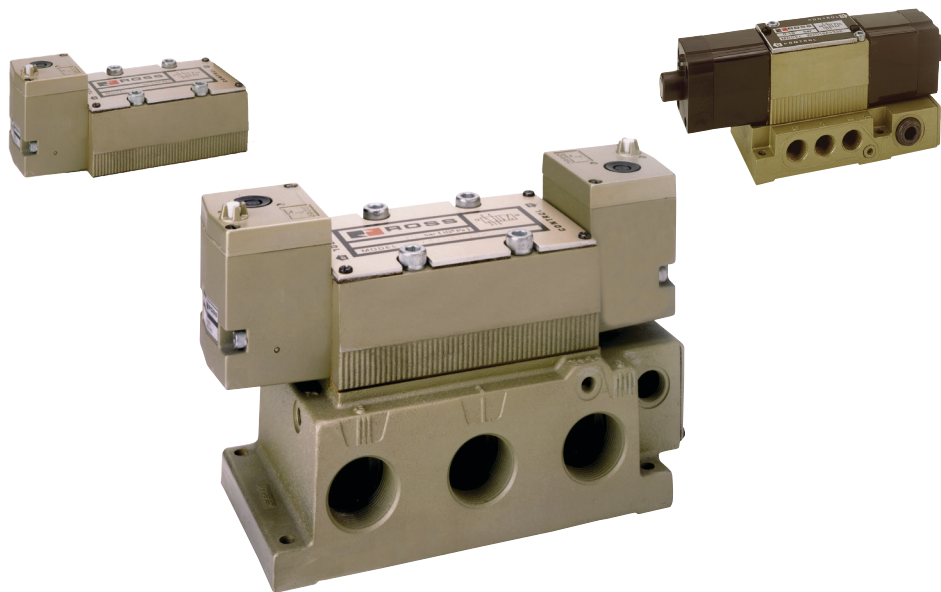




ANSI VALVES



PRODUCT CATALOG

ANSI Valves W70 Series

Product Overview

The ROSS® ANSI valves W70 Series are base mounted spool and sleeve valves that conform to the American National Standards Institute (ANSI) standards for valve-to-base interface configurations, including plug-and-socket electrical connections between valve and base.

These ANSI Size 1, 2.5, 4, 10, and 20 valves are available as, 2- and 3-position, 5-ported 4-way solenoid pilot or pressure controlled valves with either internal or external pilot supply. The spool and sleeve design means there are no seals to wear out.

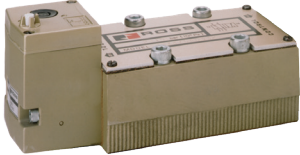
Solenoid Pilot Controlled	Direct Solenoid Controlled	Pressure Controlled
		

Illustration examples.

VALVE FEATURES

Spool Design	Spool and Sleeve construction for high dirt tolerance
Mounting Options	Individual sub-base or manifold base mounting
Pilot Supply	Internal or external; suitable for vacuum service (with external pilot supply)
Pilot Operation	Provides high shifting force with low power consumption

Actuation	ANSI Size	Available Inlet Port Sizes							Functions									Flow C _v (NI/min)	Page	
		1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	5/2		5/3			5/2		5/3				
									Single	Double	Power Center	Closed Center	Open Center	Direct		Double Direct				
														Single	Double	Power Center	Closed Center			Open Center
Solenoid Control	1	●	●						●	●	●	●	●	●	●	●	●	1.0 (980)	4 – 15	
	2.5		●	●					●	●	●	●	●	●		●	●	2.5 (2500)		
	4			●	●				●	●	●	●	●	●		●	●	4.2 (4100)		
	10				●	●	●		●	●	●							10 (9800)		
	20						●	●	●	●	●							22 (22000)		
Pressure Control	1	●	●						●	●	●	●	●	—			1.0 (980)	16 – 21		
	2.5		●	●					●	●		●	●	—			2.5 (2500)			
	4			●	●				●	●		●	●	—			4.2 (4100)			
	10				●	●	●		●	●		●	●	—			10 (9800)			
	20						●	●	●	●		●	●	—			22 (22000)			
Sub-Bases																		32 – 39		
Manifold Bases																		40 – 41		
Accessories																		44 – 46		

STANDARD SPECIFICATIONS

GENERAL	Function	5/2 Valve	
		5/3 Valve	
	Construction Design	Spool and Sleeve	
	Actuation	Electrical	Solenoid Pilot Controlled
		Pneumatic	Pressure Controlled
	Mounting	Sub-Base or Manifold	
	Connection	Threaded Port	NPT
			G
	Manual Override	Flush; rubber, non-locking	

OPERATING CONDITIONS	Temperature	Solenoid Pilot Controlled	Ambient		40° to 120°F (4° to 50°C)
			Media		40° to 175°F (4° to 80°C)
		Pressure Controlled	Ambient		40° to 175°F (4° to 80°C)
			Media		
	Flow Media		Filtered air		
	Operating Pressure		Vacuum to 150 psig (Vacuum to 10 bar)		
	Pilot Supply Pressure	ANSI Size	1 & 20	Minimum 30 psig (2 bar)	
			2.5, 4, 10	Minimum 15 psig (1 bar)	
	External Pilot Supply		Must be equal to or greater than inlet pressure		

ELECTRICAL DATA FOR SOLENOID PILOT CONTROLLED VALVES	Solenoids	Control	ANSI Size	Current Flow	Operating Voltage	Power Consumption (each solenoid)	
		Solenoid Pilot	1	DC	24 volts	5 watts	
				AC	100-110 volts, 50 Hz	10 VA inrush, 24 VA holding	
					100-130 volts, 60 Hz		
					230-240 volts, 60 Hz		
			2.5, 4, 10, 20	DC	24 volts	14 watts	
				AC	100-110 volts, 50 Hz	87 VA inrush, 55 VA holding	
					100-130 volts, 60 Hz		
					230-240 volts, 60 Hz		
		Direct Solenoid	1	DC	24 volts	20 watts	
				AC	110-120 volts, 50/60 Hz	140 VA inrush, 30 VA holding	
					230-240 volts, 60 Hz		
			2.5 & 4	DC	24 volts	20 watts	
				AC	110-120 volts, 50/60 Hz	380 VA inrush, 79 VA holding	
					230-240 volts, 60 Hz		
		Rated for continuous duty					
		ANSI Size 4, 10, & 20			Indicator Light – One per solenoid		

CONSTRUCTION MATERIAL	Valve Body	Cast Aluminum
	Spool	Stainless Steel
	Seals	Buna-N

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

PRODUCT CREDENTIALS

Certificate of Compliance	Declaration of Conformity	
		

Ordering Information

5/2 Single Solenoid Pilot Controlled Valves

SINGLE SOLENOID PILOT CONTROLLED VALVES5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number		
		24 V DC	110-120 V AC	230 V AC
1	1/4 – 3/8	W7076B2331W	W7076B2331Z	W7076B2331Y
2.5	3/8 – 1/2	W7076A3331W	W7076A3331Z	W7076A3331Y
4	3/8 – 3/4	W7076D4331W	W7076D4331Z	W7076D4331Y
10	3/4 – 1-1/4	W7076C6331W	W7076C6331Z	W7076C6331Y
20	1-1/4 – 1-1/2	W7076C8331W	W7076C8331Z	W7076C8331Y

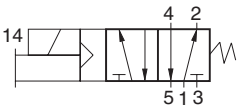
For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.6	4.9	3.0 (1.4)
2.5	3/8 – 1/2	2.5 (2500)	17	1.6	2.7	3.0 (1.4)
4	3/8 – 3/4	4.2 (4100)	20	0.6	0.6	5.3 (2.4)
10	3/4 – 1-1/4	10 (9800)	30	0.3	0.3	7.3 (3.3)
20	1-1/4 – 1-1/2	22 (22000)	50	0.1	0.2	14.5 (6.5)

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 Schematic

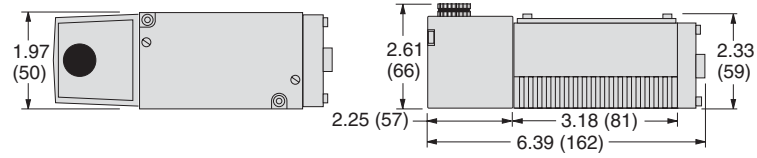


5/2 Single Solenoid Pilot Controlled Valves

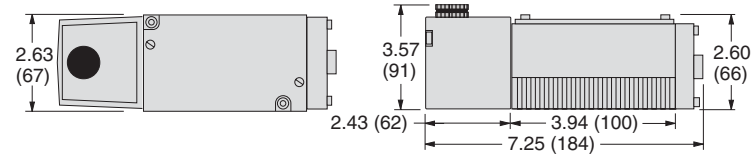
DIMENSIONS

Inches (mm)

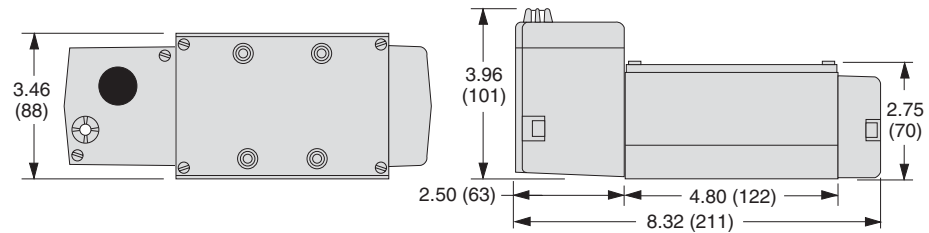
ANSI Size 1



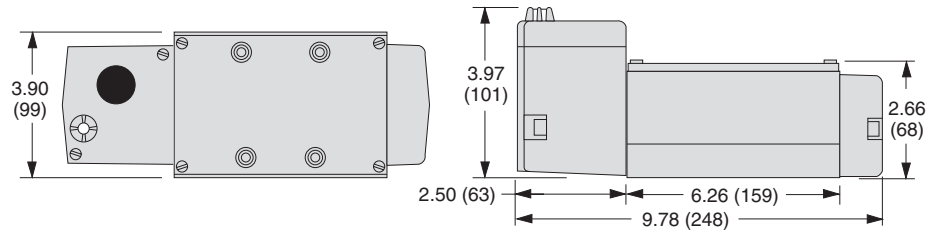
ANSI Size 2.5



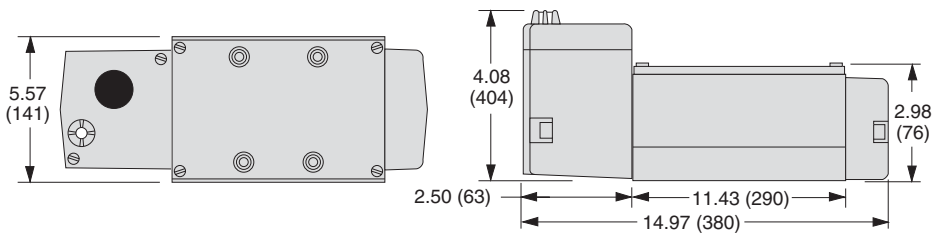
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Ordering Information

5/2 Double Solenoid Pilot Controlled Valves

DOUBLE SOLENOID PILOT CONTROLLED VALVES

5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number		
		24 V DC	110-120 V AC	230 V AC
1	1/4 – 3/8	W7076B2332W	W7076B2332Z	W7076B2332Y
2.5	3/8 – 1/2	W7076A3332W	W7076A3332Z	W7076A3332Y
4	3/8 – 3/4	W7076D4332W	W7076D4332Z	W7076D4332Y
10	3/4 – 1-1/4	W7076C6332W	W7076C6332Z	W7076C6332Y
20	1-1/4 – 1-1/2	W7076C8332W	W7076C8332Z	W7076C8332Y

For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.6	4.9	4.0 (1.8)
2.5	3/8 – 1/2	2.5 (2500)	17	1.6	2.7	4.0 (1.8)
4	3/8 – 3/4	4.2 (4100)	20	0.6	0.6	6.5 (2.9)
10	3/4 – 1-1/4	10 (9800)	30	0.3	0.3	9.0 (4.1)
20	1-1/4 – 1-1/2	22 (22000)	50	0.1	0.2	15.8 (6.8)

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 Schematic

5/2 Double Solenoid Pilot Controlled Valves

DIMENSIONS	Inches (mm)
ANSI Size 1	
ANSI Size 2.5	
ANSI Size 4	
ANSI Size 10	
ANSI Size 20	
Downloadable CAD models available.	

