

Pneumatic Division

Richland, Michigan USA

www.parker.com/pneumatics



SPEEDKING - 1/4 INCH

Bulletin Number		Bulletin Description	
<input type="checkbox"/>	V530P	Rev. 6	1/4" SK200 Single Operated Valve, Installation Instructions
<input type="checkbox"/>	V531P	Rev. 6	1/4" SK200 2-Position Double Operated Valve, Installation Instructions
<input type="checkbox"/>	V532P	Rev. 6	1/4" SK200 3-Position Double Operated Valve, Installation Instructions
<input type="checkbox"/>	V533P		1/4" SK200 Subbase & Manifold, Installation Instructions
<input type="checkbox"/>	V534P	Rev. 3	1/4" SK200 Single Operated Valve, Installation & Service Instructions
<input type="checkbox"/>	V535P	Rev. 3	1/4" SK200 2-Position Double Operated Valve, Service Instructions
<input type="checkbox"/>	V536P	Rev. 3	1/4" SK200 3-Position Double Operated Valve, Installation & Service Instructions
<input type="checkbox"/>	Safety Guide		PDN Safety Guide



Pneumatic Division North America
Richland, MI 49083

Installation Instructions: V-530P
1/4" SK-200 Single Operated Valves
ISSUED: May, 2001
Supersedes: November, 1998
ECN #9369 Rev. 6

⚠ WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Disconnect electrical supply before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, voltage and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed on these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

INSTALLATION / OPERATING INSTRUCTIONS

Valve should be installed with reasonable accessibility for service whenever possible -- repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe -- never into the female port. Do not use PTFE tape to seal pipe joints -- pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Mounting bolt torque 80-90 in-lb. for manifold and subbase mounting valves.

Air applied to the valve must be filtered to realize maximum component life.

Life Expectancy - Normal multi-million cycle life expectancy of these valves is based on the use of properly filtered and lubricated air at room temperature. However, these valves contain o-rings specially compounded with 12% molybdenum disulfide to assure long wear in applications where air line lubrication is undesirable.

Factory Pre-Lubrication - Valves are pre-lubricated at assembly with Sunaplex 781 or equivalent (Petroleum Base - Lithium Content) grease. Valves specified for vacuum service are lubricated with Dow Corning Valve Seal A.

In-Service Lubrication - F442 oil is recommended for in-service lubrication. This oil is specially formulated to provide peak performance and maximum service life from all air operated equipment. Otherwise, use an air line lubricant (compatible with Nitrile & Polyurethane seals) which will readily atomize and be of the medium aniline type. Aniline point range must be between 180° and 220° F. Viscosity at 100° F: 140 - 170 SUS.

⚠ CAUTION: Do not use synthetic, reconstituted, or oils with an alcohol content or detergent additive.

Remote Pilot Operated Valves - Connect a 3-way normally open valve to the pilot signal port for normal valve logic (IN → A, B → EXH). Use of a 3-way normally closed pilot valve results in reverse logic (IN → B; A → EXH).

Override Operation - To operate override push and turn to a full stop (at least 90°).

APPLICATION LIMITS

These products are intended for use in general purpose compressed air systems only.

Operating pressure range:	PSIG	Bar	kPa
	Minimum	35	2.41	241
Maximum	PSIG	Bar	kPa
	Solenoid Operated Std Service	140	9.65
Solenoid Operated Spl Service*	200	13.79	1379
Remote Operated - Main Valve	250	17.24	1724
Remote Operated - Pilot Signal	200	13.79	1379

*(9th digit of model number is a "3", i.e. L4452810353).

Operating Temperature Range:

Operator Type	Duty Cycle	Minimum Ambient Temperature	Maximum Ambient Temperature
Standard Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	100°F (38°C)
Special Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	125°F (52°C)
Remote Pilot	Not Applicable	0°F (-18°C)	200°F (93°C)

Voltage Range: +10% to -15% of rating

WIRING INSTRUCTIONS

Units with flying leads

Either wire may be "Hot".

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

Units with plug-in subbases or manifolds

Use wires marked "1" and "3" for connection to the solenoid. Either may be "Hot".

⚠ CAUTION: DC solenoids with indicator lights and/or arc suppression coils are polarity sensitive. Use wire number 3 for single solenoid valves as positive.

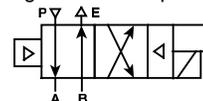
Earth ground: All electrically operated valves must be provided a proper earth ground. Connect to green wire from valve.

⚠ CAUTION: An interruption of 10 milliseconds or greater to the power supplied to the solenoid of a solenoid operated valve may cause the valve to shift. Provision must be made to prevent power interruption of this duration to avoid unintended, potentially hazardous, consequences.

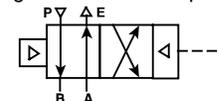
NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

ANSI SYMBOLS

Single Solenoid Operated



Single Remote Pilot Operated



INSTALLATION

Manifold and Subbase Mounted Valves

VALVE MOUNTING PROCEDURES

- 1) Clean top surface of subbase or manifold and bottom surface of valve body of any dirt or dust.
- 2) Position gasket on top of subbase or manifold, lining up all four mounting holes.
- 3) Place valve on top of gasket, lining up all four mounting holes. Electrically operated valves also require pressing down on valve to seat electrical plug.
- 4) Insert (4) valve mounting screws and torque to 80 - 90 in-lb. in progressive steps with a criss-cross pattern.

SUBBASE PORT CONNECTIONS

- 1) Connect inlet air supply to port "IN".
- 2) Connect muffler (or plumb exhaust) from exhaust port.
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.

MANIFOLD PORT CONNECTIONS

- 1) Connect inlet air supply to manifold inlet gallery by one of the following methods:

All valves to be supplied with a common pressure: Connect air supply to inlet port on either end of manifold package and plug other inlet port (or connect air supply to both ends for applications requiring a larger volume of air).

Two groups of valves each requiring a different pressure: Isolate valves into two groups using **Manifold Isolation Procedures** below. Connect appropriate air supply to each end of manifold bank at inlet port.

- 2) Connect mufflers (or plumb exhaust) at exhaust ports.
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air. Connections are commonly made to ports on end of manifold opposite wiring cavity. If bottom ports are more accessible to your application, plug end cylinder ports and remove plugs from bottom ports.

MANIFOLD ISOLATION PROCEDURES

Inlet and exhaust galleries may be isolated from those in neighboring manifolds through the use of flush pipe plugs.

- 1) Determine gallery and manifold position to be isolated.
- 2) Apply pipe sealant to threads of pipe plug.
- 3) Screw pipe plug into threaded end of gallery and tighten.

MANIFOLD APPLICATION / MANIFOLD ASSEMBLY PROCEDURES

See **Installation Instructions V-533P 1/4" Series Subbases and Manifolds** packed with subbases and manifolds.

