SKINNER VALVE
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TIM-2000-2 valve type is 7121K

IOM7201
(Rev1198)

Parker
Climate & Industrial Controls

INSTALLATION, OPERATING & MAINTENANCE INSTRUCTIONS
2-WAY N.C. AND N.O. SOLENOID VALVE
1/8", 1/4", 3/8" AND 1/2" NPT
VALVE TYPES: 7121K, 7122K

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DESCRIPTION

These valves are 2-way, direct operated models. They are available in normally closed (N.C.) and normally open (N.O.) versions. The 7121K and 7122K are offered in a combination of brass and stainless steel construction. The normally closed valves are available with 1/8", 1/4", 3/8", and 1/2" NPT pipe connections, and the normally open valves are available in 1/8" and 1/4" NPT only. Valves may be ordered with either NEMA 2 or NEMA 4, 4X integrated coils for ordinary locations or NEMA 4, 4X, 7, and 9 for hazardous locations: Divisions I and II; Class I, Groups A, B, C, and D; Class II, Groups E, F, and G. Additional solenoid coils and enclosures are offered as described in our catalog.

PRINCIPLES OF OPERATION

Normally closed type: 7121K

De-energized: Pressure is connected to Port 1 and is blocked by the plunger seal pressing on the body orifice.

Energized: The plunger is lifted off the orifice allowing flow through the valve (Port 1 to 2). For the 1/2" NPT port bodies, the direction of flow is indicated by an arrow on the body.

Normally open type: 7122K

De-energized: Pressure is connected to Port 1 and fluid is free to flow out Port 2.

Energized: The inverted sleeve design pushes the plunger and seal onto the orifice when energized, causing the seal to block the normally open orifice. Flow between Ports 1 and 2 is then stopped.

FLUID CODES

Listed below are the codes utilized by Underwriters Laboratories (UL) and the Canadian Standards Association (CSA) for various common fluids. The codes for those fluids that are approved or certified by the agencies for use with each valve are printed on the outside of the individual packaging.

CODE		FLUID
A	-	Air or nontoxic, nonflammable gases
Ac	-	Acetylene
F	-	Common refrigerants except ammonia
G	-	City gas supplied by public utilities
Ga	-	Gasoline
HO	-	Petroleum based hydraulic oils having viscosities of 125 to 400 SSU at 100°F(38°C)
02	-	Nos. 1 and 2 fuel oils, oils having viscosities not more than 40 SSU at 100°F (38°C)
02 - 06	-	No. 2 through No. 6 oil
Ox	-	Oxygen
S	-	Steam
W	-	Water or other aqueous nonflammable liquids

For the maximum fluid temperatures, as well as valve ambient limitations, check the valve part number on the nameplate and refer to the catalog.

INSTALLATION INSTRUCTIONS

Mounting position and pressure limits: Valves can be mounted directly on piping or by using the two (2) #10-24 UNC threaded holes in the bottom of the valve body.

The 7121K and 7122K valves are designed to be multi-poised and will perform properly when mounted in any position. However, for optimum life and performance the valves should be mounted vertically upright so as to minimize wear and reduce the possibility of foreign matter accumulating inside the sleeve area.

Line pressure must conform to nameplate rating.

Piping: Remove protective closures from the ports. Connect line pressure to the inlet port. Use of Teflon tape, thread compound or sealants is permissible, but should be applied sparingly to male pipe threads only.

CAUTION: *Do not allow foreign particles, Teflon tape, or thread compound to enter valve. Tightening torque should not exceed the following values for each port*

size: 1/8" NPT - 100 in-lbs., 1/4" NPT - 175 in-lbs., 3/8" NPT - 225 in-lbs., 1/2" NPT - 300 in-lbs. **Do not use the sleeve or enclosure as a lever when applying torque.**

Media filtration: Normally filtration is not required, but dirt or foreign material in the media may cause excessive leakage, wear, or in exceptional cases, malfunction. If filtration is used, install the filter on the inlet side as close to the valve as possible. Clean periodically depending on service conditions.

