# Crane Interlocks

Interlocks allow a crane to mechanically connect to one or more spur rails, to a crossover rail section between parallel runways, or directly from one crane to another on parallel runways. Interlocking reduces handling time and effort by allowing the load on a crane to be transferred to a spur rail or another crane without re-handling the load.

The following are some descriptions and definitions of the interlock components:

## Crane Interlock

The components of an interlock system that are typically installed on an end of a crane bridge beam, including a manually operated mechanism to mechanically engage or disengage the Crane Interlock to a Connecting Interlock on a Spur Rail or the bridge of an adjacent crane for crane-to-crane interlocking. May be installed on one or both ends of a crane bridge. Standard operation is by manually pulling an operating rope or chain after visually aligning the crane to the spur rail or adjacent crane bridge. Some short span cranes with interlocks on each end of the bridge beam may be provided with a single operating mechanism (not appropriate for longer span cranes). Some interlocks may be provided with an optional motor driven operating mechanism. For some applications, the “crane interlock” might be installed on a spur rail, and the “connecting interlock” on the crane. Double girder cranes must have interlock components installed on both crane bridges.

## Connecting Interlock

The components of an interlock system that are typically installed on the end of a spur rail or an adjacent crane, and designed to mechanically engage or disengage with the Crane Interlock as desired. Double girder crane systems must have a Connecting Interlock installed on both spur rails or the double bridges of the adjacent crane.

## Spur Rail

A length of monorail perpendicular to the crane runway and aligned with the crane bridge. The end of the monorail adjacent to the runway is supported by the runway with a Spur Support Bracket; other monorail supports are typical suspension components. Spur rails may extend on to include curves and switches as required for the system layout.

## Spur Support Bracket

A uniquely designed support bracket for a Spur Rail. Also known as a “gooseneck” bracket. One end of the bracket is bolted to the top flange of a runway rail, the other end to the top flange of the monorail. Use of a Spur Support Bracket assures that alignment of the crane bridge treadline to the monorail treadline is maintained, even when the runway or spur rail deflects under the load of the hoist and carrier. If the connecting interlock end of a spur rail is supported from building steel, deflection of the crane runway will cause the crane bridge to move out of alignment, relative to the spur rail, and make the interlock operation difficult if not impossible. Note: if the runway and monorail are both supported at a building column where there will be no differential deflection of the runway and monorail, a spur support bracket may not be required. For all other locations of a spur rail relative to a runway rail span, a Spur Support Bracket is required. Note: runway rails where spur support brackets are mounted should be sized for minimum deflection, typically 1/1000.

## Crossover Section

A short section of monorail (or double rails for double girder cranes) located perpendicular between adjacent crane runway systems. Each end of the monorail is supported by a bracket similar to a Spur Support Bracket, with the same criteria for design. Each end of the monorail is typically provided with a Connecting Interlock mechanism. Crossover sections are used when “crane-to-crane” interlocking is not possible, due to building column interference or other restrictions along the runway.

## Runway Deflection

Runway rail at spans where interlocking to a spur rail or an adjacent crane is planned should be sized for minimum deflection. For runway rail spans where the interlock operation will take place at mid-span, the runway rail is typically sized to provide the required ECL at 1/1000 deflection. This minimizes the differential deflection of the crane bridge to the spur rail. Only the length of runway rail within these spans need be sized for this deflection limit; rail in other spans may be sized for greater deflection allowance.

## Motorized Operation

Some interlocks may be provided with an electric motor operator in place of the standard manual pull chain operating mechanism. Requires additional buttons on the crane pendant or controller. TC/American provides a system of sensors and lights for indication of crane to spur alignment. When the motorized interlock system is engaged, a limit switch disables crane travel. Interlock systems in excess of 5 ton are recommended to be provided with motorized operation.

## Gap Spacer

Some interlocks are provided with components on the Crane Interlock and the Connecting Interlock to mechanically engage and provide horizontal spacing of the end of the crane bridge to the end of the spur rail.

# 200 Series Interlocks–2I-513/2I-515 and 2I-850/2I-930
# 325 Series Interlocks–3I-613/3I-615 and 3I-430/3I-450

## General Description

- These models of 200 and 325 Series Interlocks and Connecting Interlocks have very similar construction, are easy to operate and make a positive rail-to-rail connection.
- The Crane Interlock has two ropes with pull handles extending from the Operating Mechanism. Pull one rope to latch interlock; pull other to unlatch.
- Mechanical Operation
  - A. When the Crane Interlock is unlatched and not aligned with a connecting interlock, a “keeper” gate hangs over the end of the interlock mechanism. The keeper is a safety device to prevent the operating mechanism from rotating the trolley stop to create an open rail end.
  - B. When the crane comes into alignment with a spur rail, the keeper on the Crane Interlock rides over a nose piece on the body of the Connecting Interlock, raising the keeper to expose the Interlock Bolt.
  - C. When the Operating Mechanism rope is pulled, a lever mechanism extends an Interlock Bolt on the crane to engage the Connecting Interlock.
  - D. When the Crane Interlock Bolt enters the Connecting Interlock, a head in the Connecting Interlock rotates and turns a shaft connected to the interlock stop (the “butterfly”). This rotates the stop in line with the crane bridge and allows trolley wheels to pass. Simultaneously, an Interlock Bolt on the connecting interlock is extended to engage the Crane Interlock and rotate the crane interlock stop (“butterfly”) to allow trolley wheels to pass.
  - E. Interlocks are unlatched by pulling the opposite rope. This returns the Interlock Bolts and the Trolley Stops to their original positions (butterfly perpendicular to the bridge rail). The interlock cannot be unlatched if a trolley wheel obstructs the stop from turning.

## Interlock Alignment and Operation

### Standard Operation

A. Move the crane into alignment with a spur rail or adjacent bridge beam; verify visually.

B. Pull rope to latch the interlocks.

C. Complete transfer of load.

D. After assuring that carrier is clear of the end stop areas, pull rope to unlatch the interlocks.

### Optional Operation

A. While the crane is not aligned to a spur rail, the Operating Mechanism rope can be pulled to “pre-set” the Crane Interlock for operation. A spring on the operating mechanism rod is compressed which “loads” the Crane Interlock.

B. Because the keeper gate is down over the end of the interlock, the Interlock Bolts cannot extend nor will the Interlock Stop ("butterfly") pivot to allow trolley passage.

C. As the Crane Interlock contacts a Connecting Interlock on a spur rail, the keeper gate raises and releases the interlock mechanism to complete the crane-to-spur rail connection.

D. This feature allows an operator to make a quick and easy interlock latch.

# Interlocks for 200 Series Rail

## Model 2I-513 Connecting Interlock

10-1732-00

## Model 2I-515 Crane Interlock

10-1649-00 (with operating mechanism)

## Model 2I-850 Connecting Interlock

10-1734-00

## Model 2I-930 Crane Interlock

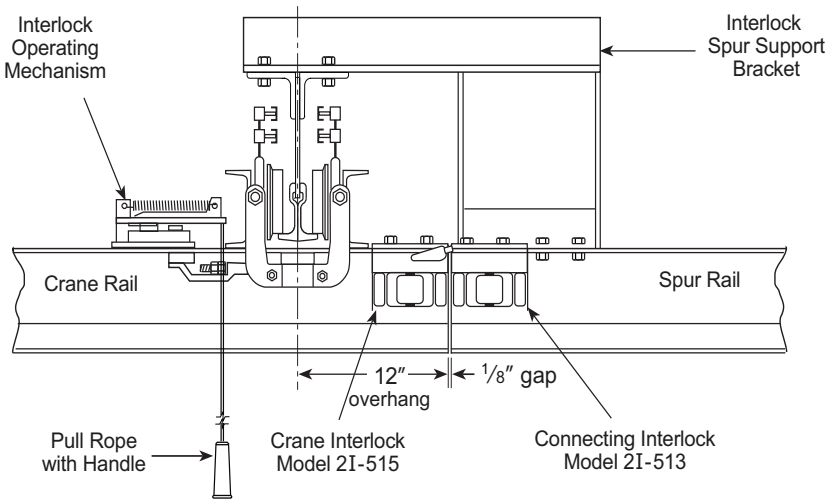
10-1909-00 (with operating mechanism)

| Part # | Model | Description | Weight |
|---|---|---|---|
| **Non Electrified and Bottom Contact Conductor*** | | | |
| **10-1732-00** | **2I-513** | Connecting Interlock | 8 lbs. |
| **10-1649-00** | **2I-515** | Crane Interlock with operating mechanism | 44 lbs. |
| **Electrified with Side Contact Conductor†** | | | |
| **10-1734-00** | **2I-850** | Connecting Interlock | 8 lbs. |
| **10-1909-00** | **2I-930** | Crane Interlock with operating mechanism | 46 lbs. |

* Standard for 2GR7-15 and 2GR7-17 rail. For deeper rails, add for step cutting (rail notches).

