Lorenz
THE CONVEYING PRODUCTS PEOPLE

ISO 9001-2008

General Installation Instructions
SERIES "D" Diverter Valves

Thank you for your purchase of a Lorenz valve. We appreciate your business! Please read this installation manual and follow recommended safety precautions.

Read thoroughly and contact Lorenz if you have any questions.

Canada 1-800-263-1942 USA 1-800-263-7782

IMPORTANT – DISCONNECT & DE-ENERGIZE ALL ELECTRICAL AND COMPRESSED AIR CONNECTIONS TO DIVERTER VALVE PRIOR TO INSTALLATION OR SERVICE

Caution: Please follow your prescribed safety policy during installation. Use extreme caution when handling these valves. Do not energize until all proper installation steps have been completed and all guarding is in place. Lock out all sources of energy during installation.

SAFETY

Before attempting installation or before connecting electricity or air supply, please review and familiarize yourself with the operation of the Diverter Valves. Be aware of any sliding blades and moving parts which could cause injury if the valve or gate is handled incorrectly. Keep all body parts clear of these potential hazard areas.

Before actuating, ensure all personnel and equipment are clear of any moving parts. Pay attention to any warning labels on the Diverter Valves. Do not operate without all supplied guarding in place. Keep hands clear of any moving parts. Please contact Lorenz if you have any questions regarding the safe handling and installation of your Diverter Valves.

UNPACKING AND INSPECTION

Please carefully examine the box or crate for damage by the carrier during shipping. Immediately report any damage or missing boxes/ crates to the delivering carrier. Lorenz is not responsible for damages caused in transit, but can assist you in launching a claim with the carrier. Please notify Lorenz immediately of any damages or shortages.

STORAGE AND HANDLING

Diverter Valves should be stored in an enclosed, clean, dry area, free from excess humidity temperatures or moisture. Diverter Valves should be stored with all openings covered to prevent foreign matter from entering the valve including all solenoids and electrical connections and compressed air lines.

ELECTRICAL REQUIREMENTS

Please ensure all electrical connections are to local codes and done by qualified personnel. An electrical disconnect box must be provided for electrical actuators with a mechanical lock out in the off position. Diverter Valves equipped with Solenoid Valves and Limit Switches will require power supply. Please check Solenoid Valve and Limit Switch specification in Appendix for requirements.

APPLICATION / SYSTEM TYPE

The pressure differential ratings for Lorenz Diverter Valves are limited to applications under 15 psig.

Warranty is void if valve is operated beyond rated limits.

Please consult technical support for information

MECHANICAL CONNECTIONS AND MOUNTING

With compression coupling connections, diverter valves must be separately supported.

(See appropriate section below). Allow for expansion or contraction of conveying line as.

