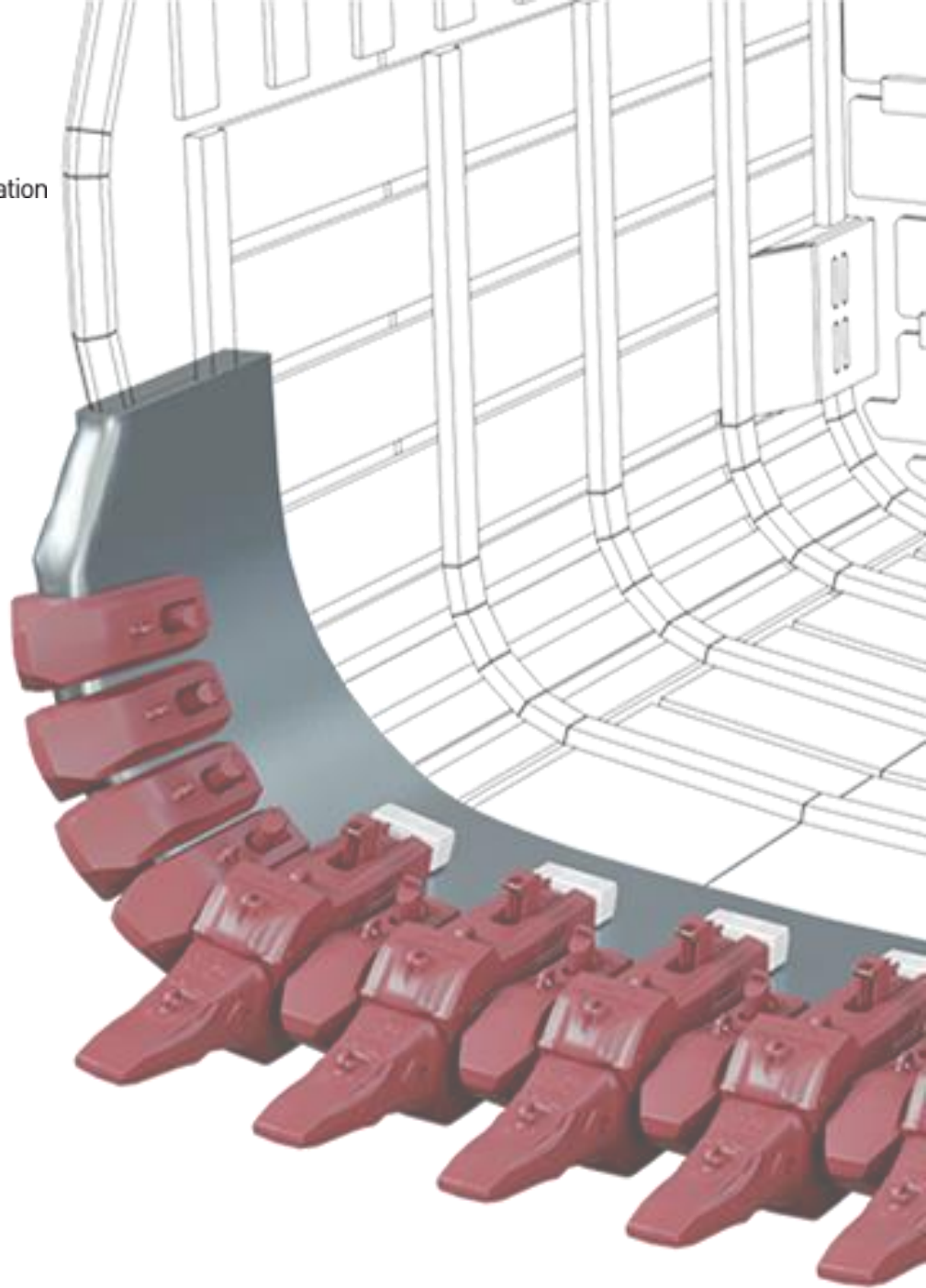




MTG

No limits innovation



INS.3.6.1

Wide Radius WR Lip Shroud + PROMET III-Locking

Installation procedure

DISCLAIMER

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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:



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.



