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097 4-speed automatic

Torque converter assembly

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Torque converter drive plate

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Torque converter oil seal

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Torque converter, disassembling/ assembling

Torque converter identification

- identify torque converters by a code letter (arrow)
 - see Technical data, Repair Group 37, for vehicle applications

Note

Turbo engines have four mounting bolts; all others have three.

Torque converter, checking

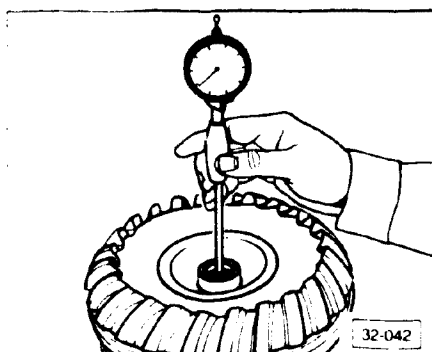
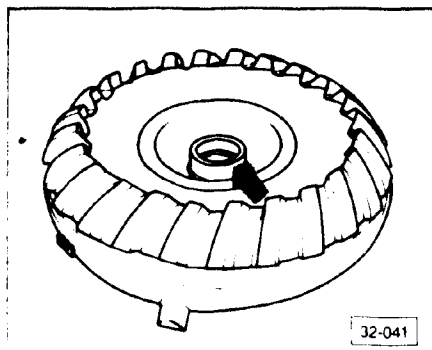
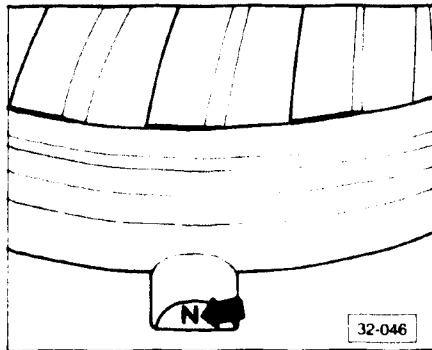
- check torque converter hub for scoring (arrow)
- check cooling vanes for secure fit
- insert turbine shaft and check for free movement of turbine
- check bushing for wear

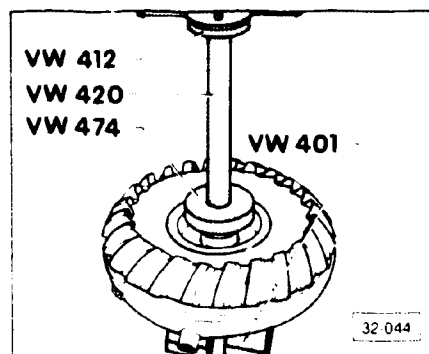
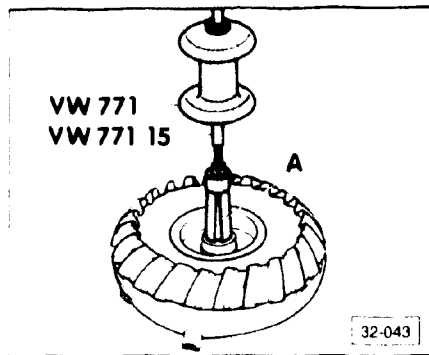
Note

The torque converter must be replaced if damaged or defective (with the exception of the bushing).

Converter bushing, checking for wear

- specifications
 - maximum wear limit diameter = 34.25 mm (1.348 in.)
 - maximum out of round = 0.03 mm (0.001 in.)





Converter bushing, removing

- extract bushing
 - A commercial puller
e.g. US 1108 or Kukko 21/5
(30-37 mm)

Converter bushing, installing

- press bushing in, up to stop

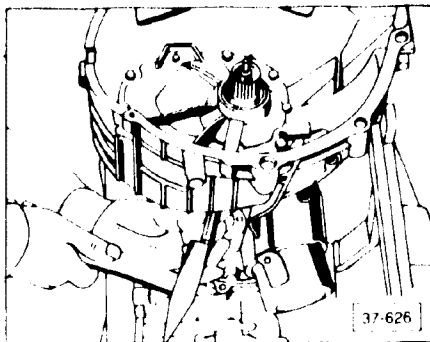
CAUTION

The installed converter bushing must have an inside diameter of 34.03-34.05 mm (1 3/40-1 3/41 in.)

