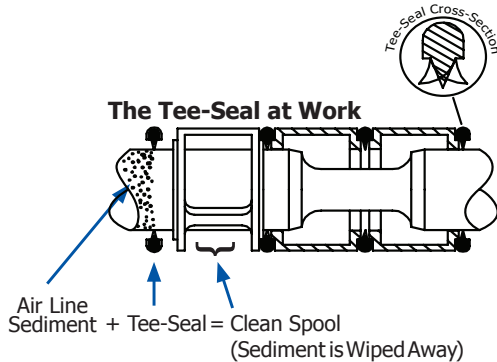
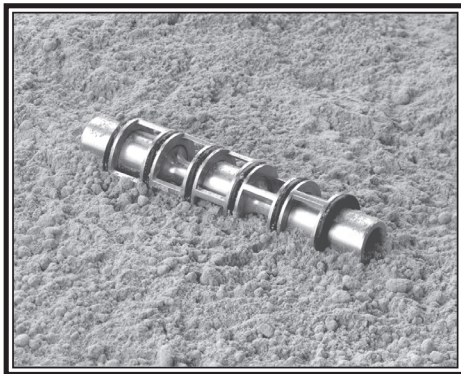


ISO Spool Valves - Design Features



Valves

- Wide variety of options and operators available.
- Conforms to ISO 5599/1 specifications for size 1, 2 and 3.
- Specific application needs? Consult the factory. We can build it for you.



Tapered Tee-Seal..... Eats Dirt

- Bidirectional tapered Tee-Seal eliminates sticking problems.
 - Flexes to clean spool
 - Mechanically Locked
 - No Spiral Twist
 - No Extrusion
 - Air Line Sediment is Wiped Away.
- Tested tough and proven reliable according to SAE specifications: Rust and water injected every 864,000 cycles for 20 million cycles.



Solenoid ... Guaranteed Against Burnout

- Three-way pilot uses full air line pressure to shift the valve.
- Pilot is internally supplied when the pressure at port one is 35 to 150 PSIG (240 to 1030 kPa).
- Coil is hermetically sealed as an integral watertight molded unit.
- Intrinsically-safe and explosion-proof versions available.
- Push Turn-Locking Override is standard. (Extended Push Non-Locking is available)

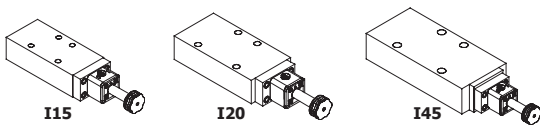
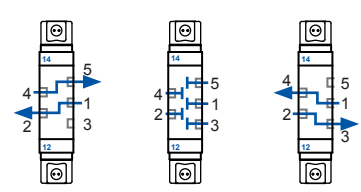
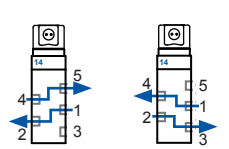
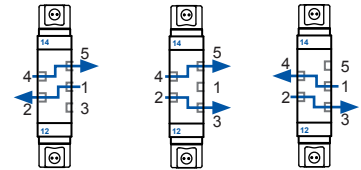
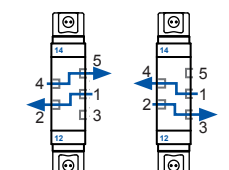
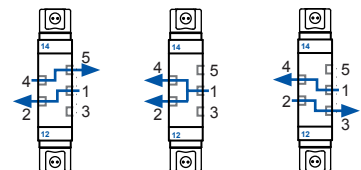





Products Certified To:

- CSA - (C22.2 and UL STD 429)
- Factory Mutual - Explosion Proof Environments
- ATEX - Explosion Proof Environments
- CE - EMF and Low Voltage Directives

ISO Spool Valves - Specs & Model Numbers

Specifications

Valve Operation		Valve Operation	
 <p>115 120 145</p>		 <p>ENERGIZED 12 DE-ENERGIZED ENERGIZED 14</p> <p>5/3 BLOCK Maintained Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 De-Energized: All ports Blocked Maintained Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3</p>	
 <p>DE-ENERGIZED 12 ENERGIZED 14</p> <p>5/2 SINGLE De-Energized: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 Energized: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3</p>		 <p>ENERGIZED 12 DE-ENERGIZED ENERGIZED 14</p> <p>5/3 EXHAUST Maintained Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 De-Energized: Port 2 open to Port 3, Port 4 open to Port 5 Port 1 Blocked Maintained Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3</p>	
 <p>ENERGIZED 12 ENERGIZED 14</p> <p>5/2 DOUBLE Momentarily Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 Momentarily Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3</p>		 <p>ENERGIZED 12 DE-ENERGIZED ENERGIZED 14</p> <p>5/3 PRESSURE Maintained Energized 12: Pressure from Port 1 to Port 2 Exhaust from Port 4 to Port 5 De-Energized: Port 1 open to Ports 2 & 4; Ports 3 & 5 Blocked Maintained Energized 14: Pressure from Port 1 to Port 4 Exhaust from Port 2 to Port 3</p>	
Operating Temperatures 	Solenoid Pilot Operated	Treated Buna-N Seals (Treated NBR, Standard)	Fluoroelastomer Seals (FPM (FKM), Option A)
	Standard High Temp Coil (Option CT)	-18°C to +50°C (0°F to +123°F) -18°C to +82°C (0°F to +180°F)	-18°C to +50°C (0°F to +123°F) -18°C to +82°C (0°F to +180°F)
Operating Pressures 	Solenoid Pilot Operated	Inlet Port	External Pilot Port
	Standard 2 Position Standard 3 Position External Pilot (Option B)	240 - 1030 kPa (35 - 150 PSIG) 345 - 1030 kPa (50 - 150PSIG) Vacuum - 240 kPa (Vacuum - 35 PSIG)	- - 240 - 1030 kPa (35 - 150 PSIG)
	Media - Air Or Inert Gas		
Filtration & Lubrication 	Air Line Lubrication of Automatic Valve products is not required, but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 viscosity, and have an aniline range between 82°C (180°F) and 99°C (210°F). Filter to 50 microns or better. For temperatures below 40°F, air must be dry to prevent formation of ice. Refer to the Maintenance section of this catalog for recommended lubricants.		