Direct Pipe Ported Valves

PORT CONNECTIONS

- 1) Connect a single inlet air supply to port "IN".
- 2) Connect muffler (or plumb exhaust) from port "EXH".
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.

SERVICE KITS / PARTS

Service Kit (Single Solenoid - Standard Service)	K352150
Service Kit (Single Solenoid - Special Service)	K352350
Service Kit (Single Remote Pilot Operated)	K352363
Pilot Valve / Remote Pilot Gasket	K183001
Body to Base Gasket	K183054
Indicator Light (24VDC - Line Mounting)	H19110
Indicator Light (24VDC - Base Mounting)	H19112
Indicator Light (120V / 60 HZ - Line Mounting)	H19102
Indicator Light (120V / 60 HZ - Base Mounting)	H19105

Direct Pipe Ported Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	19" Leads	72" Leads
12	--	--	K593007	K593178
24	--	6	K593003	K593179
--	24	--	K593015	K593181
--	36	--	K593016	K593183
--	--	12	K593010	K593182
--	--	24 (Standard)	K593014	K593184
--	--	24 (Arc Suppressed)	K593271	K593272
--	--	48	K593028	K593185
120	110	--	K593025	K593186
240	220	--	K593035	K593187
--	240	--	K593033	K593188
--	--	90	K593020	K593189
--	--	115	K593041	K593190
--	380	--	K593038	K593191

Base Mounting Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	No Light	With Light
12	--	--	K593052	--
24	--	6	K593048	--
--	24	--	K593061	--
--	36	--	K593062	--
--	--	12	K593055	--
--	--	24 (Standard)	K593060	K593274
--	--	24 (Arc Suppressed)	K593305	K593275
--	--	48	K593074	--
120	110	--	K593071	K593125
240	220	--	K593081	--
--	240	--	K593079	--

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE INSTRUCTION MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.



Pneumatic Division North America
Richland, MI 49083

Installation Instructions: V-531P
1/4" SK-200 Double Operated Valves
2-Position
ISSUED: May, 2001
Supersedes: November, 1998
ECN #9369 Rev. 6

⚠ WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Disconnect electrical supply before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, voltage and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed on these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

INSTALLATION / OPERATING INSTRUCTIONS

Valve should be installed with reasonable accessibility for service whenever possible -- repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe -- never into the female port. Do not use PTFE tape to seal pipe joints -- pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Mounting bolt torque 80-90 in-lb. for manifold and subbase mounting valves.

⚠ CAUTION: Mount the valve so that the main valve spool is horizontal. When the valve is depressurized the spool could shift due to the effects of gravity and/or vibration.

Air applied to the valve must be filtered to realize maximum component life.

Life Expectancy - Normal multi-million cycle life expectancy of these valves is based on the use of properly filtered and lubricated air at room temperature. However, these valves contain o-rings specially compounded with 12% molybdenum disulfide to assure long wear in applications where air line lubrication is undesirable.

Factory Pre-Lubrication - Valves are pre-lubricated at assembly with Sunaplex 781 or equivalent (Petroleum Base - Lithium Content) grease. Valves specified for vacuum service are lubricated with Dow Corning Valve Seal A.

In-Service Lubrication - F442 oil is recommended for in-service lubrication. This oil is specially formulated to provide peak performance and maximum service life from all air operated equipment. Otherwise, use an air line lubricant (compatible with Nitrile & Polyurethane seals) which will readily atomize and be of the medium aniline type. Aniline point range must be between 180° and 220° F. Viscosity at 100° F: 140 - 170 SUS.

⚠ CAUTION: Do not use synthetic, reconstituted, or oils with an alcohol content or detergent additive.

Override Operation - To operate override push and turn to a full stop (at least 90°).

APPLICATION LIMITS

These products are intended for use in general purpose compressed air systems only.

Operating pressure range:	PSIG	Bar	kPa
Minimum	35	2.41	241
Maximum	PSIG	Bar	kPa
Solenoid Operated Std Service	140	9.65	965
Solenoid Operated Spl Service*	200	13.79	1379
Remote Operated - Main Valve	250	17.24	1724
Remote Operated - Pilot Signal	200	13.79	1379

* (9th digit of model number is a "3", i.e. L4152810353).

Operating Temperature Range:

Operator Type	Duty Cycle	Minimum Ambient Temperature	Maximum Ambient Temperature
Standard Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	100°F (38°C)
Special Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	125°F (52°C)
Remote Pilot	Not Applicable	0°F (-18°C)	200°F (93°C)

Voltage Range: +10% to -15% of rating

WIRING INSTRUCTIONS

Units with flying leads

Either wire may be "Hot".

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

Units with plug-in subbases or manifolds

Use wires marked "1" and "2" for Solenoid "A". Use wires marked "2" and "3" for solenoid "B". For units with DC solenoids and indicator lights or arc suppression coils, wire marked "2" is positive.

⚠ CAUTION: DC solenoids with indicator lights and/or arc suppression coils are polarity sensitive. Observe polarities indicated above.

⚠ CAUTION: An interruption of 10 milliseconds or greater to the power supplied to the solenoid of a solenoid operated valve may cause the valve to shift. Provision must be made to prevent power interruption of this duration to avoid unintended, potentially hazardous, consequences.

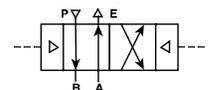
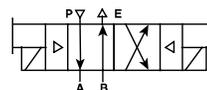
Earth ground: All electrically operated valves must be provided a proper earth ground. Connect to green wire from valve.

NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

ANSI SYMBOLS

Double Solenoid Operated

Double Remote Pilot Operated



INSTALLATION

Manifold and Subbase Mounted Valves

VALVE MOUNTING PROCEDURES

- 1) Clean top surface of subbase or manifold and bottom surface of valve body of any dirt or dust.
- 2) Position gasket on top of subbase or manifold, lining up all four mounting holes.
- 3) Place valve on top of gasket, lining up all four mounting holes. Electrically operated valves also require pressing down on valve to seat electrical plug.
- 4) Insert (4) valve mounting screws and torque to 80 - 90 in-lb. in progressive steps with a criss-cross pattern.

SUBBASE PORT CONNECTIONS

- 1) Connect inlet air supply to port "IN".
- 2) Connect muffler (or plumb exhaust) from exhaust port.
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.

MANIFOLD PORT CONNECTIONS

- 1) Connect inlet air supply to manifold inlet gallery by one of the following methods:

All valves to be supplied with a common pressure: Connect air supply to inlet port on either end of manifold package and plug other inlet port (or connect air supply to both ends for applications requiring a larger volume of air).

Two groups of valves each requiring a different pressure: Isolate valves into two groups using **Manifold Isolation Procedures** below. Connect appropriate air supply to each end of manifold bank at inlet port.

- 2) Connect mufflers (or plumb exhaust) at exhaust ports.
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air. Connections are commonly made to ports on end of manifold opposite wiring cavity. If bottom ports are more accessible to your application, plug end cylinder ports and remove plugs from bottom ports.

