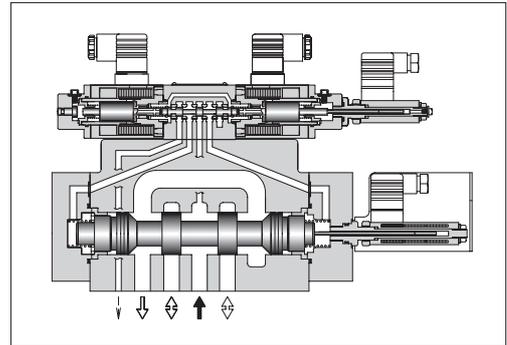
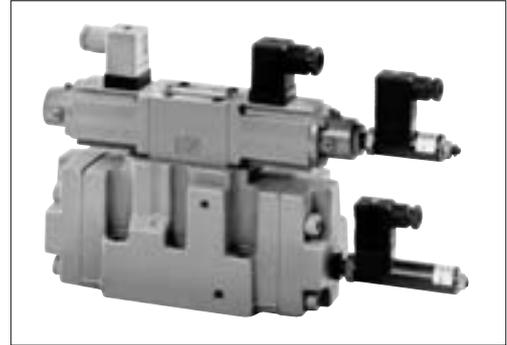


Two Stage Type Directional and Flow Control Valves

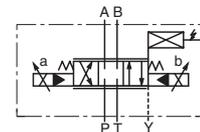
Specifications

Description	Model No.	ELDFHG-04	ELDFHG-06
Rated Flow L/min (U.S.GPM) Valve Pres. Diff. : 1 MPa (145 PSI)		280 (74.0)	350: 350 (92.5) 500: 500 (132.1)
Max. Operating Pressure MPa (PSI)		35 (5080)	350: 35 (5080) 500: 31.5 (4570)
Proof Pressure at Return Port ^{★1} (External Drain) MPa (PSI)		"T" Port : 31.5 (4570) "Y" Port : 21 (3050)	350 "T" Port : 35 (5080) "Y" Port : 21 (3050) 500 "T" Port : 25 (3630) "Y" Port : 21 (3050)
Proof Pressure at Return Port (Internal Drain) MPa (PSI)		21 (3050)	
Pilot Pressure ^{★2} MPa (PSI)		1.5–31.5 (218–4570)	
Pilot Flow ^{★3}		16 L/min or more	350: 16 L/min or more 500: 19 L/min or more
Null Leakage ^{★4} Ps=14 MPa (2030 PSI), Pp=14 MPa (2030 PSI)		3C2: 3 L/min or less 3C2P: 10 L/min or less	3C40: 4 L/min or less
Step Response (Typical Rating) (0↔100%) Pp=14 MPa (2030 PSI)		13 ms	350: 15 ms 500: 18 ms
Frequency Response (0±25%V, Phase) Pp=14 MPa (2030 PSI)		46 Hz (–90 degree)	350: 66 Hz (–90 degree) 500: 39 Hz (–90 degree)
Water - Proofness		IP64	
Operating Temperature Range		–15 – +60 °C (5–140°F)	
Spool Type		3C2:  3C2P:  (Zero Rap) 3C40: 	
Approximate Spool Stroke to Stops		±5 mm (±.20 in.)	350: ±5 mm (±.20 in.) 500: ±7 mm (±.28 in.)
Main Spool End Area cm ² (sq. in.)		7.1 (1.10)	8 (1.24)
Rated Current		Max. 2.5 A	
Coil Resistance [20 °C (68 °F)]		3.9 Ω	
Approx. Mass kg (lbs.)		10 (22.0)	350: 18 (39.7) 500: 19 (41.9)

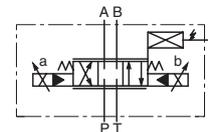
- ★1. Return pressure should be less than the actual supply pressure.
- ★2. Pilot pressure should be between 1.5 MPa (218 PSI) and 3.5 MPa (508 PSI), and should exceed 60% of the actual supply pressure to main valve.
- ★3. Pilot flow is calculated with the above step response time at pilot pressure 14 MPa (2030 PSI).
- ★4. Added up leakage of main and pilot spools are stated.



