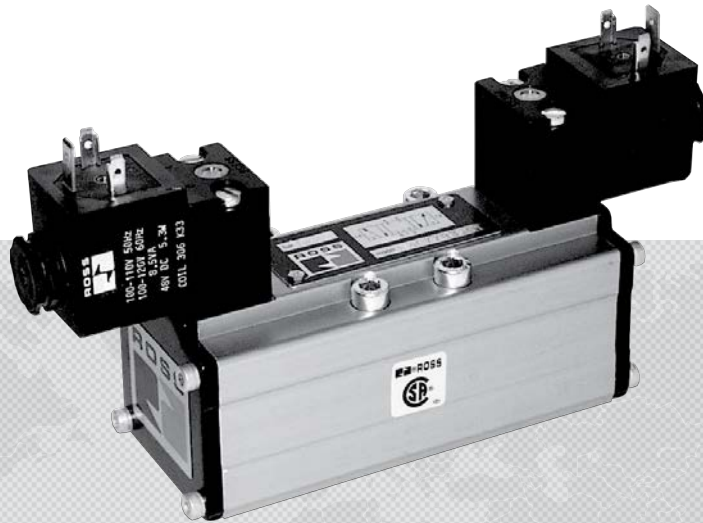




PRODUCT INFORMATION

ISO 5599-1 VALVES

W64 SERIES



ROSS CONTROLS

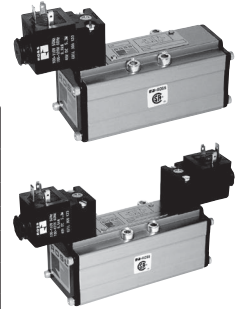
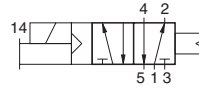
Solenoid Pilot Controlled Valves

ISO 5599-1
W64 Series

A

5-Way 2-Position Valves, Single Solenoid Pilot Controlled, Air Return

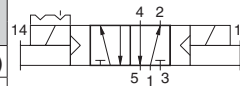
ISO Size	Port Size	Valve Model Number#*		Avg. C _v	Average Response Constants**			Weight lb (kg)
		Std. Temp.	High Temp.		F			
					In-Out	Out-Exh.		
1	1/8 - 3/8	W6476B2401W	W6476B2402W	1.0	33	2.9	5.9	1.3 (0.6)
2	3/8 - 1/2	W6476B3401W	W6476B3402W	2.0	33	1.2	2.3	1.8 (0.8)
3	1/2 - 3/4	W6476B4401W	W6476B4402W	4.0	50	0.7	1.2	2.8 (1.3)



A2

5-Way 2-Position Valves, Double Solenoid Pilot Controlled, Detented

ISO Size	Port Size	Valve Model Number#*		Avg. C _v	Average Response Constants**			Weight lb (kg)
		Std. Temp.	High Temp.		F			
					In-Out	Out-Exh.		
1	1/8 - 3/8	W6476B2407W	W6476B2408W	1.0	16	2.9	5.6	1.8 (0.8)
2	3/8 - 1/2	W6476B3407W	W6476B3408W	2.0	16	1.2	2.3	2.3 (1.0)
3	1/2 - 3/4	W6476B4407W	W6476B4408W	4.0	16	0.7	1.1	3.3 (1.5)



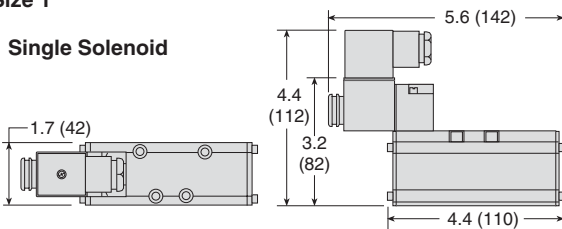
#Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., W6476B2401Z. For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately, refer to page A2.8-9.

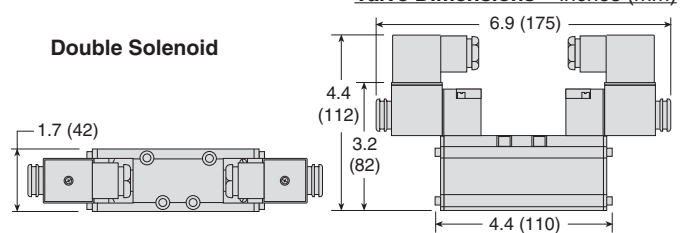
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