LIFTING LUG

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

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 |
| | EN ISO 14341-A G42X | E70C-X ACCORDING TO A5.18 OR EQUIVALENT UNDER A5.28 |
| GMAW | EN ISO 14341-A G46X | E70S-X ACCORDING TO A5.18 OR EQUIVALENT UNDER A5.28 |
| | EN ISO 16834-A T42X | E7XT-X ACCORDING TO A5.20 OR EQUIVALENT UNDER A5.29 |
| FCAW | | |

WELDING AUSTENITIC STAINLESS FILLER CONSUMABLES

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

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

3. IMPORTANT

Important aspects about the operation of the ProMET 3 locking



Omission of the information contained herein may lead to unexpected failures in the product.

Pay special attention to the correct positioning of the weld-on base for the proper functioning of the system, once the mechanical block has been placed and before tack welding, the weld-on base must be tightened, as shown in the instructions. If this is not the case, the protector remains loose, which may cause unexpected failures.

Do not apply a tightening torque on the bolt higher than what is indicated in these instructions.

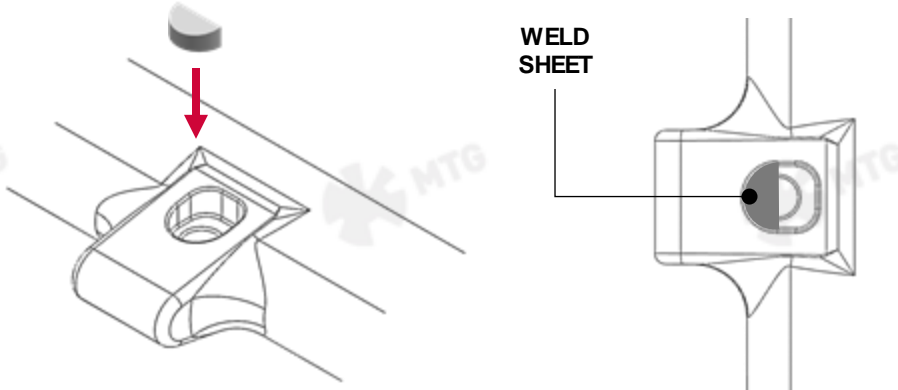
The installation of MTG products for cable shovels may require reconstruction with welding and/or grinding of the existing lip to return it to its original geometry and thus guarantee the correct tightening and performance. To perform the reconstruction/recalibration of lips, it is mandatory to follow the MTG repair instructions for rope shovels which describe the proper procedures for recovering the lip geometry by using MTG gauges. Please contact technical.services@mtg.es for further information.

These instructions are valid for the entire range of WR lip shrouds regardless their width and/or shape.

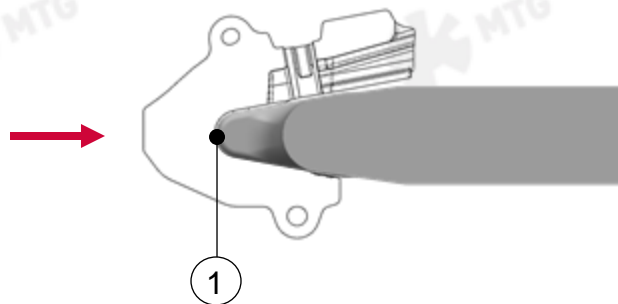
4. WELD-ON BASE INSTALLATION PROCEDURE

Before positioning the weld-on base, it is imperative that the station of the shroud on the lip has been rebuilt by using the reconstruction gauge. For the correct behavior of the shrouds during work, a correct installation of the weld-on base is a MUST. The following describes how to perform this task correctly.

