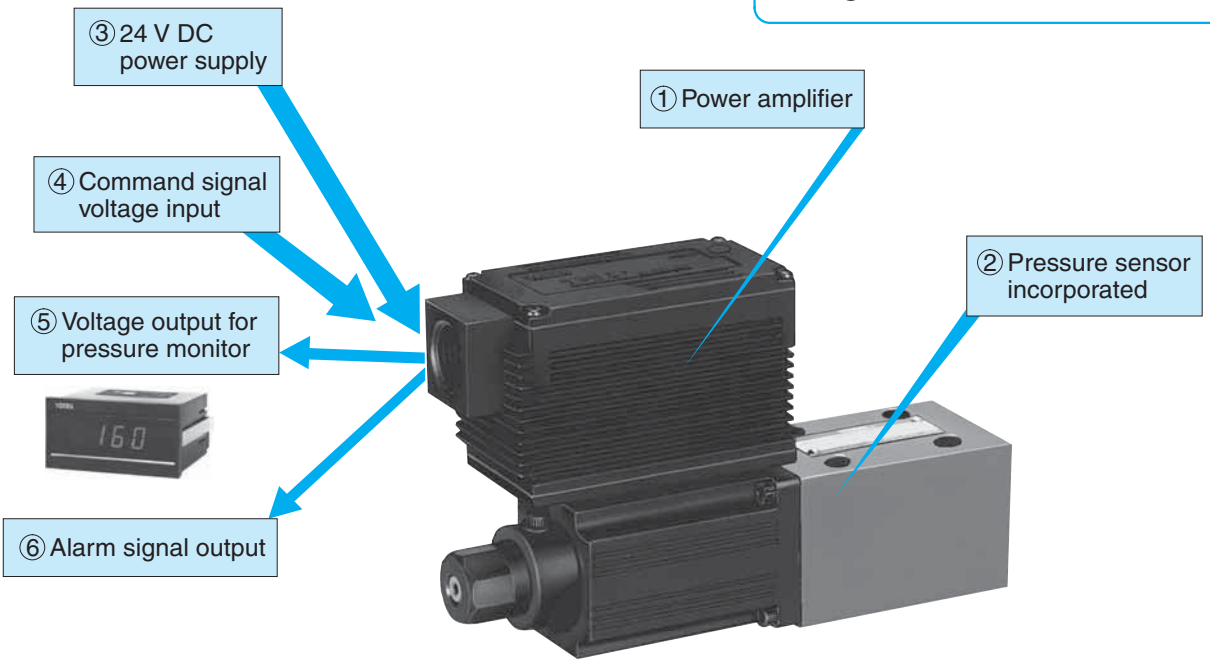
High-accuracy, simple, convenient
EH Series realizes your dreams.

Why simple ?

Highly accurate hydraulic control can be obtained only by supplying 24 V DC power ③[★3] and inputting a command signal voltage of 0 to 5 V ④.[★4]



Details of Proportional Electro-hydraulic Relief Valve

Why high-accuracy ?

The power amplifier ①and pressure sensor ②[★1] are integrated in the control valve.
Furthermore, the closed-loop control [★2] design greatly improves the linearity, hysteresis and stability in control pressure.

Why convenient ?

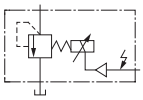
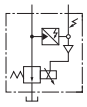
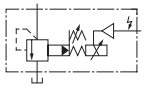
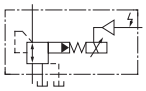
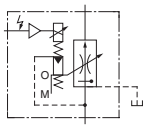
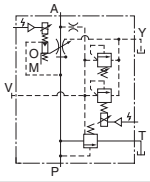
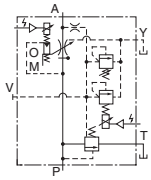
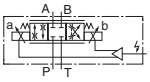
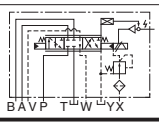
Analog voltages can be output by using the incorporated sensor for monitoring pressure, etc. ⑤[★5].
Pressure can be displayed remotely with the indicators obtainable in the market and also can be transmitted into a computer.

If any trouble arises in the system and the command signal does not match to the output, the alarm signal ⑥ is dispatched.
The trouble, if arises, can be easily detected by monitoring the dispatch of the alarm signal with sequence controller or computer.

★1. The sensor in directional control valves is to monitor the spool position. Valves without sensor are also available in both pressure control valves and directional control valves.
★2. Open-loop types are also available.
★3. EHDFG-04 and 06: ±24V DC power supply is needed.
★4. EHDFG-01, 03, 04 and 06: 0 to ±5V DC command signal is needed.
★5. EHDFG-04 and 06: The spool displacement is shown as a percentage.