ISO Size 1

Single Solenoid

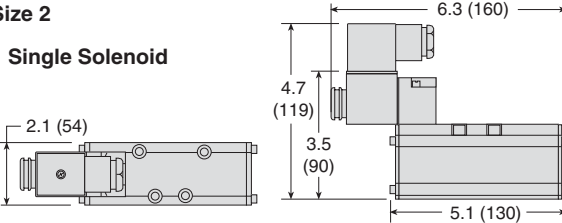


Double Solenoid

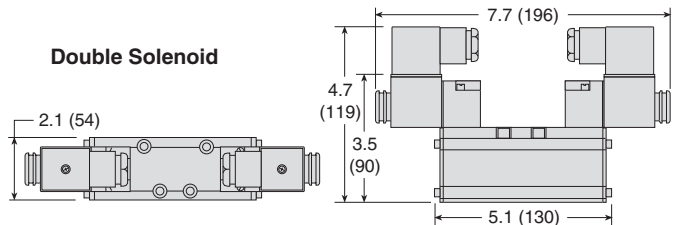


ISO Size 2

Single Solenoid

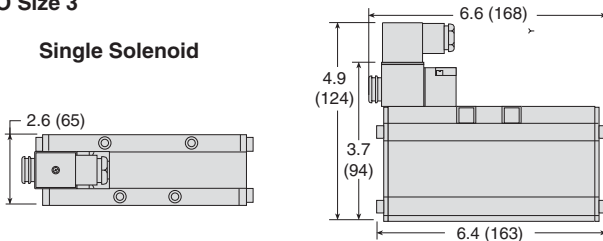


Double Solenoid

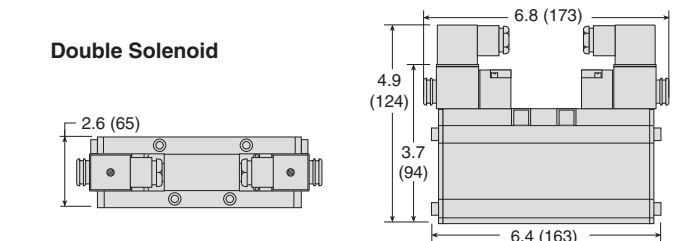


ISO Size 3

Single Solenoid



Double Solenoid



Valve Dimensions – inches (mm)

Options: Indicator Light (in electrical connectors); refer to page A2.11. Accessories ordered separately, refer to page A2.10-11.

STANDARD SPECIFICATIONS (for valves on this page):

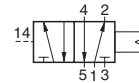
Construction Design	Poppet	Temperature - Media	Standard Temp: 40° to 175°F (4° to 80°C) High Temp: 40° to 220°F (4° to 105°C) For other temperature ranges, consult ROSS.
Mounting Type	Base	Flow Media	Filtered air
Solenoids	Rated for continuous duty	Pilot Supply	Internal or External; Selected automatically
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Operating Pressure	Pilot Supply - Internal or External: 30 to 150 psig (2 to 10 bar) When external pilot supply, pressure must be equal to or greater than inlet pressure.
Power Consumption (each solenoid)	6 watts on DC; 11 VA inrush, 8.5 VA holding on 50 or 60 Hz	Construction Material	Valve Body: Bar Stock Aluminum Poppet: Aluminum & Stainless Steel Seals: Buna-N or Fluorocarbon
Enclosure Rating	IP65, IEC 60529	Manual Override	Flush; Metal, non-locking
Electrical Connections	EN 175301-803 Form A		
Temperature - Ambient	Standard Temp: 40° to 120°F (4° to 50°C) High Temp: 40° to 175°F (4° to 80°C)		

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

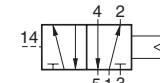
Pressure Controlled Valves

A

5-Way 2-Position Valves, Single Pressure Controlled, Air Return								
ISO Size	Port Size	Valve Model Number*		Avg. C _v	Average Response Constants**			Weight lb (kg)
		Std. Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/8 - 3/8	W6456B2411	W6456B2412	1.0	33	2.9	5.9	0.8 (0.4)
2	3/8 - 1/2	W6456B3411	W6456B3412	2.0	33	1.2	2.3	1.3 (0.6)
3	1/2 - 3/4	W6456B4411	W6456B4412	4.0	50	0.7	1.2	2.3 (1.1)



5-Way 2-Position Valves, Double Pressure Controlled, Detented								
ISO Size	Port Size	Valve Model Number*		Avg. C _v	Average Response Constants**			Weight lb (kg)
		Std. Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/8 - 3/8	W6456B2417	W6456B2418	1.0	16	2.9	5.6	1.8 (0.8)
2	3/8 - 1/2	W6456B3417	W6456B3418	2.0	16	1.2	2.3	2.3 (1.0)
3	1/2 - 3/4	W6456B4417	W6456B4418	4.0	18	0.7	1.1	3.3 (1.5)



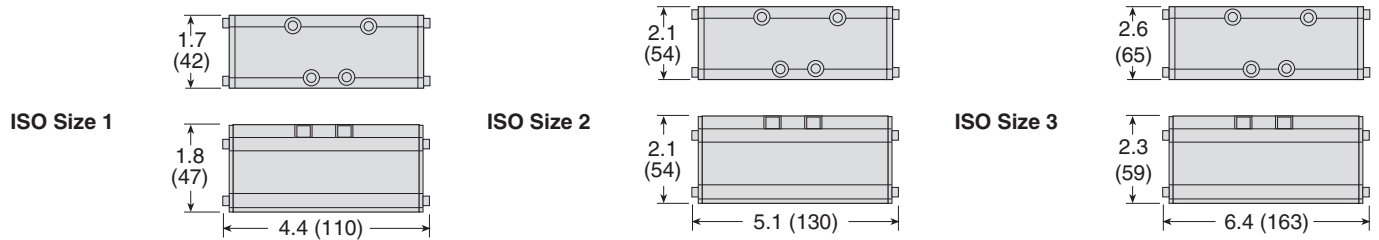
A2

* Sub-bases and manifold bases ordered separately, refer to page A2.8-9.

