1/8 Solenoid Operated Directional Valves, ODSG-01 Series

- ***WIDE RANGE OF MODELS--Choose the optimum valve to meet needs from a large selection available.***

The ODSG-01 10 series solenoid operated directional valve comes with basic model:

- **Standard type -------** Useable at high pressure, high flow [315Kgf/cm^2,63L/min.]

The optimum valve for any system can be utilized since many spool types and various solenoids are all available, along with other optional functions.

- **IP65-equivalent dust and water resistant**

On request can be customized up to IP68/69.
Consult OLEODINAMICA IDRAULICA for more details.

Specification

Valve Type	Model Numbers	Max. Flow* L/min.	Max. Operating Pressure Kgf/cm^2	Max. T-Line Back Pressure Kgf/cm^2	Max. Changeover Frequency Cycles/min.	Mass Kg
Standard Type	ODSG-01-3C※-※-10	63	315 {Spool Type 60 Only}	160	---	2.2
	ODSG-01-2D2※-※-10					
	ODSG-01-2B※-※-10					1.6

* Maximum flow indicates a ceiling flow. As the ceiling flow depends on the type of spool and operating condition, refer to the list of standard models & maximum flow on page 3 & 4 for details.

Sub-Plates

Sub-plate Model Numbers	Thread Size	Approx. Mass Kg.
ODSGM-01-3080	1/8 BSP.F	0.8
ODSGM-01X-3080	1/4 BSP.F	0.8

* 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.

Mounting Bolts

Four socket head cap screws as in the table below are included.

Soc. Hd. Cap Screw	Qty.	Mounting Bolt Kit Number
M5 x 45 Lg.	4	BKODSG-01-10

Solenoid Ratings

Valve Type	Electric source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage		
				Source Rating	Serviceable Range	Inrush (A) *2	Holding (A)	Power (W)
Standard Type	AC	A240	50	240	192 - 264	0.67	0.19	---
			60		216 - 288	0.89	0.13	
	DC	D24	--	24	21.6 - 26.4	--	1.1	26

*1 Inrush current in the above table show rms values at maximum stroke.

Model Number Designation

F	S-	ODSG	- 01	- 2	B	2	A	- A 100	-C	- N	10	- L
Special Seals **	Type	Series Number	Valve Size	Number of Valve Positions	Spool - Spring Arrangement	Spool Type	Special Two Position Valve [Omit if not required]	Coil Type	Manual Override	Electrical Conduit Connection	*3 Design Number	Models with Alternate offset Solenoid [Omit if not required]
F: Special Seals for Phosphate Ester Type Fluids (Omit if not required)	**None:** Standard Type	**ODSG :** Solenoid Operated Directional Valve	**01**	**3 :** Three Positions	**C :** Spring Centered	**2** **4** **60**	--	AC : **A 240** DC : **D 24**	**None:** Manual Override Pin	**N1 :** With Plug-in Connector with Indicator Light	**10**	--
				2 : Two Positions	**D :** No-Spring Detented	**2**	--		**C :** Push Button and Lock Nut (Option)			
					B : Spring Offset	**2**	--					**L**

*1 Design numbers subject to change. But installation dimensions remain as shown for design number 10 through 19.

Note: Models with rubber dust cap at manual push pin are also available. Consult OLEODINAMICA IDRAULICA for details.

