Franklin Fueling Systems

9000 SERIES MINI-JET

INSTALLATION GUIDE

For technical assistance, please contact:

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Conventions used in this manual

This manual includes safety precautions and other important information presented in the following format:

NOTE: This provides helpful supplementary information.

IMPORTANT: This provides instructions to avoid damaging hardware or a potential hazard to the environment, for example: fuel leakage from equipment that could harm the environment.

⚠ **CAUTION**: This indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

⚠ **WARNING**: This indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

⚠ **DANGER**: This indicates an imminently hazardous situation that will result in death if not avoided.

Operating precautions

Franklin Fueling Systems (FFS) equipment is designed to be installed in areas where volatile liquids such as gasoline and diesel fuel are present. Working in such a hazardous environment presents a risk of severe injury or death if you do not follow standard industry practices and the instructions in this manual. Before you work with or install the equipment covered in this manual, or any related equipment, read this entire manual, particularly the following precautions:

IMPORTANT: To help prevent spillage from an underground storage tank, make sure the delivery equipment is well-maintained, that there is a proper connection, and that the fill adaptor is tight. Delivery personnel should inspect delivery elbows and hoses for damage and missing parts.

⚠ **CAUTION**: Use only original FFS parts. Substituting non-FFS parts could cause the device to fail, which could create a hazardous condition and/or harm the environment.

⚠ **WARNING**: Follow all codes that govern how you install and service this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on while you are installing or servicing this product. Refer to this manual (and documentation for related equipment) for complete installation and safety information.

⚠ **WARNING**: Before you enter a containment sump, check for the presence of hydrocarbon vapors. Inhaling these vapors can make you dizzy or unconscious, and if ignited, they can explode and cause serious injury or death. Containment sumps are designed to trap hazardous liquid spills and prevent environmental contamination, so they can accumulate dangerous amounts of hydrocarbon vapors. Check the atmosphere in the sump regularly while you are working in it. If vapors reach unsafe levels, exit the sump and ventilate it with fresh air before you resume working. Always have another person standing by for assistance.

⚠ **WARNING**: Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.

⚠ **WARNING**: Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on it in danger from moving vehicles that enter the work area. To help prevent this safety hazard, secure the area by using a service truck (or some other vehicle) to block access to the work area.

⚠ **DANGER**: Make sure you check the installation location for potential ignition sources such as flames, sparks, radio waves, ionizing radiation, and ultrasound sonic waves. If you identify any potential ignition sources, you must make sure safety measure are implemented.

Contents

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⚠ **WARNING**: Discharge static electricity from the splice kit to ground before you install it, and make sure it is properly grounded while in service.

⚠ **WARNING**: Make sure all wiring enters the console's enclosure through the designated knockouts. If you use other openings, an explosion hazard may result. You must run all wiring from sensors to the console in conduit that is separate from all other wiring. If you do not, you will create an explosion hazard.

⚠ **DANGER**: Make sure you check the installation location for potential ignition sources such as flames, sparks, radio waves, ionizing radiation, and ultrasound sonic waves. If you identify any potential ignition sources, you must make sure safety measure are implemented.

