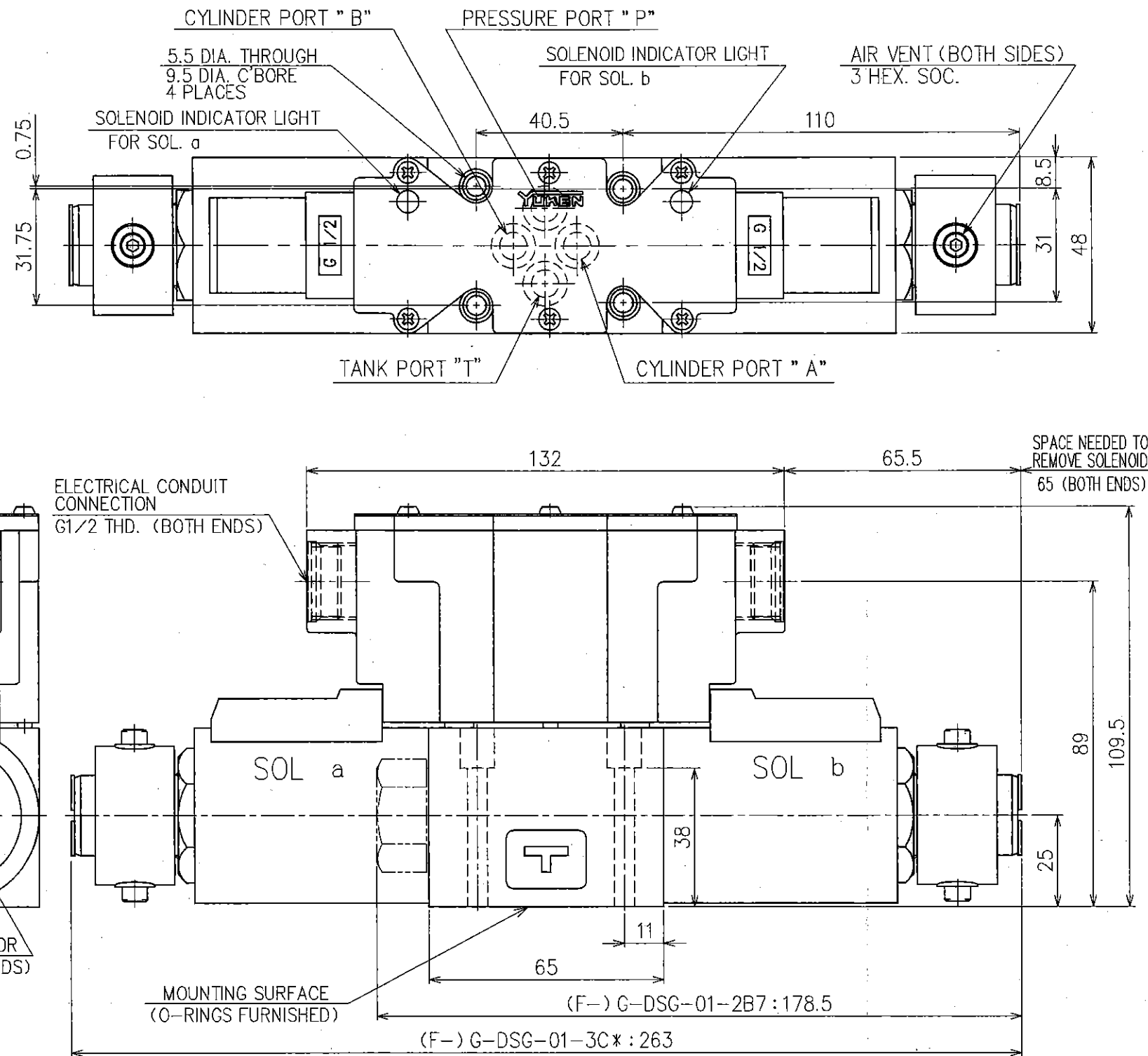




MODEL NUMBER DESIGNATION

(F-) G-DSG - 01 - 10 - 2B7 - S - 51 - L

MODELS WITH ALTERNATE OFFSET SOLENOID APPLICABLE ONLY FOR 2B7 (OMIT IF NOT REQUIRED)

