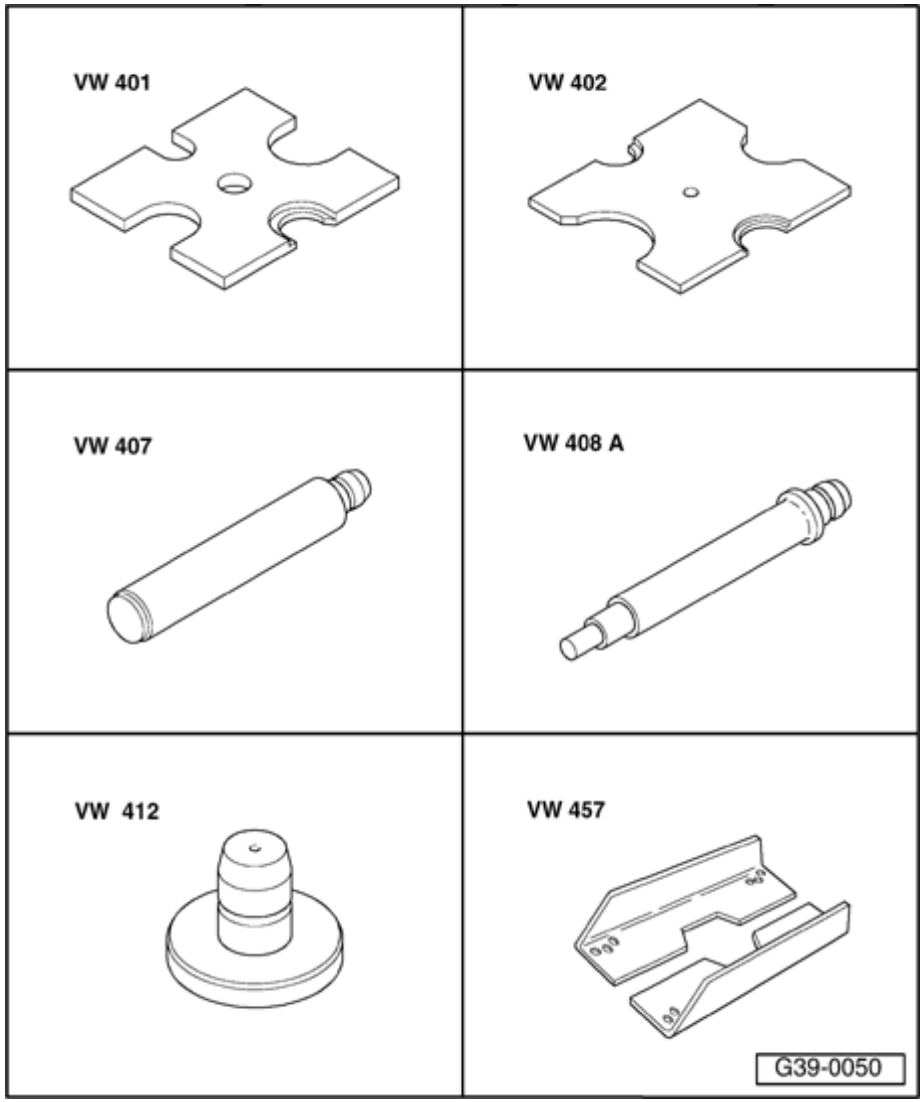
39-152

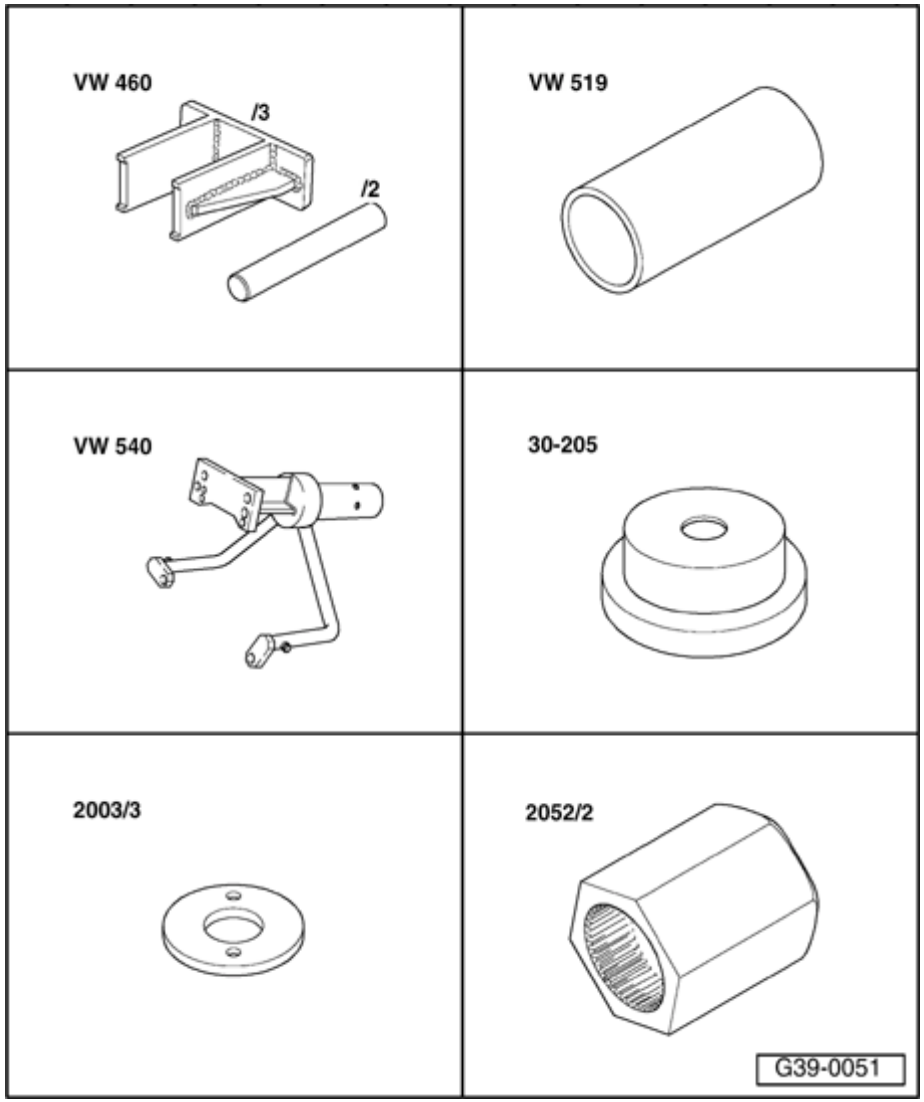


Drive pinion, removing, installing, disassembling and assembling

Special tools and equipment

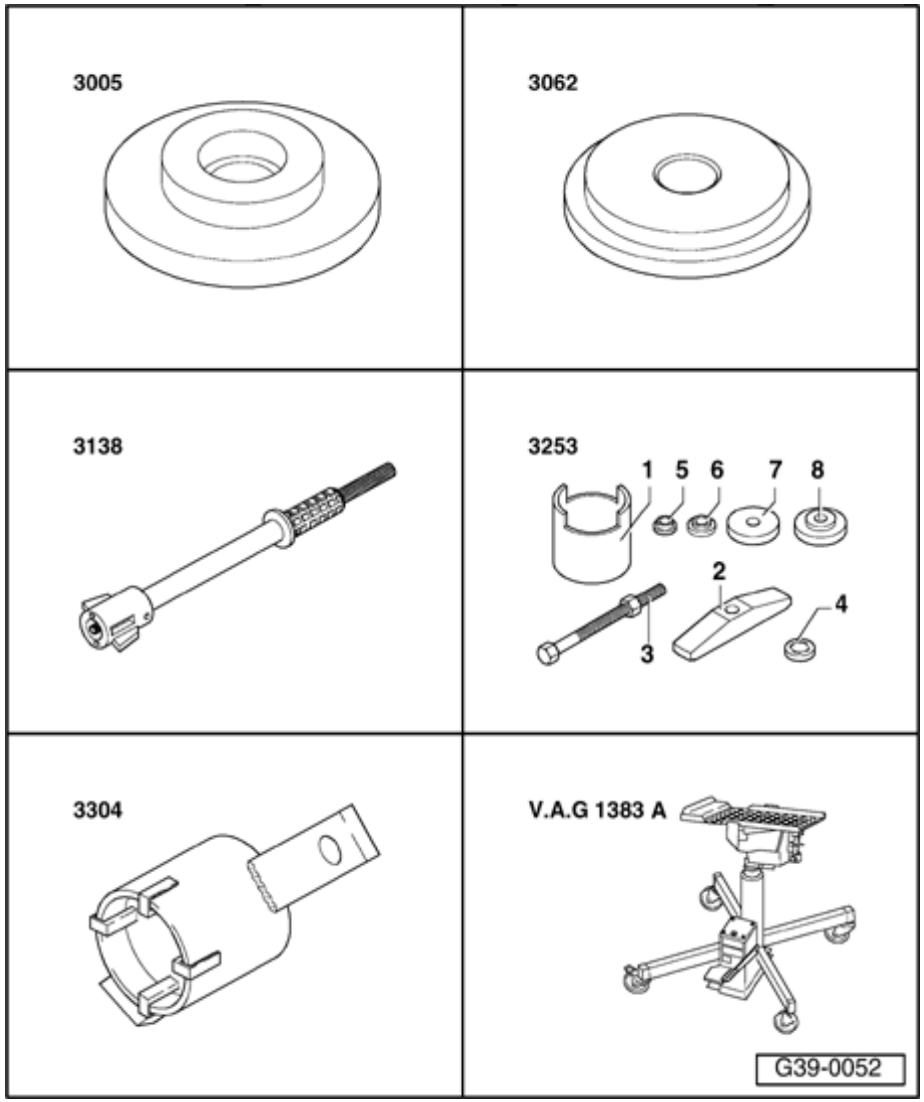
- VW401 thrust plate
- VW402 thrust plate
- VW407 punch
- VW408A punch
- VW412 punch
- VW457 support channels

39-153



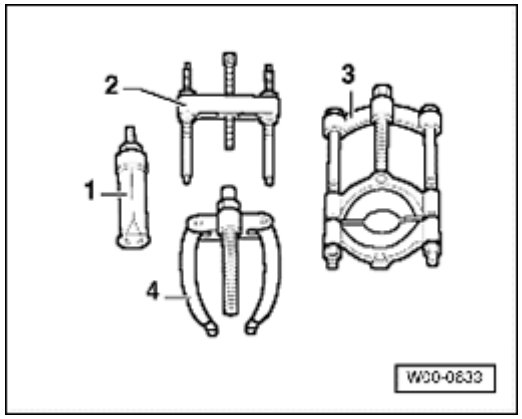
- VW460/2 drift
- VW 519 sleeve
- VW540 holding fixture
- 30-205 thrust pad
- 2003/3 seal installer
- 2052/2 assembly tool for drive pinion

39-154



- 3005 thrust pad
- 3062 thrust pad
- 3138 drift
- 3253 wheel bearing assembly set with 3253/3 and 3253/4
- 3304 retainer
- Engine/transmission jack VAG1383A engine/gearbox jack

