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IMPORTANT SAFETY RECALL

This notice applies to your vehicle. See attached serial number list.

NHTSA Safety Recall No. 18V-006

January 30, 2018

Dear Altec Owner,

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act, and Canada Motor Vehicle Safety Act.

Altec Industries, Inc. has decided that a defect which relates to motor vehicle safety exists in certain Effer Crane Units. These units require an slewing ring bolt inspection every two years. The bolts can possibly break and can possibly cause uncontrolled movement resulting in death or serious injury.

Refer to CSN 674 for the items covered under the warranty policy.

In order to determine if your unit is affected by CSN 674, compare the serial number of your unit with the list of affected units attached to the CSN. The repair can be performed by the customer or you may contact Altec at 1-877-GO-ALTEC (1-877-462-5832) for further assistance. The repair is expected to take 3 hours to complete.

At any time, you may contact Altec at 1-877 GO ALTEC (1-877-462-5832) with your unit's serial number to determine if there are any other outstanding notices.

For US owners: after contacting Altec, if you are still not able to have the safety condition remedied within a reasonable time, you may write to: Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590 or call 1-888-327-4236 (TTY: 1-800-424-9153) or go to <http://www.safercar.gov>.

For Canadian Owners: if you are still not able to have the safety condition remedied by your dealer within a reasonable time, please contact Altec Customer Service at 1-877-GO-ALTEC (1-877-462-5832).

If you had this repair performed before you received this letter, you may be eligible to receive reimbursement for the cost of obtaining a pre-notification remedy of the problem associated with this recall. If you have sold or retired the unit please call Altec at 1-877-GO-ALTEC (1-877-462-5832) so the records may be changed.

If you have leased this equipment to another person or company, you are required by Federal Law to forward a copy of this notice to the lessee by first class mail within ten (10) days of the receipt of this notice.

We are sorry to cause this inconvenience; however we are taking this action in the interest of your safety and continued satisfaction with Altec products.

Thank you for your immediate attention on this important matter.

Customer Service Notice

Date: January 30, 2018

Units Affected: Effer Crane Models 440 and 470 Installed at Altec (see attached list)

Slewing Ring Bolt Check

Altec is committed to providing our customers with safe and reliable products from initial delivery throughout the useful life of the machine.

Effer, manufacturer of articulating cranes, has published Technical Bulletin 30 which specifies the inspection and maintenance procedures for the above mentioned cranes. Altec is the United States distributor of those cranes and is publishing the information to customers. The information was not included in the current maintenance manual.

Technical Bulletin 30 explains three requirements for the affected units.

1. Check the slewing ring (sometimes called rotation bearing) bolts every six months or 500 working hours, whichever occurs first.
2. Replace the inner bolts of the slewing ring every 2 years or 2,000 working hours for the entire life of the unit after the initial replacement for this bulletin.
3. Procedure to check the welding of pedestal (basement) requiring a certified welder.

Altec requires the completion of the second requirement (bolt replacement) on Technical Bulletin 30 no later than 60 days from the receipt of this CSN. A certified welder that can do a dye penetrant test is required for the inspection and possible repair of the weldment.

Effer Technical Bulletin 30 is included with this CSN to fully explain the inspection and repair procedure for the unit. Altec also requires that customers follow the Bulletin instructions and save the Bulletin in the Maintenance Manual for later reference.

This inspection is covered under the Altec Warranty Policy and can be performed by Altec, the customer, or the customer's warranty provider. Altec will allow up to \$270 for the inspection for this bulletin inspection. A warranty claim must be submitted to be reimbursed for the cost of the parts and/or labor. Call 1-877-GO ALTEC (1-877-462-5832) to schedule the work to be done by an Altec service technician. Customers are responsible for the travel costs of an Altec Mobile Service technician if the technician performs the inspection or repair at the owner's location.



TECHNICAL BULLETIN N° 30/2017

Minerbio, 1st of September 2017

To: All Dealers / Authorized workshops

From: After Sales

Subject: **Maintenance of the crane – Check of slewing ring bolts**

Model / Range: All

Information

The bolts of the slewing ring of all models must be checked every 6 months or 500 working hours, whichever occurs first, as prescribed in the maintenance schedule of the Use and Maintenance Instructions. The value of the torque settings are in the Use and Maintenance Instructions.

As a general rule valid for all models, in case a bolt has been found broken, it is necessary to inform the After Sales and proceed with the replacement of all the bolts, inner and outer.

In particular, on cranes model 440 and 470 involved in campaign 28, once the campaign has been completed, it is necessary to replace the inner bolts of the slewing ring every 2 years or 2,000 working hours. On this occasion, it is also necessary to check the inner welding of the basement and restore it if there are any cracks.

Components and labour to check these cranes will be reimbursed in warranty.

We remind you that the progress of the campaigns can be verified in the Tech Desk Portal, "Campaign Report" menu.

Please find below the procedures to complete what requested on models 440 and 470.

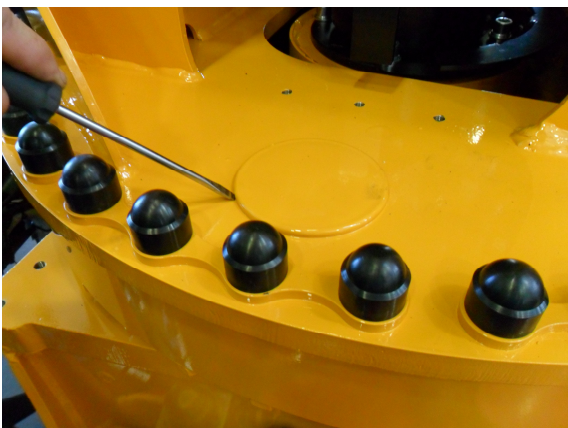
Procedure to check the tightening of the slewing ring bolts of models 440 and 470

- Set the torque wrench to a value that is 10% less than the nominal torque tightening, therefore $459 \text{ Nm} - 10\% = 413 \text{ Nm}$.
- Tighten in a sequential way the inner and outer bolts of the slewing ring verifying that any bolt get tightened. In case a bolt get tightened it means that the residual torque is less than 90% of the nominal torque and therefore all inner and outer bolts have to be replaced informing Effer.
- At the end of this check on all internal and external bolts, set the torque wrench to the nominal torque and tighten again all inner and outer bolts. It is normal that during this additional operation the bolts make a rotation of some degree.

Procedure to replace the internal bolts of the ring for models 440 and 470

Order in warranty the kit RIP_GRU2N_1/PAR1 that contains 42 bolts and grease.

- a) Stabilize the crane and position the booms to be able to rotate the crane without interfering with the truck or any other object.
- b) Remove the plastic cap on the right side of the column as per picture 1.



Picture 1

- c) Rotate the crane slowly until aligning the hole with a bolt as per picture 2. It is not important from which bolt the procedure starts.

