

# Proteus® Series Metering Pumps

## Liquid End Sheet

### LE-A76XXXXXX

When pumping solutions, make certain that all tubing is securely attached to the fittings. It is recommended that tubing or pipe lines be shielded to prevent possible injury in case of rupture or accidental damage. Always wear protective clothing and face shield when working on or near your metering pump.

Note: See parts list for materials of construction

#### A. INSTALLING INJECTION CHECK VALVE (FIGURE 1)

Note: Not all configurations have an injection valve

1. The Injection Check Valve prevents backflow from a treated line. Install the injection check valve at the location where chemical is being injected into the system.
2. Any size Female NPT fitting or pipe tee with a reducing bushing to 1/2" Female NPT will accept the injection check valve. PTFE tape should only be used on threads that are connected with pipes.
3. When installing the Injection Check Valve, be sure to position it so that the valve enters the bottom of your pipe in a vertical position. Variations 40° left and right are acceptable.

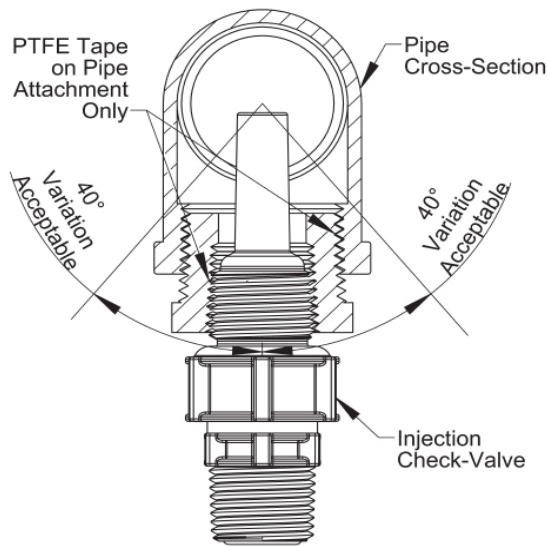


FIGURE 1

#### B. CONNECTING DISCHARGE TUBING (FIGURE 2)

Note: Cut tubing to length needed for discharge line.

1. Route tubing from the injection check valve to the metering pump, making sure it does not touch hot or sharp surfaces, or is bent so sharply that it kinks.
2. Put coupling nut over tubing.
3. Position female Ferrule about one inch (25 mm) from end of tubing.
4. For 1/4" or 6 mm OD tubing, cut tubing so that 1/4" to 3/8" (5-10 mm) protrudes from the female Ferrule. For all other tubing push the tube to the bottom of the groove in the

male Ferrule. Then slide the female Ferrule down into the male Ferrule.

5. Firmly hand tighten the coupling nut onto the fitting.

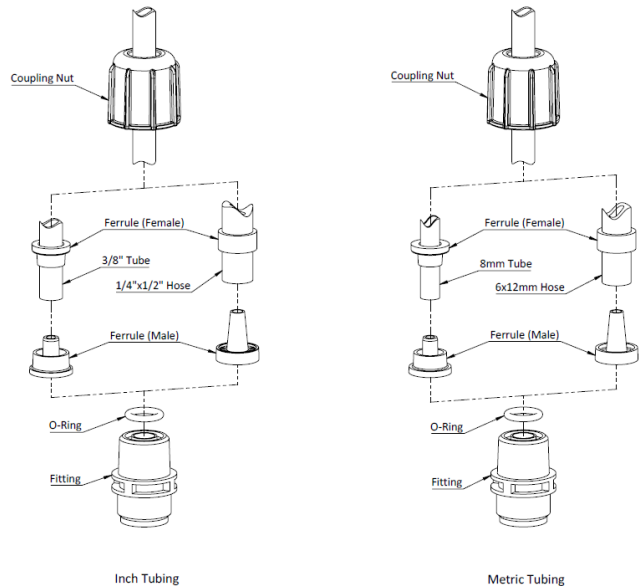


FIGURE 2

DO NOT USE CLEAR VINYL TUBING ON THE DISCHARGE SIDE OF THE PUMP.

