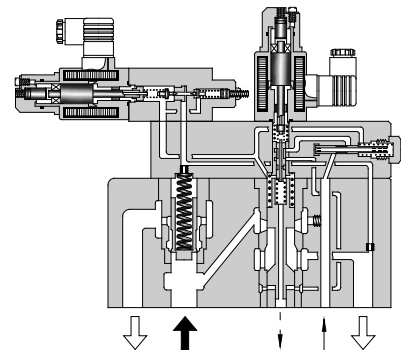
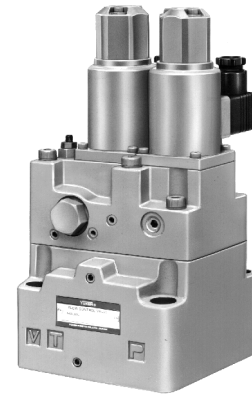


Specifications

Model Numbers		EFBG-03 -125-*-61*	EFBG-06 -250-*-61*	EFBG-10 -500-*-51*
Description				
Max. Operating Pressure MPa (PSI)		24.5 (3550)	24.5 (3550)	24.5 (3550)
Max. Flow	L/min (U.S.GPM)	125 (33)	250 (66)	500 (132)
Metred Flow Adjustment Range L/min (U.S.GPM)		1-125 (.26-33)	2.5-250 (.66-66)	5-500 (1.32-132)
Min. Pilot Pressure MPa (PSI)		1.5 (220)	1.5 (220)	1.5 (220)
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)
Flow Controls	Rated Current	800 mA	750 mA	900 mA
	Coil Resistance	10 Ω	10 Ω	10 Ω
	Differential Pressure MPa (PSI)	0.7 (100)	0.7 (100)	0.9 (130)
	Hysteresis	Less than 3%	Less than 3%	Less than 3%
	Repeatability	Less than 1%	Less than 1%	Less than 1%
Pressure Controls ^{★1}	Pres. Adj. Range MPa (PSI)	C : 1.4-15.7 (200-2275) H : 1.4-24.5 (200-3550)	C : 1.4-15.7 (200-2275) H : 1.4-24.5 (200-3550)	C : 1.5-15.7 (220-2275) H : 1.5-24.5 (220-3550)
	Rated Current	C : 890 mA H : 930 mA	C : 820 mA H : 880 mA	C : 800 mA H : 900 mA
	Coil Resistance	10 Ω	10 Ω	10 Ω
	Hysteresis	Less than 3%	Less than 3%	Less than 3%
	Repeatability	Less than 1%	Less than 1%	Less than 1%
	Approx. Mass kg (lbs.)	Refer to page 35 to 37		

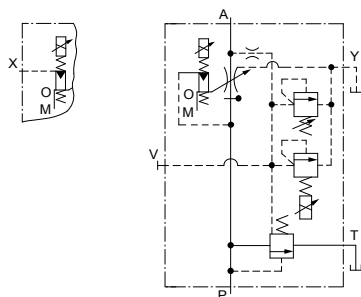
★1. The specifications for pressure controls are applied to models with proportional pilot relief valve. (Ex. EFBG-03-125-C-*-61)

★2. The maximum pressure adjustment range of the models without proportional pilot relief valves is 24.5 MPa (3550 PSI).

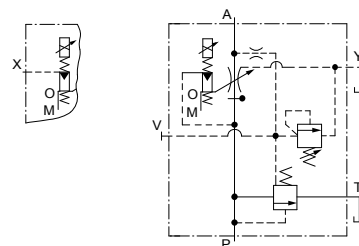


Graphic Symbols

With Proportional Pilot Relief Valve
External Pilot Internal Pilot



Without Proportional Pilot Relief Valve
External Pilot Internal Pilot



Model Number Designation

EFB	G	-03	-125	-C	-E	-61	*
Series Number	Type of Mounting	Valve Size	Max. Metred Flow L/min (U.S.GPM)	Proportional Pilot Relief Valve Pressure Adj. Range	Pilot Connection	Design Number	Design Standards
EFB : Proportional Electro-Hydraulic Flow Control and Relief Valve	G : Sub-plate Mounting	03	125 : 125 (33)	C, H : See Specifications None : Without Proportional Pilot Relief Valve	None : Internal Pilot E : External Pilot	61	Refer to ★
		06	250 : 250 (66)			61	
		10	500 : 500 (132)			51	

★ Design Standards: None Japanese Standard "JIS" and European Design Standard
90 N. American Design Standard

Attachment

Mounting Bolts

Valve Model Numbers	Socket Head Cap Screw		Qty.
	Japanese Std. "JIS" and European Design Std.	N. American Design Std.	
EFBG-03	M10 × 65 Lg.	3/8-16 UNC × 2-1/2 Lg.	4
EFBG-06	M16 × 100 Lg.	5/8-11 UNC × 4 Lg.	4
EFBG-10	M20 × 130 Lg.	3/4-10 UNC × 5 Lg.	4

Applicable Power Amplifiers

For stable performance, it is recommended that Yuken's applicable power amplifiers be used (for details see Catalogue No. Pub. EC-1305).

Model Numbers	Power Amplifier Model Numbers	
	For Flow Control	For Pres. Control
EFBG-03-125-(E)-61/6190 EFBG-06-250-(E)-61/6190 EFBG-10-500-(E)-51/5190	AME-D-10-*-20 AMN-D-10 (For DC Power Supply)	—
EFBG-03-125-C/H-(E)-61/6190 EFBG-06-250-C/H-(E)-61/6190 EFBG-10-500-C/H-(E)-51/5190	AME-D2-1010-*-10	

Sub-plate

Valve Model Numbers	Japanese Standard "JIS"		European Design Standard		N. American Design Standard		Approx. Mass kg (lbs.)
	Sub-plate Model Numbers	Thread Size	Sub-plate Model Numbers	Thread Size	Sub-plate Model Numbers	Thread Size	
EFBG-03	EFBGM-03Y-20	Rc 3/4	EFBGM-03Y-2080	3/4 BSP.F	EFBGM-03Y-2090	3/4 NPT	6 (13.2)
	EFBGM-03Z-20	Rc 1	EFBGM-03Z-2080	1 BSP.F	EFBGM-03Z-2090	1 NPT	
EFBG-06	EFBGM-06X-20	Rc 1	EFBGM-06X-2080	1 BSP.F	EFBGM-06X-2090	1 NPT	12.5 (27.6)
	EFBGM-06Y-20	Rc 1-1/4	EFBGM-06Y-2080	1-1/4 BSP.F	EFBGM-06Y-2090	1-1/4 NPT	16 (35.3)
EFBG-10	EFBGM-10Y-20★	1-1/2, 2 Flange Mounting	EFBGM-10Y-2080★	1-1/2, 2 Flange Mounting	EFBGM-10Y-2090★	1-1/2, 2 Flange Mounting	37 (81.6)

• 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.

