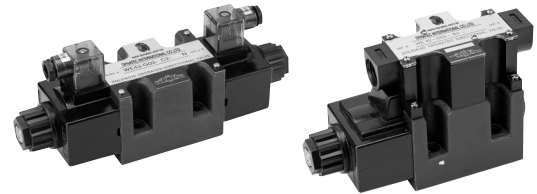
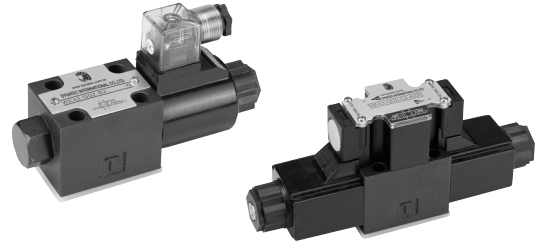




Solenoid Operated Directional Valves

Features:

1. Wet type solenoid is immersed in oil, which keeps it in lubrication and cushions it from impact and vibration.
2. Wet type solenoid also provides very low core switching noise.
3. High pressure, large capacity and minimum pressure loss.
4. Easy conneting for both DIN and ISO wiring box, with indicator light.
5. Plug-in type coil, very easy for replacement.



■ HOW TO ORDER

WH - G02 - 2 B2 A S - A110 - N

WH	G02	2	B2	A	S	A110	N
							Electric conduct connection type None: Terminal box N: Plug in connector
							Voltage AC: A110, A120, AC220, A240 DC: D12, D24
							S: Reverse Assemblage: None if not required. (For B type Spring offset spool only)
							Special two position valve: None if not required. A: Use of center and Sol. A energised. B: Use of center and Sol. B energised.
							Spool type: refer to page 3 C: Spring centered B: Spring offset D: No spring, detent
							Number of valve position 2: 2 position 3: 3 position
							Normal Diameter: 02: 1/4" 03: 3/8"
							Solenoid operated directional valves series

■ SPECIFICATIONS

Normal Diameter	G02	G03
Maximum operating pressure	315 kgf / cm ²	315 kgf / cm ²
Rated flow capacity	52 LPM	100 LPM
Maximum tank line back pressure	140 kgf / cm ²	100 kgf / cm ²
Maximum frequencies of operation	300 C.P.M. (AC, DC)	240 C.P.M. (AC, DC)
Filteration recommended	25 Micron or less	
Hydraulic fluids	Mineral oil	
Viscosity Index	90 or more	
Operating temperature	5 to 60°C	
Operating Viscosity	10 to 400 cSt	



Solenoid Operated Directional Valves

■ SOLENOID RATINGS

G02

Coil Type	Voltage (V)			Current & Power At rated Voltage			Weight	
	Source Rated	HZ	Range	IN-Rush Current(A)	Holding Current(A)	Wattage (W)		
A 110	AC100V	50	90 - 110	1.7	0.33		Single solenoid : 1.6 Kg Double solenoid : 2.2 Kg	
	AC110V	60	99 - 121	1.5	0.40			
A 120	AC110V	50	99 - 121	1.35	0.39			
	AC120V	60	108 - 132	1.25	0.28			
A 220	AC200V	50	180 - 220	0.85	0.17			
	AC220V	60	198 - 242	0.80	0.20			
A 240	AC220V	50	198 - 242	0.68	0.20			
	AC240V	60	216 - 264	0.60	0.13			
D 12	DC12V		10.8 - 13.2	2.2	2.2	26		Single solenoid : 1.7 Kg Double solenoid : 2.1 Kg
D 24	DC24V		21.6 - 26.4	1.1	1.1			

