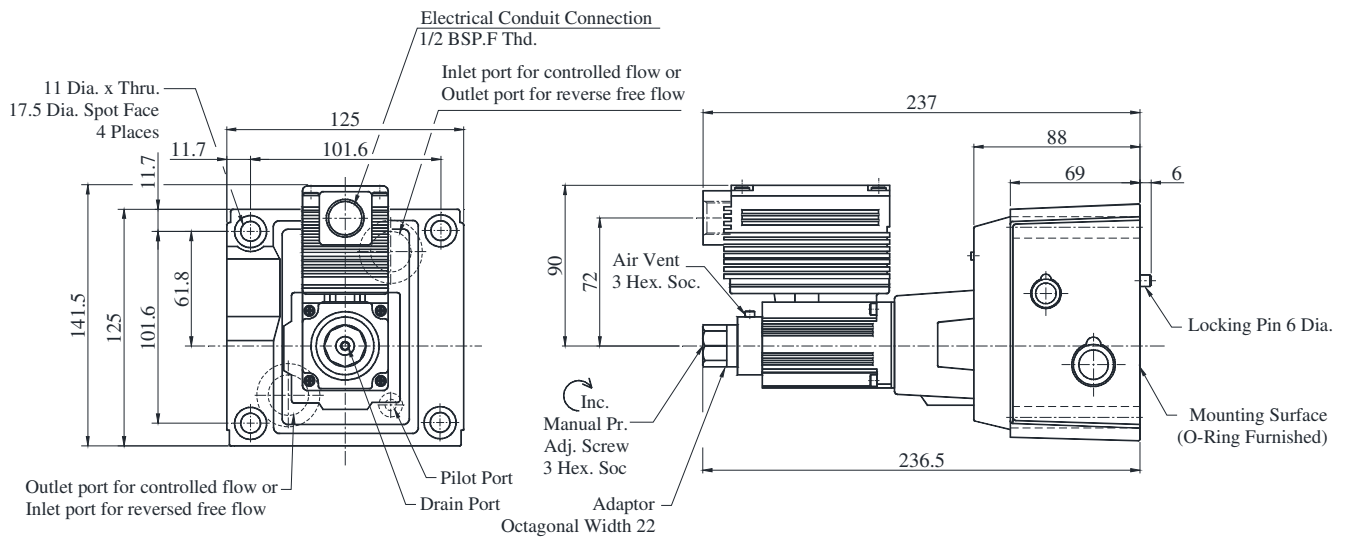
④

Use the external pilot type (type symbol: E)

