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## MAINTENANCE, CLEANING, INSTRUCTIONS & WARRANTY

PETER PAUL Solenoid valves are guaranteed free from defects in material and workmanship, under normal use and service, subject to the following:

This warranty shall be limited to repairing or replacing, F.O.B. New Britain, Connecticut, the valve or part thereof which our examination shows to be defective. Of course, normal wear and tear must be considered and exempted.

All standard and most PETER PAUL Solenoid valves have spring loaded plungers with spring loaded soft-inserts, used to provide dependability of sealing. The life of the soft plunger insert, without leakage, will vary, depending on actual operating conditions.

Should excessive amounts of dirt, foreign matter or solids be present in the media running through the valve, a filter should be installed in the pressure line, so that the inserts will not be subjected to undue strain and damage.

It may not be necessary to install a filter to prevent leakage if the media is commercially clean air, water, oil, or inert gasses, at normal temperatures.

Great care and all necessary precautions are taken in the manufacture of all component parts. However, these parts cannot be guaranteed except when specific application was made known to our Engineering Department, and our examination shows defective material or workmanship.

This warranty will not apply to any part or valve which, in our opinion, may have been subjected to misuse, abuse, or altered in any way.

**PETER PAUL ELECTRONICS CO., INC. PRODUCTS ARE COVERED BY ONE OR MORE OF THE FOLLOWING PATENTS:**

3,082,359 - 3,307,129 - 3,733,047 - 3,840,959 - 3,965,923 - 4,027,850 - 4,268,009

## INSTRUCTIONS FOR EXAMINING OR CLEANING PETER PAUL VALVES

1. Should the valve fail to operate, check the electrical circuit and replace with a new coil, only if necessary.
2. To examine the inside of the valve, first shut off electrical current and pressure. PETER PAUL valves need not be removed from the line.
3. Remove nut at top of solenoid valve. Name plate, coil, and housing may now be removed from the body. If the valve leaks at the seat, or the plunger sticks in the energized position, use the PETER PAUL WRENCH GP-010 for Series 20 or 30, GP-007 for Series 50, or GP-191 for Series 70 to remove sleeve assembly and examine soft inserts in the plunger for the presence of dirt or wear and inside of the sleeve assembly for dirt or foreign matter. Should the inserts show excessive wear, the plunger should be replaced. Should the valve develop a loud buzzing noise, the inside of the sleeve and upper portion of the plunger should be scrutinized and all foreign matter imbedded in these parts removed, using great care not to damage sleeve seat or plunger face. Should you mar either surface, replace with new sleeve and plunger assembly.

## DO NOT CLEAN PLUNGER ASSEMBLY OR SEALS WITH ANY TYPE OF CLEANING FLUID

Should the complete valve be taken off the line, use great care when reconnecting, so that no chips from the pipe threads can get into the valve. Malfunctioning can be expected when chips will work their way into either the seat or the soft inserts.

## RE - ASSEMBLY

The valves are reassembled by following the disassembly procedure in reverse order. Special care should be taken that the Flange Seal and the return spring are in place when sleeve assembly is tightened into body. After the sleeve assembly is screwed into body and before connecting the electrical circuit to the valve, it is advisable to apply pressure to that port which leads to the body chamber and check for leakage. If the valve has a sleeve port, this must be capped, in order to make this test. If the media is air or gas, leakage can be noted by applying water to the joint and watching for air bubbles. Should the media be a liquid, leakage will be readily apparent.

The nut at the top of the solenoid valve, or housing, should not be tightened excessively, as doing so will put an unnecessary strain on the sleeve assembly or the coil under the housing.

When ordering replacement parts, specify valve number, voltage, and frequency from name plate, and part needed.