★ When ordering the EFBGM-10Y, see Type F3 Pipe Flange Kits on the Catalogue No. Pub. EC-3001 and order an appropriate pipe flange kit also.

Instructions

Drain Back Pressure

Check that the drain back pressure dose not exceed 0.2 MPa (29 PSI).

When Relief Valve Passing Flow Rate is Low in Pressure Control State

To avoid preselected pressure instability, use a passing flow rate of 15 L/min (4.0 U.S.GPM) or higher.

Further, check that the tank-line back pressure dose not exceed 0.5 MPa (70 PSI).

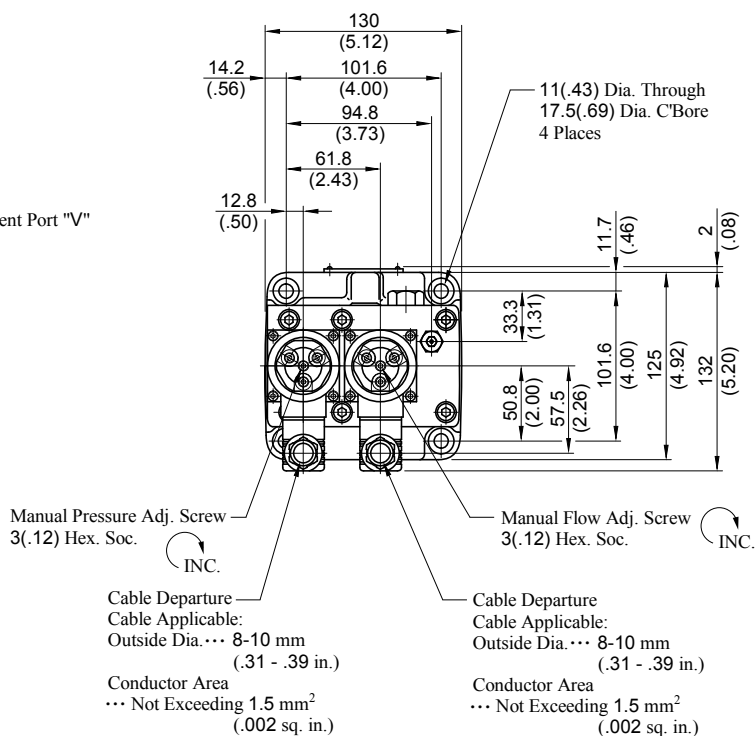
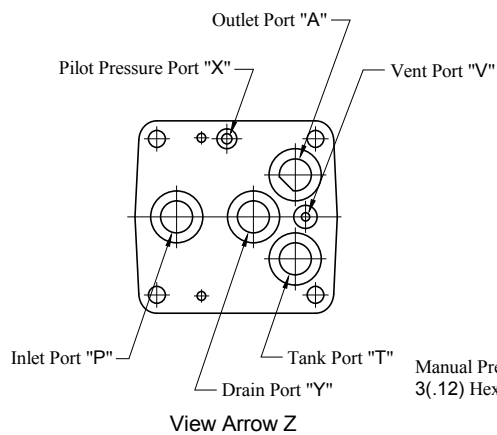
Safety Valve Pressure Setting

The pressure of the safety valve is preset at the value equal to the upper limit of the pressure adjustment range plus 2 MPa (290 PSI). Please adjust the pressure of the valve so preset to meet the pressure to be used actually.

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

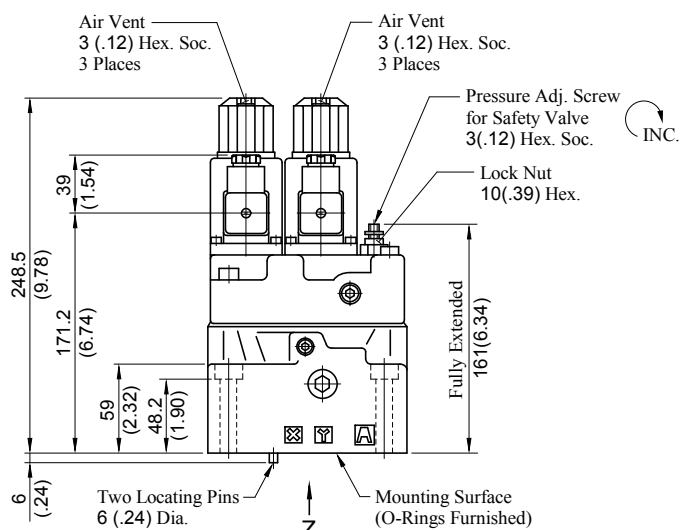
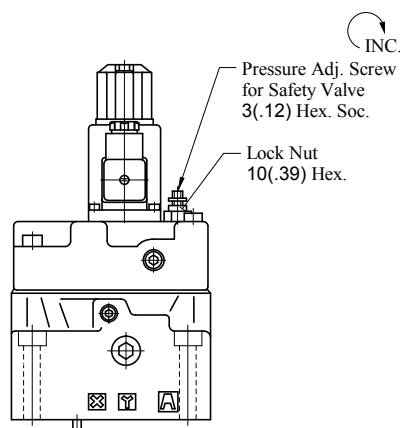
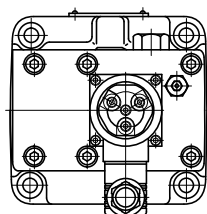
Models with Proportional Pilot Relief Valve

EFBG-03-125- C_H -(E)-61/6190



Models without Proportional Pilot Relief Valve

EFBG-03-125-(E)-61/6190



Approx. Mass 14 kg (30.9 lbs.)

