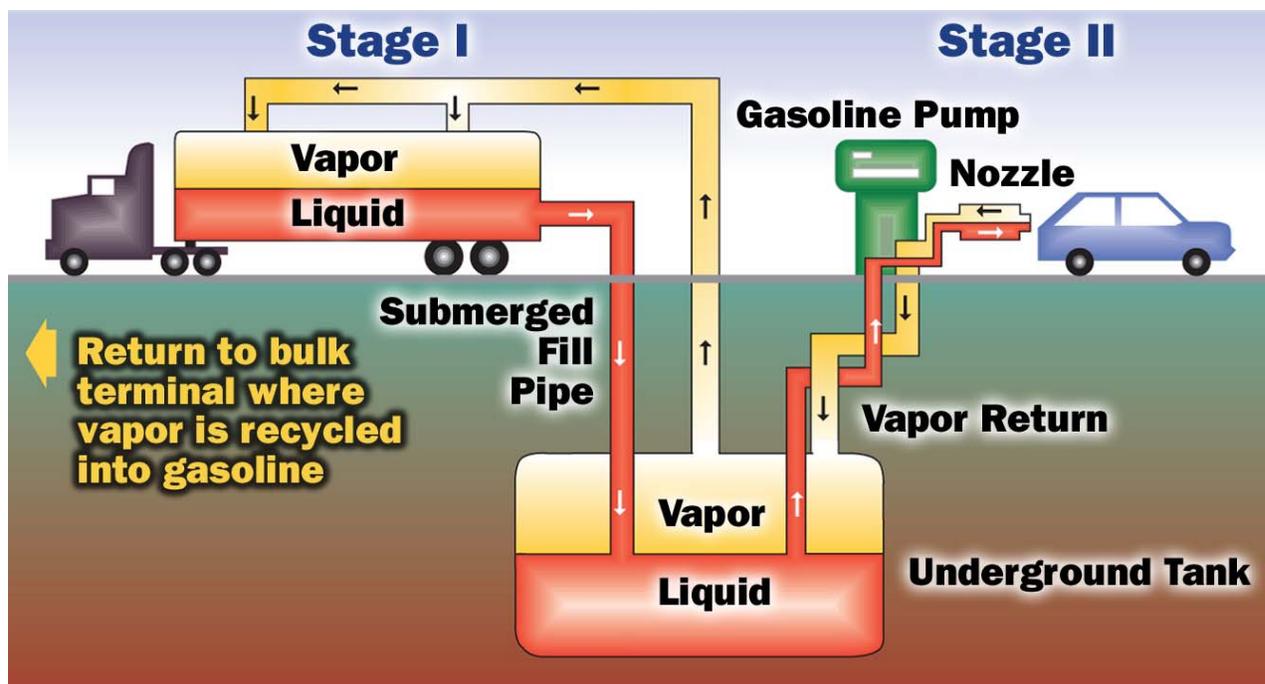


Weekly Inspection Guidance
For Stage II Vapor Recovery
Gasoline Dispensing Facilities
Vacuum Assist Systems

Massachusetts Department of Environmental Protection (MassDEP)
Bureau of Waste Prevention

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Introduction

Under the MassDEP Stage II regulation, only Stage II Vapor Recovery systems approved by the California Air Resources Board (CARB) may be installed in Massachusetts. When CARB certifies a Stage II system a CARB Executive Order is issued. CARB also issues Approval Letters to update existing Executive Orders or to certify new or redesigned Stage II components for use with particular Executive Orders.

Under the MassDEP Stage II regulation, CARB Executive Orders and Approval Letters are enforceable documents and Stage II systems must be installed, operated and maintained in accordance with the terms and conditions of each system's currently applicable CARB Executive Order and Approval Letters.

MassDEP Disclaimer

This document contains guidance information on the MassDEP Stage II regulation and applicable CARB Executive Orders and Approval Letters. This guidance is not a substitute for any requirements contained in the MassDEP Stage II regulation (310 CMR 7.24(6)) or system specific requirements referenced in applicable CARB Executive Orders and Approval Letters.

For more detailed program requirements, please see:

- 310 CMR 7.24(6) Dispensing of Motor Vehicle Fuel
www.mass.gov/MassDEP/air/laws/regulati.htm - apc
- CARB Executive Orders
Stage II systems for underground fuel storage tanks:
<http://www.arb.ca.gov/vapor/eo-PhaseII.htm>
Stage II systems for aboveground fuel storage tanks:
<http://www.arb.ca.gov/vapor/above/above.htm>
- CARB Approval Letters
<http://www.arb.ca.gov/vapor/approval/appr-all.htm>

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1.0 Vacuum Assist Stage II System Training

How a Vacuum Assist Stage II System Controls Gasoline Vapors

A Vacuum Assist Stage II system uses vacuum motors, located inside a facility's gasoline dispensers, to draw vapors back into the gasoline storage tanks through "vapor holes" at the end of each nozzle spout. Vapors collected in the facility's gasoline storage tanks are later transferred to the fuel delivery truck tanks during fuel delivery. From the delivery truck, the vapors are then transferred to a condenser at the gasoline terminal where the fumes are condensed back into gasoline.

Training for Correct Vacuum Assist System Installation, Operation and Maintenance

Stage II System owner/operators and their employees who perform required weekly visual inspections of the Stage II system must be trained in the correct installation, operation, and maintenance of their Stage II system. Required training can be completed by reviewing the terms and conditions of system's CARB Executive Order, Approval Letters, and the system guidance materials presented in this document.

Stage II Training Log – Requirements (see Stage II Training Log on page 24)

A log of all current persons trained to perform weekly Stage II inspections must be maintained on site at the Stage II facility. The log must include the following: the date training completed, the person's printed name and signature.

CARB Executive Orders and Approval Letters

CARB Executive Orders contain the terms and conditions by which a Stage II system is correctly installed, operated, and maintained as well as specific components (nozzles, hoses, fittings, etc) approved for use with the installed Stage II system. CARB Approval Letters are issued by CARB to update existing Executive Orders or to certify new or redesigned Stage II components for use with particular Executive Orders.

Please Note: Under the MassDEP Stage II regulation, CARB Executive Orders and Approval Letters are enforceable documents and Stage II Responsible Officials must install, operate and maintain his or her Stage II system in accordance with the terms and conditions of the system's currently applicable CARB Orders and Approvals.

Identifying Your Stage II System's CARB Executive Order Number

The CARB Executive Order number for your Stage II system can be obtained from the following sources:

- Your facility's currently applicable Stage II Compliance Certification Form;
- Your Stage II Compliance Testing Company; or
- The MassDEP Stage II Program (617-556-1035)

Obtaining a Copy of Currently Applicable CARB Executive Order and Approval Letters

Copies of your Stage II system's currently applicable CARB Executive Order and Approval Letters can be obtained from the CARB Web Page:

Executive Orders

- Facilities with underground fuel storage tanks use the following web page:

<http://www.arb.ca.gov/vapor/eo-PhaseII.htm>

- Facilities with aboveground fuel storage tanks use the following web page:

<http://www.arb.ca.gov/vapor/above/above.htm>

- Nozzles Approved For Assist Systems

Facility owner/operators of Assist Type Stage II Systems must refer to Executive Order G-70-199-AJ (<http://www.arb.ca.gov/vapor/eos/eo-199/eo-199.htm>) to determine the nozzles approved for use with their Stage II system.

