

ANPR 741

# Manually Operating Electrohydraulic Points

## Applicability

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NSW
SMS

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## Publication Requirement

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External Only
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## Document Status

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Issue/Revision #	Effective from
2.1	26 May 2024

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## Introduction

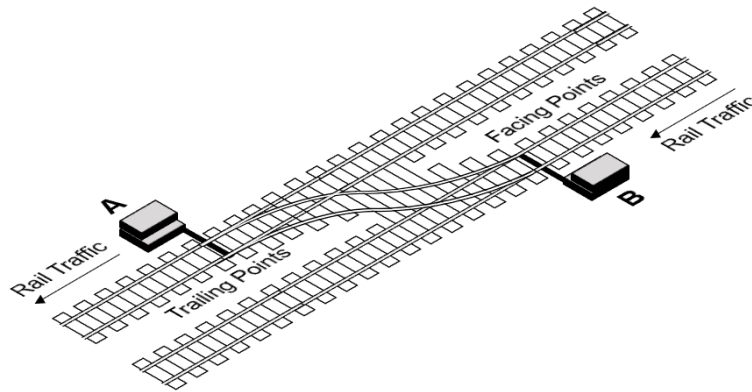
If the *Network Control Officer* has given authority, BREL Clamplock or Voestalpine Unistar electrohydraulic points machines *may* be operated manually with hydraulic handpumps.

Emergency Operating Lock (EOL) cabinets at the *points* contain one or more Union switchlocks. A pumphandle is attached to each Union or EOL key by a wire cable.

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Figure ANPR 741-1

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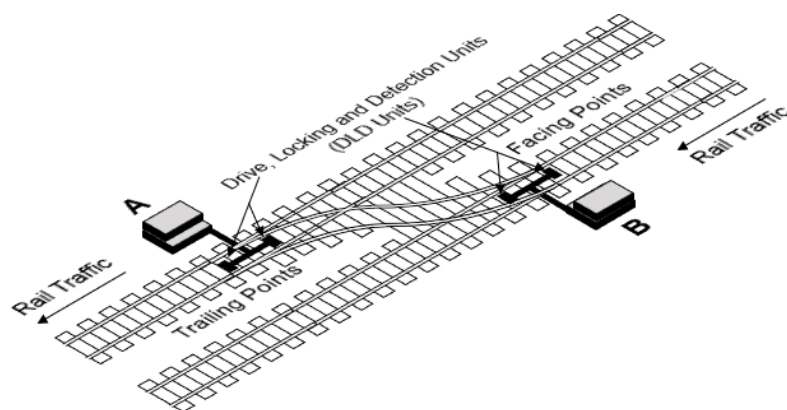
Example of crossover operated by two electrohydraulic points machines

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Figure ANPR 741-2

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Example of a Voestalpine Unistar electrohydraulic point machine layout with Drive, Locking and Detection Units (DLD-units)

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## BREL Clamplock electrohydraulic points machines switching to trackside control

### Competent Worker

1. Find the correct EOL cabinet for the points.
2. Unlock the cabinet with an SL key.

Figure ANPR 741-3



Emergency Operating Lock (EOL) cabinet

3. If there are instructions in the cabinet to help you to operate the points correctly, read and follow them.
4. If there is a black rotary switch, give it a quarter turn.
5. Give the Union keys a full turn in the correct order.
6. Take the pumphandles and keys from the cabinet.  
Removing the Union keys:
  - switches the points machines to trackside control, and
  - sets the protecting signals at STOP.
7. Check the Union key labels to make sure you have the correct ones.
8. Make sure that protecting signals are at STOP.