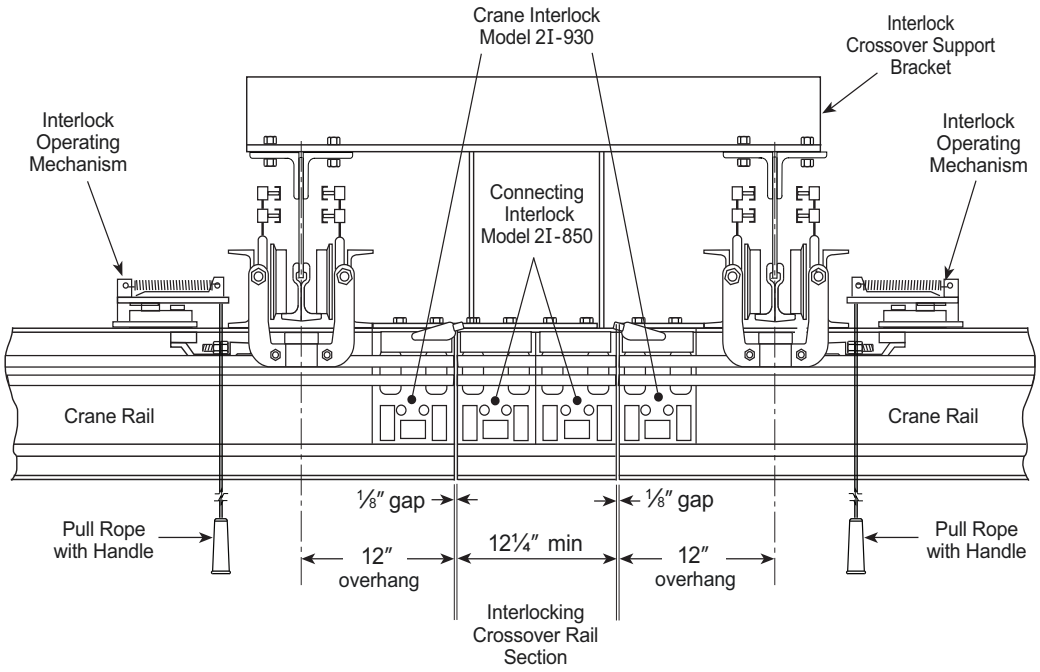
† Standard for 2GR11-16, 2GR11-23 and 2GR11-26 rail. For deeper rails, add for step cutting (rail notches).

- Interlocks may be mounted on one or both ends of a crane bridge.
- Standard Crane Interlocks are each provided with an operating mechanism.
- For cranes of 22' span and less, Crane Interlocks mounted on both ends may be provided with one operating mechanism.
- Motorized operation not recommended.
- Use only with TC/American Crane 200 Series trolleys with 4" diameter wheels (2T-2000 up to 2T-5600).