DESIGN NUMBER

INPUT INTERFACE
NONE : SINK TYPE (STANDARD)
S : SOURCE TYPE

SPOOL TYPE
3C2, 3C40, 2B7

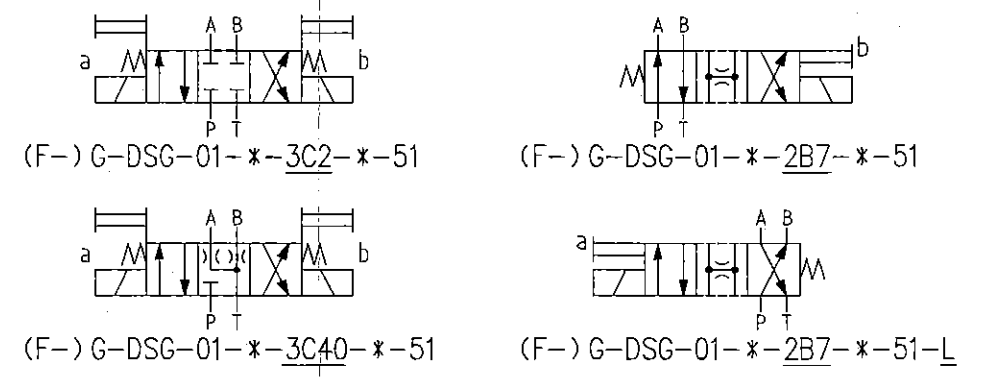
METRED FLOW CAPACITY
3C* NONE : 40 L /min 2B7 NONE : 30 L /min
10 : 10 L /min 10 : 10 L /min
20 : 20 L/min 20 : 20 L/min

VALVE SIZE

G SERIES SHOCKLESS TYPE SOLENOID OPERATED DIRECTIONAL VALVE
SUB-PLATE MOUNTING

F : SPECIAL SEALS FOR PHOSPHATE ESTER TYPE FLUID (OMIT IF NOT REQUIRED)

GRAPHIC SYMBOL

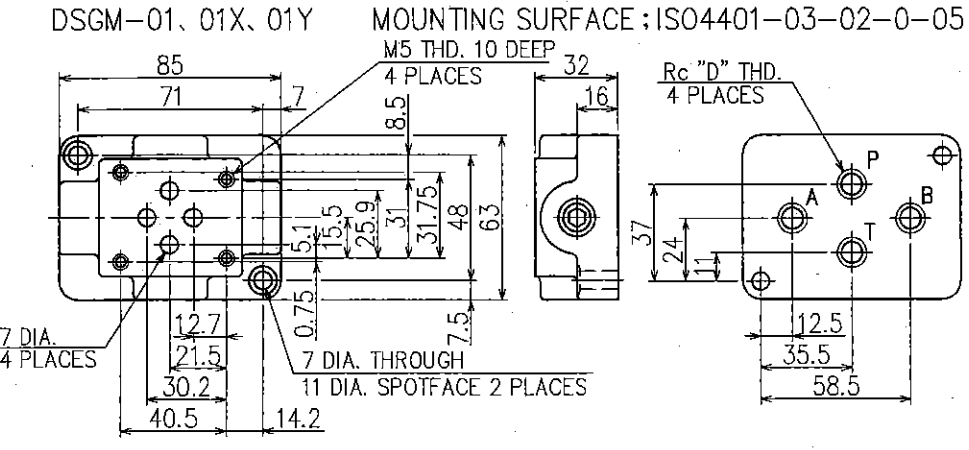


ATTACHMENT

THE MOUNTING BOLTS ARE NOT INCLUDED WITH THE VALVE.
ORDERING CODE OF YUKEN MOUNTING BOLT IS: -
YUKEN PART NUMBER : MBK-01-05-70
WHEN USING CONVENTIONAL BOLTS, CHOOSE SOCKET CAP SCREWS (M5×45LG., 4PCS) EQUIVALENT TO JIS B1176 GRADE 12.9.

• O-RINGS
G-DSG-01 : OR NBR-90 P9-N... 4 PCS.
F-G-DSG-01 : OR FKM-90 P9-N... 4 PCS.

SUB-PLATE



SUB-PLATE MODEL NO.	D	MASS kg
DSGM-01 -31	1/8	0.8
DSGM-01X-31	1/4	
DSGM-01Y-31	3/8	

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 (E.G. SURFACE ROUGHNESS OF 16/).

