Network Safeworking Rules and Procedures

Operation of Points

Procedure Number: 9012

Brookfield Rail

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Operation of points

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Glossary for this Procedure

Access	A designated safe way into, along, across or out of the Rail Corridor.
AKOL	Annett's Key on Locomotive.
Catch Points	Single or double bladed points used to derail rail traffic that might enter or foul an adjacent running line.
Centralised Traffic Control (CTC) Territory	The portions of line where the Centralised Traffic Control system of Safeworking is used.
Centralised Traffic Control (CTC)	A system where points and signals at a number of locations are remotely controlled from a centralised control room or other locations along the route.
Clear	A proceed indication displayed by a signal. In reference to a track circuit, block, section or signal route, the absence of rail traffic. In reference to track workers being clear of track.
Communication Equipment	A device that supports effective communication between Network Controllers, Rail Traffic crews, Track Workers and other Competent Workers.
Competent Worker	A worker certified as competent to carry out a relevant task.
Danger Zone	Everywhere within 3m horizontally from the nearest rail and any distance above or below this 3m, unless a safe place (see Safe Place) exists or has been created.
Dual Gauge Track	Track that allows rail traffic of different gauges to transit using a common rail.
Facing Points	Points with the switch blades facing approaching rail traffic where the track diverges.
Infrastructure Representative	An authorised Brookfield Rail employee or an organisation contracted to Brookfield Rail, responsible for maintaining network infrastructure.
Location	A place in the Network with a designated name, identification number, or signalling reference.
Locomotive	Self-propelled, non-passenger-carrying railway vehicles used for hauling other (typically freight or passenger) rolling stock.
Main Line	The running line (not including Loops) normally used for running rail traffic through and between locations

Network	A combination of track and other associated infrastructure controlled by Brookfield Rail.
Network Control Diagram	A diagram used by Network Controllers showing operational information for a Rail Traffic control area, also known as a Network Control graph to create a permanent record.
Network Controller	A Competent Worker who authorises and issues Occupancy Authorities, and works points, signals and other signalling equipment to manage routes for safe and efficient transit of rail traffic in the Network.
Obstruct	To make a line unsafe for the passage of rail traffic by the placing of tools, equipment or plant on the track.
Permanent Record	A record made in writing or in an electronic system, and kept for reference and audit.
Points	A track component consisting of paired pieces of tapered rail (blades) that can be moved and set to allow tracks to diverge or converge.
Points Indicator	An indicator showing the position of points.
Rail Traffic	Trains and track vehicle or vehicles travelling on the Network.
Rail Traffic Crew	Competent Workers responsible for the operation of the Motive Power Unit.
Route	The rail traffic path from one limit of authority to the next in the direction of travel.
Running Line	A line (other than a siding) that is used for through movement of rail traffic, not normally used for stabling rail vehicles.
Safe Place	A Safe Place is: • where there is at least three metres clearance from the nearest Running Line; • on a Platform behind the safety lines; • within a purpose-built refuge or shelter; • where a structure or physical barrier has been erected to provide a position of safety; or • immediately in front of stationary and Secured Rail Traffic.
Secure	To safeguard against accidental or unauthorised access or movement.
Self Restoring Points (SRP)	Points which can be operated remotely or by push button that automatically restores to their normal position following the movement of rail traffic. (refer to Points)
Set Back	To move in the reverse direction to that provided in the current Proceed Authority.
Shunt	To move rail traffic, rakes of vehicles, or vehicles on lines for purposes other than through movement.

Siding	A portion of track where vehicles can be placed clear of the running lines. Also see intermediate siding.
Station	A system of tracks within station limits at the beginning or end of a section at which rail traffic may cross, pass or run around.
Switchlock	A device used to lock a points lever. The device must be initially released by the Network Controller or by the positioning of the rail traffic prior to a Competent Worker operating a lever. Usually found on points leading to or from an intermediate siding or non-signalled portions of yards in CTC territory.
Trailing Points	Points with the switch blades facing away from approaching rail traffic.
Train Order Territory	The portions of line where the Train Order system of Safeworking is used.
Travel	Planned or purposeful movement from one location to another.

1. Purpose

The purpose of this Procedure is to provide instructions for operating and managing *Points* in the *Network*.

2. General

The normal position of *Points* will be indicated by the Diagram of Signalling in *Centralised Network Control (CTC) Territory* and the *Station* Sketch in *Train Order Territory*.

