

THERMIT®

Welding Methods

General Product Information

SmW-F

SkV-F

JUNCTION WELDS

SkV-L WIDE GAP

LSV BOLT HOLE

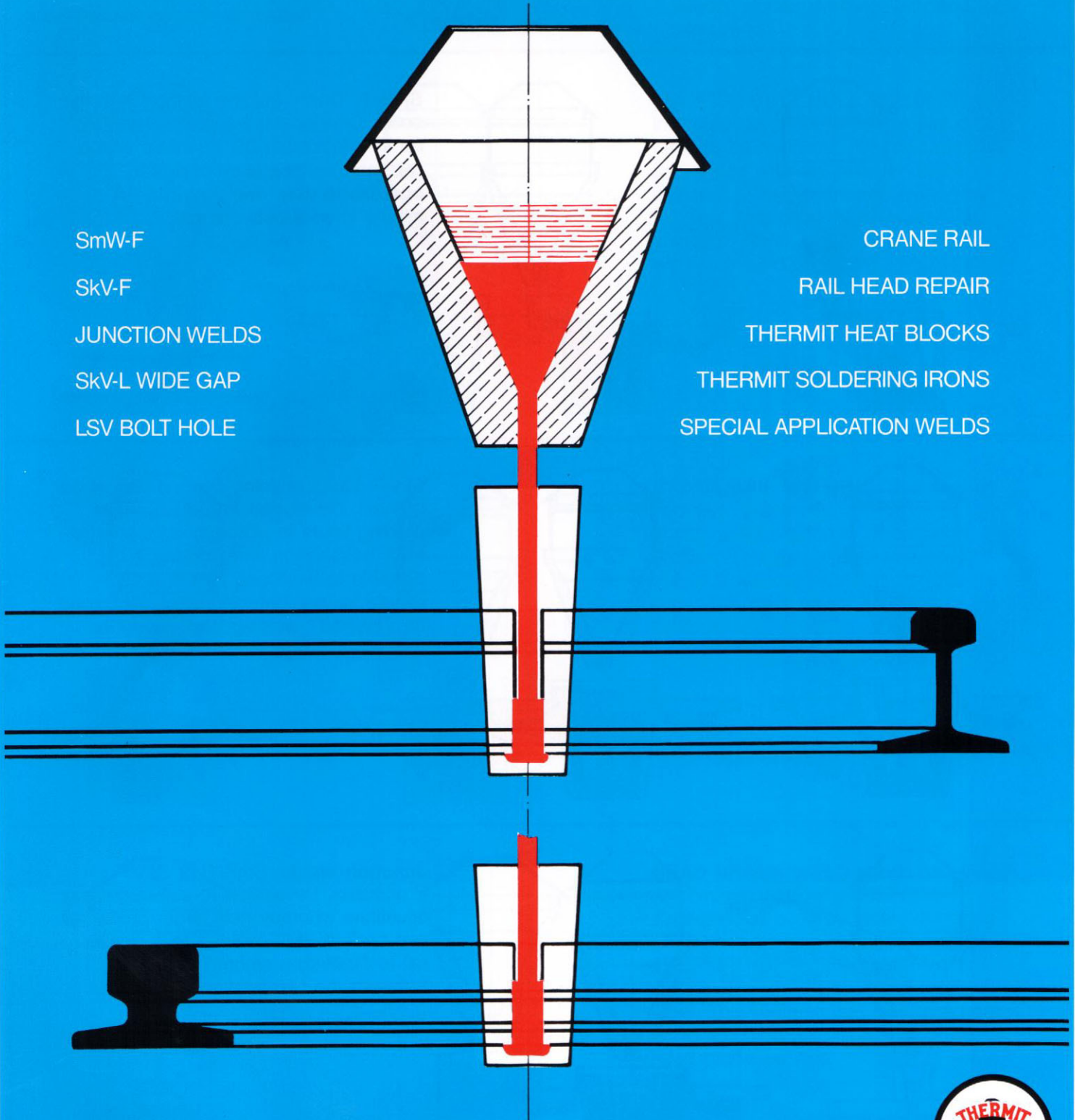
CRANE RAIL

RAIL HEAD REPAIR

THERMIT HEAT BLOCKS

THERMIT SOLDERING IRONS

SPECIAL APPLICATION WELDS



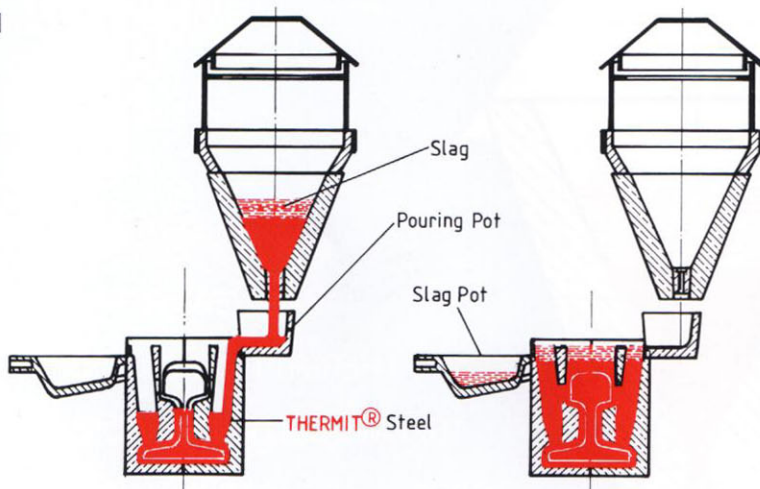
INTRODUCTION



The THERMIT Rail Welding Process has established itself as the reliable means of in situ welding over many decades, with nearly all railways over the world. It has gained this reputation by continuously adapting to the changing circumstances and increasing demands for higher standards.