Model Numbers

Series	Body Type	Port Size	Function	Body Design	Operator 1	Center Operator	Operator 2	Voltage ²	Options*
115	0 Base	0 0	A 4 Way 2 Position	A Single	A Air Pilot	D 3 Pos'n Solenoid/Air	A Air Pilot	-AA 110/50, 120/60	A Fluoroelastomer Seals
			B 4 Way 2 Position ¹	B Double	F Hand Lever -Line I Palm Button	C 3 Position Spring Manual	-AB 220/50, 240/60, 125VDC	B External Pilot Connection	
120			C 4 Way 3 Position Blopk		V Intrinsically-Safe Solenoid (24VDC only)	M 2 Position Detent Manual	-DA 22/50, 24/60, 12VDC	CT Conduit Coil High Temp	
			D 4 Way 3 Position Exhaust		X Weather-Proof Solenoid	N 3 Position Detent Manual	-DB 24VDC	D Dustproof	
145			E 4 Way 3 Position Pressure			R 2 Position Spring		G 18" Flying Leads	
						V Intrinsically-Safe Solenoid (24VDC only)		LL2 Lowest Watt Coil (0.7 Watts) with Extended Turn-Locking Override	
						X Weather-Proof Solenoid		Y Explosion-Proof Coil (CSA,FM) Z Explosion-Proof Coil (ATEX) 5 Extended Push Non-Locking Override	

* Not all Options are available for all models. Refer to "Options" at the end of this Section for additional information.

¹ Use varies. Consult the Factory for details. ²Consult the Factory for additional voltages.

ISO Spool Valves - Standard Solenoid

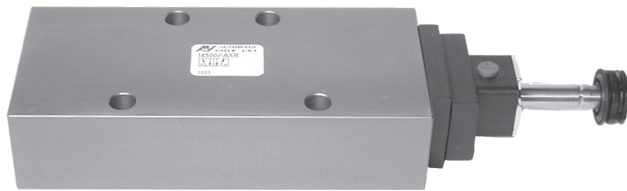
Single



I1500AAXR



I2000AAXR



I4500AAXR

Double



I1500ABXX



I2000CBDX



I4500EBDX

Model Numbers

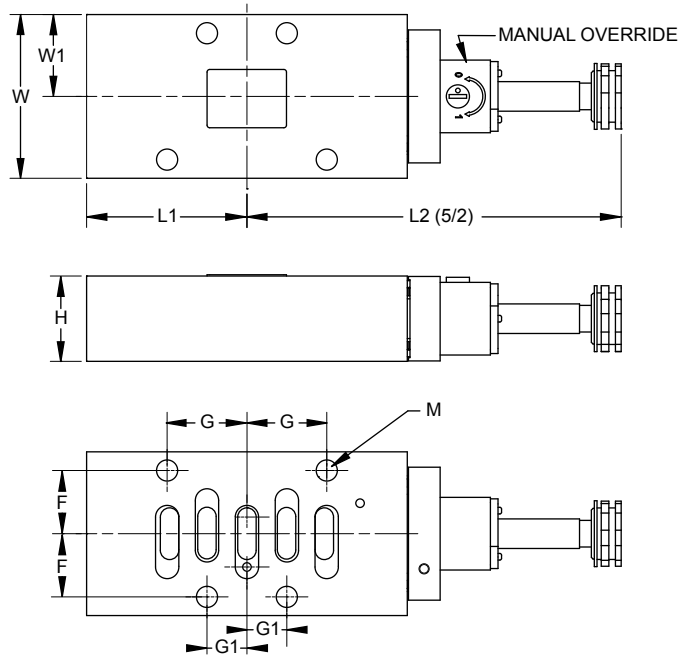
Series	ISO Size	Port Loc'n	Flow l/min (Cv)		5/2		5/3			Mat'ls		Wt Kg (lb)
			5/2	5/3	Single	Double	Block	Exhaust	Pressure	Body	Seal	
I15	1	Base	1480 (1.5)	1154 (1.2)	I1500AAXR-**	I1500ABXX-**	I1500CBDX-**	I1500DBDX-**	I1500EBDX-**	Aluminum	NBR	0,4 (0.9)
I20	2		1970 (2.0)	1537 (1.6)	I2000AAXR-**	I2000ABXX-**	I2000CBDX-**	I2000DBDX-**	I2000EBDX-**			0,7 (1.5)
I45	3		4430 (4.5)	3455 (3.5)	I4500AAXR-**	I4500ABXX-**	I4500CBDX-**	I4500DBDX-**	I4500EBDX-**			0,9 (2.0)

** = Coil Voltage Code. Coils sold separately. Refer to "Electrical Information" at the end of this Section for additional information.

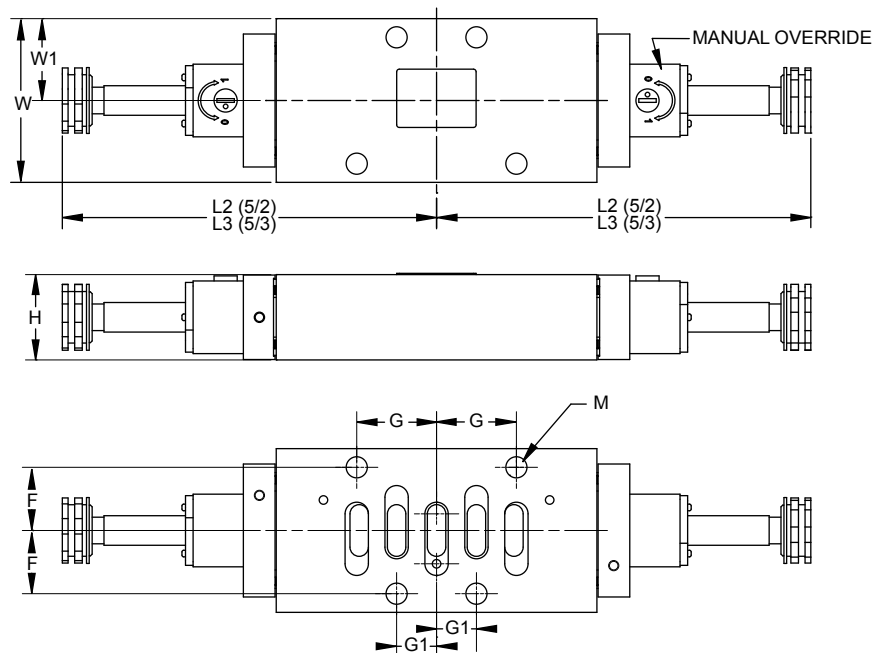
ISO Spool Valves - Standard Solenoid

Dimensional Information

Single



Double



Series	ISO Size	F	G	G1	H	L1	L2	L3	M	W	W1
I15	1	14,0 0.55	18,0 0.71	9,0 0.35	25,4 1.00	44,3 1.74	108 4.26	108 4.26	5,4 0.21	41,9 1.65	21,0 0.83
I20	2	19,0 0.75	24,0 0.95	12,0 0.47	25,4 1.00	48,2 1.90	113 4.43	113 4.43	6,4 0.25	49,2 1.94	24,6 0.97
I45	3	24,0 0.95	32,0 1.26	16,0 0.63	31,8 1.25	69,0 2.72	138 5.43	138 5.43	8,7 0.34	63,5 2.50	31,8 1.25

