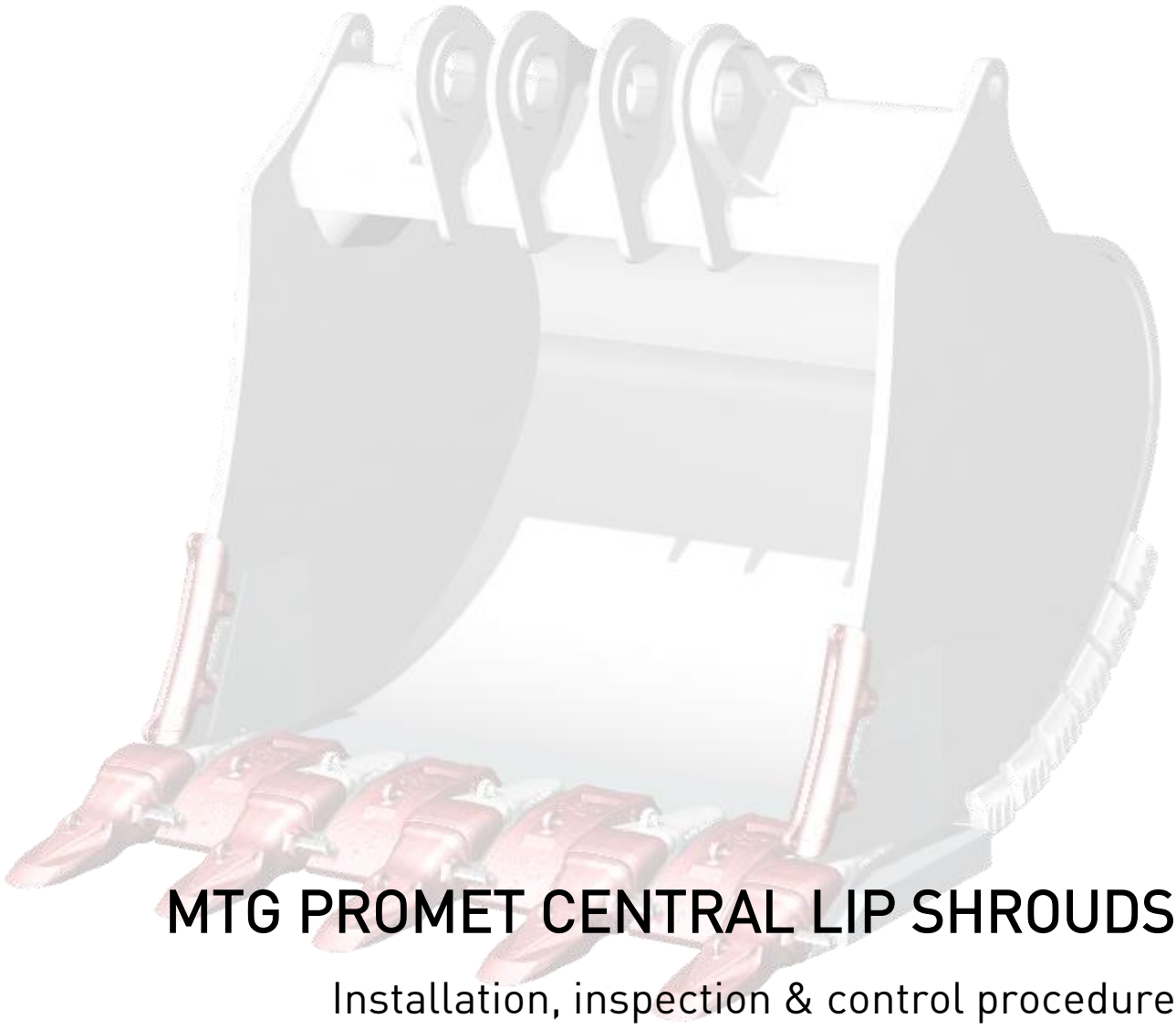
MTG

No limits innovation



MTG PROMET CENTRAL LIP SHROUDS

Installation, inspection & control procedure

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
- Protection globes
- Steel toed boots
- Ear protection
- Safety glasses

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 balanced at all times. DO NOT lift an object by connecting only one end to the load chain; Connect both ends to lifting points, if available.

When handling heavy loads (+ 25 kg), use a sling truck according to ISO 7531:1987.

