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INS.3.5.5

PLUS Wear Runners (WRF)

Installation procedure

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 are some steps which requires previous verifications/operations.

These instructions are a generic procedure for all MTG wear runners (WRF), so the images contained in this document may differ from reality due to the different sizes.

4. INITIAL CONSIDERATIONS

4.1 CONSIDERATIONS REGARDING THE LOCATION OF THE PROTECTIVE DEVICES

4.1.1 Wear runners can be installed in any area of the bucket subject to abrasion or high-impact, except in the following locations:

- Areas with a curvature that prevents the protector from properly adapting to the surface.

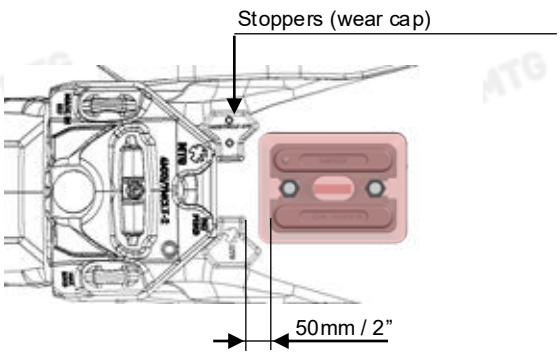
- Near the edges when it is not possible to maintain a minimum distance of 25 mm from the edge to the weld.

- On very thin plates, in which the welds may deform the plate or even penetrate it.

4.1.2 The weldable bases of the wear runners must be installed in relation to the other GET components, maintaining the distances indicated in the following images.

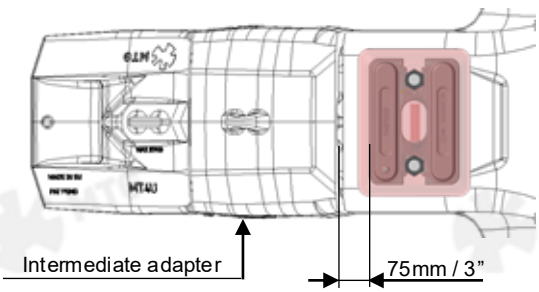
NOTE: The wear runner appears slightly transparent (burgundy color) in the images in order to show the final assembly result.

- A minimum spacing of 50 mm (2”) from adjacent protectors.

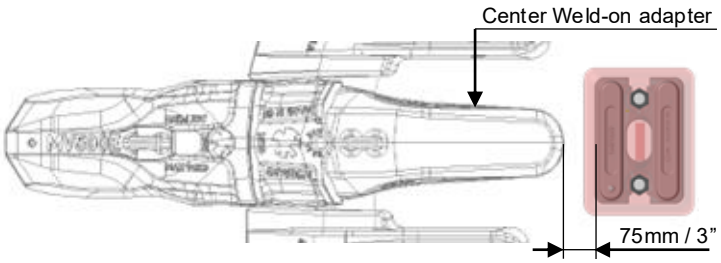


The resulting clearance between the wear runner and the other protectors will be 25 mm / 1”.

- From weld-on adapters or intermediate adapters: 75 mm (3”).

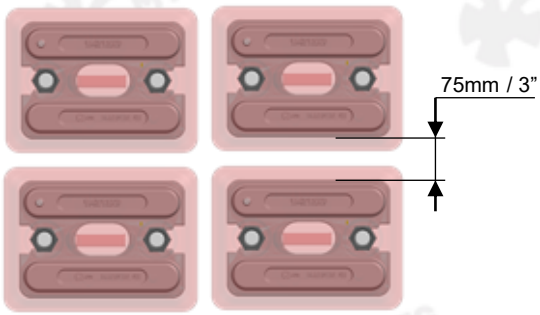


The resulting clearance between the wear runner and the intermediate adapters will be 50 mm / 2“.