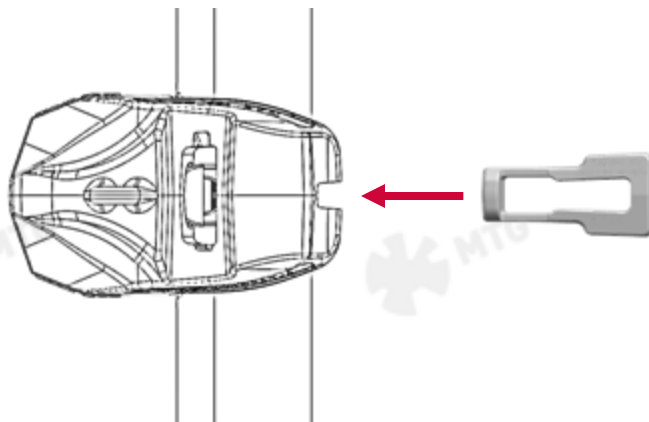
- 4.1** Make some portions of sheet metal in the shape of a half moon and weld them in the front part of the nose hole for the shroud in order to create a flat support surface to be able to weld the weld-on base for the shrouds correctly.



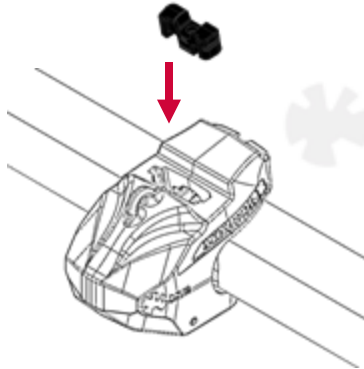
- 4.2** Place the shroud in the desired station with the help of a crane, ensuring frontal contact on the nose of the lip [1].



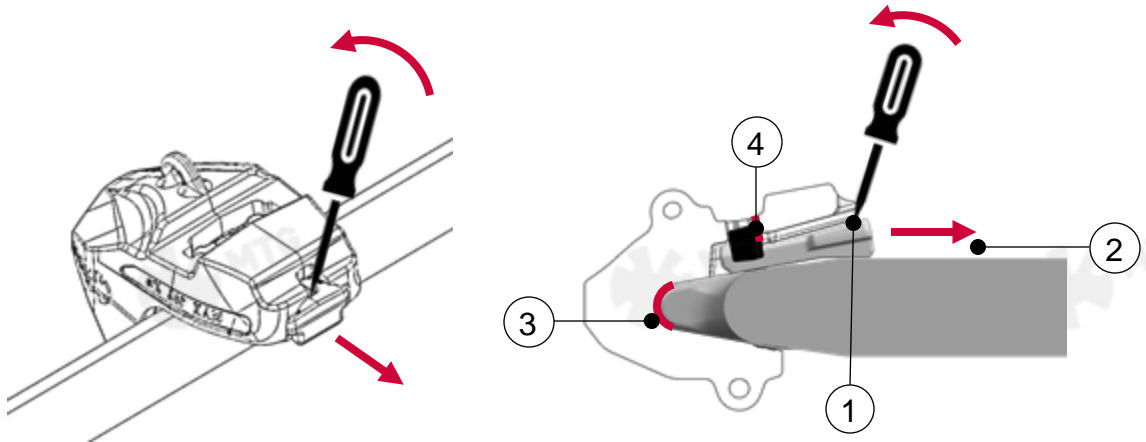
- 4.3** Insert the weld-on base from the back, as shown in the image. Note: Do not weld the base at this stage yet.



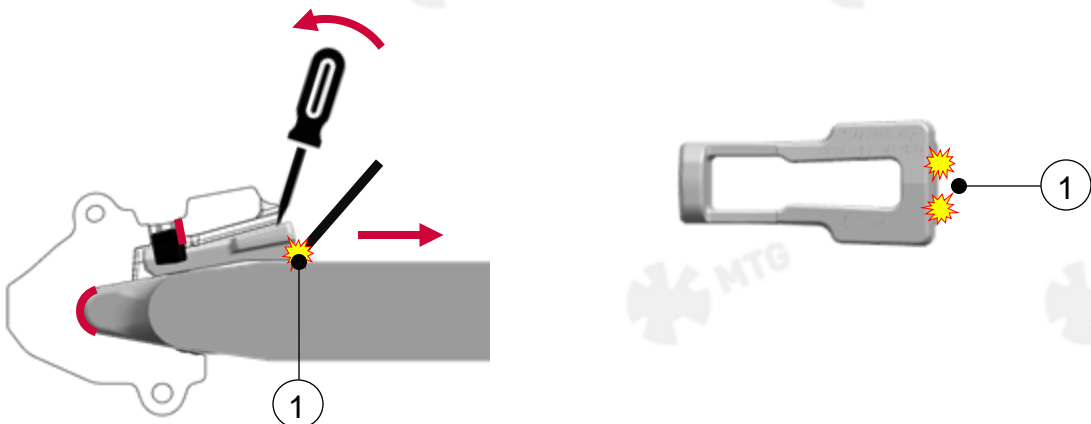
- 4.4** Insert the mechanical block into its housing, making sure that the word FRONT, engraved on the block, is facing the outside of the dipper and that the weld-on base is trapped between the shroud and the mechanical block.



