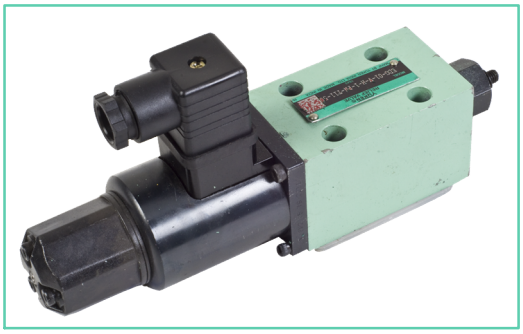
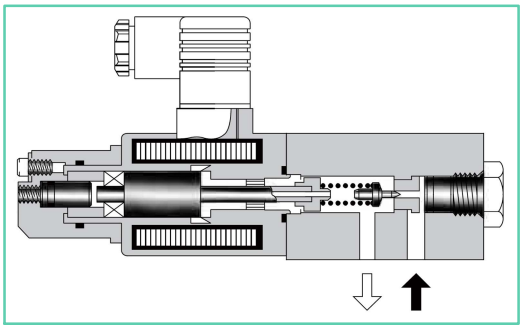
Proportional Electro-Hydraulic Pilot Relief Valves

This valve consists of a small DC solenoid and a direct-acting relief valve. It serves as a pilot valve for a low flow rate hydraulic system or a proportional electro-hydraulic control valve and controls the pressure in proportion to the input current. Note that this valve is used in conjuction with the applicable power amplifier.

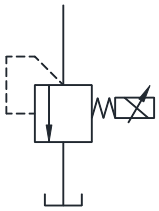




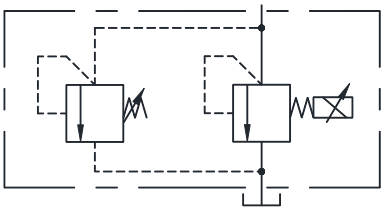
Specification

Description \ Model Number		EDG-01
Max. Operating Pres. Kgf/cm^2		250
Max. Flow L/min.		2
Min. Flow L/min.		0.3
Pres. Adj. Range Kgf/cm^2		Refer to Model No. Designation
Rated Current	mA	EDG-01※-B: 800 EDG-01※-C: 900 EDG-01※-H: 950
Coil resistance	Ω	10
Hysteresis		Less than 3%
Repeatability		Less than 1%
Mass (Approx.)	Kg	2

Graphic Symbols



Without Safety Valve



With Safety Valve

Model Number Designation

ED	G	-01	V	-C	-1	-PN	T13	-50
Series Number	Type of Mounting	Valve Size	Applicable Control*1	Pressure Adj. Range Kgf/cm^2	Safety Valve	P-Line Orifice	T-Line Orifice*2	Design Number
ED: Proportional Electro-Hydraulic Pilot Relief Valve	**G:** Sub-Plate Mounting	**01**	**None:** General Use **V:** Vent Control of Relief Valve (Omit if not required)	**B:** 5 – 70 **C:** 10 – 160 **H:** 12 – 250	**None:** Without Safety Valve **1:** With Safety Valve	**PN:** Without Orifice (Standard)	**T15** **T13** **T11**	**50**

*1. When the valve is to be used for vent control purpose, orifice adjustment is required due to piping capacity limitations. Therefore, consult Yuken representative in advance.

*2. The orifice used as the pilot valve may differ from the standard orifice.

Mounting Bolts

Four Socket head cap screws in the below table are included.

Valve Model Number	Socket head cap Screw	Qty	Bolt Kit Model Number
EDG-01	M5 x 45Lg.	4	BKDSG-01-50

Sub-Plate

Piping size	Sub-Plate Model Numbers	Thread size	Mass Kg.
1/8	DSGM-01-3080	1/8 BSP.F	0.8
1/4	DSGM-01X-3080	1/4 BSP.F	0.8

- 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.

