

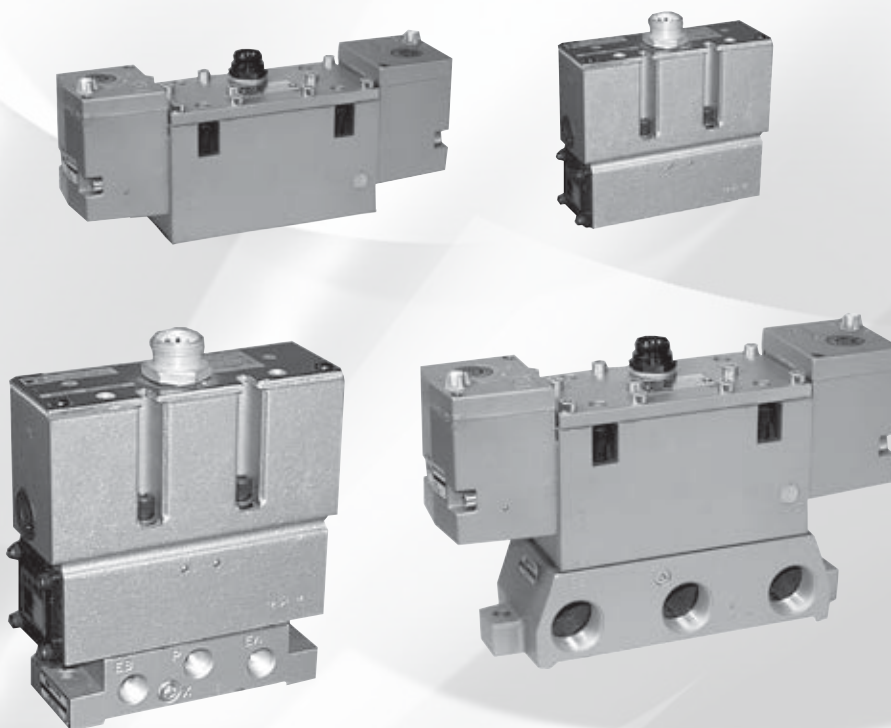
**ROSS CONTROLS®**



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**SAE VALVES 80 & 84 SERIES**

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### SAE 80 & 84 SERIES VALVES – KEY FEATURES

- Micro-thin air bearing between spool and sleeve assures quick valve response
- Designed for high cycle rates and long life
- No seals to wear out
- Easily field-convertible for use with an external pilot supply
- Suitable for vacuum service (with external pilot supply)

VALVE TYPE	VALVE SERIES	DESCRIPTION			AVAILABLE PORT SIZES								FUNCTIONS					Page				
		SAE Size	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	3/2 Single	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center		5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Direct Solenoid Control
SAE	80 & 84	125																1.8				A6.3 - A6.7
SAE	80 & 84	250																5.7				A6.3 - A6.7
SAE	80 & 84	500																8.0				A6.3 - A6.7
Sub-Bases																					A6.8	
Manifolds																					A6.9	
Accessories																					A6.10	


