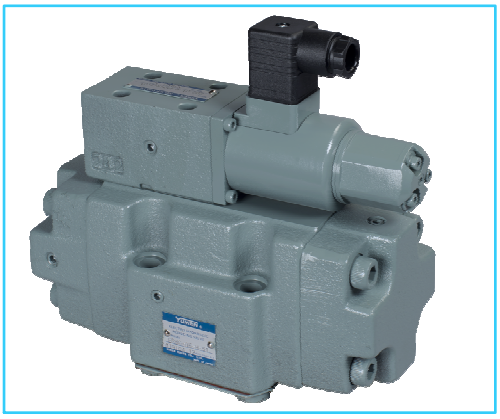
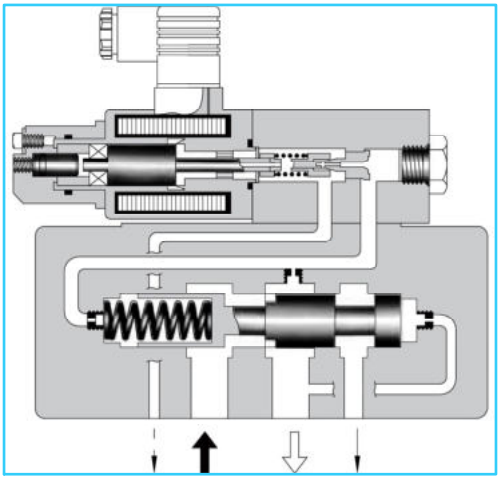
Proportional Electro-Hydraulic Relieving and Reducing Valves

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.



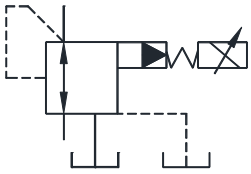


Specifications

Description \ Model Numbers		ERBG-06	ERBG-10
Max. Operating Pres.	Kgf/cm^2	250	
Max. Flow	L/min.	100	250
Max. Relieving Flow	L/min.	35	15
Secondary Pres. Adj. Range	Kgf/cm^2	Refer to Model Number Designation	
Rated Current	mA	**B :** 800 **C :** 800 **H :** 950	
Coil resistance	Ω	10	
Hysteresis		3% or less	
Repeatability		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 140 Kgf/cm^2.

Graphic Symbol



Model Number Designation

F-	ERB	G	-06	-C	-51
Special Seals	Series No.	Type of Mounting	Valve Size	Secondary Pres. Adj. Range Kgf/cm^2	Design No.
F: Special Seals for Phosphate Ester Type fluid (Omit if not required)	**ERB:** Proportional Electro-Hydraulic Relieving and Reducing Valve	**G:** Sub Plate Mounting	**06**	**B :** 8 ~ 70 **C :** 12 ~ 140 **H :** 15 ~ 210	**51**
			10	**B :** 9 ~ 70 **C :** 12 ~ 140 **H :** 15 ~ 210	

Attachment

- **Mounting Bolts**

Valve Model Numbers	Socket Head Cap Screw	Qty.	Bolt Kit Model Number
ERBG-06	M10 x 70 Lg.	4	BKERBG-06-51
ERBG-10	M10 x 70 Lg.	6	BKERBG-10-51

Applicable Power Amplifier

For stable performance, it is recommended that Yuken's applicable power amplifiers be used.(For details see page no. 691)
Model Number:

- AME-D-10-※-20
- AME-D2-1010-11
- SK1022-※-※-11
- SK1015-11 (For DC Power Supply)
- AMN-D-10 (For DC Power Supply)

Sub-Plate

Valve Model Numbers	Sub-Plate Model Numbers	Thread Size	Mass Kg.
ERBG-06	ERBGM-06-2080	3/4 BSP.F	3.0
ERBG-10	ERBGM-10-1080	1-1/4 BSP.F	6.5

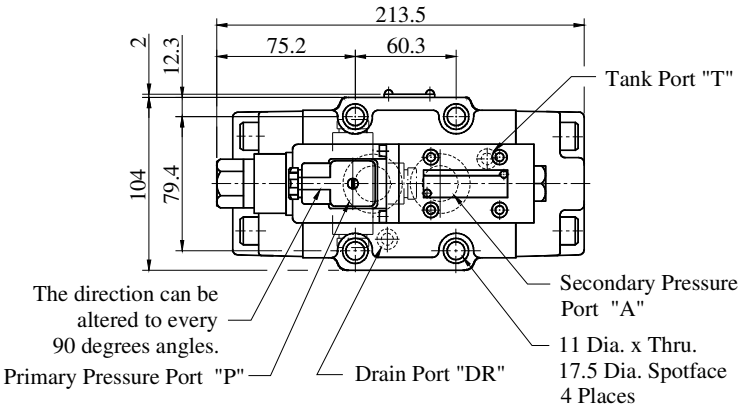
- Sub-plates are available. Specify the sub-plate model from the table above. When sub-plate are not used, the mounting surface should have a good machined finish.