Applicable Power Amplifier

For stable performance, it is recommended that Yuken's applicable power amplifiers be used. (For details see Page No. 647,651,660,668)

Model Numbers:

- PW100-※-H11 Refer EIC-H-1008
- PW200
- AME-D-10-※-20
- AME-D2-1010-11
- SK1022-※-※-11
- SK1015-11 (For DC power supply)
- AMN-D-10 (For DC power supply)

Instructions

- **Tank-Line Back Pressure**

  Check that the tank line back pressure does not exceed 2 Kgf/cm^2.

- **Vent control**

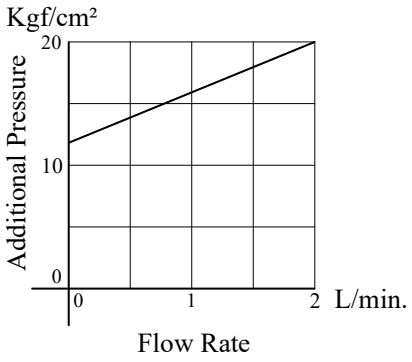
  When this valve is to be used as a relief valve or for other valve vent control purposes, use 6mm ID, 300mm or less long pipes for piping connections. If pressure instability is encountered, provide a 1-1.5mm diameter orifice for the relief or other valve vent port.

- **Circuit Pressure Control**

  When circuit pressure is directly controlled by this valve, make sure that the trapped oil volume is exceeding 40 cm^3.

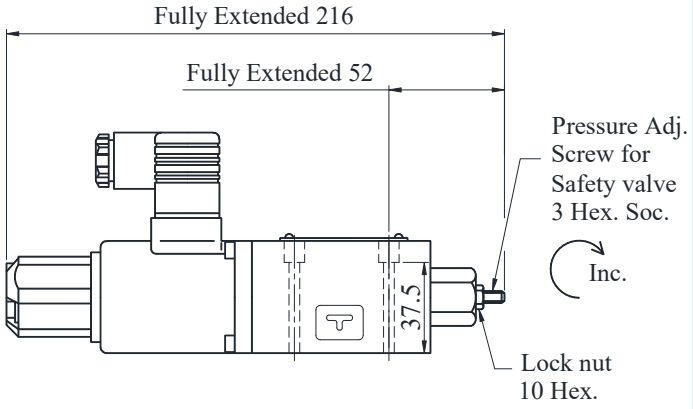
- **Safety Valve Pressure Setting**

  The safety valve pressure setting at the maximum flow rate is present to a level that is 20 Kgf/cm^2 higher than the pressure adjustment range upper limit.
  If the operating pressure upper limit is low or a different flow rate upper limit is used, make adjustment after calculating the safety valve pressure setting from the following equation:
  Pressure setting=(Operating pressure upper limit) + (Additional pressure indicated below).



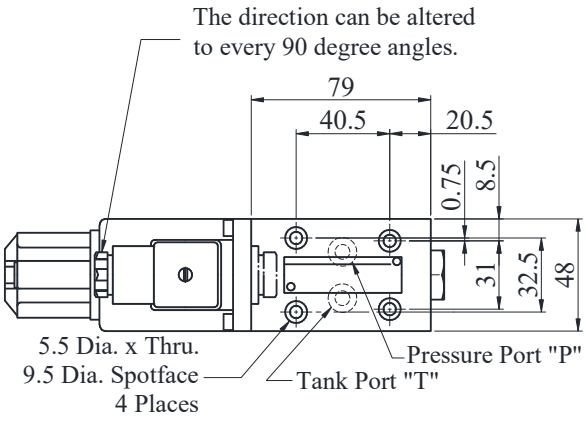
To lower the setting pressure, turn the safety valve pressure adjustment screw anti-clockwise. After adjustment, be sure to tighten the lock nut.