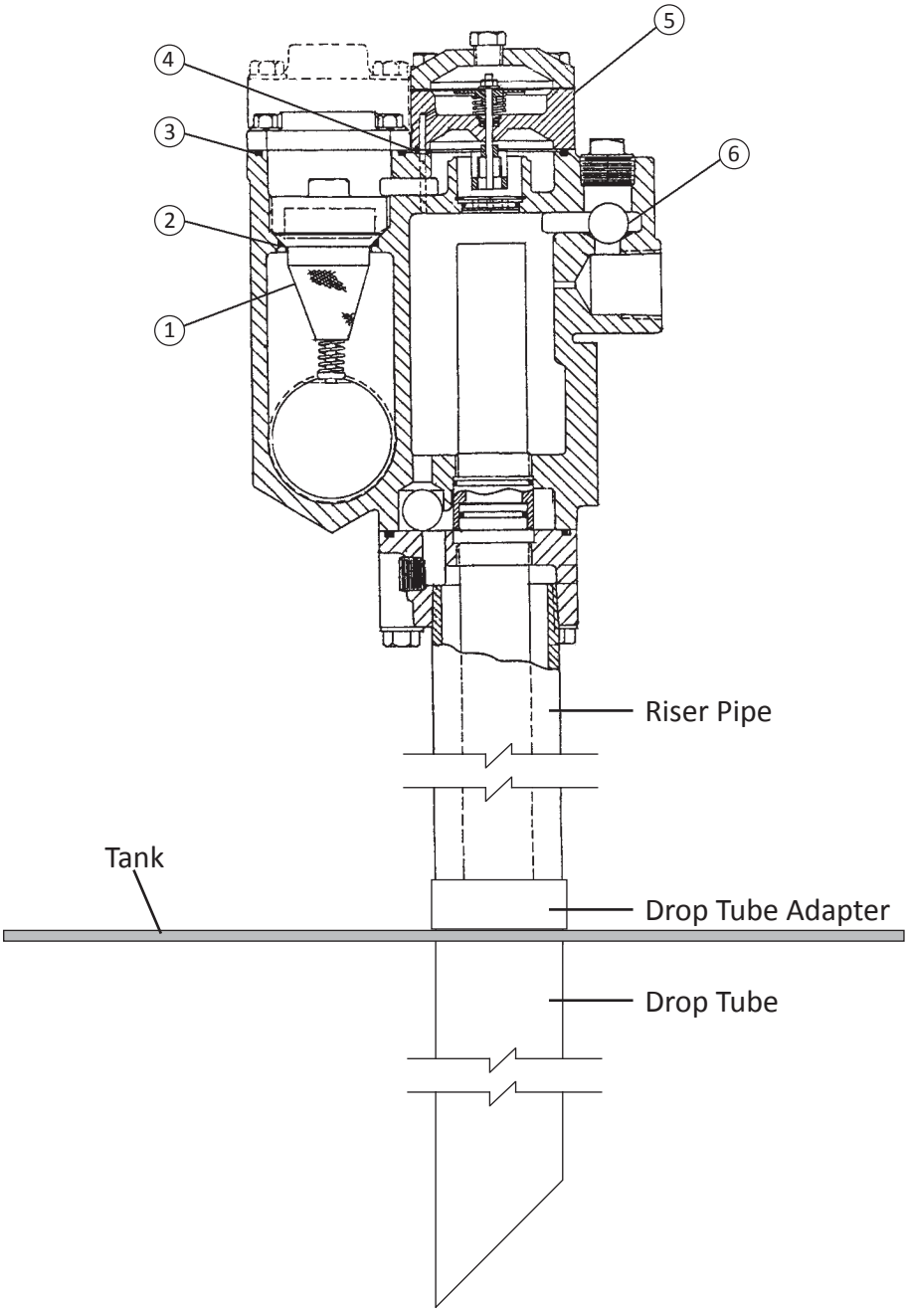
Questions and concerns

In case of emergency, follow the procedures established by your facility. If you have questions or concerns about safety or need assistance, use the information below to contact FFS:

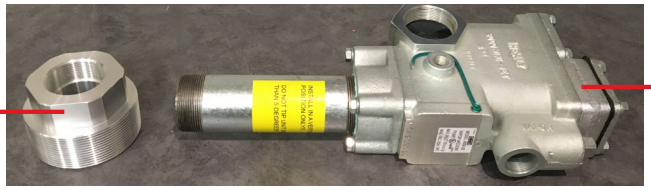
Web: franklinfueling.com
Tel: +1 608 838 8786 • Fax: +1 608 838 6433
Tel: USA & Canada +1 800 225 9787 • Tel: UK +44 (0) 1473 243300
Tel: Mex 001 800 738 7610 • Tel: DE +49 6571 105 308 • Tel: CN +86 10 8565 4566

Field-replaceable parts

Item No.	Quantity	Description	Part No.
1	1	Strainer Assembly	65010402
2	1	O-Ring	CV4
3	2	O-Ring	930
4	1	O-Ring	965
5	1	Vacuum regulator assembly	940A
6	1	Float Ball	94666