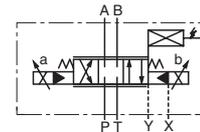
Graphic Symbols



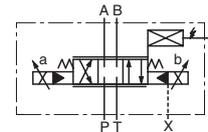
Internal Pilot / External Drain Type



Internal Pilot / Internal Drain Type



External Pilot / External Drain Type



External Pilot / Internal Drain Type

Model Number Designation

F-	ELDFH	G	-04	-280	-3C2P	-XY	-E	T	-10	*
Special Seals	Series Number	Type of Mounting	Valve Size	Rated Flow L/min (U.S.GPM)	Spool Type	Direction of Flow	Pilot Connection	Drain Connection	Design Number	Design Standards
F: Special Seals for Phosphate Ester Type Fluids (Omit if not required)	ELDFH: High Response (Two Stage) Type Proportional Electro-Hydraulic Directional and Flow Control Valves	G: Sub-Plate Mounting	04	280: 280(74.0)	3C2  3C40 	XY: Metre-in • Metre-out	None: Internal Pilot	None: External Drain	10	Refer to ^{★1}
			06	350: 350(92.5) 500: 500(132.1)	3C2P  (Zero Lap)		E: External Pilot	T: External Drain	10	

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

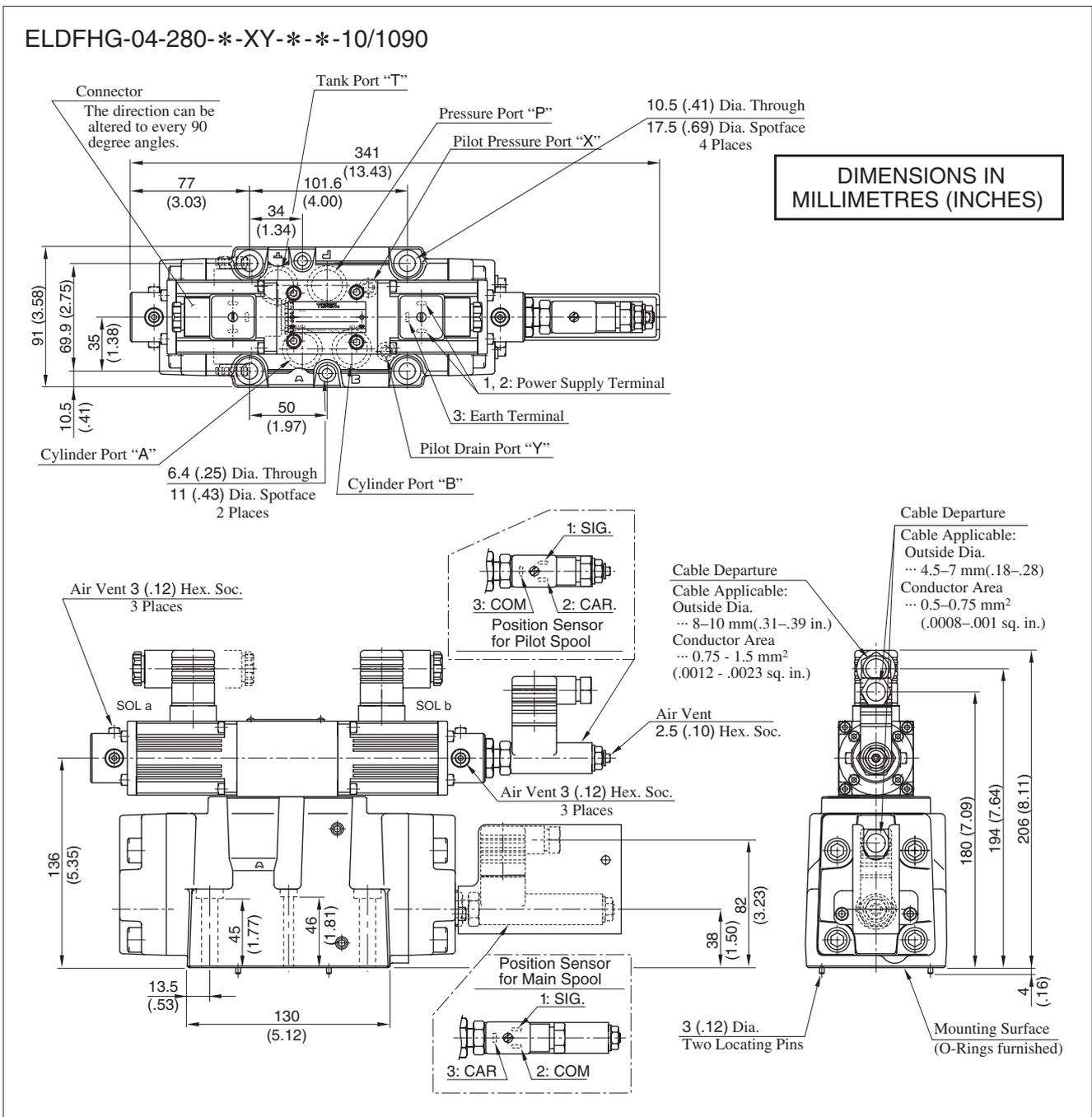
Applicable Power Amplifiers

For stable performance, it is recommended that Yuken's applicable power amplifiers be used (for details see [page 786](#)).
 Model Numbers: AMB-EL-**-**-10