Ordering Information

5/3 Double Solenoid Pilot Controlled Valves

DOUBLE SOLENOID PILOT CONTROLLED VALVES

5-Way 3-Position Valves

Center Position	ANSI Size	Base Port Size *	Valve Model Number		
			24 V DC	110-120 V AC	230 V AC
Power Center	1	1/4 – 3/8	W7077B2906W	W7077B2906Z	W7077B2906Y
	2.5	3/8 – 1/2	W7077A3904W	W7077A3904Z	W7077A3904Y
	4	3/8 – 3/4	W7077C4939W	W7077C4939Z	W7077C4939Y
	10	3/4 – 1-1/4	W7077A6920W	W7077A6920Z	W7077A6920Y
	20	1-1/4 – 1-1/2	W7077A8901W	W7077A8901Z	W7077A8901Y
Closed Center	1	1/4 – 3/8	W7077B2331W	W7077B2331Z	W7077B2331Y
	2.5	3/8 – 1/2	W7077A3331W	W7077A3331Z	W7077A3331Y
	4	3/8 – 3/4	W7077D4331W	W7077D4331Z	W7077D4331Y
	10	3/4 – 1-1/4	W7077C6331W	W7077C6331Z	W7077C6331Y
	20	1-1/4 – 1-1/2	W7077C8331W	W7077C8331Z	W7077C8331Y
Open Center	1	1/4 – 3/8	W7077B2332W	W7077B2332Z	W7077B2332Y
	2.5	3/8 – 1/2	W7077A3332W	W7077A3332Z	W7077A3332Y
	4	3/8 – 3/4	W7077D4332W	W7077D4332Z	W7077D4332Y
	10	3/4 – 1-1/4	W7077C6332W	W7077C6332Z	W7077C6332Y
	20	1-1/4 – 1-1/2	W7077C8332W	W7077C8332Z	W7077C8332Y

For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.6	4.9	4.0 (1.8)
2.5	3/8 – 1/2	2.5 (2500)	17	1.6	2.7	4.0 (1.8)
4	3/8 – 3/4	4.2 (4100)	20	0.6	0.6	6.5 (2.9)
10	3/4 – 1-1/4	10 (9800)	30	0.3	0.3	8.5 (3.8)
20	1-1/4 – 1-1/2	22 (22000)	50	0.1	0.2	15.3 (6.9)
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 Schematics		
Power Center	Closed Center	Open Center

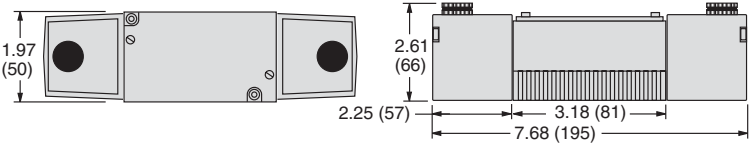
Valve Technical Data

5/3 Double Solenoid Pilot Controlled Valves

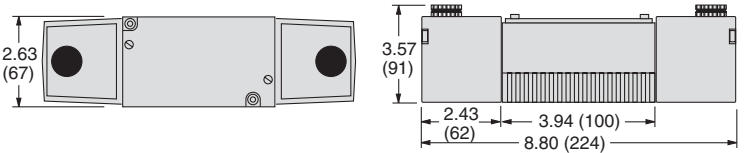
DIMENSIONS

Inches (mm)

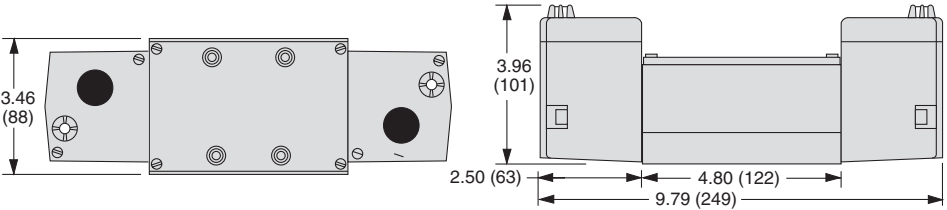
ANSI Size 1



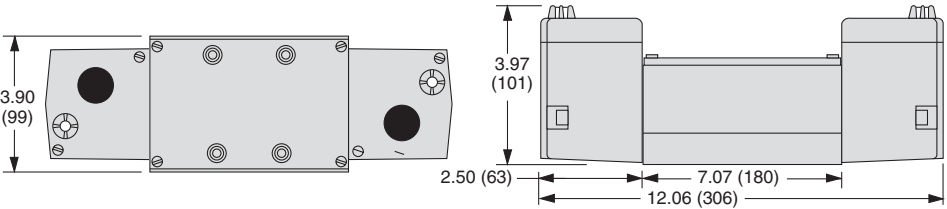
ANSI Size 2.5



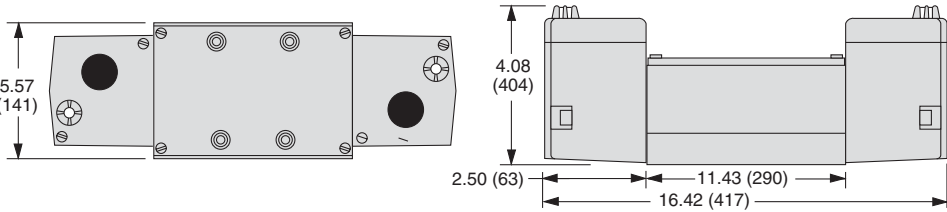
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.



Ordering Information

5/2 Direct Single Solenoid Pilot Controlled Valves

DIRECT SOLENOID PILOT CONTROLLED VALVES5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number		
		24 V DC	110-120 V AC	230 V AC
1	1/4 – 3/8	W7016B2331W	W7016B2331Z	W7016B2331Y
2.5	3/8 – 1/2	–	W7016A3331Z	W7016A3331Y
4	3/8 – 3/4	–	W7016C4331Z	W7016C4331Y

For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.6	4.9	3.5 (1.6)
2.5	3/8 – 1/2	2.5 (2500)	17	1.6	2.7	3.3 (1.5)
4	3/8 – 3/4	4.2 (4100)	20	0.6	0.6	4.3 (1.9)

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 Schematic

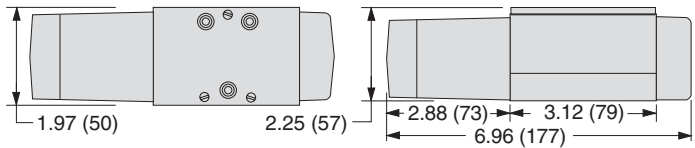
Valve Technical Data

5/2 Direct Single Solenoid Pilot Controlled Valves

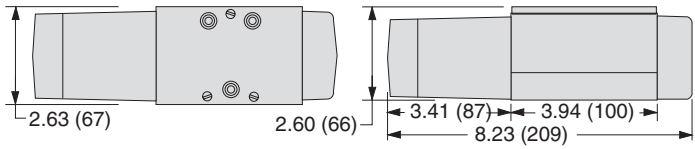
DIMENSIONS

Inches (mm)

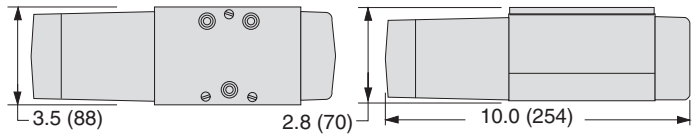
ANSI Size 1



ANSI Size 2.5



ANSI Size 4



Downloadable CAD models available.



Ordering Information

5/2 Direct Double Solenoid Pilot Controlled Valves

DIRECT SOLENOID PILOT CONTROLLED VALVES5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number		
		24 V DC	110-120 V AC	230 V AC
1	1/4 – 3/8	W7016B2332W	W7016B2332Z	W7016B2332Y
2.5	3/8 – 1/2	–	W7016A3332Z	W7016A3332Y
4	3/8 – 3/4	–	W7016C4332Z	W7016C4332Y

For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.6	4.9	3.5 (1.6)
2.5	3/8 – 1/2	2.5 (2500)	17	1.6	2.7	3.3 (1.5)
4	3/8 – 3/4	4.2 (4100)	20	0.6	0.6	4.3 (1.9)

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 Schematic

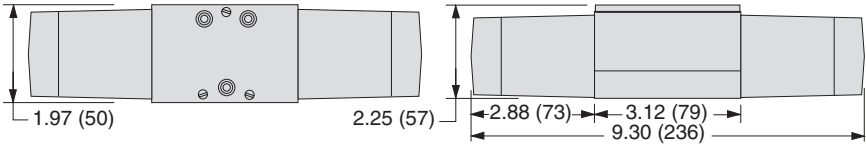
Valve Technical Data

5/2 Direct Double Solenoid Pilot Controlled Valves

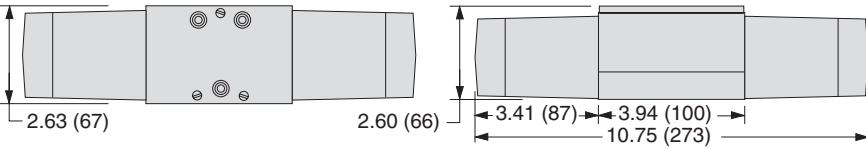
DIMENSIONS

Inches (mm)

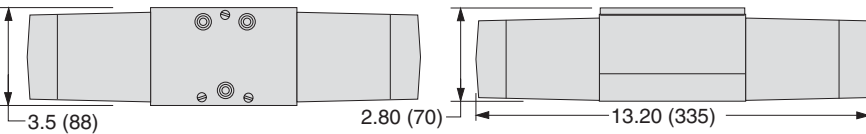
ANSI Size 1



ANSI Size 2.5



ANSI Size 4



Downloadable CAD models available.



Ordering Information

5/3 Direct Double Solenoid Pilot Controlled Valves

DIRECT SOLENOID PILOT CONTROLLED VALVES5-Way 3-Position Valves

Center Position	ANSI Size	Base Port Size *	Valve Model Number		
			24 V DC	110-120 V AC	230 V AC
Power Center	1	1/8 – 3/8	W7017B2905W	W7017B2905Z	W7017B2905Y
Closed Center	1	1/8 - 3/8	W7017B2331W	W7017B2331Z	W7017B2331Y
	2.5	3/8 - 1/2	W7017A3331W	W7017A3331Z	W7017A3331Y
	4	1/2 - 3/4	W7017C4331W	W7017C4331Z	W7017C4331Y
Open Center	1	1/8 - 3/8	W7017B2332W	W7017B2332Z	W7017B2332Y
	2.5	3/8 - 1/2	W7017A3332W	W7017A3332Z	W7017A3332Y
	4	1/2 - 3/4	W7017C4332W	W7017C4332Z	W7017C4332Y

For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/8 - 3/8	1.0 (980)	20	3.5	4.9	4.5 (2.0)
2.5	3/8 - 1/2	1.9 (1900)	10	1.3	1.8	5.0 (2.3)
4	1/2 - 3/4	3.8 (3700)	–	–	–	5.8 (2.6)

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 Schematics		
Power Center	Closed Center	Open Center

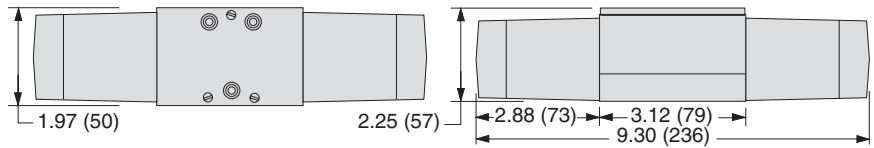
Valve Technical Data

5/3 Direct Double Solenoid Pilot Controlled Valves

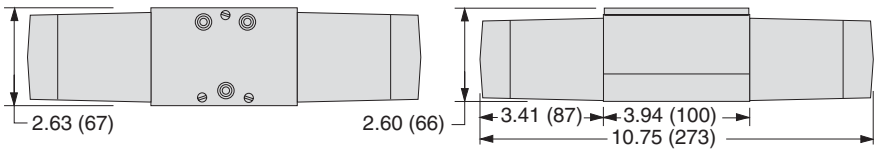
DIMENSIONS

Inches (mm)

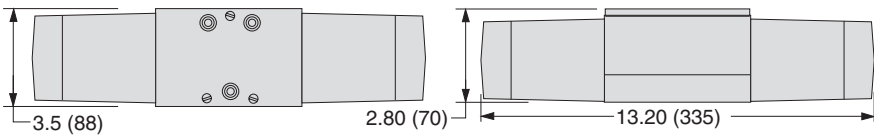
ANSI Size 1



ANSI Size 2.5



ANSI Size 4



Downloadable CAD models available.