List of Standard Models and Maximum Flow

Model with AC Solenoids : ODSG-01-※※※ -A※

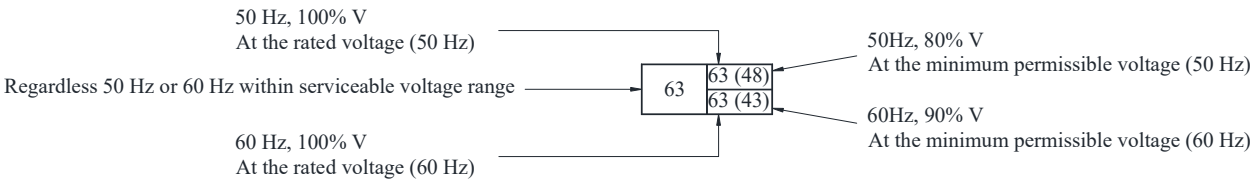
No. of Valve Positions	Spool-Spring Arrangements	Model Numbers	Graphic Symbols	Max. Flow L/min														
				P→A, B→A, A→B, B→T					P→A [Port "B" Blocked]					P→B [Port "A" Blocked]				
				50 Kgf/cm²	100 Kgf/cm²	160 Kgf/cm²	250 Kgf/cm²	315 Kgf/cm²	50 Kgf/cm²	100 Kgf/cm²	160 Kgf/cm²	250 Kgf/cm²	315 Kgf/cm²	50 Kgf/cm²	100 Kgf/cm²	160 Kgf/cm²	250 Kgf/cm²	315 Kgf/cm²
Three Positions	Spring Centered	ODSG-01-3C2		63	63	63	63	63	63 (30) 45 (25)	63 (23) 33 (18)	63 (15) 20 (10)	50 (10) 13 (5)	40 (10) 13 (5)	63 (30) 45 (25)	63 (23) 33 (18)	63 (15) 20 (10)	50 (10) 13 (5)	40 (10) 13 (5)
		ODSG-01-3C4		63	63	63	63	63 (48) 63 (43)	63 (25) 58 (20)	63 (23) 48 (18)	63 (20) 35 (15)	63 (13) 20 (8)	55 (10) 13 (5)	63 (25) 58 (20)	63 (23) 48 (18)	63 (20) 35 (15)	63 (13) 20 (8)	55 (10) 13 (5)
		ODSG-01-3C60*		45	43	40	40	--	45	43	40	40	--	45	43	40	40	--
Two Positions	No Spring Detented	ODSG-01-2D2		63	63	63	63	63	45	45	45	45 (35) 40 (30)	45 (25) 30 (20)	45	45	45	45 (35) 40 (30)	45 (25) 30 (20)
	Spring Offset	ODSG-01-2B2		63	63	63	63	63	20	20	20	20	20	63	63 (55) 63 (50)	63 (50) 63 (45)	63 (50) 63 (45)	63 (45) 60 (40)

Note :

1 Maximum Flow rates and applied current.

- The single column describes maximum flow rates regardless of whether AC solenoid 50 Hz or 60 Hz as long as it is within serviceable voltage range.
- Maximum flow rates at 50 Hz solenoid with serviceable voltage range, refer to the figures in the upper column and 60 Hz solenoid as long as it is within serviceable voltage range. Refer to the figures in the latter column.
  Where two figures are shown in the same column , the figure outside ( ) is at rated voltage and inside ( ) is at the minimum permissible solenoid voltage.

(Example)