Lubrication: Lubrication is not required although air line lubrication will substantially increase valve life.

CAUTION: *Valves which have seals or other components made from ethylene propylene rubber must not be exposed to petroleum based lubricants or other hydrocarbons. This can be identified by the letter E as the 10th digit in the valve part number.*

Electrical connection: Electrical supply must conform to nameplate rating. Connect coil leads or terminals to the electrical circuit using standard electrical practices in compliance with local authorities and the National Electrical Code.

WARNING: *Valves to be installed in* ***Hazardous Locations****, must be outfitted with Hazardous Location coils only. Verify nameplate data and coil part number before installing the valve.*

WARNING: *Turn off electrical power before connecting the valve to the power source.*

If the coil assembly is located in an inconvenient orientation, it may be reoriented to facilitate installation. Loosen coil assembly nut, rotate coil assembly to desired position, then retighten the nut with an input torque of 43-53 in-lbs.

DIN Coil and Terminal Box Assembly (Coil Code D100, D200, and D300; Option Code DB): Loosen cover screws and swing cover 90° toward the conduit hub in order to access the interior space. Separate the plastic block containing the screw terminals from the metal enclosure using a small Flathead screwdriver. Feed the lead wires through the conduit hub and attach them to the appropriate screw terminal. For electrical connection within the terminal box, use field wire that is rated for 90° C or greater. Snap the plastic block back into place inside the metal enclosure. Replace the cover and tighten the cover screws with and input torque of 2 - 4 in. lbs. Place the gasket over the DIN spades on the coil and press the terminal box and coil together. Secure the terminal box to the coil using the mounting screw provided. Apply 4 to 8 in-lbs. torque to the mounting screw.

Screw Terminal Coil and Terminal Box Assembly (Coil Code S100, S200, or S300; Option Code TB): Loosen cover screws and swing cover 90° toward the conduit hub in order to access the interior space. Feed the lead wires through the conduit hub and attach them to the appropriate screw terminal. For electrical connection within the terminal box, use field wire that is rated for 90° C or greater. Replace the cover and tighten the cover screws with an input torque of 2 - 4 in. lbs. Press the terminal box and coil together. Secure the terminal box to the coil using the mounting screw provided. Apply 12 to 20 in-lbs. torque to the mounting screw.

CAUTION: *When the DIN or Screw Terminal coils are used with the Terminal Box Assembly, be sure to apply a wrench to the wrench flats on the conduit hub when installing electrical conduit.*

Coil/enclosure temperature: Standard valves are supplied with coils designed for continuous duty service. Normal free space must be provided for proper ventilation. When the coil is energized continuously for long periods of time, the coil assembly will become hot. The coil is designed to operate permanently under these conditions. Any excessive heating will be indicated by smoking and/or odor of burning coil insulation.

For the maximum valve ambient conditions, as well as the fluid temperatures, check the valve part number on the nameplate and refer to the catalog to determine the maximum temperatures.

MAINTENANCE

Note: Depending on service conditions, fluid being used, filtration, and lubrication, it may be required to periodically clean and/or replace worn components. See Disassembly Instructions.

CAUTION: *Do not expose plastic or elastomeric materials to any type of commercial cleaning fluid. Parts should be cleaned with a mild soap and water solution.*

DISASSEMBLY INSTRUCTIONS

WARNING: *Depressurize system and turn off electrical power to the valve before attempting repair. The valves need not be removed from the line for disassembly or repair.*

To remove the coil assembly:

Normally Closed and Normally Open Valves - For both ordinary and hazardous location constructions, unscrew the nut on the top of the coil assembly. The wave washer and coil assembly can now be removed.