Ordering Information

5/2 Single Pressure Controlled Valves

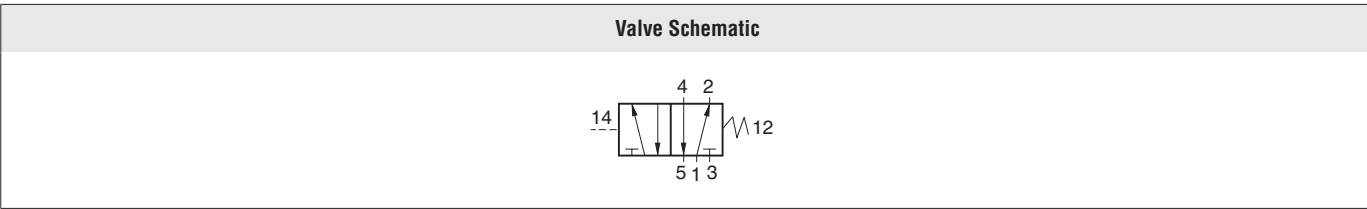
PRESSURE CONTROLLED VALVES5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number
1	1/4 – 3/8	W7056B2331
2.5	3/8 – 1/2	W7056A3331
4	3/8 – 3/4	W7056B4331
10	3/4 – 1-1/4	W7056A6331
20	1-1/4 – 1-1/2	W7056A8331

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.6	4.9	2.5 (1.1)
2.5	3/8 – 1/2	2.5 (2500)	17	1.5	2.6	2.0 (0.9)
4	3/8 – 3/4	4.2 (4100)	12	0.6	0.7	4.3 (1.9)
10	3/4 – 1-1/4	10 (9800)	20	0.3	0.3	6.3 (2.8)
20	1-1/4 – 1-1/2	22 (22000)	30	0.1	0.2	13.0 (5.9)

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.

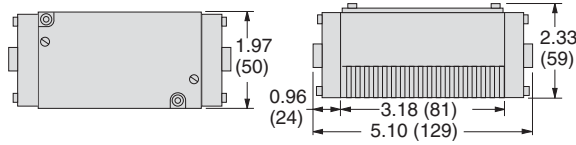


5/2 Single Pressure Controlled Valves

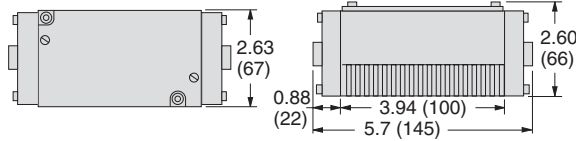
DIMENSIONS

Inches (mm)

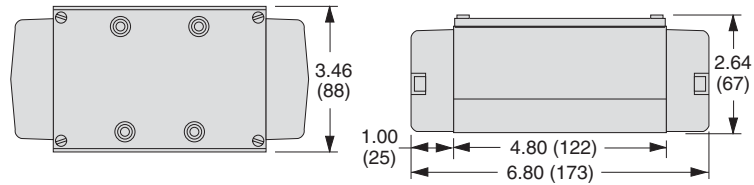
ANSI Size 1



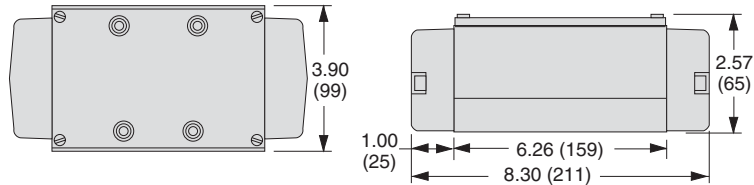
ANSI Size 2.5



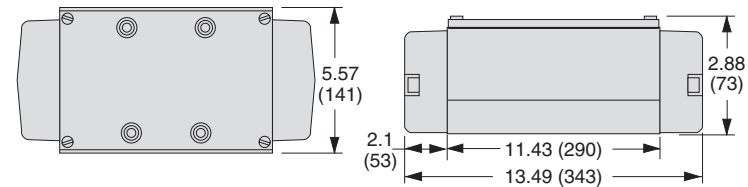
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Ordering Information

5/2 Double Pressure Controlled Valves

PRESSURE CONTROLLED VALVES

5-Way 2-Position Valves

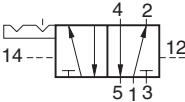
ANSI Size	Base Port Size *	Valve Model Number
1	1/4 – 3/8	W7056B2332
2.5	3/8 – 1/2	W7056A3332
4	3/8 – 3/4	W7056B4332
10	3/4 – 1-1/4	W7056A6332
20	1-1/4 – 1-1/2	W7056A8332

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.5	4.9	2.5 (1.1)
2.5	3/8 – 1/2	2.5 (2500)	17	1.5	2.6	2.0 (0.9)
4	3/8 – 3/4	4.2 (4100)	12	0.6	0.7	4.3 (1.9)
10	3/4 – 1-1/4	10 (9800)	20	0.3	0.3	6.3 (2.8)
20	1-1/4 – 1-1/2	22 (22000)	30	0.1	0.2	13.8 (6.2)

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 Schematic

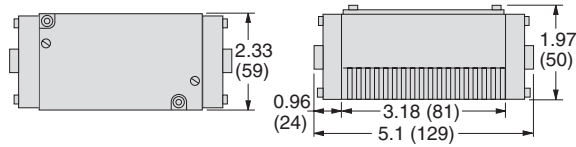


5/2 Double Pressure Controlled Valves

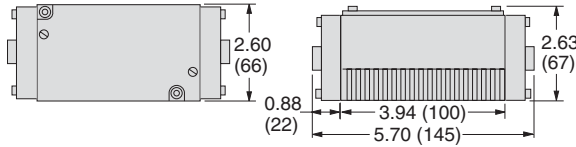
DIMENSIONS

Inches (mm)

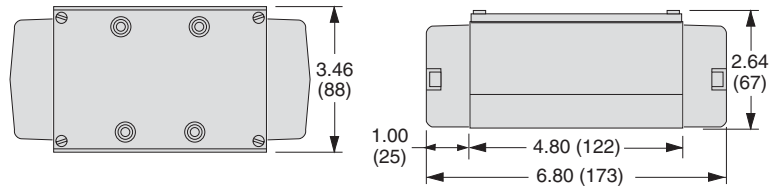
ANSI Size 1



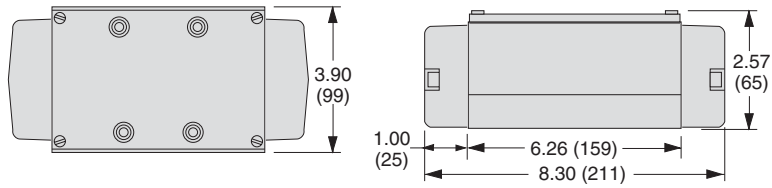
ANSI Size 2.5



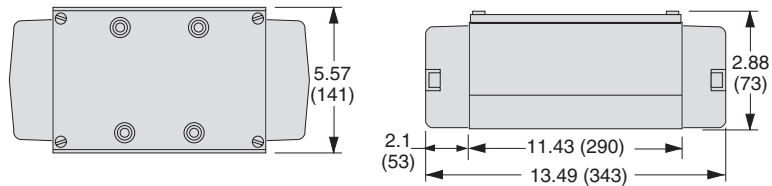
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Ordering Information

5/3 Double Pressure Controlled Valves

DOUBLE PRESSURE CONTROLLED VALVES

5-Way 3-Position Valves

Center Position	ANSI Size	Base Port Size *	Valve Model Number
Power Center	10	3/4 – 1-1/4	W7057A6902
Closed Center	1	1/4 – 3/8	W7057B2331
	2.5	3/8 – 1/2	W7057A3331
	4	3/8 – 3/4	W7057B4331
	10	3/4 – 1-1/4	W7057A6331
	20	1-1/4 – 1-1/2	W7057A8331
Open Center	1	1/4 – 3/8	W7057B2332
	2.5	3/8 – 1/2	W7057A3332
	4	3/8 – 3/4	W7057B4332
	10	3/4 – 1-1/4	W7057A6332
	20	1-1/4 – 1-1/2	W7057A8332

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _V (NI/min)	Average Response Constants*			Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	1.0 (980)	20	3.5	4.9	2.5 (1.1)
2.5	3/8 – 1/2	2.5 (2500)	17	1.5	2.6	2.0 (0.9)
4	3/8 – 3/4	4.2 (4100)	12	0.6	0.7	4.3 (1.9)
10	3/4 – 1-1/4	10 (9800)	20	0.3	0.3	6.3 (2.8)
20	1-1/4 – 1-1/2	22 (22000)	30	0.1	0.2	13.8 (6.2)

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 Schematics		
Power Center	Closed Center	Open Center

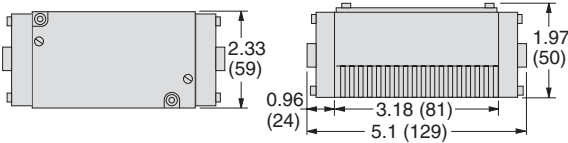
Valve Technical Data

5/3 Double Pressure Controlled Valves

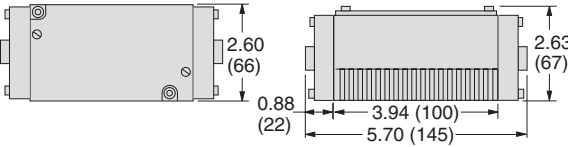
DIMENSIONS

Inches (mm)

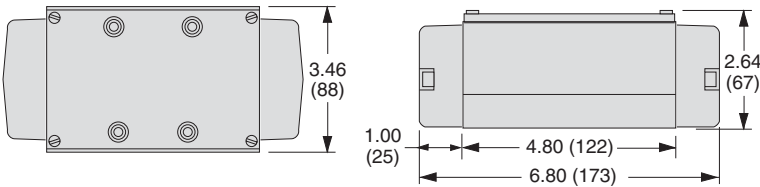
ANSI Size 1



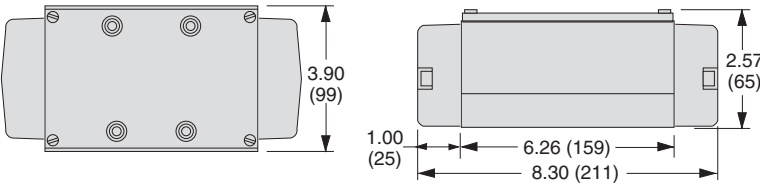
ANSI Size 2.5



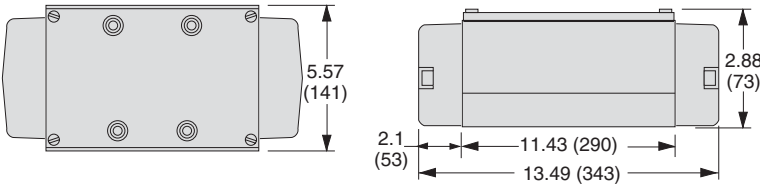
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.



ANSI Valves W74 Series

Product Overview

The ROSS® ANSI Valves W74 Series are base mounted poppet valves that conform to the American National Standards Institute (ANSI) standards for valve-to-base interface configurations, including plug-and-socket electrical connections between valve and base.

These ANSI valves are available in Size 1, 2.5, 4, 10, and 20 as standard and high temperature valves, 2- and 3-position, 5-ported 4-way solenoid pilot or pressure controlled valves with either internal or external pilot supply. The poppet design is highly tolerant of contaminated air and are self compensating for wear.

Solenoid Pilot Controlled	Pressure Controlled
	

Illustration examples.