SYM	DATE	2021-2-17	DRAWN	K.T	YUKEN KOGYO CO., LTD.
	APPROVED	Y. Tanaka	CHECKED	M. Yoshida	
	REVISIONS	三角法 THIRD ANGLE PROJECTION			
	FILE NO.	1790S			
	MODEL NO.	(F-) G-DSG-01-*-*(-S)-51(-L)			VA327682-1-0 (1/3)
	NAME	G SERIES SHOCKLESS TYPE SOLENOID OPERATED DIRECTIONAL VALVES			
	DWG NO.	1/8, SUB-PLATE MOUNTING			

SPECIFICATIONS

ITEM	MODEL NUMBER	(F-) G-DSG-01
MAX. FLOW	★1	10,20,30,40 L/min
MAX. OPERATING PRESSURE	★2	25 MPa
MAX. T-LINE BACK PRESSURE		16 MPa
ELECTRIC POWER SUPPLY	VOLTAGE	24 V DC (21 - 28 V DC INCLUDED RIPPLE): USE A STABLE POWER SUPPLY
	INPUT POWER AT 24 V	36 W
SHIFTING SIGNAL, LOW SPEED OPERATION HALT SIGNAL (CAN BE USED IN COMMON WITH ELECTRIC POWER SUPPLY)	VOLTAGE	5 - 48 V DC (USE A STABLE POWER SUPPLY)
	CURRENT	CONSTANT AT 5 mA (A CONSTANT-CURRENT CIRCUIT IS USED)
	INPUT INTERFACE	SINK TYPE, SOURCE TYPE
SHIFTING TIME RANGE (FOR ON AND OFF)		0.1 - 1 s
LOW SPEED OPERATION FLOW RATE (MIN. FLOW RATE)	RANGE (FOR SOL. a AND b)	0.5 - 5 L/min
	HOLD TIME	MAX. 600 S (AFTER 600 SECONDS, THE FLOW RATE DECREASES GRADUALLY.)
AMBIENT TEMPERATURE		0 - 50 °C WITH CIRCULATED AIR
APPROX. MASS	SPOOL TYPE : 3C*	3.0 kg
	SPOOL TYPE : 2B7	2.1 kg

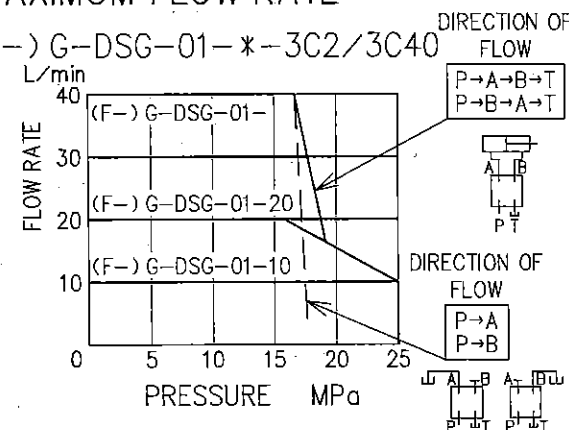
★1. THE MAXIMUM FLOW RATES MAY VARY ACCORDING TO THE OPERATING PRESSURE. REFER TO MAXIMUM FLOW RATES CHARACTERISTICS.

★2. AT PRESSURES MORE THAN 21 MPa, THE "SHOCKLESS EFFECT" IS SLIGHTLY LESS IF COMPARED IT WITH THAT AT 16 MPa.