DO NOT USE PLIERS OR PIPE WRENCH ON COUPLING NUTS OR FITTINGS.

#### C. CONNECTING SUCTION TUBING/FOOT VALVE

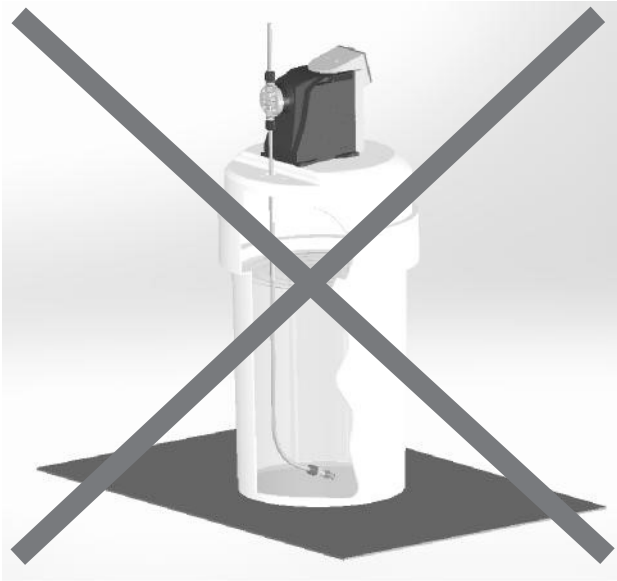
Note: High-viscosity liquid ends are not equipped with a foot valve. Flooded suction is recommended. 1/2" NPT connector is included for flooded suction installations.

1. The foot valve acts as a check valve to keep the pump primed in suction lift applications. Cut suction tubing to a length so that the foot valve hangs approximately 2 in (50 mm) above the bottom of the solution container. Please refer to Figures 3 and 4 for proper foot valve positioning. Maximum recommended vertical suction lift is 13.1 ft (4 m) for Output Codes 2 & 3 and 6.5 ft (2 m).

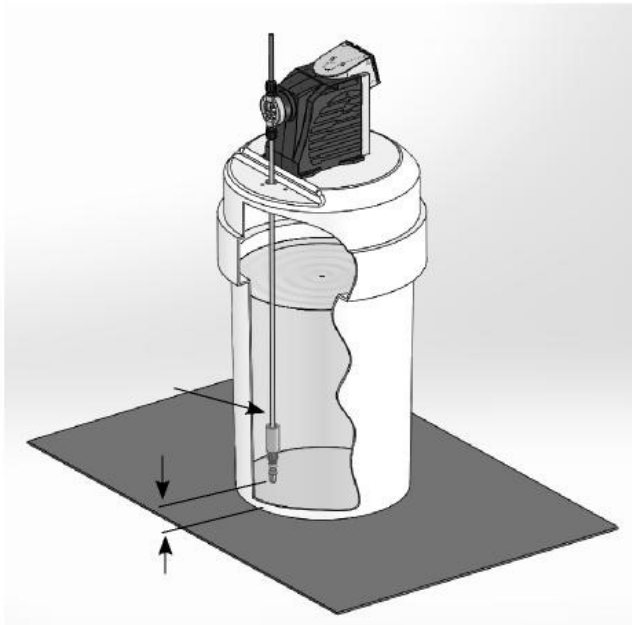


an Accudyne Industries brand

2. The ceramic weight, when installed, helps position foot valve in a vertical position. Attach the foot valve to one end of the suction tubing and slide the ceramic weight over the tubing end until it contacts the top of the foot valve coupling nut. Place foot valve and tubing into solution tank.




**FIGURE 3** - Incorrect Foot Valve Installation



**FIGURE 4** - Correct Foot Valve Installation

## D. PRIMING

1. Prime the pump by pressing PRIME . The pump will operate at the flow rate and for the duration configured in the settings menu for the prime feature.
2. For more information on the prime feature, please refer to Section 4.5 the Proteus Operation Manual available by searching for "Proteus" on [www.miltonroy.com](http://www.miltonroy.com) and clicking the "Installation and Operation Manuals Tab" or scanning the QR code below.