MANIFOLD ISOLATION PROCEDURES

Inlet and exhaust galleries may be isolated from those in neighboring manifolds through the use of flush pipe plugs.

- 1) Determine gallery and manifold position to be isolated.
- 2) Apply pipe sealant to threads of pipe plug.
- 3) Screw pipe plug into threaded end of gallery and tighten.

MANIFOLD APPLICATION / MANIFOLD ASSEMBLY PROCEDURES

See *Installation Instructions V-533P 1/4" Series Subbases and Manifolds* packed with subbases and manifolds.

Direct Pipe Ported Valves

PORT CONNECTIONS

- 1) Connect a single inlet air supply to port "IN".
- 2) Connect muffler (or plumb exhaust) from port "EXH".
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.

SERVICE KITS / PARTS

Service Kit (Double Solenoid - Standard Service)	K352151
Service Kit (Double Solenoid - Special Service)	K352351
Service Kit (Double Remote Pilot Operated)	K352357
Pilot Valve / Remote Pilot Gasket	K183001
Body to Base Gasket	K183054
Indicator Light (24VDC - Line Mounting)	H19110
Indicator Light (24VDC - Base Mounting)	H19112
Indicator Light (120V / 60 HZ - Line Mounting)	H19102
Indicator Light (120V / 60 HZ - Base Mounting)	H19105

Direct Pipe Ported Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	19" Leads	72" Leads
12	--	--	K593007	K593178
24	--	6	K593003	K593179
--	24	--	K593015	K593181
--	36	--	K593016	K593183
--	--	12	K593010	K593182
--	--	24 (Standard)	K593014	K593184
--	--	24 (Arc Suppressed)	K593271	K593272
--	--	48	K593028	K593185
120	110	--	K593025	K593186
240	220	--	K593035	K593187
--	240	--	K593033	K593188
--	--	90	K593020	K593189
--	--	115	K593041	K593190
--	380	--	K593038	K593191

Base Mounting Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	No Light	With Light
12	--	--	K593052	--
24	--	6	K593048	--
--	24	--	K593061	--
--	36	--	K593062	--
--	--	12	K593055	--
--	--	24 (Standard)	K593060	K593274
--	--	24 (Arc Suppressed)	K593305	K593275
--	--	48	K593074	--
120	110	--	K593071	K593125
240	220	--	K593081	--
--	240	--	K593079	--

WARNING

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Pneumatic Division North America
Richland, MI 49083

Installation Instructions: V-532P
1/4" SK-200 Double Operated Valves
3-Position
ISSUED: May, 2001
Supersedes: November, 1998
ECN #9369 Rev. 6

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

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- Disconnect electrical supply before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, voltage and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed on these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement label.

INSTALLATION / OPERATING INSTRUCTIONS

Valve should be installed with reasonable accessibility for service whenever possible -- repair service kits are available. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe -- never into the female port. Do not use PTFE tape to seal pipe joints -- pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. Mounting bolt torque 80-90 in-lb. for manifold and subbase mounting valves.

Air applied to the valve must be filtered to realize maximum component life.

Life Expectancy - Normal multi-million cycle life expectancy of these valves is based on the use of properly filtered and lubricated air at room temperature. However, these valves contain o-rings specially compounded with 12% molybdenum disulfide to assure long wear in applications where air line lubrication is undesirable.

Factory Pre-Lubrication - Valves are pre-lubricated at assembly with Sunaplex 781 or equivalent (Petroleum Base - Lithium Content) grease. Valves specified for vacuum service are lubricated with Dow Corning Valve Seal A.

In-Service Lubrication - F442 oil is recommended for in-service lubrication. This oil is specially formulated to provide peak performance and maximum service life from all air operated equipment. Otherwise, use an air line lubricant (compatible with Nitrile & Polyurethane seals) which will readily atomize and be of the medium aniline type. Aniline point range must be between 180° and 220° F. Viscosity at 100° F: 140 - 170 SUS.

CAUTION: Do not use synthetic, reconstituted, or oils with an alcohol content or detergent additive.

Override Operation - To operate override push and turn to a full stop (at least 90°).

3-Position Valves are available in the following three classes of neutral or centered position (7th & 8th digits of model number):

- "Class 21" - All ports blocked
- "Class 22" - Pressure to cylinder ports (Exhaust ports blocked)
- "Class 23" - Cylinder to exhaust ports (Inlet port blocked)

See the associated ANSI symbols on back.

APPLICATION LIMITS

These products are intended for use in general purpose compressed air systems only.

Operating pressure range:	PSIG	Bar	kPa
Minimum	35	2.41	241
Maximum	PSIG	Bar	kPa
Solenoid Operated Std Service	140	9.65	965
Solenoid Operated Spl Service*	200	13.79	1379
Remote Operated - Main Valve	250	17.24	1724
Remote Operated - Pilot Signal	200	13.79	1379

* (9th digit of model number is a "3", i.e. L4252810353).

Operating Temperature Range:

Operator Type	Duty Cycle	Minimum Ambient Temperature	Maximum Ambient Temperature
Standard Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	100°F (38°C)
Special Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	125°F (52°C)
Remote Pilot	Not Applicable	0°F (-18°C)	200°F (93°C)

Voltage Range: +10% to -15% of rating

WIRING INSTRUCTIONS

Units with flying leads

Either wire may be "Hot".

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

Units with plug-in subbases or manifolds

Use wires marked "1" and "2" for Solenoid "A". Use wires marked "2" and "3" for solenoid "B". For units with DC solenoids and indicator lights or arc suppression coils, wire marked "2" is positive.

CAUTION: DC solenoids with indicator lights and/or arc suppression coils are polarity sensitive. Observe polarities indicated above.

Earth ground: All electrically operated valves must be provided a proper earth ground. Connect to green wire from valve.

CAUTION: An interruption of 10 milliseconds or greater to the power supplied to the solenoid a solenoid operated valve may cause the valve to shift. Provision must be made to prevent power interruption of this duration to avoid unintended, potentially hazardous, consequences.

NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

Remote Pilot Operated Valves require the use of two normally open pilot signal valves to ensure that the spool returns to the center position upon removal of electrical power from both pilot signal valves. This is because the valve is designed to use pressure instead of springs to perform this function.

CAUTION: Failure to use two normally open pilot signal valves could result in the valve remaining in some position other than centered upon removal of electrical power from both pilot signal valves.

INSTALLATION

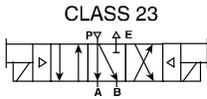
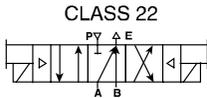
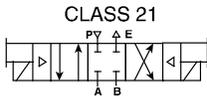
Direct Pipe Ported Valves

PORT CONNECTIONS

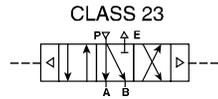
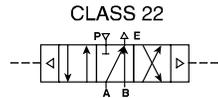
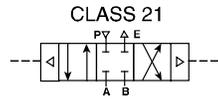
- 1) Connect a single inlet air supply to port "IN".
- 2) Connect muffler (or plumb exhaust) from port "EXH".
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.