Units of Measure: Top - mm, Bottom - inches



5/2 5/3

ISO Spool Valves - Air Pilot

Single



I1500AAAR



I2000AAAR



I4500AAAR

Double



I1500ABAA



I2000ABAA



I4500ABAA

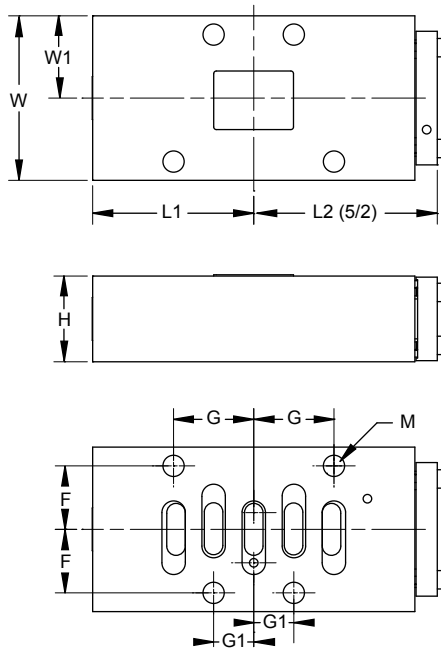
Model Numbers

Series	ISO Size	Port Loc'n	Flow l/min (Cv)		5/2		5/3			Mat'ls		Wt Kg (lb)
			5/2	5/3	Single	Double	Block	Exhaust	Pressure	Body	Seal	
I15	1	Base	1480 (1.5)	1154 (1.2)	I1500AAAR	I1500ABAA	I1500CBADA	I1500DBADA	I1500EBADA	Aluminum	NBR	0,4 (0.9)
I20	2		1970 (2.0)	1537 (1.6)	I2000AAAR	I2000ABAA	I2000CBADA	I2000DBADA	I2000EBADA			0,7 (1.5)
I45	3		4430 (4.5)	3455 (3.5)	I4500AAAR	I4500ABAA	I4500CBADA	I4500DBADA	I4500EBADA			0,9 (2.0)

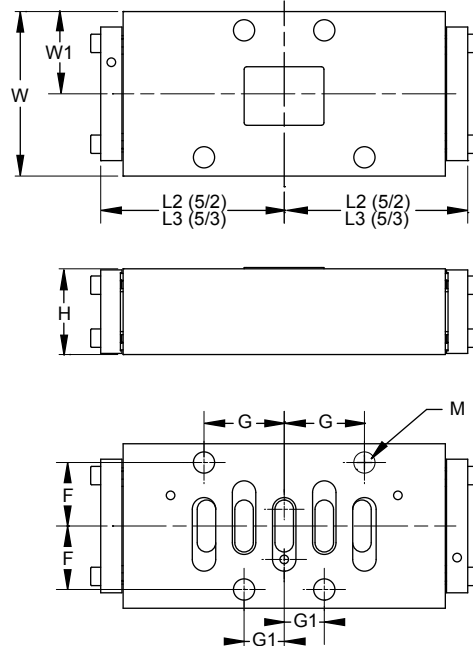
ISO Spool Valves - Air Pilot

Dimensional Information

Single

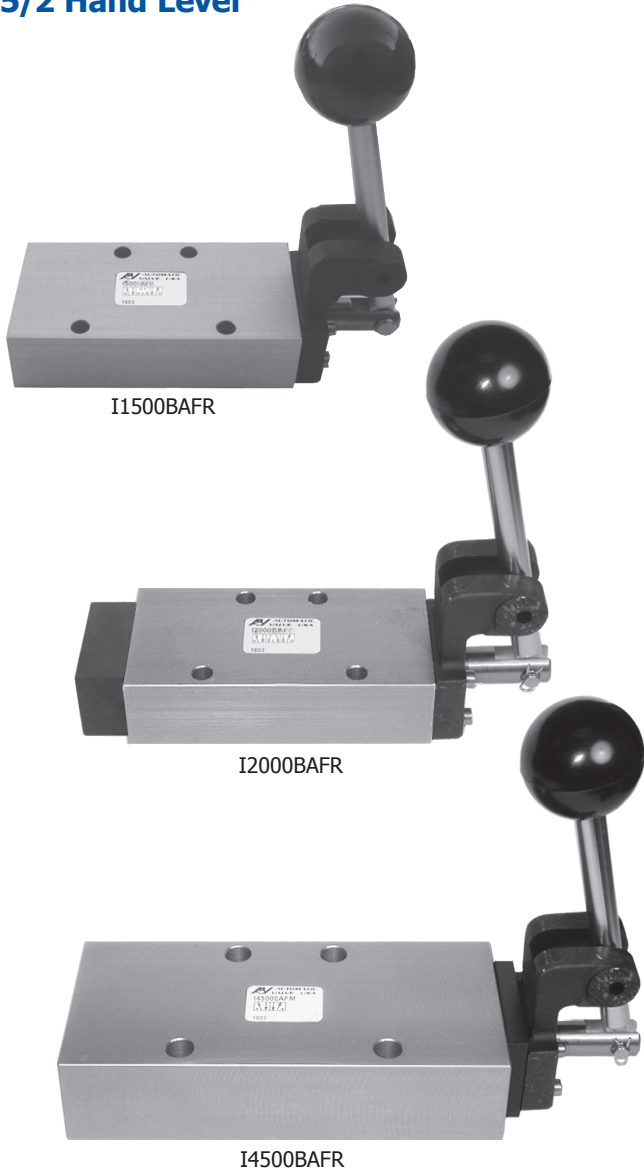
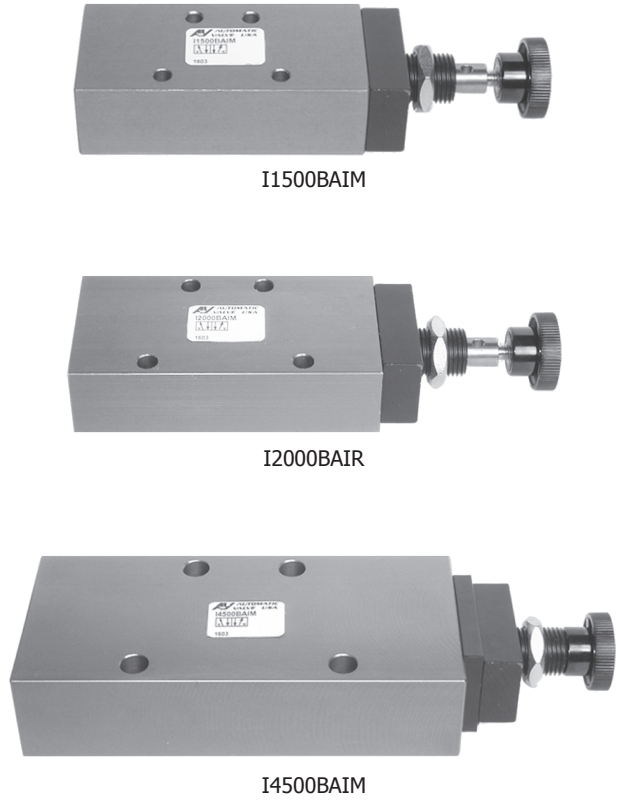