To disassemble the pressure vessel:

Normally Closed Valves - The 7121K valves contain a hex style flange in the sleeve assembly. In

the 1/8", 1/4" and 3/8" valves a wrench may be applied directly to the hex flange in order to loosen the sleeve assembly. The plunger and return spring may now be removed. In the 1/2" valve a body adapter connects the sleeve and body. The body adapter should be removed from the body with the sleeve. The body adapter need not be removed from the sleeve. The plunger guide, plunger, spring and flange seal may now be removed.

Manual override removal (where applicable) - Remove sleeve. Rotate override stem until it is free to remove.

Normally Open Valves - The 7122K valves contain a hex style flange in the sleeve assembly. A wrench may be applied directly to the hex flange in order to loosen the sleeve assembly. The plunger, return spring, wave washer, stop and O-Ring can now be removed.

Replacement Parts: When ordering replacement parts kits, specify valve number and voltage from nameplate. Parts kits are available for each valve. Parts included in each kit are marked with an **asterisk** (*). See exploded views.

REASSEMBLY INSTRUCTIONS

WARNING: *Valves equipped with **Hazardous Location** coils must use Hazardous Location replacement coils only. Verify nameplate data and coil part number before installing the replacement coil.*

To reassemble the pressure vessel:

Normally Closed Valves - Refer to exploded view drawings. The plunger guide, plunger, spring and flange seal must be replaced in the order shown as applicable.

Normally Open valves - Refer to exploded view drawings. The plunger, return spring, wave washer, stop and O-Ring must be replaced in the order shown.

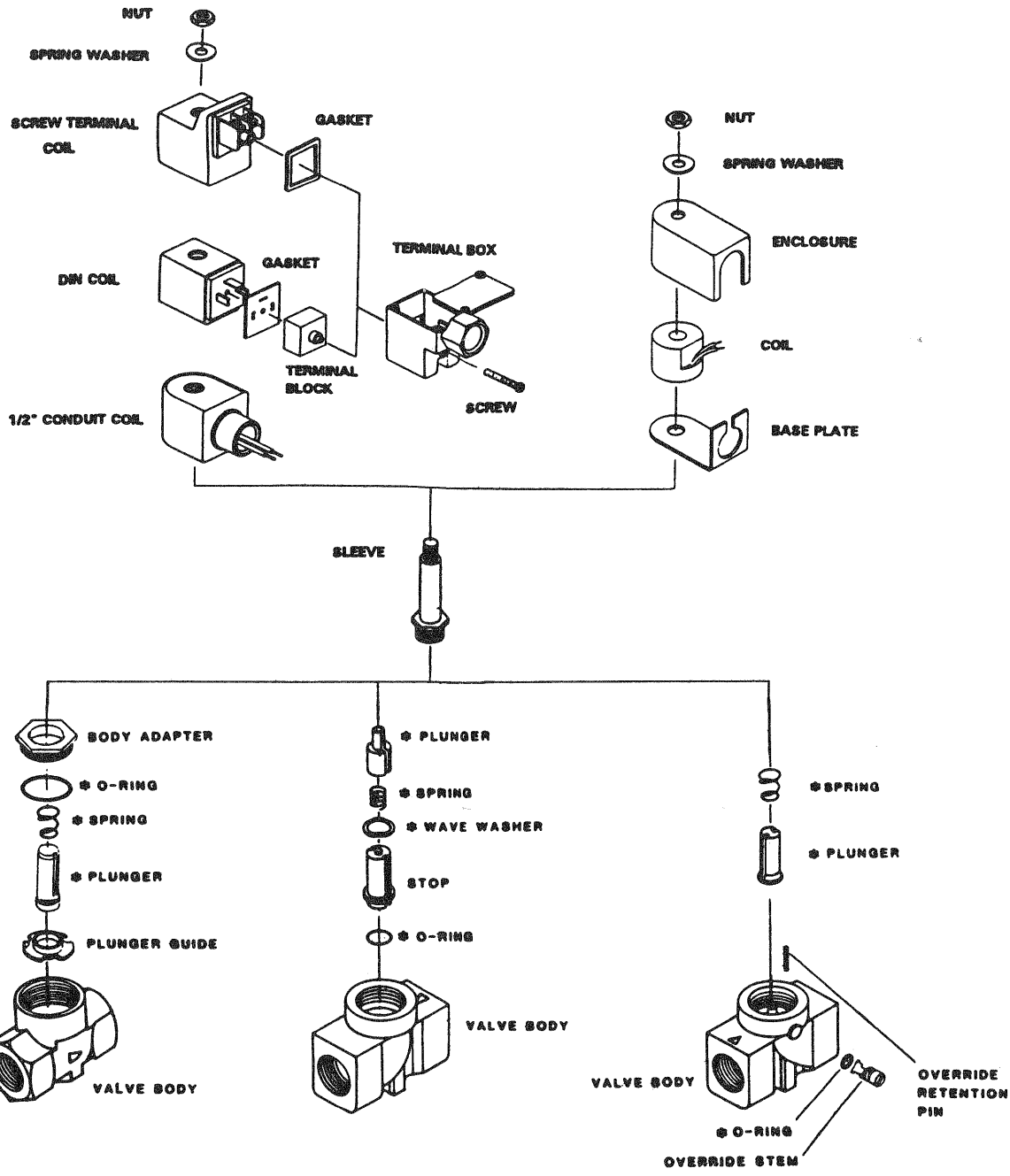
Replace the manual override (where available) prior to assembly of the sleeve to the body. Replace the override stem by rotating until fully installed with flat facing upward. Install the plunger and spring in the sleeve. Tighten sleeve assembly in the body with an input torque of 260-270 in-lbs.