Attachment

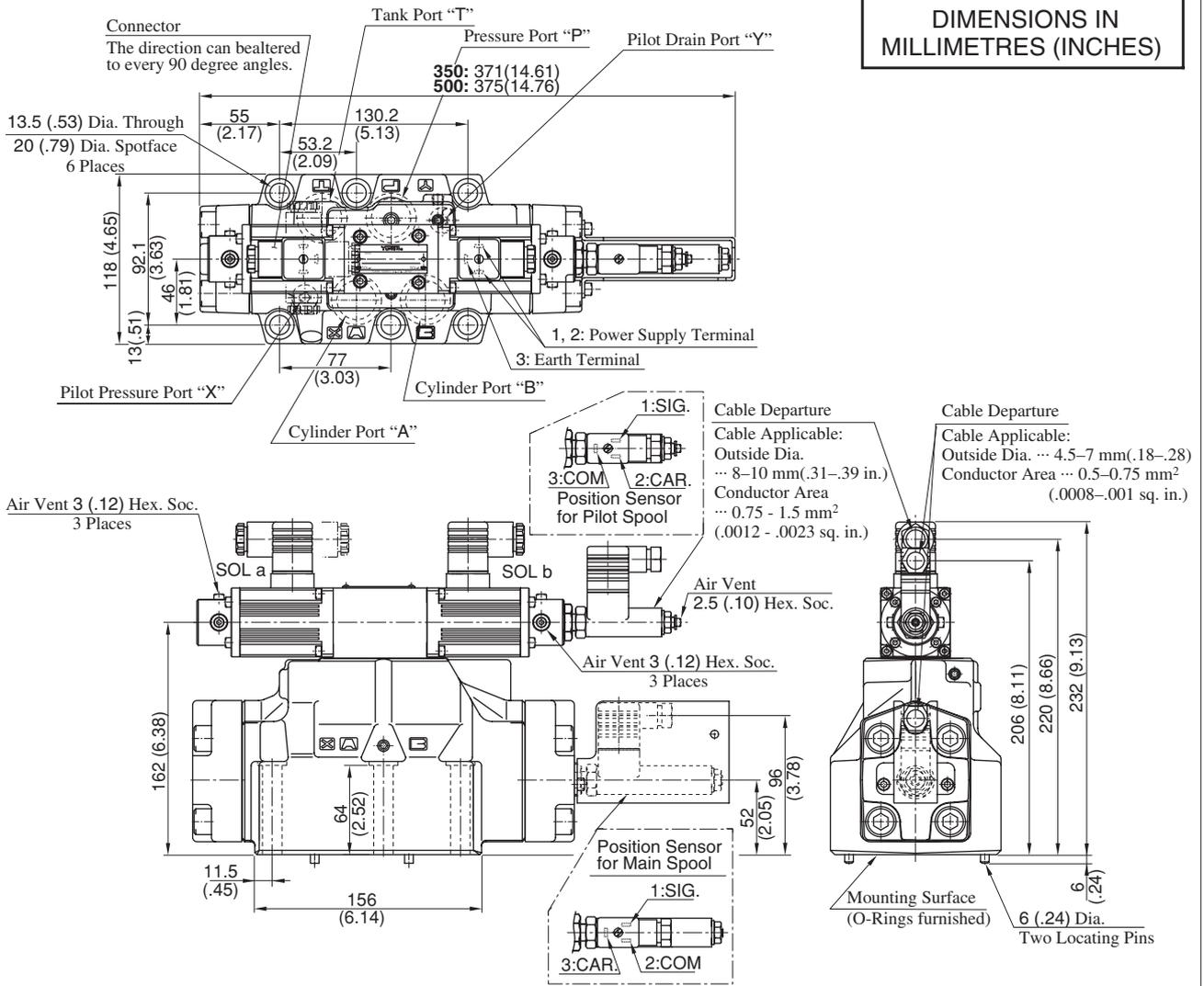
Mounting Bolts

Model Numbers	Socket Head Cap Screw			Tightening Torque Nm (in. lbs.)
	Japanese Standard "JIS" European Design Standard	N. American Design Standard	Qty.	
ELDFHG-04	M6 × 55 Lg.	1/4-20 UNC × 2-1/4 Lg.	2	12 - 15 (106 - 133)
	M10 × 60 Lg.	3/8-16 UNC × 2-1/2 Lg.	4	58 - 72 (513 - 637)
ELDFHG-06	M12 × 85 Lg.	1/2-13 UNC × 3-1/2 Lg.	6	100 - 123 (885 - 1089)