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 & LOW ALLOYED FILLER CONSUMABLES		
Process	**EN Class**	**AWS Class**
SMAW	EN ISO 2560-A E42X	E70X according to A5.1 or equivalent under A5.5
GMAW	EN ISO 14341-A G42X EN ISO 14341-A G46X	E70C-X according to A5.18 or equivalent under A5.28
		ER70S-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	E307T-X according to A5.22
	ER307 according to A5.9
FCAW	307X according to A5.22

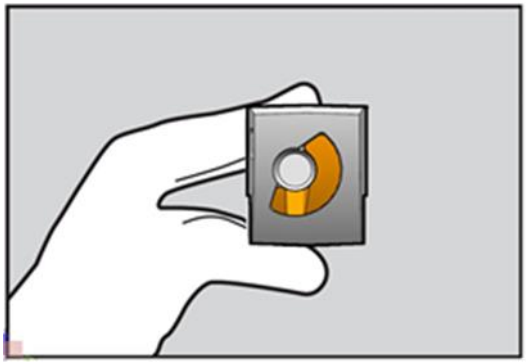
Note that "X" may stand for one or several characters.

Installation Procedure

Prior to start the welding process, the correct emplacement of the base shall be ensured following the steps hereafter described:

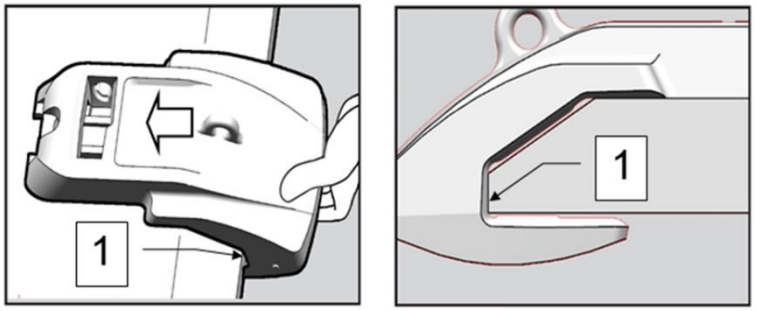
STEP 1:

Place the retainer inside the mechanical block.



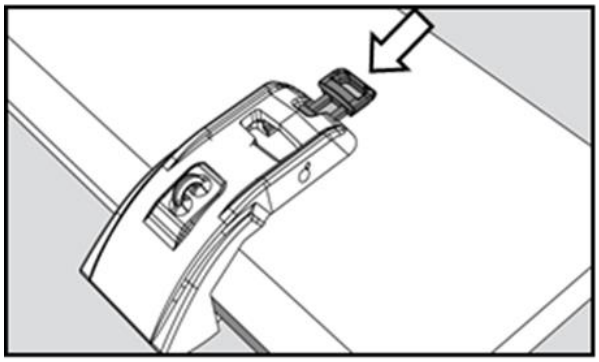
STEP 2:

Place the shroud on the blade on its desirable location. The shroud shall be in contact with the frontal surface of the blade (1).



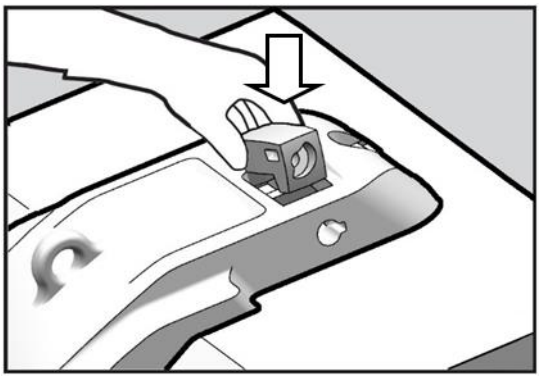
STEP 3:

Place the weldable base on the upper blade and move it towards its position on the shroud allocation. **Note**: Do not weld the base on this stage yet.



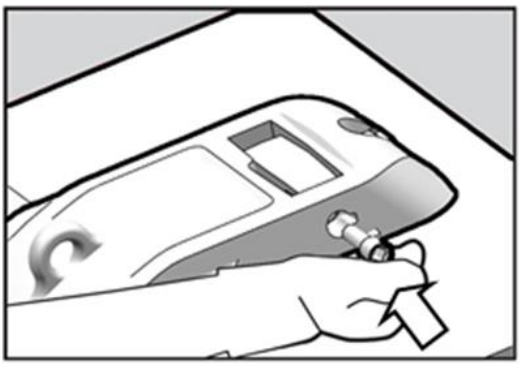
STEP 4:

Position the mechanical block with its correspondent retainer on the available allocation in the shroud.



