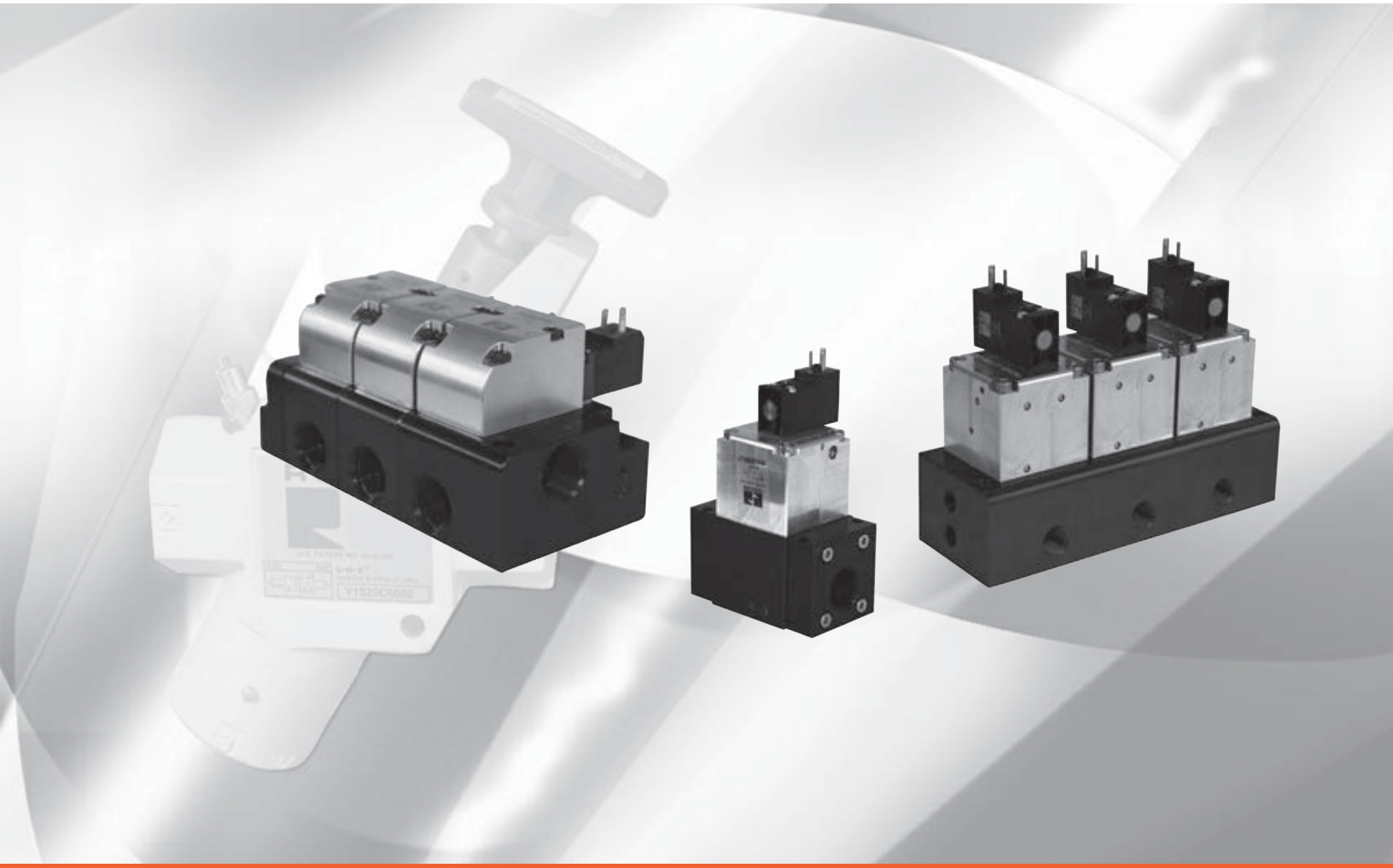
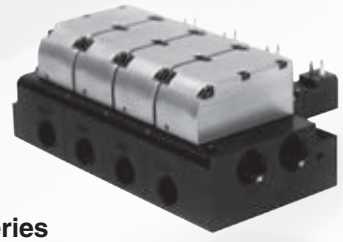
ROSS CONTROLS®

DALE Series Valves

Inline Poppet Valves & Manifolds
Leak Tight Valves & Manifolds

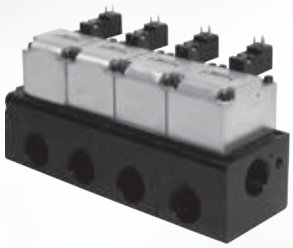




CP Series

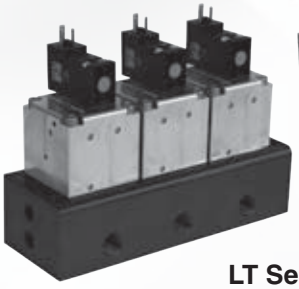
LF Series

Internally or externally piloted series for use in standard pressure applications with 30 psi (2 bar) minimum operating pressure.



CX Series

LX Series



LT Series

Externally piloted only series for use in leak tight, low pressure, vacuum, and process applications.

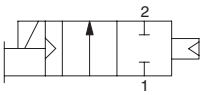
For use in leak test applications.

VALVE TYPE/FUNCTION	SOLENOID	PRESSURE	AVAILABLE INLET PORT SIZES									MAXIMUM FLOW Cv	MOUNTING		Page
			1/4	3/8	1/2	3/4	1	1¼	1½	2	2½		INLINE	MANIFOLD	
CP SERIES															
2/2	■				■		■		■		■	108	■	■	B1.3 - B1.6
3/2	■				■		■					12.3	■	■	B1.3 - B1.6
LF SERIES															
2/2	■			■	■	■	■	■	■	■	■	62.7	■		B1.7 - B1.8
CX SERIES for Leak Test Applications															
2/2	■		■		■		■		■		■	108	■		B1.9 - B1.10
3/2	■				■		■					12.3	■		B1.11
2/2		■			■		■		■		■	108	■		B1.12 - B1.13
3/2		■			■		■					12.3	■		B1.12 - B1.13
CX SERIES MANIFOLDS for Leak Test Applications															
2/2	■		■		■		■		■		■	108		■	B1.14 - B1.15
3/2	■				■		■					12.3		■	B1.16
2/2		■			■		■		■		■	108		■	B1.17 - B1.18
3/2		■			■		■					12.3		■	B1.17 - B1.18
LX SERIES for Leak Test Applications															
2/2	■			■	■	■	■	■	■	■	■	62.7	■		B1.19 - B1.20
2/2		■		■	■	■	■	■	■	■	■	62.7	■		B1.21
LT SERIES															
3/4	■		■									2.2		■	B1.22 - B1.23
Accessories	Electrical Connectors, Silencers														B1.25

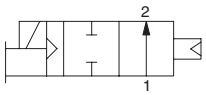
2-Way 2-Position Valves, Spring Assisted Air Return

Port Size		Model Number* Internal Pilot Supply		Pilot Port Thread		Avg. C_v	Weight lb (kg)
1	2	Normally Closed	Normally Open	NPT	BSPP		
1/2	3/8	CP14NB37101**	CP24NB37101**	10-32 UNF	M5	3.5	1.4 (0.6)
1/2	1/2	CP14NB47101**	CP24NB47101**	10-32 UNF	M5	3.5	1.4 (0.6)
1	3/4	CP16NB57101**	CP26NB57101**	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1	1	CP16NB67101**	CP26NB67101**	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1½	1¼	CP18NB77101**	CP28NB77101**	1/8-27 NPT	G1/8	44.9	10.0 (4.6)
1½	1½	CP18NB87101**	CP28NB87101**	1/8-27 NPT	G1/8	44.9	10.0 (4.6)
2½	2	CP10NB97101**	CP20NB97101**	1/8-27 NPT	G1/8	108	19.5 (8.9)
2½	2½	CP10NB07101**	CP20NB07101**	1/8-27 NPT	G1/8	108	19.5 (8.9)

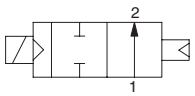
* NPT threads. For BSPP threads, replace "N" in the model number with a "D" , e.g., CP14DB37101W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., CP14NB37101W.



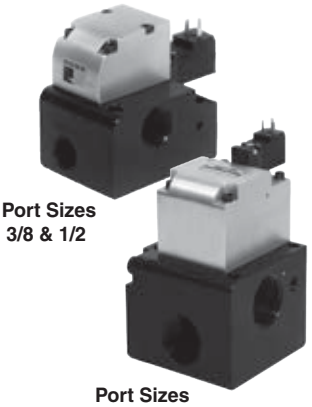
1/2 thru 2½ Normally Closed



1/2 & 1 Normally Open



1½ & 2½ Normally Open

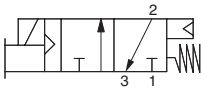

Port Sizes 3/8 & 1/2

Port Sizes 3/4 thru 2½

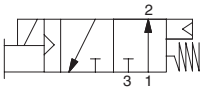
3-Way 2-Position Valves, Spring Assisted Air Return

Port Size		Model Number* Internal Pilot Supply		Pilot Port Thread		Avg. C_v	Weight lb (kg)
1, 3	2	Normally Closed	Normally Open	NPT	BSPP		
1/2	3/8	CP34NB37101**	CP44NB37101**	10-32 UNF	M5	3.5	1.8 (0.8)
1/2	1/2	CP34NB47101**	CP44NB47101**	10-32 UNF	M5	3.5	1.8 (0.8)
1	3/4	CP36NB57101**	CP46NB57101**	1/8-27 NPT	G1/8	12.3	5.3 (2.4)
1	1	CP36NB67101**	CP46NB67101**	1/8-27 NPT	G1/8	12.3	5.3 (2.4)

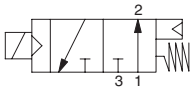
* NPT threads. For BSPP threads, replace "N" in the model number with a "D" , e.g., CP34DB37101W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., CP34NB37101W.



1/2 & 1 Normally Closed



1/2 Normally Open



1 Normally Open


Port Sizes 3/8 & 1/2

Port Sizes 3/4 & 1

EXTERNAL PILOT SUPPLY CONVERSION: The CP Series valves can be easily field converted to external pilot supply by simply removing existing pipe plug from port X-1, and installing air supply to the X-1 port.

Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

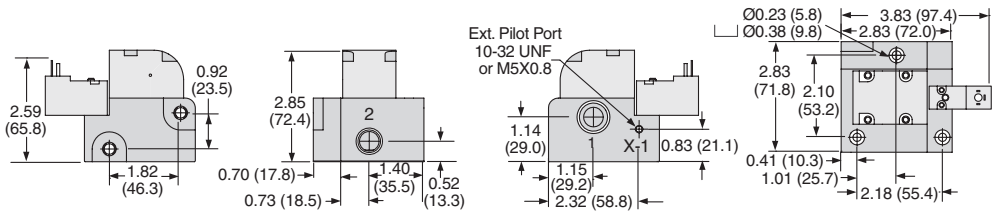
Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
2/2 Valves *Port Size 1/2 & 1 and* ***3/2 Valves*** *Port Size 1/2:*
24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
2/2 Valves *Port Size 1½ & 2½ and* ***3/2 Valves*** *Port Size 1:*
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: 30 to 145 psig (2 to 10 bar).
Pilot Pressure: 30 to 145 psig (2 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
2/2 valves: *Port Size:* 1/2 thru 2½ (Normally Closed).
Port Size: 1/2 & 1 (Normally Open).
3/2 valves: *Port Size:* 1/2 & 1 (Normally Closed).
Port Size: 1/2 (Normally Open).

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

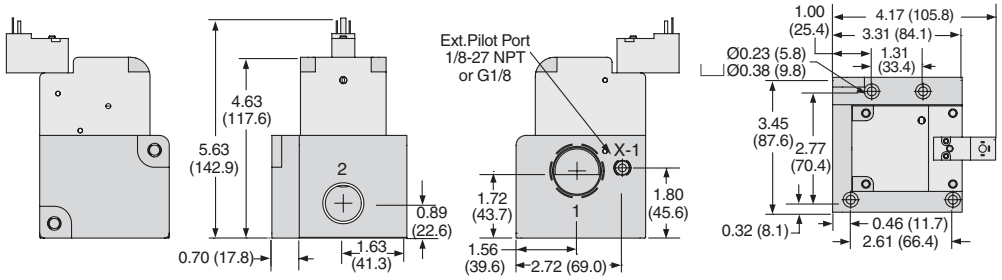
Valve Dimensions – inches (mm)

