

TRANSMISSION

Final Drive, Differential - Manual Transmission 0A6

39 FINAL DRIVE, DIFFERENTIAL

DESCRIPTION AND OPERATION

DIFFERENTIAL, ADJUSTING

Special tools and workshop equipment required

- Magnetic Plate 50 mm Dia. 385/17
- Dial Gauge Holder VW 387
- Thrust Plate VW 401
- Thrust Plate VW 402
- Punch VW 408 A
- Thrust Disc VW 412
- Crown Wheel Adjustment Device VW 521
- Thrust Piece T10266
- Assembly Device 3291
- Thrust Pad VW 472/1
- Kukko Extractor 56-70 mm 21/8
- Kukko Support 22/2

The differential must be adjusted, when the

- Differential housing

is replaced.

-- Installing the outer race/tapered roller bearing without a adjustment shim into the clutch housing.

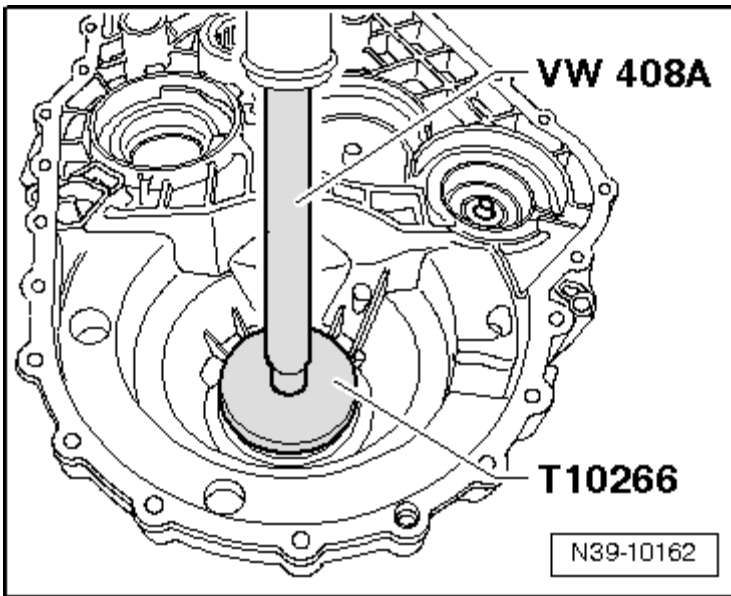


Fig. 1: Installing Outer Race/Tapered Roller Bearing Into Clutch Housing
 Courtesy of AUDI OF AMERICA, LLC

-- Install the tapered roller bearing outer race with a 0.65 mm adjustment shim into the transmission housing.

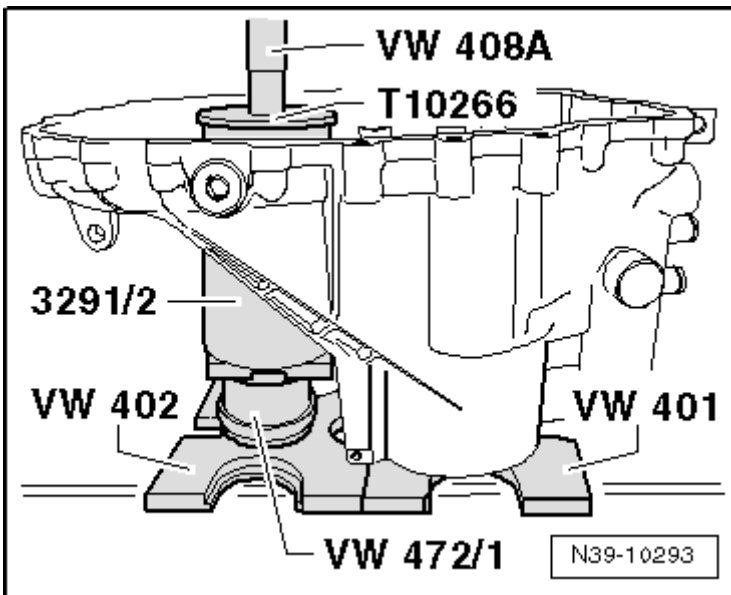


Fig. 2: Installing Outer Race/Tapered Roller Bearing Into Transmission Housing
 Courtesy of AUDI OF AMERICA, LLC

-- Insert the differential into the clutch housing.