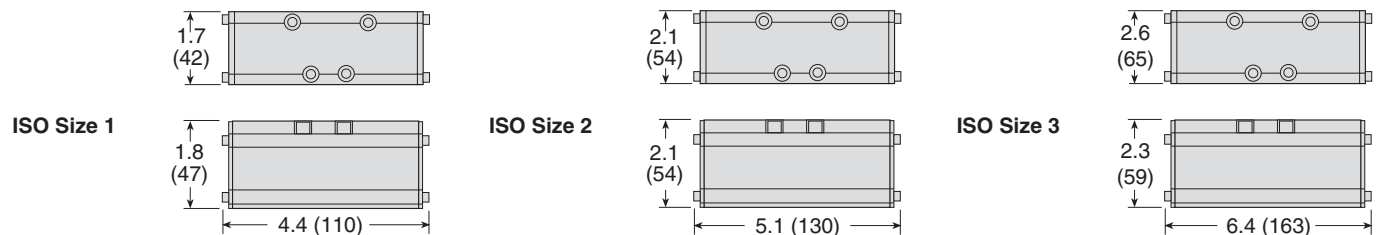
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

Single Pressure Controlled



Double Pressure Controlled



Accessories ordered separately, refer to page A2.10-11.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	Base	Pilot Supply	External
Temperature	Ambient/Media: Standard Temp: 40° to 175°F (4° to 80°C) High Temp: 40° to 220°F (4° to 105°C) <i>For other temperature ranges, consult ROSS.</i>	Operating Pressure	30 to 150 psig (2 to 10 bar) <i>Pilot supply pressure must be equal to or greater than inlet pressure.</i>

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

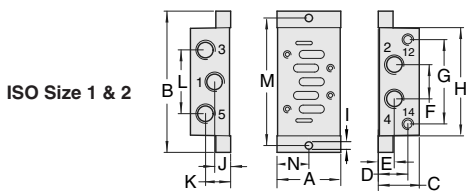


Single Bases

for ISO 5599-1 Valves
W60 & W64 Series

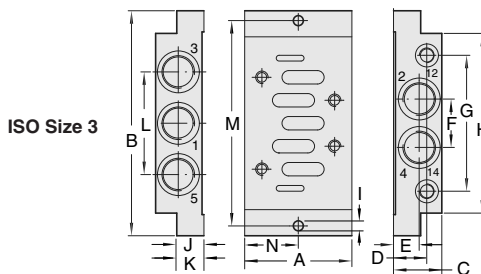
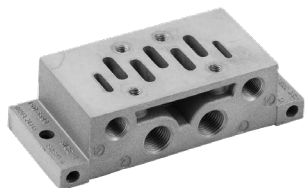
A ISO 5599-1 Single Bases, Side Ports

ISO Size	Port Size			Model Number	
	2, 4	1, 3, 5	12, 14	NPT Threads	G Threads
1	1/4	1/4	1/8	2076C01	D2076C01
2	3/8	3/8	1/8	2078C01	D2078C01
3	1/2	1/2	1/8	2080C01	D2080C01



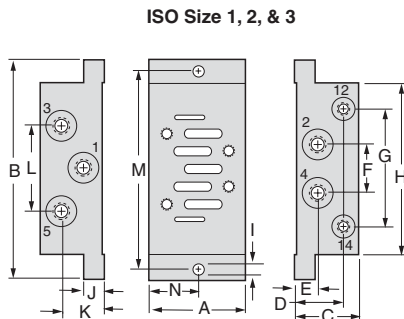
	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	1.81 (46)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.88 (124)	5.87 (149)
C	1.18 (30)	1.42 (36)	1.26 (32)
D	0.85 (21.5)	1.02 (26)	0.87 (22)
E	0.39 (10)	0.55 (14)	0.67 (17)
F	0.94 (24)	1.18 (30)	1.26 (32)
G	2.38 (60.5)	3.91 (74)	3.54 (90)
H	3.27 (83)	3.74 (95)	2.69 (119)
I	0.22 (5.5)	2.56 (6.5)	0.26 (6.6)
J	0.41 (10.5)	0.41 (10.5)	0.67 (17)
K	0.77 (19.5)	0.87 (22)	0.67 (17)
L	1.69 (43)	2.20 (56)	2.67 (68)
M	3.86 (98)	4.41 (112)	5.35 (136)
N	0.90 (23)	1.10 (28)	1.40 (35.5)

A2



ISO Size	Port Size			Model Number*
	2, 4	1, 3, 5	12, 14	NPT Threads
1	1/8	1/4	1/8	654K91
	3/8	3/8	1/8	642K91
2	1/2	1/2	1/8	643K91
3	3/4	3/4	1/2	644K91

* NPT port threads only.