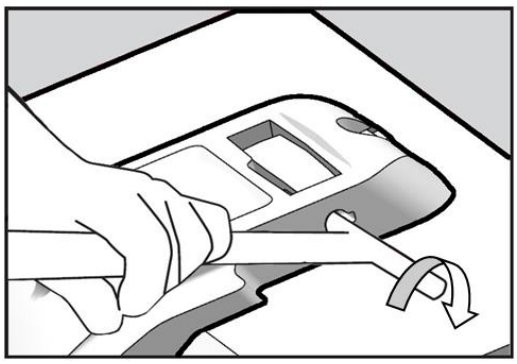
STEP 5:

Insert the pin towards the lateral hole.



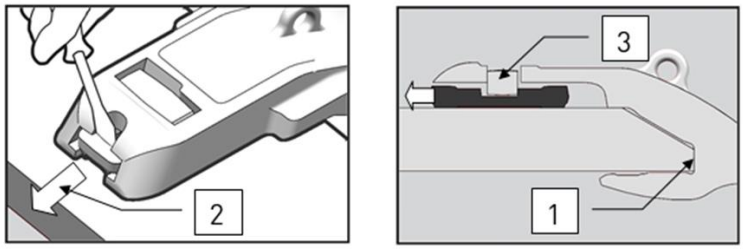
STEP 6:

Turn the pin (clockwise) by means of the extraction tool.



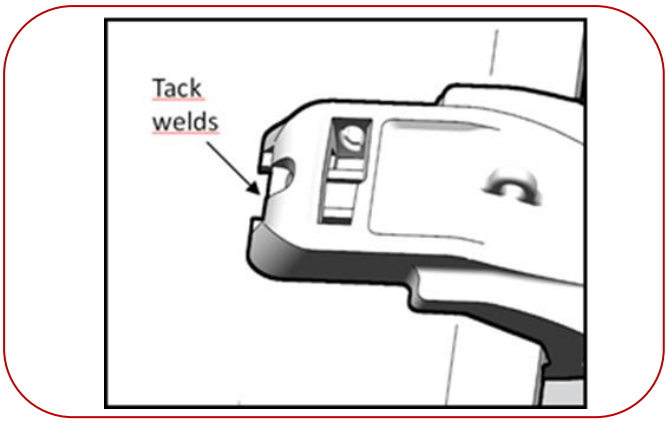
STEP 7:

Keeping the contact between the shroud and the frontal blade face [1], press the base towards the back of the bucket [3] using a screwdriver [2]. Pre-heat the base to the recommended temp. And following the welding requirements. Ensure that the assembly conditions are according the the doc. entitled: "*General welding recommendations*".



STEP 8:

Perform some Weld tacks on the rear part of the weldable base (external visible part).



STEP 9:

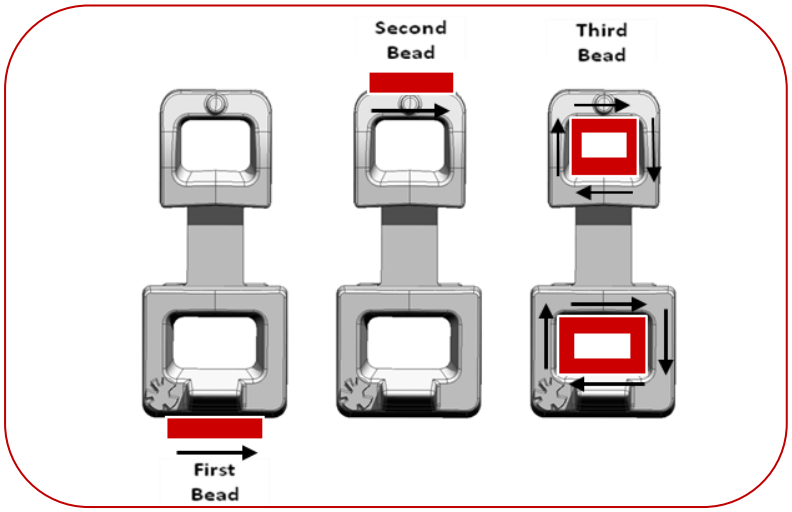
Turn the pin (counterclockwise sense), extracting the pin and the mechanical block of the shroud.

STEP 10:

Extract the shroud and pre-heat again (achieving defined pre-heating temp.) if necessary. It's important to keep this temp. during all the welding process.