2/2 Valves

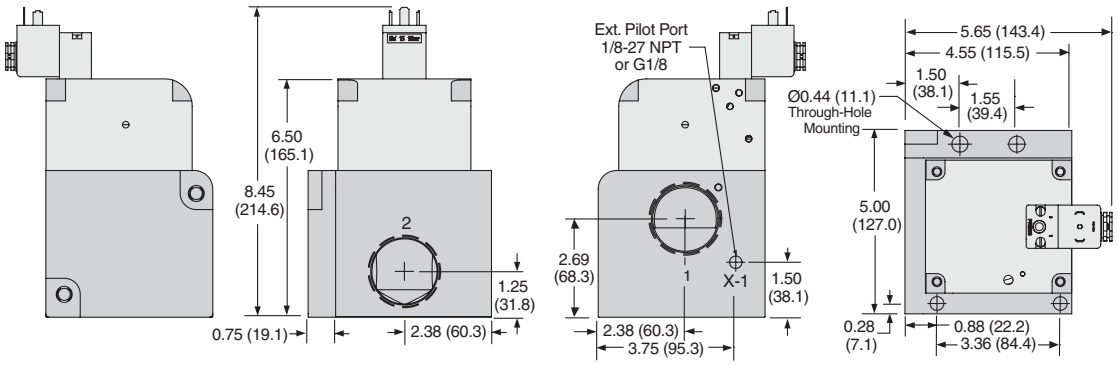
Port Size 3/8 & 1/2



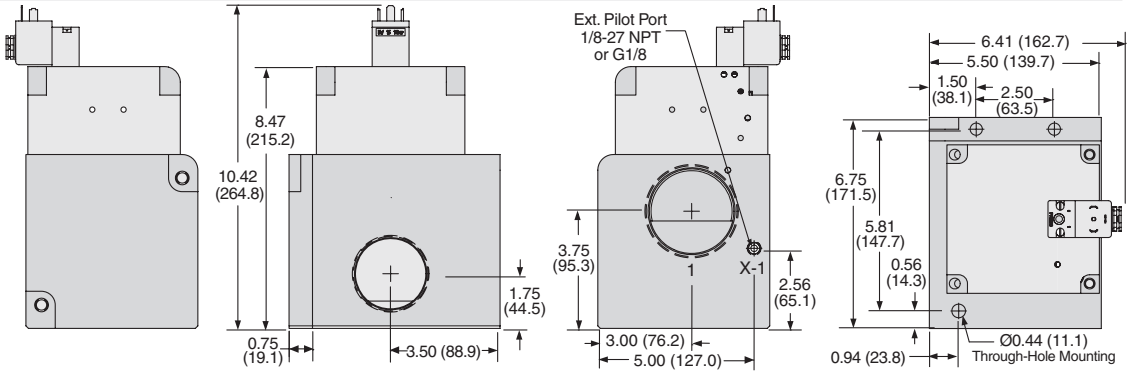
Port Size 3/4 & 1



Port Size 1¼ & 1½

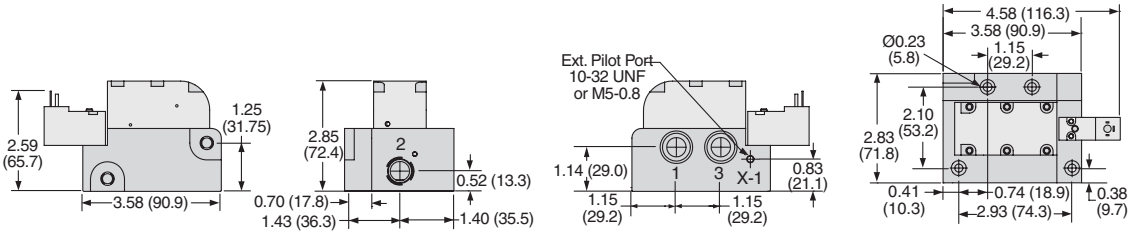


Port Size 2 & 2½

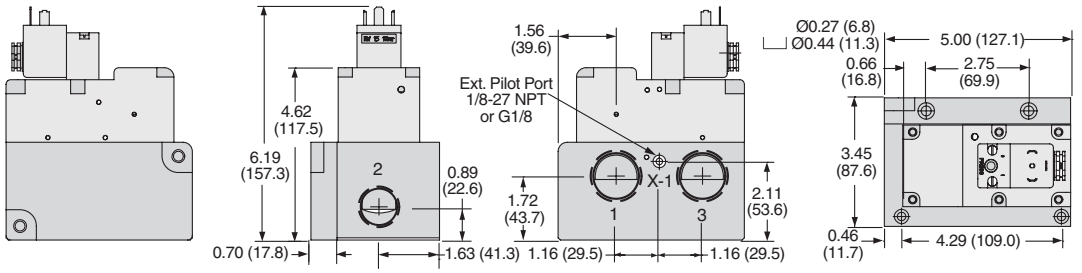


3/2 Valves

Port Size 3/8 & 1/2



Port Size 3/4 & 1

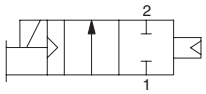


Manifolds can be ordered from two to ten stations. Complete valves-on-manifold assemblies can be ordered to fit your precise requirements. For preassembled manifold valves with the same model number, select the part number from the table below.

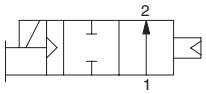
For ordering the Dale CP Series manifold valves with different valve functions, please see page B1.24 for manifold configurator.

2-Way 2-Position Valves, Spring Assisted Air Return

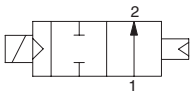
Port Size		Model Number* Internal Pilot Supply		Pilot Port Thread		Avg. C_v
1	2	Normally Closed	Normally Open	NPT	BSPP	
1/2	3/8	CP14NB3711X**	CP24NB3711X**	10-32 UNF	M5	3.7
1/2	1/2	CP14NB4711X**	CP24NB4711X**	10-32 UNF	M5	3.7
1	3/4	CP16NB5711X**	CP26NB5711X**	1/8-27 NPT	G1/8	13.7
1	1	CP16NB6711X**	CP26NB6711X**	1/8-27 NPT	G1/8	13.7
1½	1¼	CP18NB7711X**	CP28NB7711X**	1/8-27 NPT	G1/8	44.9
1½	1½	CP18NB8711X**	CP28NB8711X**	1/8-27 NPT	G1/8	44.9
2½	2	CP10NB9711X**	CP20NB9711X**	1/8-27 NPT	G1/8	108
2½	2½	CP10NB0711X**	CP20NB0711X**	1/8-27 NPT	G1/8	108



1/2 thru 2½
Normally Closed



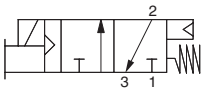
1/2 & 1
Normally Open



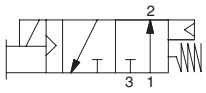
1½ & 2½
Normally Open

3-Way 2-Position Valves, Spring Assisted Air Return

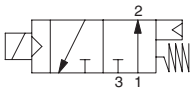
Port Size		Model Number* Internal Pilot Supply		Pilot Port Thread		Avg. C_v
1, 3	2	Normally Closed	Normally Open	NPT	BSPP	
1/2	3/8	CP34NB3711X**	CP44NB3711X**	10-32 UNF	M5	3.6
1/2	1/2	CP34NB4711X**	CP44NB4711X**	10-32 UNF	M5	3.6
1	3/4	CP36NB5711X**	CP46NB5711X**	1/8-27 NPT	G1/8	12.3
1	1	CP36NB6711X**	CP46NB6711X**	1/8-27 NPT	G1/8	12.3



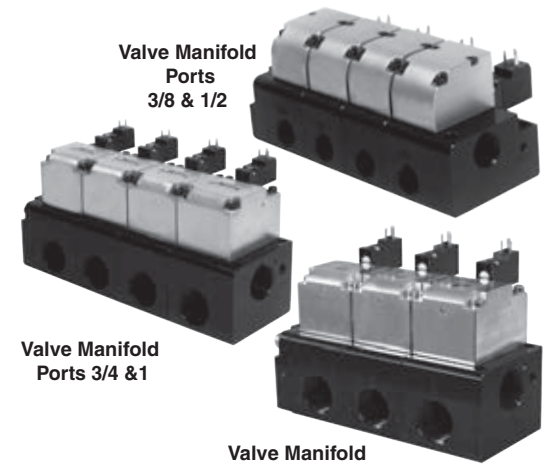
1/2 & 1
Normally Closed

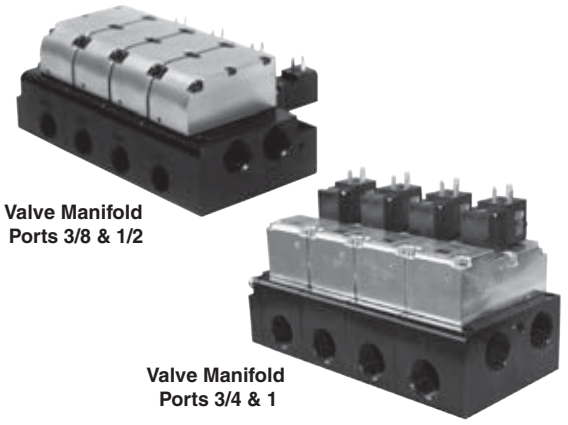


1/2
Normally Open



1
Normally Open





* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CP14DB3711XW.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., CP14NB3711XW.
X To indicate the number of stations desired (2-10), replace X in the model number with the specific number of stations, e.g., CP14NB37114W, 4 = Number of Stations.
Contact ROSS for 1 station valve manifolds or refer to single CX Valve product page.

EXTERNAL PILOT SUPPLY CONVERSION: The CP Series valves can be easily field converted to external pilot supply by simply removing existing pipe plug from port X-1, and installing air supply to the X-1 port.

Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
2/2 Valves *Port Size 1/2 & 1 and* ***3/2 Valves*** *Port Size 1/2:*
24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
2/2 Valves *Port Size* ***1½*** *& 2½ and* ***3/2 Valves*** *Port Size 1:*
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: 30 145 psig (2 to 10 bar).
Pilot Pressure: 30 to 145 psig (2 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
2/2 valves: *Port Size:* 1/2 thru 2½ (Normally Closed).
Port Size: 1/2 & 1 (Normally Open).
3/2 valves: *Port Size:* 1/2 & 1 (Normally Closed).
Port Size: 1/2 (Normally Open).

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

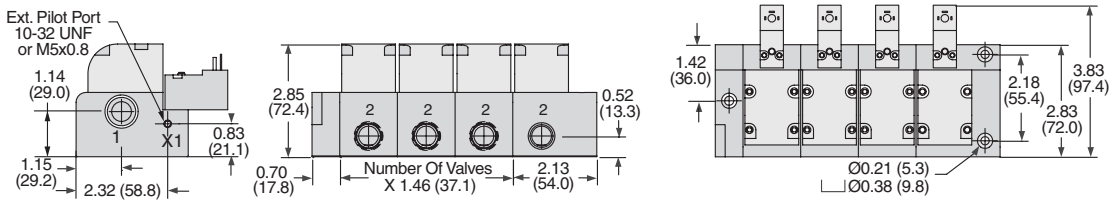
B1

B

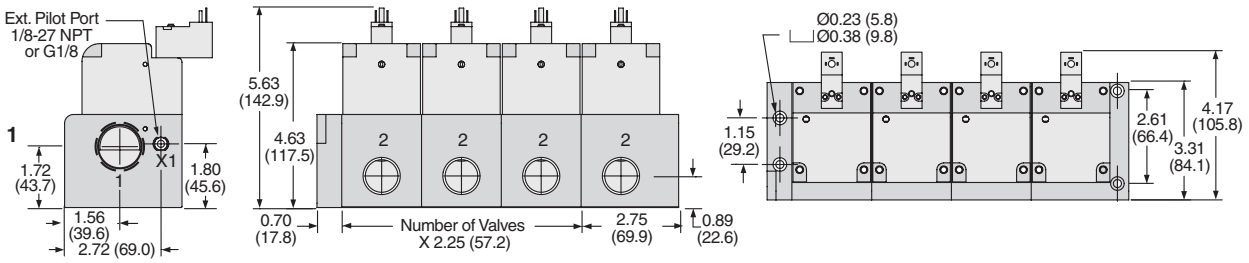
Dimensions – inches (mm)

