

Executive Order G-70-70-AC

Exhibit 5

Healy System Vapor Return Leak Tightness Test Procedure

- | STEP | PROCEDURE |
|-------------|--|
| ① | Connect 0-100" WC gage at 1/4" plug location for vacuum test (see Dwg. 9001-111 at 1" Tee between 1" ball valve in vapor inlet line and end of 2" underground vapor return). |
| ② | Turn on Multi-Jet/Mini-Jet by turning on any dispenser--hang nozzle to maintain Multi-Jet/Mini-Jet vacuum (all nozzles must be closed and must remain closed throughout the test). |
| ③ | Read 0-100" WC gage. |
| ④ | Close 1" ball valve in vapor inlet line and the 1/4" ball valve in syphon line and observe 0-100" WC gage with all nozzles closed: <ul style="list-style-type: none">a. Gage holds steady--this means that all vapor piping from the ball valves out to each and every nozzle is tight. Proceed to Step 5.b. Gage vacuum levels fall quickly--for example, -70" WC to -50" WC in 30 seconds. Proceed to Step 7. |
| ⑤ | Place 1/2-mil-thick plastic dry cleaning bag over vent discharge to atmosphere (remove pressure/vacuum valve if installed at this station). Bag to be closed with string-tie gather on one end and elastic band sealed around vent pipe other end. (Typical dry cleaning bag volume is 18 1/2 gallons.) |
| ⑥ | With bag empty and ball valves closed, turn on Multi-Jet/Mini-Jet and measure time to fill until just tight. <ul style="list-style-type: none">a. If bag remains slack while Multi-Jet/Mini-Jet is running with 1" ball valve on vapor inlet and the 1/4" ball valve on the syphon line closed, there is no vacuum leak from the ball valves to the tank. Test is complete and system is operating correctly.b. If bag inflates, this indicates vapor system is leaking air in somewhere between 1" ball valve and discharge of Multi-Jet/Mini-Jet or between 1/4" ball valve and syphon connection. Find leak as follows and repair.c. With ball valves closed connect 0-100" WC pressure gage to tank test port and cap all tank vent lines.d. Remove 1/4" pipe plug from top of Multi-Jet cover or the 3/4" pipe plug from the top of the Mini-Jet. WARNING: TO AVOID GASOLINE SPLASHBACK DO NOT SHUT OFF MULTI-JET/MINI-JET UNLESS 1/4" or 3/4" PIPE PLUG IS REPLACED. |

- e. Turn on the Multi-Jet/Mini-Jet and observe the pressure rise on tank test gage until pressure reaches +10" WC. **WARNING: DO NOT ALLOW MULTI-JET/MINI-JET TO RUN BEYOND THIS PRESSURE AS POSITIVE PRESSURE MAY INCREASE TO +75" WC.**
- f. Replace 1/4" or 3/4" pipe plug then shut off the Multi-Jet/Mini-Jet. The entire tank vapor space and all piping between the tank and the ball valves, including the Multi-Jet/Mini-Jet, will be pressurized to +10" WC.
- g. Using soapy-water spray, find leak and repair. If no bubbles appear the leak would be in the electrical conduit wire seal of the 8500 Multi-Jet. (The 9000 Mini-Jet and the non-solenoid 8500-NS version of the Multi-Jet do not have electrical connections.)

⑦ Disconnect vapor connections to 1" pipe riser under all dispensers and seal openings with rubber tubing, plugs, or other means (see Dwg. 9001-111).

⑧ Open both ball valves and read 0-100" WC gage at test port in 1" vapor inlet pipe to Multi-Jet/Mini-Jet.

⑨ Close both ball valves and observe 0-100" WC gage:

a. Gage steady--means vapor piping to all dispensers is tight. Proceed to Step 10.

b. Vacuum level falls--indicating piping leak. Record time required to drop 27" WC (i.e., -70" to -43") and estimate length of 2" vapor piping in entire station. Calculate leak rate:

$$\text{GPM (Leak Rate)*} = \frac{\text{Length (Feet)}}{100 \times \text{Time (Min.)}}$$

*Multiply answer by 2.25 for 3" vapor pipe size.

c. Repair leak if in excess of 1/4 GPM.

⑩ Reconnect one dispenser vapor piping to its risers. Open 1" ball valve and read 0-100" WC gage.

⑪ Close 1" ball valve and observe 0-100" WC gage:

a. Gage steady--means no leaks all hoses and plumbing to each nozzle this dispenser. Proceed to Step 12.

b. Gage falls from -70" WC to -50" WC in 30 seconds--large vapor leak this dispenser. Repair as required.

⑫ Disconnect vapor piping from 1" riser and reseal at 1" riser under dispenser.

⑬ Repeat Steps 11 and 12 for each dispenser.

