

KSEP / KSEPK / KSEV / KSES / KSEPR TYPE

Emergency vent cover

INSTRUCTION MANUAL



CONTENTS

- ◆ General Description
- ◆ Operation
- ◆ Shop / Job Site Testing
- ◆ Installation
- ◆ Maintenance

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Section 1. General Description

- 1-1 According to API 2000 code, the Emergency Pressure Relief Vent cover are Designed, manufactured and tested.
- 1-2 Model KSEP/KSEPK/KSES/KSEV/KSEPR, which is used for the protector of fluid storage tank, is composed of a body with the Function of emergency pressure relief.
- 1-3 This is the safe valve to protect the storage tank from the inflation(pressure) with the function to discharge Rapidly the overpressure developed during external fire around the storage tank or the Excessive fluid intake more than the capacity of pump planned.
- 1.4 ERV is designed to be Cushioned air seating, Teflon (PTFE/FEP- 2 Layer) seating diaphragm are Standard. It minimize sticking caused by resinous vapors and atmospheric moisture. The Seat tightness is 75% of set point by API 2000. It is designed to be self closing under normal operation by Inside Guide / Hinge and the restraining cable to Connect the Cover A'ssy and Flanges and also serve a grounding cable.



Section 2. Installation

2-1 The ERV is packed create to prevent damage during shipping.

Before installation, inspect the unit visually.

If any physical damage or internal contamination, the ERV should be disassembled, cleaned, and inspected Before installation.

2-2 The ERV shall be designed to be opened and settled by Weight load / Spring Load and should be Installed vertical on Tank Nozzle.

2-3 When lifting , Eye nuts are provided on the Pallet assembly and the body has three lifting eyes that are used to lift.

To avoid damage on flange surface, set the valve on a soft clean gasket material until it is ready to installed. Also handled carefully to ensure to protect damage of seat surface and Pallet assembly.(Figure 2).

2-4 Set the Vent body carefully on the nozzle, keep the gasket between the flanges.

Install with proper Bolt/Nut and studs and tighten nuts and hand tight.

Uneven nozzle on Storage tank makes leakage and recommended to use a full face gasket to avoid deflection The body flange.

2-4 Make sure the flanges are not distorted and that gasket is evenly compressed.

2-5 The ERV have independently pallet assembly and carefully seat the pallet assembly against the body without any damaged on seat surface.

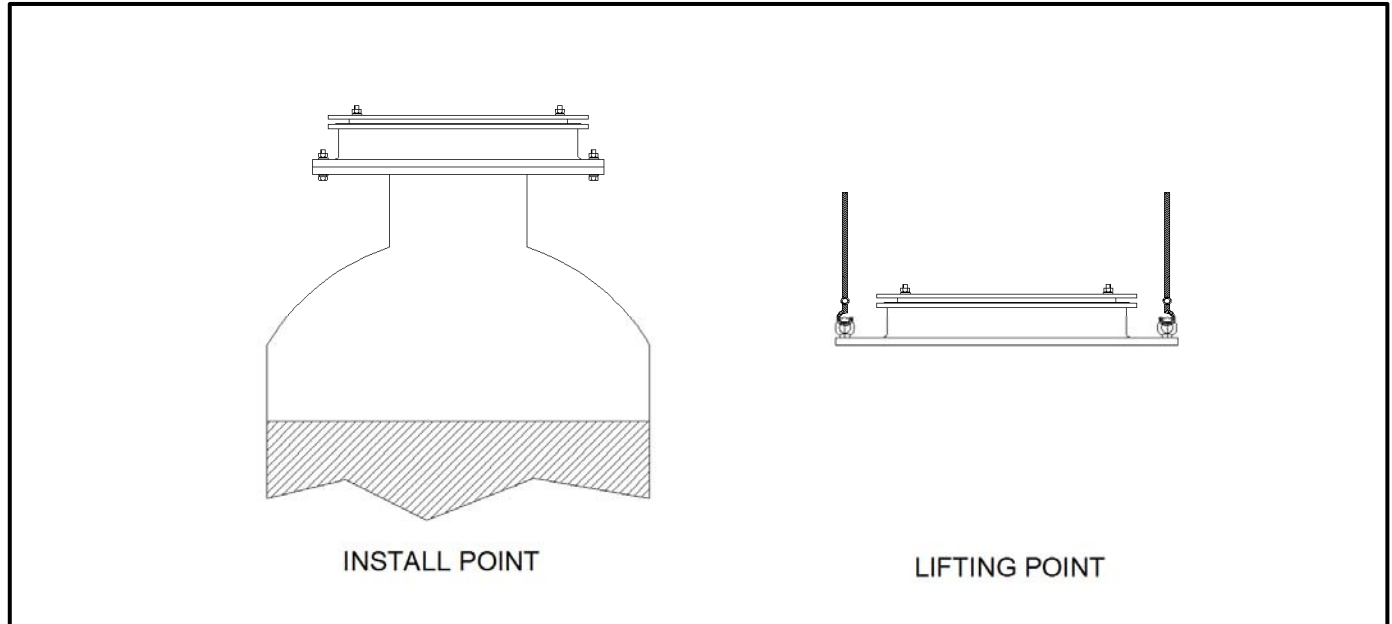


Figure 1.