Approval Letters

<http://www.arb.ca.gov/vapor/approval/appr-all.htm>

2.0 Vacuum Assist Stage II System Installation and Maintenance Guidance

Vacuum Assist System Nozzles

The following Stage II Assist systems require nozzles with "mini-boots" (see Diagram 1. on page 18) be installed.

<u>Vacuum Assist System Model</u>	<u>CARB Executive Order Number</u>
Catlow ICVN System	G-70-188
Dresser Waynevac	G-70-153-AD
Franklin Intellivac	G-70-169-AA
Gilbarco Vaporvac (Marconi) After 8/1/00	G-70-150-AE
Healy Franklin VP-1000	G-70-183-AA
Healy Franklin VP-1000	G-70-191-AA
OPW VaporEZ	G-70-163-AA
Tokheim Maxvac	G-70-154-AA

CARB Executive Order G-70-199-AJ: Specific Nozzles for each Vacuum Assist System

CARB Executive Order G-70-199-AJ contains the list of approved nozzles for each Assist system (<http://www.arb.ca.gov/vapor/eos/eo-199/eo-199.htm>).

Gilbarco Vaporvac Systems or Gilbarco Vaporvac Dispensers Installed After 8/1/2000

Gilbarco Vaporvac systems or Gilbarco Vaporvac dispensers (G-70-150-AE) installed before 8/1/2000 may have either mini-boot equipped nozzles (see Diagram 1. on page 18) or splash-guard equipped nozzles (see Diagram 2. on page 19).

Please Note:

- Splash-guard nozzles are allowed only on Gilbarco Vaporvac systems or Gilbarco Vaporvac dispensers installed before 8/1/2000.
Gilbarco Vaporvac systems or Gilbarco Vaporvac dispensers installed after 8/1/2000 must have mini-boot nozzles installed.
- Both Mini-boot nozzles and splash-guard nozzles cannot be installed on the same side of a gasoline dispenser. Splash-guard nozzles require a different

test criteria for the A/L Test than mini-boot nozzles and cannot be tested together.

For example, a multi-hose dispenser with three hoses on one side of the dispenser and three hoses on the other can have all splash-guard nozzles on one side and all mini-boot nozzles on the other. What is not allowed is having both types of nozzle on one or both sides.

- Since 8/1/2000, CARB has required splash-guard nozzles be replaced with mini-boot nozzles to improve the vapor control efficiency of the Stage II system.

Loose, Torn, or Damaged Mini-Boots

Mini-boots create a tight seal around the fuel tank filler neck preventing the ingestion of air into the vapor recovery system. Loose, torn, or damaged mini-boots must be tightly attached to the nozzle and replaced if torn or damaged.

Nozzle Automatic Shut-off Failure

- **Automatic shut-off failure:** A nozzle should shut-off or “click” off as gasoline reaches the top of the fuel tank. Nozzles that fail to click off indicate a broken automatic shut-off valve. Automatic shut-off failures result in over-filling of the tank, causing gasoline spillage.

Any nozzle that fails to shut off shall be immediately replaced or immediately taken out of service and replaced within 14 days.

Please Note: The most common Stage II Complaint that MassDEP receives are complaints regarding nozzles that fail to shut off.

Nozzle Continually Clicks Off During Fuel Dispensing

A nozzle that continually “clicks off” when dispensing fuel to an unfilled tank can indicate one or more of the following:

- Previous operator topped off causing a liquid blockage in hose vapor return line.
- A broken nozzle or improperly installed nozzle component.
- A liquid blockage in the dispenser piping or the underground vapor return line.

Clearing the Hose Vapor Return Line

To clear the vapor return line on hoses, raise and extend the hose so the gasoline drains back into the dispenser. Or, point the nozzle downward and drain the gasoline into a bucket. Pour the gasoline in the bucket back into the appropriate octane/grade fill pipe of the underground storage tank.

If a nozzle continues to click off after trying to clear the vapor return line, immediately replace the nozzle or immediately take the nozzle out of service and replace it within 14 days. If the problem persists, contact your maintenance contractor or Stage II Testing Company to determine if there is a liquid blockage problem in the underground piping.

Leaking Nozzles

- **Leaking Nozzles:** Nozzles approved for use with Assist systems under CARB Executive Order G-70-199-AL are designed to be “dripleless”. If, upon stopping the dispensing of gasoline, more than a few drops of gasoline continue to fall from the nozzle, it is an indication of a leaking nozzle.

Any nozzle that leaks gasoline should be immediately replaced or immediately taken out of service and replaced within 14 days.

Vacuum Assist System Hose Length

No more than six inches of a hose’s surface can touch the dispenser island when the nozzle is hanging in the dispenser holster (see Diagram 3. on page 20).

Hose Breakaways

Hose breakaways are designed to allow the nozzle and hose assembly to disengage from the dispenser in case a customer drives off with the nozzle still in the fuel tank filler neck. Failing to install breakaways will result in nozzle, hose, and dispenser damage, and possible personal injury to staff and customers.

Breakaway Installation

- Always install the breakaway between the nozzle and the whip hose, not between the whip hose and the dispenser (see Diagram 3. on page 20).
- The breakaway has an arrow indicating the direction of gasoline flow. Install the breakaway with the arrow pointing toward the nozzle.

Breakaway Maintenance

- Gasoline residue around a breakaway is an indication of a leaking breakaway. If a breakaway is leaking, immediately replace it or immediately take the breakaway out of service and replace the breakaway within 14 days.
- If a customer drives off with a nozzle still in the fuel tank filler neck resulting in the disengagement of the breakaway from the whip hose and dispenser, the breakaway must be replaced. The breakaway can only be reconnected if a CARB approved “reconnectable” breakaway has been installed (<http://www.arb.ca.gov/vapor/approval/cal-07/07-08.pdf>).

Hose Retractors (if required by dispenser design)

When the nozzle is resting in the holster, the retractor cable must pull the hose to the top of the retractor bar. If the retractor cable does not pull the hose to the top, one or more of the following components may be adjusted.

- **Hose Length:** If the hose is too long it will add extra weight preventing the retractor from working properly. If the hose is too short the hose will not be pulled to the top. If the hose is too short, the retractor cable hose attachment will stretch and damage the hose.
- **Retractor Cable:** If the retractor cable breaks, do not retie it. A new retractor cable of the correct length must be installed.
- **Retractor Assembly:** Replace the retractor assembly if the hose is not pulled to the top after adjusting the hose length and retractor cable.

Liquid in Hose Vapor Return Lines

Clear the vapor return lines by raising and extending the hose so the gasoline drains back into the dispenser. If this does not work then point the nozzle downward and drain the gasoline into a bucket. Pour the gasoline back into the appropriate octane/grade fill pipe of the underground storage tank.

3.0 Stage I Vapor Recovery

Stage I Vapor Recovery refers to the gasoline vapor control system between the fuel delivery truck and gasoline storage tanks located at each facility. The way Stage I works is; when gasoline is delivered to a facility, the level of fuel in the storage tanks rise, forcing the vapors in the storage tank back, through the Stage I system, to the fuel delivery truck's tanks. The tank truck then returns to the gasoline terminal where the vapors are collected and condensed back to gasoline.