- 4.5** Insert a pry bar or similar between the shroud and the weld-on base at [1], then pull the base to the back of the lip/dipper [2]. Make sure, finally, that while pulling the weld-on base back, the shroud is in contact with the front surface of the lip at [3] and the mechanical block at [4].



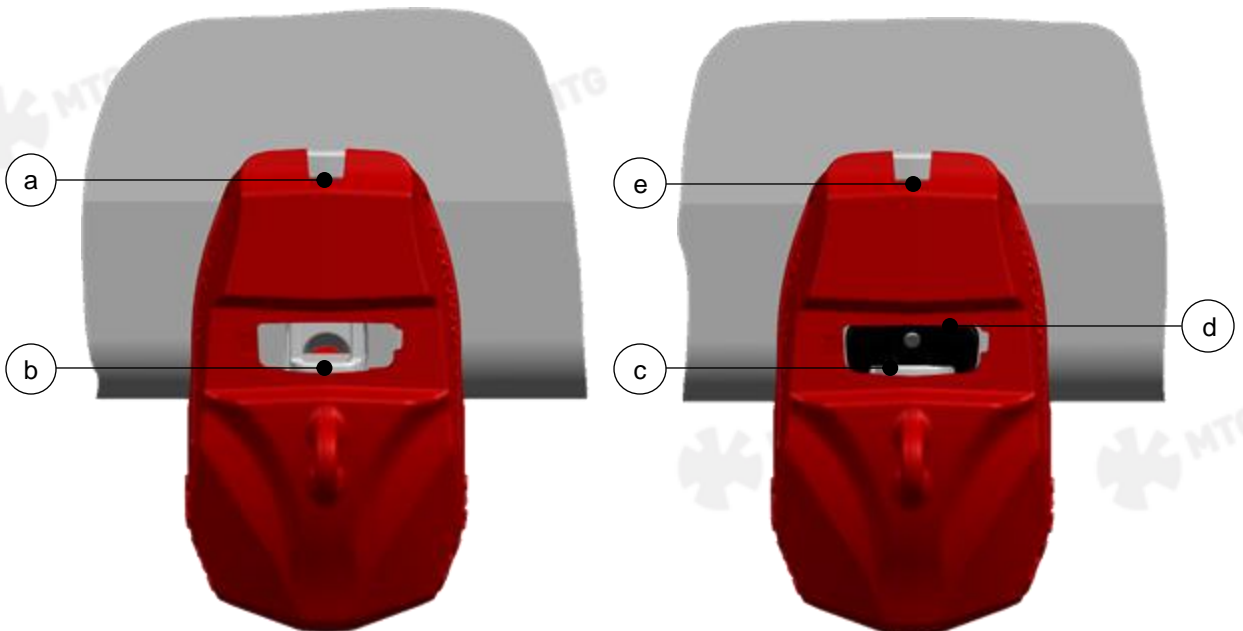
- 4.6** While pulling the weld-on base back with the pry bar, apply two tack welds [1] to the back of the weld-on base (grooves on the outer visible part of the base). **Important:** Before any welding operation, the weld-on base and the lip must be preheated to a temperature between 175°C and 200°C (347°F and 392°F) in an area of 100mm (4") around the area to be welded. The lip and base must also comply with the assembly conditions as described in the document entitled: "General welding recommendations".