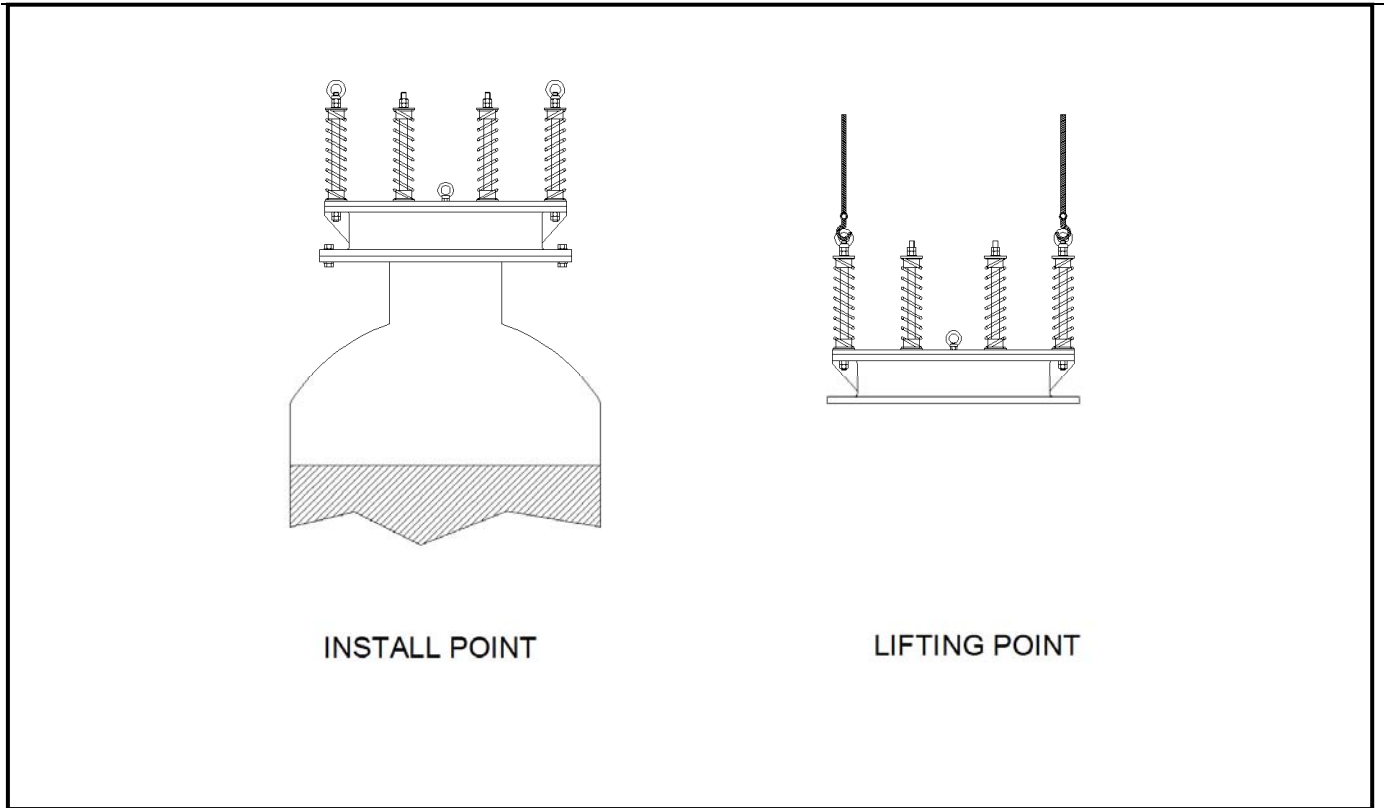


Figure 2.

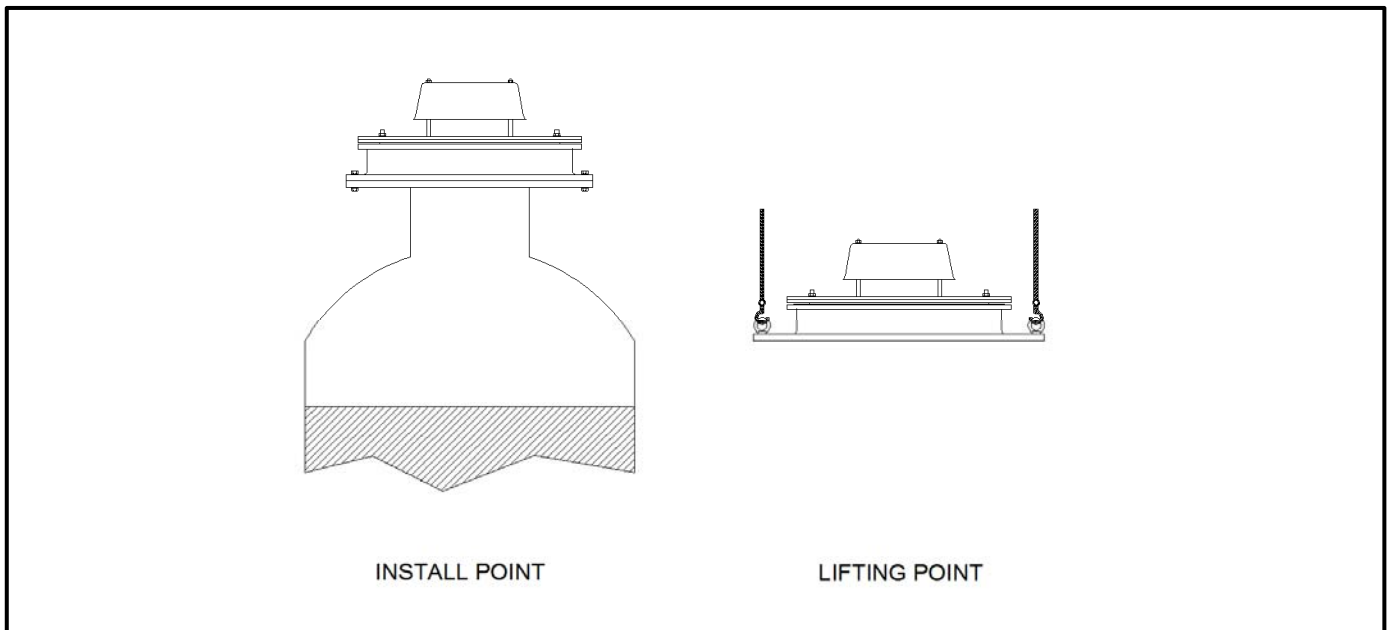


Figure 3.

