



INSTRUCTION
Assembly of the main bearing
N43-Mk3

No: I201-603GB
Page: 1 / 6
Date: 23/11-00
Rev.: 1

Responsible SKO

Prepared by: HJB

Approved by: PBL

Contents:

- 1) Aim
- 2) Responsibility
- 3) Scope
- 4) Procedure
- 5) Nonconformities
- 6) Record-keeping
- 7) Filing and distribution

1) Aim

These instructions set out the procedure for correct mounting of the main bearing in the main bearing housing and assembly on the main shaft.

2) Responsibility

The fitter who carries out the work is responsible for it being carried out correctly.

The workshop foreman or, in his absence the competent shift foreman, is authorised to inspect the work.

3) Validity

These instructions apply to the N43-Mk3 plant.

4) Procedure

a) Personnel:

Any fitter from the Nordex Group may carry out these instructions.

b) Specific points and basic documentation:

Parts bearing a serial number may only be used on issue of a materials receipt.

c) Definitions/special requirements:

All screw connections must be thoroughly marked with yellow paint after tightening.

All bolts tightened to a defined torque (with signed verification) must be coated with graphite grease, inspected by the foreman after tightening and marked with his allocated colour. Screws coated with delta MKS (zinc-aluminium and teflon coating) must **not** be greased. Absolute cleanliness must be maintained when mounting and arranging the bearings.

d) Description of work:



INSTRUCTION

Assembly of the main bearing

N43-Mk3

No: I201-603GB
Page: 2 / 6
Date: 23/11-00
Rev.: 1

Responsible SKO

Prepared by: HJB

Approved by: PBL

Mounting the bearings

Set up the rotor shaft vertically with the flange facing downwards (see Photo No. 03/01)



Photo No. 03/01

Place the rotor locking disc No. 0886 over the rotor shaft. Then the distance bush for the main shaft is mounted. This is heated to 180°C and afterwards mounted on the main shaft.

Before mounting the bearing cap on the shaft, 2 shaft seals no. 420 470 20 BA must be pressed into the bearings cap No. 0592 in the same direction.

Mount the shaft seals so that no. 420 470 20 BA faces away from the bearing. At the same time cut a 3.5 mm O ring into suitable length and glue it into the bearing cap. When the O ring has been mounted, this should be lubricated with grease (BR2 plus).

Now push the bearing cap 0592 onto the main rotor shaft. Below the bearing cap install 3 adjusting screws for adjusting the position of the bearing cap on the shaft for 159 mm. The final distance is set by means of a special tool. When this distance has been set, the distance between the upper edge of the bearing cap from the shaft recess must be 806 mm. Set this distance with the adjustment screws. (see Photo No. 03/02).

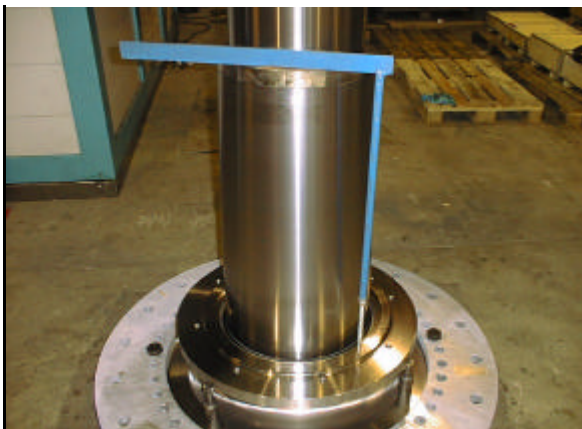


Photo No. 03/02



INSTRUCTION

Assembly of the main bearing

N43-Mk3

No: I201-603GB
Page: 3 / 6
Date: 23/11-00
Rev.: 1

Responsible SKO

Prepared by: HJB

Approved by: PBL

Mounting the radial bearing

Use an induction heater to heat the radial bearing No. 23984 to approx. 110°C and then push it onto the main rotor shaft. The radial bearing will take up the correct position because of the previously adjusted bearing cap. (see Photo no. 03/03)