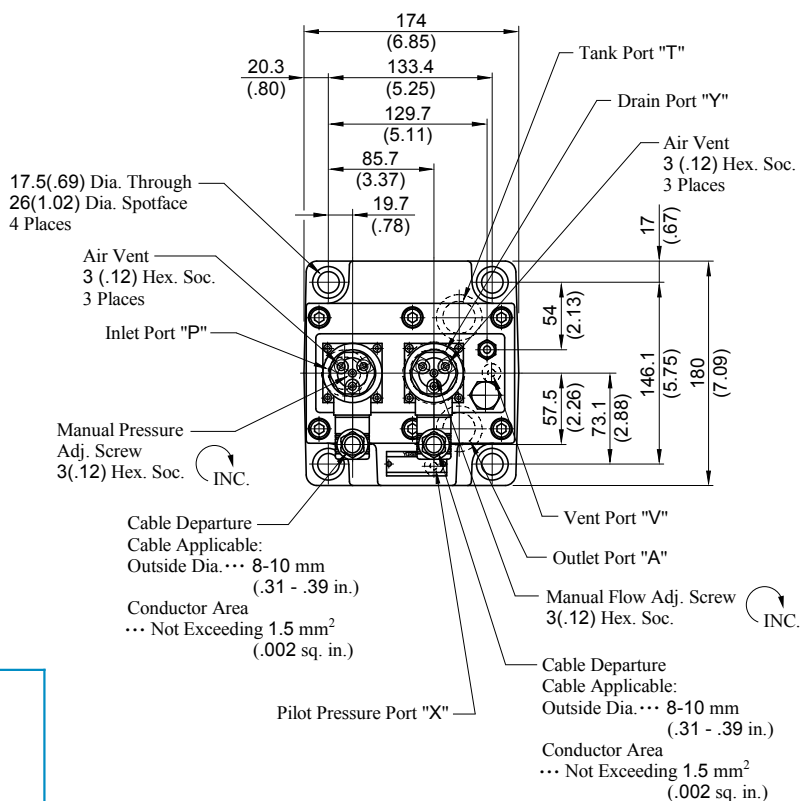
- For other dimensions, please refer to the models with Proportional Pilot Relief Valve.

Approx. Mass 13.3 kg (29.3 lbs.)

**DIMENSIONS IN
MILLIMETRES (INCHES)**

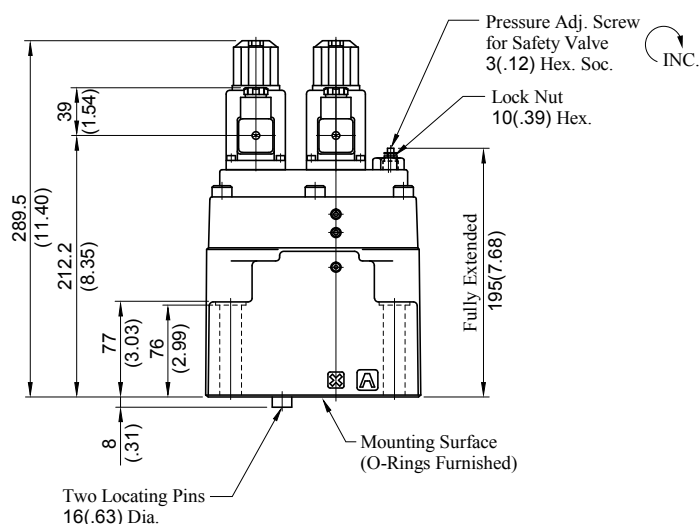
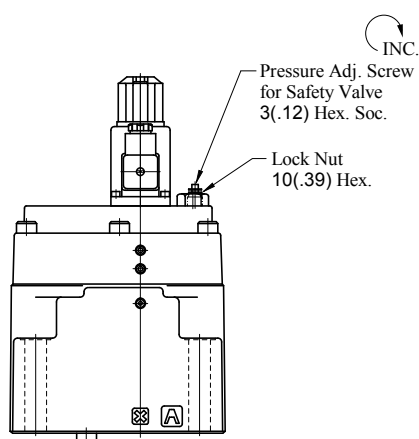
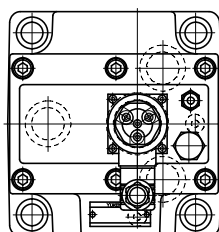
Models with Proportional Pilot Relief Valve

EFBG-06-250-^C_H-(E)-61/6190



Models without Proportional Pilot Relief Valve

EFBG-06-250-(E)-61/6190



Approx. Mass 22 kg (48.5 lbs.)

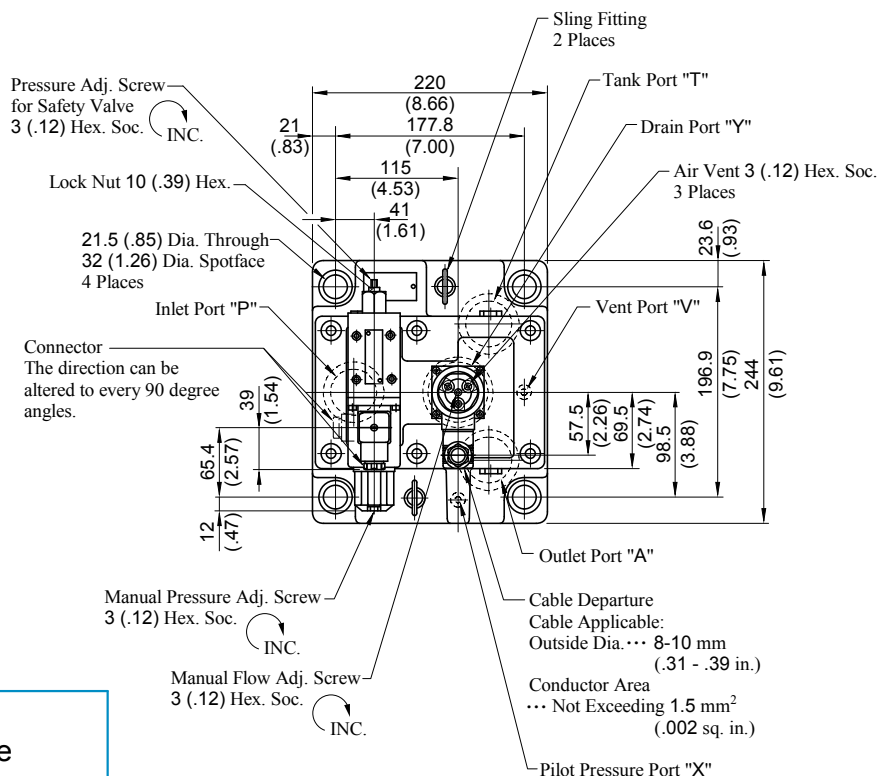
**DIMENSIONS IN
MILLIMETRES (INCHES)**

- For other dimensions, please refer to the models with Proportional Pilot Relief Valve.

