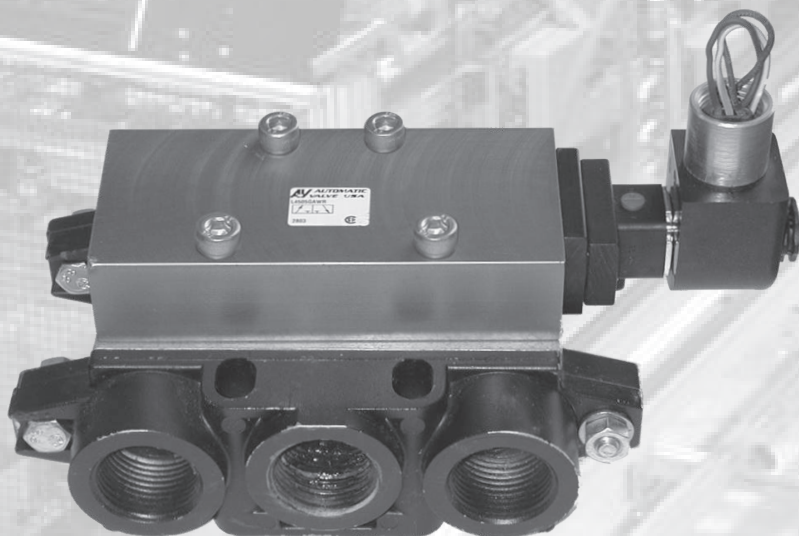
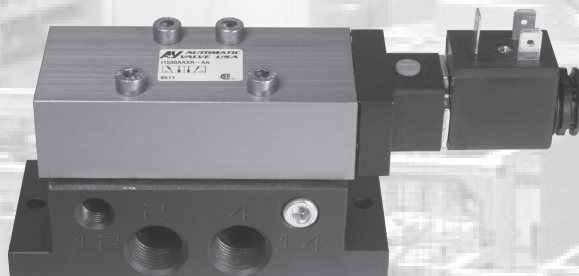


ISO 9001 **AV** **AUTOMATIC VALVE**



*World Class Pneumatic Solutions*

# **AV** *AUTOMATIC VALVE*



## **ISO Spool Valves**

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Specifications	E3
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Air Pilot	E6-E7
Manual	E8-E11
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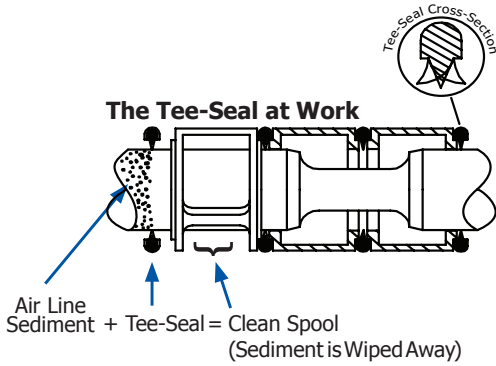
5/2



5/3

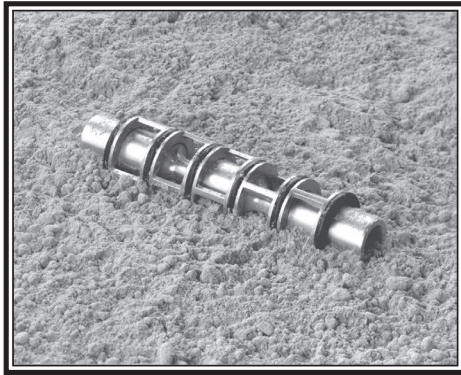


# ISO Spool Valves Design Features



## 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	
<b>Operating Temperatures</b> 	<b>Solenoid Pilot Operated</b>	<b>Treated Buna-N Seals (Treated NBR, Standard)</b>	<b>Fluoroelastomer Seals (FPM (FKM), Option A)</b>
	Standard	-18°C to +50°C (0°F to +123°F)	-18°C to +50°C (0°F to +123°F)
<b>Operating Pressures</b> 	<b>Solenoid Pilot Operated</b>	<b>Inlet Port</b>	<b>External Pilot Port</b>
	Standard 2 Position	240 - 1030 kPa (35 - 150 PSIG)	-
	Standard 3 Position	345 - 1030 kPa (50 - 150PSIG)	-
External Pilot (Option B)	Vacuum - 240 kPa (Vacuum - 35 PSIG)	240 - 1030 kPa (35 - 150 PSIG)	
<b>Filtration &amp; Lubrication</b> 	<b>Media - Air Or Inert Gas</b>		
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 <sup>2</sup>	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 <sup>1</sup>	B Double	F Hand Lever -Line	C 3 Position Spring Manual	-AB 220/50, 240/60, 125VDC	B External Pilot Connection	
120			C 4 Way 3 Position Blop		I Palm Button	M 2 Position Detent Manual	-DA 22/50, 24/60, 12VDC	CT Conduit Coil High Temp	
			D 4 Way 3 Position Exhaust		V Intrinsically-Safe Solenoid (24VDC only)	N 3 Position Detent Manual	-DB 24VDC	D Dustproof	
145			E 4 Way 3 Position Pressure		X Weather-Proof Solenoid	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	

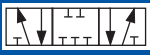
\* Not all Options are available for all models. Refer to "Options" at the end of this Section for additional information.

