Index

Parker Pneumatic

Speed King® SK200 & Valvair II

Solenoid & Pilot Operated Directional Spool Valves

Catalog VAL-SK-2/USA
July, 1998

Schrader Bellows®

⚠ WARNING

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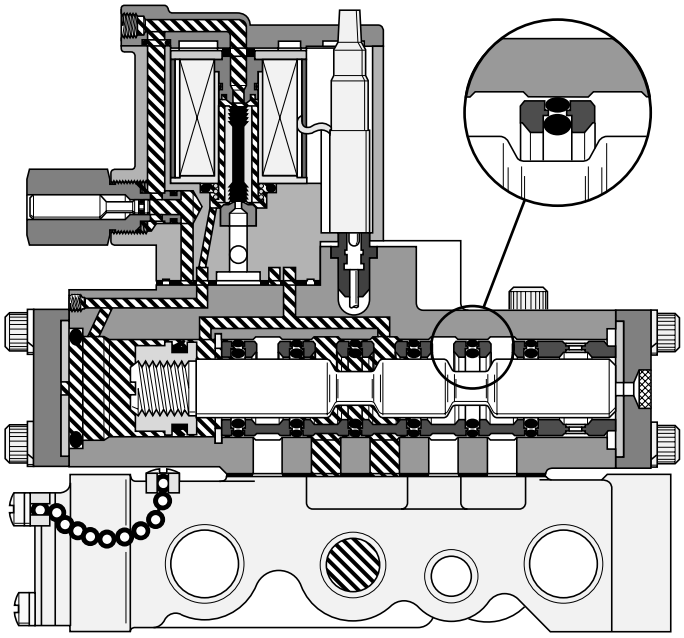
Page

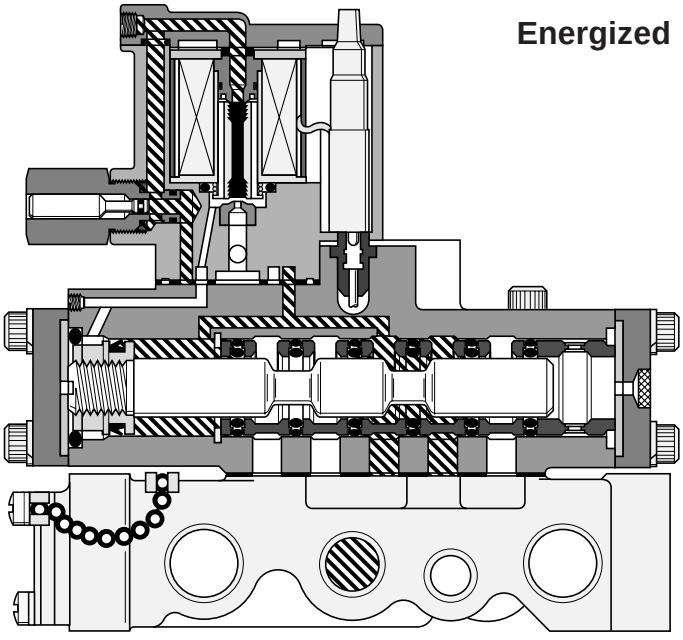
- Full Air Operation for fastest response.
- Plug-In Design simplifies maintenance and installation. Reduces downtime. No wiring or plumbing to disturb.
- Solenoids Interchange between all styles of plug-in valves.
- Locking Manual Overrides Standard. Non-locking overrides optional.
- Indicator Lights Standard on 120VAC and 24VDC models.
- Encapsulated Coil designed for low-power consumption and maximum life.
- Plug-In Subbase, Plug-In Manifolds allow design flexibility. A wide range of port sizes, from 1/4" to 1-1/4" NPT are available.
- Field Convertible to External Pilot Supply for vacuum or other services.
- "Oversized" Flow Areas.
- Synthetic Rubber O-Ring Seals are specially compounded for minimum compression and friction for superior wear and abrasion resistance.
- Precision Ground Spool "floats" on O-ring seals. Closed center cross-over design saves air.
- Plug-In "Sandwich" Regulators (Available for specific models) fit between valve and base, increase systems design capabilities.
- CSA - Selected Valves are Canadian Standards Association approved for general purpose use.

De-Energized



Pressure **Exhaust**

Energized



Pressure **Exhaust**

Speed King, SK-200 Valve Model Number System

Lubricated Service 2-Position, Plug-In 1/4" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency
L	44	5	2	9	10	2	53

Type

41	Double
44	Single

Operator

4	Remote
5	Solenoid

Size

2	1/4" Basic

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
7	Solenoid w/Light (120VAC, 24VDC)
8	Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"

10	Standard (NEMA 1 & 12) or Remote

Duty Cycle

2	Standard Service Solenoid or Remote
4	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Valvair II Valve Model Number System

Lubricated Non-Lubricated Service 2-Position, Plug-In 3/8" & 1" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency
L	67	5	3	9	10	2	53

Type

65	Double
67	Single

Operator

4	Remote
5	Solenoid

Size

3	3/8" Basic
8	1" Basic

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
7	Solenoid w/Light (120VAC, 24VDC)
8	Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"

10	Standard (NEMA 1 & 12) or Remote

Duty Cycle

2	Standard Service Solenoid or Remote
4	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Speed King, SK-200 Valve Model Number System

Lubricated Service 2-Position, Plug-In 1/2" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency
L	51	5	5	9	10	2	53

Type

38	Single (Poppet)
51	Double
54	Single

Operator

4	Remote
5	Solenoid

Size

4	1/2" Basic Poppet
5	1/2" Basic

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
7	Solenoid w/Light (120VAC, 24VDC)
8	Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"

10	Standard (NEMA 1 & 12) or Remote

Duty Cycle

2	Standard Service Solenoid or Remote
4	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Speed King, SK-200 Valve Model Number System

Lubricated Service 3-Position, Plug-In 1/4" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency
L	42	5	2	9	21	1	53

Type

42	Double

Operator

4	Remote
5	Solenoid

Size

2	1/4" Basic

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
7	Solenoid w/Light (120VAC, 24VDC)
8	Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"

21	All Ports Blocked in Neutral (NEMA 1 & 12 Enclosure) or Remote
22	Cyl. Ports Open to Exh. in Neutral (NEMA 1 & 12 Enclosure) or Remote
23	Cyl. Ports Open to Inlet in Neutral (NEMA 1 & 12 Enclosure) or Remote

Duty Cycle

1	Standard Service Solenoid or Remote
5	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Valvair II Valve Model Number System

Lubricated or Non-Lubricated Service 3-Position, Plug-In 3/8" & 1" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency
L	66	5	3	9	21	1	53

Type	
66	Double

Operator	
4	Remote
5	Solenoid

Size	
3	3/8" Basic
8	1" Basic

Operator Options	
1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
7	Solenoid w/Light (120VAC, 24VDC)
8	Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"	
21	All Ports Blocked in Neutral (NEMA 1 & 12 Enclosure) or Remote
22	Cyl. Ports Open to Exh. in Neutral (NEMA 1 & 12 Enclosure) or Remote
23	Cyl. Ports Open to Inlet in Neutral (NEMA 1 & 12 Enclosure) or Remote

Duty Cycle	
1	Standard Service Solenoid or Remote
5	Continuous Service Solenoid

Voltage & Frequency			
	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Speed King, SK-200 Valve Model Number System

Lubricated Service 3-Position, Plug-In 1/2" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency
L	52	5	5	9	21	1	53

Type	
52	Double

Operator	
4	Remote
5	Solenoid

Size	
5	1/2" Basic

Operator Options	
1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
7	Solenoid w/Light (120VAC, 24VDC)
8	Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"	
21	All Ports Blocked in Neutral (NEMA 1 & 12 Enclosure) or Remote
22	Cyl. Ports Open to Exh. in Neutral (NEMA 1 & 12 Enclosure) or Remote
23	Cyl. Ports Open to Inlet in Neutral (NEMA 1 & 12 Enclosure) or Remote

Duty Cycle	
1	Standard Service Solenoid or Remote
5	Continuous Service Solenoid

Voltage & Frequency			
	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

1/4" NPT Ports, Nominal Cv = 1.4

Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, see page 80.

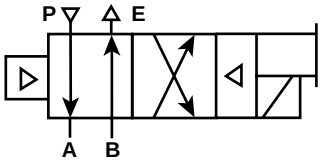
Mounting

These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port E.

Energized (maintained signal applied) – Pressure at Port P is connected to “Cylinder” Port B, “Cylinder” Port A is connected to “Exhaust” Port E.



Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A “momentary” electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a “momentary” signal is applied to the other solenoid. For alternative usages, service, see page 80.

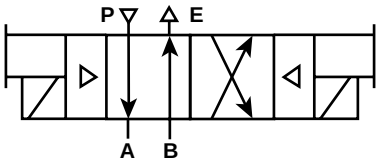
Mounting

These valves are designed for subbase or manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

With solenoid “A” having been energized last – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port E.

Energize solenoid “B” (momentary) – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port E.

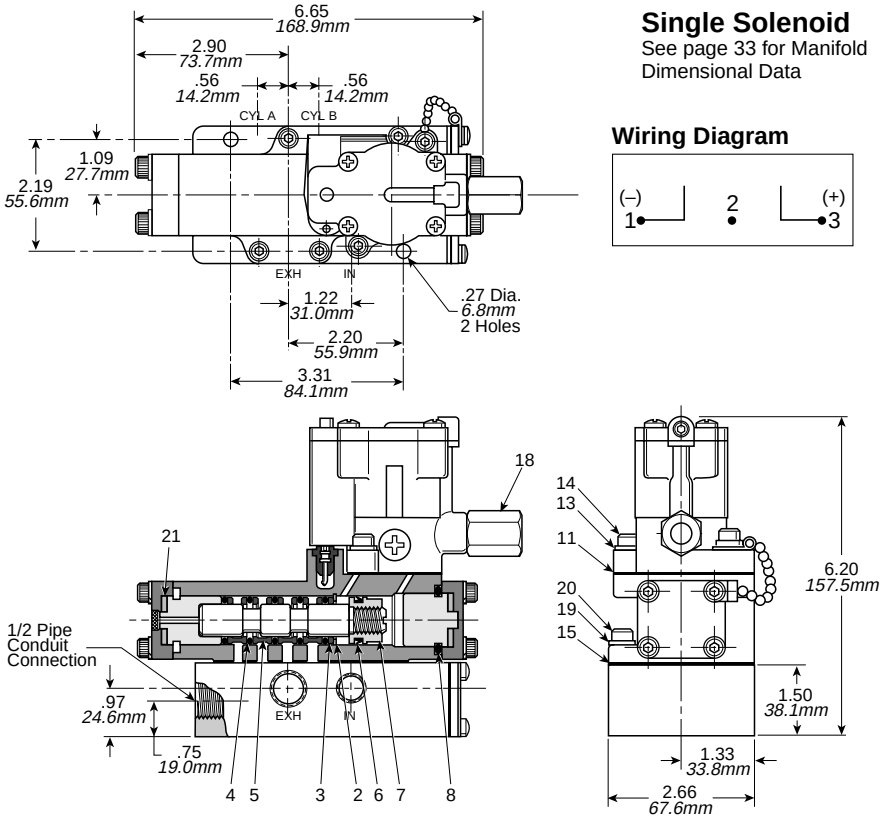


Model Selection

Valve Only		Voltage	Subbase (Side Ports)	Manifold 2 Station ▲ (End & Bottom Ports)	Manifold 3 Station ▲ (End & Bottom Ports)	Port Size (NPT)
Single Solenoid	Double Solenoid					
L445 29 102 53	L415 29 102 53	120V 60Hz 110V 50Hz	K022 097	K142 077	K142 076	1/4"
L445 23 102 **	L415 23 102 **	Other				

See page 3 for variations and (**) voltage codes.

▲ - Manifolds include mounting hardware.



Single Solenoid

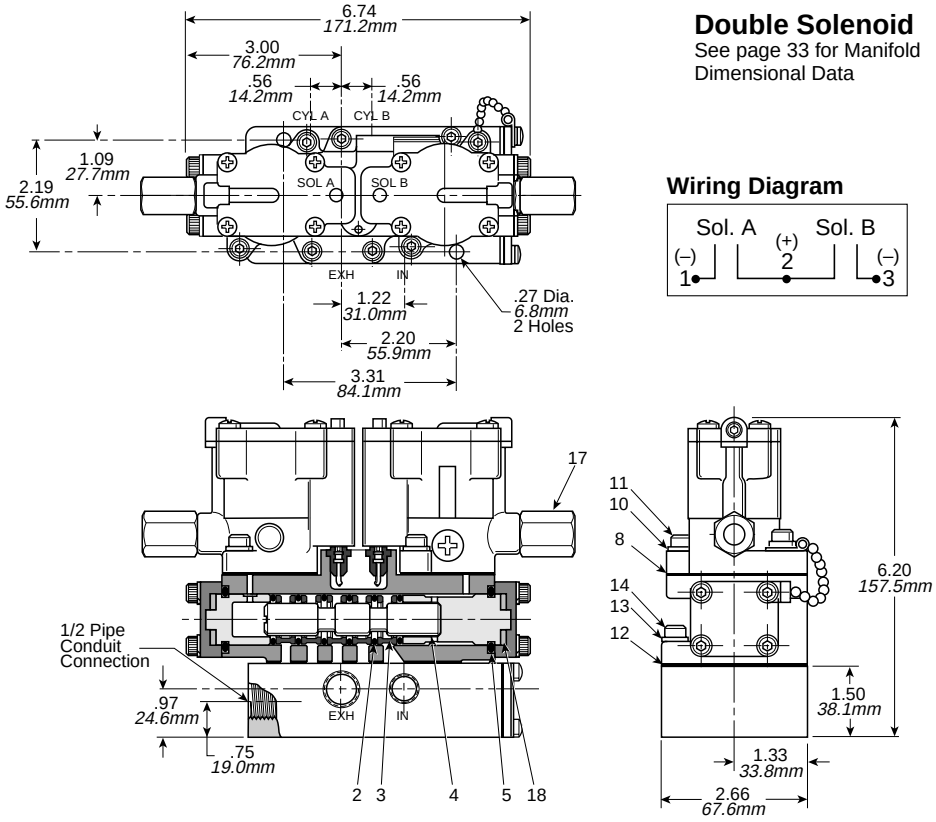
See page 33 for Manifold Dimensional Data

Wiring Diagram

Parts List

Item No.	Part No.	Description
2	K18R311093	Retaining Ring
3	K453 006	Spacer
* 4	—	O-Ring
5	K453 005	Spacer
* 6	—	Seal
7	K232 018	Spool Assy.
* 8	—	Seal
*11	—	Gasket
13	H175 12	Lockwasher
14	H100 60	Cap Screw
*15	—	Gasket
18	K152 003	Override Assy.
19	H175 12	Lockwasher
20	H100 59	Cap Screw
21	K983 001	Shock Pad

* Standard Sevice Kit: K352 150
* Special Service Kit: K352 350 (Continuous Duty)



Double Solenoid

See page 33 for Manifold Dimensional Data

Wiring Diagram

Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K493 005	Spool
* 5	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	Gasket
13	H175 12	Lockwasher
14	H100 59	Cap Screw
17	K152 003	Override Assy.
18	K983 001	Shock Pad

* Standard Sevice Kit: K352 151
* Special Service Kit: K352 351 (Continuous Duty)

3/8", 1/2", 3/4 NPT Ports, Nominal Cv = 4.8

Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

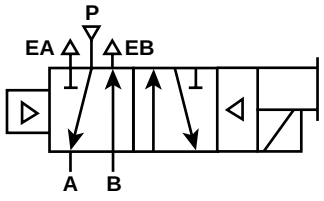
Mounting

These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.



Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A "momentary" electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a "momentary" signal is applied to the other solenoid. For alternative usages, such as dual pressure service, see page 80.

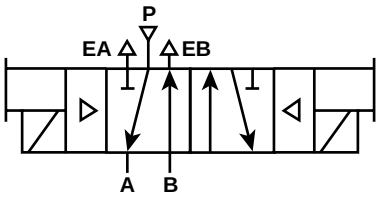
Mounting

These valves are designed for subbase or manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

With solenoid "A" having been energized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energize solenoid "B" (momentary) – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.



Model Selection

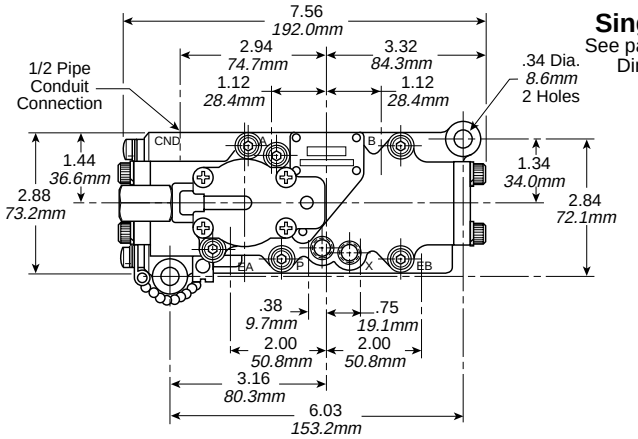
Valve Only		Voltage	Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)
Single Solenoid	Double Solenoid				
L675 39 102 53	L655 39 102 53	120V 60Hz 110V 50Hz	K022 090	K142 230	3/8"
			K022 091	K142 231	1/2"
L675 33 102 **	L655 33 102 **	Other	K022 101	K142 270	3/4"

See page 3 for variations and (**) voltage codes.

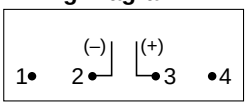
▲ - Manifolds include mounting hardware.

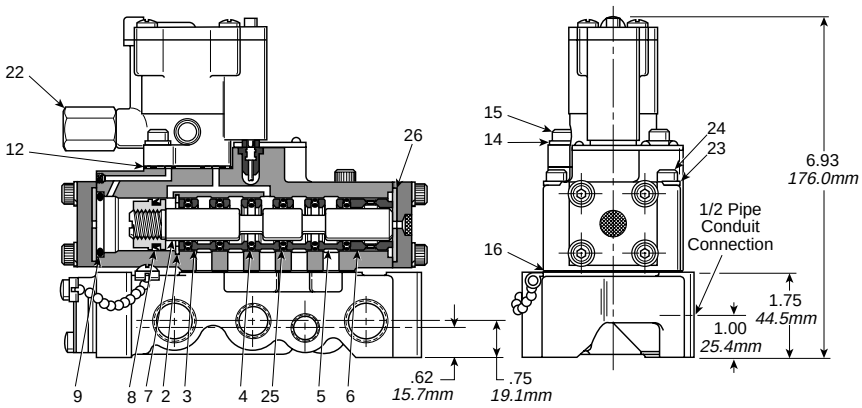
Single Solenoid

See page 34 for Manifold Dimensional Data



Wiring Diagram





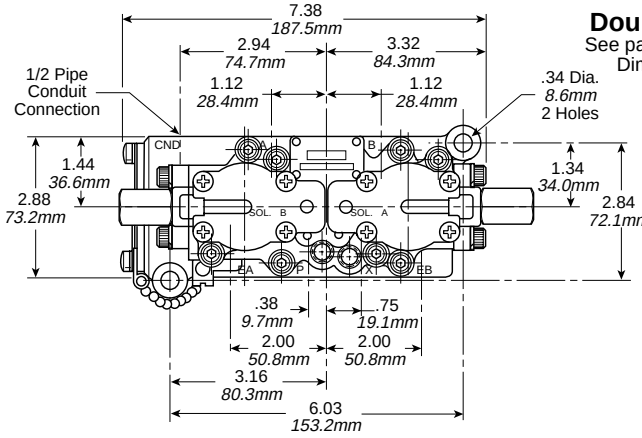
Parts List

Item No.	Part No.	Description
2	H090 71	Retaining Ring
3	K463 015	Spacer
* 4	—	O-Ring (Dynamic)
5	K453 028	Spacer
6	K463 012	End Spacer
7	K232 020	Spool Assy.
* 8	—	Seal
* 9	—	Seal
*12	—	Gasket
14	H175 12	Lockwasher
15	H100 60	Cap Screw
*16	—	Gasket
22	K152 003	Override Assy.
23	H175 12	Lockwasher
24	H100 69	Cap Screw
*25	—	O-Ring (Static)
26	K983 002	Shock Pad

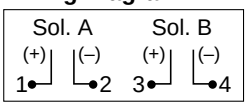
* Standard Sevice Kit: K352 124
* Special Service Kit: K352 125 (Continuous Duty)

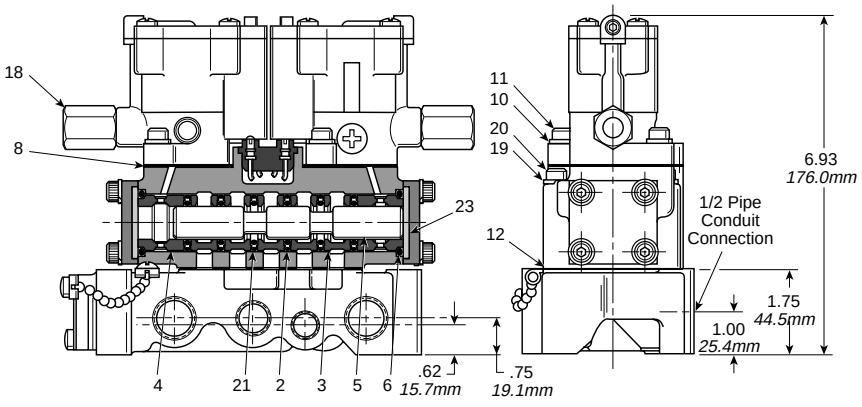
Double Solenoid

See page 34 for Manifold Dimensional Data



Wiring Diagram



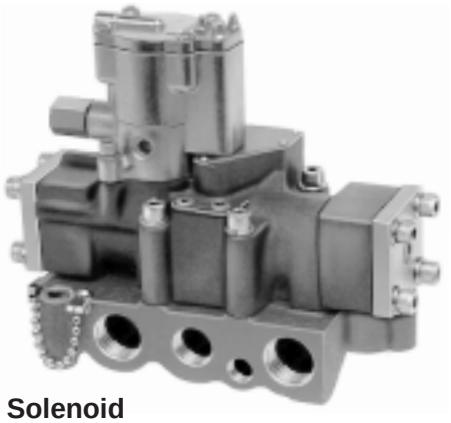


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 094	Spool
* 6	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	Gasket
18	K152 003	Override Assy.
19	H175 12	Lockwasher
20	H100 69	Cap Screw
*21	—	O-Ring (Static)
23	K983 002	Shock Pad

* Standard Sevice Kit: K352 126
* Special Service Kit: K352 127 (Continuous Duty)

1/2" & 3/4" NPT Ports, Nominal Cv = 5.2



Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

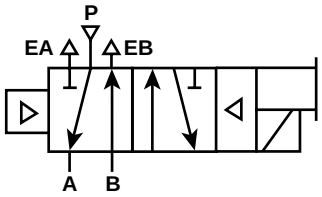
Mounting

These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.



Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A "momentary" electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a "momentary" signal is applied to the other solenoid. For alternative usages, such as dual pressure service, see page 80.

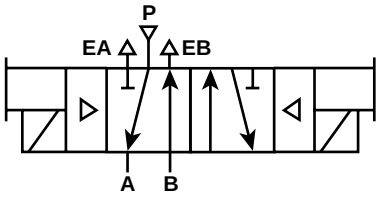
Mounting

These valves are designed for subbase or manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

With solenoid "A" having been energized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energize solenoid "B" (momentary) – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.

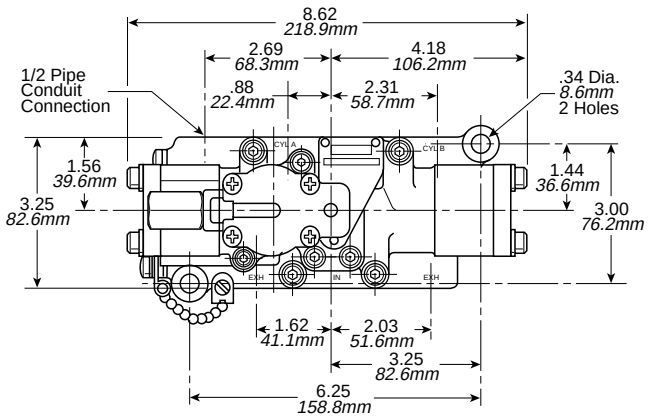


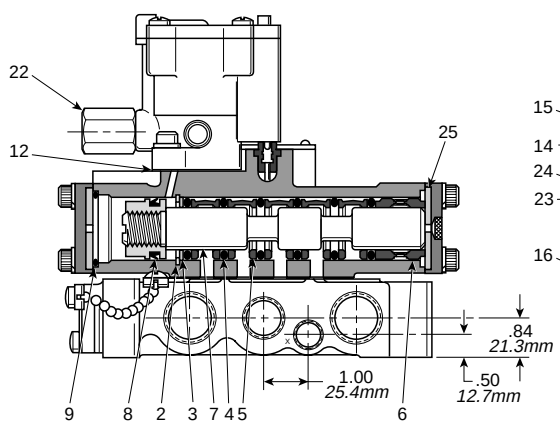
Model Selection

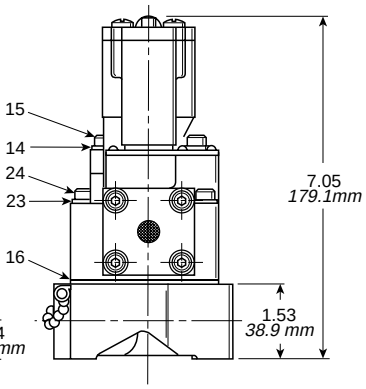
Valve Only		Voltage	Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)
Single Solenoid	Double Solenoid				
L545 59 102 53	L515 59 102 53	120V 60Hz 110V 50Hz	K022 092	K142 233	1/2"
L545 53 102 **	L515 53 102 **	Other	K022 093	K142 234	3/4"

See page 4 for variations and (**) voltage codes.

▲ - Manifolds include mounting hardware.



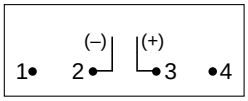




Single Solenoid

See page 34 for Manifold Dimensional Data

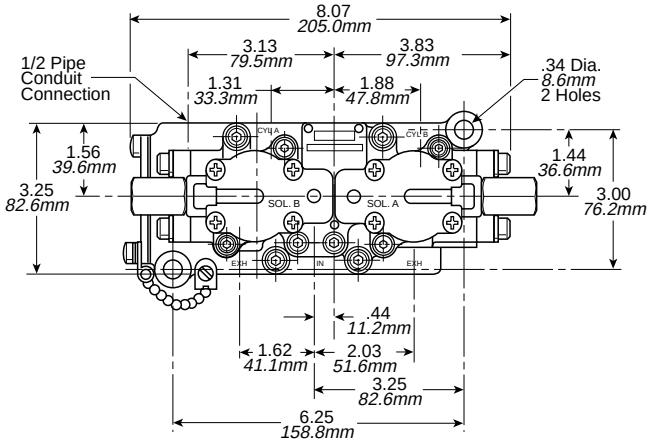
Wiring Diagram

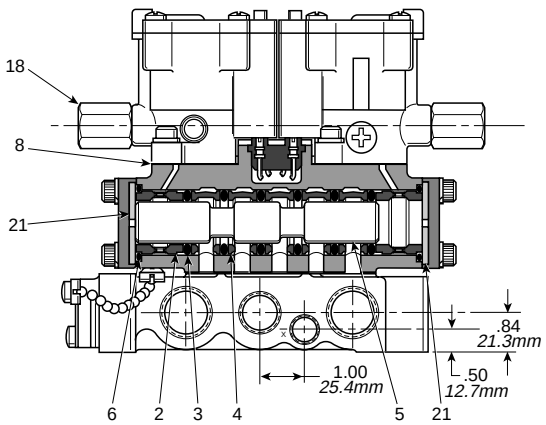


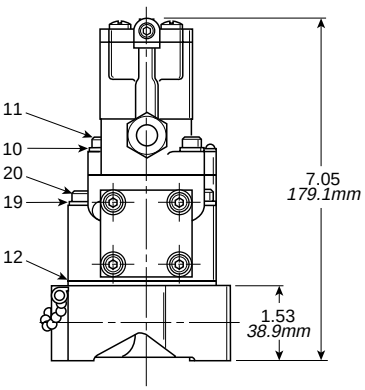
Parts List

Item No.	Part No.	Description
2	K18R311137	Retaining Ring
3	K553011	Washer
* 4	—	O-Ring
5	K453008	Spacer
6	K463001	End Spacer
7	K232017	Spool Assy.
* 8	—	Seal
* 9	—	Seal
*12	—	Gasket
14	H17512	Lockwasher
15	H10060	Cap Screw
*16	—	Gasket
22	K152003	Override Assy.
23	H17516	Washer
24	H10025	Cap Screw
25	K983003	Shock Pad

* Standard Sevice Kit: K352 152
* Special Service Kit: K352 352
(Continuous Duty)



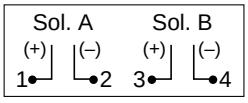




Double Solenoid

See page 34 for Manifold Dimensional Data

Wiring Diagram



Parts List

Item No.	Part No.	Description
2	K463001	End Spacer
* 3	—	O-Ring
4	K453008	Spacer
5	K343046	Spool
* 6	—	Seal
* 8	—	Gasket
10	H17512	Lockwasher
11	H10060	Cap Screw
*12	—	Gasket
18	K152003	Override Assy.
19	H17516	Washer
20	H10125	Cap Screw
21	K983003	Shock Pad

* Standard Sevice Kit: K352 153
* Special Service Kit: K352 353
(Continuous Duty)

1/2" & 3/4" NPT Ports, Nominal Cv = 4.8

Single Solenoid (Poppet)

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

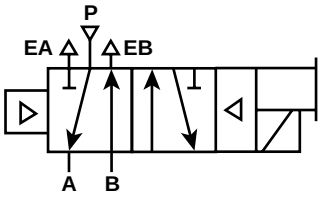
Mounting

These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.

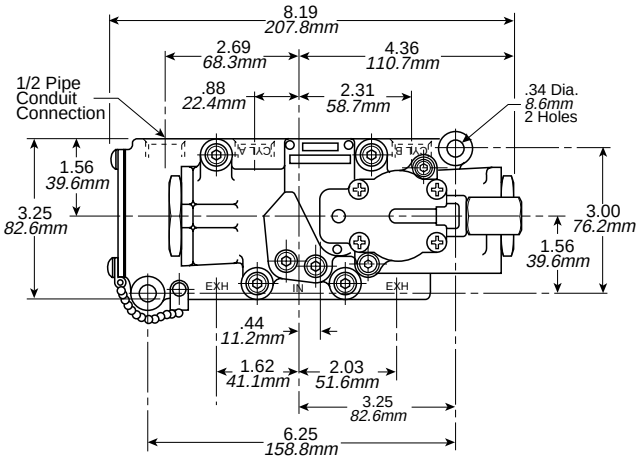


Model Selection

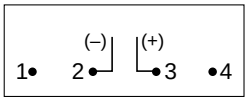
Valve Only Single Solenoid	Voltage	Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)
L385 49 102 53	120V 60Hz 110V 50Hz	K022 092	K142 233	1/2"
L385 43 102 **	Other	K022 093	K142 234	3/4"

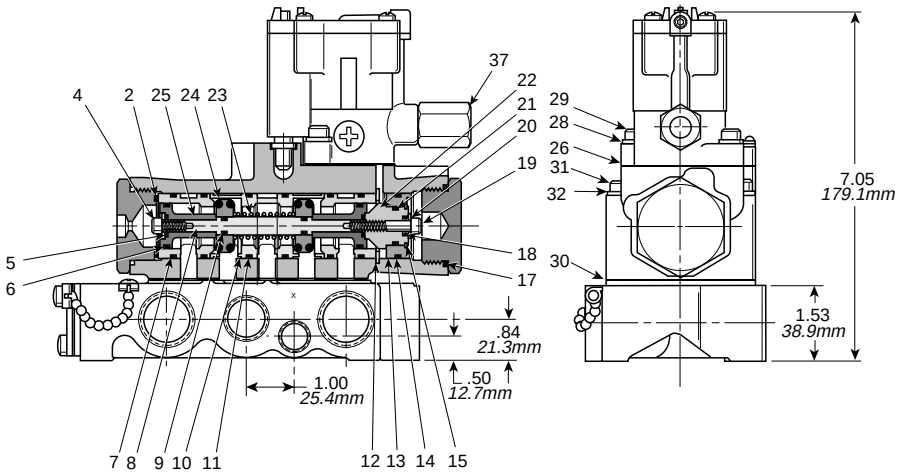
See page 4 for variations and (**) voltage codes.

▲ - Manifolds include mounting hardware.



Wiring Diagram





Parts List

Item No.	Part No.	Description
* 2	—	Seal
4	H100 37	Cap Screw
* 5	—	O-Ring
* 6	—	O-Ring
7	K403 006	Spacer (Outer)
8	K493 018	Stem
* 9	—	O-Ring
10	K403 005	Spacer (Center)
*11	—	O-Ring
12	K18R311137	Retaining Ring
13	K313 039	Piston (Outer)
*14	—	O-Ring
15	H089 52	Retaining Ring
*17	—	O-Ring
*18	—	O-Ring
19	H194 32	Cap Screw
20	H178 48	Washer
*21	—	O-Ring
22	K313 038	Piston (Inner)
23	K473 032	Spring
24	K242 002	Poppet Assy.
25	K313 037	Piston
*26	—	Gasket
28	H175 12	Lockwasher
29	H100 60	Cap Screw
*30	—	Gasket
31	H100 69	Cap Screw
32	H175 12	Lockwasher
37	K152 003	Override

* Standard Sevice Kit: K352 088
* Special Service Kit: K352 089
(Continuous Duty)

See page 34 for Manifold
Dimensional Data

3/4", 1" & 1-1/4" NPT Ports, Nominal Cv = 11.3

Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

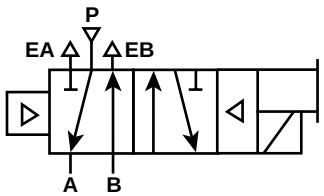
Mounting

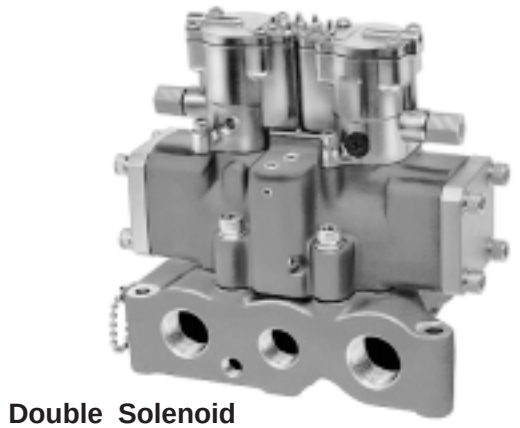
These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.





Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A "momentary" electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a "momentary" signal is applied to the other solenoid. For alternative usages, such as dual pressure service, see page 80.

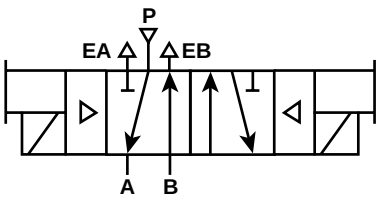
Mounting

These valves are designed for subbase or manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

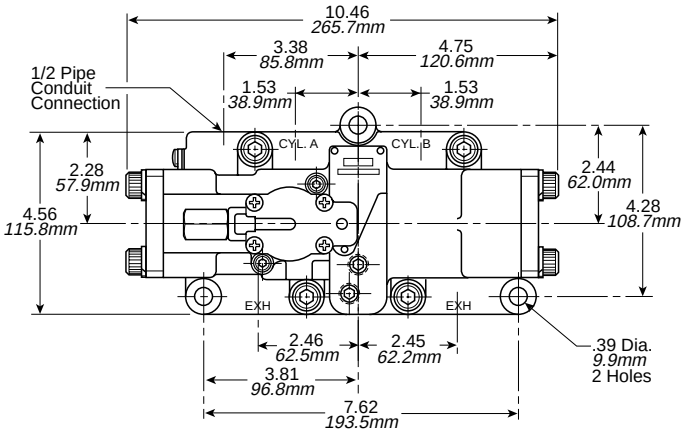
With solenoid "A" having been energized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energize solenoid "B" (momentary) – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.