E Series
Two Stage Type Directional and Flow Control Valves

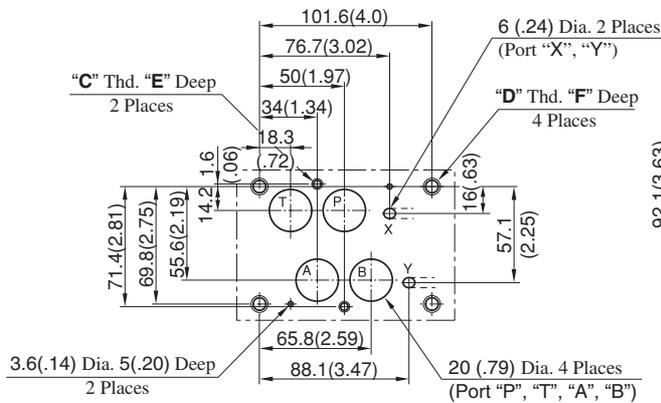
ELDFHG-06-*-*-XY-*-*-10/1090



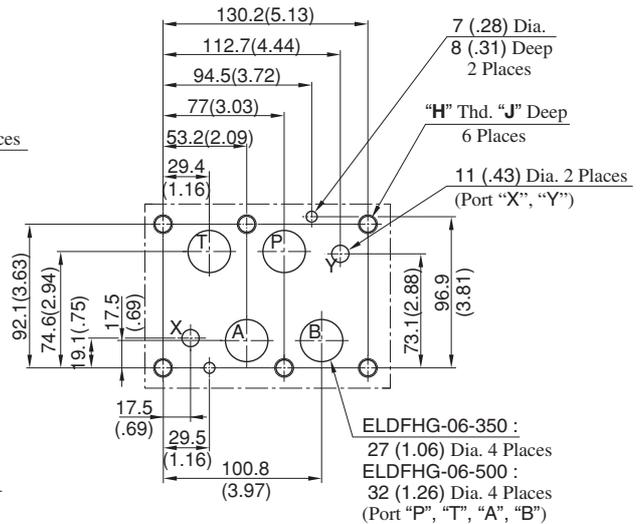
Dimensions of valve mounting surface

Prepare a mounting surface as shown to the below.
Also finish it finely.

● **ELDFHG-04**



● **ELDFHG-06**

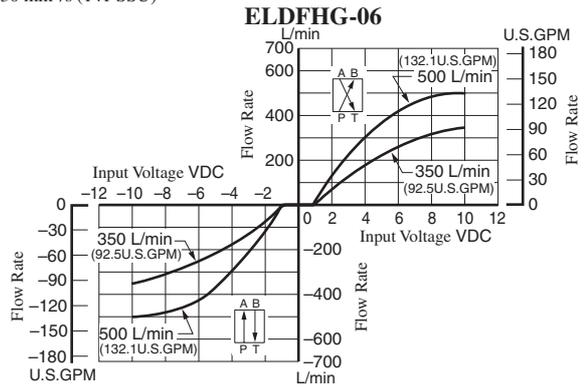
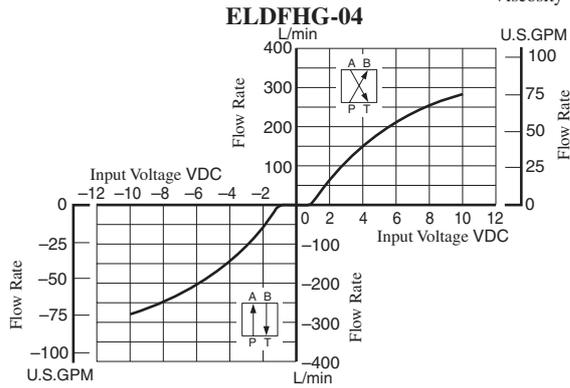


Model Numbers	"C" Thd.	"D" Thd.	"E" mm (in.)	F mm (in.)
ELDFHG-04-*-*-10	M6	M10	12 (.47)	17 (.67)
ELDFHG-04-*-*-1090	1/4-20 UNC	3/8-16 UNC	14 (.55)	20 (.79)

Model Numbers	"H" Thd.	J mm (in.)
ELDFHG-06-*-*-10	M12	24 (.94)
ELDFHG-06-*-*-1090	1/2-13 UNC	28 (1.10)

