PUBLIC TRANSPORT AUTHORITY

SAFEWORKING RULES AND PROCEDURES

9012

OPERATION OF POINTS

CONTENTS

1. PURPOSE

The purpose of this procedure is to provide instructions for operating and managing *Points* in the Public Transport Authority (PTA) *Network*.

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2. GENERAL

The normal position of *Points* will be indicated by the *Diagram of Signalling* in *Centralised Traffic Control* (*CTC*).

Points on *Running Lines* over which *Rail Traffic* is to pass must be *Secured* for the safe passage of *Rail Traffic*.

Points may be operated by electric motors or mechanically by the use of a hand lever.

Electric motor operated *Points* are remotely operated by the *Train Controller*.

The different types of motors in use are:

- Type “S”;
- Type “Y”; and
- Type “W”.

Should one or more of the motors fail to operate, or if electronic detection of the *Points* is lost, an indication will be displayed in *Train Control*. *Signals* controlling *Routes* over *Points* with no detection will only display a Stop indication.

When a *Points* failure or loss of detection occurs, the *Points* may be required to be manually operated by a *Crank Handle* which is kept in a cabinet close to the electric *Points*.

Locally operated *Points* are provided in yards and depots for the setting of *Routes* for *Rail Traffic* movements. These *Points* can be either electrically or mechanically operated by a *Competent Worker*.

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3. SETTING POINTS

3.1. INDICATIONS OF POINTS SETTING

The setting of *Points* must be communicated to *Rail Traffic Crew*, by:

- *Signal* indication;
- *Points Indicators*;
- direct observation of the *Points*; or
- other *Competent Workers*.

Points that are operated by hand must be examined to ensure that the *Points* are set for the intended *Route*.

3.2. RESTORATION OF POINTS

WARNING

At approved junctions and other approved *Locations*, *Points* may be left set for the last movement.

Rail Traffic Crew must be prepared to find the *Points* incorrectly set at these *Locations*.

Points and locking mechanisms on *Running Lines* must be restored to their normal position after use unless otherwise instructed by the *Train Controller*.

4. MOVEMENT OVER POINTS

WARNING

Points must not be operated while *Rail Traffic* is moving over or standing on the *Points*.

4.1. RAIL TRAFFIC

Rail Traffic must remain clear of the *Points* until they are correctly set for the movement.

4.2. COMPETENT WORKERS

Competent Workers must stand in a *Safe Place*, well clear of *Points* and operating mechanisms, when *Rail Traffic* is passing over *Points*.

4.3. TRAILING POINTS

Rail Traffic must not run through *Trailing Points* that are not correctly set for the movement.

WARNING

Rail Traffic Crews must not *Set Back* after *Points* have been run through until the *Points* have been inspected and declared safe.

If *Rail Traffic* runs through a set of *Trailing Points*, the *Maintenance Representative* must be advised and:

- the movement must continue in the same direction; and
- the *Points* must be inspected by a *Competent Worker* before another movement is made over them.

5. DAMAGED POINTS

WARNING

Competent Workers required to inspect or hand operate *Points* must make sure that:

- safety measures are in place before starting work in the *Danger Zone*; and
- there is an easily reached *Safe Place* near the *Points*.

If *Points* are found to be defective or damaged the *Train Controller* must be advised and the *Points* must not be used until:

- the *Points* are inspected by a *Competent Worker* and found safe for the intended movement;
- a *Competent Worker* makes the *Route* safe for the *Rail Traffic* movement by clipping the *Points* in accordance with **Procedure 9000 Clipping Points**; or
- the *Points* are inspected and repaired by a *Maintenance Representative*.

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6. FAILED ELECTRICALLY OPERATED POINTS

If the electrically operated *Points* are unable to be operated correctly, the *Points* must be:

- isolated by the removal of the *Crank Handle*; or
- set and clipped for the intended *Route*, in accordance with **Procedure 9000 Clipping Points**.

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7. MANUAL OPERATION OF ELECTRIC POINTS

7.1. TRAIN CONTROLLER RESPONSIBILITIES

When *Points* fail or have lost detection the *Train Controller* must:

- make further attempts to operate the *Points* and if they still do not work correctly, arrange for a *Competent Worker* to attend the *Points;*
- advise the *Infrastructure* representative and record on the *Train Control Diagram*:
  - the number of the defective *Points*; and
  - when repairs to the *Points* have been completed.
- electronically lock the *Points*. This will ensure that the *Points* cannot move should the power be reinstated;
- instruct the *Competent Worker* to visually check the *Points* for obstructions. If an obstruction is found, instruct the *Competent Worker* to safely remove the obstruction;
- if no obstruction is found, give *Authority* to remove the *Crank Handle* and manually operate the *Points* into either the Normal or Reverse position;
- Instruct the *Competent Worker* not to replace the *Crank Handle* until *Authorised* to do so;
- when advised by the *Competent Worker* that the *Points* are in the required position, *Authorise* the *Rail Traffic Crew* to pass the relevant *Signal* at Stop in accordance with **Rule 6013 Passing Fixed Signals at Stop**; and
- advise the *Rail Traffic Crew* to ensure that the *Points* are set correctly before travelling over them.

