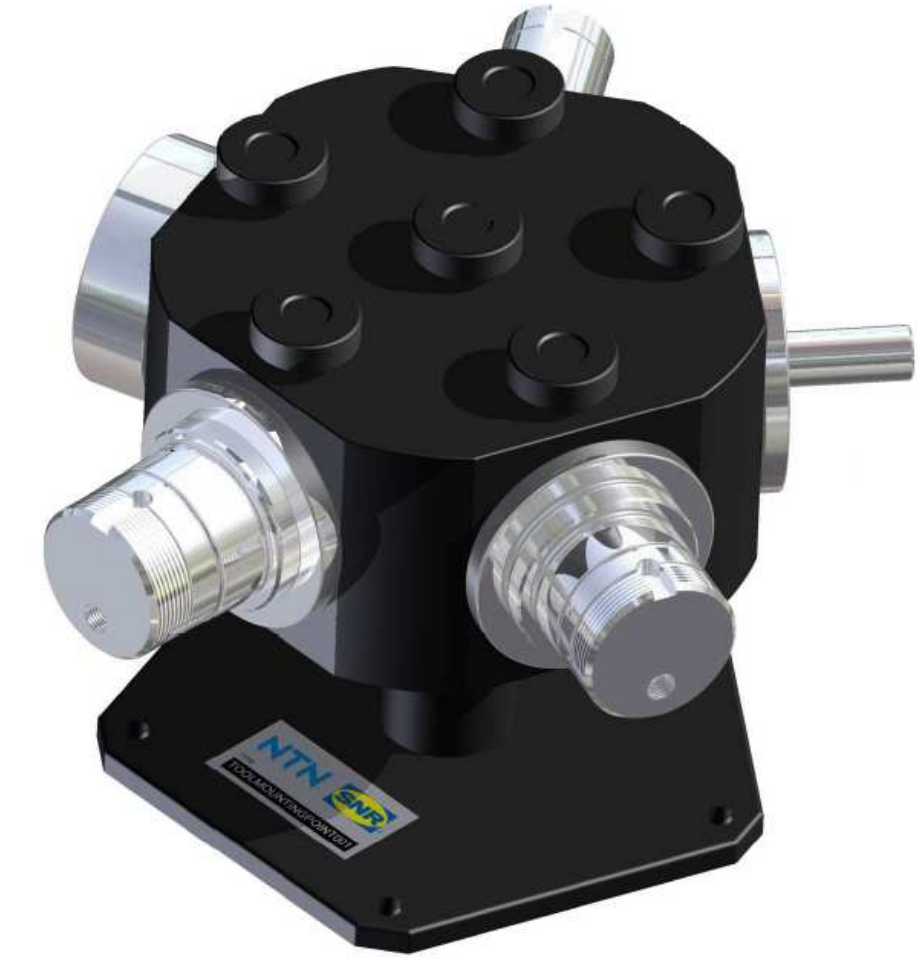


NTN-SNR Demonstration and Training tool

‘MOUNTING POINT’

