

REFERENCE:	Nova Bus Manuals
SECTION:	05: Rear Suspension
RS N°:	N/A
EFFECTIVE IN PROD.:	N/A

APPLICATION DEADLINE:N/A

SUBJECT:	ZF service bulletin 80-17 for wheel bearing assembly - ZF axles (Type A/AV/AVN)
JUSTIFICATION:	Inner slotted nuts may mislocate the wheel bearing assembly.

LEVEL	DESCRIPTION	DIRECT CHARGES		TIME
		LABOUR	MATERIAL	
1	Apply ZF service bulletin 80-17 for wheel bearing assembly.	-	-	-
2	-	-	-	-

MATERIAL

QTY	PART N°	REV.	DESCRIPTION	REPLACES PART N°
LEVEL 1				
4	0634.303.940	-	O-Ring	-
4	4474.335.144	-	Tab washer/Locking plate	-
LEVEL 2				
-	-	-	-	-

Claiming conditions are as follows: ZF will cover 3h of labor and 1h for clerical work and parts listed in this document.

DISPOSAL OF PARTS

REMOVED PARTS ARE:	DISCARDED *	RETAINED	* Dispose of the unused parts and the defective parts in accordance with local environmental standards in effect.
	Yes	-	

REVISION HISTORY

REV.	DATE	CHANGE DESCRIPTION	WRITTEN BY
NR	2018AL19	Initial release	Karthigeyan K A

APPROVED BY:

PAGE 1 OF 11

CLIENT	ORDER	ROAD NUMBER		VIN (2NVY/4RKY...)		QTY
		FROM	TO	FROM	TO	
Ames Transportation Agency - Iowa	L904	6101	6101	S92J1G9775221	S92J1G9775221	1
Austin - CMTA - Texas	LA17	5101	5104	S92J2H9775763	S92J8H9775766	4
Austin - CMTA - Texas	LA17	5107	5107	S92J3H9775769	S92J3H9775769	1
Houston - Texas	L952	1580	1580	S92J5G9775318	S92J5G9775318	1
Houston - Texas	L982	1581	1581	S92J5G9775514	S92J5G9775514	1
Houston - Texas	L982	1587	1587	S92J8G9775524	S92J8G9775524	1
Houston - Texas	L982	1592	1593	S92J0G9775534	S92J0G9775535	2
Houston - Texas	L982	1599	1599	S92J5G9775545	S92J5G9775545	1
New York City Transit - New York	L958	5439	5439	S92J9G9775533	S92J9G9775533	1
New York City Transit - New York	L958	5441	5441	S92J1G9775610	S92J1G9775610	1
New York City Transit - New York	L958	5442	5442	S92J9G9775631	S92J9G9775631	1
SEPTA - Pennsylvania	L861	7456	7456	S92L5G9775191	S92L5G9775191	1
SEPTA - Pennsylvania	L861	7459	7461	S92L0G9775194	S92L4G9775196	3
SEPTA - Pennsylvania	L861	7463	7471	S92L8G9775198	S92L5G9775207	9
SEPTA - Pennsylvania	L861	7473	7476	S92L9G9775209	S92L9G9775212	4
SEPTA - Pennsylvania	L861	7481	7484	S92L8G9775217	S92L8G9775220	4

**WARNING**

Follow your internal safety procedures.

PROCEDURE

**NOTE**

This Campaign has to be completed commercially and technically by end of 2018.

**NOTE**

The instructions included in this document has been provided by ZF. Nova Bus cannot be held responsible under any circumstances for its content.

**NOTE**

The corrective measures must be conducted during the next regular service interval within the next 6 months or 40,000 km (whatever comes first). Contact ZF service partner for repair if necessary.

**NOTE**

Fill the ZF product with recuperated oil before operation.

ANNEX - CHECKING OF SLOTTED NUT-HUB BOLT CONNECTION ON A 132, AV 110/132/133, AV 132

File 1
 Type: Assembly Instr.
 Consecutive no.: 80/17e
 Date: 12.10.2017

Service Information



Checking of slotted nut-hub bolt connection on A 132, AV 110/132/133, AVN 132

For quality assurance purposes the slotted nut bolt connection of the hubs must be checked on selected serial numbers of bus axles of the type A 132, AV 110/132/133 and AVN 132 produced in the period from January 2016 to March 2017. For implementation, the responsible Service Partners will be informed about the location of the actually affected axles by the Technical Customer Service of ZF or by the vehicle manufacturer.