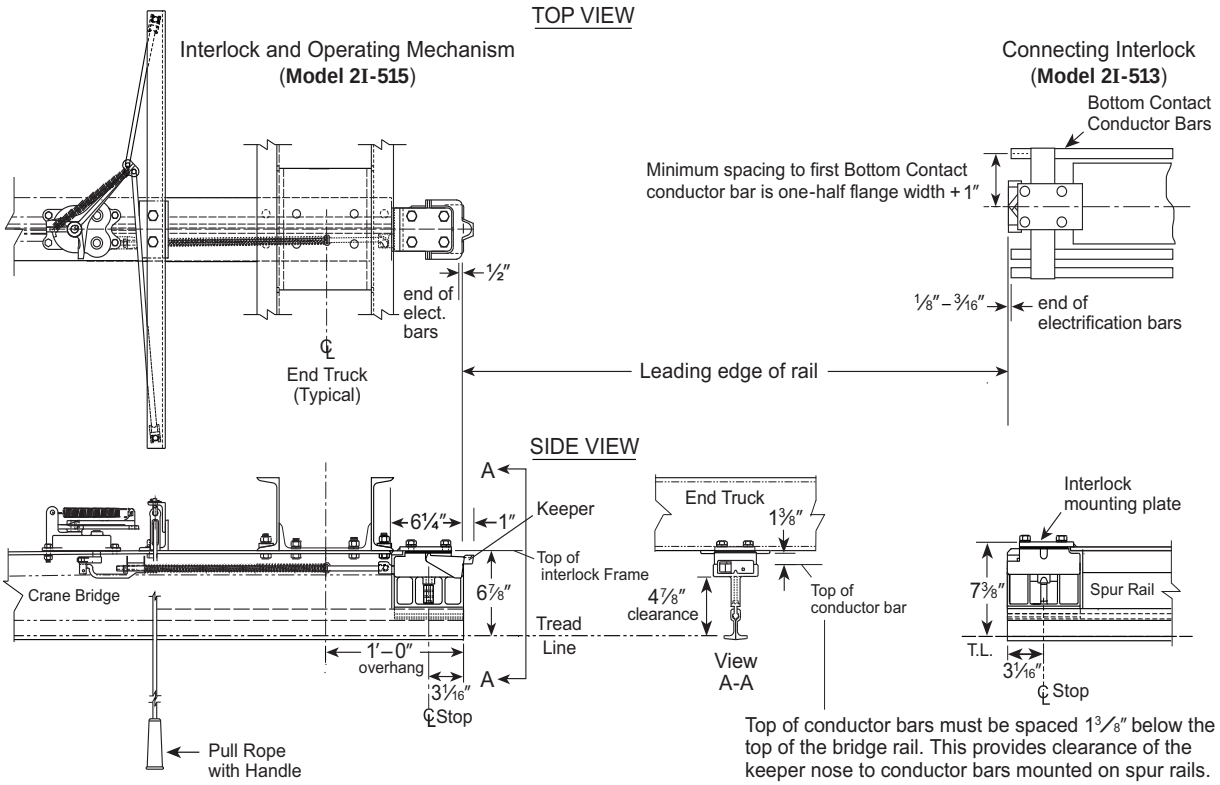



**Interlocking Cranes to Spur Rail**
**(Typical)**
Non-electrified crane and spur rail shown.

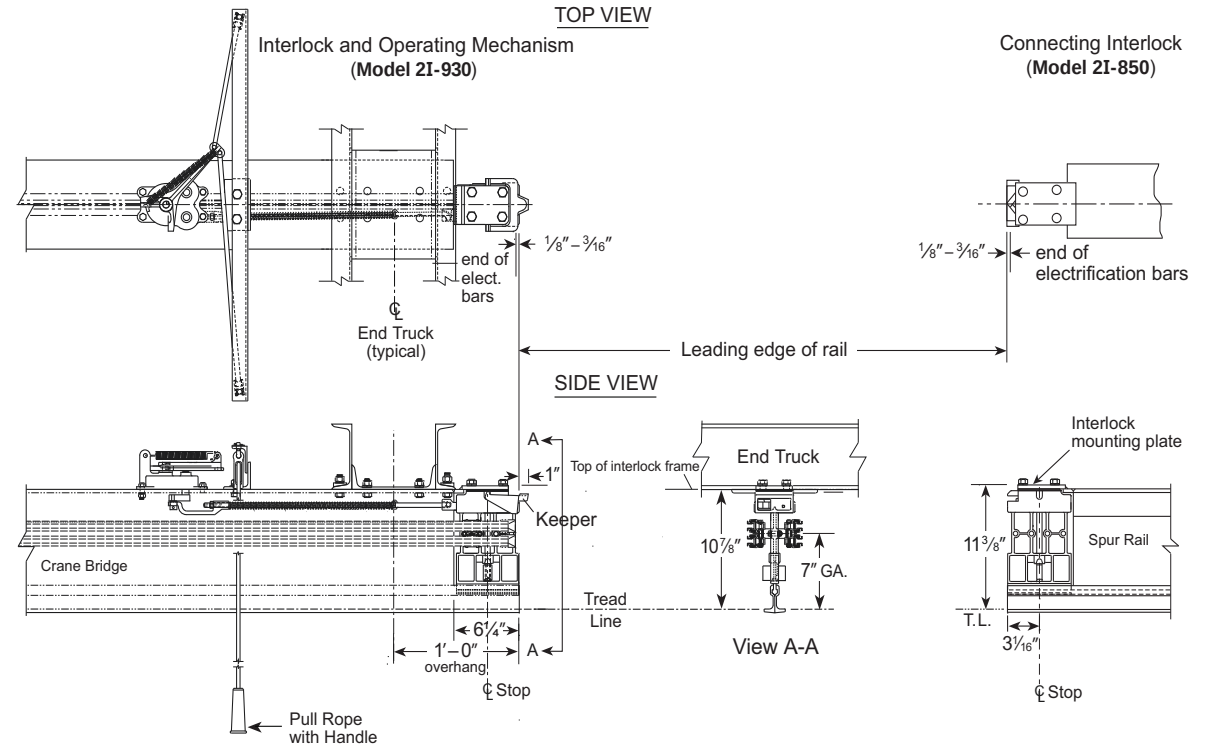
***Note*** *Spur rails must be supported from the crane runway by an Interlock Spur Support Bracket as shown to assure alignment of the spur rail treadline to the crane bridge treadline during runway deflection.*




**Interlocking Cranes to Crossover (Typical)**
Shown with 2I-930 Crane Interlocks and 2I-850 Connecting Interlocks
with Side Contact Conductor Bars on the Cranes and Crossover.




**Bottom Contact Electrification**
(or Non-Electrified)




**Side Contact Electrification**

# Interlocks for 325 “L” Series Rail

## Model 3I-450 Connecting Interlock

10-1733-00

## Model 3I-430 Crane Interlock

10-1919-00 (with operating mechanism)

## Model 3I-613 Connecting Interlock

10-1663-00

## Model 3I-615 Crane Interlock

10-1912-00 (with operating mechanism)

These interlocks are used in 3RL8-18 rail, or larger rail if the rail is step cut. Systems may be non-electrified (no conductor bar) or electrified with Bottom Contact conductor bar only.

| Model Part # | Description | Weight |
|---|---|---|
| **3I-613 10-1663-00** | Connecting Interlock<br>Use in 3RL8-18 rail.<br>For rail deeper than 3RL8-18: add for step cutting (rail notches) | 15 lbs. |
| **3I-615 10-1912-00** | Crane Interlock<br>with operating mechanism<br>Use on cranes with 3RL8-18 Bridge Rail.<br>For cranes with larger rail, add for step cutting (rail notching) each end of bridge. | 46 lbs. |

***Note*** *Current non-electrified interlocks may not be compatible with similar existing interlocks installed on old rail with “long stem” tee. If adding on to an existing system, provide crane serial number and dimension from tread-line to top of interlock frame for engineering review. “Old” dimension = 75/8"; “New” dimension = 73/8"*

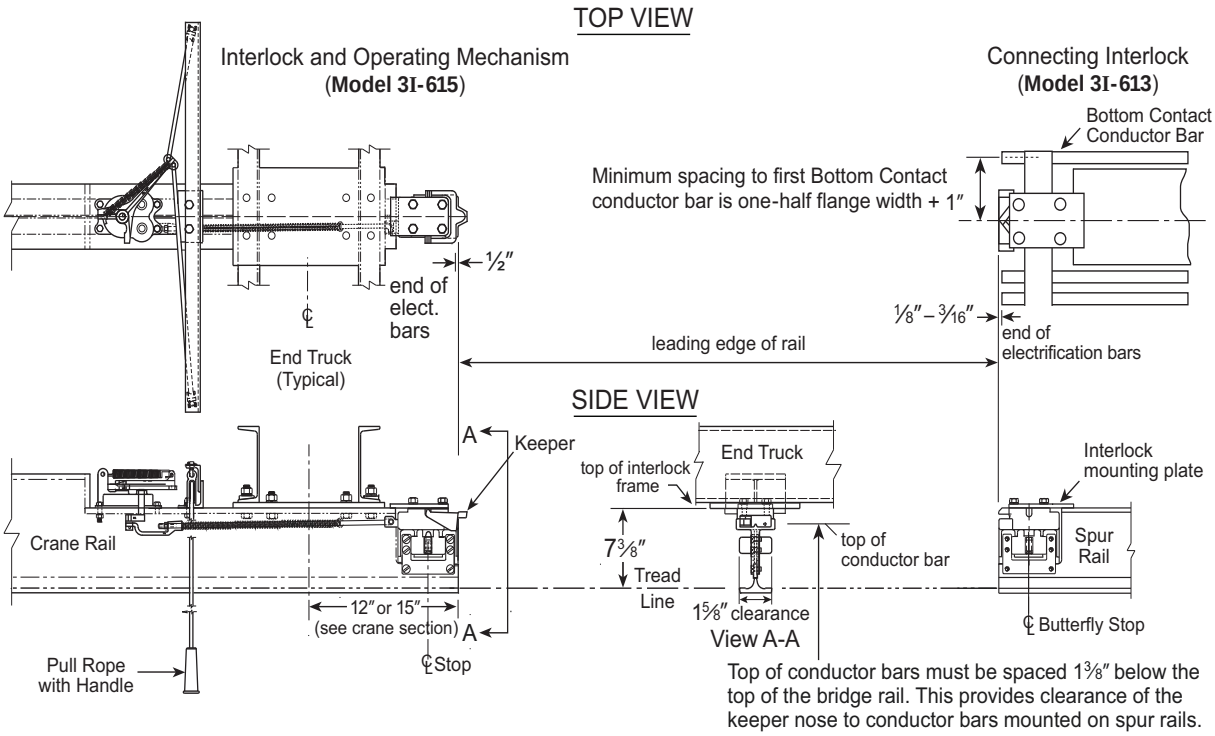
- Use on “L” Series rail only
- Standard bridge rail overhang:
  12" – for cranes w/end trucks 3ET-1300, 3ET-2600-4, 3ET-5400-4
  15" – for cranes w/end trucks 3ET-9000-4X or 3ET-9000-4
- Use only with TC/American Crane 325 series trolleys with 4" or 4½" dia. wheels (3T-2000 through 3T-5400)
- For cranes up to 6000 lb. capacity (if crane bridge is “L” Series rail)

These interlocks are used only in 3RL13-27 or 3RL14-35 rail. Systems may be non-electrified (no conductor bar) or electrified with Bottom Contact or Side Contact conductor bar. Rail requires step cut.

