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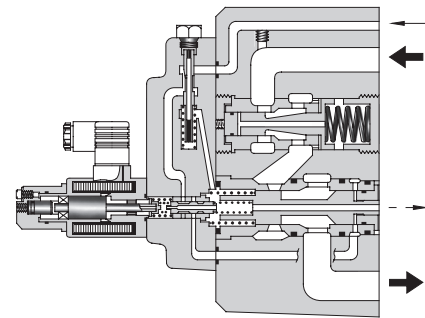
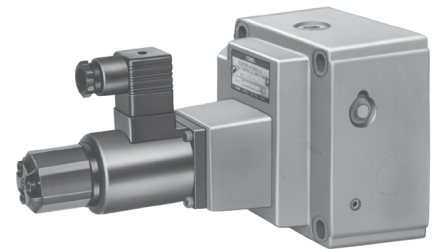
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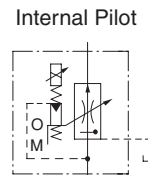
10Ω Series

Proportional Electro-Hydraulic Flow Control (and Check) Valves

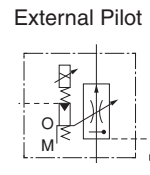
Since the preselected flow rate continuously varies in proportion to the current input to the valve, the system flow rate can be remote-controlled as desired by regulating the current output from the amplifier. Further, since the pressure and temperature compensation functions are provided, the preselected flow rate is not affected by pressure (load) or temperature (fluid viscosity). This valve is ideal for use where actuator startup, stop, and speed changes are to be implemented without producing a shock. Note that this valve is used in conjunction with the applicable power amplifier.



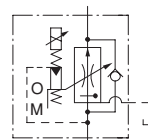
Graphic Symbols



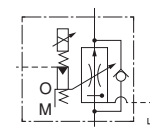
EFG-*



EFG-*



EFCG-*



EFCG-*

Specifications

Descriptions	Model Numbers	EFG -03-60	EFG -06-250
		EFCG -125	EFCG
Max. Operating Pressure	MPa	20.6	24.5
Metered Flow Adj. Range	L/min	60: 1-60 125: 1-125	2.5-250
Min. Differential Pressure*1	MPa	1.0	1.0
Free Flow (EFCG Models Only)	L/min	130	280
Min. Pilot Pressure*2	MPa	1.0	1.5
Min. Pilot L/min	at Normal	0.5	1
	at Transition	2.6	4
Rated Current	mA	780	820
Coil Resistance	Ω	10	10
Hysteresis		3% or less	3% or less
Repeatability		1% or less	1% or less
Approx. Mass	kg	10	25

*1. Min. pressure difference required between inlet and outlet ports to maintain function as pressure compensator.

*2. The minimum required value for the external pilot type.

Model Number Designation

EFC	G	-03	-125	-E	-51
Series Number	Type of Mounting	Valve Size	Max. Metered Flow L/min	Pilot Connection	Design Number
EF: Proportional Electro-Hydraulic Flow Control Valve	G: Sub-Plate Mounting	03	60 125	None: Internal Pilot	51
EFC: Proportional Electro-Hydraulic Flow Control and Check Valve		03	250	E: External Pilot	51

Accessories

Mounting bolts

Valve Model Numbers	Socket Head Cap Screw	Qty.
EFG EFCG ⁻⁰³	M10 × 80 L	4
EFG EFCG ⁻⁰⁶	M16 × 130 L	4

Applicable Power Amplifiers

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

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

Sub-Plate

Valve Model Numbers	Sub-Plate Model Numbers	Thread Size Rc	Approx. Mass kg
EFG EFCG ⁻⁰³	EFGM-03Y-30	3/4	5.7
	EFGM-03Z-30	1	5.6
EFG EFCG ⁻⁰⁶	EFGM-06X-30	1	12.5
	EFGM-06Y-30	1-1/4	16

Sub-plates are available. Specify the sub-plate model number from the tabel above. When sub-plates are not used, the mounting surface should have a good machined finish. ($\frac{1.6}{\sqrt{\quad}}$)

Instructions

Drain Back Pressure

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

Pilot Type Selection

This valve is constructed so as to operate at a predetermined pilot pressure. For the 03, a pilot pressure of 1 MPa or higher is required. For the 06, the reqiued pilot pressure is 1.5 MPa or higher.