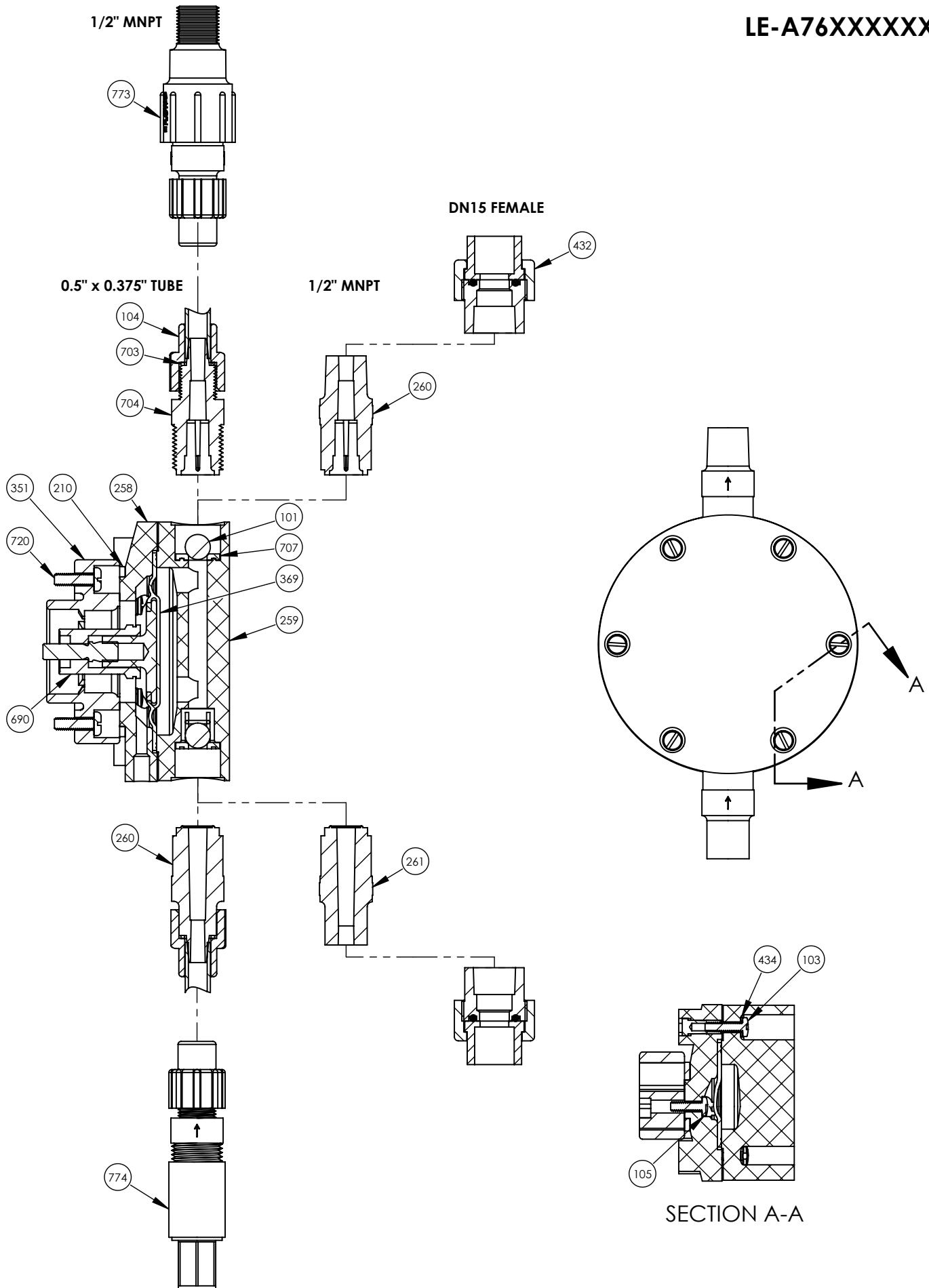


When tubing connections are loosened, chemical will drain from the line. Use appropriate safety precautions to avoid contact with chemical.

