

## PRESSURE RELIEF VALVE

### 1.0 FEATURES :

The Pressure Relief Valve (PRV) is designed as a safety device to be used on Power Transformer and similar oil filled electrical equipments. When pressure in tank rises beyond predetermined safe limit, the PRV operates & performs following functions.

- 1.1 Reduces the pressure in the tank by instantaneously opening the port of all models.
- 1.2 Operates switch / switches which can be used to initiate precautionary electrical system.

### 2.0 CONSTRUCTION AND WORKING :

For mounting PRV, six holes of 14 dia on 235 PCD are provided on the base. For the operation, a port of about 150 mm is provided. The port is sealed by a spring loaded stainless steel diaphragm. The diaphragm rests on rubber ring, thereby keeping the port sealed during normal pressure in the tank. As soon as the pressure in the tank rises above predetermined safe limit, the diaphragm gets lifted from its seat thereby opening the port. The diaphragm seals the port again after the pressure in the tank reduces to safe limit. A switch is provided for initiating electrical safety system. The lifting of diaphragm from its seat is linked to a switch. Therefore the first lift of diaphragm operates the switch. To avoid repeated on - off, manual resetting type switch is used. So even if the diaphragm operates repeatedly, the switch remains operated until it is reset manually.

### 3.0 TESTS :

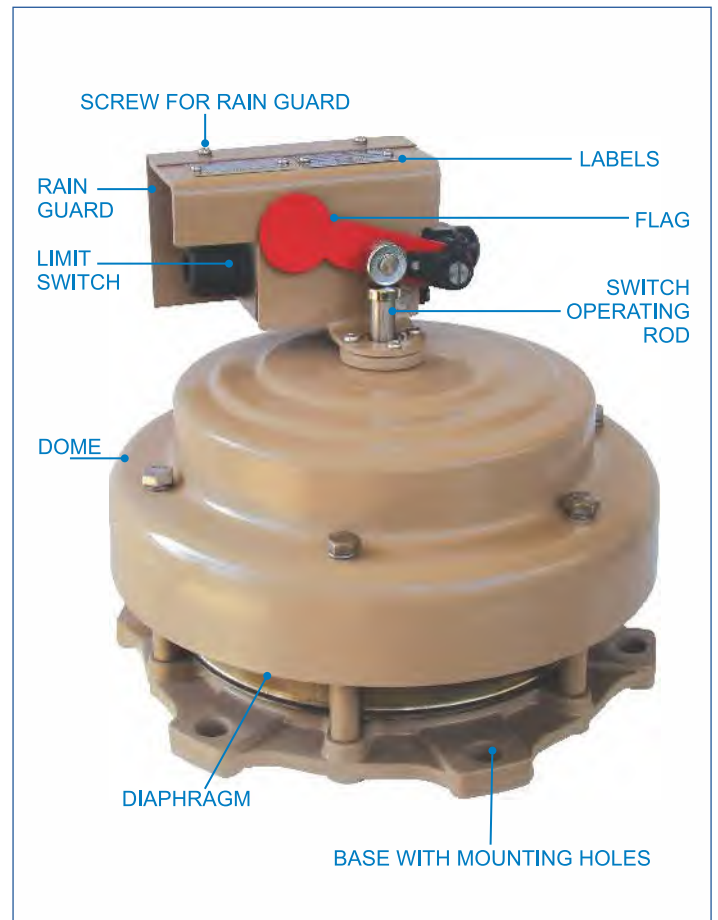
Each PRV is tested for following Routine Tests

- 3.1 Operating Pressure test at specified value with compressed air.
- 3.2 Leakage test, at static head of 75% value of specified operating pressure, with transformer oil at room temperature for 24 hours.
- 3.3 Switch operation test as per Wiring Diagram by operating PRV with compressed air
- 3.4 Breakdown test at 2 KV for one minute between live terminals and body.
- 3.5 Any other Test as specified by customer.

A Test Certificate is issued with each batch of PRV. All above tests are included in the Test Certificate.

### 4.0 INSTALLATION :

For installation, user has to provide a Mounting Pad as per Fig.6 by welding it on top cover of the tank. The orientation and position of the mounting pad should be located in such a way that after installation of PRV, wiring can be done properly. At the same time the indicating lever of PRV can be seen easily as it needs to be reset manually after the operation of PRV. Wiring may be done as per Wiring Diagram by removing rain guard. After wiring, rain guard may be reinstated. Hardware for installation of PRV is to be provided by the user. While installing bolts should be tightened evenly. Uneven tightening may lead to cracking of Aluminium Base thus making the PRV totally unserviceable.



### 5.0 FAULTS AND REMEDIES:

The PRV has rugged construction and it is not likely to get damaged easily. However the switch mechanism is delicate. Therefore it can get damaged. The switch mechanism can be repaired or replaced at site. For breakage or damage to parts like diaphragm or base, the PRV will have to be returned to us as these faults/ damages can not be repaired at site. For leakage of oil through diaphragm also the PRV will have to be returned to us as this fault/damage can not be repaired at site. Concerned Sr. Number of PRV must be informed when any communication is made.

### 6.0 ROUTINE MAINTENANCE:

Periodically, every six months PRV should be tested by air to check its satisfactory working. The operation of switch also should be checked.

### 7.0 HOW TO ORDER:

To make an offer, we need to know Model No. and Operating Pressure (any one value).