7.2. COMPETENT WORKER RESPONSIBILITIES

WARNING

When removing an obstruction from *Points* mechanisms the *Competent Worker* must not place hands between or near parts that can move.

The *Competent Worker*, when instructed to manually *Crank Points* must:

- have communications equipment and, if necessary, a torch;
- visually check the *Points* for any obstruction that may be preventing the blades from closing. If an obstruction is found, contact *Train Control* then safely remove the obstruction;
- If the failure of the *Points* is not due to an obstruction, the *Train Controller* will advise which sets of *Points* are to be cranked, and the position (Normal or Reverse);
- obtain permission from the *Train Controller* before removing the *Crank Handle* from the switch in the cabinet;
- not replace the *Crank Handle* until *Rail Traffic* has passed completely over the *Points*, and then only when instructed to do so by the *Train Controller*;
- ensure all *Points* with the same number, including Swing Nose *Points* (frogs) and K Blades, if present, have been cranked to the position nominated by the *Train Controller*;
- once the *Points* have been cranked to the required position, check that all the *Points* are set correctly for the passage of the *Rail Traffic*; and
- advise *Train Control* that the *Points* are set correctly.

7.3. RESPONSIBILITIES OF THE RAIL TRAFFIC CREW

Where no *Competent Worker* is present and the *Rail Traffic Crew* are instructed to pass a *Signal* at Stop, the *Rail Traffic Crew* must, before moving across each set of *Points*, stop and examine the *Points* to ensure that they are set for the safe passage of the *Rail Traffic*.

7.4. RESUMPTION OF NORMAL WORKING

When normal working is to resume, the *Train Controller* will instruct the *Competent Worker* to return the *Crank Handle* to its switch.

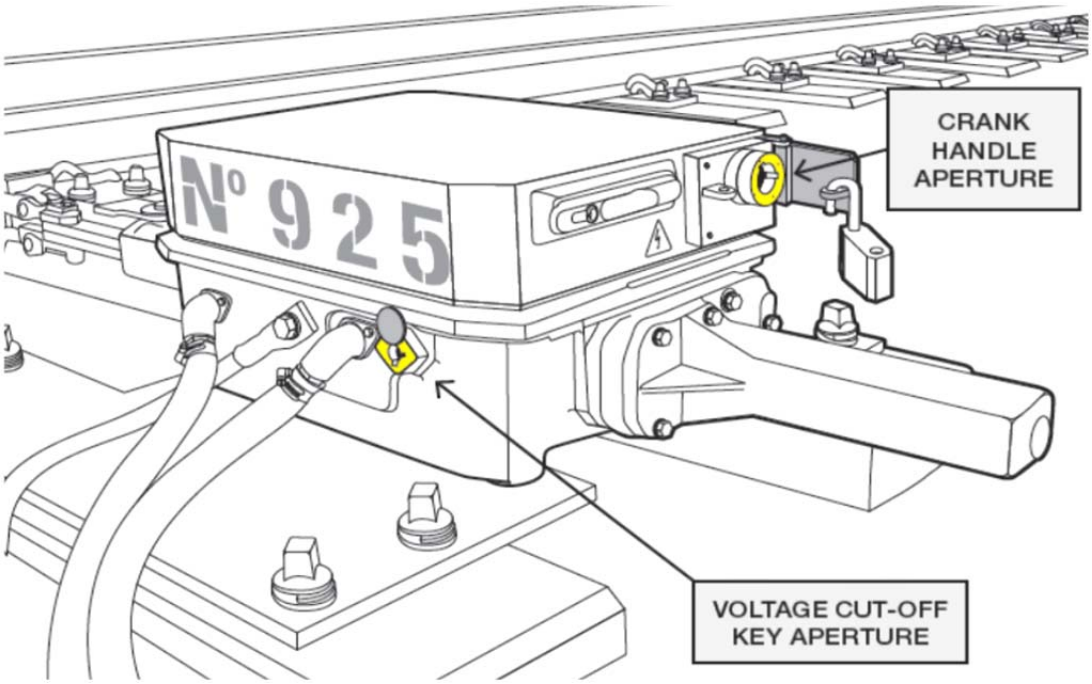
When the *Crank Handle* has been returned to its switch the *Train Controller* must be advised.

