

TECH TIPS

Service Call:

**Platform repair instructions of steel
guard rails on Terex/Genie Aerial Work
Platforms and Scissors**

Tools Needed:

See attached document for required tools

Model:

Booms/Scissors



Step 1

Follow the attached document for the proper repair of platforms for Terex/Genie Aerial Booms and Scissor lifts

If you should have any further questions, please contact the Genie Industries Service Department at 800-536-1800.

Step 2

Introduction

REV. A



Observe and Obey:

- ☑ This procedure shall be completed by a person trained and qualified on the repair of this machine.
- ☑ Immediately tag and remove from service a damaged or malfunctioning machine.
- ☑ Repair any machine damage or malfunction before operating the machine.

Before Starting the Repair:

- ☑ Prior to repair, a qualified service technician should determine if any damage to the platform structure is un-repairable and will require complete replacement. Damage to a platform can come in the form of:
 - Cracks in welds
 - Dents or damage
 - Excessive rust, corrosion or oxidation
 - Holes

The definition of a dent or damaged component is: "Any component that has been permanently deformed or results in noncompliance to the original specification."

- ☑ Be sure that all necessary tools and parts are available and ready for use.
- ☑ Read this procedure completely and adhere to the instructions. Attempting shortcuts may produce hazardous conditions.

Important:

Each repair and any related modification shall be the responsibility of the equipment owner and the person or agency performing the work. Modifications that change the design of a Genie or Terex aerial platform require prior written approval from Genie Industries

This document constitutes approval from Genie Industries for a certified welder, to perform weld repair on some damaged guard rail sections on Genie and Terex branded steel aerial work platforms provided that the following criteria is adhered to.

⚠ WARNING Failure to comply with all restrictions, instructions and warnings contained in these instructions, the Operators Manual and the applicable, or other, prevailing national standards and regulations could result in death or serious injury.

BY PROCEEDING WITH THE REPAIR AUTHORIZED HEREIN, YOU AGREE TO THE CONTENTS OF THIS LETTER AND ITS CONDITIONS. IF YOU DO NOT AGREE, DO NOT PROCEED WITH THE PROPOSED REPAIR.

If you have questions please contact the Service Department before repair procedures begin or returning the platform to service.

Welder Certification/ Qualification:

Only welding personnel qualified to the following ANSI and AWS (or equivalent) welding codes are considered qualified to execute these weld procedures.

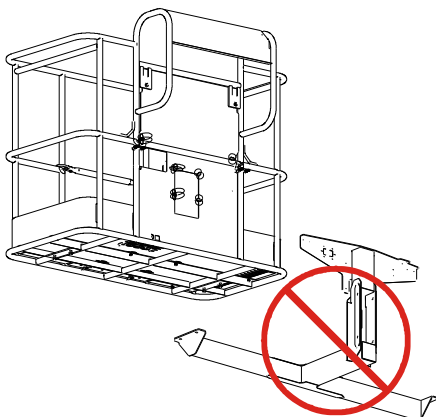
- AWS D1.1 Structural Welding Code - Steel
- AWS B2.1 Standard for Welding Procedure and Performance Qualification
- AWS D14.3 Specification for Welding Earthmoving and Construction Equipment
- AWS D14.4 Specification for Welded Joints for Machinery and Equipment
- ANSI/ASME Section IX Boiler and Pressure Vessel Code

Welding Personnel shall be qualified for the process and mode of operation selected.

Criteria for Repairing Guard Rails on Steel Platforms:

All field repair welding shall be performed by a certified welder, appointed by the equipment owner, in the basic welding positions as may be necessary.

Repairing the platform supporting structure weldment is strictly prohibited. (See illustration below)



Repairing any designated lanyard attachment points or their immediately adjoining welded structure is strictly prohibited.

Note: In the case where a lanyard attachment point or its immediately adjoining welded structure has been damaged, immediately remove the platform from service and replace entire weldment or platform.

Welding repairs of aluminum work platforms is strictly prohibited.

Welding repairs shall be completed per the most current and applicable national welding repair standards/requirements as referenced in the following national governing standards.

- Canada - CSA B354.4 (Booms) and B354.2 (Scissors, GRC), AWS D1.1, AWS D14.3 Weld Standard
- USA - ANSI A92.5 (Booms) and A92.6 (Scissors, GRC), AWS D1.1, AWS D14.3 Weld Standard
- Europe - EN 280
- Australia - AS1410.18
- Russia - Pb 10-611-03

All structural components used for platform repair shall be the same dimensions and specifications as Genie OEM tubing and at a minimum meet or exceed the following performance criteria (or equivalent).

Base Metal Specification

Description	Grade	Minimum Yield
Scissors Round Tubing	ASTM A513 1010	32,000 PSI
Scissors Square Tubing	ASTM A513	40,000 PSI
Boom Round Tubing	ASTM A513 1010	32,000 PSI



INTRODUCTION

REV. A

Welding repairs shall not cause deviation from the original platform design.

- The platform dimensions shall not change.
- The platform profile shall not change. This includes the radius of any repaired guard rail corner.
- The platform weight shall not change.
- The platform overall conformance to the applicable national self-propelled aerial work platform standard shall not change.