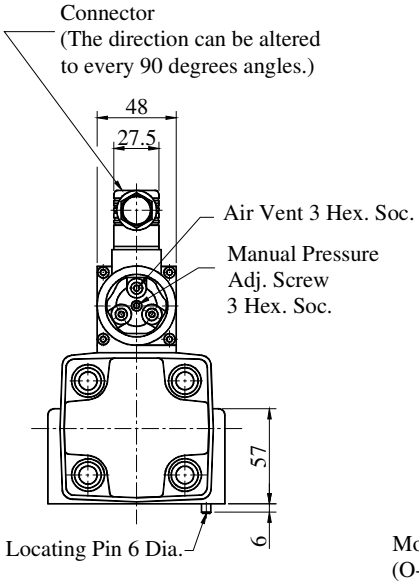
Instructions

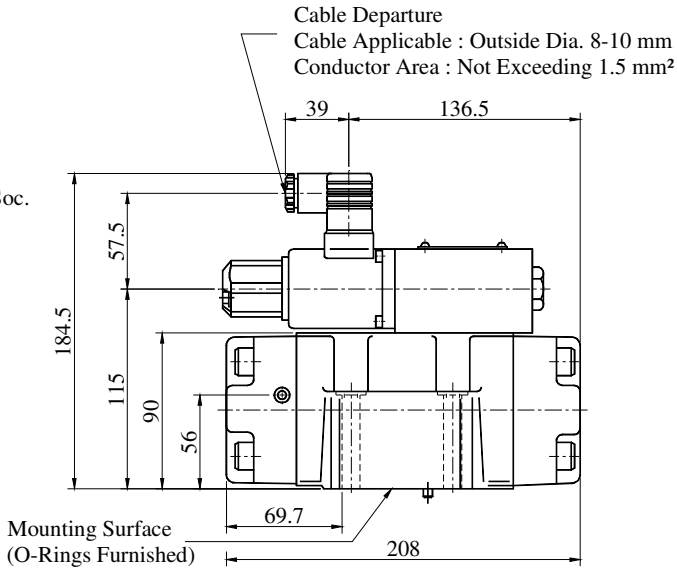
- **Primary Pressure Required for Preselected Pressure**
  The Primary pressure must be 10 Kgf/cm^2 higher than the preselected pressure
- **Drain Back Pressure**
  Check that the drain back pressure does not exceed 2 Kgf/cm^2
- **Trapped Oil Volume**
  The recommended secondary side trapped oil volume is about 20 liters. Note that the trapped oil volume must not be lower than 1.4 liters.