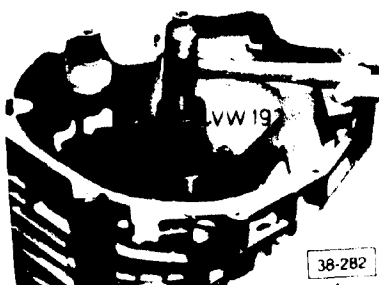
If bushing is less than minimum, it may seize. Do not ream out.

After installing bushing, check edge of converter hub for burrs or sharp edges (sealing ring can become damaged).

Torque Converter



Converter oil seal, removing



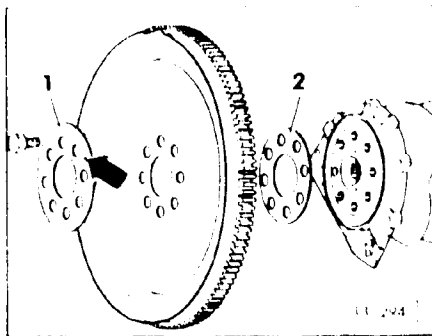
Converter oil seal, installing

CAUTION

Be careful when installing seal. Seal is very soft and can be damaged easily. Seal must not come into contact with gasoline or cleaning solutions.

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Torque converter drive plate, removing/installing (087)



Removing

- mark relationship of drive plate, washer and shim to crankshaft before removing

Installing

CAUTION

Always use new bolts when installing drive plate

- notch (arrow) on washer 1 must face torque converter
- install drive plate with washer 1 (Part No. 035 105 301A) and shim 2 (3.0 mm - Part No. 035 105 303A)

CAUTION

Part numbers are for reference only. Always check with your Parts Department for the latest information

- install new bolts with locking compound **D6**. Torque to 30 Nm (22 ft. lb) to measure for adjustment
- measure drive plate for adjustment as shown in Figure 1 and 2

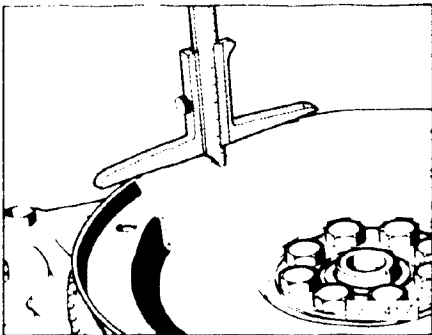


Fig. 1 Measuring drive plate inside dimension

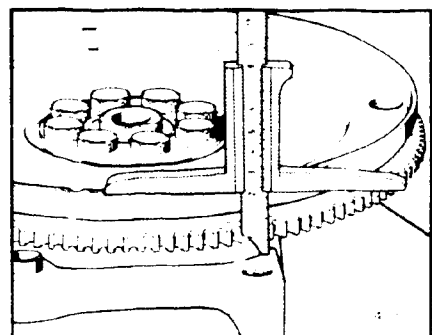
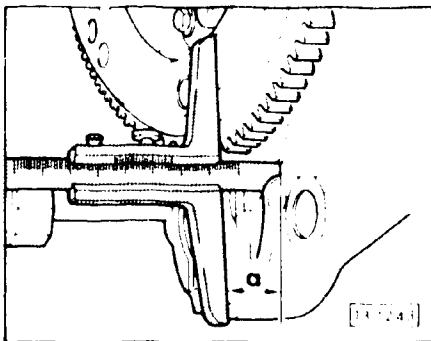
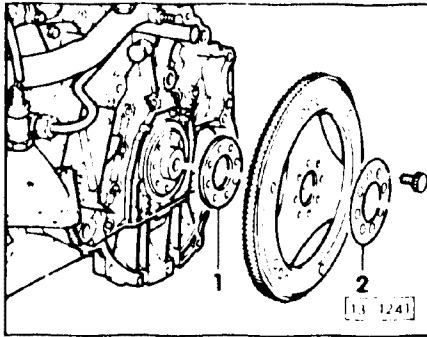


Fig. 2 Measuring clearance between drive plate and cylinder block (measure at three locations)

- average distance from drive plate to cylinder block (Fig. 2) minus drive plate inside dimension (Fig. 1) must equal 17.2-18.8 mm (0.68-0.74 in.)
 - if measurement does not equal 17.2-18.8 mm (0.68-0.74 in.), remove drive plate and reinstall with shim 2.
- torque bolts to 60 Nm (44 ft. lb) plus 1/4 (90°) turn

Torque converter drive plate, installing (097)



Installing

CAUTION

Always use new bolts when installing drive plate.