USER’s GUIDE

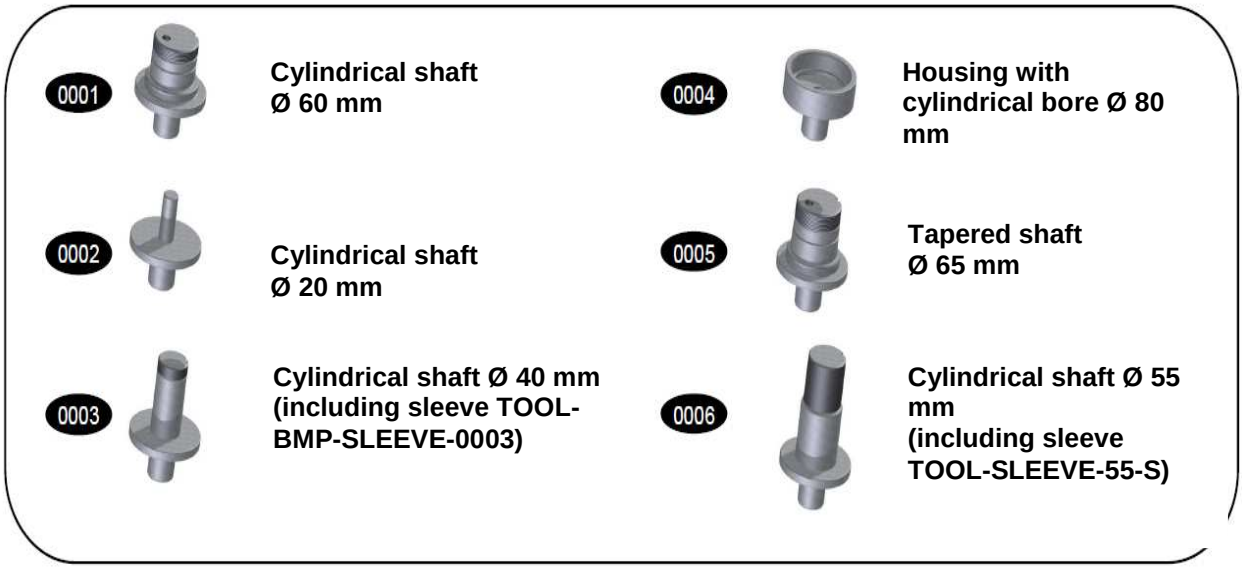
NTN-SNR MOUNTING POINT

Product description

The NTN-SNR Mounting Point (MP) is a device to show and to practice the right use of NTN-SNR mounting and dismounting tools for bearings.

This MP allows various assembly and dismounting situations for different bearing types.

Five different shafts can be easily mounted on the tool head at the same time. Unlocking the knurled head screws in the middle allows the head orientation in a suitable position.



Mounting

The MP can be used for the demonstration of 3 different mounting manners with adapted tools:

1. **Cold mounting**
2. **Warm mounting**
3. **with hydraulic nut**

Dismounting

The MP can be used for the demonstration of 4 different dismounting manners with adapted tools:

1. **A bore puller**
2. **A puller separator**
3. **A 2 or 3 arms self-centring mechanical/hydraulic puller**
4. **with a hydraulic nut**

2

1

3

3

4

The user manual describes how to use the MP regarding the training target, handling and safety aspects.

Shaft end TOOL-BMP-SHAFT-0001 (Ø60mm)

Material:

- **Bearing 22212EAW33 (also 21312V)**
- **MB12 (lock washer)**
- **KM12 (nut)**
- **Anti-fretting paste**
- **Paper for cleaning and/or basin**

Mounting (WARM)

Tools:

- **Induction Heater: TOOL FAST THERM 20**
- **HEAT RESISTANT Gloves (thermal)**
- **Hook spanner TOOL HS 50-80**

Exercise

- **Put Anti-fretting paste on shaft**
- **Adjust FAST THERM temperature level at 90°C**
- **Heat the bearing**
- **Put the gloves on**
- **Put the bearing on the shaft**
- **Put the lock washer and the nut on the shaft**
- **Look the nut with the hook spanner**
- **Secure the nut by lashing a flap of the washer into the groove of the nut**

Dismounting

Tools:

- **Pump: TOOL PUMP SET 700B-0.3L**
- **Self-centring mechanical puller TOOL SCMP 2/3-120 or Back puller with mechanical spindle TOOL BPM 22-115**

Exercise

- **Connect the Pump on the shaft**
- **Put the basin under the shaft + paper to protect the environment**
- **Give short and hard pump strokes in order to pull strongly the bearing until the groove becomes visible**
- **Disconnect the pump**
- **Put the Back puller plat with the flat side on the bearing surface**
- **Pay attention to the tool weight while screwing just before you will separate the bearing from the shaft**

Shaft end TOOL-BMP-SHAFT-0002 (Ø 20mm)

Material:

- **Bearings with eccentrically collar UEL/EX 204**

Mounting of an Eccentric collar

Tools:

- **Pin spanner TOOL PS 35-50**
- **Hammer**

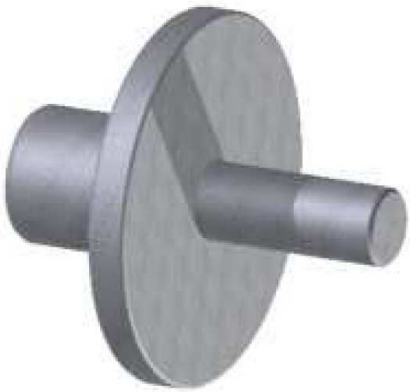
Exercise

- **Put the bearing insert UEL/EX204 on the shaft with the receptive side to the shaft end**
- **Put the eccentric collar on the inner ring and turn it until it blocks. Attention to the direction: Tightening in the sense of the rotation while shaft will pull the collar**
- **Tighten the collar by hammering the strainer**

Dismounting

- **Unscrew the collar**
- **Turn the collar by hammering in the direction against the rotation sense**

Shaft end TOOL-BMP-SHAFT-0002 (Ø 20mm)



Material:

- **Bearings adapter sleeve UK205G2H**

Mounting of a bearing insert with adapter sleeve UK205G2H

Tools:

- **Hook spanner : TOOL HS 35-50 (2 pcs.)**
- **Strainer**
- **Hammer**
- **Screw driver**

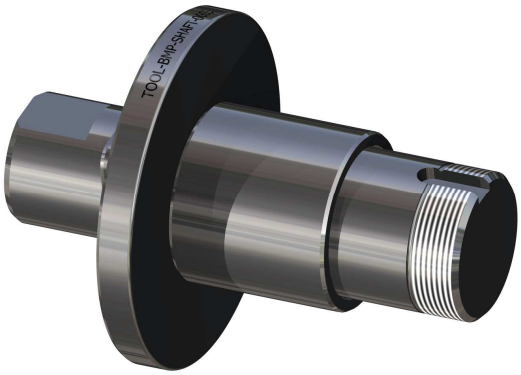
Exercise

- **Put the adapter sleeve on the shaft with the thread orientated to the shaft end**
- **Put the bearing insert on the sleeve (without any mounting paste)**
- **Put the washer and the locknut on the adapter sleeve (eventually grease the faces of the locknut and the washer to reduce friction)**
- **Tighten the locknut with the recommended torque concerning catalogue bearing units (eventually use the second hook spanner on the backside of the adapter sleeve to prevent it from turning).**
- **Secure the locknut by turning one flap of the washer into the groove of the locknut.**

Dismounting

- **Unscrew the nut 2mm**
- **Push the sleeve by hammering with a tube (or something similar) on the nut**

Shaft end TOOL-BMP-SHAFT-0003 Ø40mm (with sleeve TOOL-BMP-SLEEVE-0003)



Material:

- **Bearings with cylindrical bore Ø40 (6208; 22208EAW33; . . .)**
- **MB8 (lock washer)**
- **KM8 (nut)**
- **Anti-fretting paste**

<u>Mounting (COLD)</u>

Tools:

- **MOUNTING TOOL KIT CASE: TOOL IFT SET 33**
- **Hook spanner: TOOL HS 35-50**
- **Plastic hammer**

<u>Exercise</u>

- **Put the sleeve on the shaft**
- **Put Anti-fretting paste on shaft**
- **Put the bearing on the shaft**
- **Choose the right disk in the TOOL KIT CASE**
- **Push the bearing by hammering until the sleeve is blocked**
- **Show the washer and nut use**

<u>Dismounting</u>

Tools:

- **Back puller with mechanical spindle : TOOL BPM 22-115 <u>or</u>**
- **Self-centring mechanical puller: TOOL SCMP 2/3-120**