Stage I Vapor Recovery for Vacuum Assist Systems

"Two-Point" Stage I systems are the only Stage I system approved for use with Assist Stage II Systems. A Two-Point Stage I system has a single product fill connection for gasoline delivery, and a separate connection for vapor return (see Diagram 4. on page 21).

- Coaxial Stage I Systems are not approved for use with Assist Stage II systems.

Maintenance of Stage I Components

Properly maintained Stage I components prevent the escape of gasoline vapor from your gasoline storage tanks. The Stage I System must be inspected and maintained to prevent the loss of vapors.

Two-Point Stage I System Dry Break Valves

The vapor extraction poppet is called a "Dry Break Valve" or "Vapor Adaptor" (see Diagram 5. on page 22). The Dry Break has a spring loaded vapor seal. Press down on the vapor seal and let go (Be cautious of the potential excess vapors escaping from the dry-break when pressing down on the vapor seal to test). The vapor seal should snap shut making a tight seal. Dry breaks that do not close tightly or have leaky vapor seals must be immediately replaced or a new seals installed.

Vapor Caps

All product fills and dry breaks must have vapor caps installed to keep the connection clean and vapor tight (see Diagram 5. on page 22). Vapor caps should snap on snugly and should not spin freely. Loose vapor caps must be replaced or a new rubber gasket installed.

Rubber Gaskets

A rubber gasket must be installed under each vapor cap.

Please Note: Upon opening a Spill Containment Bucket, the presence of gasoline fumes is an indicator of a leaking vapor cap gasket. Leaking vapor cap gaskets must be immediately replaced.

Spill Containment Buckets

Spill containment buckets are designed to collect excess gasoline if a tank is overfilled (see Diagram 6 on page 23).

- Bucket Lids: Spill buckets must have a tight fitting lid to prevent the introduction of water and debris.
- Clean Buckets: Spill buckets must be free of water, dirt, leaves, or other debris at all times.
- Buckets with Drain Valves: Spill buckets with drain valves must be engaged manually after every fuel delivery to drain gasoline back into the tanks. Gasoline cannot be left in spill buckets since it will evaporate and is a source of air pollution.
- Buckets without Drain Valves: If the spill buckets do not have drain valves the gasoline must be removed manually with a hand pump, and drained back into the appropriate product fill pipe.
- Gasoline/water mixtures in spill buckets should not be drained back into the tank.

Please Note: Gasoline/Water mixtures are considered hazardous waste unless managed in accordance with 310 CMR 30.104(3)(e). Gasoline/water mixtures not managed in accordance with 310 CMR 30.104(3)(e) must be collected in sealed drums with proper labeling in accordance with 310 CMR 30.000 (other than 30.104(3)(e)).

Spill containment buckets are designed to collect excess gasoline if a tank is overfilled. An additional source of excess gasoline has been a result of gasoline delivery drivers emptying residual gasoline from the delivery hose into the buckets. Consult with your gasoline delivery company with instructions that excess gasoline in the delivery hose must be drained into the product fill pipe, not the spill bucket.

4.0 Routine Maintenance, Minor and Substantial Modifications: Compliance Testing and Certification Submittal Requirements

Definition of Routine Maintenance, Minor Modification and Substantial Modification

Routine Maintenance means, for the purposes of 310 CMR 7.24(6), the regular re-installation, repair or replacement of one or more Stage II System components including, but not limited to: hoses; nozzles; breakaways; swivels; hose retractors; bucket plow rings; "slip-on" spill or dry break buckets; "O" rings and seals; submersible pumps or suction pipes; fill adaptors; fill tubes; vapor adaptors; fill and vapor caps; drain valves; monitor caps; or riser caps.

Minor Modification means, for the purposes of 310 CMR 7.24(6), the re-installation, repair or replacement of one or more Stage II System components that is not substantial, including, but not limited to: less than 50% of the motor vehicle fuel dispensers (e.g., 1 of 4 dispensers); a central vacuum unit of a Healy 400 ORVR nozzle system or Healy 600 nozzle system; ball float extractor valve housings; dispenser mounted vapor pumps; or "screw-on" spill or dry break buckets. If the re-installation, repair or replacement of Stage II System components occurs at a motor vehicle fuel dispensing facility with two or less dispensers, the re-installation, repair or replacement of only one of the motor vehicle fuel dispensers shall be a Minor Modification.

Substantial Modification means, for the purposes of 310 CMR 7.24(6), the re-installation, repair or replacement of one or more Stage II System components including, but not limited to: 50% or more of the motor vehicle fuel dispensers (e.g., 2 of 4 dispensers); the replacement of one type of Stage II system with another type (e.g., replacement of a balance system with a vacuum assist system, or a Healy 400 ORVR nozzle system or Healy 600 nozzle system with a Healy VP-1000 system); or the re-installation, repair or replacement of Stage II System components requiring excavation below a shear valve or tank pad (e.g., vapor return piping, vent piping, vapor space tie bar, two-point or coaxial Stage I systems; or motor vehicle fuel storage tanks). If the re-installation, repair or replacement of one or more Stage II System components occurs at a motor vehicle fuel dispensing facility with two or fewer dispensers, the re-installation, repair or replacement of all motor vehicle fuel dispensers shall be a Substantial Modification.

Applicable Compliance Testing, Recordkeeping and Certification Requirements

MODIFICATION/REPAIR	TESTING REQUIRED
A. ROUTINE MAINTENANCE For routine maintenance and repairs, no submittal to MassDEP or compliance testing is required. Record of repairs is required to be maintained on site in applicable maintenance logs.	
1. Replace hose, nozzle, breakaway, swivel, hose retractor	No test
2. Replace bucket plow ring	No test
3. Replace "slip-on" spill or dry break bucket. If "screw-on" spill bucket must be replaced. See screw-on spill bucket below.	No test
4. Replace "O" rings and seals	No test
5. Replace/repair submersible pump/suction pipe	No test
6. Replace/repair fill adaptor, fill tube, vapor adaptor, fill and vapor caps, drain valves, monitor caps, riser caps	No test
B. MINOR MODIFICATIONS For minor modifications and repairs, compliance testing is required to be performed and passed, but submittal of a Form A to MassDEP is not required. Records of repairs and test results are required to be maintained on site in applicable logs.	
1. Replace dispenser mounted vapor pump (vacuum motor).	Air-to-Liquid Ratio Test (A/L) for that vapor dispenser and applicable nozzles
2. Replace "screw-on" spill or dry break bucket.	Pressure decay
3. Isolate diesel tank or other fuel storage tank not in use from Stage II system.	Pressure decay
4. Replace/repair <50% of total dispensers (e.g., 1 of 4 dispensers).	Pressure decay, dynamic back pressure/liquid blockage, (Air-to-Liquid Ratio for vacuum assist systems)
5. Replace/repair <50% of dispenser piping.	Pressure decay, dynamic back pressure/liquid blockage
6. Replace/repair Healy central vacuum unit for Healy 400 ORVR nozzle system or Healy 600 nozzle System.	Healy vapor return line test, Healy Fillneck Pressure (Healy 400 ORVR), Air-to-Liquid Ratio (Healy 600)
7. Replace/repair ball float extractor valve housing.	Pressure decay
C. SUBSTANTIAL MODIFICATIONS For substantial modifications and repairs, all applicable tests are required to be performed and passed ("full system test") and a fully completed Form A must be submitted to MassDEP prior to commencing system operation. Records of repairs and testing are required to be maintained on site in applicable logs.	
1. Excavate below shear valve or tank pad to repair, replace or install vapor return piping, vent piping, vapor space tie bar, two-point or coaxial Stage I systems.	Full system test
2. Excavate below shear valve or tank pad to repair or replace Tank	Full system test
3. Replace/repair $\geq 50\%$ of the vapor recovery system	Full system test
4. Replace/repair $\geq 50\%$ of the dispensers (e.g., 2 or more of 4 dispensers)	Full system test

