

# Gantrex Frequently Asked Questions

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## 1. CAD DRAWING FILES OF GANTREX PRODUCTS

**Q:** Will Gantrex provide CAD drawings of the various products for our use in detail designs?

**A:** Gantrex will provide scaled CAD drawings of our products upon request. We have now created a page on this site that has a CAD Library. You may download these drawings and import them into your own details to save valuable engineering time when specifying and applying Gantrex products. Contact us if you need a drawing that is not currently posted.

Revised: 04/23/01

## 2. WELDED JOINTS IN CRANE RAILS

**Q:** My crane rails are in good condition everywhere except the bolted splice joints. At these locations, the rail has broken away and built up weld repairs do not last. How can I eliminate this problem?

**A:** Gantrex recommends welded joints in crane rails. On an existing runway, the bolted splice joint area can be cropped out using an abrasive saw. The rails are drawn together and thermite welds are made. A new rail section can be added at the end of the line to make up for the amount removed. The rails are then ground flat and smooth using a profile grinder. Thermite welding is a tremendous improvement over bolted splices and has a good track record when done properly by certified welders. Other rail welding methods worthy of consideration are electric flash butt welding and gas pressure welding. Fully warranted crane rail welding services, of all kinds, are available from Gantrex Contact your local Gantrex sales office for technical advice and a proposal.



Thermal Rail Welding

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## 3. ELECTRICAL GROUNDING OF RAILS

**Q:** Is it a requirement in any codes or standards to electrically ground crane rails to each other or to a fixed grounding point?

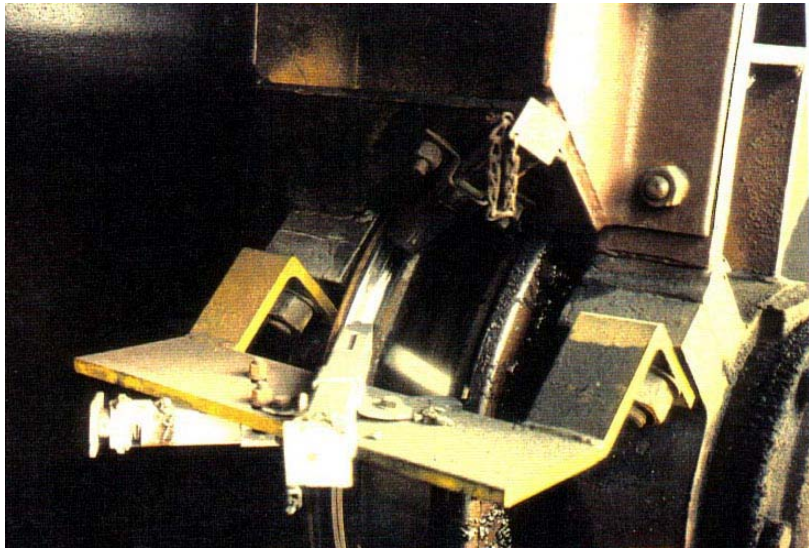
**A:** There are currently no codes or standards that address or require the grounding of crane rails. Some owners have welded copper jumper wires across bolted rail splices to provide electrical continuity. Since the splice bars are steel, we feel that this is unnecessary. It is up to the project engineer to determine if grounding of the rail system is necessary for lightning protection or cathodic protection in marine environments.

Revised: 03/15/01

#### 4. CRANE WHEEL FLANGE LUBRICATORS

**Q:** In one of our crane bays, the cranes screech as they travel the runway. The wheels are wearing heavily on the side of the rail head. What can I do to remedy this on a tight budget?

**A:** If the cranes are screeching and you have flanging problems, the best start is a survey of the runway against CMAA tolerances. Then check the crane for squareness and straightness. If you can't do all of these things, an improvement MAY be achieved by the installation of graphite wheel flange lubricators. A pair of lube stick holders is installed at each corner of the crane (or on the idler wheels if applicable). Specially formulated graphite sticks are aimed at the flanges to apply lubrication. The graphite transfers from the flanges to the rail head and reduces the friction and wear. While it will not fix the runway or crane alignment issues, it has been proven to be an effective means to extend crane rail and wheel life. Gantrex is able to provide a completely engineered package including lubricator holders, mounting brackets and lube sticks. For further information, contact Mark Veydt in the Pittsburgh office.



Revised: 03/15/01

#### 5. HYDROGEN INDUCED STRESS CRACKS IN WELDED CAST STEEL RAIL CLIPS

**Q:** What special considerations must be made in welding a rail clip lower component constructed from cast steel?

**A:** First of all, Gantrex does not make any weldable rail clip lower components from cast steels. Many of our competitors utilize steel castings for lower components in an attempt to reduce their costs. Gantrex utilizes low carbon steel bars that are forged to the final shape. We use SAE 1030 steel and it is easily weldable to A36 structural steel without any special concerns. The "carbon equivalent" found in the cast steels used by our competitors can cause hydrogen induced stress cracks in the weld region. To avoid the propagation of these cracks, often a significant preheat is required. Additionally, special shielded, low hydrogen rods may also be required. Extra preheat and special rods add significant costs to the installation. Gantrex products are designed to optimize several factors including initial material cost, ease of installation, performance and longevity. Don't be fooled by cast steel imitations of Gantrex products.

Revised: 12/22/03

#### 6. WILL THE ELECTRICAL SYSTEMS ON MY CRANE BE AFFECTED BY RAIL PAD?

**Q:** Will the electrical systems on my crane be affected by rail pad?

**A:** When the crane controls, or for that matter the crane power supply depends on the wheels to make electrical contact with the crane rail, steps must be taken to insure adequate grounding. Grounding of the crane wheels assumes that there is continuity from the wheel/rail interface through the girders and building columns to ground. Many factors can disrupt this grounding path including neoprene crane rail pad. Crane rail pad does act as an electrical insulator of low voltage power sources. Although it is true that Gantrex rail clips should theoretically supply a rail to girder grounding path, the clips should not be an integral

component of the ground path circuit. When the crane electrical system depends on the crane rail for grounding, a grounding strap should be attached from the rail to the girder. This strap should be long enough to account for any longitudinal movement that may occur. On runways where splice bars are installed a grounding strap at each rail section may be required.

Gantrex rail pad should never be used as an intentional electrical insulation material.

Revised: 06/12/03

### 7. CRANE RUNWAY ERECTION TOLERANCES

**Q:** Which set of tolerances should I specify and use for crane rail straightness and span?

**A:** There are several references that give guidelines for crane runway erection tolerances. AISE Tech Report 13, CMAA Specification #70 and MBMA all have good tolerance specifications. The following chart is reproduced from MBMA and graphically depicts the permissible tolerances. We suggest that a chart like this be included in the project plans to identify the exact tolerances you require. See the chart below.

Item		Tolerance	Maximum Rate of Change
Span		$A=3/8"$	$1/4"/20'$
Straightness		$B=3/8"$	$1/4"/20'$
Elevation		$C=3/8"$	$1/4"/20'$
Beam to Beam Top Running		$D=3/8"$	$1/4"/20'$
Beam to Beam Underhung		$E=3/8"$	$1/4"/20'$
Adjacent Beams		$F=1/8"$	N/A

Fig. 19.1 MBMA Crane Runway Erection Tolerances

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