

INSTALLATION



INSTALLATION INSTRUCTIONS
PRECAUTIONS & SAFETY RULES



Work safely. Work in the cage.

TRANSFORMER INTEGRATED GUARD RAIL



PRECAUTIONS AND SAFETY RULES

1. Read and understand these instructions as well as all labeling on individual components before installing and using the system.
2. Never use a Transformer Integrated Guard Rail (TIGR) system that has damaged or missing components or is not erected in accordance with these instructions.
3. Do not force parts together that do not fit freely.
4. Inspect all anchor points to ensure they are firmly attached to transformer.
5. ALWAYS install guardrails with the hooks (locking latches) facing outward away from the transformer.
6. ALWAYS install both top and mid guardrails.
7. Make sure all guardrail locking hooks are firmly in position and engaged with the posts and that the spring-loaded latches have functioned properly, locking the guardrail in place.
8. Never climb or stand on guardrails.
9. All post anchor mounting surfaces must be clean and dry.
10. Comply with all applicable Federal, State and Industry-specific Safety regulations and guidelines.

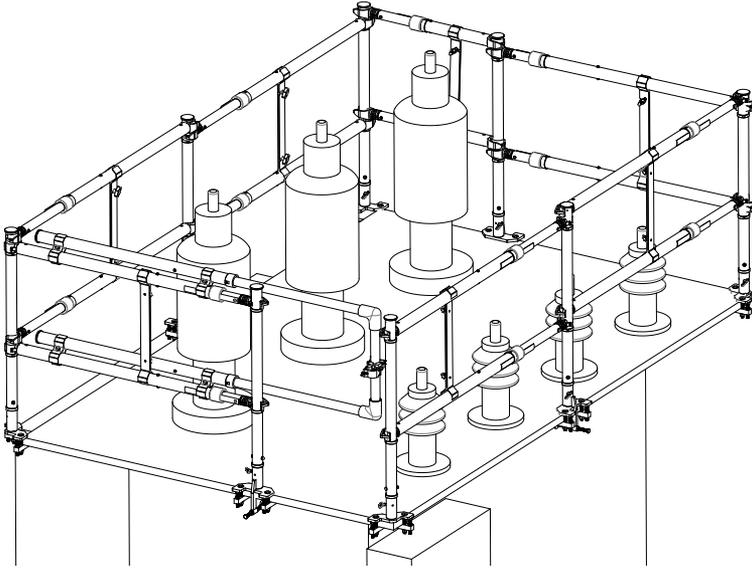
TRANSFORMER INTEGRATED GUARD RAIL



Caution:

Inspect completed installation prior to use to ensure no parts are damaged and that all connections are secure and tight.

SYSTEM DRAWING



SYSTEM DESCRIPTION

The Transformer Integrated Guard Rail (TIGR) is a guardrail fall prevention system providing an OSHA compliant guardrail around the top perimeter of industrial electrical transformers, thus eliminating the need for a maintenance worker to tether off by wearing a personal fall arrest harness.

Specific features include:

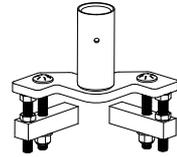
- System can be retrofitted to existing transformers.
- Adjustable braces accommodate many types, sizes and configurations of transformers.
- Guardrail components can be collapsed and conveniently stored in a TIGR Job Box.
- Post anchor assemblies are designed to be able to be left installed on a transformer for quick and easy installation of posts and guardrails for future maintenance activities.

COMPONENT LIST/IDENTIFICATION

1

CORNER POST ANCHOR P/N: 526105

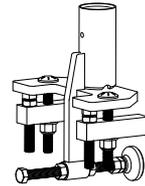
Attached to the top edge of the transformer at corners to provide a secure attachment point for the Vertical Posts.



2

CENTER POST ANCHOR P/N: 526100

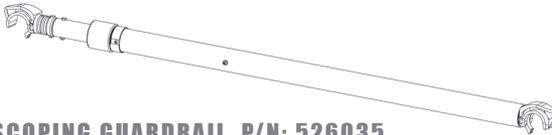
Attach along the top edges of the transformer between Center Post Anchors providing intermediate attachment points for Vertical Posts.



