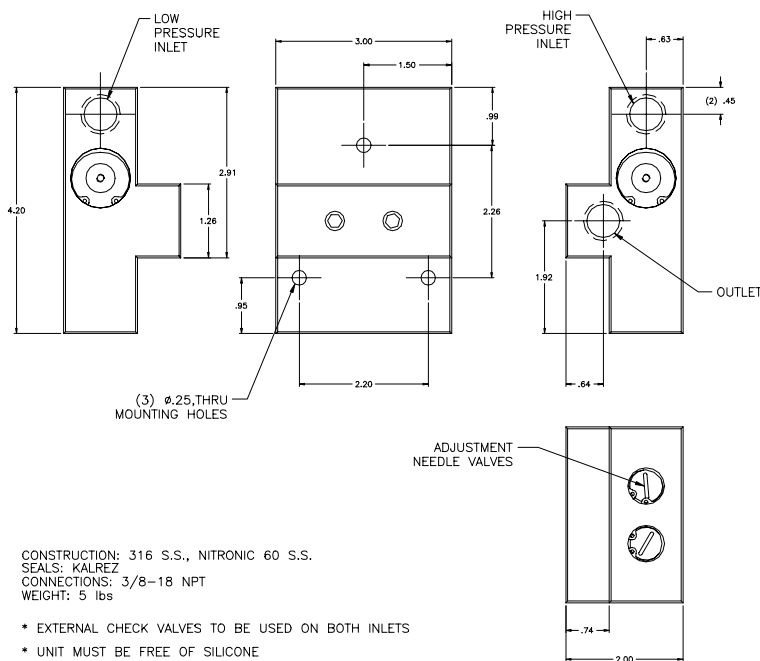


Solvair Model 381 - Installation & Operation Manual

INSTALLATION

- ★ Solvair is shipped fully assembled, ready for operation, with all parts in place. It is completely self contained, requires no outside source of power, no straight piping runs, and has three simple connections.
- ★ For long lasting, maintenance free service, the fluid and gas should be filtered and free of dirt, scale, pipe sealing materials, and other particles.
- ★ There are two inlets or supply connections; a low-pressure inlet on one side and a high-pressure inlet located directly opposite on the other side. The outlet of the Solvair is located on the same side as the high-pressure inlet.
- ★ It is crucial to the operation of the Solvair that the media coming in on the high-pressure inlet is at least 5 psi higher than the media coming in the low-pressure inlet. It does not matter whether the high-pressure media is Solvent or Air., just that the high-pressure media is **always** higher than the low-pressure media.
- ★ **Check valves should be used on both supply lines to prevent reverse flow and contamination of the air and solvent lines.**
- ★ The mounting of the unit is not critical but access to the needle valves for adjustments should be taken into consideration.
- ★ For automotive applications, the unit is to be free of all silicones.



START UP PROCEDURE

- ★ Make sure connections are tight and that all retaining rings are in correctly. There are four retaining rings; one for each needle valve and one on each spool cap.
- ★ It is imperative that low pressure and high-pressure inlets are correct for the Solvair to function properly. The installation of the spool is also critical (see service instructions).
- ★ Fine tuning of needle valves may be necessary for desired results.

CALIBRATION INSTRUCTIONS

Calibration of the Solvair is comparable to tuning a carburetor on an engine. There are two needle valves that are adjusted to achieve the proper blend of Solvent and Air for optimum cleaning time and/or reduction of solvent usage. While tuning the Solvair we recommend that you count the number of turns and keep track of where each needle valve is set.

- ★ Turn both needle valves clockwise until fully closed. Then turn counter-clockwise and count 1-1/2 rotations from the closed position. This is a good starting point for most applications.
- ★ Turning the needle valves counter clockwise increases flow, clockwise will decrease flow.
- ★ As you make adjustments to increase or decrease flow, you should concentrate on keeping the number of turns of each valve within 1/4 turn of each other. It is best to adjust them the same amount at the same time. If the needle valves are in dramatically different positions, the valve can get out of balance and perform erratically.
- ★ ***Make small adjustments.*** As you approach the optimum settings, two phase flow will occur and small adjustments will make large changes in backpressure (outlet pressure) and overall flow.

SERVICE INSTRUCTIONS

- **CAUTION: SHUT OFF ALL SUPPLY LINES AND MAKE SURE THAT THE SOLVAIR IS RELIEVED OF PRESSURE BEFORE ATTEMPTING TO SERVICE OR CLEAN.** At no time should the Solvair be disassembled while installed in the piping system. It is to be serviced at the factory or in a clean room environment by trained personnel. The Solvair is a finely tuned piece of instrumentation and should be treated with great care.
- **Do not remove any of the snap rings while the Solvair is installed in the piping system. Damage to the unit or personal injury may result.**
- To clean the unit, remove the unit from system and set up a clean area to work in.
- Remove retaining rings and pull endcaps off carefully. Be sure not to drop or damage the spool.
- Remove retaining rings and needle valves (turn counter-clockwise to remove).
- Once all parts are removed, inspect for scratches or scoring on all parts and their respective mating surfaces. If the parts have any surface damage, return the unit to the factory for repair. The unit may be cleaned with water, alcohol, or an appropriate solution for your application. Be careful not to scratch or damage parts or surface finishes while cleaning.
- Check seals for damage and replace if necessary.
- Re-assemble the unit making sure the large end of the spool is inserted towards the high-pressure side. **This is critical.** Follow start up procedure.

PRODUCT WARRANTY

W. A. KATES COMPANY guarantees every piece of equipment manufactured by it to be inspected, tested, and free from defects in workmanship or material when shipped from its factory. No warranty of corrosion resistance of any parts or assembly is expressed or implied.

This guarantee is valid for one year from date of shipment from its plant. Within that time, the W. A. KATES COMPANY will replace free of charge any equipment returned, with shipping charges prepaid, found to have been defective at time of shipment.

This warranty does not apply to: (a) damage resulting from misuse or inadequate handling; (b) damage resulting from continued use after defect is apparent; (c) any other damage, loss or liability; or (d) any piece of equipment that is changed, modified or altered in any way after it leaves the factory.

The liability of the W. A. KATES COMPANY shall be limited to the replacement, f.o.b. our factory, of any equipment found to have been defective at time of shipment with duplicate or similar equipment of equal performance rating, but such liability shall in no event exceed the contract price for said equipment.

This warranty is voided for units damaged from particle contamination.