2/2 Valves

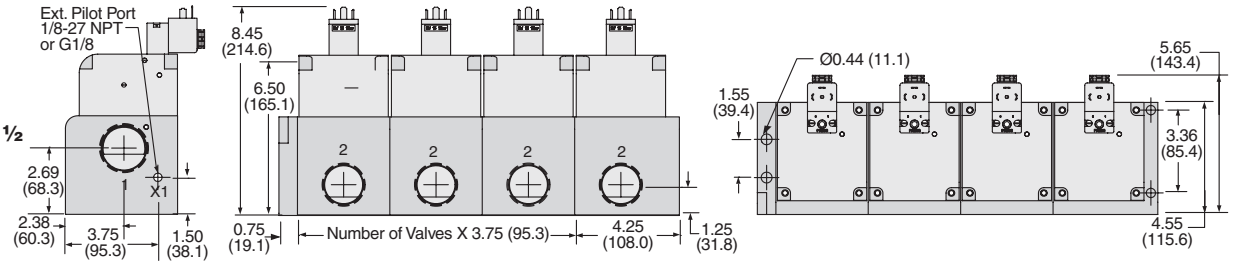
Port Size 3/8 & 1/2



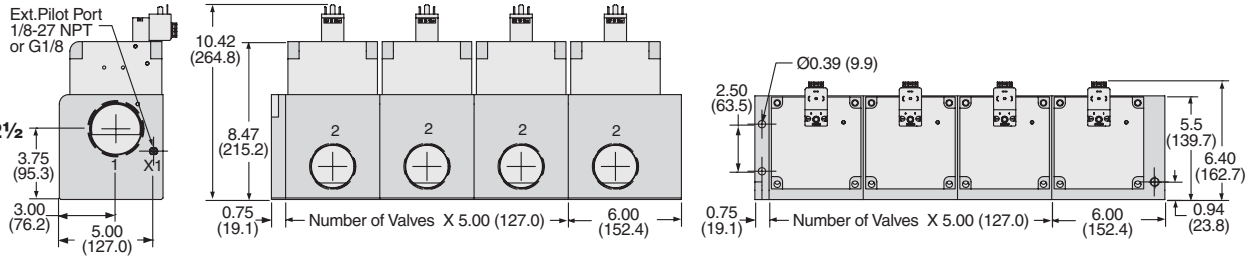
Port Size 3/4 & 1



Port Size 1¼ & 1½

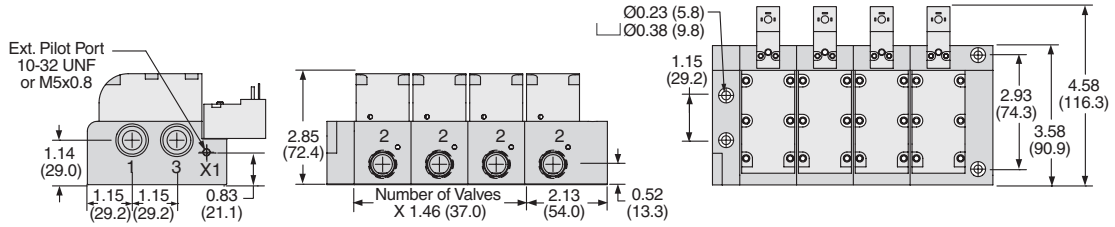


Port Size 2 & 2½

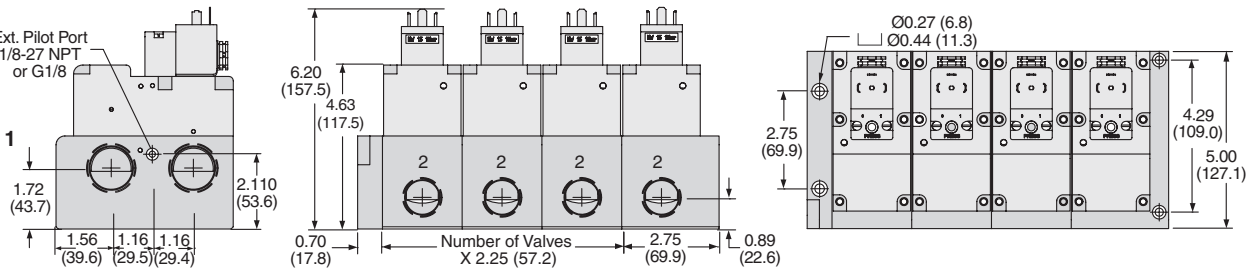


3/2 Valves

Port Size 3/8 & 1/2

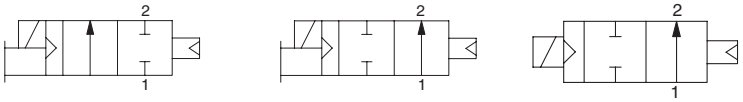


Port Size 3/4 & 1



2-Way 2-Position Valves, Spring Assisted Air Return							
Port Size		Model Number* Internal Pilot Supply		Pilot Port Thread		Avg. C_v	Weight lb (kg)
1	2	Normally Closed	Normally Open	NPT	BSPP		
3/8	3/8	LF13NB37101**	LF23NB37101**	1/8-27 NPT	G1/8	3.6	1.5 (0.7)
1/2	1/2	LF14NB47101**	LF24NB47101**	1/8-27 NPT	G1/8	3.6	1.5 (0.7)
3/4	3/4	LF15NB57101**	LF25NB57101**	1/8-27 NPT	G1/8	12.2	3.5 (1.6)
1	1	LF16NB67101**	LF26NB67101**	1/8-27 NPT	G1/8	12.2	3.5 (1.6)
1¼	1¼	LF17NB77101**	LF27NB77101**	1/8-27 NPT	G1/8	36.1	9.3 (4.2)
1½	1½	LF18NB87101**	LF28NB87101**	1/8-27 NPT	G1/8	36.1	9.3 (4.2)
2	2	LF19NB97101**	LF29NB97101**	1/8-27 NPT	G1/8	62.7	19.3 (8.8)
2½	2½	LF10NB07101**	LF20NB07101**	1/8-27 NPT	G1/8	62.7	19.3 (8.8)

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., LF13DB37101W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., LF13NB37101W.



Normally Closed | 3/8 thru 1 Normally Open | 1¼ thru 2½ Normally Open

Ports 3/8 thru 1

Ports 1¼ thru 2½

The LF & LX Series provides superior performance over a diaphragm valve with a rugged poppet design, bi-directional flow and high cycle life.

The LF & LX Series provides superior performance over a ball valve with solenoid actuation, shifting speed, cycle life, and most important, a cost effective alternative.

Diaphragm Valve ← **Improved Performance** | **Cost Effective** → **Ball Valve**

EXTERNAL PILOT SUPPLY CONVERSION:

The LF Series valves can be easily field converted to external pilot supply by simply removing existing pipe plug from port X-1, and installing air supply to the X-1 port.

Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
Port Size 3/8 thru 1: 24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
Port Size 1¼ thru 2½:
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: 30 to 145 psig (2 to 10 bar).
Pilot Pressure: 30 to 145 psig (2 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
Port Size: 3/8 thru 2½ (Normally Closed).
Port Size: 3/8 thru 1 (Normally Open).

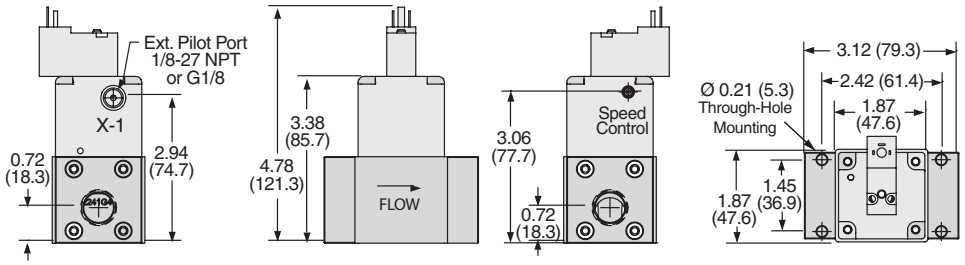
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

B1

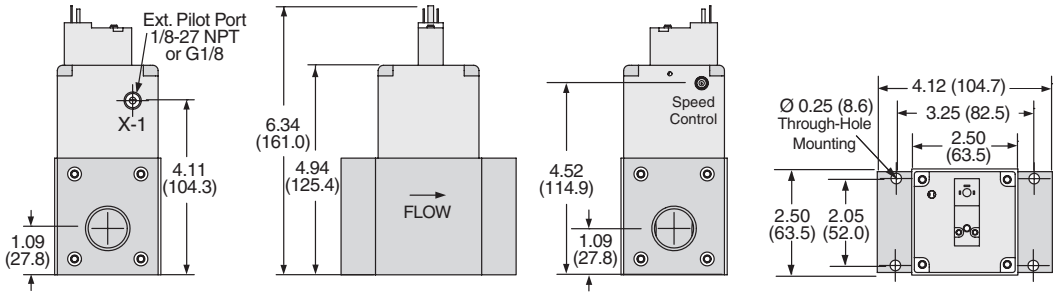
B

Valve Dimensions – inches (mm)

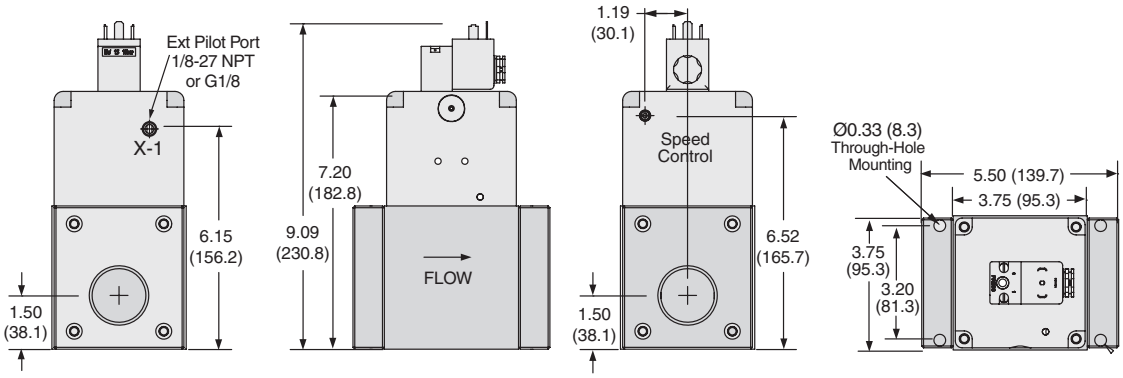
Port Size 3/8 & 1/2



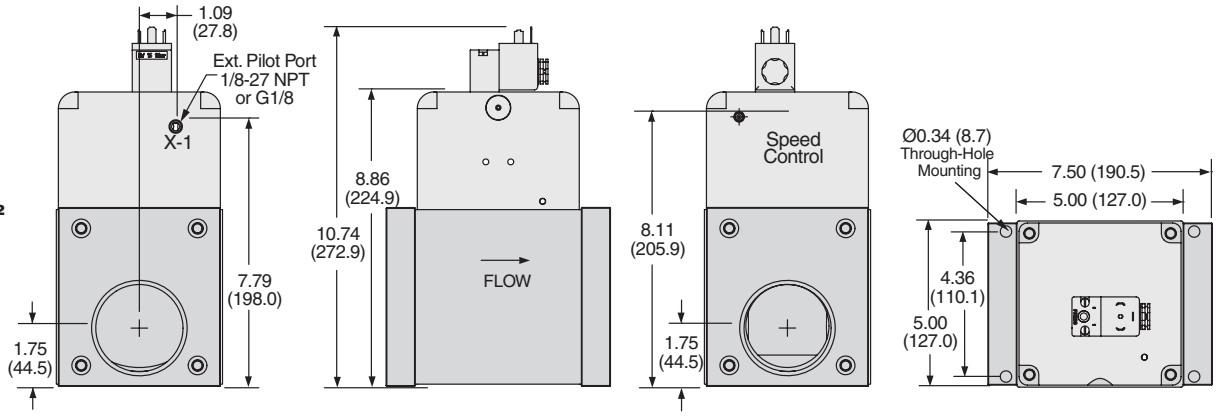
Port Size 3/4 & 1



Port Size 1¼ & 1½

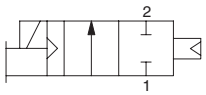


Port Size 2 & 2½

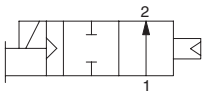


2-Way 2-Position Valves, Air Return							
Port Size		Model Number* External Pilot Supply		Pilot Port Thread		Avg. C_v	Weight lb (kg)
1	2	Normally Closed	Normally Open	NPT	BSPP		
1/4	1/4	CX12NB27501**	CX22NB27501**	10-32 UNF	M5	0.9	1.3 (0.6)
1/2	3/8	CX14NB37501**	CX24NB37501**	10-32 UNF	M5	3.5	1.4 (0.6)
1/2	1/2	CX14NB47501**	CX24NB47501**	10-32 UNF	M5	3.5	1.4 (0.6)
1	3/4	CX16NB57501**	CX26NB57501**	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1	1	CX16NB67501**	CX26NB67501**	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1½	1¼	CX18NB77501**	CX28NB77501**	1/8-27 NPT	G1/8	44.9	10.0 (4.6)
1½	1½	CX18NB87501**	CX28NB87501**	1/8-27 NPT	G1/8	44.9	10.0 (4.6)
2½	2	CX10NB97501**	CX20NB97501**	1/8-27 NPT	G1/8	108	19.5 (8.9)
2½	2½	CX10NB07501**	CX20NB07501**	1/8-27 NPT	G1/8	108	19.5 (8.9)

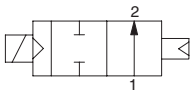
* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX12DB27501W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., CX12NB27501W.



1/4 thru 2½ Normally Closed



1/4 thru 1 Normally Open



1½ & 2½ Normally Open


Port Sizes 3/8 & 1/2


Port Sizes 1/4, 3/4 thru 2½

Features & Benefits:

- Compact Manifold Design – Eliminating piping
- High Flow – CP Series port sizes from 3/8" to 2-1/2"
- Consistent Shifting – Dual piston provides smooth, consistent shifting
- Bi-Directional Flow – Allows pressure or vacuum on any port at any time
- Reduced Downtime – Poppet cartridge rebuilds completed in minutes
- Life Test – Tested to 20 million cycles

Accessories ordered separately, refer to page B1.25.

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

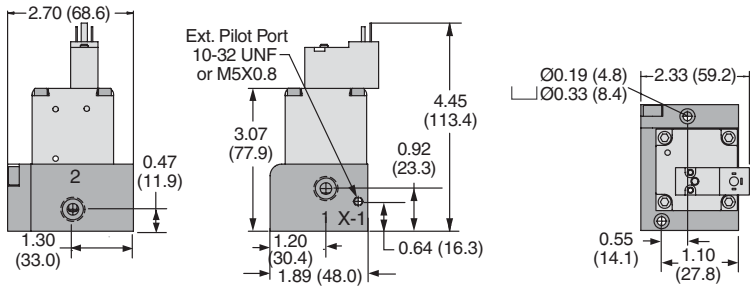
Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
Port Size 1/4 thru 1:
24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
Port Size 1¼ thru 2½:
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.

Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure:
Port Size 1/4: Vacuum to 250 psig (vacuum to 17.2 bar).
Port Size 1/2 thru 2½: Vacuum to 145 psig (vacuum to 10 bar).
Pilot Pressure:
Port Size 1/4: 70 to 145 psig (5 to 10 bar).
Port Size 1/2 thru 2½: 30 to 145 psig (2 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
Port Size: 1/4 thru 2½ (Normally Closed).
Port Size: 1/4 thru 1 (Normally Open).