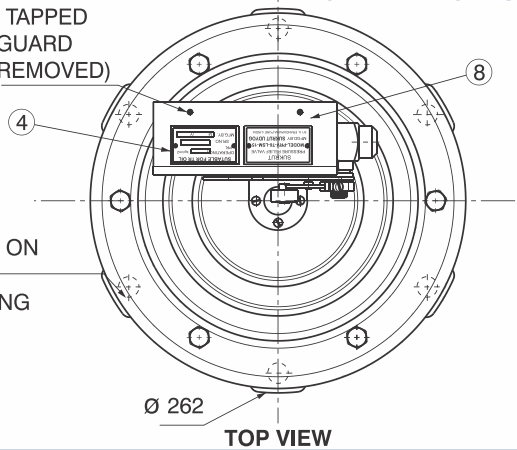


**FIG. 1**

**MODEL T-6-LSM / T-6-LSM-2 NO**

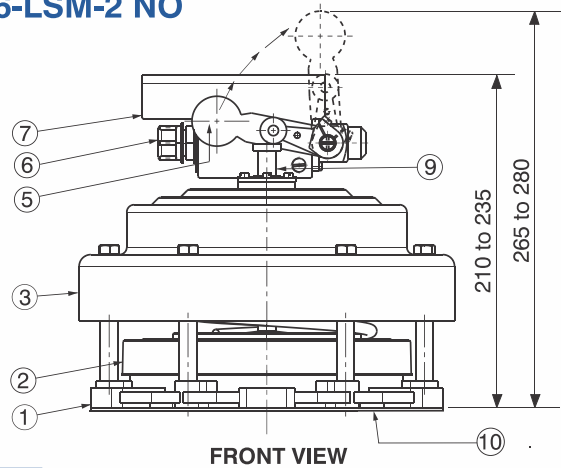
2 HOLES M4 TAPPED FOR RAIN GUARD (RAIN GUARD REMOVED)

6 HOLES 14 Ø ON 235 PCD FOR MOUNTING



Ø 262

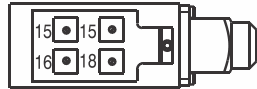
**TOP VIEW**



**FRONT VIEW**

**FIG. 2 : LIMIT SWITCH (COVER REMOVED) MODEL : T-6-LSM**

FOR 1 NO + 1 NC CONTACT

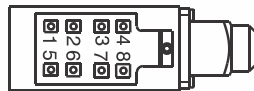


**FIG. 3 : WIRING & SWITCH OPERATION**

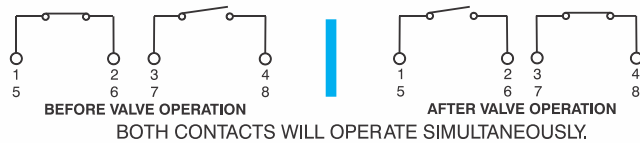


**FIG. 4 : LIMIT SWITCH (COVER REMOVED) MODEL : T-6-LSM- 2 NO.**

FOR 2 NO + 2 NC CONTACT



**FIG. 5 : WIRING & SWITCH OPERATION**



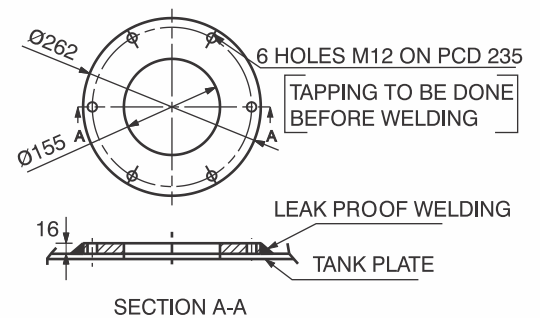
**PART LIST FOR FIG. 1**

SR NO.	DESCRIPTION	MATERIAL	QTY
1.	BASE	CAST AL.	1
2.	SPRING LOADED DIAPHRAGM	S.S	1
3.	DOME	M.S	1
4.	NAME & PRODUCT LABELS	BRASS	2
5.	FLAG	AL. PLATE	1
6.	LIMIT SWITCH		1
7.	RAINGUARD	M.S	1
8.	SCREWS FOR RAINGUARD	S.S	2
9.	SWITCH OPERATING ROD	BRASS	1
10.	GASKET	RUBBER	1

**SPECIFICATIONS :**

- LIQUID IN TANK : TRANSFORMER OIL.
- OPERATING PRESSURE : 0.42, 0.49, 0.56, 0.70, 0.84 kg/Cm<sup>2</sup> (SPECIFY ANY ONE VALUE)
- OPERATING TOLERANCE : ±0.07 kg/Cm<sup>2</sup>
- OPERATING TIME : INSTANTANEOUS.
- VALVE RESETTING : AUTOMATIC.
- OPERATING TEMPERATURE : 0 TO 100°C. (OF LIQUID IN TANK)
- ENVIRONMENT : INDOOR OR OUTDOOR
- SWITCH : SEE FIG. 2,3,4,5 FOR DETAILS.
- SWITCH RESETTING : MANUAL
- PORT OPENING : 150 mm DIA NOMINAL
- THE PRV WITHOUT SWITCH MECHANISM IS AVAILABLE MODEL T-6-W

**FIG. 6 : MOUNTING PAD**



MOUNTING PAD IS NOT SUPPLIED BY SUKRUT

**GENERAL NOTES :**

- The Operating Pressure of PRV is not adjustable at site. Hence care should be taken at the time of specifying Operating Pressure.
- The value of Operating Pressure should be worked out carefully considering strength of tank and existing static head of oil on PRV
- Storing of PRV should be done carefully. Passage of particles or small pieces through tank side of PRV will get trapped below the spring loaded diaphragm. This will cause continuous leakage of oil even at normal pressure in tank.



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