# Single Solenoid Pilot Controlled Valves

SAE  
80 Series

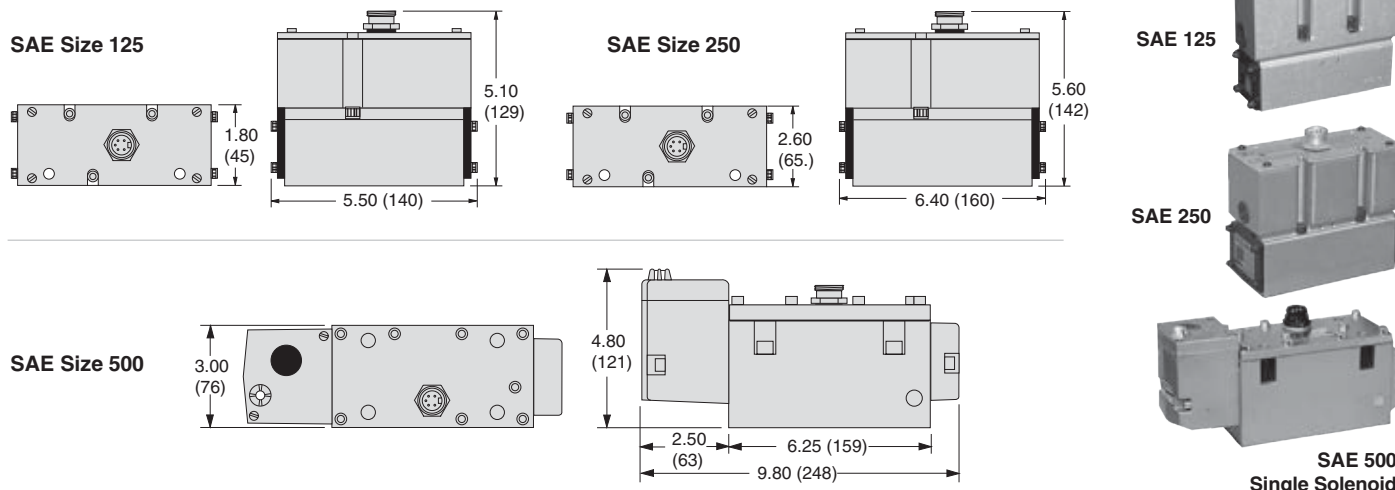
A

5-Way 2-Position Valves, Spring Return											
SAE Size	Valve Model Number*						Avg. C <sub>v</sub>	Average Response Constants#			Weight lb (kg)
	Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 5-pin micro-connector (24 volts DC)		M	F		
									In-Out	Out-Exh.	
125	8076C3311	8076C3321	8076C3331**	8076C3341**	8076C3351**	8076C3361	1.4	20	3.5	4.9	3.5 (1.6)
250	8076C4311	8076C4321	8076C4331**	8076C4341**	8076C4351**	8076C4361	4.0	10	1.4	2.6	6.5 (2.9)
500	8076B6311	8076B6321	8076B6331**	8076B6341**	8076B6351**	8076B6361	8.2	22	0.5	0.8	8.3 (3.7)

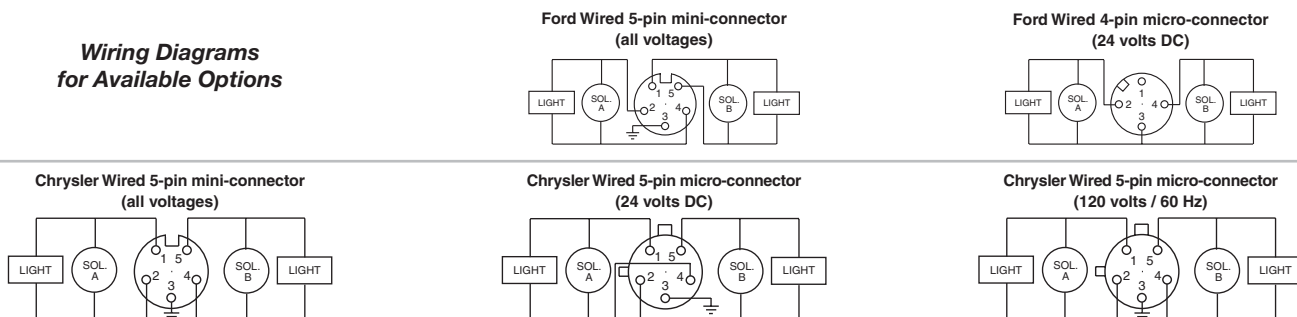
\* Sub-bases and sub-base manifolds ordered separately, refer to page A6.8-9.  
 \*\* Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 8076C3331W. For other voltages, consult ROSS.  
 # Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required 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)



## Wiring Diagrams for Available Options



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

## STANDARD SPECIFICATIONS (for valves on this page):

**Construction:** Spool and sleeve.  
**Mounting Type:** Base.  
**Solenoid Pilot:** Rated for continuous duty.  
**Standard Voltages:** 24 volts DC; 110-120 volts AC, 50/60 Hz.  
**Power Consumption (each solenoid):**  
 SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.  
 SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.

**Indicator Light:** One for each solenoid.  
**Ambient Temperature:** 40° to 120°F (4° to 50°C).  
**Media Temperature:** 40° to 175°F (4° to 80°C).  
**Flow Media:** Filtered air.  
**Inlet Pressure:** Vacuum to 150 psig (10 bar).  
**Manual Override:** Flush; rubber, non-locking.

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



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A6.3

A6

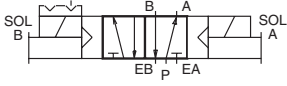
# Double Solenoid Pilot Controlled Valves

# SAE 80 Series

A

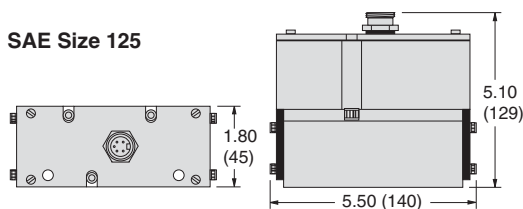
5-Way 2-Position Valves, Detented											
SAE Size	Valve Model Number*						Avg. Cv	Average Response Constants#			Weight lb (kg)
	Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 5-pin micro connector (24 volts DC)		M	F		
	In-Out	Out-Exh.									
125	8076C3312	8076C3322	8076C3332**	8076C3342**	8076C3352**	8076C3362	1.4	15	3.5	4.9	3.5 (1.6)
250	8076C4312	8076C4322	8076C4332**	8076C4342**	8076C4352**	8076C4362	4.0	17	1.5	2.6	7.0 (3.2)
500	8076B6312	8076B6322	8076B6332**	8076B6342**	8076B6352**	8076B6362	8.0	30	0.4	0.5	9.5 (4.3)

\* Sub-bases and sub-base manifolds ordered separately, refer to page A6.8-9.  
 \*\* Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 8076C3332W. For other voltages, consult ROSS.  
 # 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.