3

VERTICAL POST P/N: 526025

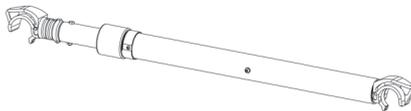
Attached to and supported by an Anchor. A tethered quick-release pin secures the Post to the Anchor. Telescoping Guardrails connect to the Posts in a “stacked” (one above the other) arrangement resting on integral support rings. Posts are constructed from non-conducting material.



4

TELESCOPING GUARDRAIL P/N: 526035

To be OSHA compliant, two Guardrails are connected between each set of adjacent Posts (at the top and at the middle) providing fall prevention to the maintainer. Each Telescoping Guardrail has a hook with a retaining latch at each end and can be continuously adjusted between 52 and 80 inches in length. A twist-to-lock friction collar locks the length. Guardrails are constructed from non-conducting material. Guardrails are connected to the Posts in a stacked (above and below) configuration.



5

COMPACT GUARDRAIL P/N: 526077

A shorter guardrail that is used for gaps outside of the range of the Telescoping Guardrail.

COMPONENT LIST/IDENTIFICATION



6

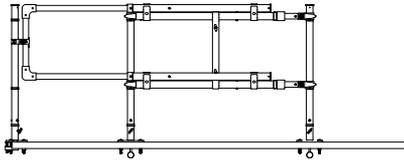
MID-RAIL CLAMP ASSY P/N: 526051

Connects the top guardrail with the mid guardrail in between Vertical Posts. This limits the vertical deflection of the Guardrails keeping them within OSHA limits.

7

TIGR JOB BOX (not shown)

Provides convenient storage of components for transport.



8

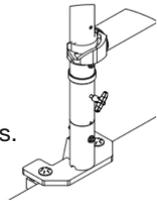
SLIDING GATE P/N: 526115

Provides adjustable-width access to the transformer with a tool-less securing provision.

9

SOCKET ADAPTER P/N: 526086

Provides an additional 4" of height at locations where obstructions are present. Note that a 3rd horizontal guardrail is required to fully meet all OSHA requirements.



10

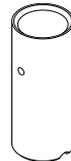
ANCHOR HARDWARE KIT (not shown) P/N: 526119

Includes all mounting hardware for a clamp kit in order to refurbish the clamps between installations.

11

WELD SOCKET P/N: 526125

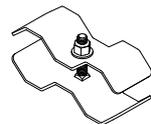
Socket that can be welded to the top surface of the transformer in place of an anchor.



12

TUBE CLAMPS P/N: 526126

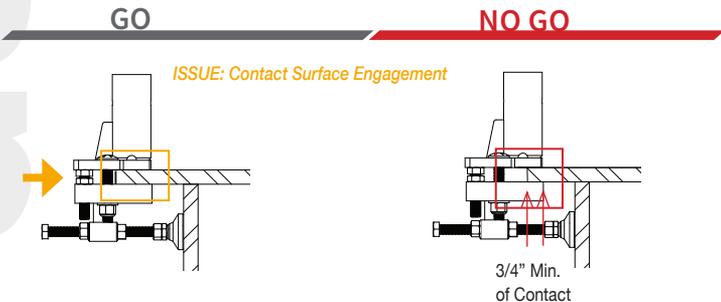
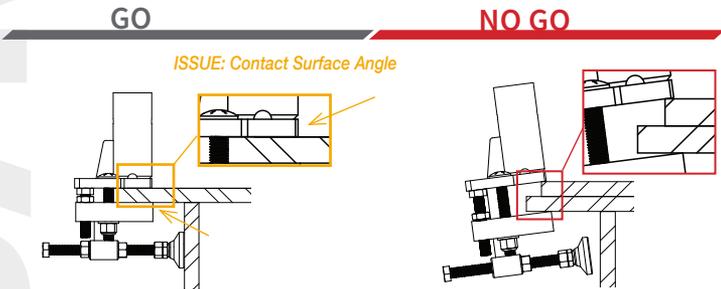
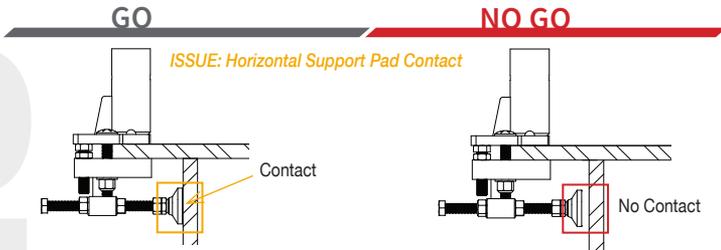
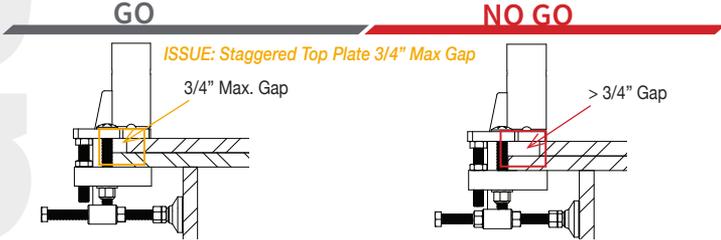
Clamps the horizontal members of the sliding gate to horizontal guardrails.