Always perform a pre-operation inspection, per the operators manual. Inspect the platform structure and welds carefully before returning to service.

Welding Parameters

FCAW (Flux-Cored Arc Welding)

- Supplementary Filler Metal: Not permitted
- Repair: Defects in welds shall be removed by approved mechanical or thermal methods
- Electrode Specification: AWS A5.20 (or equivalent)
- Electrode Classification: E71T-1, -9 (or equivalent)
- Electrode Diameter: 0.035 to 0.045 inch / 0.89 to 1.14mm
- Electrode Characteristics: DCEP(+) (reverse polarity)
- Shielding Gas: Argon 75%, CO2 25% (Argon content is permitted up to 92%)
- Base Metal Specification: Refer to table
- Preheat: 50°F (10°C) Minimum
- Interpass Temperature: No maximum
- Postweld Heat Treatment: none.
- Position: All

GMAW (Gas Metal Arc Welding - Metal Core)

- Supplementary Filler Metal: Not permitted
- Repair: Defects in welds shall be removed by approved mechanical or thermal methods.
- Electrode Specification: AWS A5.18 (or equivalent)
- Electrode Classification: E70C-6M (or equivalent)
- Electrode Diameter: 0.035 to 0.045 inch / 0.89 to 1.14mm
- Electrode Characteristics: DCEP(+) (reverse polarity)
- Shielding Gas: Argon 75%, CO2 25% (Argon content is permitted up to 92%)
- Base Metal Specification: Refer to table
- Preheat: 50°F (10°C) Minimum
- Interpass Temperature: No maximum
- Postweld Heat Treatment: none.
- Position: All

SMAW (Shielded Metal Arc Welding - "Stick")

- Supplementary Filler Metal: Not Permitted
- Repair: Defects in welds shall be removed by approved mechanical or thermal methods
- Electrode Specification: AWS A5.1 (or equivalent)
- Electrode Classification: E7018-H4R (or equivalent)
- Electrode Diameter: 3/32 inch / 2.4mm
- Electrode Characteristics: DCEP(+) (reverse polarity)
- Base Metal Specification: Refer to table
- Preheat: 50°F (10°C) Minimum
- Interpass Temperature: No maximum
- Postweld Heat Treatment: none.
- Position: All

Procedure

REV. A

Please refer to your national welding standards for additional welding requirements.

Preparation

1. Material temperature shall be a minimum of 50°F (10°C),

Note: Refer to your welding standard for minimum preheat and interpass temperatures based on welding process, material class and thickness.

2. Weldment shall not be exposed to high winds, drafts or moisture during repair to avoid excessive cooling rates or affecting gas shielding.
3. Butt joint repairs shall have a backup internal steel sleeve for reinforcement.

Note: Nonmetallic or nonfusing metal retainers are not permitted

4. Cornered ends shall be coped to match the profile of the intersecting structures
5. Joint edges shall be uniform and free from fins, notches, tears, cracks, and other irregularities that will adversely affect the quality or strength of the weld or member.
6. The welding surface shall also be free from moisture, loose or thick scale, slag, heavy rust or oxidation, grease, paint, or other foreign material that will adversely affect quality or strength of the weld.

Note: Initial cleaning shall be approved mechanical or chemical methods. Interpass cleaning by mechanical methods only. Peening is not permitted.

Execution

1. As mentioned in the preparation stage, clean area of paint, grease, dirt, rust, and other contaminants.

Note: Completely remove all paint down to bare metal on areas to be welded.

2. Weld up to existing welds (filling in all gaps so as not to allow water intrusion) or all around as necessary.
3. When welding all around, welding in two separate passes to avoid additional heat build-up which could lead to blow-thru.
4. De-slag and inspect quality and workmanship of repaired area per your national welding standard.

Note: Repair any welds that do not comply, repeating all applicable welding instructions.

Note: Nondestructive examination (NDE) may be required to confirm that the weld repair is compliant to your national welding standards.

5. Let cool down before painting.

PROCEDURE

REV. A

Expected Results

Genie does not require destructive testing to determine if the repair meets or exceeds the performance requirements of the applicable governing regulations and standards. However, it is important for you to understand that the repaired platform is expected to perform as it was originally intended. It is expected that the repaired platform meets or exceed the applicable governing regulations and standards as it relates to the structural performance of the entire platform.

In consideration for Genie's authorization herein, the equipment owner/user hereby agrees to indemnify and hold harmless Genie Industries Inc. against any and all liability, claims, suits, losses, costs and legal fees caused by, arising out of, or resulting from the repair of the Genie equipment as described above; any negligent act in the repair of the equipment by the owner, and the person or agency performing the work; and/or failure to comply with the criteria set forth in this letter related to the repair.

If you have any further questions regarding these instructions or need assistance, please contact the Genie Industries Service Department at one of the following telephone numbers:

United States:		800-536-1800
Canada:		425-881-1800
Europe:	UK	0044 1476 584 333
	France	0033 237 260 986
	Germany	49 4221 491 821
	Iberica	0034 935 725 380
	Italy	0039 075 941 8171
	Scandinavia	0046 3157 5154
	Other locations	0031 653 221 908
Middle East:		0097 143 391 800 or 0097 150 459 7937
Australia:		61 7 3456 4444
All other locations		001-425-881-1800