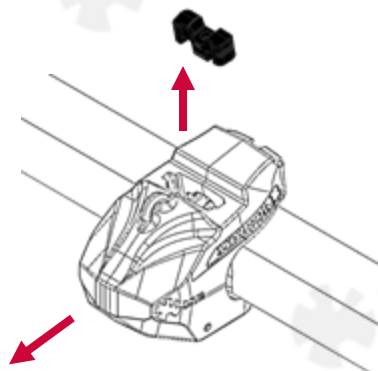
4.7 Prior to complete the welding of the weld-on base, the proper position of the base must be verified.

The following points should be checked:

- a) In a proper assembly, there should be a gap between the shroud and the weld-on base flange.
- b) In a correct assembly, the front of the weld-on base should be visible.
- c) In a correct assembly, there must be a space between the protector and the mechanical block.
- d) In a correct assembly, there should be no space between the protector and the mechanical block.
- e) In a correct assembly, the space between the shroud and the flange of the weld-on base is the same in both cases, the assembly with the base and with all the components.



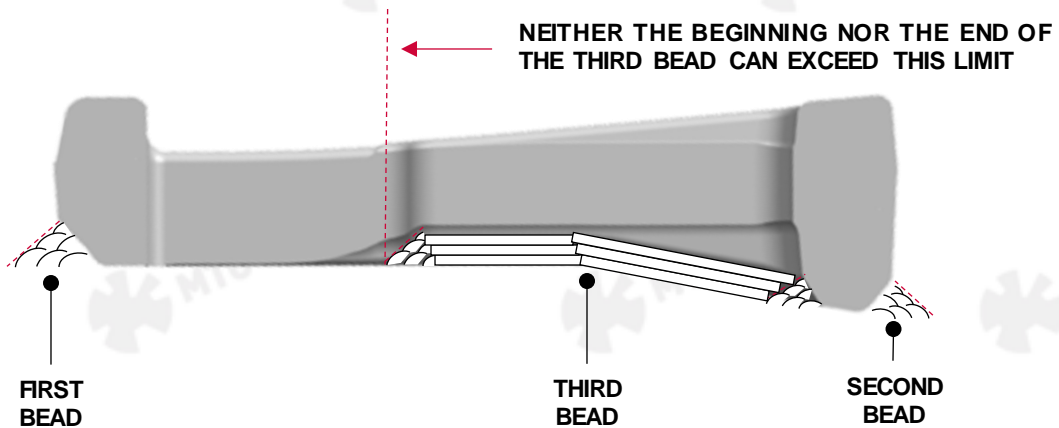
4.8 Remove the mechanical block and shroud.



4.9 Verify that the preheating temperatures are still within specs and reheat again if necessary. Then, carry out all the welding passes following the sequence shown in the figure. Make sure that the bottom surface of the weld-on base keeps contact with the lip throughout the entire welding process.



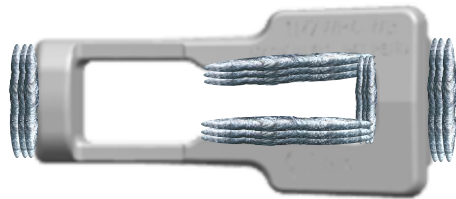
4.10 Welding beads must be continuous and must not exceed 3,2mm (1/8") above the weld preparation chamfer.



4.11 All indicated welding grooves must be completely filled. Lack of welding can cause product failure.



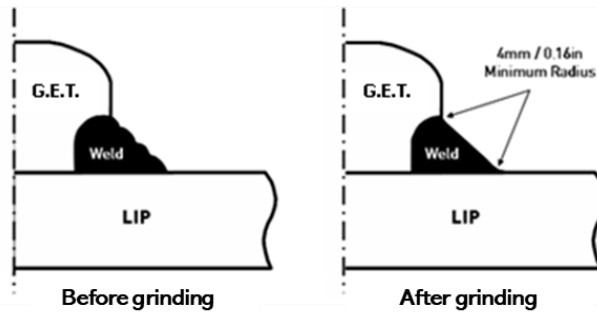
INSUFFICIENT WELDING



CORRECT WELDING

4.12 Make sure that the welding technique complies with what is stated in the document entitled: "General welding recommendations".

