

(72)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RESEARCH DESIGNS AND STANDARDS ORGANISATION

Manak Nagar, Lucknow-226011.

No. EL/3.2.39/2

24th May 1980.

MODIFICATION SHEET NO. RDSO/WA44/99

MODIFICATION TO ELGI PNEUMATIC PRESSURE SWITCHES
FOR MINIMISING DIAPHRAGM FAILURE

1. Object

A large number of failures of ELGI pressure switches due to failure of diaphragm has been reported. Failure of the diaphragm may be due to:

- a) Natural rubber diaphragm used by the manufacturer is not considered adequate for this application. It is proposed to use synthetic rubber for greater durability.
- b) It is also observed that in most of the cases, the diaphragm cracks at the location in contact with the inner edges of the flange. This edge is quite sharp and continuous flexing at this edge causes fatigue failure.
- c) In some cases, it has been observed that seating surface of the diaphragm in the bottom flange is not even as fine machining has not been done during the manufacture. This results in leakage.

2. Work to be done:

Dismantle the switch:

- 1 a) Machine the seating surface for the diaphragm in the bottom flange as shown in org. No. SKEL 3267 to a fine finish with minimum cut.
- b) Finish the edges where central cavity and diaphragm seat meet to a radius of 1.0 to 1.5 mm.
- c) Replace the existing rubber diaphragm with fabric reinforced polychloroprene rubber conforming to dimensions and specification given in org. No. SKEL 3260.

Sd/- 2/H

(12)

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- 1.4) Replace the existing rubber diaphragm with fabric reinforced polychloroprene rubber conforming to dimensions and specification given in drg. No. SKEL 3260.

Sd/- 2/H

iii) Fix the diaphragm between the flanges and uniformly tighten the nuts at diametrically opposite locations. Squeeze on rubber shall not exceed 20% of the initial thickness.

iv) Lock the nuts with a drop of araldite/locktight.

3. Application:

All locos (viz RGCP, QPDJ & WSC etc.) and EMUs fitted with ELGI pneumatic operated pressure switches.

4. Material required:

i) One fabric reinforced PCP diaphragm conforming to drg. No. SKEL 3260.

ii) Lock tight/araldite as required.

5. Material rendered surplus:

One diaphragm of natural rubber.

6. Drawing No.

SKEL 3260 & 3267.

7. Agency for Modifications:

i) Railway -- Locos and EMUs in service.

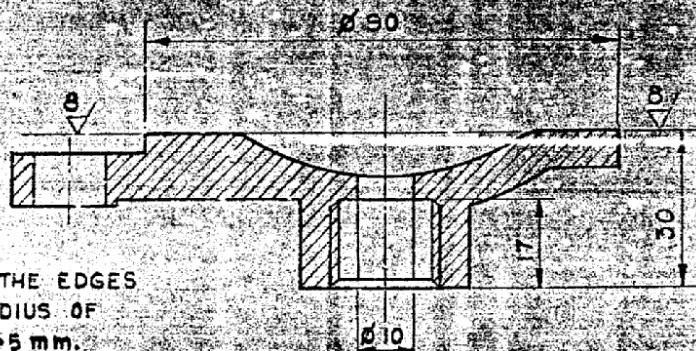
8. Distribution:

As per list enclosed.

DA 1. Mailing list.
2. SKEL NO. 3260 & 3267.

S. Baweja
(D.S. BAWEJAY)
for Director General/Elec.

SKEL 3267

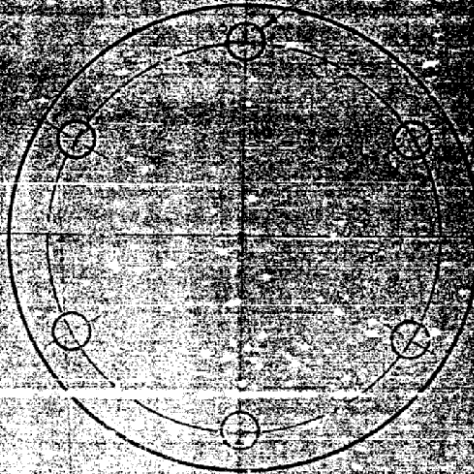


FINISH THE EDGES
TO A RADIUS OF
1.0 TO 1.5 mm.

REVISIONS
NO. 1
DATE 11/1/78
BY 101/1-1
BOTTOM FLANGE FOR
ELCI PRESSURE SWITCH
R.D.S.O. ENG. DTL SKEL 3267

SKEL 3260

6-20±0.2 Ø HOLES EQUALLY SPACED
1-00 74-5 ±0.2



3.5±0.2

PROPERTIES

a. HARDNESS (SHORE A)	60±5
b. TENSILE STRENGTH (min) kgf/cm ²	140
c. ELONGATION AT BREAK (min)%	250
d. COMPRESSION SET (max)%	50
-24 HOURS AT 100±2°C	
(AS PER IS: 3400 PT. 8)	

NOTE:-

1. THE RUBBER COMPOUND SHALL BE POLYCHLOROPRENE CONFORMING TO IS: 1818-1972 WITH THE ABOVE PROPERTIES SHALL BE REINFORCED WITH FABRIC INSERT.
2. A CLEAR IDENTIFICATION MARK OF THE MANUFACTURER INDICATING YEAR OF MANUFACTURE SHALL BE GIVEN IN THE MIDDLE OF THE THICKNESS OF THE RUBBER.

ELGI MODEL
31/6/93/7/55

RUBBER LAMINATE
FOR ELGI PRESSURE SWITCH

EDS O: ELEC DIV SKEL 3260