TRANSFORMER INTEGRATED GUARD RAIL



CENTER POST ANCHOR INSTALL (GO/NO GO)



SYSTEM INSTALLATION

1. CORNER POST ANCHOR INSTALLATION

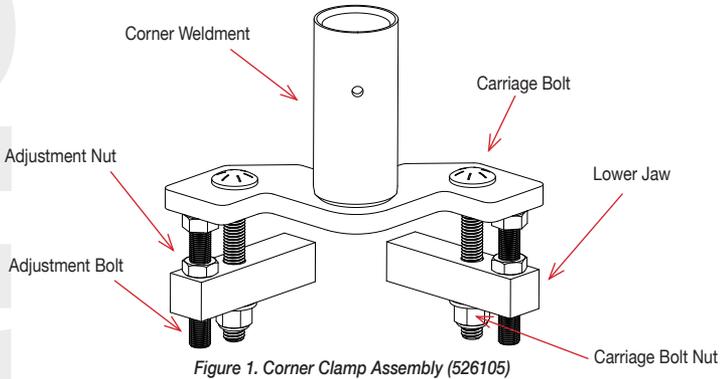


Figure 1. Corner Clamp Assembly (526105)

Install corner post anchors at each corner of the transformer.

(NOTE: Apply anti-seize compound to bolts prior to install)

- Position anchor over top plate corner with edges flush.
- Slide upper & lower anchor toward transformer as far as they will travel.
- Torque $\frac{1}{2}$ " fasteners on upper anchors to 75 ft-lb.
- Align lower anchor to upper and torque $\frac{3}{4}$ " fasteners to 75 ft-lb.