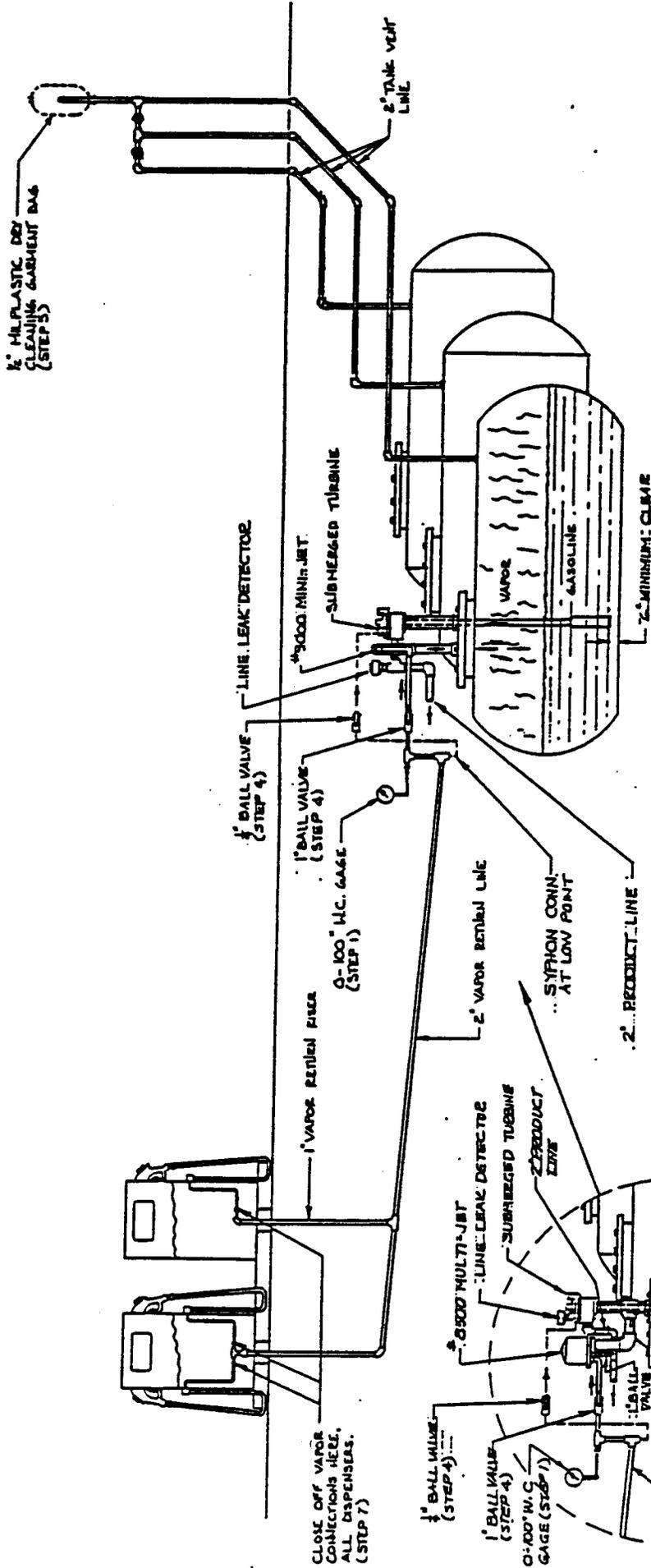
NOTE: MAKE SURE BOTH 1" BALL VALVE AND 1/4" BALL VALVE ARE OPEN FOR NORMAL SERVICE STATION OPERATION

⑭ Reconnect all dispensers to vapor return pipe risers and repeat Step 4 to verify system tightness.

Executive Order G-70-70-AC

Figure 5-A

Healy Vapor Return Leak Tightness Test Schematic



MINI-JET INSTALLATION

8500 MULTI-JET INSTALLATION

REVISIONS	
REV	DESCRIPTION
A	ORIG. ISSUE
B	REVISED FOR MINI-JET
C	ADD 1" BALL VALVE

1/2" MIL-PLASTIC DRY CLEANING GARMENT BAG (STEP 5)

CLOSE OFF VAPOR CONNECTIONS HERE, ALL DISPENSERS. (STEP 7)

MAKE ALL SHARP CORNERS

90 HOE SCALE AND DRAWING

VAPOR RETURN TIGHTNESS TEST SCHEMATIC

SCALE: N/A

NO HOE'S

DATE: 10/1/70

BY: C 9001-111

FOR THE: CAMMIDGE ENGINEERING, INC. SYSTEMS, INC.

