### Suggested Installation

- Ensure that pump materials of construction are compatible with the pumping media and the immediate surroundings the pump will be subjected to. Refer to the Wilden Chemical Resistance Guide. For optimum life and performance, the pump size should be specified to provide adequate performance and is not to exceed the pump’s maximum rated performance capabilities.

- The pump has two foot mount configurations and can be mounted in any orientation. The pump can be mounted in place or offline without losing any features in multiple locations. If the pump is to be mounted in place, ensure that the foot to the desired surface uses 4 corner holes and use the在同一的模式 across.

- The suction and discharge piping diameter should be equivalent or larger than the diameter of pipe connection lines. The length and complexity of the suction and discharge piping should be minimized, unnecessary elbows, bends and fittings should be avoided, in an effort to reduce friction losses.

- The suction hose must be non-collapsible. If rigid piping is used, it should be supported independently of the pump. The piping should be aligned to avoid twisting pressure on the pump fittings.

- Whenever self priming applications, it is critical that all fittings and connections are tight or a reduction in line of pump suction capability will result. Ensure that the suction lift requirement is less than the actual pump model’s suction lift.

- Every pump should have an air line large enough to supply the volume of air necessary to achieve the desired pumping rate. Air pressure to the pump should not exceed a maximum of 0.69 bar (100 psig). For best results, the pump should use a by-pass or a reduced pressure to eliminate air-line contamination, a nozzle valve and pressure regulator.

- When the remote solenoid option is being used, a free-way (2) solenoid valve must be used to control the operation of the pump. Minimize the length of tubing between the solenoid and the pump intake to improve pump performance.

- Tighten all hardware to suggested torque specifications prior to initial start-up. Once installation is complete, be sure to check tightness of outer piston to shaft. Check for cavitation. Confirm vacuum required to lift the fluid is not greater than the vacuum created by the fluid being pumped. Slow pump speed to allow vacuum fluids to flow into liquid chambers.

- Ensure the suction lift requirement is within the pump model’s capability. Inspect for check valve failure. A worn check ball can get stuck in the seat. A check ball can swell and become stuck if not compatible with fluid pumped. Replace if necessary.

- Air bubbles in pump discharge:
  - Check for cavitation.
  - Check tightness of outer piston to shaft.
  - Check integrity of O-ring seals, especially inside side of manifold.
  - Ensure no pressure points against a 2.1 bar (30 psig) head pressure.

- Air consumption:
  - Check for severe air leakage (blow-by) coming from the air exhaust.
  - Check for objects in the pump that would obstruct the movement of internal parts.
  - Check for objects in the pump passageways of the pump.

- Piping:
  - Ensure the differential pressure (difference between the air inlet pressure and fluid discharge pressure) is not less than 0.7 bar (10 psig). Check for check valve failure. A worn check ball can get stuck in the seat.
  - Check for severe air leakage (blow-by) coming from the air exhaust. This could indicate a failed O-ring seal or worn air valve assembly. Replace if necessary.
  - Inspect for check valve failure. A worn check ball can get stuck in the seat. A check ball can swell and become stuck if not compatible with fluid pumped. Replace if necessary.

- The suction piping must be non-collapsible. If rigid piping is used, it should be supported independently of the pump.

- Plastics series pumps are made from plastic that is not UV stabilized. Direct sunlight exposure for prolonged periods can cause deterioration of plastic.

- Keep air supply line of the pump free of debris. Use of a 5μ (micron) in-line air filter is recommended.

### Basic Troubleshooting

**Pump will not run or runs slowly:**
- Ensure the air inlet pressure is 0.3 bar (5 psig) above the start-up pressure of the pump.
- Ensure the differential pressure (difference between the air inlet pressure and fluid discharge pressure) is not less than 0.7 bar (10 psig).
- Check air line/air filter for blockage/diagnosis. Check for obstruction in the air line. Ensure the flow to the desired surface uses 4 corner holes and use the in-line air filter across.
- Check for objects in the pump that would obstruct the movement of internal parts.
- Check for severe air leakage (blow-by) coming from the air exhaust. This could indicate a failed O-ring seal or worn air valve assembly. Replace if necessary.
- Inspect for check valve failure. A worn check ball can get stuck in the seat. A check ball can swell and become stuck if not compatible with fluid pumped. Replace if necessary.

