Model 100 Jet Pump and Model 400 Series Nozzle
Aboveground Applications System Testing

System Operating Description
Up to 3.5 gallons per minute of pressurized gasoline are diverted to the 100 jet pump to supply a venturi. The venturi provides the vacuum required to return vapors to the storage tank. The fuel used to generate the vacuum is diverted to the 100 jet pump prior to the meter and is then gravity-dropped back into the storage tank. The nozzles have internal vapor control valves which regulate the amount of vacuum available to the space between the nozzle’s rubber boot and the fuel spout.

Vapor Return Tightness Assessment

Warning: DO NOT dispense fuel from any part of the system during this test procedure.

Requires a 0-100” Water Column Magnehelic Gauge (Healy Part No. 939349A) and a 0-30 psi Gasoline Product Line Gauge. Refer to the drawing on the reverse side.

1. Install a ball valve (14) and check valve (15), as shown on the drawing, if not already present.
2. Connect the 0-100” Water Column Magnehelic Gauge (12) at the tee near the ball valve, as shown on the drawing.
3. Turn on the dispenser.

Note: DO NOT dispense fuel from any part of this system during this test procedure.
4. Read the 0-100” Water Column Magnehelic Gauge. If the gauge holds steady at approximately 75” ± 5” WC, proceed to Step 12. If the gauge fails to reach 75” WC, proceed as follows:
5. Turn off system.
6. Install the 0-30” PSI gauge to the tee (16). Do not leave it permanently installed.
7. Turn on dispenser.
8. If the pressure fails to reach 20 PSI while dispensing product, there is insufficient gasoline product pressure going to the 100 jet pumps to generate sufficient vacuum.
9. Turn off dispenser.
10. Repair product pump as necessary.
11. Retest the product line pressure (Steps 6 and 7).
12. Note gauge reading, authorize dispenser, and close the ball valve (at Item 10) in the vapor return line.

Test Results

• If the gauge holds steady (i.e., drops less than 30” WC in 30 seconds): the system has a leak rate of less than 1/10 GPM during vacuum operation. The test is complete.
• If the gauge falls rapidly (i.e., drops more than 30” WC in 30 seconds): find the leak(s) in the vapor return line(s), dispenser plumbing, hoses, and/or nozzle(s), and make repairs. Retest the system to confirm vapor return tightness.

Note: Nozzle vapor return leaks can be identified by using a leak-proof plastic bag placed over the entire nozzle. Gather the bag around the hose near the nozzle handle. Authorize the dispenser. Do not move or operate the nozzle’s lever. If the bag deflates there is a vacuum leak in the nozzle which must be repaired. Typical field repair would be to replace the spout and/or valve stem seal assemblies.

Nozzle Regulation Tests

Requires 1-0-1” WC Gauge (Healy Part No. 2302A), which includes plastic tubing, fittings, and a hypodermic needle.

Full Tank Shutoff, Six-Click
1. Dispense into a container enough product to allow the small hole near the spout tip to be covered.
2. Leave the spout immersed in the product, read the quantity of gallons on the meter.
3. Attempt six times in rapid succession to dispense product. The nozzle should shut off after each attempt and the total additional volume dispensed after six tries should not exceed 1/10 gallon.

Nozzle Drip Test, Liquid Valve Tightness
1. With hose under pressure and nozzle closed, there should be no drips after one minute.

Vapor Pressure Regulation Fueling Test Procedure
1. Position a vehicle near the dispenser for fueling. The vehicle should have less than one half a tank of gasoline.
2. Remove the fill pipe cap and insert nozzle, making a seal with the nozzle boot and the fill pipe opening. Pass the hypodermic needle through the nozzle’s rubber boot to monitor the space between the inside of the boot and the outside of the spout.
3. While dispensing gasoline (normal test: 3-5 gallons), observe the 1-0-1” WC gauge
4. A properly operating system will show readings between + ¼” and − ½” WC.

Note: The pressure might exceed +¼” at the beginning of the test.
GENERAL NOTES:
• This Illustration is for a single hose installation. Two 100 Jet Pumps are required for each hose.
• Suction Pump output capacity must be 16 GPM – 20 PSI minimum.

1. +3" W.C., - 8" Vacuum vent valve, healy part # HPVV
2. 1 ½" Ball valve
3. 1 ½" Suction riser
4. 973 Syphon valve assembly
5. ½" Vapor return line (I.D)
6. ¼" Air eliminator bleed line
7. ¼" Product supply line (I.D)
8. 2" Product line
9. Vapor adapter, healy part # CX6-A
10. Nozzle, healy # 400-04 FS
11. Coaxial hose assembly, healy 75 series with hose clamp & breakaway
12. 0" TO 100" Water column gage
13. ¼" Condensate return
14. ½" Ball valve
15. 9466 Back pressure check valve (use with 6280 monitor only)
16. 0-30 PSI Pressure gage (for testing only)
17. Type 100 jet pump (two per hose)