ERBG-06-※-51

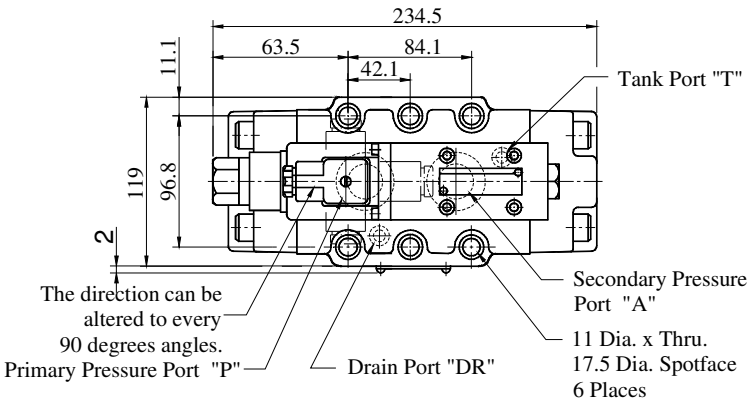
DIMENSIONS IN MILLIMETRES

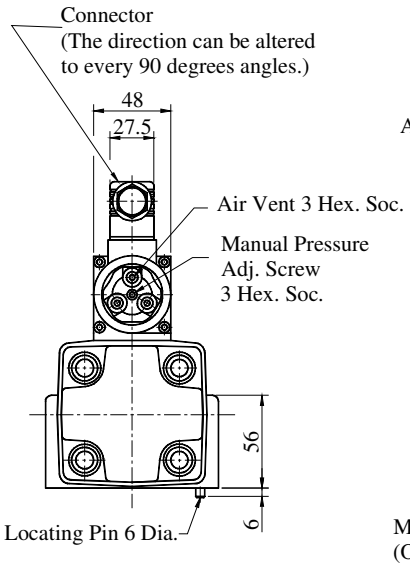


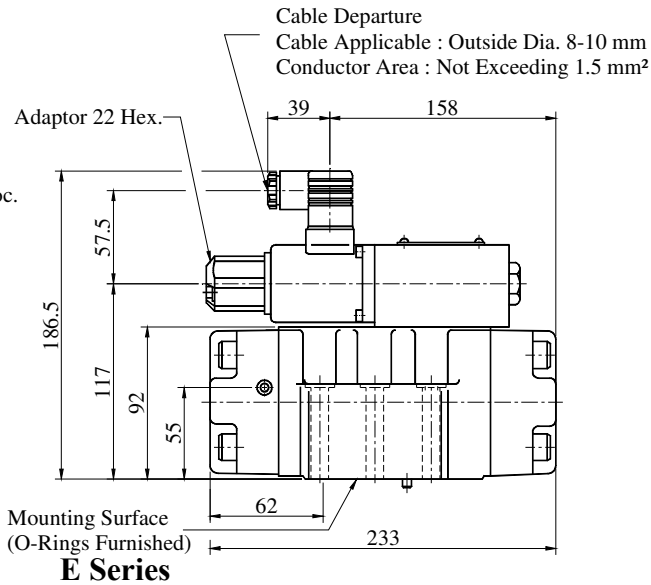




ERBG-10-※-51

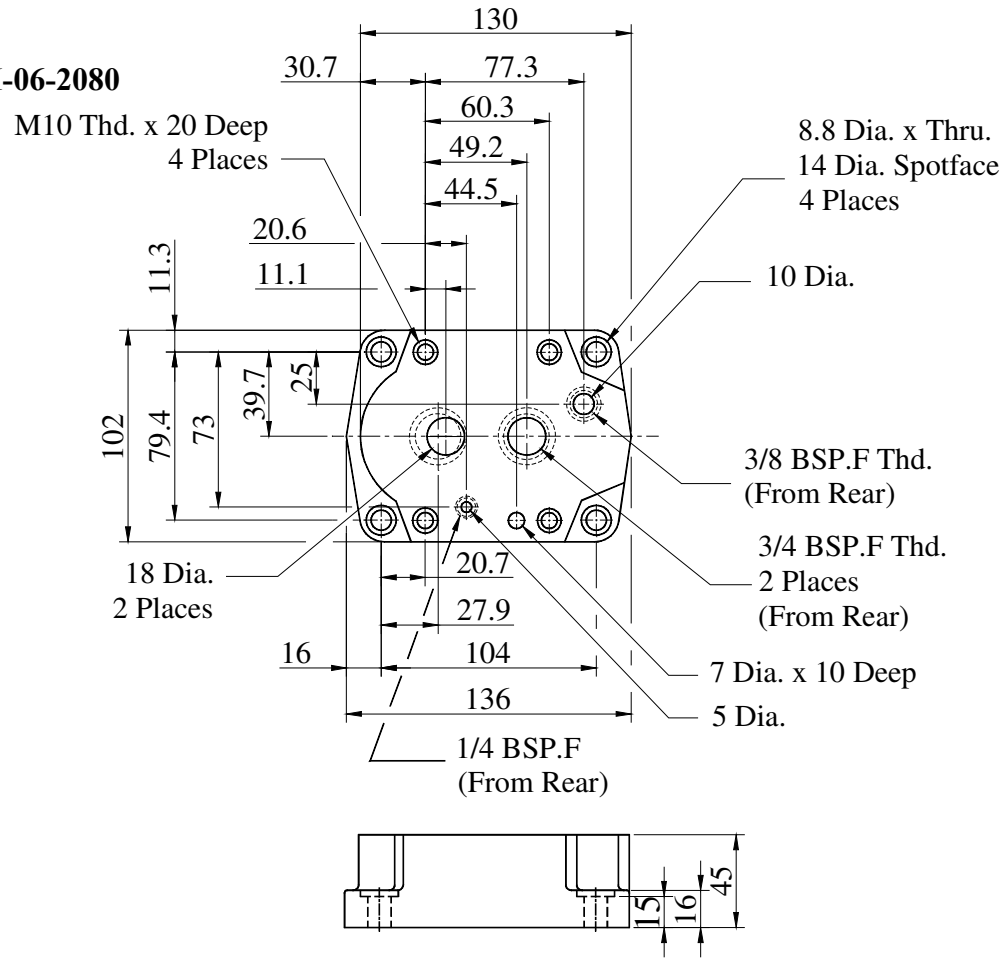




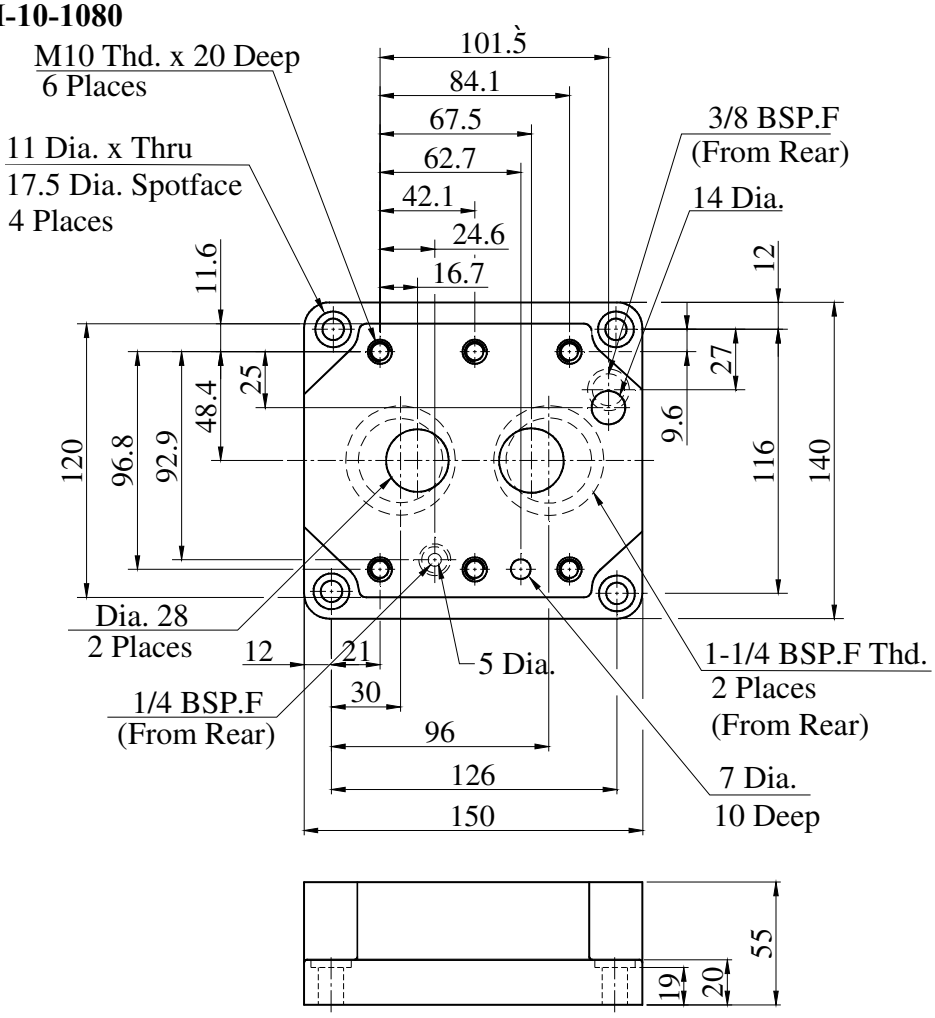


Sub-Plate

