



Brand of **NTN Group**

MAINTENANCE INSTRUCTIONS

Replacement of piston seals
of hydraulic nuts HMV...EBF



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1. Replacement parts, accessories and technical data



Pos	Article		Notice
1	TOOL HMV BALL PLUG 1/4	Sealing plug with ball *	
2	TOOL HMV NIPPLE 1/4	Hydraulic connection *	Consisting of: 1x quick-action coupling with cover 1x adapter thread 1x sealing ring
3	TOOL HMV SW 1/4	Sealing ring for hydraulic connection *	
4	TOOL HMV TBAR 11x150 TOOL HMV TBAR 16x200	Tommy bar *	HMV10EBF - HMV58EBF: 11x150 HMV60EBF - HMV200EBF: 16x200
5	TOOL HMV EBO M12 TOOL HMV EBO M16	Eye bolt DIN 580	HMV60EBF - HMV130EBF: M12 HMV134EBF - HMV200EBF: M16
6	TOOL HMV... PISTON SEALS	Set of piston seals	Consisting of: 1x O-ring (inside) 1x O-ring (outside)
7	TOOL HMV... SET-PSK	Set of pressure springs	

* Items included in delivery as standard



Do not re-use damaged parts and always replace O-rings.

2. Required tools and accessories

Allen key For insertion of cap head bolts* (Compression spring guide bolts)	
HMV...EBF	Allen key size
10-46	4
47-70	5
72-104	6
106-142	8
150-200	10

Allen key For tightening the threaded pins when disassembling the annular piston* (pre-installed in hydraulic nut as standard)	
HMV...EBF	Allen key size
10-58	2,5
60-150	3
160-200	5

Cap head screws with full thread as per DIN 912 ISO 4762 without shaft* (for assembly and centring of annular piston)	
HMV...EBF	Size
10-58	M 3 x 60
60-150	M 4 x 90
160-200	M 6 x 100

Allen key 6mm* (for disassembling/assembling seal plug with ball)	
Open-end spanner, size 22*	
Collecting container for oil*	
Hydraulic pump*	

* = Not included in delivery

3. Preparation for disassembly/assembly

The workplace or assembly area must be cleaned before starting work. While performing the work, make sure that you use clean tools.

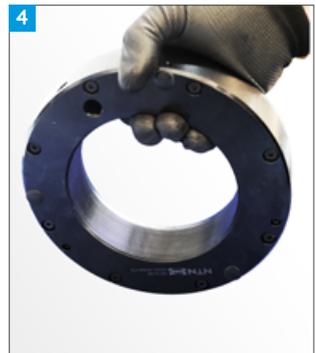
4. Dismounting the hydraulic nut

Lay the hydraulic nut flat on the working surface and make sure that the piston is fully inserted in the annular body (Non-pressurized).



- a. Clean the hydraulic nut so that it is free of oil, grease and dirt.
- b. Drain the oil.
- c. Secure the hydraulic nut so that it cannot slip away.
- d. Disconnect the hydraulic connection using an open-end spanner. Hold/position the bore of the hydraulic connection over a container and only then release the ball pressure plug using the Allen key. Fully unscrew the ball pressure plug from the annular body to allow the oil to drain.

 **Drain hydraulic oil do not re use**

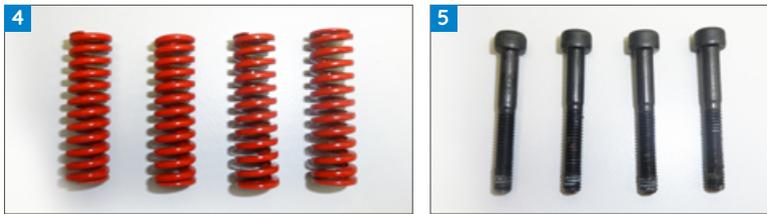


e. Release the cap head screws using a suitable Allen key (table p.2). When you do this, you will hear a short “cracking” sound due to the thread lock on the bolts.