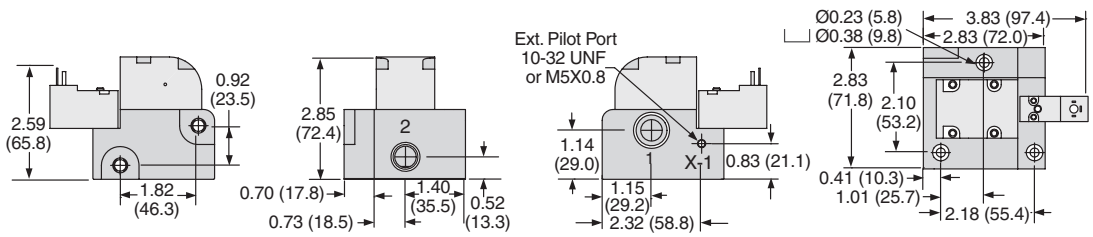
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Valve Dimensions – inches (mm)

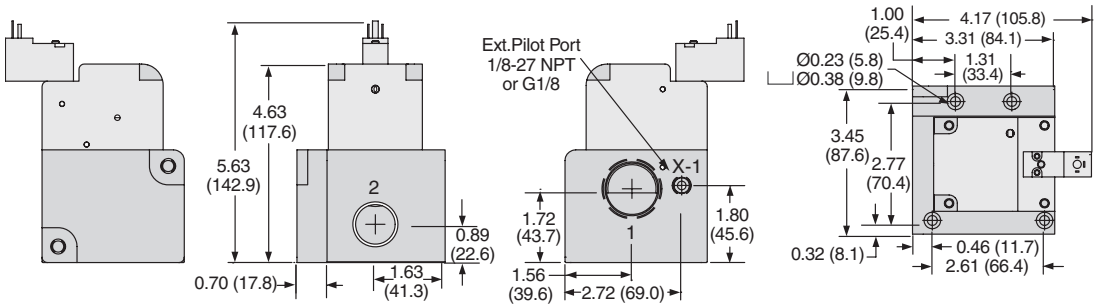
Port Size 1/4



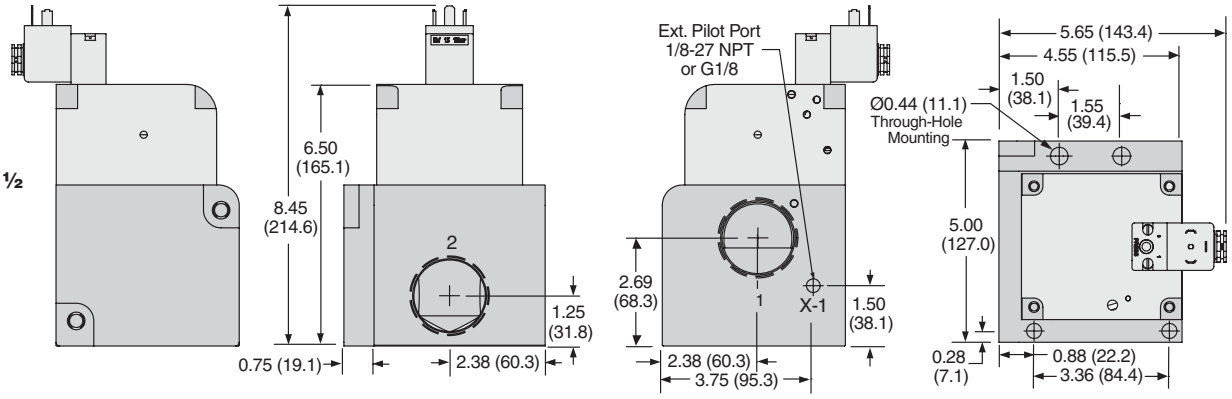
Port Size 3/8 & 1/2



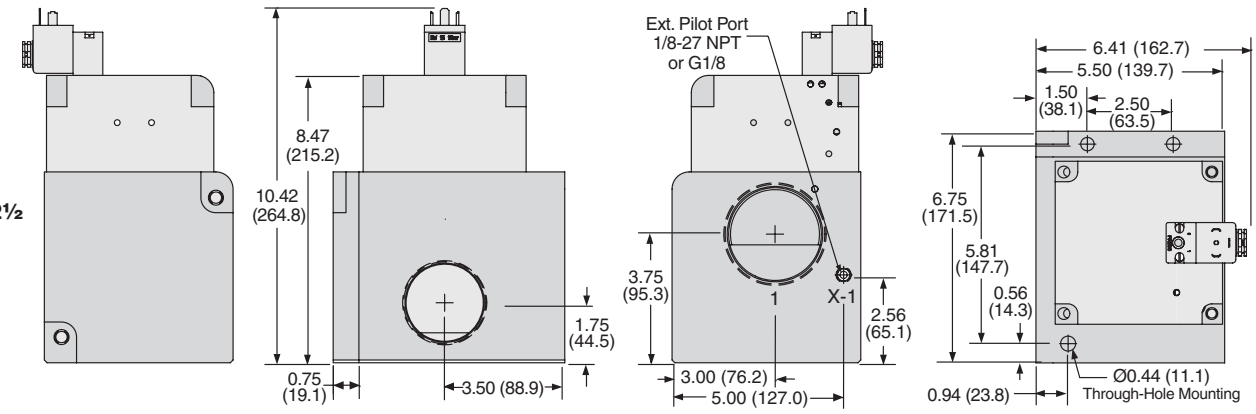
Port Size 3/4 & 1



Port Size 1¼ & 1½

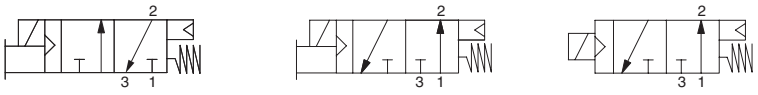


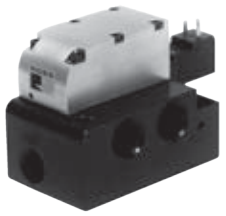
Port Size 2 & 2½



3-Way 2-Position Valves, Spring Assisted Air Return							
Port Size		Model Number* External Pilot Supply		Pilot Port Thread		Avg. C_v	Weight lb (kg)
1, 3	2	Normally Closed	Normally Open	NPT	BSPP		
1/2	3/8	CX34NB37501**	CX44NB37501**	10-32 UNF	M5	3.5	1.8 (0.8)
1/2	1/2	CX34NB47501**	CX44NB47501**	10-32 UNF	M5	3.5	1.8 (0.8)
1	3/4	CX36NB57501**	CX46NB57501**	1/8-27 NPT	G1/8	12.3	5.3 (2.4)
1	1	CX36NB67501**	CX46NB67501**	1/8-27 NPT	G1/8	12.3	5.3 (2.4)

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX34DB37501W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., CX34NB37501W.



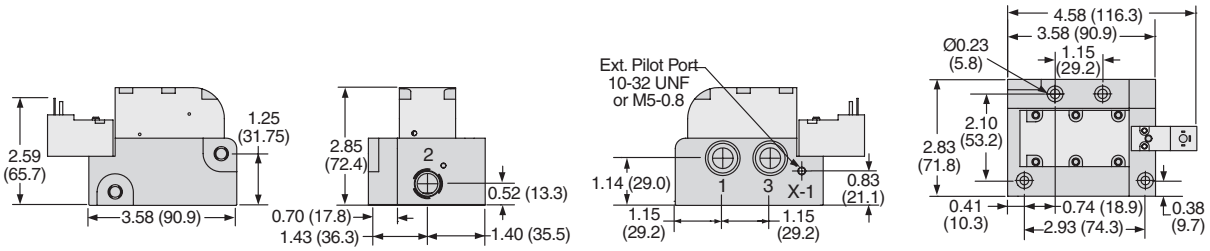


Port Sizes 3/8 & 1/2

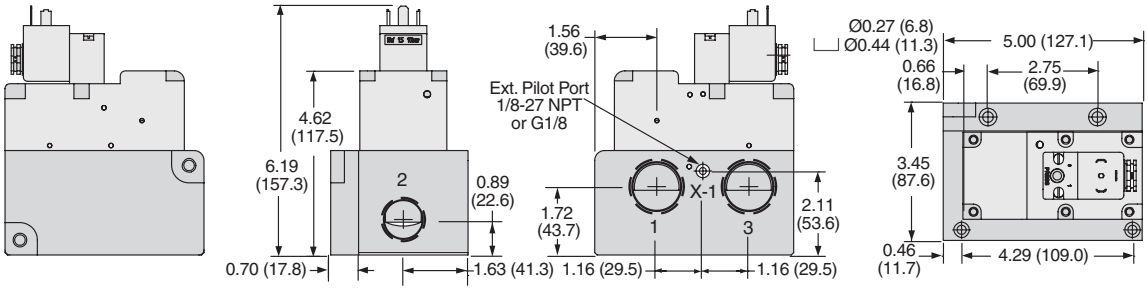
Port Sizes 3/4 & 1

Valve Dimensions – inches (mm)

Port Size 3/8 & 1/2



Port Size 3/4 & 1



Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
Port Size 1/2: 24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
Port Size 1:
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.

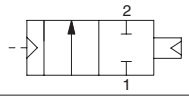
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: Vacuum to 145 psig (vacuum to 10 bar).
Pilot Pressure: 50 to 145 psig (3.4 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
Port Size: 1/2 & 1 (Normally Closed).
Port Size: 1/2 (Normally Open).

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

2-Way 2-Position Valves, Air Return						
Port Size		Model Number*	Pilot Port Thread		Avg. C_v	Weight lb (kg)
1	2		NPT	BSPP		
1/2	3/8	CX14NB35501	10-32 UNF	M5	3.5	1.4 (0.6)
1/2	1/2	CX14NB45501	10-32 UNF	M5	3.5	1.4 (0.6)
1	3/4	CX16NB55501	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1	1	CX16NB65501	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1½	1¼	CX18NB75501	1/8-27 NPT	G1/8	44.9	10.0 (4.6)
1½	1½	CX18NB85501	1/8-27 NPT	G1/8	44.9	10.0 (4.6)
2½	2	CX10NB95501	1/8-27 NPT	G1/8	108	19.5 (8.9)
2½	2½	CX10NB05501	1/8-27 NPT	G1/8	108	19.5 (8.9)

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX34DB35501.

Normally Closed



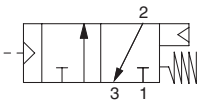
Port Sizes 3/8 & 1/2

Port Sizes 3/4 thru 2½

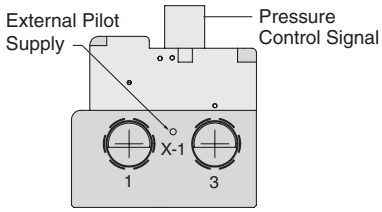
3-Way 2-Position Valves, Spring Assisted Air Return						
Port Size		Model Number*	Pilot Port Thread		Avg. C_v	Weight lb (kg)
1, 3	2		NPT	BSPP		
1/2	3/8	CX34NB35501	10-32 UNF	M5	3.5	1.4 (0.6)
1/2	1/2	CX34NB45501	10-32 UNF	M5	3.5	1.4 (0.6)
1	3/4	CX36NB55501	1/8-27 NPT	G1/8	12.3	3.5 (1.6)
1	1	CX36NB65501	1/8-27 NPT	G1/8	12.3	3.5 (1.6)

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX34DB35501.

Normally Closed



Note: The Dale Series pressure controlled valves require both an external pilot supply and a control signal to operate the valve. When a pressure control signal is applied the valve shifts to the open position.



Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: Vacuum to 250 psig (17.2 bar).

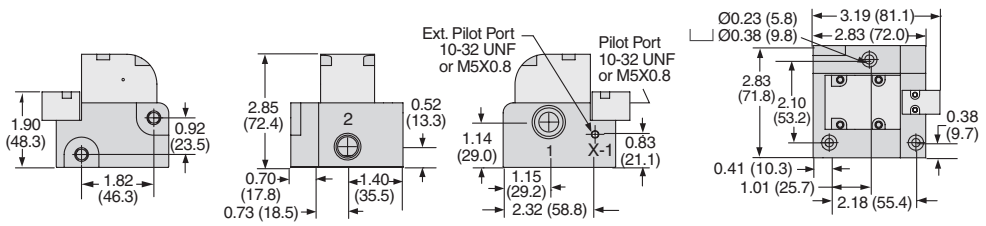
Pilot Pressure:
2/2 valves: 30 to 250 psig (2 to 17.2 bar). Must be equal to or greater than inlet pressure.
3/2 valves: 50 to 250 psig (3.4 to 17.2 bar). Must be equal to or greater than inlet pressure.

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

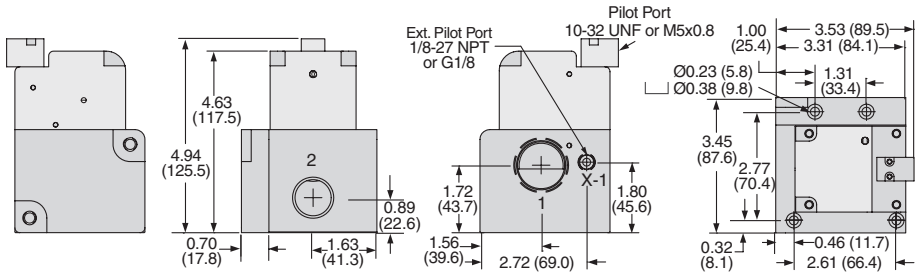
Valve Dimensions – inches (mm)