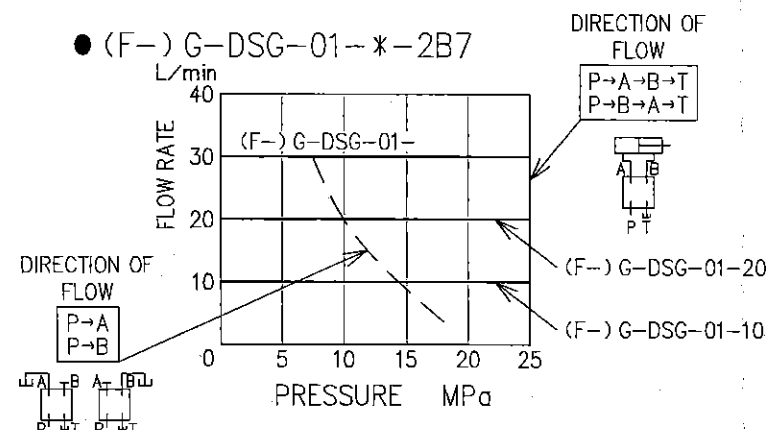
TYPICAL PERFORMANCE CHARACTERISTICS

MAXIMUM FLOW RATE

● (F-) G-DSG-01-* -3C2/3C40



● (F-) G-DSG-01-* -2B7

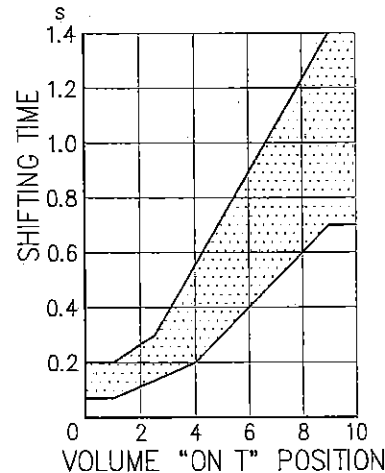


SHIFTING TIME AND ON T/OFF T ADJUSTING VOLUMES

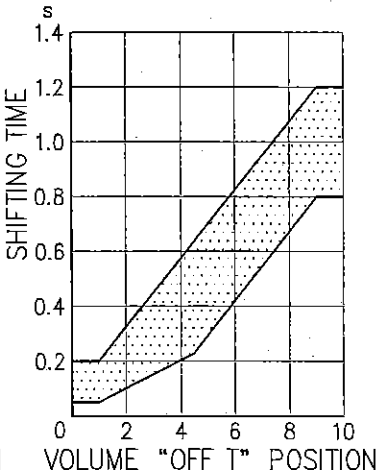
SUPPLY PRESSURE: 3.5 - 16 MPa SUPPLY FLOW: MAX. FLOW DIRECTION OF FLOW: P→A→B→T (P→B→A→T)

● (F-) G-DSG-01-* -3C2/3C40

● AT TIME SOLENOID "ON"

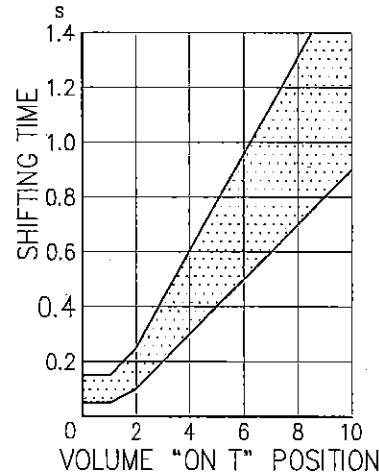


● AT TIME SOLENOID "OFF"

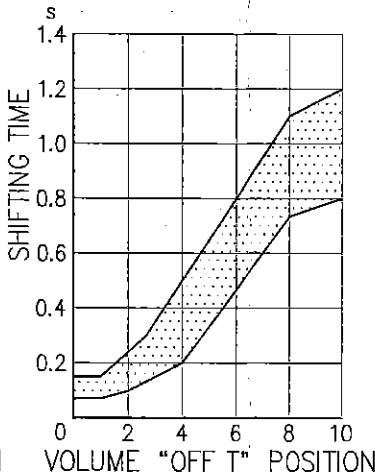


● (F-) G-DSG-01-* -2B7

● AT TIME SOLENOID "ON"



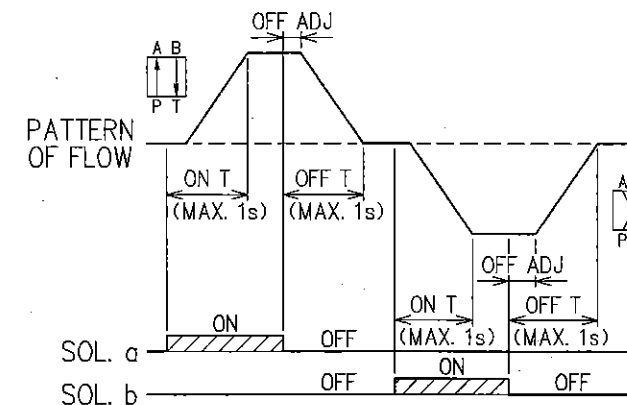
● AT TIME SOLENOID "OFF"



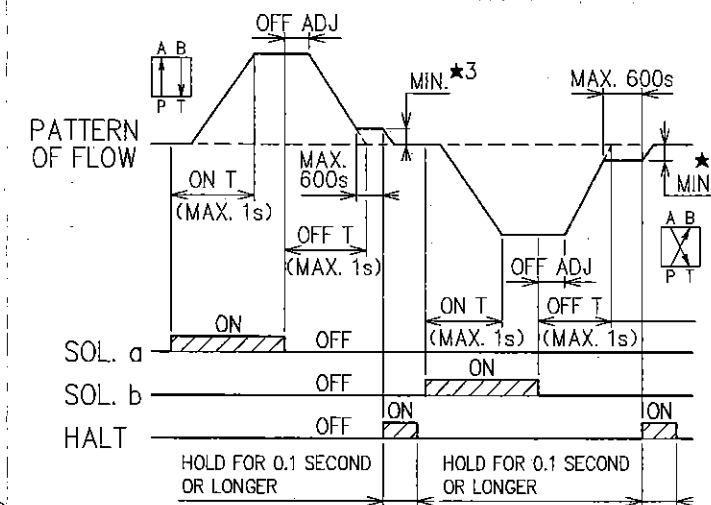
RELATIONSHIPS BETWEEN SOL SIGNALS AND FLOW PATTERNS

● WITHOUT HALT FUNCTION ("MIN 0" VOLUME POSITION)