NOTE

Points are to be tested after the *Crank Handle* is restored to the switch.

8. POINTS MOTORS

8.1. TYPE S

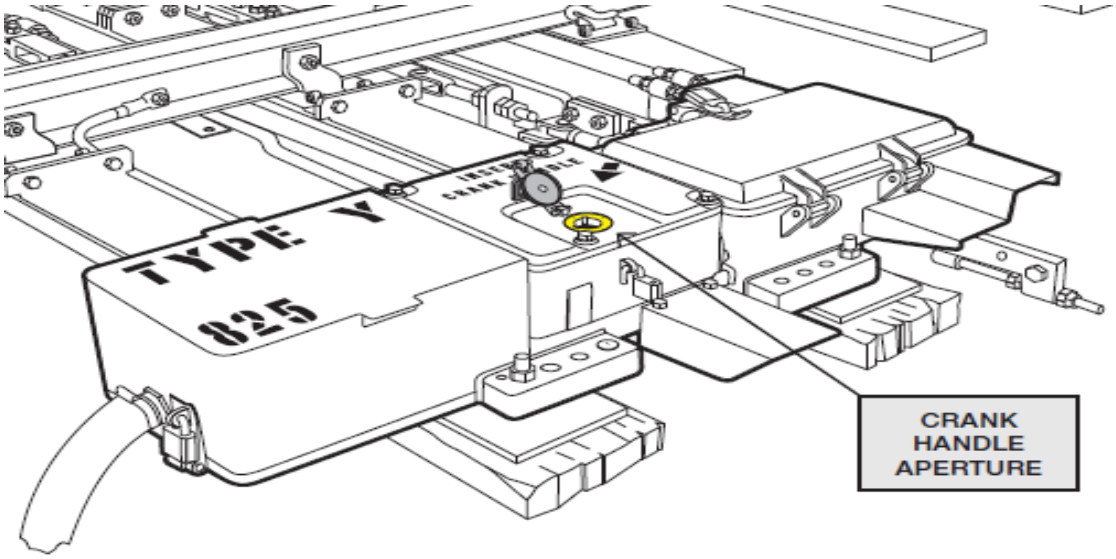


The *Competent Worker* must:

- insert the voltage cut-off key and turn it clockwise. Turning the voltage cut-off key cuts the power to the machine and moves an internal obstruction arm so that the *Crank Handle* can be inserted;
- unlock and open the *Crank Handle* aperture cover and insert the *Crank Handle* fully;
- wind the *Crank Handle* until there is an audible “click”, at which point the indicator will show the required position of the *Points*. (Note: continue to crank even after the blade appears to be flush with the rail);
- check the *Points* to ensure that they are set correctly then contact *Train Control*;
- follow the instructions from the *Train Controller*;
- when the *Train Controller* advises normal working is to resume, remove the *Crank Handle* and close and padlock the cover plate;
- turn the voltage cut-off key counter clockwise (to the original position) and remove. Failure to turn the key back to the original position will result in the power to the machine remaining isolated and the *Points* will not operate electrically;
- return the *Crank Handle* and voltage cut-off key to the *Crank Handle* cabinet;
- replace the *Crank Handle* into the *Crank Handle* switch; and
- contact *Train Control* before leaving the area and ensure that the *Crank Handle* cabinet is locked.

There is an indicator which shows the position of the *Points* (Normal or Reverse).