EH Series-Hybrid Components

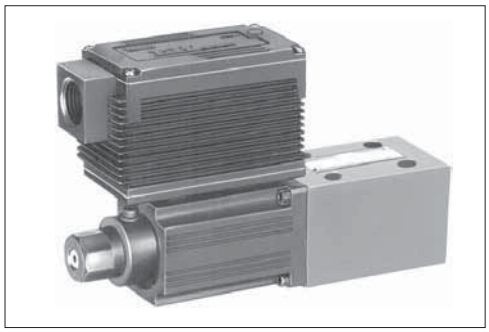
Proportional Electro-Hydraulic Controls

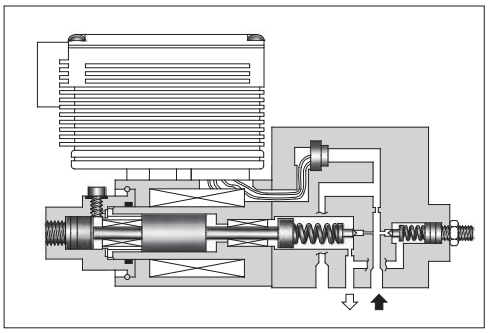
Types	Graphic Symbols	Max. Operating Pressure MPa (PSI)	Maximum Flow U.S.GPM .5 1 2 3 5 10 20 30 50 100 200 / L/min 1 2 3 5 10 20 30 50 100 200 300 500 1000	Page
Pilot Relief Valves		24.5 (3550)	EHDG 01	658
Pressure Control Valves		SB1110: 24.5(3550) SB1190: 7(1020)	SB1110 / SB1190	659
Relief Valves		24.5 (3550)	EHBG 03 06 10	660
Relieving and Reducing Valves		24.5 (3550)	EHRBG 06 10	661
Flow Control (and Check) Valves		03: 20.6 (2990) 06: 24.5 (3550)	EHFG EHFCG 03 06	662
Flow Control and Relief Valves		24.5 (3550)	EHFBG 03 06 10	663
High Flow Series Flow Control and Relief Valves		24.5 (3550)	EHFBG 03 06	664
Directional and Flow Control Valves		24.5 (3550)	EHDFG 01 03	665
High Respones Type Directional and Flow Control Valves		15.7 (2280)	EHDFG 04 06	666

Consult Yuken when detailed material such as dimensions figures is required.

Proportional Electro-Hydraulic Pilot Relief Valves

The valve can be used as a pilot valve of the Proportional Electro-Hydraulic Control Valves.
The valve can also be used as a relief valve for the hydraulic system where a small flow rate and continuous pressure control are required.



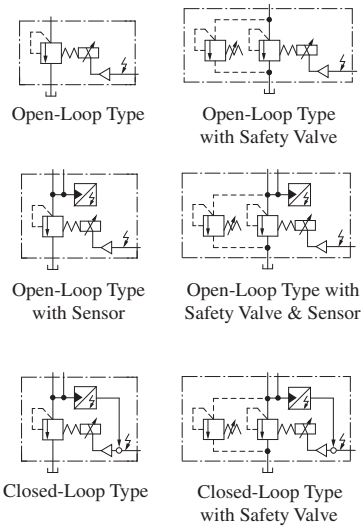


Specifications

Description \ Model Numbers	EHDG-01∗
Max. Operating Pres.	24.5 MPa (3550 PSI)
Max. Flow	2 L/min (.53 U.S.GPM)
Min. Flow	0.3 L/min (.08 U.S.GPM)
Pressure Adjustment Range	Refer to Model Number Designation
Coil Resistance	10 Ω
Hysteresis	3% (1%)★1 or less
Repeatability	1%★2 or less
Frequency Response	B: 10 (27) Hz★1 C: 10 (27) Hz★1 (-90 degree) H: 12 (27) Hz★1
Supply Electric Power	24 V DC (21 to 28 V DC Included Ripple)
Power Input (Max.)	28 W
Input Signal	B: 6.9 MPa (1000 PSI) / 5 V DC C: 15.7 MPa (2275 PSI) / 5 V DC H: 24.5 MPa (3550 PSI) / 5 V DC
Input Impedance	10 kΩ
Alarm Signal Output (Open Collector)	Voltage: Max. 30 V DC Current: Max. 40 mA
Pressure Signal Output	B: 5 V DC / 6.9 MPa (1000 PSI) C: 5 V DC / 15.7 MPa (2275 PSI) H: 5 V DC / 24.5 MPa (3550 PSI)
Ambient Temperature	0 - 50˚C (32 - 122˚F) (With Circulated Air)

★1. The value in ( ) is for the closed-loop type.
★2. The repeatability of the valve is obtained by having it tested independently on the conditions similar to its original testing.

Graphic Symbols



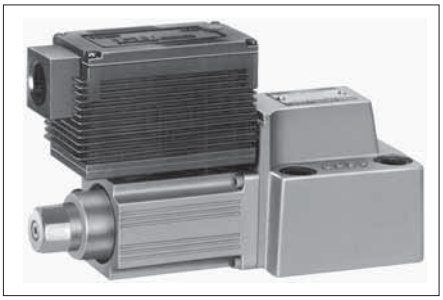
Model Number Designation

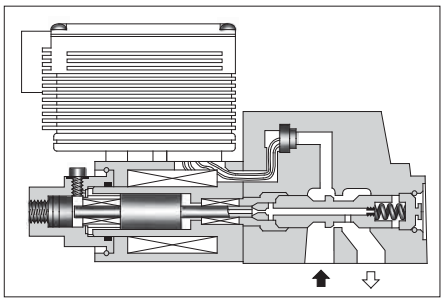
F-	EHD	G	-01	V	-B	-S	-1	-PN	T15	M10	-50
Special Seals	Series Number	Type of Mounting	Valve Size	Applicable Control	Pres. Adj. Range MPa (PSI)	Control Type	Safety Valve	P-Line Orifice	T-Line Orifice	P-B Line Orifice	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHD**: Proportional Electro-Hydraulic Pilot Relief Valve	**G**: Sub-plate Mounting	**01**	**None**: For general use **V**: Vent Control of Relief Valve (Omit if not required)	**B**: 0.5 - 6.9 (70 - 1000) **C**: 1 - 15.7 (145 - 2275) **H**: 1.2 - 24.5 (175 - 3550)	**None**: Open-Loop **S**: Open-Loop with Sensor **L**: Closed-Loop★1	**None**: Without Safety Valve **1**: With Safety Valve	**PN**: Without Orifice (Standard)	**T15** **T13** **T11** ★2	— **M10**: Standard Orifice	**50**

★1. For closed-loop models, specify applicable control code "V" even though the valve may not be used as vent control of relief valve.
★2. Standard of T-line Orifice.
Pres. Adj. Range B:T15, C:T13, H:T11.