-- Position the transmission housing and tighten the 5 bolts to specification.

-- Install the locking sleeve VW 521/4 on the differential housing (transmission housing side) with the shell VW

521/13.

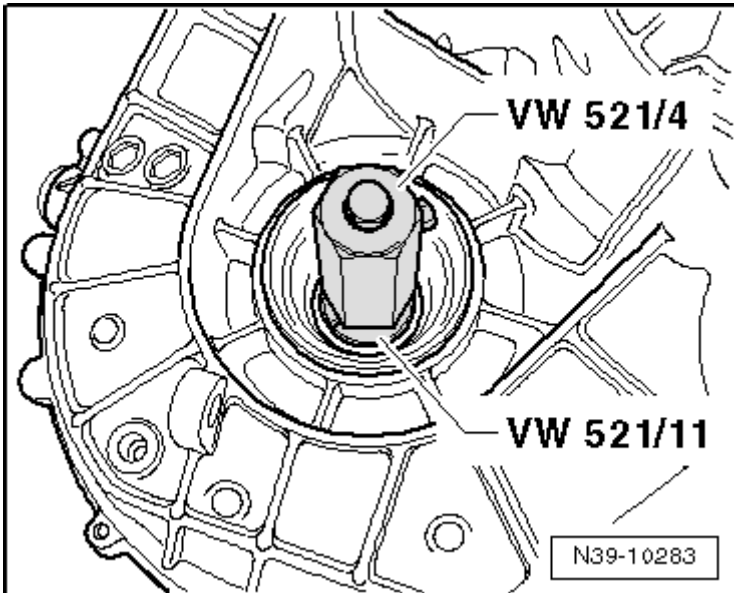


Fig. 3: Identifying Special Tools - VW 521/4 VW 521/13
Courtesy of AUDI OF AMERICA, LLC

- Install the dial gauge holder VW 387 on the clutch housing and set the gauge with 1 mm pretension to "0".
- Swivel the transmission in the assembly stand with the clutch housing upward.
- Push the differential toward the clutch housing and rotate eight times at the same time.

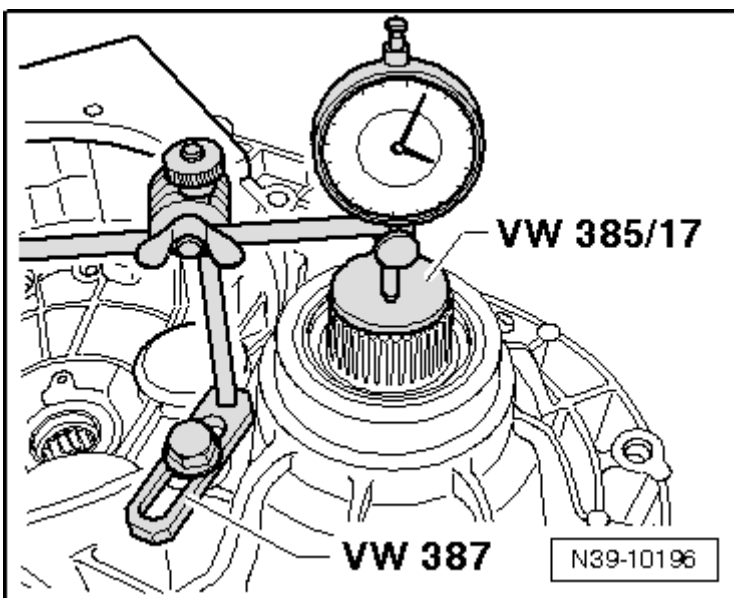


Fig. 4: Identifying Shim Using Dial Gauge VW 521/4
Courtesy of AUDI OF AMERICA, LLC

-- Move the differential up and down, and read the play on the dial gauge and note. (example: 0.70 mm).

Determine the shim according to the table, refer to **DIFFERENTIAL, ADJUSTING**.

- The measurement must be performed as shown in the illustration otherwise the measured value will be wrong.

Shim, Determining

-- Remove the transmission housing.

-- Remove the tapered roller bearing outer race from the clutch housing.