The resulting clearance between the wear runner and the welded adapters will be 50mm / 2”

- From other wear runners: 75mm (3”)



The resulting clearance between the wear runners will be 25mm / 1”

4.2 GENERAL CONSIDERATIONS

The following statements should be taken into consideration:

- Clean the surfaces adjacent to the welding areas, both on the adapter and on the protector, within a radius of 12.5mm / 0.5 in. Remove paint, grease, rust and other elements that can cause hydrogen. Cleaning can be done using a wire brush, light grinding, shot blasting or machining. The presence of pores, sand or other visible defects on the welding surfaces must be removed by grinding.

- Preheat the area to be welded to a temperature between 175ºC to 200ºC (347ºF to 392ºF) within a 100mm (4”) radius around the welding zone, according to what is exposed on the document titled “General welding recommendations”. Do not exceed 250°C (480°F).

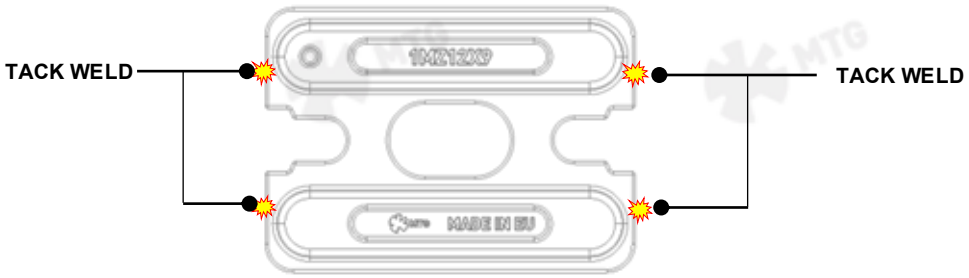
NOTE: Prior to performing any welding operation, the document titled “GEN.3.3.1 General Welding Recommendations” must be fully reviewed.

5. WELD-ON BASE INSTALLATION PROCEDURE

5.1 Place the weld-on in the desired position, ensuring that the requirements mentioned in the previous section are complied.

5.2 Preheat the area to be welded, including the bucket and the weld-on base of the wear runner, to a temperature between 175 °C and 200 °C (347 °F and 392 °F) within a 100 mm (4 ") radius around the welding zone, according to the document titled "GEN.3.3.1 General Welding Recommendations.". Do not exceed 250 °C (482 °F).

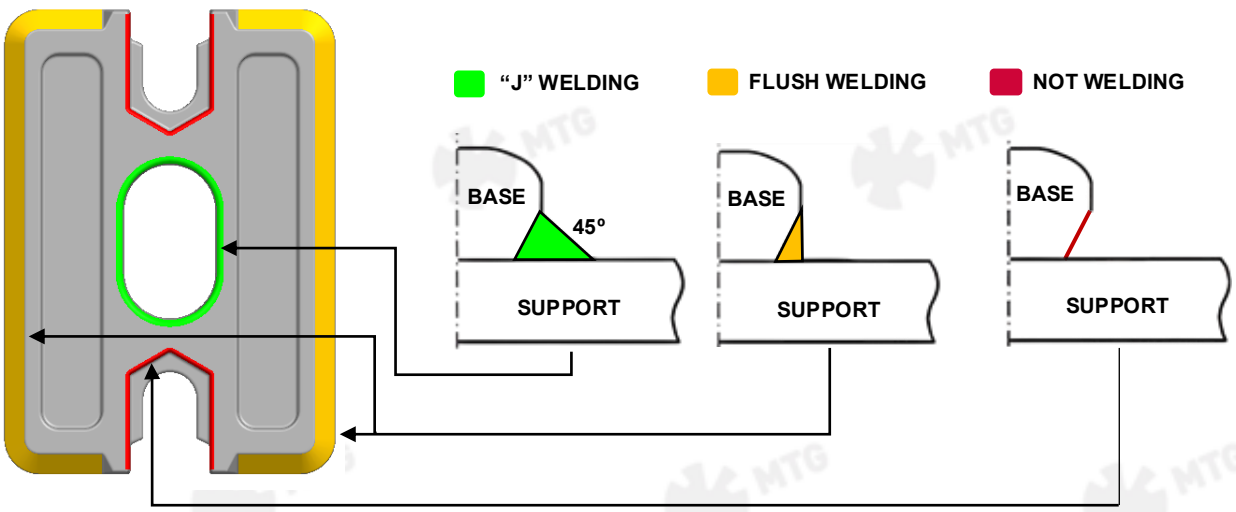
Tack the base as shown in the image, ensuring its proper positioning.