ANSI SYMBOLS

Double Solenoid Operated



Double Remote Pilot Operated



INSTALLATION

Manifold and Subbase Mounted Valves

VALVE MOUNTING PROCEDURES

- 1) Clean top surface of subbase or manifold and bottom surface of valve body of any dirt or dust.
- 2) Position gasket on top of subbase or manifold, lining up all four mounting holes.
- 3) Place valve on top of gasket, lining up all four mounting holes. Electrically operated valves also require pressing down on valve to seat electrical plug.
- 4) Insert (4) valve mounting screws and torque to 80 - 90 in-lb. in progressive steps with a criss-cross pattern.

SUBBASE PORT CONNECTIONS

- 1) Connect inlet air supply to port "IN".
- 2) Connect muffler (or plumb exhaust) from exhaust port.
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.

MANIFOLD PORT CONNECTIONS

- 1) Connect inlet air supply to manifold inlet gallery by one of the following methods:

All valves to be supplied with a common pressure: Connect air supply to inlet port on either end of manifold package and plug other inlet port (or connect air supply to both ends for applications requiring a larger volume of air).

Two groups of valves each requiring a different pressure: Isolate valves into two groups using **Manifold Isolation Procedures** below. Connect appropriate air supply to each end of manifold bank at inlet port.

- 2) Connect mufflers (or plumb exhaust) at exhaust ports.
- 3) Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air. Connections are commonly made to ports on end of manifold opposite wiring cavity. If bottom ports are more accessible to your application, plug end cylinder ports and remove plugs from bottom ports.

MANIFOLD ISOLATION PROCEDURES

Inlet and exhaust galleries may be isolated from those in neighboring manifolds through the use of flush pipe plugs.

- 1) Determine gallery and manifold position to be isolated.
- 2) Apply pipe sealant to threads of pipe plug.
- 3) Screw pipe plug into threaded end of gallery and tighten.

MANIFOLD APPLICATION / MANIFOLD ASSEMBLY PROCEDURES

See **Installation Instructions V-533P 1/4" Series Subbases and Manifolds** packed with subbases and manifolds.

SERVICE KITS / PARTS

Service Kit (Double Solenoid - Standard Service)	.....	K352151
Service Kit (Double Solenoid - Special Service)	.....	K352351
Service Kit (Double Remote Pilot Operated)	.....	K352357
Pilot Valve / Remote Pilot Gasket	.....	K183001
Body to Base Gasket	.....	K183054
Indicator Light (24VDC - Line Mounting)	.....	H19110
Indicator Light (24VDC - Base Mounting)	.....	H19112
Indicator Light (120V / 60 HZ - Line Mounting)	.....	H19102
Indicator Light (120V / 60 HZ - Base Mounting)	.....	H19105

Direct Pipe Ported Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	19" Leads	72" Leads
12	--	--	K593007	K593178
24	--	6	K593003	K593179
--	24	--	K593015	K593181
--	36	--	K593016	K593183
--	--	12	K593010	K593182
--	--	24	K593014	K593184
--	--	(Standard)		
--	--	24	K593271	K593272
--	--	(Arc Suppressed)		
--	--	48	K593028	K593185
120	110	--	K593025	K593186
240	220	--	K593035	K593187
--	240	--	K593033	K593188
--	--	90	K593020	K593189
--	--	115	K593041	K593190
--	380	--	K593038	K593191

Base Mounting Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	No Light	With Light
12	--	--	K593052	--
24	--	6	K593048	--
--	24	--	K593061	--
--	36	--	K593062	--
--	--	12	K593055	--
--	--	24	K593060	K593274
--	--	(Standard)		
--	--	24	K593305	K593275
--	--	(Arc Suppressed)		
--	--	48	K593074	--
120	110	--	K593071	K593125
240	220	--	K593081	--
--	240	--	K593079	--

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE INSTRUCTION MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.



Pneumatic Division North America
Richland, MI 49083

Installation Instructions: V-533P
1/4" SK-200 Subbases and Manifolds
ISSUED: November, 1998
Supersedes: K583-274, April, 1995
ECN #8929

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Disconnect electrical supply before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, voltage and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed on these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

APPLICATION LIMITS

These products are intended for use in general purpose compressed air systems only. Compliance with the rated pressure, temperature and voltage is necessary – see installation instructions packed with (or label on) valve.

WIRING INSTRUCTIONS

Single Solenoid: Use wires marked "2" and "3" for connection to the solenoid. For units with DC solenoids and indicator lights or arc suppression coils, wire marked "3" is positive.

Double Solenoid: Use wires marked "1" and "2" for Solenoid "A". Use wires marked "3" and "4" for Solenoid "B". For units with DC solenoids and indicator lights or arc suppression coils, wires marked "1" and "3" are positive.

CAUTION: DC solenoids with indicator lights or arc suppression coils are polarity sensitive. Observe polarities indicated above.

Earth ground: All electrically operated valves must be provided a proper earth ground. Remove the end cover of the manifold or subbase and connect a ground lead to the green ground screw.

NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

VALVE MOUNTING PROCEDURES

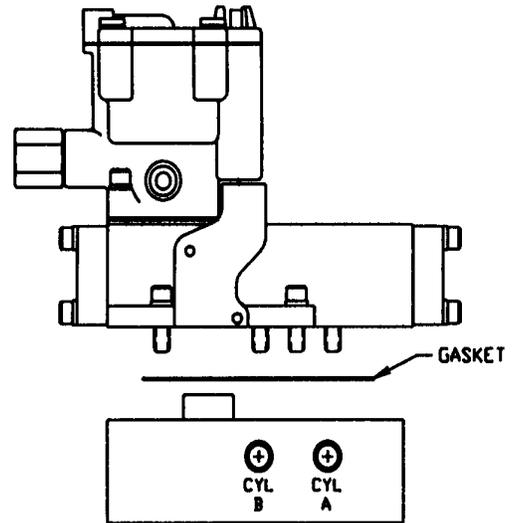
(Applies to both subbases and manifolds)

1. Clean top surface of subbase or manifold and bottom surface of valve body of any dirt or dust.
2. Position gasket on top of subbase or manifold, lining up all four mounting holes.
3. Place valve on top of gasket, lining up all four mounting holes. Electrically operated valves also require pressing down on valve to seat electrical plug.
4. Insert (4) valve mounting screws and torque to 40 – 50 in-lbs in progressive steps with a criss-cross pattern.

SUBBASE PORT CONNECTIONS

(See reverse for Manifold Port Connections)

1. Connect a single inlet air supply to port.
2. Connect mufflers (or plumb exhaust) from exhaust port.
3. Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air.



