

Track – Adjust Rail Expansion Gaps

Scope

Includes: Jointed track of either 60' 90' or 120' lengths.
Excludes: Tight Joints in CWR

Preparation

Tools, equipment and plant items required but not limited to:

- Pencil/scribe
- Rail wax crayon/marker
- Tape measure
- Rule/Step gauge
- Note book
- Rail Gap Irons of various sizes (sufficient for length of work)
- Approved rail thermometers
- Steel mesh skid pads (10 minimum)
- Appropriate fastening extractors
- Bars and hammers
- 'Top Hat' Spanner for breather adjustments
- Bridging pieces for various sizes of rails
- Pad scrapers
- Jacks
- Trolley
- Rail pull and push expansion kit (hydraulic or manual)
- Torque Wrench

Work planning considerations:

- Possession/isolation requirements
- Check availability of resource, tools, equipment, plant and materials essential to complete the planned works
- Site extents requiring rail gap adjustment
- Signalling resources to re-bond where necessary
- Traction bonding requirements

Pre site inspection:

- At a maximum of 7 days prior to work commencing walk through proposed site and record all gaps and temperatures, including any adjustment switches
- From the recordings taken, work out the number of rails needing adjustment to achieve the correct size gaps in relation to the temperature throughout the site. (This will also determine if there is a need to cut rail out or add rail in)
- Assess maximum gap that will be achieved during work carried out (this will give the information of what size bridging pieces needed and if it will become necessary to break track circuit bonds off, *ensure signalbox is notified*)

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Method

1. Place thermometers throughout the site and establish the required joint expansion gap for the actual rail temperature.
2. Commence work from end of the worksite where the wide gap expansions are. If this involves adjustment switches, adjust overlap to suit temperature of rail.
3. If the site has all tight joints then room for expansion can be created by three methods, they are:
 - cutting the first bolt hole off and re-drill, according to rail type, the back hole for fishplating or
 - cutting both holes out and re-drilling two more holes or
 - flame cut rail, adjust and weld up.

(The method of cutting out rail, must be judged as to keep all joints in suitable size beds between sleepers, as well as keeping joints square). This gap can then be regulated throughout the worksite.
4. Ensure that the adjustments made bring joints into square rather than create a stagger in the joints.
5. Unfasten the rail to a maximum of 5 lengths in front (100yds) if working to a method of moving 5 lengths at a time. If working to a method of moving one rail at a time, unfasten 2 lengths in front (40yds) and remove any rail anchors where fitted. Remove all fastenings from the sleepers each side of the joint (this will allow free movement of the 'Push/Pull' machine plus free movement for fishplates when moving more than one at a time).
6. If working on baseplates with elastic spikes that are fitting square, rails should slide through without problems. If working on baseplates with rail pads it will be necessary to lift rails using 2 duff jacks (one each side to prevent tipping) and insert steel skid pads for the rails to slide on (ensure sleepers are not elevated because of rails trapped in baseplates). BH rails need to be released from chair grip by tapping the foot of the rail towards the field side.
7. Begin to slacken the Fish bolts ahead of the work and release fishplates altogether where necessary (will depend on number of rails you are moving at a time).
8. Ensure all joint gaps ahead of the work are wedged at their present size using either 'Rail gap irons' or any other manufactured device that will accomplish the same result.
9. Install the rail joint adjuster over the first joint to be adjusted.
10. Adjust expansion gap to the desired dimension, place the desired gap iron into the joint and leave the gap iron in place until you are at a sufficient distance away that work you are carrying out will not affect the gap reading you have set at that joint.