The necessary work steps are indicated on the following pages.

Contents	Page
▪ Checking of slotted nut-hub bolt connection on A 132, AV 110/132/133	2
▪ Checking of slotted nut-hub bolt connection on AVN 132	5

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File: 1
Type: Assembly Instr.
Consecutive no.: 80/17e
Date: 06.10.2017
Page 2/7

Service Information



Checking of slotted nut-hub bolt connection on A 132, AV 110/132/133

Safety instructions environment

Operating supplies and auxiliary materials may not be allowed to enter the soil, groundwater, or sewage system.

- Request material safety data sheets for the corresponding ZF products from your responsible environmental protection authority, and observe them.
- Collect operating supplies and auxiliary materials in a sufficiently large container.
- Dispose of operating supplies and auxiliary materials, waste, containers, soaked cleaning cloths, contaminated filters, etc. in accordance with the regulations of the environmental protection laws.
- Pay attention to the manufacturer's regulations and accident prevention regulations.

When selecting operating supplies and auxiliary materials, pay attention to health risks, environmental compatibility, disposal regulations and your country-specific opportunities to dispose of such materials properly.

For further safety instructions refer to the corresponding Repair Manual.

Requirements:

- Vehicle jacked-up.
- Wheels may remain on the vehicle.

Special tools:

- 5870.401.146 Slotted nut wrench

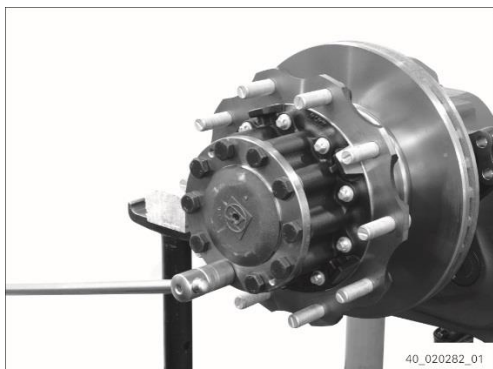


Figure 1

1. Fix hub by inserting the parking brake.
2. Loosen screws of the flange shaft.

File: 1
 Type: Assembly Instr.
 Consecutive no.: 80/17e
 Date: 06.10.2017
 Page 3/7

Service Information

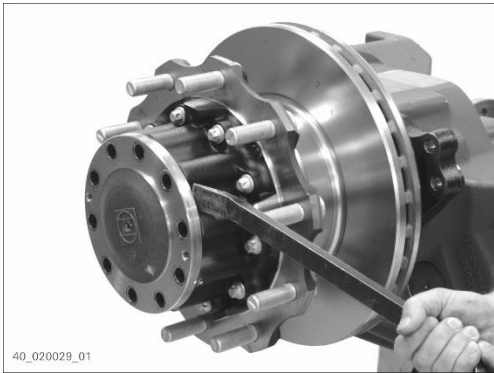


Figure 2

3. Observe safety instructions environment.
Remove flange shaft and collect leaking oil.
4. Unlock outer slotted nut.

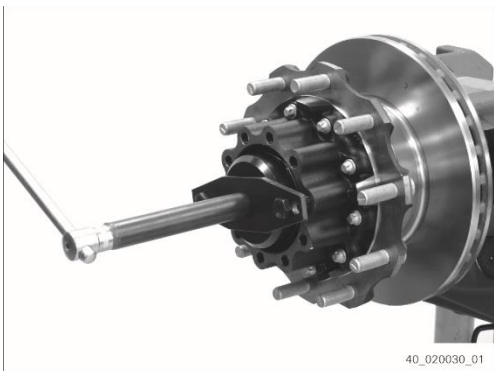


Figure 3

5. Loosen outer slotted nut with 5870.401.146 [slotted nut wrench].
6. Remove locking plate.
7. Loosen inner slotted nut with 5870.401.146 [slotted nut wrench].