G03

Coil Type	Voltage (V)			Current & Power At rated Voltage			Weight	
	Source Rated	HZ	Range	IN-Rush Current(A)	Holding Current(A)	Wattage (W)		
A 110	AC100V	50	90 - 110	4.80	0.86	31	Single solenoid : 3.3 Kg Double solenoid : 3.9 Kg	
	AC110V	60	99 - 125	4.20	0.75	32		
A 120	AC110V	50	99 - 121	4.30	0.78	30		
	AC120V	60	108 - 138	4.00	0.72	32		
A 220	AC200V	50	180 - 220	2.32	0.42	30		
	AC220V	60	198 - 242	2.05	0.36	32		
A 240	AC220V	50	198 - 242	2.05	0.37	29		
	AC240V	60	216 - 270	1.90	0.33	32		
D 12	DC12V		10.8 - 13.2	2.58	2.58	32		Single solenoid : 3.9 Kg Double solenoid : 5.2 Kg
D 24	DC24V		21.6 - 26.4	1.33	1.33			

Technical Data:

1. In conformity with the ISO standard, the installation is absolutely interchangeable.
2. Solenoid can be used within -10% to +10% of the rated voltage of the coil.
3. Withstand voltage 1500 v/sec.
4. Insulation resistance: H type.
5. A momentary signal of approx. 0.1 second is required for shifting action.

Accessories:

Mounting bolt kits are supplied with valve socket head cap screws

WH-G02 series: M5x45L, 4 pieces for tightening torque 50-70 kgf/cm

WH-G03 series: M6x35L, 4 pieces for tightening torque 120-150 kgf/cm



Solenoid Operated Directional Valves

■ SPOOL TYPES

SPRING CENTERED 3 POSITIONS

NO SPRING 2 POSITIONS DETENT

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NO SPRING 2 POSITIONS(*)

(*) Convertible Reverse Assmblage

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B* A B* B B* AS B* BS D* A 2 POSITIONS

Type	Graphic Symbols		Type	Graphic Symbols		Type	Graphic Symbols	
	Standard Assemblage	Reverse Assemblage		Standard Assemblage	Reverse Assemblage		Standard Assemblage	Reverse Assemblage
B2A			B2B			D2A		
B3A			B3B			D3A		
B4A			B4B			D4A		
B40A			B40B			D40A		
B5A			B5B			D5A		
B60A			B60B			D7A		
B7A			B7B			D9A		
B8A			B8B			D10A		
B9A			B9B			D11A		
B10A			B10B			D12A		
B11A			B11B					
B12A			B12B					

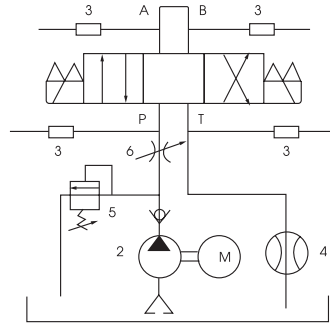


Solenoid Operated Directional Valves

FEATURES

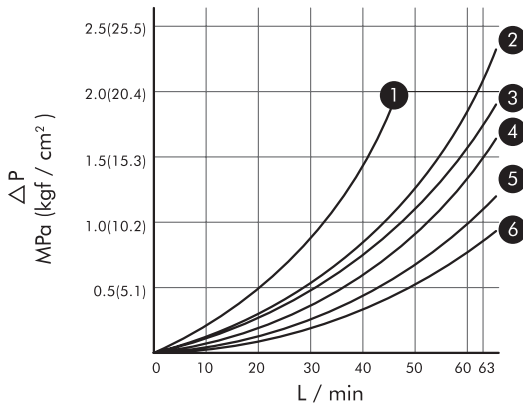
Test System:

IG pump: IGH-5F-64, 64c.c./rev,
 Motor: 50Hp x 4p, 60hz,
 Inverter: 100Hp,
 Flow meter: 200 L/Min,
 Pressure sensor: 0-350 kgf/cm²,
 Relief valve: 0~350kg /cm²,
 Hydraulic oil: 35 cSt.