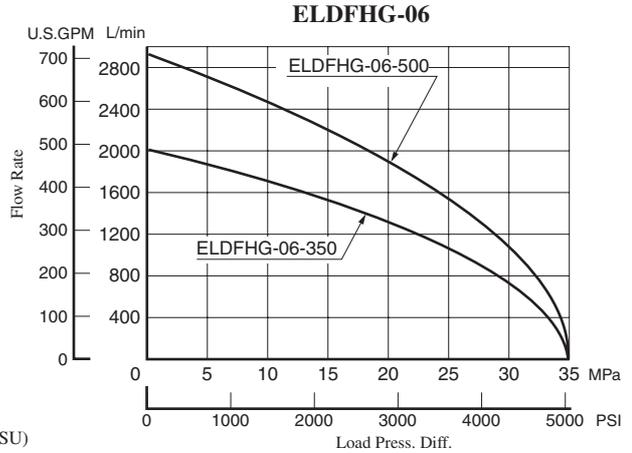
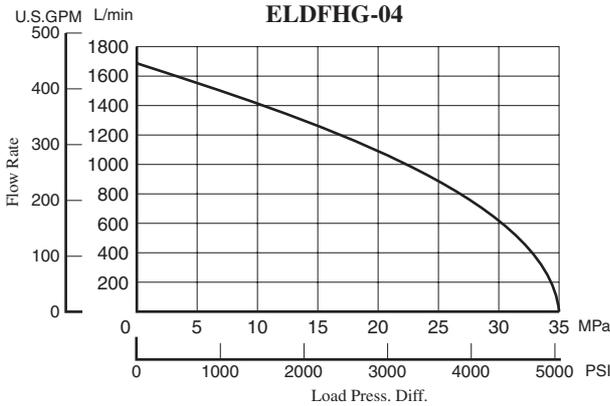
Input Voltage vs. Flow Rate

Valve Pres. Diff. : 1 MPa (145 PSI)
Viscosity : 30 mm²/s (141 SSU)



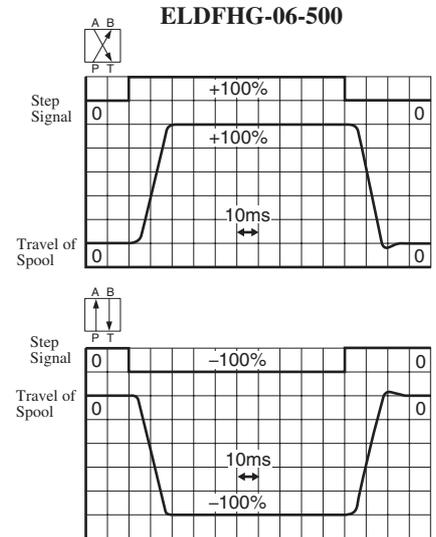
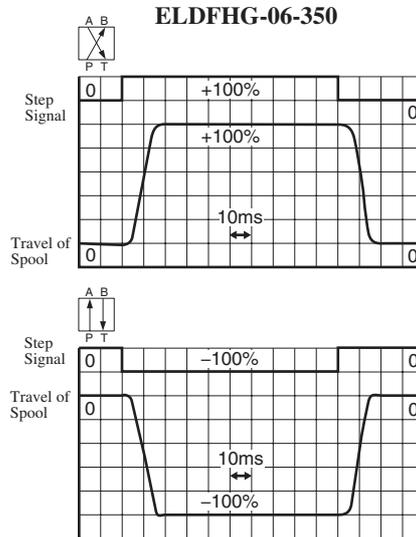
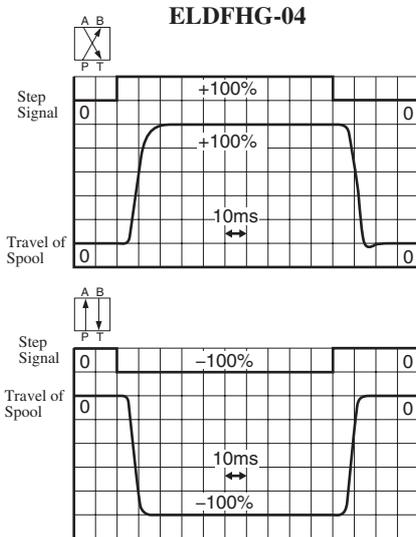
Load Flow Characteristics

Viscosity : 30 mm²/s (141 SSU)



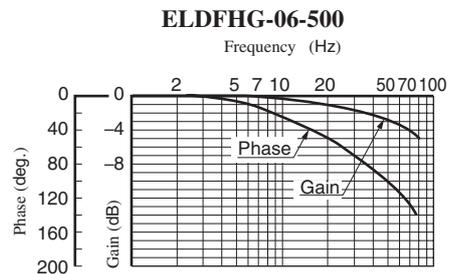
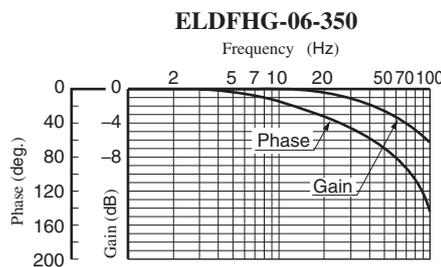
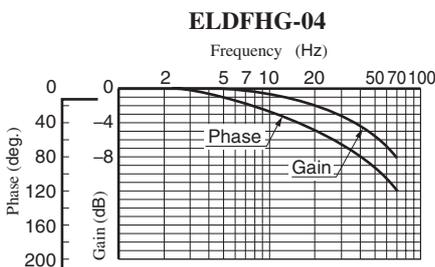
Step Response (Example)