VALVE FEATURES

Poppet Design	Poppet construction, highly tolerant of contaminated air and self compensating for wear
Mounting Options	Individual sub-base or manifold base mounting
Pilot Supply	Internal or external; suitable for vacuum service (with external pilot supply)
Pilot Operation	Provides high shifting force with low power consumption

Actuation	ANSI Size	Available Inlet Port Sizes							Functions					Flow C _v (NI/min)	Page
		1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	5/2		5/3				
									Single	Double	Power Center	Closed Center	Open Center		
Solenoid Control	1	●	●						●	●	●	●	●	0.9 (890)	24 – 27
	2.5		●	●					●	●	●	●	●	2.0 (2000)	
	4			●	●				●	●	●	●	●	4.2 (4100)	
	10				●	●	●		●	●	●	●	●	11 (11000)	
	20						●	●	●	●	●	●	●	22 (22000)	
Pressure Control	1	●	●						●	●	●	●	●	0.9 (890)	28 – 31
	2.5		●	●					●	●		●	●	2.0 (2000)	
	4			●	●				●	●		●	●	4.2 (4100)	
	10				●	●	●		●	●		●	●	11 (11000)	
	20						●	●	●	●		●	●	22 (22000)	
Sub-Bases															32 – 39
Manifold Bases															40 – 41
Accessories															44 – 46

STANDARD SPECIFICATIONS

GENERAL	Function	5/2 Valve	
		5/3 Valve	
	Construction Design	Poppet	
	Actuation	Electrical	Solenoid Pilot Controlled
		Pneumatic	Pressure Controlled
	Mounting	Sub-Base or Manifold	
	Connection	Threaded Port	NPT G
	Manual Override	Flush; rubber, non-locking	

OPERATING CONDITIONS	Temperature	Solenoid Pilot Controlled	Standard Temperature	Ambient	40° to 120°F (5° to 50°C)
				Media	40° to 175°F (5° to 80°C)
			High Temperature	Ambient	40° to 175°F (5° to 80°C)
				Media	40° to 220°F (5° to 105°C)
				For other temperature ranges, consult ROSS.	
		Pressure Controlled	Standard Temperature	Ambient	-40° to 175°F (-40° to 80°C)
				Media	-40° to 175°F (-40° to 80°C)
			High Temperature	Ambient	0° to 300°F (-17° to 150°C)
				Media	0° to 300°F (-17° to 150°C)
				For other temperature ranges, consult ROSS.	
	Flow Media		Filtered air		
	Operating Pressure		Vacuum to 150 psig (Vacuum to 10 bar)		
	Pilot Supply Pressure		Minimum 30 psig (2 bar)		
	External Pilot Supply		Must be equal to or greater than inlet pressure		

ELECTRICAL DATA FOR SOLENOID PILOT VALVES	Solenoids	ANSI Size	Current Flow	Operating Voltage	Power Consumption (each solenoid)
		1	DC	24 volts	5 watts
			AC	100-110 volts, 50 Hz	10 VA inrush, 24 VA holding
				100-130 volts, 60 Hz	
				230-240 volts, 60 Hz	
		2.5, 4, 10, 20	DC	24 volts	15 watts
			AC	110-120 volts, 50/60 Hz	87 VA inrush, 55 VA holding
				230-240 volts, 60 Hz	
		Rated for continuous duty			
		ANSI Size 4, 10, & 20		Indicator Light – One per solenoid	

CONSTRUCTION MATERIAL	Valve Body	Cast Aluminum
	Poppet	Rubber Coated Aluminum & Stainless Steel
	Seals	Buna-N

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

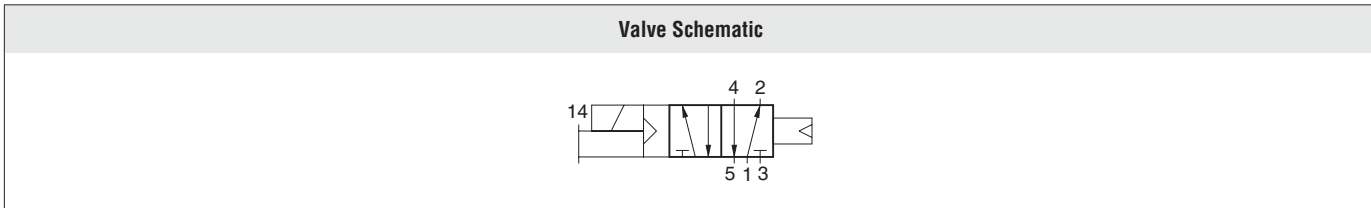
PRODUCT CREDENTIALS

Certificate of Compliance	Declaration of Conformity	
		

Ordering Information

5/2 Single Solenoid Pilot Controlled Valves							
SINGLE SOLENOID PILOT CONTROLLED VALVES						5-Way 2-Position Valves	
ANSI Size	Base Port Size *	Valve Model Number					
		STANDARD TEMPERATURE			HIGH TEMPERATURE		
		24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC
1	1/4 – 3/8	W7476B2331W	W7476B2331Z	W7476B2331Y	W7476B2336W	W7476B2336Z	W7476B2336Y
2.5	3/8 – 1/2	W7476A3331W	W7476A3331Z	W7476A3331Y	W7476A3336W	W7476A3336Z	W7476A3336Y
4	3/8 – 3/4	W7476C4331W	W7476C4331Z	W7476C4331Y	W7476C4336W	W7476C4336Z	W7476C4336Y
10	3/4 – 1-1/4	W7476A6331W	W7476A6331Z	W7476A6331Y	W7476A6336W	W7476A6336Z	W7476A6336Y
20	1-1/4 – 1-1/2	W7476A8331W	W7476A8331Z	W7476A8331Y	W7476A8336W	W7476A8336Z	W7476A8336Y
For other voltages, consult ROSS.							
* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.							

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			≈ Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	0.9 (890)	30	2.7	5.6	3.0 (1.4)
2.5	3/8 – 1/2	2.0 (2000)	25	1.5	2.9	3.0 (1.4)
4	3/8 – 3/4	4.2 (4100)	27	0.6	1.0	5.0 (2.3)
10	3/4 – 1-1/4	11 (11000)	30	0.3	0.5	6.1 (2.8)
20	1-1/4 – 1-1/2	22 (22000)	50	0.1	0.2	18.5 (8.3)
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.						

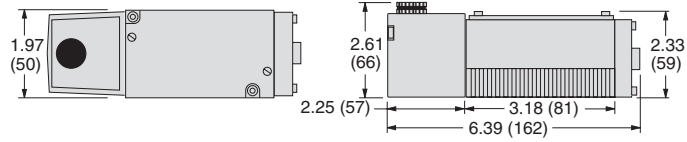


5/2 Single Solenoid Pilot Controlled Valves

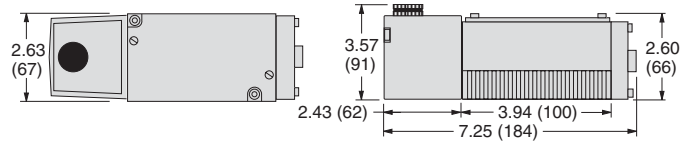
DIMENSIONS

Inches (mm)

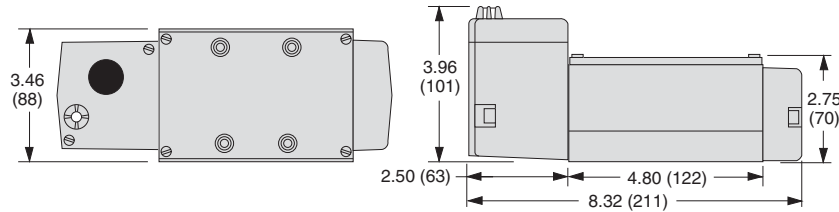
ANSI Size 1



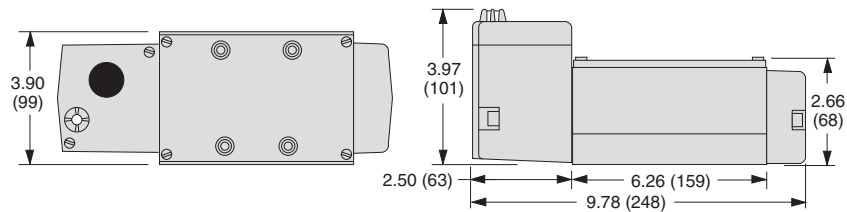
ANSI Size 2.5



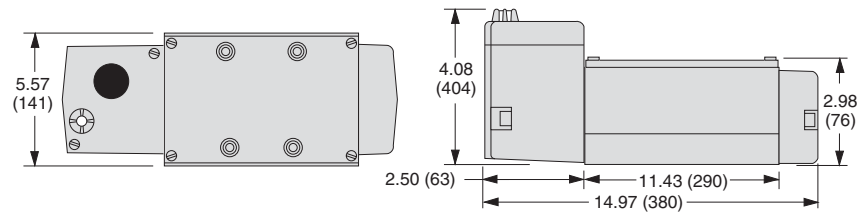
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Ordering Information

5/2 Double Solenoid Pilot Controlled Valves

DOUBLE SOLENOID PILOT CONTROLLED VALVES

5-Way 2-Position Valves

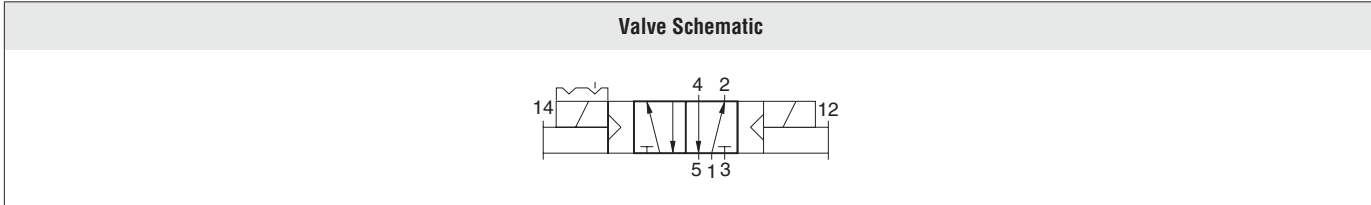
ANSI Size	Base Port Size *	Valve Model Number					
		STANDARD TEMPERATURE			HIGH TEMPERATURE		
		24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC
1	1/4 – 3/8	W7476B2332W	W7476B2332Z	W7476B2332Y	W7476B2337W	W7476B2337Z	W7476B2337Y
2.5	3/8 – 1/2	W7476A3332W	W7476A3332Z	W7476A3332Y	W7476A3337W	W7476A3337Z	W7476A3337Y
4	3/8 – 3/4	W7476C4332W	W7476C4332Z	W7476C4332Y	W7476C4337W	W7476C4337Z	W7476C4337Y
10	3/4 – 1-1/4	W7476A6332W	W7476A6332Z	W7476A6332Y	W7476A6337W	W7476A6337Z	W7476A6337Y
20	1-1/4 – 1-1/2	W7476A8332W	W7476A8332Z	W7476A8332Y	W7476A8337W	W7476A8337Z	W7476A8337Y

For other voltages, consult ROSS.

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants *			≈ Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	0.9 (890)	30	2.7	5.6	3.0 (1.4)
2.5	3/8 – 1/2	2.0 (2000)	25	1.5	2.9	3.0 (1.4)
4	3/8 – 3/4	4.2 (4100)	27	0.6	1.0	5.0 (2.3)
10	3/4 – 1-1/4	11 (11000)	30	0.3	0.5	6.1 (2.8)
20	1-1/4 – 1-1/2	22 (22000)	50	0.1	0.2	18.5 (8.3)

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.