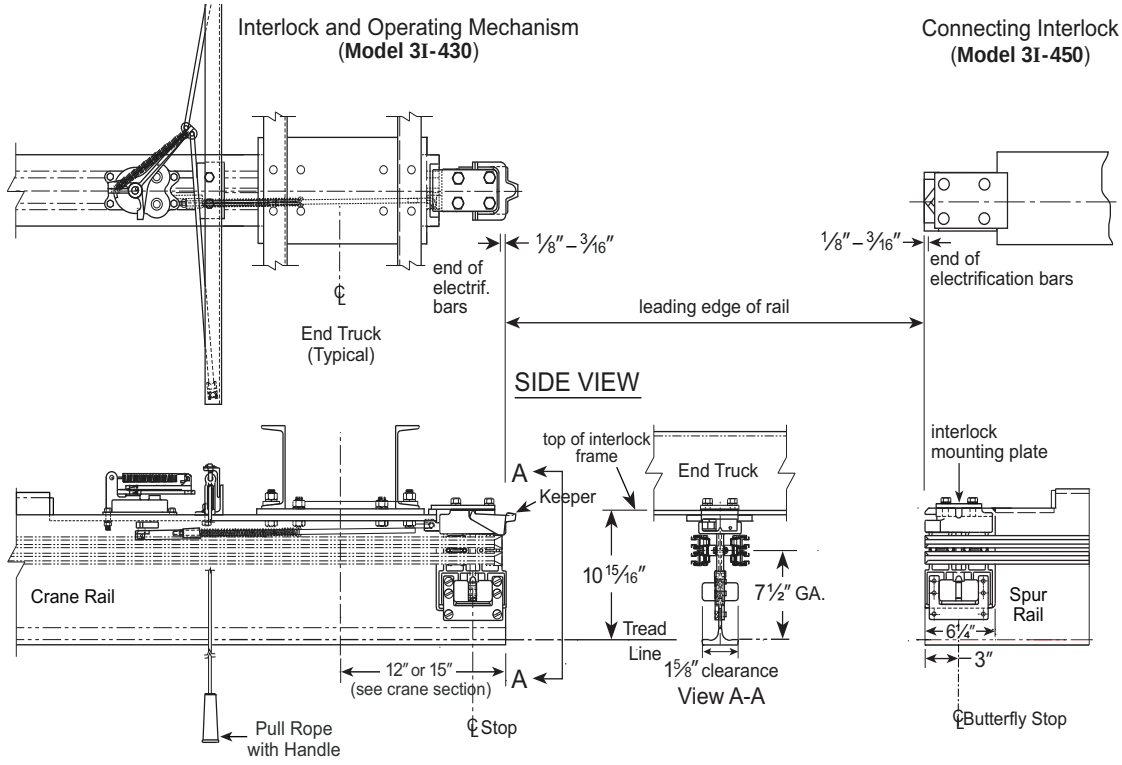
| Model Part # | Description | Weight |
|---|---|---|
| **3I-450 10-1733-00** | Connecting Interlock<br>Use only on monorail, 3RL13-27 or 3RL14-35.<br>Add for step cutting (rail notches). | 17 lbs. |
| **3I-430 10-1919-00** | Crane Interlock<br>with operating mechanism<br>Use only on cranes with 3RL13-27 or 3RL14-35 Bridge Rail.<br>Add for proper bridge rail on crane if required. Add for step cutting (rail notching) each end of bridge. | 48 lbs. |

***Note*** *Current electrified interlocks should be compatible with similar existing interlocks installed on old rail with “long stem” tee. Verify that dimension from treadline to top of interlock frame is 1015/16".*

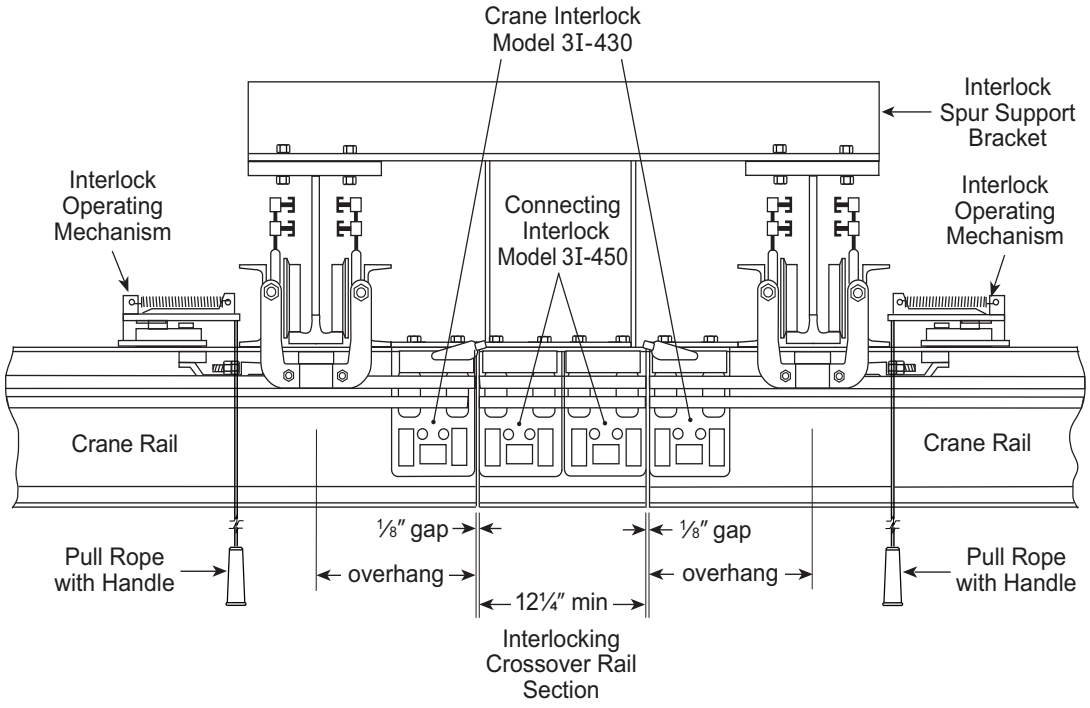
- Side Contact Electrified Interlocking Systems — require min. 13" deep rail for installation of 3I-430 and 3I-450 Interlocks
- Bottom Contact Electrified Systems may be mounted on any depth rail
- Interlocks may be mounted on one or both ends of crane bridge
- Standard Crane Interlocks provided with operating mechanism
- For cranes of 22' span and less:
  Crane Interlocks mounted on both ends may be provided with one operating mechanism
- Motorized operation *not* recommended



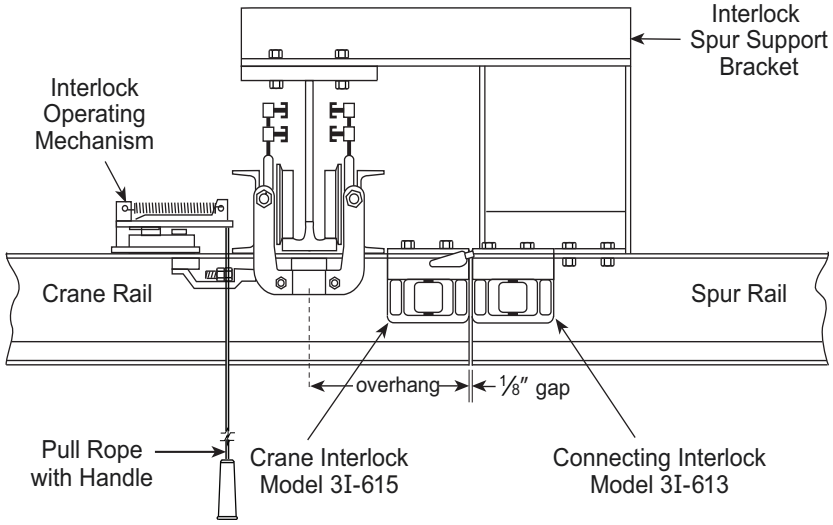

**Bottom Contact Electrification**
(or non-electrified)




**Side Contact Electrification**




**Interlocking Crane to Crossover**
**(Typical)**
Shown with 3I-430 Crane Interlocks and 3I-450 Connecting Interlocks with Side Contact Conductor Bars on the Cranes and Crossover.