Viscosity : 30 mm²/s (141 SSU)



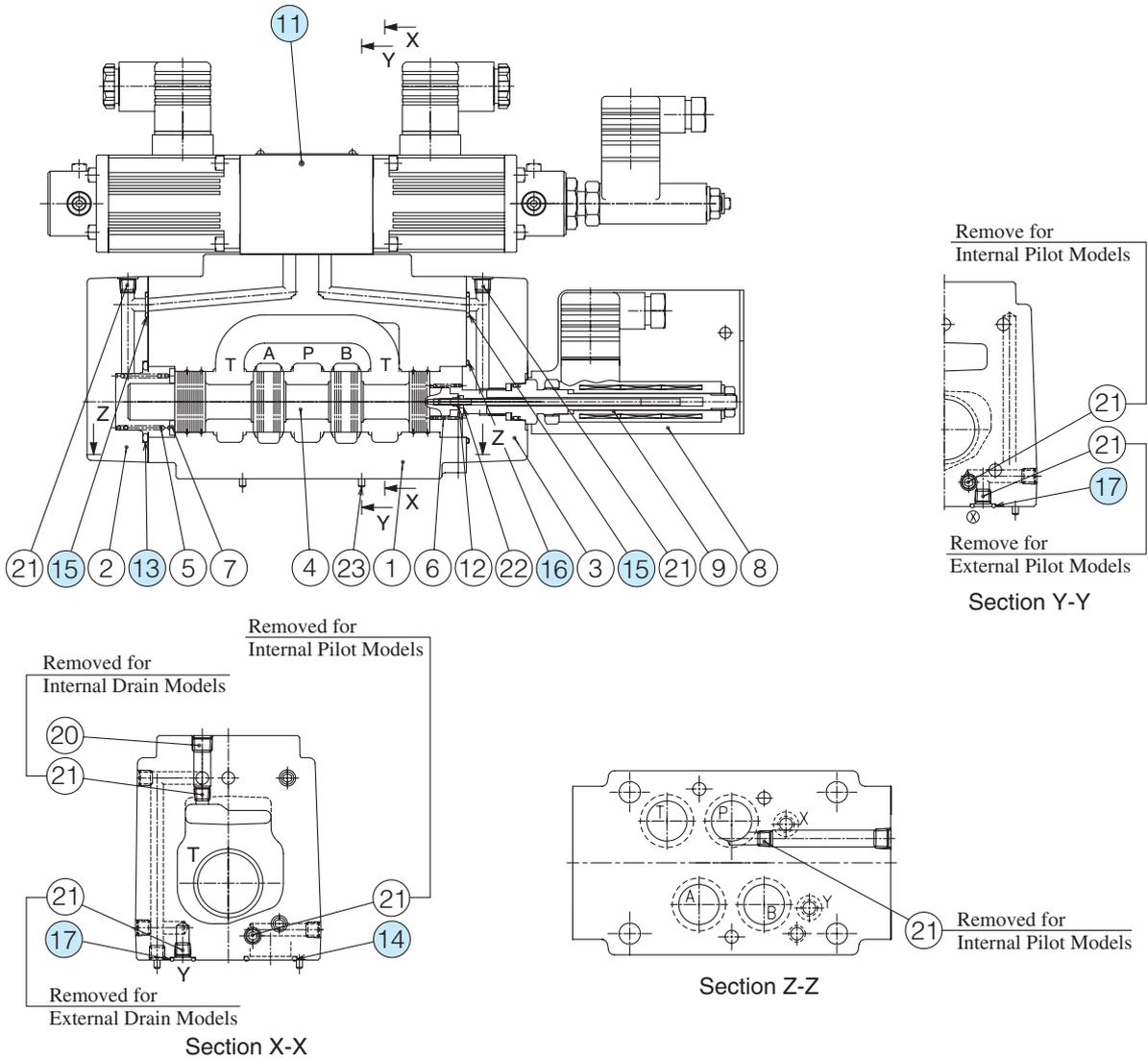
Frequency Response

Input Signal : 0 ± 25 %
Hydraulic Circuit : Port A/B Closed
Supply and Pilot Pressure : 14 PMa (2030 PSI)
Viscosity : 30 mm²/s (140 SSU)



■ List of Seals and Pilot Valve

ELDFHG-04-280-*-XY-**-10/1090



● List of Seals

Item	Name of Parts	Part Numbers	Qty.	Remarks
13	O-Ring	SO-NB-P39	1	Included in Seal Kit Kit No.: KS-ELDFHG-01-10
14	O-Ring	SO-NB-P22	4	
15	O-Ring	SO-NB-P9	2	
16	O-Ring	SO-NB-A029	1	
17	O-Ring	SO-NB-A012	2	

