

Product News



Energy-Saving Type Solenoid Operated Directional Valves

HE-DSG-01-*-D24-70**

Release of New Products

We are pleased to announce the release of “energy-saving type solenoid operated directional valves” with high pressure/flow and reduced holding power as an addition to our highly reputable solenoid operated directional valve series.

■ Features

● Energy Saving

The valves have a power consumption of 6 W, about one fifth that of the DSG-01 series (29 W), and significantly reduce running costs.

● High Pressure and High Flow

With a maximum operating pressure of 35 MPa and a maximum flow of 100 L/min, which are identical to those of the DSG-01 series, the valves provide high pressure and high flow.



■ Specifications

Model Numbers	Max. Flow (L/min)	Max. Operating Pressure (MPa)	Max. T-Line Back Pressure (MPa)	Max. Changeover Frequency (min ⁻¹)	Mass (kg)
HE-DSG-01-3C*-D24-70	100★	35	21	60	2.1
HE-DSG-01-2D2-D24-70					1.5
HE-DSG-01-2B*-D24-70					

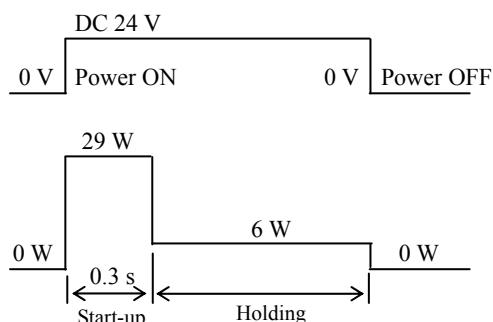
★ The maximum flow differs according to the spool type and operating conditions. For details, please refer to the List of Standard Models on page 3.

■ Solenoid Ratings

Electric Source	Coil Type	Voltage (V)		Current & Power at Rated Voltage				Start-up Time (s)
		Source Rating	Serviceable	Start-up Current (A)	Holding Current (A)	Start-up Power (W)	Holding Power (W)	
DC	D24	24	21.6 - 26.4	1.25	0.25	29	6	0.3

● Power consumption change

For the valves, the power consumption changes to 6 W in about 0.3 second after solenoid energization. For the power consumption change, see the following diagram.



■ Model Number Designation

HE-	DSG	-01	-2	B	2	A	-D24	-70	-L
Type	Series Number	Valve Size	Number of Valve Positions	Spool-Spring Arrangement	Spool Type	Special Two Position Valve (Omit if not required)	Coil Type	Design Number ★ ⁴	Models with Reverse Mtg. of Solenoid
HE: Energy-Saving Type★ ¹	DSG: Solenoid Operated Directional Valve (Sub-plate Mounting)	01	3	C: Spring Centred	2, 3 4, 40 60, 9 10, 11 12★ ²	-	(DC) D24	70	-
			2	D: No-Spring Detented	2	A: Neutral and SOL a Energized Positions			L: Omit if not required
				B: Spring Offset	2, 3, 8	A: Neutral and SOL a Energized Positions ★ ³ B: Neutral and SOL b Energized Positions			

★1. Phosphate ester type fluids are also supported. When phosphate ester type fluids are used, prefix “F-” to the model number because the special seals (fluororubber) are required to be used.

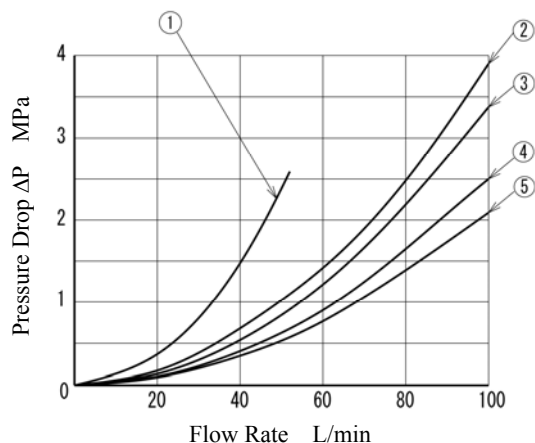
★2. In the table above, the enclosed numbers represent optional extras; the valves with such optional extras are handled as options.

★3. For details of the special two position valve, please refer to the installation drawing (1790S-VA330668-5).

★4. The design number is subject to change without notice as improvements are made to the product. However, a change only in the last digit of the design number means that the installation dimensions and performance specifications remain unchanged.