Approx. Mass 21.3 kg (47.0 lbs.)

Models with Proportional Pilot Relief Valve

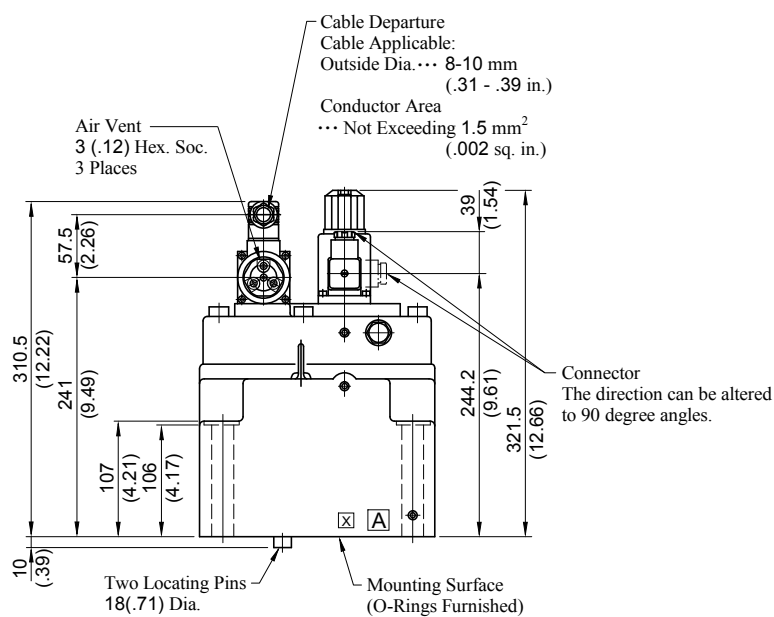
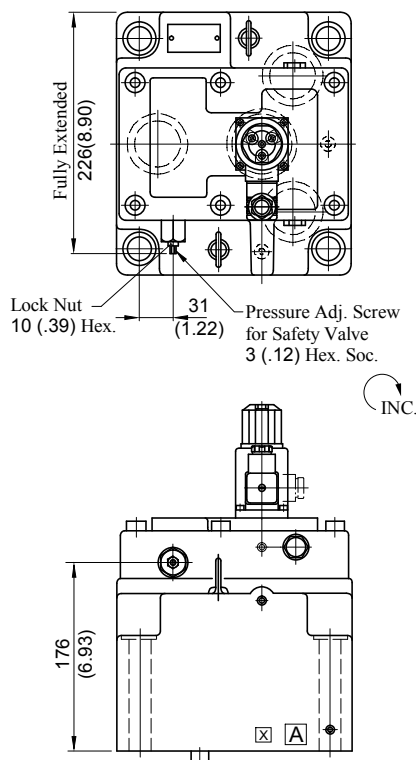
EFBG-10-500- $\frac{C}{H}$ -(E)-51/5190



**DIMENSIONS IN
MILLIMETRES (INCHES)**

Models without Proportional Pilot Relief Valve

EFBG-10-500-(E)-51/5190



Approx. Mass 64 kg (141 lbs.)

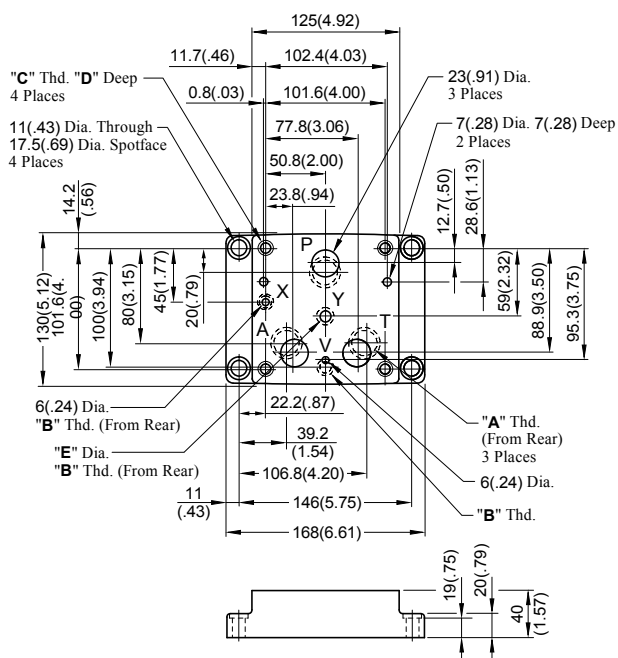
- For other dimensions, please refer to the models with Proportional Pilot Relief Valve.

Approx. Mass 62 kg (137 lbs.)