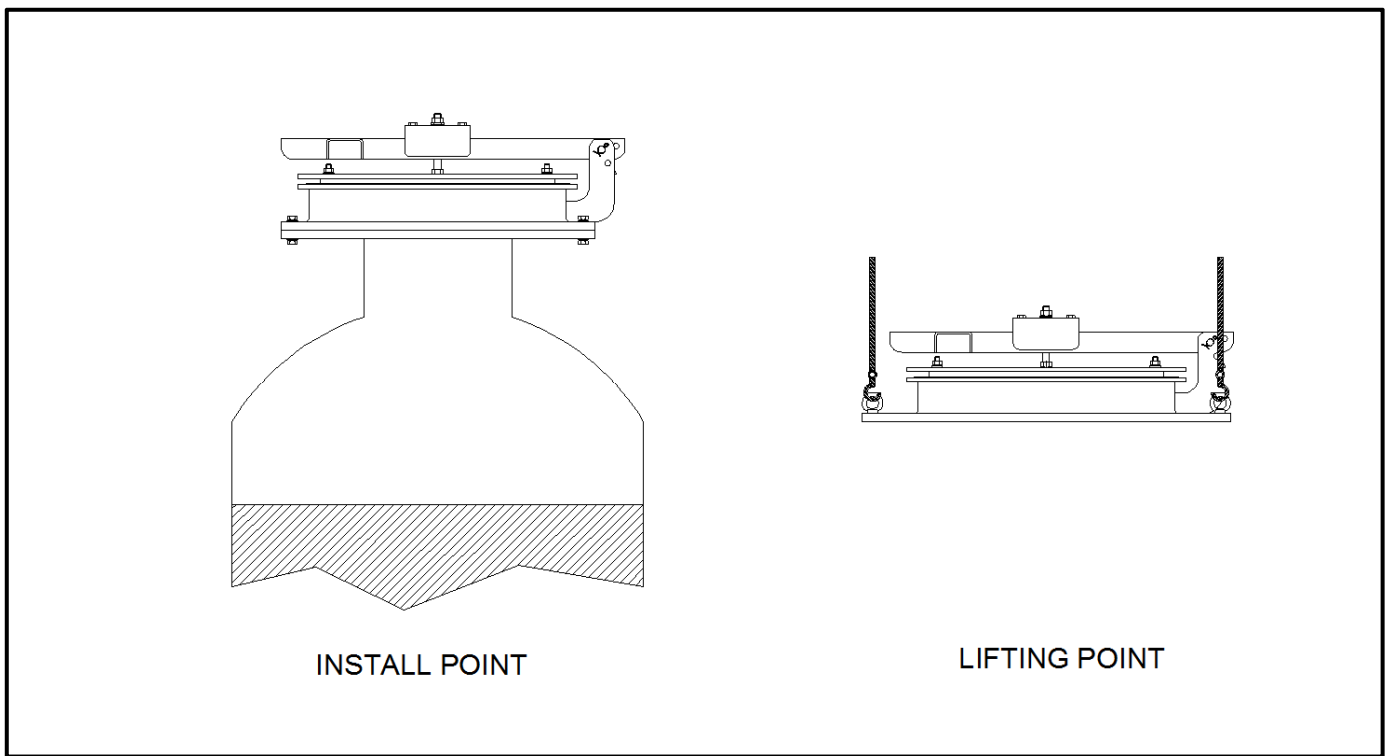


Figure 4

Section 3. Operation

- 3-1 When the tank is loading phenomena and external fire or Rupture case and the pressure is above the setting (Operational Fixing pressure), the ERV operate automatically to protect the storage tank from inflation (Figure 3).
- 3-2 The Model KSEP/KSEPK/KSEV is weight load type and provides pressure / or vacuum relief (Figure 3).
The Model KSES is spring load type and provides pressure / or vacuum relief.

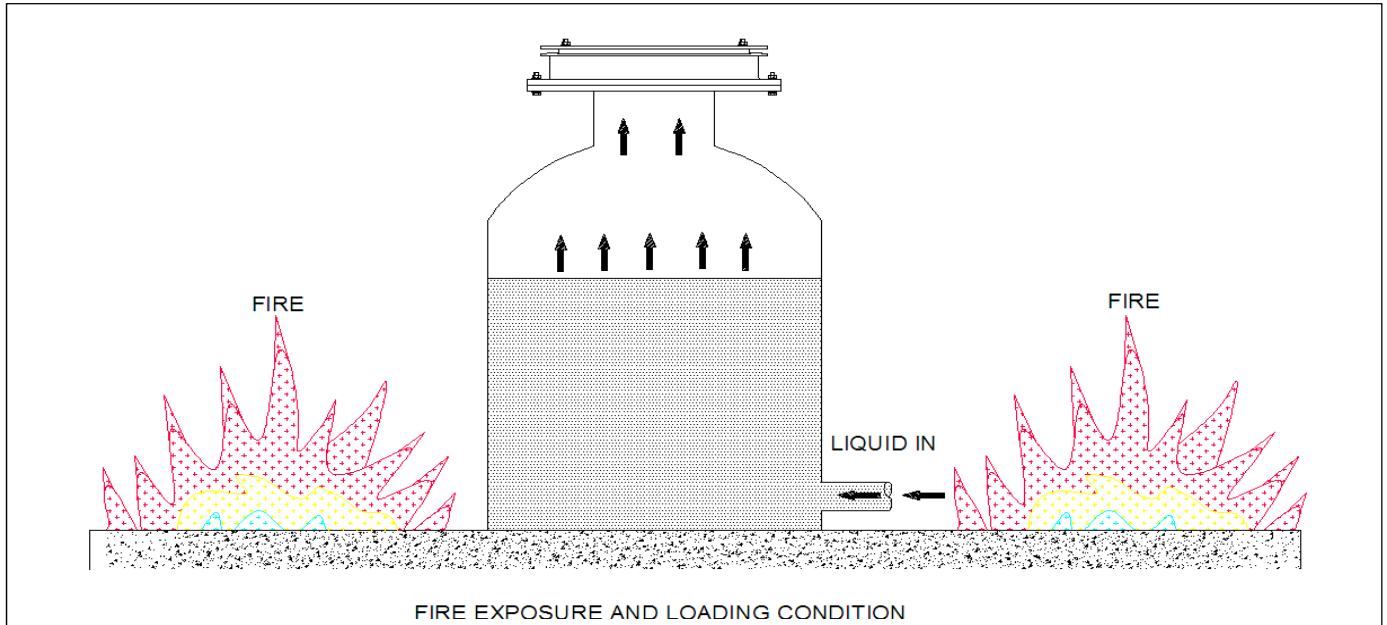


Figure 5.