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

①/②

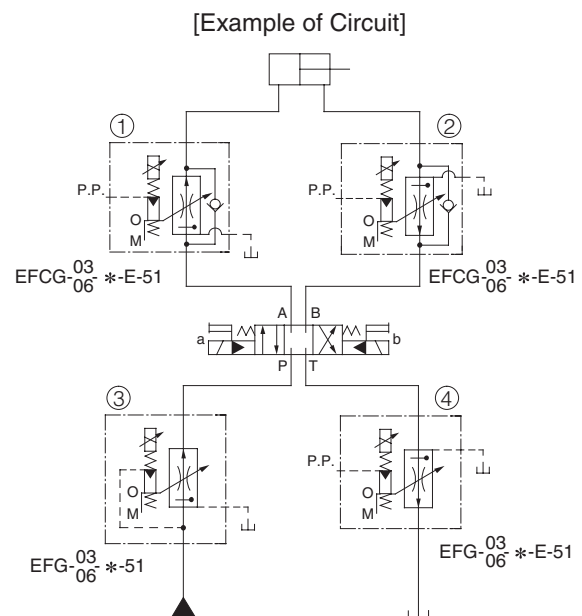
Use the external pilot type (pilot connection code: E) whether a meter-in or meter-out circuit is employed.

③

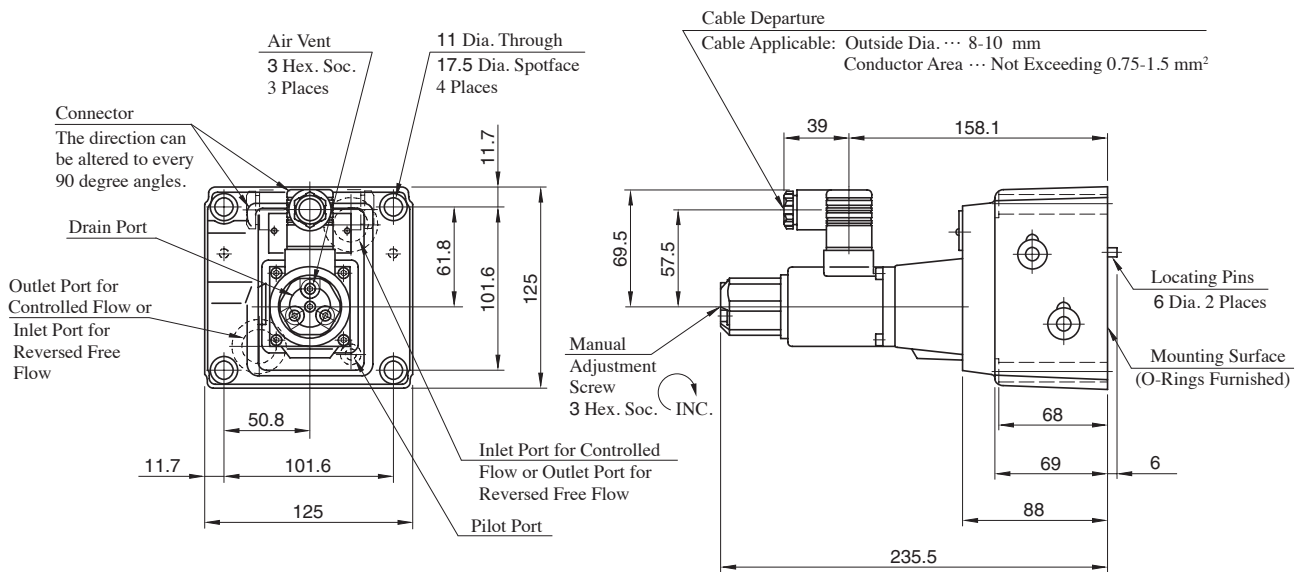
Use the internal pilot type (pilot connection code: None)