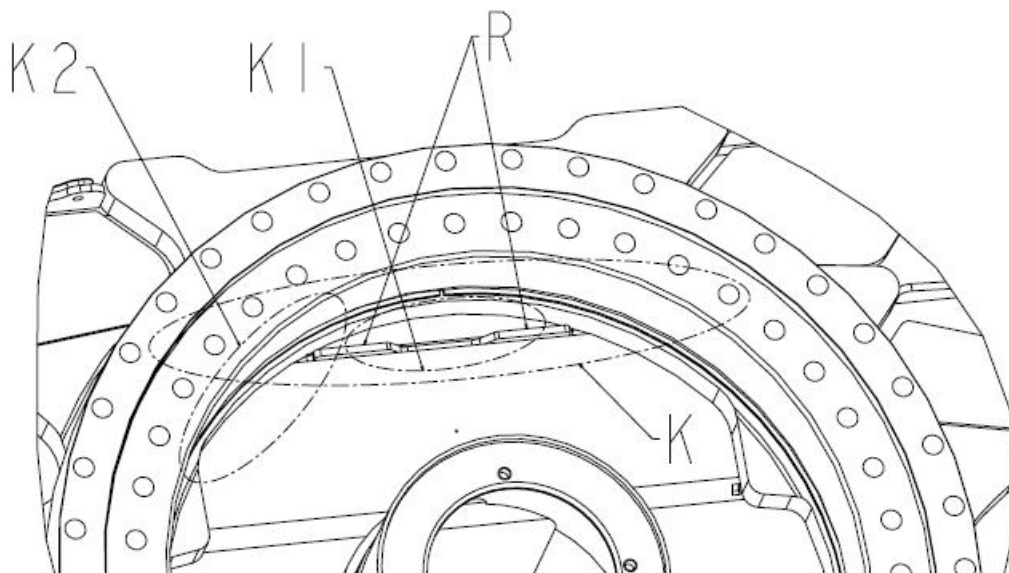


Picture 2

- d) Unscrew the bolt and fit a new one. The new bolt has to be all greased, including shank and under head, with grease supplied in the kit. Grease a thin layer without exceeding.
- e) Tighten the bolt at 459 Nm with calibrated torque wrench. Mark the head of the bolt just tightened.
- f) Rotate the crane clockwise until aligning the next bolt and repeat the procedure, points d and e.
- g) Repeat the operations for all 42 bolts.
- h) At the end make a complete rotation of the crane verifying that all 42 bolts have been tightened correctly and fit the plastic cap.
- i) Tighten again all the bolts after the first 50 working hours. It is important that, when tightening, the wrench triggers only once and that the rotation of the wrench is gradual, not to falsify in excess the value of the torque. In other words, when tightening, held the wrench at the center of the knob and rotate the wrench at a constant speed, without jerking, until the first click of the wrench. The non-respect of this may void the resistance of the bolts.

Procedure to check the welding of basement for model 440 and 470

Rotate the crane with the booms towards the stabilizers of the crane in order to have visual access to the internal welding of the basement. Clean carefully the area and check with penetrant liquids the welding and adjacent areas in the whole area K (in particular in the area K1 and between the two ribs R and in the circular welds K2).



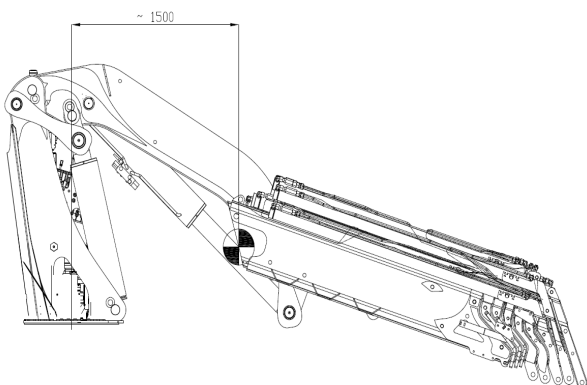


In case there are cracks in the above-mentioned welding, it is necessary to take the column off, proceed with the welding of a reinforcement kit and replace the inner and outer bolts of the slewing ring as per the following procedure.

Procedure to restore the welding of models 440 and 470

Following steps are necessary only if there are cracks in the internal welding of the basement. In case you have to proceed, it is necessary to order kit p/n RIP_GRU2N_1/PAR2.

1. Place the crane with booms closed, in a configuration that is suitable to disassemble the entire basement. In this position, hook the crane in appropriate points with an appropriate lifting means in such a way that the slewing ring will rise up approximately horizontally (see figure with approximate position of center of gravity). After disconnecting hydraulic and electrical parts, carefully unscrew the bolts between the column and slewing ring. For this operation, caution is required and it is recommended the presence of two operators, one at the controls of the hoist.

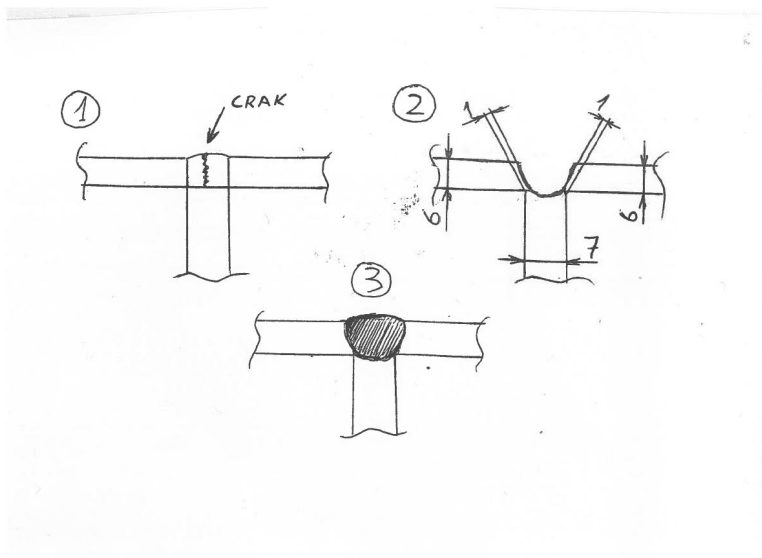


2. Remove the slewing ring from the base by unscrewing the bolts. In case you find broken bolts, you have to communicate it immediately to Effer. Clean, degrease and remove the paint from all areas affected by the repair (see points below). If you remove the paint on the welding with an emery, use it with light pressure so that the iron powders do not close any micro crack. If you use a chemical paint remover, after it you need to perform an effective cleaning.

3. ZONE K1

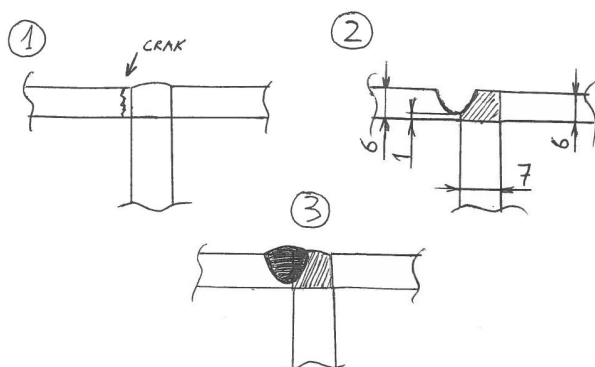
a. Case of crack present in the center of the weld or removal and renew of the welding

According to the figure, remove material with emery according to the dimensions given and re-weld



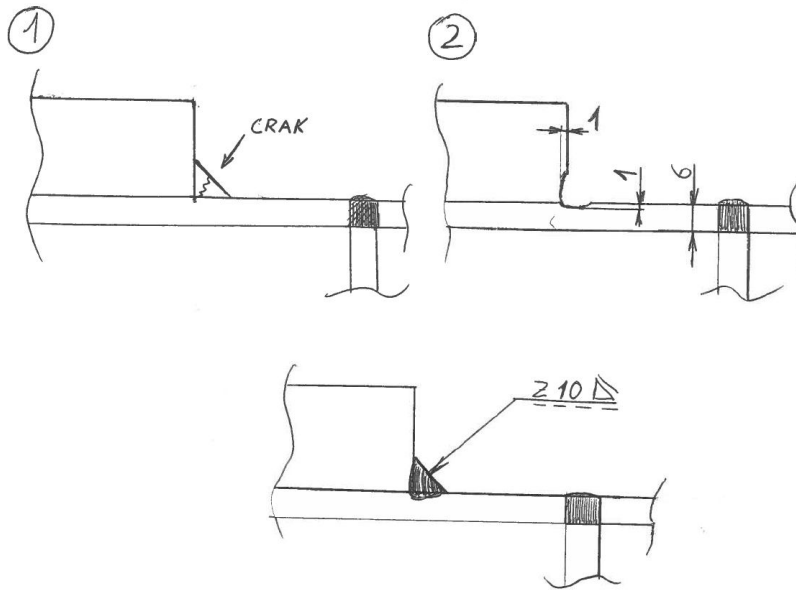
b. Case of crack present in the edge of the weld