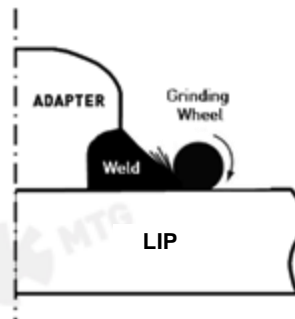
4.13 Grinding shall produce a smooth surface free of roughness and unevenness associated with the weld beads. The toes of the welds shall merge smoothly with the lip and the adapter with a minimum radius of 4mm - 5/32 in.



4.14 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 in the illustration.

Proper Grinding Directions:

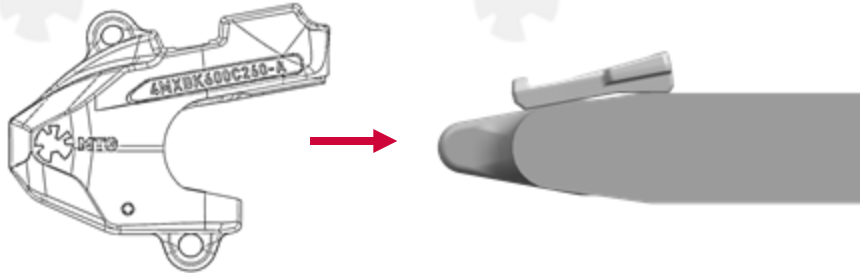


Grinding the radio at the toes of the welds is facilitated using cone-shaped grinding wheels. For final grinding, the abrasive may be no coarser than 24 Grit.

4.15 After completion of welding, all welds shall be subjected to visual and magnetic particle inspection, as described in the document "General welding recommendations". Any detected welding crack must be cleaned and repaired.

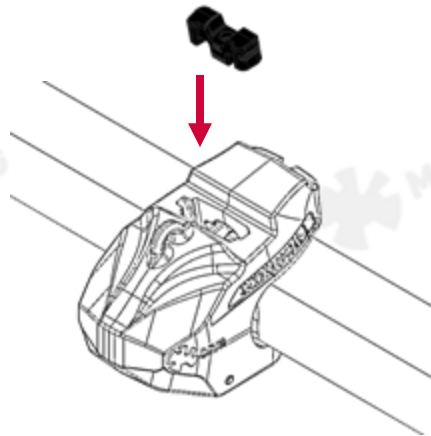
5. SHROUD INSTALLATION PROCEDURE

- 5.1** Insert the shroud into its position through the weld-on base by sliding it with the help of the lifting lug and a crane.



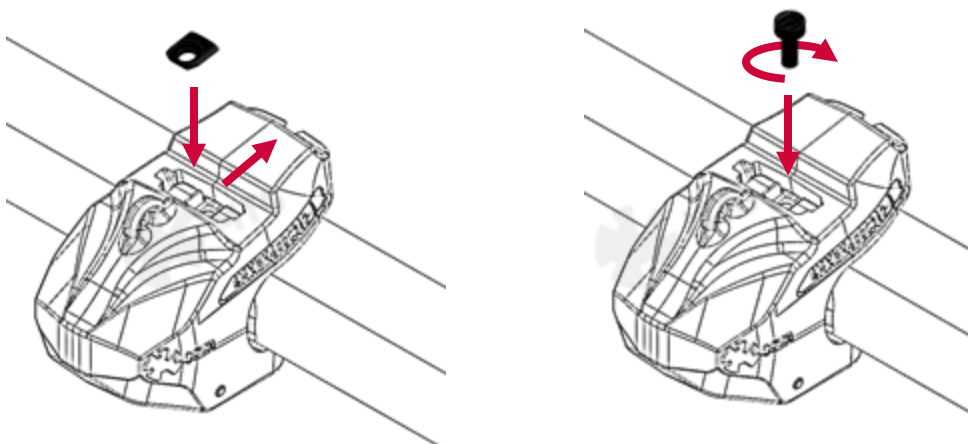
- 5.2** Insert the mechanical block into its location between the weld-on base and the shroud. At this stage, the protector cannot be moved out of position.