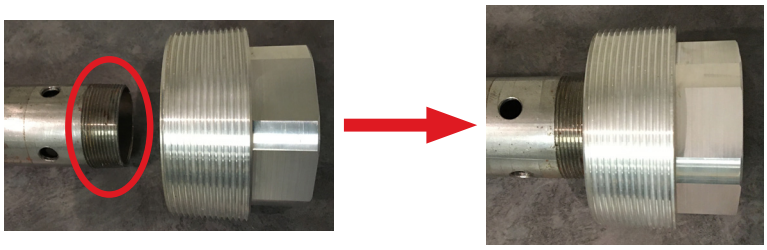
Installing a drop tube



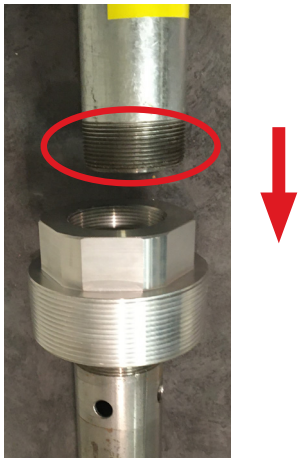
1. Obtain a 2" (50 mm) drop tube locally. Cut the non-threaded end of the drop tube to a 45° angle so that it is approximately 6" (152 mm) off the bottom of the tank when installed.

2. Drill four 1/2" (13 mm) holes approximately 2" (50 mm) below the threads in the threaded end of the drop tube. The holes should be equidistant, 90° apart.

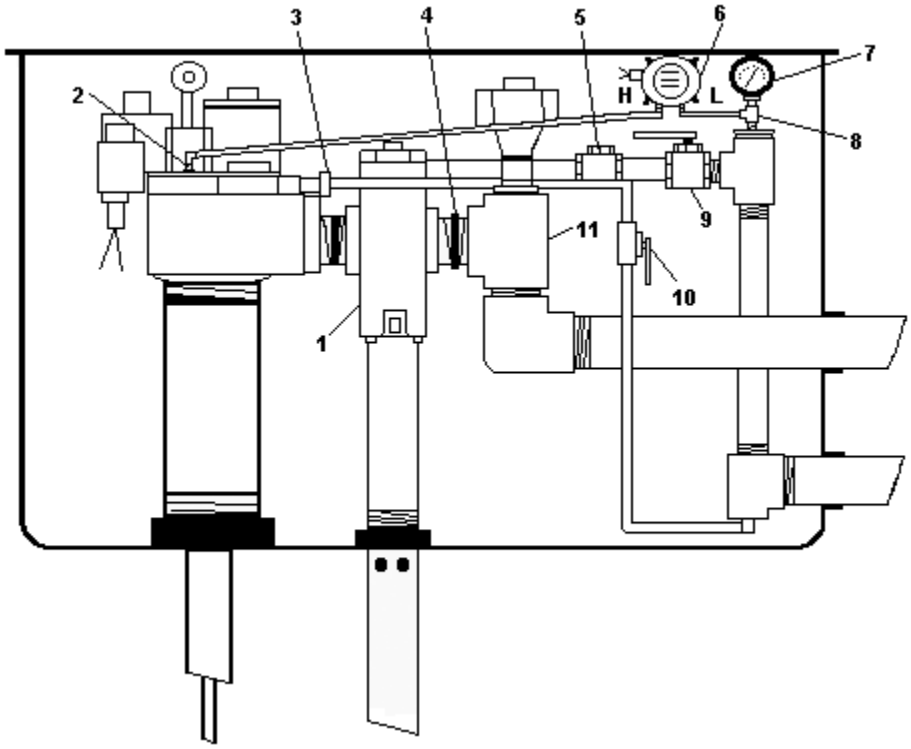
3. Apply a UL-approved, stay-soft (non-hardening), fuel-resistant pipe sealant to the threads at the top of the drop tube, and then thread it into the bottom of the drop tube adapter.



4. Apply a UL-approved, stay-soft (non-hardening), fuel-resistant pipe sealant to the threads at the bottom of the mini-Jet, and then thread it into the top of the drop tube adapter.