<sup>1</sup> Use varies. Consult the Factory for details. <sup>2</sup>Consult the Factory for additional voltages.

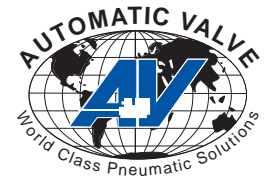
5/2



5/3



# ISO Spool Valves Standard Solenoid



## Single



I1500AAXR



I2000AAXR



I4500AAXR

## Double



I1500ABXX



I2000CBDX



I4500EBDX

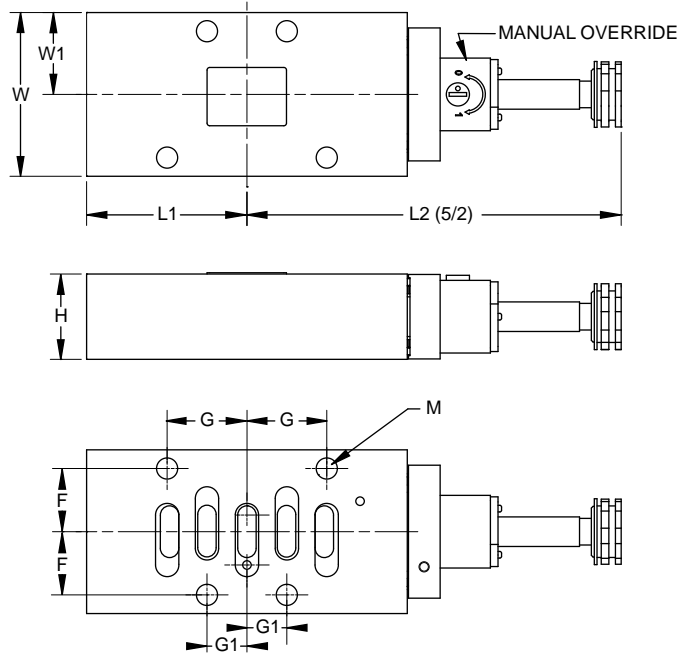
## Model Numbers

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)

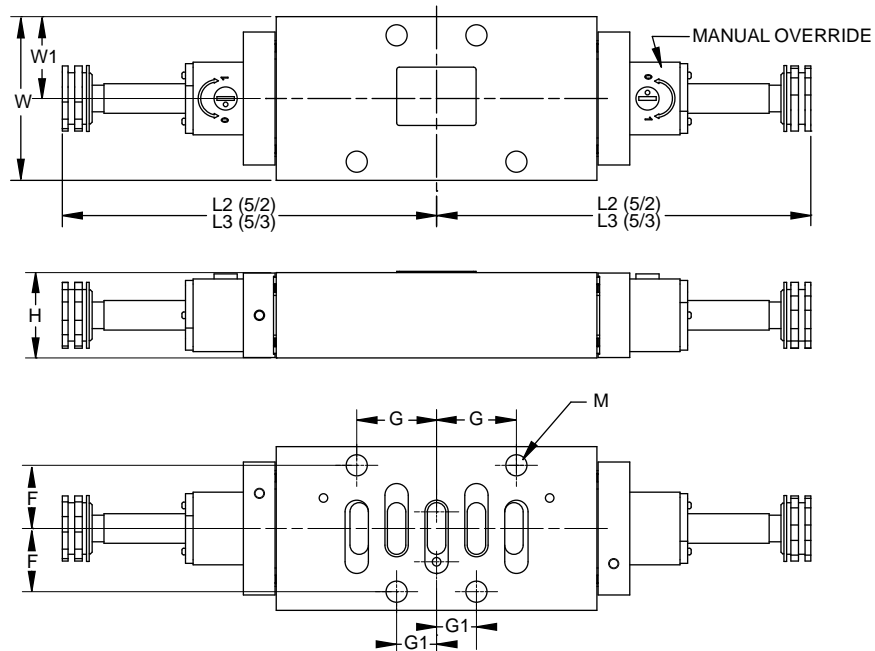
\*\* = Coil Voltage Code. Coils sold separately. Refer to "Electrical Information" at the end of this Section for additional information.