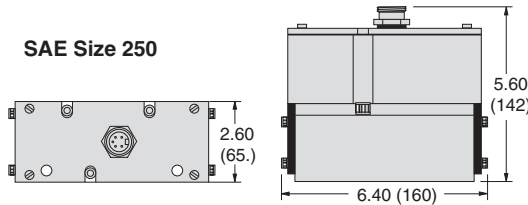


## Valve Dimensions – inches (mm)

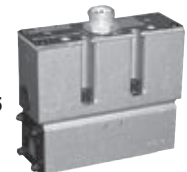
SAE Size 125



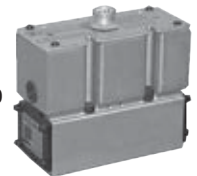
SAE Size 250



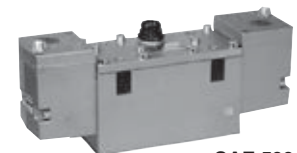
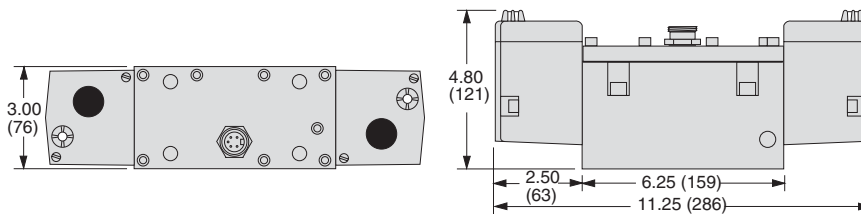
SAE 125



SAE 250



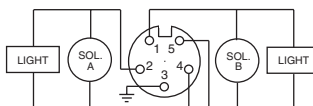
SAE Size 500



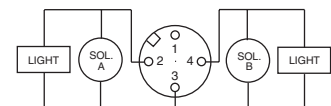
SAE 500  
Double Solenoid

## Wiring Diagrams for Available Options

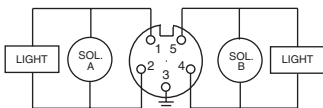
Ford Wired 5-pin mini-connector (all voltages)



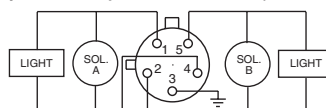
Ford Wired 4-pin micro-connector (24 volts DC)



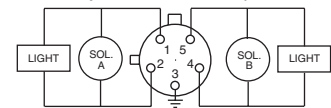
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

## STANDARD SPECIFICATIONS (for valves on this page):

**Construction:** Spool and sleeve.

**Mounting Type:** Base.

**Solenoid Pilot:** Rated for continuous duty.

**Standard Voltages:** 24 volts DC; 110-120 volts AC, 50/60 Hz.

**Power Consumption (each solenoid):**

SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.

SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.

**Ambient Temperature:** 40° to 120°F (4° to 50°C).

**Media Temperature:** 40° to 175°F (4° to 80°C).

**Flow Media:** Filtered air.

**Inlet Pressure:** Vacuum to 150 psig (10 bar).

**Pilot Pressure:** When external supply is used, pressure must be equal to or greater than inlet pressure.

**Indicator Light:** One for each solenoid.

**Manual Override:** Flush; rubber, non-locking.

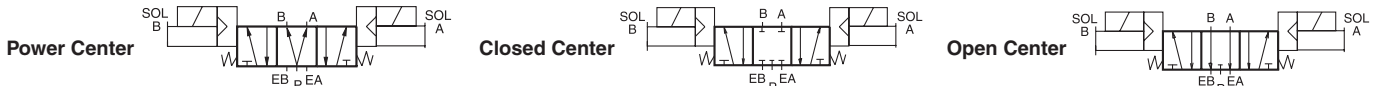
**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

# Double Solenoid Pilot Controlled Valves

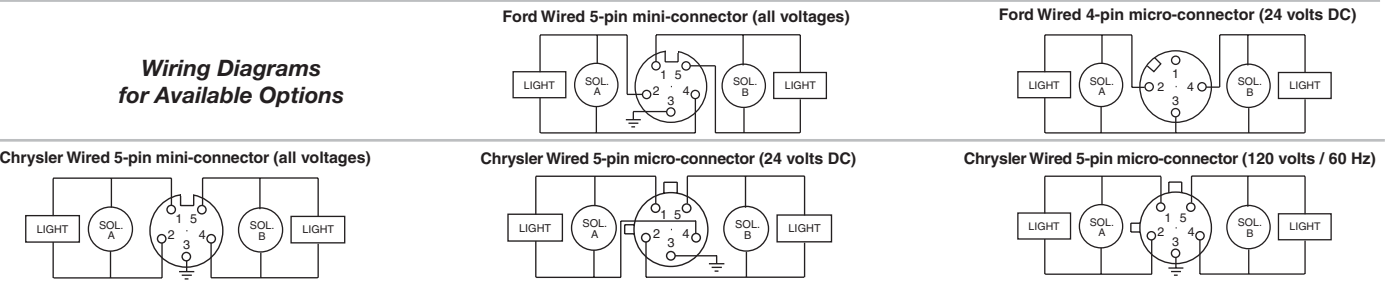
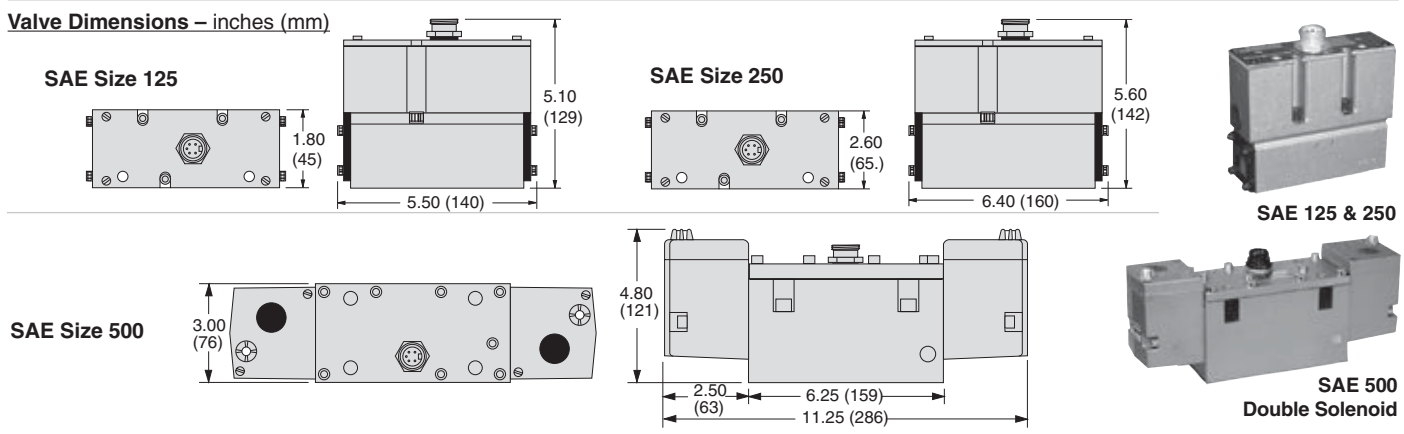
SAE  
80 Series