**NOTES**

- Not all series 15 valves or operators are agency approved. Consult Peter Paul for voltages and frequencies.
- A letter to designate the fluid groups will appear in the fifth position after the letter "Z" in the valve or operator number "Z" numbered valves or operators have a set of letters or letters and numbers before the "Z" to designate the type of valve or operator and the series. For example "22Z". The "22" designates to two way normally closed valve in the 20 series. There are five positions after the "Z" consisting of four numbers and one fluid group designation letter. For example "22Z1004K". The letter "K" designates the fluid group. There may be suffix letters after the fluid group designation letter to indicate various options. For example "22Z100KCM". The "C" would indicate a conduit housing and the "M" would indicate a molded coil. The coil voltage and frequency (if needed) are the last items in the "Z" number. For example "22Z1004KCM 120/60".
- Each fluid group uses agency approved static and dynamic seal materials. To obtain the best combination for a particular fluid, please consult Peter Paul before selecting a valve.

**PETER PAUL VALVES AND SOLENOID OPERATORS THAT ARE U.L. LISTED & CSA CERTIFIED OR THAT ARE U.L. AND CSA RECOGNIZED COMPONENTS ARE APPROVED FOR THE FOLLOWING FLUIDS, FLUID TEMPERATURES, AND AMBIENT TEMPERATURE**

<b>AMBIENT TEMPERATURE</b>	<b>FLUID TEMPERATURES</b>	<b>FLUID CODES</b>
77°F. FOR ALL AGENCY APPROVED VALVES AND OPERATORS	150°F. -FOR ALL AGENCY APPROVED VALVES AND OPERATORS EXCEPT AS FOLLOWS:	A - AIR
	77°F. MAX. -FOR HYDRAULIC OILS	F - COMMON REFRIGERANTS EXCEPT AMMONIA
	77°F. MAX. -FOR "EH21", "EH22", & "EH23" VALVE SERIES	NG - CITY GAS
	125°F. MAX. -FOR VALVE MODEL "TD32"	Ga - GASOLINE
	77°F. MAX. -FOR REFRIGERANT APPLICATIONS	HO - HYDRAULIC OIL (PETROLEUM BASE)
		LP - LIQUID PROPANE GAS
		O2 - NO. 2 OIL
		S - STEAM
		W - WATER
		OX - OXYGEN, INERT GAS

FLUIDS FOR VARIOUS PETER PAUL U.L. & C.S.A. VALVES AND OPERATORS			NOTES
VALVE OR OPERATOR SERIES - STD. CATALOG NO'S	FLUID CODE	FLUID CODES	NOTES
SERIES "15", "20", "30", "50", & "70", "E20", "E50", "015", "020", "030", "OE20", "050", "OE50", & "070" WITH STANDARD CATALOG NUMBERS	A, NG, LP, 02, HO, W, AND INERT GAS	A, NG, LP, 02, HO, W, AND INERT GAS	1
HIGH PRESSURE "EH21", "EH22", & "EH23" SERIES VALVES	A, NG, LP, HO, W AND INERT GAS	A, NG, LP, HO, W AND INERT GAS	-
<b>VALVE OR OPERATOR SERIES WITH "Z" NUMBERS</b>	<b>FLUID GROUP LETTERS</b>	<b>FLUID CODES</b>	<b>NOTES</b>
SERIES "15Z", "20Z", "EH21Z", "EH22Z", "EH23Z", "E20Z", "30Z", "50Z", "E50Z", "70Z", "015Z", "020Z", "OE20Z", "030Z", "OE50Z", & "070Z"	J or L	A, NG, LP, 02, HO, W, AND INERT GAS	2
	R or K	A, W, AND INERT GAS	2
	T or N	A, NG, LP, 02, HO, W, AND INERT GAS	2
	U or D	A, NG, LP, OX, AND INERT GAS	2
	Z or A	A, W, S, AND INERT GAS	2
	Y or S	A, W, AND INERT GAS	2
	V or G	A, W, OR INERT GAS	2
	M or B	A, NG, LP, AND INERT GAS	2
	H or F	Ga	2
	P or C	OX	2
	O or X	A, NG, LP, 02, HO, W, AND INERT GAS	2
<b>VALVES FOR USE WITH REFRIGERANTS</b>	W or E	A, F, W	2