

**96/7**  
**9 M 453 C**

## **EGT turbocharger Napier Na 355**

In the context of the further development of the Napier turbocharger Na 355, installed on the MaK 9 M 453 C engines, the fixing type for the nozzle ring was modified.

In future all Na 355 turbochargers will be delivered with these new nozzle ring clamping bolts.

This modification will considerably improve assembly and disassembly. The work should be done together with routine maintenance service.

Please find all other particulars about type and method of modification in the attached „Service Bulletin“ of Messrs. EGT.

If you have any further questions in connection with the reliable service to your engine installation, please do not hesitate to contact the MaK After-Sales Service.

# SERVICE BULLETIN



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Ref. No. Small NA Series / 14  
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Sheet No. 1

**This information is Important to your Engineers and should  
be passed on to them immediately.**

**SUBJECT :- NA-355 TURBOCHARGER – NOZZLE SETSCREW BREAKAGES.**

## **Description**

During routine overhaul, operators have found the nozzle securing setscrews shear during removal from the turbine inlet casing.

This bulletin has been introduced to enable larger setscrews to be introduced and describes the modifications necessary .

The modification includes:

- a) Re-drilling and tapping of the turbine inlet casing nozzle location holes.
- b) Re-drilling the nozzle clamp ring.
- c) Enlarge the nozzle inner ring slots to accommodate the new bolts.
- d) Specification of new materials (i.e. fasteners)

## **A. RE-DRILLING AND TAPPING OF THE TURBINE INLET CASING.**

The nozzle setscrews (9 off) are drilled on a pitch circle diameter of 210 m.m. and are equally spaced.

In most instances the locating holes are drilled and tapped through the nozzle clamping face, However there are casings which have blind holes. (i.e. not drilled through). The following instructions therefore apply.

### **Through holes**

Drill 8.5 mm diameter hole through the nozzle clamping face.

Tap M10 x 1.5 mm pitch through.

### **Blind holes**

The drilling and tapping should not break through the internal cast bosses which support the tappets.

Drill 8.5 mm diameter x 15 mm deep hole in the nozzle clamping face.

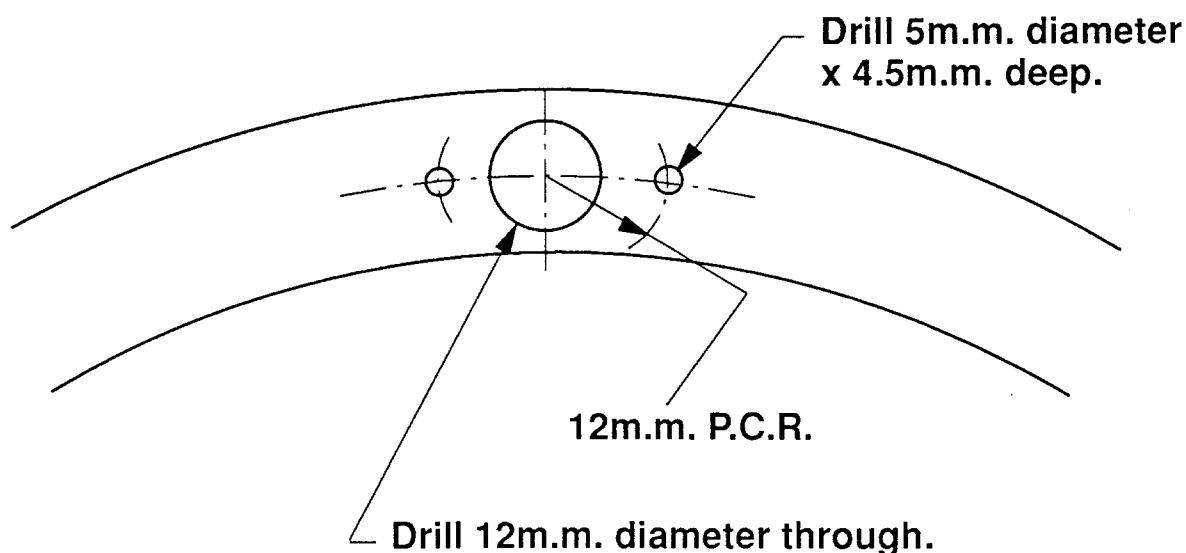
Tap M10 x 1.5 mm pitch x 12 mm.

## **B. RE-DRILLING OF THE CLAMP RING.**

The modification requires the setscrew holes to be enlarged to accommodate larger setscrews.

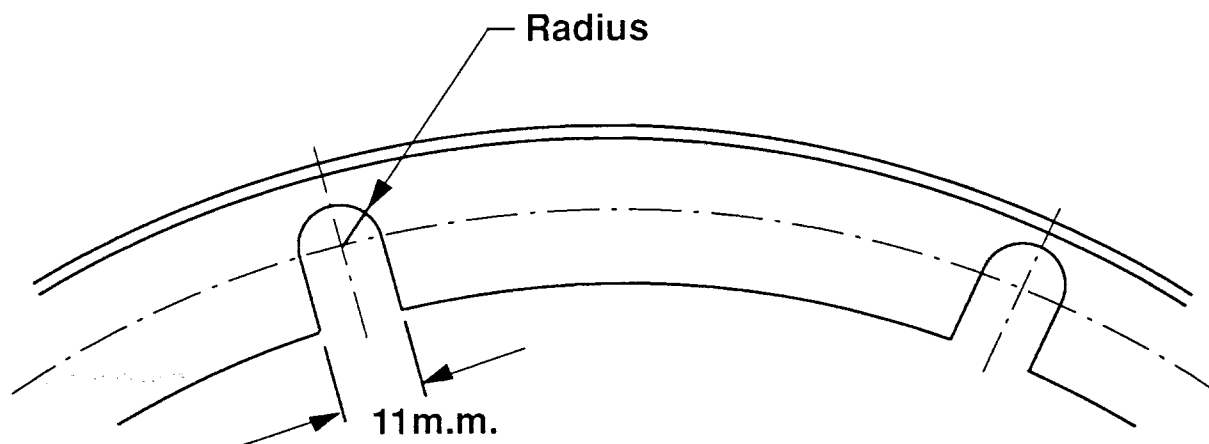
New holes are required to locate the new tabwasher.

The existing clamp ring has 9 equally spaced holes drilled 10 mm diameter on a pitch circle diameter of 210 mm.



### **C. MODIFICATION OF THE NOZZLE INNER RING**

The modification of the nozzle involves enlarging nine retaining slots to accommodate the larger fixing screws. Increase the size of the existing slots to the width shown below. Maintain positional tolerance by removing metal equally (1m.m.) from each side of the slot.



**De-burr and remove sharp edges as necessary**

### **D. SPECIFICATION OF MATERIALS.**

New materials required will be as follows :-

Description	Qty.	Current standard	Standard reqd. by this bulletin
Setscrew ( High temperature – nickel plated )	9	119 608 025	119 610 025
Tab washer ( Stainless steel )	9	237 115 008	237 115 010

**NOTE!** These setscrews should be tightened to a torque of 31.4 Nm ( 23 lbs. ft ).  
The threads must be coated with copper slip before assembly.