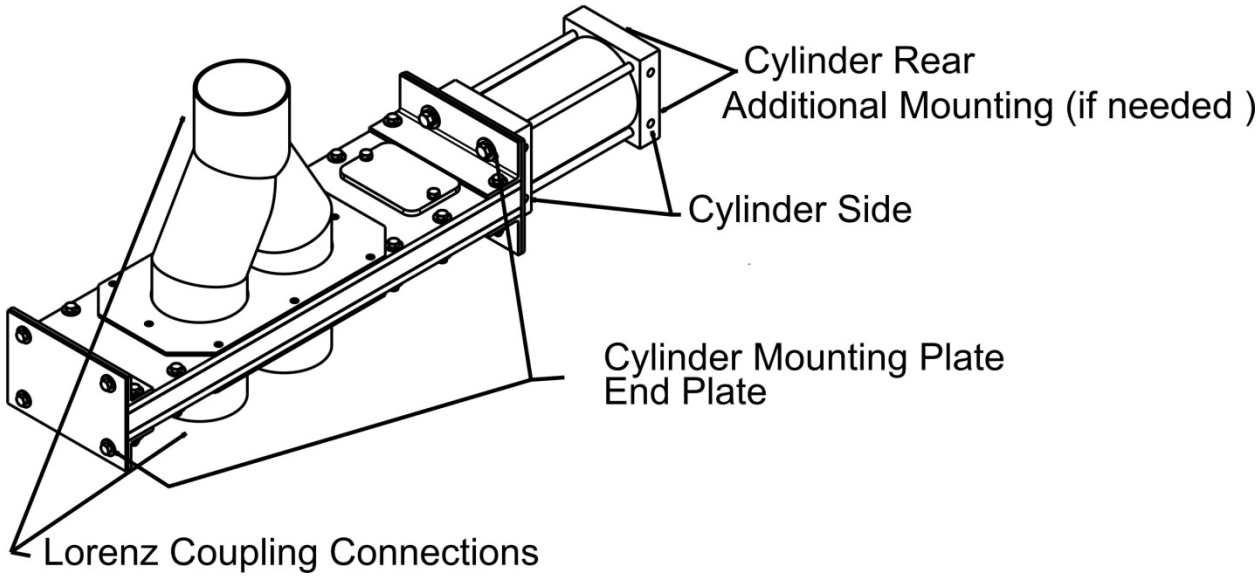
Support Requirements

All incoming / outgoing conveying lines must be supported. Diverter Valves must be properly supported to prevent binding and damage (See appropriate section below). Failure to support any valves or the conveying lines will void the warranty. Avoid supporting conveying lines or other equipment other than factory supplied accessories from the valve body.

Diverter Valves should only be lifted from the main body. Do not lift Diverter Valves from the actuator as this could damage the actuator. Lorenz is not responsible for any damage caused by improper lifting during unpacking and installation.

Diverter Valves with Electrical Actuators will require additional support due to the weight of the Electrical Actuator.

DIVERTER VALVE - MOUNTING LOCATIONS



PNEUMATIC REQUIREMENTS

A vented ball valve should be installed within 12" of air cylinder as an Air Supply Shut off. Vented ball valves allow the air pressure to escape from air cylinder preventing un-expected closure. (Regular ball valves trap the air in, and are not recommended)

Compressed air lines should be at least the same inside diameter as the ports on the factory supplied air control valve to provide the proper valve actuation. Factory supplied air controls are sized for proper valve performance. Inadequately sized controls will affect performance of the valve.

There must be **a minimum of 80 PSIG compressed air pressure at the air cylinder** to ensure proper operation. Air cylinder maximum air pressure is 150 PSIG. Clean and dry compressed air is required to insure proper operation of the air cylinder. High moisture at low temperatures can cause the air control valves and the air cylinder to freeze.

All Diverter Valves with "Air Purge" feature must be set at 1-2 PSIG greater than the conveying pressure (15 psig maximum) to create a positive pressure within the valve body. Air purge pressure can be adjusted by pressure regulator installed on the valve.

ENVIRONMENT

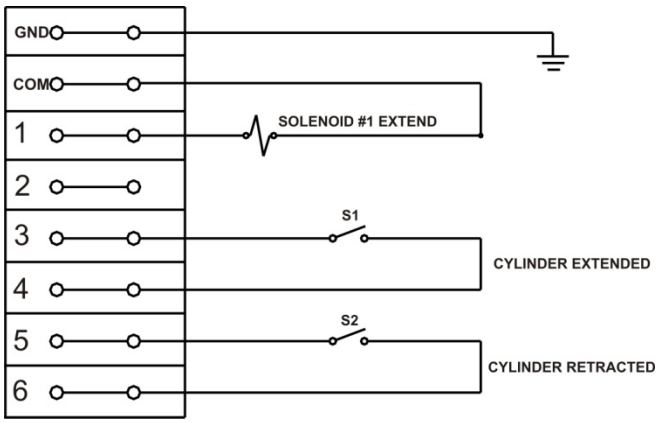
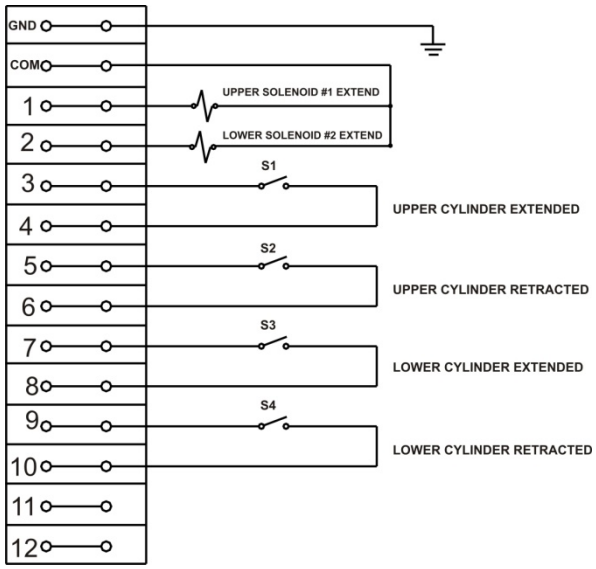
Diverter Valves are designed for use in most indoor applications. Diverter Valves with electric and/or air controls that are subject to wash down conditions should be protected as per local codes. Do not wash down any Diverter Valves with gate in the closed position as it could affect the performance of the gate and seals. Do not use any harsh or caustic solutions during wash down as they could damage the seals and affect the performance of the valve. Diverter Valves equipped with wash down capable components can be washed down with gate in the open position and water temperature should not exceed 82C (180F). Use of Diverter Valves in environments exceeding the specified temperature rating will damage the seals and void the warranty.