2. CENTER POST ANCHOR INSTALLATION

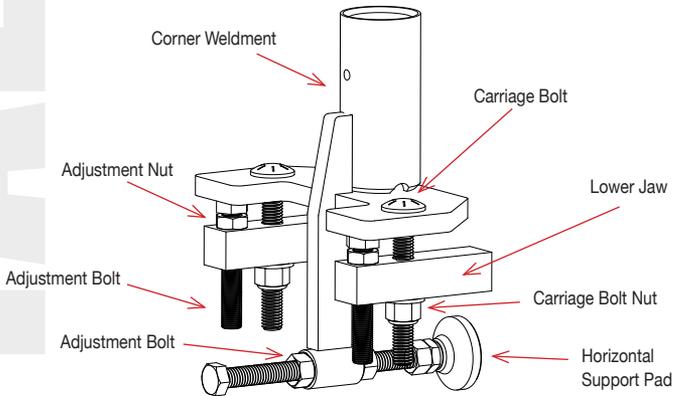
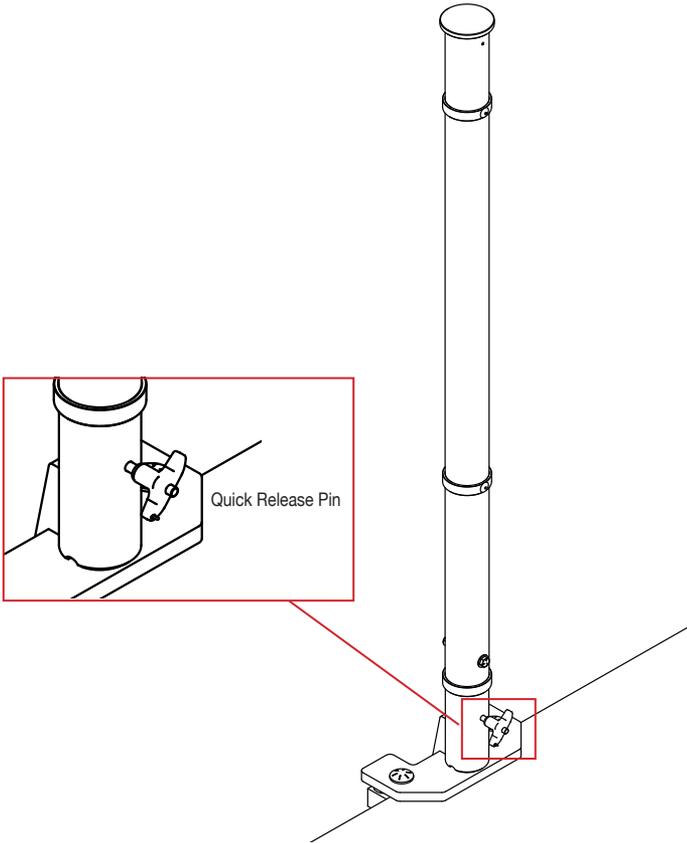


Figure 2. Center Clamp Assembly (526100)

Install center post anchors along edges of top plate between corner anchors.

- Arrange anchors approximately between 52 to 80 inches apart as required.
- Position anchor over top plate edge with edges flush.
- Slide upper & lower anchors toward transformer as far as they will travel.
- Torque $\frac{1}{2}$ " fasteners on upper clamps to 75 ft-lb.
- Align lower anchors to upper and torque $\frac{3}{4}$ " fasteners to 75 ft-lb.
- Adjust horizontal support pad tight against side wall of transformer & secure using lock nut.

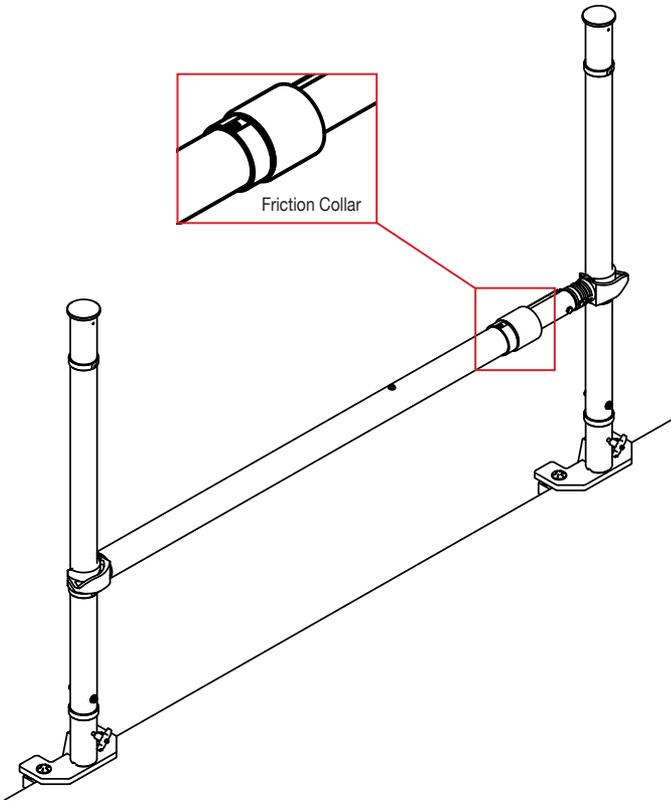
3. POST INSTALLATION



Install vertical posts.

- a. Remove quick-release pin and insert posts into anchor assembly.
- b. Install quick-release pin to lock post in place.
- c. This process is the same for installing Posts into clamp or into weld sockets or socket adapters.

