



सत्यमेव जयते

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(For Official Use Only)**

*Pamphlet
on*

POINT MAINTENANCE



**CAMTECH/S&T/S/2008/P/PM/1.0
November 2008**

**Centre
for
Advanced
Maintenance
TECHnology**



Excellence in maintenance

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POINT MAINTENANCE

1. Essential P. Way requirements for interlocked points

- Correct level and alignment of track.
- Packing and full ballasting of points (Preferably machine packing).
- Prevention of lateral/longitudinal movement of points and provision of creep and level posts opposite the toe of the switch.
- Arrangement of sleepers on adjacent tracks in alignment, where rods and wires have to cross.
- Maintenance of correct gauge.
- Fitting of gauge tie plates correctly (under toe of the switch and crossing for wooden sleepers and under toe of switch for PRC sleepers).
- Fitting of flexible stretchers such that they flex equally in the normal and reverse positions.
- Proper housing of switch rail against stock rail for sufficient length - at least up to 6 sleepers.



- Spring force on the switches for N and R setting - it should be equal on either side.
- Initial opening of the switch rail at the toe:
115 mm \pm 3mm on BG and 100 \pm 3 mm on MG.
- Clearance between rail bottom of the stock and top of leading stretcher bar - within 3 mm.
- No combination of fish plates at stock rail joints, at the heel of crossings and on turn in curve. At least one rail on either side of the points and crossings should have the same section as that of the points and crossings assembly.
- The gauge of the adjoining track is same as that of point and crossings.
- Thinner half headed stud bolts only to be used over planed length of tongue rail which butts against the stock rail.

If any of the above items are not complied, the same should be got attended by SSE/SE/JE (P. Way).

2. Maintenance instructions

2.1 General

- Ensure cleaning and lubricating of moving parts.
- Check for tightness of bolts/nuts and tighten/ replace missing bolts/nuts of flexible stretchers.
- Ensure split pins are in position and opened out.



- Ensure periodical cleaning and oiling of slide chairs for smooth operation of points

- Advise SSE/SE/JE P. Way if LH/RH tongue rail is badly damaged chipped/cracked or worn out and got it replaced with serviceable one.
- Get replaced the burred stock rail likely to obstruct housing of tongue rail and the lock bar.

2.2 Point rodding and rod rollers

- Check that the rods are in proper alignment.
- Check the joints for their good connections.
- Check the guide roller assembly for completeness.

2.3 Lock bar

Check for wheel mark on lock bars.

Check the lock bars clips and stops for tightness.

Replace the badly worn out clips and lubricate their bearing..

Check that lock bars are straight and lie 38mm below the rail top.

2.4 Cranks and Compensators

- Ensure their foundations and studs are not loose.
- Ensure that their holes have not become oblong.
- Ensure that cranks fixed on sleeper are rigidly held.

2.5 Facing Point lock

- Ensure that the edges of notches and that of F.P. lock plunger are square and sharp.
- Check the holding down bolt of F.P. locks, Cranks, Slide chairs and see that they are well-tightened.

2.6 Electrical Detectors

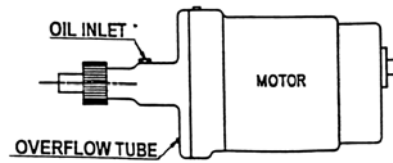
- Check the shoes and angle slides for free movements.
- Check that contacts make or break at same time.
- Lubricate the slides and rollers with axle oil.
- Check the wires are neat and tidy.

2.7 Electric Point Machine

- Check that the detection and control contacts make with sufficient pressure.
- Ensure that carbon brushes exert sufficient pressure on the commutator. Replace if worn out.
- Clean the commutator to remove carbon deposits.
- Check the tightness of fixing bolts.



- Ensure lubrication of all gears and bearings.
- Fill the gear box with lubricant through the oil inlet until oil emerges out of over flow tube.



- Check the contacts for freedom from pitting and proper adjustment.
- Tighten all nuts and check nuts and bolts holding the detector slides and lock slides with lugs.
- Keep wires neatly dressed and clear of all moving parts.
- Lubricate the slides, roller and pins with axle oil. Ensure all the bridge contacts make or break at the same time.



- Apply recommended type grease to various parts every six months or as specified by the manufacturer.

3. Testing

3.1 Correspondence testing

Correspondence testing of point at site w.r.t. point group/lever/relay and its indication must be done after cable meggering.

3.2 Obstruction test

- Place a 5 mm test piece between the switch and the stock rail at 150 mm from the toe.
- With the obstruction in, operate the point
 - (i).The point cannot be locked.
 - (ii).The point detector contacts should not assume the position indicating point closure and
 - (iii).Friction clutch should slip in case of point operated by electric point machine.
 - (iv).Test also that detector contacts just make with 1.6 mm obstruction and break with 3.5 mm obstruction.



3.3 Track locking testing

Once in three months ensure that the point does not operate when points portion track circuit is showing occupied. Energize the track circuit and ensure that the point gets operated.

3.4 For mechanically operated points

Check that the lever operating the points springs a little, equally in the normal and reverse positions before being latched.

3.5 For Electric Point Machine

- Operate the machine electrically and measure working current and voltage for both Normal and Reverse operations with and without obstruction. Ensure that the friction clutch declutches during operation with obstruction.
- Check that the crank handle cut out contact is making with sufficient pressure.
- Check point detection contacts for individual integrity by conducting contact break test.
- Operating values of point machine, point motor insulation and switch bracket insulation should be tested once in three months.

It is clarified that information given in this pamphlet does not supersede any existing provisions laid down in S.E.M., Rly. Board and RDSO publications. This document is not statutory and instructions given in it are for the purpose of guidance only. If at any point contradiction is observed, then S.E.M., Rly. Board and RDSO guidelines or Zonal Rly. instructions may be followed.