## Manually operating the points

### Competent Worker

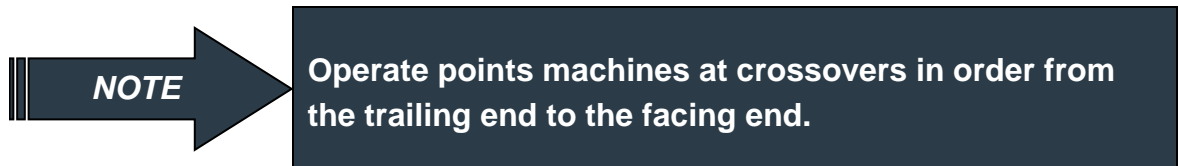
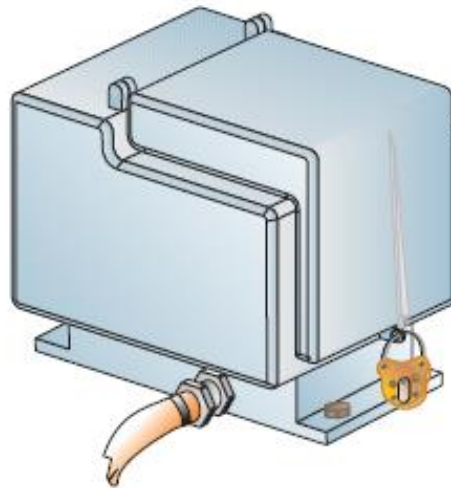


Figure ANPR 741-4



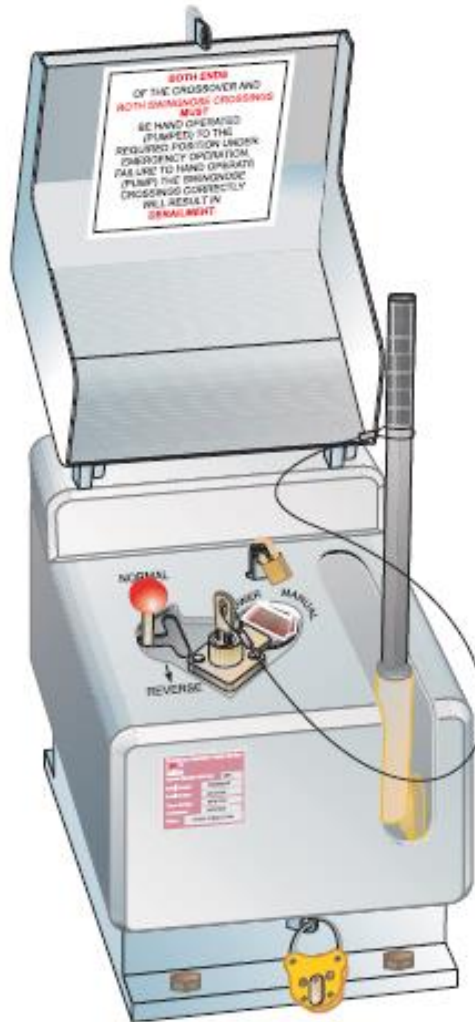
Closed and locked BREL Clamplock electrohydraulic points handpump unit

1. Unlock the handpump unit with an SL key.
2. Turn the Union key a quarter turn in the Union lock to release the rotary cutout switch.
3. Turn the rotary cutout switch from POWER to MANUAL.
4. Put the pumhandle into its sleeve in the handpump unit.
5. Set the red direction-control valve knob to NORMAL or REVERSE. Hold it there.

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**Figure ANPR 741-5**

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**BREL Clamplock electrohydraulic points handpump unit with pumphandle inserted**

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6. Work the pumphandle back and forth to:
  - free the points-locking mechanism, and
  - move the points.
7. If the points cannot be freed, tell the Network Control Officer.
8. Watch the points moving as you work the pumphandle.
9. Continue to pump until:
  - the switch rail is hard against the stock rail, and
  - the points lock into place, and
  - the resistance to pumping increases.

10. Check the position of the points at each points machine.  
Make sure that your changes set the correct *route*.
11. Check that the points-locking mechanism has engaged. If the mechanism does not engage, tell the Network Control Officer.
12. If necessary, clip and SL lock the facing points.
13. Get instructions from the Network Control Officer.

