



नाम

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अनुक्रमांक

Roll No : \_\_\_\_\_

पाठ्यक्रम

Course : \_\_\_\_\_

दिनांक

Date : \_\_\_\_\_

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Marks Awarded : \_\_\_\_\_

अनुदेशक के आद्यक्षर

Instructor Initial : \_\_\_\_\_

## STUDY OF FACING POINT LOCKS

### INTRODUCTION TO FACING POINT LOCKS:

There are three types of locks used in INDIAN RAILWAYS.

#### A. FACING POINT LOCK ( SA5984):

This consists of a casting through which the plunger works. The casting a cover. This lock can be used "IN AND OUT" method of locking the point is employed . The lock plunger moves out of the split stretcher bars, then points move and finally the plunger moves back to lock the points . There is no cross-slide arrangement for detecting the travel of the plungers. The lock detection is achieved by connecting upto crank  $6\frac{1}{2} \times 12$  inches for the plunger driving rod and notches are out at the top of split stretcher bars. This arrangement is cumbersome.

#### B. FACING POINT LOCK ( SA3297):

This lock is used where " IN AND OUT " method of locking employed . The lock plunger consists of 49.8 mm wide steel bar fitted with another steel bar of the same width and thickness on top at a distance of 120mm from its end.This 120mm projection is provided to support the split stretcher bars which are provided on top of the plunger. The notches in the split stretcher bars are out at the bottom size of the notches is  $20 \times 53$ mm . This has a cross slide for detecting the full travel of the plunger. The ensure that the points is effectively locked before the signal is cleared.

#### C. D.W.ECONOMICAL FACING POINT LOCK (SA3214):

This lock is used where "STRAIGHT THROUGH" method of locking the point is employed . The lock plunger moves in the same direction for unlocking and relocking Of the points and continues to move even during the period the points are moving. There Are two lock dogs of  $1\frac{1}{2}$  (38mm) each fitted at a distance of  $6\frac{1}{2}$  inches (158mm) apart of the plunger which locks the split stretcher bar. Both the lock dogs are staggered by  $\frac{1}{2}$  inches (12mm) such that the if ,due to the throw rod

getting disconnected the point mechanism does not move the points , it should not lock them. The staggering to the locks will fail to achieve the purpose if it is not properly connected and the point will not lock the switches have moved by and the throw rod is connected after 1 ½ inches movement .Lever will be latched without ensuring point position to avoid this each dog should be nominated for a particular lock and other should not enter this notch. This is done by connecting the plunger in such a way that during operating that the point notches which are already ½ mm displaced from the lock not nominated for them , travel away from never come closer to them , The thumb rule to never that it is to see that “with the left hand switch closed the plunger is in “ and with the right hand switch closed the plunger is out .This is known as “LEFT IN RIGHT OUT”.

This lock has a cross slide which moves with the point is unlocked and when it relocks. This cross slide is connected to the lock slide of the detector for lock and deduction in 1 ½ inch from normal locked position to reverse locked position . The movement of the lock slide ,connected to the cross slide is opposite to that of the point slides, otherwise if there is any disconnection is the slide the lock slide will be carried Away by the point slides and signal will get cleared. There are two holes provided on the cross slide is 1inch dia. The 1 inch dia hole is used for connecting up mechanical Detector, where as a smaller hole is used for connecting electrical detector.

Proper lubrication should be done for moving parts in a facing point lock. It is fixed at 20inches(500mm) from running face of the rail , inside the track ,to avoid damage to FPL because of handing coupling in BG

1. Indicate the main parts in the sketches of the following facing point locks:
  - A. FACING POINT LOCK (SA 5984).
  - B. FACING POINT LOCK , WITH PLUNGER DETECTION (SA3297).
  - C. D.W.ECONOMICAL FACING POINT LOCK(SA3214).

## 2.MEASURE AND RECORD:

SL	DESCRIPTION	SA5984	SA 3297	SA3214
1.	Length of the plunger			
2.	<i>Thickness of the plunger</i>			
3.	<i>Width and thickness of locking piece</i>			
4.	Width of notch on the split stretcher bar			
5.	Depth of the notch on the split stretcher bar			

## 3.Operate the plunger and record the following:

SA 3214 STRAIGHT THROUGH		SA 3297 IN AND OUT	
Movement of the plunger	Movement of the cross slide	Movement of the plunger	Movement of cross slide
1/8 (9mm)		3 ½ (87mm)	
1 5/16 (33mm)		2 ½ (57mm)	
1 7/8(122mm)		2 ½ (56mm)	
1 5/14 (33mm)			
1/8 (3mm)			
TOTAL STROKE 200mm	32mm	200 mm	32mm

4.In case of D.W. FPL measures the distances between the nearest of locking pieces.

5. What is the arrangement to prevent the split stretcher bar notches getting obstructed with the base of facing point lock?
6. What is the purpose of two holes on cross slide of SA 3297 and SA 3214 LOCKS?
- a.
  - b.
7. In the case of D.W. Economical Facing point lock, What are the precautions taken while cutting notches on the split stretcher bars. How are fouling notches are avoided?
8. What will be the pitch of notches on split stretcher bar D.W. FPL?
- a. BG
  - B. MG
9. Operate the lock plunger and observe the movement of the cross slide and movement of points. Why it is so?

Date;

Signature of trainee