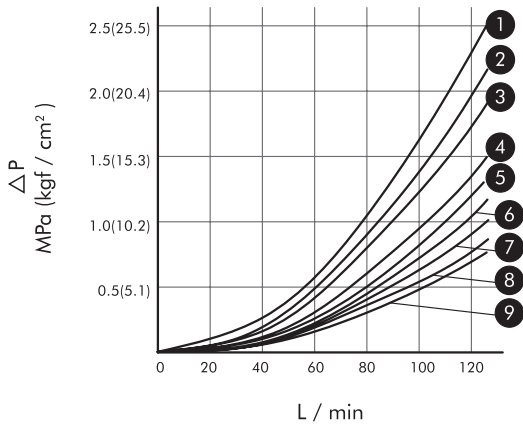
TEST CIRCUIT

WH-G02



Model No.	Flow Direction				
	P -> A	B -> T	P -> B	A -> T	P -> T
B2	②	②	⑤	⑤	-
B3	③	③	⑤	⑥	-
B8	⑤	-	⑤	-	-
C2	⑤	⑤	⑤	⑤	-
C3	⑥	⑥	⑥	⑥	④
C4	⑤	⑥	⑤	⑥	-
C5	⑤	②	②	⑤	⑧
C60	①	①	①	①	④
C9	⑥	⑤	⑥	⑤	-
C10	⑤	⑥	⑤	⑤	-
C11	⑥	⑤	⑤	⑤	-
C12	⑤	⑤	⑤	⑥	-
D2	⑤	②	⑤	②	-

WH-G03



Model No.	Flow Direction				
	P -> A	B -> T	P -> B	A -> T	P -> T
B2	②	①	⑦	⑦	-
B3	③	②	⑨	⑨	-
B8	⑥	-	⑤	-	-
C2	⑦	⑦	⑦	⑦	-
C3	⑨	⑨	⑨	⑨	⑤
C4	⑦	⑧	⑦	⑧	-
C5	⑨	⑦	⑦	⑨	①
C60	⑥	⑤	⑥	⑤	①
C9	⑨	⑦	⑨	⑦	-
C10	⑦	⑧	⑦	⑦	-
C11	⑨	⑦	⑦	⑦	-
C12	⑦	⑦	⑦	⑧	-
D2	④	③	⑥	⑥	-

— CONTRAST CHART BETWEEN FACTORS AND VISCOSITIES

VISCOSITY	CST	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	471	464
FACTOR(G)		0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

The pressure drop(ΔP) can be obtained from the formula
 $\Delta P = \Delta p(G/0.85)$ for other specific gravity(G).



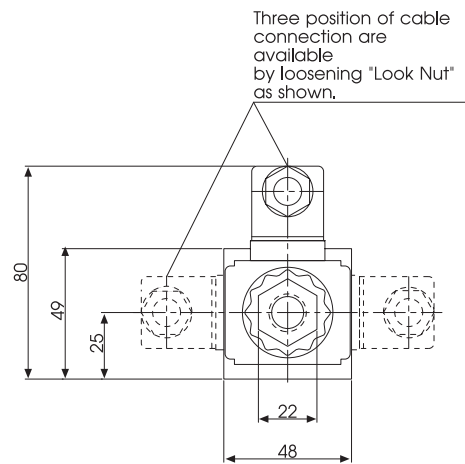
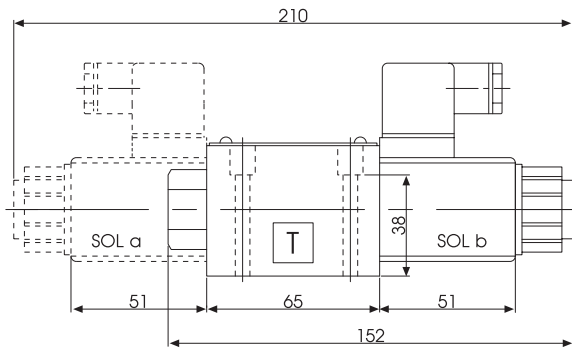
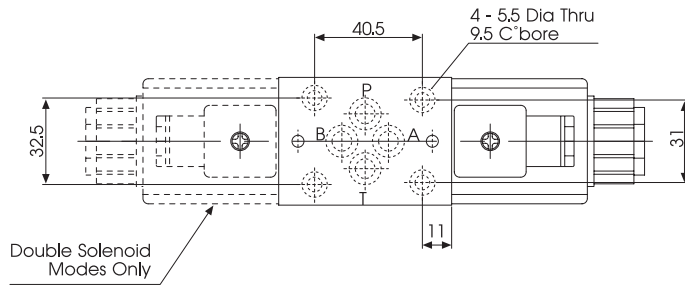
Solenoid Operated Directional Valves