Model Selection

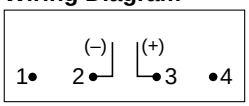
Valve Only		Voltage	Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)	Port Adapter (Manifolds)
Single Solenoid	Double Solenoid					
L675 89 102 53	L655 89 102 53	120V 60Hz 110V 50Hz	K022 094	K142 235	3/4"	K122 016 Kit Includes Both Ends
			K022 095	K142 236	1"	
L675 83 102 **	L655 83 102 **	Other	K022 096	K142 237	1-1/4"	

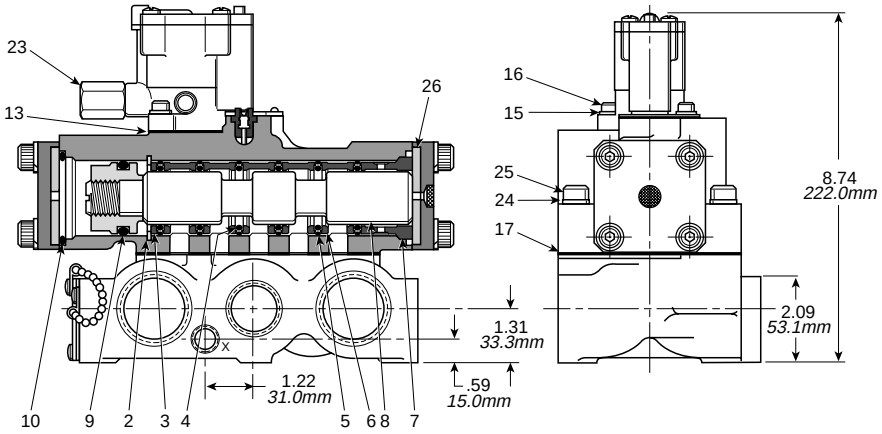


Single Solenoid

See page 35 for Manifold Dimensional Data

Wiring Diagram

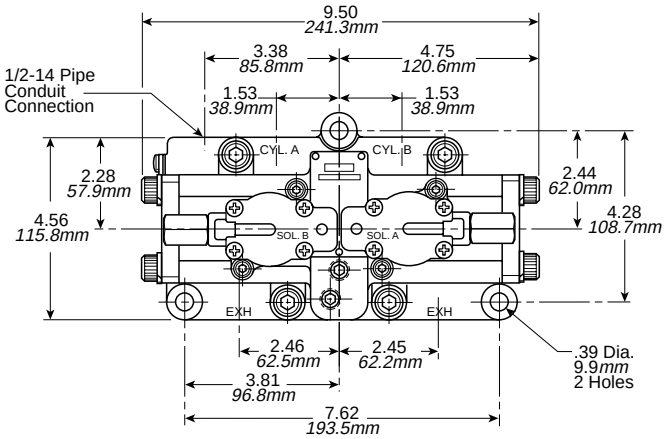




Parts List

Item No.	Part No.	Description
2	H090 09	Retaining Ring
3	K553 009	Spacer
* 4	—	O-Ring (Dynamic)
* 5	—	O-Ring (Static)
6	K453 009	Spacer
7	K463 005	End Spacer
8	K232 014	Spool Assy.
* 9	—	O-Ring
*10	—	Seal
*13	—	Gasket
15	H175 12	Lockwasher
16	H100 60	Cap Screw
*17	—	Gasket
23	K152 003	Override Assy.
24	H175 20	Lockwasher
25	H101 48	Cap Screw
26	K983 004	Shock Pad

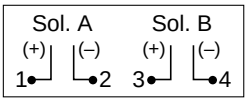
* Standard Sevice Kit: K352 128
* Special Service Kit: K352 129
(Continuous Duty)

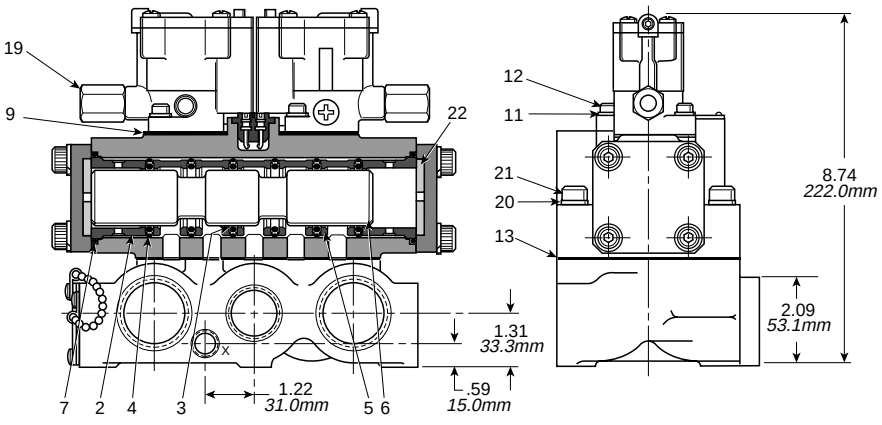


Double Solenoid

See page 35 for Manifold Dimensional Data

Wiring Diagram





Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Dynamic)
* 4	—	O-Ring (Static)
5	K453 009	Spacer
6	K343 061	Spool
* 7	—	Seal
* 9	—	Gasket
11	H175 12	Lockwasher
12	H100 60	Cap Screw
*13	—	Gasket
19	K152 003	Override Assy.
20	H175 20	Lockwasher
21	H101 48	Cap Screw
22	K983 004	Shock Pad

* Standard Sevice Kit: K352 130
* Special Service Kit: K352 131
(Continuous Duty)

1/4" NPT Ports, Nominal Cv = 1.4

Single Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

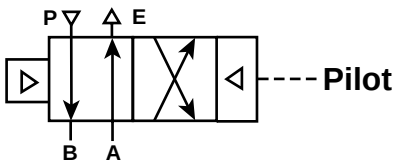
Mounting

These valves are designed for subbase or modular manifold mountings. Order from chart below.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port E.

When pressure to pilot is removed – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port E.



Double Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

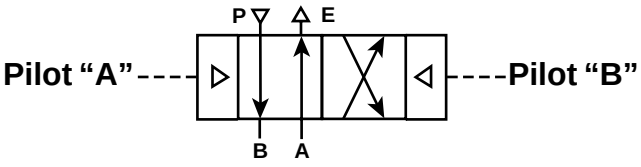
Mounting

These valves are designed for subbase or modular manifold mountings. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

Pilot “A” pressurized last – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port E.

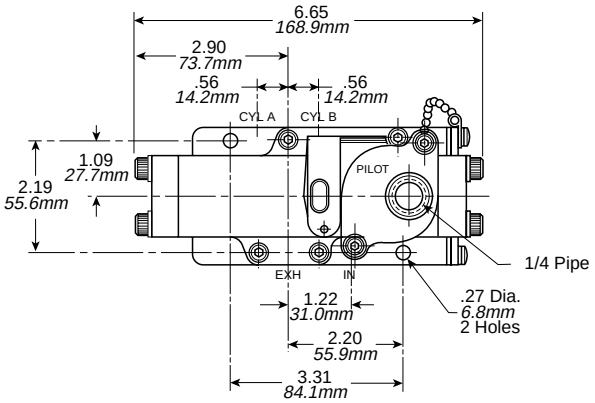
Pilot “B” pressurized last – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port E.



Model Selection

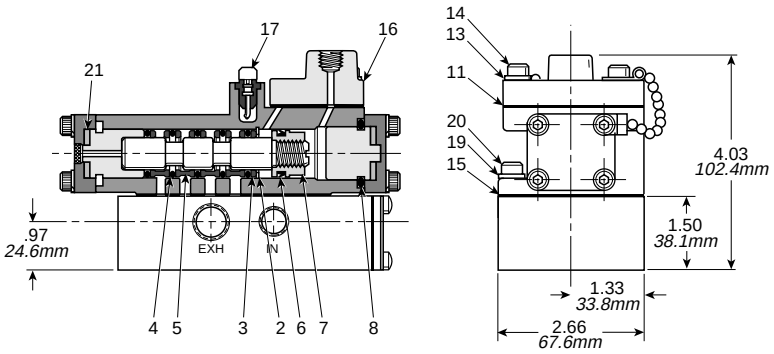
Valve Only		Subbase (Side Ports)	Manifold (End & Bottom Ports) ▲		Port Size (NPT)
Single Solenoid	Double Solenoid		2 Station	3 Station	
L444 21 102	L414 21 102	K022 097	K142 077	K142 076	1/4"

▲ - Manifolds include mounting hardware.



Single Remote

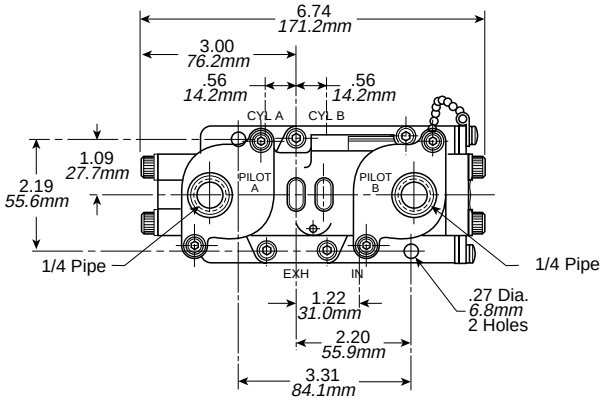
See page 33 for Manifold Dimensional Data



Parts List

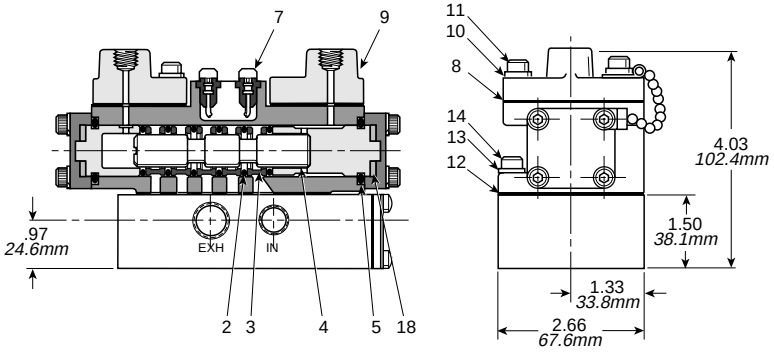
Item No.	Part No.	Description
2	K18R311093	Retaining Ring
3	K453 006	Spacer
* 4	—	O-Ring
5	K453 005	Spacer
* 6	—	Seal
7	K232 018	Spool Assy.
* 8	—	Seal
*11	—	Gasket
13	H175 12	Lockwasher
14	H100 60	Cap Screw
*15	—	Gasket
16	K323 027	Remote Cap
17	K333 013	Plug Cap
19	H175 12	Lockwasher
20	H100 59	Cap Screw
21	K983 001	Shock Pad

* Standard Sevice Kit: K352 363



Double Remote

See page 33 for Manifold Dimensional Data

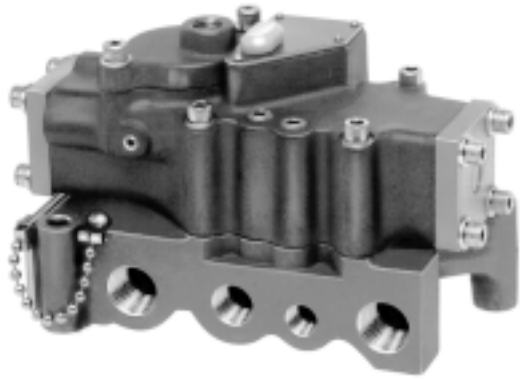


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K493 005	Spool
* 5	—	Seal
7	K333 013	Plug Cap
* 8	—	Gasket
9	K323 027	Remote Cap
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	Gasket
13	H175 12	Lockwasher
14	H100 59	Cap Screw
18	K983 001	Shock Pad

* Standard Sevice Kit: K352 357

3/8" Thru 3/4" NPT Ports, Nominal Cv = 4.8



Single Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

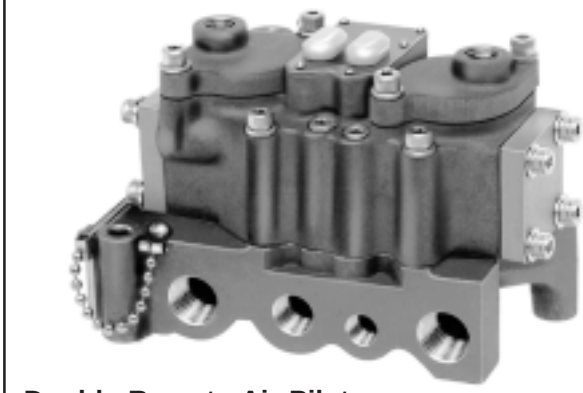
Mounting

These valves are designed for subbase or modular manifold mountings. Order from chart below.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port EB.

When pressure to pilot is removed – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port EA.



Double Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

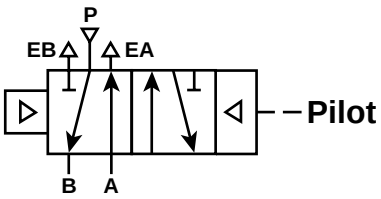
Mounting

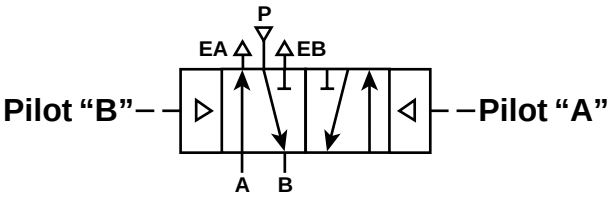
These valves are designed for subbase or modular manifold mountings. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

Pilot “A” pressurized last – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port EA.

Pilot “B” pressurized last – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port EB.

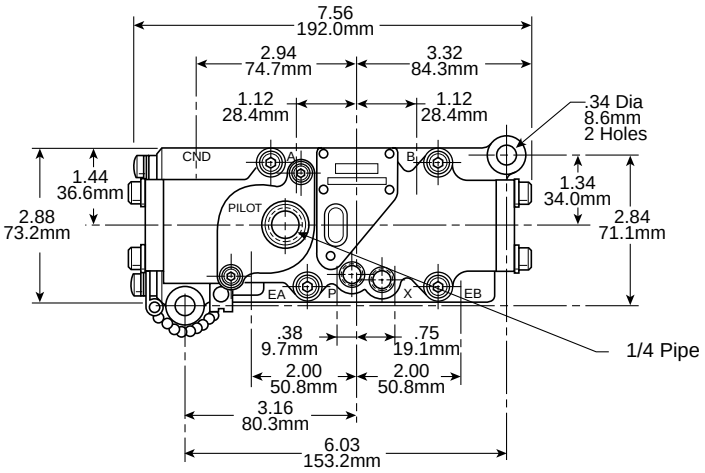




Model Selection

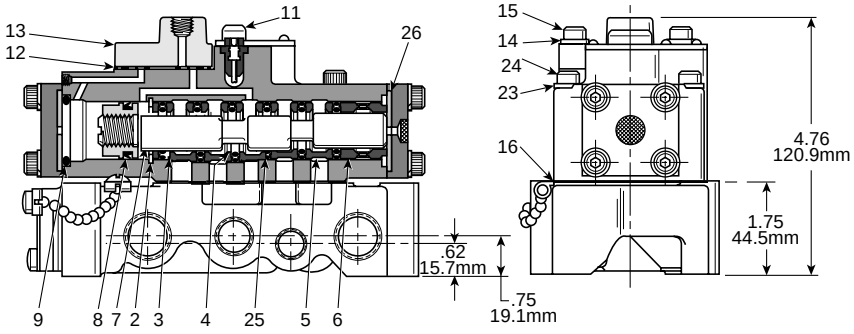
Valve Only		Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)
Single Remote	Double Remote			
L674 31 102	L654 31 102	K022 090	K142 230	3/8"
		K022 091	K142 231	1/2"
		K022 101	K142 270	3/4"

▲ - Manifolds include mounting hardware.



Single Remote

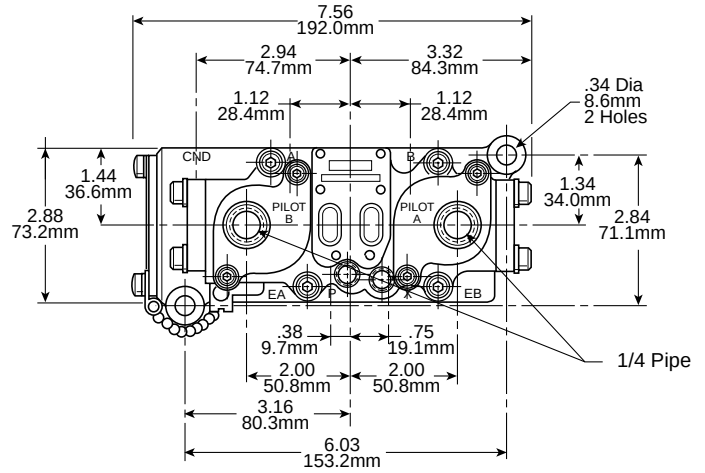
See page 34 for Manifold Dimensional Data



Parts List

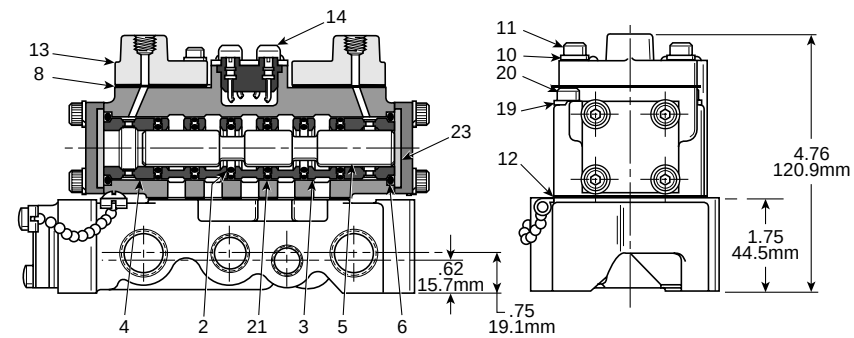
Item No.	Part No.	Description
2	H090 71	Retaining Ring
3	K463 015	Spacer
* 4	—	O-Ring (Dynamic)
5	K453 028	Spacer
6	K463 012	End Spacer
7	K232 020	Spool Assy.
* 8	—	Seal
* 9	—	Seal
11	K333 013	Plug Cap
*12	—	Gasket
13	K323 027	Remote Cap
14	H175 12	Lockwasher
15	H100 60	Cap Screw
*16	—	Gasket
23	H175 12	Lockwasher
24	H100 69	Cap Screw
*25	—	O-Ring (Static)
26	K983 002	Shock Pad

* Standard Sevice Kit: K352 362



Double Remote

See page 34 for Manifold Dimensional Data

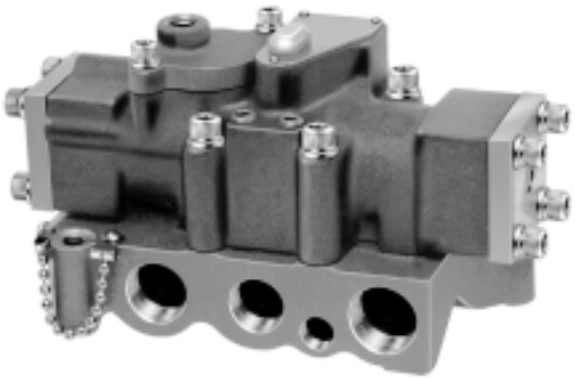


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 094	Spool
* 6	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	Gasket
13	K323 027	Remote Cap
14	K333 013	Plug Cap
19	H175 12	Lockwasher
20	H100 69	Cap Screw
*21	—	O-Ring (Static)
23	K983 002	Shock Pad

* Standard Sevice Kit: K352 355

1/2" & 3/4" NPT Ports, Nominal Cv = 5.2



Single Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

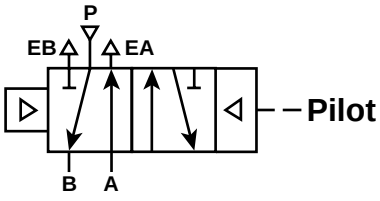
Mounting

These valves are designed for subbase or modular manifold mountings. Order from chart below.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port EB.

When pressure to pilot is removed – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port EA.



Double Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

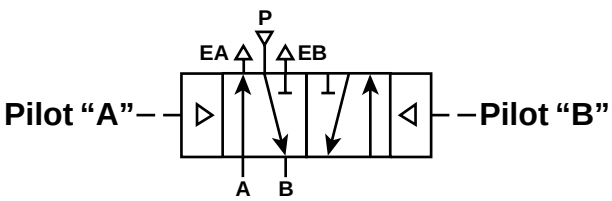
Mounting

These valves are designed for subbase or modular manifold mountings. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

Pilot “A” pressurized last – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port EA.

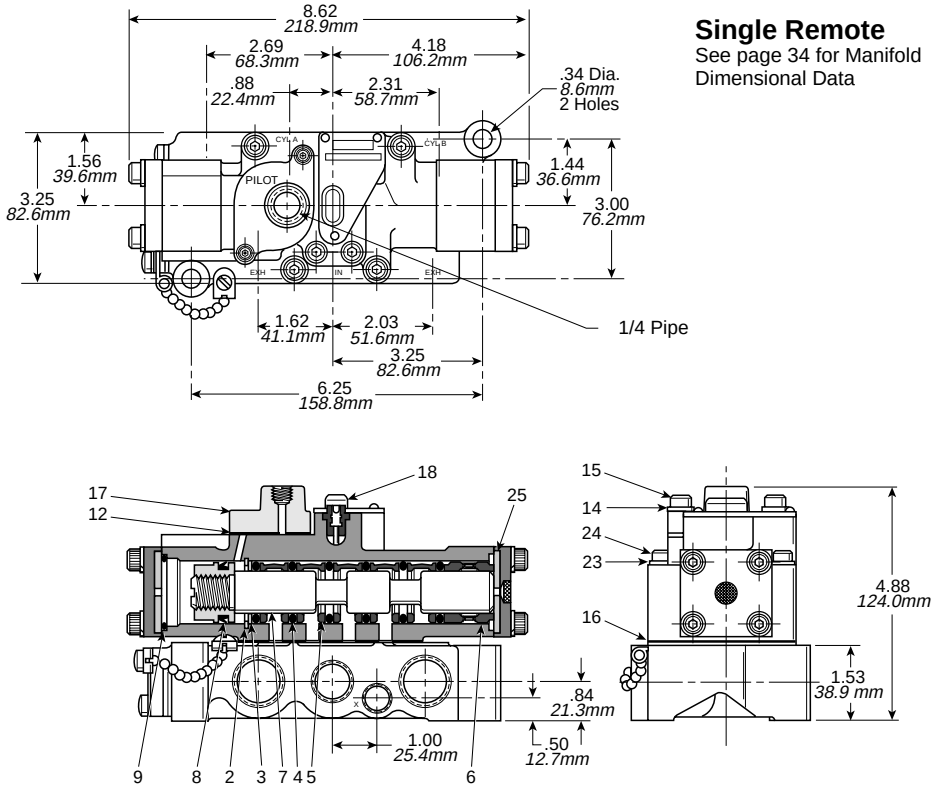
Pilot “B” pressurized last – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port EB.



Model Selection

Valve Only		Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)
Single Remote	Double Remote			
L544 51 102	L514 51 102	K022 092	K142 233	1/2"
		K022 093	K142 234	3/4"

▲ - Manifolds include mounting hardware.



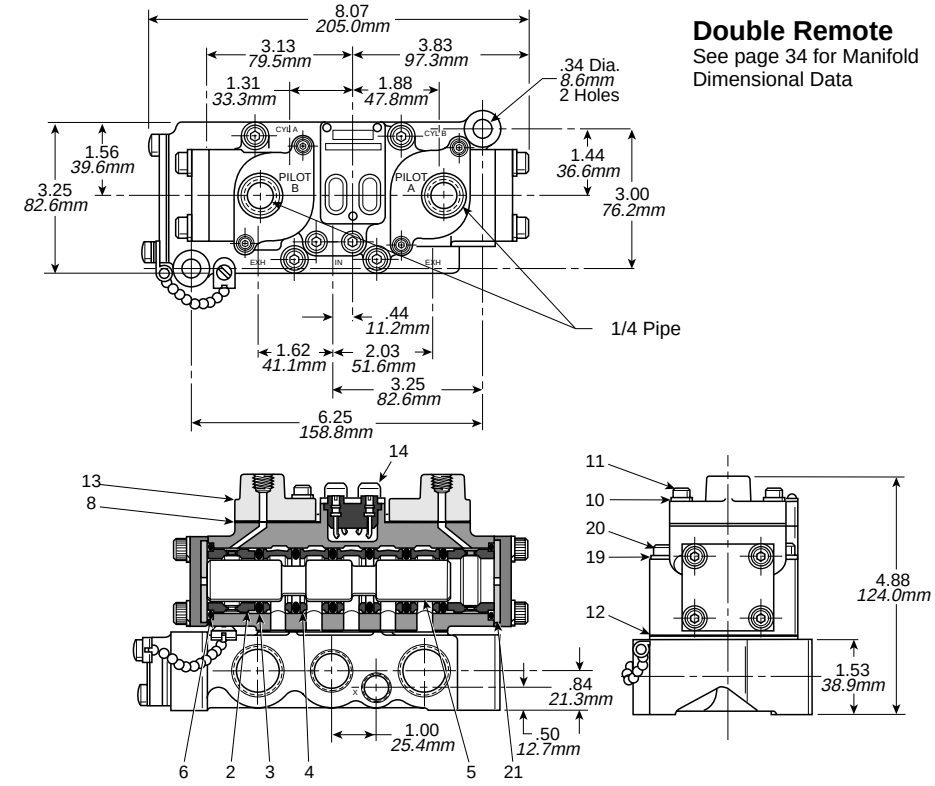
Single Remote

See page 34 for Manifold Dimensional Data

Parts List

Item No.	Part No.	Description
2	K18R311137	Retaining Ring
3	K553 011	Spacer
* 4	—	O-Ring
5	K453 008	Spacer
6	K463 001	End Spacer
7	K232 017	Spool Assy.
* 8	—	Seal
*12	—	Gasket
14	H175 12	Lockwasher
15	H100 60	Cap Screw
*16	—	Gasket
17	K323 027	Remote Cap
18	K333 013	Plug Cap
23	H175 16	Lockwasher
24	H101 25	Cap Screw
25	K983 003	Shock Pad

* Standard Sevice Kit: K352 361



Double Remote

See page 34 for Manifold Dimensional Data

Parts List

Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 046	Spool
* 6	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	Gasket
13	K323 027	Remote Cap
14	K333 013	Plug Cap
19	H175 16	Lockwasher
20	H101 25	Cap Screw
21	K983 003	Shock Pad

* Standard Sevice Kit: K352 358

3/4" Thru 1-1/4" NPT Ports, Nominal Cv = 11.3

Single Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

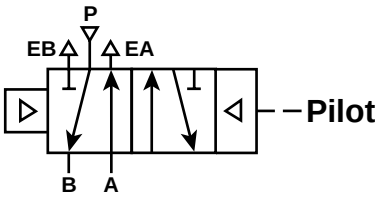
Mounting

These valves are designed for subbase or modular manifold mountings. Order from chart below.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port EB.

When pressure to pilot is removed – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port EA.



Double Remote Air Pilot

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

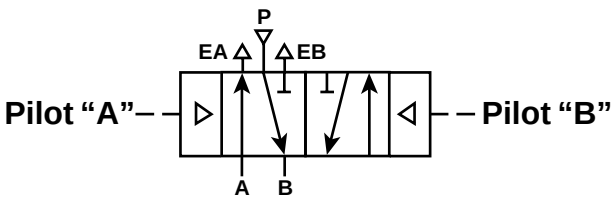
Mounting

These valves are designed for subbase or modular manifold mountings. Axis of main valve spool to be in horizontal plane. Order from chart below.

Operation: Pressure Service

Pilot “A” pressurized last – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port EA.

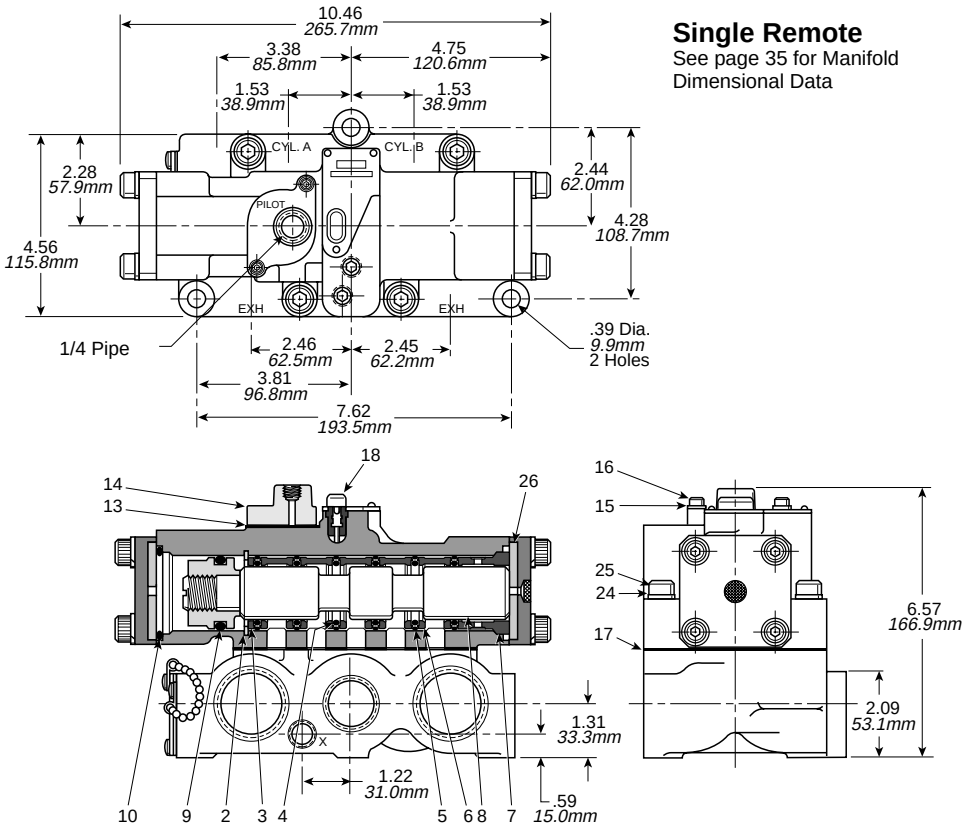
Pilot “B” pressurized last – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port EB.



Model Selection

Valve Only		Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)	Port Adapter
Single Solenoid	Double Solenoid				
L674 81 102	K654 81 102	K022 094	K142 235	3/4"	K122 016 Kit Includes Both Ends
		K022 095	K142 236	1"	
		K022 096	K142 237	1-1/4"	

▲ - Manifolds include mounting hardware, except for port adapters. See chart, order separately.



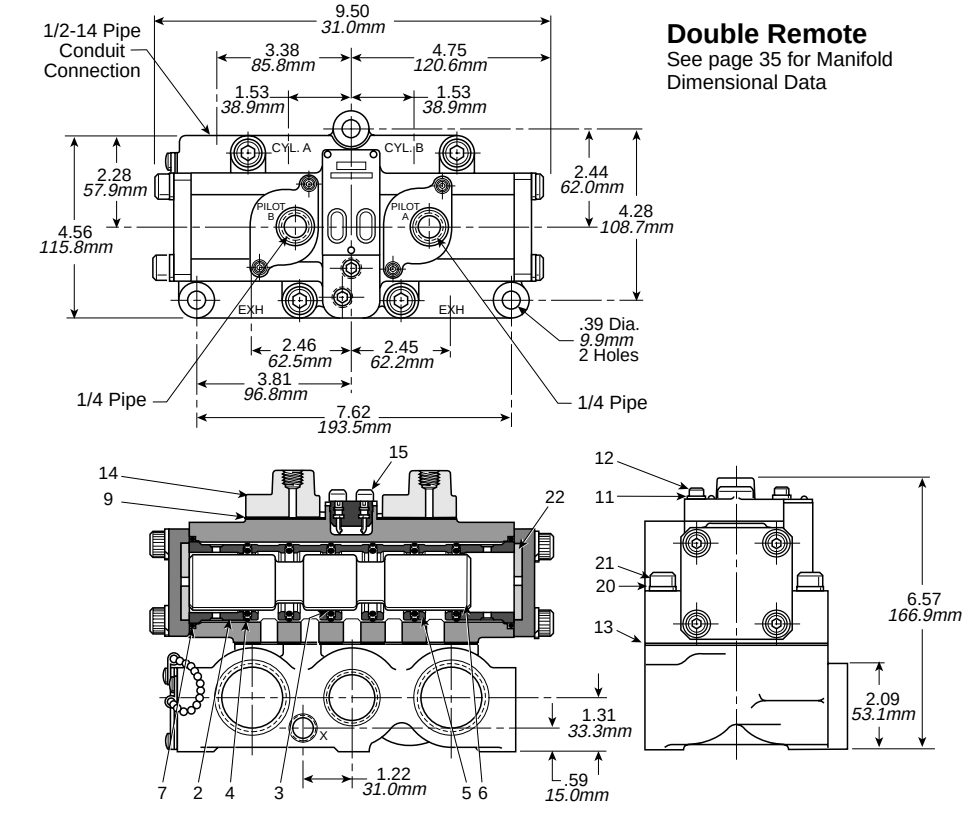
Single Remote

See page 35 for Manifold Dimensional Data

Parts List

Item No.	Part No.	Description
2	H090 09	Retaining Ring
3	K553 009	Spacer
* 4	—	O-Ring (Dynamic)
* 5	—	O-Ring (Static)
6	K453 009	Spacer
7	K463 005	Spacer
8	K232 014	Spool Assy.
* 9	—	O-Ring
*10	—	Seal
*13	—	Gasket
14	K323 027	Remote Cap
15	H175 12	Lockwasher
16	H100 60	Cap Screw
*17	—	Gasket
18	K333 013	Plug Cap
24	H175 20	Lockwasher
25	H101 48	Cap Screw
26	K983 004	Shock Pad

* Standard Sevice Kit: K352 359



Double Remote

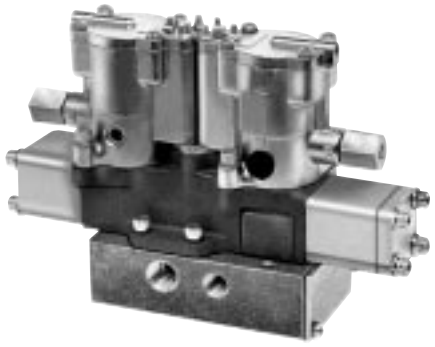
See page 35 for Manifold Dimensional Data

Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Dynamic)
* 4	—	O-Ring (Static)
5	K453 009	Spacer
6	K343 061	Spool
* 7	—	Seal
* 9	—	Gasket
11	H175 12	Lockwasher
12	H100 60	Cap Screw
*13	—	Gasket
14	K323 027	Remote Cap
15	K333 013	Plug Cap
20	H175 20	Lockwasher
21	H101 48	Cap Screw
22	K983 004	Shock Pad

* Standard Sevice Kit: K352 360

4-Way, 4-Port, 3-Position & 4-Way, 5-Port, 3-Position - 1/4", 1/2" & 3/4" NPT Ports



1/4" Basic, Nominal Cv = 1.4

1/2" Basic, Nominal Cv = 5.0

Application

These valves may be used to actuate double acting cylinders, when "inching" or incremental rod movement is desired. A "momentary" (exceeding .03 seconds) or maintained electrical signal applied to one of the solenoids shifts the valve, the valve returns to the "neutral" condition when the electrical signal is removed. Valve may be applied for alternate service.

Operation: Pressure Service

Neutral "Class 21"
Both solenoids de-energized (Normal Condition) – All ports blocked.

Neutral "Class 22"
Both solenoids de-energized (Normal Condition) – "Cylinder" Port A is open to "Exhaust" Port E (EA), "Cylinder" Port B is open to "Exhaust" Port E (EB), "Pressure" Port P is blocked.

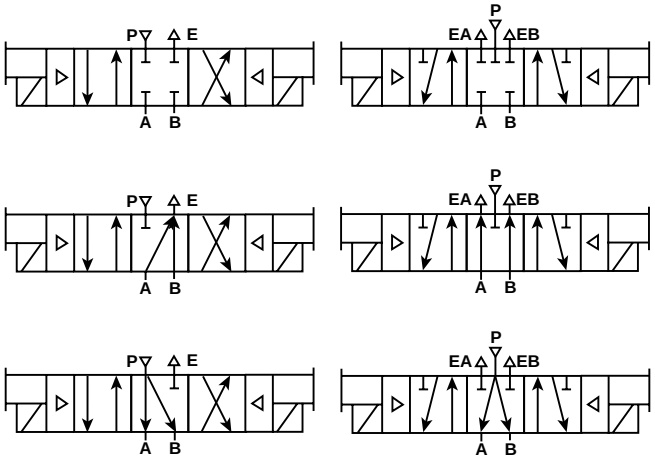
Neutral "Class 23"
Both solenoids de-energized (Normal Condition) – "Cylinder" Port A is open to Pressure Port P, "Cylinder" Port B is open to Pressure Port P. Both "Exhaust" Port(s) E (EA and EB) are blocked.

Activated Operation
With solenoid "A" energized – Pressure at Port P flows to "Cylinder" Port A, "Cylinder" Port B is connected to "Exhaust" Port E (EB), regardless of neutral "class".
With solenoid "B" energized – Pressure at Port P flows to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port E (EA), regardless of "neutral" configuration.

Mounting

These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

1/4" Basic **1/2" Basic**

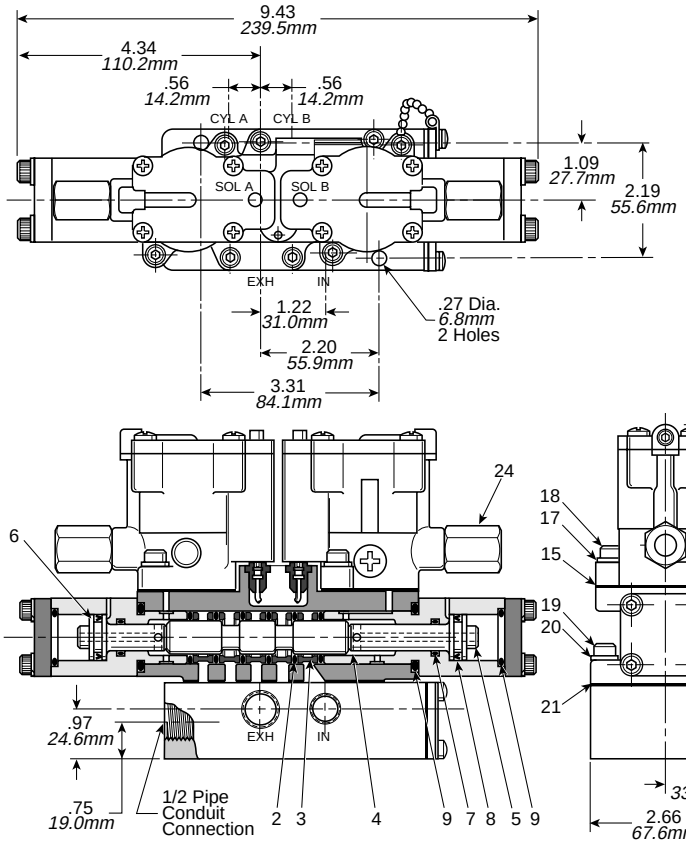


Model Selection (Neutral "Class 21" Shown)

Valve Only	Voltage	Subbase (Side Ports)	Manifold (End & Bottom Ports) ▲			Port Size (NPT)
			2 Station	3 Station	Modular	
L425 29 211 53	120V 60Hz 110V 50Hz	K022 097	K142 077	K142 076	—	1/4"
L425 23 211 **	Other					
L525 59 211 53	120V 60Hz 110V 50Hz	K022 092	—	—	K142 233	1/2"
L525 53 211 **	Other	K022 093	—	—	K142 234	3/4"

See page 4 & 5 for variations in class of neutral configuration and (**) voltage codes.

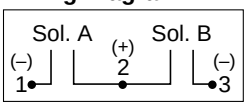
▲ - Manifolds include mounting hardware.