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* in *CTC Territory* are remotely operated by the *Network Controller*.

The different types of motors in use are:

- Type “D84M”.
- Type “X”.
- Type “Y”.
- Type “Modified Y”.
- Type “W”.
- Type “Z”.

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 Network 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 or manual lever attached to the electric *Points* motor. The crank handle is kept in a cabinet close to the electric *Points* motor.

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

Locally operated *Points* are:

- *Self-Restoring Points (SRP)*;
- Little David levers;
- Rigid levers (May be a D84M);
- Cheese Knobs;
- Racor levers.

Non moveable *Points* include:

- Transposition of Common rail;
- Gauntlets.

Points giving *Access* to *CTC Territory* may be *Secured* by a *Switchlock*. Refer to Procedure 9024 Operation of Switchlocks.

3. Setting Points

3.1 Indications of Points Setting

The setting of *Points* must be communicated to *Rail Traffic Crews*, 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*.

Points on *Running Lines* must be *Secured* to prevent *Points* blade movement or unintended operation.

3.2 Hand Operated Points

The *Network Controller* must authorise the operation of *Points* on *Running Lines* for *Shunting* or maintenance purposes

3.3 Restoration of Points

WARNING: At approved junctions and other approved *Locations*, *Points* may be left set for the movement and not restored.

***Rail Traffic Crews* 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 *Network Controller*.

In *Train Order Territory*, other than *Self-Restoring Points (SRP)*, *Rail Traffic Crews* must advise the *Network Controller* that the *Siding* is *Secured* and the *Annett's Key Is On The Locomotive (AKOL).*

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 through *Points*.

4.3 Trailing Points

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

WARNING: *Points* must not be operated while *Rail Traffic* is moving over or standing on the *Points*. *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 *Infrastructure 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 *Network 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 *Infrastructure Representative.*

6. Failed Electrically Operated Points

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

- placed into the hand operated mode;
- isolated by the removal of the crank handle; or
- set and clipped for the intended *Route*, in accordance with Procedure 9000 Clipping Points.

7. Manual Operation of Electric Points

7.1 Network Controller Responsibilities

When *Points* fail or have lost detection the *Network 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 *Network Control Diagram*:
  - the number of the defective *Points*; and
  - when repairs 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 permission 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
- 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 do not place hands between or near parts that can move**

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

- have *Communications Equipment* and, during periods of darkness and poor visibility, a torch;
- visually check the *Points* for any *Obstruction* that may be preventing the blades from closing. If an *Obstruction* is found, contact the *Network Controller*, then safely remove the *Obstruction*;
- If the failure of the *Points* is not due to an *Obstruction*, the *Network Controller* will advise which sets of *Points* are to be cranked, and the position (Normal or Reverse);
- obtain permission from the *Network 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 *Network Controller*;
- ensure all *Points* with the same number and K Blades, if present, have been cranked to the position nominated by the *Network 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 the *Network Controller* 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 *Network 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 *Network Controller* must be advised.

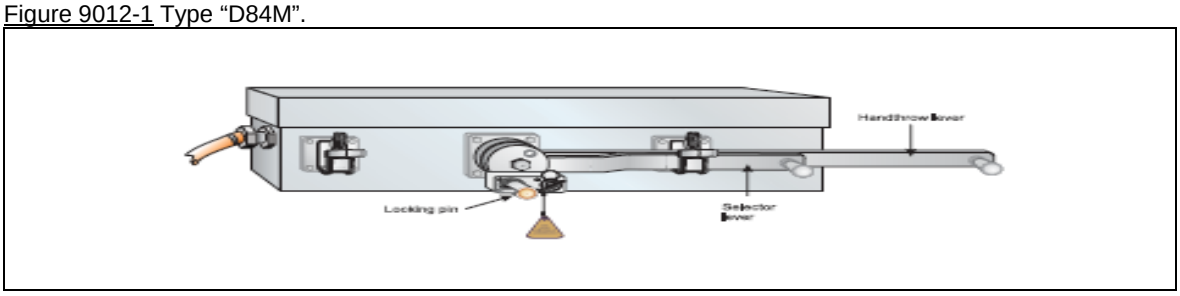
NOTE: *Points* are to be tested after the crank handle is restored to the switch.

8. Points Motors

8.1 Type “D84M”

The following instructions are to be followed when using a Type “D84M” *Points* motor.

Figure 9012-1 Type “D84M”.

