BERTOLOTO & GROTTA

Sleeve for Bearings

Instructions for Assembling and Disassembling Sleeves under Self-aligning Bearings with Tapered Bore

Video 02: ASSEMBLING of ADAPTER SLEEVE under self-aligning BALL BEARING with HYDRAULIC NUT

See the step-by-step procedure at **www.bgl.com.br/en/treinamento.htm**
Technical Videos – **Video 02**

BGL Application Engineering

Contents:

INITIAL ARRANGEMENTS

01

Keep the workplace dry and dust-free.

02

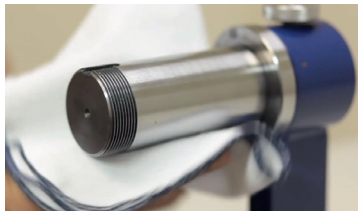
Select the adequate tools.

03

It is important that, before unpacking the parts, you compare the designation of the package with your needs.

04

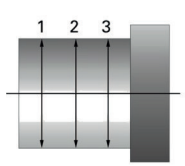
The shaft may show contact corrosion or abrasion and it must be carefully cleaned.

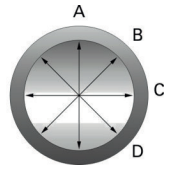


05

Next, check the dimensional precision and the shape of the shaft that will be in contact with the Sleeve.
The shaft dimension must be within the tolerance of maximum h10 and cilindricity IT5/2 or—at low rotations—IT7/2.

⚠ ATTENTION
The shaft diameter must be checked using a micrometer in four positions in two or three planes.





Assembling Procedures

06

Unpack and clean the Sleeve.

07

Put a thin film of oil on the internal and external surfaces of the Sleeve and also on the shaft.

Note: This procedure helps disassembling the parts. Depending on the type of the equipment demand, the assembling procedure can be done with dry parts, without using oil.

08

Put the Sleeve on the shaft. If necessary, enlarge it, inserting a screwdriver in the slot.

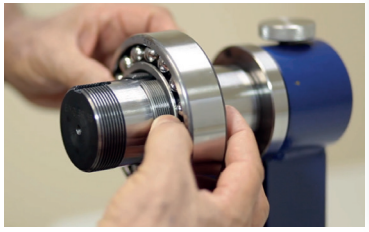
09

Remove the package from the bearing.

Note: New bearings must be taken out of the package only at the moment of assembling.

10

Remove the protective oil from the bore and also from the external diameter and put it on the Sleeve.



Video 02: **ASSEMBLING** of **ADAPTER SLEEVE** under self-aligning **BALL BEARING** with **HYDRAULIC NUT**

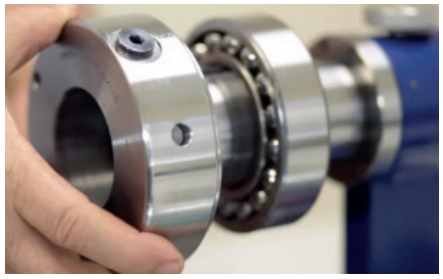
ATTENTION

The assembling of the Adapter Sleeve under the self-aligning bearing with internal diameter above 50 mm gets extremely easier when you use the Hydraulic Nut and the comparator dial.

Order the HMV_E Hydraulic Nut, being the suffix exactly the same as the one of the Adapter Sleeve.

11

Insert the Hydraulic Nut in the Sleeve, with the plunger turned to the bearing, and screw it.



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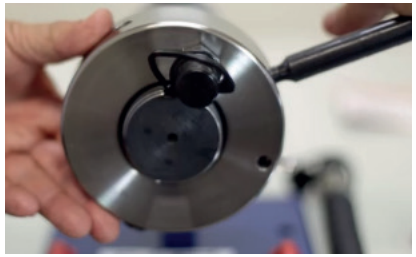
12

Use a straight pin spanner, to get a proper contact between the bearing, the Sleeve and the shaft.

Note: Starting point for Clearance Reduction (Zero Point).



13

Tie the Pump hose to the quick coupling of the Hydraulic Nut.

14

Next, insert the comparator dial into the Hydraulic Nut and tie it with the nylon screw.

15

Set the comparator dial indicator to zero (0).