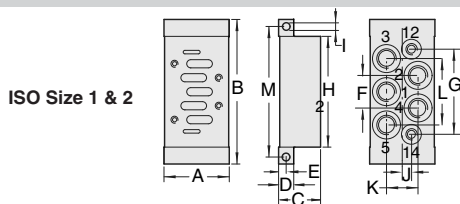


	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	1.89 (48)	2.24 (57)	2.80 (71)
B	4.33 (110)	4.88 (124)	5.87 (149)
C	1.26 (32)	1.57 (40)	1.26 (32)*
D	0.93 (24)	1.18(30)	0.87 (22)
E	0.41 (38)	0.55 (14)	0.67 (17)
F	0.94 (24)	1.18 (30)	1.26 (32)
G	2.28 (58)	2.92 (74)	3.54 (90)
H	3.27 (83)	3.74 (95)	2.69 (119)
I	0.22 (6)	0.26 (7)	0.26 (7)
J	0.41 (38)	0.55 (14)	0.67 (17)
K	0.85 (22)	1.02 (26)	0.59 (15)
L	1.70 (43)	2.20 (56)	2.68 (68)
M	3.86 (22)	4.41 (112)	5.35 (136)

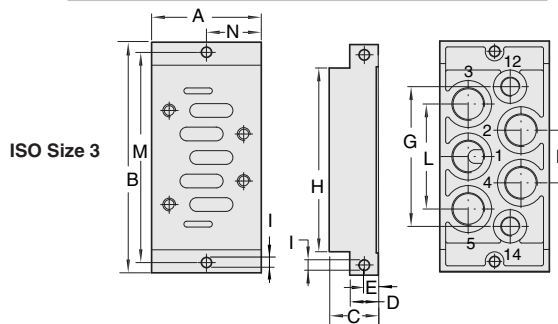
* 1.77 (45) on sub-base 644K91.

ISO 5599-1 Single Bases, Bottom Ports

ISO Size	Port Size			Model Number	
	2, 4	1, 3, 5	12, 14	NPT Threads	G Threads
1	1/4	1/4	1/8	2077C01	D2077C01
2	3/8	3/8	1/8	2079C01	D2079C01
3	1/2	1/2	1/8	2081C01	D2081C01



	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	1.81 (46)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.88 (124)	5.87 (149)
C	1.18 (30)	1.42 (36)	1.26 (32)
D	0.39 (10)	0.51 (13)	0.71 (18)
E	0.20 (5)	0.26 (6.5)	0.35 (9)
F	0.94 (24)	1.18 (30)	1.26 (32)
G	2.36 (60)	2.87 (73)	3.54 (90)
H	3.27 (83)	3.74 (95)	2.69 (119)
I	0.22 (5.5)	2.56 (6.5)	0.26 (6.6)
J	0.41 (10.5)	0.41 (10.5)	-
K	0.91 (23)	1.06 (27)	-
L	1.81 (46)	2.24 (57)	-
M	3.86 (98)	4.41 (112)	5.35 (136)
N	-	-	1.40 (35.5)

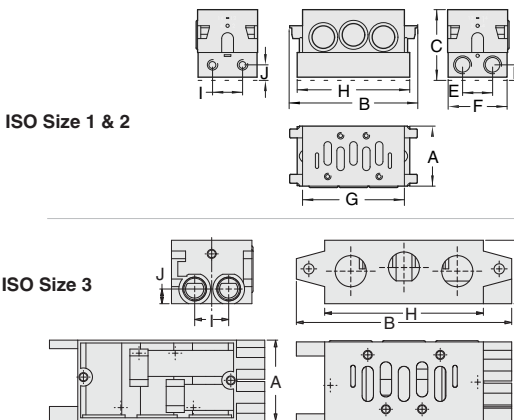


IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

ISO 5599-1 Manifold Bases, Side Ports

ISO Size	Port Size		Model Number	
	2, 4	12, 14	NPT Threads	G Threads
1	1/4	1/8	2002K91	D2002K91
2	3/8	1/8	2003K91	D2003K91
3	1/2	1/8	2004K91	D2004K91

In addition to the manifold stations, an end station kit must be ordered for each manifold installation.