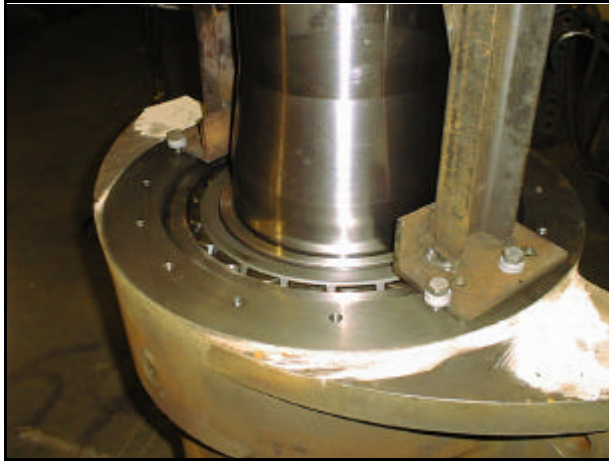


Photo No. 03/03

Pre-assembly of the bearing housing

Degrease and clean the bearing housing internally (No. 1308).
Arrange the bearing housing with the axial bearing side facing upwards.
Push the axial bearing no. 23164 on to the recess in the housing using a special tool. (see photo no. 03/04)



Photo No. 03/04

Check that the distance from the upper edge of the bearing to the upper edge of the bearing housing is 16 mm.

Now lift the bearing housing with axial bearings with a crane and heat to approx. 85°C-95°C in a special heating cabinet (Photo No. 03/06).



INSTRUCTION

Assembly of the main bearing

N43-Mk3

No: I201-603GB
Page: 4 / 6
Date: 23/11-00
Rev.: 1

Responsible SKO

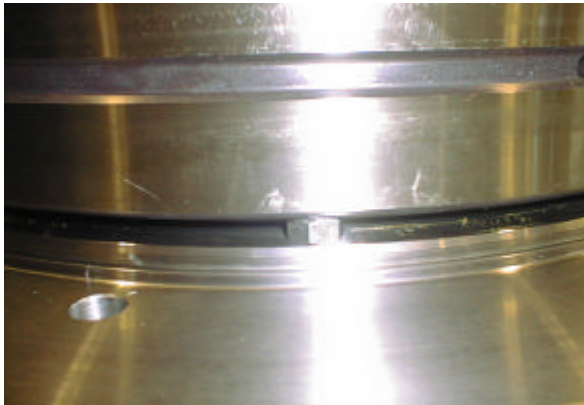
Prepared by: HJB

Approved by: PBL



Photo No. 03/06

When the temperature is reached, lower the bearing housing with axial bearing onto the main rotor shaft from above. Before this is done, the cover is lowered in a way so that the height between the bearing and the cover corresponds to the height on a 12 mm nut (see photo no. 03/07), and it must slide over the radial bearing under vacuum. It must not be allowed to bend out of alignment. (see photo No. 03/08).