Proportional Electro-Hydraulic Pressure Control Valves

These are closed-loop type pressure control valves controlling the system pressure from low to high in proportion to the input voltage. The stable pressure control is possible even in a small flow rate.



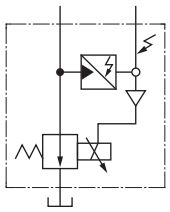


Specifications

Description \ Model Numbers	SB1110	SB1190
Max. Operating Pres.	B: 6.9 MPa (1000 PSI) H: 24.5MPa (3550 PSI)	7.0MPa (1020 PSI)
Max. Flow	30 L /min (7.93 U.S.GPM)	70 L /min (18.49 U.S.GPM)
Min. Flow	B: 0.5 L/min (.13 U.S.GPM) H: 0.5 L/min (.13 U.S.GPM) at 0.2 - 6.9 MPa (29 - 1000 PSI) 1.5 L/min (.40 U.S.GPM) at 6.9 - 15.7 MPa (1000 - 2275 PSI) 3.0 L/min (.79 U.S.GPM) at 15.7 - 24.5 MPa (2275 - 3550 PSI)	1 L /min (.26 U.S.GPM)
Pressure Adjustment Range	Refer to Model Number Designation	
Coil Resistance	10 Ω	
Hysteresis	1 % or less	1.5 % or less
Repeatability	1 % ★1 or less	
Supply Electric Power	24 V DC (21 to 28 V DC Included Ripple)	
Power Input (Max.)	28 W	
Input Signal	B: 6.9 MPa (1000 PSI) / 5 V DC H: 24.5 MPa (3550 PSI) / 5 V DC	7.0 MPa (1020 PSI) / 5 V DC
Input Impedance	10 kΩ	
Alarm Signal Output (Open Collector)	Voltage: Max. 30 V DC Current: Max. 40 mA	
Pressure Signal Output	B: 5 V DC / 6.9 MPa (1000 PSI) H: 5 V DC / 24.5 MPa (3550 PSI)	5 V DC / 7.0 MPa (1020 PSI)
Ambient Temperature	0 - 50˚C (32 - 122˚F) (With Circulated Air)	

★1. The repeatability of the valve is obtained by having it tested independently on the conditions similar to its original testing.

Graphic Symbol



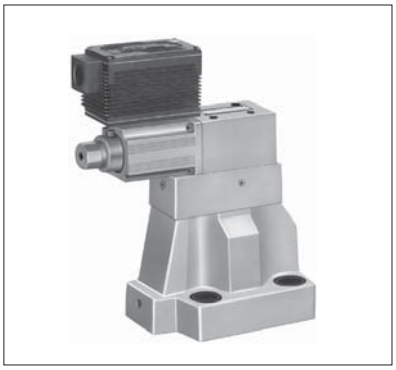
Model Number Designation

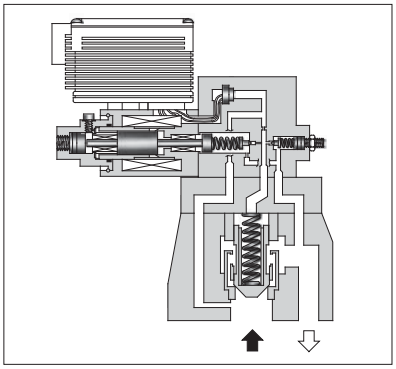
F-	SB1110	-B	-20
Special Seals	Series Number	Pres. Adj. Range MPa (PSI)	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**SB1110**: Proportional Electro-Hydraulic Pressure Control Valve (3/8, Sub-plate mounting)	**B**: 0.2 ★ - 6.9 (29 - 1000) **H**: 0.2 ★ - 24.5 (29 - 3550)	**20**
	SB1190: Proportional Electro-Hydraulic Pressure Control Valve (3/4, Sub-plate mounting)	**B**: 0.2 ★ - 7.0 (29 - 1020)	**10**

★ The minimum adjustable pressure is the value obtained at maximum flow rate.

Proportional Electro-Hydraulic Relief Valves

These valves, consist of a small size but high performance EH series electro-hydraulic proportional pilot relief valve and a low noise type relief valve. The valves control the system pressure proportionally through a controlled input voltage.