● Pilot Valve

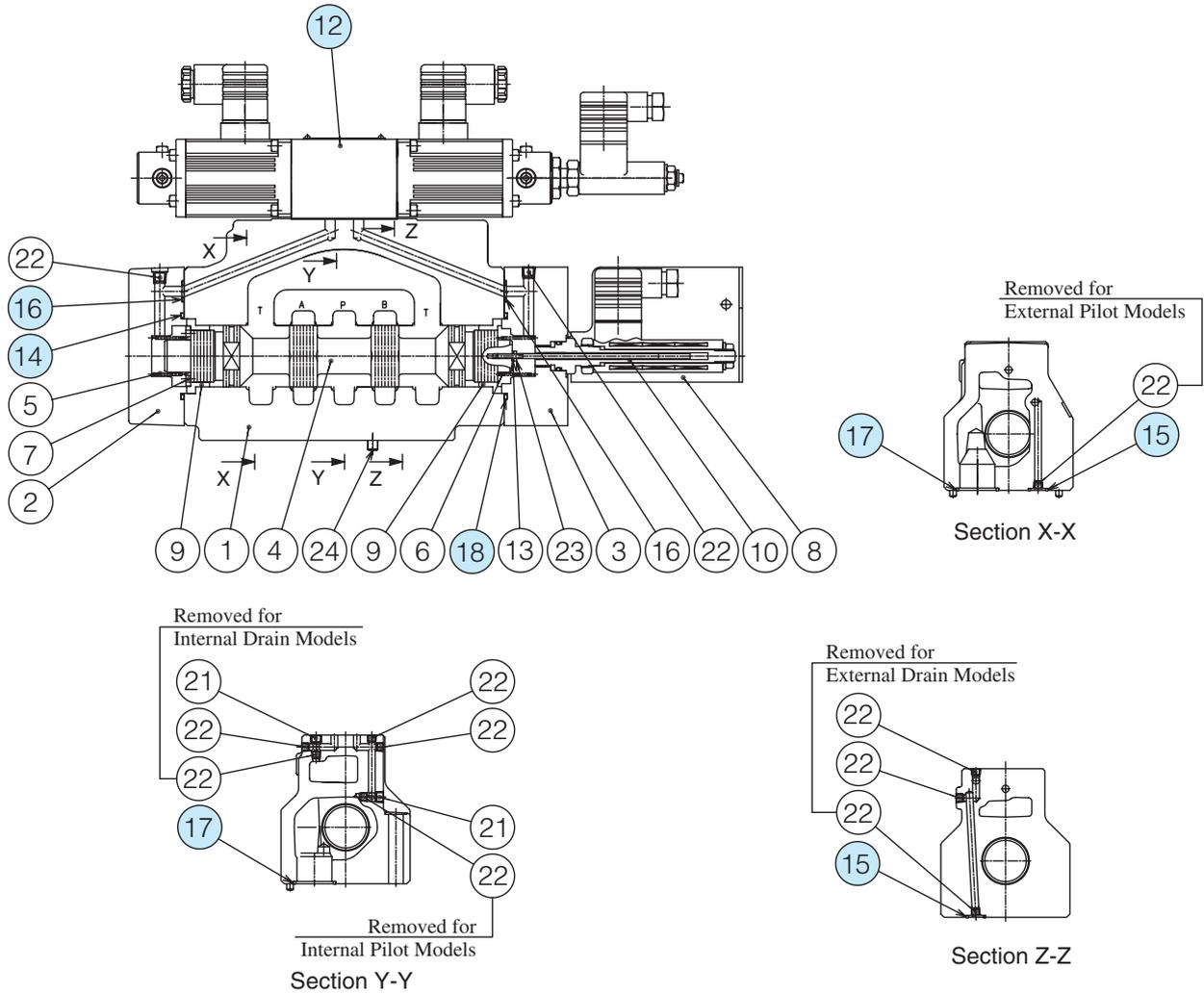
Valve Model No.	⑪ Pilot Valve Model No.
ELDFHG-04	ELDFG-01-30-3C2P-XY-1004

Note) See ELDFG-01-*-XY-10/1090 on [page 758](#) for the corresponding seal and solenoid assembly for the pilot valve.

Note: When ordering seals, please specify the seal kit number from the table above. In addition to the above o-rings, seals for pilot valve are included in the seal kit. For the detail of the pilot valve seals, see [page 758](#).