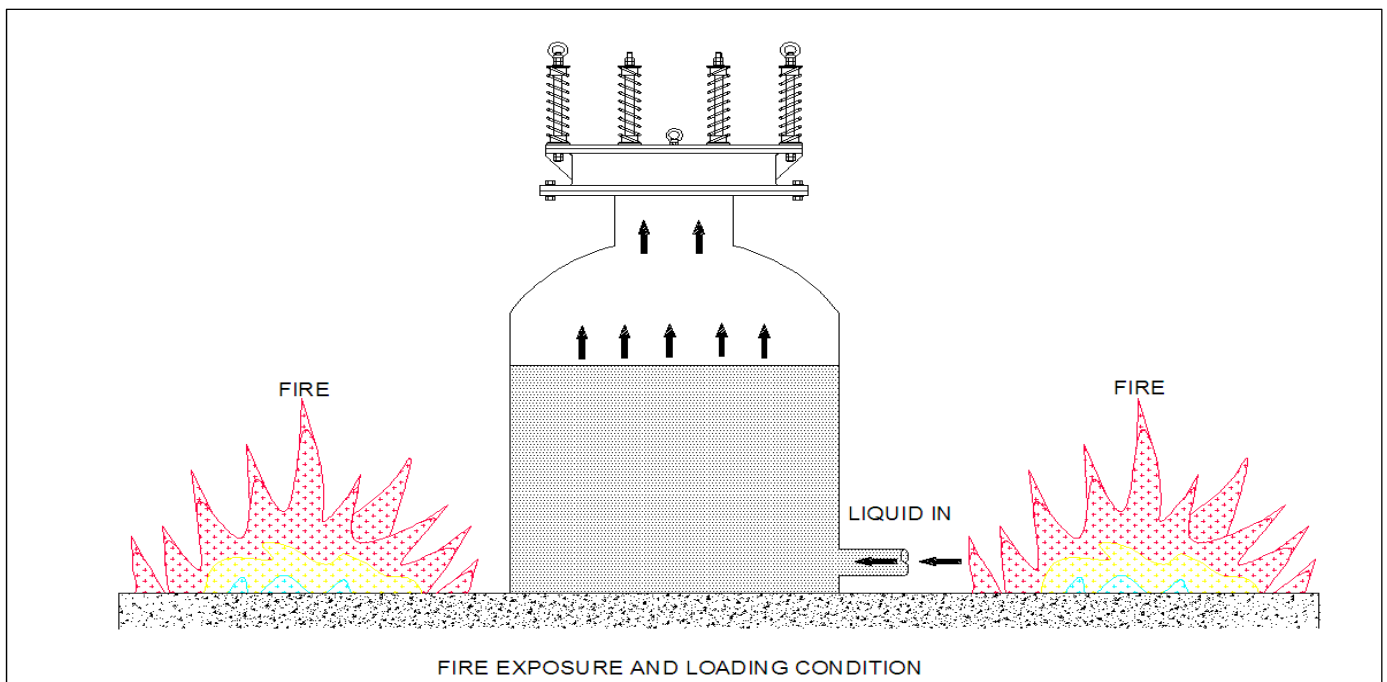


Figure 6.



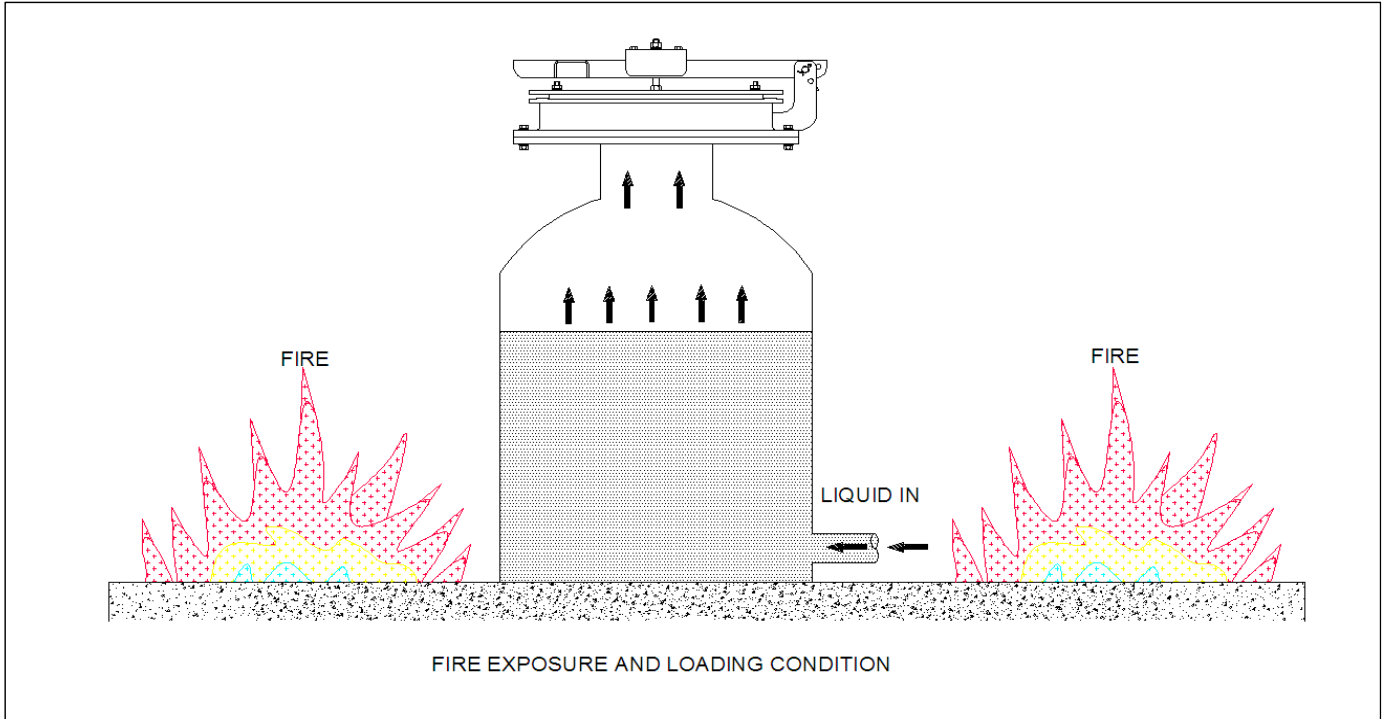


Figure 7.