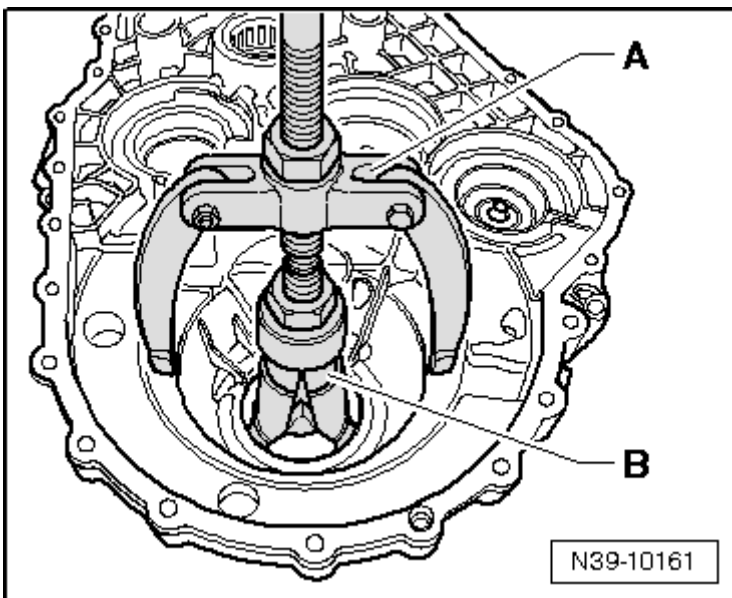


Fig. 5: Removing Outer Race/Tapered Roller Bearing From Clutch Housing
Courtesy of AUDI OF AMERICA, LLC

A - Support, for example, 22/2

B - Extractor 56-70 mm, for example 21/8

-- First place the washer into the clutch housing.

NOTE: Note the installed position of the washer, the shoulder on the inner diameter points toward the seal.

-- Then, place the shim of the determined thickness (in the example: 0.95 mm).

The following adjusting shims are available:

2011 Volkswagen Tiguan SE

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Bearing Play Measured value (mm)	Adjusting Shim Thickness (mm)
0.359 ••• 0.430 0.431 ••• 0.480 0.481 ••• 0.530	0.65 0.70 0.75
0.531 ••• 0.580 0.581 ••• 0.630 0.631 ••• 0.680	0.80 0.85 0.90
0.681 ••• 0.730 0.731 ••• 0.780 0.781•••0.830	0.95 1.00 1.05
0.831 ••• 0.880 0.881 ••• 0.930 0.931 ••• 0.980	1.10 1.15 1.20
0.981 ••• 1.030 1.031 ••• 1.080 1.081 ••• 1.130	1.25 1.30 1.35
1.131 ••• 1.250	1.40

NOTE: For the correct shims,

If the measured shim thickness is larger than those listed in the table, then install two shims that add up to the necessary thickness.

Tolerance variations make it possible to find the exact shim thickness required.

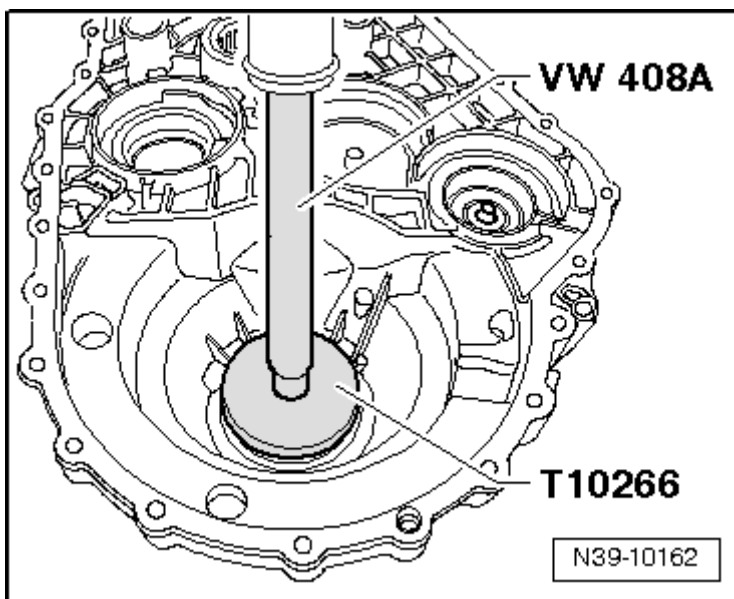


Fig. 6: Installing Outer Race/Tapered Roller Bearing Into Clutch Housing
Courtesy of AUDI OF AMERICA, LLC

-- Install the outer race again and tighten the transmission housing.