	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	1.69 (43)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.72 (120)	7.48 (190)
C	2.05 (52)	2.60 (66)	2.20 (56)
D	0.39 (10)	0.57 (14.5)	–
E	0.87 (22)	1.10 (28)	–
F	1.65 (42)	2.17 (55)	–
G	2.95 (75)	3.74 (95)	–
H	3.50 (89)	4.13 (105)	5.51 (140)
I	0.87 (22)	1.10 (28)	1.18 (30)
J	0.39 (10)	0.57 (14.5)	0.51 (13)

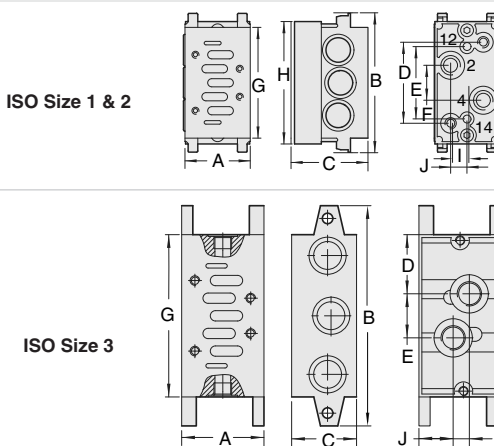


Connectors and gaskets are included with each manifold base. The ISO Size 1 & 2 manifold bases contain 3 O-rings and 2 connector brackets.

ISO 5599-1 Manifold Bases, Bottom Ports

ISO Size	Port Size		Model Number	
	2, 4	12, 14	NPT Threads	G Threads
1	1/4	1/8	1997K91	D1997K91
2	3/8	1/8	1998K91	D1998K91
3	1/2	1/8	1999K91	D1999K91

In addition to the manifold stations, an end station kit must be ordered for each manifold installation.

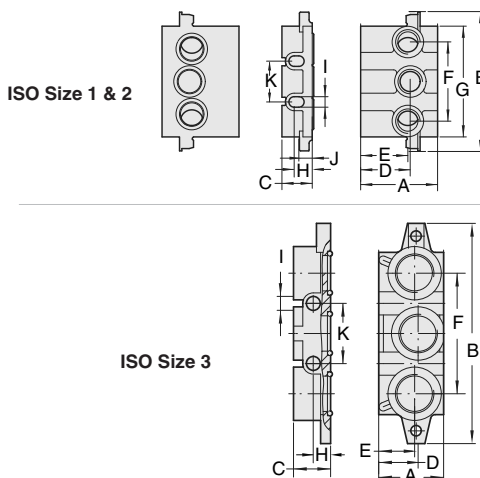


	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	1.69 (43)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.72 (120)	7.48 (190)
C	2.05 (52)	2.60 (66)	2.20 (56)
D	2.28 (58)	2.73 (69.5)	2.01 (51)
E	1.57 (40)	2.44 (62)	1.50 (38)
F	0.79 (20)	1.18 (30)	–
G	2.28 (58)	2.73 (69.5)	5.51 (140)
H	3.50 (89)	4.13 (105)	–
I	0.35 (9)	0.55 (14)	0.55 (14)
J	0.43 (11)	0.55 (14)	0.16 (29.5)



End Station Kits - ISO Size 1, 2, & 3

ISO Size	Port Size		Model Number	
	1, 3, 5	NPT Threads	G Threads	
1	3/8	723K86	D723K86	
2	1/2	724K86	D724K86	
3	1	731K86	D731K86	



	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	2.05 (52)	2.60 (66)	2.20 (56)
B	3.94 (100)	4.72 (120)	7.48 (190)
C	0.87 (22)	1.02 (26)	1.26 (32)
D	1.53 (39)	1.67 (42.5)	1.34 (34)
E	1.22 (31)	1.59 (40.5)	1.22 (31)
F	2.17 (55)	2.68 (68)	4.09 (104)
G	2.95 (75)	3.74 (95)	–
H	0.55 (14)	0.61 (15.5)	0.59 (15)
I	0.28 (7)	0.35 (9)	0.47 (12)
J	0.39 (10)	0.45 (11.5)	–
K	1.10 (28)	1.38 (35)	2.05 (52)



IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

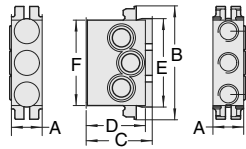
Manifold Kits & Accessories

for ISO 5599-1 Valves W60 & W64 Series

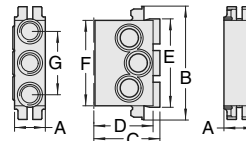
A Air Supply Module Top & Bottom Ports - ISO Size 1 & 2

ISO Size	Ports Size	Model Number			
		Top Ports		Bottom Ports	
		NPT Threads	BSPP Threads	NPT Threads	G Threads
1	3/8	725K86	D725K86	727K86	D727K86
2	1/2	726K86	D726K86	728K86	D728K86