1/4" Basic

See page 33 for Manifold Dimensional Data

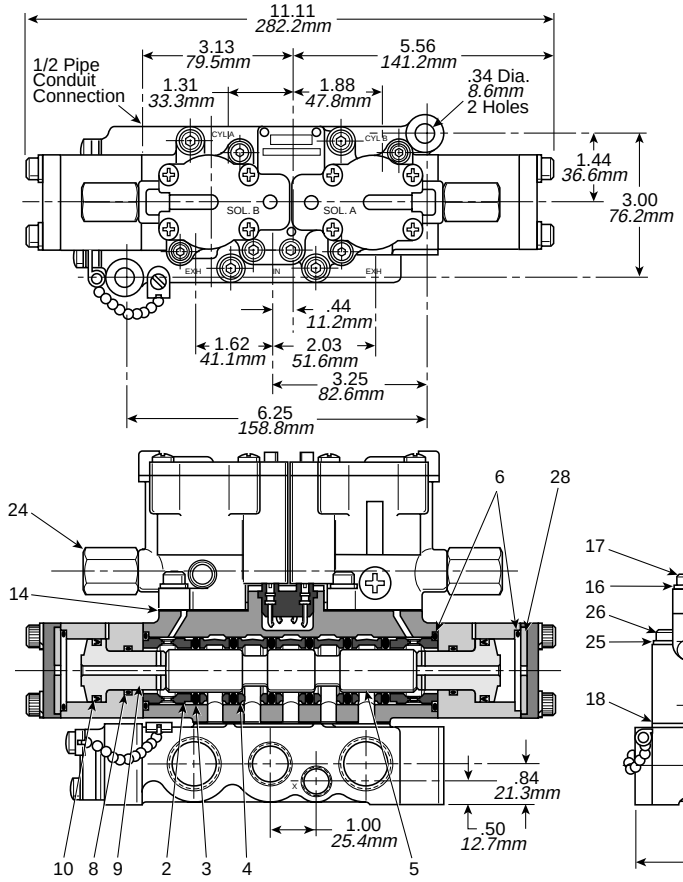
Wiring Diagram



Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K343 020	Spool (All Ports Blocked)
4	K343 073	Spool (Cyl. Ports Open to Exh.)
4	K343 021	Spool (Cyl. Ports Open to Inlet)
5	K313 009	Piston (Long)
6	K313 010	Piston (Short)
* 7	—	Seal
* 8	—	Seal
* 9	—	Seal
*15	—	Gasket
17	H175 12	Lockwasher
18	H100 60	Cap Screw
19	H100 59	Cap Screw
20	H175 12	Lockwasher
*21	—	Gasket
24	K152 003	Override Assy.

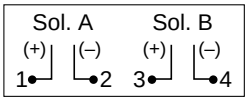
* Standard Sevice Kit: K352 151
* Special Service Kit: K352 351 (Continuous Duty)



1/2" Basic

See page 34 for Manifold Dimensional Data

Wiring Diagram

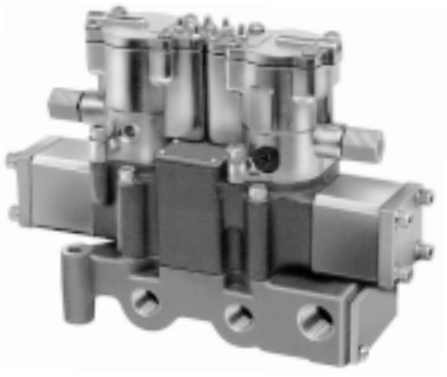


Parts List

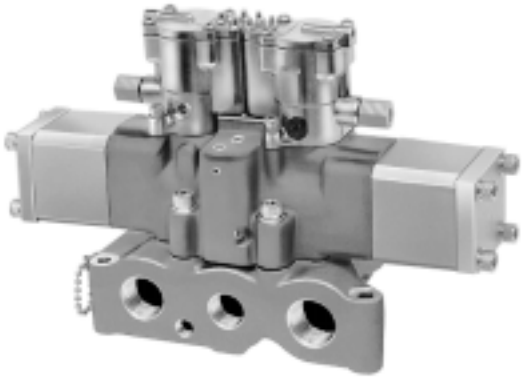
Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 045	Spool (All Ports Blocked)
5	K343 067	Spool (Cyl. Ports Open to Inlet)
5	K343 068	Spool (Cyl. Ports Open to Exh.)
* 6	—	Seal
* 8	—	Seal
9	K313 017	Piston
*10	—	Seal
*14	—	Gasket
16	H175 12	Lockwasher
17	H100 60	Cap Screw
*18	—	Gasket
24	K152 003	Override Assy.
25	H175 16	Lockwasher
26	H101 25	Cap Screw
28	K983 003	Shock Pad

* Standard Sevice Kit: K352 153
* Special Service Kit: K352 353 (Continuous Duty)

4-Way, 5-Port, 3-Position - 3/8" Thru 1-1/4" NPT Ports



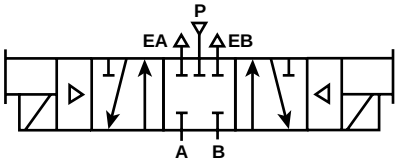
3/8" Basic, Nominal Cv = 4.8

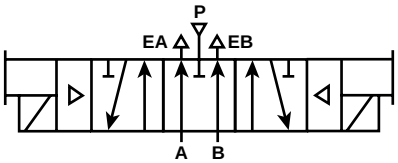


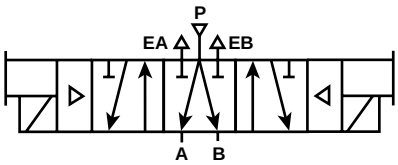
1" Basic, Nominal Cv = 11.3

Application

These valves may be used to actuate double acting cylinders, when “inching” or incremental rod movement is desired. A “momentary” (exceeding .03 seconds) or maintained electrical signal applied to one of the solenoids shifts the valve, the valve returns to the “neutral” condition when the electrical signal is removed. Valve may be applied for alternate service.







Mounting

These valves are designed for subbase or modular manifold mountings. Electrical connection from valve to base is automatic. Air & electrical connections remain undisturbed if valve is removed. Order from chart below.

Operation: Pressure Service

Neutral “Class 21”
Both solenoids de-energized (Normal Condition) – All ports blocked.

Neutral “Class 22”
Both solenoids de-energized (Normal Condition) – “Cylinder” Port A is open to “Exhaust” Port EA, “Cylinder” Port B is open to “Exhaust” Port EB, “Pressure”
Port P is blocked.

Neutral “Class 23”
Both solenoids de-energized (Normal Condition) – “Cylinder” Port A is open to Pressure Port P, “Cylinder” Port B is open to Pressure Port P. Both “Exhaust” Ports EA and EB are blocked.

Activated Operation
With solenoid “A” energized – Pressure at Port P flows to “Cylinder” Port A, “Cylinder” Port B is connected to “Exhaust” Port EB, regardless of neutral “class”.

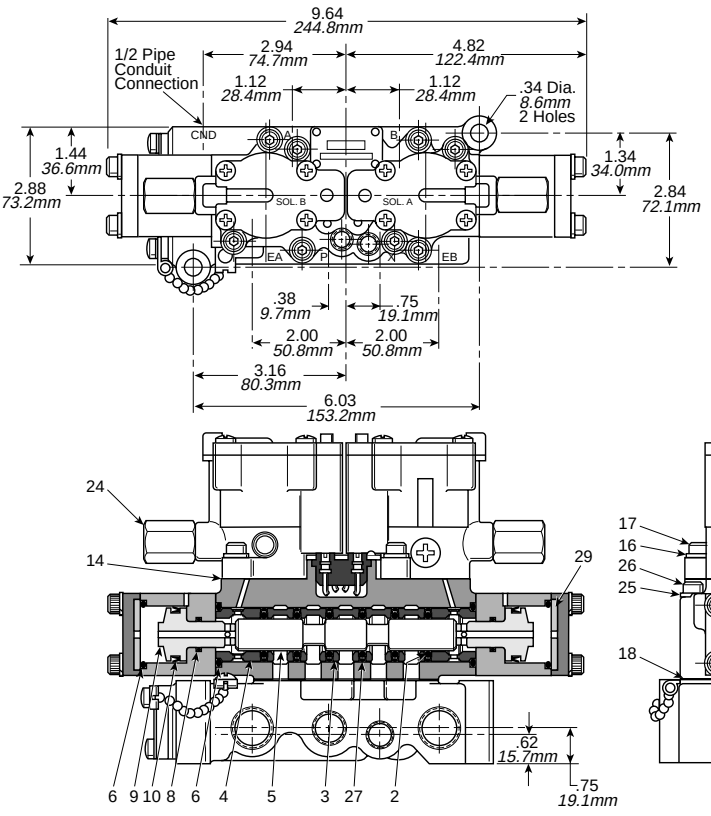
With solenoid “B” energized – Pressure at Port P flows to “Cylinder” Port B, “Cylinder” Port A is connected to “Exhaust” Port EA, regardless of neutral “class”.

Model Selection (Neutral “Class 21” Shown)

Valve Only	Voltage	Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)	Port Adapter
L665 39 211 53	120V 60Hz 110V 50Hz	K022 090	K142 230	3/8"	Not Req’d
		K022 091	K142 231	1/2"	
L665 33 211 **	Other	K022 101	K142 270	3/4"	
L665 89 211 53	120V 60Hz 110V 50Hz	K022 094	K142 235	3/4"	K122 016 Kit Includes Both Ends
		K022 095	K142 236	1"	
L665 83 211 **	Other	K022 096	K142 237	1-1/4"	

See page 5 for variations in class of neutral configuration and (**) voltage codes.

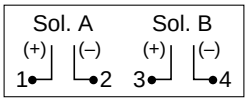
▲ - Manifolds include mounting hardware, except for port adapters. See chart, order separately.



3/8" Basic

See page 34 for Manifold Dimensional Data

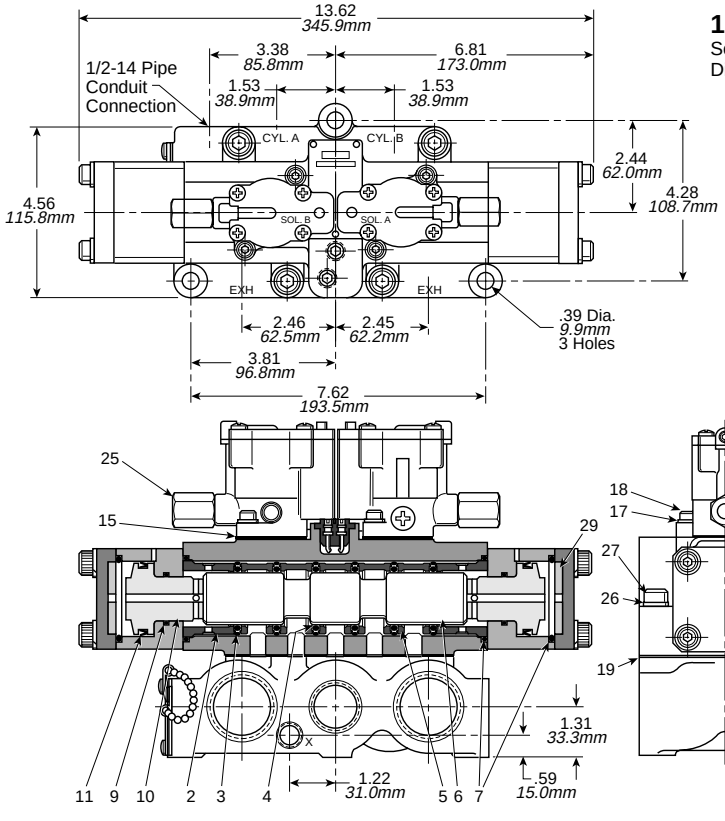
Wiring Diagram



Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 124	Spool (All Ports Blocked)
5	K343 126	Spool (Cyl. Ports Open to Inlet)
5	K343 125	Spool (Cyl. Ports Open to Exh.)
* 6	—	Seal
* 8	—	Seal
9	K313 049	Piston
*10	—	Seal
*14	—	Gasket
16	H175 12	Lockwasher
17	H100 60	Cap Screw
*18	—	Gasket
24	K152 003	Override Assy.
25	H175 12	Lockwasher
26	H100 69	Cap Screw
*27	—	O-Ring (Static)
29	K983 002	Shock Pad

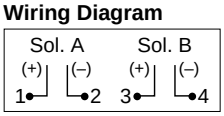
* Standard Sevice Kit: K352 126
* Special Service Kit: K352 127 (Continuous Duty)



1" Basic

See page 35 for Manifold Dimensional Data

Wiring Diagram



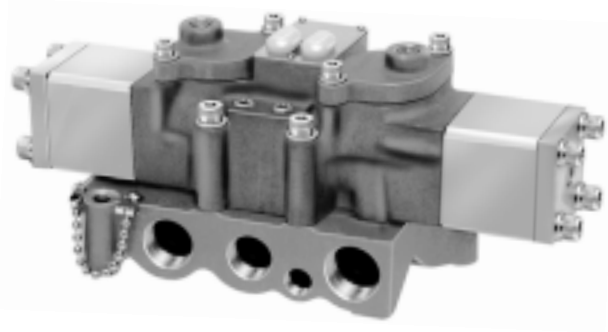
Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Static)
* 4	—	O-Ring (Dynamic)
5	K453 009	Spacer
6	K343 060	Spool (All Ports Blocked)
6	K343 070	Spool (Cyl. Ports Open to Exh.)
6	K343 069	Spool (Cyl. Ports Open to Inlet)
* 7	—	Seal
* 9	—	Seal
10	K313 023	Piston
*11	—	Seal
*15	—	Gasket
17	H175 12	Lockwasher
18	H100 60	Cap Screw
*19	—	Gasket
25	K152 003	Override Assy.
26	H175 20	Washer
27	H101 48	Cap Screw
29	K983 004	Shock Pad

* Standard Sevice Kit: K352 130
* Special Service Kit: K352 131 (Continuous Duty)

4-Way, 4-Port, 3-Position & 4-Way, 5-Port, 3-Position - 1/4", 1/2" & 3/4" NPT Ports

1/4" Basic, Nominal Cv = 1.4

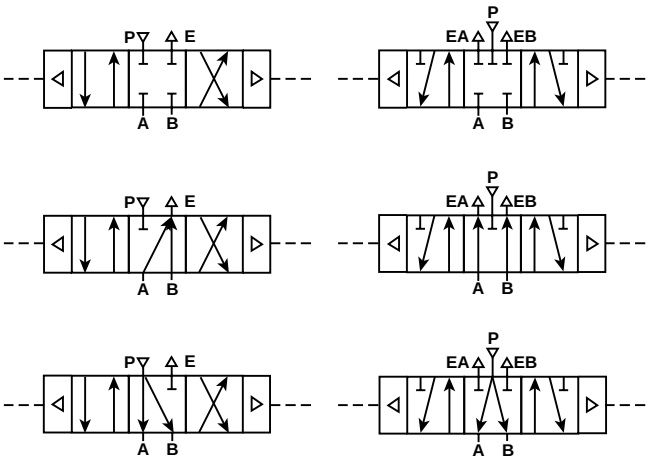


1/2" Basic, Nominal Cv = 5.0

Application

These valves may be used to actuate double acting cylinders when “inching” or incremental rod movement is desired. A normally open pilot signal to both pilot caps maintains the valve in its neutral (centered) condition. Valve may be applied for alternate service.

1/4" Basic **1/2" Basic**



Mounting

These valves are designed for subbase or modular manifold mountings. Order from chart below.

Operation: Pressure Service

Neutral “Class 21”
Normally open pilot signals to both pilot caps – All ports blocked.

Neutral “Class 22”
Normally open pilot signals to both pilot caps – “Cylinder” Port A is connected to “Exhaust” Port E (EA) and “Cylinder” Port B is connected to “Exhaust” Port E (EB). Pressure at Port P is blocked.

Neutral “Class 23”
Normally open pilot signals to both pilot caps – “Cylinder” Ports A and B are connected to Port P. “Exhaust” Port(s) E (EA and EB) are blocked.

Activated Operation
When Pilot “A” is exhausted – Pressure at Port P is connected to “Cylinder” Port A. “Exhaust” Port E (EB) is connected to “Cylinder” Port B.

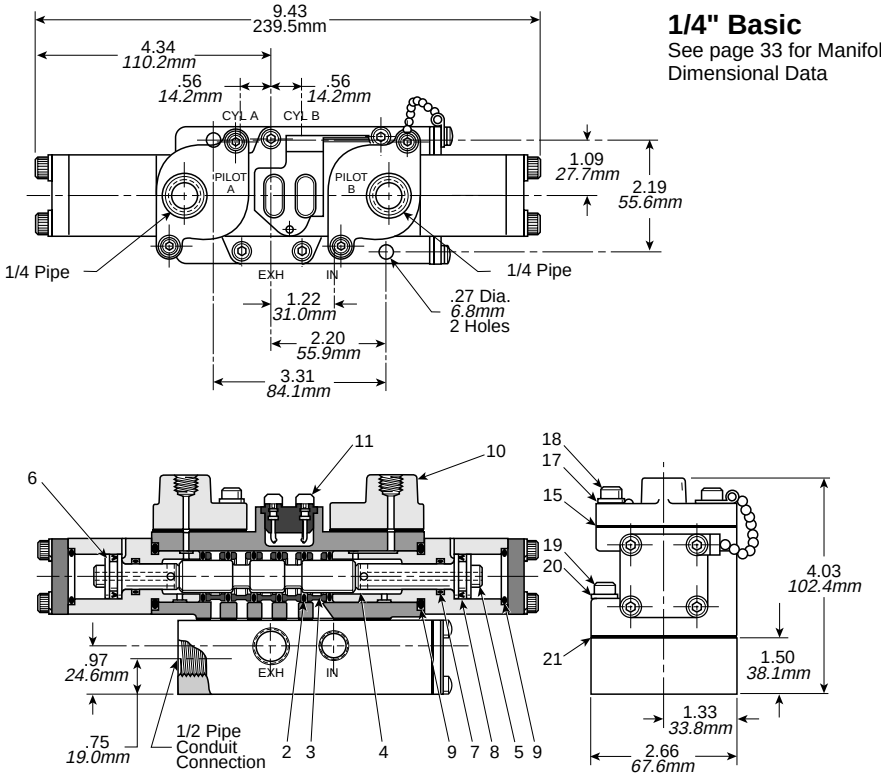
When Pilot “B” is exhausted – Pressure at Port P is connected to “Cylinder” Port B, “Exhaust” Port E (EA) is connected to “Cylinder” Port A.

Model Selection

Valve Only	Subbase (Side Ports)	Manifold (End & Bottom Ports) ▲			Port Size (NPT)
		2 Station	3 Station	Modular	
L424 21 211	K022 097	K142 077	K142 076	—	1/4"
L524 51 211	K022 092	—	—	K142 233	1/2"
	K022 093	—	—	K142 234	3/4"

See page 4 & 5 for variations in class of neutral configurations.

▲ - Manifolds include mounting hardware.



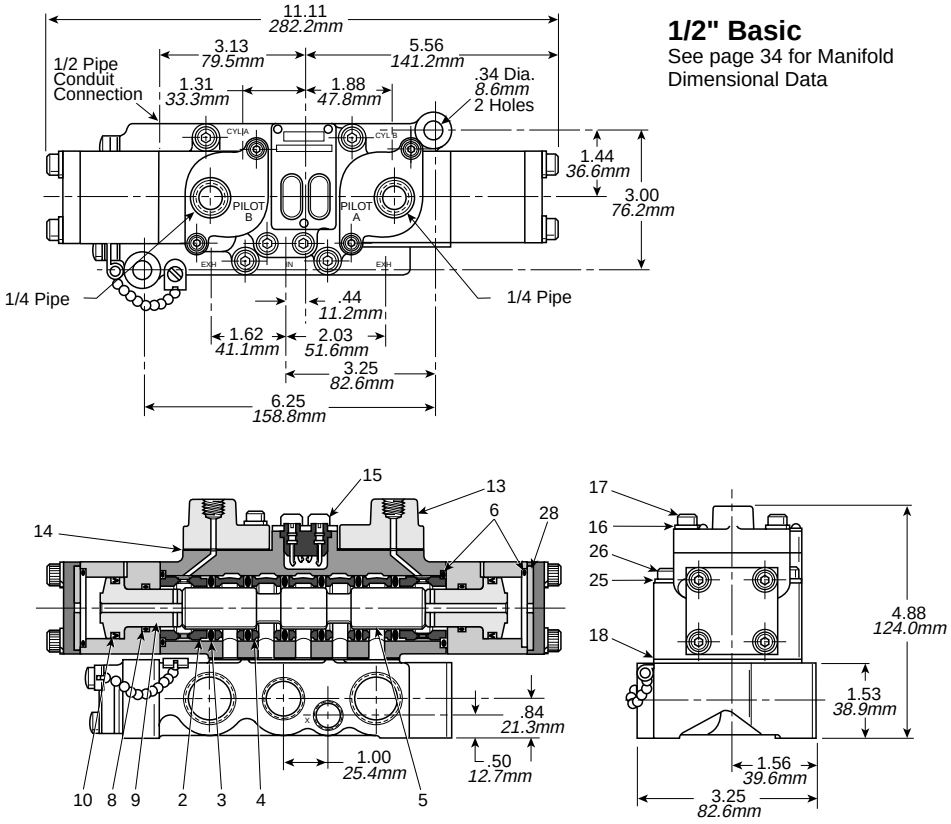
1/4" Basic

See page 33 for Manifold Dimensional Data

Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K343 020	Spool (All Ports Blocked)
4	K343 021	Spool (Cyl. Ports Open to Inlet)
4	K343 073	Spool (Cyl. Ports Open to Exh.)
5	K313 009	Piston (Long)
6	K313 010	Piston (Short)
* 7	—	Seal
* 8	—	Seal
* 9	—	Seal
10	K323 027	Remote Cap
11	K333 013	Plug Cap
*15	—	Gasket
17	H175 12	Lockwasher
18	H100 60	Cap Screw
19	H100 59	Cap Screw
20	H175 12	Lockwasher
*21	—	Gasket

* Standard Sevice Kit: K352 357



1/2" Basic

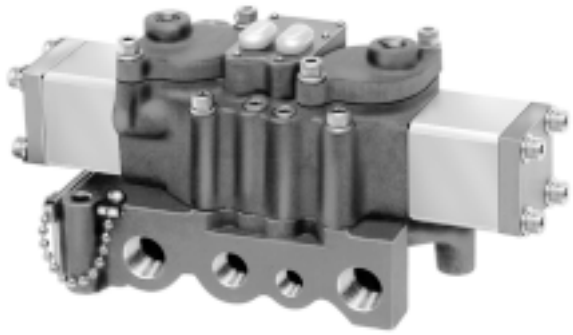
See page 34 for Manifold Dimensional Data

Parts List

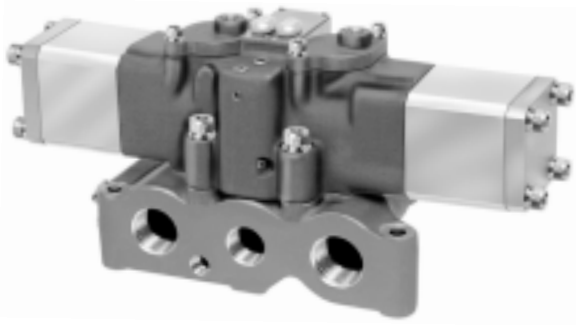
Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 045	Spool (All Ports Blocked)
5	K343 067	Spool (Cyl. Ports Open to Inlet)
5	K343 068	Spool (Cyl. Ports Open to Exh.)
* 6	—	Seal
* 8	—	Seal
9	K313 017	Piston
*10	—	Seal
13	K323 027	Remote Cap
*14	—	Gasket
15	K333 013	Plug Cap
16	H175 12	Lockwasher
17	H100 60	Cap Screw
*18	—	Gasket
25	H175 16	Lockwasher
26	H101 25	Cap Screw
28	K983 003	Shock Pad

* Standard Sevice Kit: K352 358

4-Way, 5-Port, 3-Position - 3/8" Thru 1-1/4" NPT Ports



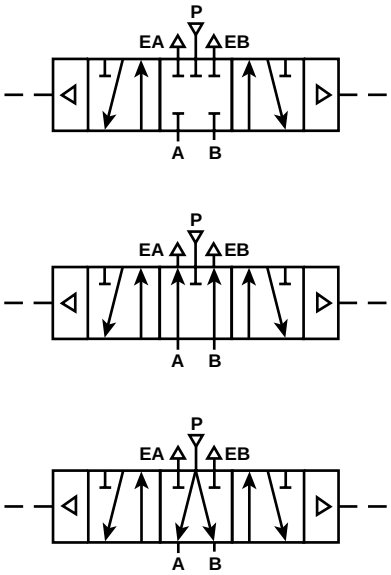
3/8" Basic, Nominal Cv = 4.8



1" Basic, Nominal Cv = 11.3

Application

These valves may be used to activate double acting cylinders when “inching” or incremental rod movement is desired. A normally open pilot signal to both pilot caps maintains the valve in its neutral (centered) condition. Valve may be applied for alternate services.



Mounting

These valves are designed for subbase or modular manifold mountings. Order from chart below.

Operation: Pressure Service

Neutral “Class 21”
Normally open pilot signals to both pilot caps – All ports blocked.

Neutral “Class 22”
Normally open pilot signals to both pilot caps – “Cylinder” Port A is connected to “Exhaust” Port EA and “Cylinder” Port B is connected to “Exhaust” Port EB. Pressure at Port P is blocked.

Neutral “Class 23”
Normally open pilot signals to both pilot caps – “Cylinder” Ports A & B are connected to Port P. “Exhaust” Ports EA & EB are blocked.

Activated Operation
When Pilot “A” is exhausted – Pressure at Port P is connected to “Cylinder” Port A. “Exhaust” Port EB is connected to “Cylinder” Port B.

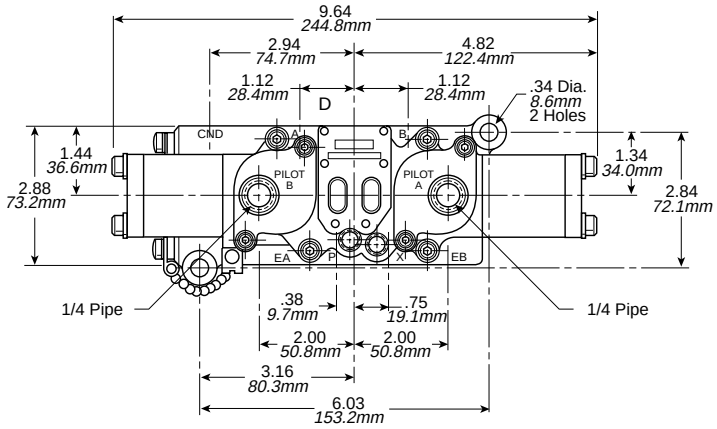
When Pilot “B” is exhausted – Pressure at Port P is connected to “Cylinder” Port B. “Exhaust” Port EA is connected to “Cylinder” Port A.

Model Selection (Neutral “Class 21” Shown)

Valve Only	Subbase (Side Ports)	Manifold ▲ (End & Bottom Ports)	Port Size (NPT)	Port Adapter
L664 31 211	K022 090	K142 230	3/8"	Not Req’d
	K022 091	K142 231	1/2"	
	K022 101	K142 270	3/4"	
L664 81 211	K022 094	K142 235	3/4"	K122 016 Kit Includes Both Ends
	K022 095	K142 236	1"	
	K022 096	K142 237	1-1/4"	

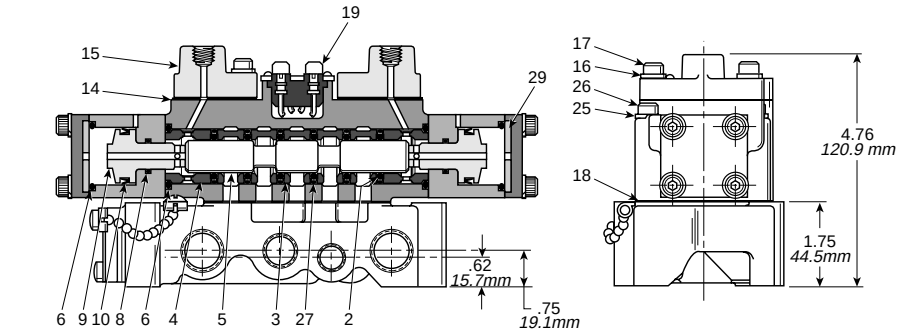
See page 5 for variations in class of neutral configurations.

▲ - Manifolds include mounting hardware.



3/8" Basic

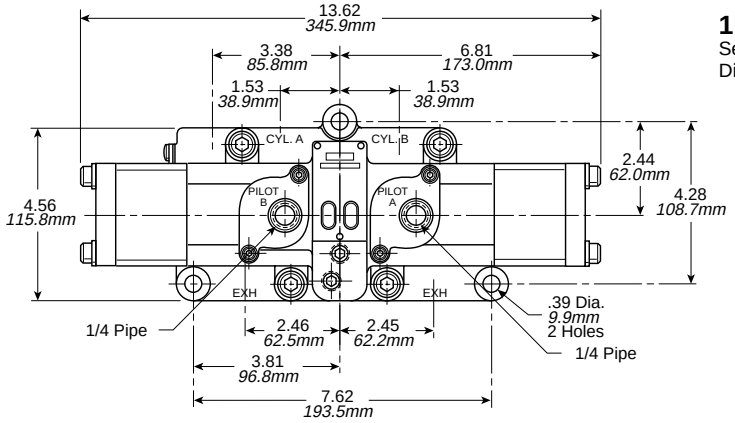
See page 34 for Manifold Dimensional Data



Parts List

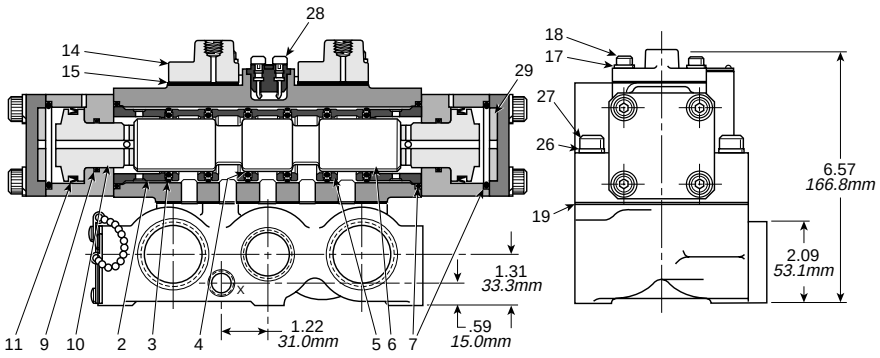
Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 124	Spool (All Ports Blocked)
5	K343 126	Spool (Cyl. Ports Open to Inlet)
5	K343 125	Spool (Cyl. Ports Open to Exh.)
* 6	—	Seal
* 8	—	Seal
9	K313 049	Piston
*10	—	Seal
*14	—	Gasket
15	K323 027	Remote Cap
16	H175 12	Lockwasher
17	H100 60	Cap Screw
*18	—	Gasket
25	H175 12	Lockwasher
26	H100 69	Cap Screw
*27	—	O-Ring (Static)
28	K333 013	Plug Cap
29	K983 002	Shock Pad

* Standard Sevice Kit: K352 355



1" Basic

See page 35 for Manifold Dimensional Data



Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Static)
* 4	—	O-Ring (Dynamic)
5	K453 009	Spacer
6	K343 060	Spool (All Ports Blocked)
6	K343 070	Spool (Cyl. Ports Open to Exh.)
6	K343 069	Spool (Cyl. Ports Open to Inlet)
* 7	—	Seal
* 9	—	Seal
10	K313 023	Piston
*11	—	Seal
14	K323 027	Remote Cap
*15	—	Gasket
17	H175 12	Lockwasher
18	H100 60	Cap Screw
*19	—	Gasket
26	H175 20	Lockwasher
27	H101 48	Cap Screw
28	K333 013	Plug Cap
29	K983 004	Shock Pad

* Standard Sevice Kit: K352 360

When Ordering Valve & Manifold Assemblies

1. Factory assembly instructions – valve & manifold (or subbase) to be assembled. Sequence of assembly to be as listed on order (see example) from left to right when facing end cylinder ports.

2. Size – identified as 5th character in Valve Model Number.

2 = 1/4" Basic L□□□2□ □□□ □□

3 = 3/8" Basic L□□□3□ □□□ □□

5 = 1/2" Basic L□□□5□ □□□ □□

▲ 8 = 1" Basic L□□□8□ □□□ □□

▲ (Port Plate K122 016 required on multi-station assemblies)

3. Number of stations:

00 = Single Subbase

01 = Single (Modular) Manifold (Do not use with 1/4" Basic Size)

02 = 2-Station

* 12 = 12-Station

* More stations may be added, if there is sufficient upstream volume and pressure to insure that the last valve in the assembly will function. An increased upstream volume, conversion to an external pilot, or an additional inlet may prevent "starvation" problems on larger assemblies.

Manifold Assembly **K 163 3 03**

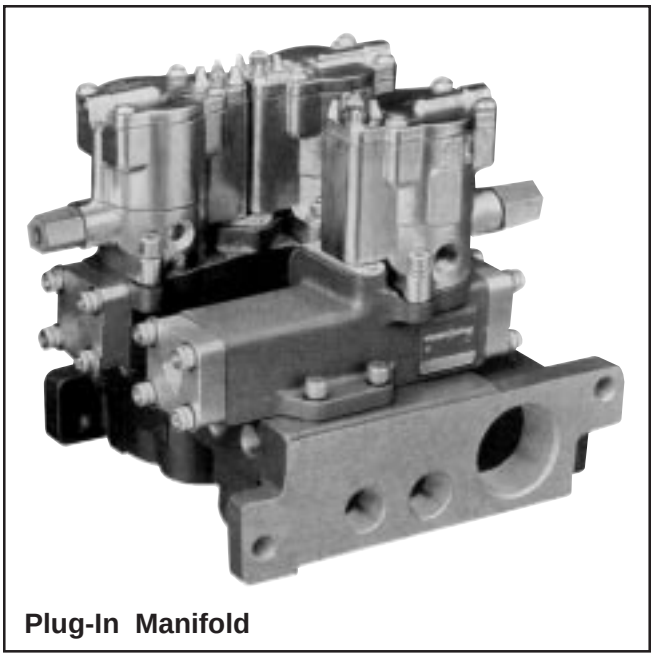
1. Number of Stations
2. Valve Size
3. Factory Assembly

Example: L515 **5**9 102 53
K022 092
K163 **5**00

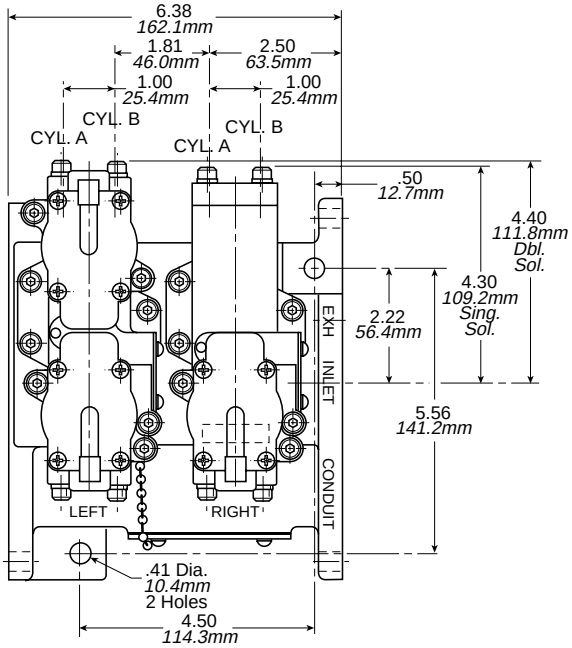
■ List items to be assembled as ordered Pairs and in "Sequence" of Assembly.

■ ***Example:*** L675 **3**9 102 53
K142 230
L655 **3**9 102 53
K142 231
L665 **3**9 102 53
K142 270
K163 **3**03

- Suitable for mounting any combination of 1/4", 4-Way single or double solenoid Plug-In Valves.
- Common inlet, exhaust and electrical conduit ports simplify installation.
- Tapped for side or bottom cylinder port connections.
- Ganging manifolds end-to-end permits manifolding any desired number of valves.
- Integral Plug-In connections for safe, simple electrical connection of valve and manifold.