List of Seals and Pilot Valve

ELDFHG-06-**-**-XY-**-10/1090



List of Seals

Item	Name of Parts	Part Numbers		Qty.
		ELDFHG-06-350	ELDFHG-06-500	
14	O-Ring	SO-NB-P40	SO-NB-A135	1
15	O-Ring	SO-NB-P14		2
16	O-Ring	SO-NB-P10		2
17	O-Ring	SO-NB-A123	SO-NB-A126	4
18	O-Ring	SO-NB-A030	SO-NB-A135	1

Note: When ordering seals, please specify the seal kit number from the table above. In addition to the above o-rings, seals for pilot valve are included in the seal kit. For the detail of the pilot valve seals, see page 758.

Pilot Valve

Valve Model No.	⑫ Pilot Valve Model No.
ELDFHG-06	ELDFG-01-30-3C2P-XY-1006

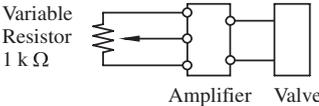
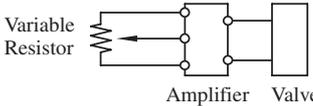
Note) See ELDFG-01-**-**-XY-10/1090 on page 758 for the corresponding seal and solenoid assembly for the pilot valve.

Seal Kit Numbers

Valve Model Numbers	Seal Kit Numbers
ELDFHG-06-350-**-**-XY-**-10/1090	KS-ELDFHG-06-350-10
ELDFHG-06-500-**-**-XY-**-10/1090	KS-ELDFHG-06-500-10

■ Power Amplifiers / Setting Adjusters For Proportional Electro-Hydraulic Control Valves

These are power amplifiers to be used exclusively to operate the electro-hydraulic proportional valves. Various type and models are available for a variety of applications.

Type	Model Numbers	Applicable to Control Valve	Function
DC Input	AME-D-10-*-20	Pressure or Flow Control (For 10 Ω Sol.)	<p>By giving the command of DC voltage (0–10 V) to the amplifier, current in proportion to that voltage will flow into the solenoid of the control valve in order to control pressure or flow rate.</p> <p>An external setting unit which makes the command voltage of 0–10 V and a DC power supply (or a function generator) are necessary, but if a variable resistor for external setting is only one, the internal power supply for amplifier can be used.</p> 
	AME-D-40-*-40	Flow Control (For 40 Ω Sol.)	
	AME-D2-H1-*-12	Flow Control and Relief (For 40Ω -10Ω Sol.)	
	AME-D2-1010-*-11	Flow Control and Relief (For 10Ω-10Ω Sol.)	
DC Input-Feedback	SK1022-*-*-11	Pressure or Flow Control (For 10 Ω Sol.)	<p>Basically, this is a DC input type with a feedback operating unit. This is for high-accuracy control and used to feedback the pressure or flow rate converted to electric signals.</p>
	AME-DF-S-*-22	Flow Control (For 40 Ω Sol.)	
Slow Up-Down	AME-T-S-*-22	Flow Control (For 40 Ω Sol.)	<p>A slow up-down signal generator and the functions of a DC input type are incorporated. This is used to control the pressure or flow rate by slow up-down pattern and the command signals are given by relay contacts, limit switches, timer contacts, etc.</p>
DC Input For DC Power 24 V DC	SK1015-11 AMN-D-10 AMN-W-10	Pressure or Flow Control (For 10 Ω Sol.)	<p>An amplifier which is operated by a battery power supply (24 V). By giving the command of DC voltage to the amplifier, current in proportion to that voltage will flow in the solenoid of the control valve in order to control pressure or flow rate.</p> <p>An external setting unit which makes the command voltage and a DC power supply (or a function generator) are necessary, but if a variable resistor for external setting is only one, the internal power supply for amplifier can be used.</p>  <p>SK1015 amplifier can be used in automobile construction machine.</p>
	SK1091-D24-10	Directional and Flow Control	
DC Input with Minor Feedback	AMN-L-01-*-*-10	High Response Type Directional and Flow Control	<p>An amplifier which is operated by a battery power supply (24V).</p>
	AMB-EL-*-*-*-10		<p>This is for high-response, high-accuracy control and used to feedback the pressure or flow rate converted to electric signals.</p>
Shockless	AMN-G-10	Shockless Directional and Flow Control	<p>Outputs shockless patterns, low speed (Level 1) high-speed (Level 2) low speed (Level 3).</p> <p>Shockless speed control is enabled just by providing SOL a and SOL b only contact signals in the same control mode as the mode for the “G” series of shifting time adjustable type shockless valves.</p>

■ Instructions

- The power amplifiers should be kept away from hot and humid conditions which may deteriorate some components of the power amplifiers. They also should be installed in the clean and dry place where the vibration is minimal. Please avoid to install the power amplifiers in the complete enclosure or get them enclosed totally as they need to radiate the heat from semiconductors or ICs inside.
- Please use shielded wires for input signal transmission to prevent the amplifiers from any interference such as noise from outside.