ERBGM-06-2080



ERBGM-10-1080

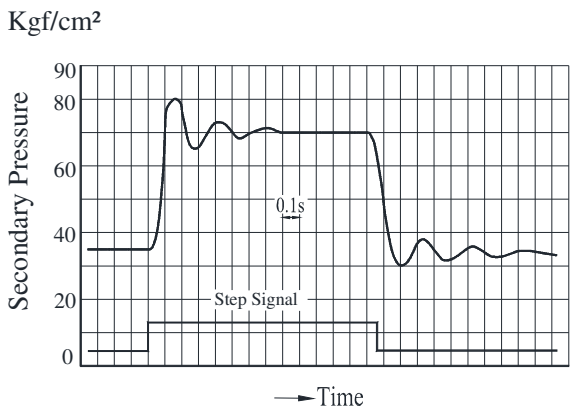


Step Response (Example)

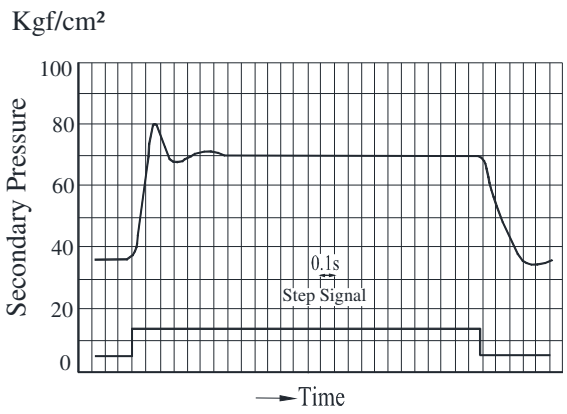
The following step response characteristics are taken when the trapped oil volume is 20 liters. The step response varies by trapped oil volume.