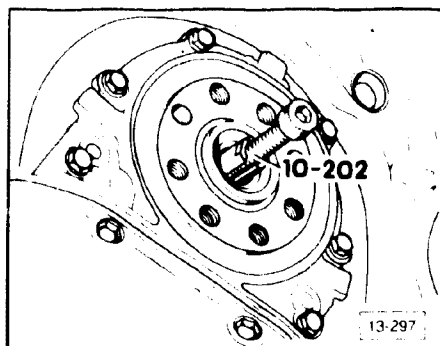
- install drive plate with washer **2** (Part No. 035 105 303A) and shim plate **1** (3.0 mm - Part No. 054 105 301 or 4.0 mm - Part No. 054 105 303)

CAUTION

Part numbers are for reference only. Always check with your Parts Department for the latest information.

- install new bolts with locking compound **D6**. Torque to 30 Nm (22 ft. lb) to measure for adjustment
- measure dimension **a** between drive plate and cylinder block at three locations and calculate average value
 - **a** = 21.3 – 22.9 mm (0.84 in. – 0.90 in)
 - if dimension **a** is not correct, remove drive plate and reinstall with a different shim plate

Pilot needle bearing, removing



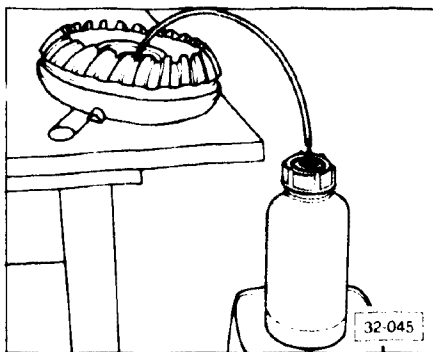
CAUTION

Short engines may be delivered with a needle bearing in the crankshaft. Remove the needle bearing before installing the automatic transmission.

Torque converter, draining

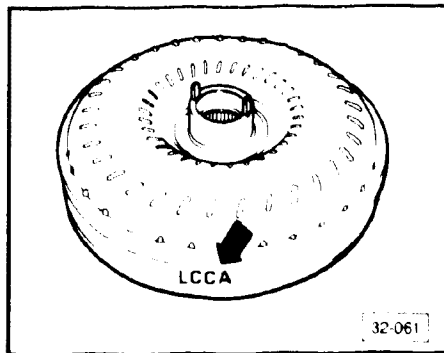
Note

If ATF is contaminated, drain the torque converter. Use Fluid Evacuator EX1, if available, and follow the manufacturer's instructions. Otherwise, drain using the manual method:



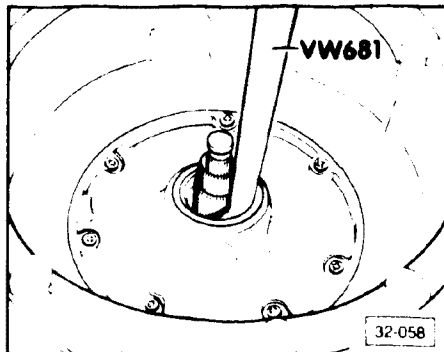
- place converter in slanted position
- attach small inside diameter hose with outside diameter of about 8 mm to plastic bottle of about 2 liter capacity
- cut converter end of hose on an angle
- squeeze bottle and hold while inserting free end of hose into converter hub
 - make sure end of hose rests on bottom
- release bottle to allow ATF to flow
- loosen bottle cap when ATF begins to flow

Torque converter, disassembling/ assembling



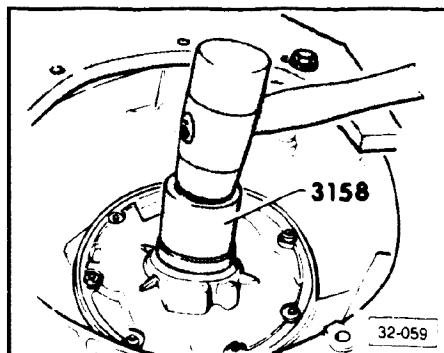
Torque converter identification

- identify torque converter by code letters (arrow)
 - see Technical data, Repair Group 37, for vehicle applications



Torque converter oil seal, removing

- remove seal with extractor lever VW 681



Torque converter oil seal, installing

- drive seal in flush with 3158