EDG-01※-※-1-P※T※-50
With safety Valve

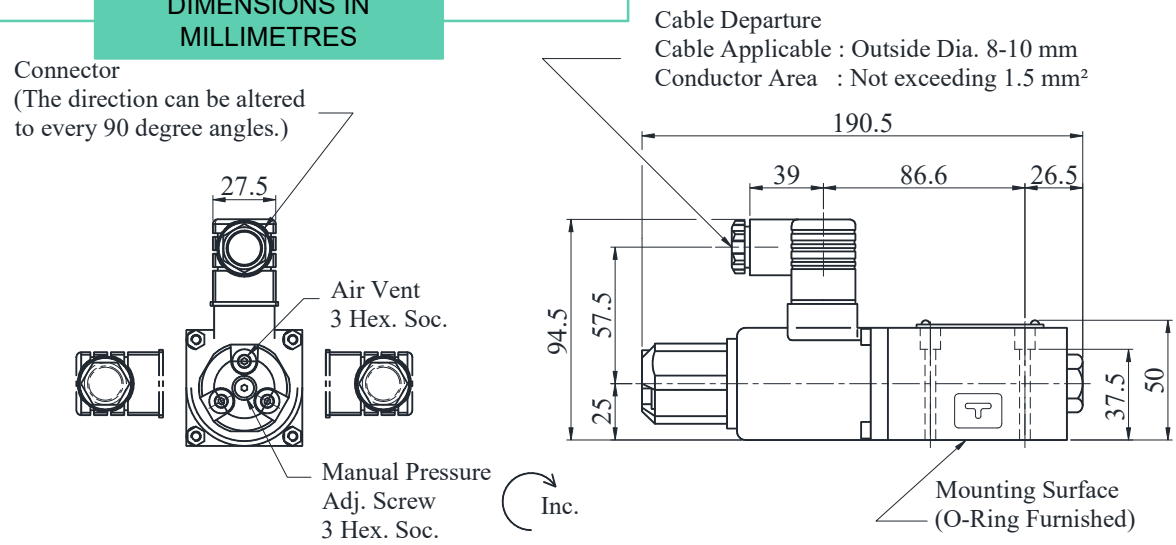


For other dimensions refer without safety valve.

EDG-01※-※-P※T※-50
Without safety Valve



DIMENSIONS IN MILLIMETRES



Note :
For valve mounting surface dimensions, see the dimensional drawings of sub-plates in Doc. No. EIC-E-1001 Page No. 340.

Spare Parts List

List of Seals

Sl. No.	Name of Parts	Part No.	Qty.	
			Without Safety Valve	With Safety Valve
1	O-Ring	SO-NB-P9	2	
2	O-Ring	SO-NB-A013	1	
3	O-Ring	SO-NA-P6	-	1
4	O-Ring	SO-NB-P14	1	

Note : When ordering the seals, please specify the seal kit number from the table above.

List of Seal Kits

Model Numbers	Seal Kit Numbers
EDG-01-50	KS-EDG-01-50
EDG-01-1-50	KS-EDG-01-1-50

Solenoid Assy.

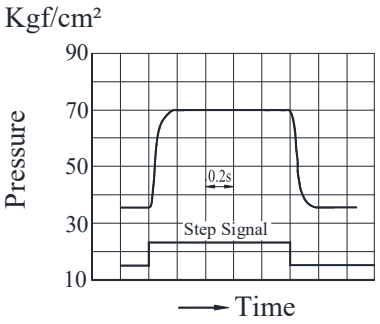
Valve Model Numbers	Solenoid Assy.
EDG-01※-※-※-P※T※-50	E318-Y06M2-05-61

Step Response (Example)

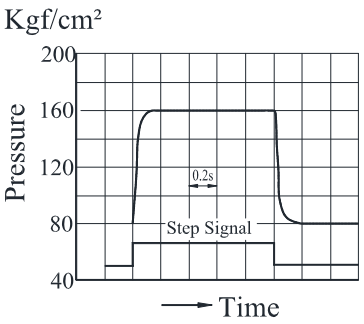
These values were measured on independent valves.
They vary by circuit.