According to the figure, remove material with emery according to the dimensions given and re-weld

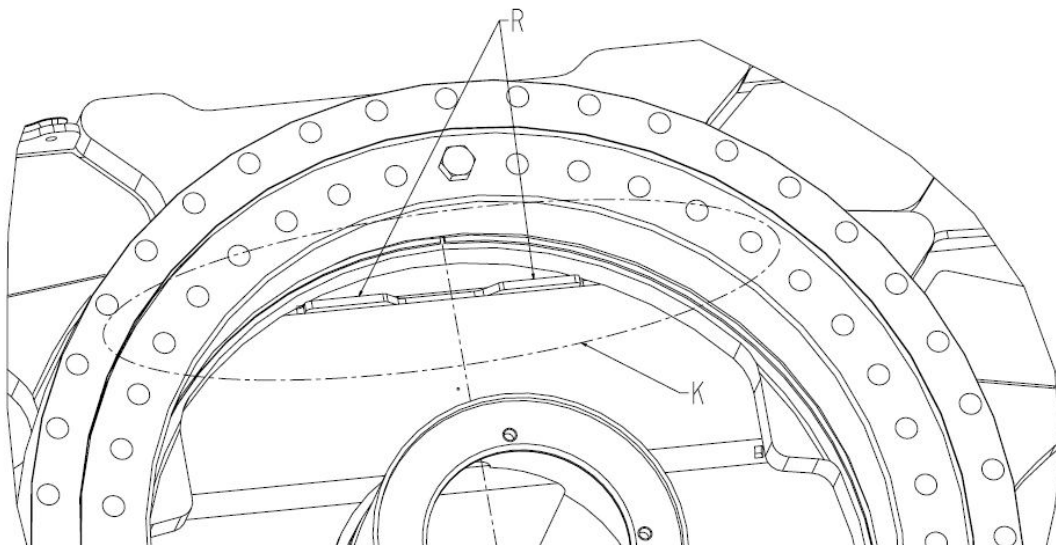


4. ZONE K2

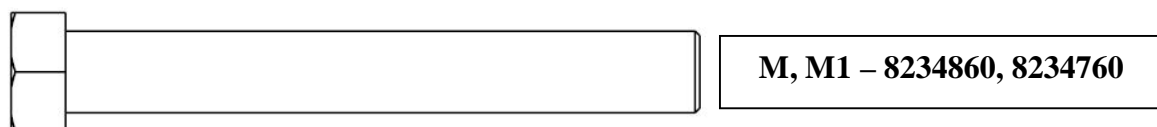
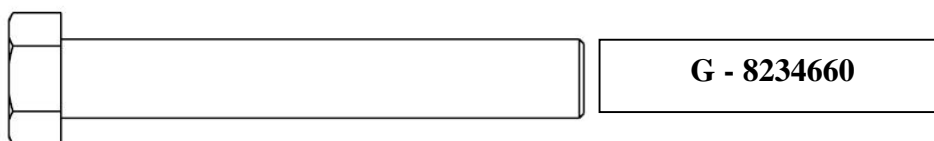
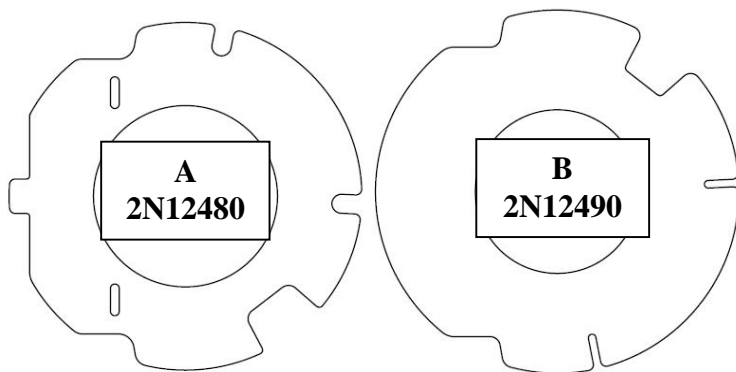
- a. Case of crack in the traits of annular welding in the K area
Remove with emery according to the dimensions given and re-weld.



5. Lower the ribs R by cutting with the emery so that they remain at a height of 10 mm from the base



6. At this point, you can begin the operations to weld the reinforcement kit. In all the areas in which you have to weld, the surfaces must be clean without the presence of paint. The welding specifications are given in ANNEX Q (intervention TYPE A)