④

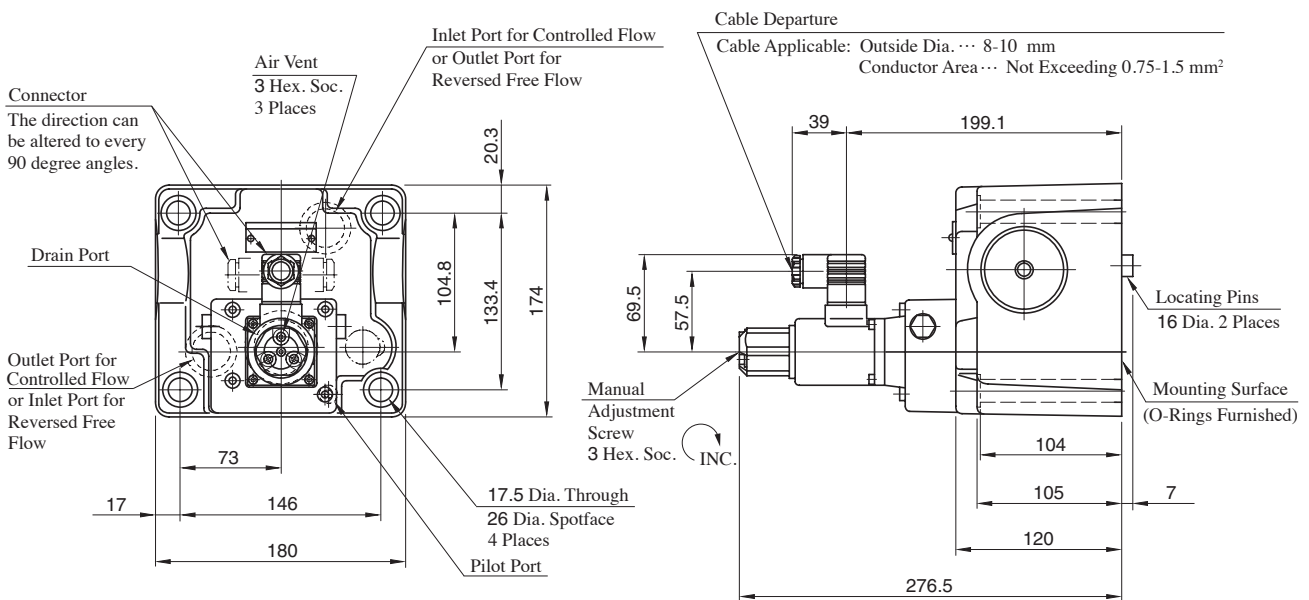
Use the external pilot type (pilot connection code: E)