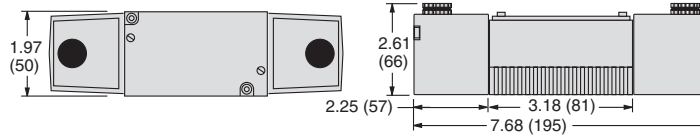


5/2 Double Solenoid Pilot Controlled Valves

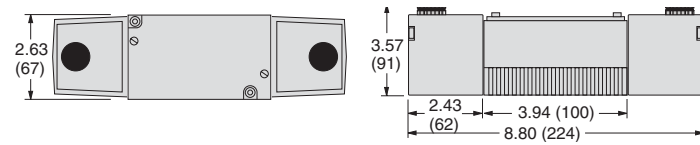
DIMENSIONS

Inches (mm)

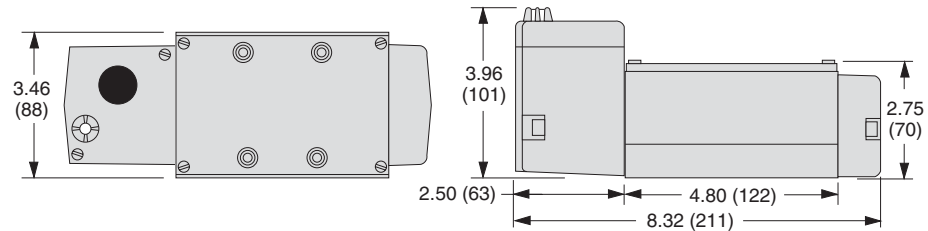
ANSI Size 1



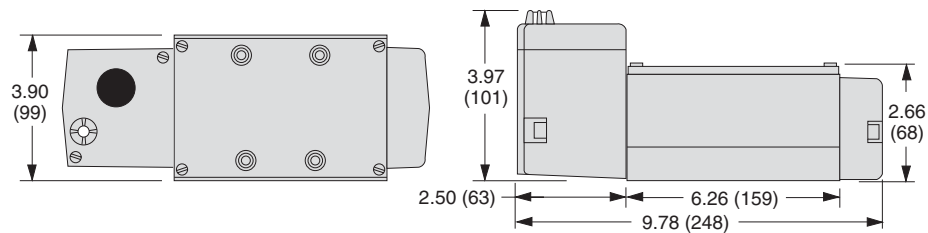
ANSI Size 2.5



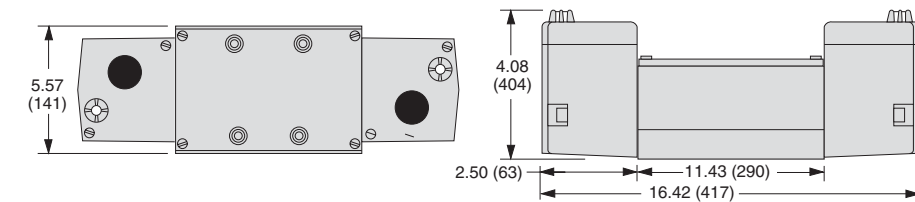
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Ordering Information

5/2 Single Pressure Controlled Valves

SINGLE PRESSURE CONTROLLED VALVES5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number	
		STANDARD TEMPERATURE	HIGH TEMPERATURE
1	1/4 – 3/8	W7456B2331	W7456B2336
2.5	3/8 – 1/2	W7456A3331	W7456A3336
4	3/8 – 3/4	W7456C4331	W7456C4336
10	3/4 – 1-1/4	W7456A6331	W7456A6336
20	1-1/4 – 1-1/2	W7456A8331	W7456A8336

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _v (NI/min)	Average Response Constants*			≈ Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	0.9 (890)	20	3.6	4.9	2.5 (1.1)
2.5	3/8 – 1/2	2.0 (2000)	17	1.5	2.6	2.0 (0.9)
4	3/8 – 3/4	4.2 (4100)	12	0.6	0.7	4.3 (1.9)
10	3/4 – 1-1/4	11 (11000)	20	0.3	0.3	6.3 (2.8)
20	1-1/4 – 1-1/2	22 (22000)	30	0.1	0.2	13.0 (5.9)

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.

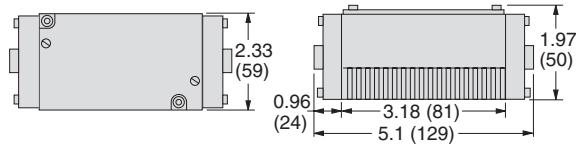
Valve Schematic

5/2 Single Pressure Controlled Valves

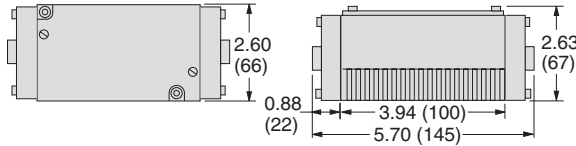
DIMENSIONS

Inches (mm)

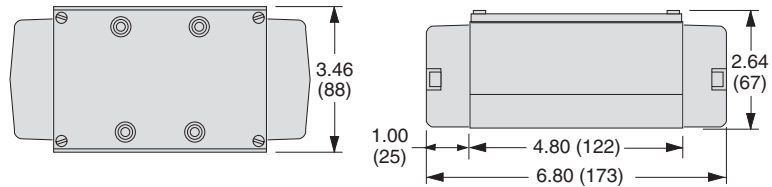
ANSI Size 1



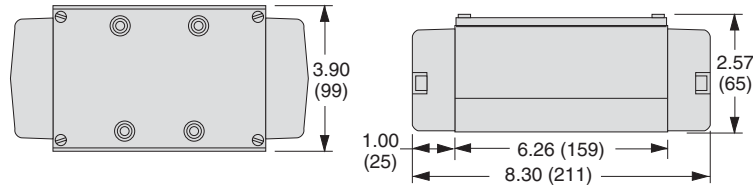
ANSI Size 2.5



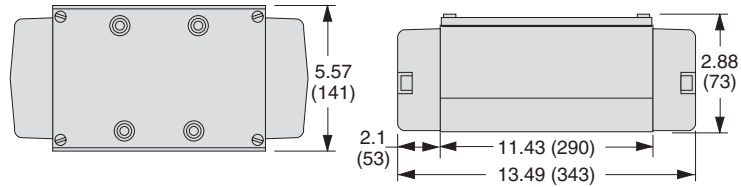
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Ordering Information

5/2 Double Pressure Controlled Valves

DOUBLE PRESSURE CONTROLLED VALVES

5-Way 2-Position Valves

ANSI Size	Base Port Size *	Valve Model Number	
		STANDARD TEMPERATURE	HIGH TEMPERATURE
1	1/4 – 3/8	W7456B2332	W7456B2337
2.5	3/8 – 1/2	W7456A3332	W7456A3337
4	3/8 – 3/4	W7456C4332	W7456C4337
10	3/4 – 1-1/4	W7456A6332	W7456A6337
20	1-1/4 – 1-1/2	W7456A8332	W7456A8337

* Sub-bases and manifold bases ordered separately. Please see Sub-Bases and Manifolds section.

ANSI Size	Base Port Size	Flow C _V (NI/min)	Average Response Constants*			≈ Weight lb (kg)
			M	F		
		1-2		1-2	2-3	
1	1/4 – 3/8	0.9 (890)	30	2.7	5.6	2.5 (1.1)
2.5	3/8 – 1/2	2.0 (2000)	25	1.4	2.9	2.0 (0.9)
4	3/8 – 3/4	4.2 (4100)	16	0.5	1.1	3.3 (1.5)
10	3/4 – 1-1/4	11 (11000)	14	0.3	0.5	7.3 (3.3)
20	1-1/4 – 1-1/2	22 (22000)	32	0.1	0.2	17.5 (7.9)

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 Schematic

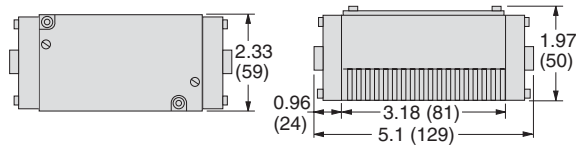
The schematic diagram shows a 5/2-way valve. It has a rectangular body with five ports labeled 1, 2, 3, 4, and 5. Port 1 is on the left, port 2 is on the top right, port 3 is on the bottom right, port 4 is on the top left, and port 5 is on the bottom left. A dashed line labeled 14 is connected to port 1. Arrows indicate the flow direction: from port 1 to port 2, from port 4 to port 3, and from port 5 to port 2.

5/2 Double Pressure Controlled Valves

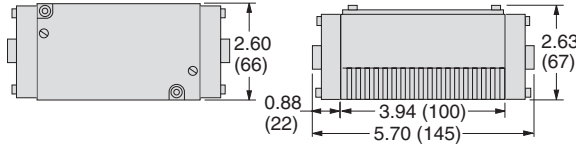
DIMENSIONS

Inches (mm)

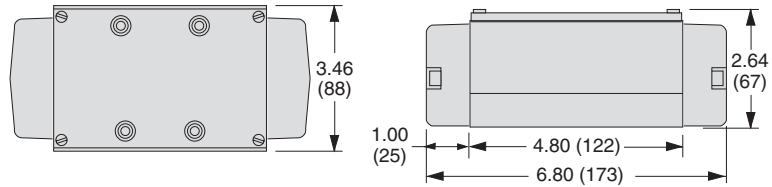
ANSI Size 1



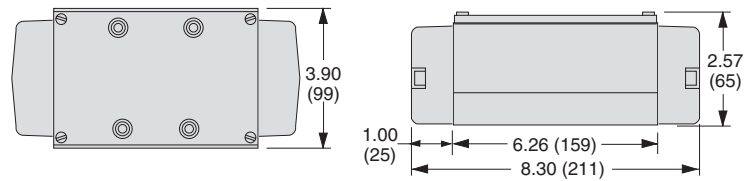
ANSI Size 2.5



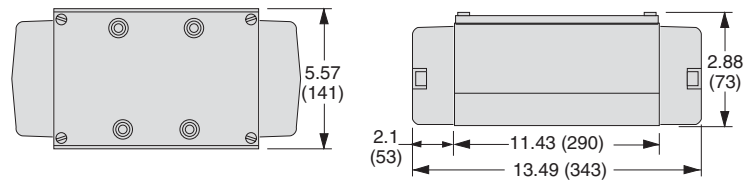
ANSI Size 4



ANSI Size 10



ANSI Size 20



Downloadable CAD models available.

Sub-Bases – Side Ported Ordering Information

For Solenoid Pilot Controlled Valves

SIDE PORTED SUB-BASES

Indicator Lights in Base	ANSI Size	Outlet Port Size	Model Number		Flow C _v (NI/min)
			NPT Thread	G Thread	
None	1	1/4	500B91	D500B91	0.9 to 1.0 (890.6 to 980)
		3/8	501B91	D501B91	
	2.5	3/8	474K91	D474K91	2.0 to 2.5 (2000 to 2500)
		1/2	475K91	D475K91	
	4	3/8	361B91	D361B91	4.2 (4100)
		1/2	362B91	D362B91	
		3/4	363B91	D363B91	
	10	3/4	364B91	D364B91	10 to 11 (9800 to 11000)
		1	365B91	D365B91	
		1-1/4	366B91	D366B91	
	20	1-1/4	367B91	D367B91	22 (22000)
		1-1/2	368B91	D368B91	

Indicato Lights in Base	ANSI Size	Outlet Port Size	Model Number						Flow C _v (NI/min)
			NPT Thread			G Thread			
			24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC	
One	1	1/4	525K91-W	525K91-Z	525K91-Y	D525K91-W	D525K91-Z	D525K91-Y	0.9 to 1.0 (890.6 to 980)
		3/8	527K91-W	527K91-Z	527K91-Y	D527K91-W	D527K91-Z	D527K91-Y	
	2.5	3/8	482K91-W	482K91-Z	482K91-Y	D482K91-W	D482K91-Z	D482K91-Y	2.0 to 2.5 (2000 to 2500)
		1/2	483K91-W	483K91-Z	483K91-Y	D483K91-W	D483K91-Z	D483K91-Y	
Two	1	1/4	526K91-W	526K91-Z	526K91-Y	D525K91-W	D525K91-Z	D525K91-Y	0.9 to 1.0 (890.6 to 980)
		3/8	528K91-W	528K91-Z	528K91-Y	D527K91-W	D527K91-Z	D527K91-Y	
	2.5	3/8	484K91-W	484K91-Z	484K91-Y	D482K91-W	D482K91-Z	D482K91-Y	2.0 to 2.5 (2000 to 2500)
		1/2	485K91-W	485K91-Z	485K91-Y	D483K91-W	D483K91-Z	D483K91-Y	

For other voltages, consult ROSS.

Sub-base for ANSI Size 4



Illustration example.

