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■ Proportional Electro-Hydraulic Relieving and Reducing Valves

This valve is derived by combining a small, high-performance 1/8 proportional electro-hydraulic pilot relief valve with a relieving and reducing valve.

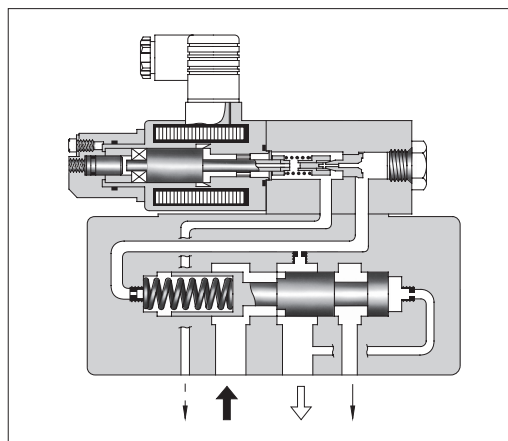
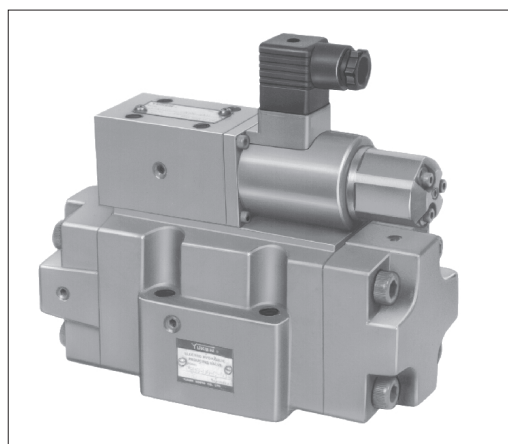
With this valve, it is possible to regulate the system pressure in proportion to the input current.

Incorporating a relief mechanism, this valve provides a good response speed and the pressure decreases even if the load is large. Note that this valve is used in conjunction with the applicable power amplifier.

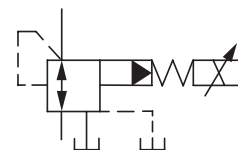
■ Specifications

Model Numbers		ERBG-06	ERBG-10
Descriptions			
Max. Operating Pres.	MPa	24.5	24.5
Max. Flow	L/min	100	250
Max. Relieving Flow	L/min	35	15
Secondary Pres. Adj. Range	MPa	Refer to Model Number Designation	
Rated Current	mA	B: 800	B: 800
		C: 800	C: 800
		H: 950	H: 950
Coil Resistance	Ω	10	10
Hysteresis		3% or less	3% or less
Repeatability		1% or less	1% or less
Mass	kg	12	13.5

★ The values shown are those obtained where the differential pressure between the secondary pressure port and tank port is 13.7 MPa.



Graphic Symbol



■ Model Number Designation

ERB	G	-06	-C	-51
Series Number	Type of Mounting	Valve Size	Secondary Pres. Adj. Range MPa	Design Number
ERB: Proportional Electro-Hydraulic Relieving and Reducing Valve	G: Sub-Plate Mounting	06	B: 0.8 - 6.9 C: 1.2 - 13.7 H: 1.5 - 20.6	51
		10	B: 0.9 - 6.9 C: 1.2 - 13.7 H: 1.5 - 20.6	



■ Accessories

● Mounting Bolts

Valve Model Numbers	Socket Head Cap Screw	Qty.
ERBG-06	M10 × 70 L	4
EBBG-10	M10 × 70 L	6

● Applicable Power Amplifiers

For stable performance, it is recommended that Yuken's applicable power amplifiers be used (for details see pages H-173, H-177 and H-183).

Model Numbers : AME-D-10- * -20
 AME-D2-1010-11
 AMN-D-10 (For DC power supply)
 SK1022- * - * -11
 SK1015-11 (For DC power supply)

■ Sub-Plates

Valve Model Numbers	Sub-Plate Model Numbers	Thread Size Rc	Mass kg
ERBG-06	ERBGM-06-20	3/4	3.0
ERBG-10	ERBGM-10-20	1-1/4	6.5

- Sub-plates are available. Specify the sub-plate model number from the table above. When sub-plates are not used, the mounting surface should have a good machined finish. ($\frac{1}{16}$)

■ Instructions

● Primary Pressure Required for Preselected Pressure

The primary pressure must be 1 MPa higher than the preselected pressure.