**EFG
EFCG-03**

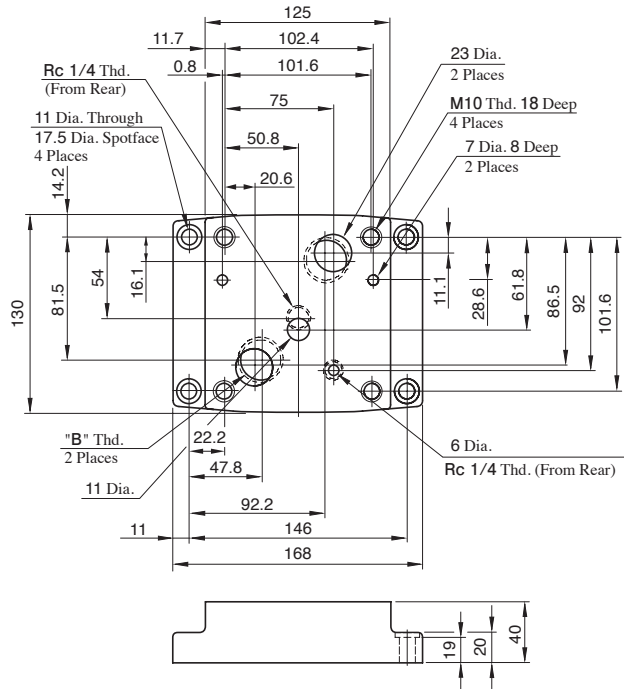


**EFG
EFCG-06**



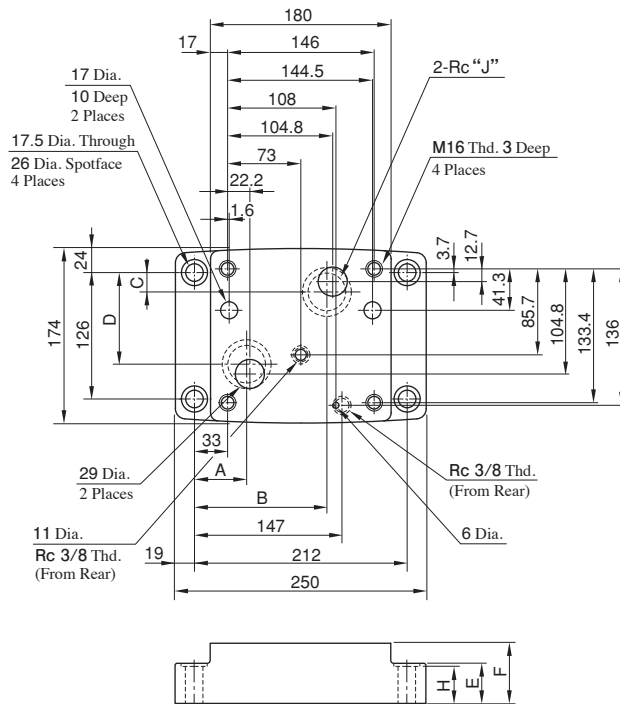
Sub-Plate

EFGM-03Y, 03Z



Sub-Plate Model Numbers	Thread Size
	"B" Thd.
EFGM-03Y-30	Rc 3/4
EFGM-03Z-30	Rc 1

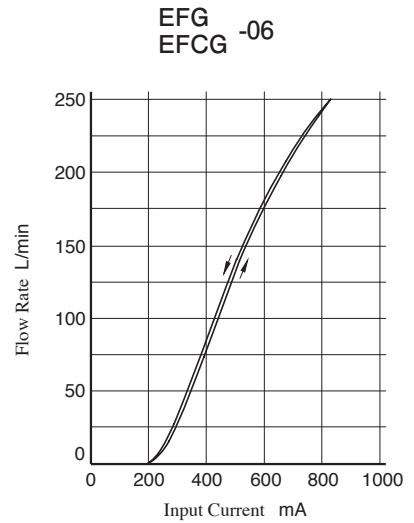
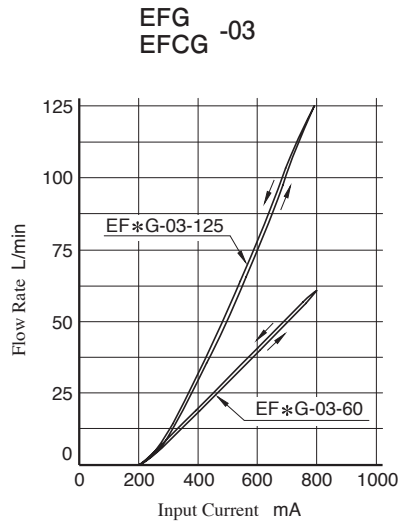
EFGM-06X, 06Y



Sub-Plate Model Numbers	A	B	C	D	E	F	H	J
EFGM-06X-30	55.2	137.8	14.3	101.1	35	45	34	1
EFGM-06Y-30	52	132	19.3	91.3	40	60	39	1-1/4

Input Current vs. Flow

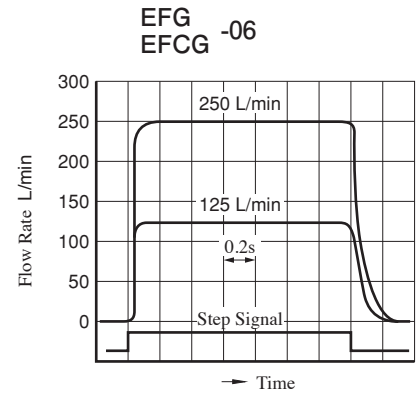
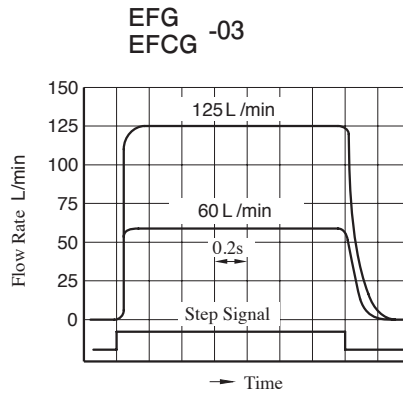
Viscosity: 30 mm²/s