8.2. TYPE Y

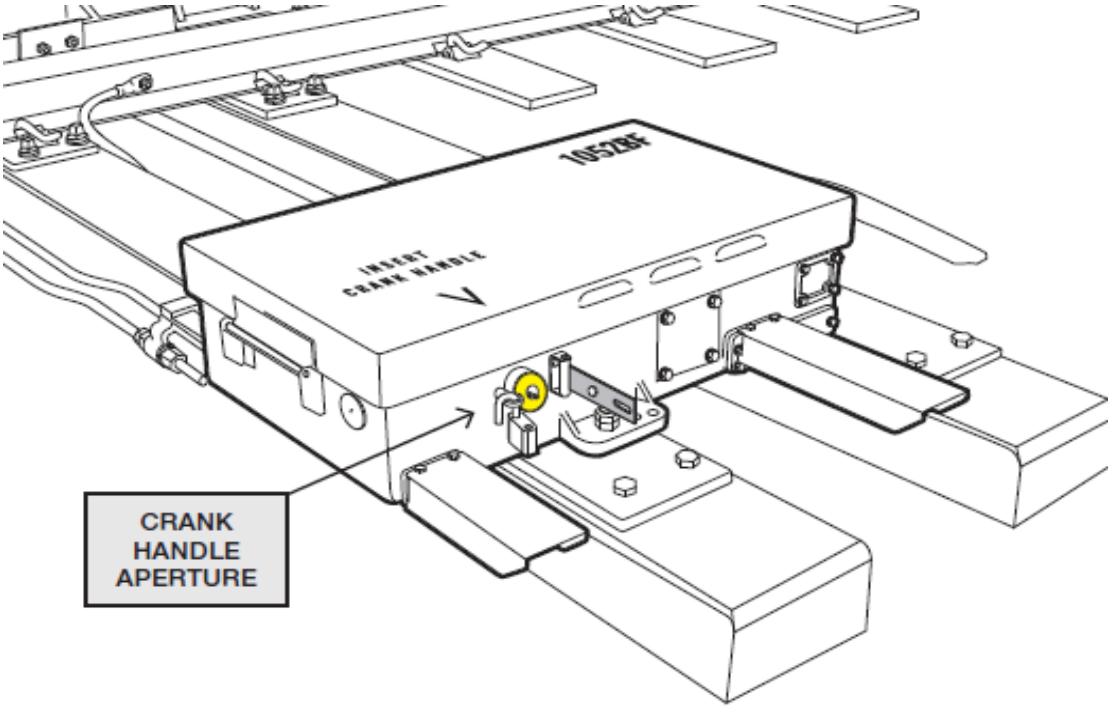


The *Competent Worker* must:

- unlock and open the *Crank Handle* aperture cover by exerting downward pressure on the hasp to release it;
- insert the *Crank Handle* into the motor;
- locate the indicator which shows the position of the *Points*;
- wind the *Crank Handle* until it will go no further and the indicator shows the required position;
- check all the *Points* to ensure that they are set correctly then contact *Train Control*;
- follow the instructions from the *Train Controller*;
- when the *Train Controller* advises normal working is to resume, remove the C*rank Handle,* and replace and padlock the hasp;
- replace the crank handle into the *Crank Handle* switch; and
- contact *Train Control* before leaving the area and ensure that the *Crank Handle* cabinet is locked.

There is an indicator which shows the position of the *Points* (Normal or Reverse).

8.3. TYPE W



WARNING