5. Replace Stage II system with another type (e.g., replace balance system with vacuum assist system, replace Healy 400 ORVR nozzle system or Healy 600 nozzle system with Healy VP-1000 system)	Full system test.
<p>D. Facilities Currently Exempt From Stage II Requirements</p> <p>For gasoline dispensing facilities currently exempt from Stage II installation requirements (i.e., the facility was installed <u>prior to</u> 11/1/1989 and since 11/1/1989 has <u>not</u> been substantially modified <u>or</u> dispensed more than 10,000 gallons of gasoline in any one month) any modification or repair of the gasoline dispensing system identified below or the dispensing of more than 10,000 gallons of gasoline in any one month <u>will trigger the requirement to</u> (a) install a Stage II system, (b) perform and pass all applicable tests and (c) submit a fully completed Form A to MassDEP, prior to commencing system operation.</p>	
1. Excavate below shear valve or tank pad to repair, replace or install vent piping and/or two-point or Coaxial Stage I systems.	
2. Install, repair or replace tank and/or fuel distribution system.	

5.0 Vacuum Assist System Weekly Inspection Instructions

The MassDEP Stage II regulation requires all Stage II systems to be visually inspected on a weekly basis (once every seven days) to ensure the system is operating correctly and properly maintained.

- Only persons who have been trained can conduct Weekly Stage II Inspections (see 1.0 Stage II "Assist" System Training).
- MASSDEP recommends that at least two persons be trained for each Stage II facility.
- See Vacuum Assist System Weekly Inspection Checklist on page 24.

Safety Precautions When Conducting Weekly Stage II Inspections

- Place safety cones around the inspection area. Be aware of moving cars while conducting inspection.
- Wear high visibility safety vest, safety goggles, gloves, and steel toe boots.
- Use a spark resistant crowbar or spark resistant screwdriver for opening Spill Containment buckets and Vapor Connection buckets.
- The Vacuum Assist System Weekly Inspection Checklist must be fully completed and signed during each weekly visual inspection.

Completing the Vacuum Assist System Weekly Inspection Checklist

- Enter inspection date to the right of "Week of:"
 - Answer all questions, check either "Yes" or "No" for each question.
- If you do not understand an inspection question please contact the MassDEP Stage II program at 617-556-1035.
- In the right-hand column of the Inspection Checklist, actions taken in response to incorrectly installed, non-functioning, or broken components at

the time of inspection must be noted and the date any repairs are completed.

- The Vacuum Assist System Weekly Inspection Checklist must be fully completed, signed and dated by the person performing the inspection.

Please Note:

If your answer to an inspection question has an asterisk (*) next to it, then the component is either incorrectly installed, non-functioning, or broken and therefore in non-compliance with applicable program requirements.

If incorrectly installed, non-functioning, or broken components are identified during a weekly inspection, the following steps must be taken:

- i. immediately repair the incorrectly installed, non-functioning or broken (broken) component(s); or, if the broken component could not be immediately repaired;
- ii. immediately stop dispensing gasoline through the broken component(s), post "Out of Service" signs on it, and repair it within 14 days; or, if the broken component(s) could not be repaired within 14 days;
- iii. immediately isolate¹ the broken component(s) from the remainder of the Stage II system so that the remainder of the Stage II system is correctly operating and post "Out of Service" signs on the broken component(s) until repaired; or, if the broken component(s) can not be isolated from the remainder of the Stage II system so that the remainder of the Stage II system is correctly operating;
- iv. immediately stop ALL dispensing of gasoline at the facility and post "Out of Service" signs on ALL motor vehicle fuel dispensers until the component(s) is repaired.

¹ **Isolate** shall mean, for the purposes of the Stage II regulations, to take out of service of one or more components of a Stage II system so that the remainder of the Stage II system operates as required by the terms and conditions of the system's currently applicable Executive Order.

6.0 Stage II Compliance Testing Requirements

Required Stage II Tests for Vacuum Assist Systems

TEST NAME	FREQUENCY	DESCRIPTON
Pressure Decay Test	Annually*	Quantifies vapor tightness of the vapor recovery system.
Vapor Space Tie Test	Annually*	Verifies if the underground tanks have been manifolded (connected by vapor piping). Multiple tanks must be manifolded together with vapor piping to distribute the collected vapors evenly to all tanks if there is a "common" Stage II vapor return line. Configurations which include dedicated Stage II vapor return lines to specific tanks do not need to be manifolded but must be verified to return to the proper tank.
Pressure Vacuum Vent Valve Test	Annually*	Determines if the Pressure Vacuum Vent Valves are opening at the correct pressure setting and closing at the correct vacuum setting.
Dynamic Back Pressure Test	Upon installation or substantial modification** <u>and</u> every 3 years	Determines vapor flow resistance through the vapor recovery piping.
Liquid Blockage Test	Upon installation or substantial modification** <u>and</u> every 3 years	Detects low points and blockage in the vapor recovery piping.
Air to Liquid Ratio Test	Annually*	Determines if the vapor return vacuum motors are calibrated properly and also detects defective nozzles.

*Annually: Tests notated as "Annually", are also required at installation, substantial modification, and every three years.

**Substantial modification: See 4.0 Routine Maintenance, Minor and Substantial Modifications: Compliance Testing and Certification Submittal Requirements.

7.0 Recordkeeping Requirements

Under the MassDEP Stage II regulation, all Stage II facilities must maintain, on-site, the following records for the most recent rolling twelve-month period:

- Stage II Training Log: The training log documents all facility employees currently trained to perform Stage II weekly visual inspections.
- Weekly Inspection Checklists: All weekly inspection checklists for the most recent rolling twelve-month period.
- Stage II Certification Forms: Copies of all applicable Stage II In-Use Compliance Certification forms for the most recent rolling twelve-month period.

- Stage II Test Reports: Copies of all Stage II Compliance Testing Company test reports.

Please Note: MassDEP recommends the above records be maintained in a single 3-ring binder.

8.0 Fuel Dispensing: Topping Off & Spill Prevention

Topping Off Results in Blocked Hoses

Overfilling or "topping off" a gas tank can draw gasoline into the vapor return openings of the nozzle, causing a blockage in the hose vapor return line. This blockage will effect the proper operation of the Stage II vapor recovery system. If a blockage occurs vapors cannot be collected.

- **Clearing the Hose Vapor Return Line:**
Clear the Hose by raising and extending the hose so the gasoline will drain back into the dispenser. If this does not work then point the nozzle downward and drain the gasoline into a bucket. Pour the gasoline back into the appropriate octane/grade fill pipe of the underground storage tank.

Topping Off Results in Gasoline Spills

Overfilling or "topping off" a gas tank can result in gasoline spillage. Gasoline contains many toxic compounds that are harmful to public health and the environment.