● WITH HALT FUNCTION

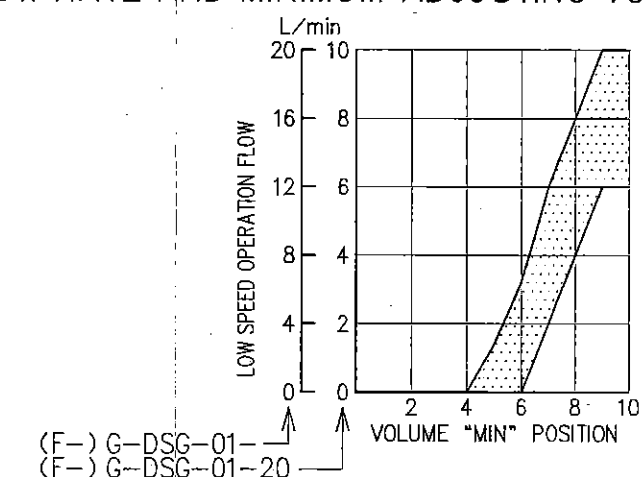
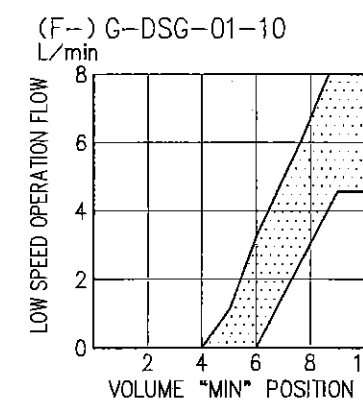


★3. THE MINIMUM ADJUSTMENT VOLUME IS COMMON FOR SOL. a AND b. AND IT IS NOT POSSIBLE TO SET A DIFFERENT VOLUME FOR EACH SOL. a AND b INDIVIDUALLY. IF THE HALT FUNCTIONS ARE NOT USED, SET THE MINIMUM ADJUSTMENT VOLUME TO ZERO.