Care should be taken when turning the *Crank Handle* (as instructed below) to ensure that the *Competent Workers* hands are not damaged by the heads of the bolts in the sleeper. It is recommended that gloves be worn.

The *Competent Worker* must:

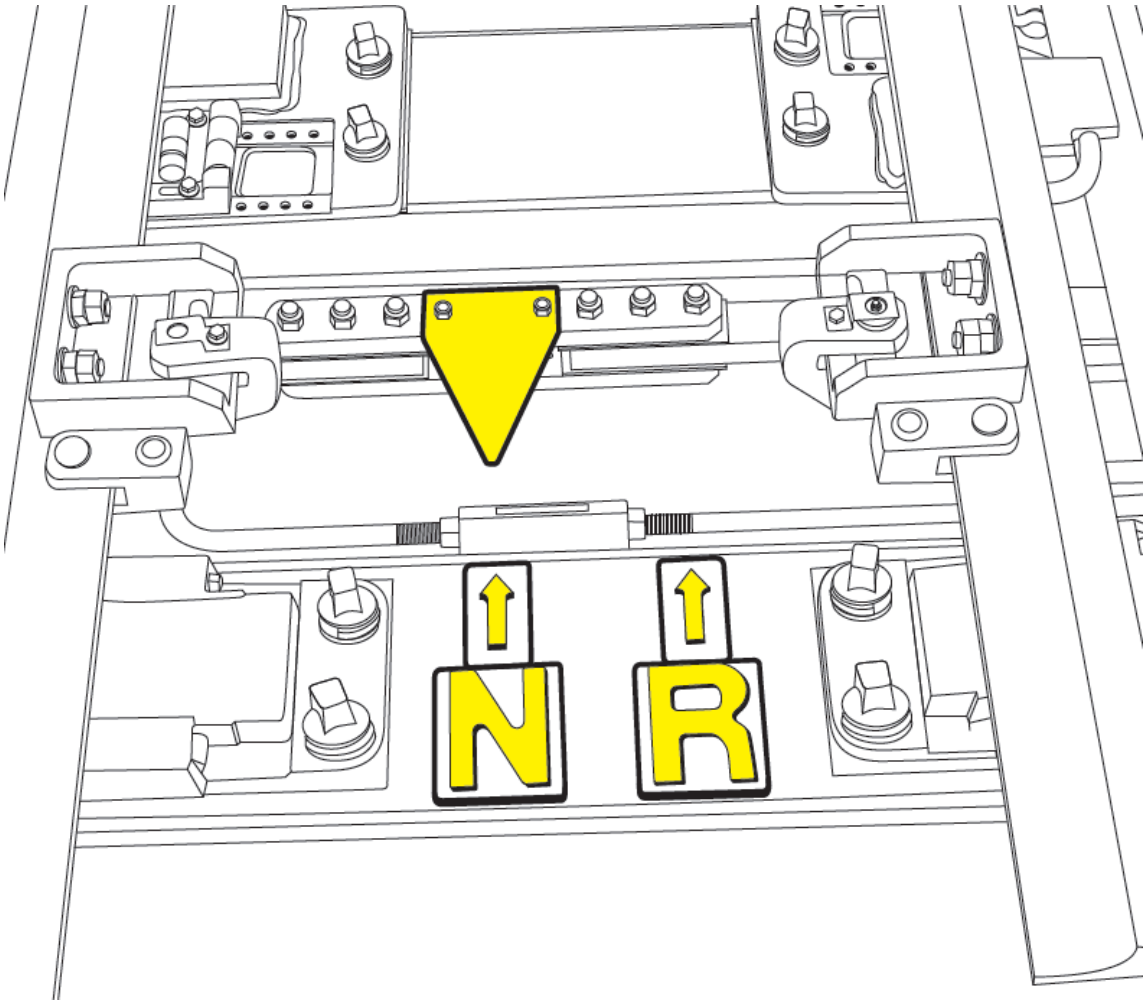
- unlock and open the hinged cover plate on the side of the machine;
- insert the *Crank Handle* into the circular hole behind the cover plate;
- wind the *Crank Handle* until there is an audible “click”, at which point the indicator will show the required position of the *Points*. (Note: continue to crank even after the point where the blade appears to be flush with the rail);
- follow the instructions from the *Train Controller*;
- when the *Train Controller* advises normal working is to resume, remove the *Crank Handle* and then close and padlock the cover plate;
- replace the *Crank Handle* into the *Crank Handle* switch; and
- contact *Train Control* before leaving the area and ensure that the *Crank Handle* cabinet is locked.