Cleaning up Gasoline Spills and Disposal of Gasoline Absorbents

An absorbent such as "Speedy Dry" should be used to limit gasoline contamination to the environment. Disposal of gasoline absorbents must be done in accordance with Massachusetts Hazardous Waste regulations (see 310 CMR 30.302: Determination of Whether a Waste is Hazardous). If the gasoline/absorbent is determined to be hazardous, it must be collected in sealed drums with proper labeling in accordance with 310 CMR 30.000.

9.0 Stage II Cost Saving Ideas

Maintain the Stage II System. Your station may be eligible for a Form D1 (no test required) if you are diligent about maintaining your Stage II system. If you pass all certification tests on the first attempt, two years in a row, and postmark your Form C by the due date, you will be eligible for a Form D1.

Install Multi-Product Blending Dispensers to reduce the number of nozzles & hoses that need to be maintained. Blending dispensers have one nozzle/hose assembly on each side of the dispenser.

Shop around for Stage II Testing companies. The prices for Stage II Tests will vary widely so call a number of testing companies to inquire about test prices. MassDEP also recommends that you ask the testing companies for references. MassDEP does not certify Stage II testing companies.

Stage II Equipment Warranty: If purchased nozzles and hoses are under a year warranty have the Stage II system tested within the year. Equipment may fail the test and it will still be covered under the warranty. Hold on to your equipment purchase receipts.

10.0 MassDEP Resources & Other State Agency Resources

MassDEP Stage II Resources:

Stage II Info Line Boston (Answering Machine): (617)-556-1035

MassDEP Stage II email address: aq.stage2@state.ma.us

Marc Bolivar, Database Management & Facility Information Support:
(617) 292-5527

Jeff Gifford, Regulation, Technical, & Enforcement Support:
(617) 556-1144

MassDEP guidance regarding: hazardous wastes, handling used oil filters, etc.

www.mass.gov/MassDEP/recycle/laws/policies.htm

MassDEP Bureau of Waste Site Cleanup (cleanup of oil and hazardous material spills)

www.mass.gov/MassDEP/cleanup/index.htm

24 Hour number – 888-304-1133 - to report releases of oil and hazardous materials to the Emergency Response Program

Leaking Underground Storage Tank Program- general information on leaking UST's
617-292-5887

Department of Fire Services

Ensure proper installation, removal, permitting, and closure of underground storage tanks, www.state.ma.us/dfs, 978-567-3300

Department of Revenue

21J Underground Storage Tank Program for reimbursement for eligible UST facilities Certificate of Compliance (COC) www.state.ma.us/ust, 617-887-5970

MA Division of Standards

Retail Gasoline & Oil Dealers License. Weights and Measures Enforcement
www.state.ma.us/standards, 617-727-3480

Diagram 1. Vacuum Assist Nozzle with Mini-Boot

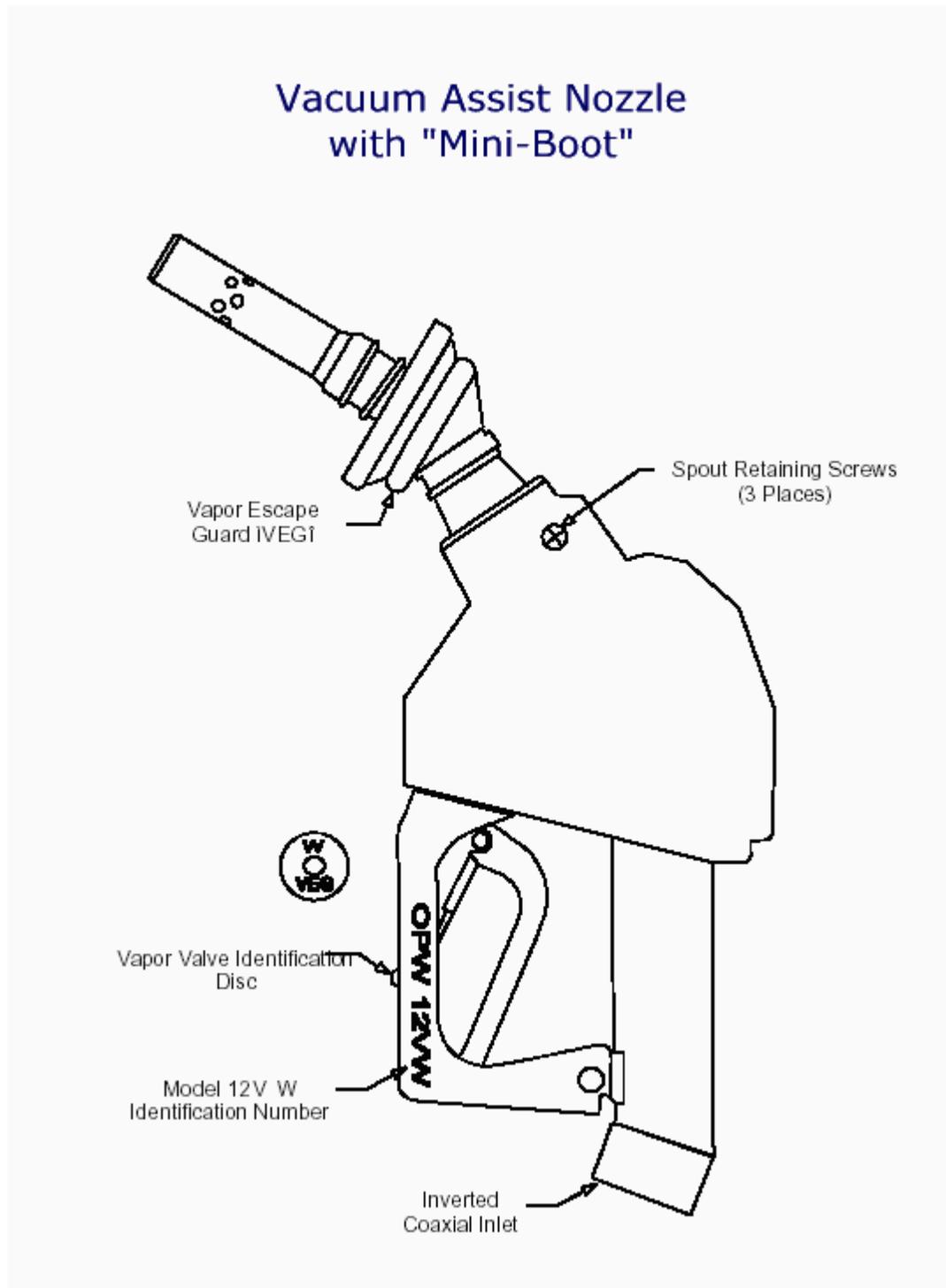


Diagram 2. Vacuum Assist Nozzle with Splash Guard

Vacuum Assist Nozzle with "Splash Guard"