■ INSTALLATION DIMENSIONS:

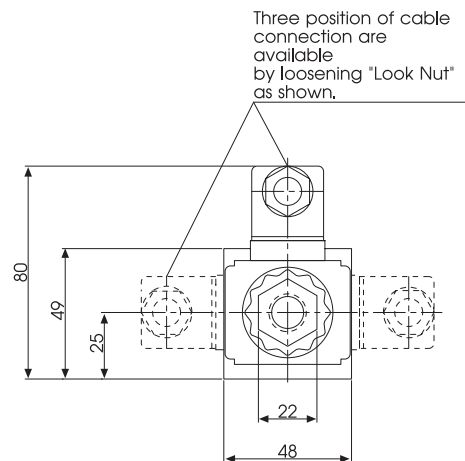
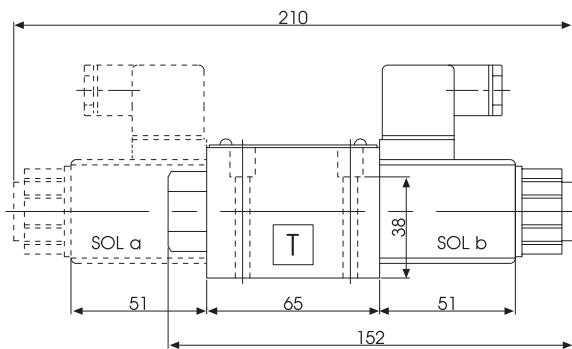
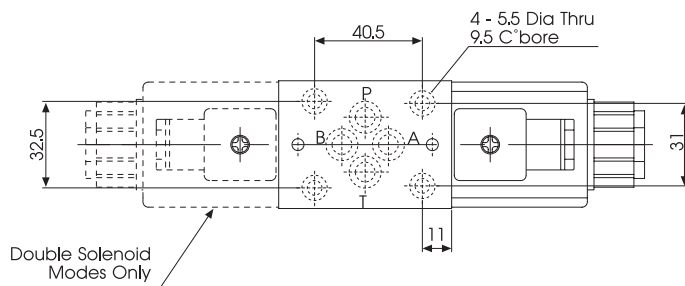
UNIT: mm

Mounting Surface: ISO 4401-03-02-0-94

WH4* - G02 - AC 110N / AC120N/ 220N / 240N



WH4* - G02 - DC 12N / 24N





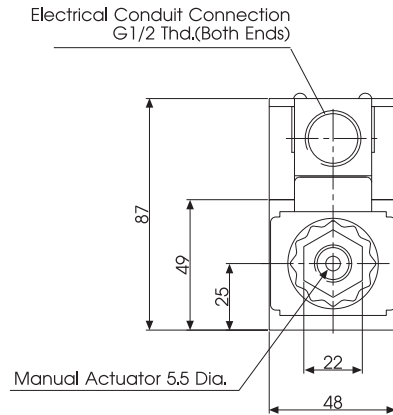
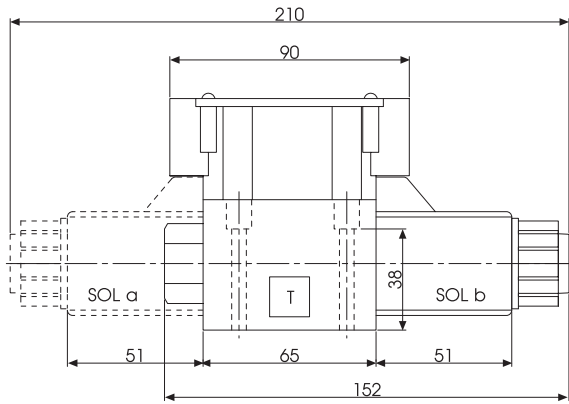
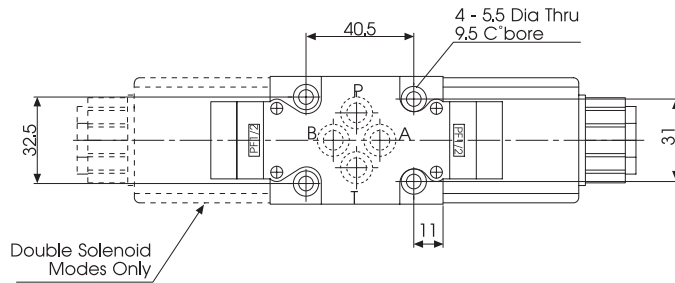
Solenoid Operated Directional Valves