● Drain Back Pressure

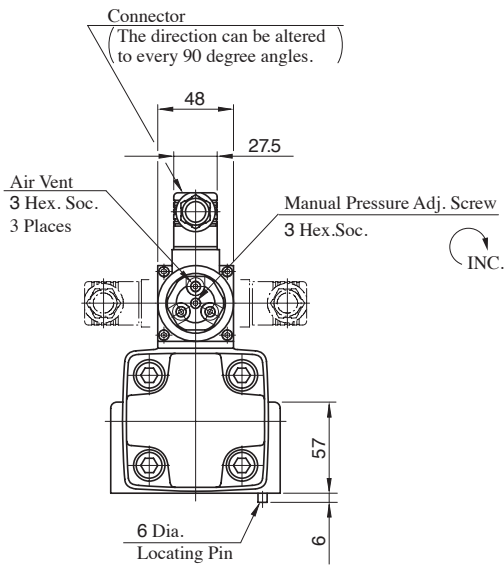
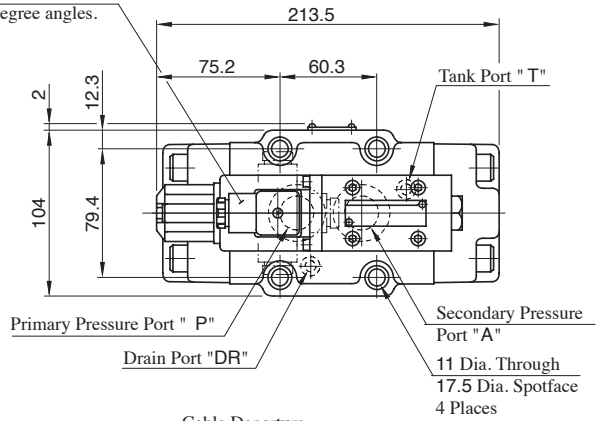
Check that the drain back pressure does not exceed 0.2 MPa.

● Trapped Oil Volume

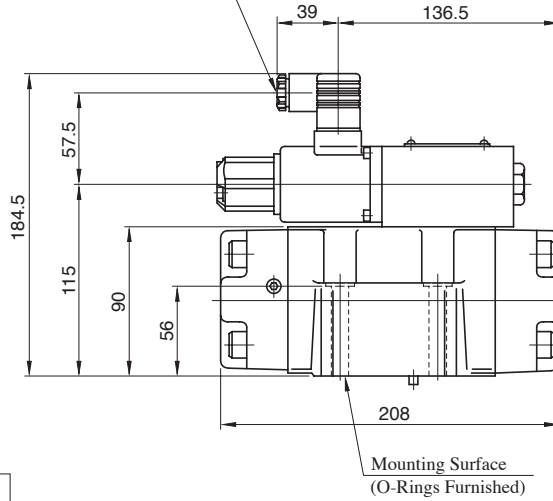
The recommended secondary side trapped oil volume is about 20 liters. Note that the trapped oil volume must not be lower than 1.4 liters.

ERBG-06

The direction can be altered to every 90 degree angles.

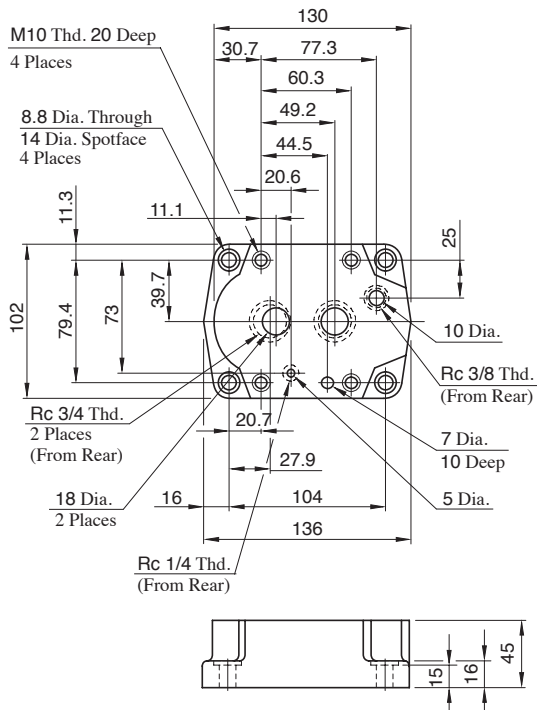


Cable Departure
Cable Applicable:
Outside Dia. ... 8-10 mm
Conductor Area
... Not Exceeding 0.75-1.5 mm²