Primary Pressure : 250 Kgf/cm^2
Trapped Oil Volume : 20 L
Viscosity : 30 cSt

ERBG-06-B



ERBG-10-B



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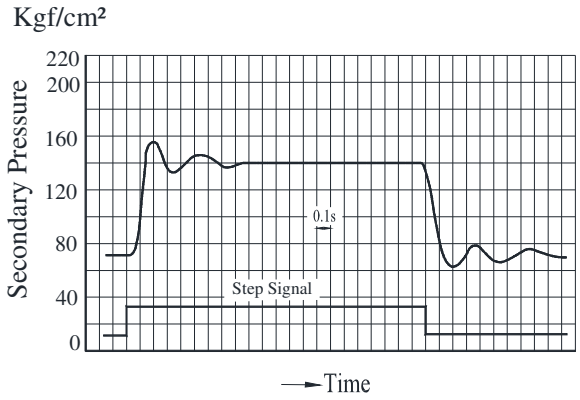
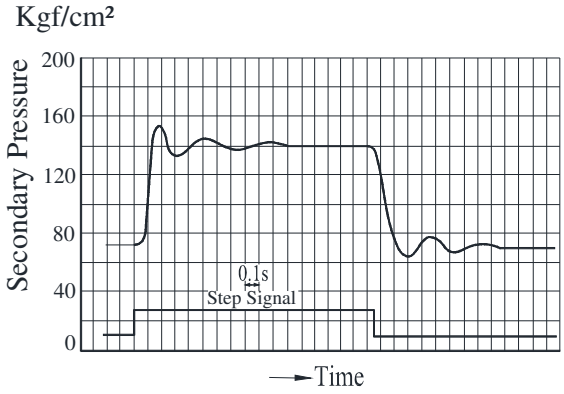
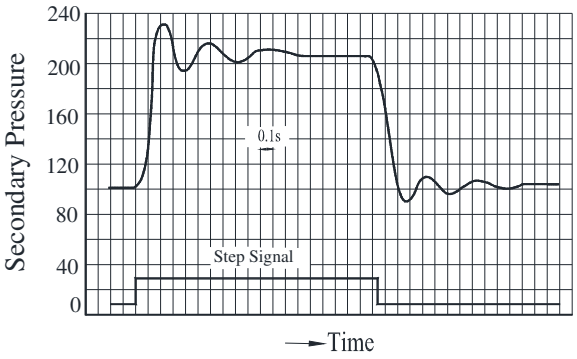


ERBG-10-C



ERBG-06-H



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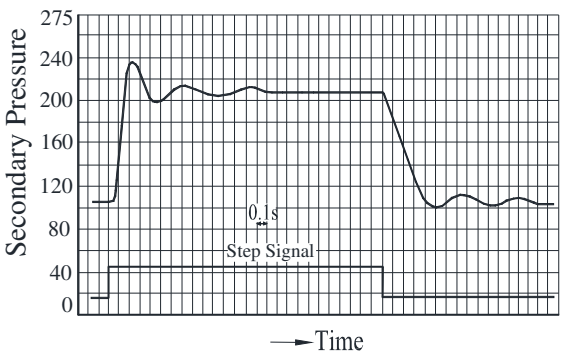
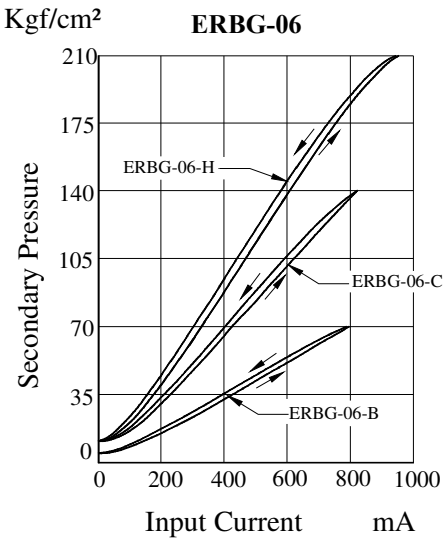
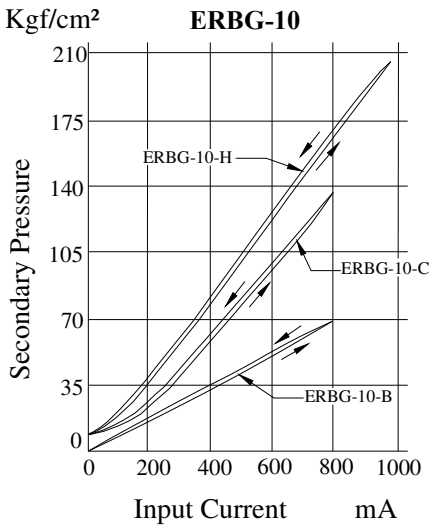