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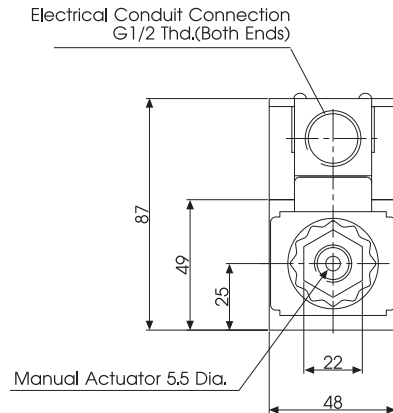
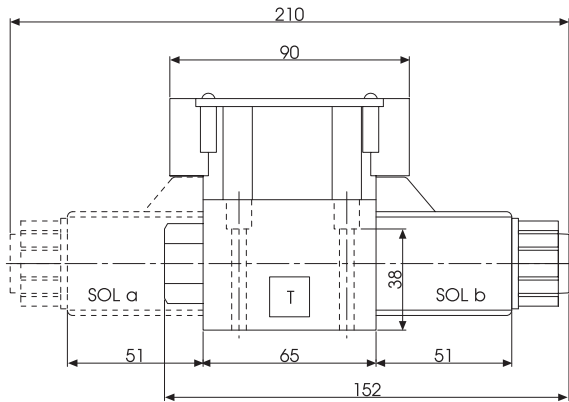
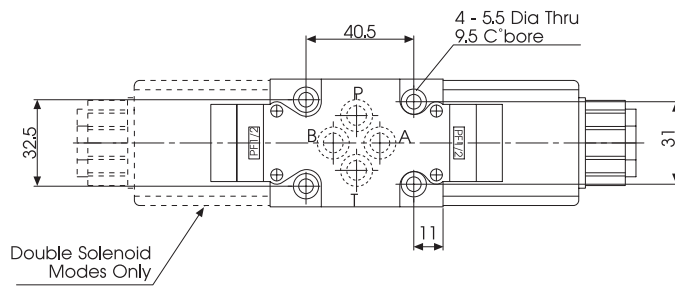
UNIT: mm