Sub-Plate

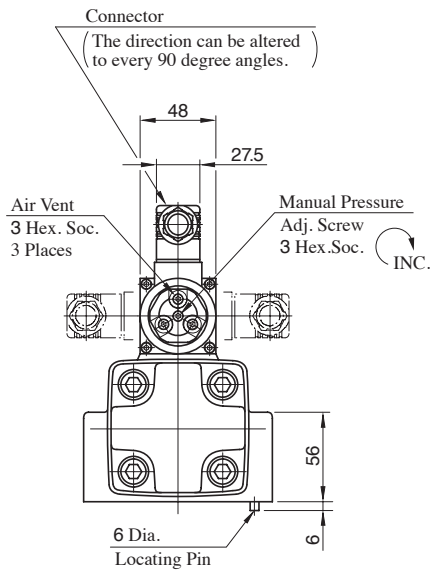
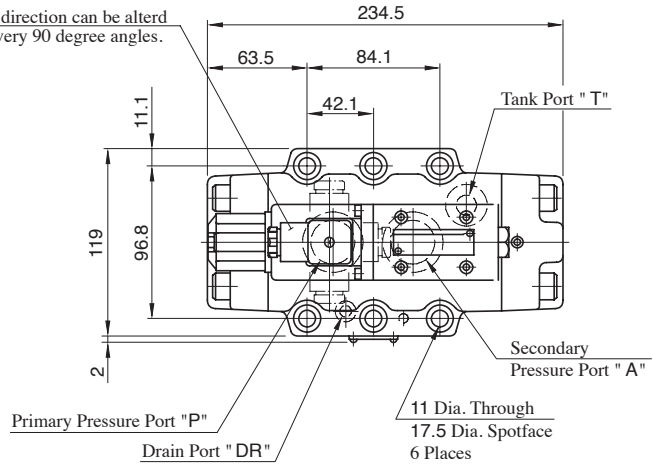
ERBGM-06





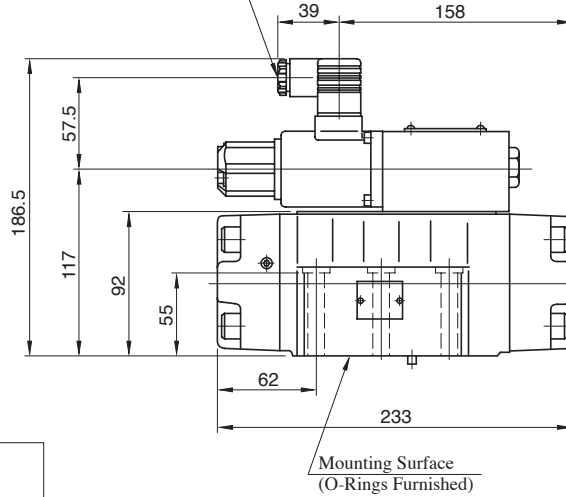
ERBG-10

The direction can be altered to every 90 degree angles.

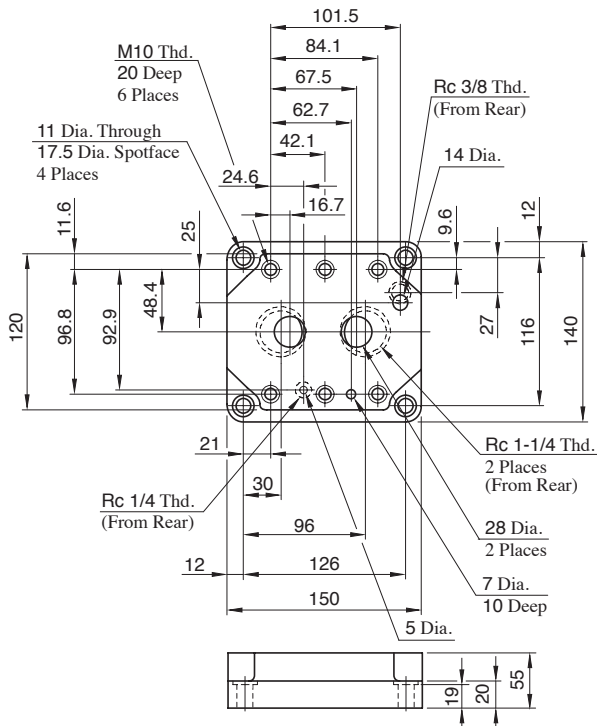


Cable Departure

Cable Applicable:
Outside Dia. ... 8-10 mm
Conductor Area
... Not Exceeding 0.75-1.5 mm²