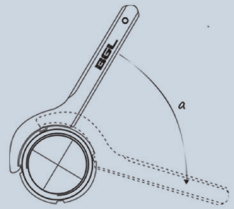
16

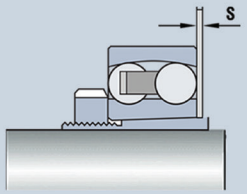
After that, consult the axial displacement table to know the amount to be displaced.

Example: The bearing 2212K was used in this assembling example.

Calculate the diameter of the bearing bore (12 x 5 = 60 mm). The amount to be displaced is 0.40 mm.

Table for tightening angle and axial displacement to assembly adapter sleeves used on self-aligning ball bearing





Bearing hore diameter	Tightening angle of the nut	Axial displacement*
d	$\alpha_{(1)}$	S
mm	º	mm
20	80	0.22
25 e 30	55	0.22
35 e 40	70	0.30
45 e 50	80	0.35
55 a 65	95 Thread pitch 1.5mm (BGL)	0.40
70	75	0.40
75 e 80	85	0.45
85 a 100	110	0.60
110 e 120	125	0.70

($_{(1)}$) The tightening angles may vary with the bearing series, with the thread pitch of the adapter sleeve and also according to the bearing manufacturer.

Source: Traditional manufacturers of bearings.

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17

Set the second marker to the figure given in the table.

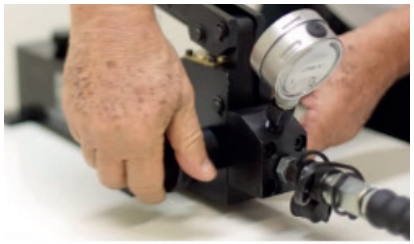
Note: The amount to be displaced is 0.40mm.

18

Pump the oil to the Hydraulic Nut, displacing the plunger, observing on the comparator dial the clearance reduction by axial displacement.

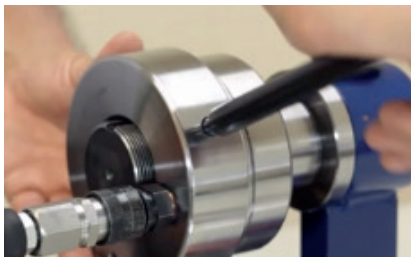
19

Upon reaching the desired axial displacement, relieve the Pump pressure and remove the comparator dial.



20

With the pin spanner, tighten the Hydraulic Nut moving back the plunger for the oil to return to the Pump.



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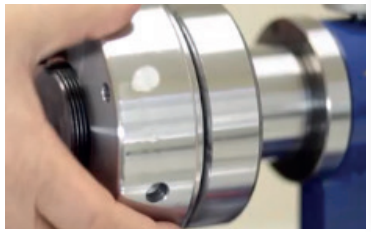
21

Disconnect the Pump and remove the Hydraulic Nut.

Note: Make sure the bearing has not moved.

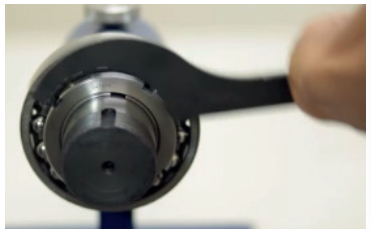


22

Put the MB Lockwasher.

23

Tighten the Locknut firmly using the HN Hook Spanner.



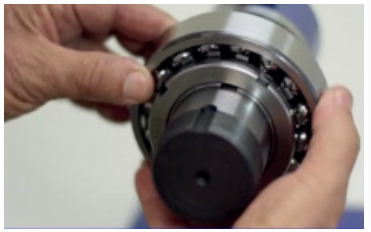
24

Align the nearest notch of the Nut with the external jut of the Washer and, with the help of a pricker, bend it.

25

To finish, make sure the bearing can be turned easily with your hands.

Note: It shows some resistance when misaligned.



To disassemble, see **Video 13** at **www.bgl.com.br/en/treinamento.htm**

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Reference Technical Standards:
ABNT NBR 16535-1: SLEEVES FOR BEARINGS
ABNT NBR 16535-2: LOCKNUTS AND LOCKWASHERS

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