## Returning to remote control

### Competent Worker

1. If necessary, remove the point clip and SL lock.
2. Turn the rotary cutout switch from MANUAL to POWER.
3. Give the Union key a quarter turn to secure the rotary cutout switch. Take out the pumphandle and Union key.
4. Lock the handpump unit.
5. Return the Union key and pumphandle to the EOL cabinet. Put the Union key into the Union switchlock. Turn the switchlock to LOCKED.
6. If there is a black rotary switch, give it a quarter turn.
7. Lock the EOL cabinet.
8. Ask the Network Control Officer to test the points.
9. Confirm with the Network Control Officer that the points operate correctly.
10. If the points do not operate correctly, get instructions from the Network Control Officer.

## Voestalpine Unistar electrohydraulic points machines switching to trackside control

### Competent Worker

1. Find the correct EOL cabinet for the points.
2. Unlock the cabinet with an SL key.

Figure ANPR 741-6



Emergency Operating Lock (EOL) cabinet

3. If there are instructions in the cabinet to help you to operate the points correctly, read and follow them.
4. Check the EOL key labels to make sure you have the correct ones.
5. Turn the EOL key from LOCKED to UNLOCKED.
6. Take the pumphandle and EOL key from the cabinet.  
Removing the EOL key:
  - switches the points machines to trackside control, and
  - sets the protecting signals or indicators at STOP.
7. Make sure that protecting signals or indicators are at STOP.

## Manually operating the points

### Competent Worker

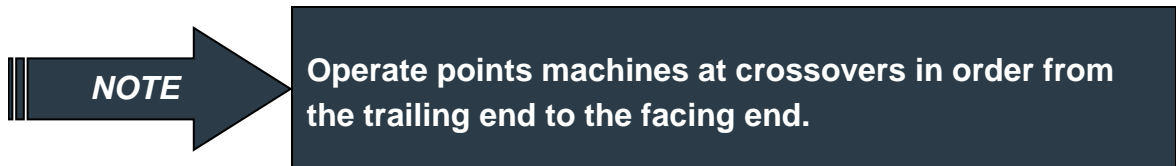
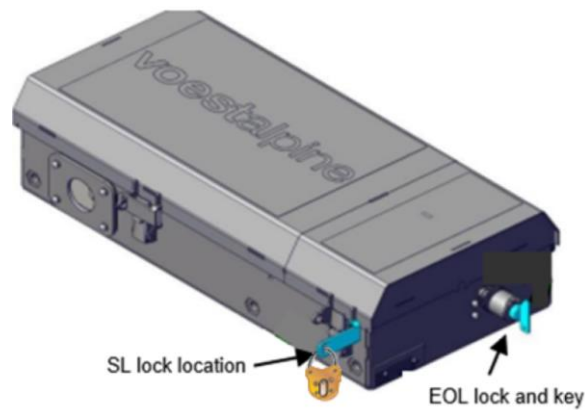


Figure ANPR 741-7



Closed Voestalpine Unistar electrohydraulic points machine

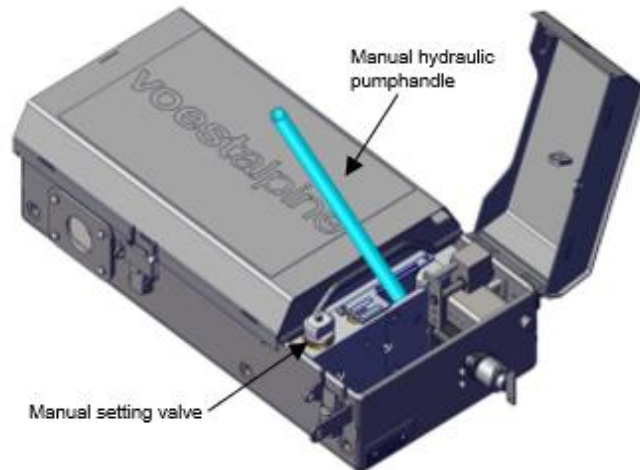
1. Insert the EOL key into the EOL lock on the end of the points machine handpump unit. Turn the EOL key in the EOL lock, to allow the points machine cover to be released and remove power to the unit. The lock captures the key.
2. Unlock the SL lock and lift the points machine handpump unit cover, to allow access to the manual hydraulic pump and manual setting valve.