**Interlocking Crane to Spur Rail**
**(Typical)**
Non-electrified crane and spur rail shown.

***Note*** *Spur rails must be supported from the crane runway by an Interlock Spur Support Bracket as shown to assure alignment of the spur rail treadline to the crane bridge treadline during runway deflection.*

# Interlocks for 325 “H” Series Rail

## Model 3I-9 Crane Interlock

10-3110-XX (3I-9A)
10-3112-XX (3I-9B) (with operating mechanism)

## Model 3I-10 Connecting Interlock

10-3111-XX (3I-10A)
10-3113-XX (3I-10B)

| Model Part # * | Description | Weight | Interlock Applications | | |
|---|---|---|---|---|---|
| | | | Trolley/Wheel Size | 3I-9A/3I-10A | 3I-9B/3I-10B |
| **3I-9A 10-3110-xx** | Crane Interlock with operating mechanism Standard on cranes with 3RH14-41 Bridge Rail. Add for step cutting (rail notching) for deeper rails. | 143 lbs. | Plain and motorized trolleys with wheel dia. up to 5” | 7½" gage Side Contact and/or Bottom Contact Electrification | 7½" gage Side Contact and/or Bottom Contact Electrification |
| **3I-9B 10-3112-xx** | Crane Interlock with operating mechanism Standard on cranes with 3RH16-47 Bridge Rail. Add for step cutting (rail notching) for deeper rails. | 144 lbs. | Plain and motorized trolleys with wheel dia. of 6½" | Bottom Contact Electrification | 9" gage Side Contact and/or Bottom Contact Electrification |
| **3I-10A 10-3111-xx** | Connecting Interlock Standard on 3RH14-41 spur rail. Add for step cutting (rail notching) for deeper rails. | 55 lbs. | Plain and motorized trolleys with wheel dia. of 9" | Bottom Contact Electrification | Bottom Contact Electrification |
| **3I-10B 10-3113-xx** | Connecting Interlock Standard on 3RH16-47 spur rail. Add for step cutting (rail notching) for deeper rails. | 56 lbs. | | | |

* Last 2 digits of interlock part numbers vary with end truck and rail size.

Note the following:

- Use on “H” Series rail only; minimum 3RH14-41.
- 3I-9A and 3I-10A designed for direct installation in 3RH14-41 rail.
  (If either the bridge rail or the spur rail is deeper, add for step cutting as required.)
- 3I-9B and 3I-10B designed for 3RH16-47 rail.
  (If either the bridge rail or the spur rail is deeper, add for step cutting as required.)
- May be used with either Side- or Bottom-Contact electrification bars, or with non-electrified systems.
- Standard interlocking bridge rail overhang:
  14"– for cranes with end trucks 3ET-9000 through 3ET-20000
  18"– for cranes with end trucks 3ET-24800 though 3ET-38000
- Interlocks may be mounted on one or both ends of a crane bridge.
- Motorized operation
  a. .Optional for crane capacity through 5 ton
  b. .Required for crane capacity greater than 5 ton
- See Interlock applications chart for trolleys and conductor bar used with these interlocks.

# Interlocks for 325 “H” Series Rail

## 325 Series Interlocks

Model 3I-9A/3I-10A
Model 3I-9B/3I-10B

## General Description

- These models of 325 Series Interlocks and Connecting Interlocks make a positive rail-to-rail connection for the heaviest crane loads.
- Use with “H” Series rail.
- For manual operation, the Crane Interlock has two chains with pull rings extending from arms of the Operating Mechanism. Pull one chain to latch the interlock, pull the other to unlatch.
- Optional motorized operation is available.
- Manual Mechanical Operation:

A. When the Crane Interlock is unlatched and not aligned with a connecting interlock, a “keeper” gate hangs over the end of the interlock mechanism. The keeper is a safety device to prevent the operating mechanism and interlock levers from raising the Safety Stop and creating an open rail end.

B. When the crane is aligned to a spur rail, a roller on the nose of the keeper rides over a ramp above the Connecting Interlock, raising the Keeper to expose the Latch Pin and allow the interlock to be actuated.

C. When the Operating Mechanism chain is pulled, a lever mechanism extends a Latch Pin from the Crane Interlock to engage the Latch Pin Guide (receiver or socket) of the Connecting Interlock. The tapered end of the Latch Pin easily enters the Guide to align the crane and spur rail.

D. As the Crane Interlock Latch Pin is pushed into the Connecting Interlock guide (receiver or socket), the nose of this Latch Pin pushes against a Connecting Interlock Latch Pin, moving it rearward. Bell Crank arms attached to the Latch Pins and Levers simultaneously pivot to raise the Safety Stop on both the Crane Bridge Rail and the Spur Rail, allowing clearance for trolleys to pass by.

E. When the Crane Interlock Latch Pin enters the connecting interlock, a Hook Latch on the Connecting Interlock Latch Pin pivots to engage a hole on the end of the Crane Interlock Latch Pin. This locks the Crane Latch Pin to the Connecting Interlock Latch Pin and keeps the interlock mechanically secure.

F. A horizontal Gap Spacer assures bridge rail-to-spur rail clearance on interlocking cranes and spur rails. As the crane approaches a spur rail, a guide roller on an arm mounted on the spur rail engages a ramp and channel guide on the crane. This gap spacer device positions the crane properly in relation to the spur rail so that proper rail gap at the treadline is maintained. The gap spacer arm must be shimmed and adjusted at installation to fit properly at each spur rail. It is not intended to compensate for installation errors.

G. When the Operating Mechanism chain is pulled to disengage the interlocks, the Latch Pins remain locked together until they are retracted, and the Safety Stops on both the crane and the spur rail are fully lowered.

H. Safety Stops are designed to contact trolley load bars or hoist lugs only, not the trolley wheels.

# Interlock Alignment & Operation–3I-9A/3I-10A and.3I-9B/3I-10B

## Standard Manual Operation

1. Move the crane into alignment with a spur rail or adjacent bridge beam, verify visually.
2. Pull chain to latch the interlocks.
3. Complete transfer of load.
4. After assuring the carrier is clear of the end stop areas, pull chain to unlatch the interlocks.

## Optional Motorized Operation

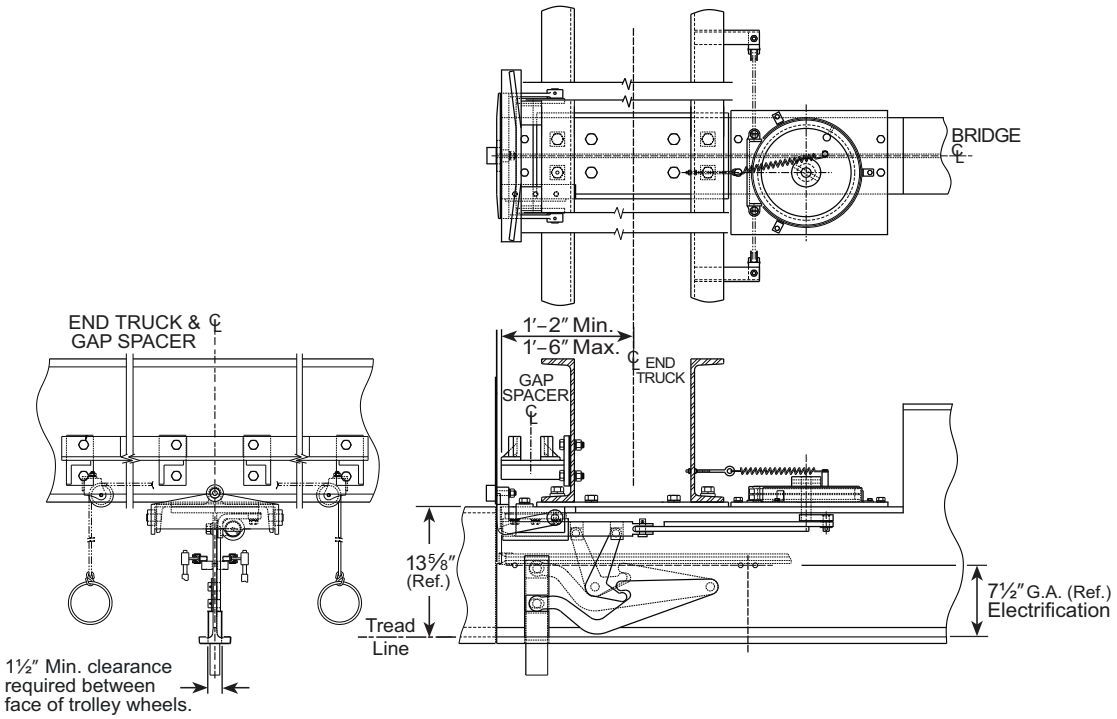
1. Indicator lights are provided on a box near the crane interlock end (may be a separate enclosure or mounted on the bottom of the crane electrical enclosure) to show when the crane bridge rail is aligned with the spur rail, when the interlock is fully engaged and when the interlock is fully disengaged.
   A. Red: Crane Interlock stop is down and interlock is not latched (normal condition during crane movement).
   B. Amber: Interlock is aligned with a spur rail or another crane bridge.
   C. Green: Crane Interlock (and Connecting Interlock) stops are raised and transfer of the carrier may begin.
2. Drive the crane to a spur rail and align the crane bridge to the spur rail. When aligned, the Amber “Aligned” light will turn on. Interlock latching may now be initiated by pressing the “Engage Interlock” button on the crane controller.