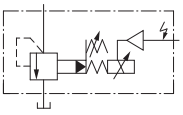


Specifications

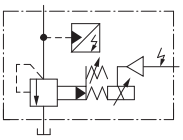
Description \ Model Numbers	EHBG-03	EHBG-06	EHBG-10
Max. Operating Pres.	24.5 MPa (3550 PSI)		
Max. Flow	100 L/min (26.4 U.S.GPM)	200 L/min (52.8 U.S.GPM)	400 L/min (106 U.S.GPM)
Min. Flow	3 L/min (.79 U.S.GPM)	3 L/min (.79 U.S.GPM)	3 L/min (.79 U.S.GPM)
Pressure Adjustment Range	Refer to Model Number Designation		
Coil Resistance	10 Ω		
Hysteresis	2% (1%)★1 or less		
Repeatability	1% ★2 or less		
Frequency Response	C: 10 (22) Hz ★1 H: 10 (25) Hz ★1 (-90 degree)	C: 11 (22) Hz ★1 H: 13 (24.5) Hz ★1 (-90 degree)	C: 7 (10.5) Hz ★1 H: 6 (14) Hz ★1 (-90 degree)
Supply Electric Power	24 V DC (21 to 28 V DC Included Ripple)		
Power Input (Max.)	28 W		
Input Signal	C: 15.7 MPa (2275 PSI) / 5 V DC H: 24.5 MPa (3550 PSI) / 5 V DC (At Max. Flow)		
Input Impedance	10 kΩ		
Alarm Signal Output (Open Collector)	Voltage: Max. 30 V DC Current: Max. 40 mA		
Pressure Signal Output	C: 5 V DC / 15.7 MPa (2275 PSI) H: 5 V DC / 24.5 MPa (3550 PSI)		
Ambient Temperature	0 - 50˚C (32 - 122˚F) (With Circulated Air)		

★1. The value in ( ) is for the closed-loop type.
★2. The repeatability of the valve is obtained by having it tested independently on the conditions similar to its original testing.

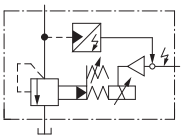
Graphic Symbols



Open-Loop Type



Open-Loop Type with Sensor



Closed-Loop Type

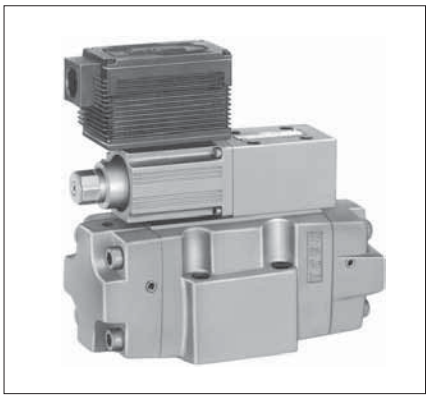
Model Number Designation

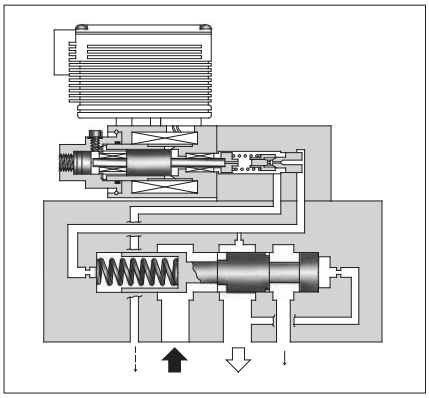
F-	EHB	G	-03	-C	-S	-50
Special Seals	Series Number	Type of Mounting	Valve Size	Pres. Adj. Range MPa (PSI)	Control Type	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHB**: Proportional Electro-Hydraulic Relief Valve	**G**: Sub-plate Mounting	**03**	**C**: 0.6 [0.8]★- 15.7 (85 [115]★- 2275) **H**: 0.6 [0.8]★- 24.5 (85 [115]★- 3550)	**None**: Open-Loop	**50**
			06	**C**: 0.9 [1.0]★- 15.7 (130 [145]★- 2275) **H**: 0.9 [1.0]★- 24.5 (130 [145]★- 3550)	**S**: Open-Loop with Sensor	**50**
			10	**C**: 1.1 [1.4]★- 15.7 (160 [205]★- 2275) **H**: 1.1 [1.4]★- 24.5 (160 [205]★- 3550)	**L**: Closed-Loop	**50**

★Each value of minimum adjustment pressure is of at 50% flow rate of the Max. Flow shown on the Specifications.
The value in [ ] is for the closed-loop type.

Proportional Electro-Hydraulic Relieving and Reducing Valves

These valves consist of a small size but high performance electro-hydraulic proportional pilot relief valve and reducing valve with relief function. The valves control the system pressure proportionally through a controlled input voltage.
Moreover, a good response speed in reducing the pressure even at a large load capacity can be obtained with the relief function of the valves.



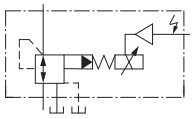


Specifications

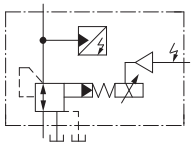
Description \ Model Numbers	EHRBG-06	EHRBG-10
Max. Operating Pres.	24.5 MPa (3550 PSI)	
Max. Flow	100 L/min (26.4 U.S.GPM)	250 L/min (66 U.S.GPM)
Max. Relieving Flow	35 L/min ★1 (9.24 U.S.GPM)	15 L/min ★1 (3.96 U.S.GPM)
Pressure Adjustment Range	Refer to Model Number Designation	
Coil Resistance	10 Ω	
Hysteresis	3% or less	
Repeatability	1% ★2 or less	
Frequency Response	B : 4 Hz C : 3 Hz (-90 degree) H : 3 Hz	
Supply Electric Power	24 V DC (21 to 28 V DC Included Ripple)	
Power Input (Max.)	28 W	
Input Signal	B : 6.9 MPa (1000 PSI) / 5 V DC C : 13.7 MPa (2000 PSI) / 5 V DC H : 20.6 MPa (3000 PSI) / 5 V DC (at Flow Rate Zero)	
Input Impedance	10 kΩ	
Pressure Signal Output	B : 5 V DC / 6.9 MPa (1000 PSI) C : 5 V DC / 13.7 MPa (2000 PSI) H : 5 V DC / 20.6 MPa (3000 PSI)	
Ambient Temperature	0 - 50˚C (32 - 122˚F) (With Circulated Air)	

★1. The figures shown are those obtained where the differential pressure between the secondary pressure port and tank port is 14 MPa (2030 PSI).
★2. The repeatability of the valve is obtained by having it tested independently on the conditions similar to its original testing.