A

5-Way 3-Position Valves												
	SAE Size	Valve Model Number*						Avg. C <sub>v</sub>	Average Response Constants#			Weight lb (kg)
		Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 5-pin micro connector (24 volts DC)		M	In-Out	Out-Exh.	
		<b>Power Center</b>	125	–	–	8077B3910**	8077B3904**		–	–	1.4	
	250	–	–	8077A4907**	8077A4904**	–	–	4.0	10	1.4	2.6	7.0 (3.2)
<b>Closed Center</b>	125	8077C3311	8077C3321	8077C3331**	8077C3341**	8077C3351**	8077C3361	1.4	20	3.5	5.2	3.5 (1.6)
	250	8077C4311	8077C4321	8077C4331**	8077C4341**	8077C4351**	8077C4361	4.0	10	1.4	2.6	7.0 (3.2)
	500	8077B6311	8077B6321	8077B6331**	8077B6341**	8077B6351**	8077B6361	8.0	12	0.5	0.8	9.5 (4.3)
<b>Open Center</b>	125	8077C3312	8077C3322	8077C3332**	8077C3342**	8077C3352**	8077C3362	1.4	20	3.5	5.2	3.5 (1.6)
	250	8077C4312	8077C4322	8077C4332**	8077C4342**	8077C4352**	8077C4362	4.0	10	1.4	2.6	7.0 (3.2)
	500	8077B6312	8077B6322	8077B6332**	8077B6342**	8077B6352**	8077B6362	8.0	12	0.5	0.8	9.5 (4.3)



\* Sub-bases and sub-base manifolds ordered separately, refer to page A6.8-9.  
 \*\* Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 8077B3910W. For other voltages, consult ROSS.  
 # 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.



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

### STANDARD SPECIFICATIONS (for valves on this page):

- Construction:** Spool and sleeve.
- Mounting Type:** Base.
- Solenoid Pilot:** Rated for continuous duty.
- Standard Voltages:** 24 volts DC; 110-120 volts AC, 50/60 Hz.
- Power Consumption (each solenoid):**  
 SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.  
 SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.
- Ambient Temperature:** 40° to 120°F (4° to 50°C).
- Media Temperature:** 40° to 175°F (4° to 80°C).
- Flow Media:** Filtered air.
- Inlet Pressure:** Vacuum to 150 psig (10 bar).
- Pilot Pressure:** When external supply is used, pressure must be equal to or greater than inlet pressure.
- Indicator Light:** One for each solenoid.
- Manual Override:** Flush; rubber, non-locking.

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



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A6.5

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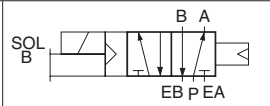
# Single Solenoid Pilot Controlled Valves