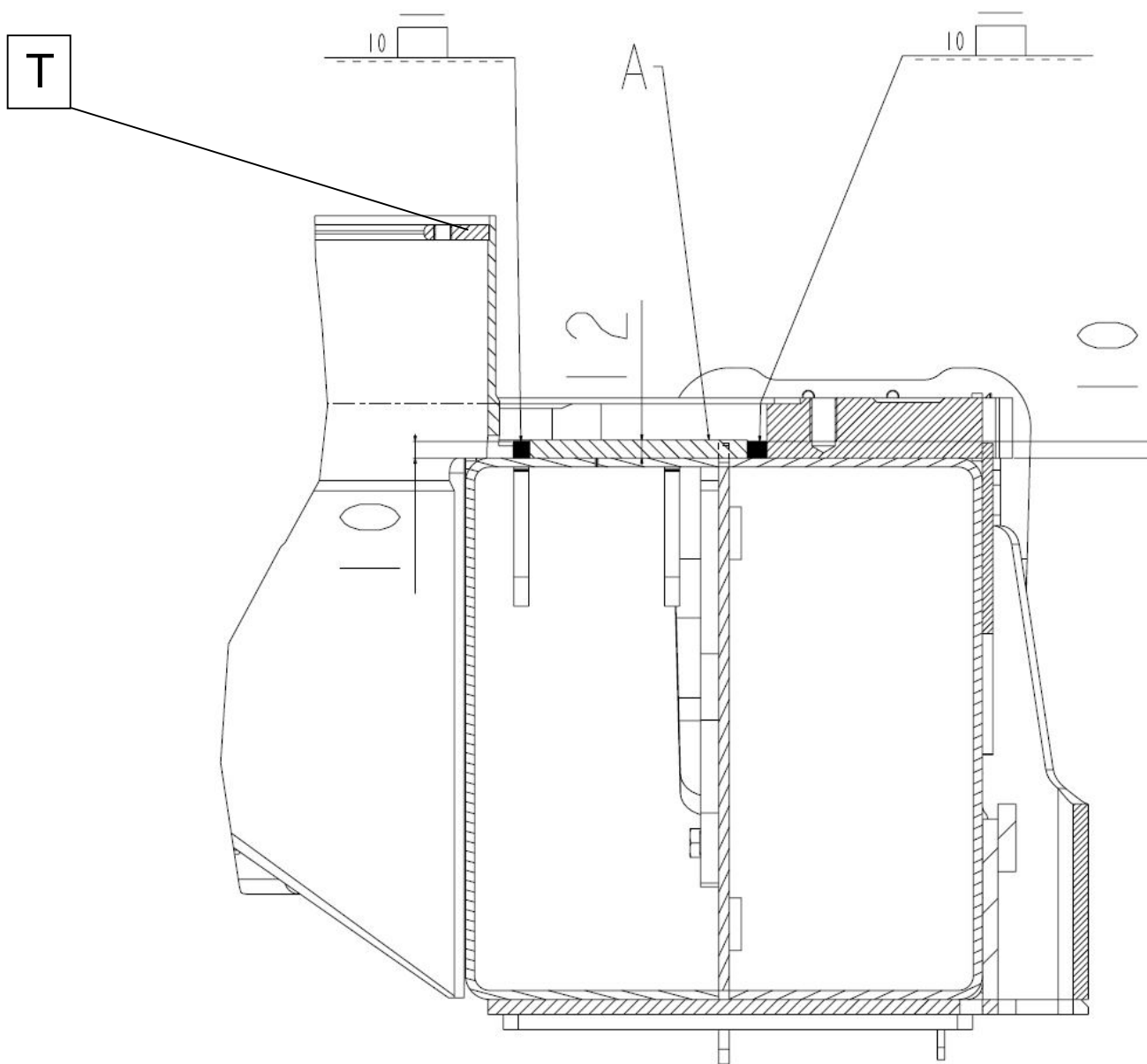


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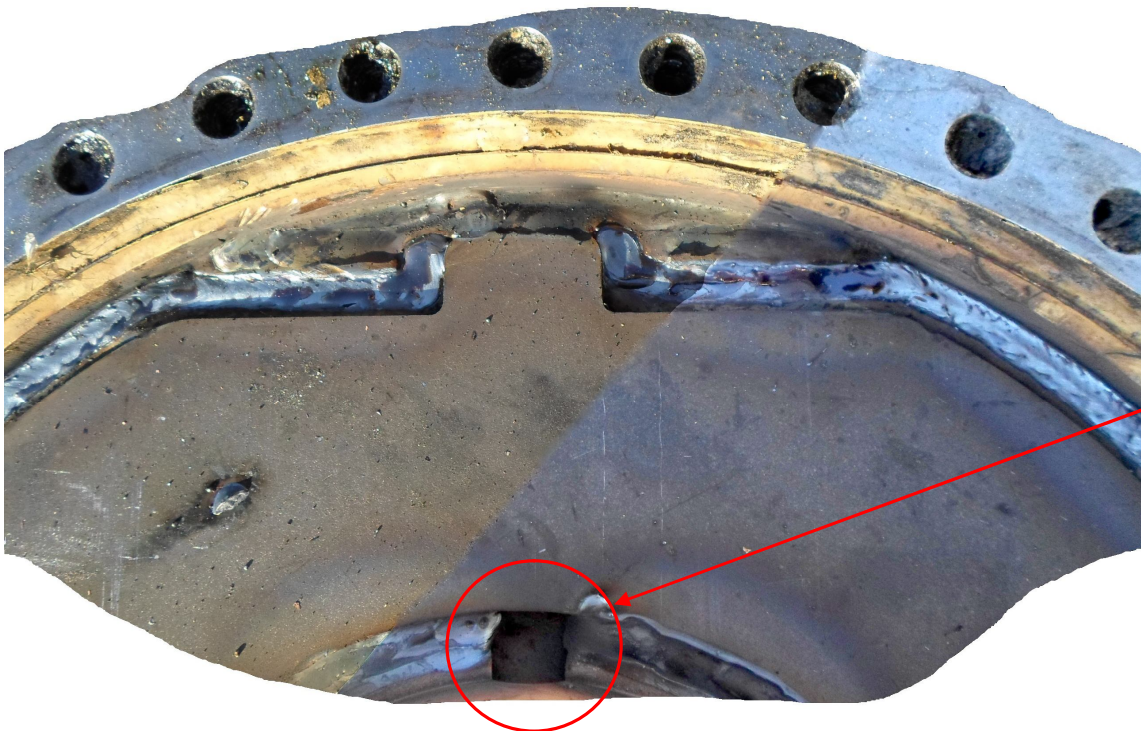
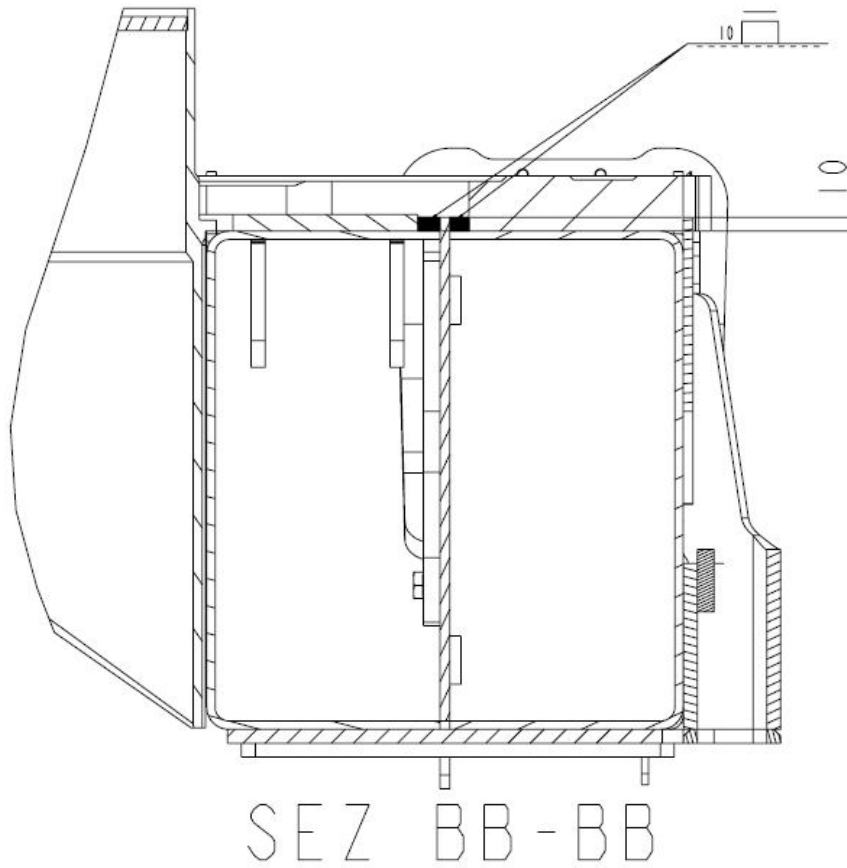
GREASE

P - 2005081

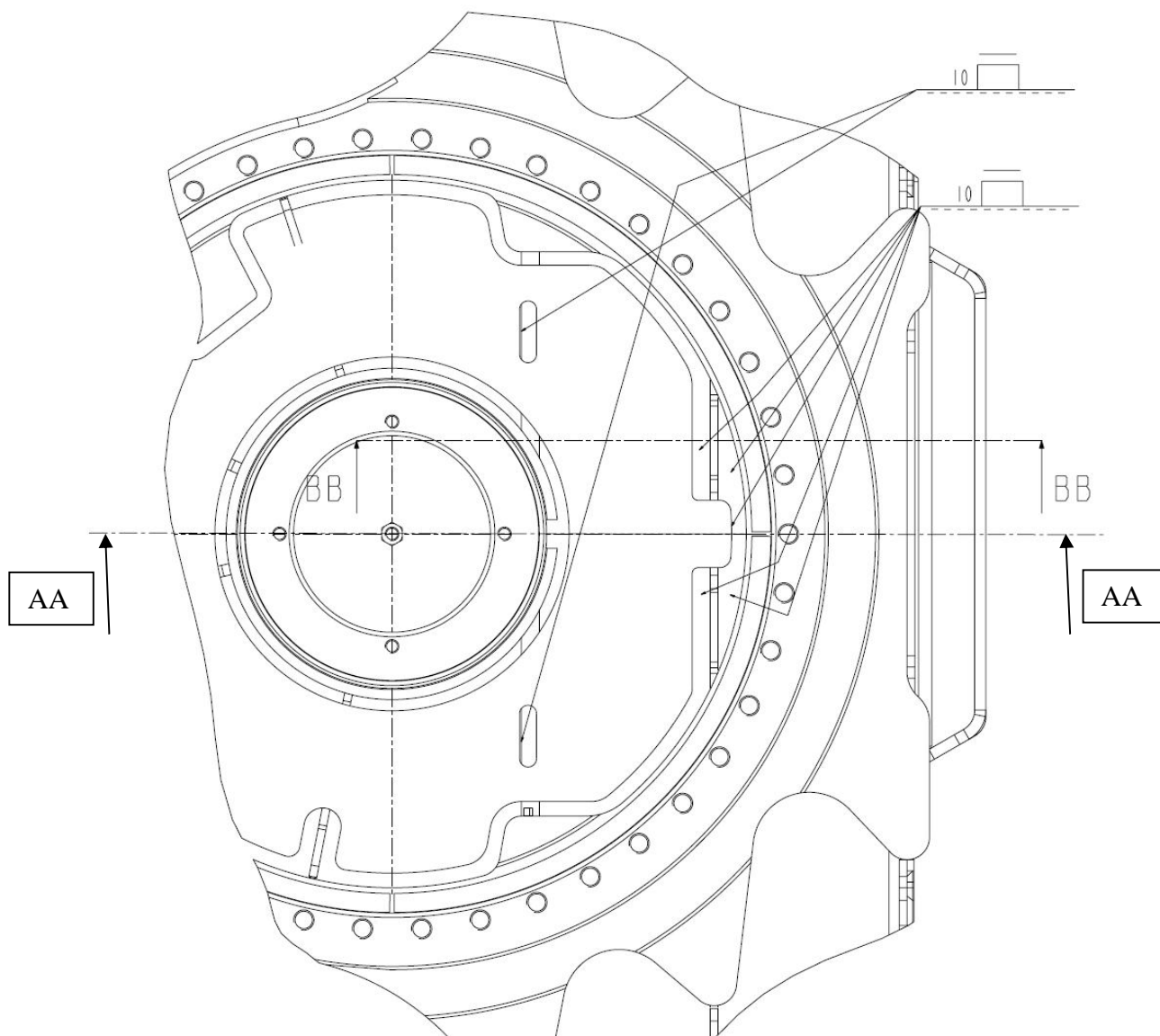
7. Place the plate A and weld it as shown in the following figures ($\overline{10}$ = fill with welding all the empty spaces with a height of 10 mm from the base). Weld with multipass technique with a maximum cord in single-pass equivalent to 7x7 (see also Annex Q). Before proceeding with the welding of plate A, check that it lays in plane on the basement. In case plate A does not lay as requested, machine with emery any obstacles on the basement.
Welding of plate A touching the tube T has to be interrupted in the area of water drainage (see picture 1).