Graphic Symbols



Open-Loop Type



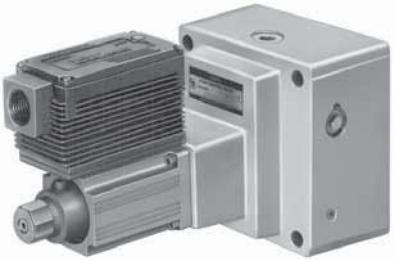
Open-Loop Type with Sensor

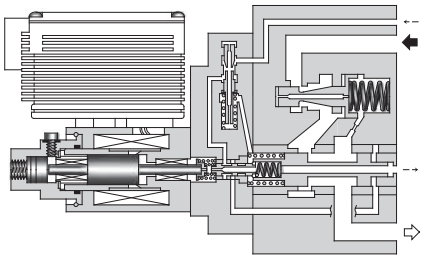
Model Number Designation

F-	EHRB	G	-06	-C	-S	-50
Special Seals	Series Number	Type of Mounting	Valve Size	Pres. Adj. Range MPa (PSI)	Control Type	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHRB**: Proportional Electro-Hydraulic Relieving & Reducing Valve	**G**: Sub-plate Mounting	**06**	**B**: 0.8 - 6.9 (115 - 1000) **C**: 1.2 - 13.7 (175 - 2000) **H**: 1.5 - 20.6 (220 - 3000)	**None**: Open-Loop	**50**
			10	**B**: 0.9 - 6.9 (130 - 1000) **C**: 1.2 - 13.7 (175 - 2000) **H**: 1.5 - 20.6 (220 - 3000)	**S**: Open-Loop with Sensor	**50**

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).





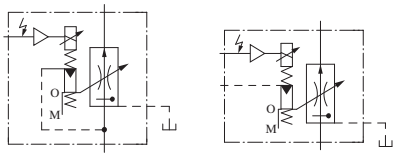
Specifications

Description \ Model Numbers		EHF∗G-03-60 / 125	EHF∗G-06-250
Max. Operating Pres. MPa (PSI)		20.6 (3000)	24.5 (3550)
Max. Metred Flow L/min (U.S.GPM)		60: 60 (15.8) 125: 125 (33)	250 (66)
Min. Metred Flow L/min (U.S.GPM)		1 (.26)	2.5 (.66)
Min. Differential Pressure ★1 MPa (PSI)		1.0 (145)	1.0 (145)
Free Flow L/min (U.S.GPM) (Only with Check Valve)		130 (34.3)	280 (73.9)
Pilot Flow L/min (U.S.GPM)	at Normal	0.5 (.13)	1 (.26)
	at Transition	2.6 (.69)	4 (1.06)
Min. Pilot Pressure MPa (PSI)		1.0 (145)	1.5 (215)
Frequency Response		12 Hz (-90 degree)	
Hysteresis		3% or less	
Repeatability		1% ★2 or less	
Coil Resistance		10 Ω	
Supply Electric Power		24 V DC (21 to 28 V DC Included Ripple)	
Power Input (Max.)		28 W	
Input signal		Max. Metred Flow / 5V DC	
Input Impedance		10 kΩ	
Ambient Temperature		0 - 50˚C (32 - 122˚F) (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.

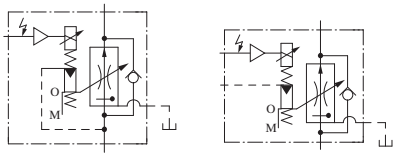
Graphic Symbols

● EHFG



Internal Pilot External Pilot

● EHFCG



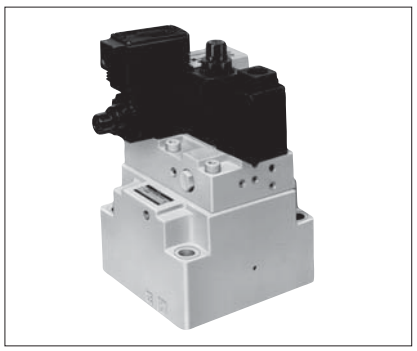
Internal Pilot External Pilot

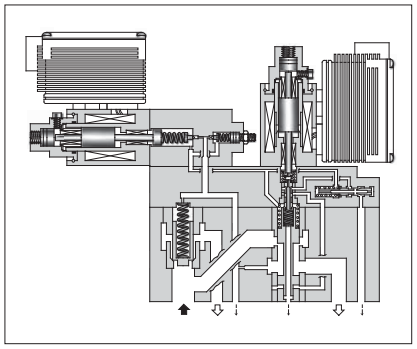
Model Number Designation

F-	EHF	G	-03	-60	-E	-50
Special Seals	Series Number	Type of Mounting	Valve Size	Max. Metred Flow L/min (U.S.GPM)	Pilot Connection	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHF**: Proportional Electro-Hydraulic Flow Control Valve **EHFC**: Proportional Electro-Hydraulic Flow Control and Check Valve	**G**: Sub-plate Mounting	**03**	**60**: 60 (15.8) **125**: 125 (33)	**None**: Internal Pilot	**50**
			06	**250**: 250 (66)	**E**: External Pilot	**50**

Proportional Electro-Hydraulic Flow Control and Relief Valves

These are proportional electro-hydraulic flow control valves having functions for controlling the direct electric current of metre-in type and for pressure control.
They are energy-saving valves for supplying the minimum pressure and flow required to operate actuators.