SAE  
84 Series

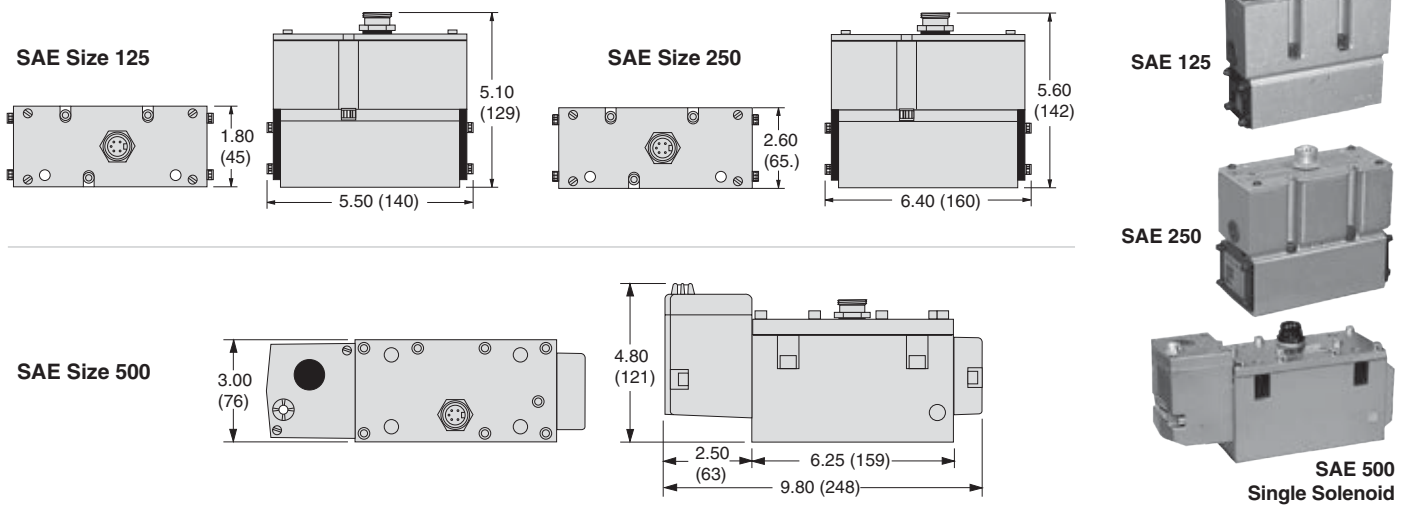
A

5-Way 2-Position Valves, Air Return												
SAE Size	Valve Model Number*						Avg. C <sub>v</sub>	Average Response Constants#			Weight lb (kg)	
	Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 5-pin micro connector (24 volts DC)		M	F			
									In-Out	Out-Exh.		
125	8476C3311	8476C3321	8476C3331**	8476C3341**	8476C3351**	8476C3361	1.8	47	1.6	3.0	2.8 (1.3)	
250	8476C4311	8476C4321	8476C4331**	8476C4341**	8476C4351**	8476C4361	5.5	60	0.6	0.8	5.2 (2.4)	
500	8476B6311	8476B6321	8476B6331**	8476B6341**	8476B6351**	8476B6361	7.9	30	0.4	0.5	7.7 (3.5)	

\* Sub-bases and sub-base manifolds ordered separately, refer to page A6.8-9.  
 \*\* Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 8476C3331W. For other voltages, consult ROSS.  
 # 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.



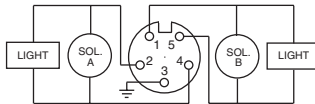
## Valve Dimensions – inches (mm)



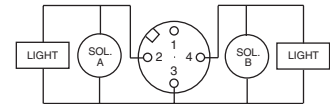
A6

## Wiring Diagrams for Available Options

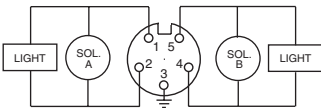
Ford Wired 5-pin mini-connector (all voltages)



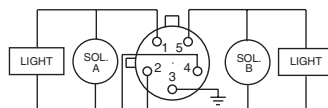
Ford Wired 4-pin micro-connector (24 volts DC)



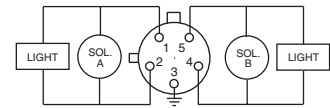
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

## STANDARD SPECIFICATIONS (for valves on this page):

**Construction:** Poppet.  
**Mounting Type:** Base.  
**Solenoid Pilot:** Rated for continuous duty.  
**Standard Voltages:** 24 volts DC; 110-120 volts AC, 50/60 Hz.  
**Power Consumption:** Each solenoid:  
 SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.  
 SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.  
**Ambient Temperature:** 40° to 120°F (4° to 50°C).

**Media Temperature:** 40° to 175°F (4° to 80°C).  
**Flow Media:** Filtered air.  
**Inlet Pressure:** 30 to 150 psig (2 to 10 bar).  
**Pilot Pressure:** When external supply is used, pressure must be equal to or greater than inlet pressure.  
**Indicator Light:** One for each solenoid.  
**Manual Override:** Flush; rubber non-locking.

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



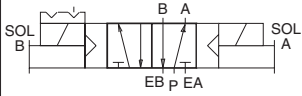
# Double Solenoid Pilot Controlled Valves