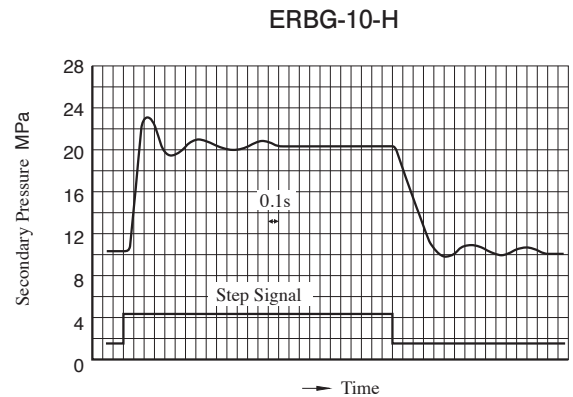
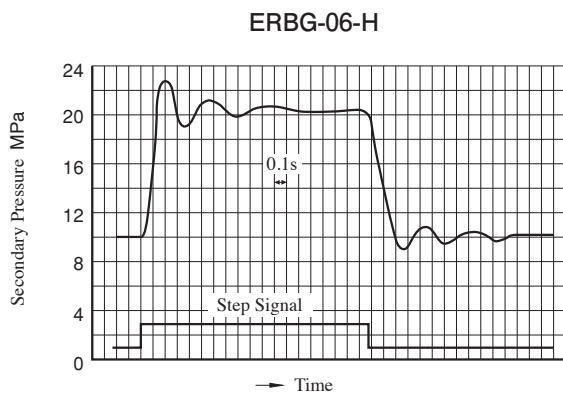
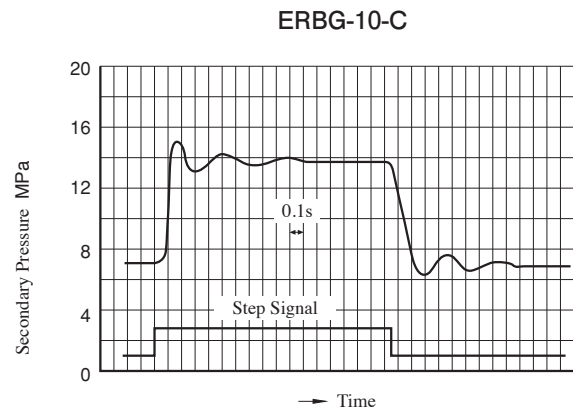
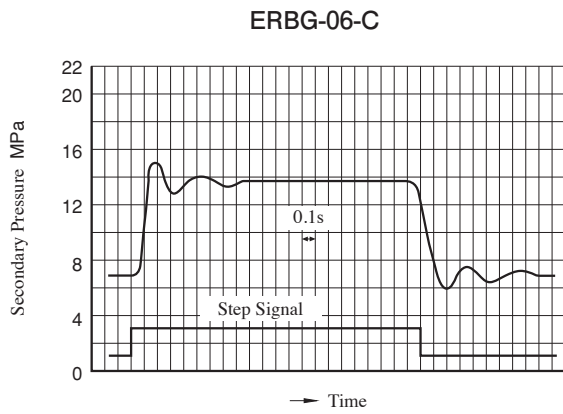
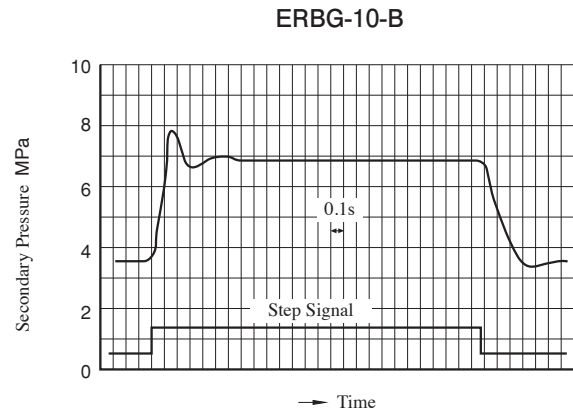
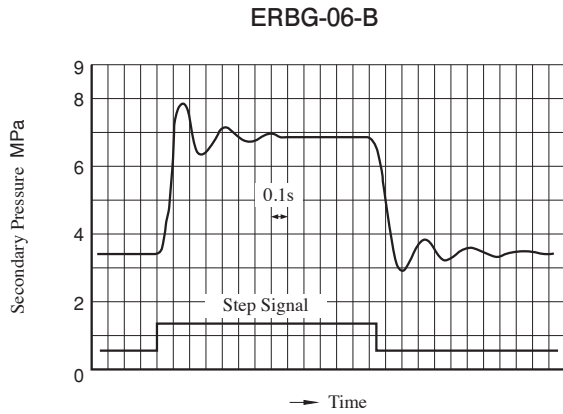
Sub-Plate ERBGM-10



Step Response (Example)

The following step response characteristics are taken when the trapped oil volume is 20 liters.
The step response varies by trapped oil volume.