■ Sub-plate

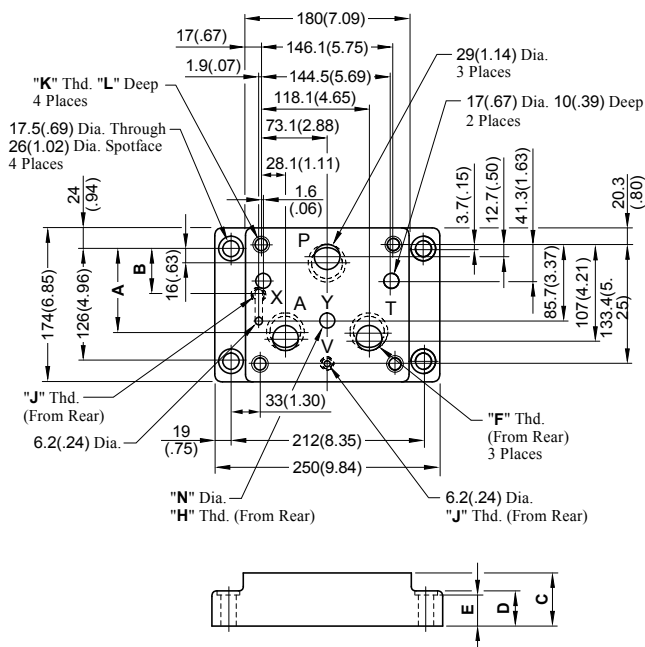
EFBGM-03Y-20/2080/2090



Sub-plate Model Numbers	Thread Size			mm (in.)	
	"A" Thd.	"B" Thd.	"C" Thd.	D	E
EFBGM-03Y-20	Rc 3/4	Rc 1/4	M10	18 (.71)	11 (.43)
EFBGM-03Z-20	Rc 1				
EFBGM-03Y-2080	3/4 BSP.F	1/4 BSP.F			11.7 (.46)
EFBGM-03Z-2080	1 BSP.F				
EFBGM-03Y-2090	3/4 NPT	1/4 NPT	3/8-16 UNC	21 (.83)	11 (.43)
EFBGM-03Z-2090	1 NPT				

DIMENSIONS IN
MILLIMETRES (INCHES)

EFBGM-^{06X}_{06Y}-20/2080/2090

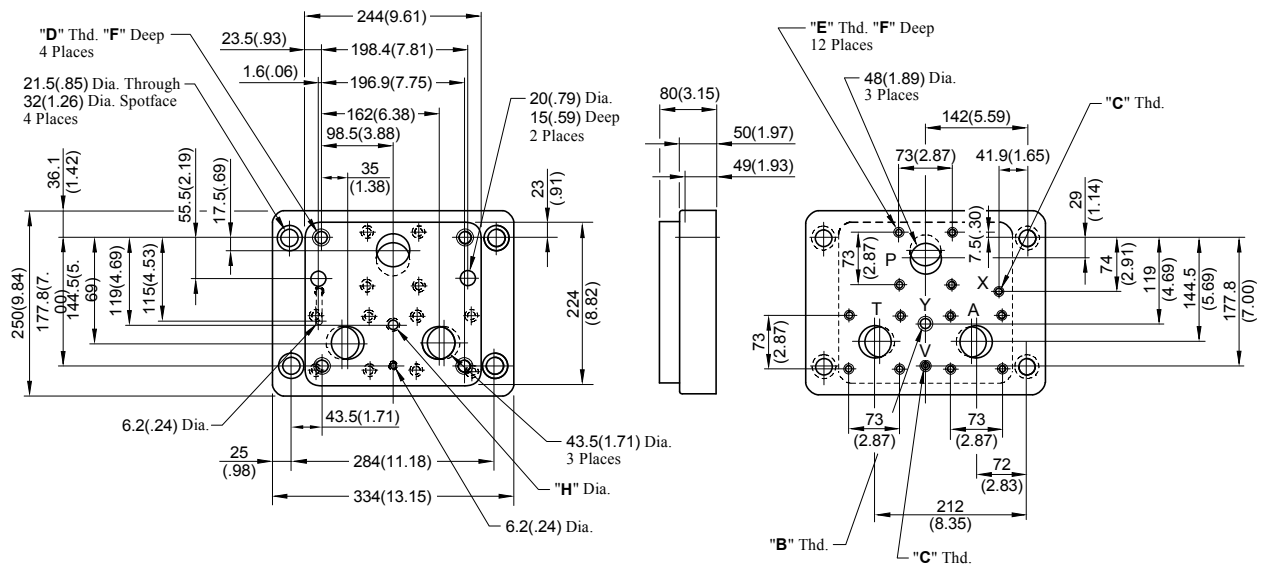


Sub-plate Model Numbers	Dimensions mm (in.)				
	A	B	C	D	E
EFBGM-06X	103.3 (4.07)	63.3 (2.49)	45 (1.77)	35 (1.38)	34 (1.34)
EFBGM-06Y	95 (3.74)	53.3 (2.10)	60 (2.36)	40 (1.57)	39 (1.54)

Sub-plate Model Numbers	Thread Size				mm (in.)	
	"F" Thd.	"H" Thd.	"J" Thd.	"K" Thd.	L	N
EFBGM-06X-20	Rc 1	Rc 3/8	Rc 1/4	M16	30 (1.18)	14 (.55)
EFBGM-06Y-20	Rc 1-1/4					
EFBGM-06X-2080	1 BSP.F	3/8 BSP.F	1/4 BSP.F	M16	30 (1.18)	15.2 (.60)
EFBGM-06Y-2080	1-1/4 BSP.F					
EFBGM-06X-2090	1 NPT	3/8 NPT	1/4 NPT	5/8-11 UNC	35 (1.38)	14 (.55)
EFBGM-06Y-2090	1-1/4 NPT					

EFBGM-10Y-20/2080/2090

DIMENSIONS IN
MILLIMETRES (INCHES)

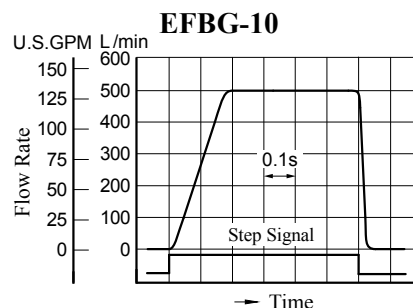
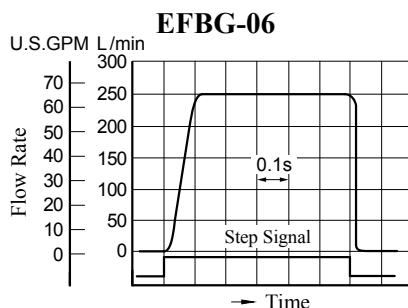
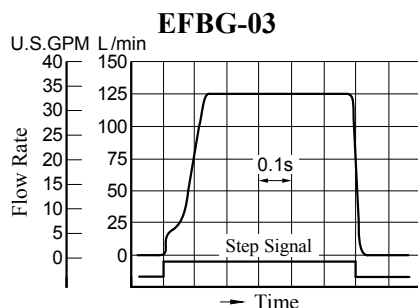