SAE  
84 Series

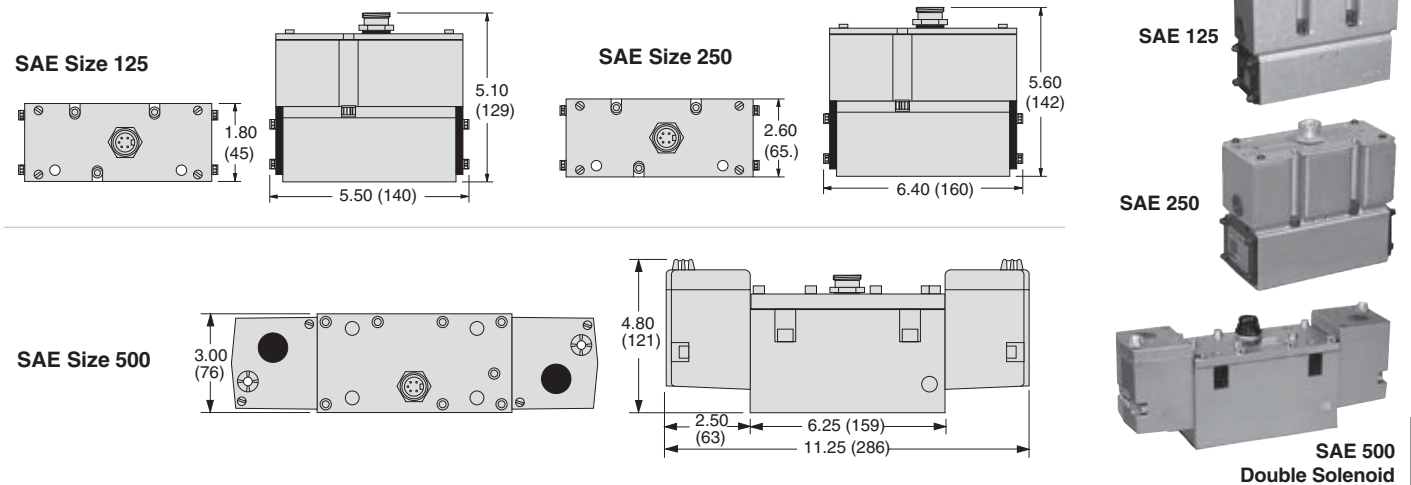
A

5-Way 2-Position Valves, Detented											
SAE Size	Valve Model Number*						Avg. C <sub>v</sub>	Average Response Constants#			Weight lb (kg)
	Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 5-pin micro connector (24 volts DC)		M	F		
									In-Out	Out-Exh.	
125	8476C3312	8476C3322	8476C3332**	8476C3342**	8476C3352**	8476C3362	1.8	16	1.7	2.4	3.3 (1.5)
250	8476C4312	8476C4322	8476C4332**	8476C4342**	8476C4352**	8476C4362	5.7	20	0.6	0.8	5.7 (2.6)
500	8476B6312	8476B6322	8476B6332**	8476B6342**	8476B6352**	8476B6362	7.6	16	0.2	0.5	8.9 (4.1)

\* Sub-bases and sub-base manifolds ordered separately, refer to page A6.8-9.  
 \*\* Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 8476C3332W. For other voltages, consult ROSS.  
 # 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.

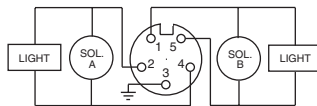


## Valve Dimensions – inches (mm)

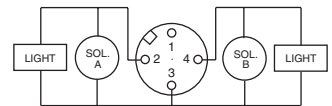


## Wiring Diagrams for Available Options

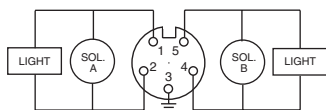
Ford Wired 5-pin mini-connector (all voltages)



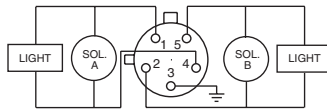
Ford Wired 4-pin micro-connector (24 volts DC)



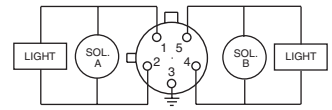
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

## STANDARD SPECIFICATIONS (for valves on this page):

**Construction:** Poppet.  
**Mounting Type:** Base.  
**Solenoid Pilot:** Rated for continuous duty.  
**Standard Voltages:** 24 volts DC; 110-120 volts AC, 50/60 Hz.  
**Power Consumption:** Each solenoid:  
 SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.  
 SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.  
**Ambient Temperature:** 40° to 120°F (4° to 50°C).

**Media Temperature:** 40° to 175°F (4° to 80°C).  
**Flow Media:** Filtered air.  
**Inlet Pressure:** 30 to 150 psig (2 to 10 bar).  
**Pilot Pressure:** When external supply is used, pressure must be equal to or greater than inlet pressure.  
**Indicator Light:** One for each solenoid.  
**Manual Override:** Flush; rubber non-locking.

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



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# Sub-Bases – Side Ported

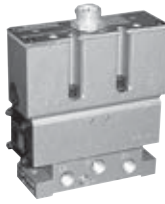
# for SAE Valves 80 & 84 Series

**A**

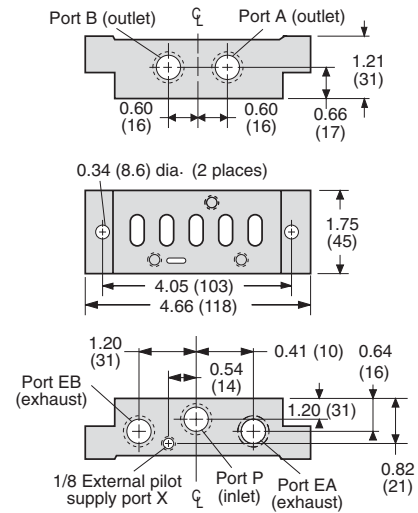
## SAE 125

SAE 125 Sub-Base		
Model Number	Port Size*	
	A, B	P, EA, EB
577K91	1/8	1/4
578K91	1/4	3/8
579K91	3/8	3/8

\*NPT port threads.  
For SAE threads, consult ROSS.