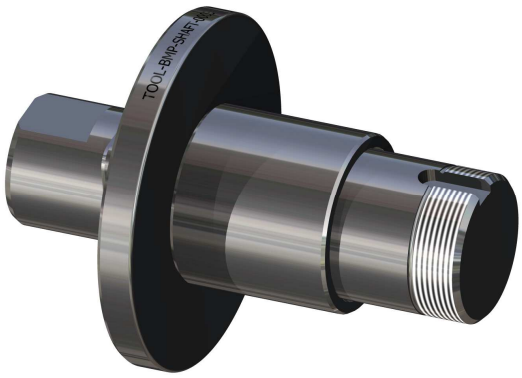
<u>Exercise</u>

- **Remove washer and nut**
- **Put the Back puller plat with the flat side on the bearing back surface**
- **Re-adjust the puller plat after some mm vertical movement**
- **Pay attention to the tool weight while screwing just before you will separate the bearing from the shaft**

or:

- **use the self-centring puller**

Shaft end TOOL-BMP-SHAFT-0003 Ø40mm (with sleeve TOOL-BMP-SLEEVE-0003)



Material:

- **Bearings with cylindrical bore Ø40 (6208; 22208EAW33; . . .)**
- **MB8 (lock washer)**
- **KM8 (nut)**
- **Anti-fretting paste**

<u>Mounting (WARM)</u>

Tools:

- **Induction heater: TOOL FAST THERM 20**
- **Gloves (thermal)**
- **Hook spanner : TOOL HS 50-80**

<u>Exercise</u>

- **Put sleeve on the shaft**
- **Put Anti-fretting paste on shaft**
- **Adjust FAST THERM temperature level at 110°C**
- **Heat the bearing**
- **Put the gloves on**
- **Put the bearing on the shaft**
- **Put the lock washer and the nut on the shaft**
- **Look the nut with the hook spanner**
- **Secure the locknut by turning one flap of the washer into the groove of the locknut**

<u>Dismounting</u>

Tools:

- **Back puller with mechanical spindle : TOOL BPM 22-115 <u>or</u>**
  Self-centring mechanical puller : TOOL SCMP 2/3-120

<u>Exercise</u>

- **Remove washer and nut**
- **Put the Back puller plat with the flat side on the bearing back surface**
- **Re-adjust the puller plat after some mm vertical movement**
- **Pay attention to the tool weight while screwing just before you will separate the bearing from the shaft**

or:

- **use the self-centring puller**

Housing end TOOL-BMP-Housing -0004 (Ø 80 mm)

Material:
- **Bearing 6208**
- **Anti-fretting paste**

Mounting

Tools:

- **MOUNTING TOOL KIT CASE: TOOL IFT SET 33**

Exercise

- **Put Anti-fretting paste on the housing contact surface**
- **Choose the right disk**
- **Put the bearing in front of the bore**
- **Push the bearing by hammering**

Dismounting

Tools:

- **Bore puller : TOOL BP SET 12-45**
- **Wrench 32mm**

Exercise

- **Choose the right puller size**
- **Spread the puller in the bore**
- **Install the puller extractor**
- **Pull out the bearing by turning the nut (32mm) with the wrench**
- **Pay attention to the tool weight while screwing just before you will separate the bearing from the shaft**

Tapered Shaft end TOOL-BMP-SHAFT-0005 Ø65 mm

Material:

- **Bearing 22212EAKW33**
- **MB12**
- **KM12**

Mechanical mounting

Tools:

- **Hook spanner : TOOL HS 50-80**
- **TOOL FEELER GAUGES 150**
- **Plastic hammer**
- **SRB ULTAGE Catalogue**
- **Marker (felt tip pen)**

