

SOLENOID VALVE FAMILIES

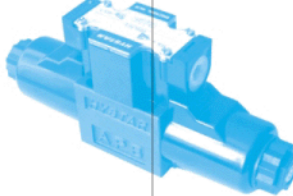
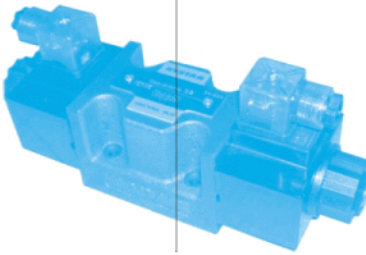
DIMENSIONS : MILLIMETERS(INCHES)

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MODEL	SOLENOID OPERATED DIRECTIONAL CONTROL VALVES		SOLENOID CONTROLLED PILOT OPERATED DIRECTIONAL CONTROL VALVES			
	01	03	04	06	10	
DSHG-N-**						
DSHG-**						
DSHG-Y-**						
DSHG-N-RW						
DSHG-RW						
DSHG-Y-RW						
DSG-N-**	 AC193(7.60) DC215(8.46)	 AC234(9.21) DC285(11.22)				
DSG-**	 AC193(7.60) DC215(8.46)	 AC234(9.21) DC285(11.22)				
DSG-Y-**	 AC193(7.60) DC215(8.46)	 AC234(9.21) DC285(11.22)				
DSGX-N-**	 AC160(6.30)					
DSGX-**	 AC160(6.30)					
DSGX-Y-**	 AC160(6.30)					
	Max. Flow : μ min	63	120	300	500	1100
	: U.S.GPM	16.6	31.7	79.3	132	291

MODEL NO SPECIFICATIONS (DSG-01/03 Solenoid Operated Directional Valves)

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Spool Type & Graphic Symbols		Rated Flow Capacity -Maximum Flow Capacity											
		DSG (X) - 01 (1/8")					DSG - 03 (3/8")						
		AC		RAC		DC	AC		RAC		DC		
SYMBOLS	MODEL NO	A1	A2	R1	R2	D1	D2	A1	A2	R1	R2	D1	D2
	DSG-2B2-**	 30~63 lpm (10.3~16.6USgpm)  70~120 lpm (18.5~31.7USgpm)											
	DSG-2B3-**												
	DSG-2B8-**												
	DSG-2D2-**												
	DSG-2D3-**												
	DSG-3C2-**												
	DSG-3C3-**												
	DSG-3C4-**												
	DSG-3C40-**												
	DSG-3C7-**												
	DSG-3C9-**												
	DSG-3C10-**												
	DSG-3C11-**												
	DSG-3C12-**												
	DSG-3C5-**	30~45 lpm (7.9~11.9USgpm) 70~100 lpm (18.5~26.4USgpm)											
	DSG-3C6-**												
	DSG-3C60-**												
Max. Operating Pressure (P.A.B) (bar)		315 (4500 PSI)											
Max. Operating Pressure 3C5/3C6 Types (bar)		250 (3600 PSI)											
Permissible Back Pressure (T) (bar)		160 (2300 PSI)											
Weight (Kgs)	Double Solenoid	1.9	2.0	4.0	4.8								
	Single Solenoid	1.5	1.6	3.3	3.8								
Switching Frequency (times/min)		280	120	280	240	120	240						
Hydraulic Fluids		Use Hydraulic Fluids Equivalent to ISO VG32 or VG46											
Operating Temperature Range Recommended (°C)		-15 ~ +70 (+5 ~ +160°F)											
Operating Viscosity (cSt)		15 ~ 400 (80 ~ 1800SSU)											
Filtration		25 Microns Absolute or Finer											

DSGX series mini. type solenoid valves.

Max. pressure (P.A.B) : 200bar (2900PSI), 3C5/3C6 spool types : 160bar (2300PSI).