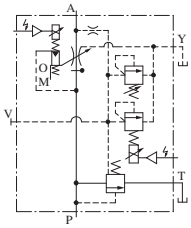


Specifications

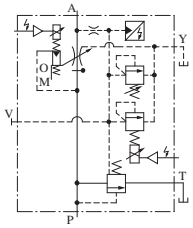
Description \ Model Numbers			EHFBG-03-60 / 125	EHFBG-06-250	EHFBG-10-500
Max. Operating Pressure MPa (PSI)			24.5 (3550)	24.5 (3550)	24.5 (3550)
Max. Flow L/min (U.S.GPM)			60 : 60 (15.8) 125 : 125 (33)	250 (66)	500 (132)
Metred Flow Capacity L/min (U.S.GPM)			60 : 1-60(.26-15.8) 125: 1-125(.26-33)	2.5-250 (.66-66)	5-500 (1.32-132)
Min. Pilot Pressure MPa (PSI)			1.5 (215)	1.5 (215)	1.5 (215)
Pilot Flow L/min (U.S.GPM)		at Normal	1 (.26)	1 (.26)	1 (.26)
		at Transition	3 (.79)	4 (1.06)	6 (1.59)
Differential Pressure MPa (PSI)			0.6 (85)	0.7 (100)	0.9 (130)
Flow Controls	Hysteresis		3% or less		
	Repeatability		1%★ or less		
	Input Signal		Max. Flow / 5 V DC		
	Coil Resistance		10 Ω		
	Supply Electric Power		24 V DC (21 to 28 V DC Included Ripple)		
	Input Impedance		10 kΩ		
	Power Input (Max.)		28 W		
Pressure Controls	Pres. Adj. Range MPa (PSI)	Adj. Range: C	1.2-15.7 (175-2275)	1.4-15.7 (200-2275)	1.5-15.7 (215-2275)
		Adj. Range: H	1.4-24.5 (200-3550)	1.4-24.5 (200-3550)	1.5-24.5 (215-3550)
	Hysteresis		2% or less		
	Repeatability		1%★ or less		
	Coil Resistance		10 Ω		
	Input Signal		Max. Operating Pres. / 5 V DC		
	Supply Electric Power		24 V DC (21 to 28 V DC Included Ripple)		
	Input Impedance		10 kΩ		
	Power Input (Max.)		28 W		
Output Signal			C : 5 V DC / 15.7 MPa (2275 PSI) H : 5 V DC / 24.5 MPa (3550 PSI)		
Ambient Temperature			0 - 50°C (32 - 122°F) (With Circulated Air)		

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

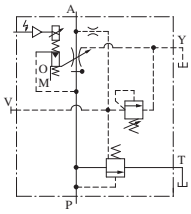
Graphic Symbols



Models with Proportional Pilot Relief Valve



Models with Proportional Pilot Relief Valve and Sensor



Models without Proportional Pilot Relief Valve

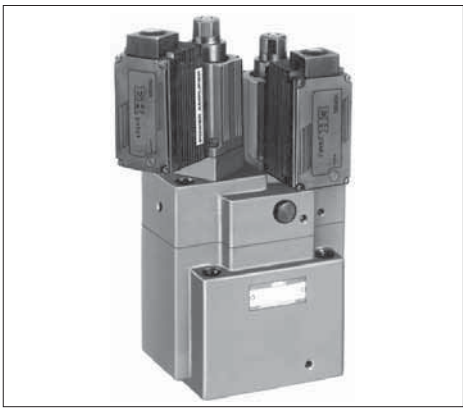
External Pilot Pres. Connection

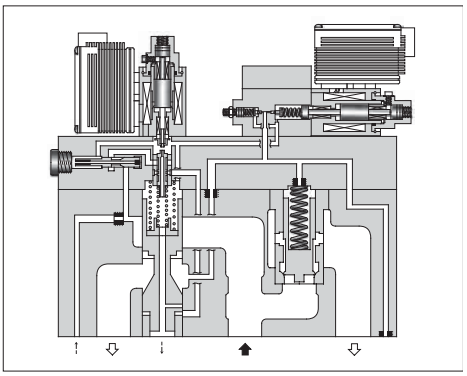
Model Number Designation

F-	EHFB	G	-03	-60	-C	-E	-S	-50
Special Seals	Series Number	Type of Mounting	Valve Size	Max. Metred Flow L/min (U.S.GPM)	Pilot Relief Valve Pres. Adj. Range	Pilot Connection of Flow Control	Pressure Controls	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHFB**: Proportional Electro-Hydraulic Flow Control and Relief Valve	**G**: Sub-plate Mounting	**03**	**60**: 60 (15.8) **125**: 125 (33)	**None**: Without Proportional Pilot Relief Valve	**None**: Internal Pilot	**None**: Open-Loop	**50**
			06	**250**: 250 (66)		**E**: External Pilot	**S**: Open-Loop with Sensor	**50**
			10	**500**: 500 (132)	**C, H**: See Specifications			**50**

High Flow Series
Proportional Electro-Hydraulic Flow Control and Relief Valves

This flow control and relief valve is a energy-saving valve that supplies the minimum pressure and flow necessary for actuator drive.
For the High Flow Series, double maximum flow rate [03 size: 125 → 250 L/min (33 → 66 U.S.GPM), 06 size: 250 → 500 L/min (66 → 132 U.S.GPM)] enables a smaller valve size than conventional products; compact-sized devices can be provided.



