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INS.3.5.1

PLUS Heel Shroud ULH & ULHX

Installation procedure

TECHNICAL SERVICES & RELIABILITY DEPARTMENT

DISCLAIMER

Liability: To ensure the correct use and handling of the MTG products without risk, please carefully read the corresponding service instructions set out on the MTG website. MTG will not be held liable for damages, loss, injury, or death arising from incorrect use or failure to heed the provisions of this guide. Similarly, MTG will not be held liable for damages caused due to the faulty installation or handling of its products. MTG likewise declines all liability for recommendations related to the use or handling of MTG products set out in documents not expressly authorized by MTG.

1. SAFETY

The practices described in this manual can be taken as guidelines for operating safely in many conditions and in addition to the safety standards that are current and enforceable in your area or region.

Your safety and the safety of third parties is the result of putting into practice your knowledge of the correct operational procedures.

Attention, when performing the work described in these instructions, always work safely and use the personal protection elements required to minimize or avoid injury. Always wear:

HARD HAT | SAFETY GLASSES | EAR PROTECTION | STEEL TOED BOOTS | PROTECTION GLOVES

To avoid eye injury, always wear safety goggles or a protective mask when using any equipment, hammer or similar tool. When equipment is under pressure or when objects are struck, chips or other debris can be thrown out. Make sure no one gets hurt by the debris that is fired before applying pressure or hitting an object. Wear eye protection that complies with ANSI Z87.1 and OSHA standards. Also wear hearing protection and gloves.

Lifting a heavy object can cause serious or fatal injury. DO NOT exceed the maximum rated capacity of lifting and positioning devices: Stay away from the area under a suspended load.

Make sure that the chain is not damaged and that the load is always balanced.

LIFTING LUG

2. WELDING

Following is a quick reference on consumables that can be used to weld MTG products. For a complete reference on welding procedures, refer to the document entitled "General welding recommendations".

WELDING UNALLOYED FILLER CONSUMABLES

PROCESS	EN CLASS	AWS CLASS
SMAW	EN ISO 2560-S E42X	E70X ACCORDING TO A5.1 OR EQUIVALENT UNDER A5.5
GMAW	EN ISO 14341-A G42X	E70C-X ACCORDING TO A5.18 OR EQUIVALENT UNDER A5.28
	EN ISO 14341-A G46X	E70S-X ACCORDING TO A5.18 OR EQUIVALENT UNDER A5.28
FCAW	EN ISO 16834-A T42X	E7XT-X ACCORDING TO A5.20 OR EQUIVALENT UNDER A5.29

WELDING AUSTENITIC STAINLESS FILLER CONSUMABLES

PROCESS	AWS CLASS
SMAW	E307-X ACCORDING TO A5.4
GMAW	ER307T-X ACCORDING TO A5.22
	ER307 ACCORDING TO A5.9
FCAW	307-X ACCORDING TO A5.22

NOTE: "X" MAY STAND FOR ONE OR SEVERAL CHARACTERS

3. IMPORTANT

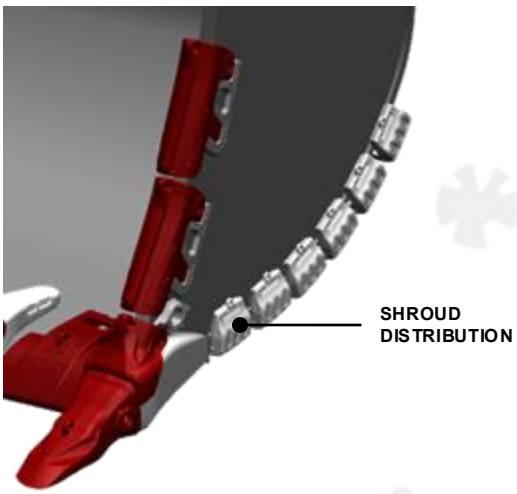
Read the full document prior to start any operation since there may be some steps which requires previous verifications/operations.

These instructions are a generic procedure for all MTG heel shrouds, so the images contained in this document may differ from reality due to the different sizes.

4. INSTALLATION PROCEDURE

4.1 LOCATION AND DISTRIBUTION OF SHROUDS

4.1.1 Prior to start the welding of the heel shrouds, it is necessary to locate and distribute the number of shrouds according to preferences or specific zones intended to be protected.



4.2 SHROUD WELDING

4.2.1 All mill scale, rust, paint, oil grease, arc air slag or moisture shall be removed from the surfaces within 12.5 mm / 0.5 in. of any weld location. The surfaces must be sufficiently clean so that there is nothing that might contain moisture or hydrocarbons, which break down in the heat of the arc producing hydrogen, which can be absorbed in the weld and cause cracks. Removal may be accomplished by shot blasting, sand blasting, grinding or machining. Any porosity, burned-in sand or other defects visible on the weld prep surfaces must be removed by grinding or arc air gouging.

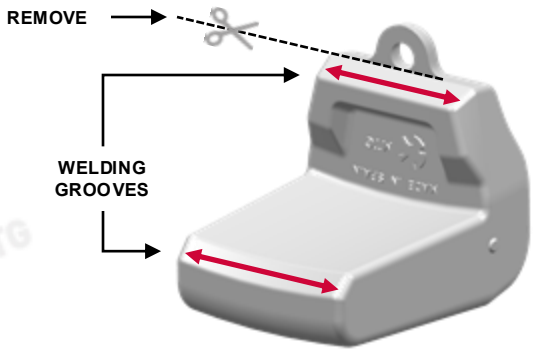
4.2.2 Preheat shroud and bucket to a temperature between 175ºC and 200ºC (347ºF and 392ºF) within an offset of 100mm / 4in all around according to what is exposed on the document entitled “General welding recommendations”. Do not overpass 250ºC / 482ºF.