Permissible Back Pressure (T) : 100bar (1430PSI)

Weight : Double Solenoid : 1.6kgs., Single Solenoid : 1.1kgs

LIST OF SPOOL FUNCTIONS (DSG-01/03)

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SPRING OFFSET 2 POSITION	GRAPHIC SYMBOLS (STANDARD)	SPRING CENTERED 3 POSITION	GRAPHIC SYMBOLS (STANDARD)	NO SPRING DETENTED 2 POSITION	GRAPHIC SYMBOLS (STANDARD)
2A2		3C2		2D2	
2A3		3C3		2D3	
2A14		3C4		2D4	
2A2L		3C40		2D40	
2A3L		3C5		2D7	
2A14L		3C6		2D2A	
2B2		3C60		2D3A	
2B3		3C7		2D4A	
2B8		3C8		2D40A	
2B29		3C9		2D5A	
2B2L		3C10		2D60A	
2B3L		3C11		2D7A	
2B8L		3C12		2D9A	
2B29L		3C25		2D10A	
		3C29		2D11A	
		3C48		2D12A	
		3C94			

LIST OF SPECIAL TWO POSITION VALVES (DSG-01/03)

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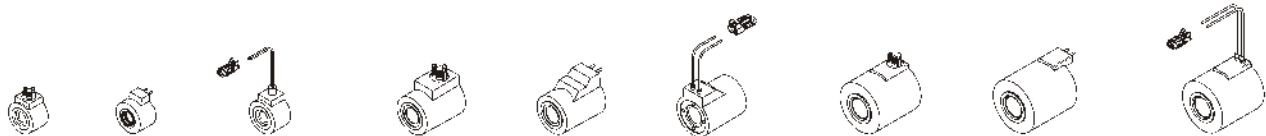
SPRING OFFSET 2 POSITION	GRAPHIC SYMBOLS		SPRING OFFSET 2 POSITION	GRAPHIC SYMBOLS	
	STANDARD	(ALTERNATED)		STANDARD	(ALTERNATED)
2B2A(L)			2B2B(L)		
2B3A(L)			2B3B(L)		
2B4A(L)			2B4B(L)		
2B40A(L)			2B40B(L)		
2B5A(L)			2B5B(L)		
2B6A(L)			2B6B(L)		
2B60A(L)			2B60B(L)		
2B7A(L)			2B7B(L)		
2B8A(L)			2B8B(L)		
2B9A(L)			2B9B(L)		
2B10A(L)			2B10B(L)		
2B11A(L)			2B11B(L)		
2B12A(L)			2B12B		
2B25A(L)			2B25B(L)		
2B29A(L)			2B29B(L)		
2B48A(L)			2B48B(L)		

NOTE : Standard Model No. + L = Alternate Model.
For example, 2B2A is Standard Model, 2B2AL is Alternate Model.

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SOLENOID SPECIFICATIONS

AC/DC CURRENT		AC				DC			
						RECTIFIED INSIDE		DC12	DC24
VOLTAGE (V)		AC110V		AC220V		R110V	R220V		
FREQUENCY (Hz)		50	60	50	60	50/60	50/60		
DSGX (01) 1/8"	Starting current (A)	0.56	0.50	0.27	0.25	-	-	-	-
	Holding current (A)	0.12	0.12	0.56	0.52	0.068	0.038	0.44	0.22
	Holding electrical power (W)	-	-	-	-	5.0	5.0	5.0	5.0
DSG (01) 1/8"	Starting current (A)	2.38	2.33	1.19	1.17	-	-	-	-
	Holding current (A)	0.40	0.45	0.20	0.23	0.30	0.15	2.2	1.1
	Holding electrical power (W)	-	-	-	-	26	26	26	26
DSG (03) 3/8"	Starting current (A)	5.37	5.03	2.69	2.52	-	-	-	-
	Holding current (A)	0.70	0.75	0.30	0.35	0.48	0.24	3.16	1.57
	Holding electrical power (W)	-	-	-	-	38	38	38	38
Permissible voltage		95~120		200~235		95~120	200~235	11.0~13.2	22~26.4
Insulation resistance (M Ω)		100 or above (500V)							