### Example of Circuit

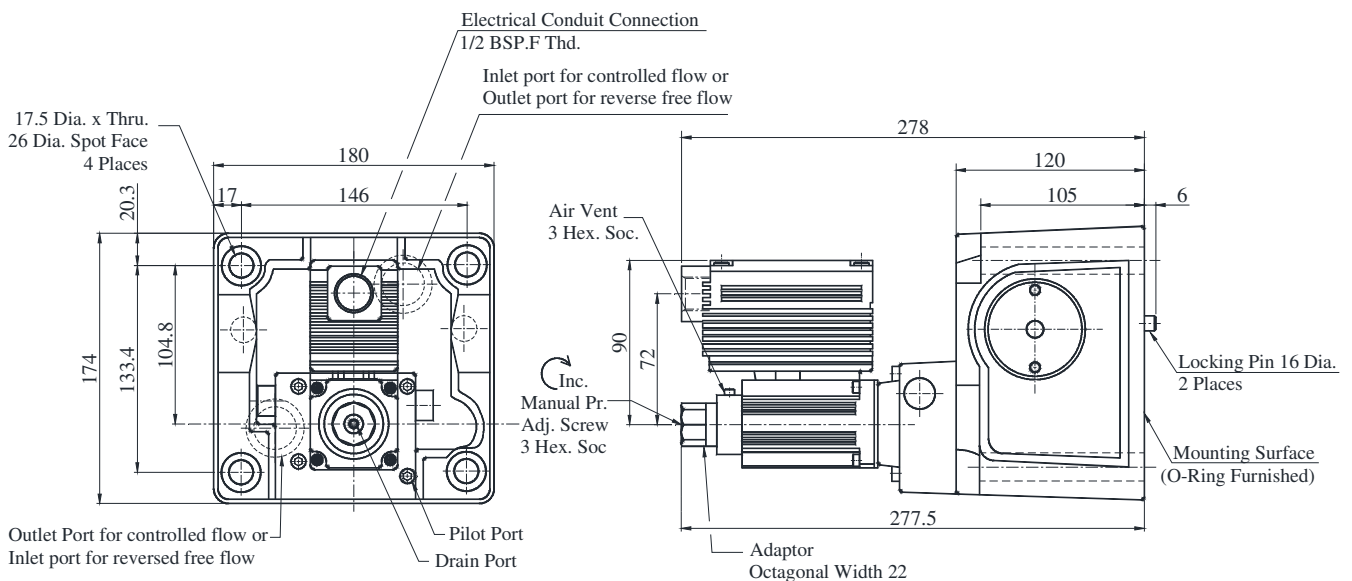


● **EHFG -03**  
● **EHFCG**

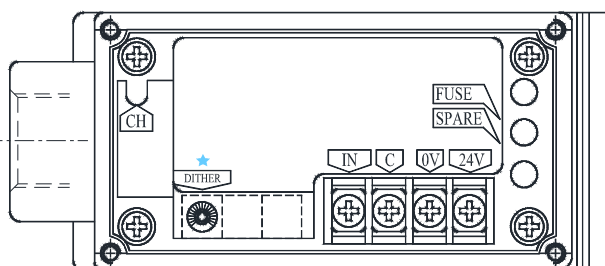


**DIMENSIONS IN  
MILLIMETRES**

● **EHFG -06**  
● **EHFCG**



■ **Detail of Amplifier**  
● **Connecting Terminal**



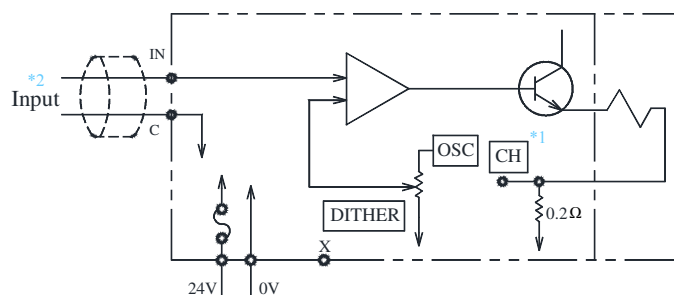
| Terminal | Name                        |
|----------|-----------------------------|
| IN       | Input Signal (+)            |
| C        | Input Signal (COM)          |
| 0 V      | } Power Supply              |
| 24 V     |                             |
| CH       | Output Current Check (to C) |

★. **DITHER**

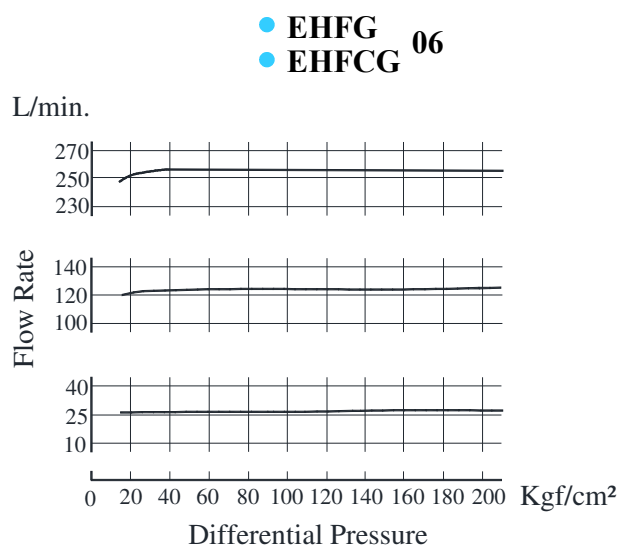
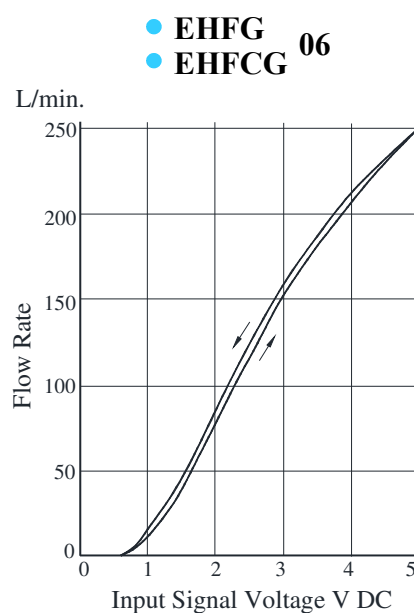
Use as it is since they are factory preset to the optimum position.  
(Do not touch is in normal condition)