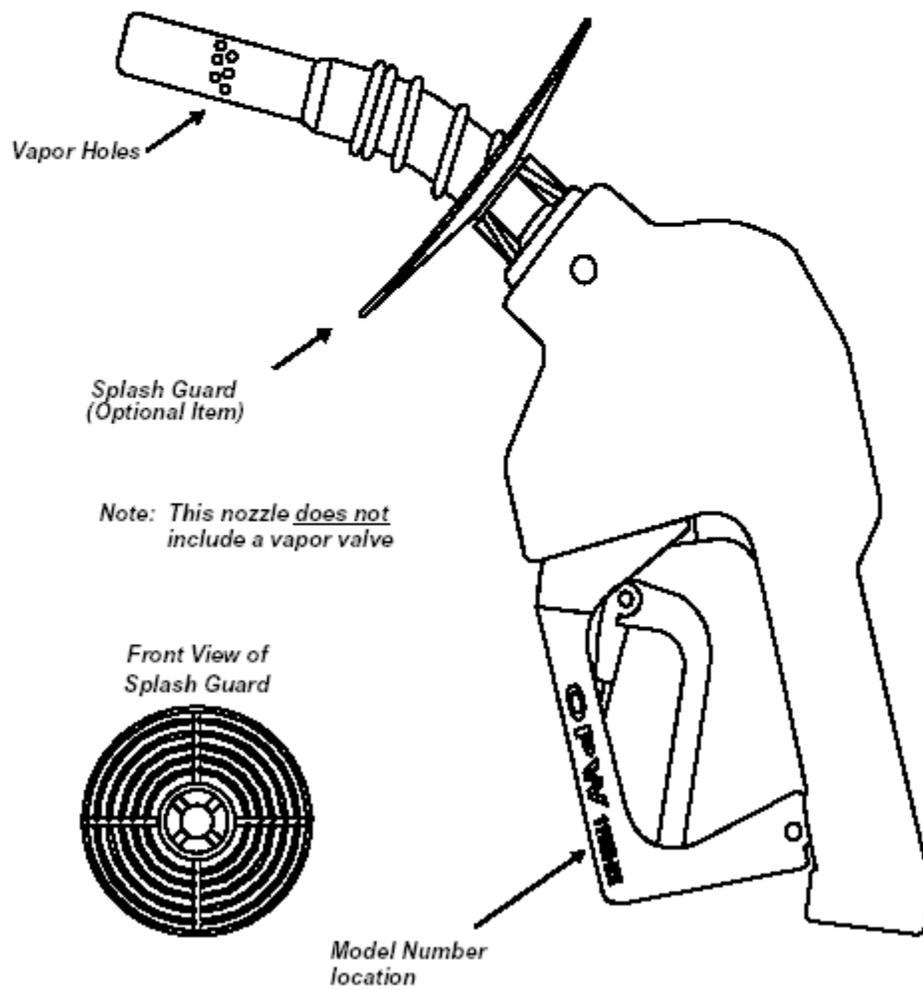


Diagram 3. Vacuum Assist Dispenser

Vacuum Assist Dispenser

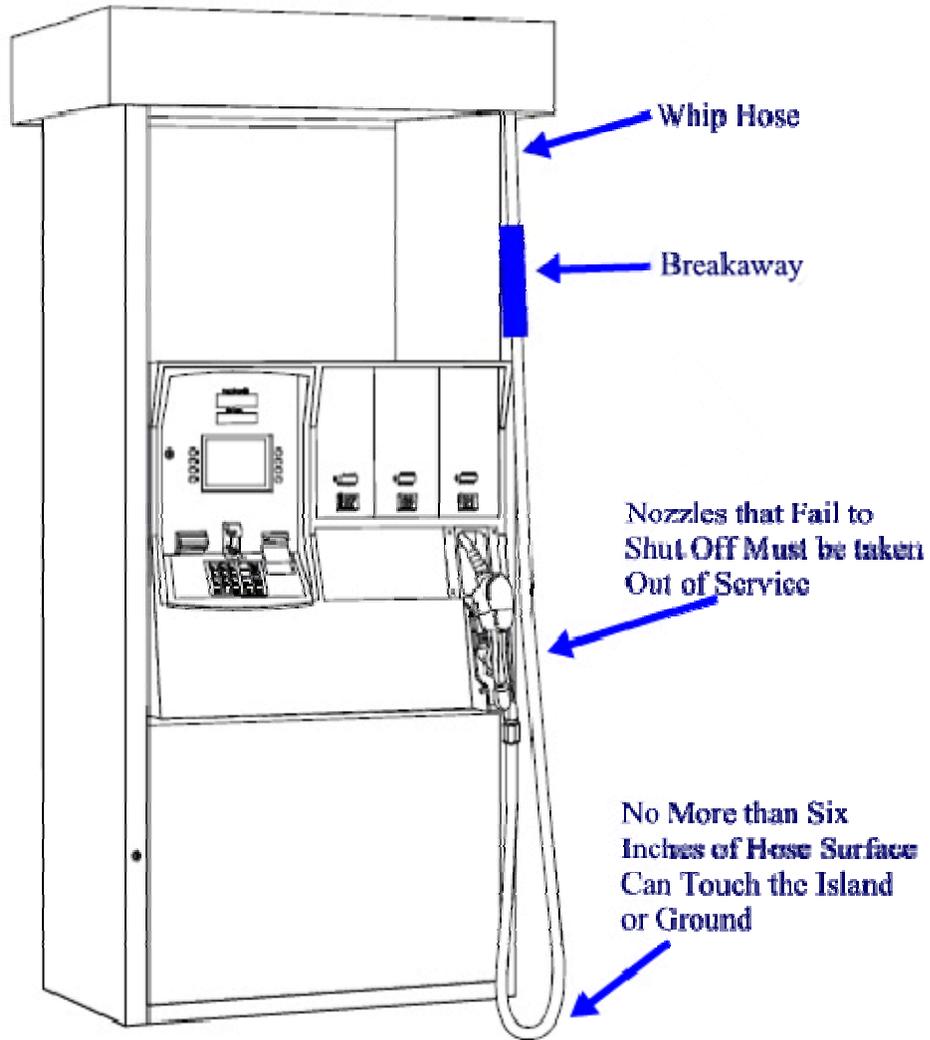


Diagram 4. Two-Point Stage I Vapor Recovery

Two-Point Stage I Vapor Recovery