2 For the maximum flow between P and T of those valves marked *, refer to page 05.

List of Standard Models and Maximum Flow

Model with DC Type Solenoids : ODSG-01-※※※-D※

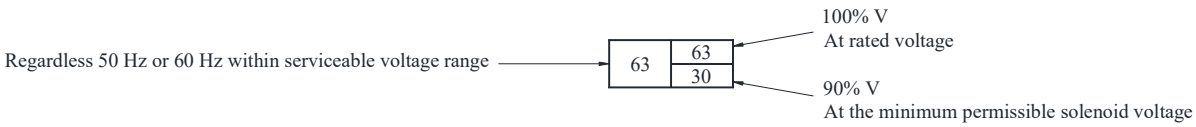
No. of Valve Positions	Spool-Spring Arrangements	Model Numbers	Graphic Symbols	Max. Flow L/min P → A, B → B, A → T					P → A [Port "B" Blocked]					P → B [Port "A" Blocked]				
				50 Kgf/cm²	100 Kgf/cm²	160 Kgf/cm²	250 Kgf/cm²	315 Kgf/cm²	50 Kgf/cm²	100 Kgf/cm²	160 Kgf/cm²	250 Kgf/cm²	315 Kgf/cm²	50 Kgf/cm²	100 Kgf/cm²	160 Kgf/cm²	250 Kgf/cm²	315 Kgf/cm²
Three Positions	Spring Centered	ODSG-01-3C2		63	63	63	63	63	45	30	20	15	13	45	30	20	15	13
									33	23	15	10	10	33	23	15	10	10
		ODSG-01-3C4		63	63	63	63	35	63	45	35	30	28	63	45	35	30	28
							28	23	50	30	23	15	13	50	30	23	15	13
		ODSG-01-3C60*		45	43	40	40	--	45	43	40	40	--	45	43	40	40	--
Two Positions	No Spring Detented	ODSG-01-2D2		63	63	63	63	63	45	45	45	40	30	45	45	45	40	30
				58	55	55	55	55				30	25				30	25
	Spring Offset	ODSG-01-2B2		63	63	63	63	63	20	18	18	18	18	63	58	40	30	30
				53	53	53	53	53							40	28	25	25

Note:

1 Maximum Flow Rates and applied current.

- The single column describes maximum flow rates regardless of voltage as long as it is within the serviceable voltage range.
- Where two figures are shown in the same column, the upper is at rated voltage and the latter is at the minimum permissible solenoid voltage.

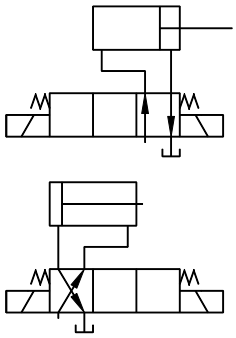
(Example)

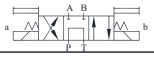


2 For the maximum flow between P and T of those valves marked *, refer to page 05.

Maximum Flow of Centre By-Pass

In spool type 60, P→T (Center By-Pass) flow rates are limited as shown in the column below. Described maximum flow rates are regardless voltage within serviceable voltage range.



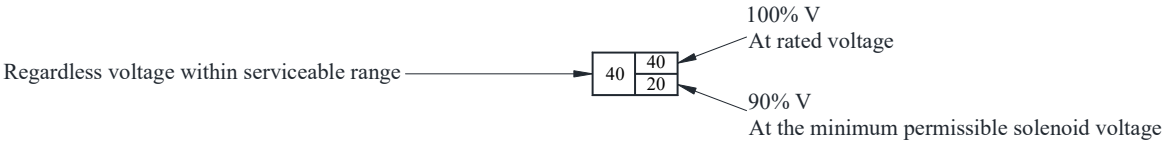
Model Numbers	Graphic Symbols	Max. Flow L/min.			
		50 Kgf/cm^2	100 Kgf/cm^2	160 Kgf/cm^2	250 Kgf/cm^2
ODSG-01-3C60-A※/D※		45	43	40	30

Note:

1 Maximum Flow Rates and applied current.

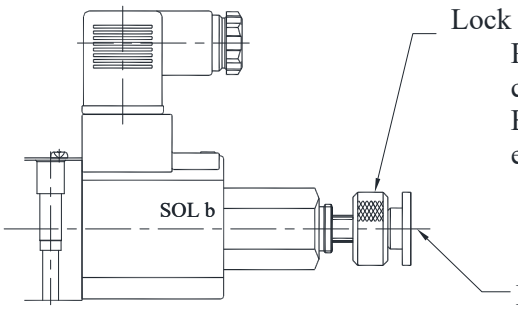
- The single column describes maximum flow rates regardless voltage within serviceable voltage range.
- Where two figures are shown in the same column, the upper is at rated voltage and the latter is at the minimum permissible solenoid voltage.

(Example)



Options

Model With Push Button & Lock Nut : (S-) ODSG-01-※※※-※C-(N1)-10



Lock Nut

Press the "Push Button" then turn "Lock Nut" clockwise. The position of the "Push Button" is held. Be sure to loosen "Lock Nut" fully before solenoid is energized.