Input Current vs. Secondary Pressure

Primary Pressure: 250Kgf/cm²
Viscosity : 30cSt

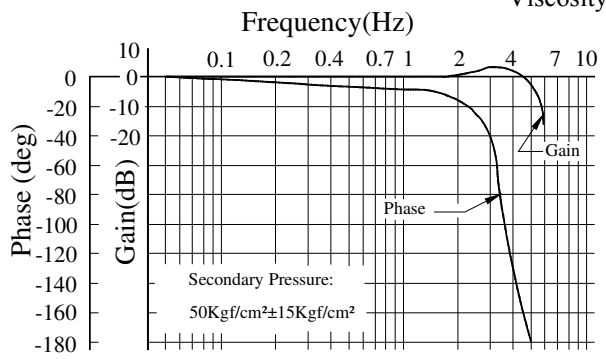




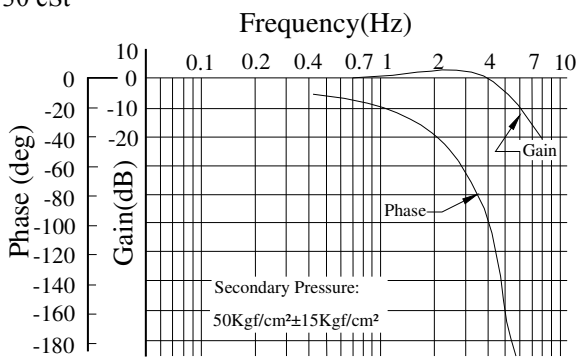
Frequency Response

Primary Pressure : 250 Kgf/cm²
Trapped Oil Volume : 20 L
Viscosity : 30 cSt

ERBG-06-B



ERBG-10-B



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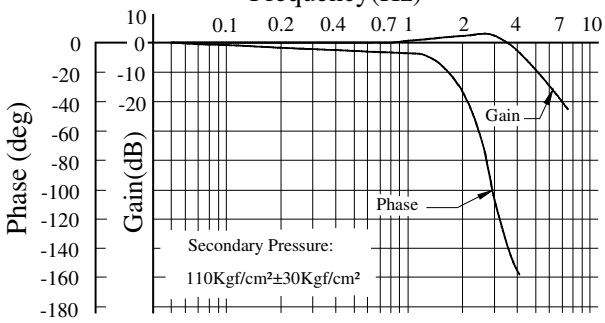

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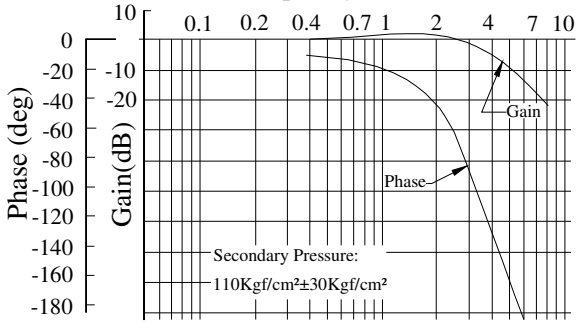

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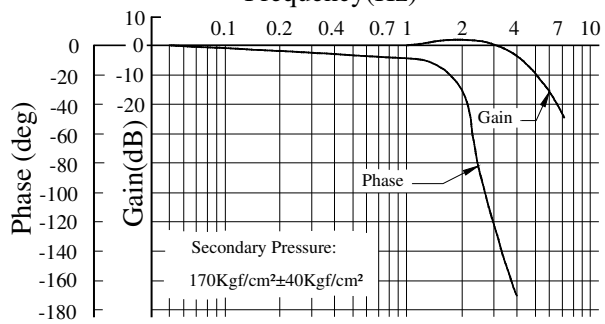

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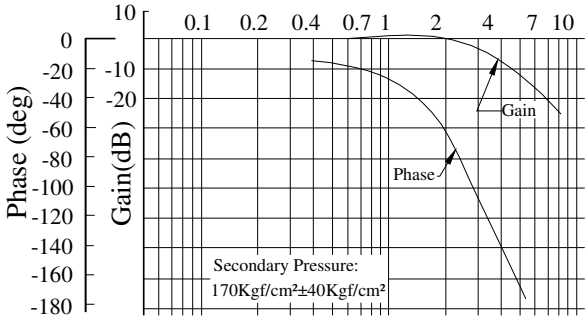
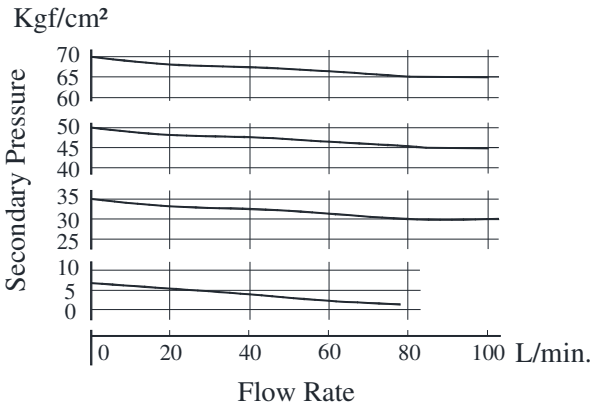