4. GUARDRAIL INSTALLATION



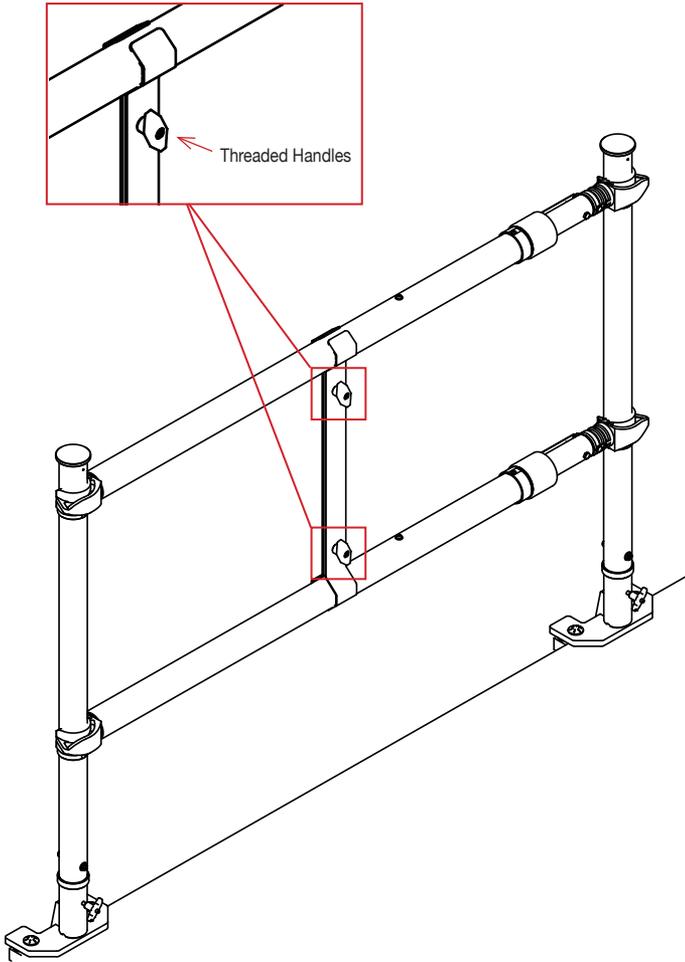
⚠ Caution:

Open side of hooks must be facing outward (away from transformer) and the retaining latch engaged around post.

Install guardrails around perimeter of transformer.

- Loosen friction lock collar allowing adjustment of guardrail length.
- Install first guardrail at mid-height between adjacent posts.
- Tighten friction lock collar.
- Install second guardrail at top of posts following same procedure as above.
- Continue guardrail installation following steps a. through d.