■ Pressure Drop

Pressure drop curves based on a viscosity of 35 mm²/s and a specific gravity of 0.850



Model Numbers	Pressure Drop Curve Number				
	P→A	B→T	P→B	A→T	P→T
HE-DSG-01-3C2	④	④	④	④	-
HE-DSG-01-3C3	⑤	⑤	⑤	⑤	②
HE-DSG-01-3C4	④	④	④	④	-
HE-DSG-01-3C40	④	④	④	④	-
HE-DSG-01-3C60	①	①	①	①	②
HE-DSG-01-3C9	⑤	③	⑤	③	-
HE-DSG-01-3C10	④	⑤	④	④	-
HE-DSG-01-3C11	④	④	④	④	-
HE-DSG-01-3C12	④	④	④	⑤	-
HE-DSG-01-2D2	⑤	④	⑤	④	-
HE-DSG-01-2B2	⑤	④	⑤	④	-
HE-DSG-01-2B3	⑤	⑤	⑤	⑤	-
HE-DSG-01-2B8	⑤	-	④	-	-

For any other viscosity, multiply the factors in the table below.

Viscosity	mm ² /s	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	417	464
Factor		0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

For any other specific gravity (G'), the pressure drop (ΔP') may be obtained from the formula below.

$$\Delta P' = \Delta P(G'/0.850)$$

List of Standard Models

No. of Valve Positions	Spool-Spring Arrangement	Model Numbers/ Graphic Symbols	Max. Flow L/min														
			P→A (B) →B (A) →T					P→A					P→B				
			Working Pressure MPa					Working Pressure MPa					Working Pressure MPa				
			10	16	25	31.5	35	10	16	25	31.5	35	10	16	25	31.5	35
Three Positions	Spring Centred	HE-DSG-01-3C2 	100	100	100	100	100	100	45	28	25	22	100	45	28	25	22
		a b	55	35	23	19	17	55	35	23	19	17	55	35	23	19	17
		HE-DSG-01-3C3 	80	80	80	80	80	63	63	63	63	63	63	63	63	63	63
		a b	63	63	63	63	63	56	56	56	56	56	56	56	56	56	56
		HE-DSG-01-3C4 	90	90	30	20	18	55	35	20	18	16	55	35	20	18	16
		a b	40	20	15	14	40	25	15	13	12	40	25	15	13	12	
		HE-DSG-01-3C40 	85	85	55	50	25	75	40	25	20	18	75	40	25	20	18
		a b	32	30	19	15	45	30	18	15	14	45	30	18	15	14	
		HE-DSG-01-3C60 	40	40	40	40	40	52	52	52	52	52	52	52	52	52	52
		a b	32	32	32	32	32	46	46	46	46	46	46	46	46	46	46
		HE-DSG-01-3C9 	100	100	100	100	100	20	15	10	10	8	20	15	10	10	8
		a b	85	85	30	20	18	55	35	20	18	16	55	35	20	18	16
		HE-DSG-01-3C10 	85	85	30	20	18	55	35	20	18	16	55	35	20	18	16
		a b	40	20	15	14	40	25	15	13	12	40	25	15	13	12	12
HE-DSG-01-3C11 	100	100	100	100	100	23	20	13	10	5	55	35	20	18	16		
a b	40	25	15	13	12	40	25	15	13	12	40	25	15	13	12		
HE-DSG-01-3C12 	85	85	30	20	18	55	35	20	18	16	55	35	20	18	16		
a b	40	20	15	14	40	25	15	13	12	40	25	15	13	12	12		
Two Positions	No-Spring Detented	HE-DSG-01-2D2 	68	68	68	68	68	45	45	40	30	27	50	50	50	45	45
		a b	63	63	63	63	63	30	25	22	22	45	42	40	40	40	
	Spring Offset	HE-DSG-01-2B2 	80	80	80	80	80	20	16	16	15	13	45	28	18	15	12
		a b	30	20	10	9	8	75	75	75	75	75	65	65	65	65	65
		HE-DSG-01-2B3 	70	70	70	70	70	50	50	50	50	50	45	28	18	15	12
		a b	65	65	65	65	65	26	17	13	11	10	30	20	10	9	8
		HE-DSG-01-2B8 	—	—	—	—	—	26	17	13	11	10	45	28	18	15	12
		a b	30	20	10	9	8	30	20	10	9	8	30	20	10	9	8

(1) Each cell with two rows in the table above indicates that the maximum flow varies depending on the voltage. The upper row shows the value at the rated voltage, while the lower row shows the value at the minimum serviceable voltage.

100	← 100% of DC rated voltage (after temperature rise and saturated)
55	← 90% of DC rated voltage (after temperature rise and saturated)

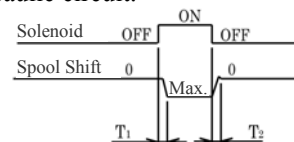
(2) In the valve type 3C60, if the actuator is placed between the cylinder ports A and B as illustrated below, the actuator moves and suspends at its stroke end, and the valve is then shifted to the neutral position with the actuator suspended, the maximum flow rates available are those shown below regardless of the voltage in the serviceable voltage range.