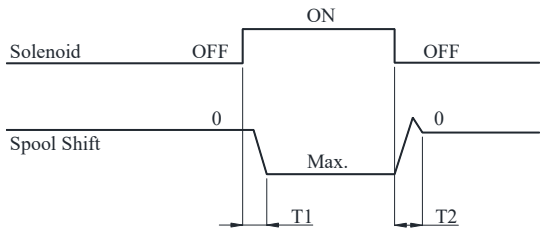
Push Button

Typical Changeover Time

Changeover time varies according to oil Viscosity, spool type and hydraulic circuit

Standard Type

(Without Shockless Function)



[Test Conditions]
Pressure : 160 Kgf/cm^2
Flow Rate: 31.5 L/min
Viscosity: 35cSt
Voltage : 100% V
(After coil temperature rise and saturates)

[Result of Measurement]

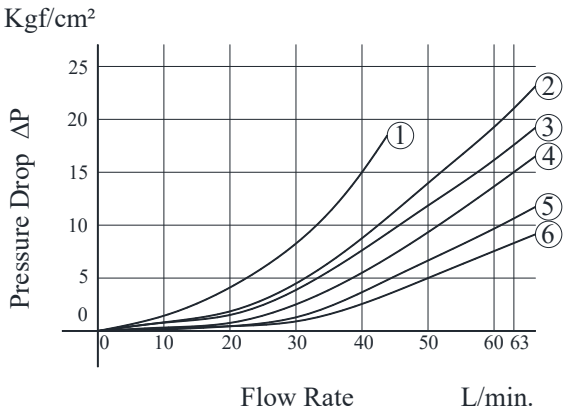
Type	Model Numbers	Changeover Time ms	
		T1	T2
Standard Type	ODSG-01-3C2-A※	15	23
	ODSG-01-3C2-D※	48	19

Pressure Drop

Pressure drop based on viscosity cSt and specific gravity of 0.850.

Model Numbers	Pressure Drop Curve Number				
	P→A	B→T	P→B	A→T	P→T
ODSG-01-3C2	⑤	⑤	⑤	⑤	—
ODSG-01-3C4	⑤	⑥	⑤	⑥	—
ODSG-01-3C60	①	①	①	①	④
ODSG-01-2D2	⑤	②	⑤	②	—
ODSG-01-2B2	②	②	⑤	⑤	—

Standard Type : ODSG-01



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

Viscosity cSt (mm^2/s)	15	20	30	40	50	60	70	80	90	100
Factor	0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