TOP VIEW OF THE BASE

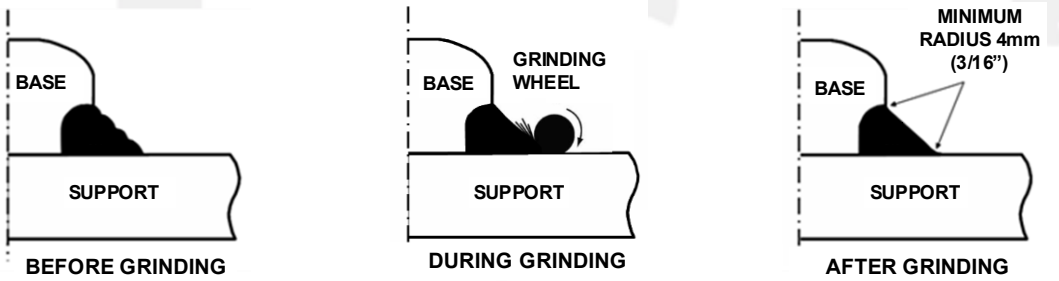
5.3 Check that the preheat temperature is still within the recommended range.

Proceed with the welding of the weld-on base in the indicated areas, filling the welding groove according to the color code indicated in the following figure. Do not weld outside the marked areas or exceed 250ºC (482ºF) during the welding process.



BOTTOM VIEW OF THE BASE

5.4 Once the welding is finished, it must be ground. 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 lip and the base with a minimum radius of 4mm - 5/32 in.



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 must be carried out with the outer part of the disc and not with the central part of it. The grinding direction must be perpendicular to the ends of the weld beads as shown in the figure.

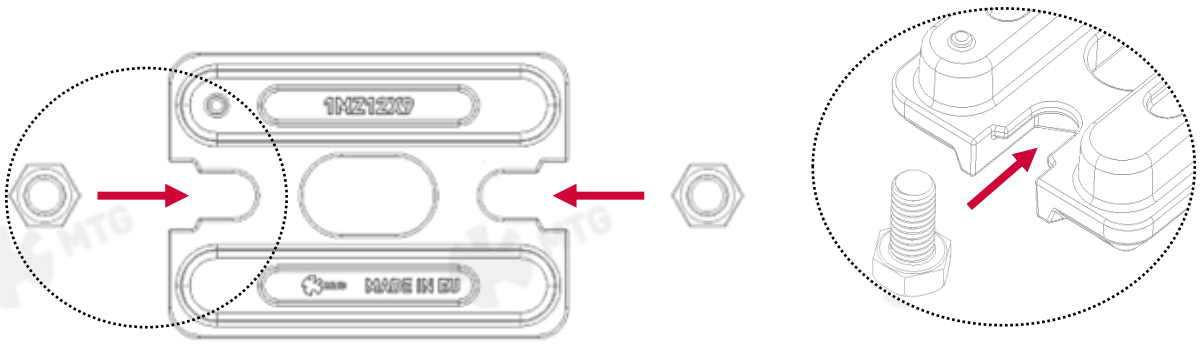
Grinding the radio at the toes of the welds is facilitated using cone-shaped grinding wheels. For final grinding, the abrasive may be no coarser than 24 Grit.

5.5 Once the welding process has been finished proceed with the welding inspection according what is stated in the document entitled: GENERAL WELDING RECOMMENDATIONS.