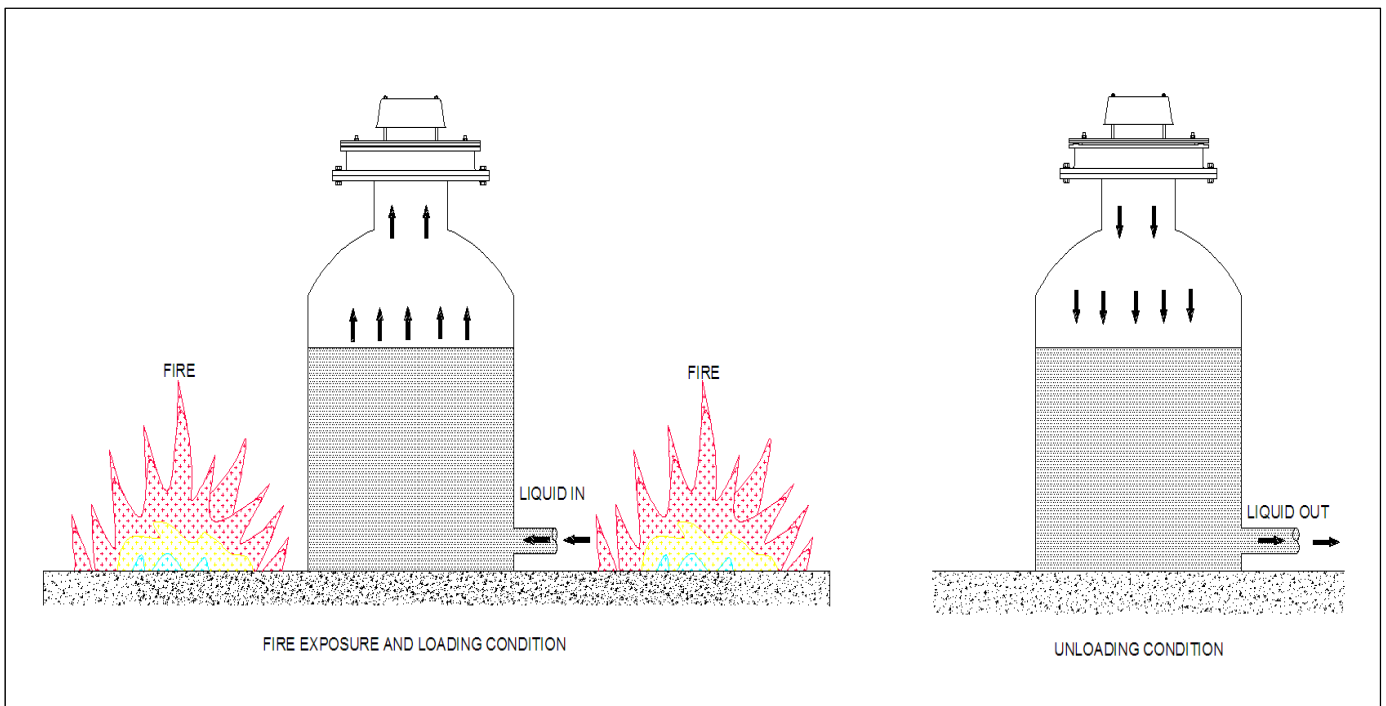


Figure 8.

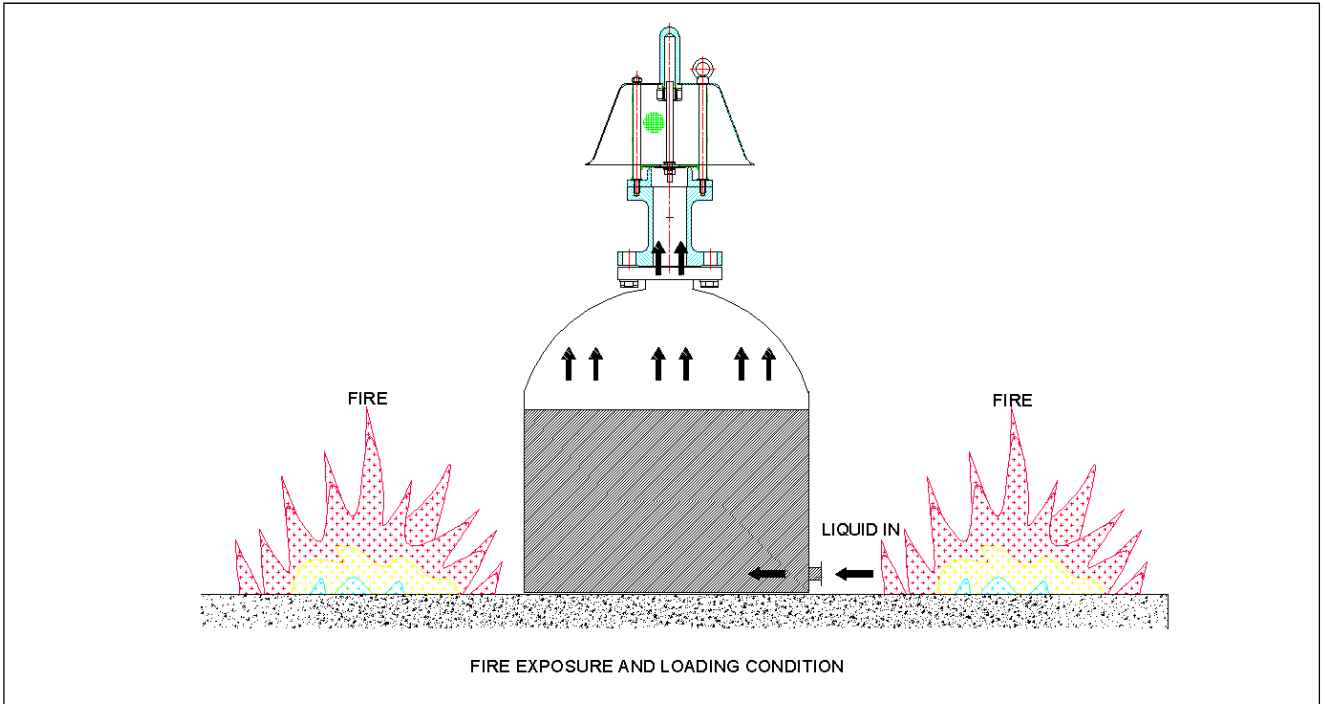


Figure 9.

Section 4. Maintenance

4-1 General

- 4-1-1 The ERV do not require routine lubrication or adjustment, but should be checked periodically, At least twice a year.
- 4-1-2 The valve provide emergency protection, it do not need normally cycle in service but inspection seat Tightness should be done to ensure compliance with local regulation as needed. When inspection the diaphragms, disc and seat surface should be checked.
- 4-1-3 Always keep the record of maintenance performed.

CAUTION.

In case of remove the ERV from the tank for any reason, make sure all pressure has been released before the flange fasteners are loosened.

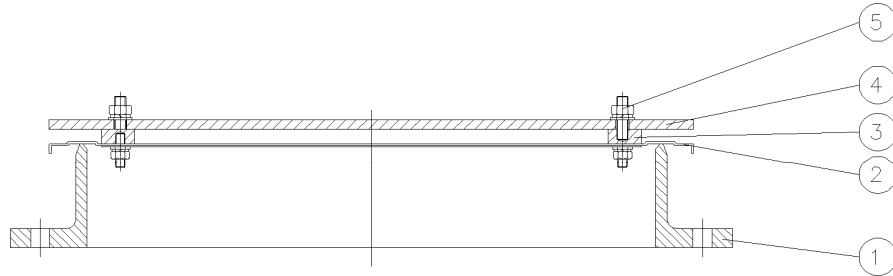
4-2 The Procedure Disassembly and Assembly.

- 4-2-1 Make sure above "Caution" before remove ERV from the Tank.
- 4-2-2 Using the eye Nut, lift vertically and elevate on the plate table so they aren't bent or damaged.
- 4-2-3 Use a spark free spanner to hold four bolt from the bottom side. Loosen the hex nuts and remove. Lift weather hood, counter weight, disc (= pallet) and diaphragms.
- 4-2-4 Prior to final assembly, verify that the seat surface is free of corrosion, damage. The seat surface should be carefully cleaned. If the Seat surface is damaged, it must be lapped using a perfectly flat ground metal disc or sand paper.
- 4-2-5 Also the Diaphragm, 2 layer (PTFE/FEP) / or O-ring should be verify it damaged or not.
- 4-2-6 Reverse the steps of Disassembly.
- 4-2-7 Apply PTFE sealant tape between Disc (=Pallet), Counter weight, Inner Cover to protect Sealing.
- 4-2-7 The ERV should be tested on a pressure test stand to verify the setting and evaluate Seat tightness as noted Section 5, Shop testing.