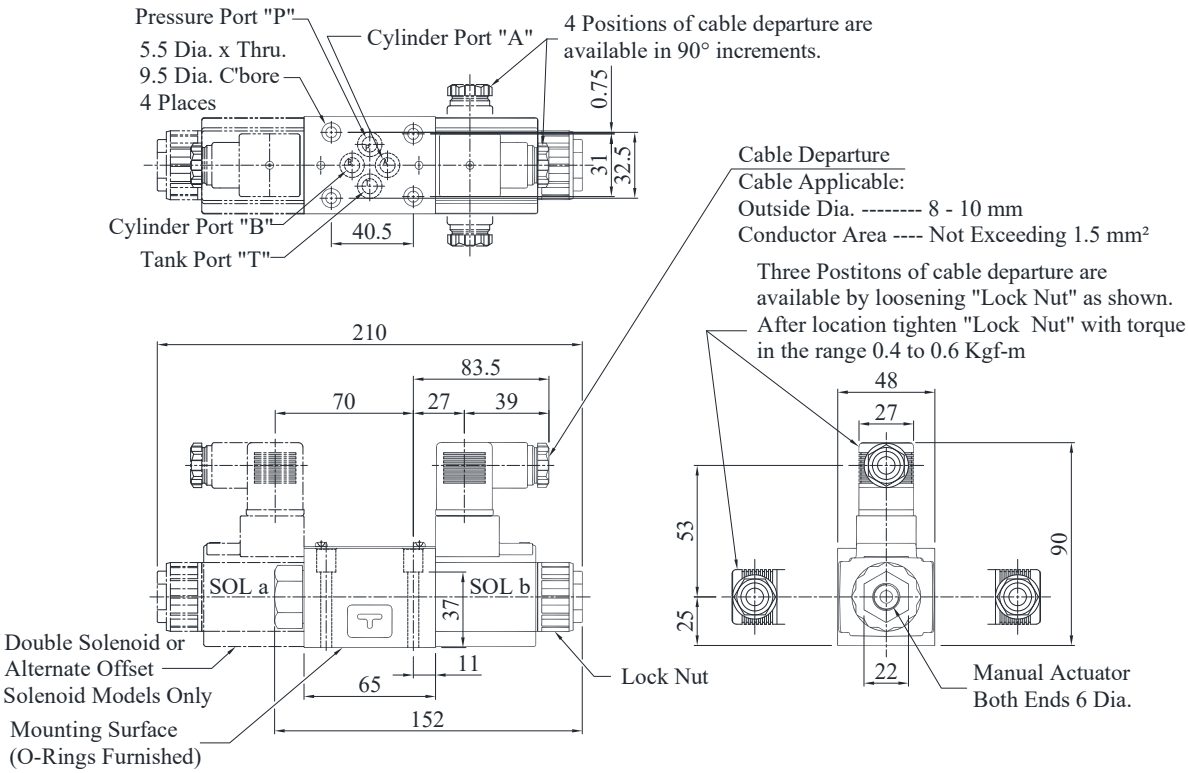
- For any other specific gravity (G′), the pressure drop (ΔP′) can be obtained from the formula below.

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

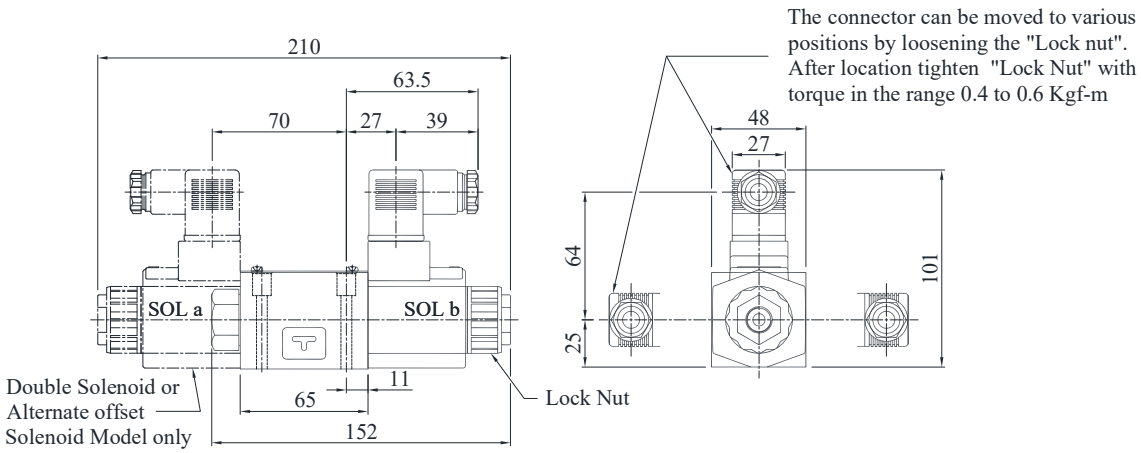
PLUG-IN CONNECTOR WITH INDICATOR LIGHT (N1)