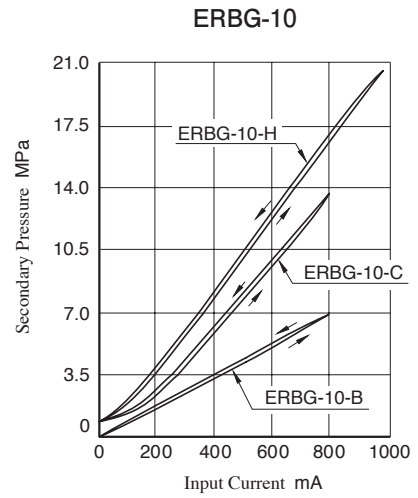
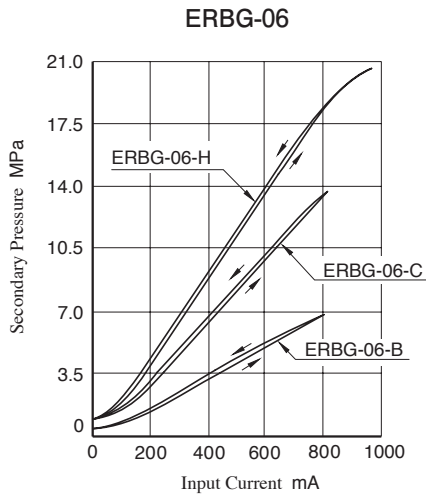
Primary Pressure : 24.5 MPa
Trapped Oil Volume : 20 L
Viscosity : 30 mm²/s





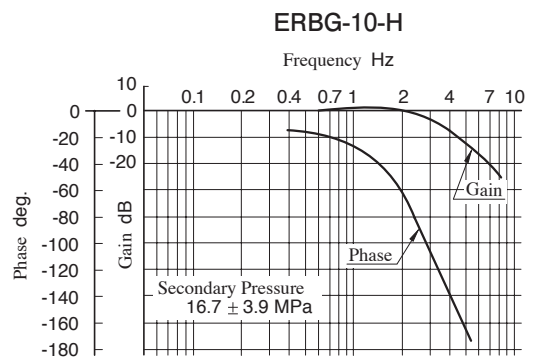
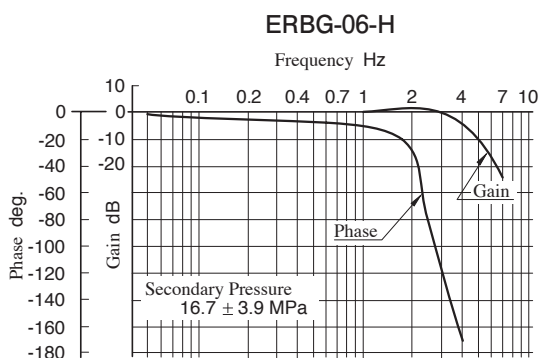
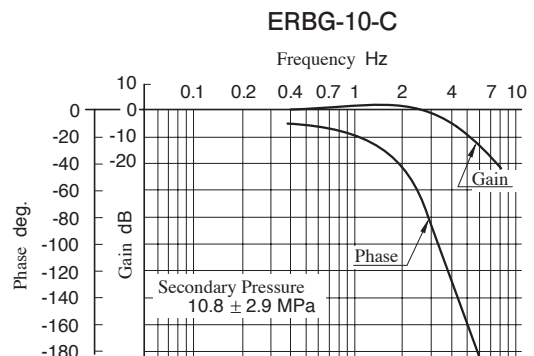
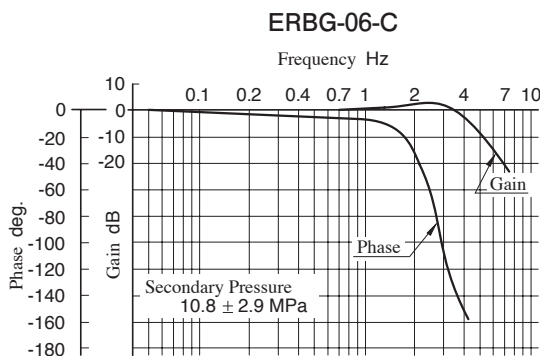
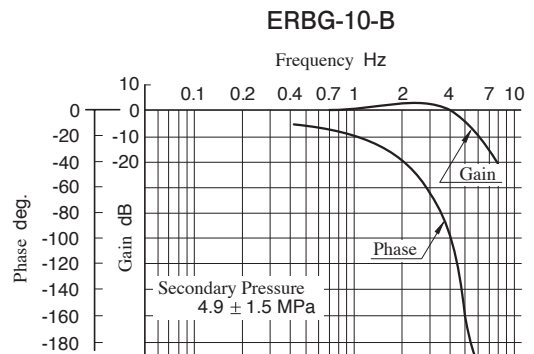
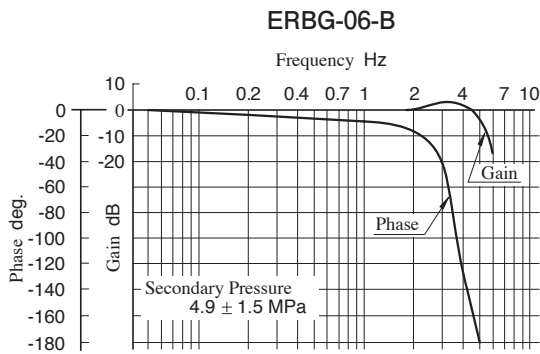
Input Current vs. Secondary Pressure