2/2 Valves

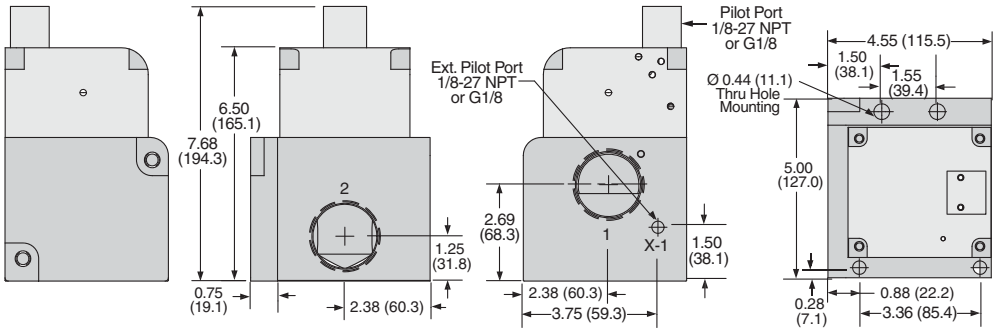
Port Size 3/8 & 1/2



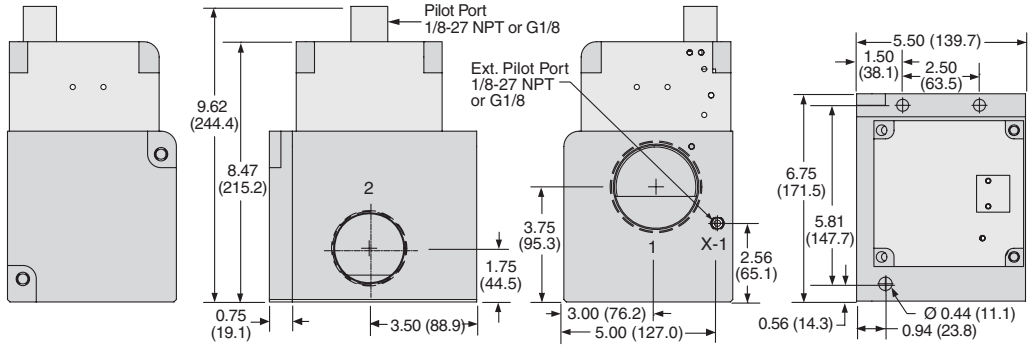
Port Size 3/4 & 1



Port Size 1¼ & 1½

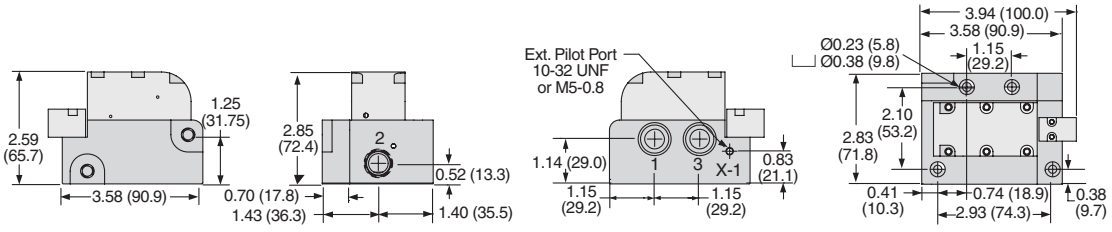


Port Size 2 & 2½

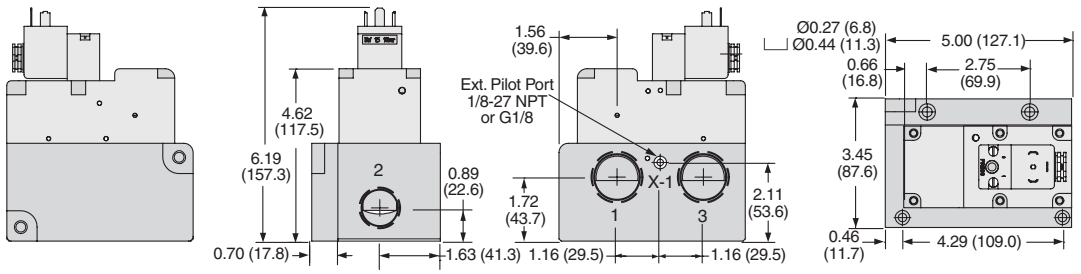


3/2 Valves

Port Size 3/8 & 1/2



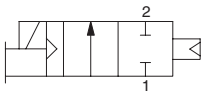
Port Size 3/4 & 1



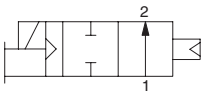
Manifolds can be ordered from two (2) to ten (10) stations. Complete valves-on-manifold assemblies can be ordered to fit your precise requirements.
For preassembled manifold valves with the same model number, select the part number from the table below.
For ordering the Dale CX Series manifold valves with different valve functions, please see page B1.24 for manifold configurator.

2-Way 2-Position Valves, Air Return

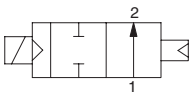
Port Size		Model Number* External Pilot Supply		Pilot Port Thread		Avg. C_v
1	2	Normally Closed	Normally Open	NPT	BSPP	
1/4	1/4	CX12NB2751X**	CX22NB2751X**	10-32 UNF	M5	0.9
1/2	3/8	CX14NB3751X**	CX24NB3751X**	10-32 UNF	M5	3.5
1/2	1/2	CX14NB4751X**	CX24NB4751X**	10-32 UNF	M5	3.5
1	3/4	CX16NB5751X**	CX26NB5751X**	1/8-27 NPT	G1/8	12.3
1	1	CX16NB6751X**	CX26NB6751X**	1/8-27 NPT	G1/8	12.3
1½	1¼	CX18NB7751X**	CX28NB7751X**	1/8-27 NPT	G1/8	44.9
1½	1½	CX18NB8751X**	CX28NB8751X**	1/8-27 NPT	G1/8	44.9
2½	2	CX10NB9751X**	CX20NB9751X**	1/8-27 NPT	G1/8	108
2½	2½	CX10NB0751X**	CX20NB0751X**	1/8-27 NPT	G1/8	108



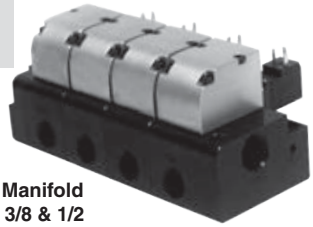
1/4 thru 2½ Normally Closed

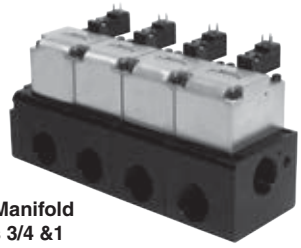


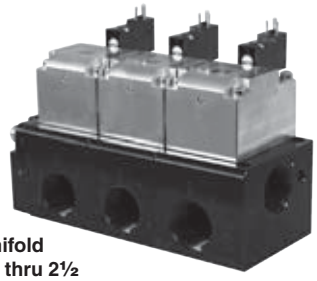
1/4 thru 1 Normally Open



1½ & 2½ Normally Open


Valve Manifold Ports 3/8 & 1/2


Valve Manifold Ports 3/4 &1


Valve Manifold Ports 1/4, 1¼ thru 2½

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX12DB2751XW.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g.,CX12NB2751XW.
X To indicate the number of stations desired, replace X in the model number with the specific number of stations, e.g., CX12NB27514W, 4 = 4 Stations; CX12NB27510W, 0 = 10 Stations.

Features & Benefits:

- Compact Manifold Design – Eliminating piping
- High Flow – CP Series port sizes from 3/8" to 2-1/2"
- Consistent Shifting – Dual piston provides smooth, consistent shifting
- Bi-Directional Flow – Allows pressure or vacuum on any port at any time
- Reduced Downtime – Poppet cartridge rebuilds completed in minutes
- Life Test – Tested to 20 million cycles

Accessories ordered separately, refer to page B1.25.

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

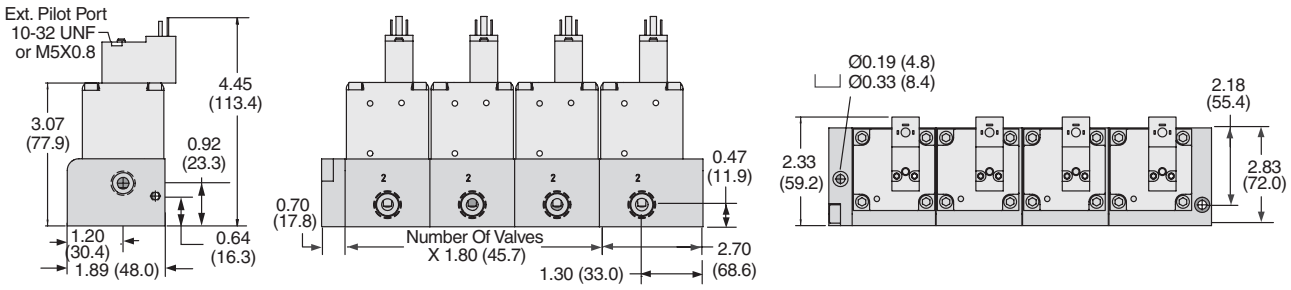
Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
Port Size 1/4 thru 1: 24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
Port Size 1¼ thru 2½:
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure:
Port Size 1/4: Vacuum to 250 psig (vacuum to 17.2 bar).
Port Size 1/2 thru 2½: Vacuum to 145 psig (vacuum to 10 bar).
Pilot Pressure:
Port Size 1/4: 70 to 145 psig (5 to 10 bar).
Port Size 1/2 thru 2½: 30 to 145 psig (2 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
Port Size: 1/4 thru 2½ (Normally Closed).
Port Size: 1/4 thru 1 (Normally Open).

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

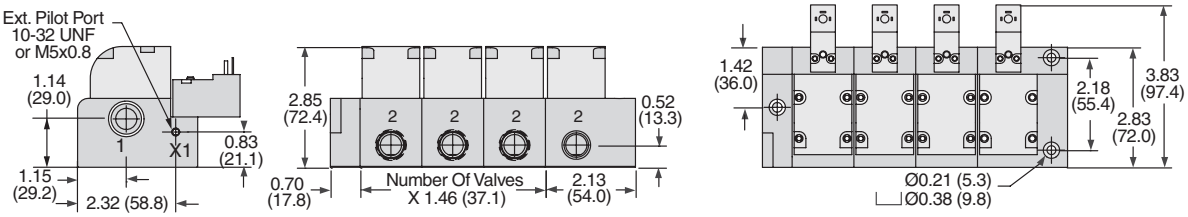
Online Version
Rev. 11/14/16

Dimensions – inches (mm)

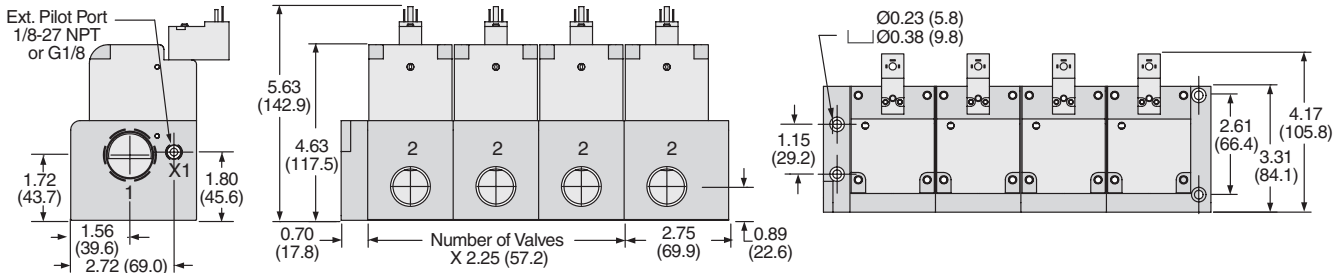
Port Size 1/4



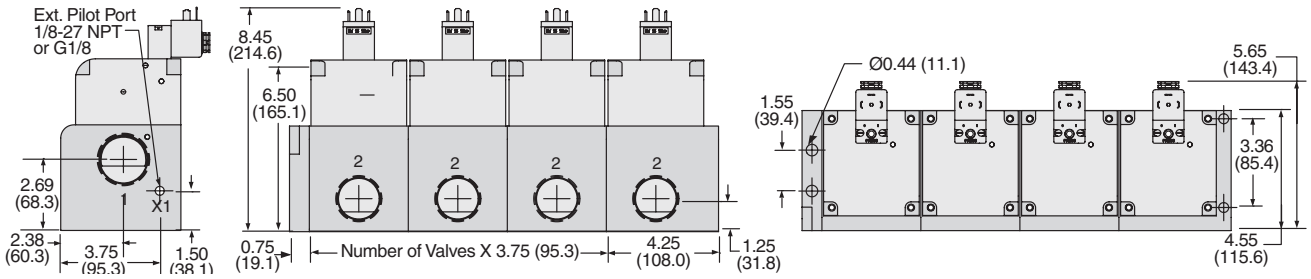
Port Size 3/8 & 1/2



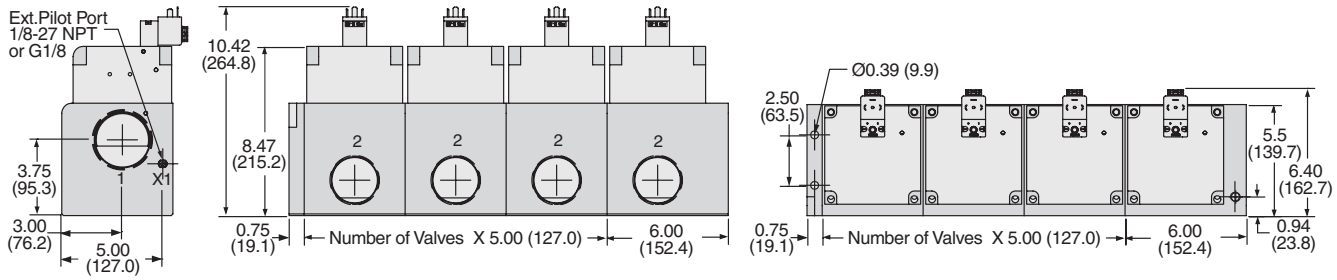
Port Size 3/4 & 1



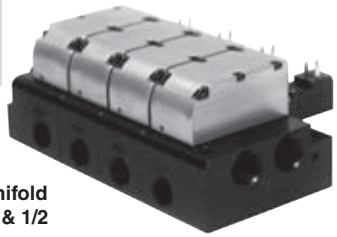
Port Size 1¼ & 1½



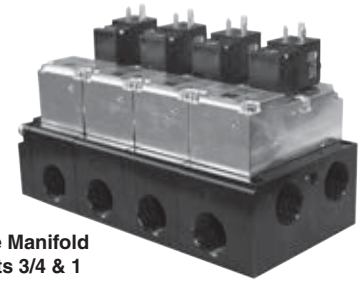
Port Size 2 & 2½



Manifolds can be ordered from two (2) to ten (10) stations. Complete valves-on-manifold assemblies can be ordered to fit your precise requirements.
For preassembled manifold valves with the same model number, select the part number from the table below. For ordering the Dale CX Series manifold valves with different valve functions, please see page B1.24 for manifold configurator.