***Note*** *A limit switch in the electrical controls prevents the interlock from being actuated unless the crane interlock is aligned (Amber light is on) with a connecting interlock.*

3. Engage the interlock by pressing and holding the “Engage Interlock” button until the interlock is fully latched. When the interlock starts to engage, the Red “Interlock Disengaged” light will turn off. When the interlock is fully engaged, the Green “Interlock Engaged” light will turn on. The Amber “Aligned” light remains on.

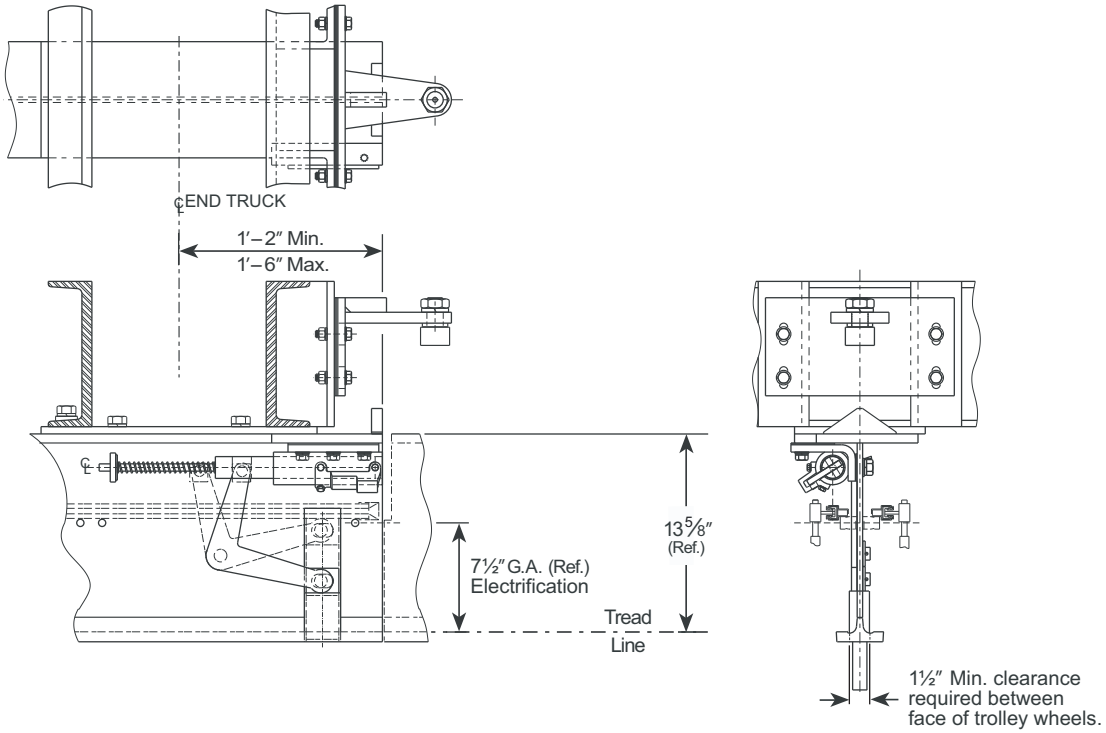
***Note*** *A limit switch in the electrical controls disables crane motion until the interlocks are disengaged.*

4. Move the carrier across the interlocked crane and spur rail section as required.
5. Disengage the interlock by pressing and holding the “Disengage Interlock” button until the interlock is fully disengaged. The Green “Interlock Engaged” light will turn off when the interlock starts to disengage, and the Red “Interlock Disengaged” light will turn on when the interlock is fully disengaged.
   The Amber “Aligned” light remains on.
   Crane motion is now allowed.
6. When the crane is moved away from the spur rail, the Amber “Aligned” light will turn off, leaving only the Red “Interlock Disengaged” light showing.



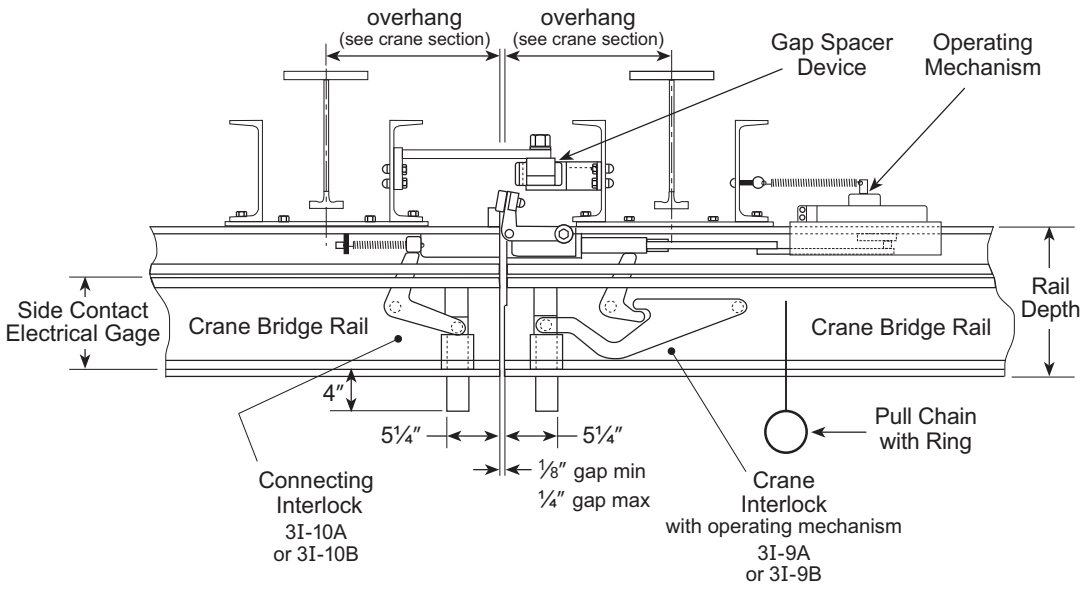

**3I-9A Crane Interlock**

Manual Operation, Shown in Crane Bridge with Step Cut and Side Contact Conductors