There is an indicator which shows the position of the *Points* (Normal or Reverse).

9. ADDITIONAL INFORMATION

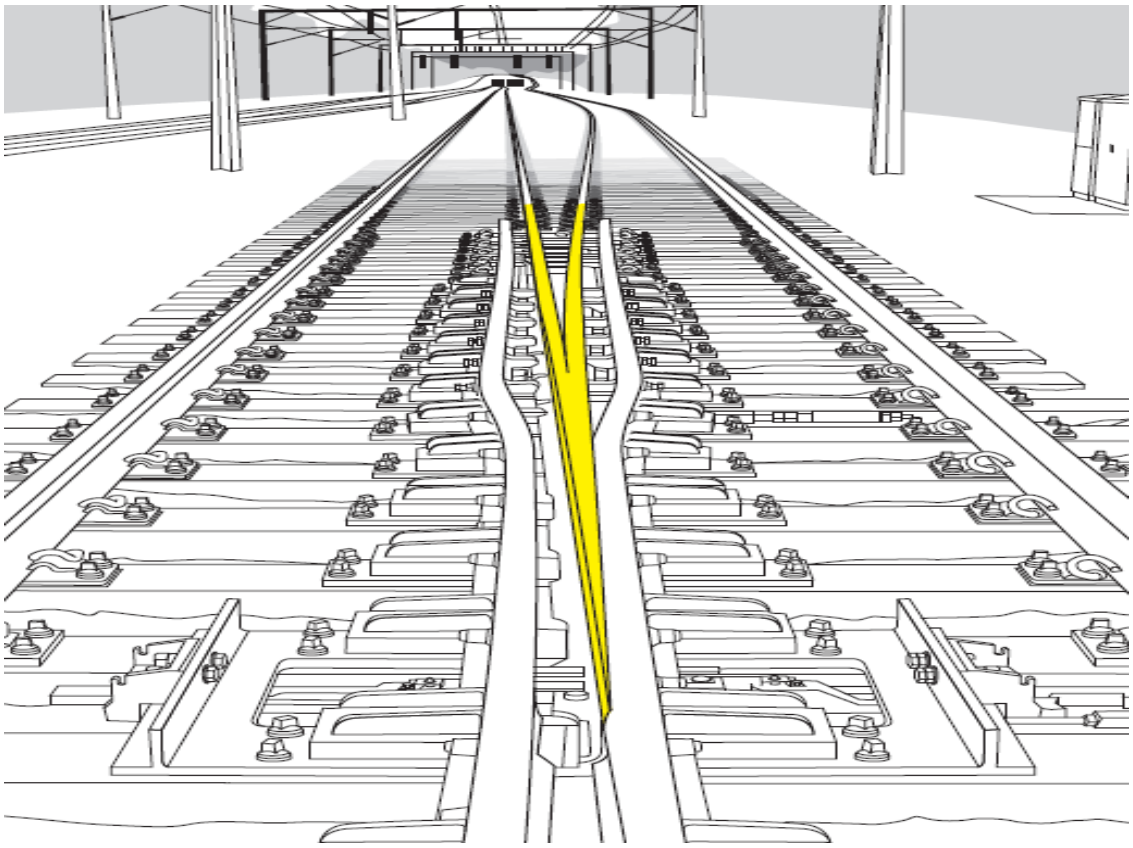
9.1. NORMAL OR REVERSE INDICATORS

To indicate the Normal and Reverse setting of the *Points*, metal letters are provided, fixed on the sleeper at the toe of each blade. “N” indicates the *Points* are set Normal; “R” indicates the *Points* are set for Reverse.