Sub-plate Model Numbers	Thread Size				mm (in.)	
	"B" Thd.	"C" Thd.	"D" Thd.	"E" Thd.	F	H
EFBGM-10Y-20	Rc 3/8	Rc 1/4	M20	M16	32(1.26)	14(.55)
EFBGM-10Y-2080	3/8 BSP.F	1/4 BSP.F			32(1.26)	15.2(.60)
EFBGM-10Y-2090	3/8 NPT	1/4 NPT	3/4-10 UNC	5/8-11 UNC	34(1.34)	14(.55)

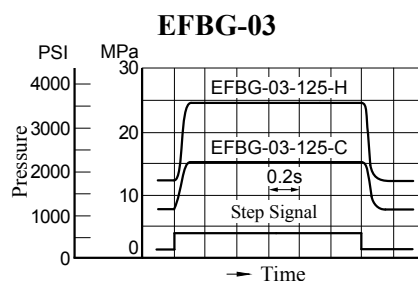
■ Step Response

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

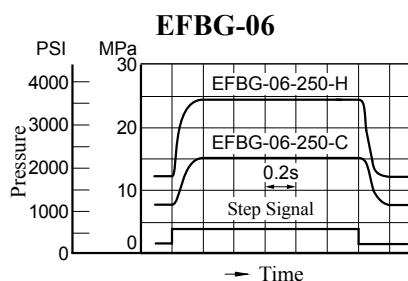
● Flow Controls



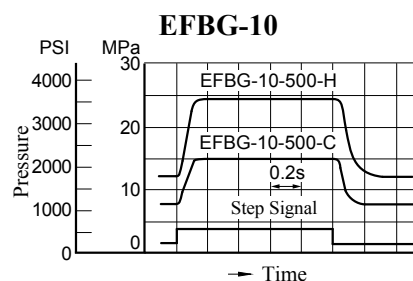
● Pressure Controls



Flow Rate : 125 L/min (33 U.S.GPM)
Trapped Oil Volume : < 1 L (.264 U.S.Gallons)

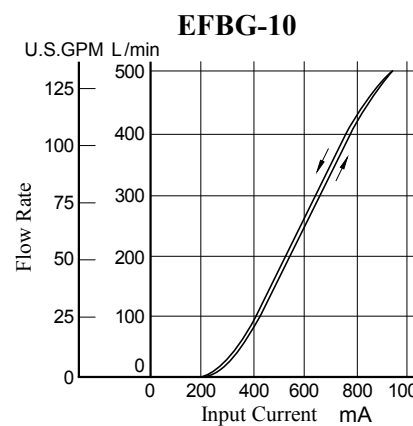
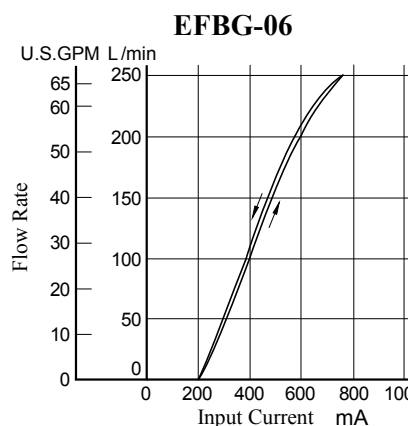
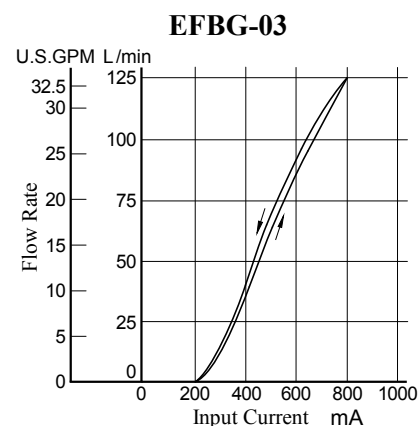


Flow Rate : 250 L/min (66 U.S.GPM)
Trapped Oil Volume : < 1 L (.264 U.S.Gallons)

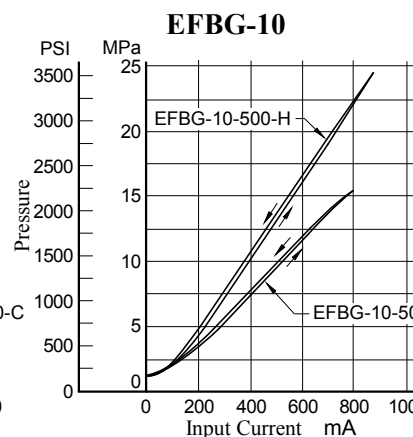
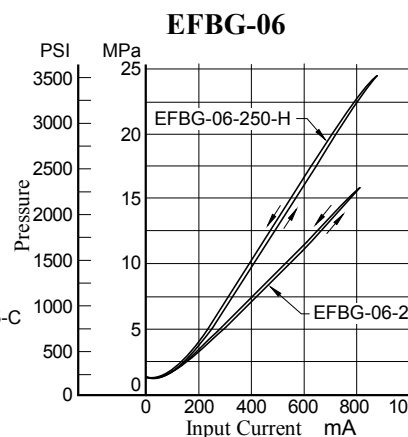
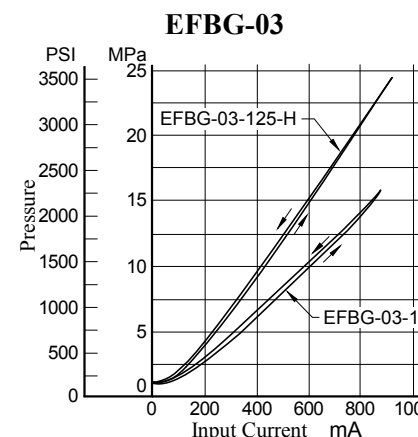


Flow Rate : 500 L/min (132 U.S.GPM)
Trapped Oil Volume : < 1 L (.264 U.S.Gallons)

