

F64 HEADSTOCK WITH ANTIFRICTION BEARINGS (closed design)

Type 102-37 with quick-closing lever
Lubrication by oil gun or by oil mist
For normal and special I speed ranges

SPECIFICATION	Item N°	102-37
Thread on spindle nose		diam. 97.6 x 3 mm (3 27/32x.118")
Length of thread on spindle nose		15 mm (19/32")
Cylindrical seat on spindle nose		diam. 98 x 10 mm (3.859 x 13/32")
Spindle bore		diam. 64 mm (2 17/32")
Maximum bore through standard collet (*)		diam. 55 mm (2 11/64")
Internal taper of collet sleeve		15°
Width of pulley steps		47 mm (1 27/32")
Diameters of pulley steps		100/126 mm (4/5")
Weight in kg (lbs)		40.500 (89.29)

(*) Note : For a through bore greater than 53 mm (2 3/32") diam., and up to 55 mm (2 11/64") diam., it is necessary to remove the internal protective tube (102-37.031) situated at the rear of the spindle (102-37.102).

To do this, proceed as follows :

1. Open the collet.
2. Unscrew the nut (102-37.019).
3. Withdraw the tube (102-37.031).
4. Refit the nut (102-37.019).

MAINTENANCE

A. CLEANING ON RECEIPT

All external and internal machined parts are given a coat of anti-rust grease prior to despatch.

This grease has no lubricating property. Its presence may cause serious seizures, even several weeks after the machine has been put into service. Clean the entire unit with a chemically neutral white cloth (free of acid or chlorine) soaked in paraffin. Avoid using alcohol or petrol (which often contains alcohol) or any other organic product that would dissolve the cellulose paint.

B. LUBRICATION OF BEARINGS (applicable only to lubrication by oil gun)

The front and rear bearings are lubricated through two nipples placed on the headstock. Use a good mineral oil with a viscosity of about 3°E at 50°C (see Lubricating chart, ING 57-1). For lubrication, use the oil gun supplied with the lathe.

The lubricant and the method of lubrication used have an effect on the friction and temperature of the bearings. Any large accumulation of lubricant can cause overheating.

Lubricate often, but little. (At the most, once a day in normal service.)

Never use grease! Any excessive amount of grease can restrict the motion of the rolling elements to such an extent that they only slide on the tracks.

Note : Headstocks lubricated by oil mist require no other form of lubrication.

C. LEVER-OPERATED QUICK-CLOSING ATTACHMENT

The fulcrum pins of the lever (102-37.004) are each provided with an oil nipple (K7).

Give a few shots of oil to this points, once a week. Oil also the dogs (102-37.012). Remove the spindle-nose nut (102-37.011) and lubricate the clamping elements inside the spindle.

(See Lubricating chart, ING 57-1).

ADJUSTMENT OF SPINDLE BEARINGS

The two bearings are carefully adjusted during the assembly of the headstock. No subsequent adjustment is necessary until after a relatively long period of running.

Only a skilled person should be permitted to make the adjustments described below, as they call for the greatest possible care.

TAKING UP AXIAL AND RADIAL PLAY IN THE FRONT AND REAR BEARINGS

1. Determine the exact amount of radial play by means of a comparator reading to within 1/1000 mm (.00004").

2. Pull the lever (102-37.004) towards you and unscrew the nut (102-37.019).

3. Unscrew the sleeve (102-37.014).

4. Remove the support (102-37.105) together with the quick-closing attachment. The support (102-37.105) is secured by four screws.

5. Loosen the screw of nut (102-37.108) and tighten the latter according to the amount of play to be taken up.

6. Firmly tighten the screw of nut (102-37.108).

7. Refit the quick-closing unit and check the axial play of the bearings which must be :

.004 to .006 mm (.000157 to .000236") in the case of the normal speed range, and
.006 to .008 mm (.000236 to .000315") in the case of the special I speed range,
if perfect running conditions are to be obtained.

This check must be made with the two (Gamet 117090/117133 x) bearings completely dry.

8. Refit all the parts in the reverse order of dismantling.

SPINDLE-LOCKING DEVICE

The piston (102-37.021), actuated by a knurled pinion, is brought into mesh with the teeth of the gear (102-37.035) and allows the spindle to be locked as and when required. The gear (102-37.035) is designed also to drive the screwcutting attachment (102-35.500) made for mounting on the F27, F38 and F64 headstocks with antifriction bearings (closed design).

LEVER - OPERATED QUICK - CLOSING ATTACHMENT**A. FITTING AND OPERATION**

The support (102-37.105) is fixed to the frame of the headstock by means of 4 screws (CCM M8x22).

To clamp the workpiece, push the lever (102-37.004) to the left.

To unclamp the workpiece, pull the lever to the right.

Important! When handling bar work, avoid whip by placing a guide bush in the nut (102-37.019).

B. ADJUSTMENT OF CLOSING

1. Screw the nose nut (102-37.011) right up.
2. Arrange the dogs (102-37.012) horizontally and check whether the ring (102-37.017) is correctly placed.
3. Exert an axial pressure on the collet from the front of the headstock to ensure that the dogs (102-37.012) are placed in position.
4. Push the lever (102-37.004) to the left.
5. Clamp the workpiece lightly by screwing up the sleeve (102-37.014)
6. Pull the lever (102-37.004) towards you and make the final adjustment of the closing with the sleeve (102-37.014).
The sleeve (102-37.014) is automatically locked in all its positions by two spring-loaded pistons.

C. ADJUSTMENT OF THE BEARING SLEEVE (102-37.034)

Whenever the quick-closing attachment has been removed, it is necessary, after refitting it, to readjust the perpendicularity of the sleeve (102-37.034).

To do this, run the machine at a reduced speed and adjust the eccentric screw (102-21.615) until the sleeve is immobilized in the vertical plane.

Note : Any distortion in the sleeve (102-37.034), however slight, can cause very rapid wear in the bearing (6016 x).

D. REPLACEMENT OF THE CLAMPING DOGS

When replacing the clamping dogs (102-37.012), it is essential to fit two parts of the same number.

To replace, proceed as follows :

1. Slightly loosen the sleeve (102-37.014) to minimize the pressure on the clamping dogs.
3. Release the pin (102-34.020) by undoing the screw (D M6x8) and withdraw it.
3. Take out the lever (102-37.004). To do this, completely remove the pivot-screw (102-34.025) and slightly slacken the eccentric screw (102-21.615).
4. Unscrew the nut (102-37.019) and take out the sleeve (102-37.034), the nut (102-37.036) and the ball bearing (6016 x) together, without dismantling this assembly.
5. Withdraw the internal protective tube (102-37.031).
6. Unscrew and remove the sleeve (102-37.014).
7. Mount the internal protective tube (102-37.031) in the spindle and adjust the new dogs.
8. Refit the whole assembly in the reverse order of dismantling, (see sections B & C, above).