**EH Series**

**Proportional Electro-Hydraulic Flow Control and Check Valves**



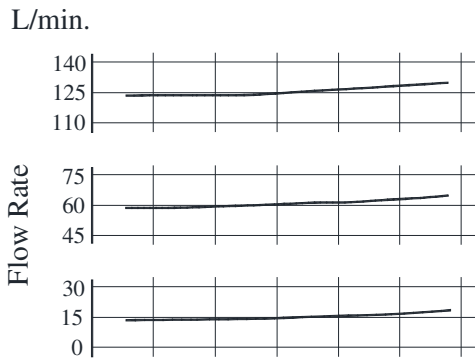
\*2 Use shielded cable for “Input” connection. The ground of the shielded cable must be connected to input signal side.



## Viscosity Vs. Flow Rate

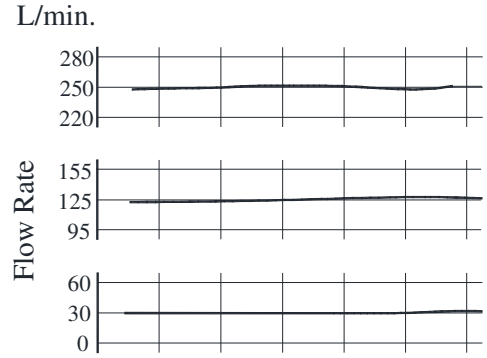
Oil : ISO VG 46 Oil.

● EHFG 03  
● EHFCG 03



Temperature 10 20 30 40 50 60 70 °C  
Viscosity 240 120 75 45 30 20 5 cSt

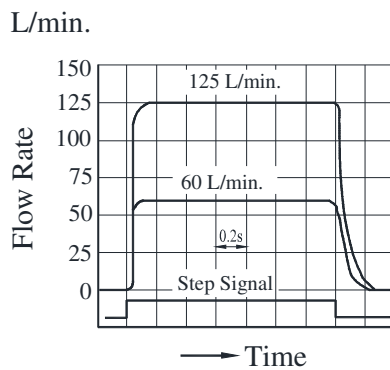
● EHFG 06  
● EHFCG 06



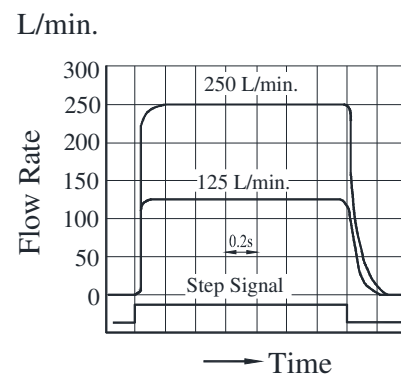
Temperature 10 20 30 40 50 60 70 °C  
Viscosity 240 120 75 45 30 20 5 cSt

## Step Response (Example)

● EHFG 03  
● EHFCG 03



● EHFG 06  
● EHFCG 06



The step response right are those obtained when the valve itself is tested independently.

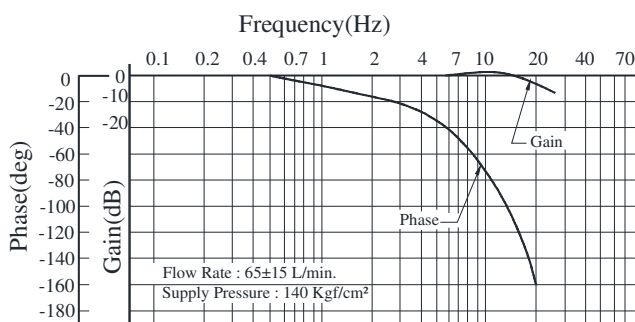
The step responses may differ from them when the valve is used in combination with other control valves.

## Frequency Response

Trapped Oil Volume : 1 L

Viscosity : 30 cSt

● EHFG 03  
● EHFCG 03



● EHFG 06  
● EHFCG 06