**3I-10A Connecting Interlock**

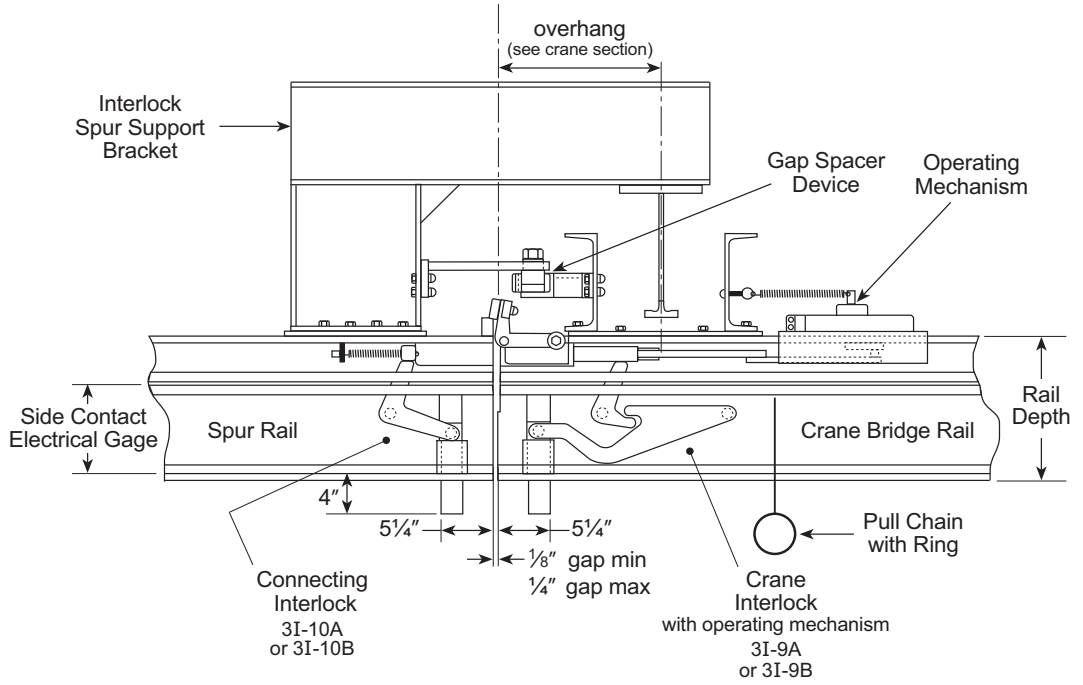
Manual Operation, Shown in Crane Bridge without Step Cut, with Side Contact Conductors




**Interlocking Crane to Crane (325 "H" Series)**

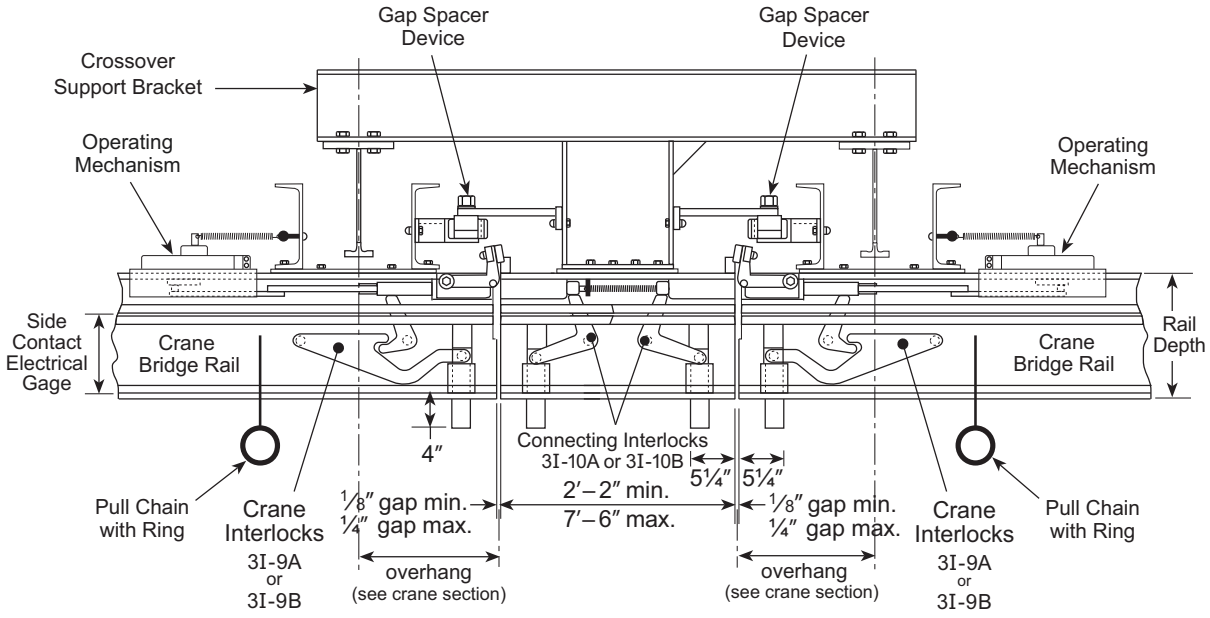
Cranes may be latched or interlocked directly to each other for bridge-to-bridge carrier transfer.

***Note*** *Operations at the mid-point of runway spans may be difficult due to differential deflection of loaded versus unloaded runways.The Interlock Gap Spacer Device provides horizontal alignment only, to prevent ends of crane bridges from hitting; it does not provide vertical alignment.*



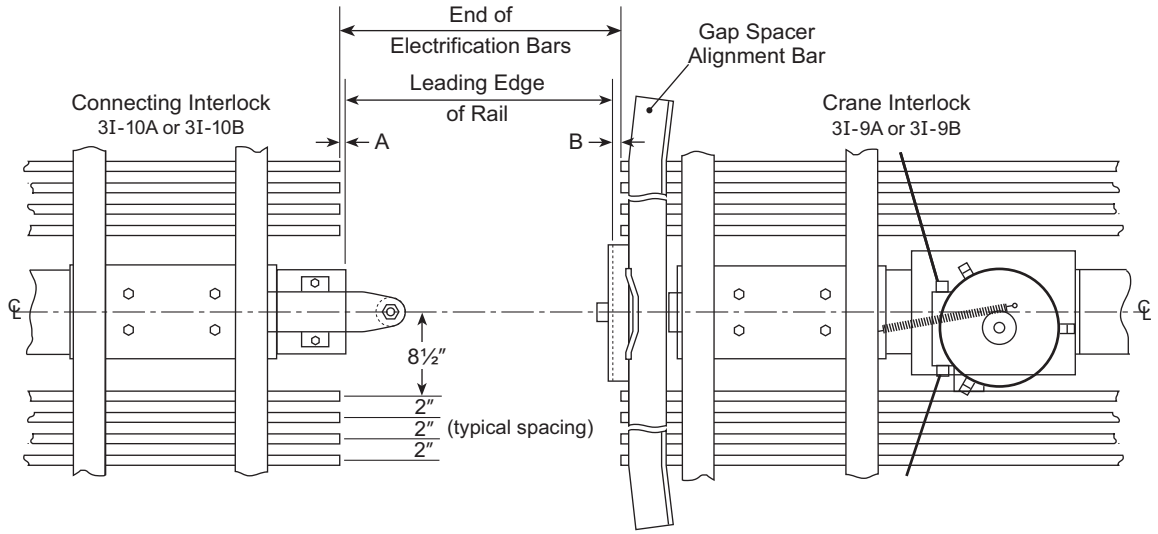

**Interlocking Crane to Spur (325 Series)**
**(Typical)**

***Note*** *Spur rails must be supported from the crane runway by an Interlock Spur Support Bracket as shown to assure alignment of the spur rail treadline to the crane bridge treadline during runway deflection.*




**Interlocking Cranes to Crossover**

***Note*** *Where building obstructions prevent latching or interlocking of one crane bridge directly to another, carriers can be transferred bridge-to-bridge via an Interlocking Crossover as shown.*




**Set-Back of Conductor Bars from End of Rail with Interlock**

**Bottom Contact Bars Shown**

A = ⅛″ – 3⁄16″ for either Bottom or Side Contact

B = ⅛″ – 3⁄16″ if Side Contact, ½” if Bottom Contact

# Interlocks for 450 Series Cranes and Spur Rails

## Model 45I-9C Crane Interlock

10-3302-00 (with motorized operating mechanism)

## Model 45I-10C Connecting Interlock

10-3303-00

## General Description

- Positive rail-to-rail connection for the very heaviest loads
- For use on 450 Series rail only
- 45I-9C and 45I-10C designed for 45R20-79 rail minimum (due to clearance required to raise the Safety Stop)

***Note*** *If either the bridge rail or spur rail is deeper, add for step cutting as required.*

- Motorized operation only
- For use with Bottom Contact electrification bars
- Standard bridge rail overhang = 24"
- Interlocks may be mounted on one or both ends of a crane bridge.