39-155



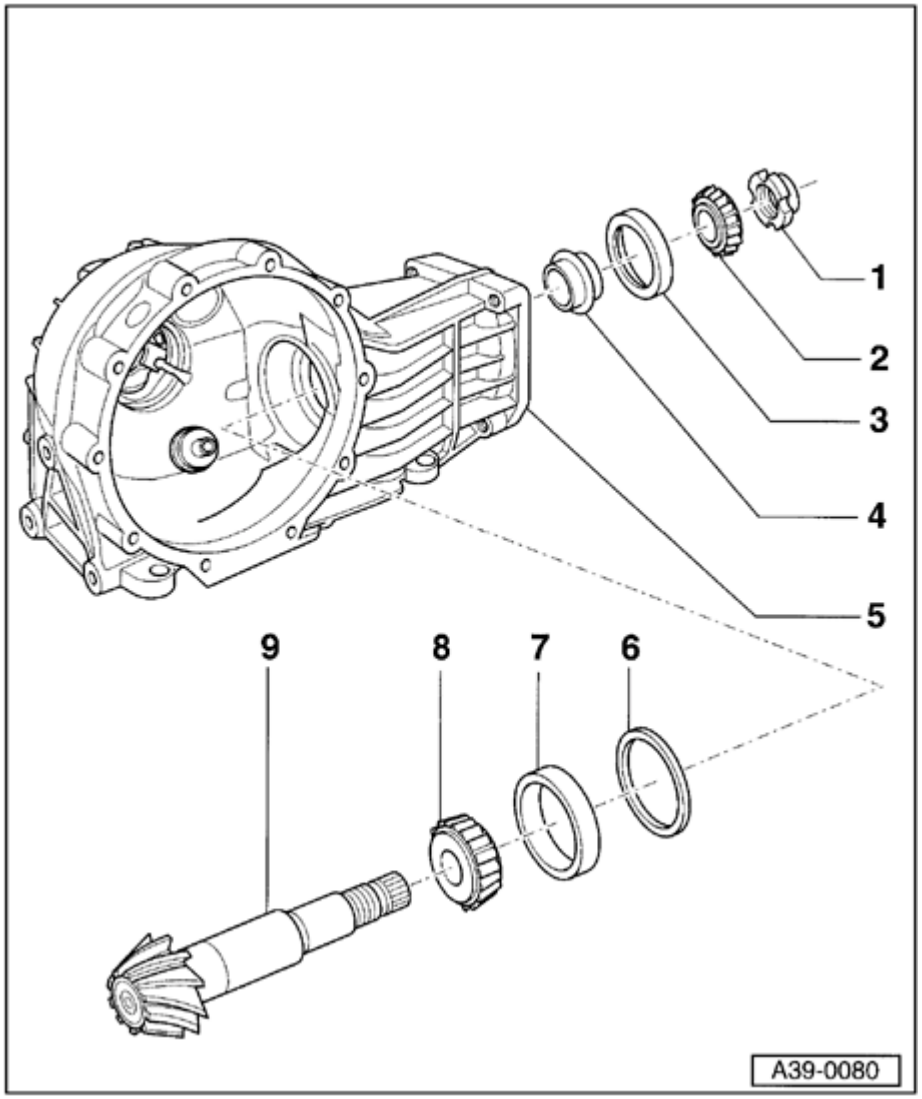
- Item 1: Kukko21/7 extractor
- Item 2: Kukko 22/2 support
- Item 3: Kukko 17/2 separator
- Torque gauge 0 - 600 Ncm
- 32 wrench insert hex socket

39-156

Notes:

- *General repair notes ⇒ page 00-27 .*
- *Disconnect torque tube from rear final drive with the final drive installed ⇒ page 39-96 .*
- *Disconnect torque tube from rear final drive with the final drive removed ⇒ page 39-126 .*
- *Replace both tapered roller bearings together. If possible, use same manufacturer!*
- *Do not grease new tapered roller bearings additionally for friction torque measurement. The bearings are already greased with a special oil from the factory.*
- *Removing differential ⇒ page 39-128 .*
- *Adjustments are required when replacing components marked with 1) ⇒ Adjustment overview ⇒ page 39-170 .*

39-157



1 - Nut

- Always replace
- Unbolt ⇒ Fig. 1 and Fig. ⇒ 2
- Unbolt ⇒ Fig. 11
- Measuring friction torque ⇒ Fig. 12
- Secure ⇒ Fig. 13

2 - Small tapered roller bearing inner race 1)

- Press out drive pinion ⇒ Fig. 3
- Pressing on ⇒ Fig. 10

3 - Small tapered roller bearing outer race 1)