VALVES RESPONSE CAPACITY

Model	Working Direction	Spring Centered Type (3C*)	No Spring Type (2D*)	Unit : Times/Second
				Spring Offset Type (2B*)
DSGX-01 AC	Energization	0.01~0.02	0.01~0.02	0.01~0.02
	Spring back	0.015~0.05	-----	0.015~0.05
DSGX-01 DC/RAC	Energization	0.02~0.05	0.02~0.05	0.02~0.05
	Spring back	0.015~0.05	-----	0.015~0.05
DSG-01-AC	Energization	0.01~0.02	0.01~0.02	0.01~0.02
	Spring back	0.015~0.05	-----	0.015~0.05
DSG-01-DC/RAC	Energization	0.02~0.05	0.02~0.05	0.02~0.05
	Spring back	0.015~0.05	-----	0.015~0.05
DSG-03-AC	Energization	0.005~0.025	0.010~0.020	0.01~0.02
	Spring back	0.005~0.030	-----	0.010~0.030
DSG-03-DC/RAC	Energization	0.030~0.090	0.030~0.090	0.030~0.050
	Spring back	0.020~0.050	-----	0.020~0.040

1) Above response time test condition base on follow terms.

DSG-01 based on 140 bar (2000 psi) , 30 lpm (7.9 USgpm)

DSG-03 based on 140 bar (2000 psi) , 45 lpm (11.9 USgpm)

2) Changeover response time changes a little by the test condition (pressure, flow, viscosity.....etc.).

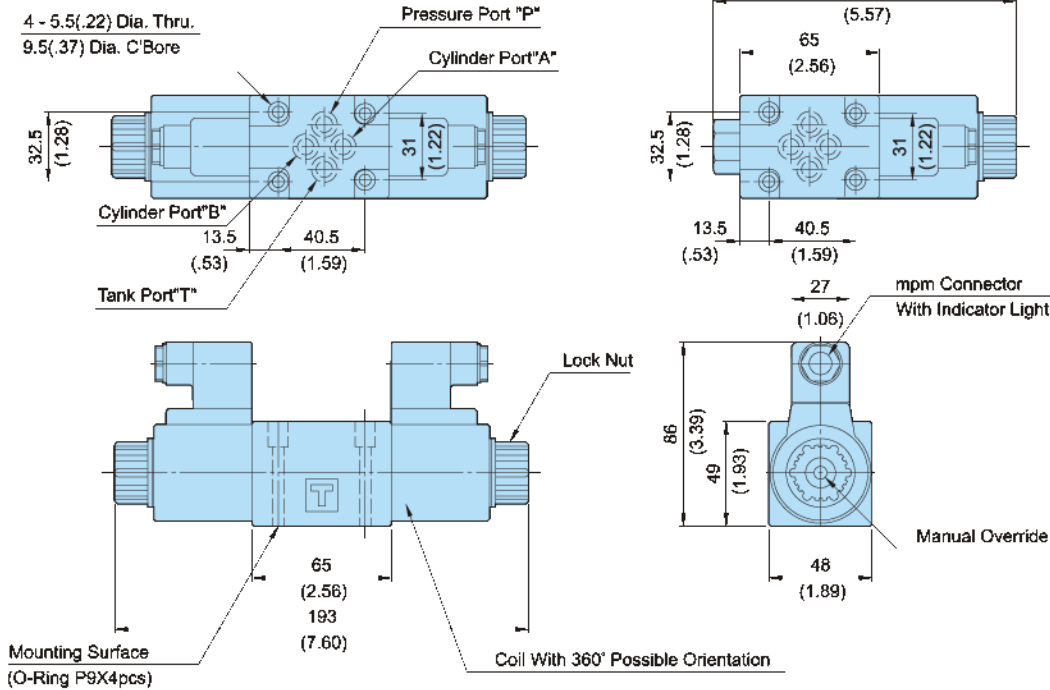
DIMENSIONS

MILLIMETERS(INCHES)