■ Input Current vs. Flow



■ Input Current vs. Pressure

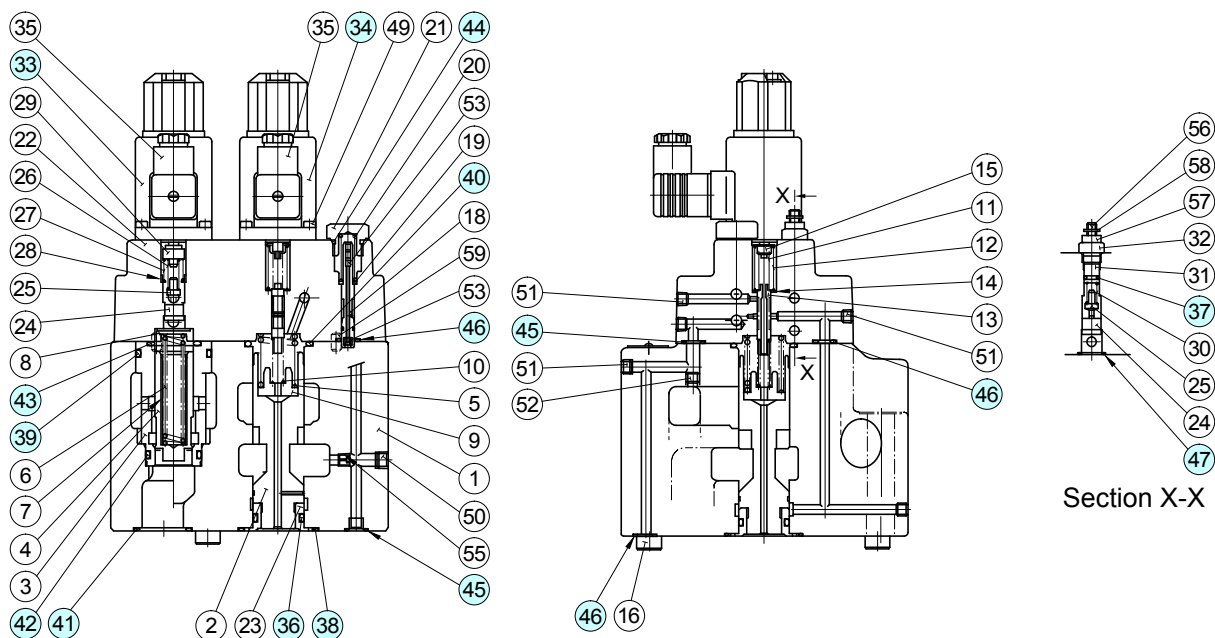


EFBG-03-125-*-61/6190
EFBG-06-250-*-61/6190



CAUTION

When making replacement of seals, please do it carefully after reading through the relevant instructions in the Operator's Manual.



● List of Seals

Item	Name of Parts	Part Numbers			
		EFBG-03	Qty.	EFBG-06	Qty.
36	O-Ring	SO-NA-A016	1	SO-NA-P26	1
37	O-Ring	SO-NA-P6	1	SO-NA-P6	1
38	O-Ring	SO-NB-P28	1	SO-NB-P44	1
39	O-Ring	SO-NB-P32	1	SO-NB-P42	1
40	O-Ring	SO-NB-P28	1	SO-NB-P36	1
41	O-Ring	SO-NB-P28	3	SO-NB-P32	3
42	O-Ring	SO-NB-G30	1	SO-NB-P30	1
43	O-Ring	SO-NB-P28	1	SO-NB-P28	1
44	O-Ring	SO-NB-P15	1	SO-NB-P15	1
45	O-Ring	SO-NB-P11	2	SO-NB-P11	2
46	O-Ring	SO-NB-P9	5	SO-NB-P11	4
47	O-Ring	SO-NB-A016	1	SO-NB-A016	1

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

In addition to the above o-rings, o-rings for solenoid ass'y are included in the seal kit.

For the detail of the solenoid ass'y seals, see the Catalogue No. Pub. EC-1302.

● List of Seal Kits

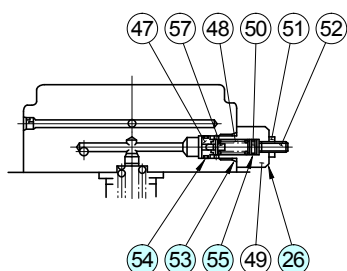
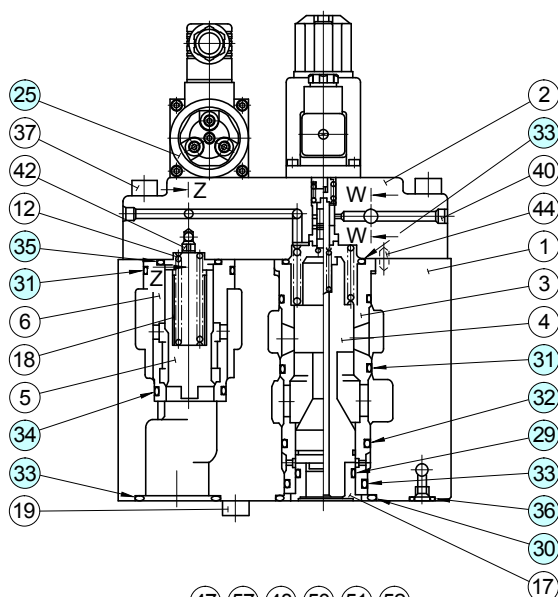
Model Numbers	Seal Kit Numbers
EFBG-03-125-61*	KS-EFBG-03-61
EFBG-03-125-C/H-61*	KS-EFBG-03-C-61
EFBG-06-250-61*	KS-EFBG-06-61
EFBG-06-250-C/H-61*	KS-EFBG-06-C-61