EXTERNAL PILOT SUPPLY
NOT AVAILABLE

MANIFOLD APPLICATION

Valves may be gang manifolded up to any number of stations, providing that sufficient pressure is realized in the circuits down –stream of the valve outlets; and sufficient pressure is available for shifting the valves. Longer manifold gangs may require intermediate supports. Means to increase pressure levels include supply connections at both ends of the manifold gang and sequencing the valve operation to maximize time between different valve shifts.

WARNING: Air exhausting from one valve into the exhaust gallery of the manifold may pressurize other valve circuits open to the same gallery. Design the circuit such that there is no hazard or damage consequence from this action.

MANIFOLD ASSEMBLY PROCEDURES

Manifolds may be assembled to one another either before or after assembling valves to manifolds. If inlet, exhaust or external pilot galleries are to be isolated from neighboring manifolds, be sure to follow **Manifold Isolation Procedures** below before proceeding with this section.

1. If wiring is to be done in manifold junction boxes, rather than in an external junction box, loosen electrical cover mounting screws on end of manifolds, remove covers and pull wires out through cover openings.
2. Clean counterbores inside of manifold and mating surface of neighboring manifold.
3. Apply light coating of grease (in kit) to o-rings and place in counterbores.
4. Place manifold next to neighboring manifold. If wiring is to be done in an external junction box, pull wires through conduit gallery of neighboring manifold.
5. Insert hex head screws through holes in neighboring manifolds and screw hex nut onto screw. Torque screws to 160-180 in-lbs.
6. Connect a grounding wire to the green ground screw of at least one manifold and feed this wire through conduit gallery to either end of manifold.
7. Replace electrical covers and tighten cover screws.

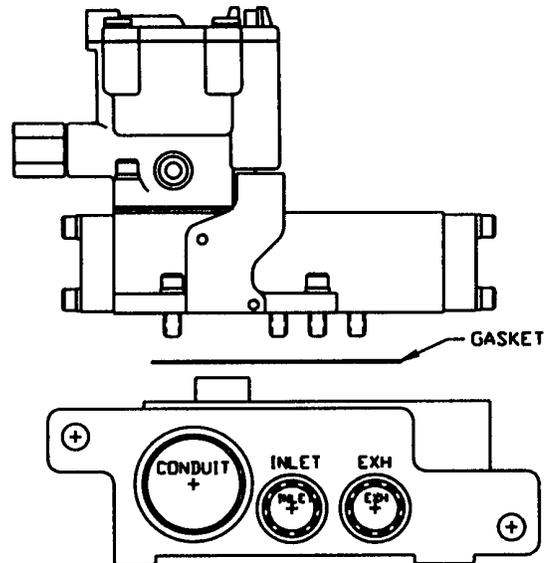
MANIFOLD PORT CONNECTIONS

(See front for Subbase Port Connections)

1. Connect inlet air supply to manifold inlet gallery by one of the following methods:

All valves to be supplied with a common pressure: Connect air supply to inlet port on either end of manifold package and plug other inlet port (or connect air supply to both ends for applications requiring a larger volume of air).

Two groups of valves each requiring a different pressure: Isolate valves into two groups using **Manifold Isolation Procedures** below. Connect appropriate air supply to each end of manifold bank at inlet port.
2. Connect mufflers (or plumb exhaust) at exhaust ports.
3. Connect cylinder ports "A" and "B" to ends of cylinder or other device to be supplied air. Connections are commonly made to ports on end of manifold opposite wiring cavity. If bottom ports are more accessible to your application, plug end cylinders ports and remove plugs from bottom ports.



EXTERNAL PILOT SUPPLY
NOT AVAILABLE

MANIFOLD ISOLATION PROCEDURES

Inlet and exhaust galleries may be isolated from those in neighboring manifolds through the use of flush pipe plugs.

1. Determine gallery and manifold position to be isolated.
2. Apply pipe sealant to threads of pipe plug.
3. Screw pipe plug into threaded end of gallery and tighten.

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Pneumatic Division
Richland, Michigan 49083

Installation & Service Instructions
V534P

1/4" SK-200 Single Operated Valves

ISSUED: February, 2002

Supersedes: November, 2001

Doc.# V-534P, ECN# P28822, Rev. 3

! WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

Operating Pressure Range:	PSIG	bar	kPa
Minimum	35	2.41	241
Maximum	PSIG	bar	kPa
Solenoid Operated Std Service	140	9.65	965
Solenoid Operated Spl Service*	200	13.79	1379
Remote Operated - Main Valve	250	17.24	1724
Remote Operated - Pilot Signal	200	13.79	1379

* (9th digit of model number is a "3", i.e. L4452810353).

Operating Temperature Range:

Operator Type	Duty Cycle	Minimum Ambient Temperature	Maximum Ambient Temperature
Standard Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	100°F (38°C)
Special Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	125°F (52°C)
Remote Pilot	Not Applicable	0°F (-18°C)	200°F (93°C)

Voltage Range: +10% to -15% of rating

Wiring Instructions

Units With Flying Leads

Either wire may be "Hot".

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

Units With Plug-in Subbases or Manifolds

Use wires marked "1" and "3" for connection to the solenoid. Either may be "Hot".

! CAUTION: DC solenoids with indicator lights and / or arc suppression coils are polarity sensitive. Use wire number 3 for single solenoid valves as positive.

Earth ground: All electrically operated valves must be provided a proper earth ground. Connect to green wire from valve.

NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

Service Procedures

NOTE: All cleaning of parts to be done with mineral spirits or equivalent cleaning solution. Grease should be a mineral based lubricant (Magnalube G). All parts showing nicks, scratches or other signs of wear or damage should be replaced.

Valve Service

1. Orient valve with Solenoid "B" on the right hand side. (Letters "A" and "B" are cast into the sides of the body near each end.)
2. Loosen (4) socket head cap screws (A) on each end of valve until they disengage from body.
3. On right end of valve, remove end cap (B), bumper (C) and plug assembly (D). Remove seal (E) from plug (F). Discard seal.
4. On left end of valve, remove end cap (B), bumper (C) and plug (G).
5. Insert finger into left end of body and push spool assembly (H) out right end.
6. Remove and discard u-cup (J) from spool assembly. Clean spool assembly. Apply grease to new u-cup from kit and assemble to spool assembly (open end toward spool).
7. Remove o-rings (K), spacers (L) and short spacer ring (M). Discard o-rings. Clean spacers.
8. Apply lubricant (tube in kit) to o-rings (K) and seal (E).
9. Reassemble short spacer ring (M), an o-ring (K) and a spacer (L). Alternatively assemble an o-ring and a spacer until all o-rings and spacers are used. Press each set firmly into place.