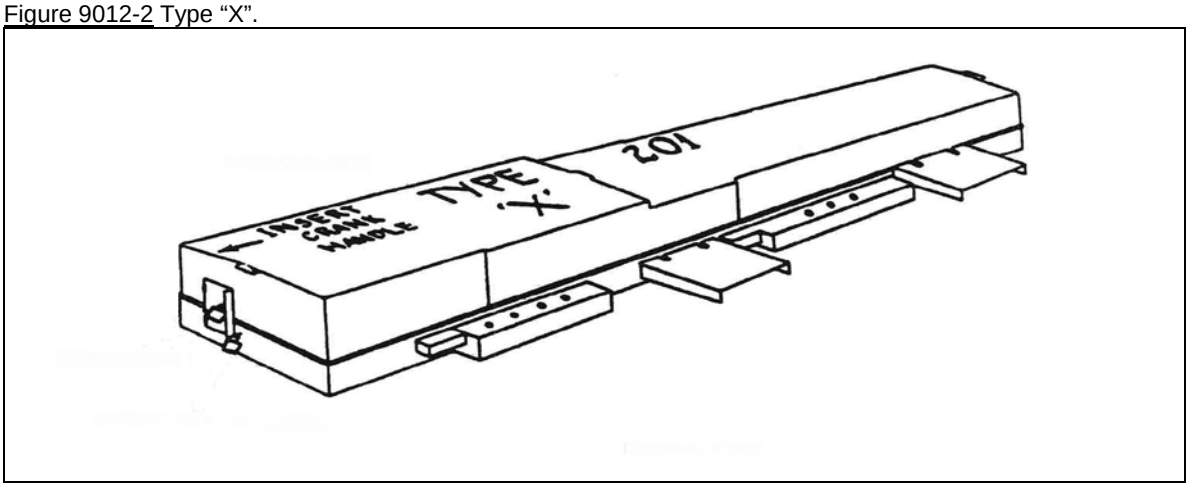


- Obtain the *Network Controller’s* permission to operate the *Points* machine.
- Find the correct Emergency Operating Lock (EOL) cabinet for the *Points*.
- Unlock the cabinet with a Traffic Standard key.
- If there are instructions in the cabinet to help you operate the *Points*, read and follow them.
- Turn the EOL keys from LOCKED to UNLOCKED. Take them from the cabinet in the correct order; Removing them will cause Network Control to lose detection of the *Points*.
- Check the key labels to make sure they are the correct keys.
- Unlock the Traffic Standard lock securing both the handthrow and the selector levers.
- Turn the EOL key in the EOL lock on the *Points* machine. The lock captures the key.
- Pull out the locking pin to allow the levers to be moved.
- Lift the catch holding the selector lever.
- Move the selector lever from MOTOR to HAND. Keep the lever in place with the catch.
- Lift the catch holding the handthrow lever.
- Move the handthrow lever to move the *Points* to the required position.
- Make sure that the switch rail is hard against the stock rail.
- *Secure* the handthrow lever with the Traffic Standard lock.
- Keep the handthrow lever in place with the catch. If it is not held by the catch when the switch rail is hard against the stock rail, tell the *Network Controller*.

8.2 Type “X”

The following instructions are to be followed when using a Type “X” *Points* motor.

Figure 9012-2 Type “X”.