Step Response

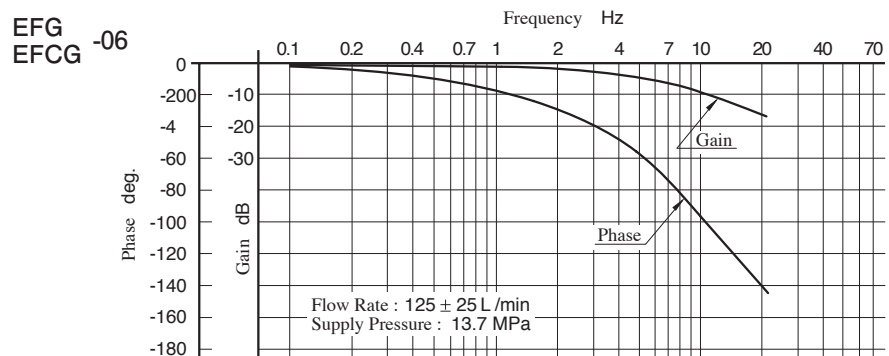
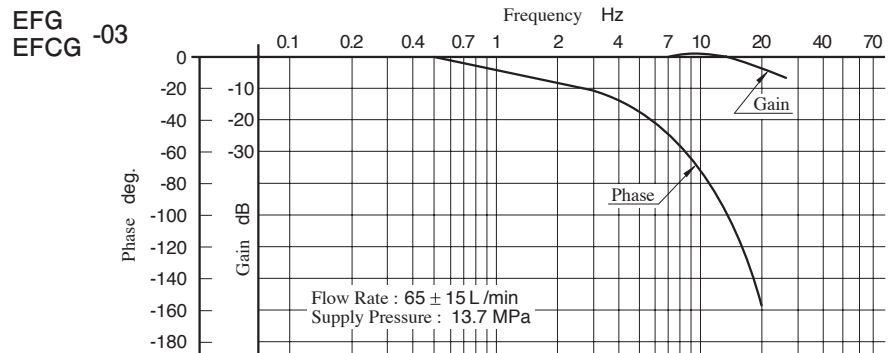
These characteristics have been obtained by measuring on each valve. Therefore, they may vary according to a hydraulic circuit to be used.