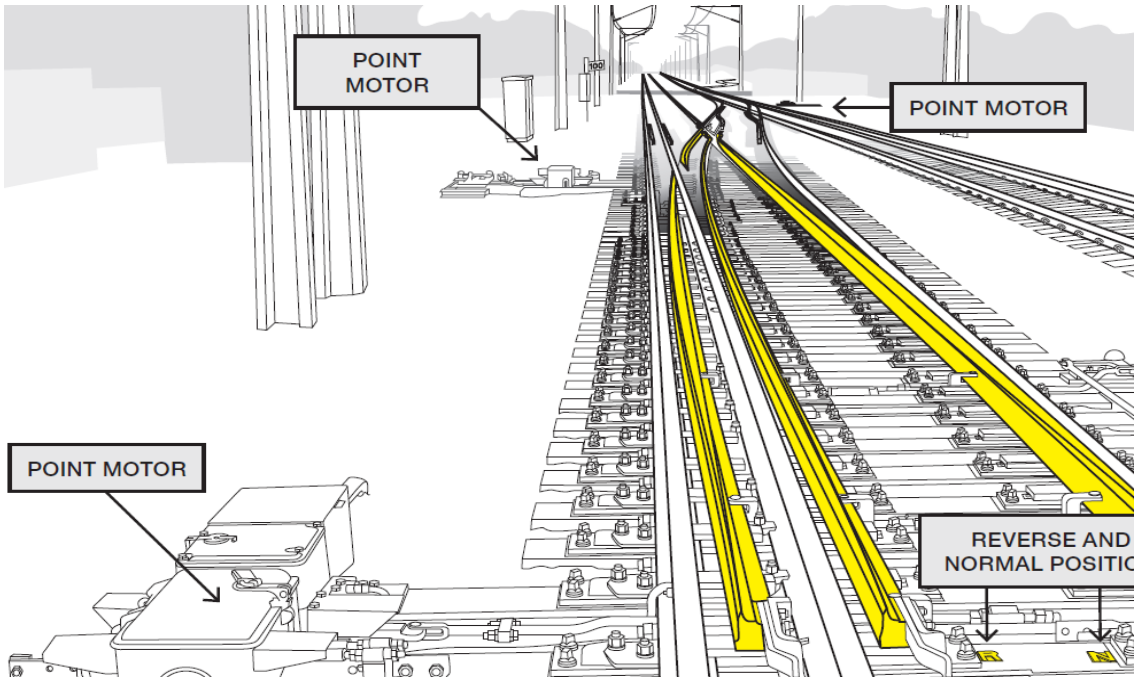
9.2. SWING NOSE CROSSING

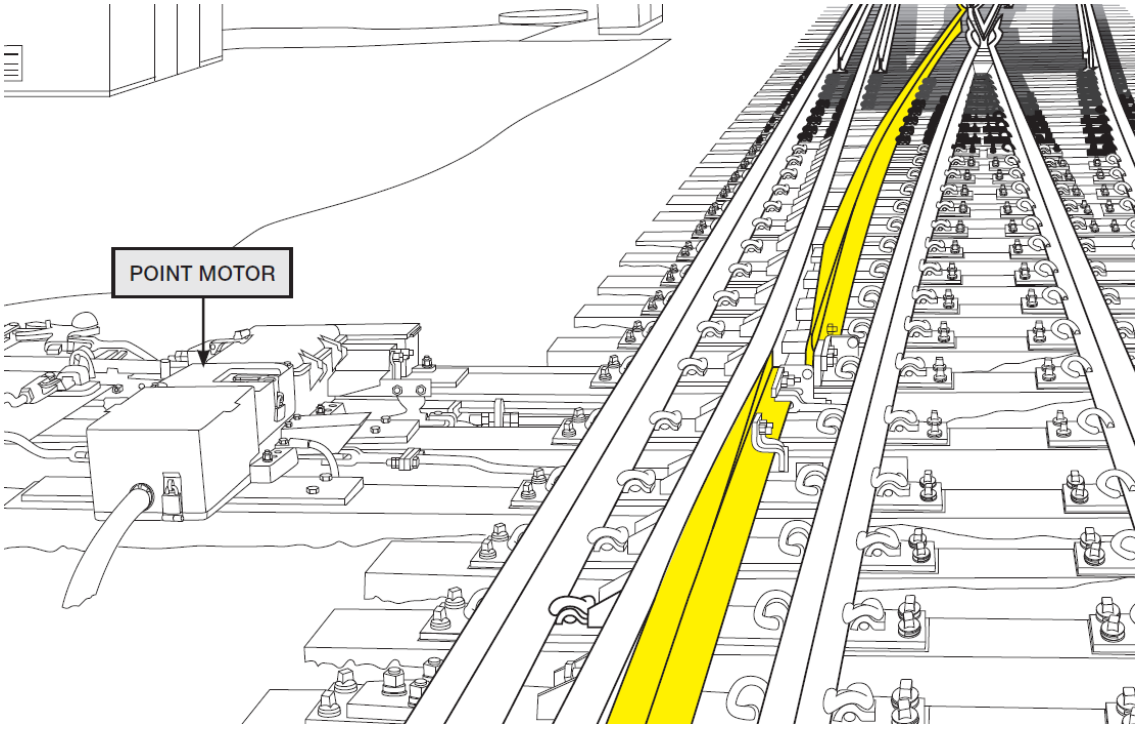
At some turnouts the *Points* may be provided with *Swing Nose Blades* (frogs). For this reason it is necessary to thoroughly examine the *Points* before *Rail Traffic* is permitted to *Travel* over them.



9.3. K BLADES

At some dual gauge turnouts where a conflict of gauge occurs, the *Points* may be provided with K Blades. For this reason it is necessary to thoroughly examine the *Points* before *Rail Traffic* is permitted to *Travel* over them.





9.4. CATCH POINTS

Catch Points are *Points* placed at depots and *Sidings*. The purpose of *Catch Points* is to derail any *Vehicle* which might run out onto a *Running Line* and become a danger to *Rail Traffic* running on that line.

Usually they are a single blade that will lead the *Rail Traffic* away from the *Main Line.* These single blades can be controlled by any of the types of *Points* motors that have been described already in this procedure.