Mounting Surface: ISO 4401-03-02-0-94

WH4* - G02 - AC 110 / AC120 / 220 / 240



WH4* - G02 - DC 12 / 24





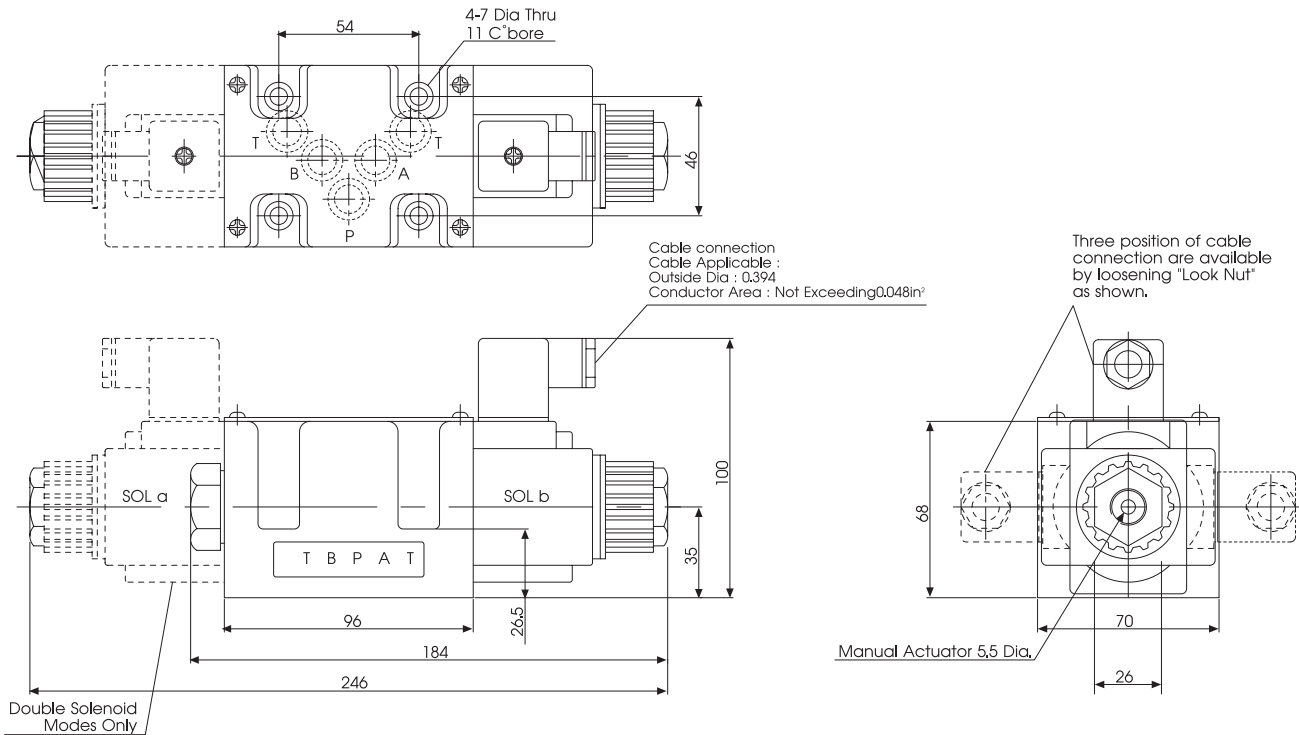
Solenoid Operated Directional Valves

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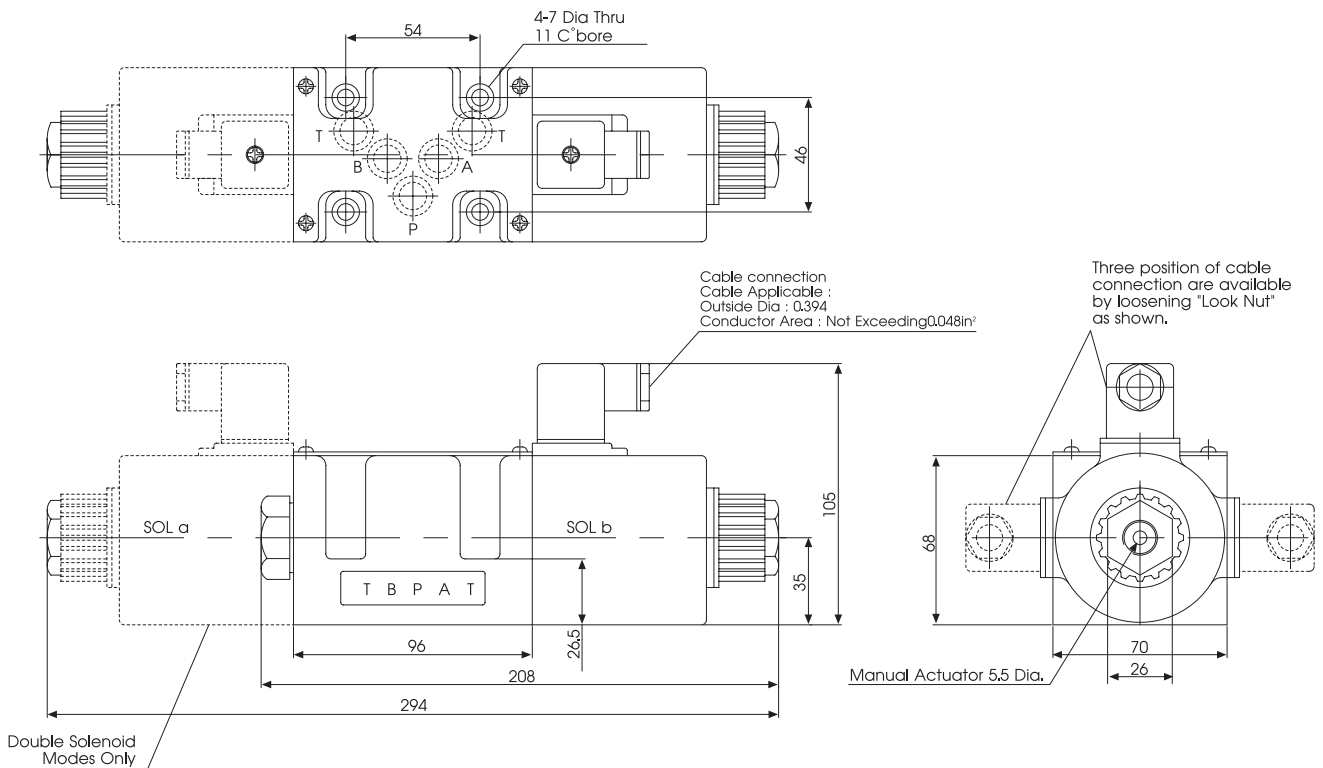
UNIT: mm