STEP 11:

Perform all weld beads following the instructions shown on the figure placed at right side. The welding beads must be continuous and must not exceed the 3,2mm / 0,13" above the welding preparation chamfer.



STEP 12:

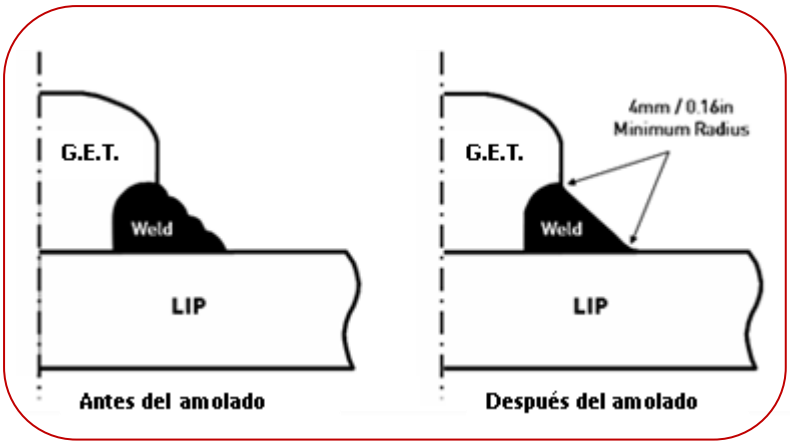
Verify that the inferior part of the weldable base remains in contact with the blade along all the welding process.

STEP 13:

Ensure that the welding technique comply with what is exposed on the document entitled: "*General welding recommendations*".

STEP 14:

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 / 0.16 in.

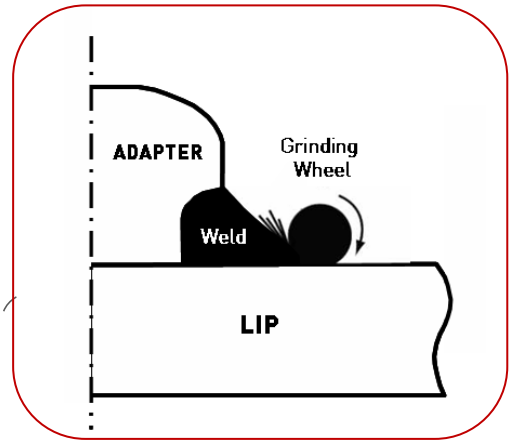


Grinding shall be done using high speed electric or pneumatic grinders with grinding wheels no larger than 50mm / 2.00 in. in diameter. ANGLE HEAD OR DISK GRINDERS ARE NOT ALLOWED FOR THIS WORK.

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 by the use of cone-shaped grinding wheels. For final grinding, the abrasive may be no coarser than 24 Grit.



STEP 15:

After completion of welding, all welds shall be subjected to visual and magnetic particle inspection, as described on "G*eneral welding recommendations*". Any detected welding crack must be cleaned and repaired.

Inspection and control procedure

Dimensional control

The measurement can be made by means of ultrasonic equipment or measuring tape according to the following procedure:

- Clean the areas where the measurement will be performed.

- Apply contact liquid in the area (in the case of ultrasonic measurement)

- Take measurement at each point as shown below:

- Thickness on the specified zones A and B on the figure below.

Thickness (mm)	A (mm)	B (mm)
70	22	20
75	22	20
80	22	20
90	22	20
100	27	20
120	27	20
140	27	20

Table A. Dimensions of max. admissible wear at shrouds

- Frontal contact between the shroud and the blade: Visual Check. Place the bucket as it allows the shroud to be pointing the floor and check the dimension between the lip and the shroud (lower zone). The shrouds shall not be forced to perform that check.

- If a gap higher tan 7mm (for blade/lip thickness 70/90mm) or 12mm (for blade/lip thickness 100/140mm), disassembly the shroud and verify the gap root cause (Plastic deformation at the lip and/or plastic deformation at the locking).

- Holes apparition: Visual Check.

- Check the status of the welds at the welded bases.

The replacement for the shrouds shall be performed if at least one of the following conditions appears:

1. Wearing check dimensions below the limits defined on the data table A
2. Holes apparition.
3. Cracks detection.

NOTE: These measures are measures of maximum wear and does not imply the need for the element to reach them to be replaced. The fact of replacing the element before reaching any of these dimensions does not suppose a bad behavior of them.