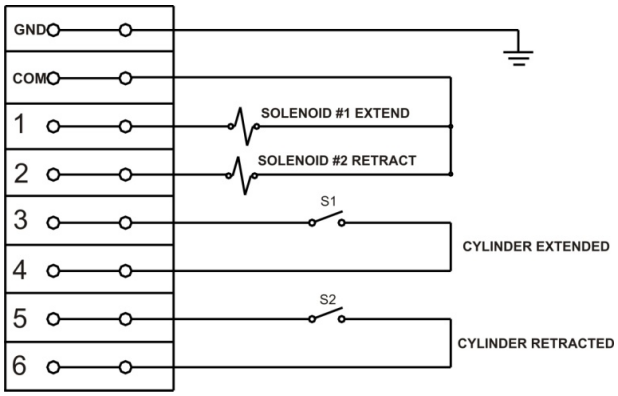
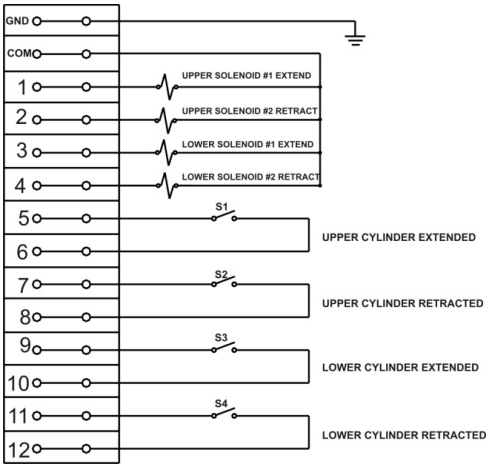
Do not weld or use open flame on or near the valve.

The seals will be damaged and void the warranty.

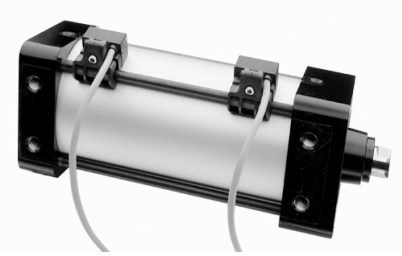
For proper operation of the Diverter Valves air controls, switches and valve should be protected from rain and snow. A protective weather shield is recommended. Moisture & high humidity can damage the gate by causing the seals to swell; a wash down modification is required for any valve in this situation.

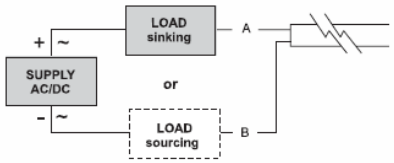
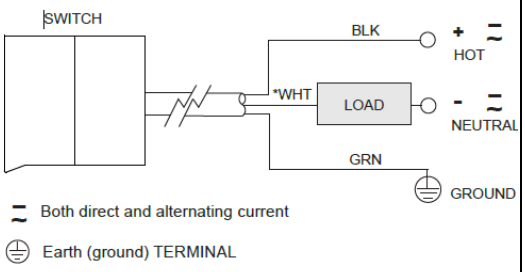
WIRING DIAGRAMS