## Dimensional Information

### Single



### Double



Series	ISO Size	F	G	G1	H	L1	L2	L3	M	W	W1
<b>I15</b>	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
<b>I20</b>	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
<b>I45</b>	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

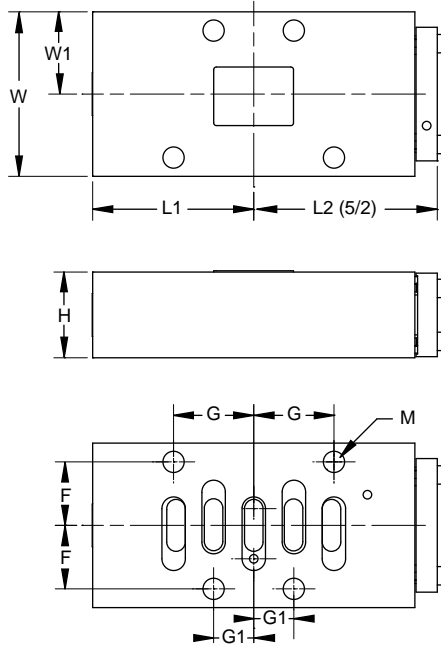
E

## Model Numbers

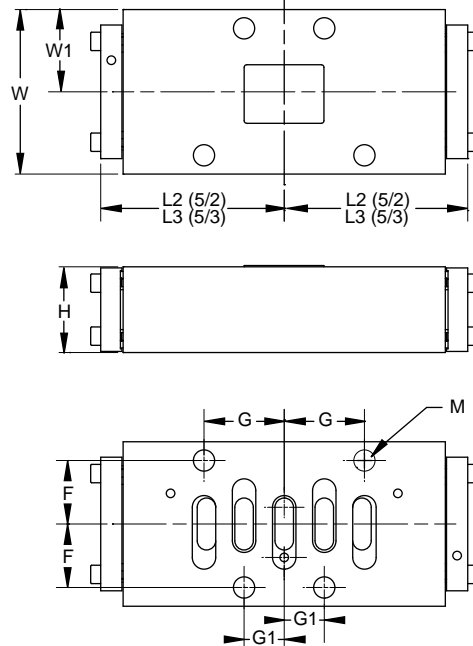
Series	ISO Size	Port Loc'n	Flow l/min (Cv)		5/2		5/3			Mat'ls		Wt Kg (lb)
			5/2	5/3	Single	Double	Block	Exhaust	Pressure	Body	Seal	
I15	1	Base	1480 (1.5)	1154 (1.2)	I1500AAAR	I1500ABAA	I1500CBADA	I1500DBADA	I1500EBADA	Aluminum	NBR	0,4 (0.9)
I20	2		1970 (2.0)	1537 (1.6)	I2000AAAR	I2000ABAA	I2000CBADA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

## Dimensional Information

### Single



### Double



Series	ISO Size	F	G	G1	H	L1	L2	L3	M	W	W1
<b>I15</b>	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
<b>I20</b>	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
<b>I45</b>	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