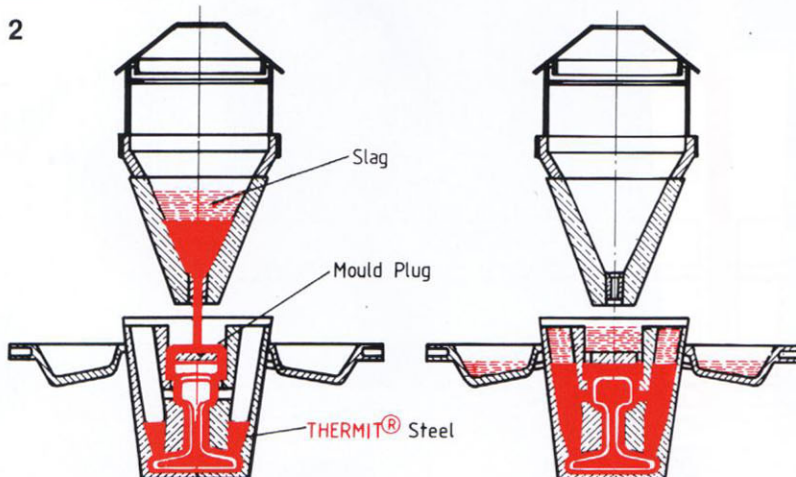
LISTED ARE PROCESSES AVAILABLE:

1



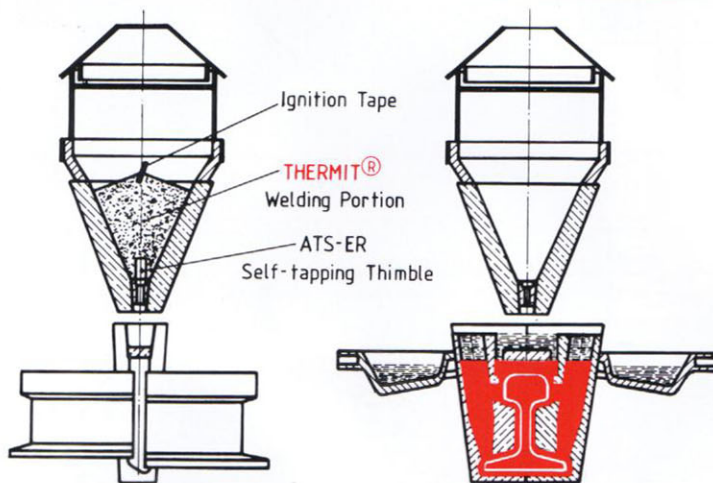
SmW-F: Quick welding method with flat collar. Developed to suit all rail profiles up to a maximum 60 Kg/metre with a two man welding team makes it possible to weld one joint in a 25 minute interval between trains.

2



SkV-F: Quick welding method with short preheat. Developed to reduce actual welding times to accommodate shorter track possession time, making it possible to weld one joint in a 15 minute interval between trains. Approved for THERMIT welding head hardened rails (1080 MPa).