INSTRUCTION

Assembly of the main bearing

N43-Mk3

No: I201-603GB
Page: 5 / 6
Date: 23/11-00
Rev.: 1

Responsible SKO

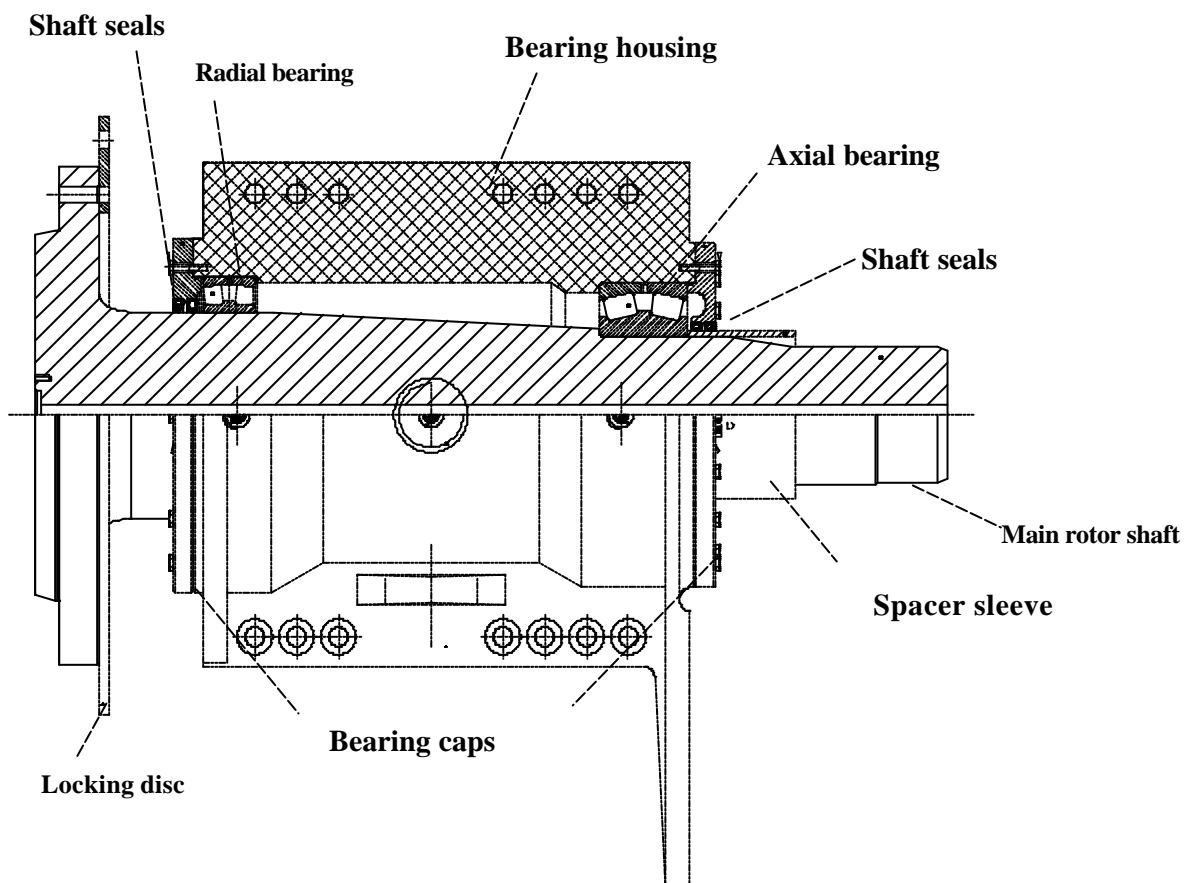
Prepared by: HJB

Approved by: PBL

Photo No. 03/08

Heat the spacer sleeve No.1296 with an induction heater to approx. 160°C . When the temperature is reached, push the sleeve as far as the inner bearing ring. When the parts have cooled down, fit the bearing cap.

Press a shaft seal (340-380-18B2) onto the inside of the bearing cap (0590). Mount a 3.5 mm O-ring lubricated with a thin layer of grease (BR2 Plus). Push the bearing cap onto the bearing housing and secure with 16 hexagonal screws no. M16x70 8.8 and washers, applying a torque of 170 Nm. Mount the bearing cap so that the threaded holes for the lubricating nipples face upwards. Now press a second shaft seal (340-380-18B2) onto the bearing cap from the outside. (see Drawing No. 04/01)



Now mount the bearing housing horizontally in the assembly jig.

Secure the front bearing cover (0592) with 8 hexagonal screws no. M16x70 8.8 and washers to the bearing housing, applying a torque of 170 Nm. Apply a thin coating of grease to the cap. Mount the bearing cap so that the threaded holes for the lubricating nipples face upwards. If the radial bearing has previously been



INSTRUCTION
Assembly of the main bearing
N43-Mk3

No: I201-603GB
Page: 6 / 6
Date: 23/11-00
Rev.: 1

Responsible SKO

Prepared by: HJB

Approved by: PBL

correctly adjusted, the bearing will sit centrally between the recess in the bearing housing and the bearing cap. On both sides there will be a clearance of 4 mm. Tolerance is ± 1 mm.

After finishing this work, mount the 10 mm angled lubricating nipple on the front bearing cap. Screw on 2 No. 1/8" threaded angle fittings (No. 08LR1/8").

Furthermore mount 2 pieces of 10 mm angled lubricating nipples (no. 08LR1/8") at the back of the bearing cap. The thread with lubricating nipples must be mounted with a weak thread safety device pink (Omnifit Seal 100). Finally, the nipples are covered by plugs which protect against paint etc. From below screw a 2" blind plug (for grease removal) into the bearing housing, this is mounted with a thread safety device (Omnifit seal 100). From above screw into the bearing housing a 1/2" bleed plug and 2 no. PG 9 holders for the temperature gauges and close the hole with 2 pieces of cable before painting.

Secure the distributor bench bushing (0721) for tip control with 4 hexagonal screws no. M12x30 8.8. Insert into this a further bushing (0722) to take the spoiler tube and fix it with 3 hexagonal screws no. M8x20 and plug with 3/4" plug.

Fix the locking disk no. 0886 to the shaft flange with 2 hexagonal screws no. M30x140.

Have the bearing housing painted.

5) Nonconformities:

If differences from these instructions should occur in practice, inform the Production Manager immediately.

He must then enter the nonconformity separately in a nonconformity report.

6) Record-keeping:

When this instruction has been carried out, complete Assembly Report K201-603GB.

7) Filing and distribution:

Attach the materials receipt and the assembly Report to the turbine file.