DATE: 10/1/70

SCALE: 1 OF 1

USE III DIMENSIONAL SYSTEM		ORIGINAL SIZE	
FRACTIONS	DIMENSIONS	INCHES	MILLIMETERS
0/16	0/16	0/16	0/16
0/32	0/32	0/32	0/32
0/64	0/64	0/64	0/64
0/128	0/128	0/128	0/128
0/256	0/256	0/256	0/256
0/512	0/512	0/512	0/512
0/1024	0/1024	0/1024	0/1024
0/2048	0/2048	0/2048	0/2048
0/4096	0/4096	0/4096	0/4096
0/8192	0/8192	0/8192	0/8192
0/16384	0/16384	0/16384	0/16384
0/32768	0/32768	0/32768	0/32768
0/65536	0/65536	0/65536	0/65536
0/131072	0/131072	0/131072	0/131072
0/262144	0/262144	0/262144	0/262144
0/524288	0/524288	0/524288	0/524288
0/1048576	0/1048576	0/1048576	0/1048576
0/2097152	0/2097152	0/2097152	0/2097152
0/4194304	0/4194304	0/4194304	0/4194304
0/8388608	0/8388608	0/8388608	0/8388608
0/16777216	0/16777216	0/16777216	0/16777216
0/33554432	0/33554432	0/33554432	0/33554432
0/67108864	0/67108864	0/67108864	0/67108864
0/134217728	0/134217728	0/134217728	0/134217728
0/268435456	0/268435456	0/268435456	0/268435456
0/536870912	0/536870912	0/536870912	0/536870912
0/1073741824	0/1073741824	0/1073741824	0/1073741824
0/2147483648	0/2147483648	0/2147483648	0/2147483648
0/4294967296	0/4294967296	0/4294967296	0/4294967296
0/8589934592	0/8589934592	0/8589934592	0/8589934592
0/17179869184	0/17179869184	0/17179869184	0/17179869184
0/34359738368	0/34359738368	0/34359738368	0/34359738368
0/68719476736	0/68719476736	0/68719476736	0/68719476736
0/137438953472	0/137438953472	0/137438953472	0/137438953472
0/274877906944	0/274877906944	0/274877906944	0/274877906944
0/549755813888	0/549755813888	0/549755813888	0/549755813888
0/1099511627776	0/1099511627776	0/1099511627776	0/1099511627776
0/2199023255552	0/2199023255552	0/2199023255552	0/2199023255552
0/4398046511104	0/4398046511104	0/4398046511104	0/4398046511104
0/8796093022208	0/8796093022208	0/8796093022208	0/8796093022208
0/17592186444416	0/17592186444416	0/17592186444416	0/17592186444416
0/35184372888832	0/35184372888832	0/35184372888832	0/35184372888832
0/70368745777664	0/70368745777664	0/70368745777664	0/70368745777664
0/140737491555328	0/140737491555328	0/140737491555328	0/140737491555328
0/281474983110656	0/281474983110656	0/281474983110656	0/281474983110656
0/562949966221312	0/562949966221312	0/562949966221312	0/562949966221312
0/1125899932422624	0/1125899932422624	0/1125899932422624	0/1125899932422624
0/2251799864845248	0/2251799864845248	0/2251799864845248	0/2251799864845248
0/4503599729690496	0/4503599729690496	0/4503599729690496	0/4503599729690496
0/9007199459380992	0/9007199459380992	0/9007199459380992	0/9007199459380992
0/18014398918761984	0/18014398918761984	0/18014398918761984	0/18014398918761984
0/36028797837523968	0/36028797837523968	0/36028797837523968	0/36028797837523968
0/72057595675047936	0/72057595675047936	0/72057595675047936	0/72057595675047936
0/144115191350095872	0/144115191350095872	0/144115191350095872	0/144115191350095872
0/288230382700191744	0/288230382700191744	0/288230382700191744	0/288230382700191744
0/576460765400383488	0/576460765400383488	0/576460765400383488	0/576460765400383488
0/1152921530800766976	0/1152921530800766976	0/1152921530800766976	0/1152921530800766976
0/2305843061601533952	0/2305843061601533952	0/2305843061601533952	0/2305843061601533952
0/4611686123203067904	0/4611686123203067904	0/4611686123203067904	0/4611686123203067904
0/9223372246406135808	0/9223372246406135808	0/9223372246406135808	0/9223372246406135808
0/18446744492812271616	0/18446744492812271616	0/18446744492812271616	0/18446744492812271616
0/36893488985624543232	0/36893488985624543232	0/36893488985624543232	0/36893488985624543232
0/73786977971249086464	0/73786977971249086464	0/73786977971249086464	0/73786977971249086464
0/147573955942498172928	0/147573955942498172928	0/147573955942498172928	0/147573955942498172928
0/295147911884996345856	0/295147911884996345856	0/295147911884996345856	0/295147911884996345856
0/590295823769992691712	0/590295823769992691712	0/590295823769992691712	0/590295823769992691712
0/1180591647539985383424	0/1180591647539985383424	0/1180591647539985383424	0/1180591647539985383424
0/2361183295079970766848	0/2361183295079970766848	0/2361183295079970766848	0/2361183295079970766848
0/4722366590159941533696	0/4722366590159941533696	0/4722366590159941533696	0/4722366590159941533696
0/9444733180319883067392	0/9444733180319883067392	0/9444733180319883067392	0/9444733180319883067392