Primary Pressure : 24.5 MPa
Viscosity : 30 mm²/s



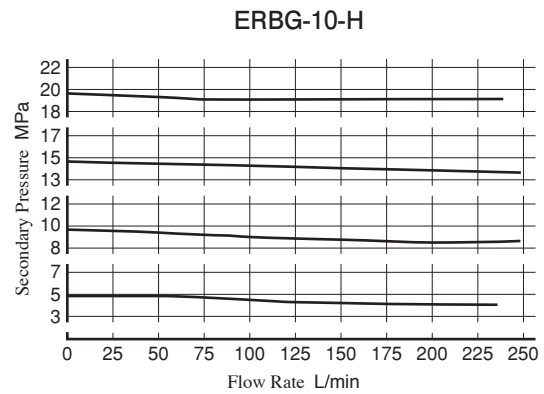
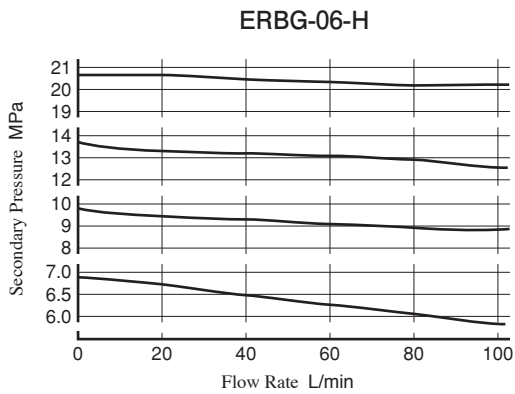
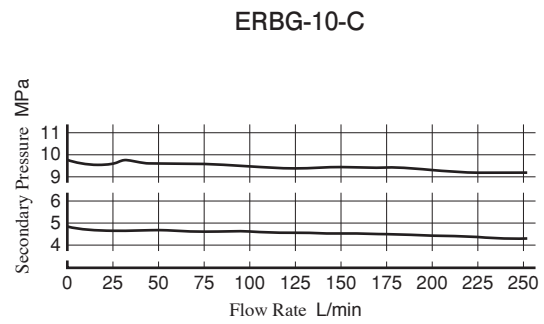
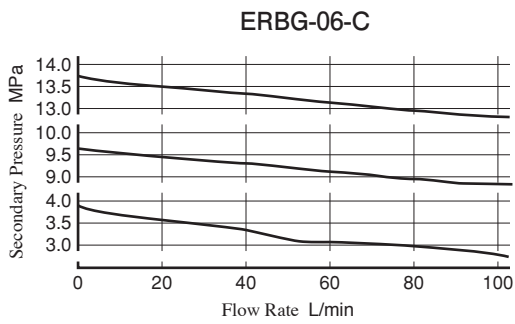
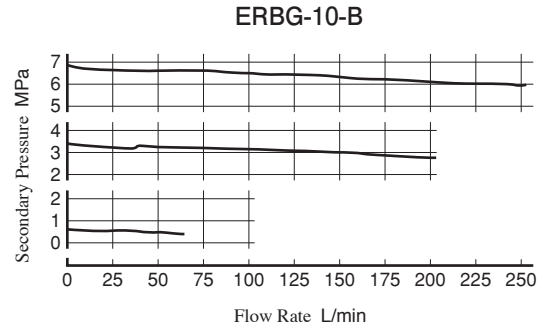
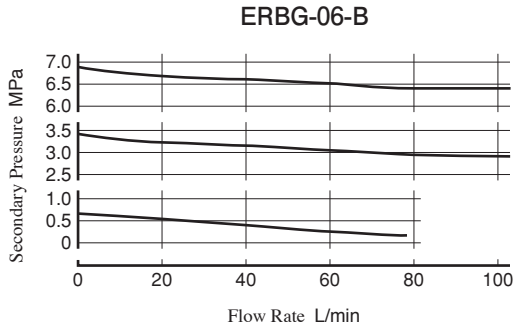
Frequency Response