! WARNING

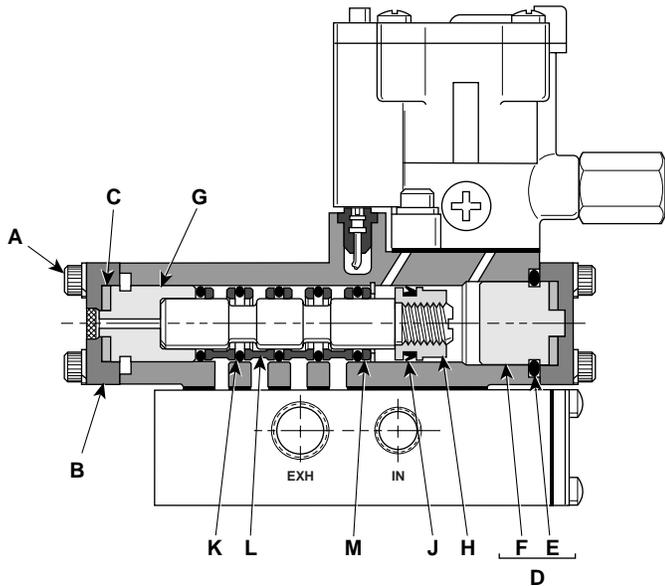
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10. On left end of valve, assemble plug (G), bumper (C) and end cap (B). Tighten (4) socket head screws (A) to 50-65 in-lb.
11. Slide spool assembly (H) into right end of valve.
12. On right end of valve, assemble seal (E) to plug (F). Then assemble plug assembly (D), bumper (C), and end cap (B). Tighten (4) socket head screws (A) to 50-65 in-lb.



Pilot Valve Service

See *Service Instructions V-644P L-Pilot Valves and Operators* packed with **Pilot Valve Service Kit K352166** included in this kit.

Coil / Indicator Light Replacement

See *Service Instructions V-644P L-Pilot Valves and Operators* packed with replacement coils and lights.

Manual Override Replacement Or Conversion

The following override assemblies are interchangeable and can be replaced or field converted:

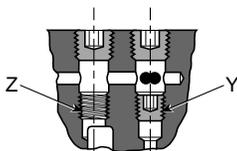
- Non-locking override K162001
- Locking override K152003
- Extended locking override K152006

Remove override and clean internal threads in housing. Apply pipe sealant sparingly to threads of override housing and assemble override to pilot valve housing.

NOTE: Overrides are held out by air pressure and may not extend until pressure is reapplied to the valve.

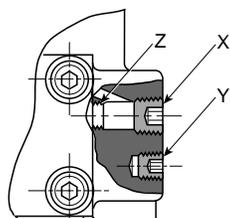
Conversion Procedure For External Pilot

Base Mounted



For field conversion to external pilot supply, remove (2) 1/8" pipe plugs from top of valve body and move bottom plug from "Y" to "Z". Replace 1/8" pipe plugs and connect pilot pressure to the 1/4" pipe external pilot supply port "X" in subbase or manifold.

Direct Pipe Ported



For field conversion to external pilot supply, remove and discard 1/4" pipe 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.

Service Kits / Parts

- Service Kit (Single Solenoid - Standard Service) K352150
- Service Kit (Single Solenoid - Special Service) K352350
- Service Kit (Single Remote - Pilot Operated) K352363
- Pilot Valve / Remote Pilot Gasket. K183001
- Body to Base Gasket..... K183054
- Indicator Light (24VDC - Line Mounting) H19110
- Indicator Light (24VDC - Base Mounting)..... H19112
- Indicator Light (120V / 60 HZ - Line Mounting) H19102
- Indicator Light (120V / 60 HZ - Base Mounting) H19105

Direct Pipe Ported Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	19" Leads	72" Leads
12	—	—	K593007	K593178
24	—	6	K593003	K593179
—	24	—	K593015	K593181
—	36	—	K593016	K593183
—	—	12	K593010	K593182
—	—	24 (Standard)	K593014	K593184
—	—	24 (Arc Suppressed)	K593271	K593272
—	—	48	K593028	K593185
120	110	—	K593025	K593186
240	220	—	K593035	K593187
—	240	—	K593033	K593188
—	—	90	K593020	K593189
—	—	115	K593041	K593190
—	380	—	K593038	K593191

Base Mounting Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	No Light	With Light
12	—	—	K593052	—
24	—	6	K593048	—
—	24	—	K593061	—
—	36	—	K593062	—
—	—	12	K593055	—
—	—	24		
—	—	(Standard)	K593060	K593274
—	—	24		
—	—	(Arc Suppressed)	K593305	K593275
—	—	48	K593074	—
120	110	—	K593071	K593125
240	220	—	K593081	—
—	240	—	K593079	—



Pneumatic Division North America
Richland, MI 49083

Service Instructions: V-535P

1/4" SK-200 Double Operated Valves
2-Position

ISSUED: November, 1998

Supersedes: K583390, March, 1996

ECN #8929

WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Disconnect electrical supply before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, voltage and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed on these instructions.
- Installation, service and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.



CAUTION: DC solenoids with indicator lights or arc suppression coils are polarity sensitive. Observe polarities indicated above.

Earth ground: All electrically operated valves must be provided a proper earth ground. Connect to green wire from valve.

NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

SERVICE PROCEDURES

NOTE: All cleaning of parts to be done with mineral spirits or equivalent cleaning solution. Grease should be a mineral based lubricant (Sunaplex 781). All parts showing nicks, scratches or other signs of wear or damage should be replaced.

Valve Service

- 1) Loosen (4) socket head screws (A) on each end of valve until they disengage from body.
- 2) On right end of valve, remove end cap (B), bumper (C) and plug assembly (D). Remove seal (E) from plug (F). Discard seal.
- 3) On left end of valve, remove end cap (B), bumper (C) and plug assembly (G). Remove seal (H) from plug (J). Discard seal.
- 4) Insert finger into one end of body and push spool (K) out other end. Clean spool.
- 5) Remove o-rings (L), and spacers (M). Discard o-rings. Clean spacers.
- 6) Apply lubricant (tube in kit) to o-rings (L) and seals (H).
- 7) On right end of valve, assemble seal (H) to plug (J). Then assemble plug assembly (G), bumper (C), and end cap (B). Tighten (4) socket head screws (A) to 50-65 in-lb.
- 8) On left end of valve assemble an o-ring (L) and a spacer (M). Alternatively assemble an o-ring and a spacer until all o-rings and spacers are used. Press each set firmly into place.
- 9) Slide spool (K) into open end of valve.
- 10) On left end of valve, assemble seal (E) to plug (J). Then assemble plug assembly (G), bumper (C), and end cap (B). Tighten (4) socket head screws (A) to 50-65 in-lb.

APPLICATION LIMITS

These products are intended for use in general purpose compressed air systems only.

Operating pressure range:	PSIG	Bar	kPa
Minimum	35	2.41	241
Maximum	PSIG	Bar	kPa
Solenoid Operated Std Service	140	9.65	965
Solenoid Operated Spl Service*	200	13.79	1379
Remote Operated - Main Valve	250	17.24	1724
Remote Operated - Pilot Signal	200	13.79	1379

* (9th digit of model number is a "3", i.e. L4152810353).