A

DSG-N-01-AC

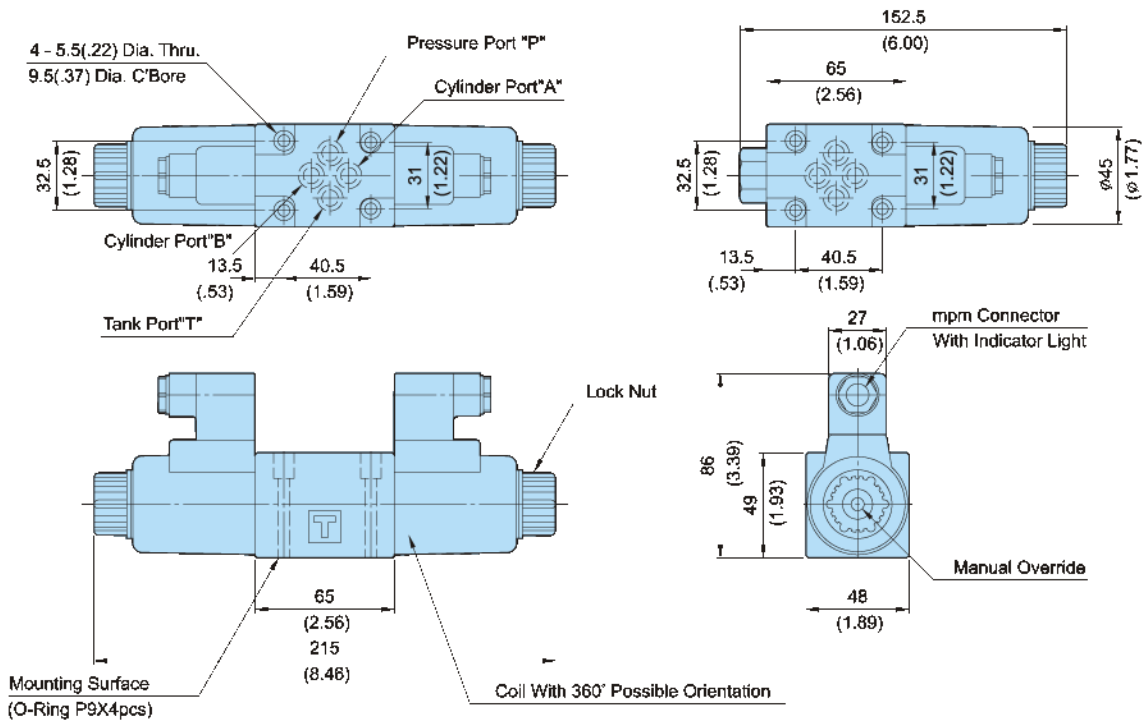
**MOUNTING SURFACE:DSG-01-CETOP3
ISO 03-NFPAD03**



Attachment Name	Description	Tightening Torque	Code
Soc. Hd. Cap Screw	M5 X45LgX4pcs	5-7 Nm	30
Soc. Hd. Cap Screw	10-24UNCX1-3/4"LgX4pcs	43-60 in.lbs	3090

DSG-N-01-DC/RAC

**MOUNTING SURFACE:DSG-01-CETOP3
ISO 03-NFPAD03**



Attachment Name	Description	Tightening Torque	Code
Soc. Hd. Cap Screw	M5 X45LgX4pcs	5-7 Nm	30
Soc. Hd. Cap Screw	10-24UNCX1-3/4"LgX4pcs	43-60 in.lbs	3090