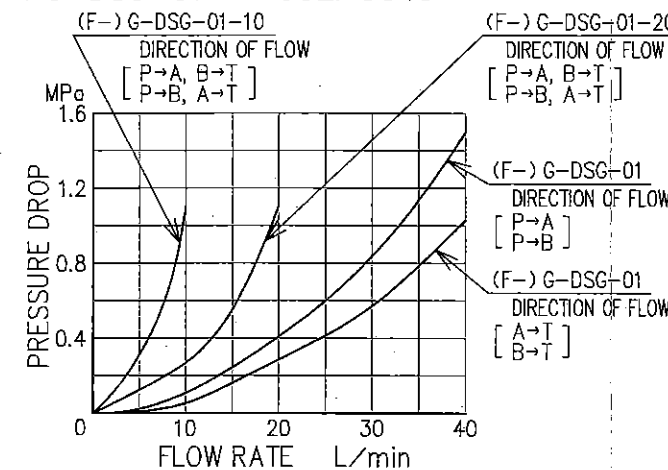
LOW SPEED OPERATION FLOW RATE AND MINIMUM ADJUSTING VOLUME

● (F-) G-DSG-01-* -3C2/3C40

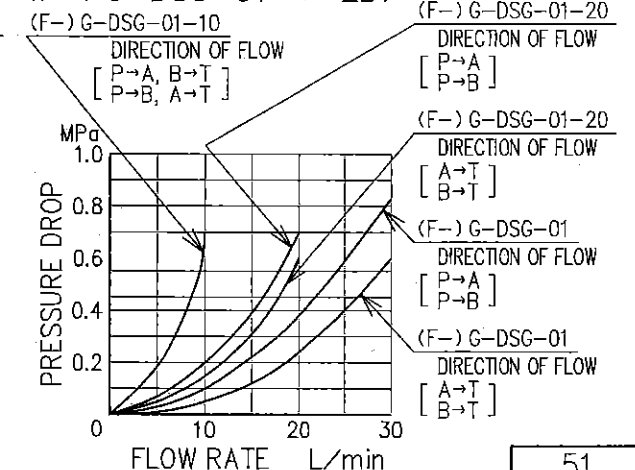


PRESSURE DROP

● (F-) G-DSG-01-* -3C2/3C40



● (F-) G-DSG-01-* -2B7



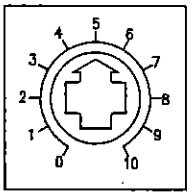
DATE APPROVED THIRD ANGLE PROJECTION FILE NO. 1790S	DATE	DRAWN	YUKEN KOGYO CO., LTD. MODEL NO. (F-) G-DSG-01-* - * (-S) -51 (-L) NAME G SERIES SHOCKLESS TYPE SOLENOID OPERATED DIRECTIONAL VALVES 1/8, SUB-PLATE MOUNTING DWG NO. VA327682-1-0 (2/3)
	APPROVED	CHECKED	
	三角法	THIRD ANGLE PROJECTION	
	FILE NO.	DWG NO.	

INSTRUCTIONS

1.THE ADJUSTING VOLUME
THE ADJUSTING VOLUMES ARE SET AT THE TIME OF SHIPMENT AS SHOWN BELOW.
FOR ACTUAL USE, ADJUST THEM TO THE MACHINES WHILE REFERRING TO THE GRAPHS.

		ADJUSTING VOLUME SCALE			
		ON T	OFF T	OFF ADJ	MIN
(F-) G-DSG-01-* -3C*	SOL.a SOL.b	5	5	3	0
(F-) G-DSG-01-* -2B7		5	5	0	0

ADJUSTING VOLUME SCALE



2.AIR BLEEDING
TO ACHIEVE A STABLE "SHOCKLESS" EFFECT, DISCHARGE AIR BY LOOSENING THE AIR VENT AND FILL THE IRON CORE OF THE SOLENOID WITH FLUID.
EACH SOLENOID HAS TWO AIR VENTS, LOOSEN EITHER ONE.
AFTER AIR DISCHARGE, BE SURE TO RETIGHTEN THE AIR VENT.
THE AIR VENTS CAN BE INSTALLED IN ANY POSITION AT 360°.
MAKE SURE TO TIGHTEN THE AIR VENT AFTER BLEEDING AIR.

3.TANK PIPING
DO NOT CONNECT THE TANK PIPE TO ANY LINE SUBJECTED TO ANY SURGE PRESSURE.
TO OBTAIN A STABLE "SHOCKLESS" EFFECT, TAKE CARE NOT TO ALLOW THE FLUID IN THE IRON CORE OF THE SOLENOID TO FLOW OUT. TO ENSURE THIS, IT IS BEST TO USE CHECK VALVES HAVING A CRACKING PRESSURE OF ABOUT 0.035 MPa.

4.MANUAL SHIFTING
IF NO SHIFTING SIGNAL VOLTAGE IS GIVEN TO THE VALVE IN AN INITIAL OPERATION OR AN ELECTRICAL FAULT, TEMPORARY VALVE SHIFTING CAN BE CARRIED OUT BY PUSHING THE MANUAL OPERATION PUSH PIN.
IN ADDITION, PLEASE NOTE THAT IF THE BACK PRESSURE OF THE TANK LINE INCREASES, MANUAL OPERATION OF THE PUSH PIN GETS HARDER.

5.POWER SUPPLY AND SHIFTING SIGNAL
THE SHIFTING SIGNAL CAN BE COMPLETELY ISOLATED FROM THE SOLENOID POWER SUPPLY BY SEPARATING THE POWER SUPPLY CIRCUIT FOR THE SHIFTING SIGNAL TO ACTIVATE THE SEMICONDUCTOR SWITCH FROM THAT FOR THE SOLENOID.

6.CHANGING THE SHIFTING SIGNALS
TURN OFF THE SHIFTING SIGNAL BEFORE CHANGING IT TO THE OTHER.
AT THIS TIME, SET A TIME LAG BETWEEN THE 2 SIGNALS TO GAIN SATISFACTORY SHOCKLESS EFFECT.
SINCE THE TIME LAG DIFFERS DEPENDING ON THE SCALE POSITION OF VOLUME "OFF T", MAKE THE LAG LARGER THAN THE ONE SHOWN IN THE RIGHT CHART.