Double

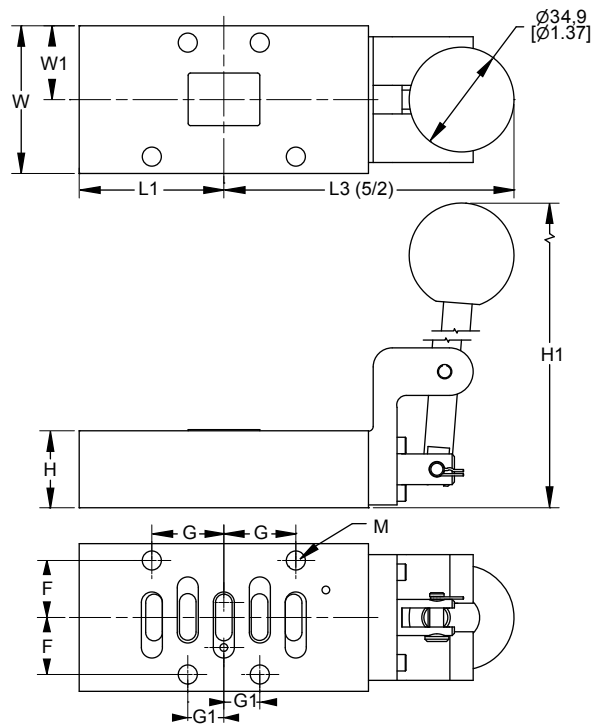
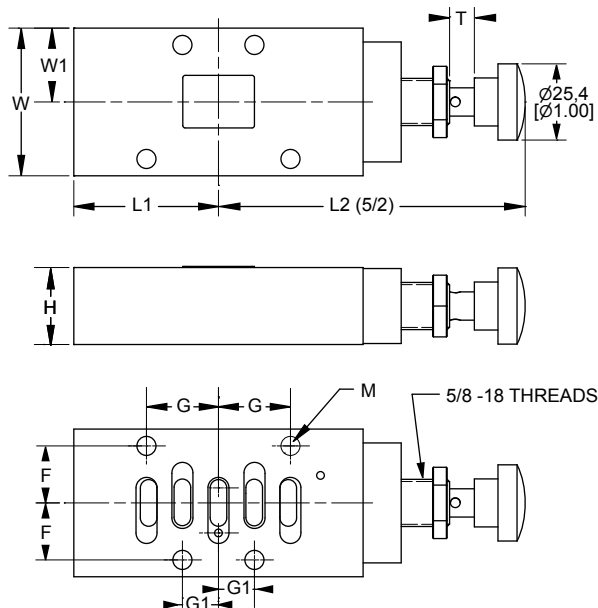


Series	ISO Size	F	G	G1	H	L1	L2	L3	M	W	W1
I15	1	14,0 0.55	18,0 0.71	9,0 0.35	25,4 1.00	44,3 1.74	50,8 2.00	50,8 2.00	5,4 0.21	41,9 1.65	21,0 0.83
I20	2	19,0 0.75	24,0 0.95	12,0 0.47	25,4 1.00	48,2 1.90	54,6 2.15	54,6 2.15	6,4 0.25	49,2 1.94	24,6 0.97
I45	3	24,0 0.95	32,0 1.26	16,0 0.63	31,8 1.25	69,0 2.72	75,4 2.97	75,4 2.97	8,7 0.34	63,5 2.50	31,8 1.25

Units of Measure: Top - mm, Bottom - inches

5/2 Hand Lever

5/2 Palm Button

Model Numbers

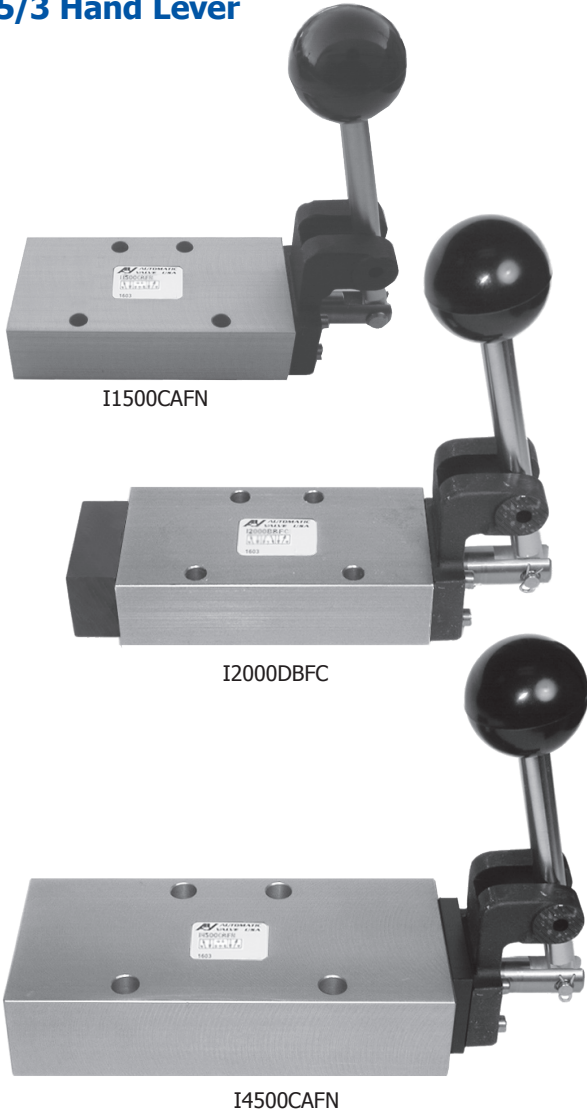
Series	ISO Size	Port Location	Flow (5/2) l/min (Cv)	Operator	5/2 (4 Way 2 Position)		Materials		Weight Kg (lb)
					Detented	Spring Return	Body	Seal	
I15	1	Base	1480 (1.5)	Hand Lever	I1500BAFM	I1500BAFR	Aluminum	NBR	0,4 (0.9)
				Palm Button	I1500BAIM	I1500BAIR			
I20	2		1970 (2.0)	Hand Lever	I2000BAFM	I2000BAFR			
				Palm Button	I2000BAIM	I2000BAIR			
I45	3		4430 (4.5)	Hand Lever	I4500BAFM	I4500BAFR			
				Palm Button	I4500BAIM	I4500BAIR			