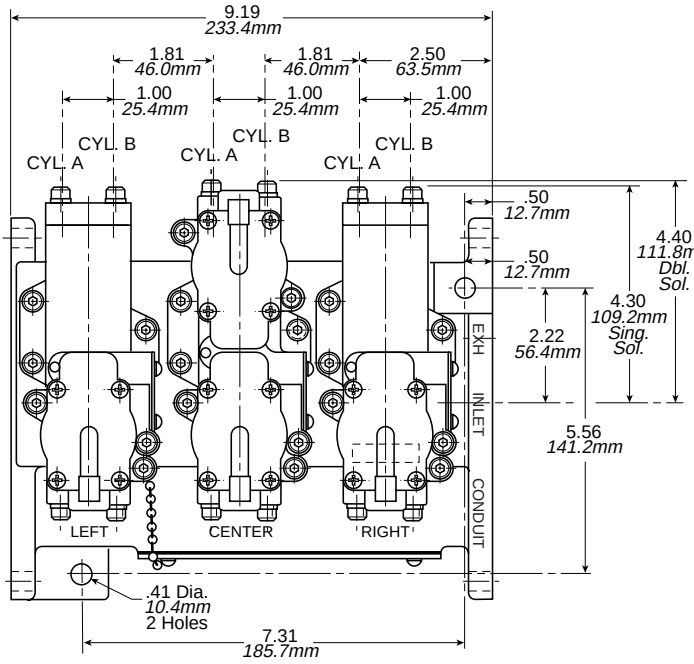


Plug-In Manifold

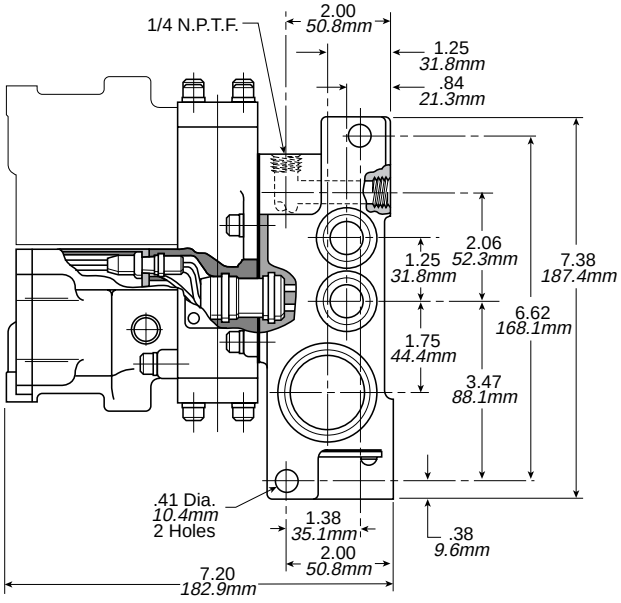


K142-077 Two-Station Manifold

Cylinder Ports	1/4" NPTF
Exhaust Port	1/2" NPTF
Inlet Port	1/2" NPTF
Conduit Port	1-1/4" NPTF



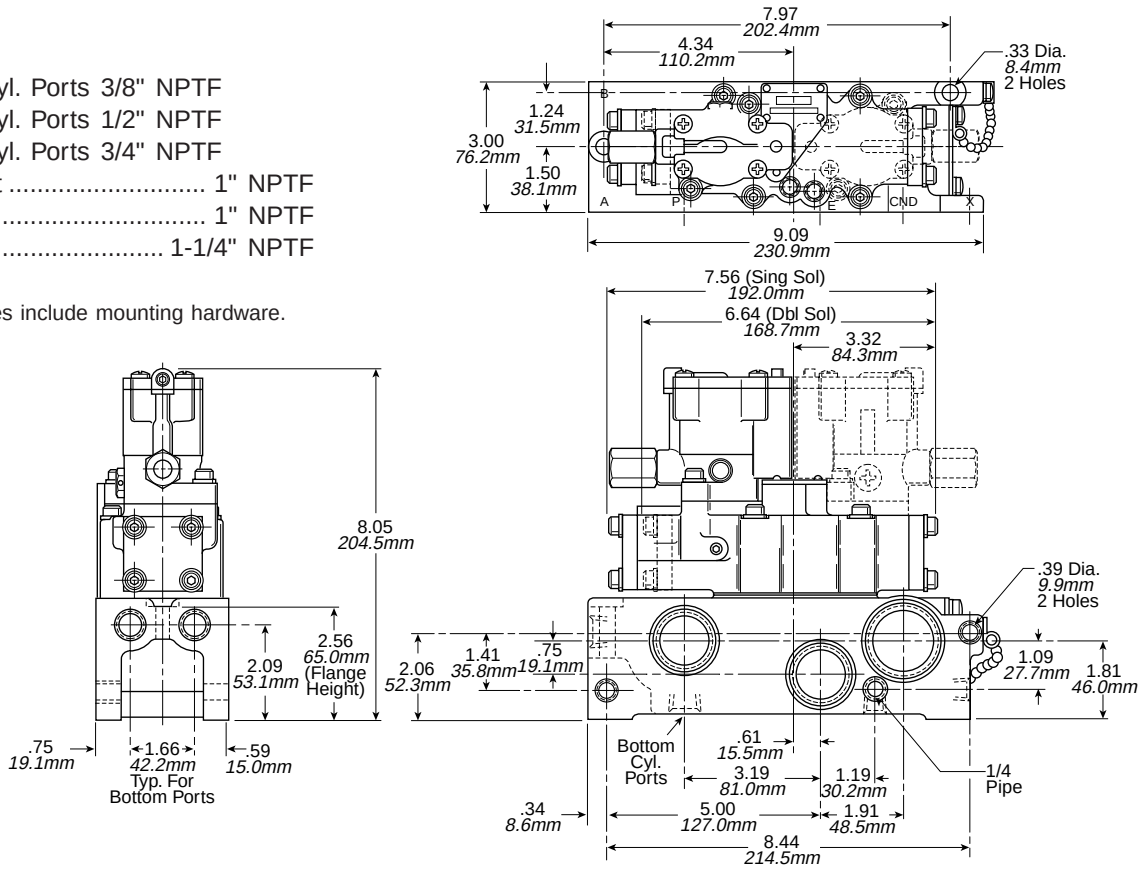
K142-076 Three-Station Manifold



3/8" Basic

K142 230 Cyl. Ports 3/8" NPTF
K142 231 Cyl. Ports 1/2" NPTF
K142 270 Cyl. Ports 3/4" NPTF
Exhaust Port ..... 1" NPTF
Inlet Port..... 1" NPTF
Conduit Port ..... 1-1/4" NPTF

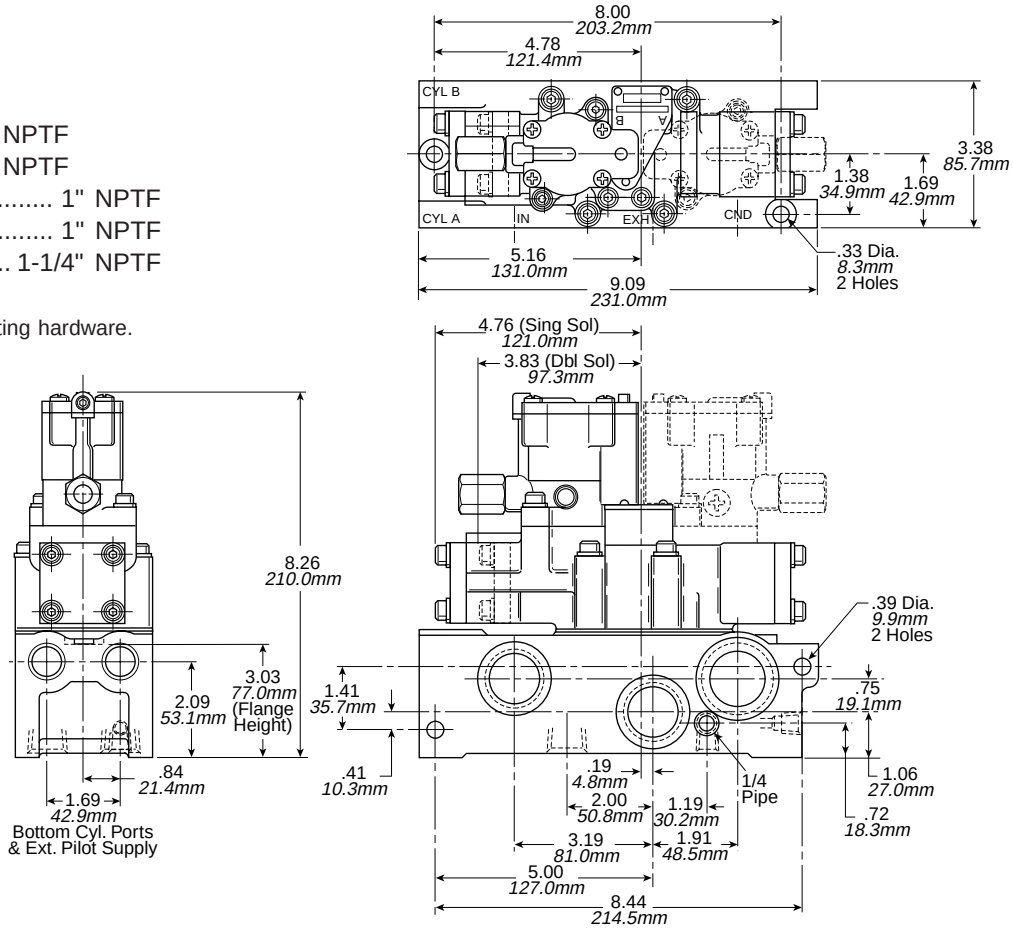
Note:
Manifold assemblies include mounting hardware.



1/2" Basic

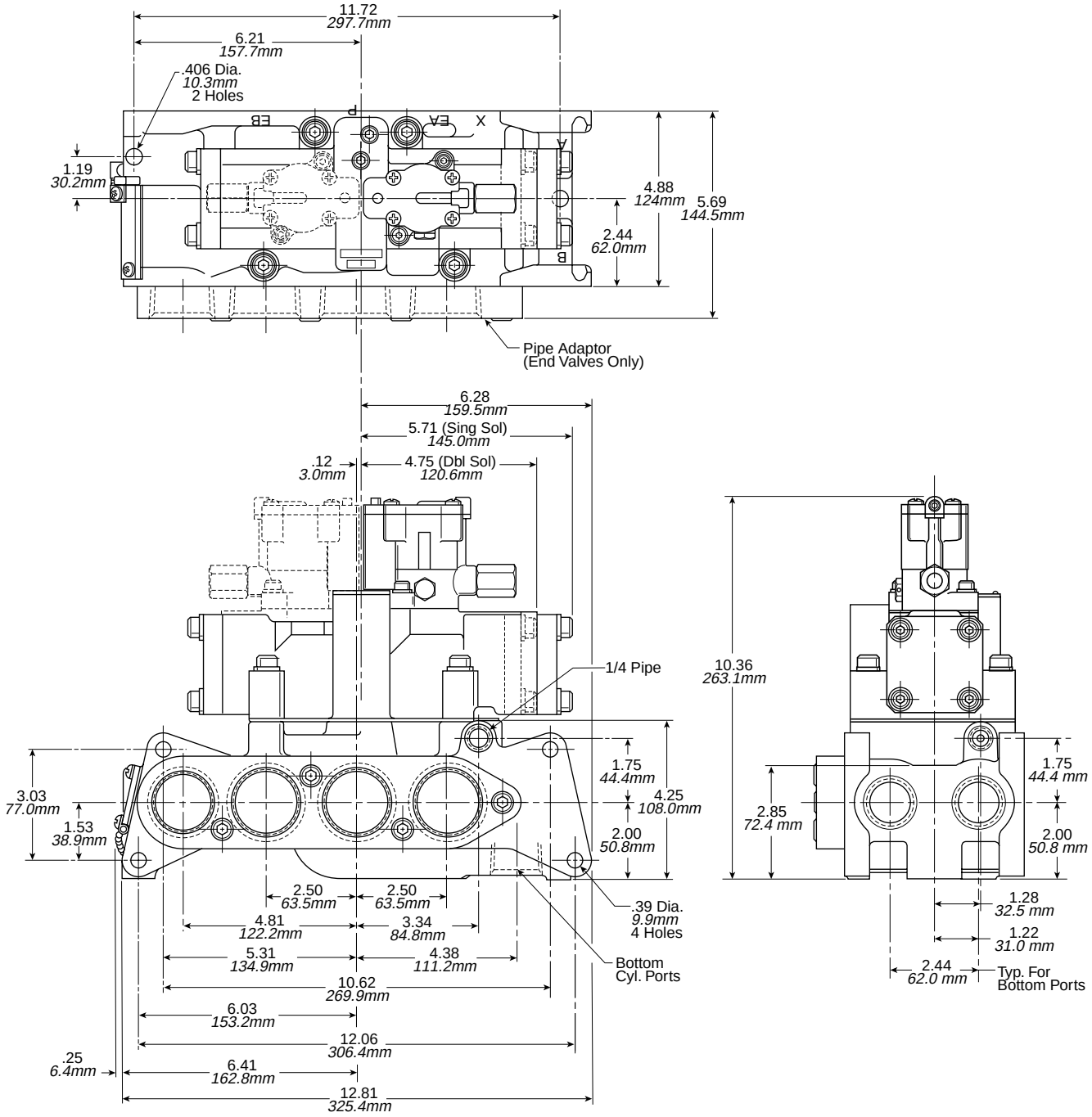
K142 233 Cyl. Ports 1/2" NPTF
K142 234 Cyl. Ports 3/4" NPTF
Exhaust Port ..... 1" NPTF
Inlet Port..... 1" NPTF
Conduit Port ..... 1-1/4" NPTF

Note:
Manifold assemblies include mounting hardware.



1" Basic

K142 235 Cyl. Ports 3/4" NPTF
K142 236 Cyl. Ports 1" NPTF
K142 237 Cyl. Ports 1-1/4" NPTF
K122 016 End Plate Kit (Both Plates)
Exhaust Port ..... 1-1/2" NPTF (Port Plate)
Inlet Port..... 1-1/2" NPTF (Port Plate)
Conduit Port ..... 1-1/4" NPTF (Port Plate)



Modular Pneumatic Controls Plug-In Sandwich Block Design for Modular Port Regulation

These modular regulators assemble to any 3/8" basic valve interface pattern.

Port Regulation Made Easy

Place the sandwich on the manifold or subbase, tighten the four securing screws, then plug the valve into the sandwich and tighten its securing screws to complete the assembly.

Within minutes, these modular components can be installed in new, or used to improve existing manifold systems, without disturbing wiring or air connections.

3-Configurations

1. **Common Port Regulation** - A common regulated pressure is selected to both cylinder ports.
2. **Single Port Regulation** - Line pressure is available to one cylinder port, while a single regulated pressure is selected to the other cylinder port.
3. **Independent Port Regulation** - Two independently regulated pressures selected to the cylinder ports.

NOTE: When using single or independent port sandwich regulators, be aware that:

1. Cylinder port outlets are reversed.
2. 3-Position, cylinder ports open to exhaust and cylinder ports open to inlet functions are reversed. To produce a cylinder ports open to exhaust function, order valve with cylinder ports open to inlet. To produce a cylinder ports open to inlet function, order valve with cylinder ports open to exhaust.

Manual or Remote secondary pressure adjustment.

Three Pressure Ranges are standard for manual units:

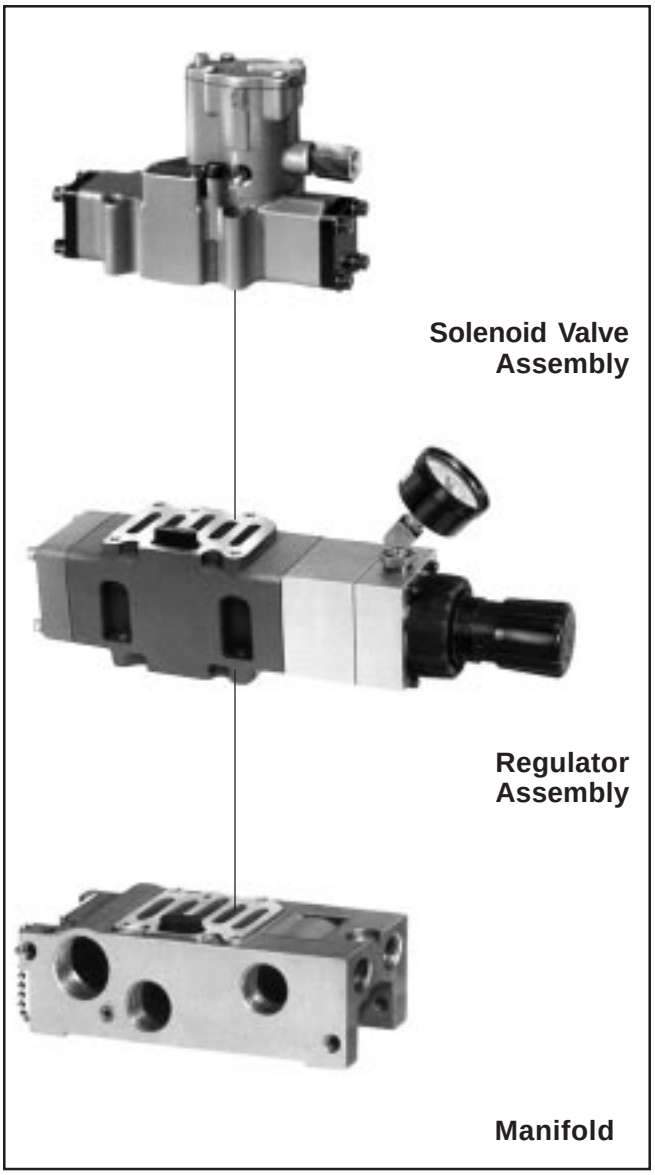
1-30 psig

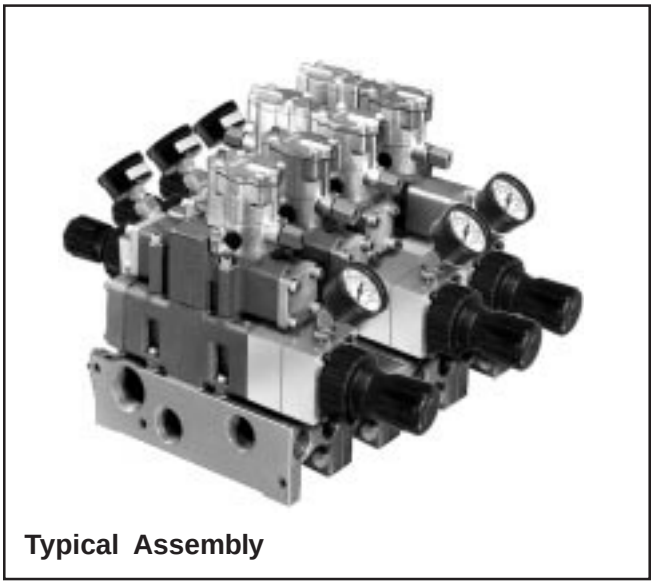
1-60 psig

2-125 psig.

Range for Remote: 0-140 psig

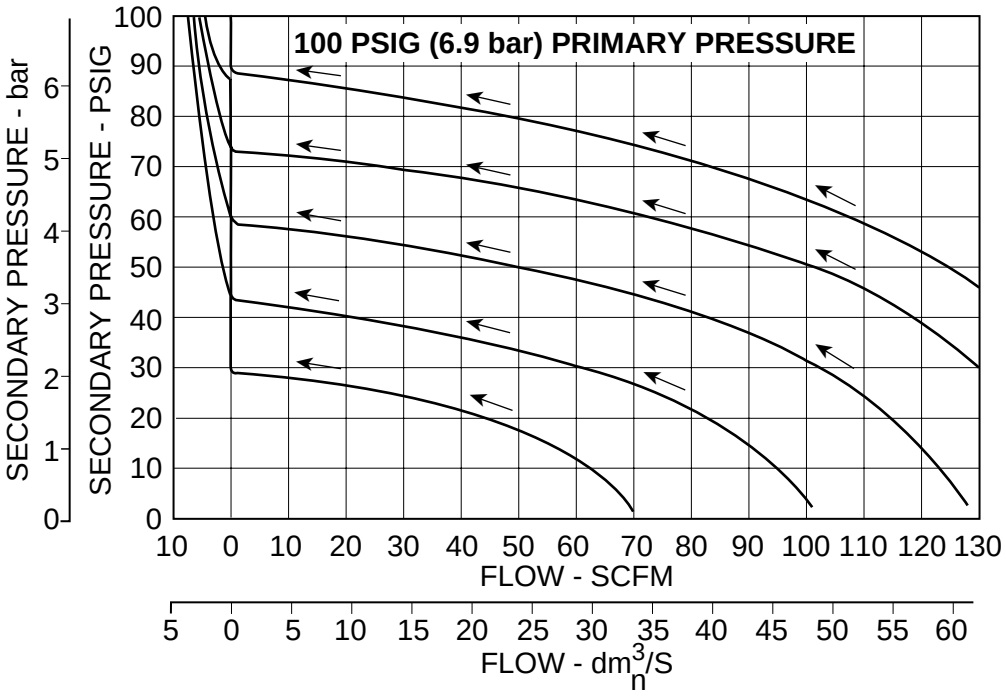
Gauges are furnished standard, liquid filled gauges are optional.



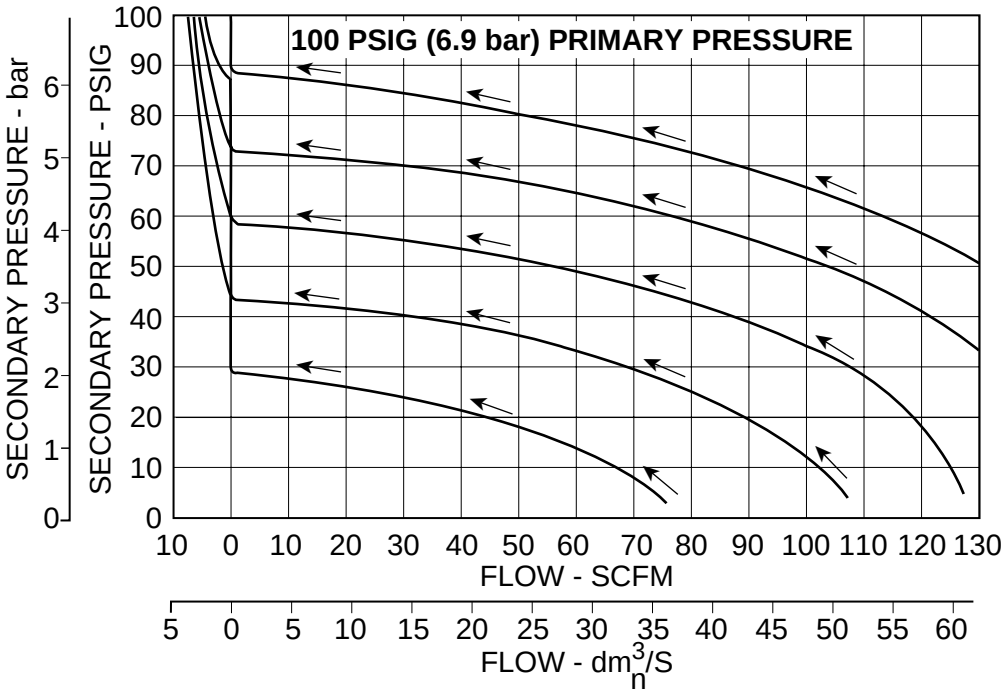


Typical Assembly

RELIEF AND FLOW CHARACTERISTICS
COMMON PORT REGULATION



RELIEF AND FLOW CHARACTERISTICS
INDEPENDENT OR SINGLE PORT REGULATION



The above curves illustrate flow characteristics through an assembled valve, air regulator, and base (or modular manifold) unit.

Function

This modular air pressure regulator assembly, installed between a 3/8" basic, 4-Way valve and subbase, supplies regulated pressures to both cylinder ports.

Valve must be converted to external pilot supply.

Features

Regulated pressure output from the valve is adjusted by knob on the manually set model or by air pressure signal applied to the regulator pilot port on the remotely set model.

Furnished with pressure gauge as standard.

Assembly “A” (Shown at right) or Assembly “B” may be specified as a matter of convenience, or to satisfy space limitations.*

Pressure Range Options

Maximum Supply Pressure ..... 140 psi
Output Pressure Range ..... 1 - 30 psi
1 - 60 psi
2 - 125 psi

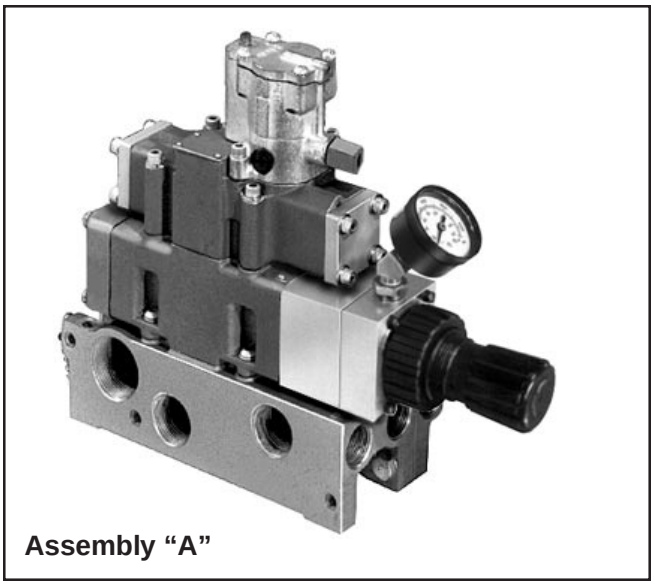
Operating Temperature Range

32°F (0°C) to 175°F (79°C)

How To Order

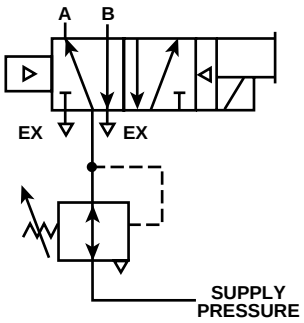
1. Select type of adjustment
2. Select pressure range
3. Select assembly style

Example: Manual adjusted.
5-30 psi with regulator positioned over the junction box.
Model No. L554 08 301C



Assembly “A”

Graphic Symbol



Regulated Pressure at
Both “A” & “B”

Pressure Adjustment	Pressure Range	Model Number	
	psi	Assembly “A”	Assembly “B”
Manual	1 - 30	L554 01 308C	L554 08 301C
	1 - 60	L554 02 308C	L554 08 302C
	2 - 125	L554 03 308C	L554 08 303C
Manual with Liquid Filled Gauges	1 - 30	L554 27 308C	L554 08 327C
	1 - 60	L554 28 308C	L554 08 328C
	2 - 125	L554 29 308C	L554 08 329C
Remote	0 - 140	L554 11 308C	L554 08 311C
Remote with Liquid Filled Gauges	0 - 140	L554 35 308C	L554 08 335C

* Assembly “A” places the regulator on the end opposite the electrical junction box. Assembly “B” places the regulator over the electrical junction box.

Note: Shaded units are not standard stock items.

Function

This modular air pressure regulator assembly, when installed between a 3/8" basic, 4-Way valve and subbase or modular manifold, supplies one or more regulated pressures to one of the valve cylinder ports and supply pressure to the other cylinder port.

On Single Port Cylinder Port Regulation Units controlled by a single solenoid valve, cylinder port “B” is the normally open cylinder port. The solenoid is energized to open cylinder Port “A”. On double solenoid operated valves, energizing solenoid “B” opens cylinder port “A” and energizing solenoid “A” opens cylinder port “B”.

Valve must be converted to external pilot supply.

Features

Regulated pressure output from the valve is adjusted by knob on the manually set model or by air pressure signal applied to the regulator pilot port on the remotely set model.

For reduced pressure at “A” cylinder port, the regulator is mounted per assembly “A” on end opposite the electrical junction box. For reduced pressure at “B” cylinder port the regulator is mounted per Assembly “B” which places the regulator over the electrical junction box.

Furnished with pressure gauge as standard.

Pressure Range Options

Maximum Supply Pressure ..... 140 psi
Output Pressure Range ..... 1 - 30 psi
1 - 60 psi
2 - 125 psi

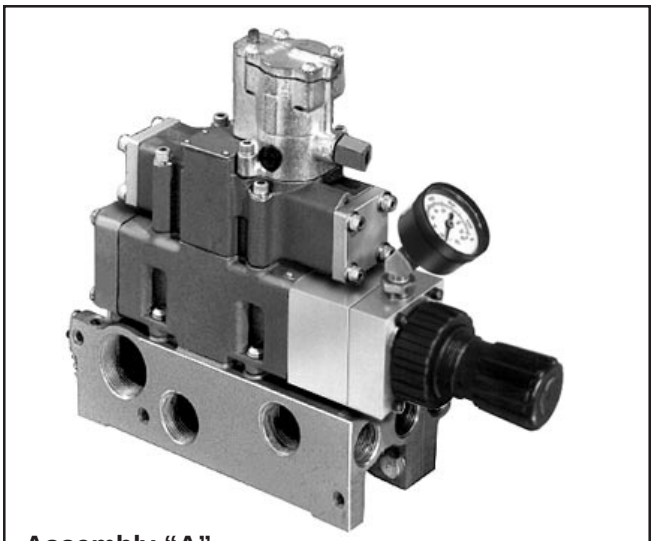
Operating Temperature Range

32°F (0°C) to 175°F (79°C)

How To Order

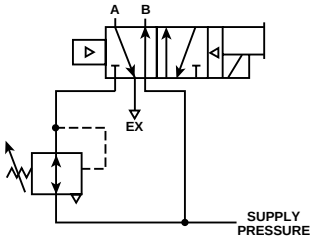
1. Select type of adjustment desired
2. Select pressure range
3. Select working port for reduced pressure

Example: Manual adjustment, 5-60 psi, Port A reduced.
Model No. L554 05 307C

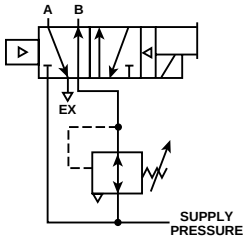


Assembly “A”

Graphic Symbol



Supply Pressure at “B” & Regulated at “A”



Supply Pressure at “A” & Regulated at “B”

Pressure Adjustment	Pressure Range	Model Number	
		Reduced Pressure	
	psi	Cyl. Port “A”	Cyl. Port “B”
Manual	1 - 30	L554 04 307C	L554 07 304C
	1 - 60	L554 05 307C	L554 07 305C
	2 - 125	L554 06 307C	L554 07 306C
Manual with Liquid Filled Gauges	1 - 30	L554 30 307C	L554 07 330C
	1 - 60	L554 31 307C	L554 07 331C
	2 - 125	L554 32 307C	L554 07 332C
Remote	0 - 140	L554 14 307C	L554 07 314C
Remote with Liquid Filled Gauges	0 - 140	L554 38 307C	L554 07 338C

NOTE: Shaded units are not standard stock items.

NOTE: When using single or independent port sandwich regulators, be aware that:
1. Cylinder port outlets are reversed.
2. 3-Position, cylinder ports open to exhaust and cylinder ports open to inlet functions are reversed. To produce a cylinder ports open to exhaust function, order valve with cylinder ports open to inlet. To produce a cylinder ports open to inlet function, order valve with cylinder ports open to exhaust.

Function

This modular air pressure regulation assembly, when installed between a 3/8" basic, 4-Way valve and subbase or modular manifold, supplies one or more regulated pressures to each of the valve cylinder ports.

Regulated pressure to cylinder port “A”, and a second regulated pressure to cylinder port “B”; independently adjustable.

On Independent Cylinder Port Regulation Units controlled by a single solenoid valve, cylinder port “B” is the normally open cylinder port. The solenoid is energized to open cylinder port “A”. On double solenoid operated valves, energizing solenoid “B” opens cylinder port “A” and energizing solenoid “A” opens cylinder port “B”

Valve must be converted to external pilot supply.

Features

Regulated pressure output from the valve is adjusted by knob on the manually set model or by air pressure signal applied to the regulator pilot port on the remotely set model.

Furnished with pressure gauge as standard.

The regulator controlling pressure to port “A” is mounted on the end opposite the electrical junction box (Assembly “A”). Regulated pressure from cylinder port “B” is controlled by the regulator installed over the electrical junction box (Assembly “B”).

Pressure Range Options

Maximum Supply Pressure ..... 140 psi
Output Pressure Range ..... 1 - 30 psi
1 - 60 psi
2 - 125 psi

Operating Temperature Range

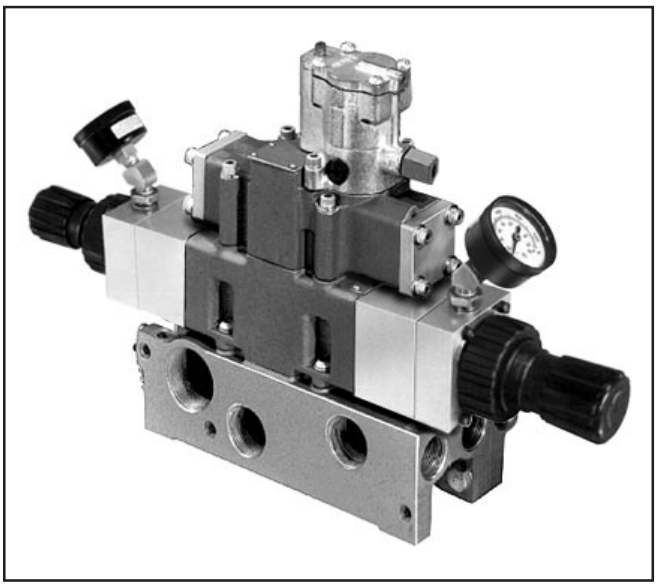
32°F (0°C) to 175°F (79°C)

How To Order

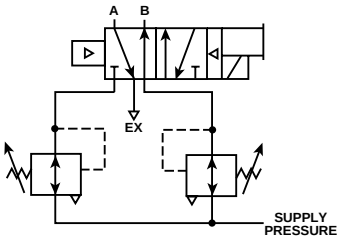
1. Select type of adjustment
2. Select pressure range for each cylinder port

Example: Manual adjusted.
5-30 psi rande for cylinder port “A”
and 10-125 psi for cylinder port “B”
Model No. L554 04 306C

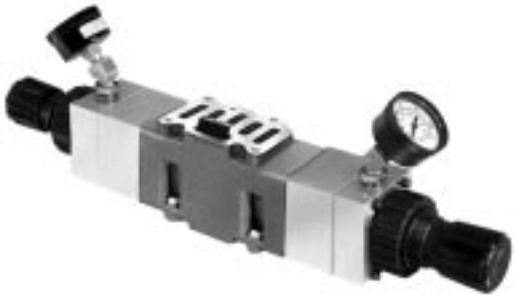
NOTE: When using single or independent port sandwich regulators, be aware that:
1. Cylinder port outlets are reversed.
2. 3-Position, cylinder ports open to exhaust and cylinder ports open to inlet functions are reversed. To produce a cylinder ports open to exhaust function, order valve with cylinder ports open to inlet. To produce a cylinder ports open to inlet function, order valve with cylinder ports open to exhaust.



Graphic Symbol



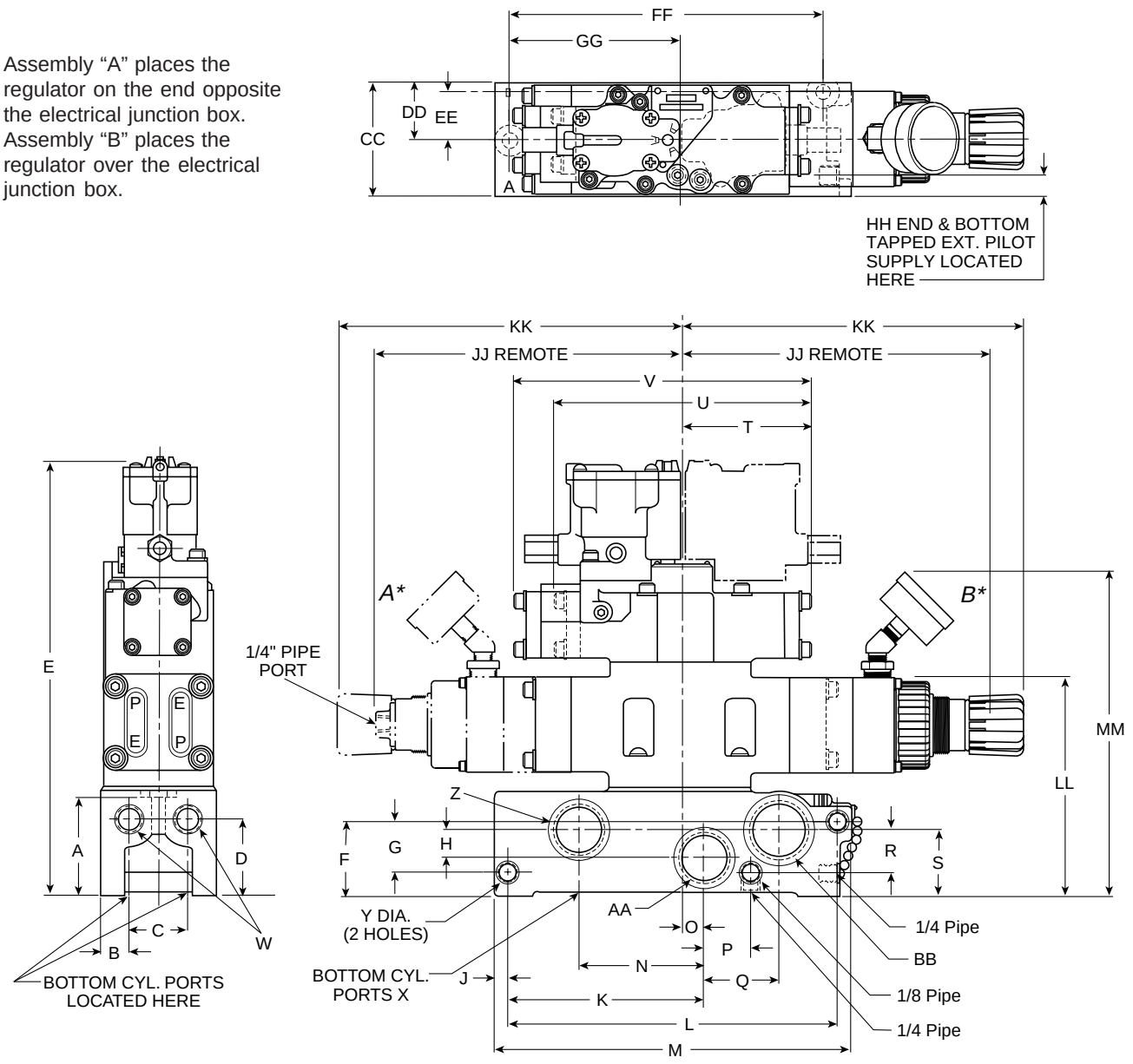
Independently Regulated Pressure at Both “A” & “B”



Pressure Adjustment	Cylinder Port “A”	Model Number		
		Cylinder Port “B”		
	psi	5-30	5-60	10-125†
Manual	1 -30	L554 04 304C	L554 04 305C	L554 04 306C
	1 - 60	L554 05 304C	L554 05 305C	L554 05 306C
	2 - 125	L554 06 304C	L554 06 305C	L554 06 306C
Manual with Liquid Filled Gauges	1 - 30	L554 30 330C	L554 30 331C	L554 30 332C
	1 - 60	L554 31 330C	L554 31 331C	L554 31 332C
	2 - 125	L554 32 330C	L554 32 331C	L554 32 332C
Remote	0 - 140	—	—	L554 14 314C†
Remote with Liquid Filled Gauges	0 - 140	—	—	L554 38 338C†

NOTE: Shaded units are not standard stock items.
† Remote operator units 0-140 PSI

* Assembly “A” places the regulator on the end opposite the electrical junction box. Assembly “B” places the regulator over the electrical junction box.