7.LOW SPEED OPERATION HALT SIGNAL (HALT SIGNAL)
A LOW-SPEED OPERATION FLOW RATE CAN BE SET BY ADJUSTING THE "MIN" VOLUME. HOWEVER, IT WILL BE THE SAME FOR BOTH SOL. a AND b. THEREFORE, APPLY THE MINIMUM OPERATION SIGNAL TO BOTH SOL. a AND b (REFER TO THE FLOW PATTERN CHART).

8.TIGHTENING TORQUE OF MOUNTING BOLT
5 - 7 N·m

9.USB PORT
BY CONNECTING THE AMPLIFIER TO A COMPUTER, THE VALVE'S ADJUSTMENT RANGE CAN BE CHANGED AND ITS OPERATING CONDITION CAN BE MONITORED.

HYDRAULIC FLUIDS

- TYPE OF FLUIDS
 - PETROLEUM BASE OILS : USE FLUIDS EQUIVALENT TO ISO VG32 OR VG46.
 - SYNTHETIC FLUIDS : USE PHOSPHATE ESTER OR POLYOL ESTER FLUIDS.
- WHEN PHOSPHATE ESTER FLUID IS USED, PREFIX "F-" TO THE MODEL NUMBER BECAUSE THE SPECIAL SEALS FLUORORUBBER ARE REQUIRED TO BE USED.

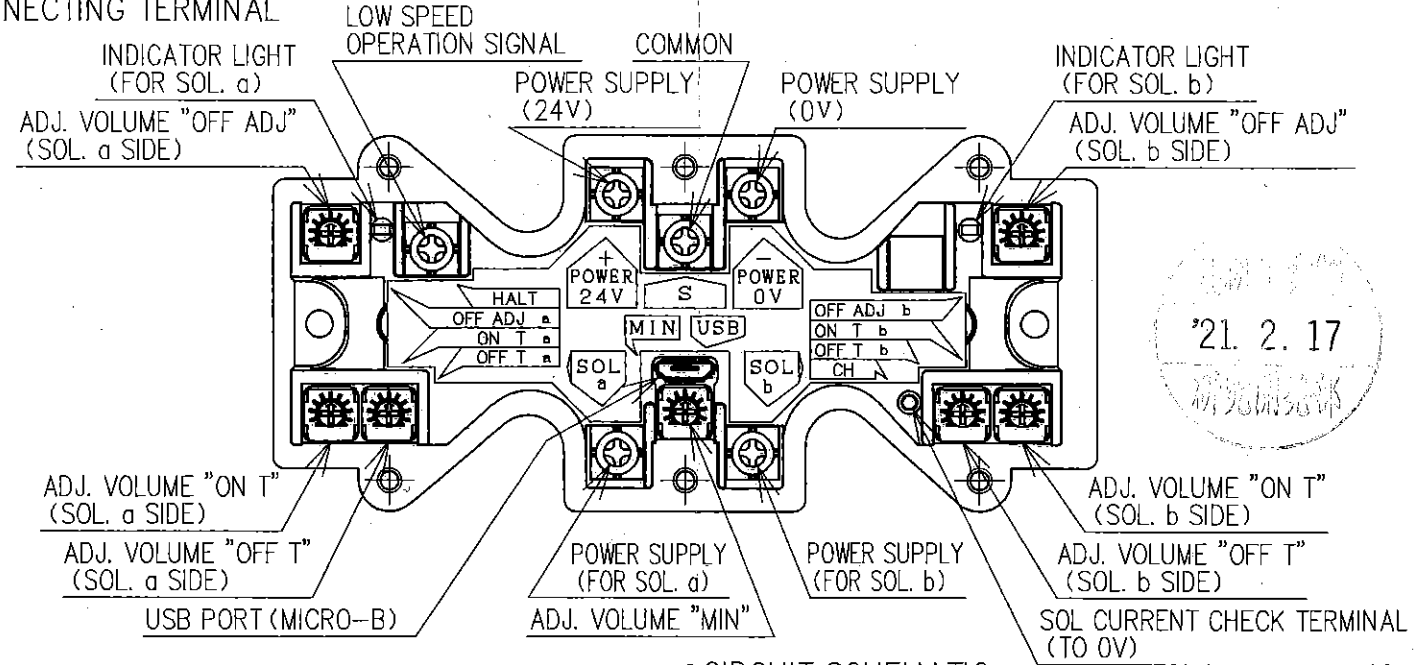
WATER CONTAINING FLUIDS : USE WATER-GLYCOL FLUIDS OR W/O EMULSION TYPE FLUIDS.
NOTE) CONTACT US FOR USING ANY OTHER OILS.