Dimensional Information
5/2 Hand Lever

5/2 Palm Button


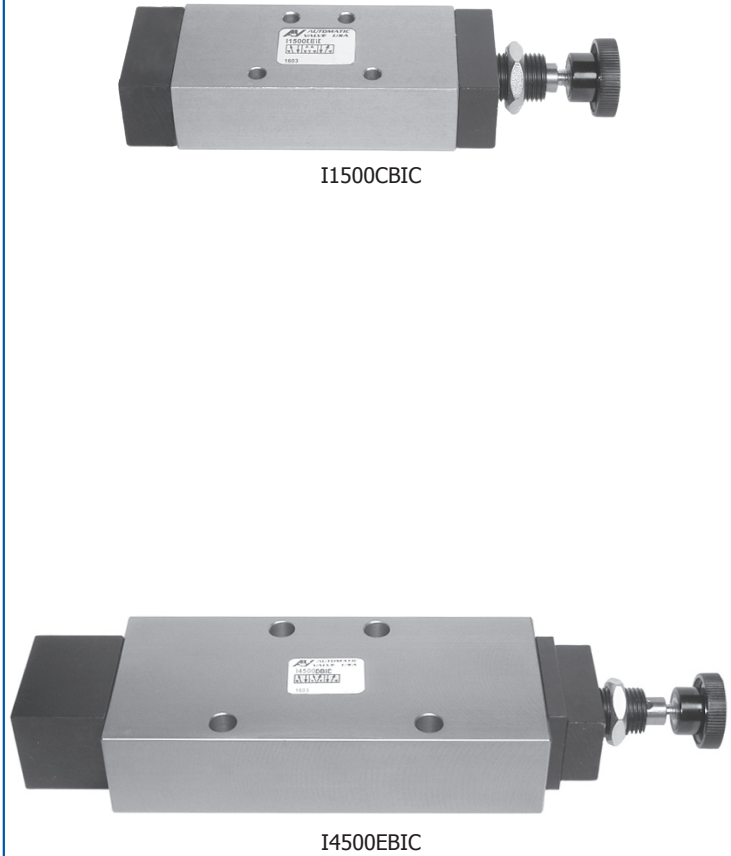
Series	ISO Size	F	G	G1	H	H1	L1	L2	L3	M	T	W	W1
I15	1	14,0 0.55	18,0 0.71	9,0 0.35	25,4 1.00	136 5.35	44,3 1.74	102 4.00	101 3.98	5,4 0.21	6,4 0.38	41,9 1.65	21,0 0.83
I20	2	19,0 0.75	24,0 0.95	12,0 0.47	25,4 1.00	136 5.35	48,2 1.90	106 4.16	105 4.14	6,4 0.25	9,5 0.38	49,2 1.94	24,6 0.97
I45	3	24,0 0.95	32,0 1.26	16,0 0.63	31,8 1.25	155 5.47	69,0 2.72	26,5 4.98	126 4.96	8,7 0.34	12,7 0.50	63,5 2.50	31,8 1.25

Units of Measure: Top - mm, Bottom - inches

5/3 Hand Lever

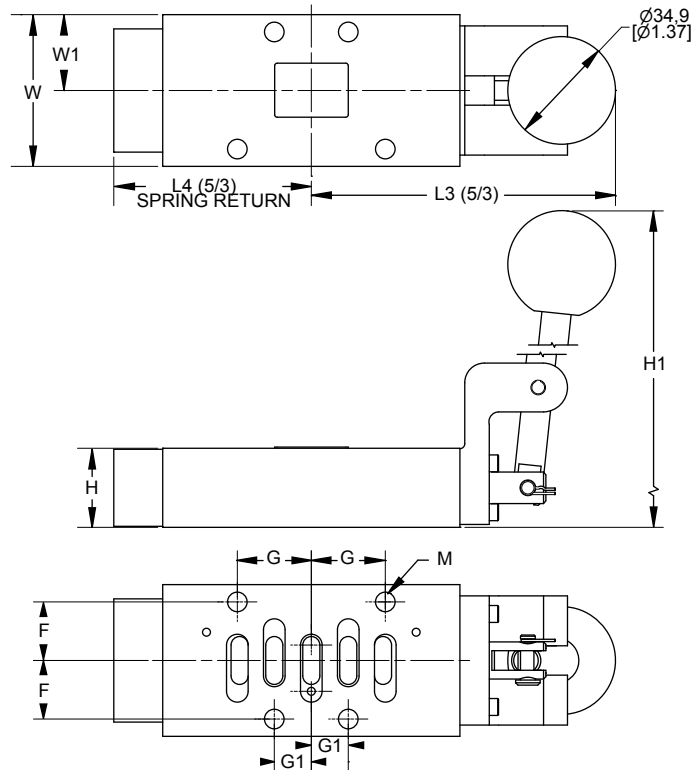
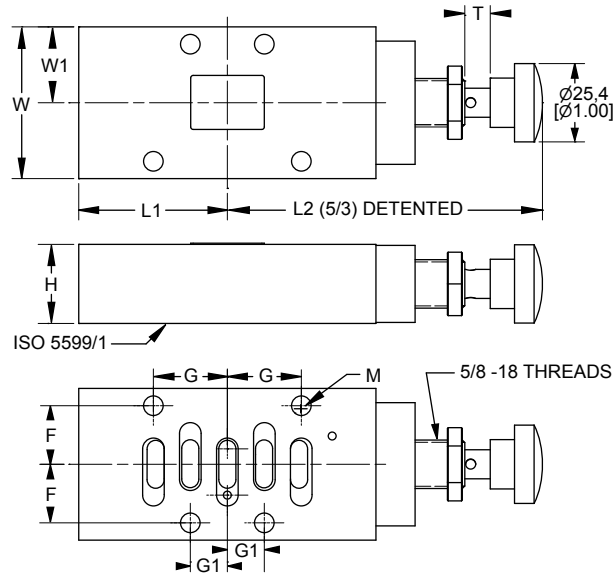


5/3 Palm Button



Model Numbers

Series	ISO Size	Flow (5/3) l/min (Cv)	Operator	5/3 (4 Way 3 Position)						Body Material	Seal Material	Weight kg (lb)		
				Detented 5/3			Spring Center 5/3							
				Block	Exhaust	Pressure	Block	Exhaust	Pressure					
I15	1	1480 (1.5)	Hand Lever							Aluminum	NBR	0,4 (0,9)		
			Palm Button	I1500CAIN	I1500DAIN	I1500EAIN	I1500CBIC	I1500DBIC	I1500EBIC					
I20	2	1970 (2.0)	Hand Lever	I2000CAFN	I2000DAFN	I2000EAFN	I2000CBFC	I2000DBFC	I2000EBFC			-	-	0,7 (1,5)
			Palm Button	-	-	-	-	-	-					
I45	3	4430 (4.5)	Hand Lever	I4500CAFN	I4500DAFN	I4500EAFN	I4500CBFC	I4500DBFC	I4500EBFC			-	-	0,9 (2,0)
			Palm Button	I4500CAIN	I4500DAIN	I4500EAIN	I4500CBIC	I4500DBIC	I4500EBIC					