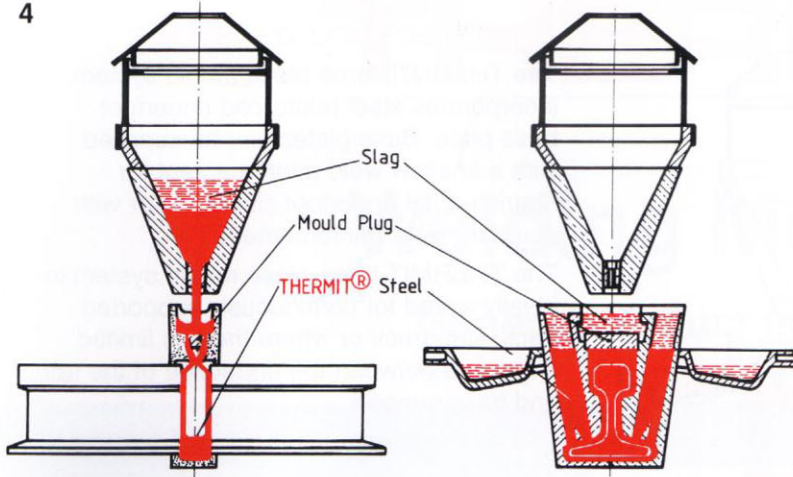
3



Junction Welds: SmW-F or SkV-F Processes. Developed to suit upgrading situations whereby new larger profile rail can be THERMIT welded to a smaller rail to facilitate a smooth transition between the two sections.

SkV-F Process shown Fig. 3.

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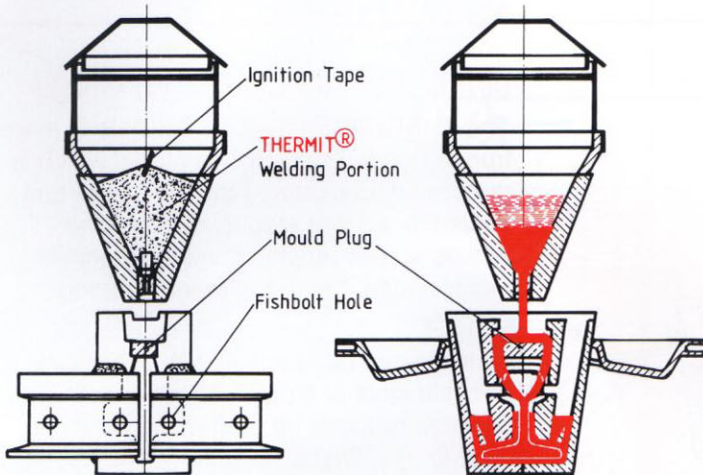


WIDE GAP WELDING: The SkV-L Wide Gap weld is available to weld rail gaps from 50mm through 65mm to a maximum of 80mm.

This weld can accommodate easy removal of:

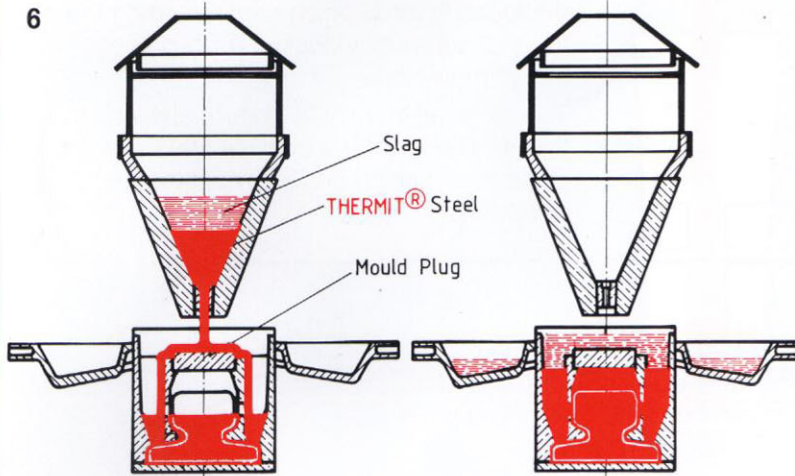
- Defective flashbutt or field welds;
- Wheel burns or fractures within gap tolerance;
- Sound THERMIT welds to facilitate replacement of standard turnouts, etc.;
- Existing gaps in rail which cannot be readily closed avoiding the need for a closure rail.

5



LSV FISH BOLT HOLE WELD: Should insulated rail joints or fish plated joints have to be removed, the rail ends can be welded with the two bolt holes adjacent to the joint being closed by welding. This process is available as standard 25mm gap or included with wide gap weld of 80mm.