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**Figure ANPR 741-8**

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Open Voestalpine Unistar points machine with manual pumphandle inserted

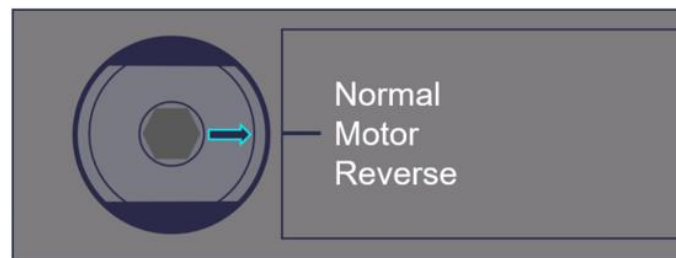
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3. Turn the manual setting valve from motor to the required route setting (NORMAL or REVERSE).

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**Figure ANPR 741-9**

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Voestalpine Unistar points machine manual setting valve

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4. Put the pumphandle onto the sleeve in the points machine manual hydraulic pump unit.
5. Work the pumphandle back and forth to:
  - free the points-locking mechanism, and
  - move the points.
6. If the points cannot be freed, tell the Network Control Officer.
7. Watch the points moving as you work the pumphandle.

8. Continue to pump until:
  - the switch rail is hard against the stock rail, and
  - the points are correctly set, and
  - the resistance to pumping increases.
9. Check the position of the points at each points machine.  
Make sure that your changes set the correct route.



**Remove the pumhandle before rail traffic is to travel over the points.**

10. Check the locking indicator aligns in each Drive, Locking and Detection Unit (DLD unit) sighting window, that is closest to the switch rail against the stock rail.



**There may be more than 1 DLD unit on each point end.**

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**Figure ANPR 741-10**

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Example of Voestalpine Unistar electrohydraulic DLD unit sighting windows

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Some DLD units have a protective cover plate that obstructs the view of the sighting window. To view the locking indicator through the sighting window, the cover plate must be removed.

Figure ANPR 741-11



Example of DLD unit sighting window arrow indicator and alignment marker (locking indicator), aligned



If the locking indicators do not align on the DLD unit, tell the Network Control Officer.

The Network Control Officer must tell a Signals Maintenance Representative.



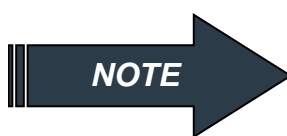
Rail traffic must not travel over the points where the locking indicator is not aligned in the DLD unit, until the infrastructure is certified fit for service by a Signals Maintenance Representative.

11. If necessary, clip and SL lock the facing points.
12. Get instructions from the Network Control Officer.

## Returning to remote control

### Competent Worker

1. Remove the point clip and SL lock.
2. Turn the manual setting valve from NORMAL or REVERSE to Motor.
3. Take out the pumphandle.
4. Close the points machine handpump unit cover and lock the SL lock.
5. Turn the EOL key in the EOL lock and remove the EOL key from the EOL lock on the end of the points machine handpump unit.
6. Return the EOL key and pumphandle to the EOL cabinet. Put the EOL key into the EOL lock. Turn the EOL key to LOCKED.
7. Lock the EOL cabinet.
8. Tell the Network Control Officer that the points have been restored to remote control.
9. Where possible, ask the Network Control Officer to test the points.
10. Where possible, confirm with the Network Control Officer that the points operate correctly or confirm with Network Controller that points have been restored to remote control.
11. If the points do not operate correctly, get instructions from the Network Control Officer.



**Where the protective cover plate was removed, it must be restored when returning the points to remote control.**

## Related ARTC Network Procedures

<b>ANPR 703</b>	Using Absolute Signal Blocking
<b>ANPR 707</b>	Clipping points
<b>ANPR 711</b>	Lookouts
<b>ANPR 721</b>	Spoken and written communication
<b>ANPR 740</b>	Responding to faulty points

## Effective Date

26 May 2024