NOTE: Make sure the word FRONT, engraved on the block, is facing away from the dipper.



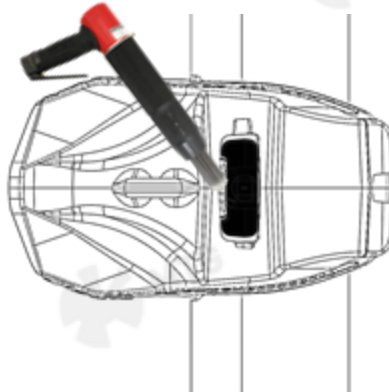
- 5.3** Insert the locking plate into its position on the mechanical block and slide it towards the inside of the dipper until its hole and the one of the mechanical block are concentric. Then insert the bolt and tighten it to a torque of 200 Nm (147 lb ft).

Finally, insert the plug into the bolt's head to prevent it from dirt.

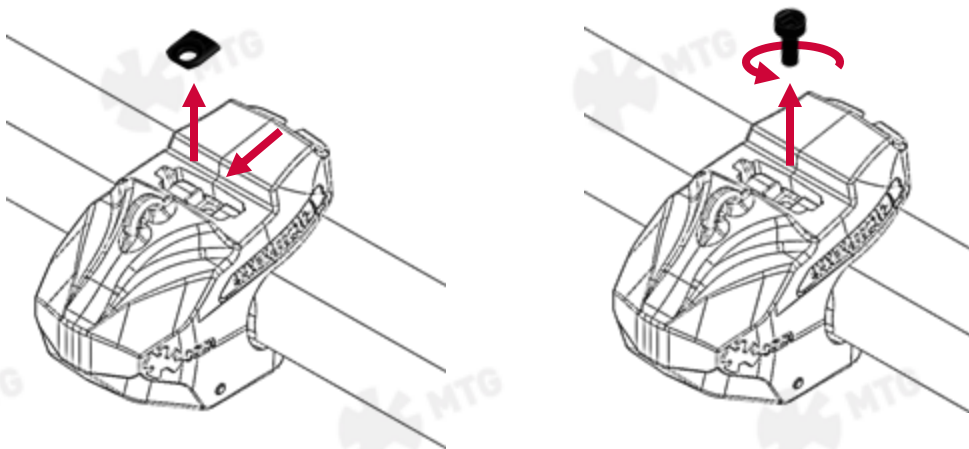


6. SHROUD REMOVAL PROCEDURE

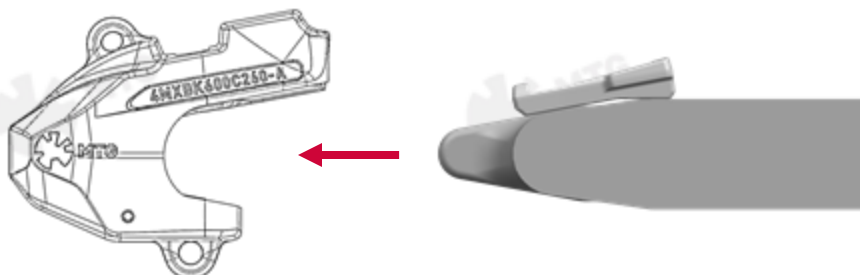
- 6.1** Clean the fines stuck behind the locking plate by using a needle gun. Then, remove the plug from the bolt's head and unscrew the bolt until it is completely disassembled. An electric or pneumatic impact gun can make the operation easier.



- 6.2** Slide the locking plate back and remove it. Additional cleaning may be necessary to ease the operation. Then loosen the bolt and remove it.



- 6.3** Weld a lifting lug to the shroud and use it to remove the shroud from the lip with the help of a crane.





Service Instructions

The latest welding recommendations and assembly / disassembly instructions can be found online:

www.mtgcorp.com/manuals

Please contact Technical Services in case of questions:

technical.services@mtg.es



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