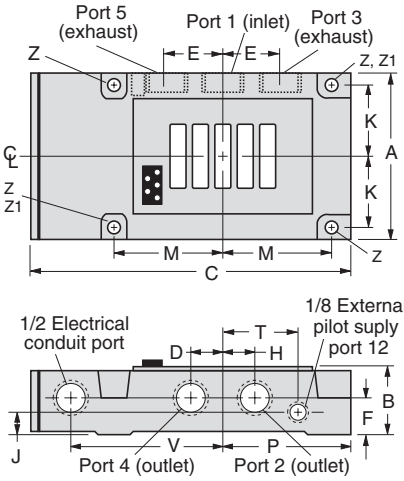
Sub-Base Technical Data

For Solenoid Pilot Controlled Valves

DIMENSIONS

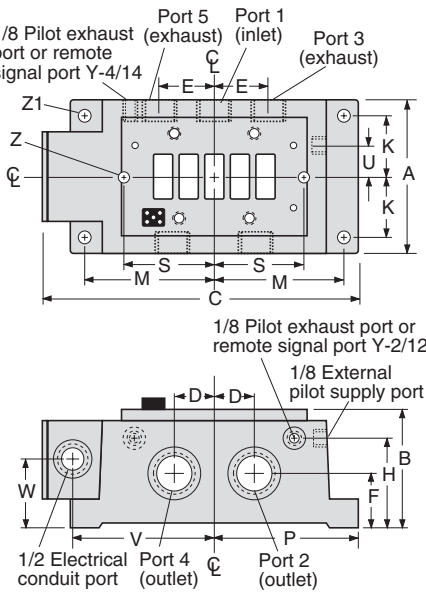
Inches (mm)

ANSI Size
1 & 2.5



Dimensions inches (mm)					
	ANSI 1	ANSI 2.5	ANSI 4	ANSI 10	ANSI 20
A	2.80 (71)	3.56 (90)	3.36 (85)	5.08 (129)	6.64 (169)
B	1.44 (37)	1.61 (41)	2.64 (67)	3.78 (96)	3.70 (94)
C	6.15 (156)	7.09 (180)	7.21 (183)	10.45 (266)	12.34 (313)
D	0.51 (13)	0.63 (16)	0.75 (19)	1.38 (35)	1.38 (35)
E	0.88 (22)	1.25 (32)	1.50 (38)	2.76 (70)	2.76 (70)
F	0.78 (20)	0.93 (23)	1.23 (31)	1.75 (44)	1.59 (40)
H	0.58 (15)	0.63 (16)	2.21 (56)	3.01 (76)	2.85 (72)
J	0.38 (10)	0.50 (13)	—	—	—
K	1.13 (29)	1.50 (38)	—	2.05 (52)	2.38 (60)
M	1.88 (48)	2.31 (59)	—	4.33 (110)	5.35 (136)
P	2.43 (62)	2.97 (75)	2.86 (73)	4.76 (121)	5.86 (149)
S	—	—	2.36 (60)	—	—
T	1.35 (34)	1.78 (45)	—	—	—
U	—	—	0.83 (21)	1.97 (50)	1.54 (39)
V	2.75 (70)	3.29 (83)	3.07 (78)	4.65 (118)	5.60 (142)
W	—	—	1.23 (31)	2.50 (64)	2.15 (55)
Z	0.27 (7)	—	0.30 (7)	—	—
Z1	—	0.28 (7)	—	0.34 (9)	0.37 (9)

ANSI Size
4, 10, & 20



Downloadable CAD models available.

Sub-Bases – Side Ported Ordering Information

For Pressure Controlled Valves

SIDE PORTED SUB-BASES

ANSI Size	Outlet Port Size	Model Number		Flow C _v (NI/min)
		NPT Thread	G Thread	
1	1/4	500B91	D500B91	0.9 to 1.0 (890.6 to 980)
	3/8	501B91	D501B91	
2.5	3/8	474K91	D474K91	2.0 to 2.5 (2000 to 2500)
	1/2	475K91	D475K91	
4	3/8	361B91	D361B91	4.2 (4100)
	1/2	362B91	D362B91	
	3/4	363B91	D363B91	
10	3/4	364B91	D364B91	10 to 11 (9800 to 11000)
	1	365B91	D365B91	
	1-1/4	366B91	D366B91	
20	1-1/4	367B91	D367B91	22 (22000)
	1-1/2	368B91	D368B91	

Sub-base for ANSI Size 4



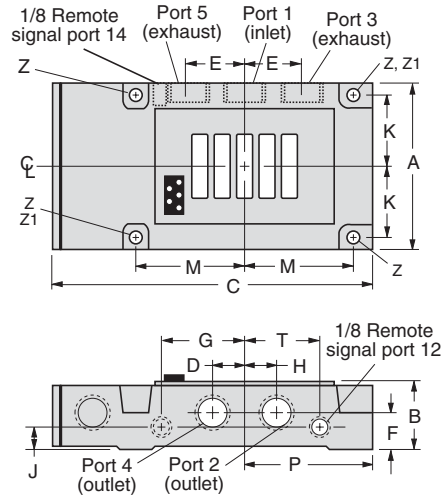
Illustration example.

For Pressure Controlled Valves

DIMENSIONS

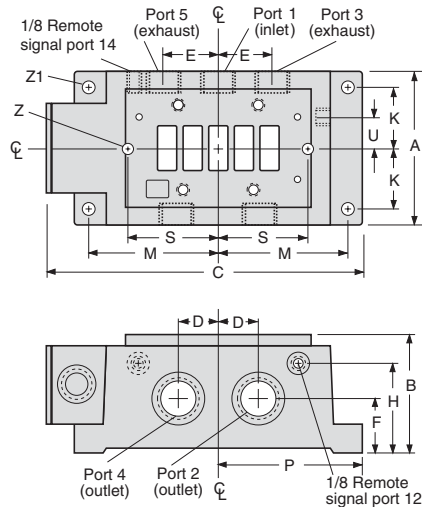
Inches (mm)

ANSI Size
1 & 2.5



Dimensions inches (mm)					
	ANSI 1	ANSI 2.5	ANSI 4	ANSI 10	ANSI 20
A	2.80 (71)	3.56 (90)	3.36 (85)	5.08 (129)	6.64 (169)
B	1.44 (37)	1.61 (41)	2.64 (67)	3.78 (96)	3.70 (94)
C	6.15 (156)	7.09 (180)	7.21 (183)	10.45 (266)	12.34 (313)
D	0.51 (13)	0.63 (16)	0.75 (19)	1.38 (35)	1.38 (35)
E	0.88 (22)	1.25 (32)	1.50 (38)	2.76 (70)	2.76 (70)
F	0.78 (20)	0.93 (23)	1.23 (31)	1.75 (44)	1.59 (40)
H	0.58 (15)	0.63 (16)	2.21 (56)	3.01 (76)	2.85 (72)
J	0.38 (10)	0.50 (13)	—	—	—
K	1.13 (29)	1.50 (38)	—	2.05 (52)	2.38 (60)
M	1.88 (48)	2.31 (59)	—	4.33 (110)	5.35 (136)
P	2.43 (62)	2.97 (75)	2.86 (73)	4.76 (121)	5.86 (149)
S	—	—	2.36 (60)	—	—
T	1.35 (34)	1.78 (45)	—	—	—
U	—	—	0.83 (21)	1.97 (50)	1.54 (39)
V	—	—	—	—	—
Z	0.27 (7)	—	0.30 (7)	—	—
Z1	—	0.28 (7)	—	0.34 (9)	0.37 (9)

ANSI Size
4, 10, & 20



Downloadable CAD models available.

Sub-Bases – Side & Bottom Ported Ordering Information

For Solenoid Pilot or Pressure Controlled Valves

SIDE & BOTTOM PORTED SUB-BASE

Indicator Lights in Base	ANSI Size	Outlet Port Size	Model Number		Flow C _v (NI/min)
			NPT Thread	G Thread	
None	1	1/4	499B91	D499B91	0.9 to 1.0 (890 to 980)
	2.5	3/8	476K91	D476K91	2.0 to 2.5 (2000 to 2500)
	4	3/8	369B91	D369B91	4.2 (4100)
		1/2	370B91	D370B91	
		3/4	371B91	D371B91	

Indicator Lights in Base	ANSI Size	Outlet Port Size	Model Number						Flow C _v (NI/min)
			NPT Thread			G Thread			
			24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC	
One	1	1/4	529K91-W	529K91-Z	529K91-Y	D529K91-W	D529K91-Z	D529K91-Y	0.9 to 1.0 (890 to 980)
	2.5	3/8	477K91-W	477K91-Z	477K91-Y	D477K91-W	D477K91-Z	D477K91-Y	2.0 to 2.5 (2000 to 2500)
Two	1	1/4	530K91-W	530K91-Z	530K91-Y	D530K91-W	D530K91-Z	D530K91-Y	0.9 to 1.0 (890 to 980)
	2.5	3/8	486K91-W	486K91-Z	486K91-Y	D486K91-W	D486K91-Z	D486K91-Y	2.0 to 2.5 (2000 to 2500)

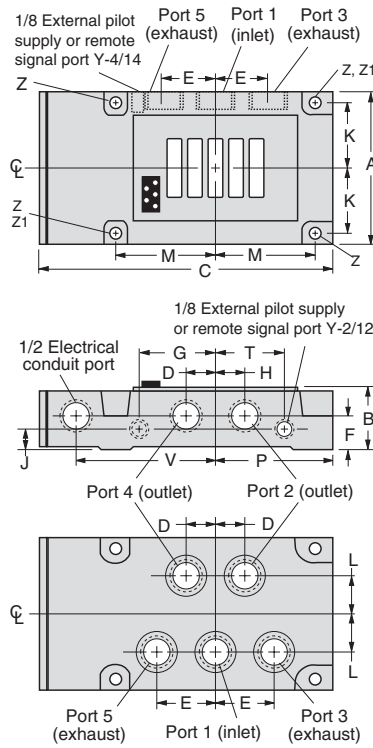
For other voltages, consult ROSS.

For Solenoid Pilot Controlled Valves

DIMENSIONS

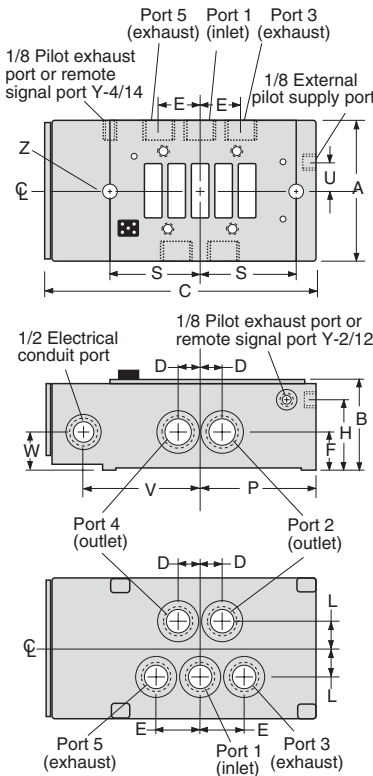
Inches (mm)

ANSI Size 1 & 2.5



Dimensions inches (mm)			
	ANSI 1	ANSI 2.5	ANSI 4
A	2.80 (71)	3.56 (90)	3.36 (85)
B	1.44 (37)	1.61 (41)	2.64 (67)
C	6.15 (156)	7.09 (180)	7.21 (183)
D	0.51 (13)	0.63 (16)	0.75 (19)
E	0.88 (22)	1.25 (32)	1.50 (38)
F	0.78 (20)	0.93 (23)	1.23 (31)
G	1.46 (37)	2.41 (61)	—
H	0.58 (15)	0.63 (16)	2.21 (56)
J	0.38 (10)	0.50 (13)	—
K	1.13 (29)	1.50 (38)	—
L	0.63 (16)	0.81 (21)	—
M	1.88 (48)	2.31 (59)	—
P	2.43 (62)	2.97 (75)	2.86 (73)
S	—	—	2.36 (60)
T	1.35 (34)	1.78 (45)	—
U	—	—	0.83 (21)
V	2.75 (70)	3.29 (83)	—
Z	0.27 (7)	—	0.30 (7)
Z1	—	0.28 (7)	—

ANSI Size 4



Downloadable CAD models available.