Single Solenoid ***Pre wire Terminal Box Wiring Diagram*** (2 Way Diverter)	***Single Solenoid*** ***Pre wire Terminal Box Wiring Diagram*** (3&4 Way Diverters)
	

Double Solenoid ***Pre wire Terminal Box Wiring Diagram*** (2 Way Diverter)	***Double Solenoid*** ***Pre wire Terminal Box Wiring Diagram*** (3 & 4 Way Diverters)
	

POSITION SWITCHES



	SW-R-004	*SW-RX-001*
Description	Reed Switch, MOV, LED Light, 2 Wire	Magnetic Proximity Sensor , MOV, LED, 3 Wire
Function	Normally Open SPST	Normally Open SPST
Switching Voltage	5 – 240 VDC/VAC 50/60 Hz	0 – 120 VAC/VDC 50/60 Hz
Switching Current	1 Amp Max, .005 Amp Min	Maximum Current 0.5A
Switching Power	30 watts Max.	100 watts Max.
Switch Speed	0.6ms operate, 0.05ms release	Response Time On 0.5ms / Off 0.1ms
Voltage Drop	3 volts	Maximum Load 10W Resistance
Temperature Range	-20°C to +80°C (-4°F to + 176°F)	-20°C to +80°C (-4°F to + 176°F)
Lead Length	9 feet	9 feet
Usage notes	For PLC Application	NEMA 1,4 &13 Hazardous location ratings: CSA: Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; and Class III
Wiring Diagram		

	A	Red		
	B	Black		

Note: Usage above maximum ratings or incorrect wiring connections will result in damage to switch.

POSITION SWITCH TROUBLE SHOOTING NOTES

Problem	Solution
Reed Switch works but LED does not light	1. Check current draw of load. It must be > 5 mA for LED to light. 2. 2. Check polarity: Refer to wiring diagram if using DC power supply
Reed switch sticks in closed position.	1. Check current draw, power/VA and voltage of load and compare with specs of the appropriate model sensor. These cannot be exceeded. 2. Voltage/Current spikes may be excessive for your particular load. External transient suppression may be required. 3. Long wire runs (greater than 25') can cause capacitance build-up and sticking will result. Consult factory for solution.
Current or voltage leakage when reed switch is off.	1. Check current, power/VA and voltage rating of load and compare with specs of appropriate model sensor. Those cannot be exceeded. 2. Reed element was damaged. Consult factory.
Reed switch will not turn on.	1. Check magnet strength on surface of sensor. It must be >85 Gauss. 2. Switch is damaged. Consult factory. 3. 3. Check for proper wiring.
Reed switch turns on more than once as magnet passes beneath it.	1. Check for proper magnet polarity. The poles must be parallel to the switch as shown in the wiring diagram. 2. Check for dead spots on the magnet if polarity is correct.

WARRANTY

Any modifications to any valve other than recommended maintenance voids the warranty. Please contact Lorenz *if you have any questions regarding maintenance, troubleshooting or before attempting any repairs.*

Lorenz warrants to the original buyer only that all products or parts sold by Lorenz shall be free of defects in materials and workmanship for a period of one (1) year from the date of shipment, when used according to Lorenz recommended usages. This warranty is strictly limited to repair or replacement of defective parts, provided those products are returned to Lorenz prepaid. Labour and materials for any downtime/repair/replacement is not covered. This warranty shall be considered void if such products are misused, improperly installed, improperly stored, operated beyond rate limitations, damaged, neglected, altered/changed/repaired or modified by anyone other than Lorenz or designate. Lorenz assumes no responsibility for any emissions from our valves.

All special order products or material are not returnable. No liability is assumed for consequential damages or for any labour or other expense incurred by reason of sale or use of our products, singularly or in combination with other products. To the best of our ability products will be delivered at specific times but no liability is assumed for failure to deliver because of delays or defaults occasioned directly or indirectly by fire, flood, act of God, labour trouble or shortage or any cause unavoidable beyond our reasonable contract.

Goods remain the property of the seller until payment is received in full and purchaser acknowledges in full that this is a security agreement and a document to this effect may be registered according to the local and applicable legislation or there shall be a charge for the full purchase price on the goods. All special order products or material are not returnable.