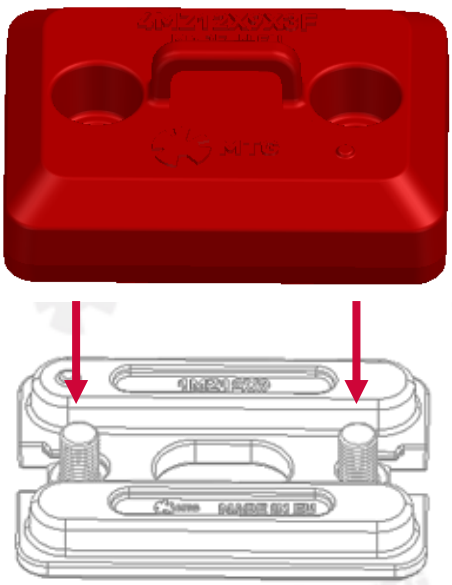
In case of finding any crack indication, proceed with the crack reparation by grinding or gouging the area and filling by welding. Be aware that prior to any operation in which heat is involved a pre-heating to the recommended temperatures is mandatory..

6. WEAR RUNNER INSTALLATION PROCEDURE.

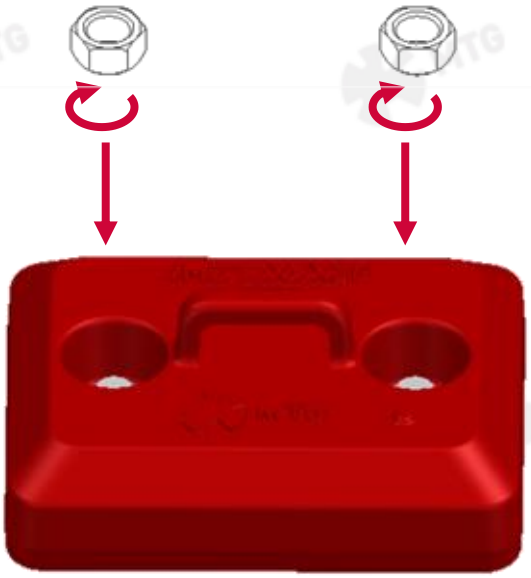
6.1 Insert the fastening bolts on both sides of the welded base, into the slots provided. The threaded ends must face outward.



6.2 Place the guard in its position by sliding it onto the fastening bolts.



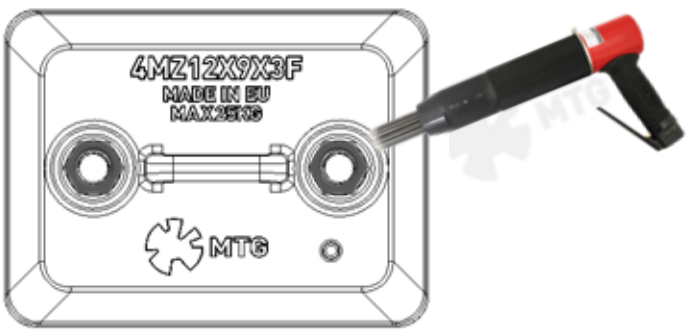
6.3 Insert the nuts onto the fastening bolts and tighten them using an impact socket tool to a torque of 410 Nm (302 lbf·ft).

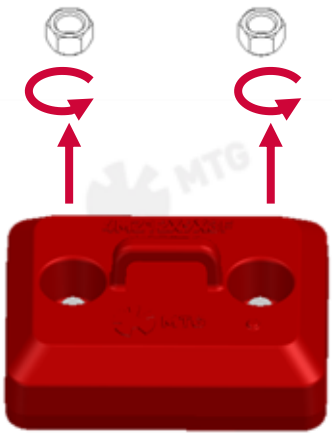


7. WEAR RUNNER REMOVAL PROCEDURE

7.1 Clean fines adhered in the nut housings using a needle gun.

Fully unscrew both nuts. An electric or pneumatic impact gun may be used to facilitate the operation.





7.1 Remove the shroud from its location. If necessary, weld a lifting eye to the guard and use a lifting crane for removal.

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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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