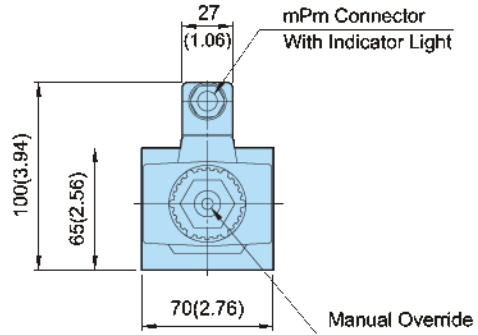
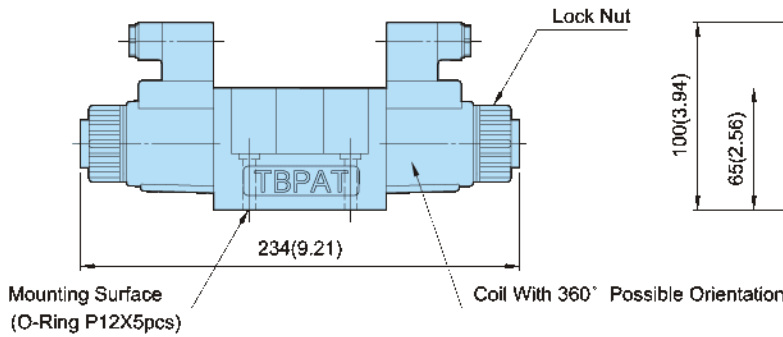
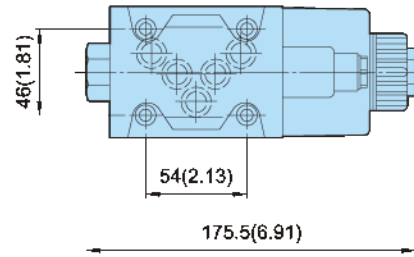
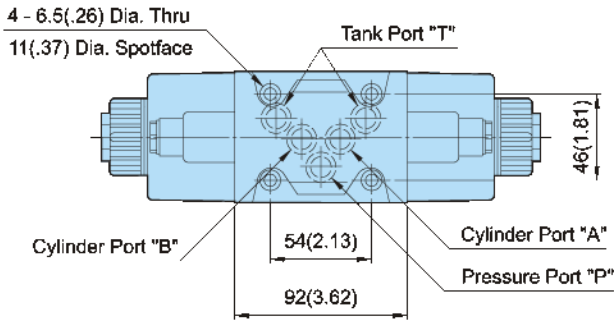
DIMENSIONS

MILLIMETERS(INCHES)

A

DSG-N-03-AC

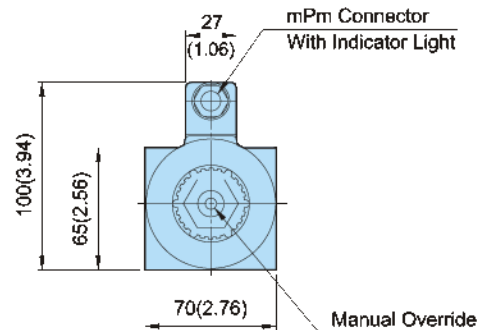
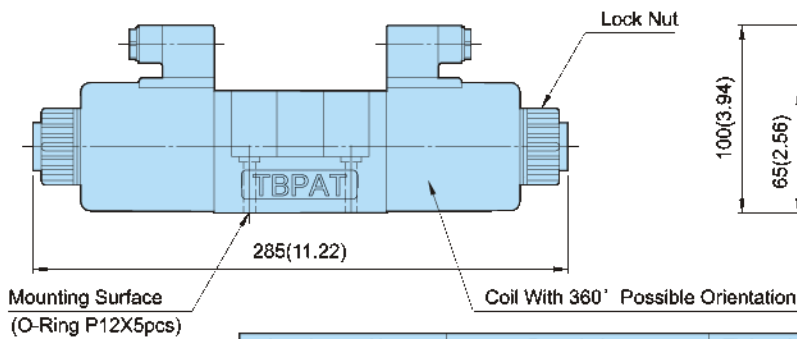
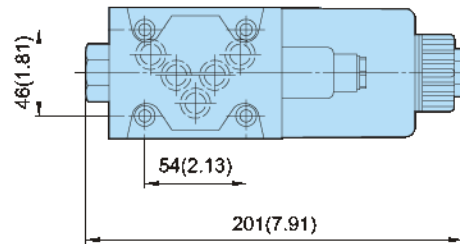
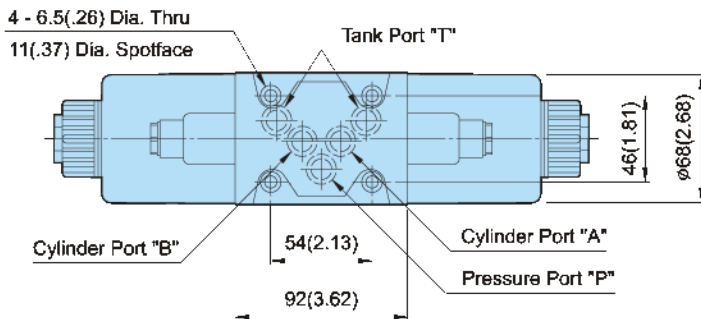
MOUNTING SURFACE:DSG-03-CETOP5
ISO 05-NFPAD05