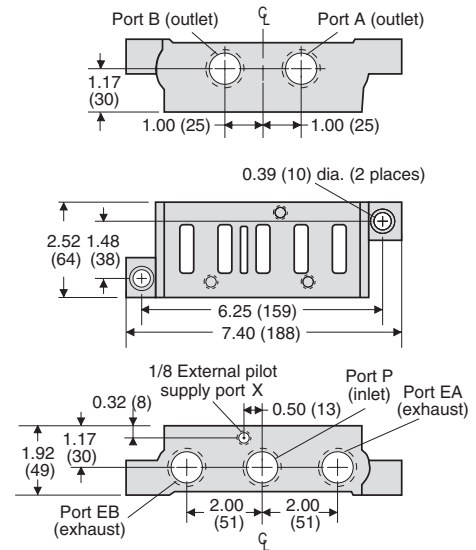
### Dimensions – inches (mm)



## SAE 250

SAE 250 Sub-Base		
Model Number	Port Size*	
	A, B	P, EA, EB
539K91	1/4	3/8
540K91	3/8	1/2
541K91	1/2	1/2
542K91	3/4	3/4

\*NPT port threads.  
For SAE threads, consult ROSS.

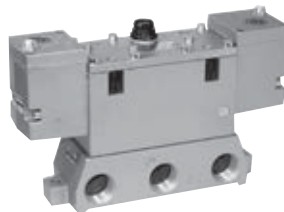


**A6**

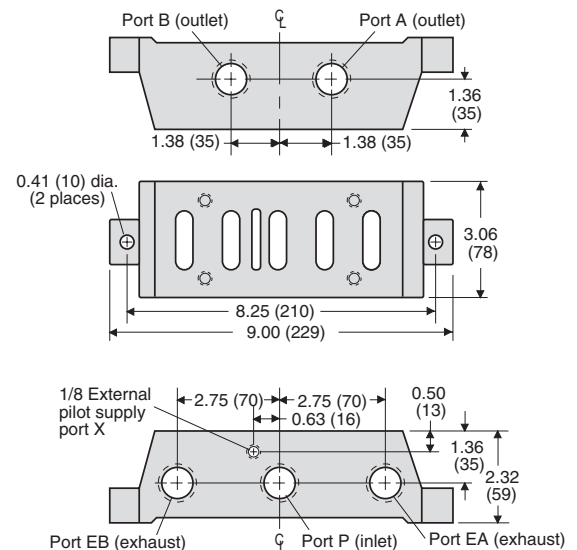
## SAE 500

SAE 500 Sub-Base		
Model Number	Port Size*	
	A, B	P, EA, EB
582K91	1/2	3/4
728K91	3/4	3/4
583K91	3/4	1
584K91	1	1

\*NPT port threads.  
For SAE threads, consult ROSS.



**SAE 500  
Double Solenoid**



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



## Manifold Stations

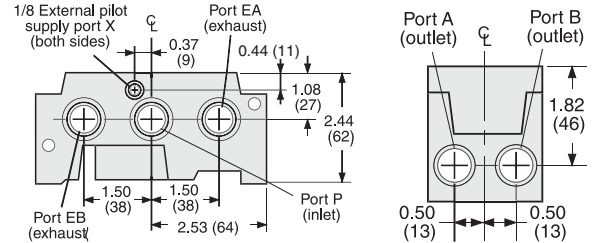
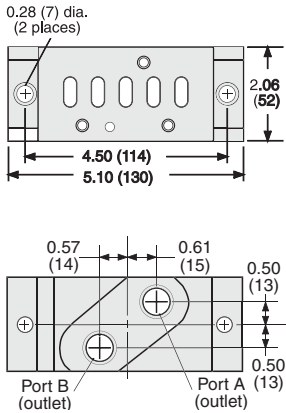
Each manifold station is supplied with all necessary seals and hardware for assembly. End plates are *not* required with these manifolds. Each station has all ports threaded to accept piping.

### SAE 125

Dimensions – inches (mm)

SAE 125 Manifold		
Model Number	Port Size*	
	A, B	P, EA, EB
580K91	1/4	3/8
581K91	3/8	3/8

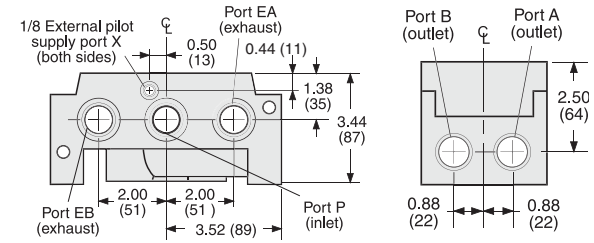
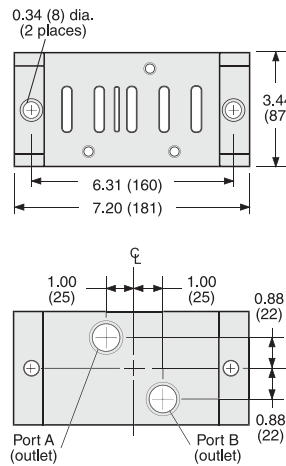
\*NPT port threads.  
For SAE threads, consult ROSS.