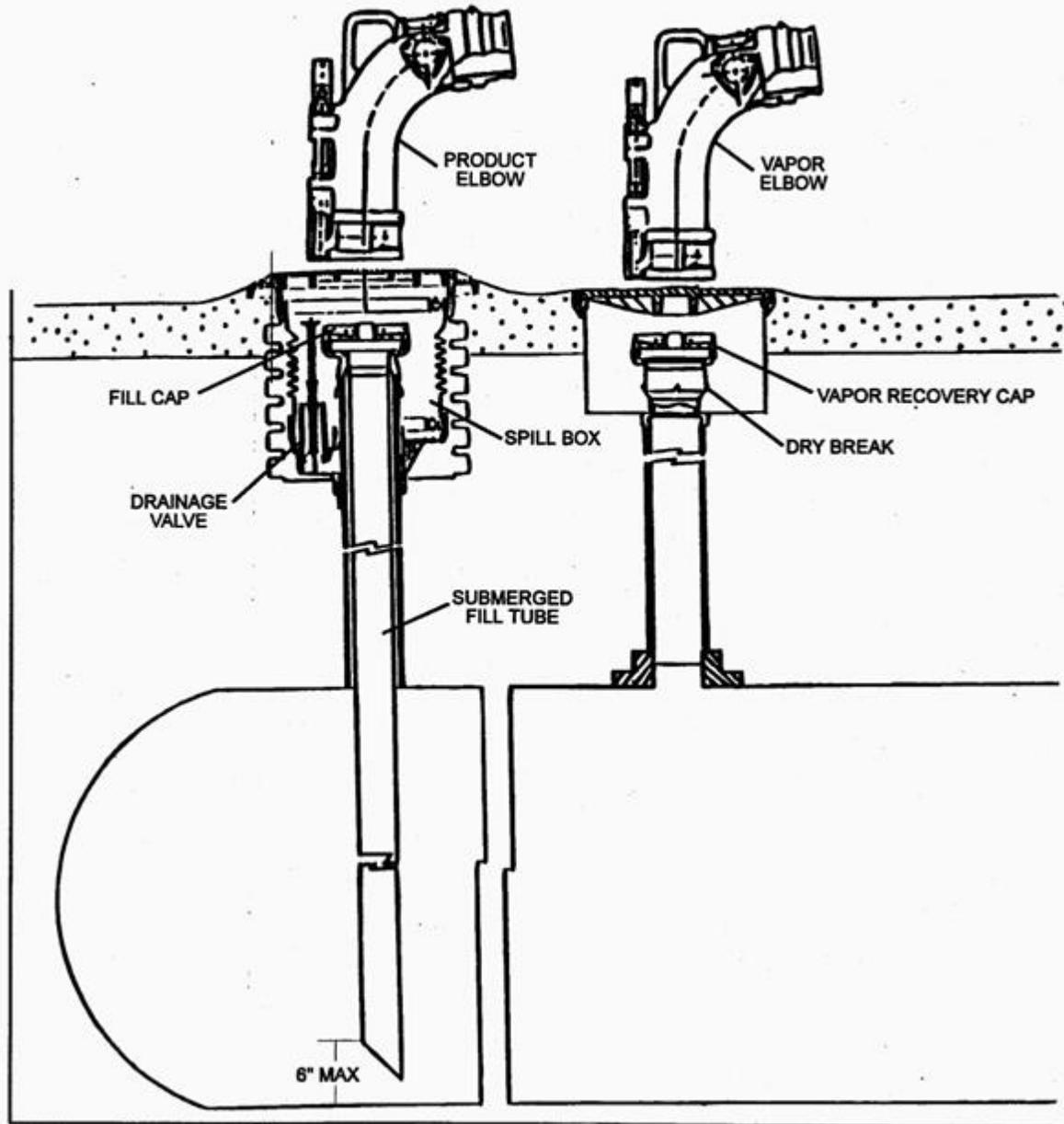


Diagram 5. Dry Break Valve for Two-Point Stage I System

Dry Break Valve for Two-Point Stage I System

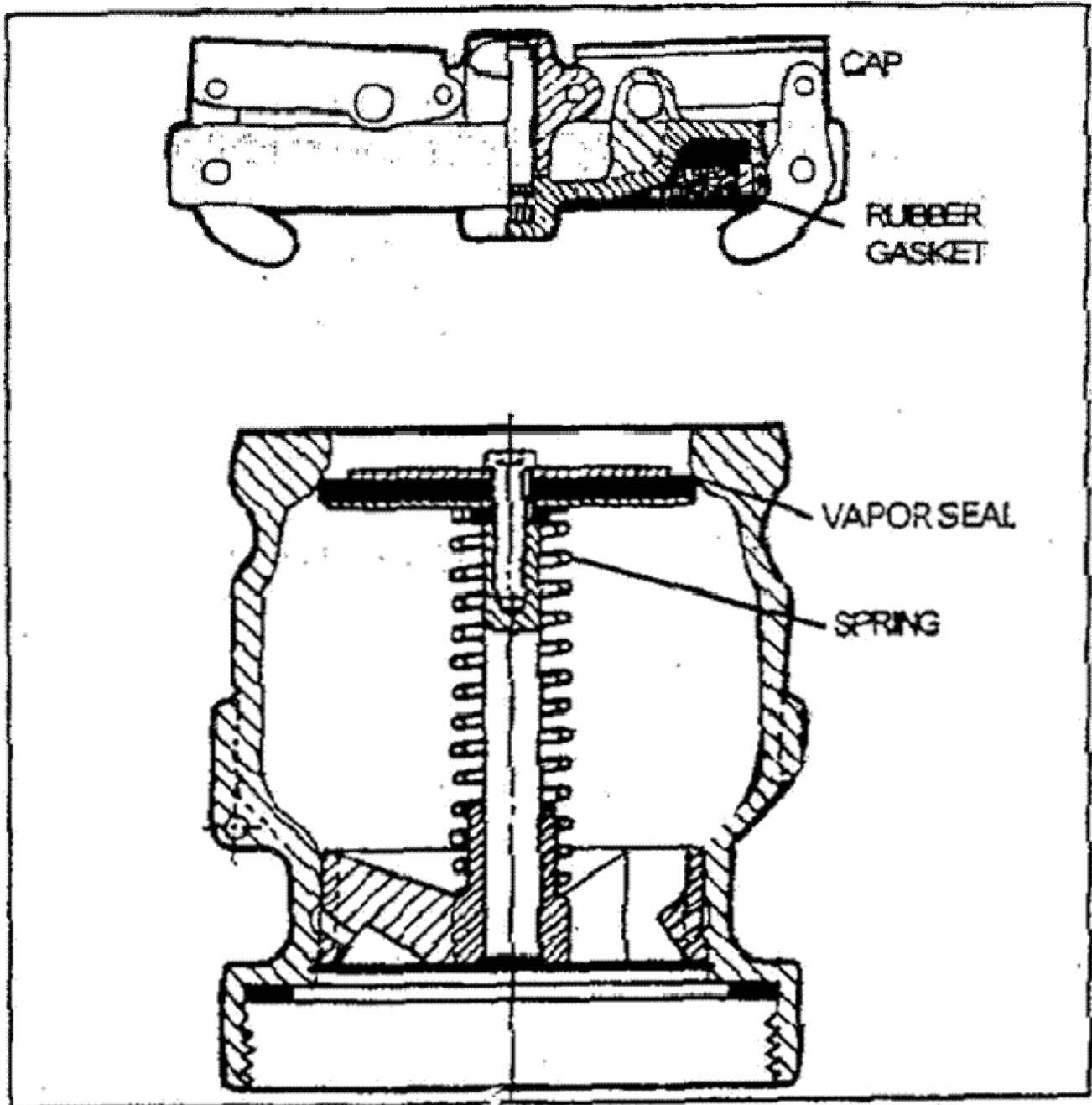
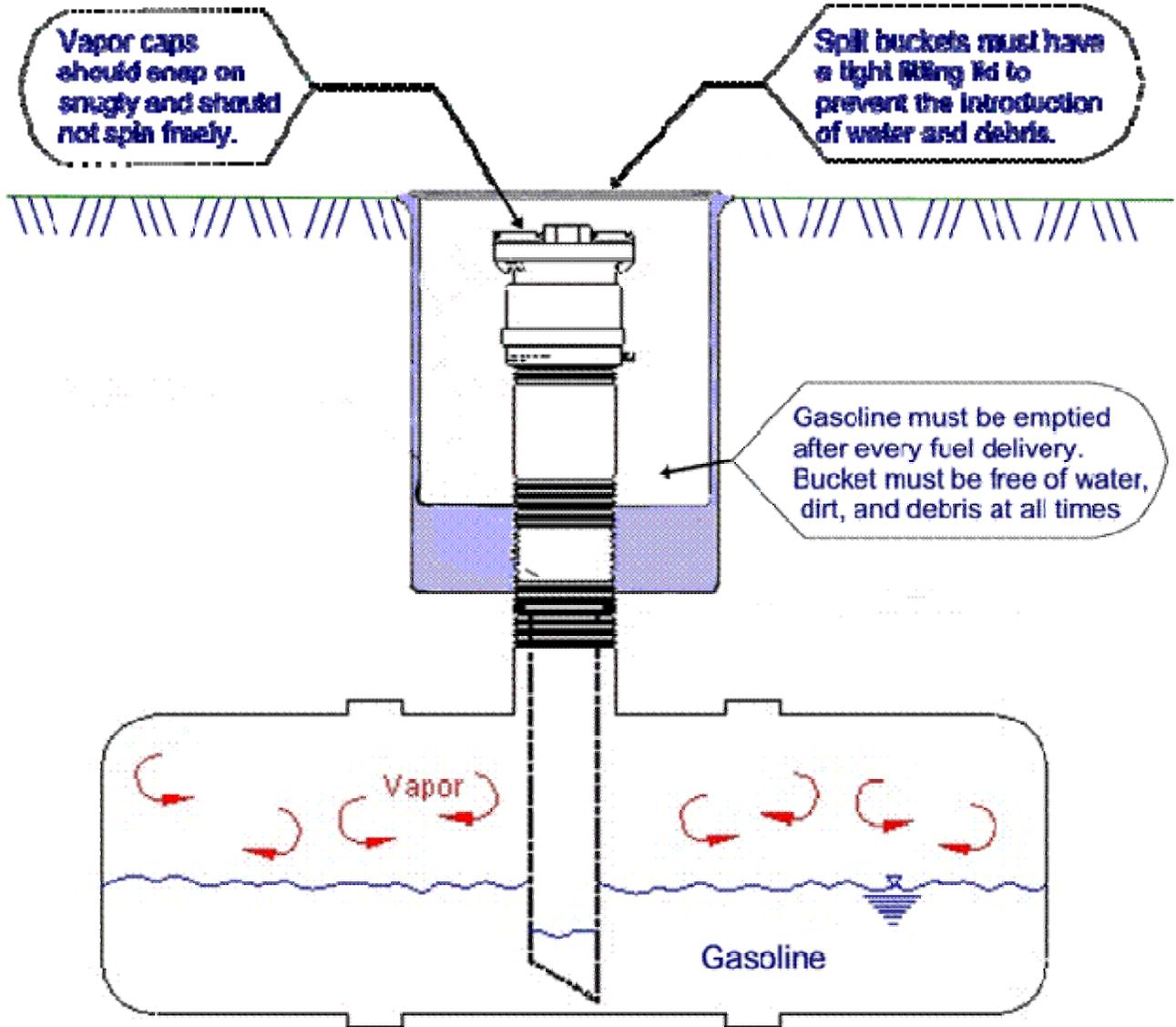