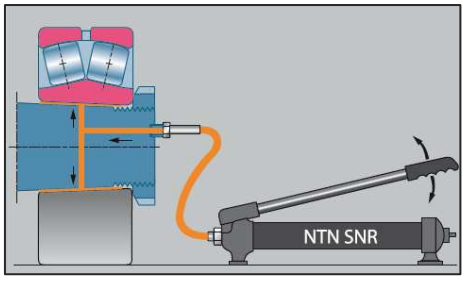
Exercise

- **Do not put Anti-fretting paste on shaft!**
- **Put the bearing on the shaft**
- **Put the washer MB12 on the shaft**
- **Screw the nut KM12 on the threat and tight it against the washer in order to suppress all the gap**
- **Look-up the needed axial bearing displacement and calculate the nut rotation by thread pitch**
- **Make a mark with the marker on the nut and a second mark on the shaft in order to indicate the final nut position**
- **Tight the nut with the spanner (perhaps with the help of the hammer, eventually grease the surface of washer and locknut to prevent too much friction)**
- **Control the clearance with the feeler gauges (min /max)**
- **If the clearance is NOK, turn the nut again**

Dismounting

Tools:

- **Pump : TOOL PUMP SET 700B-0.3L**
- **Paper to protect the environment**



Exercise

- **Unscrew the nut 2 turns**
- **Connect the pump on the shaft**
- **Put paper around the shaft to protect the environment**
- **Give short and hard pump strokes to release the bearing**
- **Disconnect the pump**
- **Unscrew the nut completely and remove the bearing**

Tapered Shaft end TOOL-BMP-SHAFT-0005 Ø65 mm

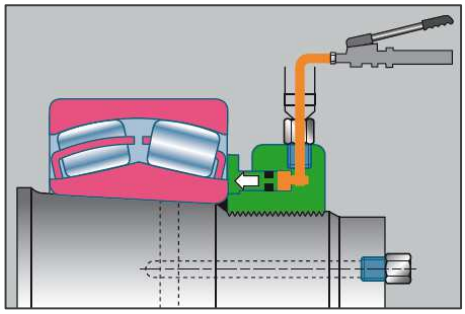
Material:

- **Bearing 22212EAKW33**
- **MB12**
- **KM12**

Mounting (with hydraulic nut)

Tools:

- **Hydraulic nut : TOOL HMV12EBF**
- **Hydraulic pump: TOOL PUMP SET 700B**
- **TOOL DIAL GAUGE 050**
- **Catalogue SRB**
- **TOOL FEELER GAUGES 150**
- **Hook spanner : TOOL HS 50-80**



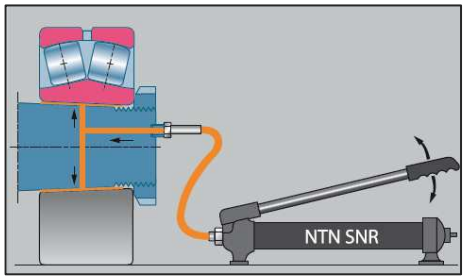
Exercise

- **Do not put Anti-fretting paste on shaft!**
- **Put the bearing on the shaft**
- **Put the hydraulic nut on the shaft and tight it slightly against the bearing**
- **Put the gauge on the nut with a minimal displacement of 2mm**
- **Look-up the needed axial bearing displacement**
- **Connect the hydraulic pump and pump until the nut piston moves the right distance**
- **Check if the necessary reduction of the clearance is reached and eventually pump again**
- **Open the valve on the pump; the piston moves back into its original position.**
- **Disconnect the pump, dismount the hydraulic nut**
- **Control the clearance with the feeler gauges (min /max)**
- **In case of a too light clearance remount the nut and pump again**
- **Fix the nut with the washer MB12 and the nut KM12.**

Dismounting

Tools:

- **Pump: TOOL PUMP SET 700B**
- **Paper to protect the environment**



Exercise

- **Unscrew the nut 2 turns**
- **Connect the pump on the shaft**
- **Put paper around the shaft to protect the environment**
- **Give short and hard pump strokes to release the bearing**
- **Disconnect the pump**

Shaft end TOOL-BMP-SHAFT-0006 (Ø 55 mm)

Material:

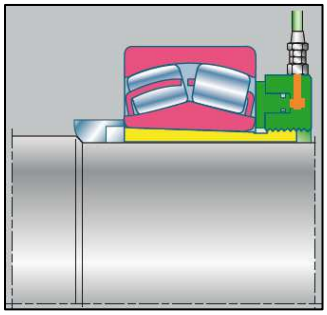
- **Bearing 22212EAKW33**
- **Sleeve H312**
- **MB12**
- **KM12**
- **Shaft ring TOOL BMP-SLEEVE-55-S**