Operating Temperature Range:

Operator Type	Duty Cycle	Minimum Ambient Temperature	Maximum Ambient Temperature
Standard Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	100°F (38°C)
Special Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	125°F (52°C)
Remote Pilot	Not Applicable	0°F (-18°C)	200°F (93°C)

Voltage Range: +10% to -15% of rating

WIRING INSTRUCTIONS

Units with flying leads

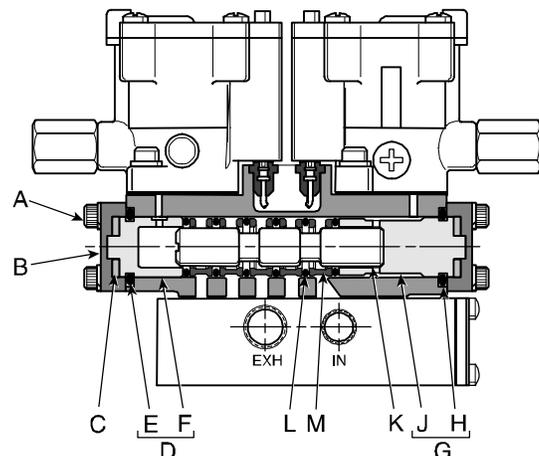
Either wire may be "Hot".



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

Units with plug-in subbases or manifolds

Use wires marked "1" and "2" for Solenoid "A". Use wires marked "2" and "3" for solenoid "B". For units with DC solenoids and indicator lights or arc suppression coils, wire marked "2" is positive.



SERVICE PROCEDURES (CONTINUED)

Pilot Valve Service

See *Service Instructions V-644P L-Pilot Valves and Operators* packed with **Pilot Valve Service Kit K352166** included in this kit.

Coil / Indicator Light Replacement

See *Service Instructions V-644P L-Pilot Valves and Operators* packed with replacement coils and lights.

MANUAL OVERRIDE REPLACEMENT OR CONVERSION

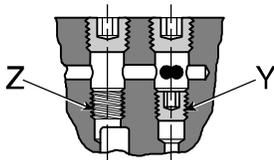
The following override assemblies are interchangeable and can be replaced or field converted:

- Non-locking override K162001
- Locking override K152003
- Extended locking override K152006

Remove override and clean internal threads in housing. Apply pipe sealant sparingly to threads of override housing and assemble override to pilot valve housing.

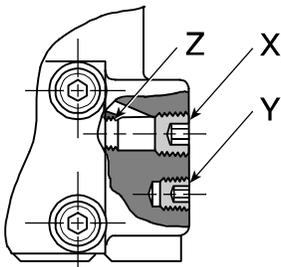
NOTE: Overrides are held out by air pressure and may not extend until pressure is reapplied to the valve.

CONVERSION PROCEDURE FOR EXTERNAL PILOT



Base Mounted

For field conversion to external pilot supply, remove (2) 1/8" pipe plugs from top of valve body and move bottom plug from "Y" to "Z". Replace 1/8" pipe plugs and connect pilot pressure to the 1/4" pipe external pilot supply port "X" in subbase or manifold.



Direct Pipe Ported

For field conversion to external pilot supply, remove and discard 1/4" pipe 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.

SERVICE KITS / PARTS

- Service Kit (Double Solenoid - Standard Service) K352151
- Service Kit (Double Solenoid - Special Service) K352351
- Service Kit (Double Remote - Pilot Operated) K352357
- Pilot Valve / Remote Pilot Gasket K183001
- Body to Base Gasket K183054
- Indicator Light (24VDC - Line Mounting) H19110
- Indicator Light (24VDC - Base Mounting) H19112
- Indicator Light (120V / 60 HZ - Line Mounting) H19102
- Indicator Light (120V / 60 HZ - Base Mounting) H19105

Direct Pipe Ported Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	19" Leads	72" Leads
12	--	--	K593007	K593178
24	--	6	K593003	K593179
--	24	--	K593015	K593181
--	36	--	K593016	K593183
--	--	12	K593010	K593182
--	--	24 (Standard)	K593014	K593184
--	--	24 (Arc Suppressed)	K593271	K593272
--	--	48	K593028	K593185
120	110	--	K593025	K593186
240	220	--	K593035	K593187
--	240	--	K593033	K593188
--	--	90	K593020	K593189
--	--	115	K593041	K593190
--	380	--	K593038	K593191

Base Mounting Valves

Voltage			Coil	
60 Hz	50 Hz	D. C.	No Light	With Light
12	--	--	K593052	--
24	--	6	K593048	--
--	24	--	K593061	--
--	36	--	K593062	--
--	--	12	K593055	--
--	--	24 (Standard)	K593060	K593274
--	--	24 (Arc Suppressed)	K593305	K593275
--	--	48	K593074	--
120	110	--	K593071	K593125
240	220	--	K593081	--
--	240	--	K593079	--

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE INSTRUCTION MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.



Pneumatic Division
Richland, Michigan 49083

Installation & Service Instructions
V536P
1/4" SK-200 Double Operated Valves
3-Position
ISSUED: February, 2002
Supersedes: November, 2001
Doc.# V-536P, ECN# P28822, Rev. 3

! WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

Introduction

Follow these instructions when installing, operating, or servicing the product.

Application Limits

These products are intended for use in general purpose compressed air systems only.

Operating Pressure Range:	PSIG	bar	kPa
Minimum	35	2.41	241
Maximum	PSIG	bar	kPa
Solenoid Operated Std Service	140	9.65	965
Solenoid Operated Spl Service*	200	13.79	1379
Remote Operated - Main Valve	250	17.24	1724
Remote Operated - Pilot Signal	200	13.79	1379

* (9th digit of model number is a "3", i.e. L4252810353).

Operating Temperature Range:

Operator Type	Duty Cycle	Minimum Ambient Temperature	Maximum Ambient Temperature
Standard Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	100°F (38°C)
Special Service Solenoid	Intermittent	0°F (-18°C)	125°F (52°C)
	Continuous	0°F (-18°C)	125°F (52°C)
Remote Pilot	Not Applicable	0°F (-18°C)	200°F (93°C)

Voltage Range: +10% to -15% of rating

Wiring Instructions

Units With Flying Leads

Either wire may be "Hot".

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

Units With Plug-in Subbases or Manifolds

Use wires marked "1" and "2" for Solenoid "A". Use wires marked "2" and "3" for solenoid "B". For units with DC solenoids and indicator lights or arc suppression coils, wire marked "2" is positive.

! CAUTION: DC solenoids with indicator lights or arc suppression coils are polarity sensitive. Observe polarities indicated above.

Earth ground: All electrically operated valves must be provided a proper earth ground. Connect to green wire from valve.

NOTE: In addition to the above instructions, follow all requirements for local and national electrical codes.