Flow Rate vs. Secondary Pressure

Viscosity: 30 cSt

ERBG-06-B



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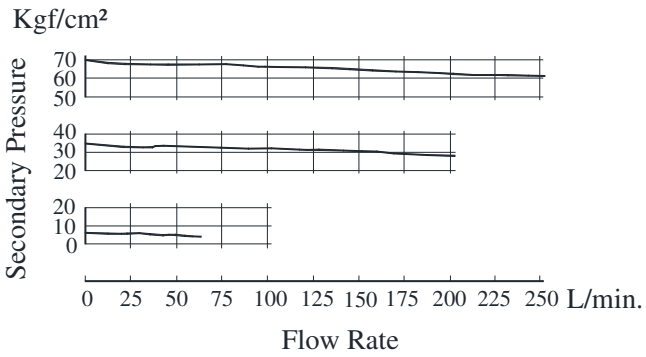

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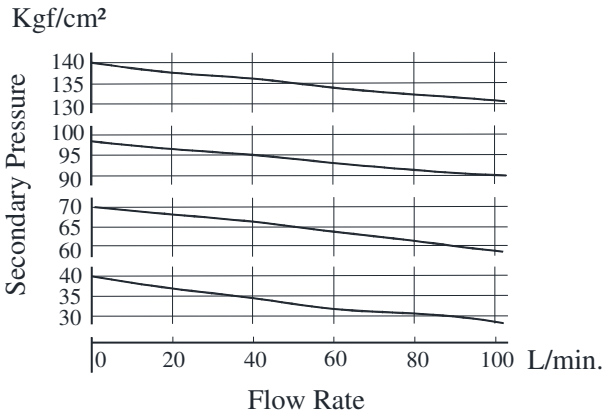

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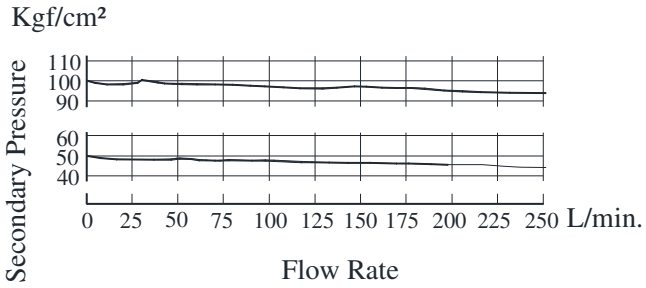

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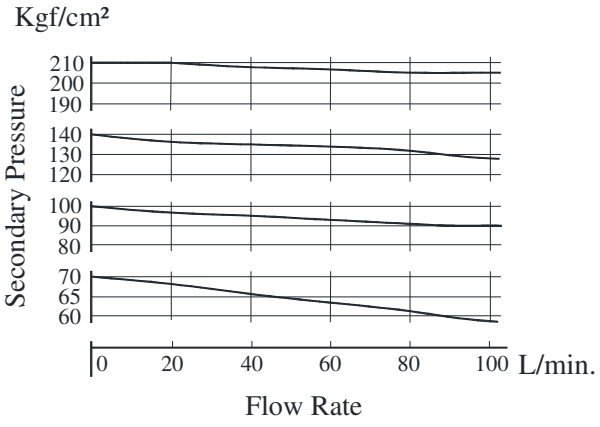

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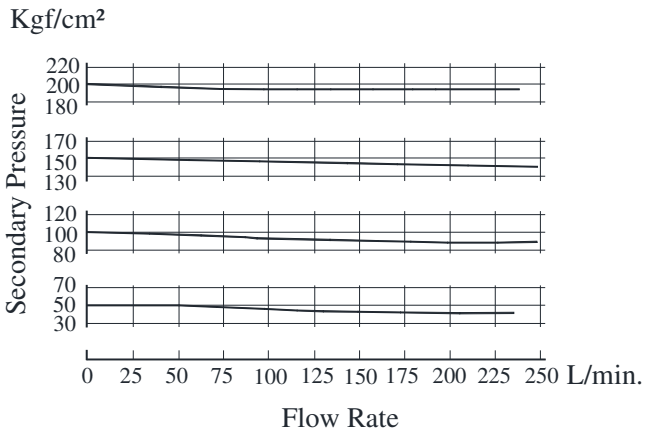
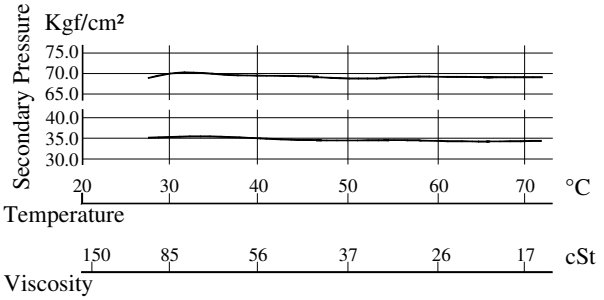