<u>Mounting (with Adapter sleeve H312)</u>

Tools:

- **Hydraulic nut : TOOL HMV12EBF**
- **TOOL PUMP SET 700B**
- **TOOL DIAL GAUGE 050**
- **TOOL Feeler gauges 150**
- **Hook spanner: TOOL HS 50-80**
- **Catalogue SRB**

<u>Exercise</u>



- **<u>Do not</u> put Anti-fretting paste on shaft!**
- **Put the shaft-ring on the shaft (cavity to the bearing side)**
- **Put the bearing on the sleeve, push the sleeve on the shaft until the bearing is in contact with the shaft-ring**
- **Screw the hydraulic nut on the sleeve (orientation: piston face to the bearing) until the nut is slightly tightened on the bearing**
- **Install the dial gauge**
- **Look-up the needed axial bearing displacement**
- **Connect the hydraulic pump and pump until the nut piston moves the right distance (see bearing displacement)**
- **Check if the necessary reduction of the clearance is reached and eventually pump again**
- **Open the valve on the pump (the piston moves back into its original position)**
- **Disconnect the pump, dismount the hydraulic nut**
- **Control the clearance with the feeler gauges (min /max)**
- **In case of a too large clearance remount, the nut and pump again**
- **Disconnect the pump**
- **Fix the nut with the washer MB12 and the nut KM12.**

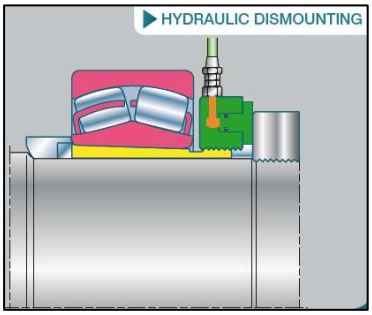
Shaft end TOOL-BMP-SHAFT-0006 (Ø 55 mm)

Dismounting

Tools:

- **Pump: TOOL PUMP SET 700B**
- **Hydraulic nut HMV12EBF**
- **Nut KM10**

Exercise



- **Remove nut and washer**
- **Screw the hydraulic nut on the sleeve (piston to the shaft end) keeping a distance of approximately 2mm between the bearing and the nut**
- **Screw the nut KM10 on the shaft (until the nut piston)**
- **Connect the pump and pump until the bearing is released**
- **Open the valve on the pump (the piston moves back into its original position)**

Shaft end TOOL-BMP-SHAFT-0006 (Ø55 mm)

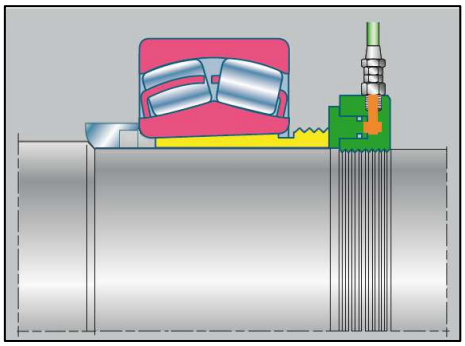
Material:

- **Bearing 22212EAKW33**
- **Withdrawal sleeve AHX312**
- **MB10**
- **KM10**
- **Shaft-ring TOOL BMP-SLEEVE-55-S**

<u>Mounting (with withdrawal sleeve AHX312)</u>

Tools:

- **Hydraulic nut : TOOL HMV10EBF**
- **Pump: TOOL PUMP SET 700B**
- **TOOL DIAL GAUGE 050**
- **TOOL FEELER GAUGES 150**
- **Catalogue SRB**



