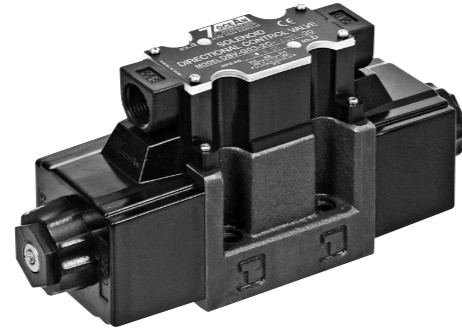


SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

FEATURES :

- Highest performance in NG 10
- Optimized spool design to reduce flow force
- Proven quality through 10 million endurance test
- Coil outside cover with BMC fire proof material
- Surge suppressor inside DC wiring box type
- Connections to DIN, ISO and CETOP



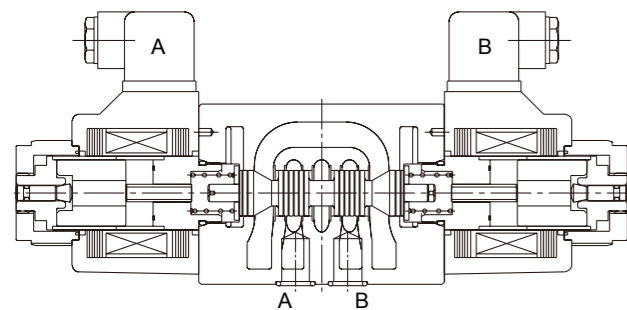
Model: DSV-G03-* *-A220-20

SPECIFICATION :

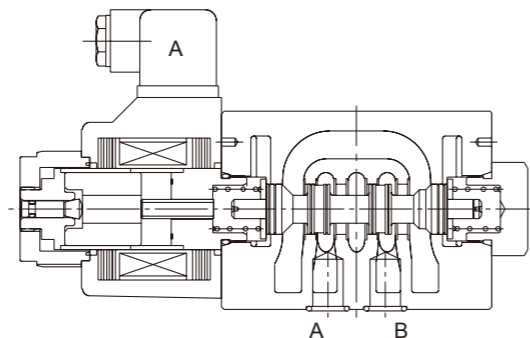
Maximum Flow Rate	160 L/Min (42 GPM)	
Maximum Operating Pressure	250 Bar (3571 PSI)	
Maximum Permissible Back Pressure	160 Bar (2285 PSI)	
Ambient Temperature Range	-15°C~+50°C	
Hydraulic Fluid Temperature	-15°C~+70°C	
Viscosity Range	15~400 mm ² /S	
Hydraulic Oil	ISO VG32, 46, 68	
Fluid Cleanliness	25 μm	
Degree of Protection	IEC 144 Class IP 65	
Maximum Change over Frequency	180 Times/Min (AC/DC)	
	120 Times/Min (RF)	
Mounting Pattern	ISO 4401-AC-05-4-A	
Approx. Weight (Kg)	Single solenoid	4.4 kg(DC/RF) / 3.6 kg(AC)
	Double solenoid	6.1 kg(DC/RF) / 4.6 kg(AC)
Valve Fixing Screws	Metric	M6 x 35L (4pcs)
	Inch	1/4"~20UNCx1-3/8"L (4pcs)
Tightening Torque	12~15 Nm	

CROSS SECTION DIAGRAM:

■ DSD-G03-2C-A*-31



■ DSD-G03-2A-A*-31



SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

ORDERING CODE :

DSV - G 03 - 2 C - A110 - 20 - **
1 2 3 4 5 6 7 8

1 DIRECTIONAL CONTROL VALVE

DSV: Wiring housing with G1/2 thread and indicator light
 DSD: DIN 43650 Coils

2 MANIFOLD OR SUBPLATE MOUNTING

3 NOMINAL VALVE SIZE:

NG 10, CETOP 5 and ISO 4401-05 (NFPA-D05/DIN 24340)

4 TYPE OF SPOOL (CENTER CONDITION)

0	1	2	3	5	6
A B P T	A B P T	A B P T	A B P T	A B P T	A B P T
7	8	11	22	31	33
A B P T	A B P T	A B P T	A B P T	A B P T	A B P T

- 0: Open center (All ports)
- 1: Open center (P, A to T)
- 2: Closed center (All ports)
- 3: Closed center (P, B)
- 5: Closed center (T, B)
- 6: Closed center (P only)
- 7: Open center (P to A, B)
- 8: Tandem center (P to T)
- 11: Open center (P, B to T)
- 22: Closed center (Two way)
- 31: Closed center (P, A)
- 33: Closed center (Bleed A,B)