- RECOMMENDED VISCOSITY AND OIL TEMPERATURES
USE UNDER CONDITIONS WHERE THE VISCOSITY AND OIL TEMPERATURE OF THE HYDRAULIC FLUID REMAIN IN THE RANGES INDICATED.
VISCOSITY : 15 - 200 mm²/s
OIL TEMPERATURES : -15 - +60 °C

- CONTROL OF CONTAMINATION
DUE CAUTION MUST BE PAID TO MAINTAINING CONTROL OVER CONTAMINATION OF THE HYDRAULIC FLUIDS WHICH MAY OTHERWISE LEAD TO BREAKDOWNS AND SHORTER THE LIFE OF THE VALVE. PLEASE MAINTAIN THE DEGREE OF CONTAMINATION WITHIN NAS 1638-GRADE 12. USE 25 μm OR FINER LINE FILTER.

DETAIL OF AMPLIFIER

CONNECTING TERMINAL

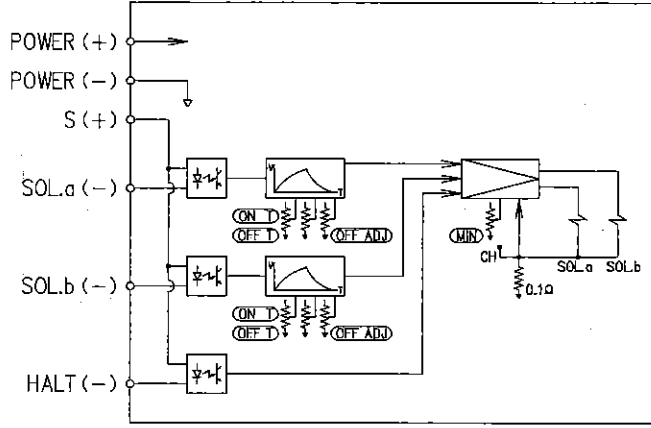


TERMINAL	NAME
+POWER 24V	POWER SUPPLY
-POWER 0V	
SOL. a	SHIFTING SIGNAL FOR SOL. a
SOL. b	SHIFTING SIGNAL FOR SOL. b
S	COMMON
HALT	LOW SPEED OPERATION SIGNAL (FOR SOL. a AND b)
CH	★ OUTPUT CURRENT CHECK (TO 0 V)
SOL.a	ON T a
	OFF T a
SOL.b	ON T b
	OFF T b
SOL.a	OFF ADJ a
	DEAD TIME ADJUSTING VOLUME AT OFF
SOL.b	OFF ADJ b
	DEAD TIME ADJUSTING VOLUME AT OFF
MIN	MIN. ADJUSTING VOLUME (FOR SOL. a AND b)
USB	USB PORT (MICRO-B)

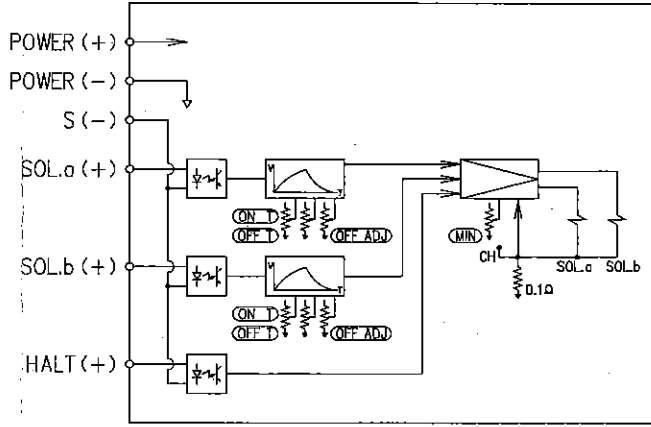
★ FOR "CH" TERMINAL EXTERNAL, INSTRUMENT SHALL HAVE INPUT IMPEDANCE MORE THAN 10 kΩ.

CIRCUIT SCHEMATIC

• (F-) G-DSG-01-* - *- SINK TYPE



• (F-) G-DSG-01-* - *- S SOURCE TYPE



SIGN	DATE	DRAWN	YUKEN KOGYO CO., LTD.	
	APPROVED	CHECKED		MODEL NO. (F-) G-DSG-01-* - * (-S) -51 (-L)
	三角法 THIRD ANGLE PROJECTION			NAME G SERIES SHOCKLESS TYPE SOLENOID OPERATED DIRECTIONAL VALVES
	FILE NO. 1790S	DWG NO. VA327682-1-0		(3/3)