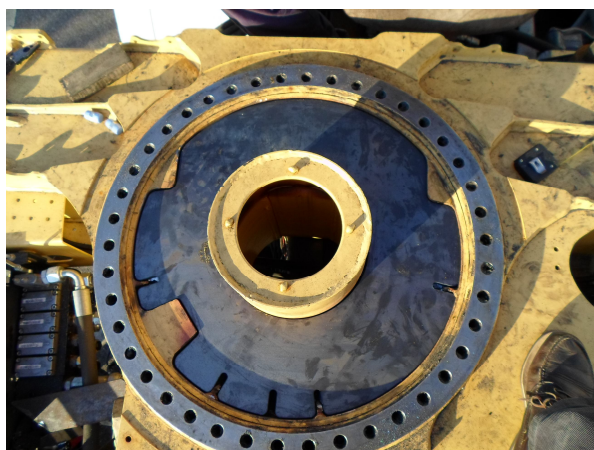
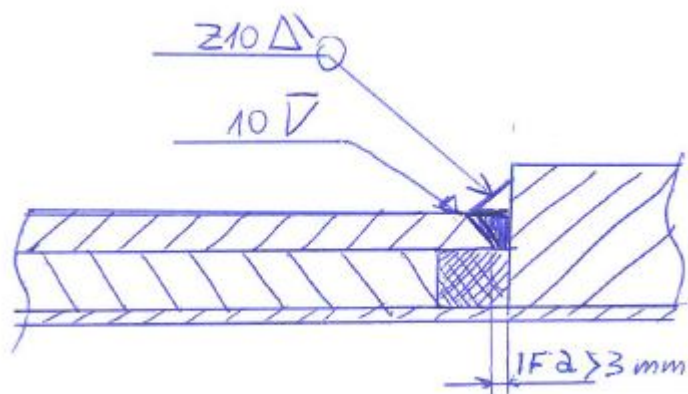
SEZ AA - AA



Picture 1



8. Position plate B and weld it as shown in the figure. Before welding plate B, check that it lays in plane, machining with an emery any eventual obstacle. Fill also with welding the empty spaces in the upper part of the sheet metal. Weld with multipass technique with a maximum cord in single-pass equivalent to 7x7 (see also Annex Q). In case plate B laying on the basement has got some area of the perimeter with measure "a" (see figure below) higher than 3 mm, it is necessary to make a chamfer 8x45° in plate B and make a preventive welding 10V (see figure below and pictures 2 and 3).



Picture 2

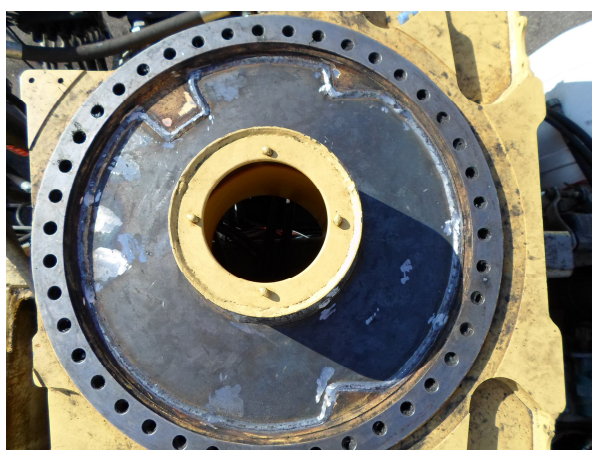


Picture 3

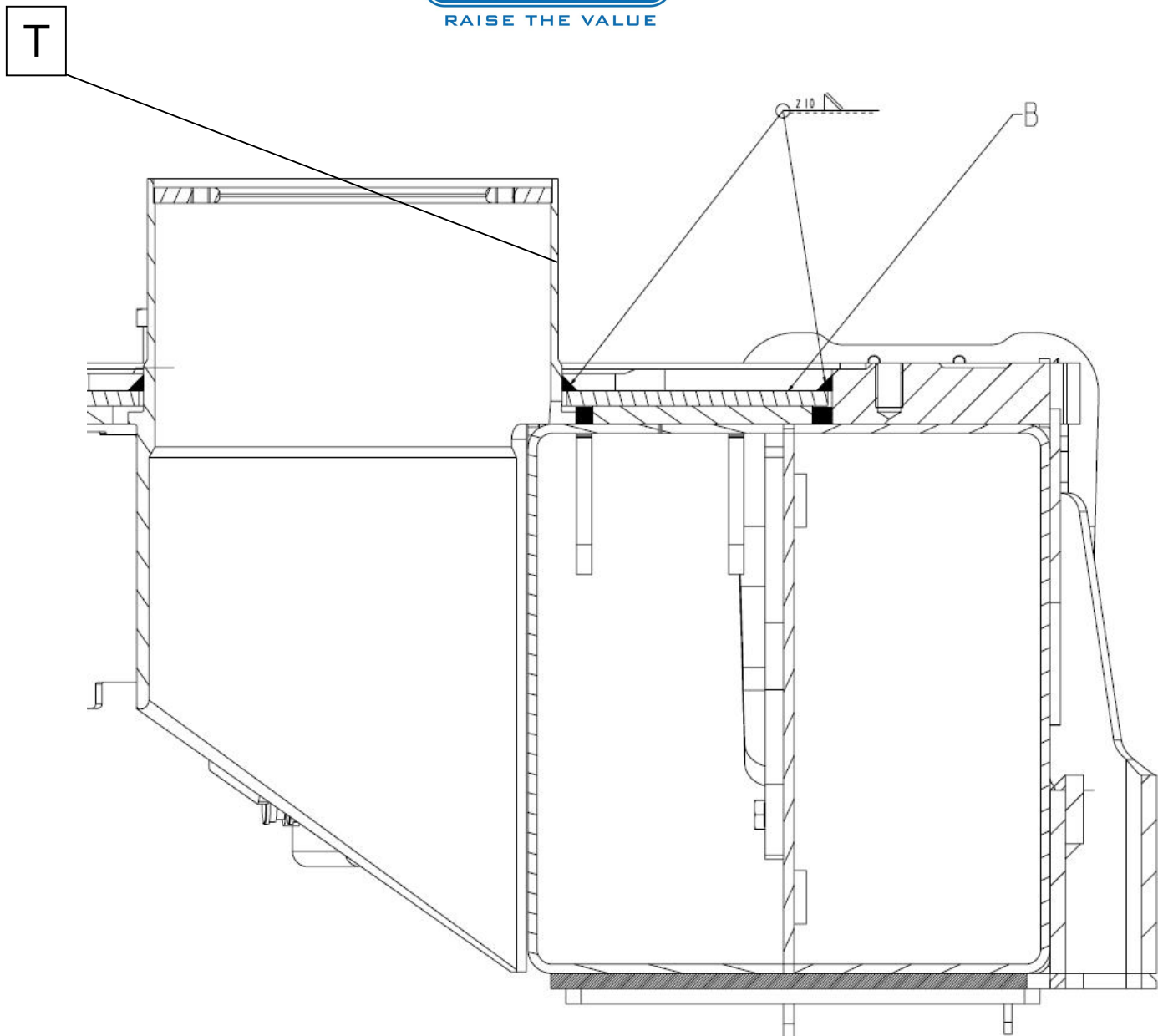
The welding between plate B and tube T has to be interrupted in the water drainage area (see picture 4). The final result is shown in picture 5.