Service Procedures

NOTE: All cleaning of parts to be done with mineral spirits or equivalent cleaning solution. Grease should be a mineral based lubricant (Magnalube G). All parts showing nicks, scratches or other signs of wear or damage should be replaced.

Valve Service

1. Loosen (4) socket head cap screws (A) on each end of valve until they detach end sections from body. Perform steps 2 and 3 to one end section at a time in order to avoid mixing parts. The pistons and end stops are different lengths
2. **End Section Disassembly** - Detach housing (B) from end stop (C). Remove and discard seals (D & E). Push piston (F) out of end stop (C). Remove and discard v-seals (G & H). Clean piston and end stop.
3. **End Section Reassembly** - Apply lubricant (tube in kit) to v-seals (G & H) and piston bore in end stop (C). Install v-seal (G) onto piston (F) with grooved end facing large diameter end of piston (F). Install v-seal (H) into end stop with grooved end facing away from piston bore. Assemble piston (F) and seal (D) into end stop. Slide housing back over screws. Slide seal (E) onto end stop.
4. Insert finger into one end of body and push spool (J) out other end. Clean spool.
5. Remove o-rings (K), and spacers (L). Discard o-rings. Clean spacers and body bore.

! WARNING

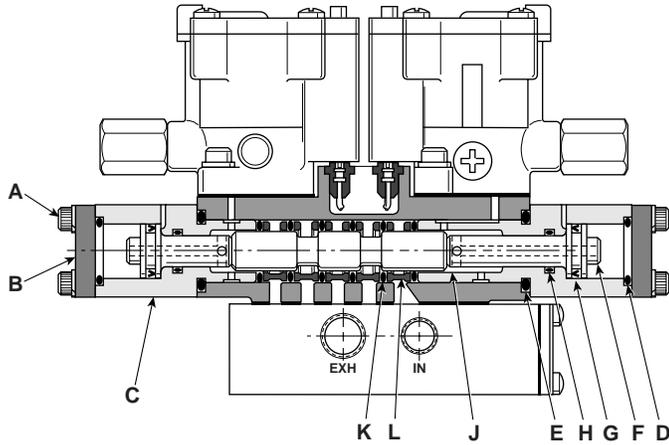
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6. Apply lubricant (tube in kit) to o-rings (K).
7. Reassemble right end section. Tighten screws (A) to 50-65 in-lb.
8. Assemble an o-ring (K) and a spacer (L). Alternatively assemble an o-ring and a spacer until all o-rings and spacers are used. Press each set firmly into place.
9. Slide spool (J) into left end of valve.
10. Reassemble left end section. Tighten screws (A) to 50-65 in-lb.



Pilot Valve Service

See *Service Instructions V-644P L-Pilot Valves and Operators* packed with **Pilot Valve Service Kit K352166** included in this kit.

Coil / Indicator Light Replacement

See *Service Instructions V-644P L-Pilot Valves and Operators* packed with replacement coils and lights.

Manual Override Replacement Or Conversion

The following override assemblies are interchangeable and can be replaced or field converted:

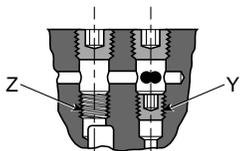
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- Locking override K152003
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Remove override and clean internal threads in housing. Apply pipe sealant sparingly to threads of override housing and assemble override to pilot valve housing.

NOTE: Overrides are held out by air pressure and may not extend until pressure is reapplied to the valve.

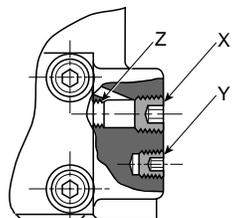
Conversion Procedure For External Pilot

Base Mounted



For field conversion to external pilot supply, remove (2) 1/8" pipe plugs from top of valve body and move bottom plug from "Y" to "Z". Replace 1/8" pipe plugs and connect pilot pressure to the 1/4" pipe external pilot supply port "X" in subbase or manifold.

Direct Pipe Ported



For field conversion to external pilot supply, remove and discard 1/4" pipe 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.

Service Kits / Parts

Service Kit (Double Solenoid - Standard Service)	K352151
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Direct Pipe Ported Valves

Voltage			Coil	
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—	—	24		
—	—	(Standard)	K593060	K593274
—	—	24		
—	—	(Arc Suppressed)	K593305	K593275
—	—	48	K593074	—
120	110	—	K593071	K593125
240	220	—	K593081	—
—	240	—	K593079	—



Pneumatic Division
Richland, Michigan 49083
269-629-5000

PDNSG-1

Pneumatic Division Safety Guide

ISSUED: August 1, 2006

Supersedes: June 1, 2006

Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

⚠ WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS ("PRODUCTS") CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

- 1.1. Scope:** This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.
- 1.2. Fail-Safe:** Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.
- 1.3. Relevant International Standards:** For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414:1998, Pneumatic Fluid Power – General Rules Relating to Systems. See www.iso.org for ordering information.
- 1.4. Distribution:** Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.
- 1.5. User Responsibility:** Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:
 - Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
 - Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
 - Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
 - Assuring compliance with all applicable government and industry standards.
- 1.6. Safety Devices:** Safety devices should not be removed, or defeated.
- 1.7. Warning Labels:** Warning labels should not be removed, painted over or otherwise obscured.
- 1.8. Additional Questions:** Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

- 2.1. Flow Rate:** The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.
- 2.2. Pressure Rating:** Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.
- 2.3. Temperature Rating:** Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.
- 2.4. Environment:** Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.
- 2.5. Lubrication and Compressor Carryover:** Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.
- 2.6. Polycarbonate Bowls and Sight Glasses:** To avoid potential polycarbonate bowl failures:
 - Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
 - Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
 - Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

Pneumatic Division Safety Guide

- 2.7. Chemical Compatibility:** For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5
- 2.8. Product Rupture:** Product rupture can cause death, serious personal injury, and property damage.
- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
 - Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
 - Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

- 3.1. Component Inspection:** Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.
- 3.2. Installation Instructions:** Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.
- 3.3. Air Supply:** The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

- 4.1. Maintenance:** Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.
- 4.2. Installation and Service Instructions:** Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.com.
- 4.3. Lockout / Tagout Procedures:** Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)
- 4.4. Visual Inspection:** Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
 - Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
 - Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
 - Any observed improper system or component function: Immediately shut down the system and correct malfunction.
 - Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

- 4.5. Routine Maintenance Issues:**
- Remove excessive dirt, grime and clutter from work areas.
 - Make sure all required guards and shields are in place.
- 4.6. Functional Test:** Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.
- 4.7. Service or Replacement Intervals:** It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:
- Previous performance experiences.
 - Government and / or industrial standards.
 - When failures could result in unacceptable down time, equipment damage or personal injury risk.
- 4.8. Servicing or Replacing of any Worn or Damaged Parts:** To avoid unpredictable system behavior that can cause death, personal injury and property damage:
- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
 - Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
 - Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
 - Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
 - After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
 - Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.
- 4.9. Putting Serviced System Back into Operation:** Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.