Primary Pressure : 24.5 MPa
Trapped Oil Volume : 20 L
Viscosity : 30 mm²/s



Flow Rate vs. Secondary Pressure

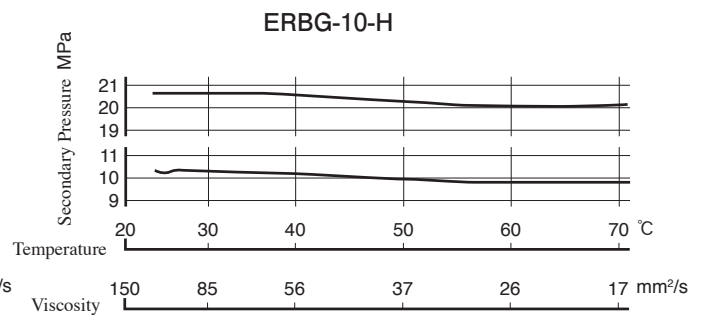
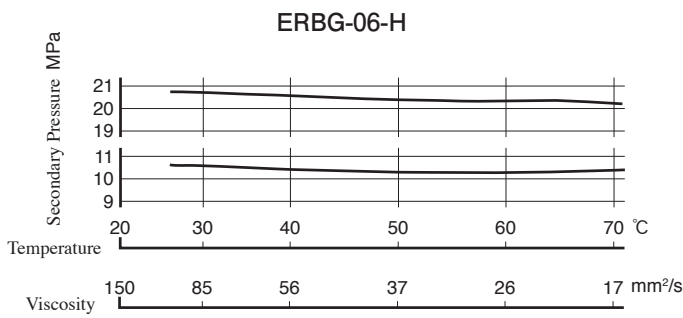
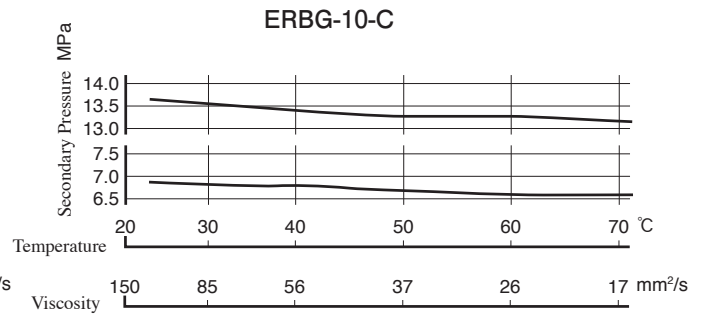
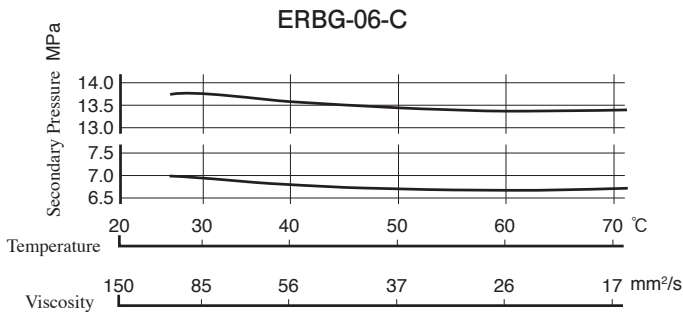
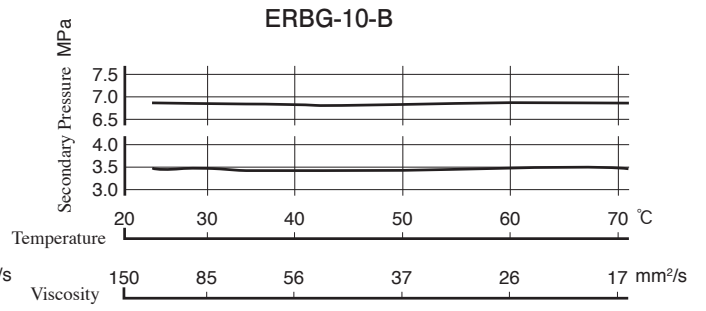
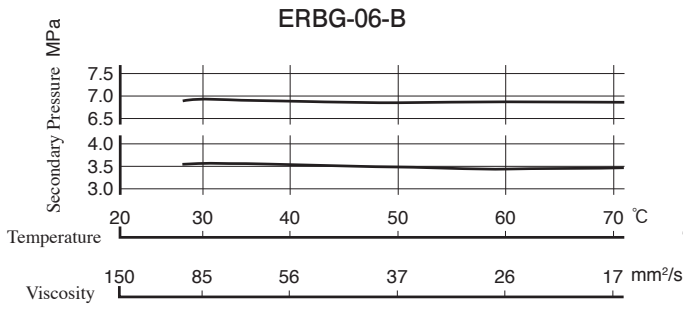
Viscosity : 30 mm²/s