5 SPRING CRACKING PRESSURE

- A: Spring offset to port "A" single solenoid
- AL: Spring offset to port "B" single solenoid
- B: Spring centered-single solenoid
- BL: Spring centered-single solenoid
- C: Spring centered-double solenoid
- N: Without spring with detent

6 ELECTRIC POWER SOURCE INDICATION

- A110: AC100V, 50/60 Hz; AC110V, 60 Hz
- A120: AC110V, 50 Hz; AC120V, 60 Hz
- A220: AC200V, 50/60 Hz; AC220V, 60 Hz
- A240: AC220V, 50 Hz; AC240V, 60 Hz
- DC12: DC12V
- DC24: DC24V
- R110: AC110V, 60 Hz; Rectifier built-in type
- R220: AC220V, 60 Hz; Rectifier built-in type

7 DESIGN NUMBER

- 10: Old Design Number
- 20: New Design Number
- 31: Connector with indicator light

8 OPTIONAL INQUIRY

- LS: Surge Killer

SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

SPOOL TYPES:

Position type at neutral	Double solenoid valves, spring centered -C-	Single solenoid valves, solenoid at port A end -B-	Single solenoid valves, solenoid at port B end -BL-
0 (H)	DSV-G03-0C 	DSV-G03-0B 	DSV-G03-0BL
1 (F)	DSV-G03-1C 	DSV-G03-1B 	DSV-G03-1BL
2 (E)	DSV-G03-2C 	DSV-G03-2B 	DSV-G03-2BL
		DSV-G03-2F 	DSV-G03-2FL
3 (L)	DSV-G03-3C 	DSV-G03-3B 	DSV-G03-3BL
5	DSV-G03-5C 	DSV-G03-5B 	DSV-G03-5BL
6 (J)	DSV-G03-6C 	DSV-G03-6B 	DSV-G03-6BL
7 (M)	DSV-G03-7C 	DSV-G03-7B 	DSV-G03-7BL
8 (G)	DSV-G03-8C 	DSV-G03-8B 	DSV-G03-8BL
11 (P)	DSV-G03-11C 	DSV-G03-11B 	DSV-G03-11BL
31 (U)	DSV-G03-31C 	DSV-G03-31B 	DSV-G03-31BL
33 (W)	DSV-G03-33C 	DSV-G03-33B 	DSV-G03-33BL

*() : Rexroth Model

SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

SPOOL TYPES:

Position type during transition	Double solenoid valves, spring centered -N-	Single solenoid valves, solenoid at port A end -A-	Single solenoid valves, solenoid at port B end -AL-
0 (H)		DSV-G03-0A 	DSV-G03-0AL
2 (E)	DSV-G03-2N 	DSV-G03-2A 	DSV-G03-2AL
6 (J)		DSV-G03-6A 	DSV-G03-6AL
7 (M)		DSV-G03-7A 	DSV-G03-7AL
22 (A)		DSV-G03-22A 	DSV-G03-22AL

*() : Rexroth Model

FEATURES OF ELECTRO-MAGNETIC COIL :

Solenoid Classification	Power Source	Voltage (V)	Frequency (Hz)	Holding Current (A)	Inrush Current (A)	Holding Power (W)	Permissible Voltage (V)	Insulation Grade	Coil Insulation Class	Insulation Resistance (MΩ)
AC	A110	AC100V	50	1.28	5	45.4	90~110	B	H (180°C)	>50
			60	1.09	4.24	26.2	90~110			
	A120	AC110V	50	1.08	4.70	46.6	100~120			
			60	0.87	4.32	38.2	110~130			
	A220	AC200V	50	0.68	2.66	47.4	190~210			
			60	0.55	2.34	31.9	190~210			
A240	AC220V	50	0.41	2.35	59.3	210~230				
	AC240V	60	0.44	2.38	65.9	230~250				
DC	DC12	DC12V	-	2.58	-	29.2	10.8~13.2	B	H (180°C)	
	DC24	DC24V	-	1.48	-	35.1	21.6~26.4			
RF	R110	AC110V, 60HZ DC99V		0.42	-	41	90~110	B	H (180°C)	
	R220	AC220V, 60HZ DC198V		0.21	-	41	190~220			

SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

PERFORMANCE FIGURES & CURVES:

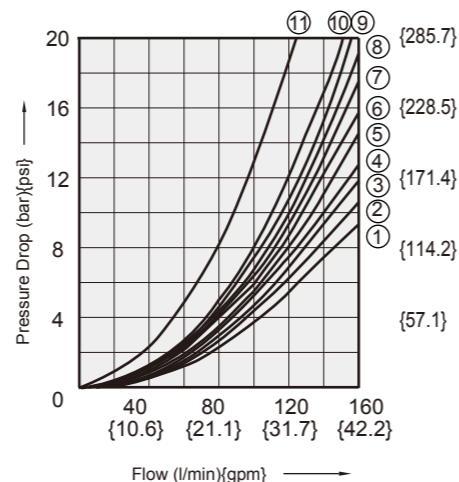
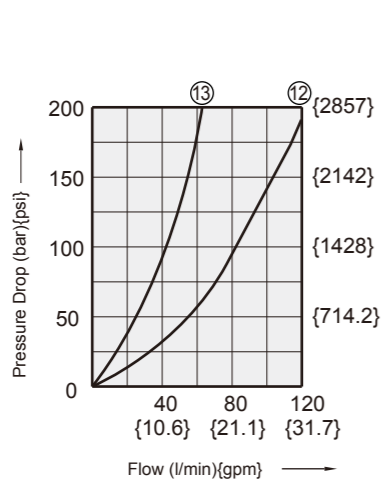
Pressure Drop Curve Reference Chart

Viscosity of Hydraulic Fluid: 36 mm²/s

Spool Type	C, B, BL								
	Control Position				Neutral Position				
	P→A	B→T	P→B	A→T	P→T	A→T	B→T	P→A	P→B
0 (H)	7	10	7	10	8	8	8	6	6
1 (F)	6	3	9	11	10	2	-	6	-
2 (E)	5	3	5	3	-	-	-	-	-
3 (L)	5	3	5	9	-	4	-	-	-
6 (J)	5	9	5	9	-	4	4	-	-
7 (M)	6	3	6	3	-	-	-	7	7
8 (G)	1	10	1	10	11	-	-	-	-
11 (P)	9	11	6	3	10	-	2	-	6
31 (U)	5	9	5	3	-	-	4	-	-
33 (W)	5	3	5	3	-	13	13	-	-

Spool Type	A, AL			
	Control Position			
	P→A	B→T	P→B	A→T
0 (H)	6	9	6	6
2 (E)	6	3	6	3

Spool Type	N			
	Control Position			
	P→A	B→T	P→B	A→T
2 (E)	7	3	7	3



WIRING:

<p>■ DSV-G03-*C-*20</p> <p>Note: 1. COM terminal is fitted in double solenoid valve for easiness of wiring. 2. Use an earth terminal when ground wiring is necessary. 3. Use a compressed terminal for M3. 4. Fasten the screw of the terminal with 0.5~0.7 N.m (4.3~6.1 lbs) torque.</p>	<p>■ DSD-G03-*-*31</p>
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SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

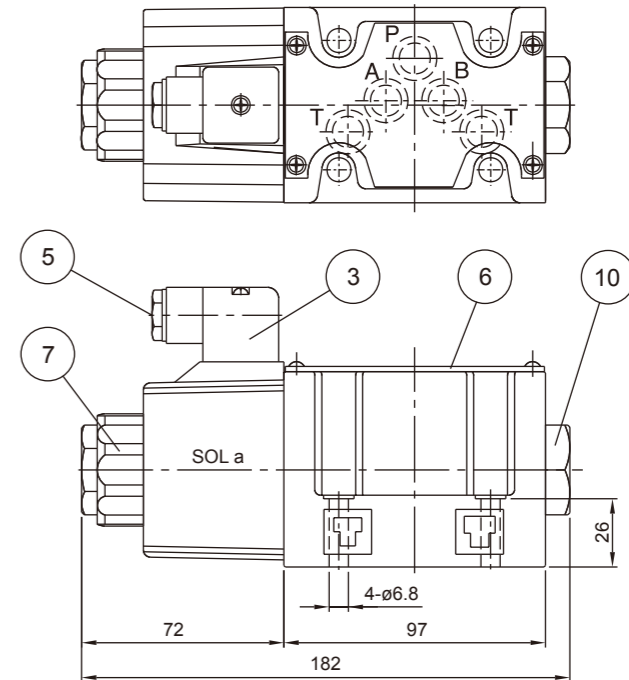
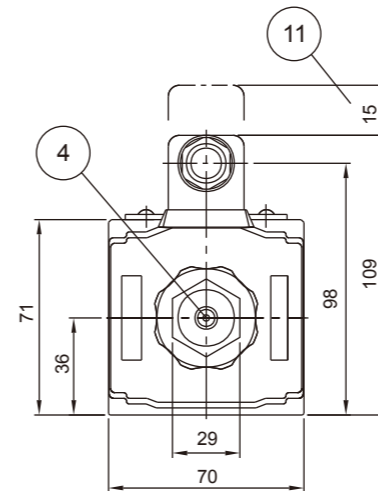
DIMENSIONS:

AC solenoid (DSD Type)

■ DSD-G03- *A-A*-31

*B

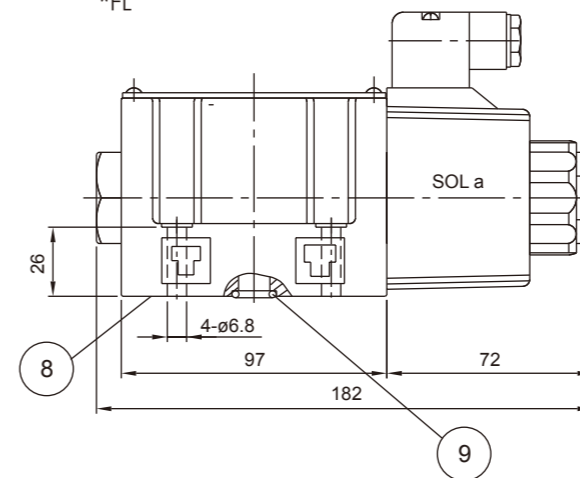
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■ DSD-G03- *AL-A*-31

*BL

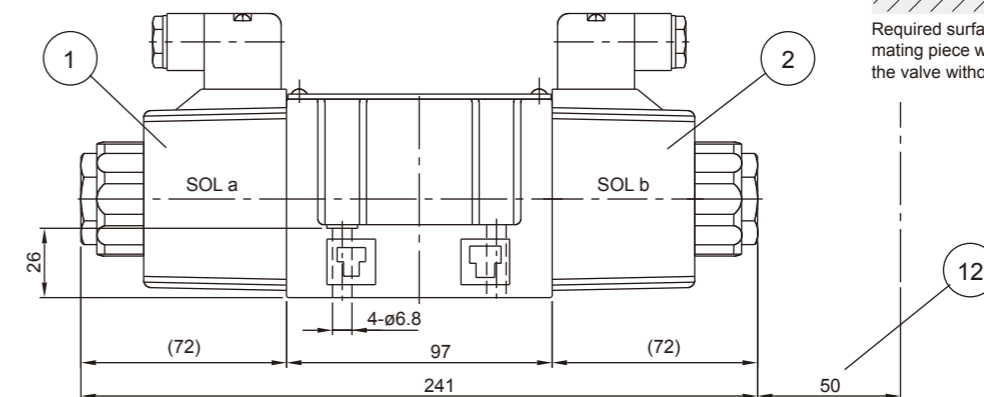
*FL



- 1: Solenoid a
- 2: Solenoid b
- 3: Angled plug to DIN 43650
- 4: Push pin for manual operation
- 5: Lead wire take-out (Cable diameter ø8~10mm)
- 6: Nameplate
- 7: Lock nut with torque in the range 10.5 Nm
- 8: Connections to DIN 24340 (NG10, ISO 4401-AC-05-4-A); valve fixing screws M6x35; tightening torques 12~15 Nm
- 9: O-ring AS568-014 (Hs 90)
- 10: Hex nut (for single solenoid)
- 11: Space required to remove plug
- 12: Coil removable length

■ DSD-G03- *C-A*-31

*N



0.01/100 mm
Rmax4
Required surface finish of mating piece when fitting the valve without subplate

SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

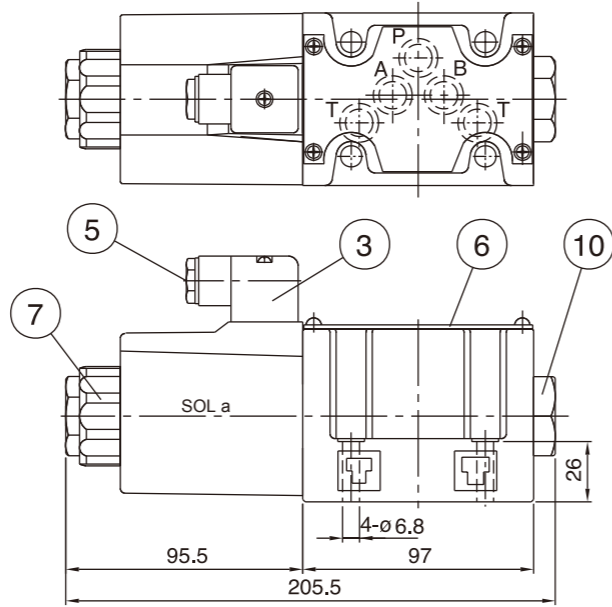
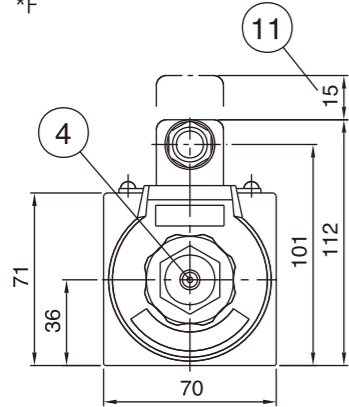
DIMENSIONS:

DC solenoid (DSD Type)

■ DSD-G03- *A-DC*-31

*B

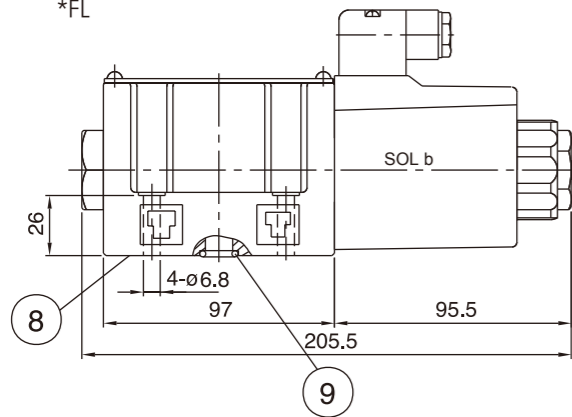
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■ DSD-G03- *AL-DC*-31

*BL

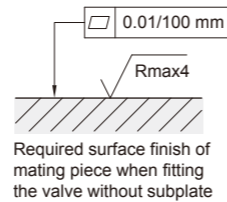
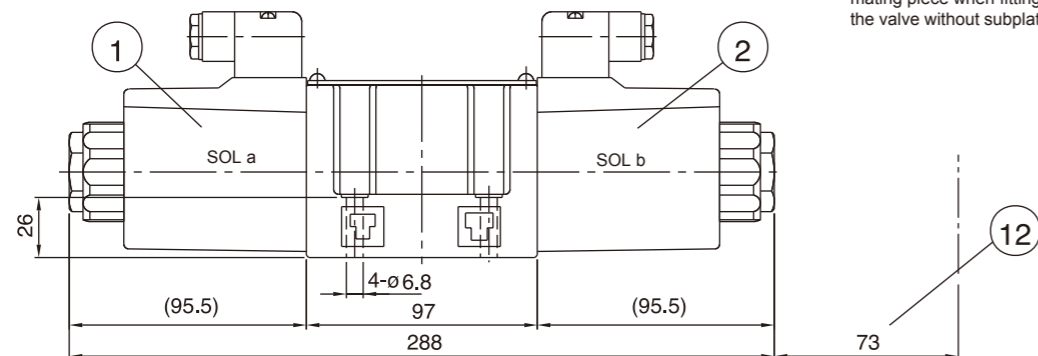
*FL



- 1: Solenoid a
- 2: Solenoid b
- 3: Angled plug to DIN 43650
- 4: Push pin for manual operation
- 5: Lead wire take-out (Cable diameter ø8~10mm)
- 6: Nameplate
- 7: Lock nut with torque in the range 10.5 Nm
- 8: Connections to DIN 24340 (NG10, ISO 4401-AC-05-4-A); valve fixing screws M6x35; tightening torques 12~15 Nm
- 9: O-ring AS568-014 (Hs 90)
- 10: Hex nut (for single solenoid)
- 11: Space required to remove plug
- 12: Coil removable length

■ DSD-G03- *C-DC*-31

*N



SOLENOID OPERATED

DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

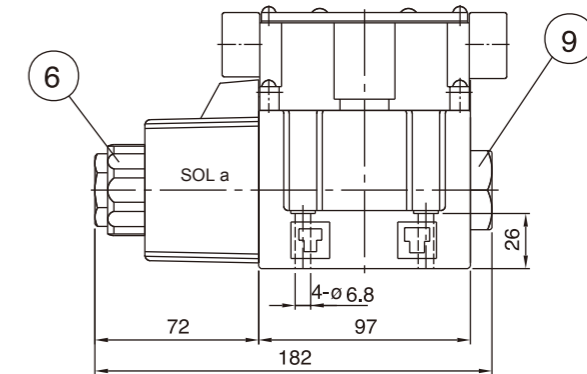
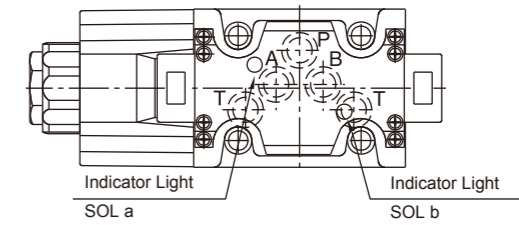
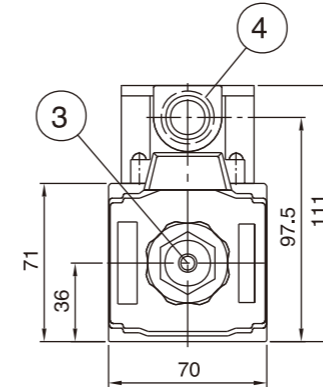
DIMENSIONS:

AC solenoid (DSV Type)

■ DSV-G03- *A-A*-20

*B

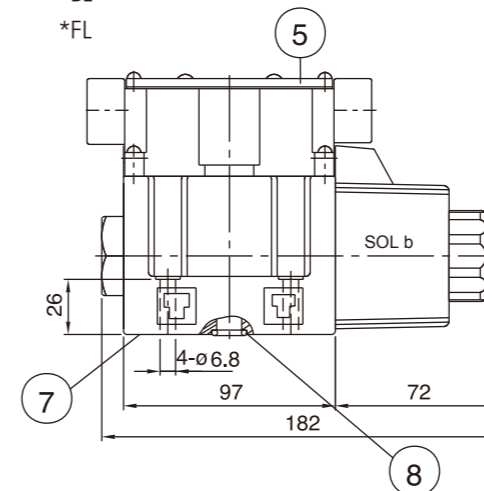
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■ DSV-G03- *AL-A*-20

*BL

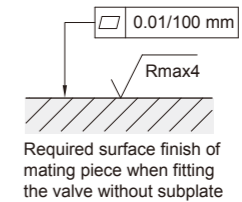
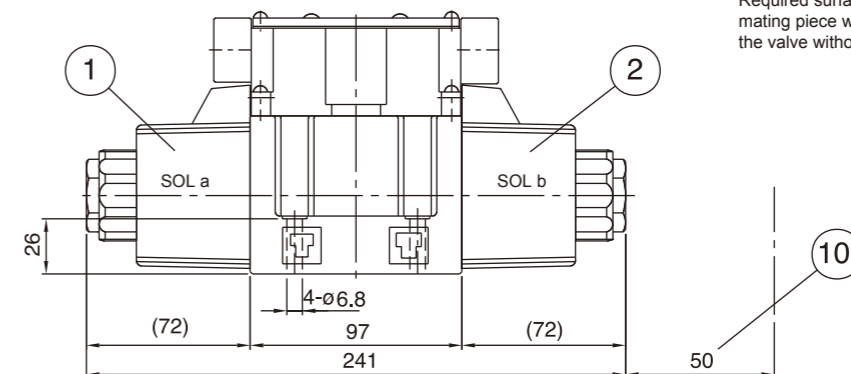
*FL



- 1: Solenoid a
- 2: Solenoid b
- 3: Push pin for manual operation
- 4: Lead wire take-out (G1/2")
- 5: Nameplate
- 6: Lock nut with torque in the range 10.5 Nm
- 7: Connections to DIN 24340 (NG10, ISO 4401-AC-05-4-A); valve fixing screws M6x35; tightening torques 12~15 Nm
- 8: O-ring AS568-014 (Hs 90)
- 9: Hex nut (for single solenoid)
- 10: Coil removable length

■ DSV-G03- *C-A*-20

*N



SOLENOID OPERATED
DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

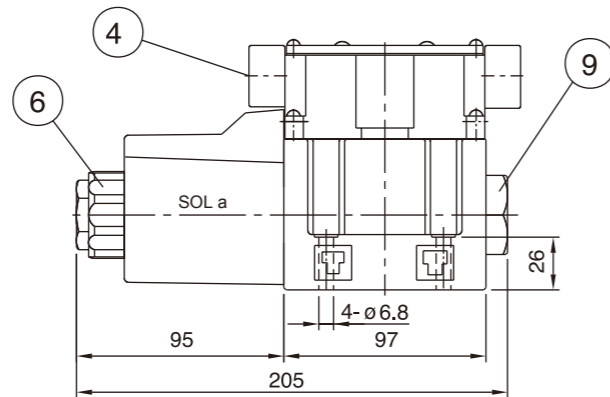
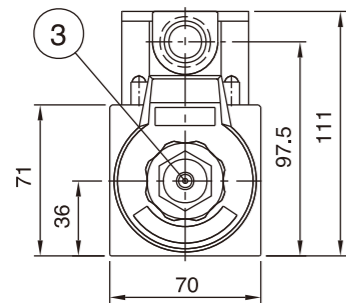
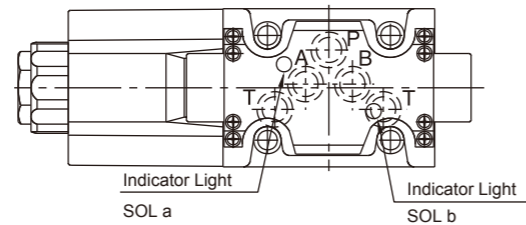
DIMENSIONS:

DC solenoid (DSV Type)

■ DSV-G03- *A-DC*-20

*B

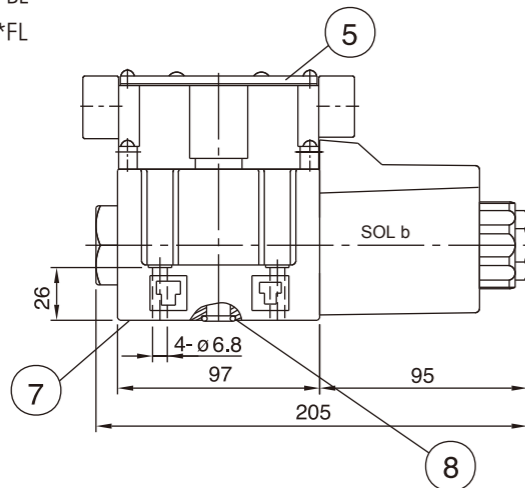
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■ DSV-G03- *AL-DC*-20

*BL

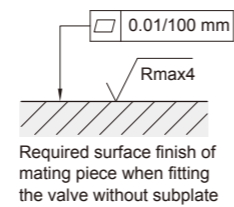
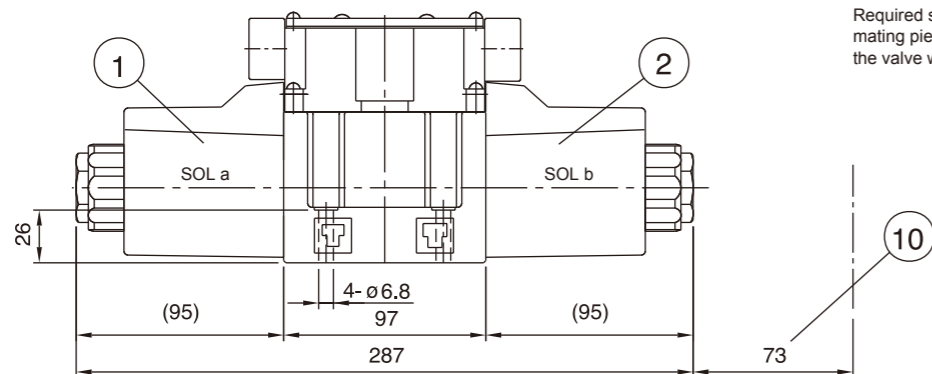
*FL



- 1: Solenoid a
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- 3: Push pin for manual operation
- 4: Lead wire take-out (G1/2")
- 5: Nameplate
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- 7: Connections to DIN 24340 (NG10, ISO 4401-AC-05-4-A); valve fixing screws M6x35; tightening torques 12~15 Nm
- 8: O-ring AS568-014 (Hs 90)
- 9: Hex nut (for single solenoid)
- 10: Coil removable length