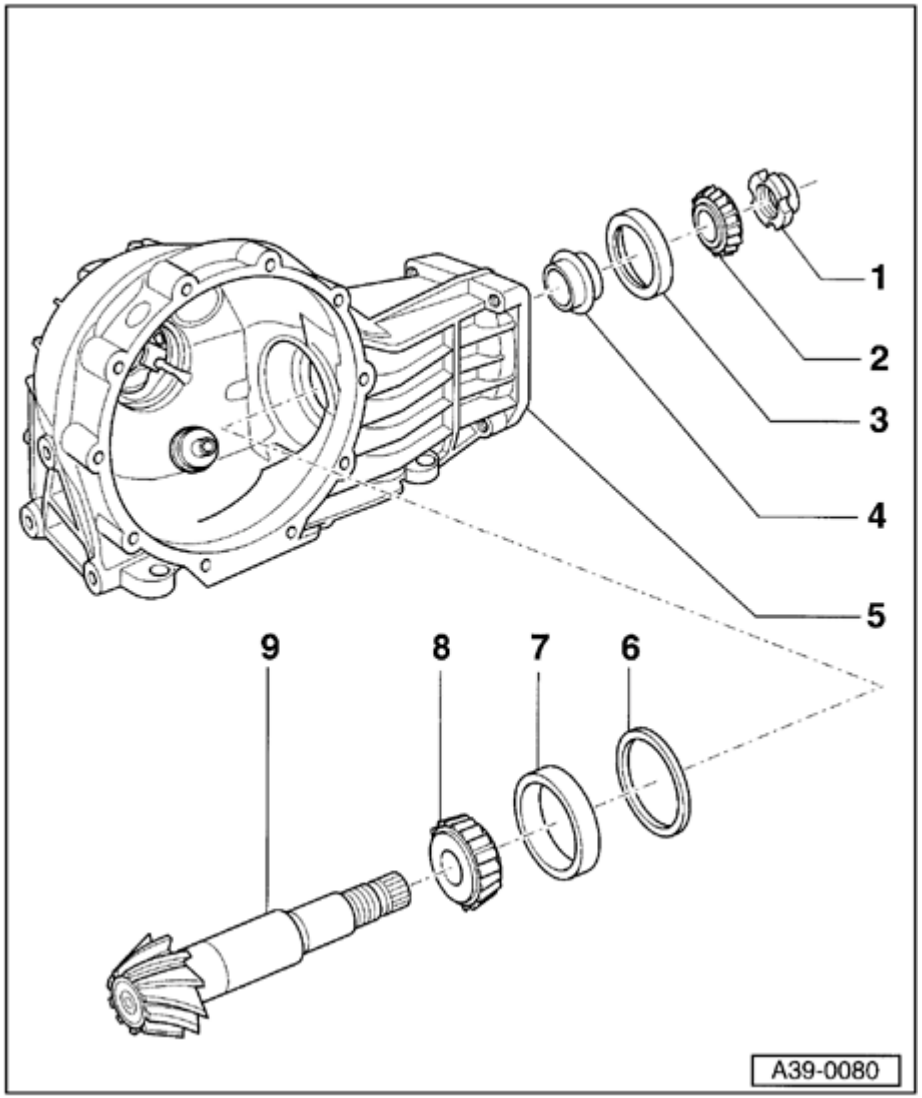
- Pulling out ⇒ Fig. 4
- Pressing in ⇒ Fig. 9

4 - Spacer sleeve 1)

- Always replace

5 - Final drive housing 1)

39-158



6 - Shim "S3"

- Note thickness
- Adjustment overview ⇒ page 39-170

7 - Large tapered roller bearing outer race 1)

- Driving out ⇒ Fig. 5
- Pulling in ⇒ Fig. 8

8 - Large tapered roller bearing inner race 1)

- Pressing off ⇒ Fig. 6
- Pressing on ⇒ Fig. 7

9 - Drive pinion 1)