Models With AC Solenoid : ODSG-01-※※※-A※-N1-10

DIMENSIONS IN MILLIMETER



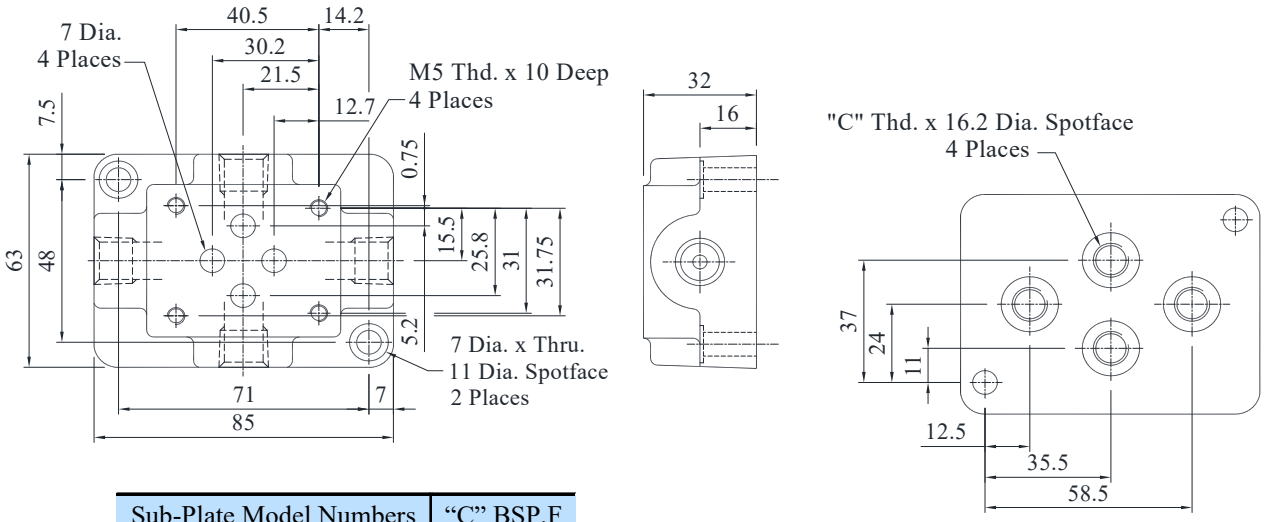
Models With DC Solenoid : ODSG-01-※※※-D※- N1 -10



Sub Plates

DIMENSIONS IN MILLIMETER

- **ODSGM-01※-3080**



Sub-Plate Model Numbers	"C" BSP.F
ODSGM-01-3080	1/8
ODSGM-01X-3080	1/4
ODSGM-01Y-3080	3/8

Sub-Plates are available specify sub-plate model from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.

Spare Parts List

- **List of Seals**

Model Numbers	O-Ring Details For Seal Kit	Qty.		
		3C※	2D※	2B※
ODSG-01-※※※-※※-10	SO-NB-P9	4		4
	SO-NB-P18	2		2
	SO-NA-P4	4		2
ODSG-01-※※※-※※-N1-10	SO-NB-P9	4		4
	SO-NB-P18	2		1

Note:When ordering the seals, please specify the seal kit number as shown above.

- **List of Seal kits**

Valve Model Numbers	Seal Kit Numbers
ODSG-01-※※※-※※-10	KS-ODSG-01-10
ODSG-01-※※※-※※-N1-10	KS-ODSG-01-N1-10

Solenoid Assy., Coil, Connector Assy. Number

Valve Model Numbers	Solenoid Assy. Numbers	Coil Numbers	Remarks
ODSG-01-※※※-A240-N1-10※	SA1-240-N1-10	C-SA1-240-N1-10	Plug-in Connector with Indicator Light
ODSG-01-※※※-D24-N1-10※	SD1-24-N1-10	C-SD1-24-N1-10	

Ironcore Assy. Number

N-	ODSG	-IC	-01	-AC	-10
Type	Series Number	Iron Core	Valve Size	Coil Type	Design Number
N : Standard Type	**ODSG:** Sol. Operated DC Valve	**IC:** Iron-Core Assembly	**01**	**AC** **DC**	**10**