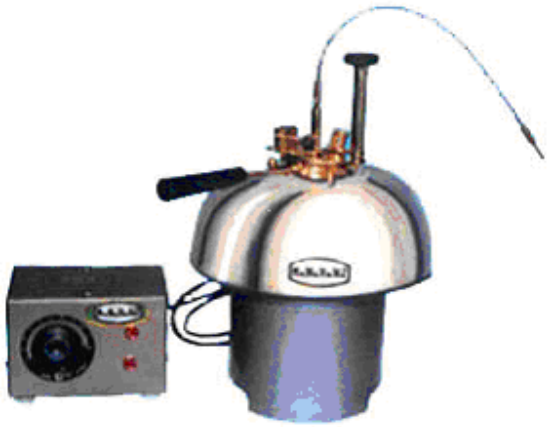
FLASH POINT (CLOSED) BY PENSKY MARTENS APPARATUS



DEEP VISION INSTRUMENTS

WORKING INSTRUCTIONS – FLASH POINT (CLOSED) BY MEANS OF THE PENSKY MARTENS APPARATUS.

IS:1209-1958 AND IP34/58

The Pensky Marten's Apparatus is used for determining the closed Flash Point of all PeTROLEUM HAVING A Flash pOint above 48.9*C (120*F), except for out-back Bitumens.

DESCRIPTION OF THE APPRATUS :

The main components of the Pensky Martens Flash Point Apparatus are follows :

- OIL CUP
- AIR BATH
- ELECTRIC HEATING ARRANGEMENT
- ENERGY REGULATOR BOX
- TOP PLATE
- COVER ASSEMBLY HAVING

(a) COVER
(b) SHUTTER
(c) STIRRING DEVICE
(d) FLAME EXPOSURE DEVICE
(e) THERMOMETER SOCKET.

THERMOMETERS :

IP 15C	-7*c TO 100* (LOW)
IP 16C	90*c TO 370*c(HIGH)

Either of the thermometers may be employed if the indicated reading falls within 93* to 110*C. For tests in which the indicated reading falls within the limits –7 to 93*C (20 to 200*F), the IF 15C thermometer shall be used and for tests in which the indicated reading falls within the limits 110 to 370*C (230 to 700*F) the IP 16C thermometer shall be used.

A blue print figure 1 is attached to show the constructional details.

DESCRIPTION :

The brass oil cup is meant for heating the Petroleum Products to the Flash Point. It carries a mark all round in the inside to show the required level of liquid.

The cup has a flange which rests on the brass top and the lower parts of the cup is within the Air Bath or Heating Vessel. The top plate is screwed on the Air Bath through brass spacers, so that an air gap is produced between the cup and the Air Bath by which the transmission to the cup is almost entirely by heated air. The cup flange has an indicator to fit correctly on the Top Plate. The heat is supplied from 220V A.C. Mains, by an electric heater kept below the Air Bath and the regulation of the heat is done by the Energy regulator. The function of the Air Bath and the Top Plate is to prevent external air draughts from interferring with the heating.

The cover proper of the lid is made of brass plate and has a tubular fitment which enables it to sit on the cup. The cover proper is illustrated in Figure 2/

It has three holes B,A & C in the peripherial region and also one circular hole which carries a split tube for taking brass collar of a thermometer, and one central hole admits stirrer rod.

The peripherial hole A is larger and the flame exposure to the oil under test is given through it. The flame is produced by a burning gas jet of a gas reserviour fitted close to the hole A. The gas is supplied from gas mains. The shutter is a brass disc fitted concentracally on the cover proper. It has two peripherial holes matching the hole b & A of the cover proper. The shutter can be rotated by the spring loaded handle G which is mounted on the cover proper. Initially the shutter keeps all the holes B,A, &C, closed proper . Intially the shutter keeps all the holes B,A & C closed but by slight rotation all the three holes get exposed. A lever arrangement fitted to the shutter tilts the gas Chamber in such a way that the gas jet with the flame enters the hole momentarily.

The gas chamber has another ancillary jet called the Pilot flame F in figure 1. This enables the main gas jet to be relighted if extinguished during the test. The pilot flame burns continuously and is away from any of the holes of the cover proper.

Where gas supplied is not available, an oil burner replaces the gas chamber. A cotton wick produces the flame, otherwise the mechanism is similar as for the gas jet. A pilot oil flame is also provided in this case.

A light cololured ball of 4mm diameter fixed to a wire is mounted on the shutter, and which enables the test test flame size to be visually adjusted to the same

size as that of the ball. This is done by restricting the gas supply in the case of gas jets, and by adjusting the wick expsure in oil test flames.

The stirrer consists of a steel rod of which two pairs of brass propellers are fixed. The rod passes through the shutter.

A flexible cable protected with armouring is fitted to the external and of the rod. The flexible shaft has a brass handle which can be manually rotated, causing to the propellers to stir the test liquid.

OPERATION : The operation is fully prescribed in the specification is : 1209 – 1958 issued by the Indian Standard Institution, New Delhi and also in in 34/58 of the Institute of Petroleum, London.