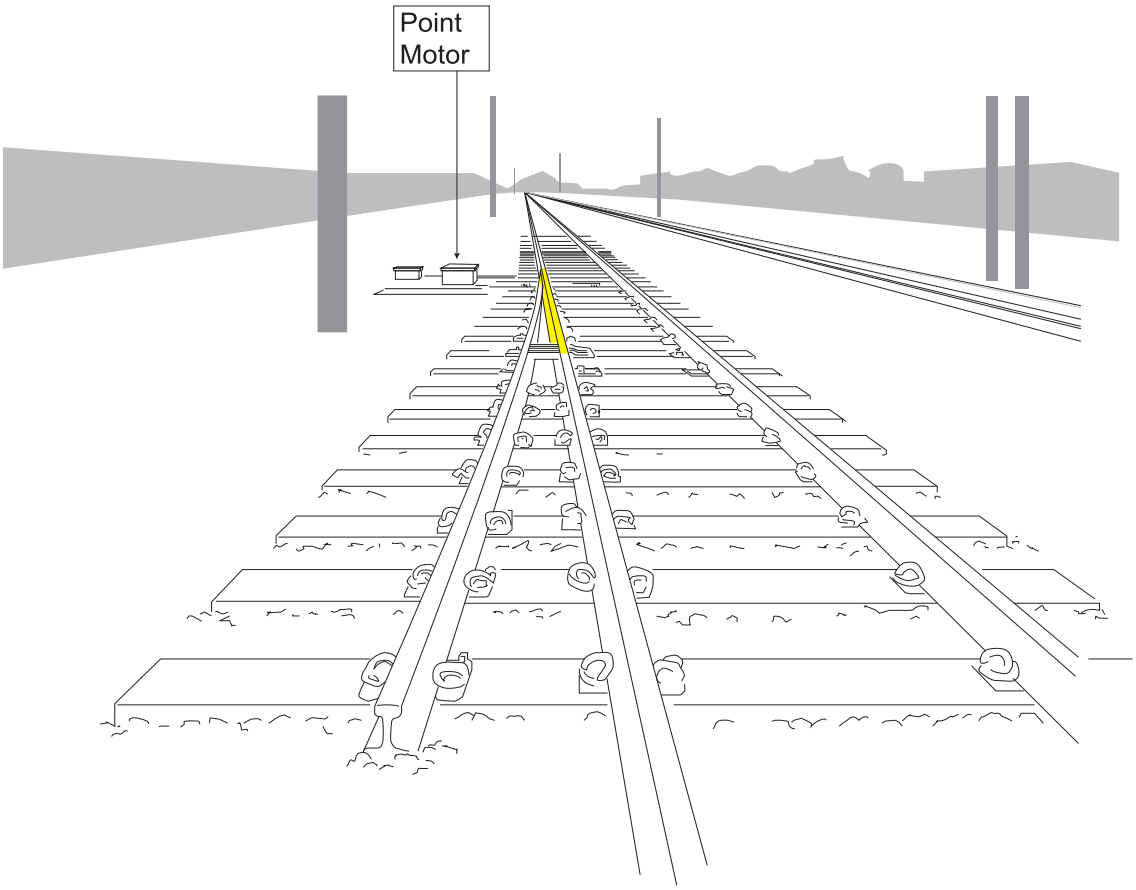


Figure 1: Single Blade Catch Point

Where a *Siding* is placed between the Up and Down Mains and there is insufficient room to use a single blade catch point, then wide to gauge catch *Points* are used which derail the *Train* in the centre.

Each *Points* blade is operated by an electric *Points* motor.

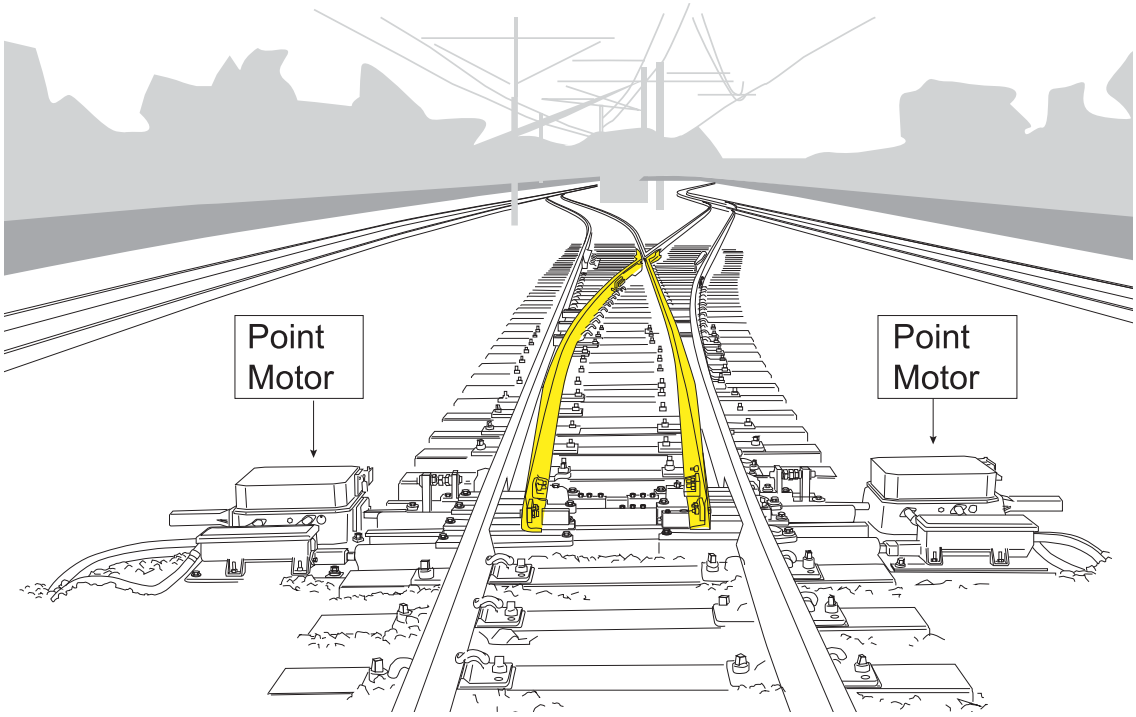


Figure 2: Wide to Gauge Catch Points

10. CLIPPING OF POINTS

If it cannot be assured that the *Facing Points* on *Running Lines* will remain in the correct position, the *Points* are to be clipped in accordance with **Procedure 9000 Clipping Points**.

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11. KEEPING RECORDS

The *Train Controller* and the *Maintenance Representative* must keep a *Permanent Record* of the *Points* failure.

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12. REFERENCE

Rule 6013 Passing Fixed Signals at Stop

Procedure 9000 Clipping Points

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13. EFFECTIVE DATE

1 November 2015

I N T E N T I O N A L L Y B L A N K