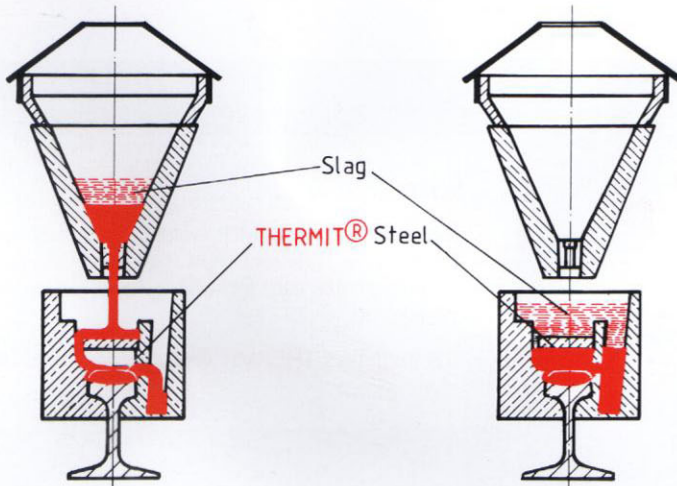
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CRANE RAIL WELDING: Standard or Footless. Crane rails can be successfully welded in all common profiles. This process can be carried out as a standard or footless weld (i.e. without a collar below the base of the rail foot).

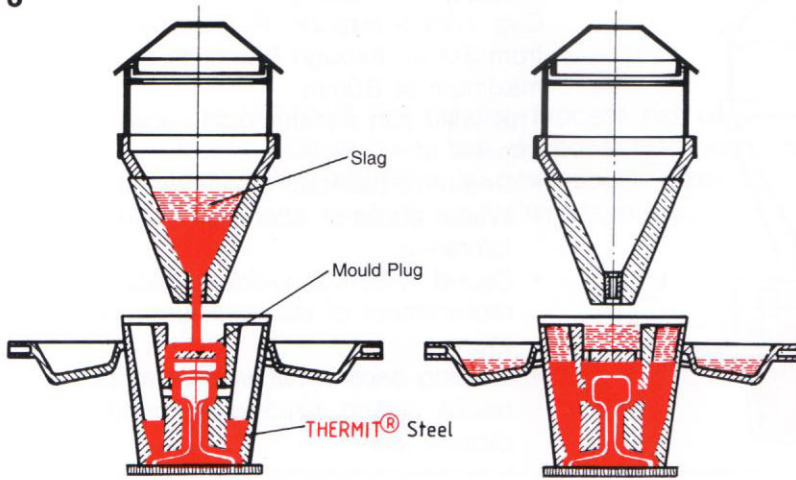
Footless weld shown in Fig. 6.

7



HEAD REPAIR WELD HRW: Developed to accommodate wheel burns or damaged rail head surfaces, removing the defect area by a molten wash of THERMIT material. Replacing the damaged area with sound compatible steel. This process can be carried out on all standard rail profiles including head hardened rails.

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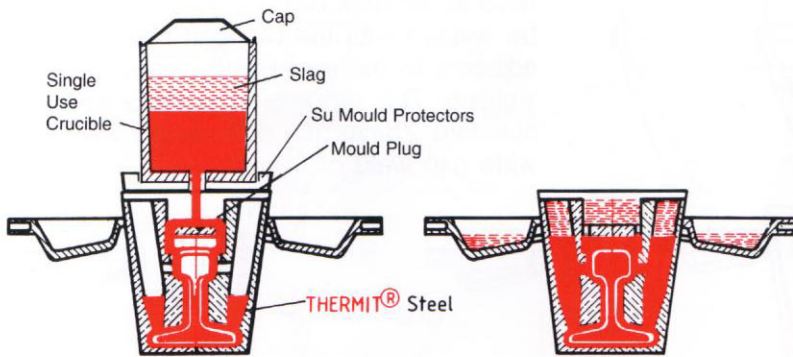


THREE PIECE MOULD SYSTEM:

The THERMIT three piece mould system incorporates steel reinforced underfoot base plate. Base plates can be supplied with a shallow weld reinforcement for restricted rail underfoot clearance or with standard weld reinforcement.

The THERMIT three piece mould system is ideally suited for continuously supported track, slab track or where there is limited clearance between the underside of the rail and base support.

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SINGLE USE CRUCIBLE – SU Process

The THERMIT Single Use Crucible is made from a bonded refractory material which is preformed, compacted then encased and sealed in a 5 litre steel container. The automatic self tapping thimble system is incorporated during the manufacturing process.

Crucible can be supplied with either a re-useable steel or single use refractory cap. Crucible requires no preheating or drying prior to use. On completion of preheating operations, direct central placement of the precharged single use crucible is by way of the locating tabs, which are located on the top of the specially designed SU process mould protectors.

The single use crucible system eliminates the requirement for a crucible stand, crucible extension ring and adaptor assembly.

Training of THERMIT Welders

The company performs training courses for THERMIT welders. Arrangements can be made for training to be carried out at our works or at customers' work site.

KPMG

ISO 9002



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NOTE:

The different THERMIT welding methods are patented in Australia and overseas. Further protected rights exist for welding tools, preformed moulds, etc.

The trademark THERMIT is protected worldwide.