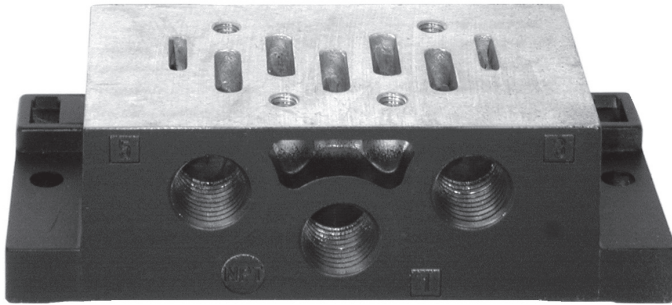
Dimensional Information
5/3 Hand Lever

5/3 Palm Button


Series	ISO Size	F	G	G1	H	H1	L1	L2	L3	L4	W	W1
I15	1	14,0 0.55	18,0 0.71	9,0 0.35	25,4 1.00	136 5.35	44,3 1.74	102 4.00	101 3.98	60,1 2.37	41,9 1.65	21,0 0.83
I20	2	19,0 0.75	24,0 0.95	12,0 0.47	25,4 1.00	136 5.35	48,2 1.90	106 4.16	105 4.14	64,1 2.52	49,2 1.94	24,6 0.97
I45	3	24,0 0.95	32,0 1.26	16,0 0.63	31,8 1.25	155 5.47	69,0 2.72	26,5 4.98	126 4.96	99,2 3.91	63,5 2.50	31,8 1.25

Units of Measure: Top - mm, Bottom - inches

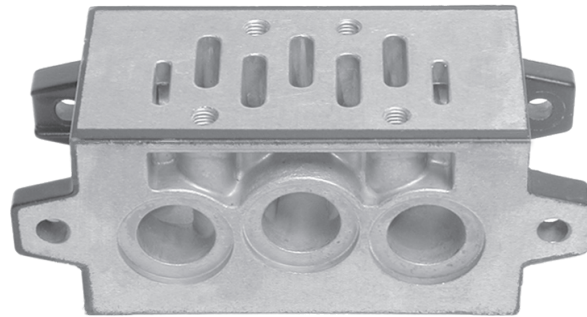
ISO Spool Valves - Sub-Bases and Manifolds

Sub-Base



7107-501

Manifold (Bottom Ported Shown)



A7107-503

Model Numbers

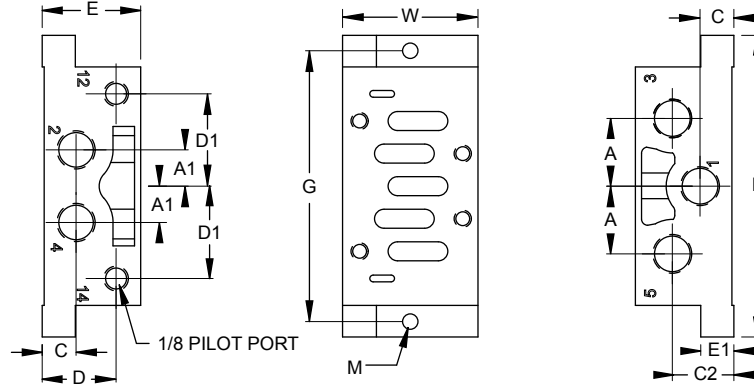
Series	ISO Size	Sub-Base				Manifold					Manifold Accessories		
		Model Number*	Ports 2, 4	Ports 1, 3, 5	Wt Kg (lb)	Model Number*		Ports 2, 4	Ports 1, 3, 5	Wt Kg (lb)	Model Number*		
						Bottom	Side				End Plates	Blocking Disk	Blank Station Cover
I15	1	7107-501	1/4	1/4	0,5 (1.0)	A7107-503	A7108-008	1/4	3/8	0,68 (1.5)	7107-504	A7002-010	A7107-506
		7107-502	3/8	3/8									
I20	2	7112-501	3/8	3/8	0,5 (1.0)	A7113-046	A7113-046	3/8	3/8	0,68 (1.5)	-	A7112-505	A7112-506
		7112-502	1/2	1/2									
I45	3	7129-501	1/2	1/2	0,54 (1.2)	-	7130-021	1/2	1	0,91 (2.0)	7129-504	A7129-505	A7129-506
		7129-502	3/4	3/4									