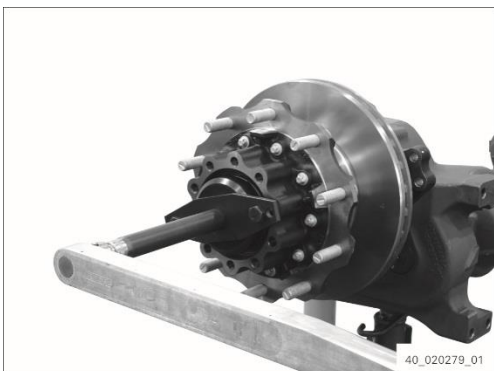


Figure 4

8. Tighten inner slotted nut with 5870.401.146 [slotted nut wrench].
Tightening torque: **100 Nm**
9. Rotate the hub in both directions several times.
10. Tighten inner slotted nut with 5870.401.146 [slotted nut wrench].
Tightening torque: **850 Nm**
11. Push **new** locking plate with tab pointing inwards onto the hub carrier.
12. Bolt on outer slotted nut with the chamfer pointing inwards.
13. Tighten outer slotted nut with 5870.401.146 [slotted nut wrench].
Tightening torque: **1200 Nm**

File: 1
Type: Assembly Instr.
Consecutive no.: 80/17e
Date: 06.10.2017
Page 4/7

Service Information

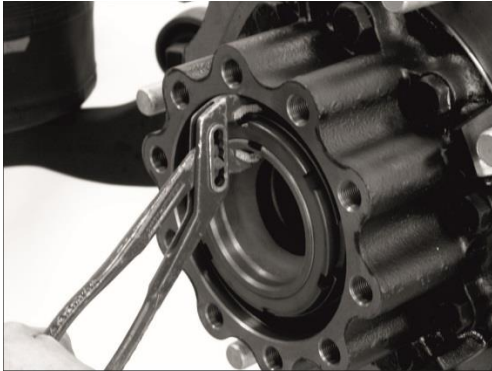


Figure 5

14. Secure outer slotted nut with locking plate.



Figure 6

15. Grease **new** O-ring (1) and insert it into the annular groove of the flange shaft.

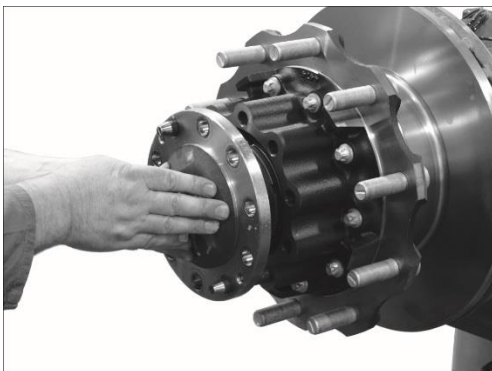


Figure 7

16. Push flange shaft into the hub carrier.

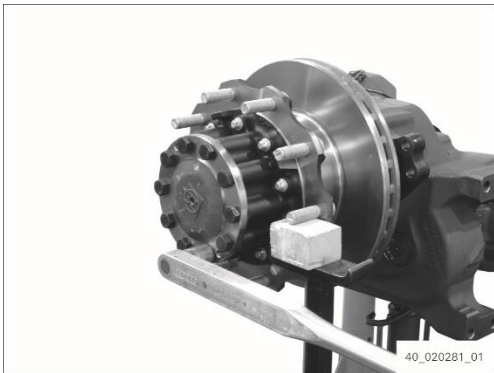


Figure 8

17. Fix hub by inserting the parking brake.
18. Turn in and tighten the screws.
Tightening torque: **440 Nm**

File: 1
Type: Assembly Instr.
Consecutive no.: 80/17e
Date: 06.10.2017
Page 5/7

Service Information



Checking of slotted nut-hub bolt connection on AVN 132

Safety instructions environment

Operating supplies and auxiliary materials may not be allowed to enter the soil, groundwater, or sewage system.

- Request material safety data sheets for the corresponding ZF products from your responsible environmental protection authority, and observe them.
- Collect operating supplies and auxiliary materials in a sufficiently large container.
- Dispose of operating supplies and auxiliary materials, waste, containers, soaked cleaning cloths, contaminated filters, etc. in accordance with the regulations of the environmental protection laws.
- Pay attention to the manufacturer's regulations and accident prevention regulations.

When selecting operating supplies and auxiliary materials, pay attention to health risks, environmental compatibility, disposal regulations and your country-specific opportunities to dispose of such materials properly.

For further safety instructions refer to the corresponding Repair Manual.