■ DSV-G03- *C-DC*-20

*N

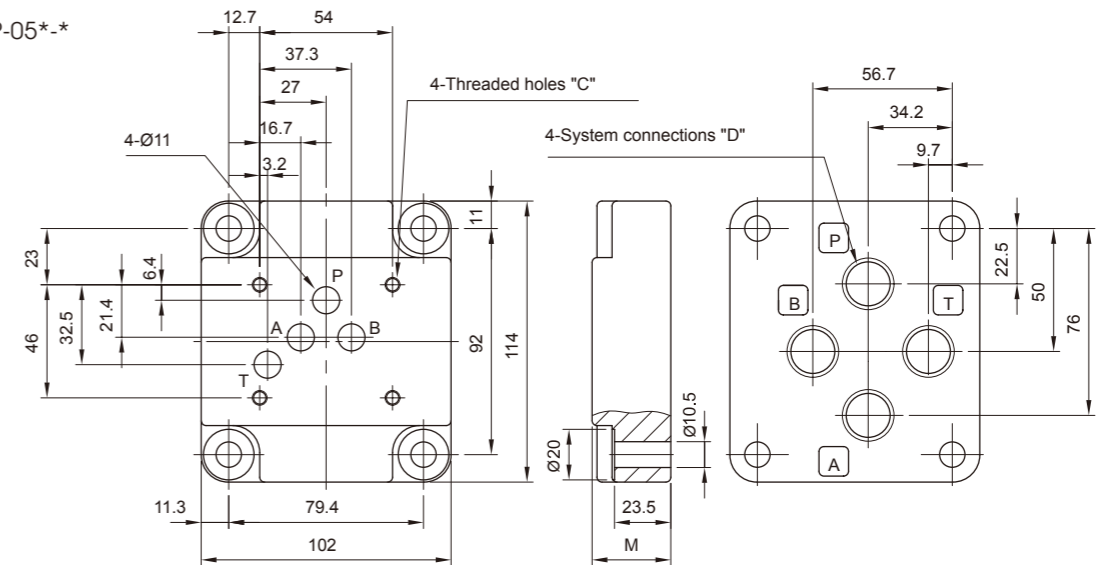


SOLENOID OPERATED
DIRECTIONAL CONTROL VALVE DSV / DSD-G03 SIZE 10

SUBPLATE DIMENSIONS:

Bottom Connection

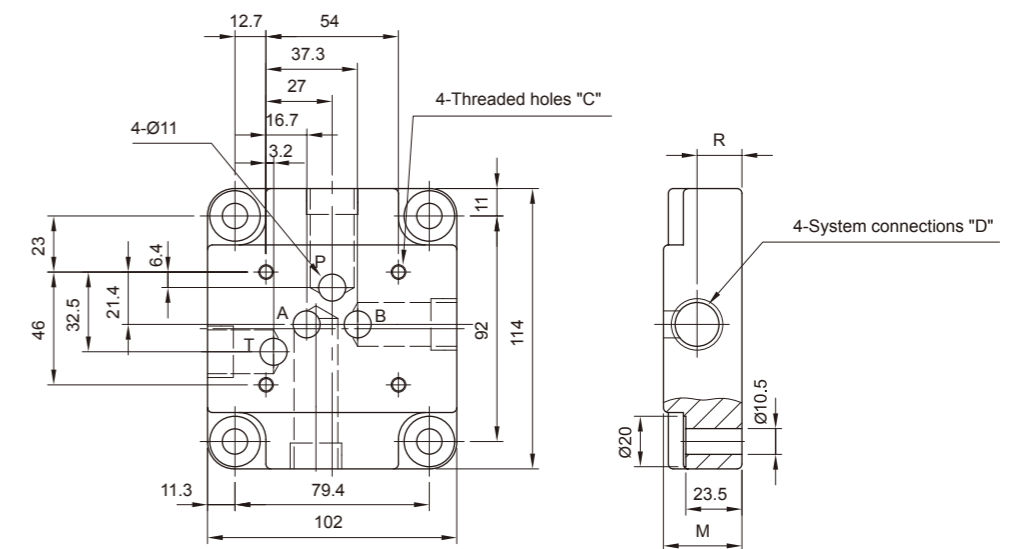
■ DGSP-05*-*



Model	C	D	M	Weight	Model	C	D	M	Weight
DGSP-05-8		1/2" Rc	32	2.1 kgs	DGSP-05N-8	1/4"~20UNC-2B	1/2" NPT	32	2.1 kgs
DGSP-05-12	M6x14 Deep (min)	3/4" Rc	38	2.4 kgs	DGSP-05N-12	Thd. x 1/2" Deep	3/4" NPT	38	2.4 kgs
DGSP-05G-8	Full Thread Depth	1/2" BSP	32	2.1 kgs	DGSP-05S-8	Full	1/2" SAE	32	2.1 kgs
DGSP-05G-12		3/4" BSP	38	2.4 kgs	DGSP-05S-12	Thread Depth	3/4" SAE	38	2.4 kgs

Side Connection

■ DGSP-05*-*E



Model	C	D	M	R	Weight	Model	C	D	M	R	Weight
DGSP-05-8E		1/2" Rc	32	16	2.1 kgs	DGSP-05N-8E	1/4"~20UNC-2B	1/2" NPT	32	16	2.1 kgs
DGSP-05-12E	M6x14 Deep (min)	3/4" Rc	38	18	2.4 kgs	DGSP-05N-12E	Thd. x 1/2" Deep	3/4" NPT	38	18	2.4 kgs
DGSP-05G-8E	Full Thread Depth	1/2" BSP	32	16	2.1 kgs	DGSP-05S-8E	Full	1/2" SAE	32	16	2.1 kgs
DGSP-05G-12E		3/4" BSP	38	18	2.4 kgs	DGSP-05S-12E	Thread Depth	3/4" SAE	38	18	2.4 kgs