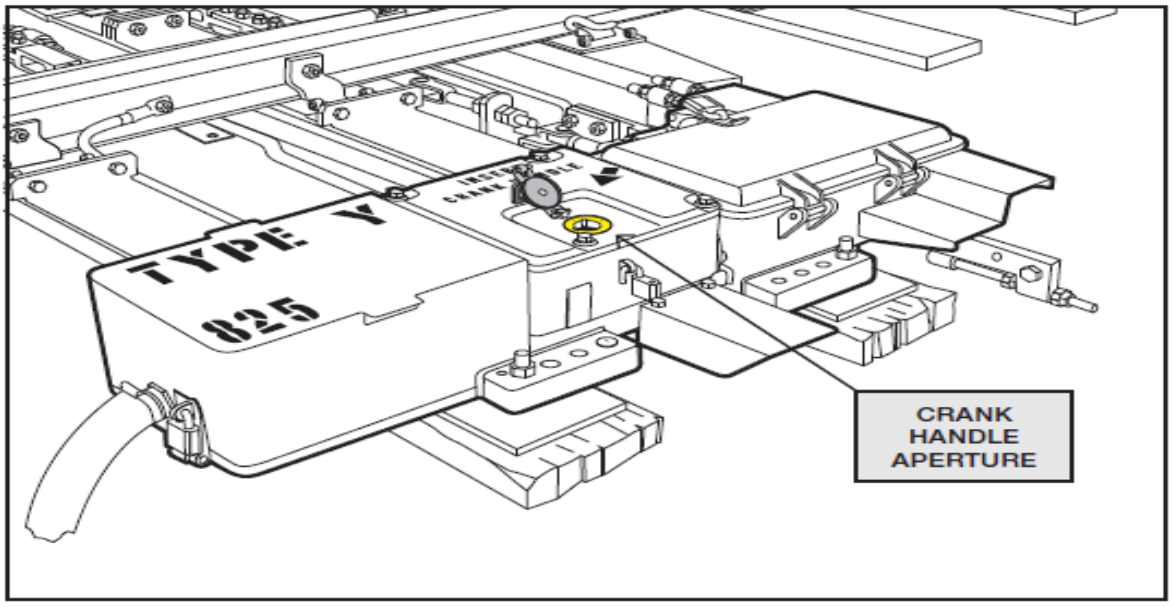


- Unlock the Traffic Standard lock and open the hinged cover plate at the end of the machine above ground level.
- Insert the crank handle through the slotted guide plate, lift the plate with the handle against the spring and then push crank handle through guides.
- Rotate slowly to locate the nibs in the slotted guide plate and push them home to engage the motor shaft.
- The crank handle must be wound until it will go no further.
- Check all the *Points* to ensure that they are set correctly and then contact the *Network Controller*.
- Follow the instructions from the *Network Controller*.
- When the *Network 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.
- Contact the *Network Controller* before leaving the area and ensure that the crank handle cabinet is locked.

8.3 Type “Y” and “Modified Y”

The following instructions are to be followed when using Type “Y” and “Modified Y” *Points* motors.

Figure 9012-3 Type “Y” and “Modified Y”.