0/18889466360639767135784	0/18889466360639767135784	0/18889466360639767135784	0/18889466360639767135784
0/37778932721279534271568	0/37778932721279534271568	0/37778932721279534271568	0/37778932721279534271568
0/75557865442559068543136	0/75557865442559068543136	0/75557865442559068543136	0/75557865442559068543136
0/151115730885118137086272	0/151115730885118137086272	0/151115730885118137086272	0/151115730885118137086272
0/302231461770236274172544	0/302231461770236274172544	0/302231461770236274172544	0/302231461770236274172544
0/604462923540472548345088	0/604462923540472548345088	0/604462923540472548345088	0/604462923540472548345088
0/1208925847080945096690176	0/1208925847080945096690176	0/1208925847080945096690176	0/1208925847080945096690176
0/2417851694161890193380352	0/2417851694161890193380352	0/2417851694161890193380352	0/2417851694161890193380352
0/4835703388323780386760704	0/4835703388323780386760704	0/4835703388323780386760704	0/4835703388323780386760704
0/9671406776647560773521408	0/9671406776647560773521408	0/9671406776647560773521408	0/9671406776647560773521408
0/19342813553295121547042816	0/19342813553295121547042816	0/19342813553295121547042816	0/19342813553295121547042816
0/38685627106590243094085632	0/38685627106590243094085632	0/38685627106590243094085632	0/38685627106590243094085632
0/77371254213180486188171264	0/77371254213180486188171264	0/77371254213180486188171264	0/77371254213180486188171264
0/15474250842636097237634552	0/15474250842636097237634552	0/15474250842636097237634552	0/15474250842636097237634552
0/30948501685272194475269104	0/30948501685272194475269104	0/30948501685272194475269104	0/30948501685272194475269104
0/61897003370544388950538208	0/61897003370544388950538208	0/61897003370544388950538208	0/61897003370544388950538208
0/123794006741088777901076416	0/123794006741088777901076416	0/123794006741088777901076416	0/123794006741088777901076416
0/247588013482177555802152832	0/247588013482177555802152832	0/247588013482177555802152832	0/247588013482177555802152832
0/495176026964355111604305664	0/495176026964355111604305664	0/495176026964355111604305664	0/495176026964355111604305664
0/990352053928710223208611328	0/990352053928710223208611328	0/990352053928710223208611328	0/990352053928710223208611328
0/1980704107857420446417222656	0/1980704107857420446417222656	0/1980704107857420446417222656	0/1980704107857420446417222656
0/3961408215714840892834445312	0/3961408215714840892834445312	0/3961408215714840892834445312	0/3961408215714840892834445312
0/7922816431429681785668890624	0/7922816431429681785668890624	0/7922816431429681785668890624	0/7922816431429681785668890624
0/15845632862859363711337781248	0/15845632862859363711337781248	0/15845632862859363711337781248	0/15845632862859363711337781248
0/31691265725718727422675562496	0/31691265725718727422675562496	0/31691265725718727422675562496	0/31691265725718727422675562496
0/63382531451437454845351124992	0/63382531451437454845351124992	0/63382531451437454845351124992	0/63382531451437454845351124992
0/126765062902874909690702249984	0/126765062902874909690702249984	0/126765062902874909690702249984	0/126765062902874909690702249984
0/253530125805749819381404499968	0/253530125805749819381404499968	0/253530125805749819381404499968	0/253530125805749819381404499968
0/507060251611499638762808999936	0/507060251611499638762808999936	0/507060251611499638762808999936	0/507060251611499638762808999936
0/1014120503222999277525617999872	0/1014120503222999277525617999872	0/1014120503222999277525617999872	0/1014120503222999277525617999872
0/2028241006445998555051235999744	0/2028241006445998555051235999744	0/2028241006445998555051235999744	0/2028241006445998555051235999744
0/4056482012891997110102471999488	0/4056482012891997110102471999488	0/4056482012891997110102471999488	0/4056482012891997110102471999488
0/8112964025783994220204943998976	0/8112964025783994220204943998976	0/8112964025783994220204943998976	0/8112964025783994220204943998976
0/1622592805156798844040988797792	0/1622592805156798844040988797792	0/1622592805156798844040988797792	0/1622592805156798844040988797792
0/3245185610313597688081977595584	0/3245185610313597688081977595584	0/3245185610313597688081977595584	0/3245185610313597688081977595584
0/6490371220627195376163955191168	0/6490371220627195376163955191168	0/6490371220627195376163955191168	0/6490371220627195376163955191168
0/129807424412543			