### SAE 250

SAE 250 Manifold		
Model Number	Port Size*	
	A, B	P, EA, EB
553K91	3/8	1/2
554K91	1/2	3/4
555K91	3/4	3/4

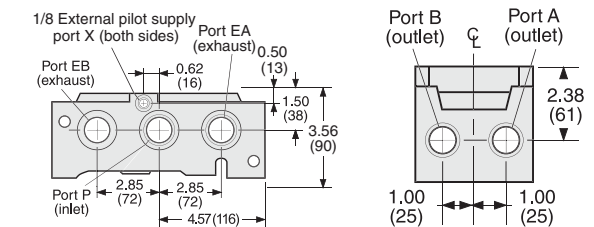
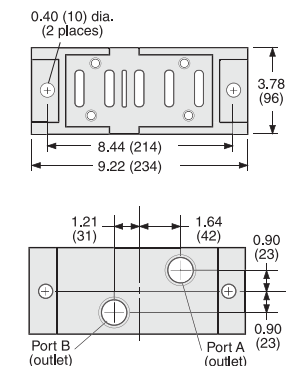
\*NPT port threads.  
For SAE threads, consult ROSS.



### SAE 500

SAE 500 Manifold		
Model Number	Port Size*	
	A, B	P, EA, EB
585K91	1/2	3/4
586K91	3/4	1
587K91	1	1


\*NPT port threads.  
For SAE threads, consult ROSS.

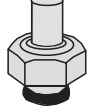


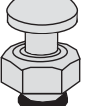
**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

## A Manual Override Kits for SAE Size 500 Valves

Flush flexible manual override buttons are standard on all SAE 500 solenoid pilot valves. Metal buttons as shown below can be installed in place of the standard flexible buttons. Both locking and non-locking metal buttons are available. Each button has spring-return action. 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.

Flush Button		
Locking Type	Kit Number	
Non-Locking	790K87	
Locking	792K87	

Extended Button		
Locking Type	Kit Number	
Non-Locking	791K87	

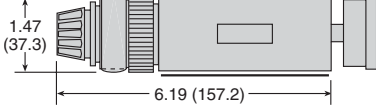
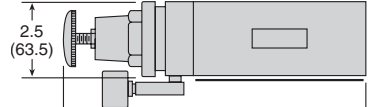
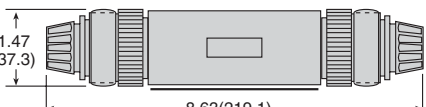
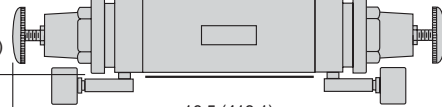
Extended Button with Palm		
Locking Type	Kit Number	
Non-Locking	984H87	

## Blanking Plates

For manifold stations not occupied by a valve, blanking plates are available. These plates block the unused air passages.

SAE Size	Part Number
125	820K77
250	821K77
500	822K77

## Interposed Regulators

SAE Size & Type	Model Number	Dimensions – inches (mm)
125 Single	593K91	 1.47 (37.3) 6.19 (157.2)
125 Dual	873H91	 2.5 (63.5) 11.0 (279.4)
250 Single	595K91	 1.47 (37.3) 8.63 (219.1)
250 Dual	816H91	 1.47 (37.3) 16.5 (419.1)

Single and dual interposed regulators are available for SAE sizes 125 and 250.

A regulator is sandwiched between the valve and sub-base or manifold station and the valve is then bolted through the regulator to the sub-base or manifold station with the longer bolts provided. Single pressure regulators supply the same regulated pressure at both outlet ports.

Dual pressure regulators allow the pressure at each outlet port to be set independently.

*Use dual pressure regulators with 80 Series valves only. When using dual pressure regulators, the valve must be externally piloted. For external pilot supply conversion, see below.*

**Regulated pressure range:** 10 to 130 psig (1 to 9 bar); regulator-to-base gasket included.

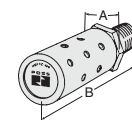
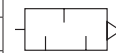
### EXTERNAL PILOT SUPPLY CONVERSION

ROSS SAE Solenoid pilot valves are designed to use an internal pilot supply. However, they are easily converted for use with an external pilot supply. To make this conversion, remove the pipe plug on the bottom of the valve. The plug is located between the center port and an adjacent port. Install this plug in the threaded port at the end of the center port. This blocks the internal pilot supply. Connect the external pilot supply line to port X in the base. Pressure in the external supply line must not be less than that specified in the valve's Standard Specifications.

## Silencers

Port Size	Thread Type	Model Number		Avg. C <sub>v</sub>	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
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)
3/8	Male	5500A3003	D5500A3003	4.3	1.3 (32)	3.5 (88)	0.2 (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 (92)	0.2 (0.1)
3/4	Male	5500A5003	D5500A5003	11.5	2.0 (51)	5.3 (135)	0.6 (0.3)
1	Male	5500A6003	D5500A6003	14.6	2.0 (51)	5.4 (138)	0.6 (0.3)

**Pressure Range:** 0 to 150 psig (0 to 10.3 bar) maximum. **Flow Media:** Filtered air.



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

# 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 or part 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 <sup>#</sup>	C*	—
ISO 228 - DIN 259 Parallel, BSPP <sup>#</sup>	D	G
ISO 228 - JIS B0203 Tapered <sup>#</sup>	J	ISO
SAE 1926- ISO 11926	S	NPT

\* Used only for filters, regulators, lubricators.

<sup>#</sup> 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 [www.rosscontrols.com](http://www.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