With the coil assembly repositioned on the sleeve, slide the wave washer over the sleeve and tighten the coil assembly nut with an input torque of 43-53 in-lbs.

Refer to the Installation Instructions for remaining installation procedures.

TROUBLE SHOOTING

PROBLEM	PROCEDURE
Valve fails to operate	1. Check electrical suppy with voltmeter. Voltage should agree with nameplate or label rating. 2. Check coild with ohmmeter for shorted or open coil. 3. Make sure that pressure complies with nameplate rating.
Valve is sluggish or inoperative - electrical supply and pressure check out	1. Disassemble valve as per the Disassembly Instructions. Clean out extraneous matter. All components inside the sleeve must be free to move without binding. 2. The return spring must not be broken. Replace spring is necessary.
External leakage at sleeve flange to body joint.	1. Check that sleeve is torqued to 260 -270 inch-pounds.
External leakage at manual override (where available)	1. Remove sleeve. Rotate override until free to remove. Check O-ring and the surface that it contacts. Clean or replace worn or damaged O-ring as required.
Internal leakage at sleeve port	1. Dissassemble valve as per the Disassembly Instructions. Remove extraneous matter. Clean parts in a mild soap and water solution 2. Examine surface of the plunger seal or retainer seal. If damaged, replace component. 3. Inspect orifice in the body / stop for nicks. Damage may require a new valve or replacement parts.



TYPE 7121K

7/16" ORIFICE

TYPE 7122K

TYPE 7121K

1/16" - 1/4" ORIFICE

DECLARATION

Parker's Skinner Valve Division certifies its valve appliance products complies with the essential requirements of the applicable European Community Directives. We hereby confirm that the appliance has been manufactured in compliance with the applicable standards and is intended for installation in a machine or application where commissioning is prohibited until evidence has been provided that the machine or application is also in compliance with EC directives.

The data supplied in the Skinner valve catalogs and general Installation, Operating & Maintenance Instructions are to be consulted and pertinent accident prevention regulations followed during product installation and use. Any unauthorized work performed on the product by the purchaser or by third parties can impair its function and relieves Parker Hannifin of all warranty claims and liability for any misuse and resulting damage.

A separate Declaration of Conformity or Manufacturer's declaration is available upon request. Please provide valve identification numbers and order serial numbers of products concerned.