⚠ Caution! Due to the compression springs, the cap head bolts are under tension.

f. Remove the cap head bolts and compression springs from the annular body.



5. Dismounting the annular piston from the annular body

a. Uniformly screw in the threaded pins to eject the annular piston from the annular body until it becomes completely free from the annular body.



b. Then remove the ejector pins. They are not required during the subsequent operations.

c. Lift the piston.

d. Clean the hydraulic oil from the hydraulic nut

e. Check all functional surfaces for damage.



6. Dismounting the O-rings

- a. Remove the external and internal O-rings from the grooves either manually or using a flat object (e.g. blunt slot-head screwdriver or similar).



When doing so, make sure that the hydraulic nut and, in particular, the sealing surfaces are not damaged.



- b. Clean the hydraulic nut so that it is free from oil, grease and dirt.



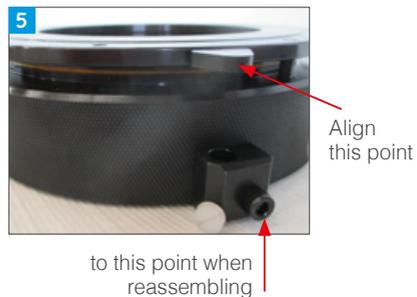
Always replace the existing old O-rings with new O-rings!

7. Assembling the hydraulic nut

- a. Before assembly, clean the complete hydraulic nut and remove all dust, dirt, etc. If there is any dust, dirt, etc. in the hydraulic nut, this can lead to damage and defective sealing. Check all surfaces, and in particular the functional surfaces, for damage!
- b. Remove the new O-rings (toroidal sealing rings) from the packaging and check for damage.
- c. Lightly lubricate the O-rings.
- d. Position the external O ring with hydraulic oil above the annular piston in the groove and press the internal O ring into the groove.
- e. If hydraulic nut is equipped with a dial gauge holder and measurement areas, place the piston and body against one another, making sure that the measurement areas are positioned correctly relative to the dial gauge holder. To perform positioning, screw in two screws (above HMV 30 EBF (see photo number 5) 3 screws) cap head set screws with full thread (DIN 912 ISO 4762

without shaft) without springs opposite to the centring position.

- f. Press the upper and lower parts together evenly and make sure that they lie flat against one another. Make sure that the O-rings do not shear off and become damaged.

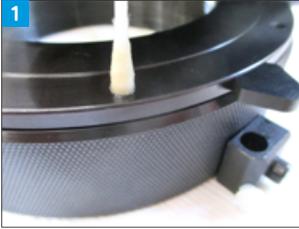


CAUTION!

The screws must be tightened evenly as there is a risk that the O-rings will be damaged

g. Remove the centering set screws.

h. Degrease the take-up thread in the annular piston (dilution) and then blow out with compressed air.



i. Insert compression springs.



j. Apply thread lock to the compression bolts and screw in so that they are flush with the outside of the piston.



k. Screw in the hydraulic connection and tighten to the specified tightening torque.



Make sure that sealing washer (3) is replaced by a new original sealing washer

8. Drain the hydraulic nut

- a. Connect the hydraulic pump
- b. Tilt the nut



- c. Pump oil into the hydraulic nut until oil emerges without air bubbles at the ball pressure plug



- d. d) Screw in the ball pressure plug to the defined tightening torque of max. 45 Nm.

9. Function test

- a. To make sure that the O-rings are installed correctly it is necessary to perform a function test.
- b. Operate the hydraulic pump until the maximum stroke of the hydraulic nut has been reached (yellow marker).
- c. If oil emerges, repeat from step 1.
- d. If the yellow marker is exceeded, oil will emerge and the hydraulic nut will not travel any further out of the annular body (integrated safety valve)
- e. Release the pressure at the hydraulic pump and disconnect the hydraulic nut from the pump. The hydraulic nut is now ready for operation.



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