* G Threads: Add the letter "W" after the model number to indicate G Threads

ISO Spool Valves - Sub-Bases and Manifolds

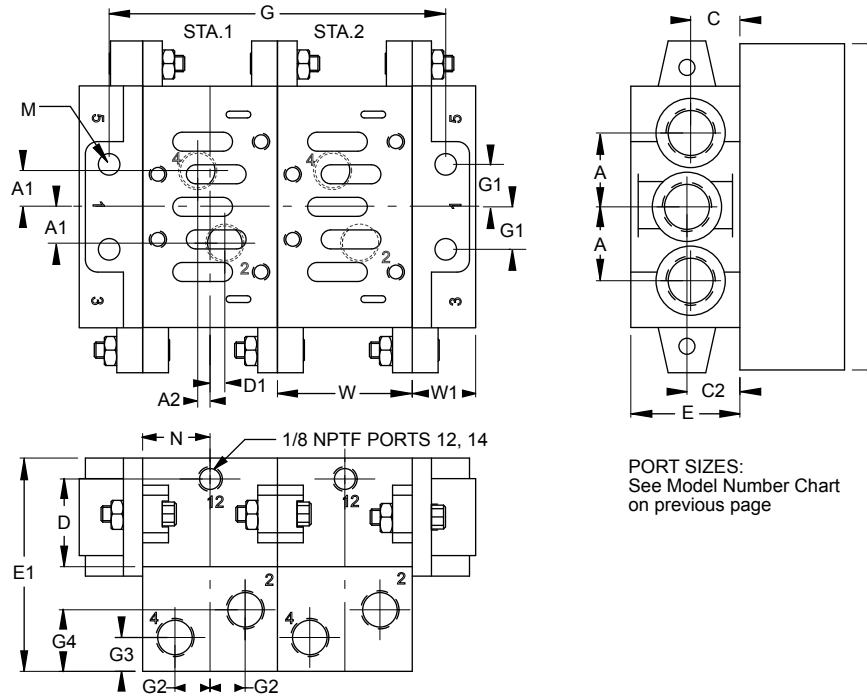
Dimensional Information

Sub-Bases



PORT SIZES:
See Model Number Chart
on previous page

Manifolds












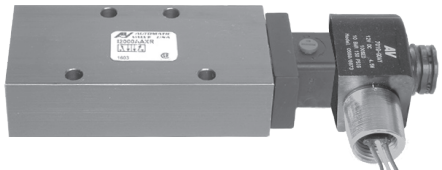


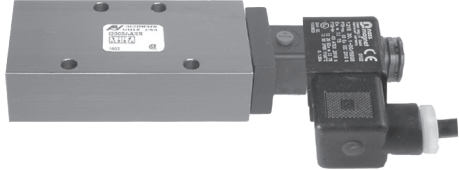


PORT SIZES:
See Model Number Chart
on previous page

	Series	ISO Size	A	A1	A2	C	C2	D	D1	E	E1	G	G1	G2	G3	G4	L	M	N	W	W1
Sub-Base	I15	1	21,5 0.85	12,0 0.47	-	10,5 0.41	21,5 0.85	23,5 0.93	29,0 1.10	32,0 1.30	10,0 0.39	98,0 3.90	-	-	-	-	110 4.30	5,6 0.22	-	48,0 1.90	-
	I20	2	28,0 1.10	15,0 0.59	-	14,0 0.55	25,9 1.02	30,0 1.18	37,0 1.46	40,0 1.57	13,0 0.51	112 4.41	-	-	-	-	124 4.88	7,0 0.26	-	57,0 2.24	-
	I45	3	34,0 1.30	16,0 0.63	-	17,0 0.67	17,0 0.67	22,0 0.87	45,0 1.80	32,0 1.30	18,0 0.71	136 5.40	-	-	-	-	149 5.90	7,0 0.26	-	71,0 2.80	-
Manifold	I15	1	24,0 0.94	13,0 0.51	1,5 0.06	21,0 0.83	24,0 0.94	37,0 1.47	7,5 0.30	46,0 1.80	81,0 3.20	108 4.30	14,0 0.55	11,0 0.43	12,0 0.47	25,0 0.98	110 4.30	7,0 0.27	21,5 0.85	43,0 1.69	22,0 0.87
	I20	2	35,5 1.40	17,8 0.70	14,3 0.56	27,4 1.08	27,4 1.08	42,8 1.68	14,3 0.56	52,3 2.06	-	118 4.63	27,9 1.10	13,5 0.53	12,2 0.48	12,2 0.48	133 5.25	7,1 0.28	27,9 1.10	55,9 2.20	-
	I45	3	48,2 1.90	19,0 0.75	6,0 0.24	30,4 1.20	33,0 1.30	45,9 1.81	7,8 0.31	55,9 2.20	99,0 3.90	172 6.80	25,4 1.00	18,0 0.71	17,0 0.67	27,9 1.10	190 7.50	11,9 0.47	35,5 1.40	71,1 2.80	30,5 1.20

Units of Measure: Top - mm, Bottom - inches

ISO Spool Valves - Configuration Example

Valve With W-Solenoid Cap	+	Coil	=	Valve With Coil
 I2000AAXR	+	 NEMA 4x with DIN 43650 Form B Connection 7019-9**	=	 I2000AAXR-**
 I2000AAXR	+	 NEMA 4x with 18" Leads 7019-9**G	=	 I2000AAXR-**G
 I2000AAXR	+	 NEMA 4x 1/2" Conduit with 30" Leads 7019-9**C	=	 I2000AAXR-**C
 I2000AAXR	+	 Explosion-Proof 1/2" Conduit with 24" Leads 7019-9**Y	=	 I2000AAXR-**Y
 I2000AAXR	+	 ATEX Explosion-Proof with 39" Cable 7152-9**	=	 I2000AAXR-**Z

ISO Spool Valves - Electrical Information






Part Numbers

Description	Operator Type	Instructions	Wt. Kg(lb)	Coil Part Number **=Voltage
Weather-Proof DIN 43650 Industrial Form B Connection NEMA 4X	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	7019-9**
Weather-Proof 18" Leads NEMA 4X	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	7019-9**G
Weather-Proof 1/2" Conduit with 30" Leads NEMA 4X	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	7019-9**C 7019-9**CT (high temp 82°C max)
Explosion-Proof 1/2" Conduit with 24" Leads CSA & FM Approved CL. I; Zone1 ExmII T4; AExmII CL. I; Div.1; GR. A, B, C, D CL. II; GR. E, F, G CL. III T4 Ta=-20°C to +60°C NEMA 4, 4X, 7C, 7D, 9	X	Order coil separately (specify voltage code from below)	0,20 (0.44)	7019-9**Y
Intrinsically-Safe Strain Relief Ex ia CL. I; GR. A,B,C,D CL. II; GR.E,F,G CL. III; Div.1; T5	V	Coil and Connector included with valve (24VDC only)	0,21 (0.46)	A7106-374-DB
A7106-374 Must be Used with an Intrinsically-Safe Barrier For more information refer to "Intrinsic Safety" insert on Page D7.				
Explosion-Proof 3m Cable & Strain Relief Ex m II T5 PTB 03 ATEX2018 X Ex II 2 G EEx m II T5 Ex II 2 D IP65 T95°C	Z	Order coil separately (specify voltage code from below)	0,36 (0.78)	7152-9**

Voltage Codes (Lower wattage options available, consult factory)

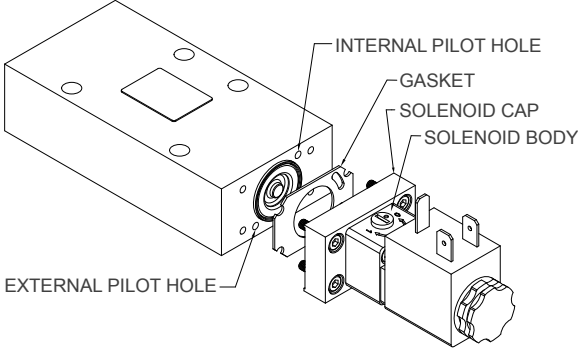
** Code	Voltage +/-10%		Current (Amps)								Resistance (OHMS @ 25°C)				Power (AC=VA, DC=Watts)							
	Operator Type:		Inrush				Holding				X		V		Z		X		V		Z	
			NEMA		ATEX		NEMA		ATEX													
	NEMA 4	NEMA 7,9 & ATEX	4, 4x	7, 9	Exia	Exm	4, 4x	7, 9	Exia	Exm	4, 4x	7, 9	Exia	Exm	4, 4x	7, 9	Exia	Exm				
DA	24/50 24/60	-	.36	-	-	-	.24	-	-	-	32	-	-	-	6.9	-	-	-				
AA	120/50 120/60	120/60	.08	.10	-	.04	.05	.05	-	.03	840	530	-	1664	6.9	6.5	-	3.4				
AB	230/50 230/60	240/60	.04	.05	-	.02	.03	.03	-	.01	3310	2345	-	6730	6.4	6.8	-	3.3				
DA	12 VDC	12VDC	.38	.38	-	.27	.38	.38	-	.27	32	32	-	45	4.8	4.5	-	3.5				
DB	24 VDC	24VDC	.20	.19	.05	.14	.20	.19	.05	.14	121	128	275	177	4.8	4.5	1.6	3.5				
AB	125 VDC	-	.04	-	-	-	.04	-	-	-	3310	-	-	-	5.9	-	-	-				