Top Ports ISO Size 1 & 2



Bottom Ports ISO Size 1 & 2



	Dimensions inches (mm)	
	ISO 1	ISO 2
A	1.06 (27)	1.06 (27)
B	3.94 (100)	4.72 (120)
C	2.28 (58)	2.71 (69)
D	2.05 (52)	2.60 (66)
E	3.07 (78)	3.74 (95)
F	2.95 (75)	3.74 (95)
G	2.20 (56)	2.20 (56)

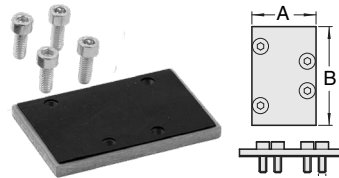


A2

Blanking Plate Kits - ISO Size 1, 2, & 3

ISO Size	Model Number
1	2602H77
2	2603H77
3	2604H77

A blanking plate is used to cover the top of a manifold station that is not in use. A kit consists of a metal plate, a gasket, and mounting bolts.



	Dimensions inches (mm)		
	ISO 1	ISO 2	ISO 3
A	1.57 (40)	2.04 (52)	3.03 (77)
B	2.60 (66)	3.15 (80)	4.17 (106)
Plate Thickness	0.16 (4)	0.24 (6.2)	0.41 (12)

Assembly Kits - ISO Size 1 & 2

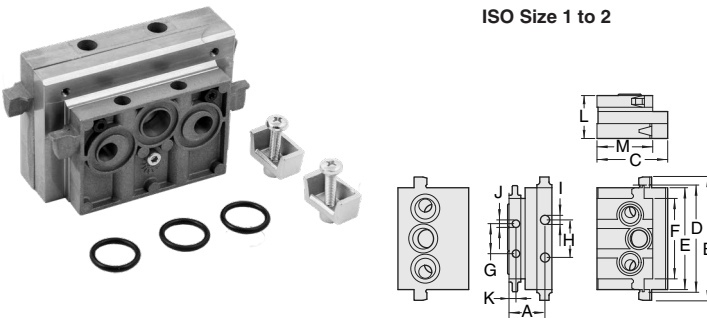
ISO Size	Model Number
1	732K86
2	733K86



Transition Modules - ISO Size 1, 2 & 3

ISO Size	Model Number
1 to 2	729K86
2 to 3	730K86

Different size ISO valves can be used in the same manifold installation by means of transition module. The inlet and exhaust ports of two different size manifold stations are connected by means of a transition module installed between the two stations.



	Dimensions inches (mm)	
	ISO 1 & 2	ISO 2 to 3
A	1.32 (33.5)	1.10 (28)
B	4.72 (120)	7.48 (190)
C	2.60 (66)	2.60 (66)
D	3.94 (100)	3.94 (100)
E	3.74 (95)	6.61 (168)
F	2.95 (75)	2.20 (56)
G	1.10 (28)	1.38 (35)
H	1.38 (35)	-
I	0.34 (8.5)	2.56 (6.5)
J	0.28 (7)	0.34 (8.5)
K	2.56 (6.5)	0.56 (14)
L	1.58 (40)	-
M	2.05 (52)	1.61 (41)

Blocking Disks - ISO Size 1 & 2

Ports between manifold stations can be closed by means of blocking disks.

ISO Size	Model Number
1	319A40
2	320A40
3	321A40



Independent Pressure Modules

When a valve in a manifold installation must work at a different pressure than that supplied to the manifold, an independent supply can be provided via an independent pressure module. The pressure module mounts between valve and base and isolates the valve from the manifold inlet pressure. The independent supply is connected to an inlet port in the end of the pressure module.

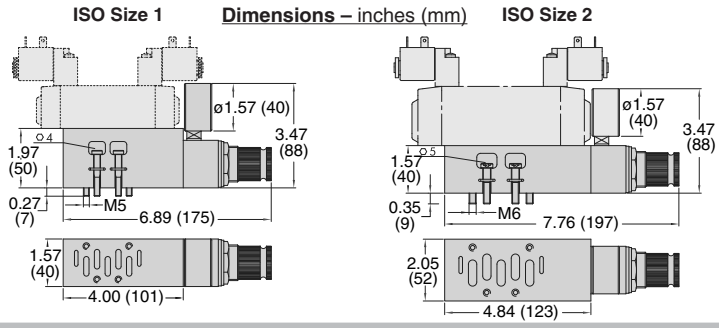
ISO Size	Inlet Port	Part Number
1	1/4	703K77
2	3/8	692K77
3	1/2	715K77

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Accessories

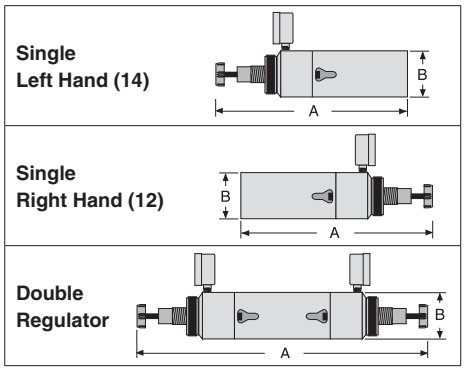
Interposed Pressure Regulators

Single pressure regulators available. Downstream pressure must always be set to increasing values. Max upstream pressure 190 psig (13 bar). Pressure can be regulated from 0 to 175 psig (0 to 12 bar). Requires no new piping.