**Pump runs but little or no product flows:**
- Check for cavitation. Confirm vacuum required to lift the fluid is not greater than the vacuum created by the fluid being pumped. Slow pump speed to allow vacuum fluids to flow into liquid chambers.
- Ensure the suction lift requirement is within the pump model’s capability. Inspect for check valve failure. A worn check ball can get stuck in the seat. A check ball can swell and become stuck if not compatible with fluid pumped. Replace if necessary.

**Air bubbles in pump discharge:**
- Check for cavitation.
- Check tightness of outer piston to shaft.
- Check integrity of O-ring seals, especially inside side of manifold.
- Ensure no pressure points against a 2.1 bar (30 psig) head pressure.

**Air consumption:**
- Check for severe air leakage (blow-by) coming from the air exhaust.
- Check for objects in the pump that would obstruct the movement of internal parts.
- Check for objects in the pump passageways of the pump.

**Piping:**
- Ensure the differential pressure (difference between the air inlet pressure and fluid discharge pressure) is not less than 0.7 bar (10 psig).
- Check for check valve failure. A worn check ball can get stuck in the seat.
- Check for severe air leakage (blow-by) coming from the air exhaust. This could indicate a failed O-ring seal or worn air valve assembly. Replace if necessary.
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**Air consumption:**
- Check for severe air leakage (blow-by) coming from the air exhaust.
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**Air consumption:**
- Check for severe air leakage (blow-by) coming from the air exhaust.
- Check for objects in the pump that would obstruct the movement of internal parts.
- Check for objects in the pump passageways of the pump.
Before any maintenance or repair is attempted, the compressed air line to the pump should be disconnected and all air pressure allowed to bleed from the pump.

Insert air valve assembly (item 1) into center section (item 5) until fully seated. Install retaining ring (item 6) to groove in center section on both sides.

For PTFE ball pumps, install locking ears (item 20) on to surfaces of center section (item 5). Slide inner pistons (item 23) on to ends of shaft.

Install four (4) ball check cartridges (item 12) into manifold. Cartridge will be flush with end of the manifold if installed correctly.

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If a large enough vise is not available, the pump fasteners can be used to join the assembly together. A "snug fit" tightening procedure must be used to gradually bring the assembly together.

Press muffler element (item 9) into muffler frame (item 10) and install the assembly into the muffler cavity (opposite the air inlet) of center section (item 5). Fasten with 4 #12 screws (item 11).

Press muffler element (item 9) into muffler frame (item 10) and install the assembly into the muffler cavity (opposite the air inlet) of center section (item 5). Fasten with 4 #12 screws (item 11).

Install outer pistons on to ends of manifold (item 15). Ensure t-nuts (item 17) are properly inserted into manifold screw bosses.

Install four (4) manifold O-rings (item 20) on to ends of manifold (item 15).

Install four (4) ball check cartridges (item 12) into manifold. Cartridge will be flush with end of the manifold if installed correctly.

Each and every product manufactured by Wilden Pump & Engineering, LLC is built to meet the highest standards of quality. Every pump is functionally tested to ensure integrity of operation. Wilden Pump & Engineering, LLC warrants that pumps, accessories and parts manufactured or supplied by it to be free from defects in material and workmanship for a period of five (5) years from date of installation or six (6) years from date of manufacture, whichever comes first. Failure due to normal wear, misapplication, or abuse is, of course, excluded from this warranty. Since the use of Wilden pumps and parts is beyond our control, we cannot guarantee the suitability of any pump or part for a particular application. Wilden Pump & Engineering, LLC shall not be liable for any consequential damage or expense arising from the use or misuse of its products on any application. Responsibility is limited solely to replacement or repair of defective Wilden Pump & Engineering, LLC product. All decisions as to the cause of failure are the sole determination of Wilden Pump & Engineering, LLC. Prior approval must be obtained from Wilden for return of any items for warranty consideration and must be accompanied by the appropriate MSDS for the product(s) involved. A Return Goods Tag, obtained from an authorized Wilden distributor, must be included with the items which must be shipped freight prepaid. The foregoing warranty is exclusive and in lieu of all other warranties expressed or implied (whether written or oral) including all implied warranties of merchantability and fitness for any particular purpose. No distributor or other person is authorized to assume any liability or obligation for Wilden Pump & Engineering, LLC other than expressly provided herein.