	A	B	C	D	E	F	G	H	J	K	L	M	N
inches	2.56	.75	1.50	2.09	11.28	2.06	1.41	.75	.34	5.00	8.44	9.09	3.19
mm	65.0	19.1	38.1	53.1	286.5	52.3	35.8	19.1	8.64	127.0	214.4	230.9	81.0
	O	**P**	**Q**	**R**	**S**	**T**	**U**	**V**	**W**	**X**	**Y**	**Z**	**AA**
inches	.61	1.19	1.91	1.09	1.81	3.32	6.64	7.56	3/8", 1/2" or 3/4" NPTF		.39	1" NPTF	1" NPTF
mm	15.5	30.2	48.5	27.7	46.0	84.3	168.7	192.0			9.9		
	BB	**CC**	**DD**	**EE**	**FF**	**GG**	**HH**	**JJ**	**KK**	**LL**	**MM**		
inches	1-1/4" NPTF	3.00	1.50	1.24	7.97	4.34	.40	8.53	10.15	5.46	8.80		
mm		76.2	38.1	31.5	202.4	110.2	10.2	216.6	257.8	138.6	223.5		

Common Port Regulation
End Section Assemblies: See Tables 'A' or 'B'
Parts: See Table 'E'

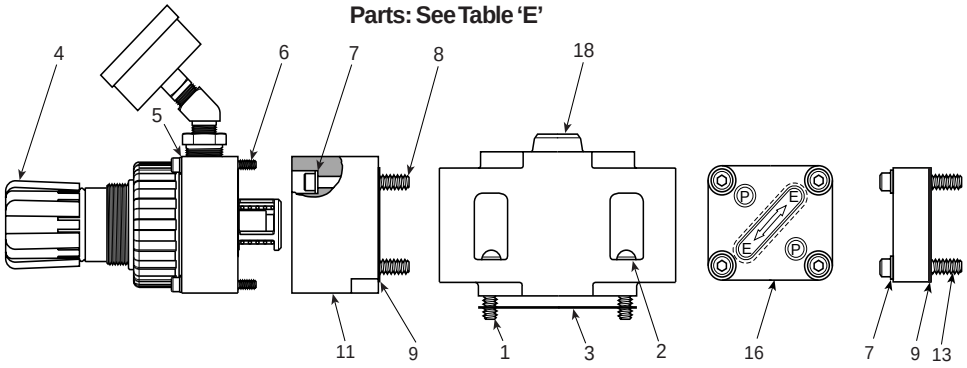


Table 'A'
Manual End Section
Common Port Regulation

psi	Standard	Liquid Filled
1-30	K362 301C	K362 327C
1-60	K362 302C	K362 328C
2-125	K362 303C	K362 329C

Table 'B'
Remote End Section
Common Port Regulation

psi	Standard	Liquid Filled
0-140	K362 311C	K362 335C

Single Port Regulation
End Section Assemblies: See Tables 'C' or 'D'
Parts: See Table 'E'

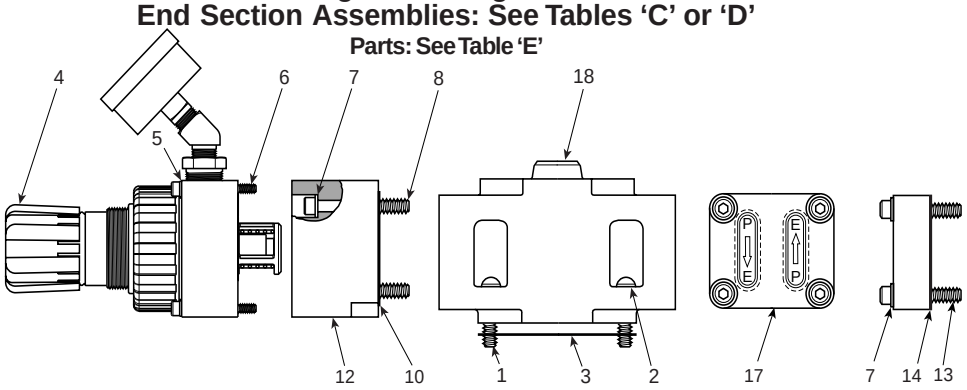


Table 'C'
Manual End Section
Single Independent Port Regulation

psi	Standard	Liquid Filled
1-30	K362 304C	K362 330C
1-60	K362 305C	K362 331C
2-125	K362 306C	K362 332C

Table 'D'
Remote End Section
Single Independent Port Regulation

psi	Standard	Liquid Filled
0-140	K362 314C	K362 338C

Independent Port Regulation
End Section Assemblies: See Tables 'C' or 'D'
Parts: See Table 'E'

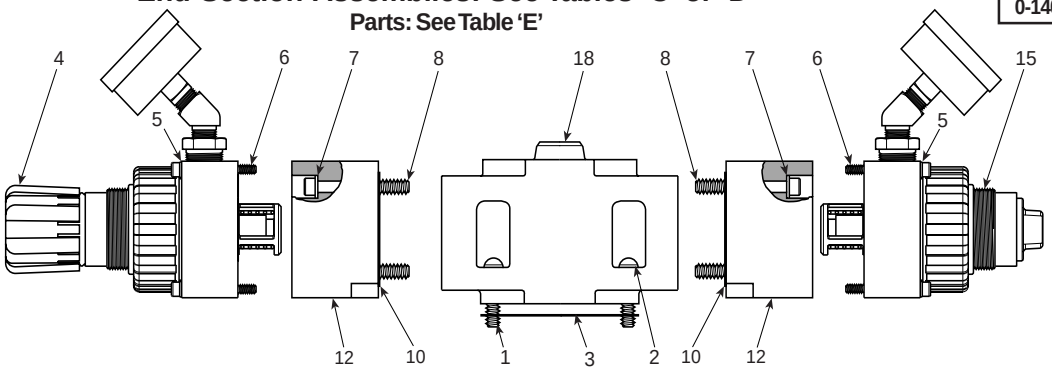


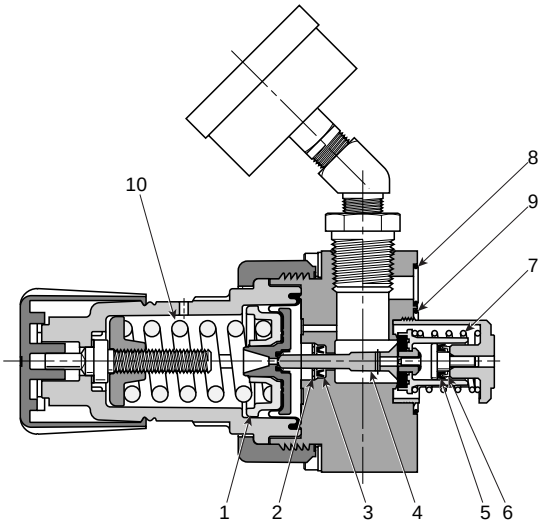
Table 'E': Parts

Item No.	Part Number		Description
1	H098 15		Screw (4)
2	H175 12		Lockwasher (4)
3	K183 077		Gasket
4	Standard	Liquid Filled	Manual Reg. Assy. (w/Gauge)
	K472 001C	K472 013C	1-30 psi
	K472 002C	K472 014C	1-60 psi
	K472 003C	K472 015C	2-125 psi
5	H175 09		#10 Lockwasher
6	H100 32		#10-32 x 1.75" Lg. SHCS
7	H175 11		1/4" Lockwasher
8	H100 69		1/4-20 x 2.25" Lg. SHCS

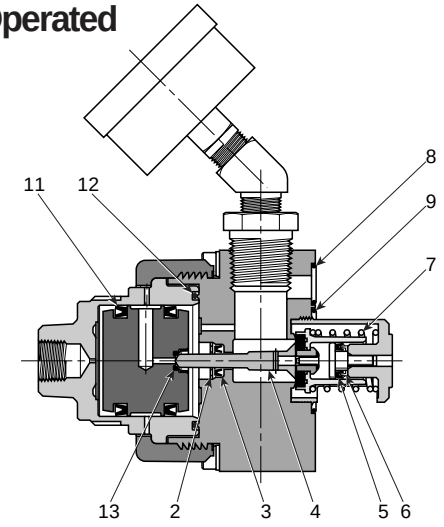
Item No.	Part Number		Description
9	K183 082		Gasket
10	K183 084		Gasket
11	K043 012		Function Block (P to P)
12	K043 011		Function Block (P to E)
13	H100 107		1/4-20 x 1-1/2" Lg. SHCS
14	K183 083		Gasket
15	Standard	Liquid Filled	Remote Reg. Assy. (w/Gauge)
	K472 009C	K472 018C	0-140 psi
16	K362 308		Function Plate Assy. (Incl. 7, 9, 13)
17	K362 307		Function Plate Assy. (Incl. 7, 13, 14)
18	K032 270		Body Assy. (Incl. 1, 2, 3)

NOTE: Shaded units are not standard stock items.

Manual Adjusting



Remote Operated



Replacement Parts

Item No.	Part Number	Description
1	○	Diaphragm Assembly
2	○ ●	Retaining Ring
3	○ ●	Vee Packing
4	○ ●	Poppet Assembly
5	○ ●	Vee Packing
6	○ ●	Backflow Retainer
7	○ ●	Poppet Spring
8	○ ●	.989 ID x .070 W O-Ring
9	○ ●	1.301 ID x .070 W O-Ring
10	P01698 P04062 P04063	1-30 PSI Spring 1-60 PSI Spring (Blue) 2-125 PSI Spring
11	●	Vee Packing
12	●	1.674 ID x .103 W O-Ring
13	●	Vent Seal

○ Parts included in K352409 Service Kit for Manual Operated Modular Regulators.

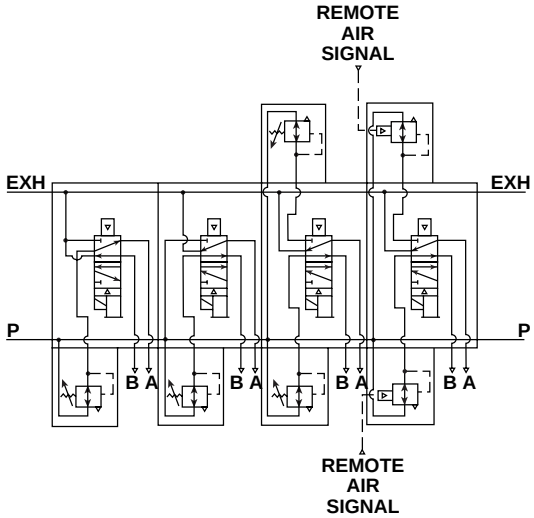
● Parts included in K352411 Service Kit for Remote Operated Modular Regulators.

Replacement Gauges

psi	Standard	Liquid Filled
0-60	3560 0400	H032 57
0-160	3560 0410	H032 58
0-300	3560 0420	—

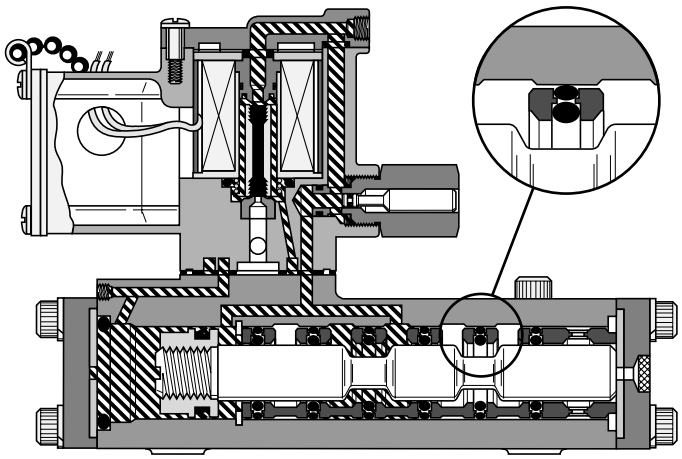
NOTE: Shaded units are not standard stock items.

Suggested Schematic of Assembled Valve, Air Regulation and Modular Manifold Units



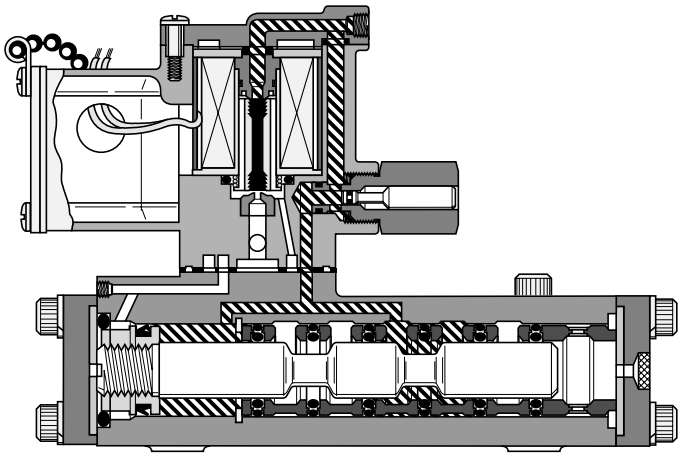
- Full Air Operation for fastest response.
- "Direct Pipe" Design for economy and performance.
- Solenoids Interchange between all styles of direct pipe ported valves.
- Variety of Operators Available; Direct Conduit, (JIC) Junction Box, NEMA 4, Hazardous Duty, (UL, CSA), and remote air pilot.
- Locking Manual Overrides Standard. Non-locking overrides optional.
- Indicator Lights Standard on 120VAC and 24VDC models.
- Encapsulated Coil designed for low-power consumption and maximum life.
- Field Convertible to External Pilot Supply for vacuum or other services.
- "Oversized" Flow Areas.
- Synthetic Rubber O-Ring Seals are specially compounded for minimum compression and friction for superior wear and abrasion resistance.
- Precision Ground Spool "floats" on O-ring seals. Closed center cross-over design saves air.

De-Energized



Pressure **Exhaust**

Energized



Pressure **Exhaust**

Speed King, SK-200 Valve Model Number System

Lubricated Service 2-Position - 1/4" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency	Lead Length
L	48	5	2	9	10	2	53	L

Type	
46	Double
48	Single

Operator	
4	Remote
5	Solenoid

Size	
2	1/4" NPT Inlet & Cyl. 3/8" NPT Exh.
3	3/8" NPT Inlet, Cyl. & Exh.

Duty Cycle	
2	Standard Service Solenoid or Remote
4	Continuous Service Solenoid

Lead Length	
Blank	19" (Standard)
L	72" (Optional)

Operator Options	
1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
4	Solenoid w/Jct. Box
5	Solenoid w/Jct. Box & Non-Locking Override
6	Solenoid w/Jct. Box & Locking Override
7	Solenoid w/Jct. Box & Light (120VAC, 24VDC)
8	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"	
10	Standard (NEMA 1 & 12) or Remote
60	Hazardous Duty (NEMA 7 & 9) ■
80	NEMA 4 ■

■ Use with operator options 1, 2 & 3 only.

Voltage & Frequency			
	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Valvair II Valve Model Number System

Lubricated or Non-Lubricated Service 2-Position - 3/8" & 1" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency	Lead Length
L	70	5	3	9	10	2	53	L

Type	
68	Double
70	Single

Operator	
4	Remote
5	Solenoid

Size	
3	3/8" NPT Inlet & Cyl. 1/2" NPT Exh.
4	1/2" NPT Inlet, Cyl. & Exh.
7	3/4" NPT Inlet & Cyl. 1" NPT Exh.
8	1" NPT Inlet & Cyl. 1-1/4" NPT Exh.
9	1-1/4" NPT Inlet Cyl. & Exh.

Duty Cycle	
2	Standard Service Solenoid or Remote
4	Continuous Service Solenoid

Lead Length	
Blank	19" (Standard)
L	72" (Optional)

Operator Options	
1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
4	Solenoid w/Jct. Box
5	Solenoid w/Jct. Box & Non-Locking Override
6	Solenoid w/Jct. Box & Locking Override
7	Solenoid w/Jct. Box & Light (120VAC, 24VDC)
8	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"	
10	Standard (NEMA 1 & 12) or Remote
60	Hazardous Duty (NEMA 7 & 9) ■
80	NEMA 4 ■

■ Use with operator options 1, 2 & 3 only.

Voltage & Frequency			
	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Note: Shaded units are not standard stock items.

Speed King, SK-200 Valve Model Number System

Lubricated Service 2-Position 1/2" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency	Lead Length
L	64	5	5	9	10	2	53	L

Type

61	Double
64	Single

Operator

4	Remote
5	Solenoid

Size

5	1/2" NPT Inlet & Cyl. 3/4" NPT Exh.
6	3/4" NPT Inlet, Cyl. & Exh.

Enclosure "Class"

10	Standard (NEMA 1 & 12) or Remote
60	Hazardous Duty (NEMA 7 & 9) ■
80	NEMA 4 ■

■ Use with operator options 1, 2 & 3 only.

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Duty Cycle

2	Standard Service Solenoid or Remote
4	Continuous Service Solenoid

Lead Length

Blank	19" (Standard)
L	72" (Optional)

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
4	Solenoid w/Jct. Box
5	Solenoid w/Jct. Box & Non-Locking Override
6	Solenoid w/Jct. Box & Locking Override
7	Solenoid w/Jct. Box & Light (120VAC, 24VDC)
8	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Locking Override

Note: Shaded units are not standard stock items.

Speed King, SK-200 Valve Model Number System

Lubricated Service 3-Position 1/4" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency	Lead Length
L	47	5	2	9	21	1	53	L

Type

47	Double

Size

2	1/4" NPT Inlet & Cyl. 3/8" NPT Exh.
3	3/8" NPT Inlet, Cyl. & Exh.

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Operator

4	Remote
5	Solenoid

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
4	Solenoid w/Jct. Box
5	Solenoid w/Jct. Box & Non-Locking Override
6	Solenoid w/Jct. Box & Locking Override
7	Solenoid w/Jct. Box & Light (120VAC, 24VDC)
8	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Locking Override

Duty Cycle

1	Standard Service Solenoid or Remote
5	Continuous Service Solenoid

Lead Length

Blank	19" (Standard)
L	72" (Optional)

Enclosure "Class"

	All Ports Blocked in Neutral
21	Standard (NEMA 1 & 12) or Remote
71	Hazardous Duty (NEMA 7 & 9) ■
91	NEMA 4 ■
	Cyl. Ports Open to Exh. in Neutral
22	Standard (NEMA 1 & 12) or Remote
72	Hazardous Duty (NEMA 7 & 9) ■
92	NEMA 4 ■
	Cyl. Ports Open to Inlet in Neutral
23	Standard (NEMA 1 & 12) or Remote
73	Hazardous Duty (NEMA 7 & 9) ■
93	NEMA 4 ■

■ Use with operator options 1, 2 & 3 only.

Note: Shaded units are not standard stock items.

Valvair II Valve Model Number System

Lubricated or Non-Lubricated Service 3-Position 3/8" & 1" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency	Lead Length
L	69	5	3	9	21	1	53	L

Type

69	Double

Operator

4	Remote
5	Solenoid

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
4	Solenoid w/Jct. Box
5	Solenoid w/Jct. Box & Non-Locking Override
6	Solenoid w/Jct. Box & Locking Override
7	Solenoid w/Jct. Box & Light (120VAC, 24VDC)
8	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Locking Override

Size

3	3/8" NPT Inlet & Cyl. 1/2" NPT Exh.
4	1/2" NPT Inlet, Cyl, & Exh.
7	3/4" NPT Inlet & Cyl. 1" Exh.
8	1" NPT Inlet & Cyl. 1-1/4" NPT Exh.
9	1-1/4" NPT Inlet Cyl. & Exh.

Enclosure "Class"

	All Ports Blocked in Neutral
21	Standard (NEMA 1 & 12) or Remote
71	Hazardous Duty (NEMA 7 & 9) ■
91	NEMA 4 ■
	Cyl. Ports Open to Exh. in Neutral
22	Standard (NEMA 1 & 12) or Remote
72	Hazardous Duty (NEMA 7 & 9) ■
92	NEMA 4 ■
	Cyl. Ports Open to Inlet in Neutral
23	Standard (NEMA 1 & 12) or Remote
73	Hazardous Duty (NEMA 7 & 9) ■
93	NEMA 4 ■

■ Use with operator options 1, 2 & 3 only.

Duty Cycle

1	Standard Service Solenoid or Remote
5	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Lead Length

Blank	19" (Standard)
L	72" (Optional)

Note: Shaded units are not standard stock items.

Speed King, SK-200 Valve Model Number System

Lubricated Service 3-Position 1/2" Basic Size

Basic Series	Type	Operator	Size	Operator Options	Enclosure "Class"	Duty Cycle	Voltage & Frequency	Lead Length
L	62	5	5	9	21	1	53	L

Type

62	Double

Operator

4	Remote
5	Solenoid

Size

5	1/2" NPT Inlet & Cyl. 3/4" NPT Exh.
6	3/4" NPT Inlet, Cyl. & Exh.

Operator Options

1	Solenoid (Basic) or Remote
2	Solenoid w/Non-Locking Override
3	Solenoid w/Locking Override
4	Solenoid w/Jct. Box
5	Solenoid w/Jct. Box & Non-Locking Override
6	Solenoid w/Jct. Box & Locking Override
7	Solenoid w/Jct. Box & Light (120VAC, 24VDC)
8	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Non-Locking Override
9	Solenoid w/Jct. Box & Light (120VAC, 24VDC) & Locking Override

Enclosure "Class"

	All Ports Blocked in Neutral
21	Standard (NEMA 1 & 12) or Remote
71	Hazardous Duty (NEMA 7 & 9) ■
91	NEMA 4 ■
	Cyl. Ports Open to Exh. in Neutral
22	Standard (NEMA 1 & 12) or Remote
72	Hazardous Duty (NEMA 7 & 9) ■
92	NEMA 4 ■
	Cyl. Ports Open to Inlet in Neutral
23	Standard (NEMA 1 & 12) or Remote
73	Hazardous Duty (NEMA 7 & 9) ■
93	NEMA 4 ■

■ Use with operator options 1, 2 & 3 only.

Duty Cycle

1	Standard Service Solenoid or Remote
5	Continuous Service Solenoid

Voltage & Frequency

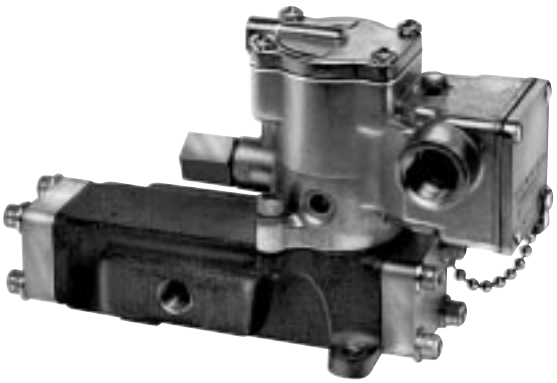
	60Hz	50Hz	DC
45			12
49			24
53	120	110	
57	240	220	

Lead Length

Blank	19" (Standard)
L	72" (Optional)

Note: Shaded units are not standard stock items.

1/4" & 3/8" NPT Ports, Nominal Cv = 1.8



Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, see page 80.

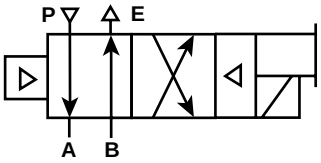
Mounting

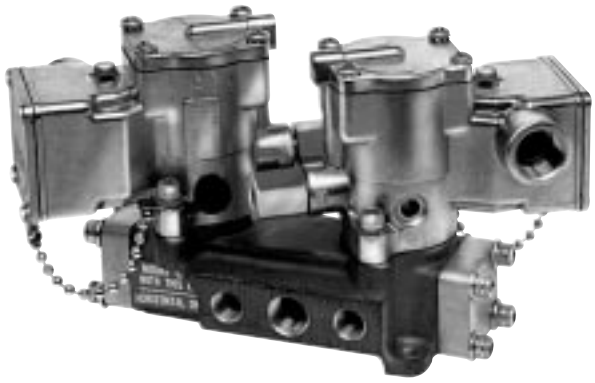
Valve may be mounted in any position.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port E.

Energized (maintained signal applied) – Pressure at Port P is connected to “Cylinder” Port B, “Cylinder” Port A is connected to “Exhaust” Port E.





Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A “momentary” electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a “momentary” signal is applied to the other solenoid. For alternative usages, service, see page 80.

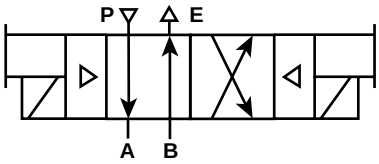
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

With solenoid “A” having been energized last – Pressure at Port P is connected to “Cylinder” Port A. “Cylinder” Port B is connected to “Exhaust” Port E.

Energize solenoid “B” – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port E.



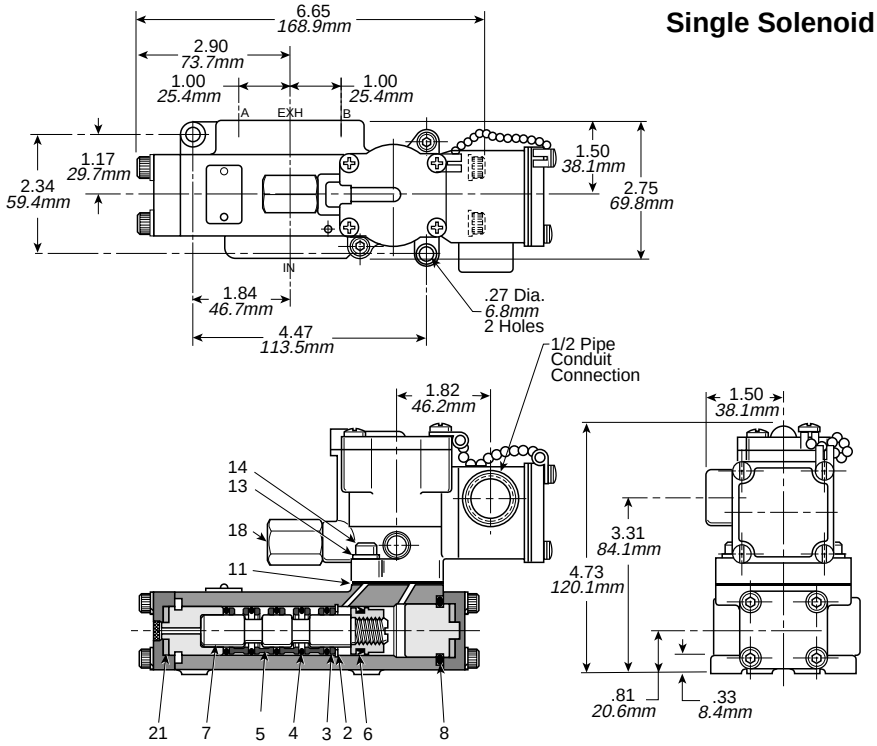
Model Selection

Valve		Voltage	Port Size (NPT)		Operator Type
Single Solenoid	Double Solenoid		P, A & B	Exhaust	
L485 29 102 53	L465 29 102 53	120V 60Hz 110V 50Hz	1/4"	3/8"	Junction Box
L485 39 102 53	L465 39 102 53		3/8"	3/8"	
L485 26 102 **	L465 26 102 **	Other	1/4"	3/8"	Junction Box
L485 36 102 **	L465 36 102 **		3/8"	3/8"	
L485 23 102 **	L465 23 102 **	Any	1/4"	3/8"	Basic
L485 33 102 **	L465 33 102 **		3/8"	3/8"	
L485 23 802 **	L465 23 802 **	Any	1/4"	3/8"	NEMA 4
L485 33 802 **	L465 33 802 **		3/8"	3/8"	
L485 23 602 **	L465 23 602 **	See Voltage Chart	1/4"	3/8"	▲ Hazardous Duty
L485 33 602 **	L465 33 602 **		3/8"	3/8"	

See page 45 for variations and (**) voltage codes.
Note: Shaded areas are not standard stock items.

▲ - UL & CSA Approved.

Single Solenoid

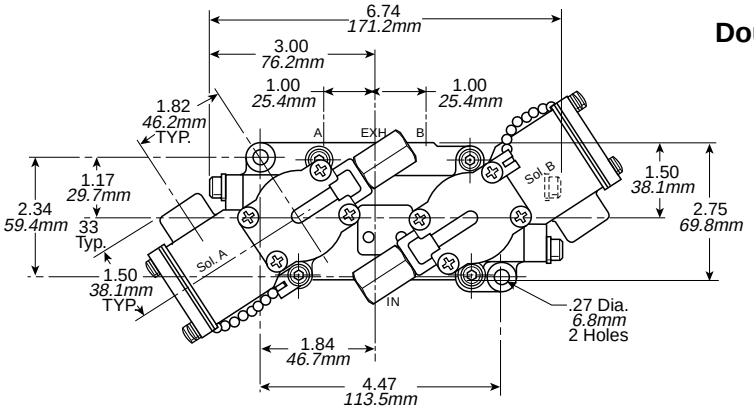


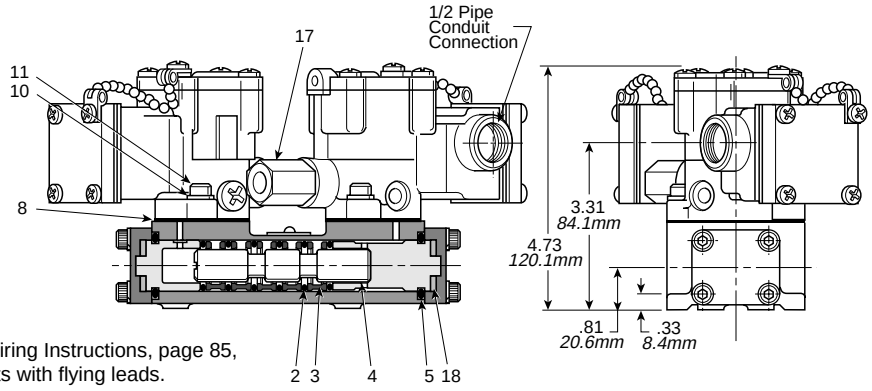
Parts List

Item No.	Part No.	Description
2	K18R311093	Retaining Ring
3	K453 006	Spacer
* 4	—	O-Ring
5	K453 005	Spacer
* 6	—	Seal
7	K232 018	Spool Assy.
* 8	—	Seal
*11	—	Gasket
13	H175 12	Lockwasher
14	H100 60	Cap Screw
18	K152 003	Override Assy.
21	K983 001	Shock Pad

* Standard Sevice Kit: K352 150
* Special Service Kit: K352 350
(Continuous Duty)

Double Solenoid





See Wiring Instructions, page 85, for units with flying leads.

Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K493 005	Spool
* 5	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
17	K152 003	Override Assy.
18	K983 001	Shock Pad

* Standard Sevice Kit: K352 151
* Special Service Kit: K352 351
(Continuous Duty)

3/8" & 1/2" NPT Ports, Nominal Cv = 4.8

Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

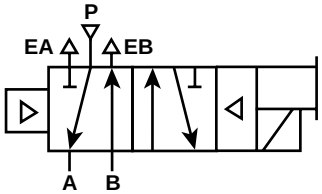
Mounting

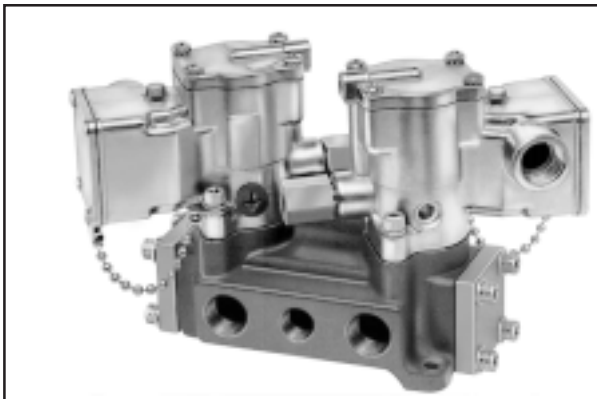
Valve may be mounted in any position.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.





Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A "momentary" electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a "momentary" signal is applied to the other solenoid. For alternative usages, such as dual pressure service, see page 80.

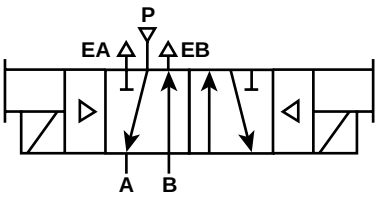
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

With solenoid "A" (solenoid nearest Port B on valve body) having been energized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

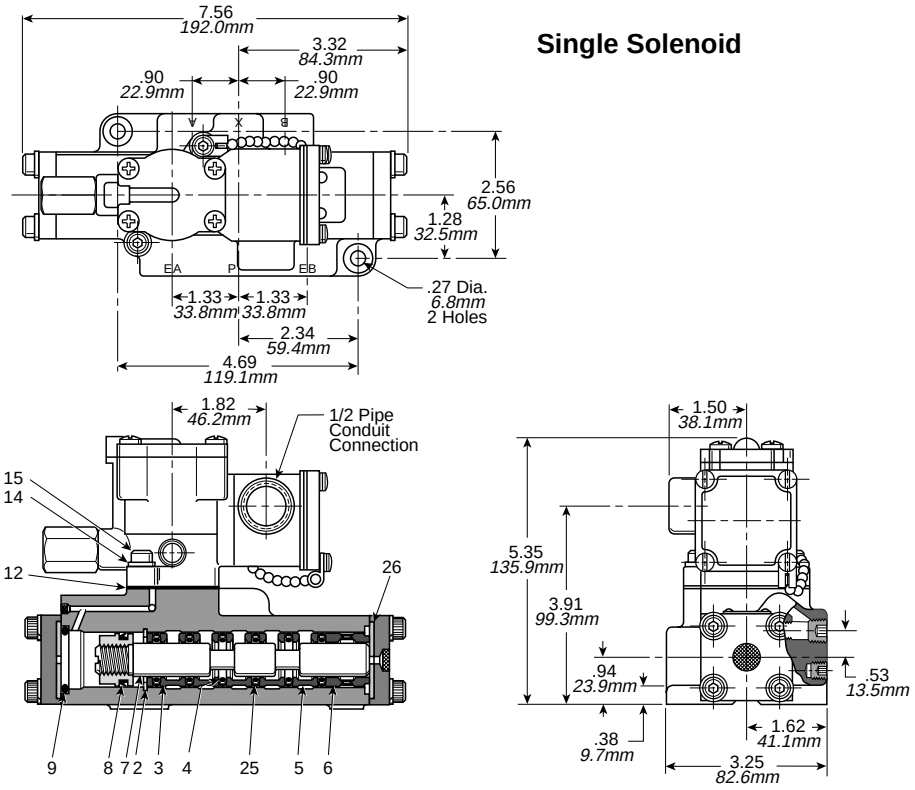
Energize solenoid "B" (solenoid nearest Port A on valve body) – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.



Model Selection

Valve		Voltage	Port Size (NPT)		Operator Type
Single Solenoid	Double Solenoid		P, A & B	EA & EB	
L705 39 102 53	L685 39 102 53	120V 60Hz 110V 50Hz	3/8"	1/2"	Junction Box
L705 49 102 53	L685 49 102 53		1/2"	1/2"	
L705 36 102 **	L685 36 102 **	Other	3/8"	1/2"	Junction Box
L705 46 102 **	L685 46 102 **		1/2"	1/2"	
L705 33 102 **	L685 33 102 **	Any	3/8"	1/2"	Basic
L705 43 102 **	L685 43 102 **		1/2"	1/2"	
L705 33 802 **	L685 33 802 **	Any	3/8"	1/2"	NEMA 4
L705 43 802 **	L685 43 802 **		1/2"	1/2"	
L705 33 602 **	L685 33 602 **	See Voltage Chart	3/8"	1/2"	▲ Hazardous Duty
L705 43 602 **	L685 43 602 **		1/2"	1/2"	

Single Solenoid

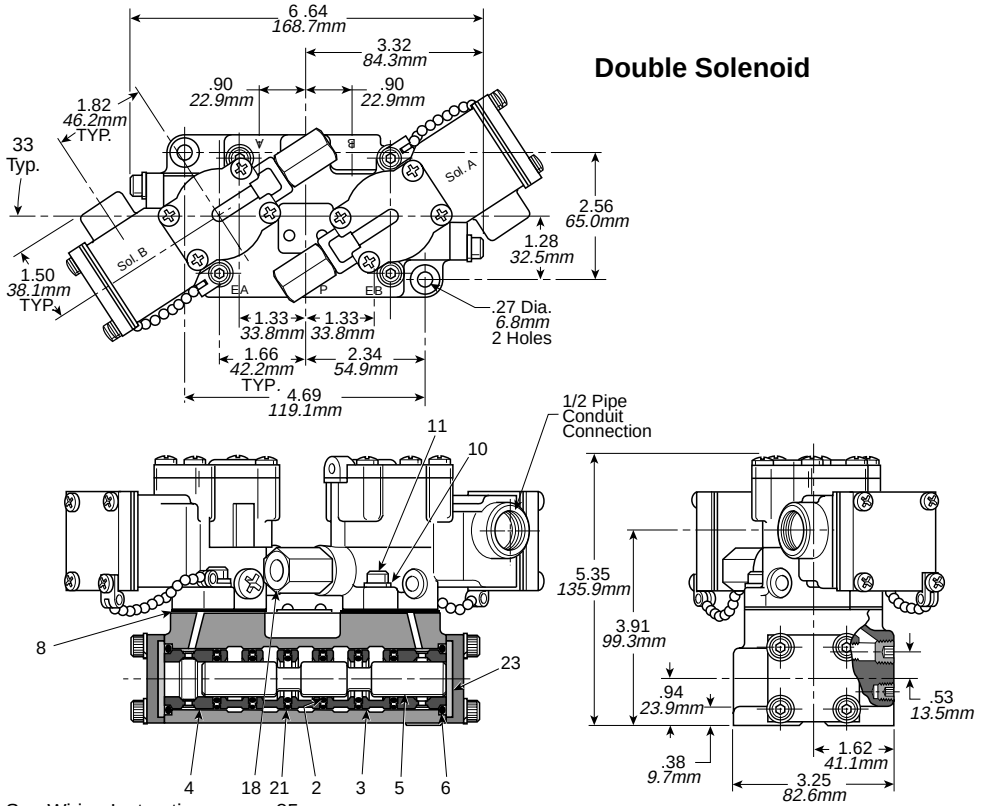


Parts List

Item No.	Part No.	Description
2	H090 71	Retaining Ring
3	K463 015	Spacer
* 4	—	O-Ring (Dynamic)
5	K453 028	Spacer
6	K463 012	End Spacer
7	K232 020	Spool Assy.
* 8	—	Seal
* 9	—	Seal
*12	—	Gasket
14	H175 12	Lockwasher
15	H100 60	Cap Screw
22	K152 003	Override Assy.
*25	—	O-Ring (Static)
26	K983 002	Shock Pad

* Standard Sevice Kit: K352 124
* Special Service Kit: K352 125
(Continuous Duty)

Double Solenoid



See Wiring Instructions, page 85,
for units with flying leads

Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 094	Spool
* 6	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
18	K152 003	Override Assy.
*21	—	O-Ring (Static)
23	K983 002	Shock Pad

* Standard Sevice Kit: K352 126
* Special Service Kit: K352 127
(Continuous Duty)

1/2" & 3/4" NPT Ports, Nominal Cv = 5.5

Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

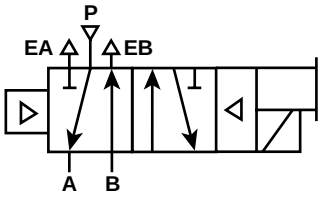
Mounting

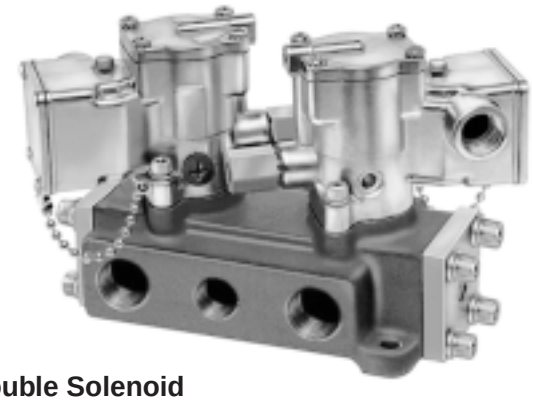
Valve may be mounted in any position.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.





Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A "momentary" electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a "momentary" signal is applied to the other solenoid. For alternative usages, such as dual pressure service, see page 80.

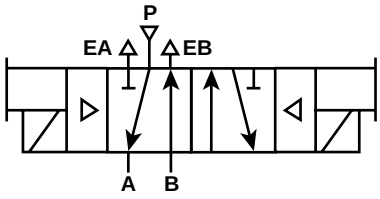
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

With solenoid "A" (solenoid nearest Port B on valve body) having been energized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energize solenoid "B" (solenoid nearest Port A on valve body) – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.

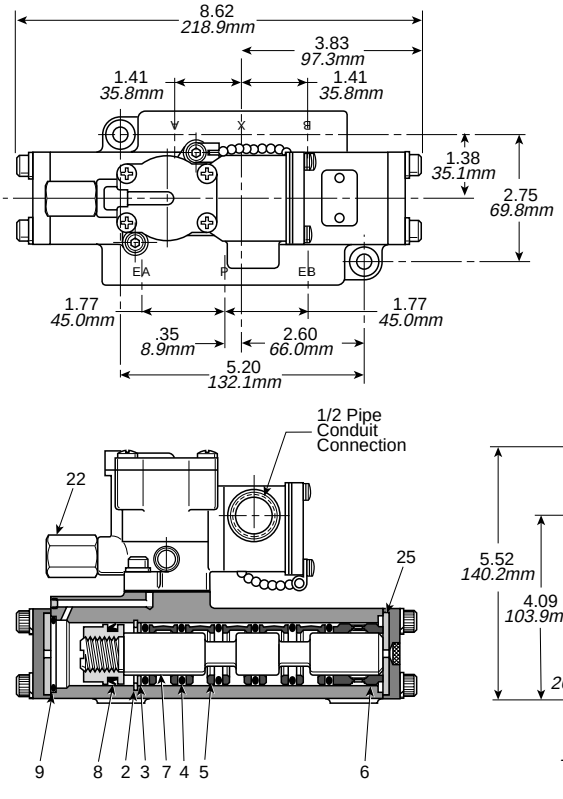


Model Selection

Valve		Voltage	Port Size (NPT)		Operator Type
Single Solenoid	Double Solenoid		P, A & B	EA & EB	
L645 59 102 53	L615 59 102 53	120V 60Hz 110V 50Hz	1/2"	3/4"	Junction Box
L645 69 102 53	L615 69 102 53		3/4"	3/4"	
L645 56 102 **	L615 56 102 **	Other	1/2"	3/4"	Junction Box
L645 66 102 **	L615 66 102 **		3/4"	3/4"	
L645 53 102 **	L615 53 102 **	Any	1/2"	3/4"	Basic
L645 63 102 **	L615 63 102 **		3/4"	3/4"	
L645 53 802 **	L615 53 802 **	Any	1/2"	3/4"	NEMA 4
L645 63 802 **	L615 63 802 **		3/4"	3/4"	
L645 53 602 **	L615 53 602 **	See Voltage Chart	1/2"	3/4"	▲ Hazardous Duty
L645 63 602 **	L615 63 602 **		3/4"	3/4"	

See page 46 for variations and (**) voltage codes.
▲ - UL & CSA Approved.
Note: Shaded areas are not standard stock items.

Single Solenoid

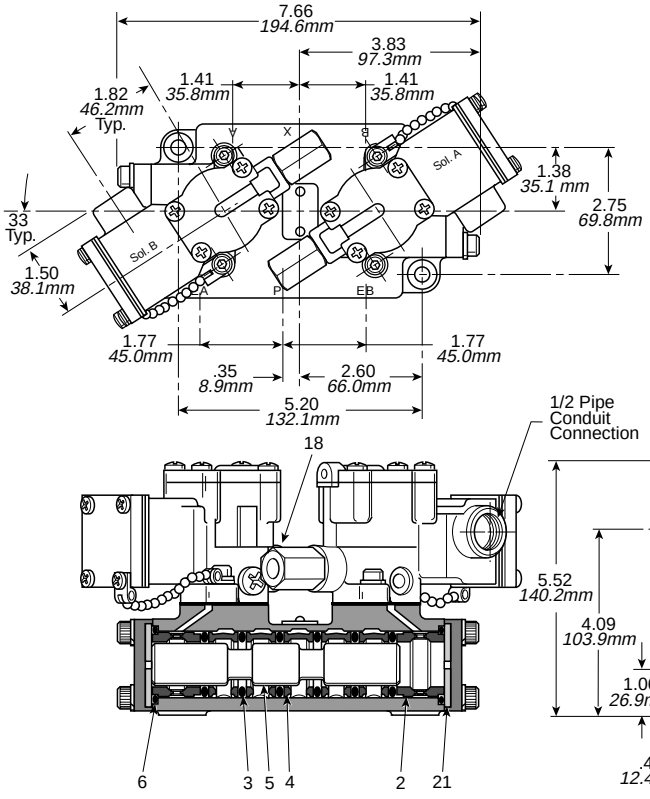


Parts List

Item No.	Part No.	Description
2	K18R311137	Retaining Ring
3	K553 011	Washer
* 4	—	O-Ring
5	K453 008	Spacer
6	K463 001	End Spacer
7	K232 017	Spool Assy.
* 8	—	Seal
* 9	—	Seal
*12	—	Gasket
14	H175 12	Lockwasher
15	H100 60	Cap Screw
22	K152 003	Override Assy.
25	K983 003	Shock Pad

* Standard Sevice Kit: K352 152
* Special Service Kit: K352 352
(Continuous Duty)

Double Solenoid



See Wiring Instructions, page 85, for units with flying leads.

Parts List

Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 046	Spool
* 6	—	Seal
* 8	—	Gasket
10	H175 12	Lockwasher
11	H100 60	Cap Screw
18	K152 003	Override Assy.
21	K983 003	Shock Pad

* Standard Sevice Kit: K352 153
* Special Service Kit: K352 353
(Continuous Duty)

3/4", 1" & 1-1/4" NPT Ports, Nominal Cv = 12.0

Single Solenoid

Application

These valves may be used to actuate a double acting cylinder. A maintained electrical signal shifts the valve. When this signal is removed the valve returns to its normal condition. For alternate usages, such as dual pressure service, see page 80.

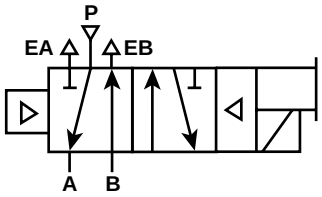
Mounting

Valve may be mounted in any position.

Operation: Pressure Service

De-energized (normal condition) – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energized (maintained signal applied) – Pressure at Port P is connected to "Cylinder" Port B, "Cylinder" Port A is connected to "Exhaust" Port EA.



Double Solenoid

Application

These valves may be used to actuate double acting cylinders. A "momentary" electrical signal (exceeding .03 seconds) applied to one of the solenoids shifts the valve. It will remain in this position until a "momentary" signal is applied to the other solenoid. For alternative usages, such as dual pressure service, see page 80.

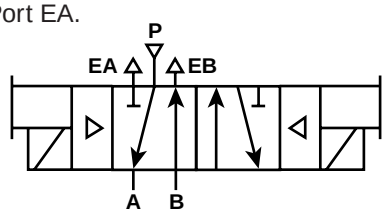
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

With solenoid "A" (solenoid nearest Port B on valve body) having been energized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

Energize solenoid "B" (solenoid nearest Port A on valve body) – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.

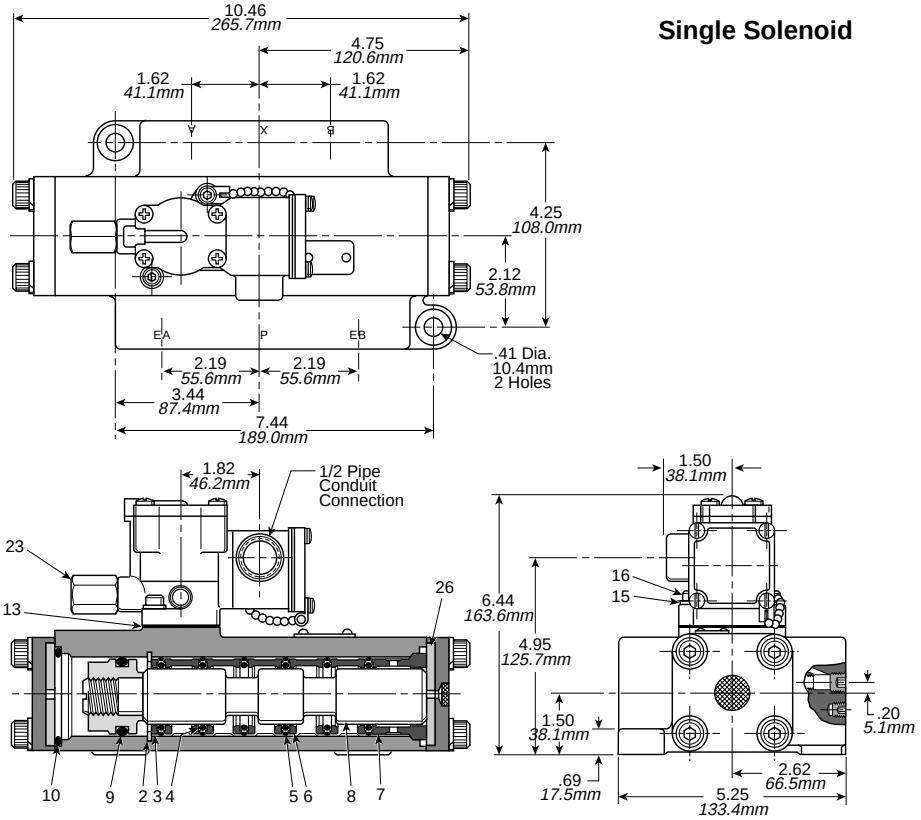


Model Selection

Valve		Voltage	Port Size (NPT)		Type
Single Solenoid	Double Solenoid		P, A & B	EA & EB	
L705 79 102 53	L685 79 102 53	110V 50Hz	3/4"	1"	Junction Box
L705 89 102 53	L685 89 102 53		1"	1-1/4"	
L705 99 102 53	L685 99 102 53		1-1/4"	1-1/4"	
L705 76 102 **	L685 76 102 **	Other	3/4"	1"	Junction Box
L705 86 102 **	L685 86 102 **		1"	1-1/4"	
L705 96 102 **	L685 96 102 **		1-1/4"	1-1/4"	
L705 73 602 **	L685 73 602 **	See Voltage Chart	3/4"	1"	▲ Hazardous Duty
L705 83 602 **	L685 83 602 **		1"	1-1/4"	
L705 93 602 **	L685 93 602 **		1-1/4"	1-1/4"	

See page 45 for variations and (**) voltage codes.
▲ - UL & CSA Approved.
Note: Shaded areas are not standard stock items.

Single Solenoid

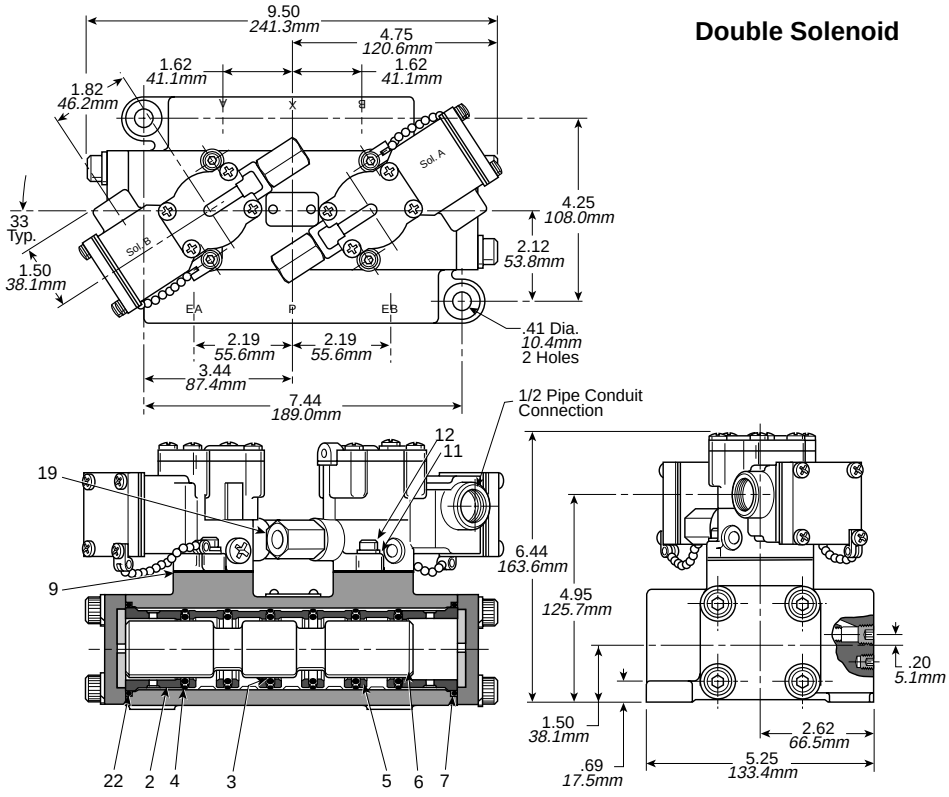


Parts List

Item No.	Part No.	Description
2	H090 09	Retaining Ring
3	K553 009	Spacer
* 4	—	O-Ring (Dynamic)
* 5	—	O-Ring (Static)
6	K453 009	Spacer
7	K463 005	End Spacer
8	K232 014	Spool Assy.
* 9	—	O-Ring
*10	—	Seal
*13	—	Gasket
15	H175 12	Lockwasher
16	H100 60	Cap Screw
23	K152 003	Override Assy.
26	K983 004	Shock Pad

* Standard Sevice Kit: K352 128
* Special Service Kit: K352 129
(Continuous Duty)

Double Solenoid



See Wiring Instructions, page 85,
for units with flying leads.

Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Dynamic)
* 4	—	O-Ring (Static)
5	K453 009	Spacer
6	K343 061	Spool
* 7	—	Seal
* 9	—	Gasket
11	H175 12	Lockwasher
12	H100 60	Cap Screw
19	K152 003	Override Assy.
22	K983 004	Shock Pad

* Standard Sevice Kit: K352 130
* Special Service Kit: K352 131
(Continuous Duty)

1/4" & 3/8" NPT Ports, Nominal Cv = 1.8

Single Remote

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

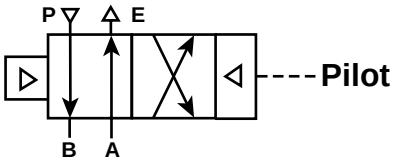
Mounting

Valve may be mounted in any position.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port E.

When pressure to pilot is removed – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port E.



Double Remote

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

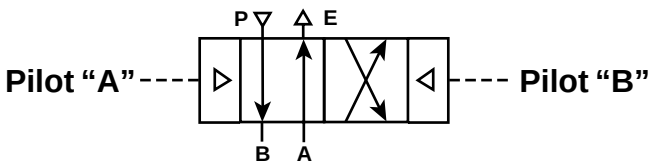
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

Pilot "A" pressurized last – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port E.

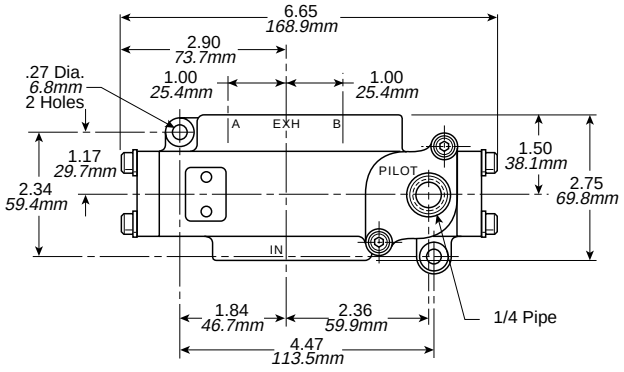
Pilot "B" pressurized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port E.

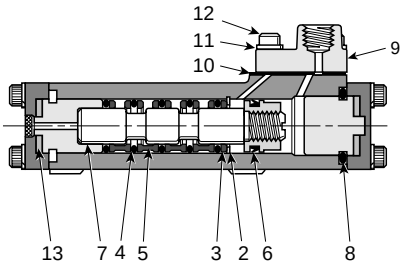


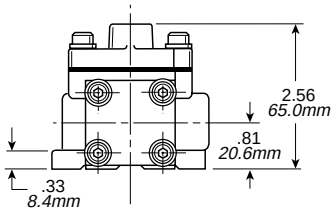
Model Selection

Valve		Port Size (NPT)	
Single Remote	Double Remote	P, A & B	Exhaust
L484 21 102	L464 21 102	1/4"	3/8"
L484 31 102	L464 31 102	3/8"	3/8"

Single Remote





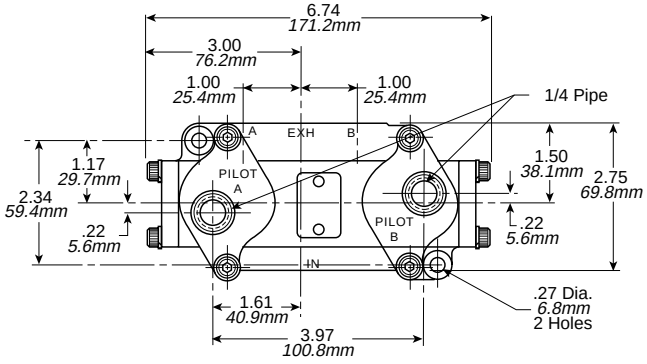


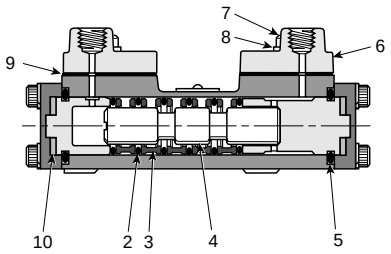
Parts List

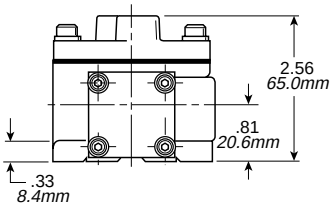
Item No.	Part No.	Description
2	K18R311093	Retaining Ring
3	K453 006	Spacer
* 4	—	O-Ring
5	K453 005	Spacer
* 6	—	Seal
7	K232 018	Spool Assy.
* 8	—	Seal
9	K323 027	Remote Cap
*10	—	Gasket
11	H175 12	Lockwasher
12	H100 60	Cap Screw
13	K983 001	Shock Pad

* Standard Sevice Kit: K352 363

Double Remote







Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K493 005	Spool
* 5	—	Seal
6	K323 027	Remote Cap
7	H100 60	Cap Screw
8	H175 12	Lockwasher
* 9	—	Gasket
10	K983 001	Shock Pad

* Standard Sevice Kit: K352 357

3/8" & 1/2" NPT Ports, Nominal Cv = 4.8

Single Remote

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

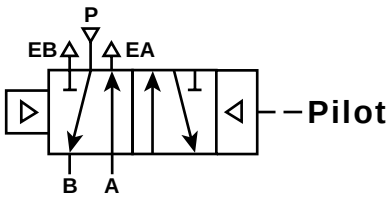
Mounting

Valve may be mounted in any position.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

When pressure to pilot is removed – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.



Double Remote

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

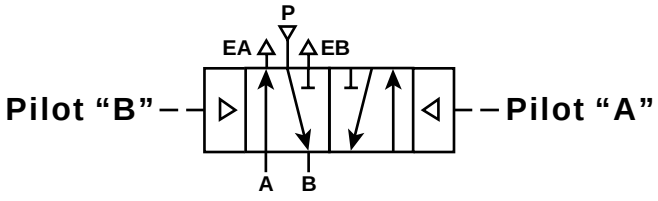
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

Pilot "A" (nearest Port B on valve body) pressurized last – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.

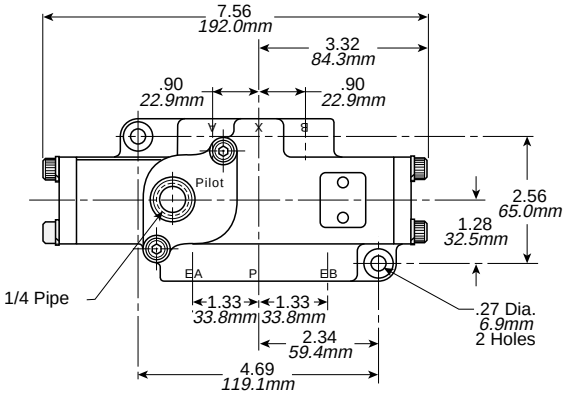
Pilot "B" (nearest Port A on valve body) pressurized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

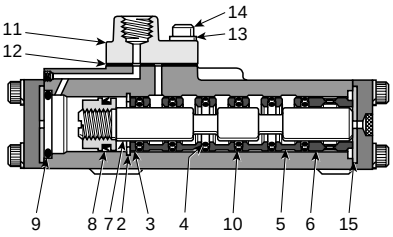


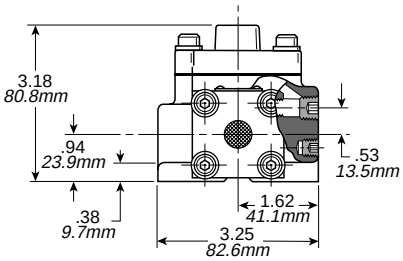
Model Selection

Valve		Port Size (NPT)	
Single Remote	Double Remote	P, A & B	EA & EB
L704 31 102	L684 31 102	3/8"	1/2"
L704 41 102	L684 41 102	1/2"	1/2"

Single Remote





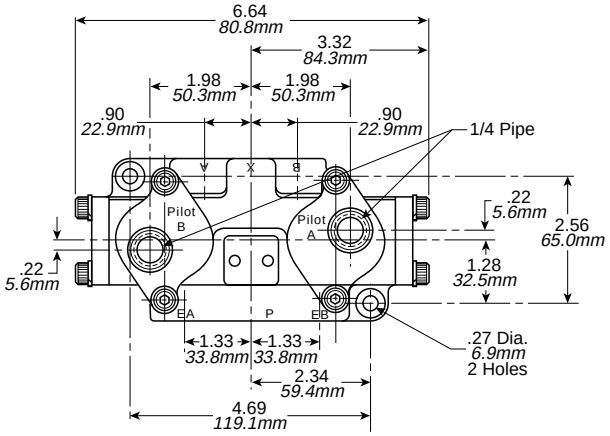


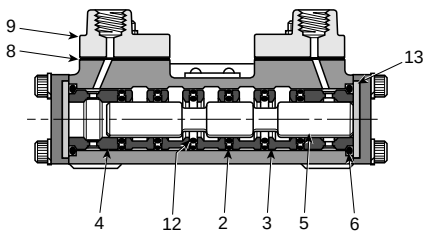
Parts List

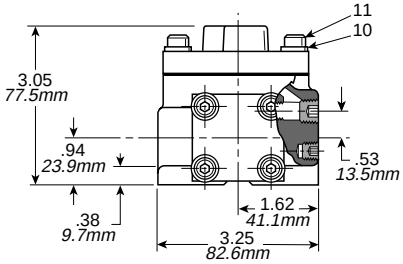
Item No.	Part No.	Description
2	H090 71	Retaining Ring
3	K463 015	Spacer
* 4	—	O-Ring (Dynamic)
5	K453 028	Spacer
6	K463 012	End Spacer
7	K232 020	Spool Assy.
* 8	—	Seal
* 9	—	Seal
*10	—	O-Ring (Static)
11	K323 027	Remote Cap
*12	—	Gasket
13	H175 12	Lockwasher
14	H100 60	Cap Screw
15	K983 002	Shock Pad

* Standard Sevice Kit: K352 362

Double Remote







Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Static)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 094	Spool
* 6	—	Seal
* 8	—	Gasket
9	K323 027	Remote Cap
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	O-Ring (Dynamic)
13	K983 002	Shock Pad

* Standard Sevice Kit: K352 355

1/2" & 3/4" NPT Ports, Nominal Cv = 5.2

Single Remote

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

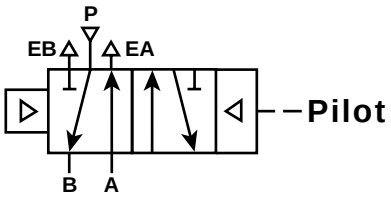
Mounting

Valve may be mounted in any position.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

When pressure to pilot is removed – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.



Double Remote

Application

These valves may be used to activate double acting cylinders. A momentary pressure signal applied alternately to each of the pilot caps shifts the valve. For alternate usage, see page 80.

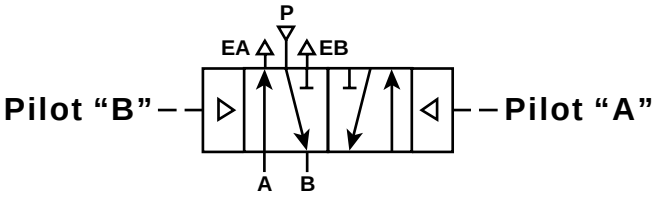
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

Pilot "A" (nearest Port B on valve body) pressurized last – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.

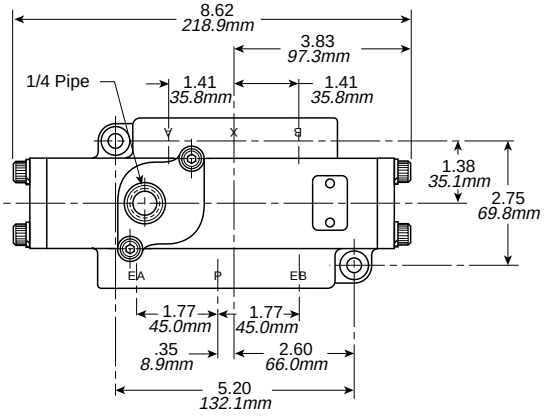
Pilot "B" (nearest Port A on valve body) pressurized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

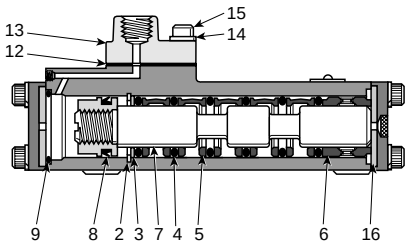


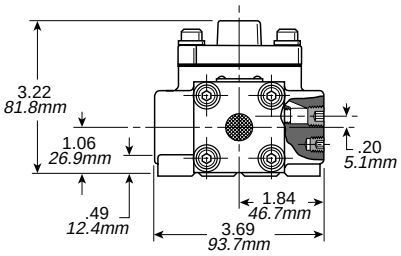
Model Selection

Valve		Port Size (NPT)	
Single Remote	Double Remote	P, A & B	EA & EB
L644 51 102	L614 51 102	1/2"	3/4"
L644 61 102	L614 61 102	3/4"	3/4"

Single Remote





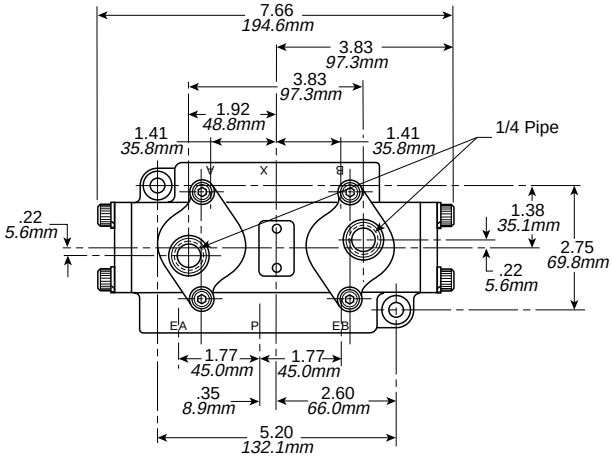


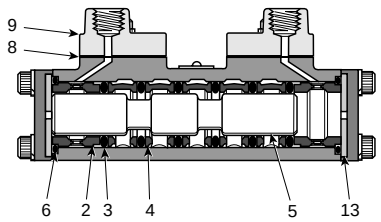
Parts List

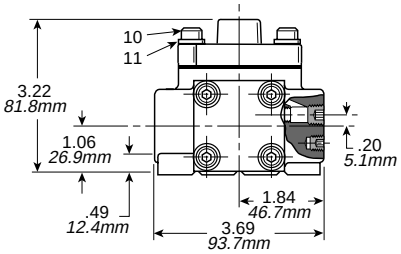
Item No.	Part No.	Description
2	K18R311137	Retaining Ring
3	K553 011	Washer
* 4	—	O-Ring
5	K453 008	Spacer
6	K463 001	End Spacer
7	K232 017	Spool Assy.
* 8	—	Seal
* 9	—	Seal
*12	—	Gasket
13	H323 027	Remote Cap
14	H175 12	Lockwasher
15	H100 60	Cap Screw
16	K983 003	Shock Pad

* Standard Sevice Kit: K352 361

Double Remote





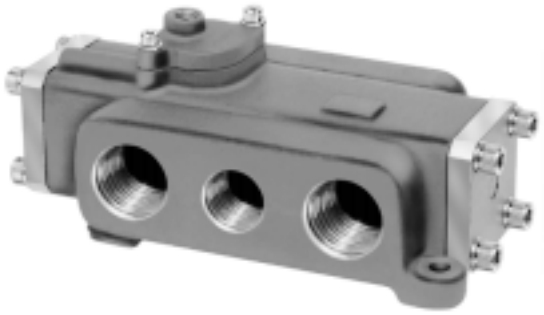


Parts List

Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 046	Spool
* 6	—	Seal
* 8	—	Gasket
9	K323 027	Remote Cap
10	H100 60	Cap Screw
11	H175 12	Lockwasher
13	K983 003	Shock Pad

* Standard Sevice Kit: K352 358

3/4" Thru 1-1/4" NPT Ports, Nominal Cv = 12.0



Single Remote

Application

These valves may be used to activate double acting cylinders. A maintained pressure signal to the pilot cap activates the valve. When this signal is removed, the valve shifts. For alternate usage, see page 80.

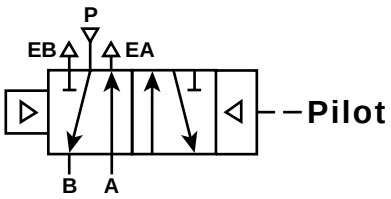
Mounting

Valve may be mounted in any position.

Operation: Pressure Service

Pressure to pilot cap – Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.

When pressure to pilot is removed – Pressure at Port is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.



Double Remote

Application

These valves may be used to activate double acting cylinders. Normally open signals applied to the pilot caps are alternately bled off to actuate the valve. For alternate usage, see page 80.

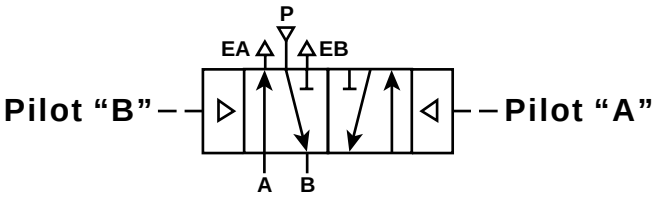
Mounting

Axis of main valve spool to be in horizontal plane.

Operation: Pressure Service

Pilot "A" (nearest Port B on valve body) pressurized last – Pressure at Port P is connected to "Cylinder" Port B. "Cylinder" Port A is connected to "Exhaust" Port EA.

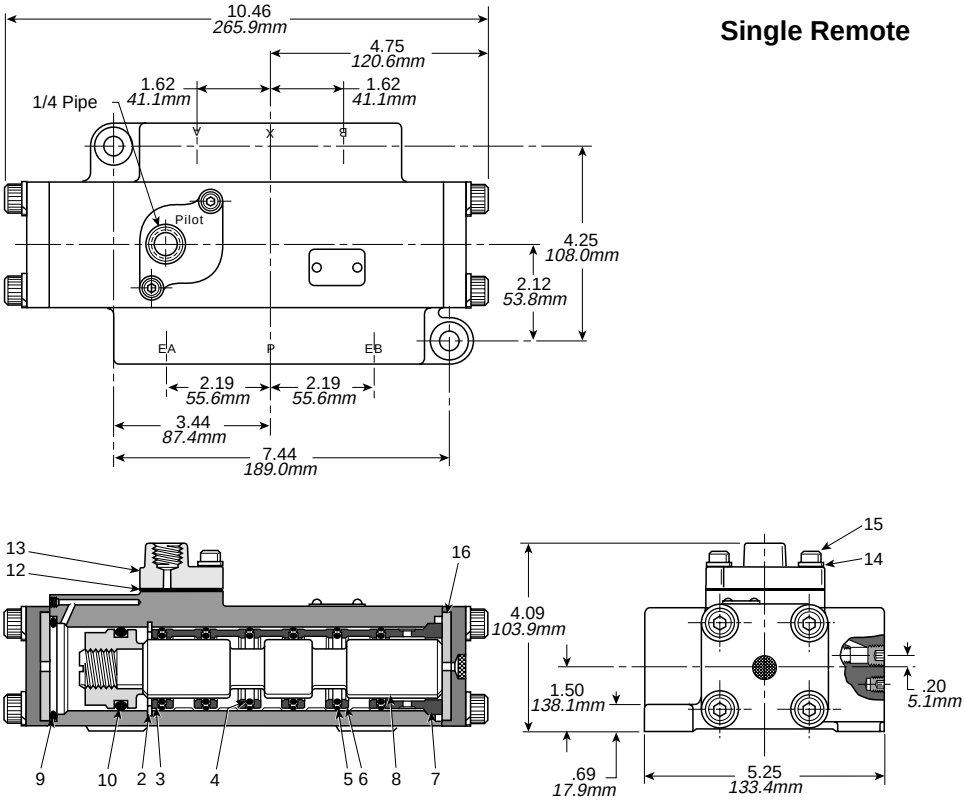
Pilot "B" (nearest Port A on valve body) pressurized last – Pressure at Port P is connected to "Cylinder" Port A. "Cylinder" Port B is connected to "Exhaust" Port EB.



Model Selection

Valve		Port Size (NPT)	
Single Remote	Double Remote	P, A & B	EA & EB
L704 71 102	L684 71 102	3/4"	1"
L704 81 102	L684 81 102	1"	1-1/4"
L704 91 102	L684 91 102	1-1/4"	1-1/4"

Single Remote

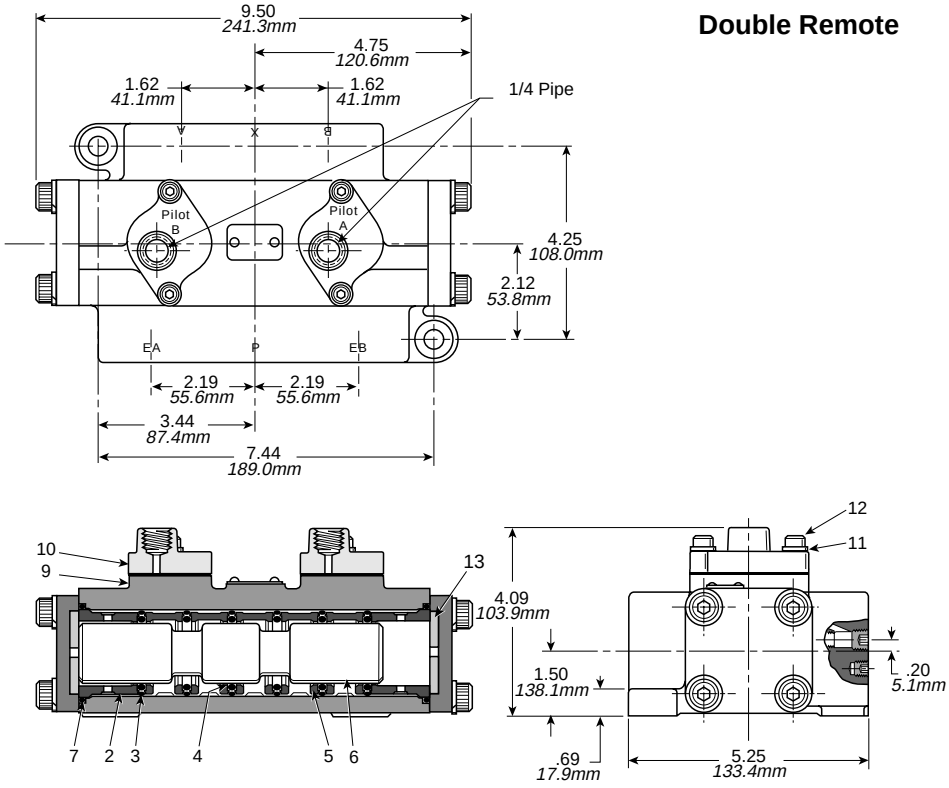


Parts List

Item No.	Part No.	Description
2	H090 09	Retaining Ring
3	K553 009	Spacer
* 4	—	O-Ring (Dynamic)
* 5	—	O-Ring (Static)
6	K453 009	Spacer
7	K463 005	End Spacer
8	K232 014	Spool Assy.
* 9	—	Seal
*10	—	O-Ring
*12	—	Gasket
13	K323 027	Remote Cap
14	H175 12	Lockwasher
15	H100 60	Cap Screw
16	K983 004	Shock Pad

* Standard Sevice Kit: K352 359

Double Remote



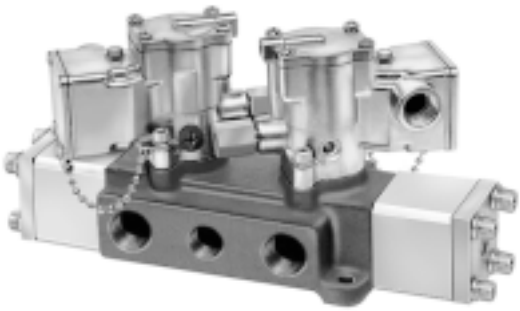
Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Static)
* 4	—	O-Ring (Dynamic)
5	K453 009	Spacer
6	K343 061	Spool
* 7	—	Seal
* 9	—	Gasket
10	K323 027	Remote Cap
11	H175 12	Lockwasher
12	H100 60	Cap Screw
13	K983 004	Shock Pad

* Standard Sevice Kit: K352 360

4-Way, 4-Port, 3-Position & 4-Way, 5-Port, 3-Position - 1/4" Thru 3/4" NPT Ports

1/4" Basic, Nominal Cv = 1.7

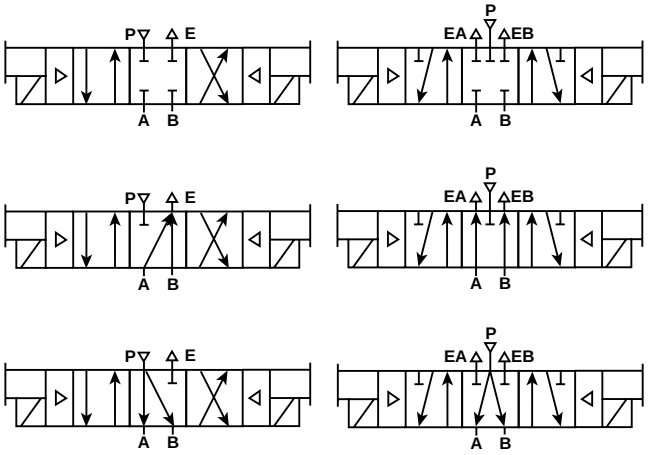


1/2" Basic, Nominal Cv = 5.2

Application

These valves may be used to actuate double acting cylinders, when “inching” or incremental rod movement is desired. A “momentary” (exceeding .03 seconds) or maintained electrical signal applied to one of the solenoids shifts the valve, the valve returns to the “neutral” condition when the electrical signal is removed. Valve may be applied for alternate service.

