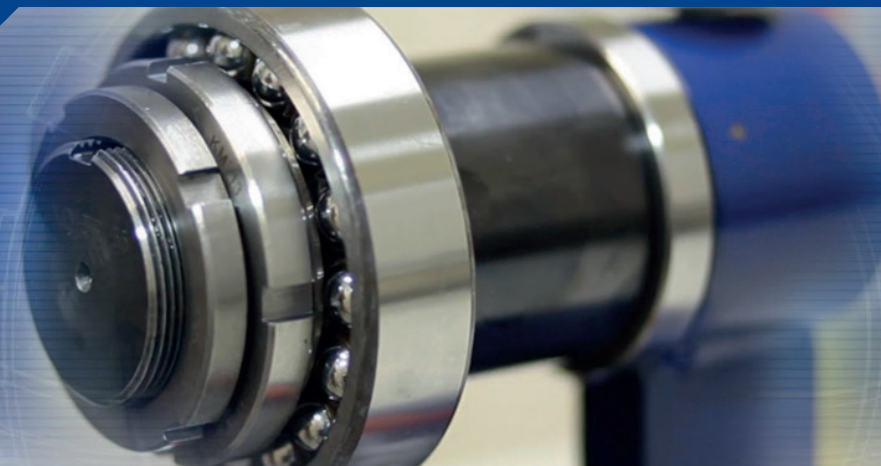


## Instructions for Assembling and Disassembling Sleeves under Self-aligning Bearings with Tapered Bore



**Video 06: ASSEMBLING of WITHDRAWAL SLEEVE under self-aligning  
BALL BEARING with HOOK SPANNER**

See the step-by-step procedure at [www.bgl.com.br/en/treinamento.htm](http://www.bgl.com.br/en/treinamento.htm)  
Technical Videos - **Video 06**

**Contents:**

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**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**

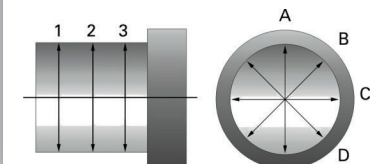
The shaft may show contact corrosion or abrasion and it must be carefully cleaned.



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



Atenção: Rolamentos novos devem ser retirados de sua embalagem somente no momento da montagem

**07**

Put it on the shaft.

**Note:** The shaft needs to be scaled.



Há necessidade do eixo ser escalonado



**08**

Unpack and clean the Sleeve.

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



Este procedimento ajudará na desmontagem das peças

**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.



10

Screw the Nut to the Withdrawal Sleeve which will be used to measure the axial moving.



Na BUCHA DE DESMONTAGEM AHX 312 foi utilizada a porca KM 13

11

Oil the chamfered face of the shaft Nut with a thin film of oil.



12

Screw the shaft nut until the Sleeve-shaft-bearing set is firmly set.



Neste exemplo foi utilizada a Porca KM 11 e Chave de Gancho HN 11

13

Adjust the Withdrawal Sleeve Nut with the correct displacement value using a feeler gauge and the axial displacement table for the self-aligning ball bearings.

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

Calculate the diameter of the bearing bore ( $12 \times 5 = 60 \text{ mm}$ ).

**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**

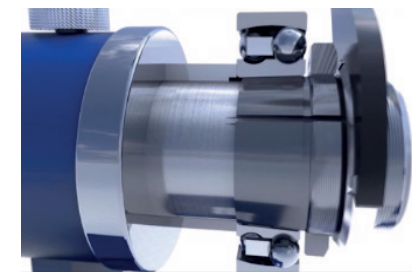
Bearing bore diameter	Tightening angle of the nut	Axial displacement*
d	$\alpha(^{\circ})$	S
mm	°	mm
20	80	0.22
25 e 30	55	0.22
35 e 40	70	0.30
45 e 50	80	0.35
55 a 65	95 Thread pitch 1.5mm (BGL)	0.40
70	75	0.40
75 e 80	85	0.45
85 a 100	110	0.60
110 e 120	125	0.70

(\*) 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.

14

With a HN Hook Spanner, tighten the shaft nut until the Sleeve Nut touches the bearing.



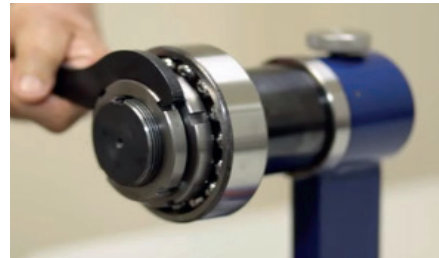
15

Check for any clearance between the Nut and the bearing.



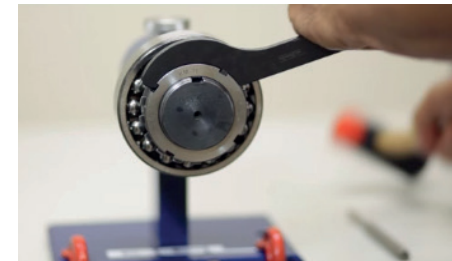
16

Remove the Nut used for the assembling as well as the Withdrawal Sleeve Nut. Make sure the Sleeve has not moved back.



17

Put the MB Lockwasher. Firmly screw the Locknut to the shaft using an HN Hook Spanner.



18

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



19

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



To disassemble, see **Video 14** at [www.bgl.com.br/en/treinamento.htm](http://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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