DIFFERENTIAL OVERVIEW

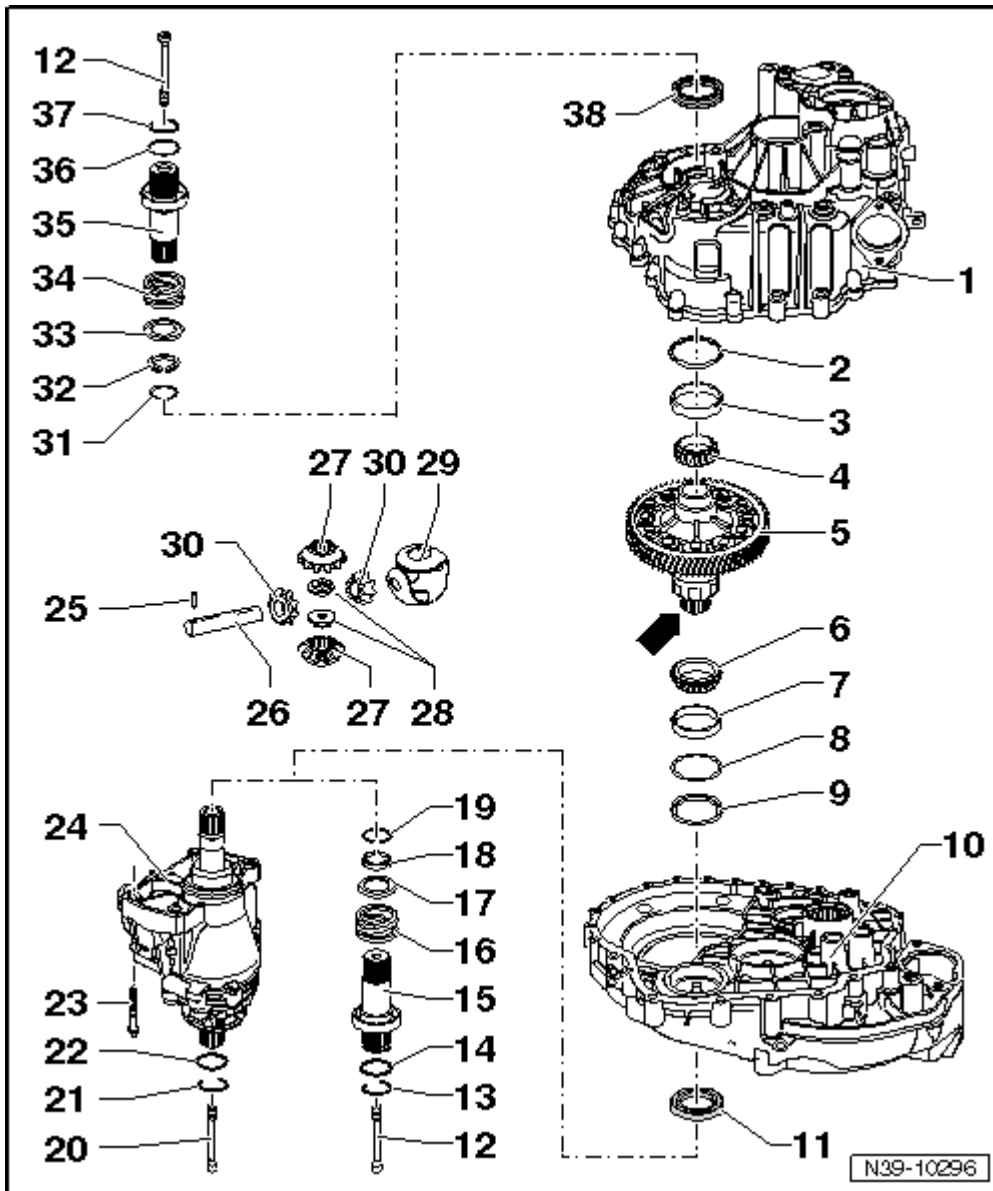


Fig. 7: Identifying Differential

Courtesy of AUDI OF AMERICA, LLC

1. Transmission Housing
2. Washer
 - For the differential.
 - Always 0.65 mm thick.
3. Outer Race/Tapered Roller Bearing
 - Removing, refer to **Fig. 24**.
 - Installing, refer to **Fig. 25**.
4. Inner Race/Tapered Roller Bearing
 - Removing, refer to **Fig. 26**.