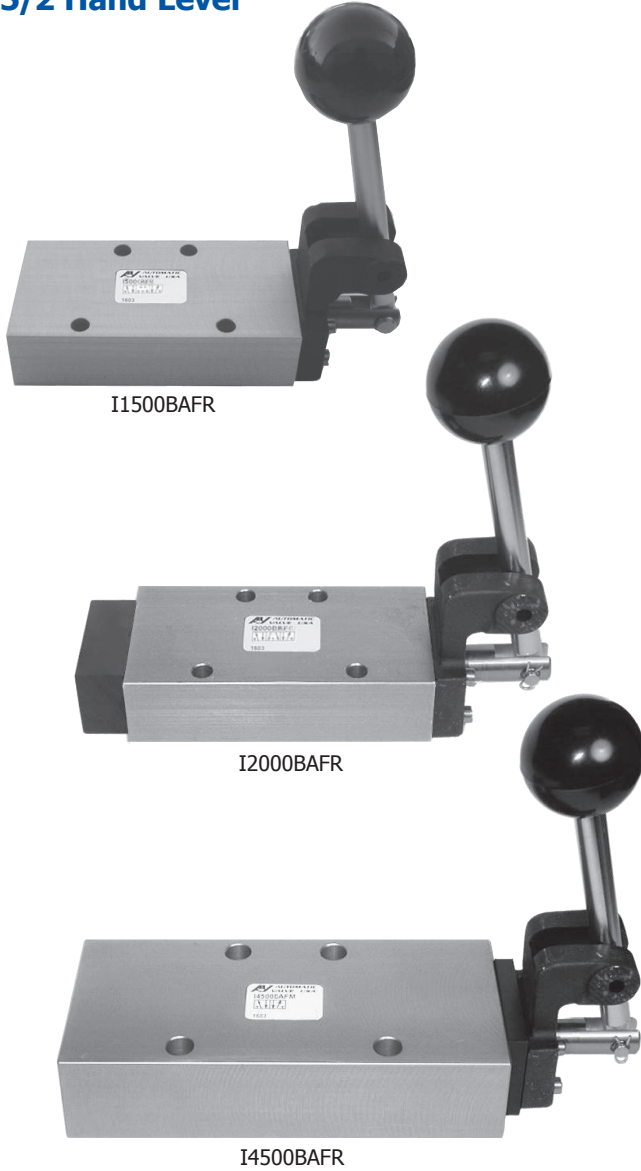




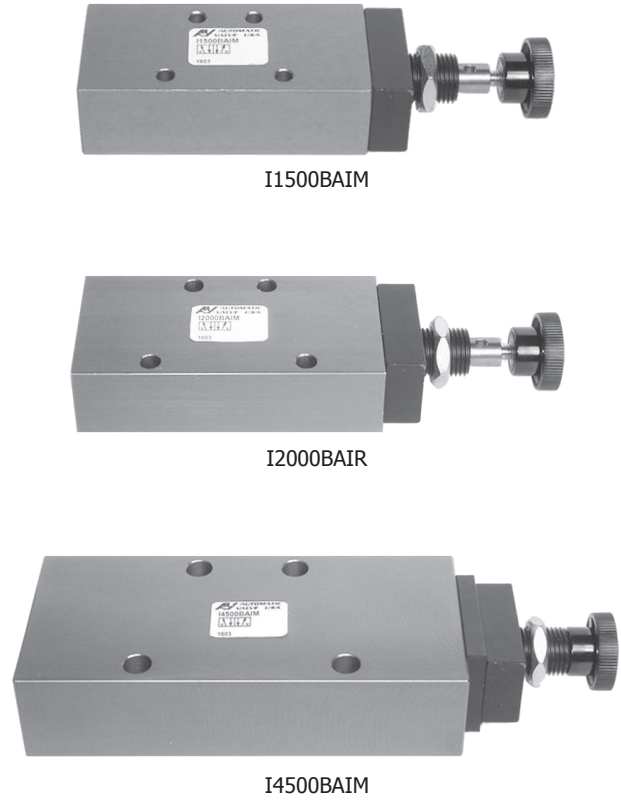
# ISO Spool Valves Manual



## 5/2 Hand Lever



## 5/2 Palm Button



E

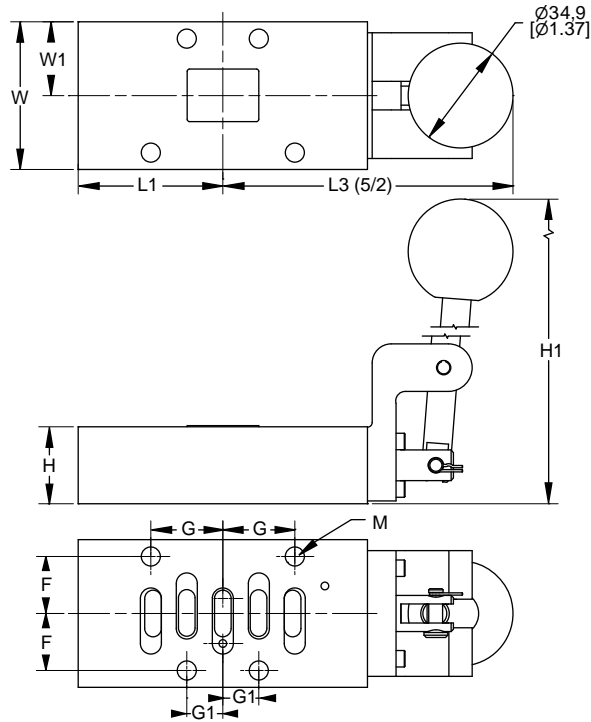
## Model Numbers

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			0,7 (1.5)
				Palm Button	I2000BAIM	I2000BAIR			
I45	3		4430 (4.5)	Hand Lever	I4500BAFM	I4500BAFR			0,9 (2.0)
				Palm Button	I4500BAIM	I4500BAIR			

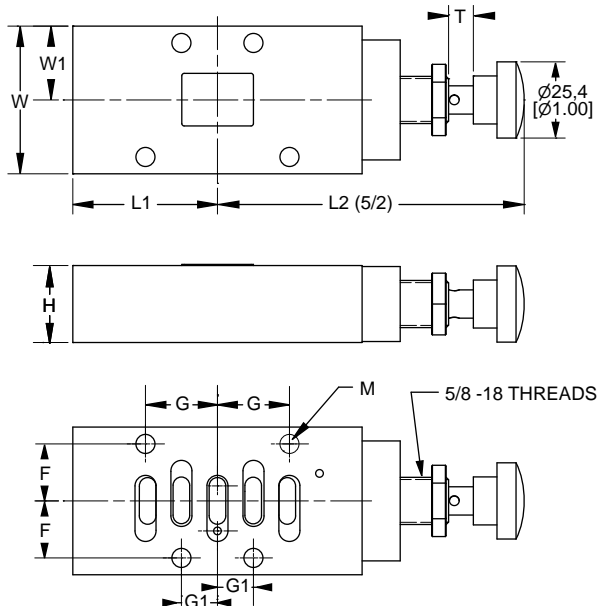


### Dimensional Information

#### 5/2 Hand Lever



#### 5/2 Palm Button



Series	ISO Size	F	G	G1	H	H1	L1	L2	L3	M	T	W	W1
<b>I15</b>	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
<b>I20</b>	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
<b>I45</b>	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