- Matched to ring gear, always replace together as a set

39-159

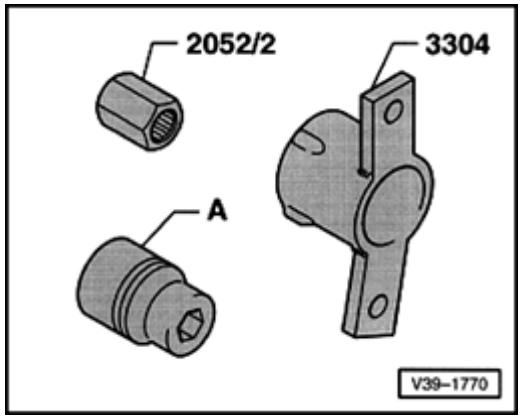


Fig. 1 Tools for removing and installing drive pinion nut

A - 32 mm wrench socket

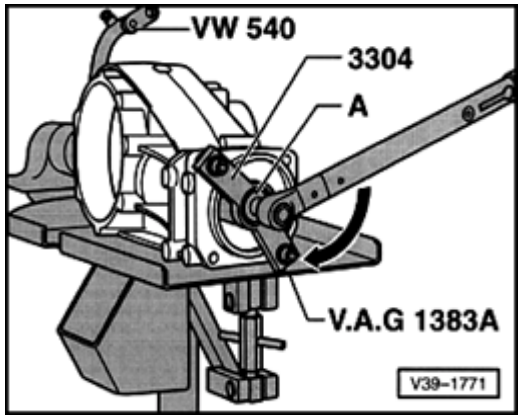


Fig. 2 Removing drive pinion nut

- Install 3304 retainer using two hex bolts M8 x 30.
- When nut is removed, final drive must be supported (e.g. using VAG1359/2 universal mount together with VAG1383A transmission hoist).

39-160

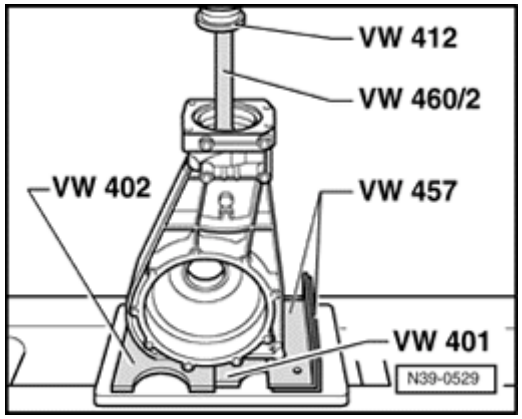


Fig. 3 Pressing out drive pinion from small tapered roller bearing inner race

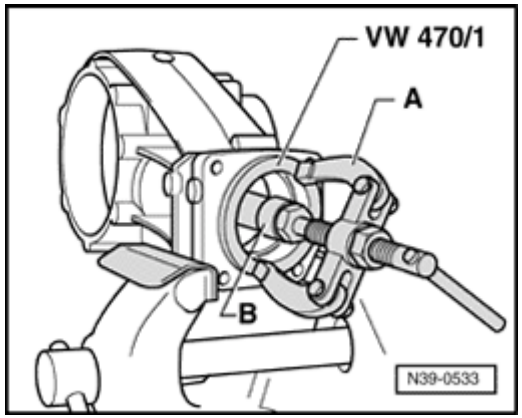


Fig. 4 Pulling out small tapered roller bearing outer race

A - Support e.g. Kukko 22/2

B - Internal puller 46 to 58 mm, e.g. Kukko 21/7 extractor

39-161

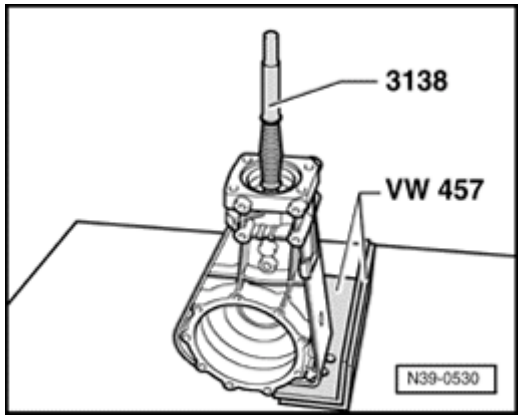


Fig. 5 Driving out large tapered roller bearing outer race

- Check adjustment shims for damage after removing.