Installation with a Red Jacket® Pump

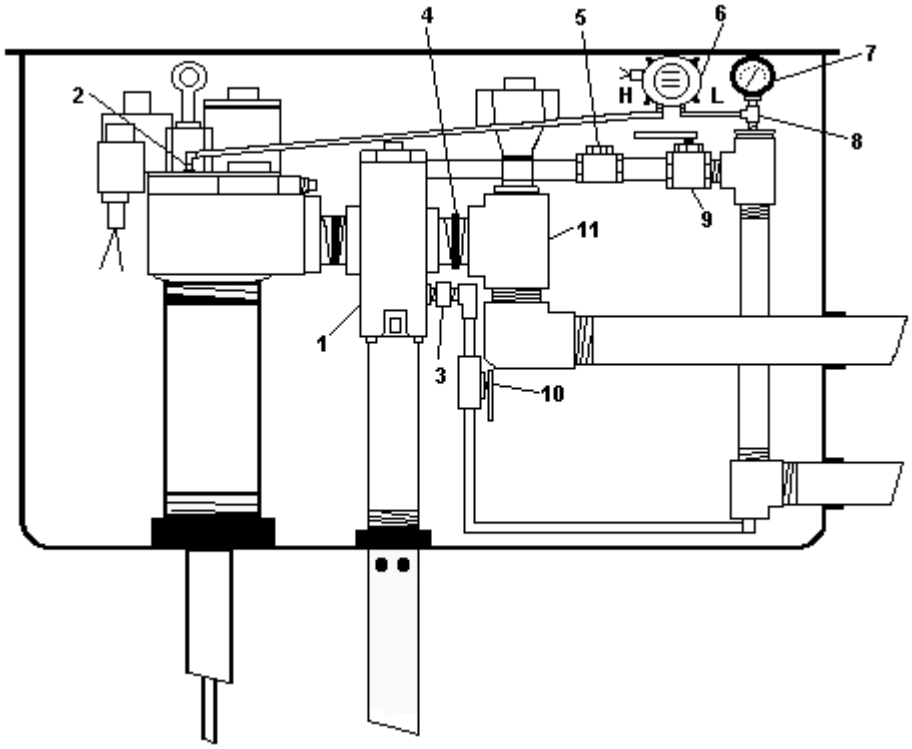


IMPORTANT: FFS recommends using a drop tube. Please see "Installing a drop tube" for specifications.

Below is a list of required items for a typical 9000 Mini-Jet sump installation. This installation is shown using the STP siphon port for low point liquid removal:

1. 9000 Mini-Jet, Healy™ Systems Central Vacuum Source.
2. ¼" Tank Test Port, Red Jacket®.
3. Siphon Valve, Red Jacket®.
4. Universal Check Valve part number 62230001 (or equivalent).
5. Condensate Drain Check Valve part number 9466, Healy™ Systems.
6. TS-VPS Vacuum Sensor.
7. W.C. Vacuum Gage, 0" to 100" (FOR TESTING ONLY).
8. ¼" TEE for vacuum gage test port
9. 1" Ball Valve, UL listed.
10. ¼" Ball Valve, UL listed.
11. Leak Detector TEE Housing, Red Jacket®.