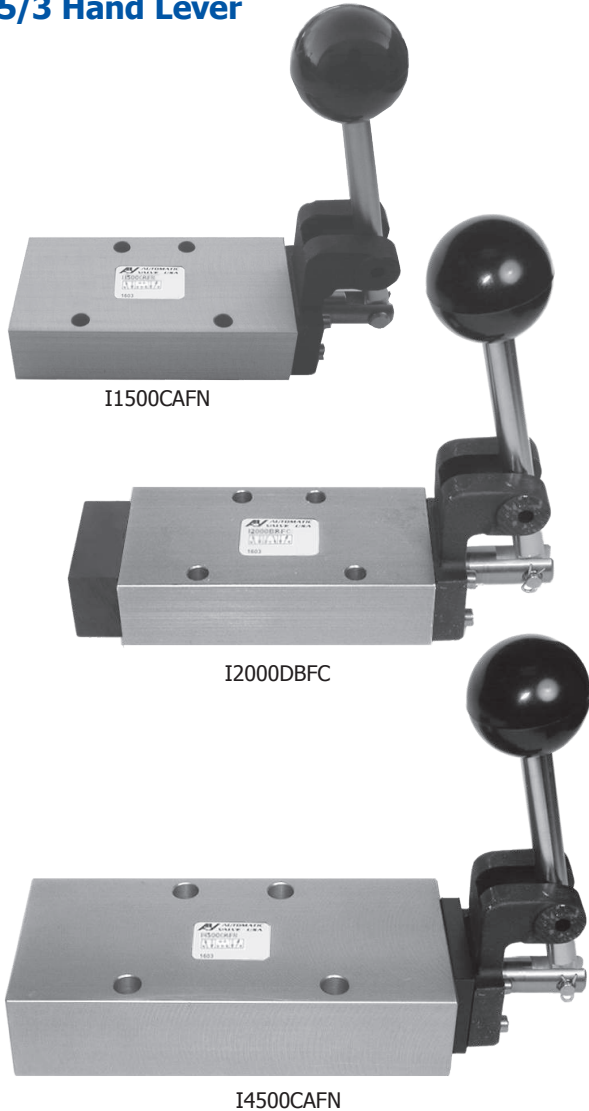
Units of Measure: Top - mm, Bottom - inches