REFER TO THE PROTEUS INSTRUCTION MANUAL FOR ADDITIONAL INSTRUCTIONS AND PRECAUTIONS.

You may contact your local Milton Roy Distributor for additional information or visit Milton Roy on the web at [www.miltonroy.com](http://www.miltonroy.com)

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| Key Number | Description                  | Part Number | Quantity  |           |           |           |           |           |           |           |           |
|------------|------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|            |                              |             | A76VCN7PN | A76ACN7PN | A76ATN7PN | A76VCN7TN | A76ACN7TN | A76ATN7TN | A76VCN2FN | A76ACN2FN | A76ATN2FN |
| 101        | BALL                         | 10138       | 2         | 2         | -         | 2         | 2         | -         | 2         | 2         | -         |
|            |                              | 10601       | -         | -         | 2         | -         | -         | 2         | -         | -         | 2         |
| 103        | SCREW, HEAD                  | 30856       | 6         | 6         | 6         | 6         | 6         | 6         | 6         | 6         | 6         |
| 104        | COUPLING NUT                 | 10411       | -         | -         | -         | 2         | 2         | 2         | -         | -         | -         |
| 105        | SCREW, LE ADAPTER            | 10598       | 4         | 4         | 4         | 4         | 4         | 4         | 4         | 4         | 4         |
| 210        | CENTERING WASHER             | 1199959881N | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 258        | DIAPHRAGM ADAPTER            | 38856       | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 259        | HEAD                         | 48483       | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 260        | VALVE HOUSING                | 35585       | 1         | 1         | 1         | -         | -         | -         | 1         | 1         | 1         |
|            |                              | 31938       | -         | -         | -         | 1         | 1         | 1         | -         | -         | -         |
| 261        | VALVE HOUSING                | 35420       | 1         | 1         | 1         | -         | -         | -         | 1         | 1         | 1         |
|            |                              | 31937       | -         | -         | -         | 1         | 1         | 1         | -         | -         | -         |
| 351        | LE SPACER                    | 70114       | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 353        | SECONDARY DIA-PHRAGM (BOOT)* | 35330       | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 369        | DIAPHRAGM                    | 36953       | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 432        | UNION                        | 4320533028N | -         | -         | -         | -         | -         | -         | 2         | 2         | 2         |
| 434        | WASHER                       | 38490       | 6         | 6         | 6         | 6         | 6         | 6         | 6         | 6         | 6         |
| 690        | DIAPHRAGM SPACER             | 70056       | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 703        | CLAMP RING                   | 37203       | -         | -         | -         | 2         | 2         | 2         | -         | -         | -         |
| 707        | SEAL RING                    | 10228       | 2         | -         | -         | 2         | -         | -         | 2         | -         | -         |
|            |                              | 55772       | -         | 2         | 2         | -         | 2         | 2         | -         | 2         | 2         |
| 720        | SCREW, LE SPACER             | 70054       | 4         | 4         | 4         | 4         | 4         | 4         | 4         | 4         | 4         |
| 773        | INJECTION VALVE, 1/2" TUBE   | 33481       | -         | -         | -         | (1)       | (1)       | (1)       | -         | -         | -         |
|            | INJECTION VALVE, NPT         | 38270       | (1)       | (1)       | (1)       | -         | -         | -         | -         | -         | -         |
| 774        | FOOT VALVE, 1/2" TUBE        | 33480       | -         | -         | -         | (1)       | (1)       | (1)       | -         | -         | -         |
|            | FOOT VALVE, NPT              | 38271       | (1)       | (1)       | (1)       | -         | -         | -         | -         | -         | -         |
| -          | TUBE, 1/2", PE               | 10142-16    | -         | -         | -         | (1)       | (1)       | (1)       | -         | -         | -         |

Items shown in ( ) are optional

\*Boot not shown in drawing