ISO Size	Model Number	Weight lb (kg)
1	2000K91	1.68 (0.76)
2	2001K91	1.99 (0.9)

Single and double pressure regulators are available. Single left hand (14) and single right hand (12) regulators are available. Single pressure regulators provide the same regulated pressure at both outlet ports. Double pressure regulators allow the pressure at each outlet port to be set independently. Pressure can be regulated from 0 to 150 psig (0 to 10 bar). Requires no new piping.



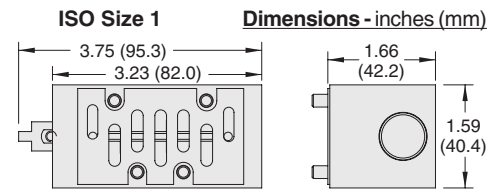
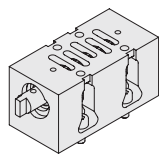
ISO Size	Regulator Model Number		
	Single		Double
	Left Hand (14)	Right Hand (12)	
1	1300K91	1301K91	1302K91
2	1303K91	1304K91	1305K91
3	1306K91	1307K91	1308K91

ISO Size	Regulator Dimensions – inches (mm)		
	A (Single)	A (Double)	B (Single/Double)
1	7.3 (186)	13.2 (336)	1.5 (39)
2	8.3 (211)	14.8 (376)	2.0 (51)
3	10.5 (267)	18.3 (465)	2.5 (64)

Interposed Shut-Off

Manually actuated with a 1/4 turn, the interposed shut-off isolates all ports, including the pilot.

ISO Size	Part Number
1	1871B91
2 & 3	Please contact ROSS.



Interposed Flow Controls (for W60 Series valves only)

An interposed flow control unit regulates the exhaust flow of air from a pneumatic cylinder, thereby controlling the extension and retraction speeds. Separate controls regulate the air flow from each end of the cylinder. Being located between the valve and base, the unit requires no additional piping.

ISO Size	Model Number
1	701B77
2	702B77
3	722K77

Electrical Connectors

Electrical Connector	Electrical Connector Type	Cord Length meters (feet)	Cord Diameter	Electrical Connector Model Number		
				Without Light	Lighted Connector*	
					24 Volts DC	120 Volts AC
EN 175301-803 Form A	Prewired Connector (18 gauge)	2 (6½)	6-mm	721K77	720K77-W	720K77-Z
	Prewired Connector (18 gauge)	2 (6½)	10-mm	371K77	383K77-W	383K77-Z
	Connector for threaded conduit (1/2 inch electrical conduit fittings)	–	–	723K77	724K77-W	724K77-Z
	Connector Only	–	–	937K87	936K87-W	936K87-Z



*Lights in connectors with a translucent housing can be used as indicator lights to show when solenoids are energized.

Silencers

Port Size	Thread Type	Model Number		Avg. Cv	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	R Threads		Width	Length	
1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
1/2	Male	5500A4003	D5500A4003	4.7	1.3 (32)	3.6 (91)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (91)	0.2 (0.1)



Pressure Range: 0 to 290 psig (0 to 20 bar) maximum. Flow Media: Filtered air.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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General Information

Standard Specifications

The standard specifications for the products on each page of this catalog are given on the same page or referenced. For solenoid pilot valves, models with internal pilot supply are listed. Most models are also available for use with external pilot supply or have a built-in pilot supply selector valve.

The products in this catalog are intended for use in industrial pneumatic systems. Most products are adaptable to other uses and conditions not covered by the standard specifications given in this catalog. Weights shown are approximate and are subject to change. Dimensions given, unless otherwise noted, are envelope dimensions (not for mounting). Consult ROSS for further information.

Port Threads

Ports of valves and bases described in this catalog have NPT (ANSI B2.1) threads. Other thread types can be specified by putting an appropriate prefix letter on the model number when ordering.

Thread Types by Model Prefix Letter

Pneumatic Port Threads	Prefix Letter	Threaded Electrical Opening
NPT (ANSI B2.1)	None	NPT
ISO 228 - DIN 259 Parallel, BSPP [#]	C*	—
ISO 228 - DIN 259 Parallel, BSPP [#]	D	G
ISO 228 - JIS B0203 Tapered [#]	J	ISO
SAE 1926- ISO 11926	S	NPT

* Used only for filters, regulators, lubricators.

[#] ISO 228 threads supersedes BSPP, G and JIS thread types.