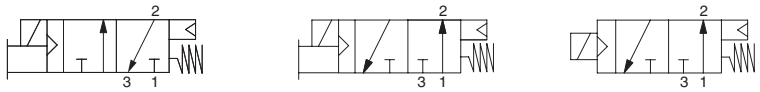
Valve Manifold
Ports 3/8 & 1/2



Valve Manifold
Ports 3/4 & 1

3-Way 2-Position Valves, Spring Assisted Air Return

Port Size		Model Number* External Pilot Supply		Pilot Port Thread		Avg. C_v
1, 3	2	Normally Closed	Normally Open	NPT	BSPP	
1/2	3/8	CX34NB3751X**	CX44NB3751X**	10-32 UNF	M5	3.6
1/2	1/2	CX34NB4751X**	CX44NB4751X**	10-32 UNF	M5	3.6
1	3/4	CX36NB5751X**	CX46NB5751X**	1/8-27 NPT	G1/8	12.3
1	1	CX36NB6751X**	CX46NB6751X**	1/8-27 NPT	G1/8	12.3



1/2 & 1
Normally Closed

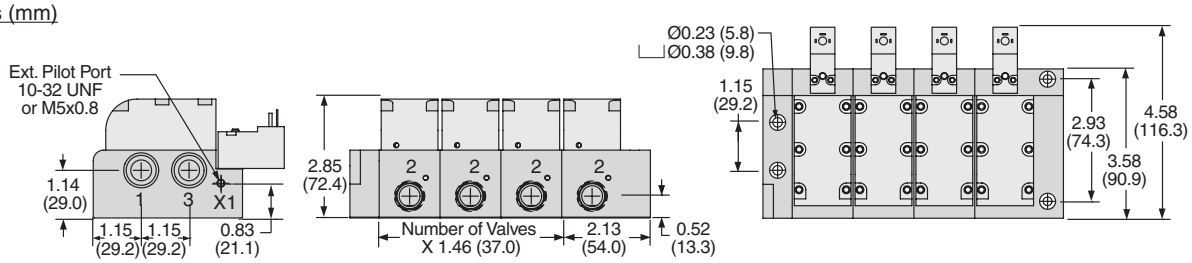
1/2
Normally Open

1
Normally Open

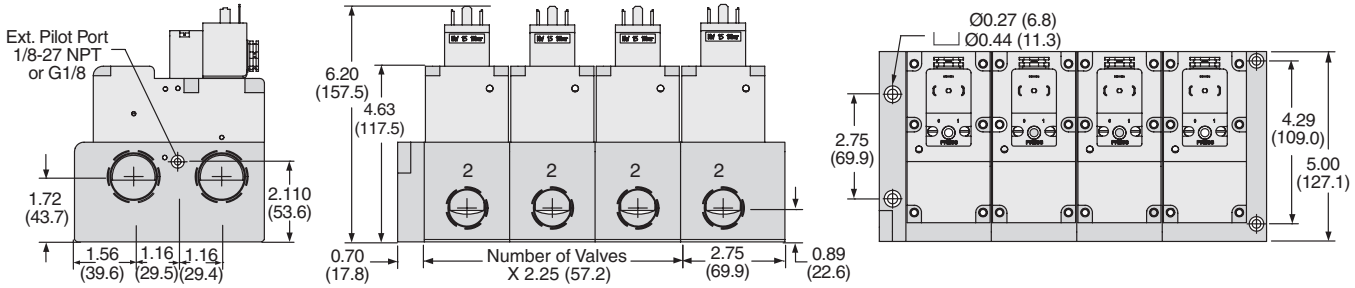
* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX34DB3751**.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., CX34NB3751XW.
X To indicate the number of stations desired, replace X in the model number with the specific number of stations, e.g., CX34NB37514W, 4 = 4 Stations ; CX34NB37510W, 0 = 10 Stations.

Dimensions – inches (mm)

Port Size 3/8 & 1/2



Port Size 3/4 & 1



Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

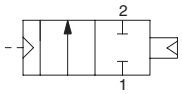
Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
Port Size 1/2: 24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
Port Size 1: 24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz. 5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: Vacuum to 145 psig (vacuum to 10 bar).
Pilot Pressure: 50 to 145 psig (3.4 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
Port Size: 1/2 & 1 (Normally Closed).
Port Size: 1/2 (Normally Open).

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

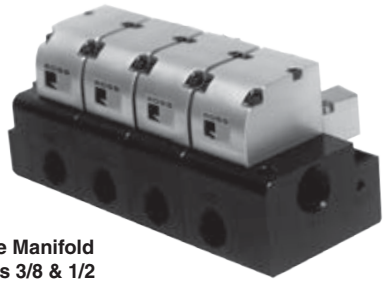
Manifolds can be ordered from two (2) to ten (10) stations.
Complete valves-on-manifold assemblies can be ordered to fit your precise requirements.
For preassembled manifold valves with the same model number, select the part number from the table below.
For ordering the Dale CX Series manifold valves with different valve functions, please see page B1.24 for manifold configurator.

2-Way 2-Position Valves, Air Return

Port Size		Model Number*	Pilot Port Thread		Avg. C_v
1	2		NPT	BSPP	
1/2	3/8	CX14NB3551X	10-32 UNF	M5	3.7
1/2	1/2	CX14NB4551X	10-32 UNF	M5	3.7
1	3/4	CX16NB5551X	1/8-27 NPT	G1/8	13.7
1	1	CX16NB6551X	1/8-27 NPT	G1/8	13.7
1½	1¼	CX18NB7551X	1/8-27 NPT	G1/8	44.9
1½	1½	CX18NB8551X	1/8-27 NPT	G1/8	44.9
2½	2	CX10NB9551X	1/8-27 NPT	G1/8	108
2½	2½	CX10NB0551X	1/8-27 NPT	G1/8	108

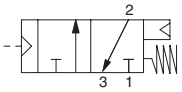


Normally Closed

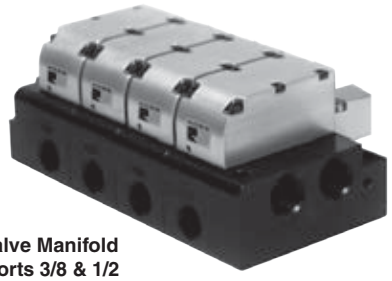

Valve Manifold
Ports 3/8 & 1/2

3-Way 2-Position Valves, Spring Assisted Air Return

Port Size		Model Number*	Pilot Port Thread		Avg. C_v
1, 3	2		NPT	BSPP	
1/2	3/8	CX34NB3551X	10-32 UNF	M5	3.6
1/2	1/2	CX34NB4551X	10-32 UNF	M5	3.6
1	3/4	CX36NB5551X	1/8-27 NPT	G1/8	12.3
1	1	CX36NB6551X	1/8-27 NPT	G1/8	12.3

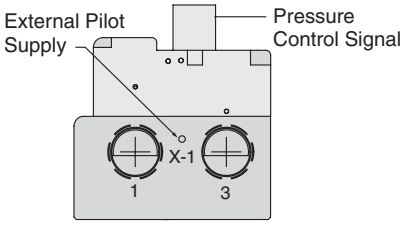


Normally Closed


Valve Manifold
Ports 3/8 & 1/2

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., CX14DB3551X.
X To indicate the number of stations desired, replace X in the model number with the specific number of stations, e.g., CX14NB35516, 6 = 6 Stations; CX14NB35510, 0 = 10 Stations.

Note: The Dale Series pressure controlled valves require both an external pilot supply and a control signal to operate the valve. When a pressure control signal is applied the valve shifts to the open position.



Note: For manifolds requiring different valves types, consult ROSS.

Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: Vacuum to 250 psig (vacuum to 17.2 bar).

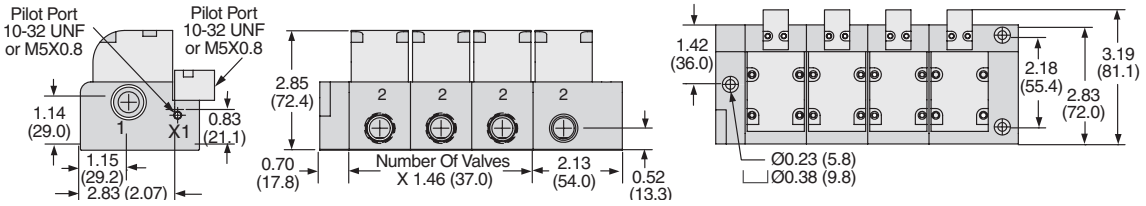
Pilot Pressure:
2/2 valves: 30 to 250 psig (2 to 17.2 bar).
Must be equal to or greater than inlet pressure.
3/2 valves: 50 to 250 psig (3.4 to 17.2 bar). Must be equal to or greater than inlet pressure.

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

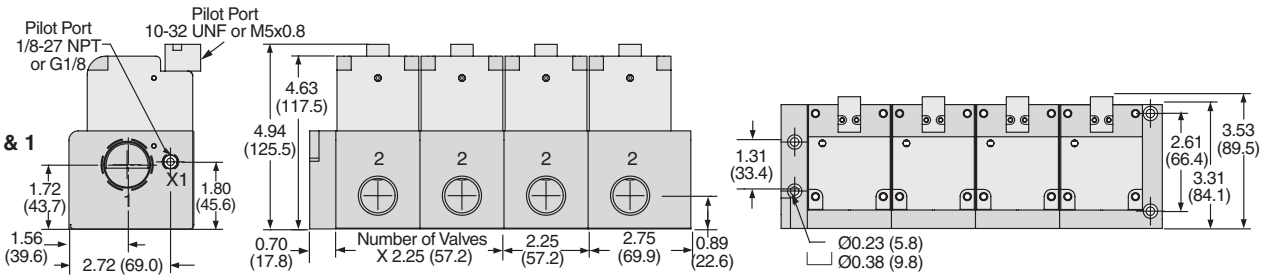
Dimensions – inches (mm)

2/2 Valves

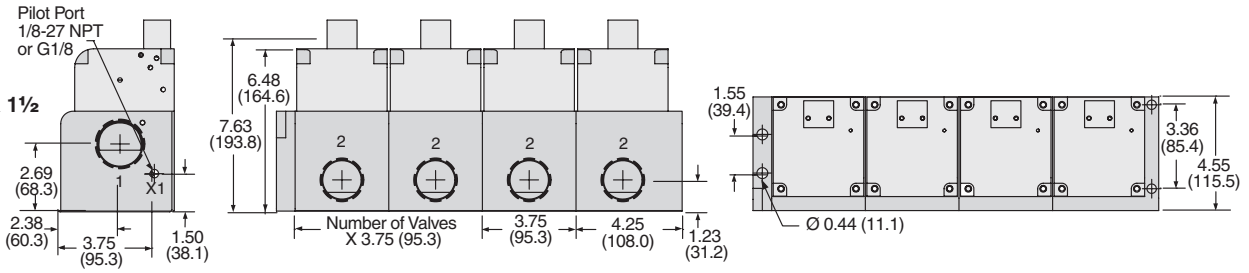
Port Size 3/8 & 1/2



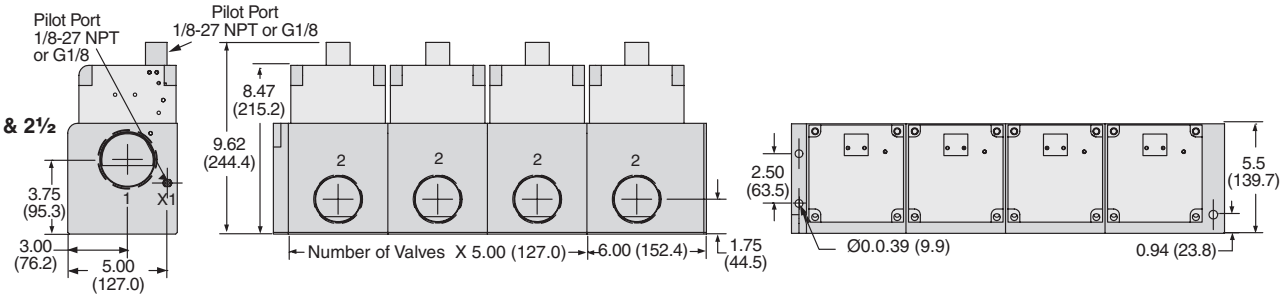
Port Size 3/4 & 1



Port Size 1¼ & 1½

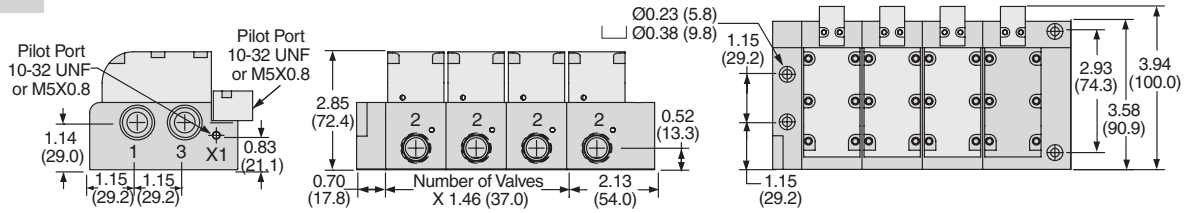


Port Size 2 & 2½

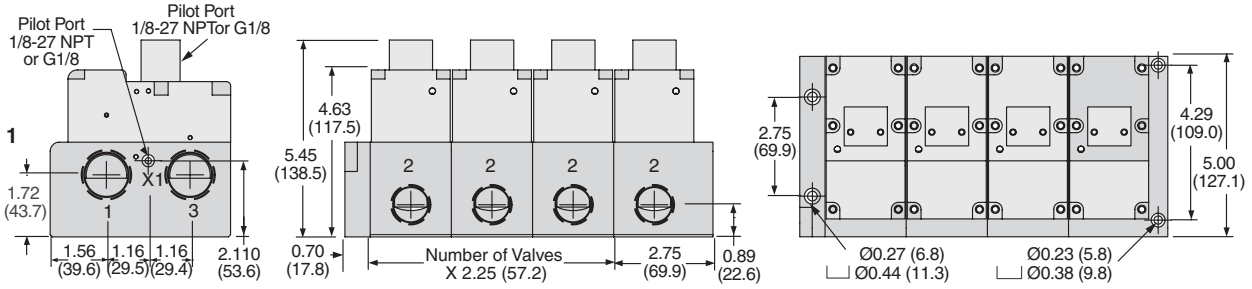


3/2 Valves

Port Size 3/8 & 1/2

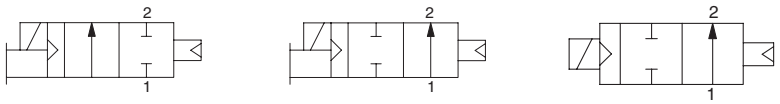


Port Size 3/4 & 1



2-Way 2-Position Valves, Air Return							
Port Size		Model Number* External Pilot Supply		Pilot Port Thread		Avg. C_v	Weight lb (kg)
1	2	Normally Closed	Normally Open	NPT	BSPP		
3/8	3/8	LX13NB37501**	LX23NB37501**	10-32 UNF	M5	3.6	1.5 (0.7)
1/2	1/2	LX14NB47501**	LX24NB47501**	10-32 UNF	M5	3.6	1.5 (0.7)
3/4	3/4	LX15NB57501**	LX25NB57501**	1/8-27 NPT	G1/8	12.2	3.5 (1.6)
1	1	LX16NB67501**	LX26NB67501**	1/8-27 NPT	G1/8	12.2	3.5 (1.6)
1¼	1¼	LX17NB77501**	LX27NB77501**	1/8-27 NPT	G1/8	36.1	9.3 (4.2)
1½	1½	LX18NB87501**	LX28NB87501**	1/8-27 NPT	G1/8	36.1	9.3 (4.2)
2	2	LX19NB97501**	LX29NB97501**	1/8-27 NPT	G1/8	62.7	19.3 (8.8)
2½	2½	LX10NB07501**	LX20NB07501**	1/8-27 NPT	G1/8	62.7	19.3 (8.8)

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., LX13DB37501W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., LX13NB37501W.