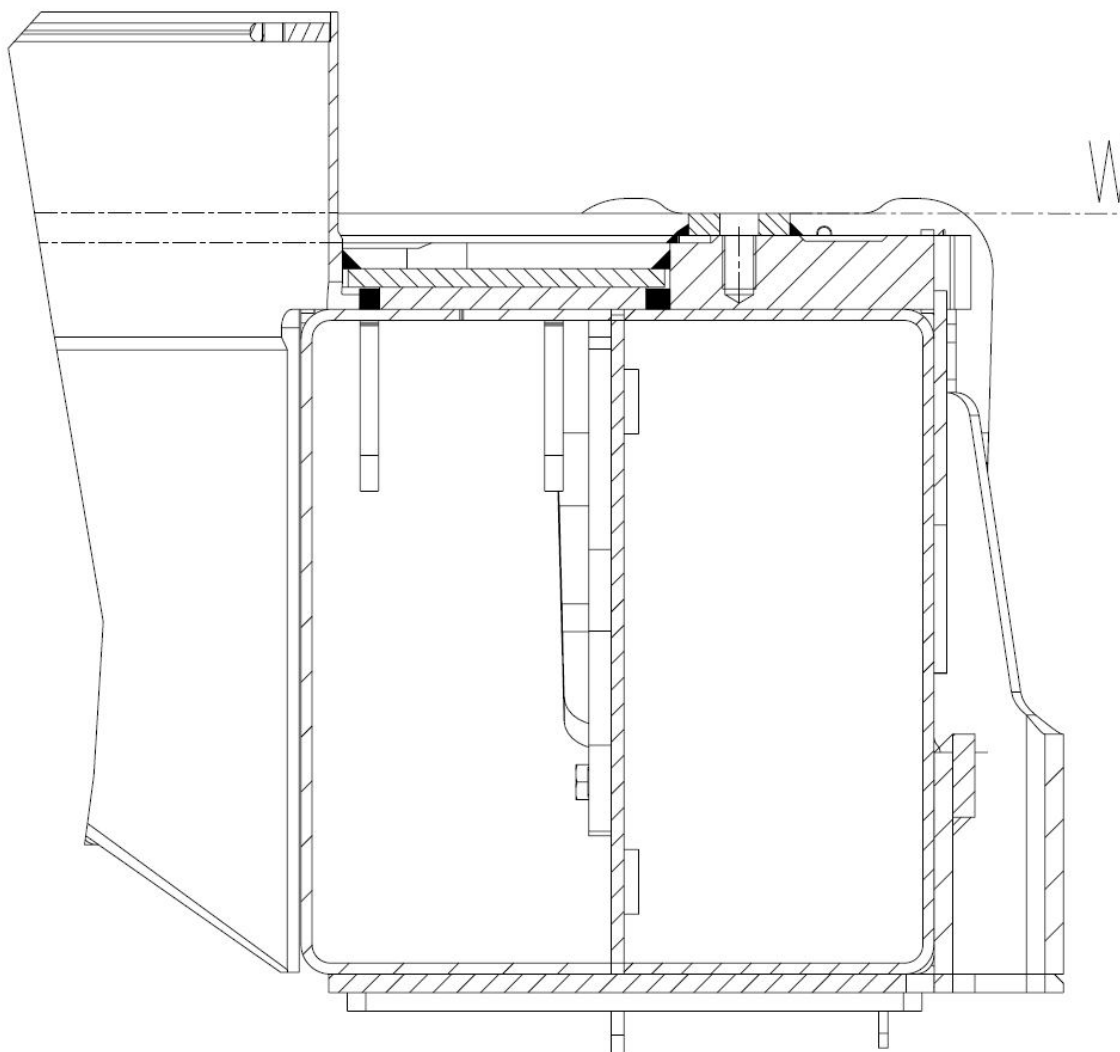
Picture 4

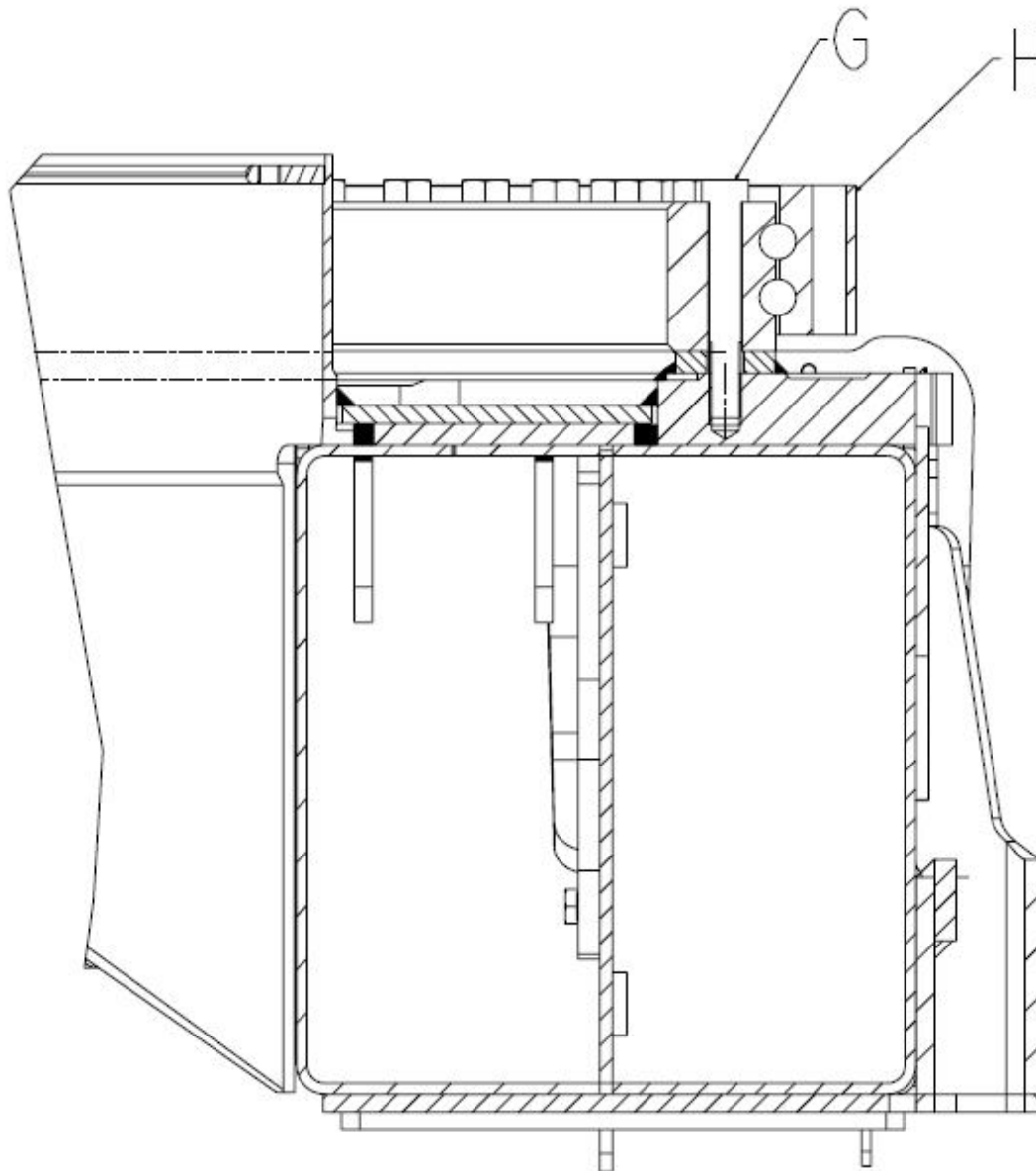


Picture 5

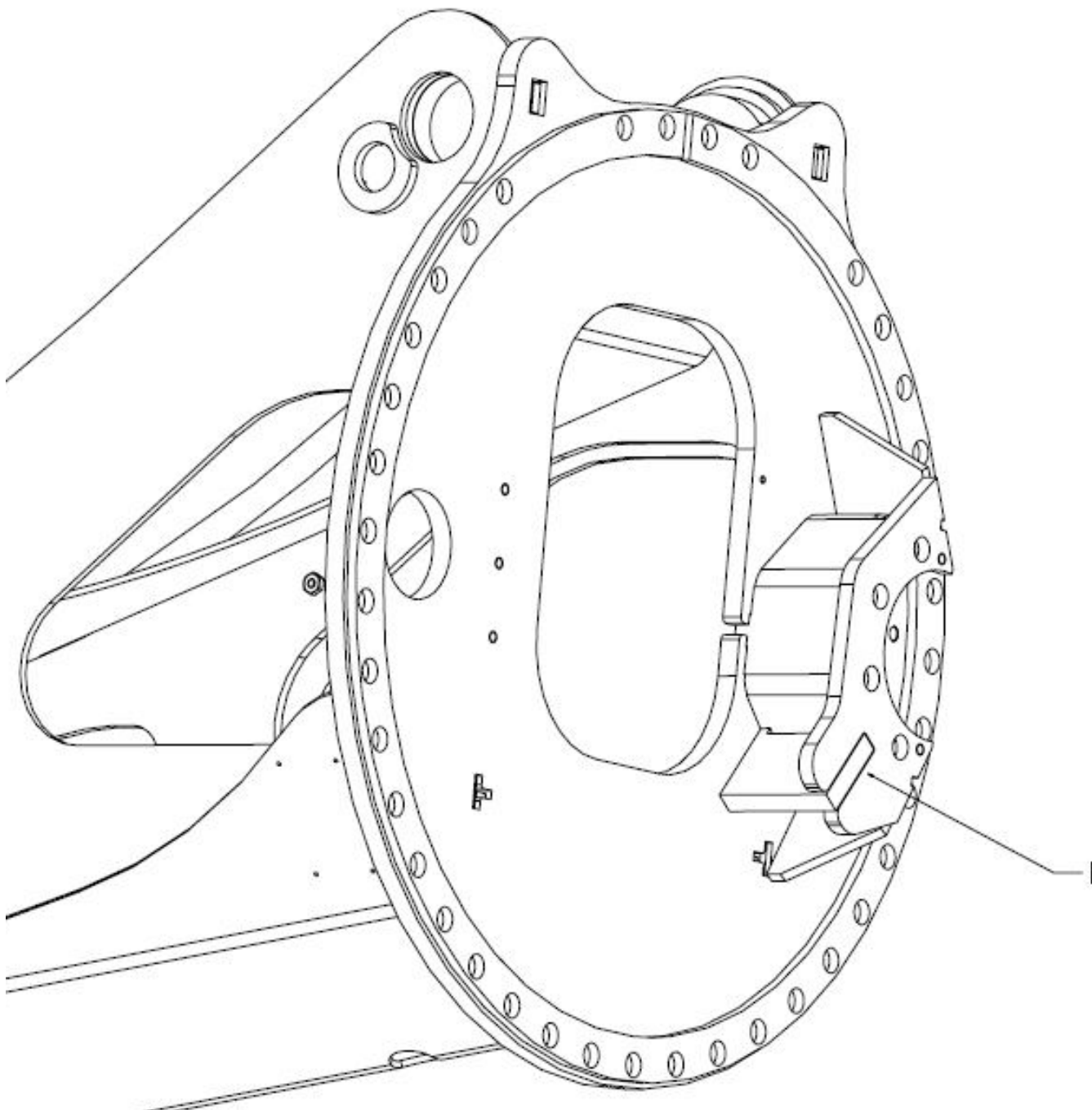


9. Paint where necessary except plane W. After the placement of slewing ring H on plane W, tighten bolts G with a torque of **459 Nm**. Tighten following procedure in attachment at the end of the bulletin.