Flow Rate : 2 L/min.
Trapped oil volume : 40 cm²
Viscosity : 30 cSt

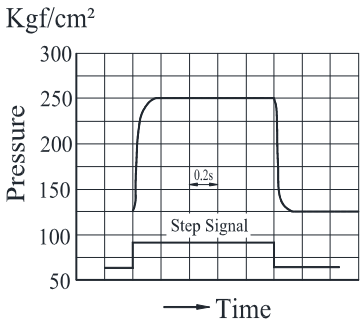
EDG-01-B



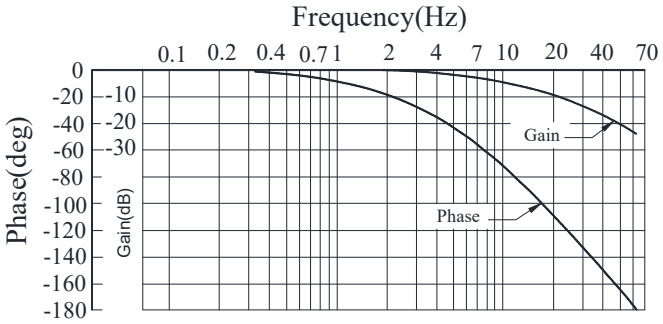
EDG-01-C



EDG-01-H

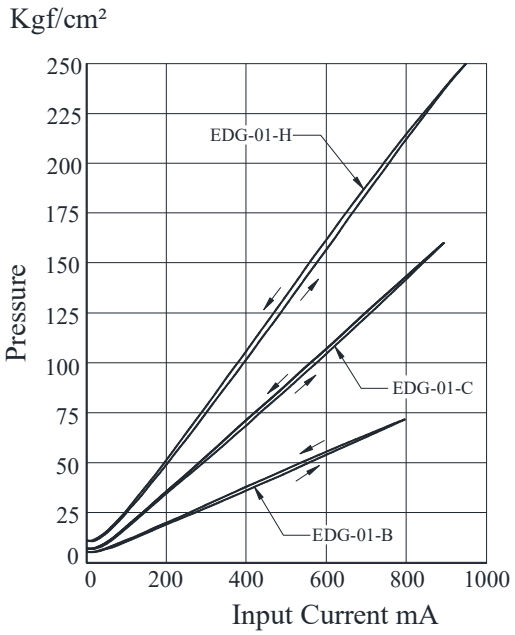


Frequency Response

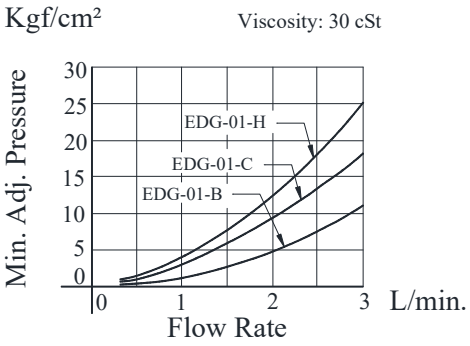


Flow Rate : 2 L/min.
Pressure : 80 Kgf/cm²±16 Kgf/cm²
Trapped oil volume : 30 cm²
Viscosity : 30 cSt

Control Pressure vs. Input Current

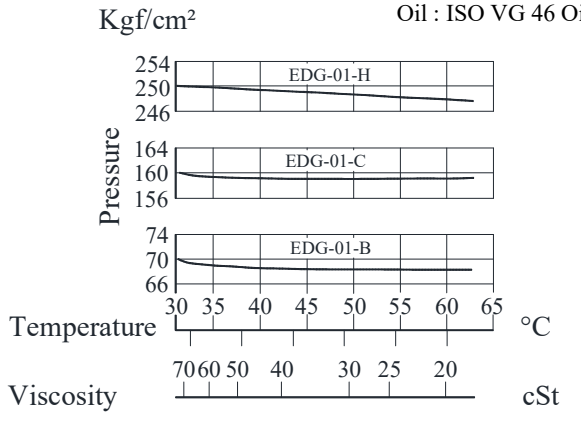


Min. Adjustment Pressure



Viscosity vs. Pressure

Flow Rate : 2 L/min.
Oil : ISO VG 46 Oil



Flow Rate vs. Pressure