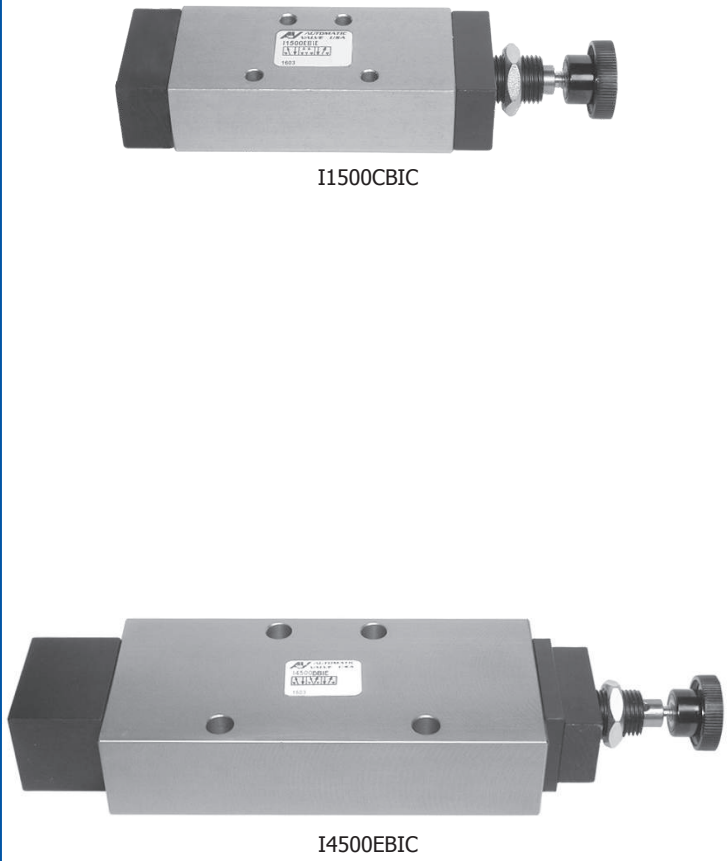
# ISO Spool Valves Manual



## 5/3 Hand Lever

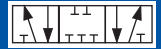


## 5/3 Palm Button



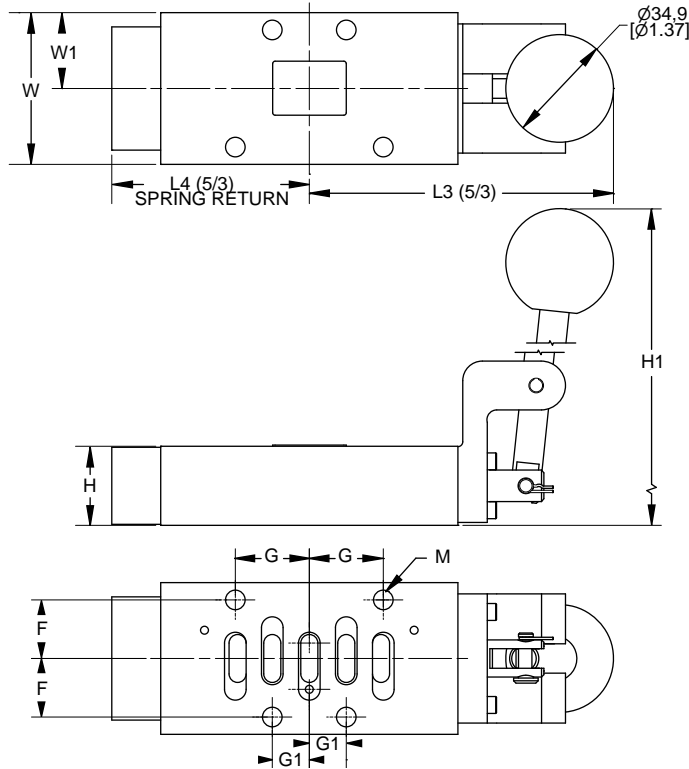
## Model Numbers

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											
I20	2	1970 (2.0)	Hand Lever									-	-	0,7 (1,5)
			Palm Button	-	-	-	-	-	-					
I45	3	4430 (4.5)	Hand Lever									-	-	0,9 (2,0)
			Palm Button											

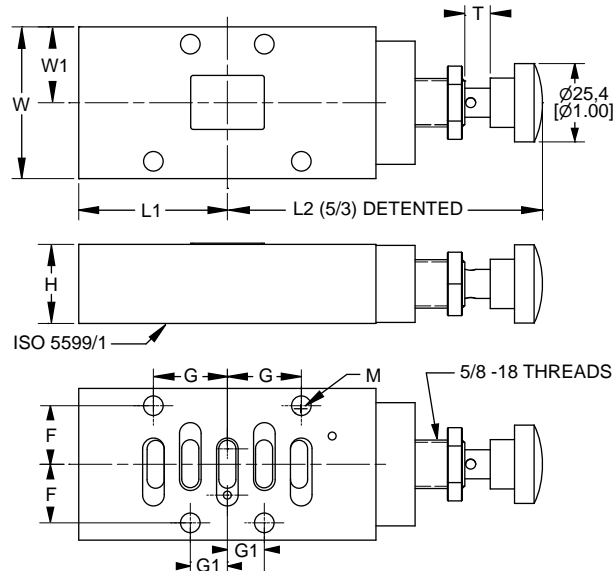


### Dimensional Information

#### 5/3 Hand Lever



#### 5/3 Palm Button



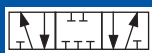
Series	ISO Size	F	G	G1	H	H1	L1	L2	L3	L4	W	W1
<b>I15</b>	1	14,0 0.55	18,0 0.71	9,0 0.35	25,4 1.00	136 5.35	44,3 1.74	102 4.00	101 3.98	60,1 2.37	41,9 1.65	21,0 0.83
<b>I20</b>	2	19,0 0.75	24,0 0.95	12,0 0.47	25,4 1.00	136 5.35	48,2 1.90	106 4.16	105 4.14	64,1 2.52	49,2 1.94	24,6 0.97
<b>I45</b>	3	24,0 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