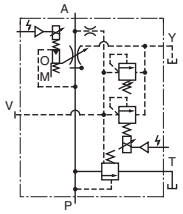


Specifications

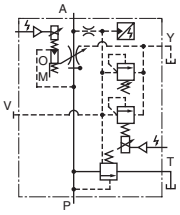
Description \ Model Numbers			EHFBG-03-250	EHFBG-06-500
Max. Operating Pressure MPa (PSI)			24.5 (3550)	24.5 (3550)
Max. Flow L/min (U.S.GPM)			250 (66)	500 (132)
Metred Flow Capacity L/min (U.S.GPM)			2.5-250 (.66-66)	5-500 (1.32-132)
Min. Pilot Pressure MPa (PSI)			1.5 (215)	1.5 (215)
Pilot Flow L/min (U.S.GPM)		at Normal	1 (.26)	1 (.26)
		at Transition	4 (1.06)	6 (1.59)
Differential Pressure MPa (PSI)			0.8 (115)	0.9 (130)
Flow Controls	Hysteresis		3% or less	
	Repeatability		1%★ or less	
	Input Signal		Max. Flow / 5 V DC	
	Coil Resistance		10 Ω	
	Supply Electric Power		24 V DC (21 to 28 V DC Included Ripple)	
	Input Impedance		10 kΩ	
	Power Input (Max.)		28 W	
Pressure Controls	Pres. Adj. Range MPa (PSI)	Adj. Range: C	1.6-15.7 (230-2275)	1.5-15.7 (215-2275)
		Adj. Range: H	1.8-24.5 (260-3550)	1.5-24.5 (215-3550)
	Hysteresis		3% or less	
	Repeatability		1%★ or less	
	Coil Resistance		10 Ω	
	Input Signal		Max. Operating Pres. / 5 V DC	
	Supply Electric Power		24 V DC (21 to 28 V DC Included Ripple)	
	Input Impedance		10 kΩ	
	Power Input (Max.)		28 W	
Output Signal			C : 5 V DC / 15.7 MPa (2275 PSI) H : 5 V DC / 24.5 MPa (3550 PSI)	
Ambient Temperature			0 - 50°C (32 - 122°F) (With Circulated Air)	

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

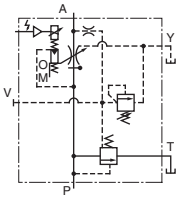
Graphic Symbols



Models with Proportional Pilot Relief Valve



Models with Proportional Pilot Relief Valve and Sensor



Models without Proportional Pilot Relief Valve

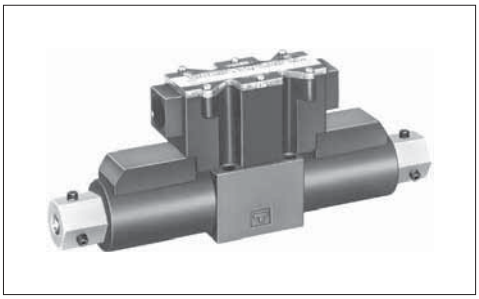
External Pilot Pres. Connection

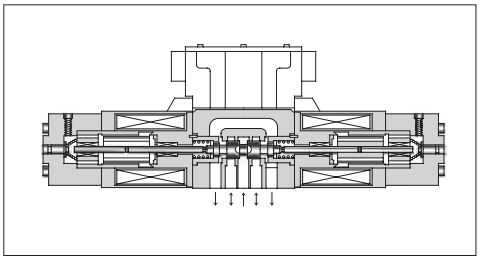
Model Number Designation

F-	EHFB	G	-03	-250	-C	-E	-S	-50
Special Seals	Series Number	Type of Mounting	Valve Size	Max. Metred Flow L/min (U.S.GPM)	Pilot Relief Valve Pres. Adj. Range	Pilot Connection of Flow Control	Pressure Controls	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHFB**: Proportional Electro-Hydraulic Flow Control and Relief Valve	**G**: Sub-plate Mounting	**03**	**250**: 125 (66)	**None**: Without Proportional Pilot Relief Valve	**None**: Internal Pilot	**None**: Open-Loop	**50**
			06	**500**: 500 (132)	**C, H** : See Specifications	**E**: External Pilot	**S**: Open-Loop with Sensor	**50**

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.





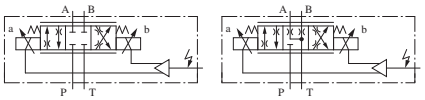
Specifications

Description \ Model Numbers		EHDFG-01	EHDFG-03
Max. Operating Pressure MPa (PSI)		24.5 (3550)	24.5 (3550)
Max. Tank Line Back Pres. MPa (PSI)		7 (1020)	7 (1020)
Rated Flow L/min (U.S.GPM) [Valve ⊿P 6.9 MPa (1000 PSI)]		30 (7.92)	60 (15.9)
Hysteresis		5% or less	
Repeatability		1%★ or less	
Frequency Response		20 Hz (-90 deg.)	17 Hz (-90 deg.)
Coil Resistance		10.5 Ω	8.0 Ω
Supply Electric Power		24 V DC (21 to 28 V DC Included Ripple)	
Input Voltage	By Controlling Variable Resistance (Using of Power from Amp.)	1 - 2 kΩ Volume Range	
	By Controlling Voltage (Using of Power outside Amp.)	0 - –5 V for SOL a 0 - +5 V for SOL b	
Input Impedance		10 kΩ	10 kΩ
Power Input (Max.)		40 W	45 W
Ambient Temperature		0 - 50˚C (32 - 122˚F) (With Circulated Air)	