Attachment Name	Description	Tightening Torque	Code
Soc. Hd. Cap Screw	M6 X35LgX4pcs	12-15 Nm	30
Soc. Hd. Cap Screw	1/4-20UNCX1-1/2"LgX4pcs	105-130 in.lbs	3090

DSG-N-03-DC/RAC

MOUNTING SURFACE:DSG-03-CETOP5
ISO 05-NFPAD05

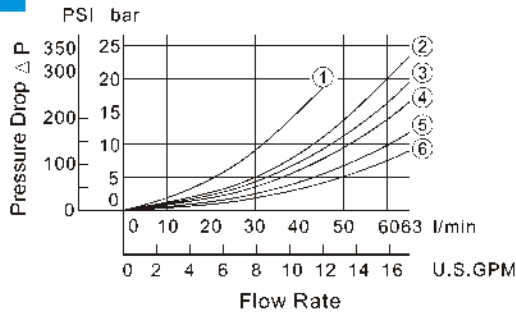


Attachment Name	Description	Tightening Torque	Code
Soc. Hd. Cap Screw	M6 X35LgX4pcs	12-15 Nm	30
Soc. Hd. Cap Screw	1/4-20UNCX1-1/2"LgX4pcs	105-130 in.lbs	3090

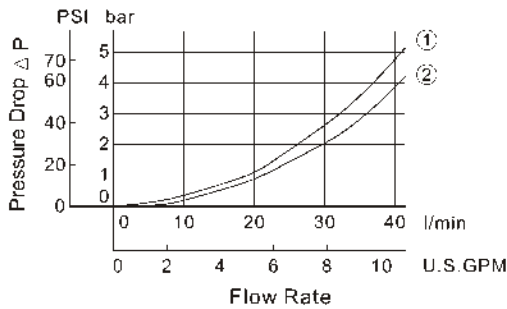
PRESSURE DROP

A

DSG-01



DSG-01-S

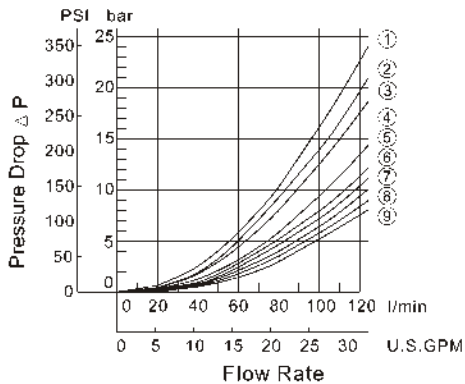


Series	Spool Type	Pressure Drop Curve Number				
		P→A	B→T	P→B	A→T	P→T
DSG-01	3C2	5	5	5	5	—
	3C3	6	6	6	6	4
	3C4	5	6	5	6	—
	3C40	5	5	5	5	—
	3C60	1	1	1	1	4
	3C9	6	5	6	5	—
	3C10	5	6	5	6	—
	3C12	5	5	5	6	—
	2D2	5	2	5	2	—
	2B2	2	2	5	5	—
	2B3	3	3	5	6	—
2B8	5	—	5	—	—	

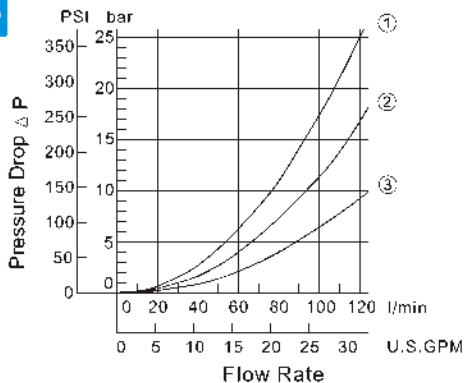
Series	Spool Type	Pressure Drop Curve Number			
		P→A	B→T	P→B	A→T
DSG-01-S	3C2	1	1	1	1
	3C4	1	2	1	2
	2B2	1	1	1	1

Graphs based on fluid viscosity of 35 cSt(162 SSU) .