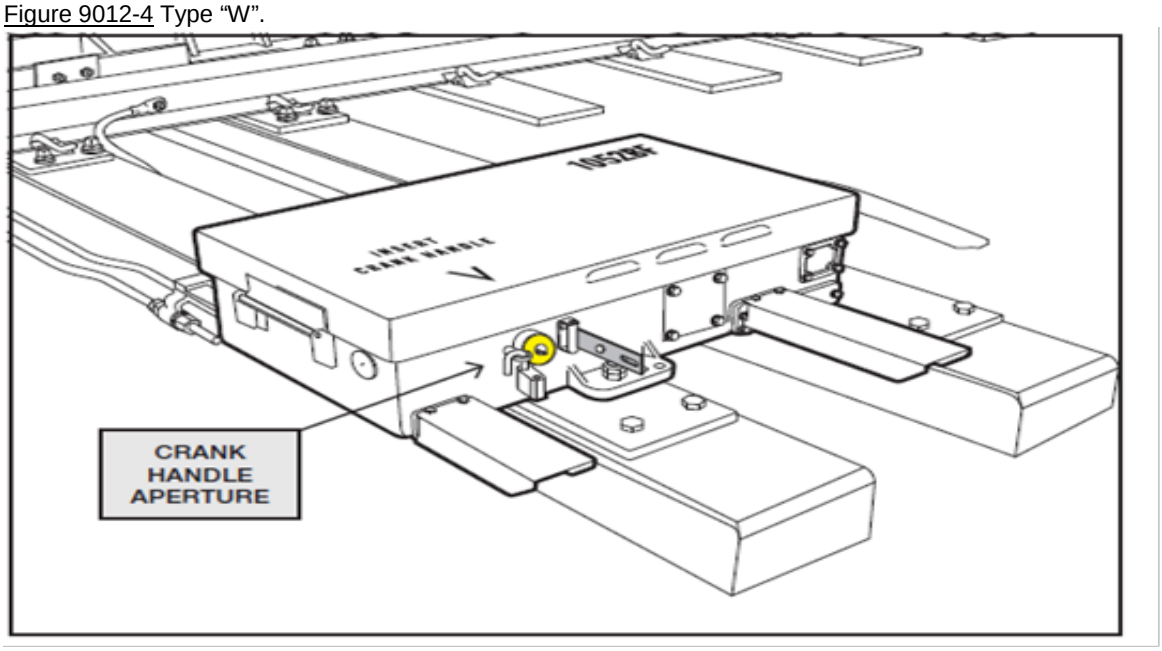


- Unlock the Traffic Standard lock and open the crank handle aperture cover by exerting downward pressure on the hasp to release it.
- On the type ”Y”, remove the plug under the aperture cover using the crank handle.
- Insert the crank handle into the motor.
- Locate the indicator which shows the position of the *Points*.
- The crank handle must be wound until it will go no further and the indicator shows the required position.
- Check all the *Points* to ensure that they are set correctly and then contact the *Network Controller*.
- Follow the instructions from the *Network Controller*.
- When the *Network Controller* advises normal working is to resume, remove the crank handle, and replace and padlock the hasp.
- On the type ”Y”, replace the plug under the aperture cover.
- Replace the crank handle into the crank handle switch.
- Contact the *Network Controller* before leaving the area and ensure that the crank handle cabinet is locked.

8.4 Type “W”

The following instructions are to be followed when using a Type “W” *Points* motor.

Figure 9012-4 Type “W”.



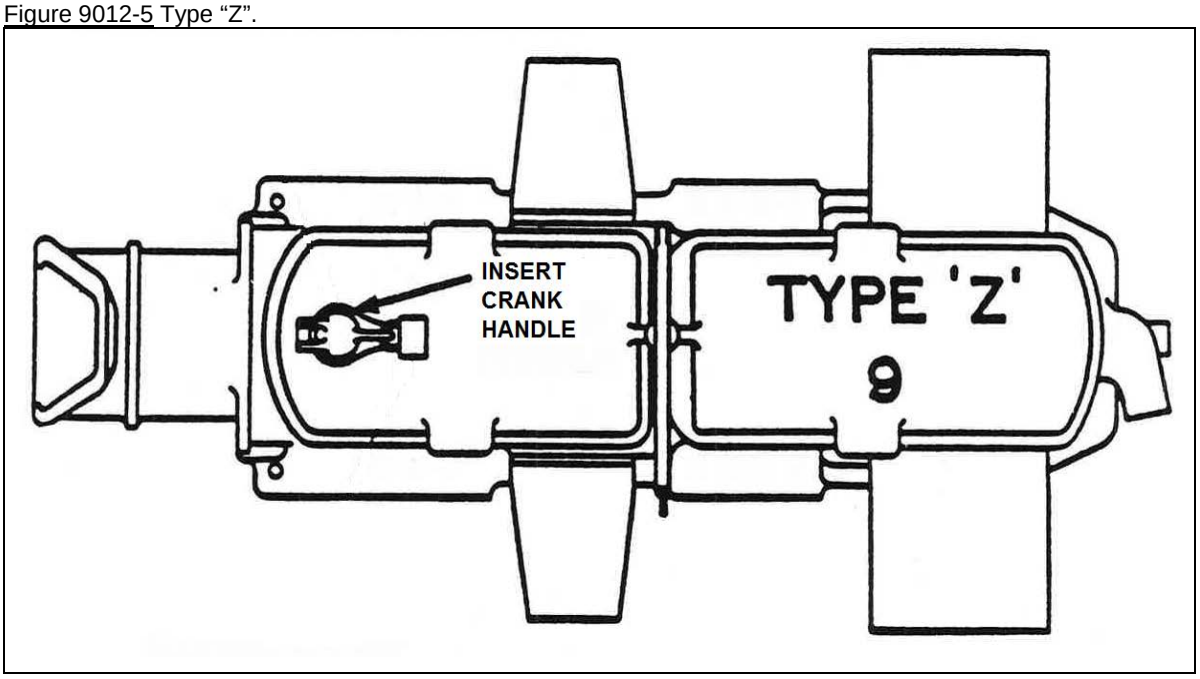
WARNING: Care should be taken when turning the crank handle (as instructed below) to ensure that the operator’s hands are not damaged by the heads of the bolts in the sleeper. It is recommended that gloves be worn.

- Unlock the Traffic Standard lock 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 *Network Controller*.
- When the *Network 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.
- Contact the *Network Controller* before leaving the area and ensure that the crank handle cabinet is locked.

8.5 Type “Z”

The following instructions are to be followed when using a Type “Z” *Points* motor.

Figure 9012-5 Type “Z”.