Normally Closed | 3/8 thru 1 Normally Open | 1¼ & 2½ Normally Open

Ports 3/8 thru 1

Ports 1¼ thru 2½

The LF & LX Series provides superior performance over a diaphragm valve with a rugged poppet design, bi-directional flow and high cycle life.

The LF & LX Series provides superior performance over a ball valve with solenoid actuation, shifting speed, cycle life, and most important, a cost effective alternative.

Diaphragm Valve → **Improved Performance** ← **Cost Effective** **Ball Valve**

EXTERNAL PILOT SUPPLY CONVERSION:

The LX Series valves can be easily field converted to external pilot supply by simply removing existing pipe plug from port X-1, and installing air supply to the X-1 port.

Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

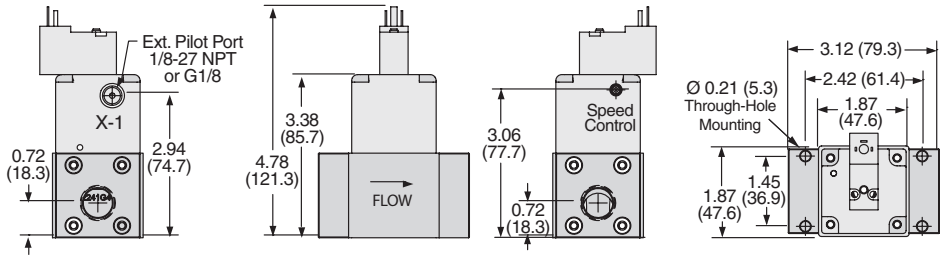
Construction: Poppet.
Mounting Type: Inline.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid)**:**
Port Size 3/8 thru 1:
24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.
Port Size 1¼ thru 2½:
24 volts DC; 110 volts AC, 50 Hz; 120 volts AC, 50/60 Hz.
5.8 watts nominal on AC and DC, 6.5 watts maximum on AC and DC.

Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: Vacuum to 145 psig (vacuum to 10 bar).
Pilot Pressure: 30 to 145 psig (2 to 10 bar). Must be equal to or greater than inlet pressure.
Manual Override: Non-Locking.
Port Size: 3/8 thru 2½ (Normally Closed).
Port Size: 3/8 thru 1 (Normally Open).

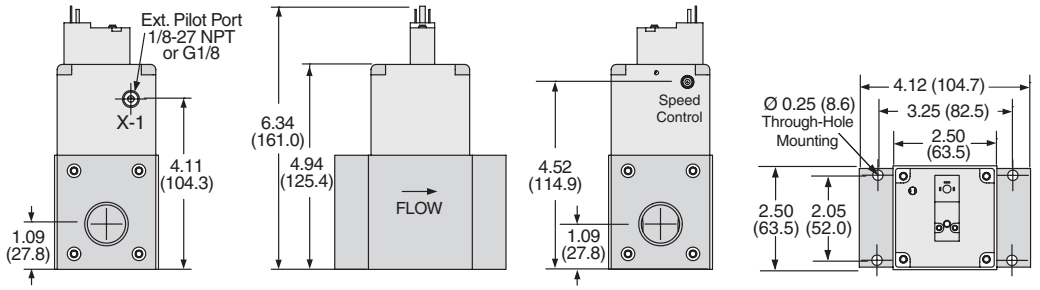
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Valve Dimensions – inches (mm)

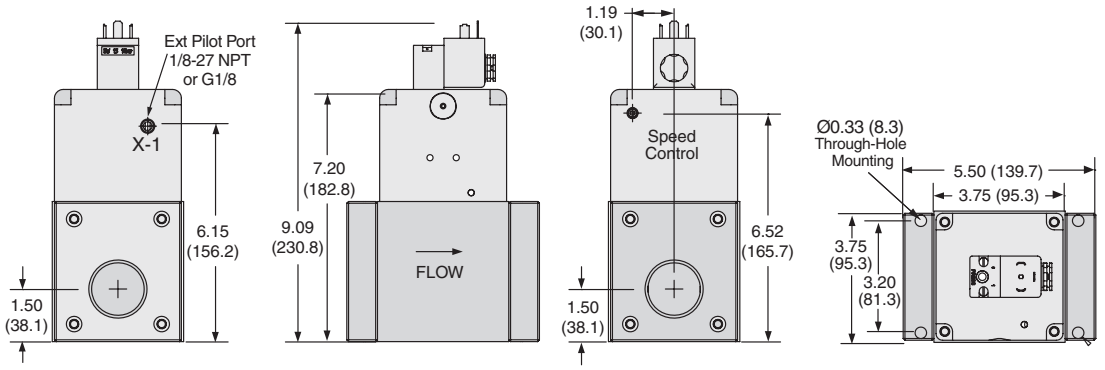
Port Size 3/8 & 1/2



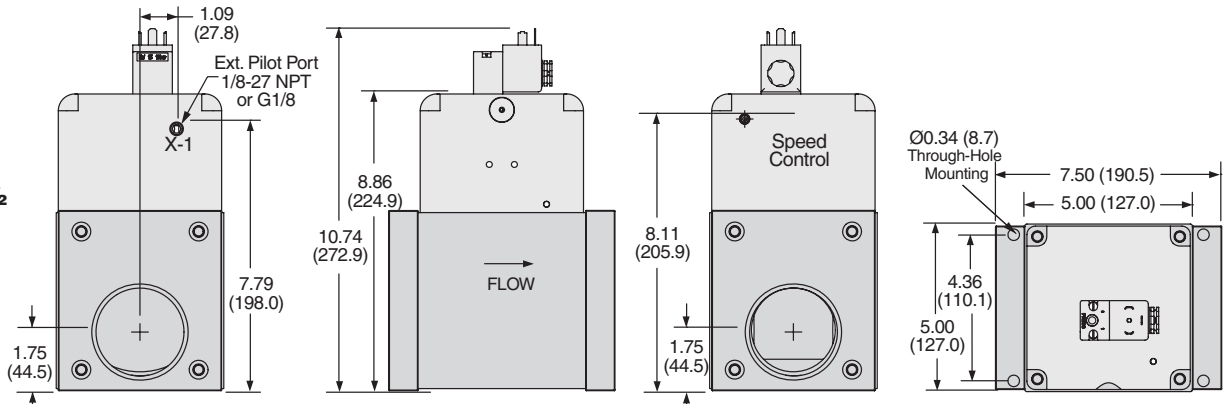
Port Size 3/4 & 1



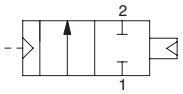
Port Size 1¼ & 1½



Port Size 2 & 2½



2-Way 2-Position Valves, Air Return						
Port Size		Model Number*	Pilot Port Thread		Avg. C_v	Weight lb (kg)
1	2		NPT	BSPP		
3/8	3/8	LX13NB35501	10-32 UNF	M5	3.6	1.5 (0.7)
1/2	1/2	LX14NB45501	10-32 UNF	M5	3.6	1.5 (0.7)
3/4	3/4	LX15NB55501	1/8-27 NPT	G1/8	12.2	3.5 (1.6)
1	1	LX16NB65501	1/8-27 NPT	G1/8	12.2	3.5 (1.6)
1¼	1¼	LX17NB75501	1/8-27 NPT	G1/8	36.1	9.3 (4.2)
1½	1½	LX18NB85501	1/8-27 NPT	G1/8	36.1	9.3 (4.2)
2	2	LX19NB95501	1/8-27 NPT	G1/8	62.7	19.3 (8.8)
2½	2½	LX10NB05501	1/8-27 NPT	G1/8	62.7	19.3 (8.8)

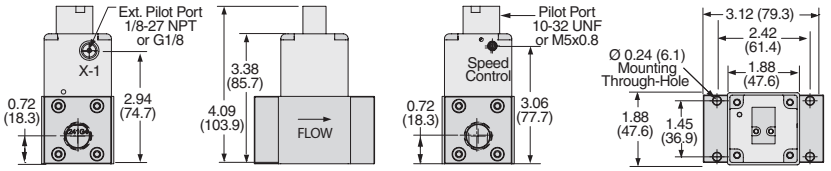


Normally Closed

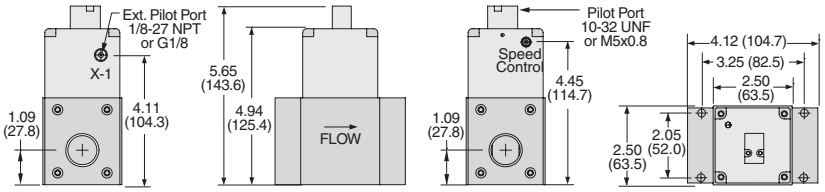
* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., LX13DB35501.

Valve Dimensions – inches (mm)

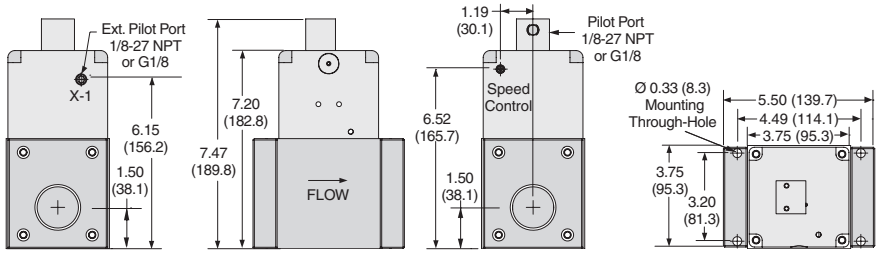
Port Size 3/8 & 1/2



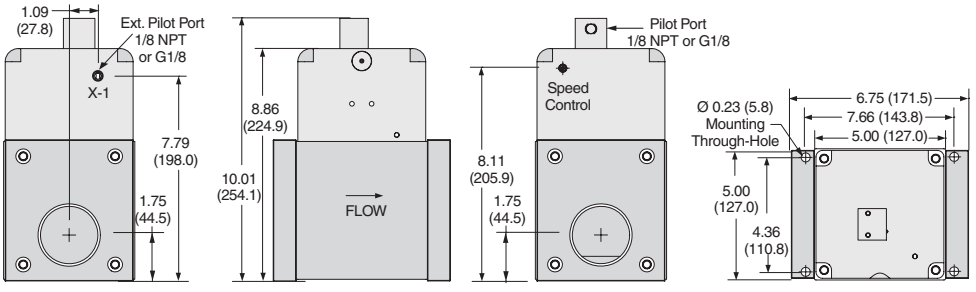
Port Size 3/4 & 1



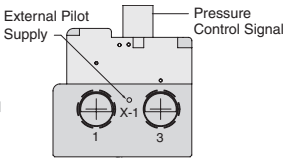
Port Size 1¼ & 1½



Port Size 2 & 2½



Note: The Dale Series pressure controlled valves require both an external pilot supply and a control signal to operate the valve. When a pressure control signal is applied the valve shifts to the open position.



Accessories ordered separately, refer to page B1.25.

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

Construction: Poppet.
Mounting Type: Inline.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).

Flow Media: Filtered air. For liquid applications, consult ROSS.
Inlet Pressure: Vacuum to 250 psig (vacuum to 17.2 bar).
Pilot Pressure: 30 to 250 psig (2 to 17.2 bar). Must be equal to or greater than inlet pressure.

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

Solenoid Pilot Controlled Valve Manifold
for Leak Test Applications

Dale LT Series

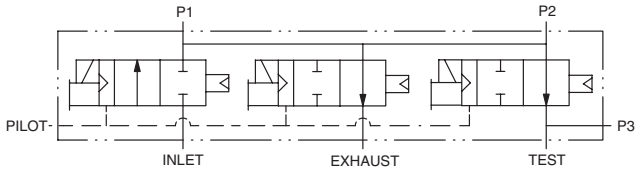
The LT Series valves can be field configured for flow, pressure decay, or differential pressure testing by selecting different combinations of the three sensor ports.