5/2



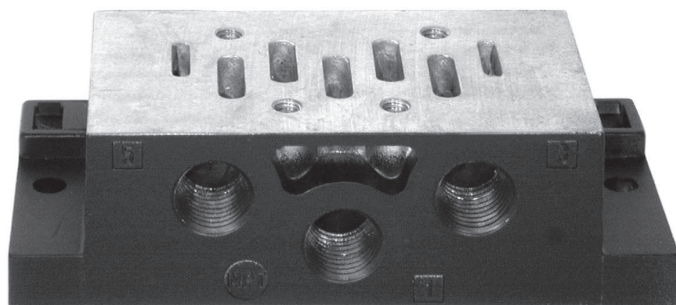
5/3



# ISO Spool Valves Sub-Bases and Manifolds

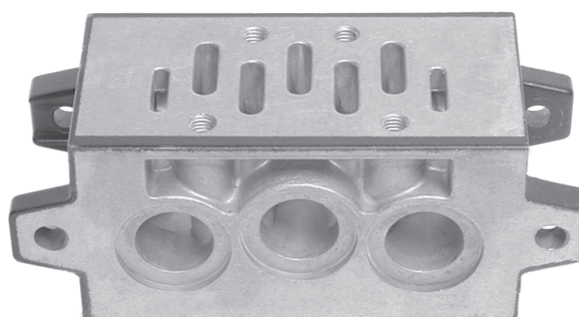


**Sub-Base**



7107-501

**Manifold (Bottom Ported Shown)**



A7107-503

E

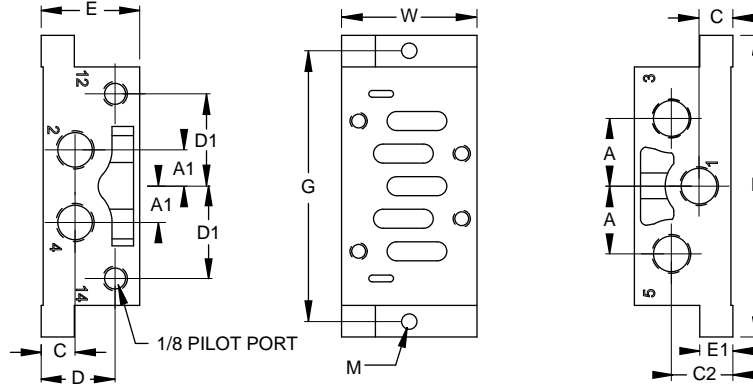
## Model Numbers

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

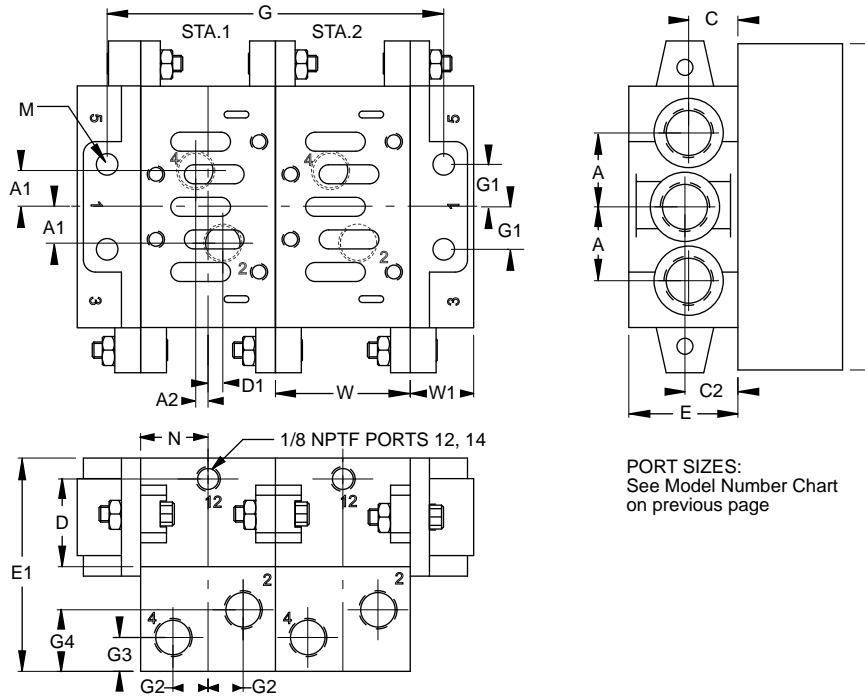
## Dimensional Information

### 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

5/2



5/3



# 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

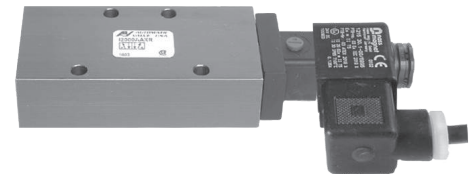
+



ATEX Explosion-Proof  
with 39" Cable

7152-9\*\*

=

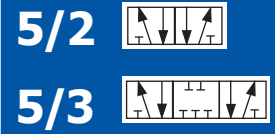


I2000AAXR-\*\*Z

E



# ISO Spool Valves Electrical Information



ISO Spool Valves

## Part Numbers

Description	Operator Type	Instructions	Wt. Kg(lb)	Coil Part Number **=Voltage
<b>Weather-Proof</b> DIN 43650 Industrial Form B Connection NEMA 4X	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	<b>7019-9**</b>
<b>Weather-Proof</b> 18" Leads NEMA 4X	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	<b>7019-9**G</b>
<b>Weather-Proof</b> 1/2" Conduit with 30" Leads NEMA 4X	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	<b>7019-9**C</b> <b>7019-9**CT</b> (high temp 82°C max)
<b>Explosion-Proof</b> 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)	<b>7019-9**Y</b>
<b>Intrinsically-Safe</b> 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)	<b>A7106-374-DB</b>
<b>A7106-374 Must be Used with an Intrinsically-Safe Barrier</b> For more information refer to "Intrinsic Safety" insert on Page D7.				
<b>Explosion-Proof</b> 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)	<b>7152-9**</b>

E

## 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	
			X		V		Z		X													
	NEMA 4	NEMA 7,9 & ATEX	NEMA		ATEX		NEMA		ATEX		NEMA		ATEX		NEMA		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					
<b>DA</b>	24/50 24/60	-	.36	-	-	-	.24	-	-	-	32	-	-	-	6.9	-	-	-				
<b>AA</b>	120/50 120/60	120/60	.08	.10	-	.04	.05	.05	-	.03	840	530	-	1664	6.9	6.5	-	3.4				
<b>AB</b>	230/50 230/60	240/60	.04	.05	-	.02	.03	.03	-	.01	3310	2345	-	6730	6.4	6.8	-	3.3				
<b>DA</b>	12 VDC	12VDC	.38	.38	-	.27	.38	.38	-	.27	32	32	-	45	4.8	4.5	-	3.5				
<b>DB</b>	24 VDC	24VDC	.20	.19	.05	.14	.20	.19	.05	.14	121	128	275	177	4.8	4.5	1.6	3.5				
<b>AB</b>	125 VDC	-	.04	-	-	-	.04	-	-	-	3310	-	-	-	5.9	-	-	-				