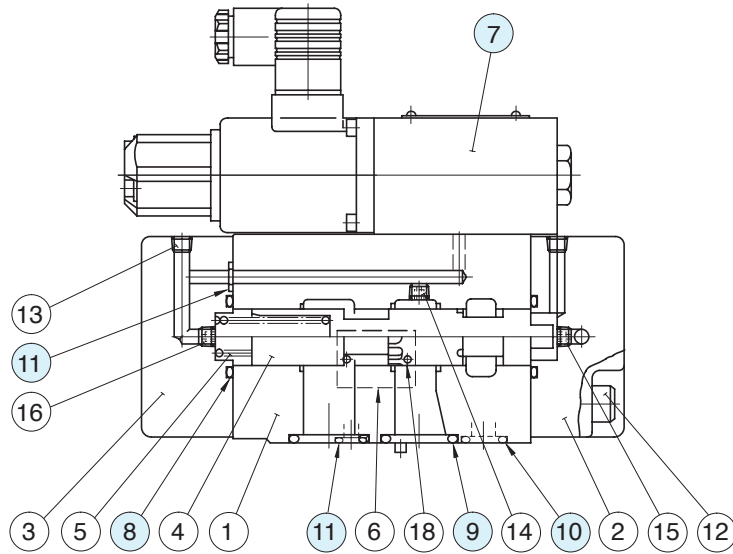
■ Viscosity vs. Secondary Pressure

Oil: ISO VG32



List of Seals and Pilot Valves

ERBG-06
10



List of Seals

Item	Name of Parts	Part Numbers		Qty.
		ERBG-06	ERBG-10	
8	O-Ring	OR NBR-90 G30-N	OR NBR-90 P36-N	2
9	O-Ring	OR NBR-90 P28-N	OR NBR-90 P28-N	2
10	O-Ring	OR NBR-90 P14-N	OR NBR-90 P18-N	1
11	O-Ring	OR NBR-90 P9-N	OR NBR-90 P9-N	3

Pilot Valves

Valve Model No.	⑦ Pilot Valve Model Numbers
ERBG-06-B-51	EDG-01-B-PNTN-5101
ERBG-06-C-51	EDG-01-C-PNTN-5101
ERBG-06-H-51	EDG-01-H-PNT15-5101
ERBG-10-B-51	EDG-01-B-PNTN-5101
ERBG-10-C-51	EDG-01-C-PNTN-5101
ERBG-10-H-51	EDG-01-H-PNT15-5101

Note: For the details of pilot valves, refer to "Pilot Relief Valves" on page H-97.

■ Interchangeability between Current and New Design

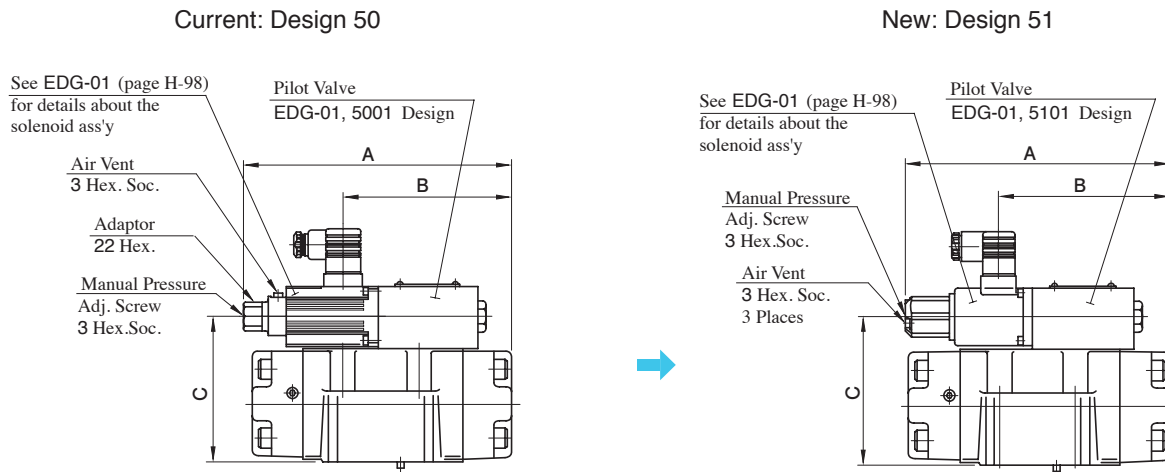
ERBG-06/10 series valves have changed model from 50 to 51 design in line with the model change of pilot valve (EDG-01).

● Specifications and Characteristics

Input current-secondary pressure characteristics differ between current and new design. Please inquire separately for details. Other specifications remain unchanged.

● Mounting Interchangeability

There is an interchangeability in the mounting dimensions, however, the outside shape and dimensions are changed as shown below due to pilot valve improvement and other modifications.



Model Numbers		A	B	C
Current	ERBG-06- *-50	214.5	136.5	115
New	ERBG-06- *-51	213.5	136.5	115
Current	ERBG-10- *-50	235.5	158	117
New	ERBG-10- *-51	234.5	158	117

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