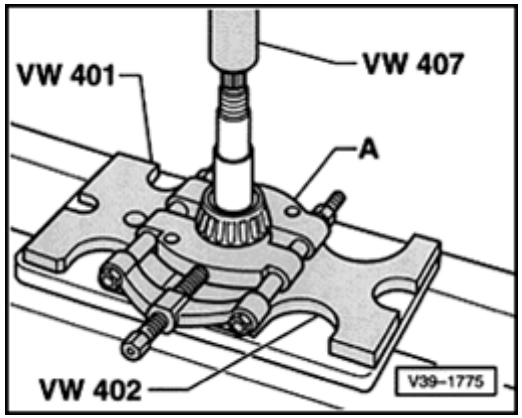


Fig. 6 Pressing off large tapered roller bearing inner race from drive pinion

A - Separating device 22-115 mm, e.g. Kukko 17/2 separating tool

39-162

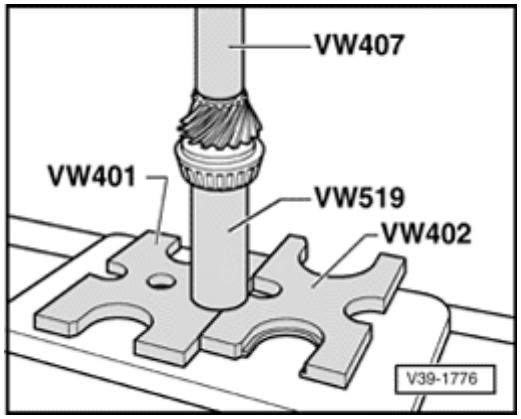


Fig. 7 Pressing large tapered roller bearing inner race onto drive pinion

WARNING!

Wear protective gloves!

- Heat inner race to approx. 100 ° C ,position and press on.

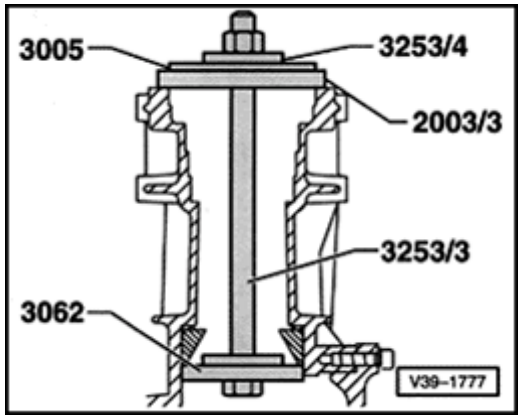


Fig. 8 Pulling in large tapered roller bearing outer race

- Insert previously determined adjustment shim "S3" for drive pinion ⇒ page 39-177 .

Note:

On 3253/4 pressure disc, marking "Oben" points toward nut on installation device

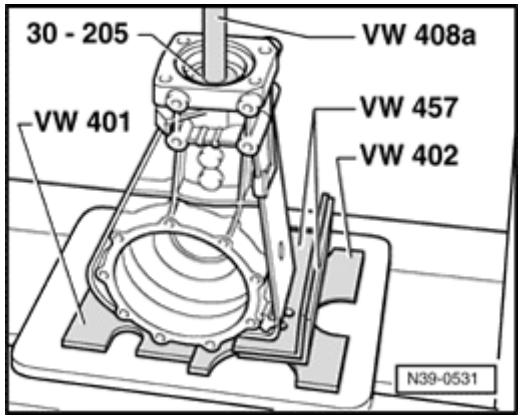


Fig. 9 Pressing in small tapered roller bearing outer race

- The outer race must be oiled and installed using VW408A punch and 30-205 thrust pad.