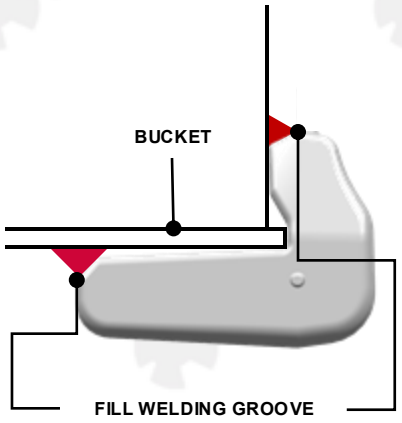
4.2.3 Once the preheating temperature has been achieved, proceed with the shroud tack welding to ensure its correct position.

Whilst performing this operation, the contact surfaces of the shroud should be contacting the bucket at all time.

4.2.4 Proceed with the welding of the shroud. Ensure that the welding technique complies with what is exposed in the document entitled: "General welding recommendations".

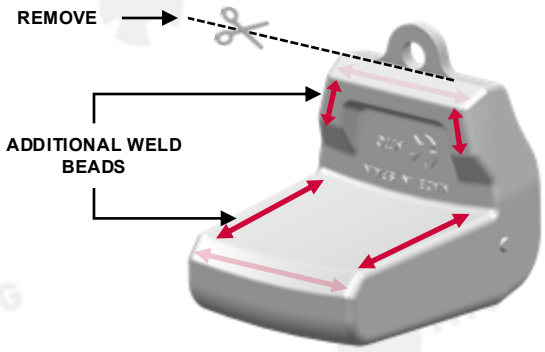
The shroud must be welded by completing the welding grooves indicated in the images below. If necessary, remove the lifting lug of the shroud.

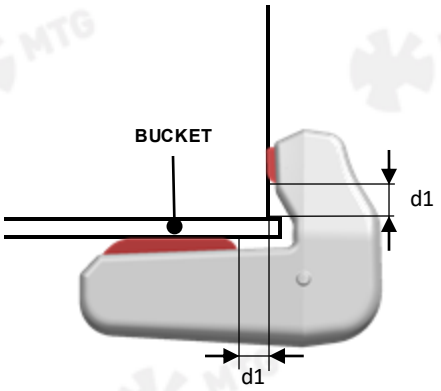




NOTE: Additional welding may be added to sides (as shown in the picture below).

All these welds must **finish with a minimum gap "d1"** to the outside edges of the bucket or the **existing wear liner** (as indicated the picture below).



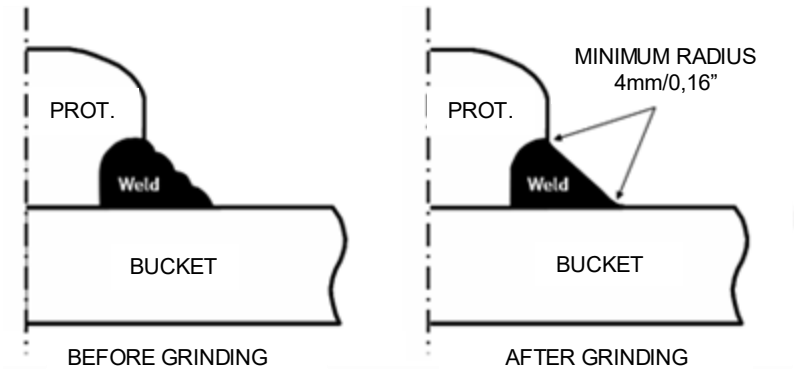


	d1	
SIZE	[MM]	[INCHES]
≤ 130	10 – 12.5	3/8 – 1/2
≥ 300	20 - 25	13/16 - 1

4.2.5 All welds both inside and outside must be ground.

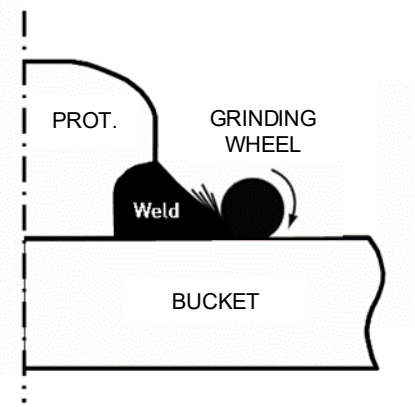
After grinding, the surface must be free of rough areas and undulations associated with the arrangement of the welding beads.

Grinding shall produce a smooth surface free of roughness and unevenness associated with the weld beads. The toes of the welds shall merge smoothly with the bucket and the protector with a minimum radius of 4mm - 5/32 in.



4.2.6 Grinding shall be done using high speed electric or pneumatic grinders with grinding wheels no larger than 50mm - 2 in. in diameter. **ANGLE HEAD OR DISK GRINDERS ARE NOT ALLOWED FOR THIS WORK**.

Grinding shall be done with the perimeter of the wheel and not the face. The grinding direction must be perpendicular to the toes of the welds as it is described in the following illustrations:



For grinding of weld ends it is recommended to use conical grinding wheels. To ensure a good finish, the refining grain should not exceed 24 grit.

4.2.7 After completion of welding, all welds shall be subjected to visual and magnetic particle inspection. Any detected welding crack must be cleaned and repaired.

4.2.8 Repeat the sequence for all the rest of heel shrouds.

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Service Instructions

The latest welding recommendations and assembly / disassembly instructions can be found online:
www.mtgcorp.com/manuals

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