Sub-Bases – Bottom Ported Ordering Information

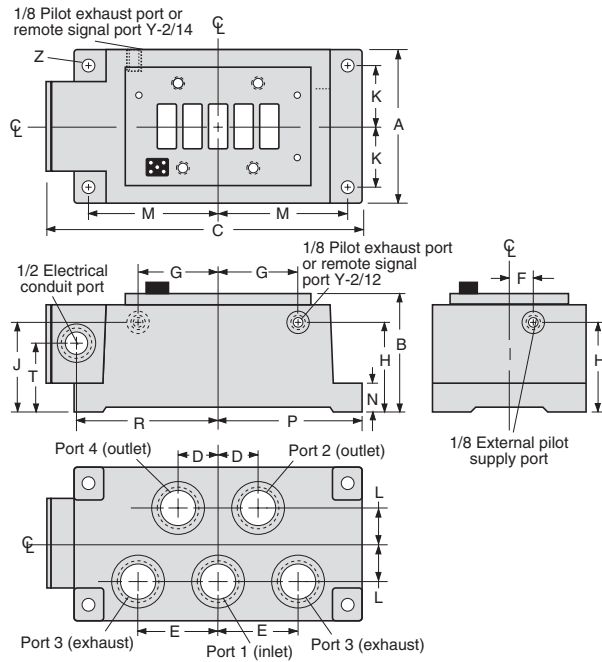
For Solenoid Pilot or Pressure Controlled Valves				
BOTTOM PORTED SUB-BASE				
ANSI Size	Outlet Port Size	Model Number		Flow C _v (NI/min)
		NPT Thread	G Thread	
10	3/4	372B91	D372B91	10 to 11 (9800 to 11000)
	1	373B91	D373B91	
	1-1/4	374B91	D374B91	
20	1-1/4	375B91	D375B91	22 (22000)
	1-1/2	376B91	D376B91	

For Solenoid Pilot or Pressure Controlled Valves

DIMENSIONS

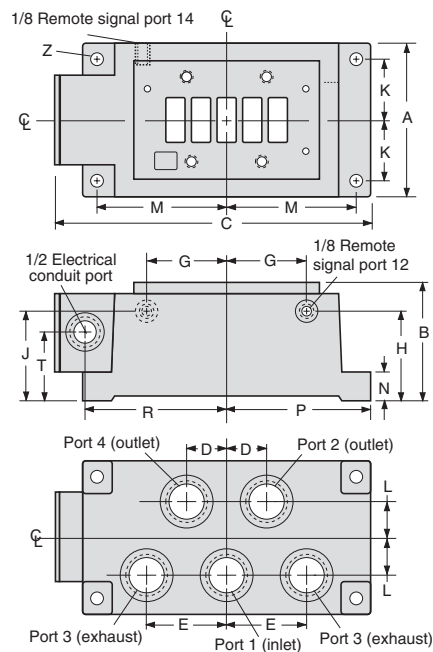
Inches (mm)

for Solenoid Pilot Controlled Valves



Dimensions inches (mm)		
	ANSI 10	ANSI 20
A	5.8 (129)	6.64 (169)
B	3.78 (96)	3.70 (94)
C	10.45 (266)	12.34 (313)
D	1.38 (35)	1.38 (35)
E	2.76 (70)	2.76 (76)
F	1.03 (26)	1.54 (39)
G	2.60 (66)	3.90 (99)
H	3.01 (76)	2.85 (72)
J	3.25 (83)	2.85 (72)
K	2.05 (52)	2.38 (60)
L	1.22 (31)	1.22 (31)
M	4.33 (110)	5.36 (136)
N	0.88 (22)	1.00 (25)
P	4.76 (121)	5.82 (148)
R	4.65 (118)	5.60 (142)
T	2.50 (64)	2.15 (55)
Z	0.34 (8)	0.37 (9)

for Pressure Controlled Valves



Downloadable CAD models available.

Manifold Bases Ordering Information

For Solenoid Pilot Controlled Valves

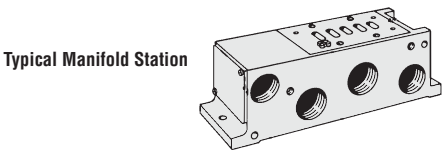
MANIFOLD BASES

Indicator Lights in Base	ANSI Size	Outlet Port Size	Model Number		Flow C _v (NI/min)
			NPT Thread	G Thread	
None	1	1/4	502B91	D502B91	0.9 to 1.0 (890.6 to 980)
		3/8	503B91	D503B91	
	2.5	3/8	472K91	D472K91	2.0 to 2.5 (2000 to 2500)
		1/2	473K91	D473K91	
	4	3/8	377B91	D377B91	4.2 (4100)
		1/2	378B91	D378B91	
		3/4	379B91	D379B91	
	10	3/4	380B91	D380B91	10 to 11 (9800 to 11000)
		1	381B91	D381B91	
		1-1/4	382B91	D382B91	

Indicator Lights in Base	ANSI Size	Outlet Port Size	Model Number						Flow C _v (NI/min)
			NPT Thread			G Thread			
			24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC	
One	1	1/4	531K91-W	531K91-Z	531K91-Y	D531K91-W	D531K91-Z	D531K91-Y	0.9 to 1.0 (890.6 to 980)
		3/8	533K91-W	533K91-Z	533K91-Y	D533K91-W	D533K91-Z	D533K91-Y	
	2.5	3/8	478K91-W	478K91-Z	478K91-Y	D478K91-W	D478K91-Z	D478K91-Y	2.0 to 2.5 (2000 to 2500)
		1/2	479K91-W	479K91-Z	479K91-Y	D479K91-W	D479K91-Z	D479K91-Y	
Two	1	1/4	532K91-W	532K91-Z	532K91-Y	D532K91-W	D532K91-Z	D532K91-Y	0.9 to 1.0 (890.6 to 980)
		3/8	534K91-W	534K91-Z	534K91-Y	D534K91-W	D534K91-Z	D534K91-Y	
	2.5	3/8	480K91-W	480K91-Z	480K91-Y	D480K91-W	D480K91-Z	D480K91-Y	2.0 to 2.5 (2000 to 2500)
		1/2	481K91-W	481K91-Z	481K91-Y	D481K91-W	D481K91-Z	D481K91-Y	

For other voltages, consult ROSS.

The model numbers of the manifold stations shown on this page specify pressure ports with NPT threads and electrical openings with 1-1/4 NPT threads. All necessary hardware and seals for manifold assembly are included with each manifold station.



Indicator Lights

As shown in the chart the smaller sizes of manifolds are available with indicator lights. These lights are located in the end plate covering the electrical cavity.

Lights are mounted in bases, on the valves, or on solenoids, depending on the particular type of valve.

Manifold Note

The port positions of the solenoid controlled and the pressure controlled manifolds are not the same. For this reason these stations cannot be mixed in the same installation. If both types of valves must be used in the same installation, use only manifold stations for solenoid controlled valves.

ASSEMBLED MANIFOLDS

Valves and manifold stations can be assembled by ROSS to precise specifications.

The assembly is then ready for integration into your system.

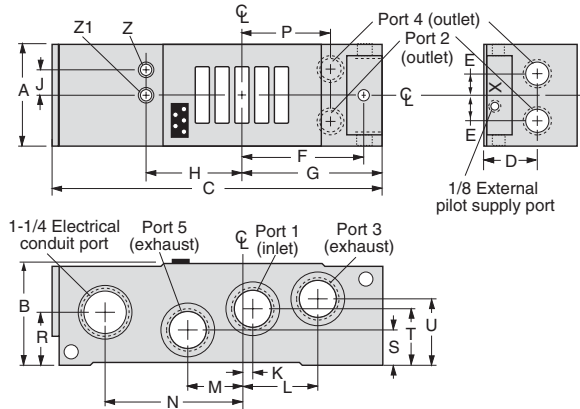
For detailed information about such assemblies, consult your ROSS Distributor or call ROSS in the U.S.A. at 1-888-TEK-ROSS (835-7677) or 1-248-764-1800.

For Solenoid Pilot Controlled Valves

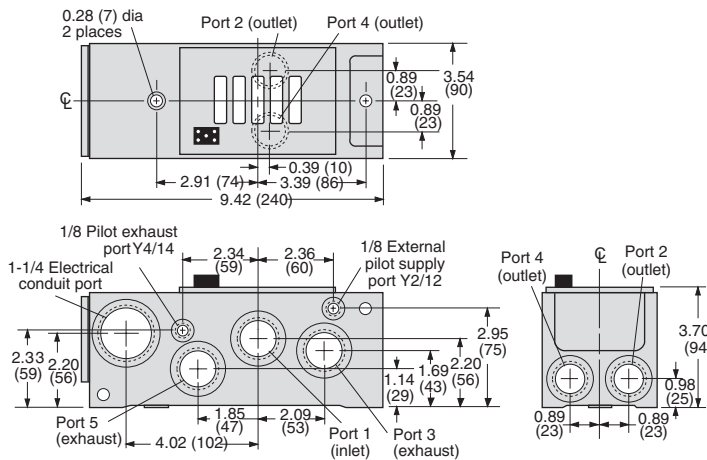
DIMENSIONS

Inches (mm)

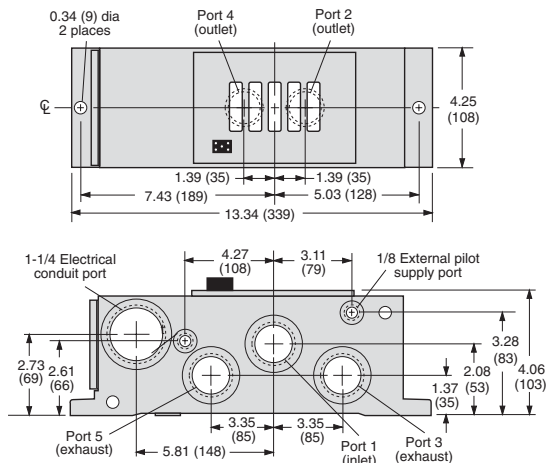
ANSI Size 1 & 2.5



ANSI Size 4



ANSI Size 10



Sub-Base Dimensions inches (mm)

	ANSI SIZE				
	1	2.5	4	10	20
A	2.80 (71)	3.56 (90)	3.36 (85)	5.08 (129)	6.64 (169)
B	1.44 (37)	1.61 (41)	2.64 (67)	3.78 (96)	3.70 (94)
C	6.15 (156)	7.09 (180)	7.21 (183)	10.45 (266)	12.34 (313)
D	0.51 (13)	0.63 (16)	0.75 (19)	1.38 (35)	1.38 (35)
E	0.88 (22)	1.25 (32)	1.50 (38)	2.76 (70)	2.76 (70)
F	0.78 (20)	0.93 (23)	1.23 (31)	1.75 (44)	1.59 (40)
H	0.58 (15)	0.63 (16)	2.21 (56)	3.01 (76)	2.85 (72)
J	0.38 (10)	0.50 (13)	—	—	—
K	1.13 (29)	1.50 (38)	—	2.05 (52)	2.38 (60)
M	1.88 (48)	2.31 (59)	—	4.33 (110)	5.35 (136)
P	2.43 (62)	2.97 (75)	2.86 (73)	4.76 (121)	5.86 (149)
S	—	—	2.36 (60)	—	—
T	1.35 (34)	1.78 (45)	—	—	—
U	—	—	0.83 (21)	1.97 (50)	1.54 (39)
V	2.75 (70)	3.29 (83)	3.07 (78)	4.65 (118)	5.60 (142)
W	—	—	1.23 (31)	2.50 (64)	2.15 (55)
Z	0.27 (7)	—	0.30 (7)	—	—
Z1	—	0.28 (7)	—	0.34 (9)	0.37 (9)

Downloadable CAD models available.

Manifold Bases Ordering Information

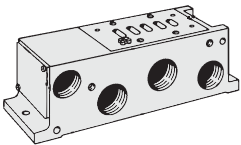
For Pressure Controlled Valves

MANIFOLD BASES

Indicator Lights in Base	ANSI Size	Outlet Port Size	Model Number		Flow C _v (NI/min)
			NPT Thread	G Thread	
None	1	1/4	359B91	D359B91	0.9 to 1.0 (890.6 to 980)
		3/8	360B91	D360B91	
	2.5	3/8	468B91	D468B91	2.0 to 2.5 (2000 to 2500)
		1/2	469B91	D469B91	
	4	3/8	383B91	D383B91	4.2 (4100)
		1/2	384B91	D384B91	
		3/4	385B91	D385B91	
	10	3/4	386B91	D386B91	10 to 11 (9800 to 11000)
		1	387B91	D387B91	
		1-1/4	388B91	D388B91	

The numbers of the manifold stations shown in the chart on the right specify pressure ports with NPT threads. All necessary hardware and seals for manifold assembly are included with each manifold station.