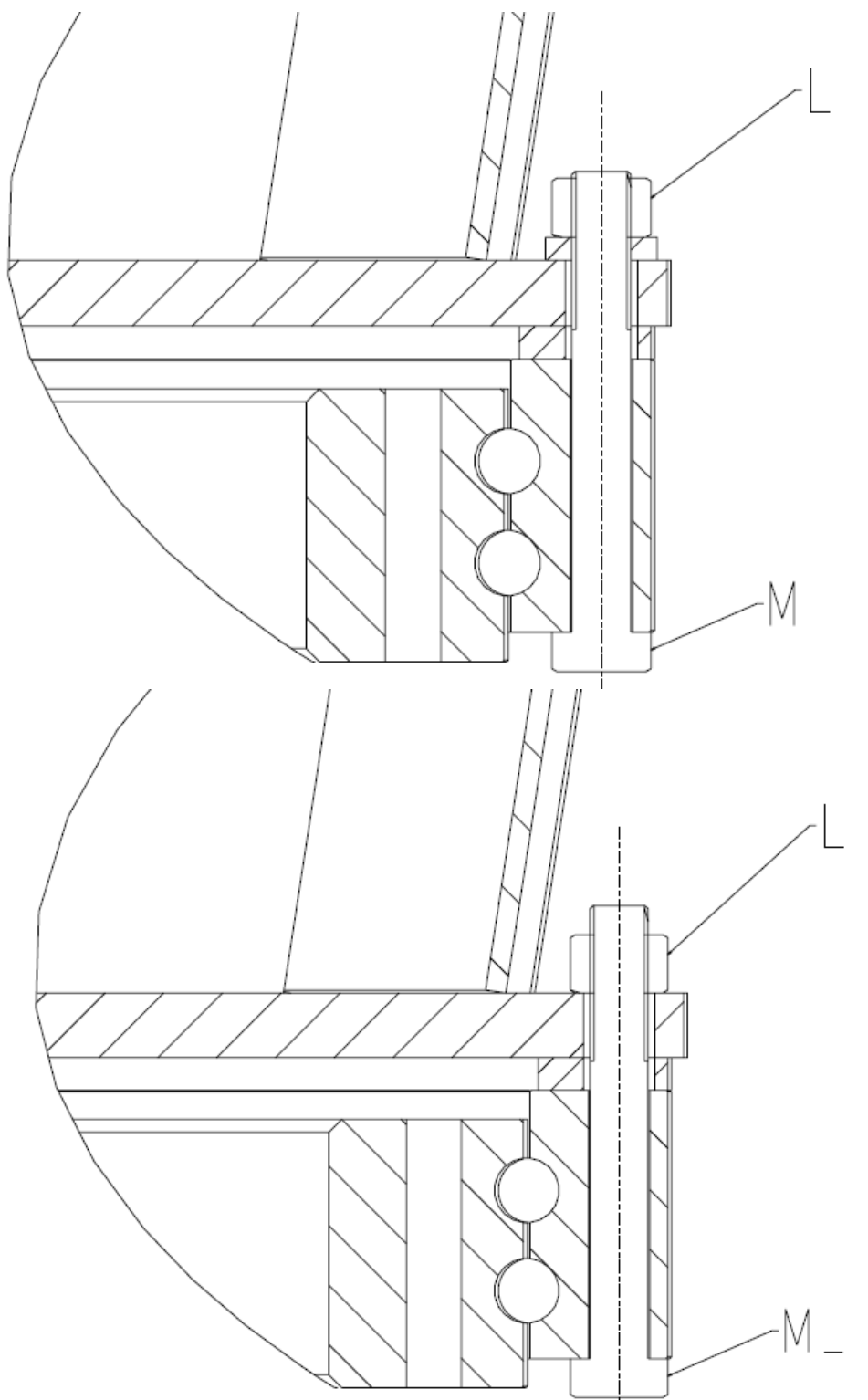


10. Cut with an emery the tooth I of the column at the same high of the base as shown in figure



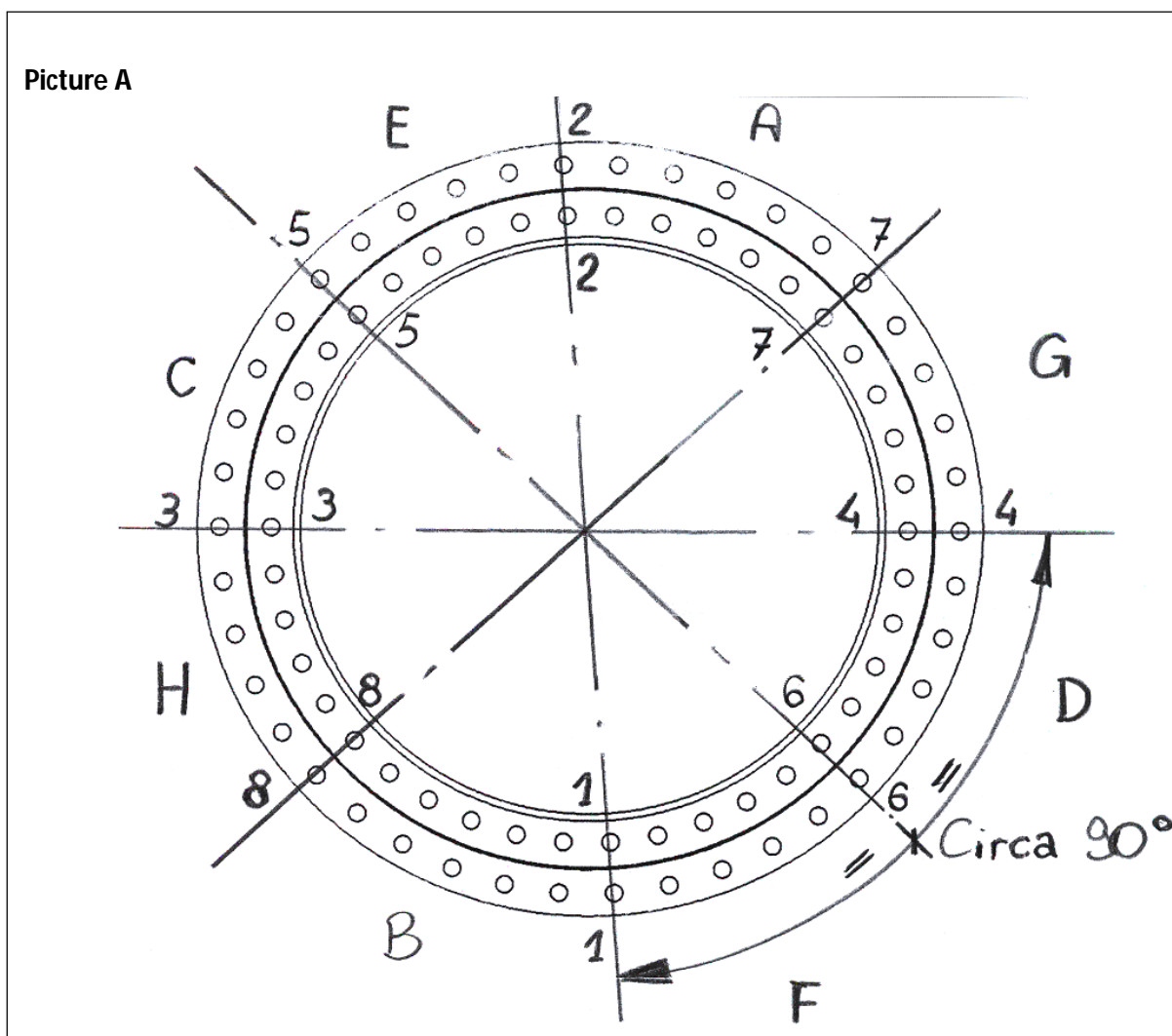
11. Reposition the column/crane on the slewing ring, as originally fitted, connecting it with the new bolts M and M1 and relevant nut L, interposing the original shims only in longer bolts M.
Bolts have to be tightened at **459 Nm**. Tighten following procedure in attachment at the end of the bulletin.

To do this coupling between column / crane and basement caution is required and it is recommended the presence of two operators, one of which at the controls of the hoist.

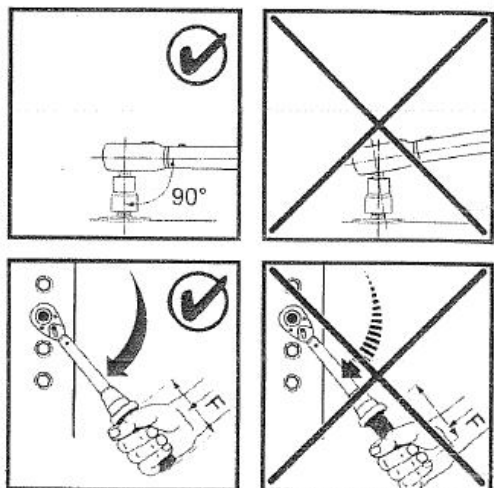


Procedure to tighten inner and outer bolts

Position the slewing ring in a way that the painted teeth of the inner ring are in correspondence of the reduction gear (crane toward the dumper of the truck). Grease completely the bolts (thread, shank and under head) with the grease contained in the kit provided by Effer. Greasing all the specified parts of the bolts is very important. Then, using a wrench, tighten completely the first 8 bolts as per the sequence shown in picture A (see numbers from 1 to 8). After that, tighten the remaining bolts of each of the 8 sectors (from A to H, see picture A): first all the bolts of sector A, then all the bolts of sector B and so on until tightening all the bolts of sector H.



It is important that, when tightening, the wrench triggers only once and that the rotation of the wrench is gradual, not to falsify in excess the value of the torque. In other words, when tightening, held the wrench at the center of the knob and rotate the wrench at a constant speed, without jerking, until the first click of the wrench. The non-respect of this may void the resistance of the bolts.



Proceed with a sequential tighten of all bolts.

Rotate, if necessary, the outer ring the slewing ring in a way that the caps of picture B are in correspondence of the painted teeth. In this way, when the operation is finished, the position of these caps is on one side of the fuse.

Grease then the teeth of the slewing ring and position the fuse with the reduction gear already mounted on the slewing ring. Engage the pinion with the teeth marked by the paint and, with the help of a lever, bring the surfaces perfectly in contact with each other (you reach the best result when the free play between teeth of pinion and slewing ring equal to zero).

Proceed with the tightening following the same order of picture A.



Picture B



Warranty claim

The reimbursement in warranty is:

3 hours of labor in case it is necessary only the replacement of the bolts (labor code A12)

30 hours of labor in case it is also necessary to weld the reinforcement kit (labor code Z07)

We are available for any help/clarification you may need.

After Sales

Effer SpA