Installation with a Red Jacket® Pump



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7. W.C. Vacuum Gage, 0" to 100" (FOR TESTING ONLY).
8. ¼" TEE for vacuum gage test port.
9. 1" Ball Valve, UL listed.
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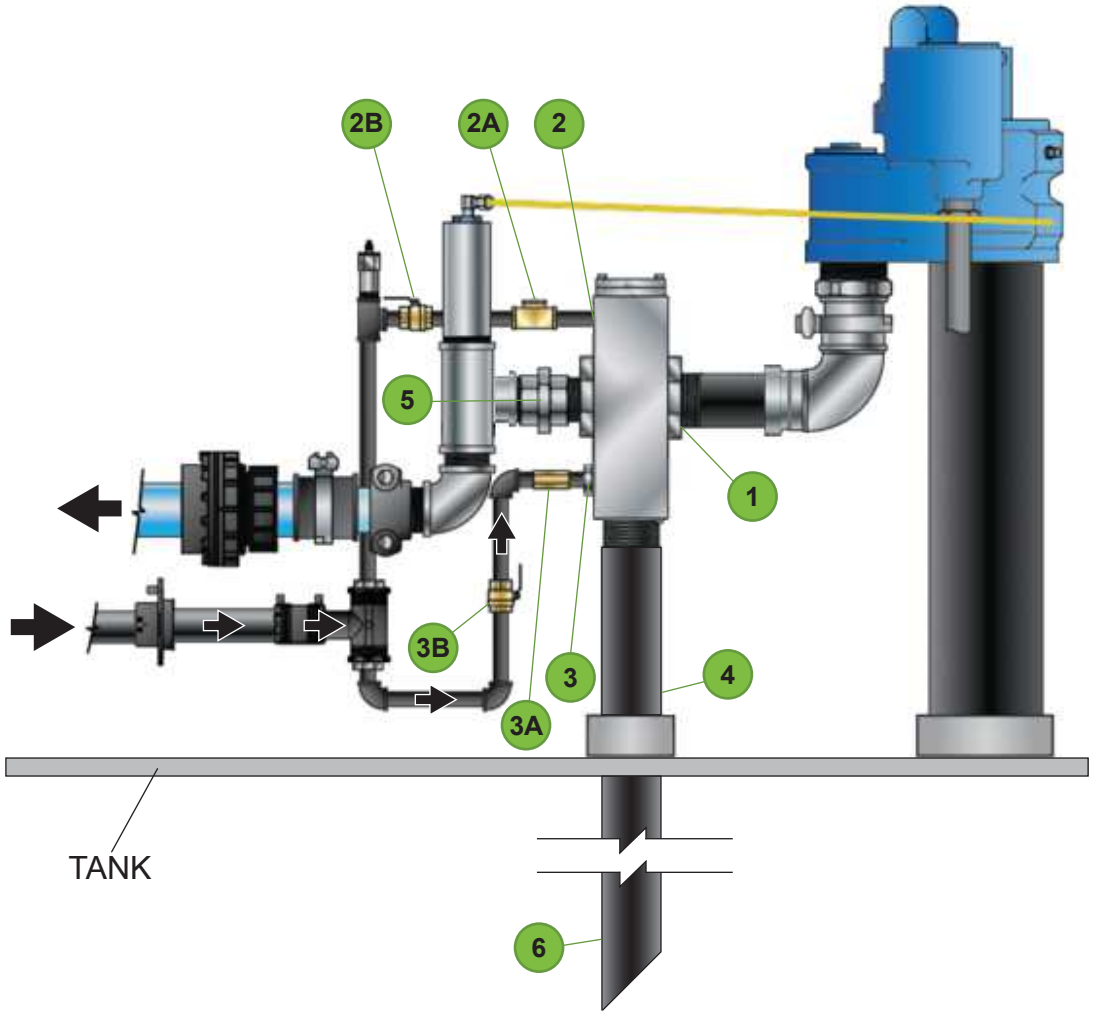
11. Leak Detector TEE Housing, Red Jacket®.

Installation with an FE Petro Pump



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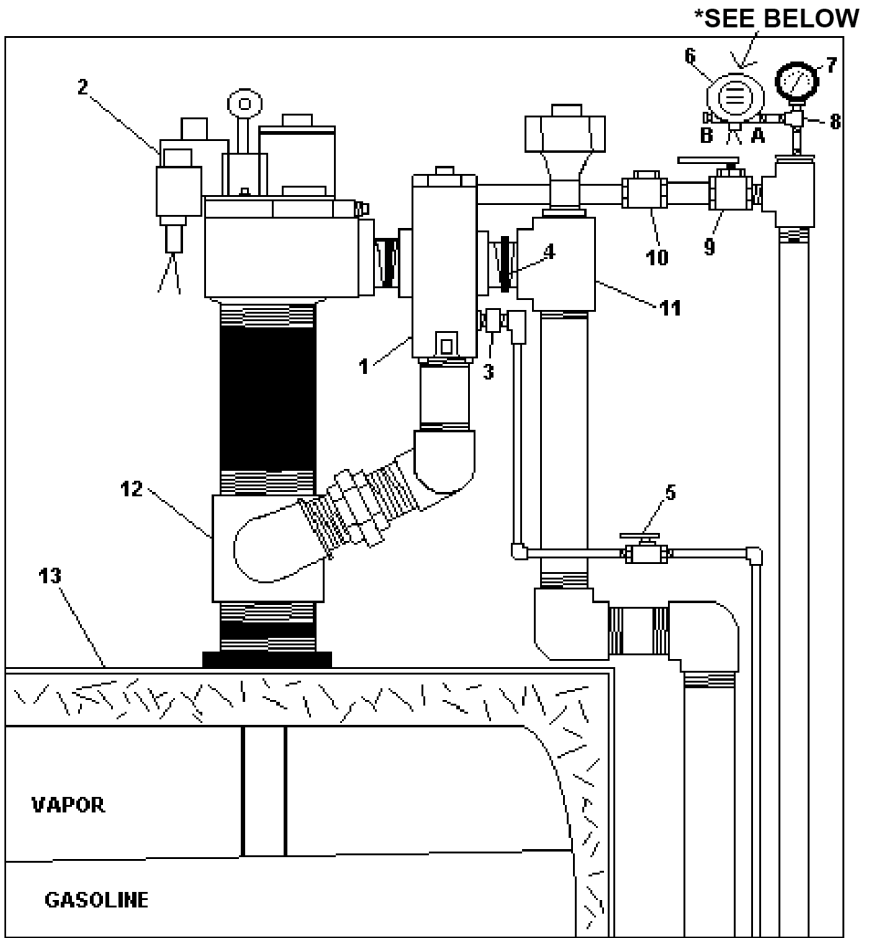
Below is a list of required items for a typical 9000 Mini-Jet sump installation. This installation is shown using the STP siphon port for low point liquid removal:

1. 2" product through port: On each side of 9000 Mini-Jet for product to pass through. 10 to 12 GPM will return to tank. This is what creates vacuum.
2. 1" vapor port:
   - 2A - Back Pressure Check Valve part number 9466
   - 2B - Ball valve.
3. ¼" syphon port-Siphon Check Valve.
   - 3A - Siphon Check Valve.
   - 3B - Ball Valve.
4. 2" product port back to tank.
5. 2" Inline Check Valve: Allows MLD to test remaining line without interference from 9000 Mini-Jet.
6. Drop Tube.

Typical above-ground installation with a 9000 Mini-Jet



* See CARB Executive Order G-70-187 for system monitor requirements on aboveground installations.

IMPORTANT: FFS recommends using a drop tube. Please see "Installing a drop tube" for specifications. This system is shown using the 9000 Mini-Jet siphon port for low point liquid removal. Below is a list of items in a typical aboveground tank installation with a 9000 Healy™ Systems Central Vacuum Source:

1. 9000 Mini-Jet, Healy™.
2. 1½ HP Pump, Red Jacket®.
3. Siphon Valve, Red Jacket®.
4. Check Valve part number 62230001 (or UL equivalent), Morrison Brothers.
5. ¼" Ball Valve (UL listed).
6. TS-VPS Vacuum Sensor.
7. W.C. Vacuum Gauge 0-100" (for testing only).
8. ¼" TEE for vacuum gauge port.
9. 1" Ball Valve (UL listed).
10. #9466 Back Pressure Check Valve, Healy™.
11. Leak Detector TEE Housing.
12. 4x2" Reducer TEE.
13. Aboveground Vaulted Tank (insulated to R5 or K.18)

Adjusting the Mini-Jet

1. Start the submersible pump.
2. Read the vacuum level in the underground vacuum vapor return piping. Use a 0-100" WC vacuum gage.
3. Adjust the vacuum, if necessary, according to the following steps, and then turn off the submersible pump.
4. Remove ¼" pipe plug.
5. Slip a 5/16" thin-wall deep socket though the pipe tapped hole to secure the #5-40 hex nut in place.
6. Insert a ⅛" wide-blade screwdriver through the 5/16" thin-wall deep socket and engage the slot on top of the adjustment needle.
7. Hold the adjusting needle, and turn the socket approximately one-quarter turn counterclockwise to loosen the nut.
8. Hold the nut, and turn the needle clockwise to reduce vacuum or counterclockwise to increase vacuum.
9. Hold the needle in place, and retighten the nut one-quarter turn clockwise. Remove the socket and screwdriver each time to check regulation. Re-adjust as required to reach the desired level.
10. Replace the plug when completed.

IMPORTANT: Clockwise force on the nut while adjusting the needle could cause damage to the needle. If the nut is tight, hold the needle in place, and loosen the nut one quarter turn counterclockwise with a 5/16" thin-wall deep socket.

NOTE: Regulator assemblies with damaged needle screw slots or torn diaphragms need to be replaced as a complete new assembly (p/n 940A) because they are sealed to prevent leakage through the screw threads (the individual parts cannot be replaced).

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