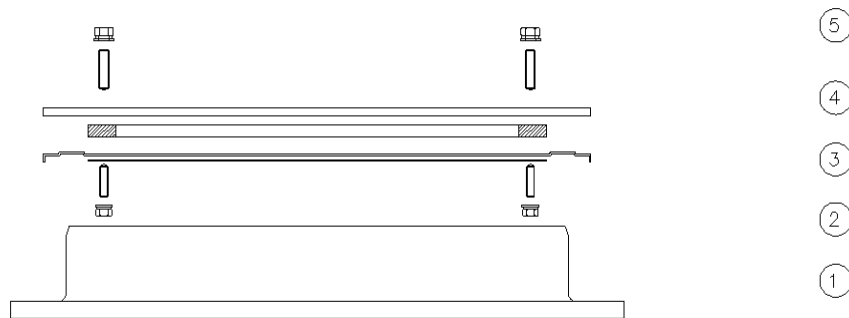
● MODEL KSEP TYPE ASSEMBLY & DIS ASSEMBLY

ASSEMBLY



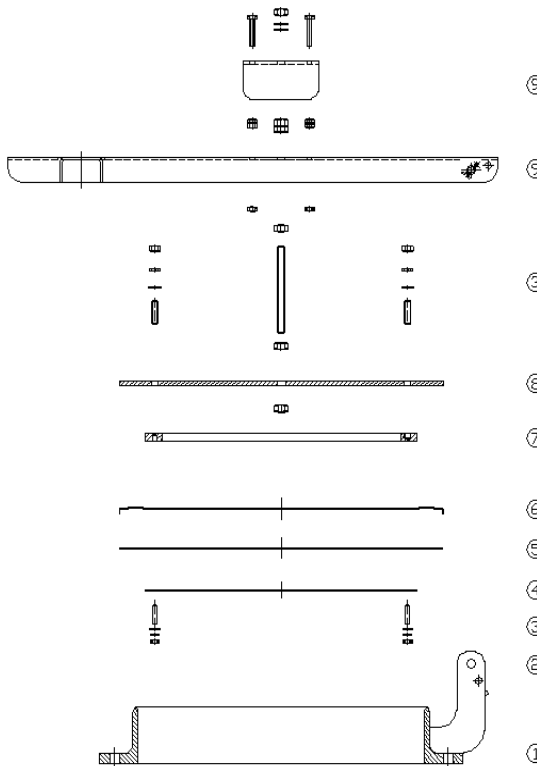
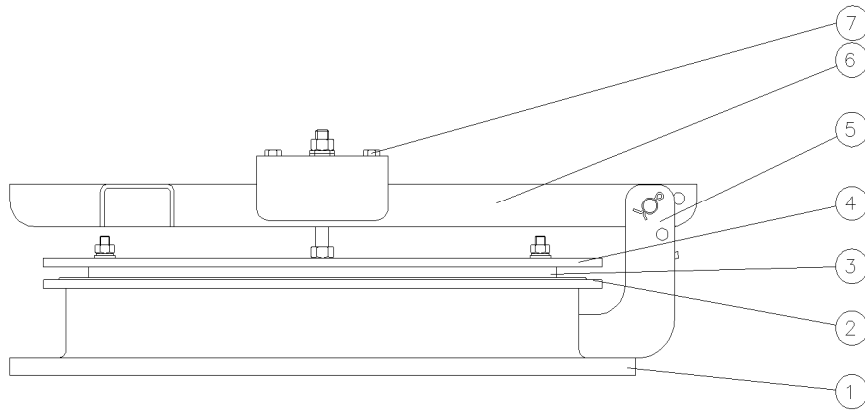
DISASSEMBLY

- ① BODY ② DISC ③ BASE RING ④ LOADING WELGHT ⑤ BOLT / NUT



● MODEL KSEPK TYPE ASSEMBLY & DISASSEMBLY

ASSEMBLY

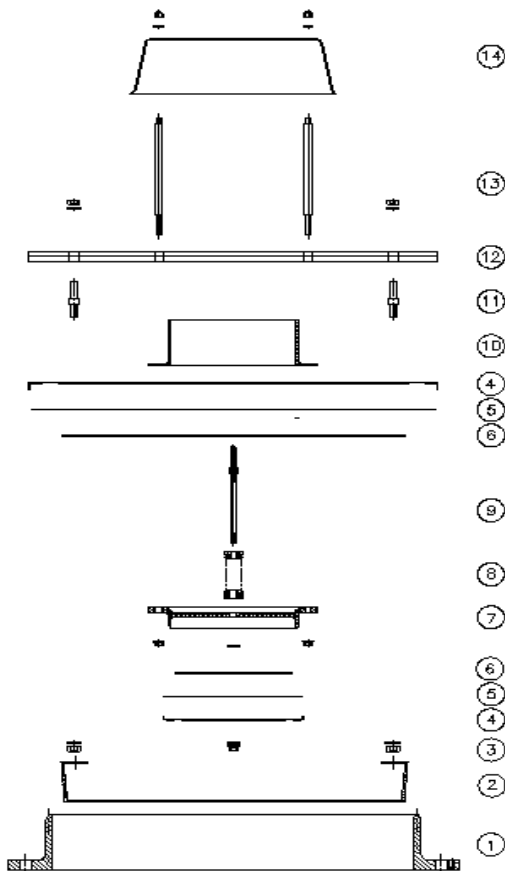
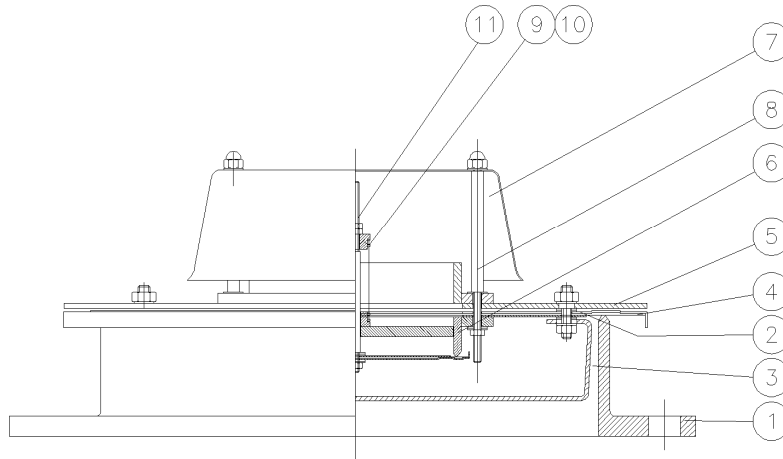