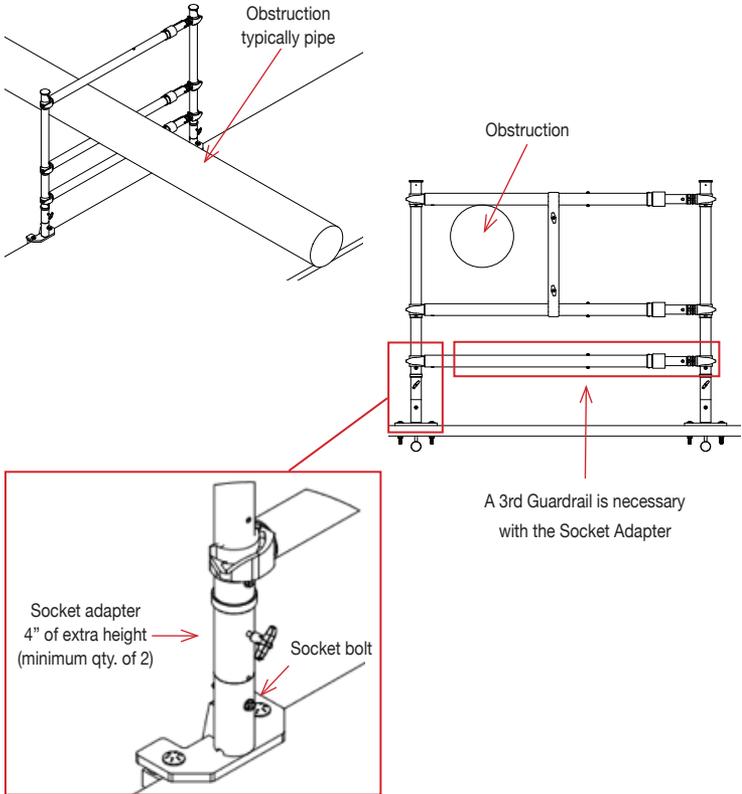
5. MIDRAIL CLAMP INSTALLATION



Install Mid-rail Clamp Assembly

- Locate clamp assembly approximately mid-way on guardrail span as shown.
- Clamp assembly must be installed on non-telescoping (outer tube) end.
- Align clamp brackets and hand tighten using threaded handles.

6. SOCKET ADAPTER INSTALLATION

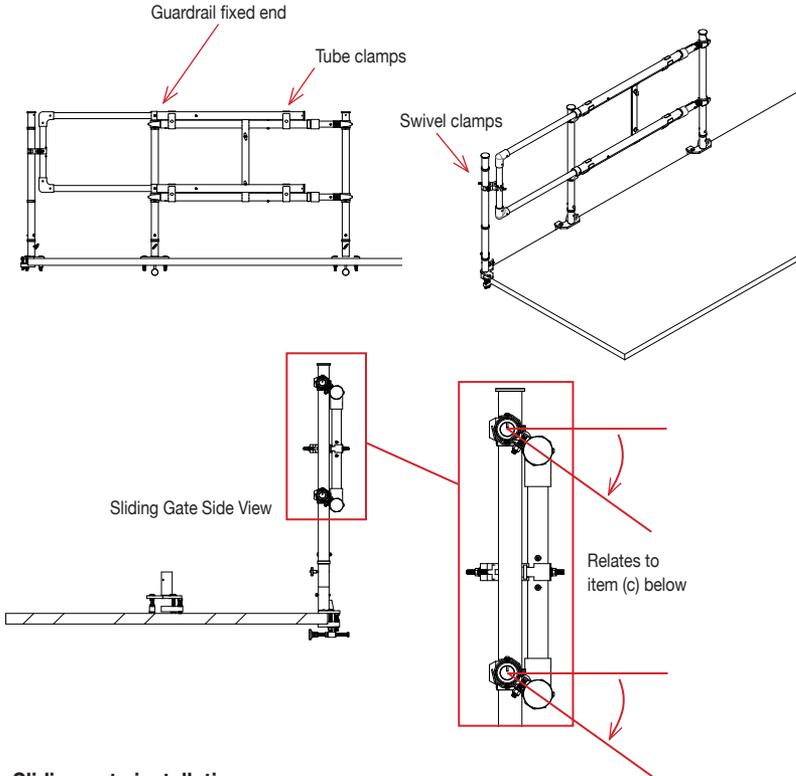


Socket adapter

(NOTE: For instances in which there is an obstruction preventing guardrail installation, a socket adapter can be utilized)

- Insert the socket adapters into the base sockets on each side of the obstruction.
- Install the included hardware through the socket adapter and the base socket and tighten to 10 – 15 ft-lb.
- Insert the vertical post into the socket adapter.
- Insert quick release pin.
- Install guardrail at base of vertical post (refer to guardrail installation).

7. SLIDING GATE INSTALLATION



Sliding gate installation.

(NOTE: Position the gate on the INSIDE perimeter of the transformer)

- When installing the sliding gate, ensure the guardrails adjacent to the gap have the fixed end the closest to the gap.
- Using the provided tube clamps, clamp the sliding gate onto the adjacent guardrails.
- Angle the gate from the support guardrails.
- Tighten the tube clamps to 25-30 ft-lbs.
- Loosen the wing-nut on the swivel clamp.
- Loosen hex nut on swivel clamp.
- Extend gate across gap to opposite vertical post.
- Clamp the swivel clamp around the vertical post and tighten wing-nuts until the split lock washer is fully flattened.
- Hand tighten the hex nut on the swivel clamp to secure gate in closed position.



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