Viscosity: 30 mm²/s

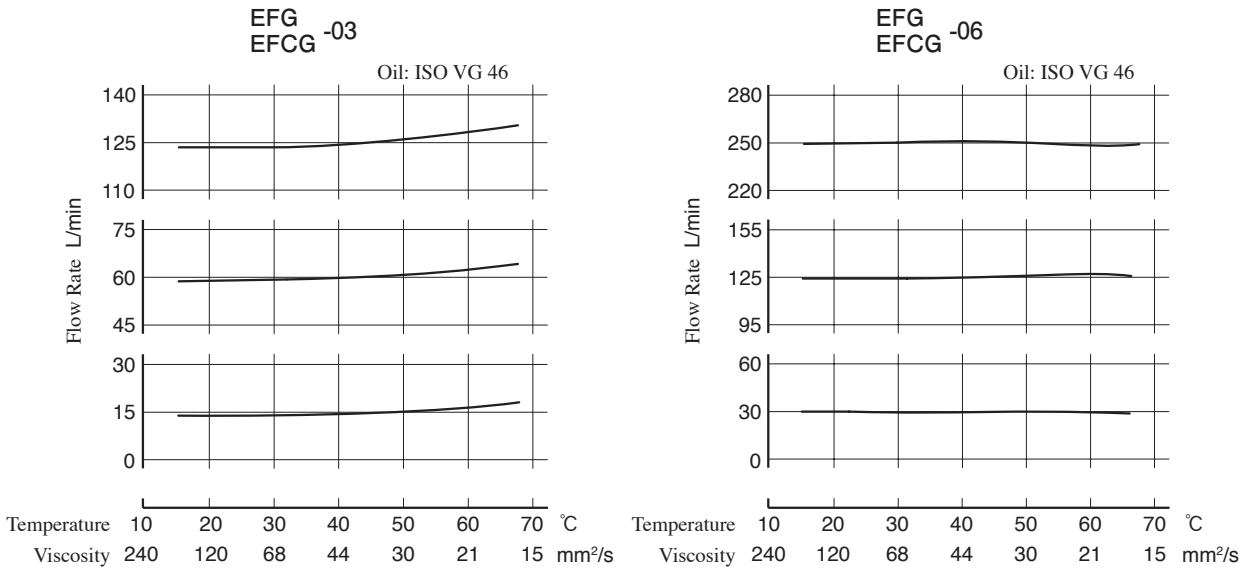


Frequency Response

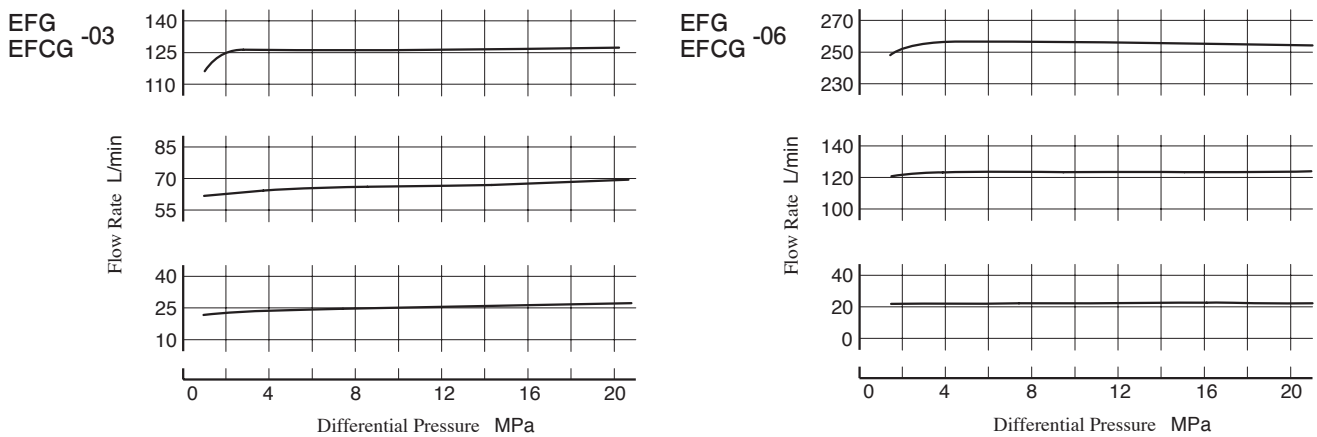
Viscosity: 30 mm²/s



Viscosity vs. Flow



Differential Pressure vs. Metered Flow



Interchangeability between Current and New Design

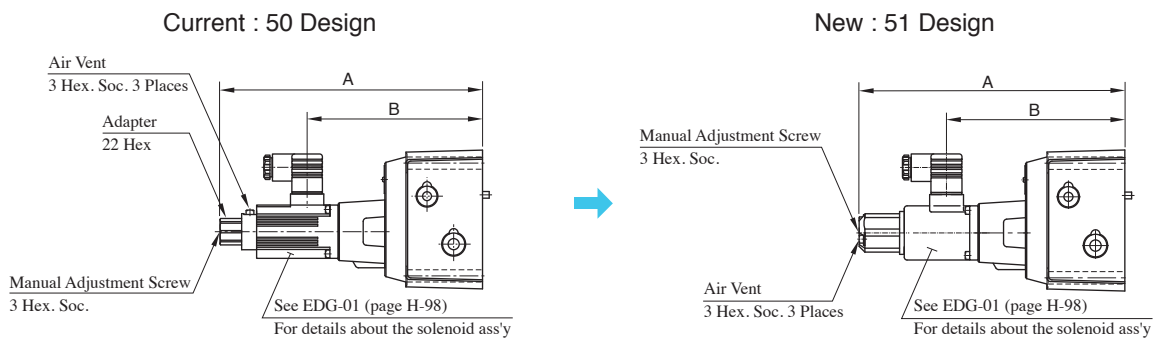
Specifications and Characteristics

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

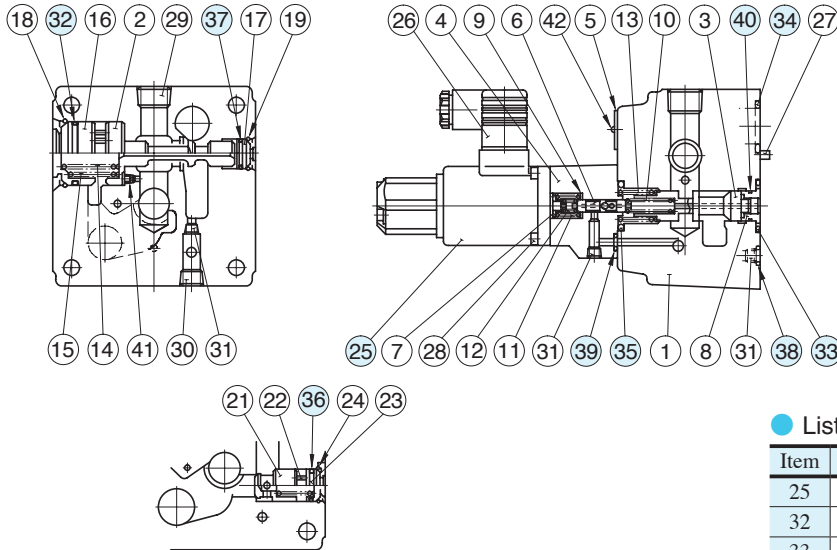
Installation Interchangeability

There is an interchangeability in the mounting dimensions between current and new design, however, note that because of improvements made on the solenoids, the overall shapes and dimensions have been changed as shown below.