Diagram 6. Spill Containment Bucket for Gas Fill Pipe

Spill Bucket for Gas Fill Pipe



Week Of: _____

Revised MassDEP May 2009

Vacuum Assist System: Weekly Visual Inspection Checklist		If “*”, Date Repaired. Other Repair Notations
<p>A. Nozzles</p> <p>1. Correct nozzles installed, as per Exhibit 1 of CARB Order G-70-199-AJ?</p> <p>2. Nozzle mini-boots torn, loose, or missing?</p> <p>3. Nozzle spouts dented, loose, or leaking?</p> <p>4. Nozzle spout vapor recovery holes clogged with dirt?</p> <p>5. Nozzles fail to shut off causing spillage?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p>	
<p>B. Hoses, Swivels, Retractors, & Breakaways</p> <p>1. Hoses damaged or leaking?</p> <p>2. More than six inches of any hose surface touching the dispenser island when the nozzle is in the dispenser holster? (See Diagram 3, page 20)</p> <p>3. Hose swivels turn freely minimizing hose damage?</p> <p>4. Retractor cable assemblies loose or damaged? (If required by dispenser design)</p> <p>5. Hose breakaways installed between the hose and the whip hose?</p> <p>6. Hose breakaways installed in the proper direction?</p> <p>7. Hose breakaways leaking gasoline?</p>	<p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p>	
<p>C. Pressure/Vacuum (P/V) Vent Caps</p> <p>Are P/V Vent Caps installed on all tank vent lines?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p>	
<p>D. Stage I Vapor Recovery</p> <p>1. Two-Point Stage I Vapor recovery system installed?</p> <p>2. Vapor Caps:</p> <ul style="list-style-type: none"> • Vapor caps installed on all Product Fill Adaptors <u>and</u> Dry Break Vapor Adaptors? • Vapor caps lock firmly so they don't move freely? • Rubber seals installed underneath all vapor caps? • Rubber seals cracked, torn, or worn out? 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No*</p> <p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p>	

<p>D. Stage I Vapor Recovery (continued)</p> <p>3. Dry Break Vapor Adaptors</p> <ul style="list-style-type: none"> • Dry Break Vapor Adaptors tight and in good condition? <input type="checkbox"/> Yes <input type="checkbox"/> No* • Gasoline fumes escaping from dry break vapor adaptors with the vapor caps removed? (See Diagram 5, page 22) <input type="checkbox"/> Yes* <input type="checkbox"/> No <p>4. Product Fill Adaptors and Spill Buckets</p> <ul style="list-style-type: none"> • Product fill adaptors tight and in good condition? <input type="checkbox"/> Yes <input type="checkbox"/> No* • Spilled gasoline emptied from the spill containment bucket after fuel delivery? <input type="checkbox"/> Yes <input type="checkbox"/> No* • Gasoline, water, dirt, leaves, or debris in the spill containment buckets? <input type="checkbox"/> Yes* <input type="checkbox"/> No 	
<p>E. Vapor Recovery System Repair</p> <p>As a result of weekly visual inspections, did you find any Stage II and/or Stage I components incorrectly installed, non-functioning or broken?</p> <p>If <u>YES</u>, did you:</p> <ul style="list-style-type: none"> a. Immediately repair the incorrectly installed, non-functioning or broken (broken) component(s)? <u>or</u>, b. If the broken component(s) could not be immediately repaired immediately stop dispensing gasoline through the broken component(s), post “Out of Service” signs on it, and repair it within 14 days? <u>or</u>, c. If the broken component(s) could not be repaired within 14 days; immediately isolate the broken component(s) from the remainder of the Stage II system so that the remainder of the Stage II system is correctly operating and post “Out of Service” signs on the broken component(s) until repaired? <u>or</u>, d. If the broken component(s) can not be isolated from the remainder of the Stage II system so that the remainder of the Stage II system is correctly operating; immediately stop <u>ALL</u> dispensing of gasoline at the facility and post “Out of Service” signs on <u>ALL</u> motor vehicle fuel dispensers until the component(s) was repaired? 	<p><input type="checkbox"/> Yes* <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

Weekly Stage II Inspector’s Name (Printed)

Weekly Stage II Inspector’s Signature

Date