Connectors (Not polarity dependent)

DIN 43650 Industrial Form B							
	Maximum Cable Diameter: 9mm (0.35")						
Type	Strain Relief without Cord	Strain Relief with Light		1/2" Conduit without Cord	Molded with 6' Cord	Strain Relief with Light & 6' Cord	
		100-240 AC 48-120 DC	6-48 AC/DC			100-240 AC 48-120 DC	6-48 AC/DC
Part Number	7020-001	7020-AA	7020-DB	7039-001	7020-006	7094-006	7094-007

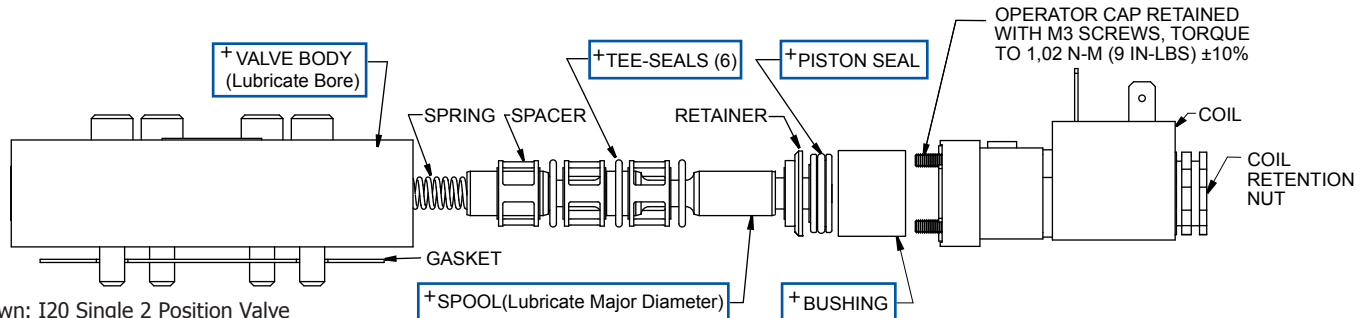
ISO Spool Valves - Options

Options (Add the suffix to the end of the model number in alpha-numeric order)

Suffix	Option	Description
A	Fluoroelastomer Seals	For applications where fluid media or ambient conditions are not compatible with nitrile seals. <i>Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.</i>
B	External Pilot	For solenoid applications where the pressure to port one is less than 2 BAR (35 PSIG). See example below for field conversion.
		<p style="text-align: center;">Field Conversion</p> <ul style="list-style-type: none"> Remove solenoid and cap from the valve body. Rotate the gasket 180° so that the internal pilot hole in the valve body is covered by the gasket. Refasten the gasket, cap and solenoid to the valve body. Make sure the gasket completely covers the internal pilot hole before tightening the M3 screws. Torque to 1,02 N-m (9 in-lbs) ±10%. Remove the 1/8 NPTF pipe plug from the cap and make the external pilot connection. 
C	Conduit Coil	Refer to the "Electrical Information" page in this section for details.
CT	Conduit Coil High Temperature	With 30" Leads. Refer to the "Electrical Information" page in this section for details.
D	Dustproof	For applications in extremely dusty and contaminated environments. Vent ports are plugged and spring pad breather vent is eliminated.
G	Coil With 18" Leads	Refer to the "Electrical Information" page in this section for details.
LL2	Lowest Watt Coil with Extended Turn-Locking Override	Power Consumption = 0.7 Watts. Solenoid cap provides an extended override that is turned to lock in the "on" position.
W	G Threads	All ports tapped to metric "G" standard. (Sub-bases and manifolds only)
Y	Explosion-Proof Coil (CSA, FM)	Refer to the "Electrical Information" page in this section for details.
Z	Explosion-Proof Coil (Atex, PTB)	Refer to the "Electrical Information" page in this section for details.
5	Extended Push Non-Locking Override	Solenoid cap provides an extended override that is pushed in to actuate and does not lock in the "on" position.

ISO Spool Valves - Service Information

Valve must be disconnected from all air and electrical power sources before disassembly.



Shown: I20 Single 2 Position Valve

+ = Items that Must Be Lubricated

Service Kit Installation Instructions

1. Follow appropriate lock-out/tag-out procedures. Do not attempt to service a valve, if you are not familiar with lock-out/tag-out procedures.
2. Turn off electrical power to the valve.
3. Remove valve from all electrical and air power sources.
4. Ensure all stored air power is exhausted.
5. Remove coil by first removing coil retention nut.
6. Remove operator cap by first removing 4 socket head cap screws.
7. Remove existing serviceable components by "pushing" internal components gently out of the valve body.
8. Clean the spool with a clean cloth.
9. Discard the spring (Single Spring Return models only).
10. Lubricate the designated ++ items in the above assembly drawing with a thin film of lubricant - the item should look "WET" with no excess lubricant visible.
11. Replace components as shown above.
 - 11.1 Replace spring pad and spring (Single Spring Return models only).
 - 11.2 Alternate Tee-seals and spacers.
 - 11.3 Once all 6 Tee-seals are installed, replace the retainer, bushing and piston.
12. Orientate the operator cap by aligning the open end of the gasket with the pilot hole in the valve body.
13. Torque cap screws into body to 1,02 N-m (9 in-lbs) ±10%. Alternate tightening of the screws, so cap "squeezes" evenly onto the body.

Air Line Lubrication of Automatic Valve products is not required, but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 or lighter viscosity, and have an aniline point between 82°C (180°F) and 99°C (210°F). Refer to the Maintenance Section of this catalog for recommended lubricants.

Model Numbers: Service Kits

Series	Function			
	Single		Double	
	Model Number	Contents	Model Number	Contents
I15	K-I15-SGL K-I15-SGL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seal (1), Spring (1)	K-I15-DBL K-I15-DBL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seals (2)
	I20	K-I20-SGL K-I20-SGL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seal (1), Spring (1)	K-I20-DBL K-I20-DBL-A (fluoroelastamer)
I45		K-I45-SGL K-I45-SGL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seal (1), Spring (1)	K-I45-DBL K-I45-DBL-A (fluoroelastamer)