Flow Ratings

Flow ratings are expressed as C_v where $C_v = 1$ corresponds to a steady state air flow of approximately 32 scfm under the following conditions:

Inlet pressure = 100 psig (6.7 bar)
Pressure drop = 10 psi (0.69 bar)
Air temperature = 68°F (20°C)
Relative humidity = 36%

Note: Because widely differing test standards are used to measure C_v values, the figures given in this catalog should not be used to compare ROSS valves with those of other makers. The C_v ratings given here are intended only for use with performance charts published by ROSS. The C_v ratings are averages for the various flow paths through the valve and are for steady flow conditions.

Approvals and Certifications

ROSS products are designed to meet a number of industrial standards, including the Canadian Standards Association (C.S.A.) guidelines. For more information on specific product approvals, contact your local distributor or ROSS.

Solenoids

All ROSS standard solenoids are rated for continuous duty (unless noted otherwise) and will operate the valve within the air pressure range specified in this catalog.

Explosion-Proof Solenoid Pilot available, for more information consult ROSS.

Voltage & Hertz

When ordering a solenoid valve, also specify the desired solenoid voltage and hertz.

Voltage Types by Model Suffix Letter

Voltage	Suffix Letter
120 volts AC	Z
220 volts AC	Y
12 volts DC	H
24 volts DC	W
48 volts DC	M
90 volts DC	K
110 volts DC	P
125 volts DC	C

Recommended Solenoid Voltages: 100-110 volts AC, 50 Hz; 100-120 volts AC, 60 Hz; 24 volts DC; 110 volts DC.

In addition, the following voltages are available:

200, 220 volts AC, 50 Hz
200, 240, 480 volts AC, 60 Hz
24, 48, 220 volts AC, 50 Hz
240 volts AC, 60 Hz
200, 220 volts AC, 50 Hz
200, 240 volts AC, 60 Hz.

For example: Model 2773B5001, 120 volts AC, 60 Hz.
Model W6076B2401, 220 volts AC, 50 Hz.

Please note that not all configurations are available for all models.

For additional information or help with voltage configuration, please contact your local distributor or ROSS.

Port Identification

Valve symbols in this catalog conform to the ISO 1219-1:1991 standard of the International Organization for Standardization (ISO) and the SAE J2051 standard of the Society of Automotive Engineers (SAE) respectively.

Information or Technical Assistance

For additional information or application assistance concerning ROSS products, consult ROSS or your local ROSS distributor (see contact information on the back cover).

Order Placement

For order placement, consult ROSS or your local ROSS distributor.
For a current list of countries and local distributors, visit ROSS' website at rosscontrols.com.

CAUTIONS, WARNINGS and STANDARD WARRANTY

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.
3. All applicable instructions should be read and complied with before using any fluid power system in order to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use. If you have any questions, call your nearest ROSS location listed on the cover of this document.
4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products.

WARNING: Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.

FILTRATION and LUBRICATION

5. Dirt, scale, moisture, etc. are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. ROSS recommends a filter with a 5-micron rating for normal applications.
6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do *not* fail to use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.

7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks human injury, and/or damage to property.

AVOID INTAKE/EXHAUST RESTRICTION

8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.
9. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

WARNING: ROSS expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size, or an inadequately maintained silencer installed with a ROSS product.

POWER PRESSES

10. Mechanical power presses and other potentially hazardous machinery using a pneumatically controlled clutch and brake mechanism must use a press control double valve with a monitoring device. A double valve without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All double valve installations involving hazardous applications should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.

ENERGY ISOLATION/EMERGENCY STOP

11. Per specifications and regulations, ROSS L-O-X® and L-O-X® with EEZ-ON® operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

STANDARD WARRANTY

limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND ROSS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ROSS MAKES NO WARRANTY WITH RESPECT TO ITS PRODUCTS MEETING THE PROVISIONS OF ANY GOVERNMENTAL OCCUPATIONAL SAFETY AND/OR HEALTH LAWS OR REGULATIONS. IN NO EVENT IS ROSS LIABLE TO PURCHASER, USER, THEIR EMPLOYEES OR OTHERS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM A BREACH OF THE WARRANTY DESCRIBED ABOVE OR THE USE OR MISUSE OF THE PRODUCTS. NO STATEMENT OF ANY REPRESENTATIVE OR EMPLOYEE OF ROSS MAY EXTEND THE LIABILITY OF ROSS AS SET FORTH HEREIN.

All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation under this warranty is





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There are ROSS Distributors Throughout the World

To meet your requirements across the globe, ROSS distributors are located throughout the world. Through ROSS or its distributors, guidance is available for the selection of ROSS products, both for those using pneumatic components for the first time and those designing complex systems.

Other literature is available for engineering, maintenance, and service requirements.

If you need products or specifications not shown in this catalog, please visit ROSS' website, contact ROSS or your ROSS distributor. The ROSS Support Team will be happy to assist you in selecting the best product for your application.

For a current list of countries and local distributors, visit ROSS' at rosscontrols.com.