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

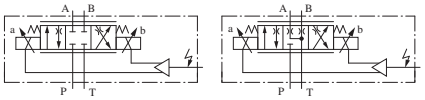
Graphic Symbols

● Metre-in • Metre-out Control



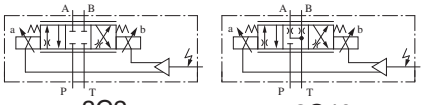
3C2 3C40

● Metre-out Control



3C2 3C40

● Metre-in Control



3C2 3C40

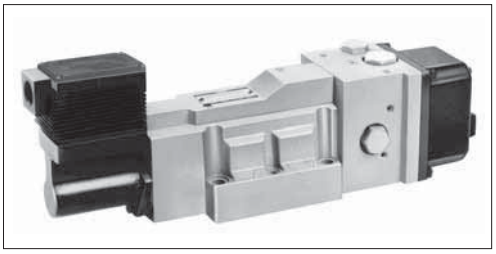
Model Number Designation

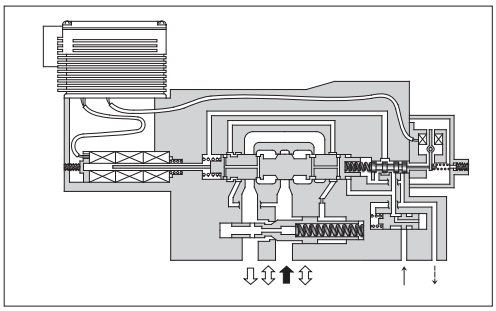
F-	EHDF	G	-01	-30	-3C2	-E	-30
Special Seals	Series Number	Type of Mounting	Valve Size	Rated Flow L/min (U.S.GPM)	Spool Type★	Direction of Flow	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHDF**: Proportional Electro-Hydraulic Directional and Flow Control Valve	**G**: Sub-plate Mounting	**01**	**30**: 30 (7.92)	**3C2**	**XY** : Metre-in · Metre-out	**30**
			03	**60**: 60 (15.9)	**3C40**	**X** : Metre-in **Y** : Metre-out	**30**

★Spool type shown in the column is for the centre position.

High Response Type Proportional Electro-Hydraulic Directional and Flow Control Valves

These valves pursue the ultimate performance of proportional electro-hydraulic directional & flow control valves and make themselves to have high response features.
The closed-loop is composed in the valve inside by combination of a differential transformer (LVDT) and a power amplifier. Thus, high accuracy and reliability are provided.
In addition to control in the open-loop, these can be used for the closed-loop system as simplified servo valves.





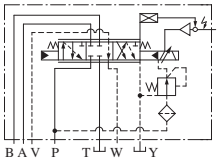
Specifications

Description \ Model Numbers		EHDFG-04	EHDFG-06
Max. Operating Pres. MPa (PSI)		15.7 (2280)	15.7 (2280)
Rated Flow L/min (U.S.GPM) Valve Pres. Difference: 1.5 MPa (215 PSI)		130 (34.3)	280 (73.9)
Min. Required Pilot Pres. MPa (PSI)		1.5 (215)	1.5 (215)
Min. Required Pilot Flow L/min (U.S.GPM)	at Normal	2 (.53)	2 (.53)
	at Transition	6 (1.59)	10 (2.64)
Max. Drain Line Back Pres. MPa (PSI)		0.1 (15)	0.1 (15)
Hysteresis		1% or less	
Repeatability		1%★ or less	
Frequency Response		55 Hz (-90 deg.)	45 Hz (-90 deg.)
Coil Resistance		30 Ω	30 Ω
Supply Electric Power		±24 V DC (±21 to ±28 V DC Included Ripple)	
Input Signal		Rated Flow / ±5 V DC	
Input Impedance		10 kΩ	10 kΩ
Power Input (Max.)		20 W	20 W
Alarm Signal Output (Open Collector)		Voltage: Max. 30 V DC Current: Max. 30 mA	
LVDT Output (Sensor Monitor)		±5 V DC / Rated Travel of Spool	
Ambient Temperature		0 - 50°C (32 - 122°F) (With Circulated Air)	

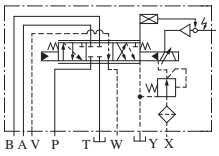
★The repeatability of the valves is obtained by having it tested independently on the conditions similar to its original testing.

Graphic Symbols

● Models without Pressure Compensator Valve

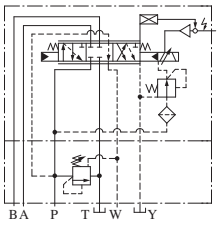


Internal Pilot



External Pilot

● Models with Pressure Compensator Valve



Internal Pilot

Model Number Designation

F-	EHDF	G	-04	-130	-2	-E	-CB	-10
Special Seals	Series Number	Type of Mounting	Valve Size	Rated Flow L/min (U.S.GPM)	Spool Type★	Pilot Connection	Relief Type Pres. Compensator	Design Number
F: Special Seals for Phosphate Ester Type Fluid (Omit if not required)	**EHDF**: Proportional Electro-Hydraulic Directional and Flow Control Valve	**G**: Sub-plate Mounting	**04**	**130**: 130 (34.3)	**2**	**None**: Internal Pilot	**None**: Not Provided	**10**
			06	**280**: 280 (73.9)	**40**	**E**: External Pilot	**CB**: Provided	**10**

★ Spool type shown in the column is for the centre position.