BERTOLOTO & GROTTA

Sleeve for Bearings

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

Video 07: ASSEMBLING of WITHDRAWAL 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 07**

BGL Application Engineering

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Video 07: **ASSEMBLING** of **WITHDRAWAL SLEEVE** under self-aligning **BALL BEARING** with **HYDRAULIC NUT**

INITIAL ARRANGEMENTS

01

Keep the workplace dry and dust-free.

02

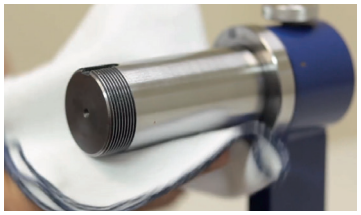
Select the adequate tools.

03

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

04

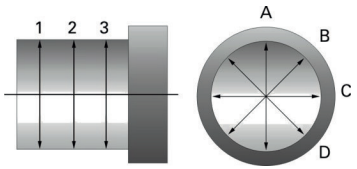
The shaft may show contact corrosion or abrasion and it must be carefully cleaned.



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.



Video 07: **ASSEMBLING** of **WITHDRAWAL SLEEVE** under self-aligning **BALL BEARING** with **HYDRAULIC NUT**

Assembling Procedures

06

Unpack the bearing, remove the protective oil from the bore and from the external diameter.

07

Put it on the shaft.

Note: The shaft needs to be scaled.

08

Unpack and clean the Sleeve.

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

09

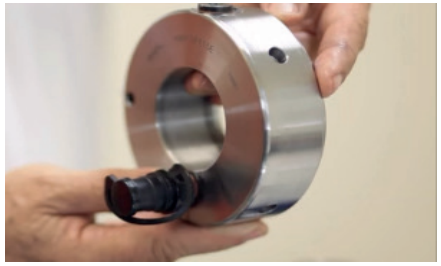
Put the Sleeve on the shaft. If necessary, enlarge it inserting a screwdriver in the slot and then move it under the bearing until you get a firm contact.

Video 07: **ASSEMBLING** of **WITHDRAWAL SLEEVE** under self-aligning **BALL BEARING** with **HYDRAULIC NUT**

ATTENTION

The assembling of the Withdrawal 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.

Note: In this example a Withdrawal Sleeve AHX 312 was used with the Hydraulic Nut HMV 11E.



10

Insert the Hydraulic Nut in the shaft thread, with the plunger turned to the Withdrawal Sleeve.

11

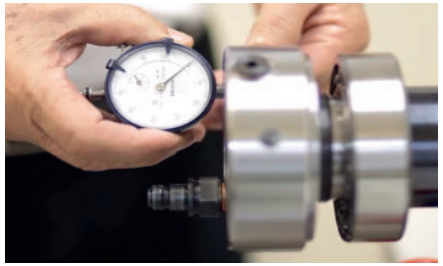
Use a straight pin spanner, to get a proper contact between the bearing, the Sleeve and the shaft.

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

Video 07: **ASSEMBLING** of **WITHDRAWAL SLEEVE** under self-aligning **BALL BEARING** with **HYDRAULIC NUT**

12

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

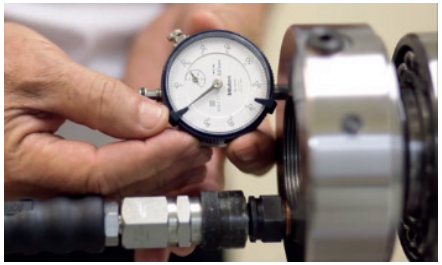


13

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

14

Set the comparator dial indicator to zero (0).



15

After that, consult the Axial Displacement Table to know the amount to be displaced and set the second marker to the figure in the table.

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

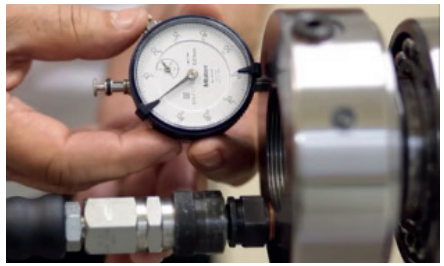
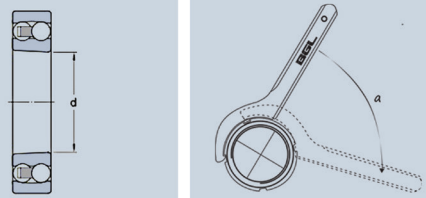


Table for tightening angle and axial displacement to assembly adapter sleeves used on self-aligning ball bearing



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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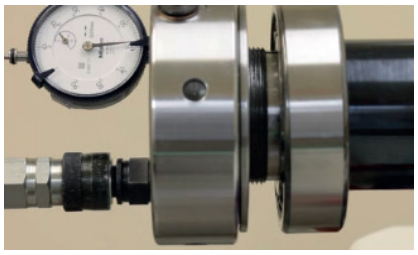
16

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

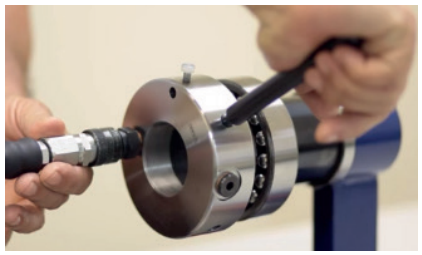
17

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



18

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



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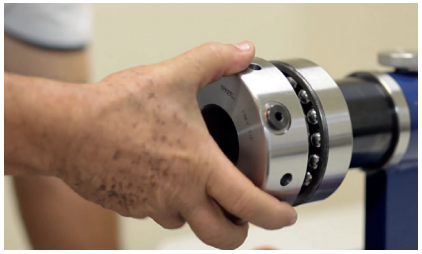
19

Disconnect the Pump and remove the Hydraulic Nut.

Note: Make sure the Sleeve has not moved back.

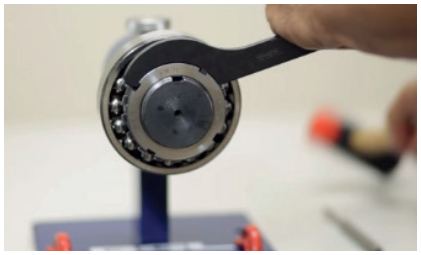


20

Put the Lockwasher.

21

Firmly tighten the Locknut using an HN Hook Spanner.



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22

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

23

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

To disassemble, see **Video Vídeo 15** at **www.bgl.com.br/en/treinamento.htm**

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Catalog Download:
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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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