1/4" Basic **1/2" Basic**



Operation: Pressure Service

Neutral “Class 21”
Both solenoids de-energized (Normal Condition) – All ports blocked.

Neutral “Class 22”
Both solenoids de-energized (Normal Condition) – “Cylinder” Port A is open to “Exhaust” Port E (EA), “Cylinder” Port B is open to “Exhaust” Port E (EB), “Pressure” Port P is blocked.

Neutral “Class 23”
Both solenoids de-energized (Normal Condition) – “Cylinder” Port A is open to Pressure Port P, “Cylinder” Port B is open to Pressure Port P. Both “Exhaust” Port(s) E (EA and EB) are blocked.

Activated Operation
With solenoid “A” energized – Pressure at Port P flows to “Cylinder” Port A, “Cylinder” Port B is connected to “Exhaust” Port E (EB).

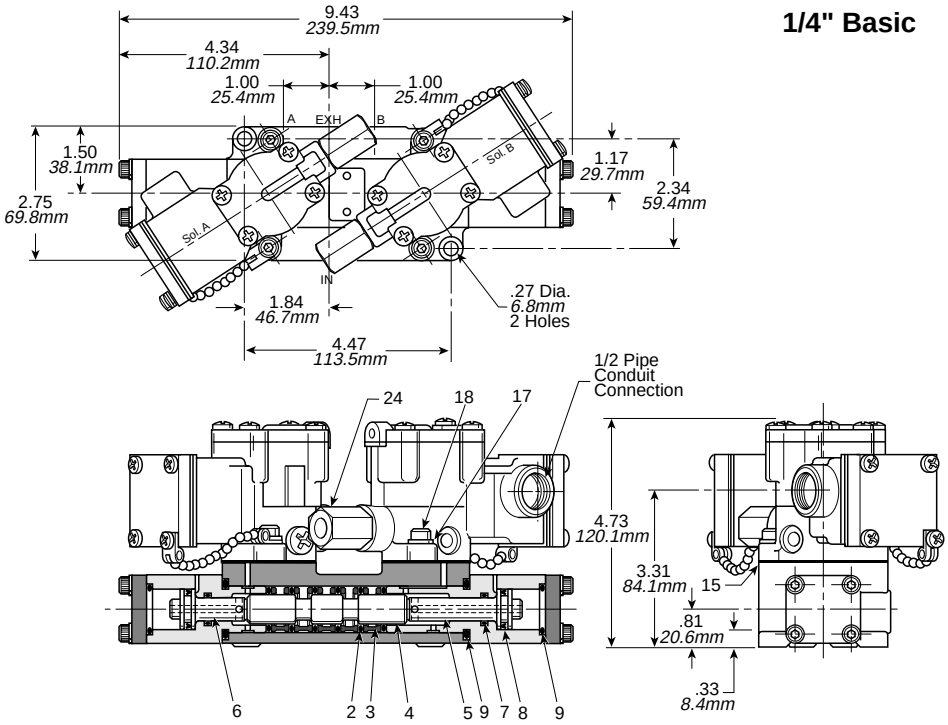
With solenoid “B” energized – Pressure at Port P is connected to “Cylinder” Port B. “Cylinder” Port A is connected to “Exhaust” Port E (EA).

Model Selection (Neutral “Class 21” Shown)

Valve		Voltage	Port Size (NPT)		Operator Type
1/4" Basic Size	1/2" Basic Size		P, A & B	Exhaust	
L475 29 211 53	—	120V 60Hz 110V 50Hz	1/4"	3/8"	Junction Box
L475 39 211 53	—		3/8"	3/8"	
—	L625 59 211 53		1/2"	3/4"	
—	L625 69 211 53		3/4"	3/4"	
L475 26 211 **	—	Other	1/4"	3/8"	Junction Box
L475 36 211 **	—		3/8"	3/8"	
—	L625 56 211 **		1/2"	3/4"	
—	L625 66 211 **		3/4"	3/4"	

See page 47 & 49 for variations in class of neutral configuration and (**) voltage codes.

1/4" Basic

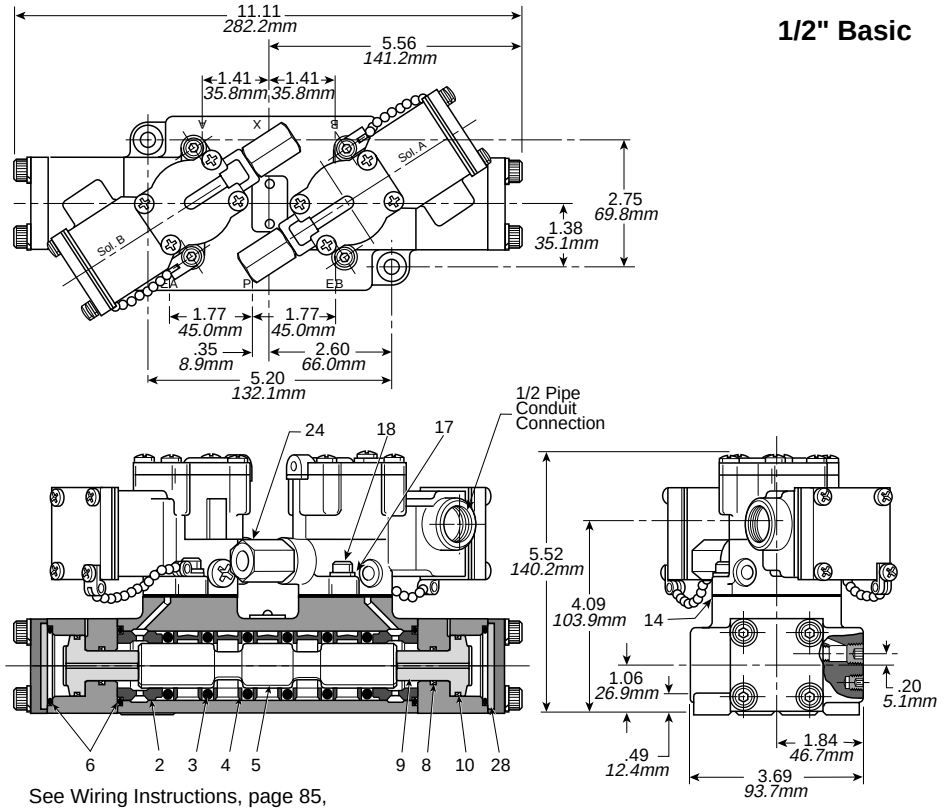


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K343 020	Spool (All Ports Blocked)
4	K343 073	Spool (Cyl. Ports Open to Exhaust)
4	K343 021	Spool (Cyl. Ports Open to Inlet)
5	K313 009	Piston (Long)
6	K313 010	Piston (Short)
* 7	—	Seal
* 8	—	Seal
* 9	—	Seal
*15	—	Gasket
17	H175 12	Lockwasher
18	H100 60	Cap Screw
24	K152 003	Override Assy.

* Standard Sevice Kit: K352 151
* Special Service Kit: K352 351 (Continuous Duty)

1/2" Basic



See Wiring Instructions, page 85, for units with flying leads.

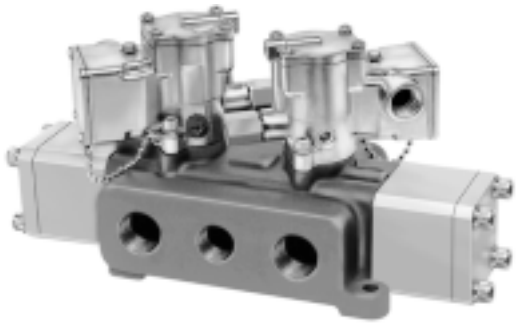
Parts List

Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 045	Spool (All Ports Blocked)
5	K343 067	Spool (Cyl. Ports Open to Inlet)
5	K343 068	Spool (Cyl. Ports Open to Exhaust)
* 6	—	Seal
* 8	—	Seal
9	K313 017	Piston
*10	—	Seal
*14	—	Gasket
16	H175 12	Lockwasher
17	H100 60	Cap Screw
24	K152 003	Override Assy.
28	K983 003	Shock Pad

* Standard Sevice Kit: K352 153
* Special Service Kit: K352 353 (Continuous Duty)

4-Way, 5-Port, 3-Position - 3/8" Thru 1-1/4" NPT Ports

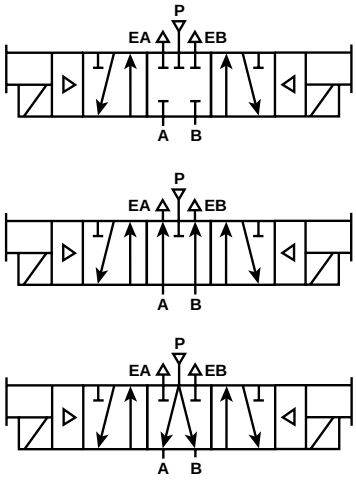
3/8" Basic, Nominal Cv = 4.5



1" Basic, Nominal Cv = 12.0

Application

These valves may be used to actuate double acting cylinders, when “inching” or incremental rod movement is desired. A “momentary” (exceeding .03 seconds) or maintained electrical signal applied to one of the solenoids shifts the valve, the valve returns to the “neutral” condition when the electrical signal is removed. Valve may be applied for alternate service.



Operation: Pressure Service

Neutral “Class 21”
Both solenoids de-energized (Normal Condition) – All ports blocked.

Neutral “Class 22”
Both solenoids de-energized (Normal Condition) – “Cylinder” Port A is open to “Exhaust” Port EA, “Cylinder” Port B is open to “Exhaust” Port EB, “Pressure” Port P is blocked.

Neutral “Class 23”
Both solenoids de-energized (Normal Condition) – “Cylinder” Port A is open to Pressure Port P, “Cylinder” Port B is open to Pressure Port P. Both “Exhaust” Ports EA and EB are blocked.

Activated Operation
With solenoid “A” (solenoid nearest Port B on valve body) energized – Pressure at Port P is connected to “Cylinder” Port A, “Cylinder” Port B is connected to “Exhaust” Port EB.

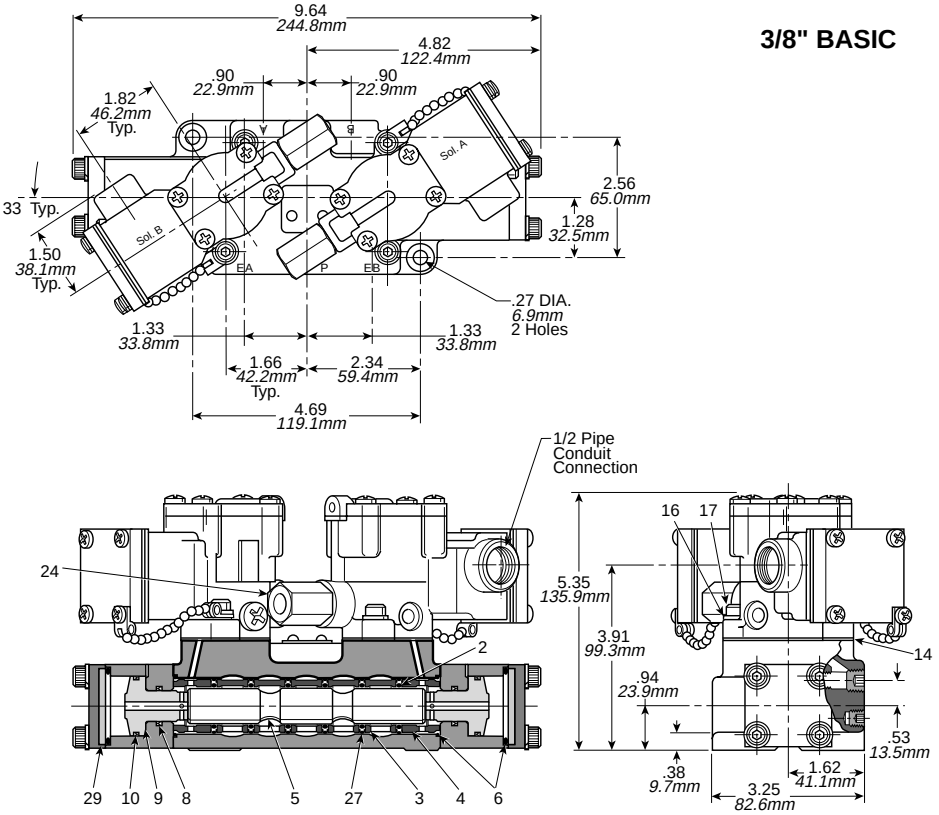
With solenoid “B” (solenoid nearest Port A on valve body) energized – Pressure at Port P is connected to “Cylinder” Port B, “Cylinder” Port A is connected to “Exhaust” Port EA.

Model Selection (Neutral “Class 21” Shown)

Valve		Voltage	Port Size (NPT)		Type
3/8" Basic Size	1" Basic Size		P, A & B	EA & EB	
L695 39 211 53	—	120V 60Hz 110V 50Hz	3/8"	1/2"	Junction Box
L695 49 211 53	—		1/2"	1/2"	
—	L695 79 211 53		3/4"	1"	
—	L695 89 211 53		1"	1-1/4"	
—	L695 99 211 53		1-1/4"	1-1/4"	
L695 36 211 **	—	Other	3/8"	1/2"	Basic
L695 46 211 **	—		1/2"	1/2"	
—	L695 76 211 **		3/4"	1"	
—	L695 86 211 **		1"	1-1/4"	
—	L695 96 211 **		1-1/4"	1-1/4"	

See page 48 for variations in class of neutral configuration and (**) voltage codes.

3/8" BASIC

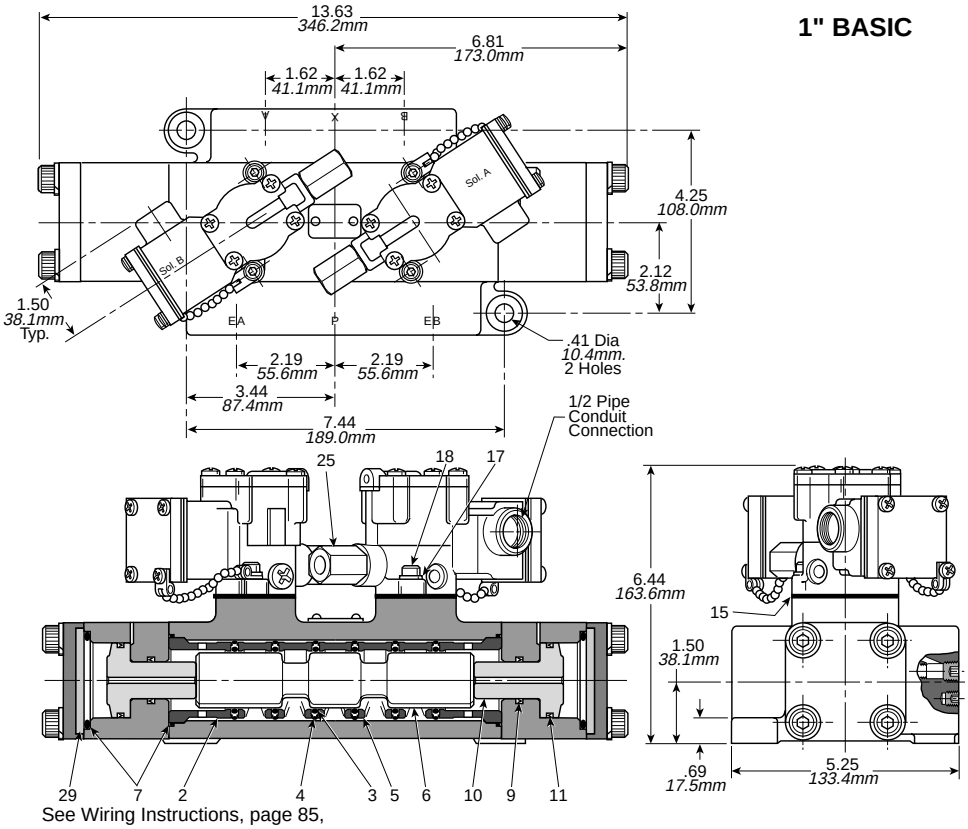


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 124	Spool (All Ports Blocked)
5	K343 126	Spool (Cyl. Ports Open to Inlet)
5	K343 125	Spool (Cyl. Ports Open to Exhaust)
* 6	—	Seal
* 8	—	Seal
9	K313 049	Piston
*10	—	Seal
*14	—	Gasket
16	H175 12	Lockwasher
17	H100 60	Cap Screw
24	K152 003	Override Assy.
*27	—	O-Ring (Static)
29	K983 002	Shock Pad

* Standard Sevice Kit: K352 126
* Special Service Kit: K352 127
(Continuous Duty)

1" BASIC



See Wiring Instructions, page 85, for units with flying leads.

Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Static)
* 4	—	O-Ring (Dynamic)
5	K453 009	Spacer
6	K343 060	Spool (All Ports Blocked)
6	K343 070	Spool (Cyl. Ports Open to Exhaust)
6	K343 069	Spool (Cyl. Ports Open to Inlet)
* 7	—	Seal
* 9	—	Seal
10	K313 023	Piston
*11	—	Seal
*15	—	Gasket
17	H175 12	Lockwasher
18	H100 60	Cap Screw
25	K152 003	Override Assy.
29	K983 004	Shock Pad

* Standard Sevice Kit: K352 130
* Special Service Kit: K352 131
(Continuous Duty)

4-Way, 4-Port, 3-Position & 4-Way, 5-Port, 3-Position

1/4" Basic, Nominal Cv = 1.7

1/2" Basic, Nominal Cv = 5.2

Application

These valves may be used to actuate double acting cylinders, when "inching" or incremental rod movement is desired. A normally open pilot signal to both pilot caps maintains the valve in its neutral (centered) condition. Valve may be applied for alternate service.

Operation: Pressure Service

Neutral "Class 21"
Normally open pilot signals to both pilot caps – All ports blocked.

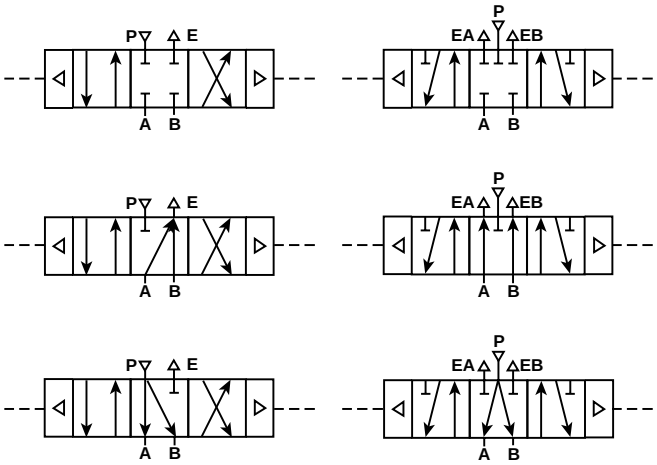
Neutral "Class 22"
Normally open pilot signals to both pilot caps – "Cylinder" Port A is connected to "Exhaust" Port E (EA) and "Cylinder" Port B is connected to "Exhaust" Port E (EB). Pressure at Port P is blocked.

Neutral "Class 23"
Normally open pilot signals to both pilot caps – "Cylinder" Port A & B are connected to Port P. "Exhaust" Port(s) E (EA and EB) are blocked.

Activated Operation
When Pilot "A" is exhausted – Pressure at Port P is connected to "Cylinder" Port A. "Exhaust" Port E (EB) is connected to "Cylinder" Port B.

When Pilot "B" is exhausted – Pressure at Port P is connected to "Cylinder" Port B, "Exhaust" Port E (EA) is connected to "Cylinder" Port A.

1/4" Basic **1/2" Basic**

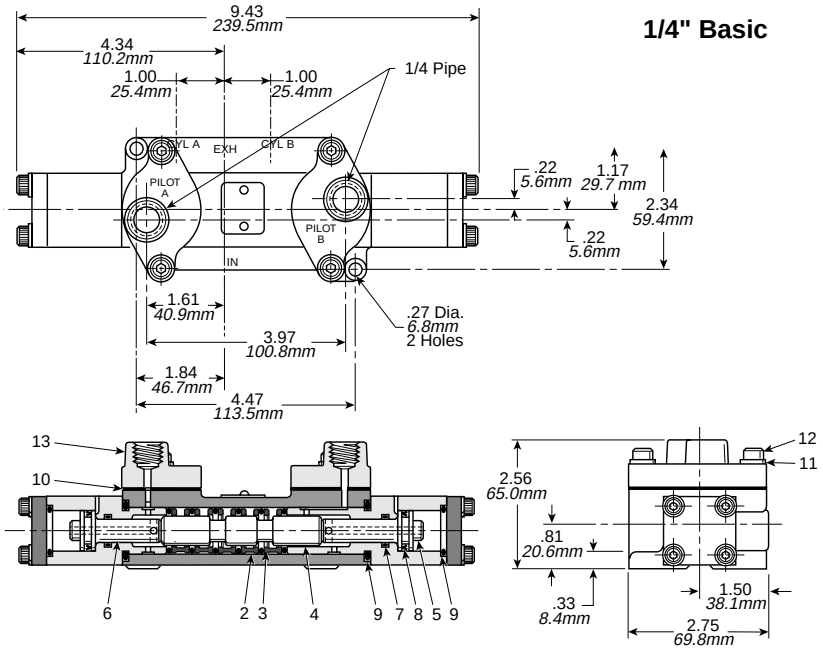


Model Selection (Neutral "Class 21" Shown)

Valve	Port Size (NPT)	
	P, A & B	Exhaust
L474 21 211	1/4"	3/8"
L474 31 211	3/8"	3/8"
L624 51 211	1/2"	3/4"
L624 61 211	3/4"	3/4"

See page 47 & 49 for variations on ordering other neutral class configurations.

1/4" Basic

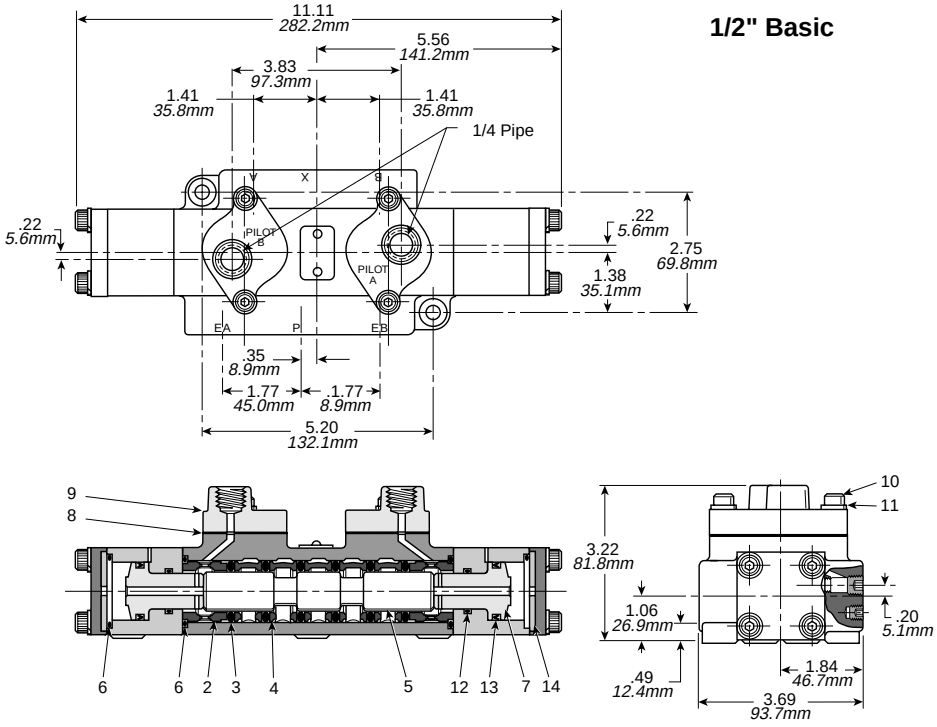


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring
3	K453 005	Spacer
4	K343 020	Spool (All Ports Blocked)
4	K343 021	Spool (Cyl. Ports Open to Exhaust)
4	K343 073	Spool (Cyl. Ports Open to Inlet)
5	K313 009	Piston (Long)
6	K313 010	Piston (Short)
* 7	—	Seal
* 8	—	Seal
* 9	—	Seal
*10	—	Gasket
11	H175 12	Lockwasher
12	H100 60	Cap Screw
13	K323 027	Remote Cap

* Standard Sevice Kit: K352 357

1/2" Basic



Parts List

Item No.	Part No.	Description
2	K463 001	End Spacer
* 3	—	O-Ring
4	K453 008	Spacer
5	K343 045	Spool (All Ports Blocked)
5	K343 057	Spool (Cyl. Ports Open to Inlet)
5	K343 068	Spool (Cyl. Ports Open to Exhaust)
* 6	—	Seal
7	K313 017	Piston
* 8	—	Gasket
9	K323 027	Remote Cap
10	H100 60	Cap Screw
11	H175 12	Lockwasher
*12	—	Seal
*13	—	Seal
14	K983 003	Shock Pad

* Standard Sevice Kit: K352 358

4-Way, 5-Port, 3-Position - 3/8" Thru 1-1/4" NPT Ports

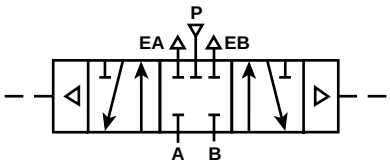
3/8" Basic, Nominal Cv = 4.5

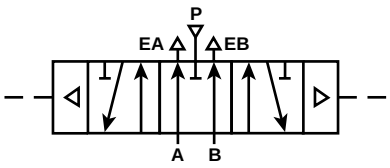
1-1/4" Basic, Nominal Cv = 12.0

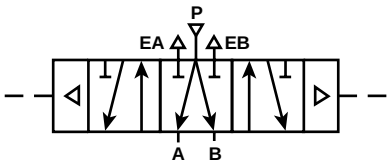
Application

These valves may be used to activate double acting cylinders when “inching” or incremental rod movement is desired. A normally open pilot signal to both pilot caps maintains the valve in its neutral (centered) condition. Valve may be applied for alternate services.

Operation: Pressure Service







Neutral “Class 21”
Normally open pilot signals to both pilot caps – All ports blocked.

Neutral “Class 22”
Normally open pilot signals to both pilot caps – “Cylinder” Port A is connected to “Exhaust” Port EA and “Cylinder” Port B is connected to “Exhaust” Port EB. Pressure at Port P is blocked.

Neutral “Class 23”
Normally open pilot signals to both pilot caps – “Cylinder” Ports A & B are connected to Port P. “Exhaust” Ports EA & EB are blocked.

Activated Operation
When Pilot “A” (nearest Port B on valve body) is exhausted – Pressure at Port P is connected to “Cylinder” Port A. “Exhaust” Port EB is connected to “Cylinder” Port B.

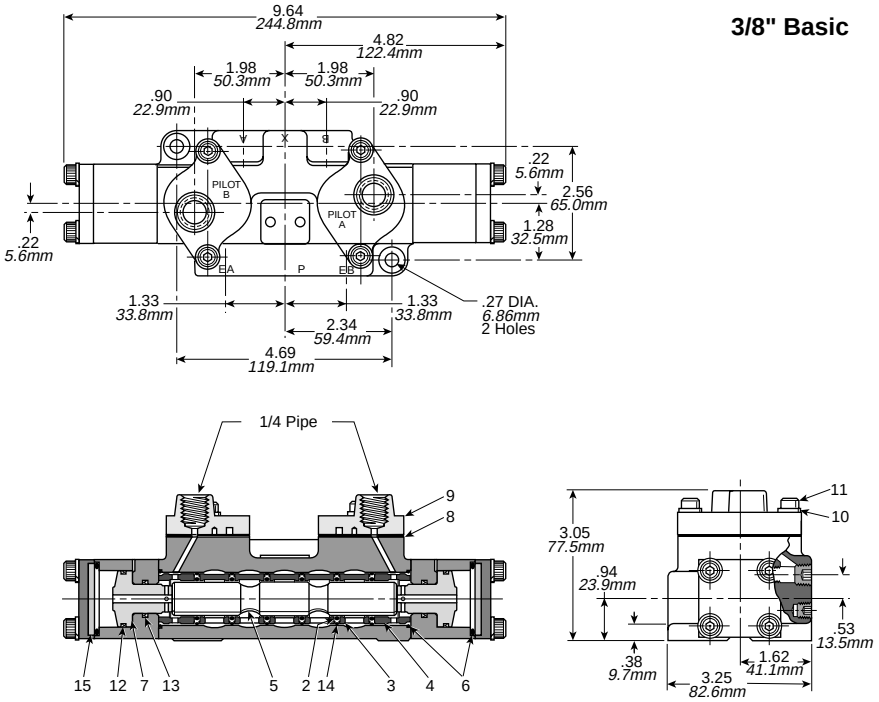
When Pilot “B” (nearest Port A on valve body) is exhausted – Pressure at Port P is connected to “Cylinder” Port B. “Exhaust” Port EA is connected to “Cylinder” Port A.

Model Selection (Neutral “Class 21” Shown)

Valve	Port Size (NPT)	
	P, A & B	EA & EB
L694 31 211	3/8"	1/2"
L694 41 211	1/2"	1/2"
L694 71 211	3/4"	1"
L694 81 211	1"	1-1/4"
L694 91 211	1-1/4"	1-1/4"

See page 48 for ordering other neutral configurations.

3/8" Basic

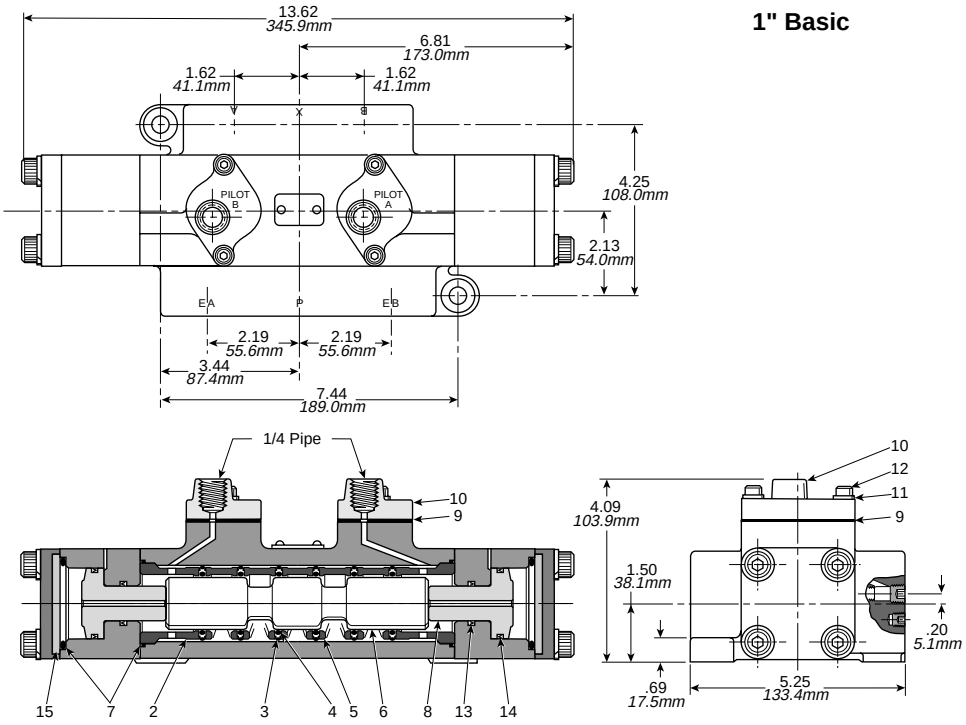


Parts List

Item No.	Part No.	Description
* 2	—	O-Ring (Dynamic)
3	K453 028	Spacer
4	K463 012	End Spacer
5	K343 124	Spool (All Ports Blocked)
5	K343 126	Spool (Cyl. Ports Open to Inlet)
5	K343 125	Spool (Cyl. Ports Open to Exhaust)
* 6	—	Seal
7	K313 049	Piston
* 8	—	Gasket
9	K323 027	Remote Cap
10	H175 12	Lockwasher
11	H100 60	Cap Screw
*12	—	Seal
*13	—	Seal
*14	—	O-Ring (Static)
15	K983 002	Shock Pad

* Standard Sevice Kit: K352 355

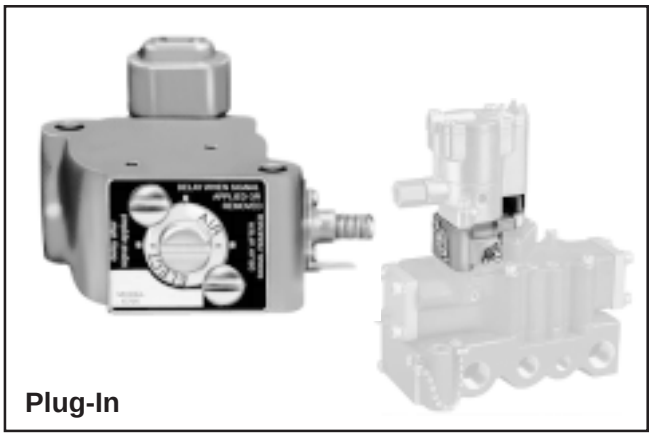
1" Basic



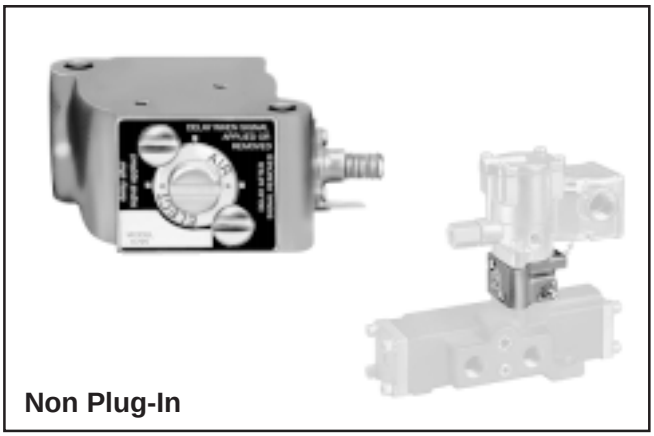
Parts List

Item No.	Part No.	Description
2	K463 005	End Spacer
* 3	—	O-Ring (Static)
* 4	—	O-Ring (Dynamic)
5	K453 009	Spacer
6	K343 060	Spool (All Ports Blocked)
6	K343 070	Spool (Cyl. Ports Open to Exhaust)
6	K343 069	Spool (Cyl. Ports Open to Inlet)
* 7	—	Seal
8	K313 023	Piston
* 9	—	Gasket
10	K323 027	Remote Cap
11	H175 12	Lockwasher
12	H100 60	Cap Screw
*13	—	Seal
*14	—	Seal
15	K983 004	Shock Pad

* Standard Sevice Kit: K352 360



Plug-In



Non Plug-In

Time Delay Modules Provide

- Delay of valve action upon application of control signal, removal of control signal or both application and removal of control signal.
- Delay Intervals from 0-6, 5-12, or 10-30 seconds... up to several minutes with the addition of a small external reservoir.
- Repeatability within 10%, using clean filtered air.
- Change of function without disassembly... with line pressure on the valve.

Function

Time Delay Modules provide precise, consistent delay of valve shift. They eliminate the need for electrical timers and relays and simplify circuitry.

Delay interval is controlled by an externally adjustable metering screw. Change of function is accomplished by loosening two lock screws turning the slotted selector plate to the desired function and re-tightening the lock screws.

By adding a small external reservoir, delay interval can be extended up to several minutes.

For accuracy and good repeatability, use filtered air to the pilot and be sure all gaskets are tight.

Setting Selector for Desired Function

For Valves which are Solenoid Pilot Operated, or Valves being controlled by normally open remote pilot, match the pointer marked "**Elect**" with the desired function indicator line.

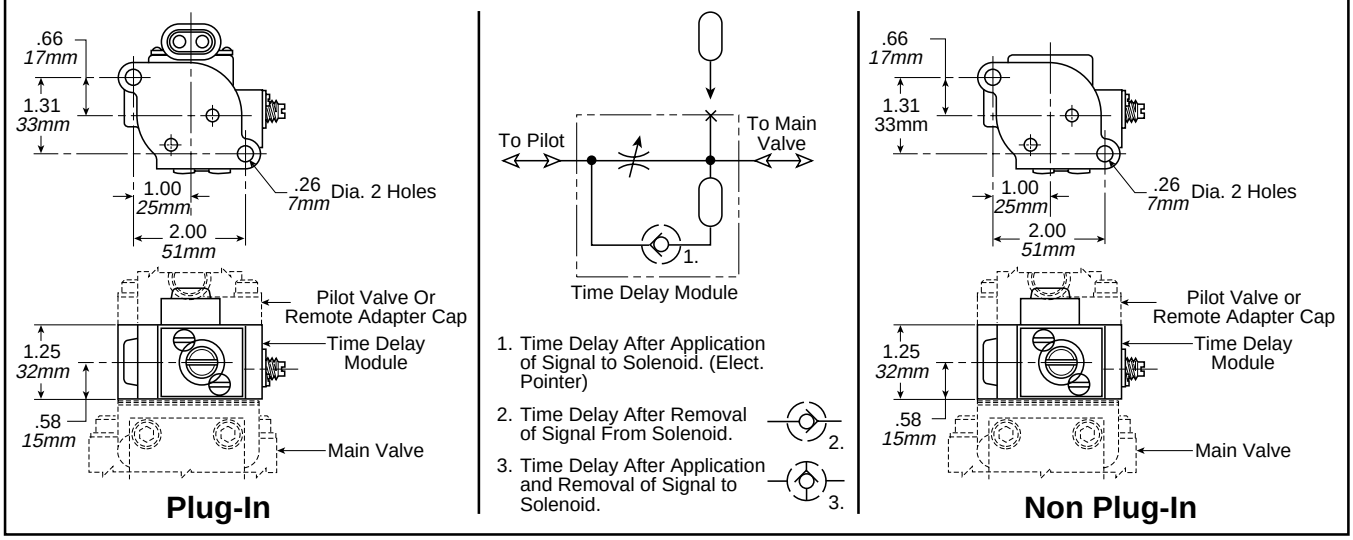
For Valves which are being controlled by normally closed pilot, match the pointer marked "**Air**" with the desired function indicator line.