- DISASSEMBLY -

- ① BODY
- ② HINGE
- ③ HEX BOLT/NUT
- ④ COVER PLATE
- ⑤ DIAPHRAGM
- ⑥ DISC
- ⑦ BASE RING
- ⑧ LOADING WEIGHT
- ⑨ ARM

● MODEL KSEV TYPE ASSEMBLY & DIS ASSEMBLY

ASSEMBLY

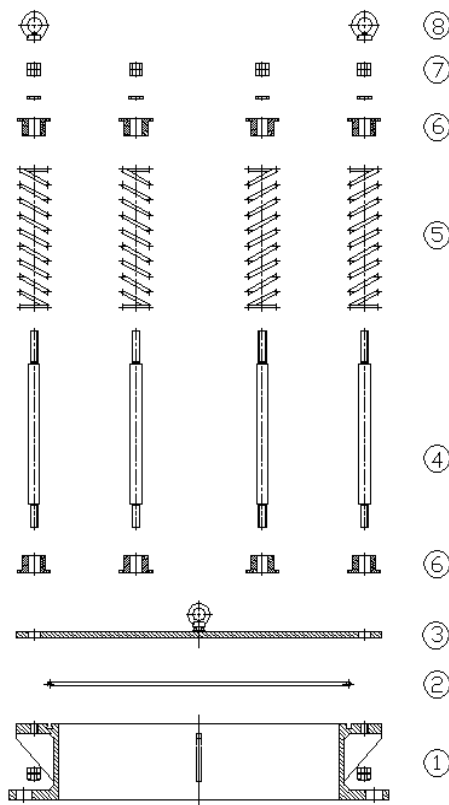
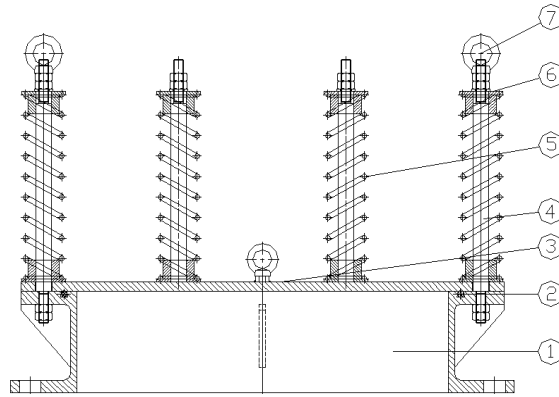


- DIASSEMBLY -

- ① BODY
- ② GUIDE
- ③ NUT
- ④ DISC
- ⑤ DIAPHRAGM
- ⑥ COVER PLATE
- ⑦ VACUUM SEAT
- ⑧ SPRING/SPRING PAD
- ⑨ VACUUM STEM
- ⑩ RAIN COVER
- ⑪ STUD BOLT
- ⑫ WEIGHT
- ⑬ PRESSURE GUIDE
- ⑭ HOOD

● MODEL KSES TYPE ASSEMBLY & DIS ASSEMBLY

ASSEMBLY

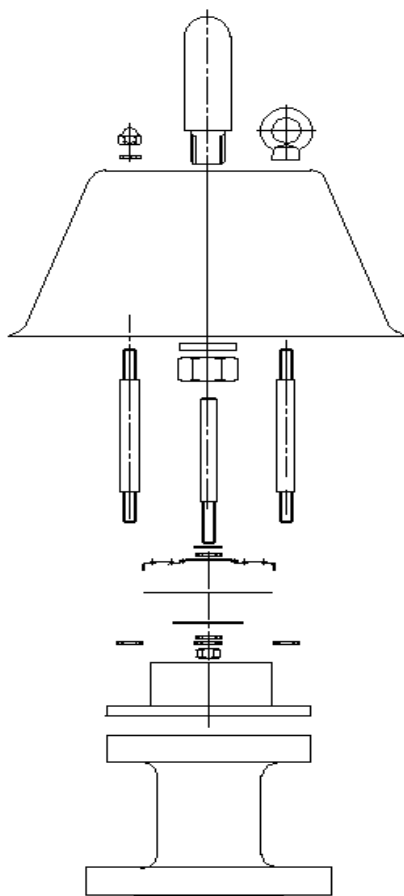
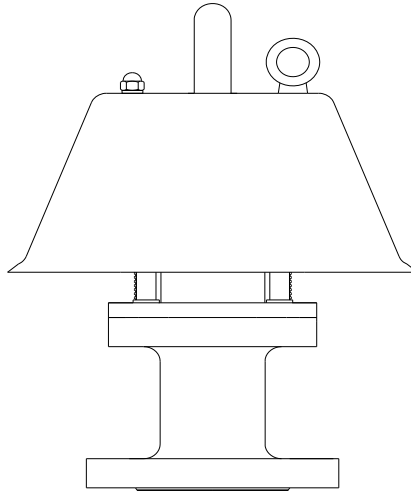