	Model Number	Graphic Symbol	Max. Flow L/min				
			10 MPa	16 MPa	25 MPa	31.5 MPa	35 MPa
	HE-DSG-01-3C60-D24		55	44	30	26	22

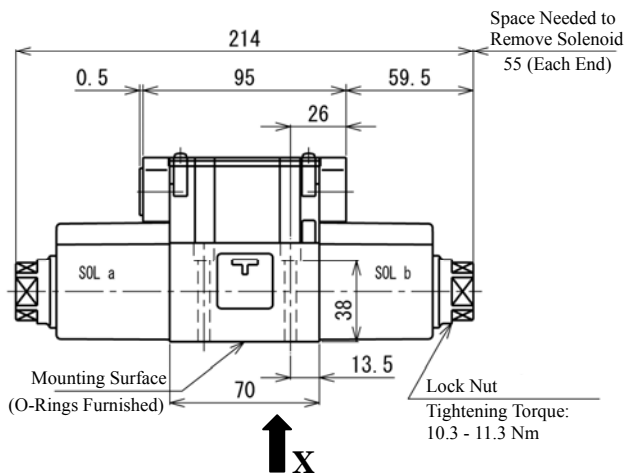
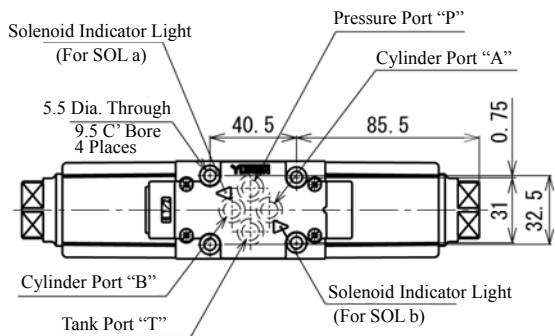
Changeover Time

Changeover time varies according to the oil viscosity, spool type, and hydraulic circuit.

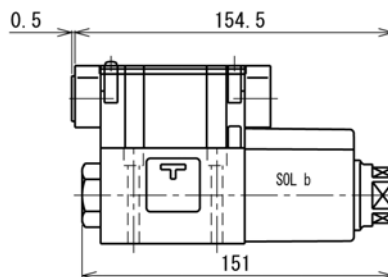
Model Number	T ₁ ms	T ₂ ms
HE-DSG-01-***-D24	30 - 45	20 - 30



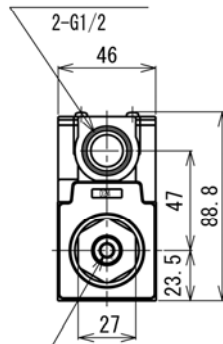
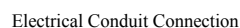
● **No-Spring Detented: HE-DSG-01-2D****



● **Spring Offset: HE-DSG-01-2B***

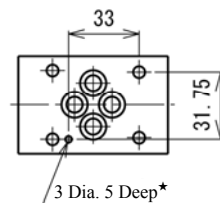


- For other dimensions, refer to the left figure.
- A model with the solenoid mounted on the SOL a side (reverse mounting) is also available.



Push Pin Hole for Manual Actuator
6 Dia. (Both Ends)

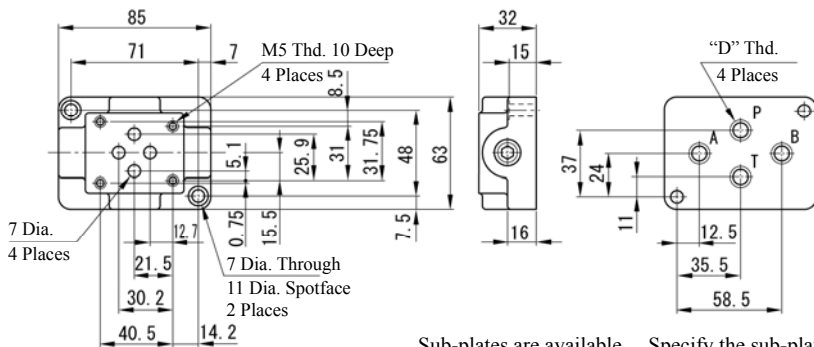
★ A locating pin can be fitted to this hole to conform with ISO 4401-03-02-0-94. However, no locating pin is provided to a standard design valve. When ordering a valve with a locating pin, consult Yuken.



VIEW ARROW X

- **Sub-plate**

DSGM-01, 01X, 01Y Mounting surface: ISO4401-AB-03-4-A



Sub-plate Model Numbers	D
DSGM-01-31	1/8
DSGM-01X-31	1/4
DSGM-01Y-31	3/8

Sub-plates are available. Specify the sub-plate model number from the left table.

When sub-plates are not used, the mounting surface should have a good machined finish (e.g. surface roughness of 6-S).

■ Product Release

We will start accepting orders for the products in May 2013.

■ Application

Machine tools and general industrial machinery