Mounting Surface: ISO 4401-05-04-0-94

WH4* - G03 - AC 110N / AC120N / 220N / 240N



WH4* - G03 - DC 12N / 24N





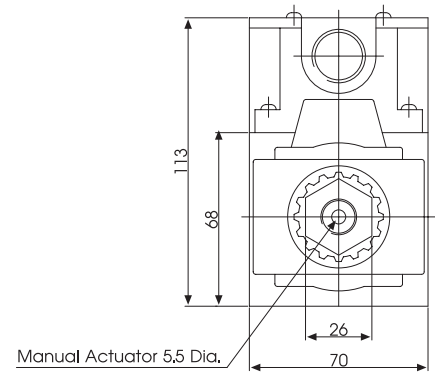
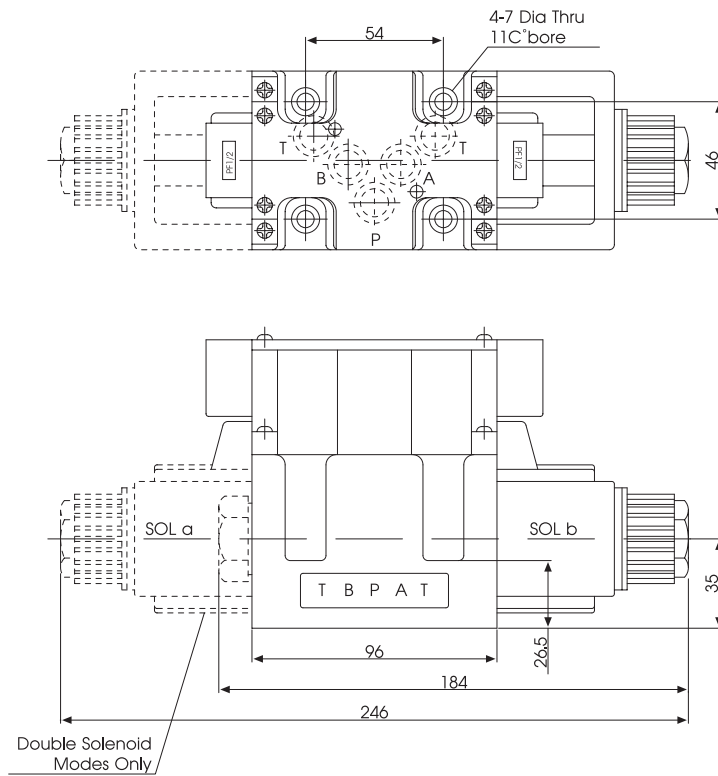
Solenoid Operated Directional Valves

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WH4* - G03 - DC 12 / 24