Typical Manifold Station



Manifold Note

The port positions of the solenoid controlled and the pressure controlled manifolds are not the same. For this reason these stations cannot be mixed in the same installation. If both types of valves must be used in the same installation, use only manifold stations for solenoid controlled valves.

ASSEMBLED MANIFOLDS

Valves and manifold stations can be assembled by ROSS to precise specifications.

The assembly is then ready for integration into your system.

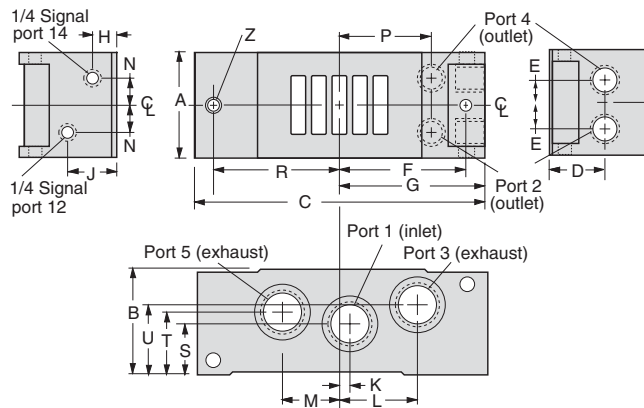
For detailed information about such assemblies, consult your ROSS Distributor or call ROSS in the U.S.A. at 1-888-TEK-ROSS (835-7677) or 1-248-764-1800.

For Pressure Controlled Valves

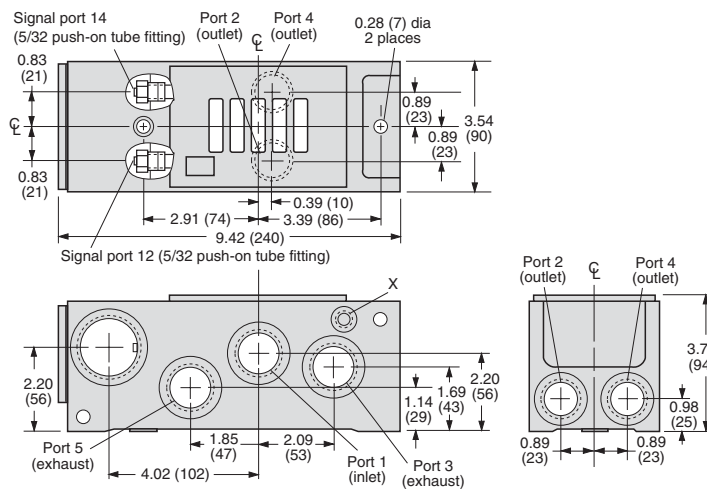
DIMENSIONS

Inches (mm)

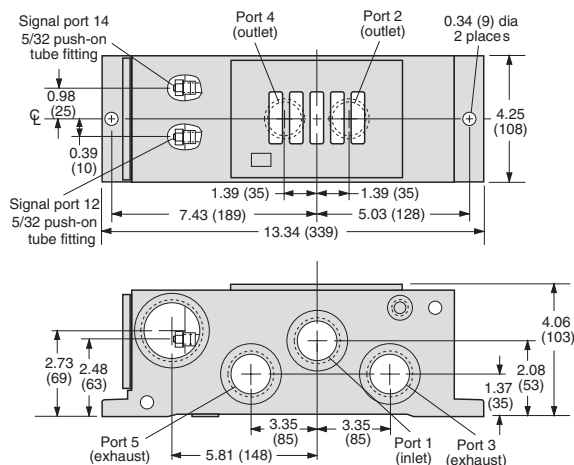
ANSI Size 1 & 2.5



ANSI Size 4



ANSI Size 10



Dimensions inches (mm)		
	ANSI 1	ANSI 2.5
A	2.26 (57)	2.80 (71)
B	2.26 (57)	2.66 (68)
C	6.25 (159)	6.86 (174)
D	1.32 (34)	1.48 (38)
E	0.56 (14)	0.70 (18)
F	2.88 (73)	2.99 (76)
G	3.31 (84)	3.40 (86)
H	0.56 (14)	0.74 (19)
J	0.88 (22)	1.26 (32)
K	0.00 (00)	0.18 (6)
L	1.47 (37)	1.80 (46)
M	1.36 (35)	1.46 (37)
N	0.56 (14)	0.70 (18)
P	2.37 (60)	2.21 (56)
R	2.50 (64)	2.99 (76)
S	1.14 (29)	1.40 (36)
T	1.14 (29)	1.76 (45)
U	1.26 (32)	1.76 (45)
Z	0.28 (7)	0.28 (7)

Downloadable CAD models available.

SOLENOID PILOT MANUAL OVERRIDES

Flush Button	Extended Button	Extended Button with Palm
		

Illustration examples.

Manual Override Kits	Manual Override Type	Kit Number	
		Locking Type	Non-Locking Type
	Flush Button	792K87	790K87
	Extended Button	–	791K87
	Extended Button with Palm	–	984H87
Flush metal button, non-locking manual override is standard on solenoid models. Each of the buttons in the override kits is made of metal and is spring-returned. The locking type button, however, can be kept in the actuated position by turning the slot in the top of the button with a screwdriver.			

INTERPOSED PRESSURE REGULATORS



Illustration example.

Interposed Regulators	ANSI Size	Model Number		
		Single	Double	
			Solenoid	Remote Air
	1	840C91	841C91	713C91
	2.5	626C91	627C91	714C91
	4	632C91	633C91	715C91
	Both single and double interposed regulators are available for valves with C_v ratings up to 4.2. A regulator is bolted to the valve's sub-base or manifold station, and the valve is then bolted to the regulator. This mounting method allows the valve to be removed and replaced without disturbing the regulator. 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. A locking type knob is used to set the regulated pressure at any point in the range of: 5 to 100 psig (0.3 to 7 bar) for ANSI Size 1 and 2 models; 5 to 125 psig (0.3 to 8.5 bar) for ANSI Size = 4.2 models. Maximum inlet pressure is 150 psig (10 bar). Pressure gauge(s) included.			
	Warning	Double interposed regulators will reverse output ports - the 12 solenoid will pressurize the 4 port, the 14 solenoid will pressurize the 2 port - which may cause unexpected, potentially dangerous cylinder movement at valve pressurization.		



EXHAUST SILENCERS

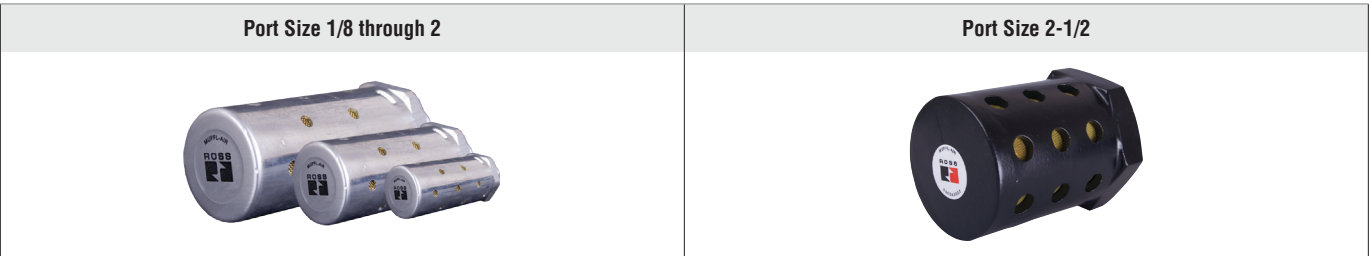
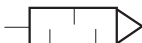


Illustration examples.

Silencers	SPECIFICATIONS		Silencer Material		Pressure Range psig (bar)		Schematic	
			Aluminum		0-290 (0-20) maximum			
	Port Size	Thread Type	Flow C _v (NI/min)	Model Number		Dimensions inches (mm)		≈ Weight lb (kg)
				NPT Thread	R/Rp Thread	Length	Hex Size (D)	
	1/4	Male	2.3 (2300)	5500A2003	D5500A2003	2.2 (6)	0.81 (21)	0.07 (0.03)
	3/8	Male	9.0 (8900)	5500A3013	D5500A3013			
			4.9 (4800)	5500A3003	D5500A3003	3.5 (9)	1.25 (32)	0.2 (0.1)
	1/2	Male	6.8 (6700)	5500A4003	D5500A4003	3.6 (9)		
	3/4	Male	7.2 (7100)	5500A5013	D5500A5013	3.6 (9)	2.0 (51)	0.9 (0.4)
			15 (15000)	5500A5003	D5500A5003	5.3 (14)		
	1	Male	18 (18000)	5500A6003	D5500A6003	5.4 (14)		
	1-1/4	Male	24 (23000)	5500A7013	D5500A7013	5.5 (14)		

CAUTIONS, WARNINGS And STANDARD WARRANTY



ROSS OPERATING VALVE, ROSS CONTROLS®, ROSS DECCO®, and AUTOMATIC VALVE INDUSTRIAL, collectively the “ROSS Group”.

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure all sources of energy are turned off, the entire pneumatic system is shut down and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS Group Products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any product can be tampered with and/or need servicing after installation, persons responsible for the safety of others or the care of equipment must check ROSS Group Products on a regular basis and perform all necessary maintenance to ensure safe operating conditions.
3. All applicable instructions should be read and complied with before using any fluid power system 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 Group location.
4. Each ROSS Group Product should be used within its specification limits. In addition, use only ROSS Group components to repair ROSS Group Products.

WARNINGS:

Failure to follow these instructions can result in personal injury and/or property damage.

FILTRATION and LUBRICATION

1. 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. The ROSS Group recommends a filter with a 5-micron rating for normal applications.
2. All standard ROSS Group filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. 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 and hazardous leakage. Immediately replace crazed, cracked, or deteriorated bowls.
3. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum base 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 personal injury, and/or damage to property.

WARNINGS:

Failure to follow these instructions can result in personal injury and/or property damage.

AVOID INTAKE/EXHAUST RESTRICTION

1. Do not restrict air flow in the supply line. To do so could reduce the pressure of the supply air below minimum requirements for the valve and thereby causing erratic action.
2. 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.

WARNINGS: Failure to follow these instructions can result in personal injury and/or property damage.

SAFETY APPLICATIONS

1. 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.
2. Safe Exhaust (dump) valves without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All Safe Exhaust valve installations should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.
3. Per specifications and regulations, the ROSS L-O-X® and L-O-X® with EEZ-ON®, N06 and N16 Series operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

WARNINGS:

Failure to follow these instructions can result in personal injury and/or property damage.

STANDARD WARRANTY

All products sold by the ROSS Group are warranted for a one-year period [with the exception of Filters, Regulators and Lubricators (“FRLs”) which are warranted for a period of seven (7) years] from the date of purchase. All products are, during their respective warranty periods, warranted to be free of defects in material and workmanship. The ROSS Group's obligation under this warranty is limited to repair, replacement or refund of the purchase price paid for products which the ROSS Group has determined, in its sole discretion, are defective. All warranties become void if a product has been subject to misuse, misapplication, improper maintenance, modification or tampering. Products for which warranty protection is sought must be returned to the ROSS Group freight prepaid.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND THE ROSS GROUP EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE ROSS GROUP 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 THE ROSS GROUP 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 THE ROSS GROUP MAY EXTEND THE LIABILITY OF THE ROSS GROUP AS SET FORTH HEREIN.



GLOBAL LOCATIONS

	AMERICAS	USA	ROSS CONTROLS	Tel: +1-248-764-1800	www.rosscontrols.com
		Canada	ROSS CANADA	Tel: +1-416-251-7677	www.rosscanada.com
		Brazil	ROSS BRASIL	Tel: +55-11-4335-2200	www.rosscontrols.com.br
	EUROPE	Germany	ROSS EUROPA	Tel: +49 (0)6103-7597-100	www.rosseuropa.com
		France	ROSS FRANCE	Tel: +33(0)1-49-45-65-65	www.rossfrance.com
		United Kingdom	ROSS UK	Tel: +44 (0)1254 872277	www.rossuk.co.uk
	ASIA & PACIFIC	India	ROSS CONTROLS INDIA	Tel: +91-44-2624-9040	www.rosscontrolsindia.com
		China	ROSS CONTROLS CHINA	Tel: +86-21-6915-7961	www.rosscontrolschina.com
		Japan	ROSS ASIA	Tel: +81-42-778-7251	www.rossasia.co.jp



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