Model Numbers	A	B
(Current) EF*G-03-* *-50	236.5	158.1
(New) EF*G-03-* *-51	235.5	158.1
(Current) EF*G-06-250-* *-50	277.5	199.1
(New) EF*G-06-250-* *-51	276.5	199.1



**EFG
EFCG-03**



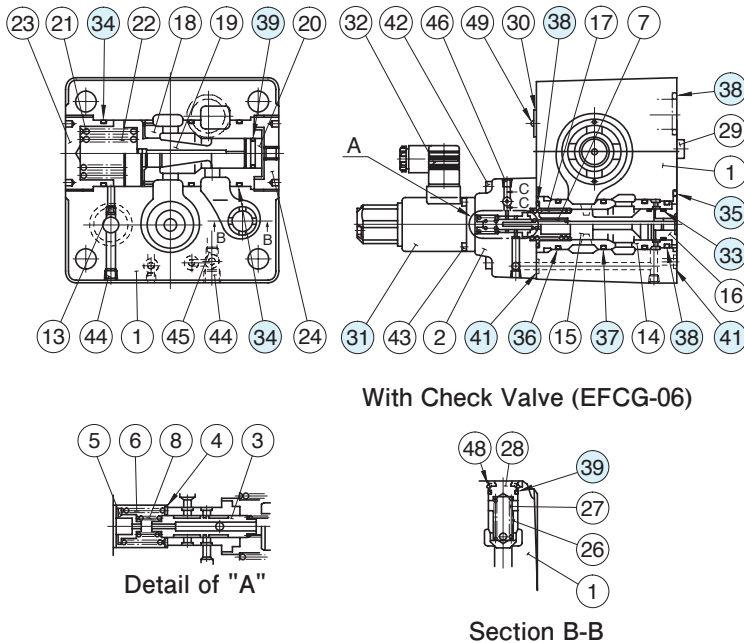
With Check Valve (EFCG-03)

Note) The connector assembly GDM-211-B-11 (Item 26) is not included in the solenoid assembly.

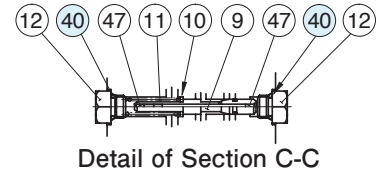
● List of Seals and Solenoid Ass'y

Item	Name of Parts	Part Numbers	Qty.
25	Solenoid Ass'y	E318-Y06M1-28-61	1
32	O-Ring	OR NBR-90 G35-N	1
33	O-Ring	OR NBR-90 P28-N	1
34	O-Ring	OR NBR-90 P28-N	2
35	O-Ring	OR NBR-90 P26-N	1
36	O-Ring	OR NBR-90 P16-N	1
37	O-Ring	OR NBR-90 P14-N	1
38	O-Ring	OR NBR-90 P9-N	1
39	O-Ring	OR NBR-90 P6-N	2
40	O-Ring	AS568-016(NBR-70-1)	1

**EFG
EFCG-06**



With Check Valve (EFCG-06)



Detail of Section C-C

● List of Seals and Solenoid Ass'y

Item	Name of Parts	Part Numbers	Qty.
31	Solenoid Ass'y	E318-Y06M1-28-61	1
33	O-Ring	OR NBR-70-1 P21-N	1
34	O-Ring	OR NBR-90 P50-N	3
35	O-Ring	OR NBR-90 P46-N	1
36	O-Ring	OR NBR-90 P36-N	1
37	O-Ring	OR NBR-90 P34-N	2
38	O-Ring	OR NBR-90 P32-N	4
39	O-Ring	OR NBR-70-1 P21-N	1★
40	O-Ring	OR NBR-90 P10-N	2
41	O-Ring	OR NBR-90 P9-N	3

★Two o-rings are required for the EFCG.

Note) The connector assembly GDM-211-B-11 (Item 32) is not included in the solenoid assembly.

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