## Connectors (Not polarity dependent)

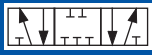
DIN 43650 Industrial Form B	Maximum Cable Diameter: 9mm (0.35")		Strain Relief with Light		1/2" Conduit without Cord	Molded with 6' Cord	Strain Relief with Light & 6' Cord	
<b>Type</b>	Strain Relief without Cord	100-240 AC 48-120 DC	6-48 AC/DC	1/2" Conduit without Cord	Molded with 6' Cord	100-240 AC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



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5/3



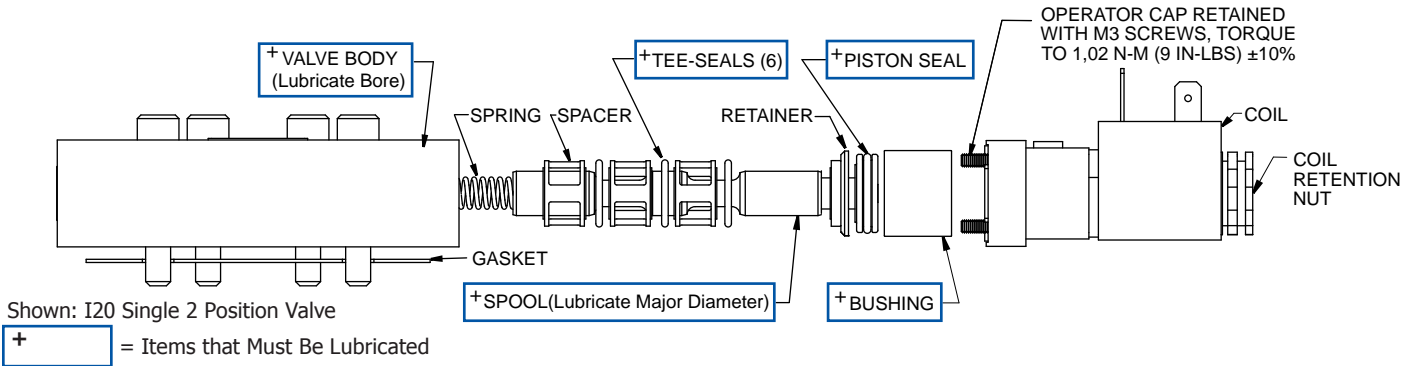
# ISO Spool Valves Options



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

Suffix	Option	Description
<b>A</b>	<b>Fluoroelastomer Seals</b>	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>B</b>	<b>External Pilot</b>	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;"><b>Field Conversion</b></p> <ul style="list-style-type: none"> <li>Remove solenoid and cap from the valve body.</li> <li>Rotate the gasket 180° so that the internal pilot hole in the valve body is covered by the gasket.</li> <li>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%.</li> <li>Remove the 1/8 NPTF pipe plug from the cap and make the external pilot connection.</li> </ul>
<b>C</b>	<b>Conduit Coil</b>	Refer to the "Electrical Information" page in this section for details.
<b>CT</b>	<b>Conduit Coil High Temperature</b>	With 30" Leads. Refer to the "Electrical Information" page in this section for details.
<b>D</b>	<b>Dustproof</b>	For applications in extremely dusty and contaminated environments. Vent ports are plugged and spring pad breather vent is eliminated.
<b>G</b>	<b>Coil With 18" Leads</b>	Refer to the "Electrical Information" page in this section for details.
<b>LL2</b>	<b>Lowest Watt Coil with Extended Turn-Locking Override</b>	Power Consumption = 0.7 Watts. Solenoid cap provides an extended override that is turned to lock in the "on" position.
<b>W</b>	<b>G Threads</b>	All ports tapped to metric "G" standard. (Sub-bases and manifolds only)
<b>Y</b>	<b>Explosion-Proof Coil (CSA, FM)</b>	Refer to the "Electrical Information" page in this section for details.
<b>Z</b>	<b>Explosion-Proof Coil (Atex, PTB)</b>	Refer to the "Electrical Information" page in this section for details.
<b>5</b>	<b>Extended Push Non-Locking Override</b>	Solenoid cap provides an extended override that is pushed in to actuate and does not lock in the "on" position.

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



## 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.

E

**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	<b>K-I15-SGL</b> K-I15-SGL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seal (1), Spring (1)	<b>K-I15-DBL</b> K-I15-DBL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seals (2)
	I20	<b>K-I20-SGL</b> K-I20-SGL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seal (1), Spring (1)	<b>K-I20-DBL</b> K-I20-DBL-A (fluoroelastamer)
I45		<b>K-I45-SGL</b> K-I45-SGL-A (fluoroelastamer)	Tee-Seals (6), Gasket (1), Piston Seal (1), Spring (1)	<b>K-I45-DBL</b> K-I45-DBL-A (fluoroelastamer)