3-Way 4-Position Valve, Multi Solenoid Actuated

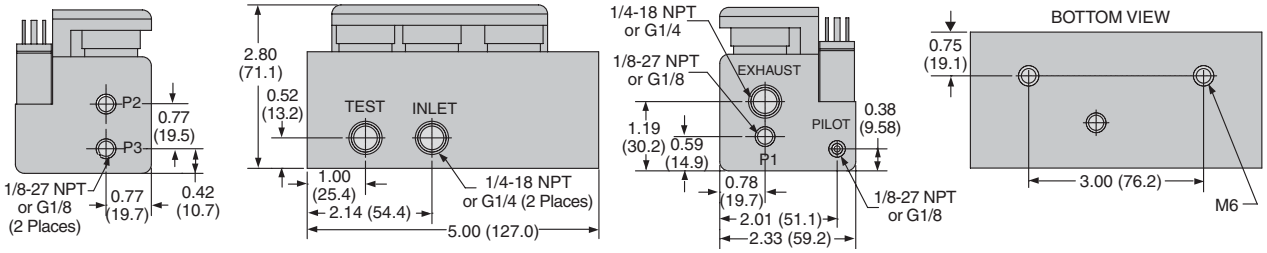
Port Size			Model Number*	Pilot Port Thread		Avg. C_v	Weight lb (kg)
In	Exh.	Test		NPT	BSPP		
1/4	1/4	1/4	LT32NB27500**	1/8-27 NPT	G1/8	2.2	2.9 (1.3)

* NPT threads. For BSPP threads, replace "N" in the model number with a "D", e.g., LT32DB27500W.
** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., LT32NB27500W.

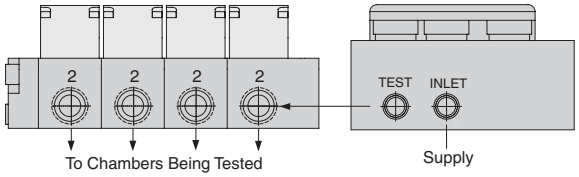
Normally Closed



Dimensions – inches (mm)



The CX and LT Series can be combined to simplify the most complex test circuits. The LT manifold with integrated sensor ports is the primary valve used for the fill, isolate and test functions. In this example the test port of the LT is connected to the CX manifold allowing four chambers to be tested one at a time. The flexibility of combining the LT and CX manifolds creates a compact package, reduces leak paths, and provides an all in one test solution.



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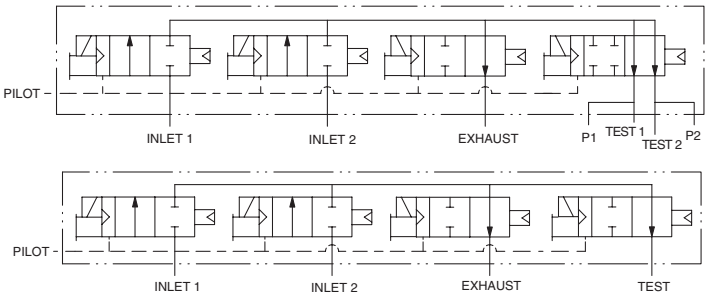
ROSS/FLEX® Customer defined application specific solutions that reduce cost, improve productivity and provide a perfect fit.



Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Pilot Solenoid: DC power. Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.

Ambient/Media Temperature: 40° to 120°F (4° to 50°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Pilot Port: 1/8 NPT, or G1/8 ports.
Inlet Pressure: 2 to 145 psi (0.13 to 10 bar).
Pilot Pressure: 50 to 145 psi (3.4 to 10 bar). Must be equal to or greater than inlet pressure.

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

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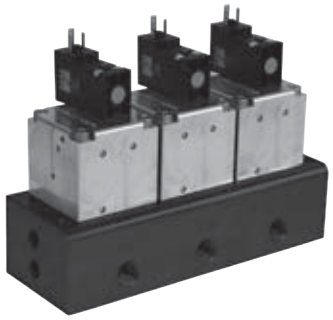
Rev. 11/14/16

The LT Series valves can be field configured for flow, pressure decay, or differential pressure testing by selecting different combinations of the three sensor ports.

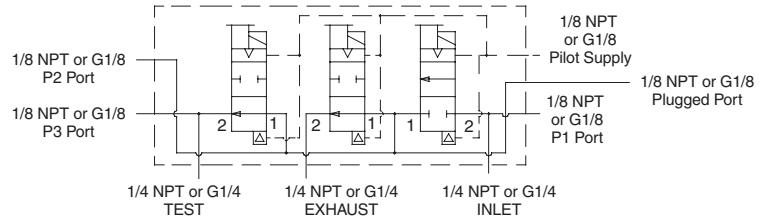


3-Way 4-Position Valve, Multi Solenoid Actuated

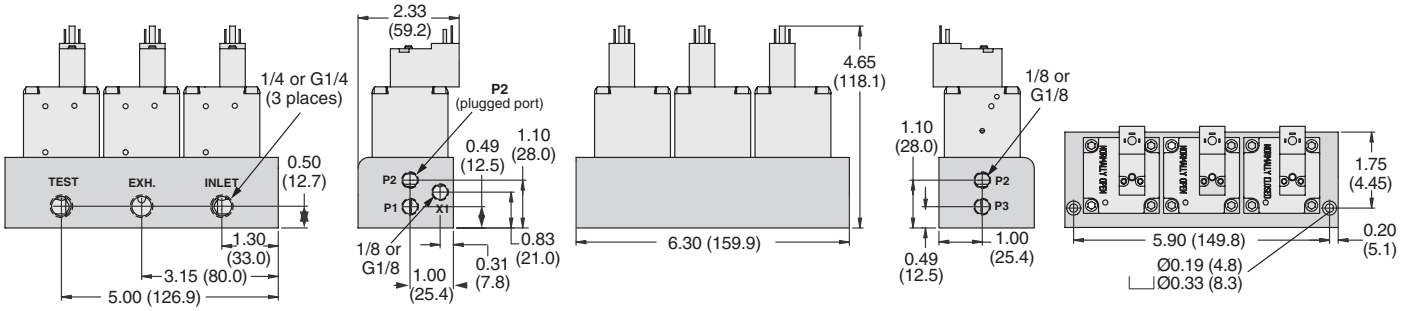
Threads	Port Size			Model Number	Sensor Ports			Pilot Port Thread	Avg. C_v	Weight lb (kg)
	In	Exh.	Test		P1	P2	P3			
NPT	1/4	1/4	1/4	LT32NB27500**01	1/8	1/8	1/8	1/8 NPT	0.9	3.6 (1.7)
BSPP	1/4	1/4	1/4	LT32DB27500**01	1/8	1/8	1/8	G 1/8	0.9	3.6 (1.7)

** Insert voltage code: "W" = 24 volts DC; "Z" = 110 volts AC, 120 volts AC; e.g., LT32NB27500W01.

Normally Closed



Dimensions – inches (mm)



The CX and LT Series can be combined to simplify the most complex test circuits. The LT manifold with integrated sensor ports is the primary valve used for the fill, isolate and test functions. In this example the test port of the LT is connected to the CX manifold allowing four chambers to be tested one at a time. The flexibility of combining the LT and CX manifolds creates a compact package, reduces leak paths, and provides an all in one test solution.

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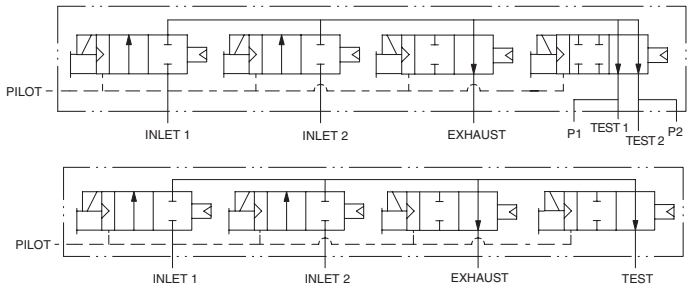

Accessories ordered separately, refer to page B1.25.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Inline.
Pilot Solenoid: DC power. Rated for continuous duty.
Standard Voltages/Power Consumption (each solenoid):
24 volts DC: 1.2 watts on DC.
110 volts AC, 50 Hz: 5.4 VA.
120 volts AC, 60 Hz: 5.0 VA.

Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form C connector.
Ambient/Media Temperature: 40° to 120°F (4° to 50°C).
Flow Media: Filtered air. For liquid applications, consult ROSS.
Pilot Port: 1/8 NPT, or G1/8 ports.
Inlet Pressure: Vacuum to 250 psi (vacuum to 17.2 bar).
Pilot Pressure: 70 to 145 psi (4.8 to 17.2 bar).

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

CP & CX Series Assembled Valve Manifold Configurator

This form can be used when your application requires either a CP or CX Series valve manifold with different valve functions to provide you with complete valve manifold assemblies to fit your precise requirements.

Manifolds can be ordered from two to ten stations. For other combinations, contact ROSS for more information.

# of Stations 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Port Thread: NPT ☐ BSPP ☐

Valve Series: CP ☐ CX ☐

Valve Type: 2/2 ☐ 3/2 ☐

Compatible Combinations

- Air Pilot & Solenoid Pilot Valves
- 24 volts DC & 110 or 120 volts AC Solenoid Pilot Valves
- Different port 2 sizes with same port 1 size
  (i.e., valve 1 = 1/2" port 1 & 3/8" port 2;
  valve 2 = 1/2" port 1 & 1/2" port 2.

Valve Position Number	Valve Model Number*
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

*Refer to CP or CX Valve product pages for Valve Model Numbers. Enter "Blank" to indicate base with blocking plate.

Example:

Valve Position Number	Valve Model Number**
1	CX14NB37511W
2	CX14NB37511W
3	CX24NB37511W
4	CX24NB37511W
5	Blank
6	CX14NB47511W
7	CX24NB47511W
8	CX14NB35511
9	
10	

**Example given for an eight station manifold.

Name:_____ **Date:**_____

Company Name:_____

Address:_____

City, State, Zip Code:_____

Tel:_____ **e-mail:**_____

Fax completed form to 1-706-356-3600 or e-mail to custsvc@rosscontrols.com to obtain pre-assemble part number, price, and delivery.

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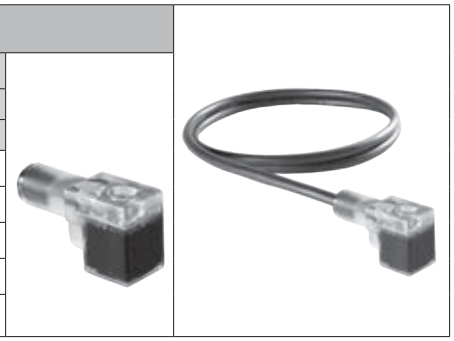
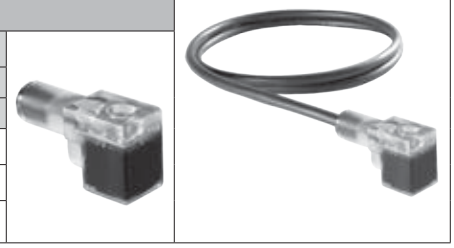
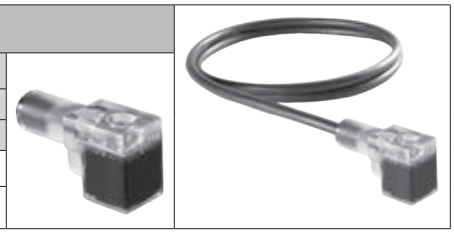
Rev. 11/14/16

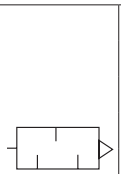
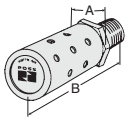
Electrical Connectors

Electrical Connectors for CP, CX Series Solenoid Pilot Controlled Valves.							
Valve Type	Port Size	Electrical Connector Form	Electrical Connectors Part Number				
			Lighted Connector Only		Lighted Connector Pre-wired*		
			24 Volts DC	120 Volts AC	24 Volts DC	120 Volts AC	
2/2	1/4 - 1	EN 175301-803 Form C	2453K77-W	2453K77-Z	2476K77-W	2476K77-Z	
2/2	1½-2½	EN 175301-803 Form A	936K87-W	936K87-Z	720K77-W	720K77-Z	
3/2	1/2	EN 175301-803 Form C	2453K77-W	2453K77-Z	2476K77-W	2476K77-Z	
3/2	1	EN 175301-803 Form A	936K87-W	936K87-Z	720K77-W	720K77-Z	
*Pre-wired connectors include a 2 meter (6½ ft.) cord.							

Electrical Connectors for LF, LX Series Solenoid Pilot Controlled Valves.							
Valve Type	Port Size	Electrical Connector Form	Electrical Connectors Part Number				
			Lighted Connector Only		Lighted Connector Pre-wired*		
			24 Volts DC	120 Volts AC	24 Volts DC	120 Volts AC	
2/2	3/8 - 1	EN 175301-803 Form C	2453K77-W	2453K77-Z	2476K77-W	2476K77-Z	
2/2	1¼-2½	EN 175301-803 Form A	936K87-W	936K87-Z	720K77-W	720K77-Z	
*Pre-wired connectors include a 2 meter (6½ ft.) cord.							

Electrical Connectors for LT Series Solenoid Pilot Controlled Valves.							
Valve Type	Port Size	Electrical Connector Form	Electrical Connectors Part Number				
			Lighted Connector Only		Lighted Connector Pre-wired*		
			24 Volts DC	120 Volts AC	24 Volts DC	120 Volts AC	
1/4	3/8 - 1	EN 175301-803 Form C	2453K77-W	2453K77-Z	2476K77-W	2476K77-Z	
*Pre-wired connectors include a 2 meter (6½ ft.) cord.							

Silencers

Port Size	Thread Type	Model Number		Avg. C_v	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	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.

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#	**C***	—
ISO 228 - DIN 259 Parallel, BSPP#	**D**	G
ISO 228 - JIS B0203 Tapered#	**J**	ISO
SAE 1926- ISO 11926	**S**	NPT

* Used only for filters, regulators, lubricators.

ISO 228 threads superseds 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.

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

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 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.