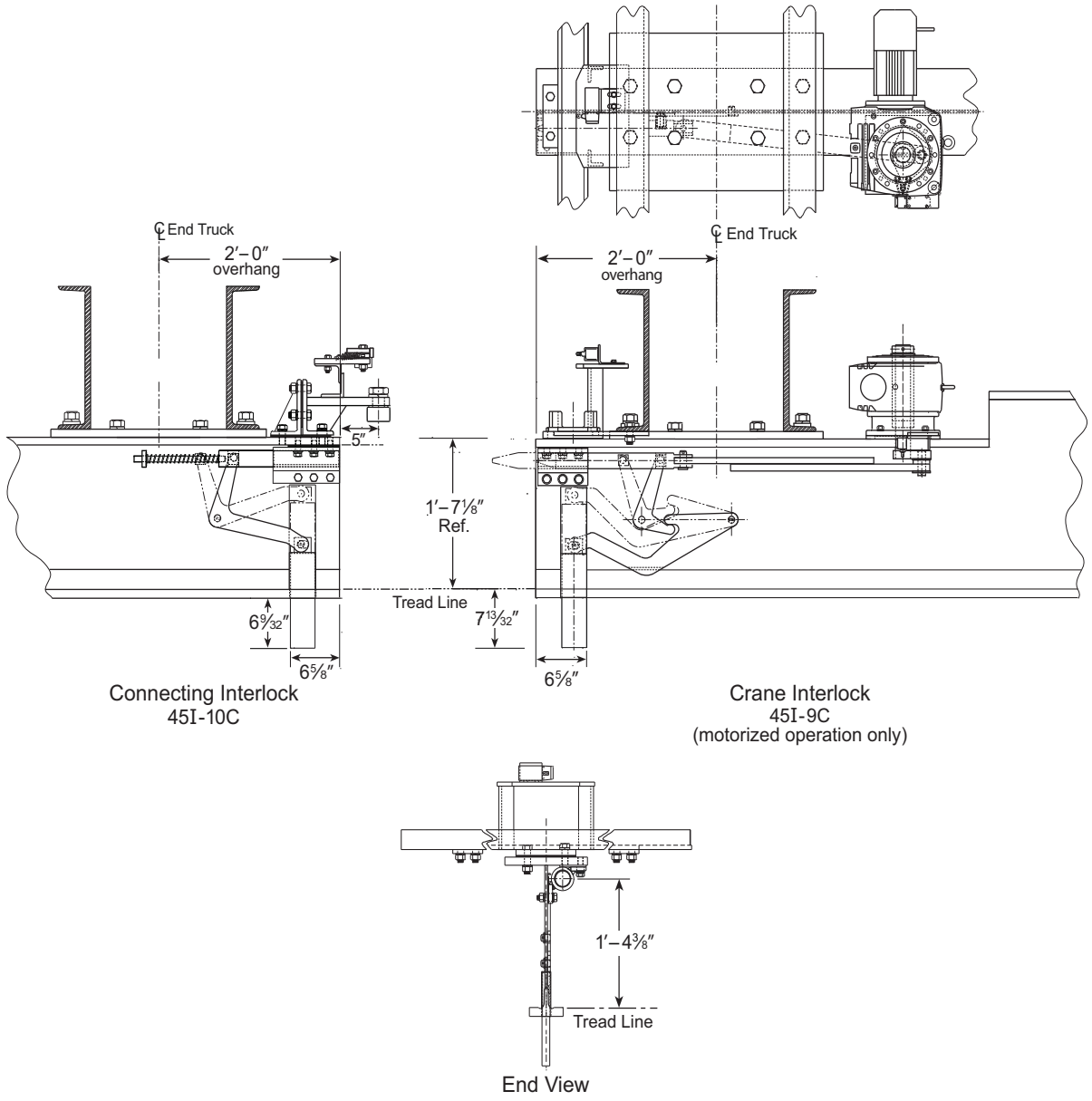
## General Mechanical Operation

1. When the Crane Interlock is unlatched and not aligned with a Connecting Interlock, an Alignment Limit Switch is electrically open. This serves as a safety device to prevent an operator from inadvertently energizing the motorized operating mechanism, causing the interlock levers to raise the Safety Stop and create an open rail end.
2. When the crane is aligned to a spur rail, the Alignment Limit Switch is closed and enables the circuit to the motorized operating mechanism to be completed and the interlock to be actuated.
3. When the Engage Interlock button on the pendant or controller is pressed, the motor and reducer on the operating mechanism extends a Latch Pin from the Crane Interlock to engage the Latch Pin Guide (receiver or socket) of the Connecting Interlock. The tapered end of the Latch Pin easily enters the Guide to align the crane and spur rail.
4. As the Crane Interlock Latch Pin is pushed into the Connecting Interlock guide (receiver or socket), the nose of this Latch Pin pushes against a Connecting Interlock Latch Pin, moving it rearward. Bell Crank arms attached to the Latch Pins and Levers simultaneously pivot to raise the Safety Stop on both the Crane Bridge Rail and the Spur Rail, allowing clearance for trolleys to pass by.
5. A horizontal Gap Spacer assures bridge rail-to-spur rail clearance on interlocking cranes and spur rails. As the crane approaches a spur rail, a guide roller on an arm mounted on the spur rail engages a ramp and channel guide on the crane. This gap spacer device positions the crane properly in relation to the spur rail so that proper rail gap at the treadline is maintained. The gap spacer arm must be shimmed and adjusted at installation to fit properly at each spur rail. It is not intended to compensate for installation errors.
6. When the Disengage Interlock button on the pendant or controller is pressed to disengage the interlocks, the motorized interlock operator retracts the latch pins to disengage the interlock. The crane interlock latch pin does not fully retract from the connecting interlock until the Safety Stops on both the crane and the spur rail are fully lowered.
7. Safety Stops are designed to contact trolley load bars or hoist lugs only, not the trolley wheels.

## Motorized Operation

1. Indicator lights are provided on a box near the crane interlock end (may be a separate enclosure or mounted on the bottom of the crane electrical enclosure) to show when the crane bridge rail is aligned with the spur rail, when the interlock is fully engaged and when the interlock is fully disengaged.
   A. Red: Crane Interlock stop is down and interlock is not latched (normal condition during crane movement).
   B. Amber: Interlock is aligned with a spur rail or another crane bridge.
   C. Green: Crane Interlock (and Connecting Interlock) stops are raised and transfer of the carrier may begin.
2. Drive the crane to a spur rail and align the crane bridge to the spur rail. When aligned, the Amber "Aligned" light will turn on. Interlock latching may now be initiated by pressing the "Engage Interlock" button on the crane controller.
   *Note: A limit switch in the electrical controls prevents the interlock from being actuated unless the crane interlock is aligned (Amber light is on) with a connecting interlock.*
3. Engage the interlock by pressing and holding the "Engage Interlock" button until the interlock is fully latched. When the interlock starts to engage, the Red "Interlock Disengaged" light will turn off. When the interlock is fully engaged the Green "Interlock Engaged" light will turn on. The Amber "Aligned" light remains on.
   *Note: A limit switch in the electrical controls disables crane motion until the interlocks are disengaged.*
4. Move the carrier across the interlocked crane and spur rail section as required.
5. Disengage the interlock by pressing and holding the "Disengage Interlock" button until the interlock is fully disengaged. The Green "Interlock Engaged" light will turn off when the interlock starts to disengage, and the Red "Interlock Disengaged" light will turn on when the interlock is fully disengaged. The Amber "Aligned" light remains on. Crane motion is now allowed.
6. When the crane is moved away from the spur rail, the Amber "Aligned" light will turn off, leaving only the Red "Interlock Disengaged" light showing.

| Model Part # | Description | Weight |
|---|---|---|
| **45I-9C 10-3302-00** | Crane Interlock with Motorized operating mechanism<br>For minimum 45R20-79 Bridge Rail.<br>Add for step cutting (rail notching) for deeper rails. | 415 lbs. |
| **45I-10C 10-3303-00** | Connecting Interlock<br>For minimum 45R20-79 Spur Rail.<br>Add for step cutting (rail notching) for deeper rails. | 150 lbs. |




**Crane to Crane Interlock Shown**