● Solenoid Ass'y

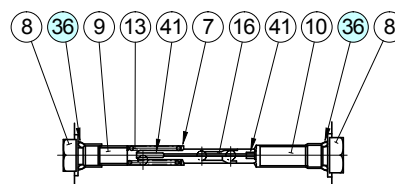
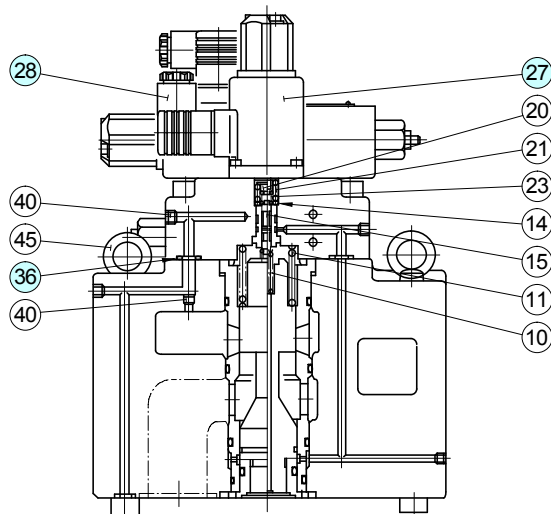
Valve Model Numbers	③③ Solenoid Ass'y Model Numbers	③④ Solenoid Ass'y Model Numbers
EFBG-03-125-C/H-(E)-61/6190	E318-Y06M1-04-61	E318-Y06M1-28-61
EFBG-06-250-C/H-(E)-61/6190		
EFBG-03-125-(E)-61/6190 EFBG-06-250-(E)-61/6190	—	

Note: The connector assembly GDM-211-B-11 (Item 35) is not included in the solenoid assembly.

EFBG-10-500-**-51/5190



Section W-W
(Only for Models without
Pilot Relief Valve)



Section Z-Z

● List of Seals

Item	Name of Parts	Part Numbers	Qty.	
			Models with Pilot Relief Valve	Models without Pilot Relief Valve
29	O-Ring	SO-NA-P34	1	1
30	O-Ring	SO-NB-G60	1	1
31	O-Ring	SO-NB-G55	3	3
32	O-Ring	SO-NB-P50	1	1
33	O-Ring	SO-NB-P48	5	5
34	O-Ring	SO-NB-P42	1	1
35	O-Ring	SO-NB-P36	1	1
36	O-Ring	SO-NB-P11	8	8
53	O-Ring	SO-NB-P14	—	1
54	O-Ring	SO-NB-A013	—	1
55	O-Ring	SO-NA-P6	—	1

Note: When ordering seals, please specify the seal kit number from the table right. In addition to the above o-rings, o-rings for pilot valve and solenoid ass'y are included in the seal kit.

For the detail of the pilot valve and solenoid ass'y seals, see the Catalogue No. Pub. EC-1302.



CAUTION

When making replacement of seals, please do it carefully after reading through the relevant instructions in the Operator's Manual.

● List of Seal Kits

Model Numbers	Seal Kit Numbers
EFBG-10-500-51*	KS-EFBG-10-51
EFBG-10-500-C/H-51*	KS-EFBG-10-C-51

● Pilot Valve and Solenoid Ass'y

Valve Model Numbers	②⑤ Pilot Valve Model Numbers	②⑦ Solenoid Ass'y Model No.	②⑥ Safety Valve Model No.
EFBG-10-500-C-(E)-51/5190	EDG-01V-C-1-PNT12-5103	E318-Y06M1-28-61	—
EFBG-10-500-H-(E)-51/5190	EDG-01V-H-1-PNT12-5103		—
EFBG-10-500-(E)-51/5190	—		SB1094-2002

Note: The connector assembly GDM-211-B-11 (Item 28) is not included in the solenoid assembly.

Interchangeability between Current and New Design

■ Interchangeability between Current and New Design

Model changes have been made from 50, 51 to 61 design in the EFBG-03/06 because of changes in the pilot valve building-in method and model changes have been made from 50 to 51-design in the EFBG-10 because of improvement in Solenoid Ass'y.

● Specification and Characteristics

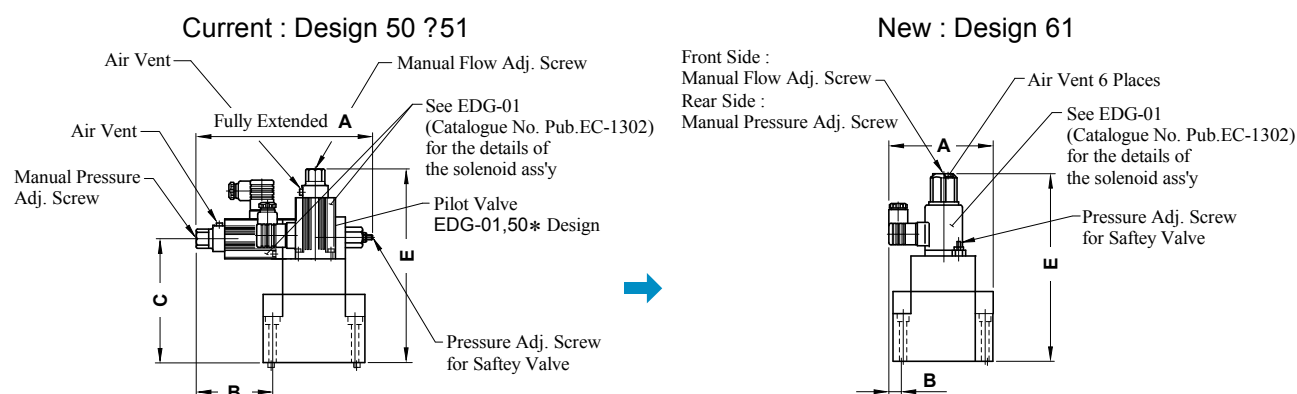
No changes in specifications and characteristics between current and new design

● Interchangeability in Installation

● EFBG-03/06

50* ?51* Design → 61* Design

The mounting surface are interchangeable. However, the method of building in the pilot valve has been changed, bringing about changes in the appearance shapes and dimensions as shown below.



Model Numbers	A	B	C	D
(Current) EFBG-03-125-*-50/5090	217 (8.54)	93.2 (3.67)	155 (6.10)	236.5 (9.31)
(New) EFBG-03-125-*-61/6190	132 (5.20)	18.7 (1.74)	—	248.5 (9.78)
(Current) EFBG-06-250-*-50/5090	217 (8.54)	53.3 (2.10)	196 (7.72)	277.5 (10.93)
(New) EFBG-06-250-*-61/6190	159.5 (6.28)	—	—	289.5 (11.40)

60* Design → 61*Design

The mounting surface are interchangeable. There are no changes in the appearance shapes and dimensions.

● EFBG-10

Mounting compatibility is provided.

Note that because of improvements made on the solenoids, the overall shapes have been changed as shown below.