Viscosity vs. Secondary Pressure

Oil: ISO VG 32

ERBG-06-B



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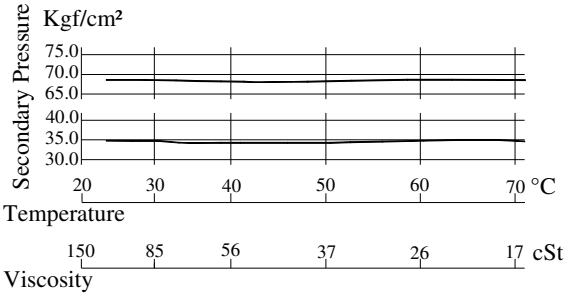

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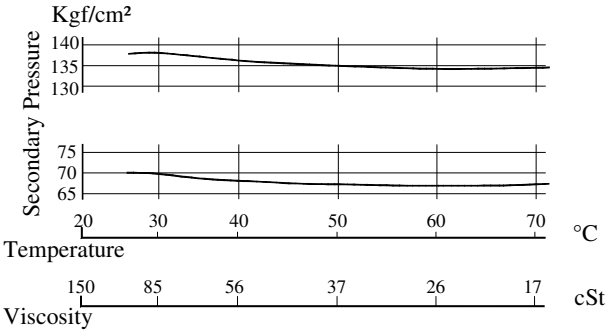
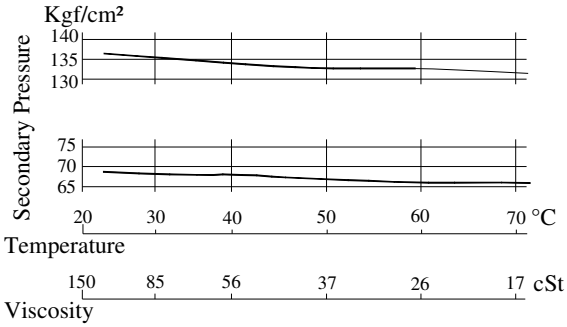


ERBG-10-C



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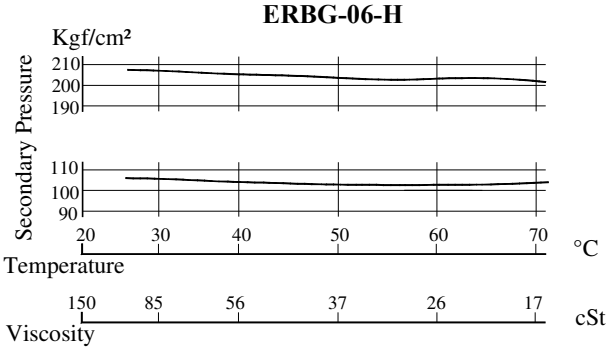

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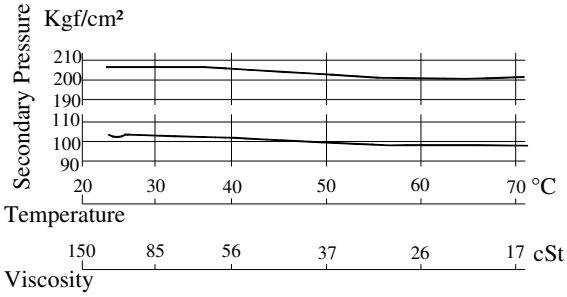

Spare Parts List

List of Seals

Sl. No.	Name of Parts	Part Numbers		Qty.
		ERBG-06	ERBG-10	
1	O-Ring	SO-NB-G30	SO-NB-P36	2
2	O-Ring	SO-NB-P28	SO-NB-P32	2
3	O-Ring	SO-NB-P14	SO-NB-P18	1
4	O-Ring	SO-NB-P9	SO-NB-P9	3

Note: When Ordering the seals, please specify the seal kit numbers KS-ERBG-06-51

List of Seals Kits

Valve Model Numbers	Seal Kit Numbers
ERBG-06	KS-ERBG-06-51
ERBG-10	KS-ERBG-10-51

Pilot Valves

Sl. No.	Valve Model Numbers	Pilot Valve Model Numbers
1	ERBG-06-B-51	EDG-01-B-PNTN-5101
2	ERBG-06-C-51	EDG-01-C-PNTN-5101
3	ERBG-06-H-51	EDG-01-H-PNTN-5101
4	ERBG-10-B-51	EDG-01-B-PNTN-5101
5	ERBG-10-C-51	EDG-01-C-PNTN-5101
6	ERBG-10-H-51	EDG-01-H-PNTN-5101