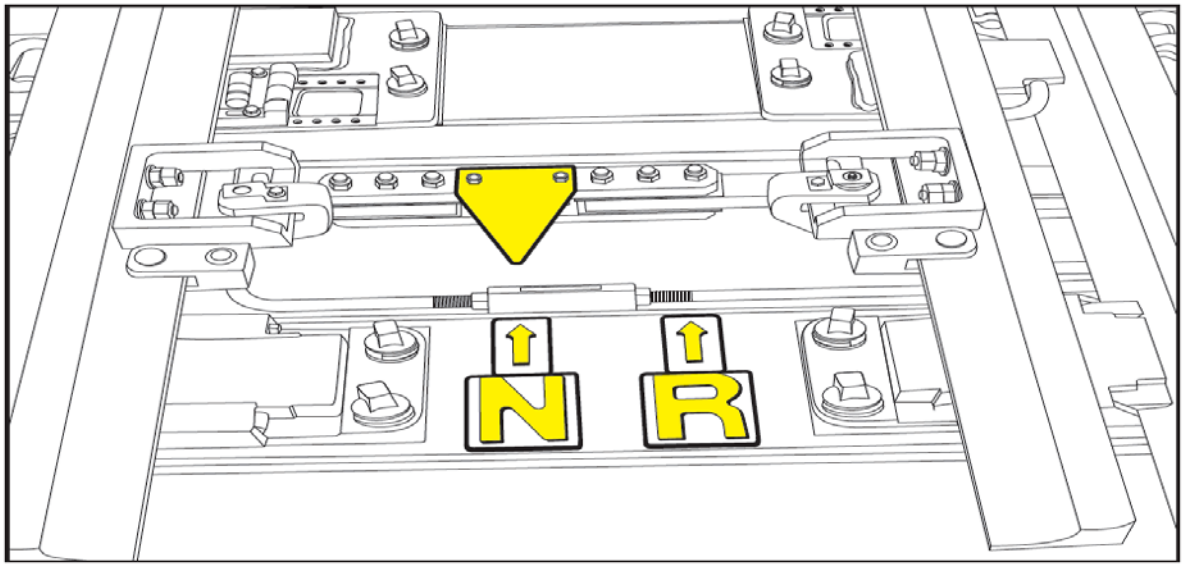
- Unlock the Traffic Standard lock and open the crank handle aperture cover.
- Move the slide directly over the crank handle socket and insert the crank handle into the motor.
- The crank handle must be wound until it will go no further and the indicator shows the required position.
- Check all the *Points* to ensure that they are set correctly and then contact the *Network Controller*.
- Follow the instructions from the *Network Controller*.
- When the *Network Controller* advises normal working is to resume, remove the crank handle, ensure the slide has moved aside to the fullest extent possible and replace and padlock the hasp.
- Replace the crank handle into the crank handle switch.
- Contact the *Network Controller* before leaving the area and ensure that the crank handle cabinet is locked.

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.

Figure 9012-6 Normal or Reverse indicator.



9.2 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.

Figure 9012-7 K Blades.