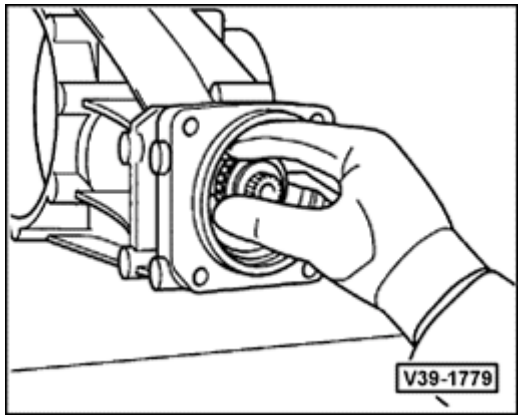


Fig. 10 Pressing on small tapered roller bearing inner race

WARNING!

Wear protective gloves!

- Insert drive pinion with a new spacer sleeve.
- Heat up small tapered roller bearing inner race to approx. 100 °C and insert on drive pinion.
- Press drive pinion upward and insert bearing up to stop using 40-21 sleeve.

39-164

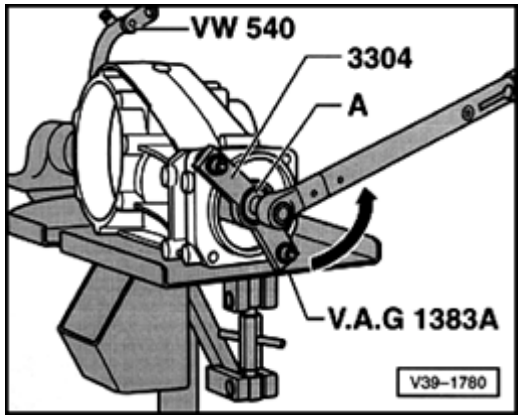


Fig. 11 Tightening drive pinion nut and adjusting friction torque

- Install 3304 retainer using two hex bolts M8 x 30.
- When tightening nut, support final drive (e.g. using VAG1359/2 universal mount with VAG1383A transmission hoist).
- Always replace drive pinion nut.
- Tighten nut for drive pinion until no more drive pinion backlash is present.
- Tighten further until specified friction torque is attained; while tightening measure friction torque multiple times ⇒ Fig. 12 .

Note:

If the specified friction torque is surpassed, replace spacer sleeve and repeat adjustment! Any spacer sleeve that has been pressed together too far one time must be replaced.

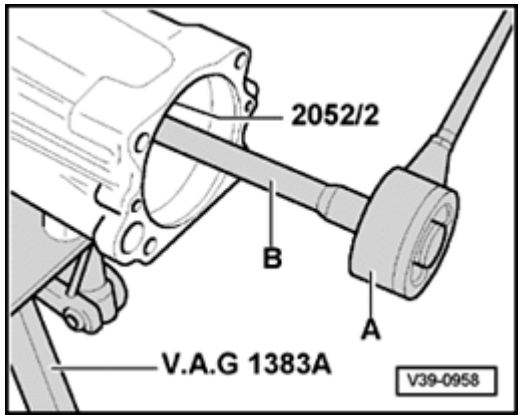


Fig. 12 Measuring friction torque

A - Standard torque gauge, 0 to 600 Ncm

B - Extension with 32 mm wrench socket

- Adjust to following friction torque

New bearings	Run-in bearings 1)
200 to 250 Ncm	30 to 60 Ncm

1) have been run in at least 50 km

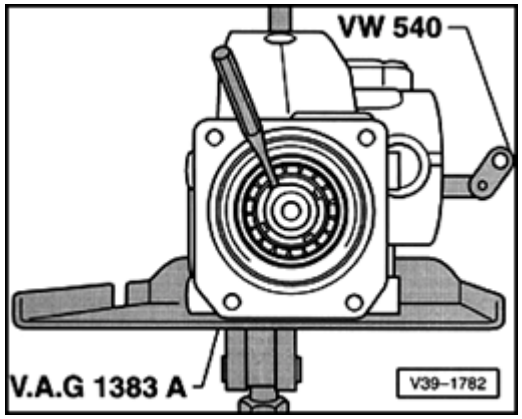


Fig. 13 Removing drive pinion nut

- Peen drive pinion nut using mandrel.