- DISASSEMBLY -

- ① BODY
- ② O-RING
- ③ COVER
- ④ SPRING STEM
- ⑤ SPRING
- ⑥ SPRING PAD
- ⑦ NUT
- ⑧ EYE NUT

● MODEL KSEPR TYPE DISASSEMBLY & ASSEMBLY

ASSEMBLY

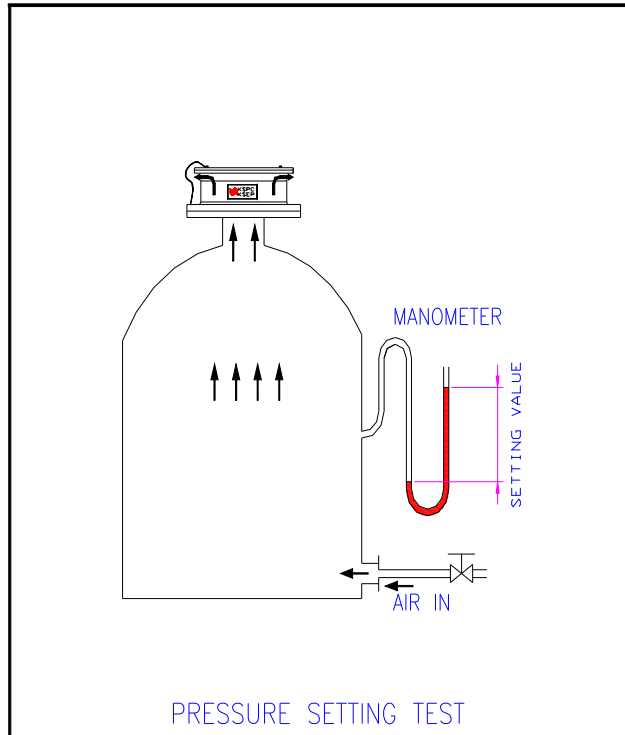


- DISASSEMBLY -

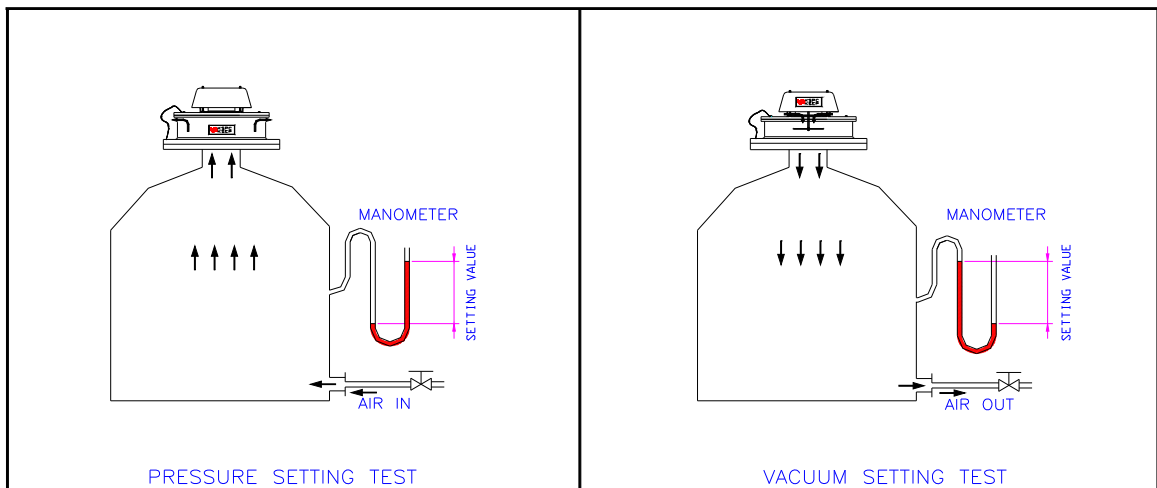
- ① BODY
- ② PRESSURE SEAT
- ③ COVER PLATE
- ④ DIAPHRAGM
- ⑤ DISC
- ⑥ PRESSURE STEM
- ⑦ HOOD
- ⑧ STEM GUIDE

Section 5. SHOP / JOB SITE TESTING

5-1 According to the " SET PRESSURE VERIFIATION" the API 2000 code, all products should be taken The setting test before shipping (Figure 6) or after Maintenance (Figure 5).



- KSEP TYPE



- KSEV TYPE

Figure 5.

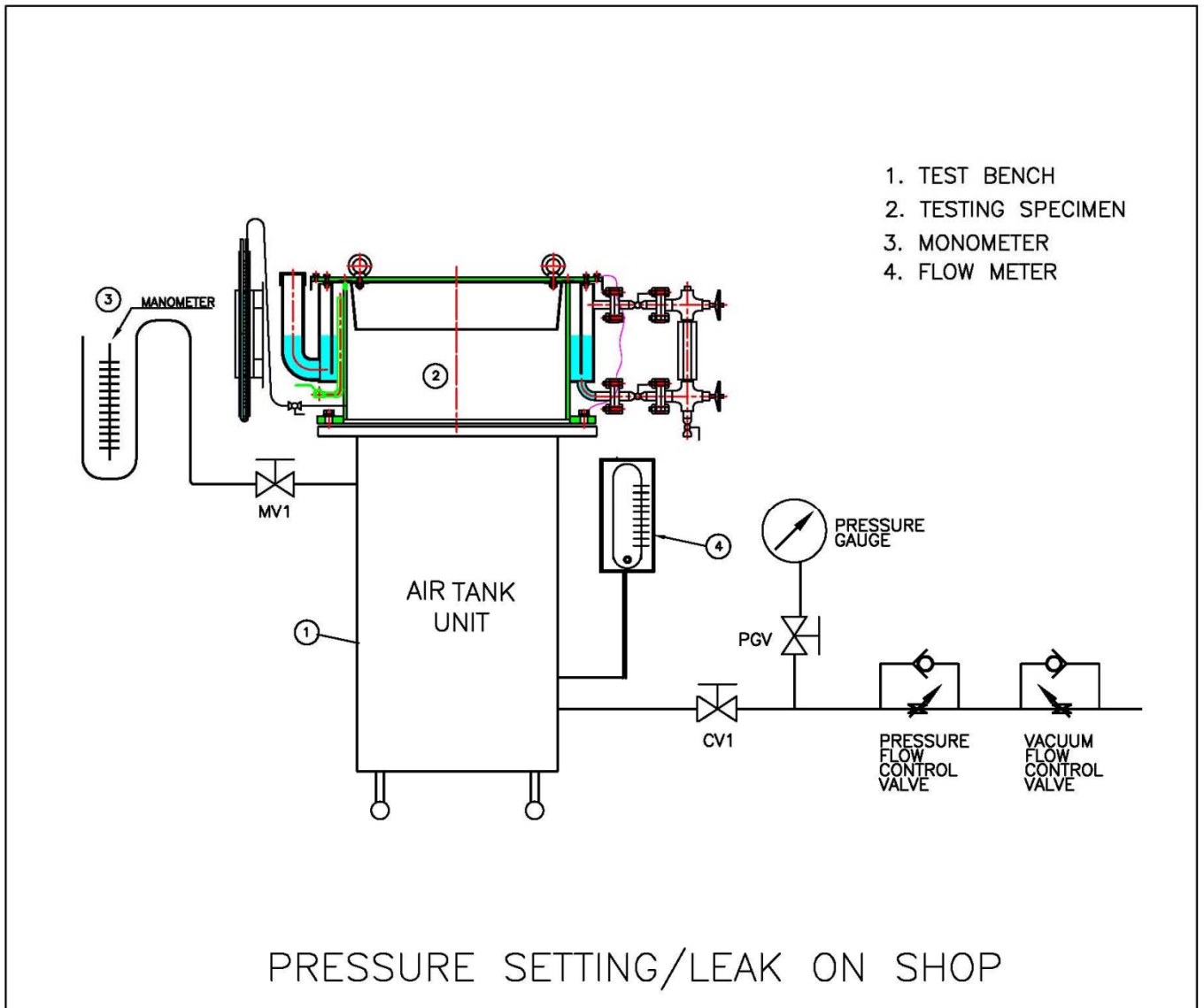


Figure 6.