DSG-03



DSG-03-S



Series	Spool Type	Pressure Drop Curve Number				
		P→A	B→T	P→B	A→T	P→T
DSG-03	3C2	7	7	7	7	—
	3C3	9	9	9	9	5
	3C4	7	8	7	8	—
	3C40	7	7	7	7	—
	3C60	6	5	6	5	1
	3C9	9	7	9	7	—
	3C10	7	8	7	7	—
	3C12	7	7	7	8	—
	2D2	4	3	6	6	—
	2B2	2	1	7	7	—
	2B3	3	2	9	9	—
2B8	6	—	5	—	—	

Series	Spool Type	Pressure Drop Curve Number			
		P→A	B→T	P→B	A→T
DSG-03-S	3C2	2	2	2	2
	3C4	2	2	3	3
	2B2	1	2	2	2

Graphs based on fluid viscosity of 35 cSt(162 SSU) .

FLOW LIMITATIONS :

Pressure drop is influenced by forces acting within the valve. The graphs shown assume simultaneous equal flow rates P to A or B, and from A or B to T.

Care should be taken in applications where high flow rates are used in conjunction with high pressure. i.e. greater than 250 bar(3600PSI).

Also when single flow paths, or substantially different simultaneous flow rates are required between P to A or B, and A or B to T.

DIMENSIONS

MILLIMETERS(INCHES)

A

OPTIONAL

MODELS WITH STROKE LIMITER (RW/RA/RB)

When the stroke limiter is screwed in, the main spool stroke becomes shorter and flow rate becomes lower.

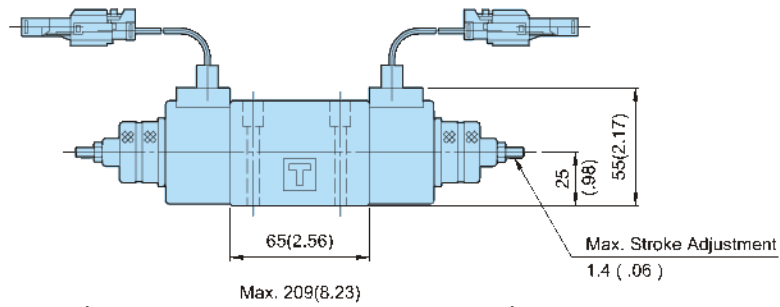
(DSGX-01/DSG-01/DSG-03 were available in DC / RAC only)

GRAPHIC SYMBOLS		CODE
	With Stroke Adjustment, "A+B" Stroke.	"RW"
	With Stroke Adjustment, Port "A" Stroke.	"RA"
	With Stroke Adjustment, Port "B" Stroke.	"RB"

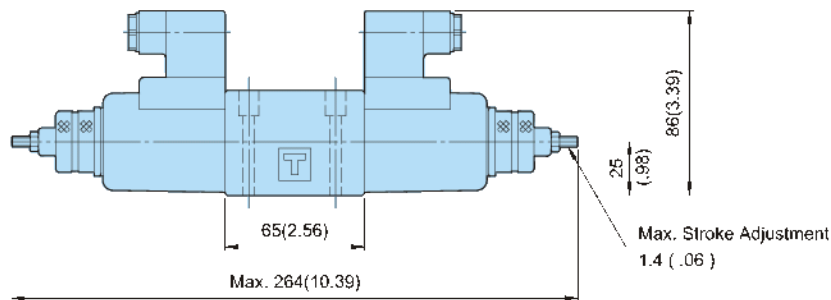
DSGX-***-Y-01-DC/RAC-RW



RW-01



DSG-***-N-01-DC/RAC-RW



DSG-***-03-DC/RAC-RW