How To Order

To order Time Delay Modules, select model number for delay interval required. Modules are furnished with gaskets, screws, and installation instructions.

Plug-In Kit Number	Delay Interval
K705 2001	0 - 6 Second Delay
K705 2002	5 - 12 Second Delay
K705 2003	10 - 30 Second Delay

Non Plug-In Kit Number	Delay Interval
K705 1001	0 - 6 Second Delay
K705 1002	5 - 12 Second Delay
K705 1003	10 - 30 Second Delay



"Blank Station" Covers	
Manifold Assembly	**Blank Cover Kit**
K142 076	K060 20007
K142 077	
K142 230	K060 20003
K142 231	
K142 270	
K142 233	K060 20009
K142 234	
K142 235	K060 20004
K142 236	
K142 237	

"Flush Type" Hex Drive Pipe Plugs for Port Isolation	
Part No.	**Size (NPTF)**
H074 70	1/8"
H074 07	1/4"
H074 11	3/8"
H074 14	1/2"
H074 81	3/4"
H074 71	1"
H074 72	1-1/4"
H074 30	1-1/2"

Electrical Connectors
Single or Double Solenoid Valves

Basic Size	Valve Body		Subbase/Manifold		
	Single Sol.	Double Sol.	19" Leads	72" Leads	12' Leads
1/4"	H027 17	H027 26	H027 19	—	—
3/8"	H027 23	H027 22	H027 13	H027 89	H027 40
1/2"					
1"					

Notes: Shaded units are not standard stock items.

L□□□ □□ □□□ **
|
_____ **Voltage Code**

Interchangeable
Manual Override Assemblies
for Solenoid Operators

Non-Locking Type
K162 001

Locking Type
K152 003

Effective June 1, 1990 the Flush Locking Override replaced the Extended Knob Locking Override as the Schrader Bellows standard. The part number remains K152 003. To override valve, use a flat head screwdriver to press in and rotate plunger 90° until plunger locks in place. For proper valve operation, override should be in the out position.

Voltage Suffix Codes

Code **	Voltage			Coil Number	
	60 Hz	50 Hz	DC	Plug-In	Flying Lead (19)" *
40	**12**	–	3	**K593 052**	**K593 007**
42	**24**	–	6	**K593 048**	**K593 003**
43	27	**24**	–	**K593 061**	**K593 015**
45	–	–	**12**†	**K593 055**	**K593 010**
49	–	–	**24**†	**K593 060** **K593 274** ‡	**K593 014**
51	–	130	**48**†	**K593 074**	**K593 028**
53	**120** †	**110**	–	**K593 071** **K593 125** ‡	**K593 025**
57	**240** †	**220**	–	**K593 081**	**K593 035**
60	–	–	**90**	–	**K393 020**
61	–	–	**120**	–	**K593 041**

Notes: Shaded areas indicate extended delivery times should be expected, consult supplier for availability.
Bold Face type indicated primary coil rating.
† - Indicates voltages approved for solenoid operators designed for use in hazardous locations. (See page 87.)
* - 19" Coil lead length is standard. Other lead lengths may be available, consult supplier.
‡ - Assembly includes indicator light socket, less light.

To use this chart you must know the Basic Valve Series, Quantity, and Type of Operators, or the first three characters of the Valve Model Number.

Basic Valve		Solenoid Operated *				Remote Pilot Operated	
		Standard Service (Intermittent Duty)		Special Service ** (Continuous Duty)			
Size	Series (Prefix)	Single	Double 2 & 3-Position	Single	Double 2 & 3-Position	Single	Double 2 & 3-Position
1/4"	L41	–	K352 151	–	K352 351	–	K352 357
	L42	–	K352 151	–	K352 351	–	K352 357
	L44	K352 150	–	K352 350	–	K352 363	–
	L46	–	K352 151	–	K352 351	–	K352 357
	L47	–	K352 151	–	K352 351	–	K352 357
	L48	K352 150	–	K352 350	–	K352 363	–
3/8" *	L65	–	K352 126	–	K352 127	–	K352 355
	L66	–	K352 126	–	K352 127	–	K352 355
	L67	K352 124	–	K352 125	–	K352 362	–
	L68	–	K352 126	–	K352 127	–	K352 355
	L69	–	K352 126	–	K352 127	–	K352 355
	L70	K352 124	–	K352 125	–	K352 362	–
1/2"	L51	–	K352 153	–	K352 353	–	K352 358
	L52	–	K352 153	–	K352 353	–	K352 358
	L54	K352 152	–	K352 352	–	K352 361	–
	L61	–	K352 153	–	K352 353	–	K352 358
	L62	–	K352 153	–	K352 353	–	K352 358
	L64	K352 152	–	K352 352	–	K352 361	–
1" †	L65	–	K352 130	–	K352 131	–	K352 360
	L66	–	K352 130	–	K352 131	–	K352 360
	L67	K352 128	–	K352 129	–	K352 359	–
	L68	–	K352 130	–	K352 131	–	K352 360
	L69	–	K352 130	–	K352 131	–	K352 360
	L70	K352 128	–	K352 129	–	K352 359	–

Notes:

* Kits for solenoid operated valves include solenoid service kits.

** Special service (continuous duty) solenoids may be identified as having gold colored solenoid tops.

† Valvair II valves are easily identified by gold colored valve end caps.

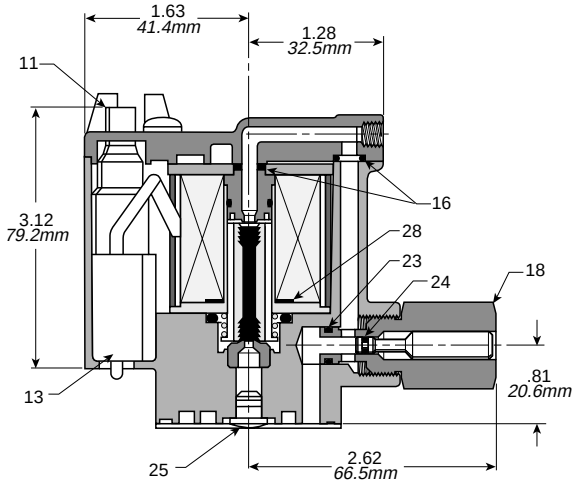
Conversion Kits: Lubricated to Non-Lubricated Operation

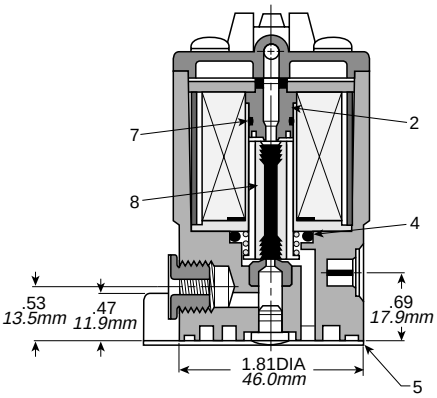
Basic Size	Operators (Solenoid or Remote Pilot)				
	Single	Double (2-Position)	Double (3-Position)		
			All Ports Blocked	Cyl. to Exh.	Cyl. to Inlet
3/8"	K322 012	K322 013	K322 014	K322 015	K322 016
1"	K352 359 K092 070 K092 071	K352 360 (K092 070 2-Req'd)	K352 360 (K103 103 Gold Colored End Caps 2-Req'd)		

Plug-In Pilot with Indicator Light

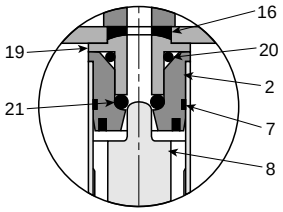
Replacement Pilots

Description	Standard Service		Special Service	
Override Type	Locking	Non-Locking	Locking	Non-Locking
With Override (120VAC)	K175 9035 53	K175 8035 53	K185 9025 53	K185 8025 53
With Override (Other than 120VAC)	K175 3035**	K175 2035**	K185 3025**	K185 2025**





Standard Pilot Only



Special Service Pilot Only

Parts List

Item No.	Part Number	Description
2	K423 005	Top Seat (STD. Service)
	K423 010	Top Seat (SPL. Service)
* 4	H142 13	Seal
* 5	K183 001	Gasket
* 7	H249 69	O-Ring
* 8	K343 002	Plunger (STD. Service)
	K343 001	Plunger (SPL. Service)
11	H191 05	Light (120 AC)
	H191 12	Light (24VDC)
13	K593 125	Coil 120V 60Hz / 220V 50Hz, for Indicator Light**
	K593 071	Coil 120V 60Hz / 110V 50Hz
	K593 081	Coil 240V 60 Hz / 220V 50 Hz
	K593 048	Coil 6VDC / 12V 60Hz
	K593 055	Coil 12VDC
	K593 274	Coil 24VDC, for Indicator Light**
	K593 060	Coil 24VDC

Item No.	Part Number	Description
* 16	H142 01	Seal
18	K152 003	Override Assembly
19	K213005	Insert
* 20	H134 13	O-Ring
* 21	H134 73	O-Ring
* 23	H134 58	O-Ring
* 24	H134 62	O-Ring
* 25	K333 002	Plug
28	K183 108	Gasket

* Parts included in Service Kit. (For other voltages see page 75.)
Special Service Kit K352 366
Standard Service Kit K352 166

** Light not included with coil.

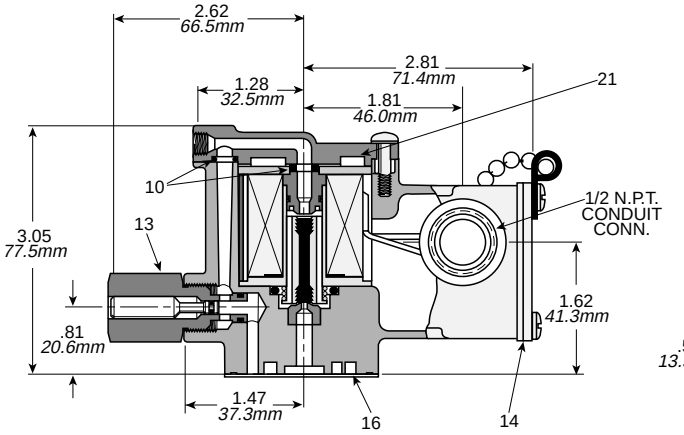
NOTE: Shaded units are not standard stock items.

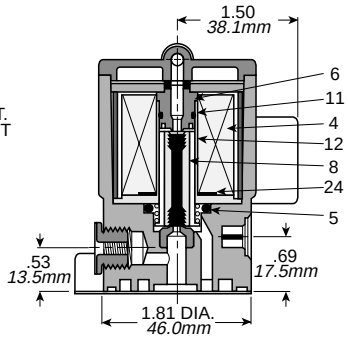
Basic Pilot

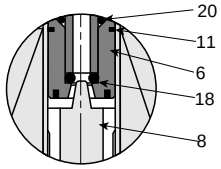
JIC Pilot

Replacement Pilots

Description	Standard Service		Special Service	
Override Type	Locking	Non-Locking	Locking	Non-Locking
Basic with Override	K065 3035**	K065 2035**	K085 3025**	K085 2025**
JIC with Junction Box & Override	K065 6035**	K065 5035**	K085 6025**	K085 5025**
JIC Pilot with Junction Box & Override & Indicator Lights (120VAC Only)	K065 9035**	K065 8035**	K085 9025**	K085 8025**







Special Service Pilot Only

Parts List

Item No.	Part Number	Description
4	K593 025	Coil 120V 60Hz / 110V 50Hz
	K593 035	Coil 240V 60Hz / 220V 50Hz
	K593 003	Coil 6VDC / 12V 60Hz
	K593 010	Coil 12VDC
	K593 014	Coil 24VDC
	K593 041	Coil 120VDC
5	H142 13	Seal
6	K423 006	Top Seat
	K423 010	Top Seat (SPL. Service Pilot)
8	K343 002	Plunger (STD. Service)
	K343 001	Plunger (SPL. Service)
* 10	H142 01	Seal
* 11	H249 69	O-Ring

Item No.	Part Number	Description
12	K272 004	Plunger Guide
13	K152 003	Override Assembly
* 14	K183 047	Cover Gasket
* 16	K183 001	Gasket
* 18	H134 73	O-Ring
* 20	H134 13	O-Ring
* 21	H147 01	Shock Pad
22	H191 02	120 AC Only – Indicator Light
24	K183 108	Gasket

Coil leads are 19" long (For other voltages see page 75).

* Parts included in Service Kit.
Special Service Kit K352 366
Standard Service Kit K352 166

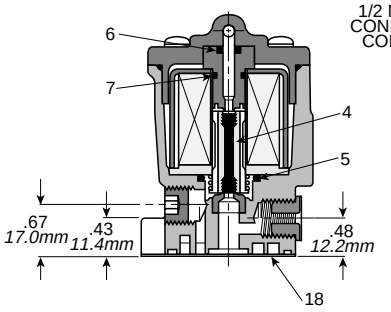
NOTE: Shaded units are not standard stock items.

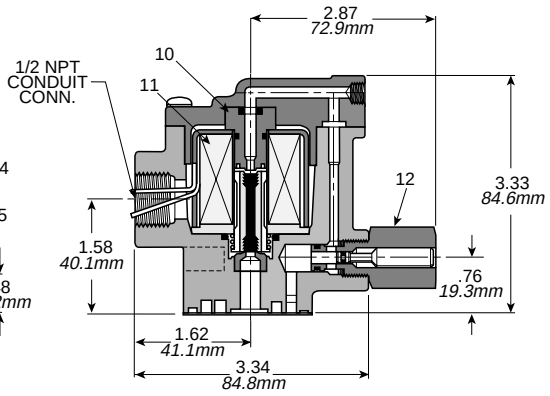
Hazardous Duty

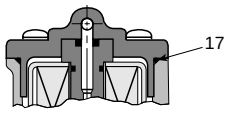
NEMA 4 Pilot

Replacement Pilots

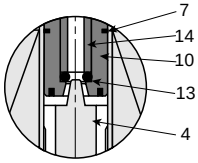
Description	Standard Service		Special Service	
Hazardous Duty Pilot - UL & CSA	K025 1035**		K045 1025**	
NEMA 4 Pilot	K235 1035**		K255 1025**	
Override Type	**Locking**	**Non-Locking**	**Locking**	**Non-Locking**
Hazardous Duty with Override	K025 3035**	K025 2035**	K045 3025**	K045 2025**
NEMA 4 with Override	K235 3035**	K235 2035**	K255 3025**	K255 2025**







NEMA 4 Rated Pilot Only



Special Service Pilot Only

Parts List

Item No.	Part Number	Description
*** 4**	K343 002	Plunger (STD. Service)
	K343 001	Plunger (SPL. Service)
*** 5**	K142 13	Seal
*** 6**	H134 11	O-Ring
	H134 61	O-Ring (STD. Service)
*** 7**	H249 69	O-Ring (SPL. Service)
10	K423 001	Top Seat
	K423 002	Top Seat (SPL. Service)
11	K593 025	Coil 120V 60Hz / 110V 50Hz
	K593 035	Coil 240V 60Hz / 220V 50Hz
	K593 003	Coil 6VDC / 12V 60Hz
	K593 010	Coil 12VDC
	K593 014	Coil 24VDC
	K593 041	Coil 120VDC

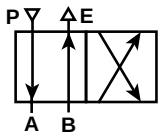
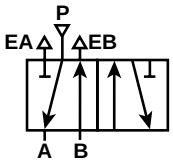
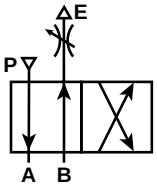
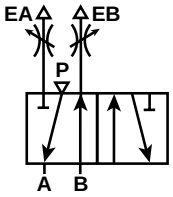
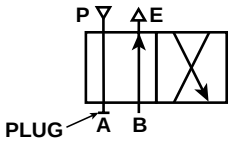
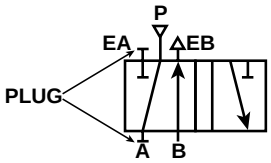
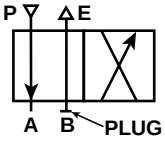
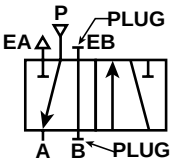
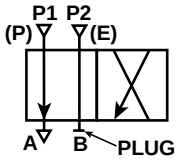
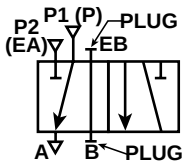
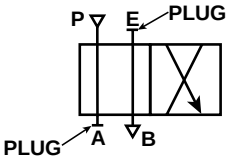
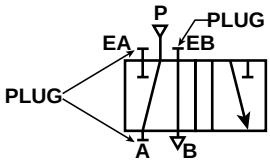
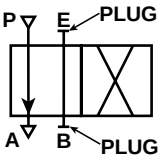
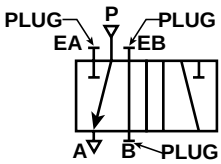
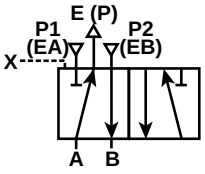
Item No.	Part Number	Description
12	K152 003	Override Assembly
*** 13**	H134 73	O-Ring
*** 17**	H137 16	Gasket (NEMA 4 Rated Pilot Only)
*** 18**	K183 001	Gasket

Coil leads are 19" long (For other voltages see page 75).

***** Parts included in Service Kit.
Special Service Kit K352 366
Standard Service Kit K352 166

NOTE: Shaded units are not standard stock items.

Speed King, Valves are exceptionally versatile and may be used to perform a wide variety of functions, some of which are illustrated here for your convenience.

	4-Ported Valves	5-Ported Valves
Standard 4-Way Directional Control		
4-Way With Exhaust Port Speed Control		
3-Way Normally Closed		
3-Way Normally Open		
Pressure Selector **P1 Must Be 35-140 PSI** **P2 May Be 0-250 PSI or Vacuum**		
2-Way Normally Closed		
2-Way Normally Open		
Dual Pressure 4-Way **X- External Pilot Supply 35-140 PSI** **P1 & P2 May Be 0-250 PSI or Vacuum**		

The capacity curves shown in the chart are for theoretical valve having a C_V - 1.0 for air at standard conditions –temperature 68°F, 36% relative humidity and 14.7 PSI absolute pressure.

To estimate the SCFM capacity of a valve, if the supply or initial pressure is known, proceed as follows:

Assuming initial pressure to 100 PSIG, select the 100 PSI initial pressure curve and follow it upward and to the left edge of the chart. Read the flow in SCFM (in this example flow is approximately 56 SCFM). Multiply the SCFM flow obtained in the chart by the C_V for valve and flow path desired shown in the accompanying table.

To estimate valve size for a known required flow and initial pressure, divide the required SCFM flow by the SCFM obtained from the flow chart. Select the required valve size from the valves listed in the table which have a C_V that slightly exceeds the quotient.

For example: Assuming 200 SCFM required flow, 100 PSIG initial pressure, divide 200 SCFM by 56 SCFM (max. flow from chart). The quotient is 3.57 (200/56 = 3.57). Valves with a C_V of 3.57 or greater selected from the table will provide the required flow.

To estimate flow capacity at a specific "final pressure," locate the desired final pressure on the bottom scale of the chart. Follow a vertical line upward until it intersects the initial pressure curve. Then follow a horizontal line from that point to the left edge of the chart. Read SCFM flow. Multiply SCFM obtained in chart by C_V of selected valve for flow.

C_V Method

Data at Std. Conditions
68°F Temperature
14.7 PSI Abs. Pressure
36% Relative Humidity

$$Q = 22.48\ C_V \sqrt{\frac{(\triangle Pc) \times (P_2)}{(T_1) \times (G)}}$$

C_V = Flow Coefficient

G = Specific Gravity of fluid related to air = 1 @ 14.7 psia, 68°F, 36% Relative Humidity

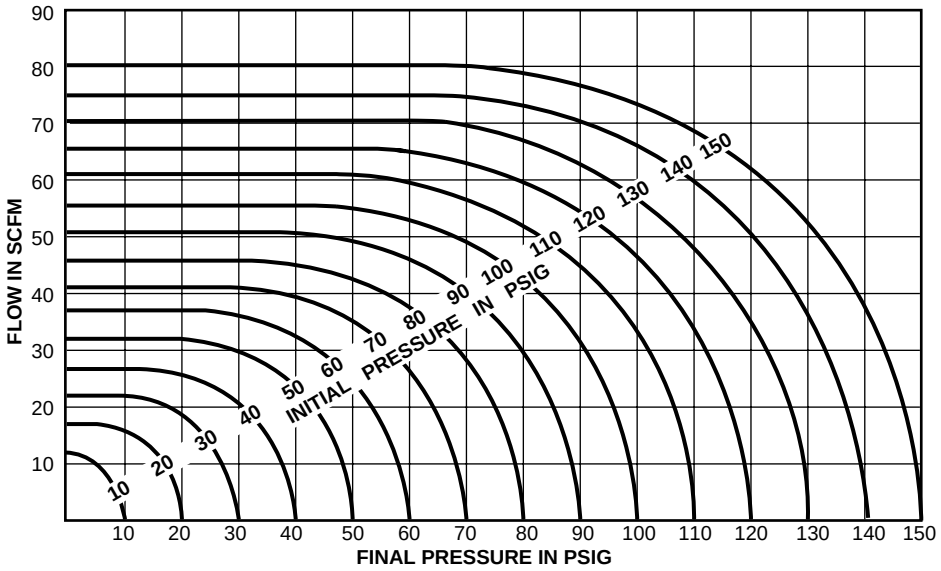
P_2 = Downstream Pressure (psia)

△Pc = Component pressure drop

Q = Flow Rate (scfm) at 14.7 psia, 68°F, 36% Relative Humidity

T_1 - Upstream Temperature °R (°R = °F + 460)

Flow Rating determined in accordance with NFPA recommended Standard NFPA/T3.21.3-1972.



Valve Type	Cylinder Port Size (NPTF)	Mounting Style	C_V Flow Rating			
			Inlet to Cylinder "A"	Inlet to Cylinder "B"	Cylinder "A" To Exhaust	Cylinder "B" To Exhaust
1/4" Single	1/4"	Subbase	1.2	1.4	1.1	1.1
	1/4"	Manifold	1.1	1.3	1.0	1.0
3/8" Single	3/8"	Subbase	4.8	4.8	4.5	4.8
	1/2"	Subbase	5.5	5.1	5.3	4.9
	3/4"	Subbase	5.1	4.9	5.3	5.1
	3/8"	Manifold	4.5	4.2	4.0	4.0
	1/2"	Manifold	5.0	4.5	4.7	4.5
	3/4"	Manifold	4.8	4.4	4.9	4.5
1/2" Single	1/2"	Subbase	5.1	4.5	5.2	4.8
	3/4"	Subbase	5.3	5.0	5.4	5.2
	1/2"	Manifold	4.6	4.5	4.6	4.5
	3/4"	Manifold	4.8	4.9	4.9	4.8
1" Single	3/4"	Subbase	10.1	11.0	10.4	9.9
	1"	Subbase	12.3	11.8	11.8	11.8
	1-1/4"	Subbase	12.4	11.6	12.4	12.7
	3/4"	Manifold	10.7	10.7	10.9	10.9
	1"	Manifold	11.6	12.1	12.1	11.6
	1-1/4"	Manifold	12.6	12.6	12.6	11.9
1/4" Double	1/4"	Subbase	1.4	1.7	1.3	1.4
	1/4"	Manifold	1.3	1.6	1.3	1.4
3/8" Double	3/8"	Subbase	4.5	4.4	4.5	4.0
	1/2"	Subbase	5.5	5.0	5.1	5.0
	3/4"	Subbase	5.0	5.0	5.5	5.5
	3/8"	Manifold	4.5	4.0	4.0	4.0
	1/2"	Manifold	4.8	4.4	4.7	4.8
	3/4"	Manifold	4.9	4.4	5.1	4.6
1/2" Double	1/2"	Subbase	4.8	5.1	5.1	5.0
	3/4"	Subbase	5.5	5.1	5.9	5.5
	1/2"	Manifold	4.4	4.5	4.5	4.7
	3/4"	Manifold	5.0	4.8	5.2	5.1
1" Double	3/4"	Subbase	10.9	11.1	10.3	10.3
	1"	Subbase	11.4	11.9	11.9	11.4
	1-1/4"	Subbase	12.0	12.0	11.8	12.0
	3/4"	Manifold	10.7	10.2	10.9	10.9
	1"	Manifold	12.3	11.5	11.2	11.2
	1-1/4"	Manifold	12.8	11.9	11.9	11.6
1/4" Double 3-Position	1/4"	Subbase	1.4	1.7	1.5	1.4
	1/4"	Manifold	1.3	1.7	1.5	1.4
3/8" Double 3-Position	3/8"	Subbase	3.8	3.9	4.0	3.9
	1/2"	Subbase	4.2	4.7	5.2	5.0
	3/4"	Subbase	4.5	4.5	4.4	4.6
	3/8"	Manifold	3.7	3.8	4.2	4.1
	1/2"	Manifold	3.9	4.0	4.9	4.6
	3/4"	Manifold	4.1	3.9	4.2	4.0

Valve Type	Cylinder Port Size (NPTF)	Mounting Style	C_V Flow Rating			
			Inlet to Cylinder "A"	Inlet to Cylinder "B"	Cylinder "A" To Exhaust	Cylinder "B" To Exhaust
1/2" Double 3-Position	1/2"	Subbase	4.7	4.8	4.8	4.8
	3/4"	Subbase	5.5	4.8	5.3	5.0
	1/2"	Manifold	4.2	4.2	4.4	4.8
	3/4"	Manifold	4.8	4.6	4.6	5.0
1" Double 3-Position	3/4"	Subbase	10.2	10.3	9.9	10.3
	1"	Subbase	10.6	11.0	11.4	10.9
	1-1/4"	Subbase	11.6	11.6	11.8	11.6
	3/4"	Manifold	9.8	10.0	10.6	10.1
	1"	Manifold	10.8	11.1	11.1	10.8
	1-1/4"	Manifold	11.3	11.8	11.9	11.4
1/2" Single Sol. Poppet	1/2"	Subbase	4.1	4.2	5.0	4.8
	3/4"	Subbase	4.3	4.4	5.2	5.2
	1/2"	Manifold	4.2	4.8	4.4	4.6
	3/4"	Manifold	4.6	4.6	4.5	4.8
1/4" Single	1/4"	Direct Pipe	1.8	2.2	1.8	1.9
	3/8"	Direct Pipe	2.0	2.2	1.9	2.0
3/8" Single	3/8"	Direct Pipe	4.7	4.6	4.7	4.9
	1/2"	Direct Pipe	5.3	5.2	5.3	5.5
1/2" Single	1/2"	Direct Pipe	5.1	5.1	5.2	5.3
	3/4"	Direct Pipe	5.6	5.2	5.6	5.9
1" Single	3/4"	Direct Pipe	10.9	10.9	11.9	11.9
	1"	Direct Pipe	12.4	13.0	13.0	13.3
	1-1/4"	Direct Pipe	12.9	12.5	13.1	13.1
1/4" Double	1/4"	Direct Pipe	1.8	1.7	1.9	1.7
	3/8"	Direct Pipe	1.8	1.9	1.9	2.0
3/8" Double	3/8"	Direct Pipe	4.5	4.7	4.7	4.8
	1/2"	Direct Pipe	5.5	5.2	5.1	5.3
1/2" Double	1/2"	Direct Pipe	5.2	5.0	5.1	5.5
	3/4"	Direct Pipe	5.7	5.5	5.7	5.8
1" Double	3/4"	Direct Pipe	10.9	11.4	10.9	11.4
	1"	Direct Pipe	12.5	12.5	11.9	12.5
	1-1/4"	Direct Pipe	13.0	13.6	13.0	13.0
1/4" Double 3-Position	1/4"	Direct Pipe	1.7	1.6	1.9	1.8
	3/8"	Direct Pipe	1.8	1.9	1.9	1.9
3/8" Double 3-Position	3/8"	Direct Pipe	4.1	4.1	4.2	4.1
	1/2"	Direct Pipe	4.5	4.2	4.5	4.8
1/2" Double 3-Position	1/2"	Direct Pipe	5.0	4.7	5.2	5.5
	3/4"	Direct Pipe	5.4	5.0	5.3	5.7
1" Double 3-Position	3/4"	Direct Pipe	10.6	11.1	10.9	10.4
	1"	Direct Pipe	11.0	11.4	12.1	11.8
	1-1/4"	Direct Pipe	12.1	12.5	12.5	12.0

Materials of Construction

Valve Bodies: Anodized aluminum alloy

Valve Spool: * Aluminum alloy with special coating on 3/8" & 1" basic valves

Hard chrome plated AISI type 416 stainless steel on 1/4" & 1/2" basic valves.

Resilient Seals: In Valve Body -

Dynamic: Polyurethane base on 3/8" & 1" basic valves*

Static/Dynamic: Nitrile base w/12% Molybdenum Disuphide on 1/4" & 1/2" basic valves

Other Seals: Nitrile

Shock Pads: Polyurethane

Valve Spacers: Brass

Manifolds & Subbases: Aluminum alloy

Solenoid Bodies: Plated zinc alloy

Internal Components: Corrosion resistant steel

Resilient Seals: Standard service - Nitrile
Special service (continuous duty)- Fluorocarbon & Silicone

Other Seals: Nitrile

Coil: Class “B” epoxy encapsulated (Class “H” also available on some models, consult supplier)

* These materials are specially designed for valves used on non-lubricated service.

Valve Selection

Safety factors are designed into each valve. However, it is important that the application requirements do not exceed the limits stated on page 86 for pressure and temperature.

“Nominal C_V” ratings are given on each ordering page. These represent an average of performance for all flow-paths of a given valve size. Valves should be sized to an application using actual C_V (Flow Coefficient) values. See pages 81 thru 83 for this data.

Life Expectancy

Valves designed for non-lubricated service as well as those designed for lubricated service will provide millions of maintenance free cycles. Under laboratory conditions service life exceeds 25,000,000 cycles!

Factory Pre-Lubrication

Valves are lubricated at assembly with Sunaplex 781 or equivalent. Valves specified for vacuum service are lubricated with Dow Corning Valve Seal A.

Valves for Non-Lubricated Service

3/8" and 1" basic valve sizes are designed to operate in applications where in-service lubrication is not desirable. Valves are factory pre-lubed as noted above. These valves may be used for lubricated service as well.

Lubrication

Air Line Lubricant (compatible with Nitrile & Polyurethane seals) must readily atomize and be of the medium analine type. Analine point range must be between 180° and 220°F. Viscosity @ 100°F: 140-170 SUS.

Recommended Lubricant

If in-service lubrication is required, use F442 oil, or equivalent. F442 is specially formulated to provide peak performance and maximum service life for air operated equipment.

Installation

Valves should be installed with reasonable accessibility for service. Exercise care in keeping piping lengths to a minimum. Piping should be free of dirt, chips & scale. Pipe joint compound should be used sparingly applied only to the thread, never to the valve body. Avoid undue strain at piping joints. Protect the valve from exposure to extreme temperatures, dirt and moisture to maximize life.

Note: Valves equipped with locking manual overrides. Override(s) must be in the fully extended position for proper valve operation.

Double Solenoid/Remote Caution

Note: It is recommended that double solenoid and double remote 2-Position valves be mounted with the main spool in the horizontal plane.

Wiring Instructions for Base Mounted Valves

Single Solenoid:
Use wires marked “2” & “3” for connection. Units with DC Solenoids and indicator lights are polarity sensitive. Wire marked “3” is positive (+).

Double Solenoid:
Use wires marked “1” & “2” for Solenoid “A”. Use wires marked “3” & “4” for Solenoid “B”. Units with DC Solenoids and indicator lights are polarity sensitive. Wires marked “1” and “3” are positive.

⚠ **Caution:** DC Solenoids are polarity sensitive. Observe polarities indicated above.

Units with flying leads
Wires are not polarity sensitive.

⚠ **Caution:** DC solenoids with indicator lights and/or arc suppression coils are polarity sensitive. Use red wire as positive.

Listing Agencies

General Purpose Approvals

CSA - Canadian Standards Association
File Number 42024

Hazardous Duty Approvals

UL - Underwriters Laboratories, Inc.
File Number E42542
Category Y107

CSA - Canadian Standards Association
File Number 24349

See page 87 for Approved Hazardous Location Class, Group & Division.

“Special Service” Solenoid (Continuous Duty)

Special Service Solenoids are designed for use when the solenoid duty cycle is greater that 70% or when energization times are for 10 minutes or longer.

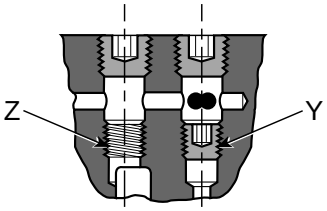
These solenoids should be used when valves are to be held energized for hours, days or weeks… or when extended ambient temperature operation is required. Apply the duty cycle formula to determine if this type of solenoid is required.

Duty Cycle Formula

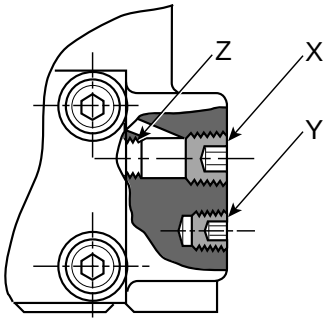
$$\frac{\text{Time Energized}}{\text{Time Energized + Time Off}} \times 100 = \%\ \text{Duty Cycle}$$

If Duty Cycle is 70% or greater, then Special Service (Continuous Duty) Solenoid should be used.

Pilot Supply Conversion



Base Mounted
For field conversion to external pilot supply, remove two 1/8" NPTF plugs from top of valve body and move bottom plug from “Y” to “Z”. Replace 1/8" NPTF plugs and connect pilot pressure to the 1/4" NPTF external pilot supply port “X” in subbase.



Direct Pipe Ported
For field conversion to external pilot supply, remove and discard 1/4" NPTF plug in external pilot supply port “X”. Move stored plug “Y” to location “Z” in bottom of pilot supply port “X”. Then connect pilot pressure to port “X” in valve body.

Pressure Range for Solenoid Operated Valves

Media	Internal Pilot Supply Basic Valve Size				External Pilot Supply Basic Valve Size				
	1/4"	3/8"	1/2"	1"	1/4"		3/8"	1/2"	1"
Air	35-140* PSIG				N.A.	Main	0-250 PSIG		
						Pilot	35-140* PSIG		
Vacuum	Do Not Use				N.A.	Main	Within 1 Hg of Perfect		
						Pilot	35-140* PSIG		
Other	Consult Supplier								

* **Note:** 200 PSIG Solenoid Is Optional (consult supplier).

Pressure Range for Remote Pilot Operated Valves

Media		Valve Type	
		Single	Double & 3-Position
Air	Main	35-250 PSIG	0-250 PSIG
	Pilot	35-200 PSIG	35-200 PSIG
Vacuum	Main	Do Not Use	Within 1" Hg of Perfect
	Pilot	Do Not Use	35-200 PSIG
Other	Consult Supplier		

Ambient Temperature Range Standard Service Solenoid Operator

Minimum	Maximum	
	Intermittent Duty	Continuous Duty
0°F	125°F	100°F

Special Service (Continuous Duty) Solenoid Operator

Minimum	Maximum	
	Intermittent Duty	Continuous Duty
0°F	125°F	125°F

As the above chart indicates, Standard Duty Solenoids may be used on continuous duty but ambient temperature is de-rated.

In some cases, Special Service Solenoids may be rated for higher ambient temperatures (consult supplier).

Ambient Temperature Range Remote Pilot Operated Valves

Remote Pilot	
Minimum	Maximum
0°F	200°F

Caution

If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage and unpredictable behavior.

Solenoid Enclosure Ratings

Type	Listing Agency	NEMA Rating	Description
Plug-In	CSA	1 & 12	General Purpose Indoor Only Dust Tight
Conduit / Flying Lead	CSA	1 & 12	General Purpose Indoor Only Dust Tight
* Conduit (As Specified)	UL & CSA	7 & 9	Hazardous Location (See Chart Below)
* Conduit (As Specified)	CSA	4	General Purpose Indoor / Outdoor Watertight

* See ordering information on specific valve type. (Direct Pipe Ported Valves Only.)

Hazardous Duty Solenoid Listing
Valves with solenoid operators designated for hazardous locations are UL & CSA Approved as follows:

National Electric Code	Ambient Conditions	NEMA Classification
Class I Div. 1 Group C	Ethyl, Ether, Etc., Gases & Vapors	VII (7)
Class I Div. 1 Group D	Gasoline, Etc., Gases & Vapors	VII (7)
Class I Div. 2 Group B	Butadiene, Etc., Liquid, Fluid or Vapor Normally Contained, or Atmosphere Ventilated	VII (7)
Class II Div. 1 Group E	Metal Dust	IX (9)
Class II Div. 1 Group F	Coal, Coke, Carbon Black Dust	IX (9)
Class II Div. 1 Group G	Flour, Starch, Grain Dust	IX (9)

See Article 500 - Hazardous (Classified) Locations, National Electric Code.

Voltage Code Replacement Coils & Electrical Characteristics
Voltage Code: Final Two Digits in valve model number

L□□□ □□ □□□ **
Voltage Code

Voltage Code **	Voltage	Plug-In Style Coil Number	Flying Leads Coil Number	Electrical Characteristics				
				Watts	Inrush Amps	Holding Amps	V/A	
							Inrush	Hold
45	12VDC	K593 055	K593 010	8	—	.66	—	7.92
49	24VDC	K593 060	K593 014	8	—	.32	—	7.68
53	120V/60Hz	K593 125	K593 025	9	.29	.18	31.2	—
	110V/50Hz			7	.32	.22	23.1	—
57	240V/60Hz	K593 081	K593 035	13	.18	.12	41.4	—
	220V/50Hz			9	.13	.09	29.9	—

Other voltages are available, see page 75.

Notes

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