Requirements:

- Vehicle jacked-up.
- Wheels may remain on the vehicle.

Special tools:

- 5870.401.146 Slotted nut wrench



Figure 9

1. Fix hub by inserting the parking brake.
2. Loosen screws of the cover.
3. Observe safety instructions environment. Remove cover.
4. Unlock outer slotted nut.

File: 1
Type: Assembly Instr.
Consecutive no.: 80/17e
Date: 06.10.2017
Page 6/7

Service Information

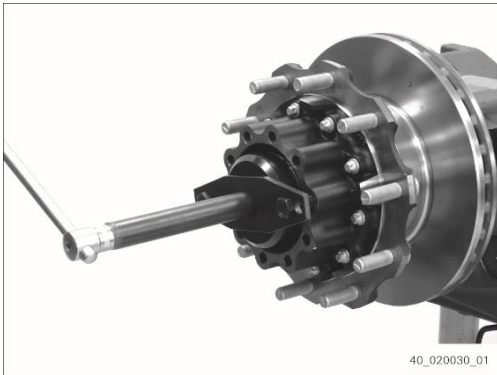


Figure 10

5. Loosen outer slotted nut with 5870.401.146 [slotted nut wrench].
6. Remove locking plate.
7. Loosen inner slotted nut with 5870.401.146 [slotted nut wrench].

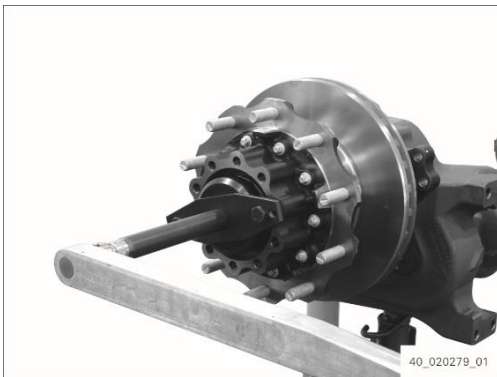


Figure 11

8. Tighten inner slotted nut with 5870.401.146 [slotted nut wrench].
Tightening torque: **100 Nm**
9. Rotate the hub in both directions several times.
10. Tighten inner slotted nut with 5870.401.146 [slotted nut wrench].
Tightening torque: **850 Nm**
11. Push **new** locking plate with tab pointing inwards onto the hub carrier.
12. Bolt on outer slotted nut with the chamfer pointing inwards.
13. Tighten outer slotted nut with 5870.401.146 [slotted nut wrench].
14. Tightening torque: **1200 Nm**

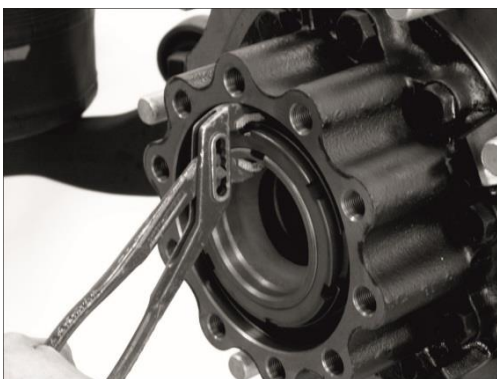


Figure 12

15. Secure outer slotted nut with locking plate.

File: 1
Type: Assembly Instr.
Consecutive no.: 80/17e
Date: 06.10.2017
Page 7/7

Service Information



Figure 13

16. Grease **new** O-ring and insert it into the annular groove of the cover.

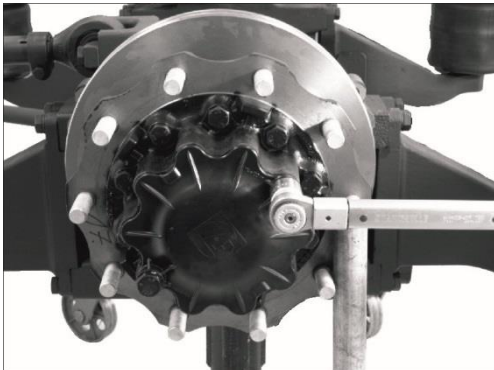


Figure 14

17. Insert cover until contact is obtained.
18. Fix hub by inserting the parking brake.
19. Turn in and tighten the screws.
Tightening torque: **100 Nm**