<u>Exercise</u>

- **<u>Do not</u> put Anti-fretting paste on shaft!**
- **Put the shaft-ring on the shaft**
- **Put the bearing on the shaft (pay attention to the right inner ring orientation)**
- **Put the sleeve on the shaft, push the sleeve on the shaft until the bearing blocks the sleeve**
- **Screw the hydraulic nut on the sleeve (orientation: piston to the bearing side), set the nut tight against the sleeve**
- **Install the dial gauge**
- **Look-up the needed axial bearing displacement**
- **Connect the hydraulic pump**
- **Pump until the nut piston moves the right distance (see bearing displacement)**
- **Check if the necessary reduction of the clearance is reached and eventually pump again**
- **Open the valve on the pump (the piston moves back into its original position)**
- **Disconnect the pump, dismount the hydraulic nut**
- **Control the clearance with the feeler gauges (min /max)**
- **In case of a too large clearance remount the nut and pump again**
- **Disconnect and remove the pump**
- **Fix the nut with the washer MB10 and the nut KM10.**

Shaft end TOOL-BMP-SHAFT-0006 (Ø55 mm)

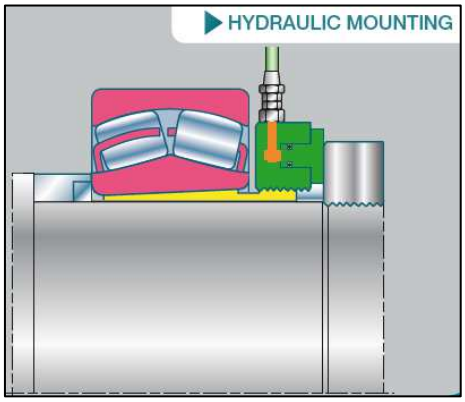
Material:

- **Bearing 22212EAKW33**
- **Withdrawal sleeve AHX312**
- **MB10**
- **KM10**
- **Shaft-ring TOOL BMP-SLEEVE-55-S**

<u>Mounting (with withdrawal sleeve AHX312)</u>

Tools:

- **Hydraulic nut : TOOL HMV13EBF**
- **Pump: TOOL PUMP SET 700B**
- **TOOL FEELER GAUGES 150**
- **Catalogue SRB**

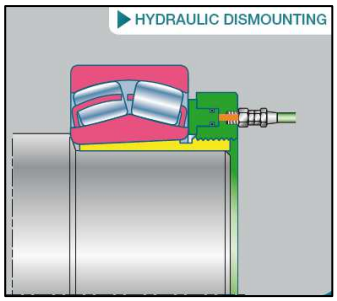


<u>Exercise</u>

- **<u>Do not</u> put Anti-fretting paste on shaft!**
- **Put the shaft-ring on the shaft**
- **Put the bearing on the shaft (pay attention to the right inner ring orientation)**
- **Put the sleeve on the shaft, push the sleeve on the shaft until the bearing blocks the sleeve**
- **Screw the hydraulic nut on the sleeve (orientation: piston to the shaft end); keep a distance of 2mm between the bearing and nut**
- **Screw the nut KM10 tight against the nut piston**
- **Look-up the needed axial bearing displacement**
- **Prepare the feeler gauge thickness with the value of the displacement**
- **Connect the hydraulic pump and pump until the nut piston moves and the feeler gauge move inside the gap between nut body and piston**
- **Open the valve on the pump (the piston moves back into its original position)**
- **Disconnect the pump, dismount the hydraulic nut**
- **Control the clearance with the feeler gauges (min /max)**
- **In case of a too large clearance remount the nut and pump again**
- **Disconnect and remove the pump**
- **Fix the sleeve with the washer MB10 and the nut KM10.**

Shaft end TOOL-BMP-SHAFT-0006 (Ø55 mm)

Dismounting



Tools:

- **Pump: TOOL PUMP SET 700B**
- **Hydraulic nut : TOOL HMV13EBF**

Exercise

- **Remove nut and washer from the shaft**
- **Screw the hydraulic nut on the sleeve (piston face to the bearing)**
- **Connect the pump and pump until the bearing is released**
- **Open the valve on the pump (the piston moves back into its original position)**