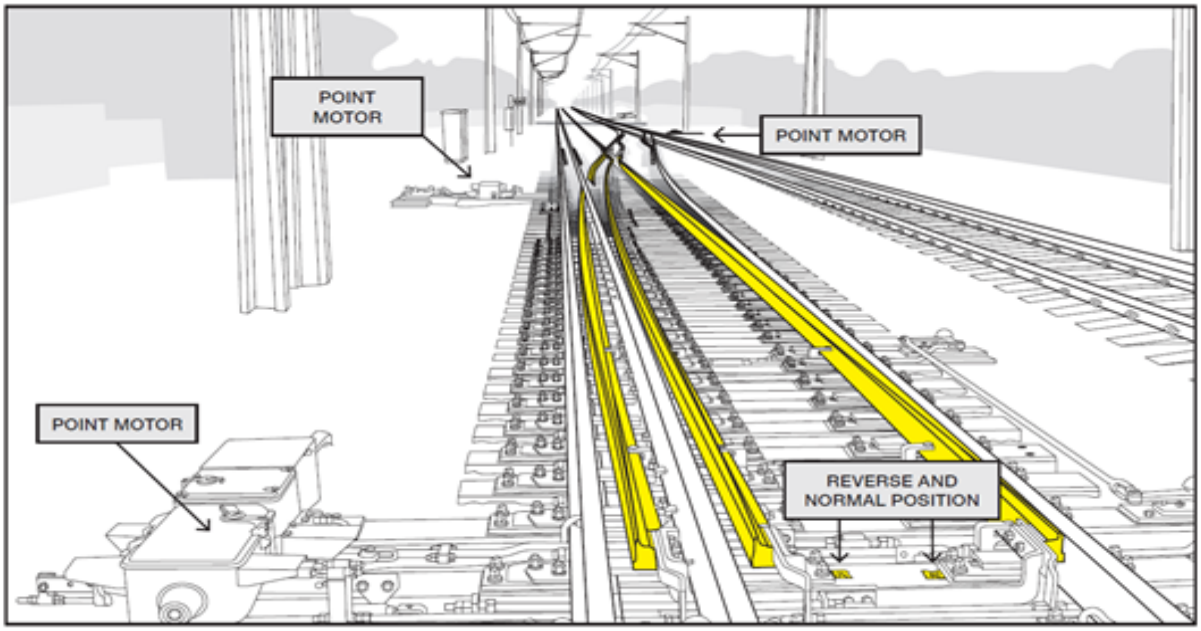
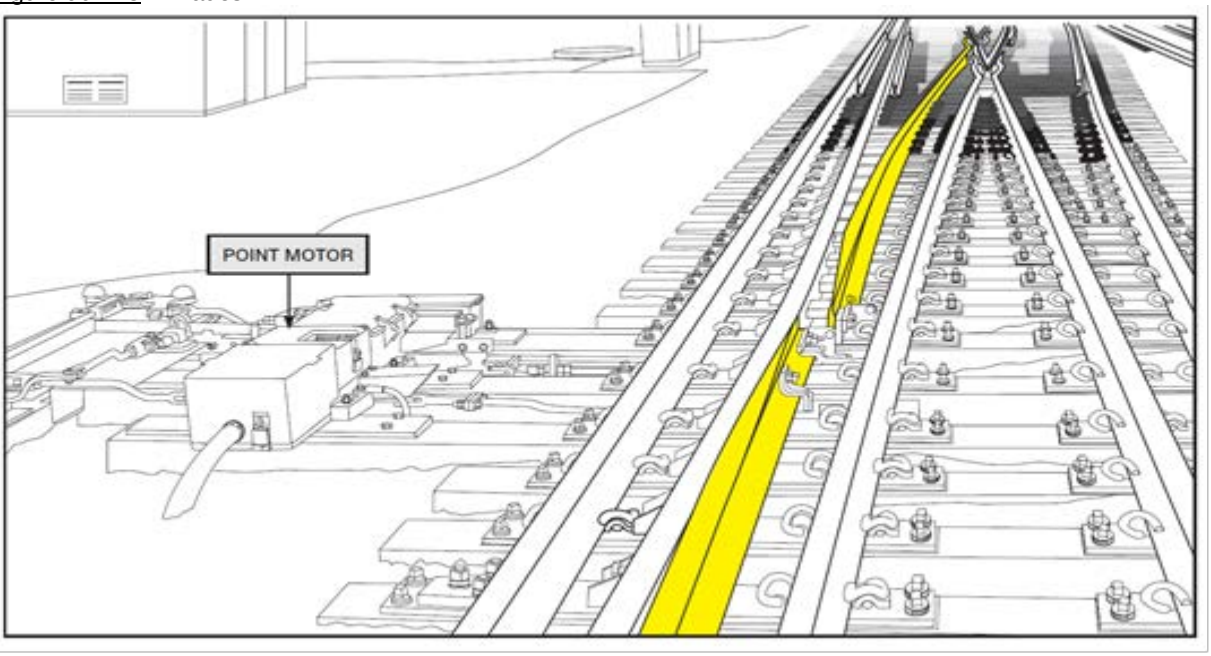


Figure 9012-8 K Blades.



9.3 Catch Points

Catch Points are *Points* placed at depots and *Sidings*. The purpose of these *Points* is to derail any vehicle which might run out onto a *Running Line* and become a danger to *Rail Traffic* movements 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 *Point* motors that have been described already in this instruction.

Space for single blade *Catch Point*

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.

11. Permanent Record

The *Network Controller* and the *Infrastructure Representative* must keep a *Permanent Record* of the *Points* failure.

12. References

6013 Passing Fixed Signals at STOP

9000 Clipping Points

9024 Operation of Switchlocks

13. Effective Date

4 May 2016