34-1

Shift linkage, servicing

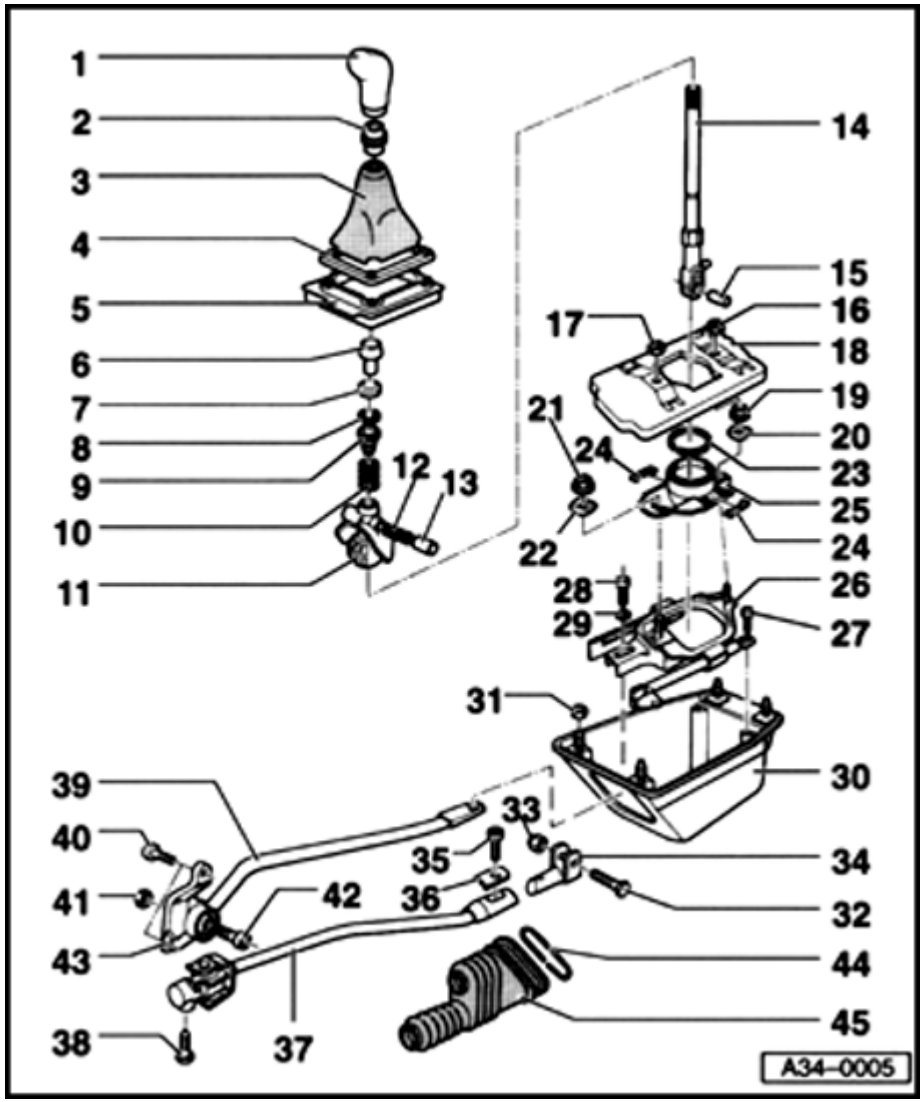
Notes:

- *Adjusting* ⇒ *Page 34-12* .
- *To remove the complete shift linkage, remove the exhaust system.*

⇒ Repair Manual, Engine Mechanical, Repair Group 26

- *To disassemble the shift linkage in the installation position, the shift mechanism housing must be lowered.*

34-2



1 - Shift knob

2 - Bushing

3 - Housing cover

- Carefully pry out latch in rear section of center console

4 - Top part of retaining frame

5 - Bottom part of retaining frame

6 - Bushing

7 - Sleeve

8 - Circlip

- Do not over-stretch when installing

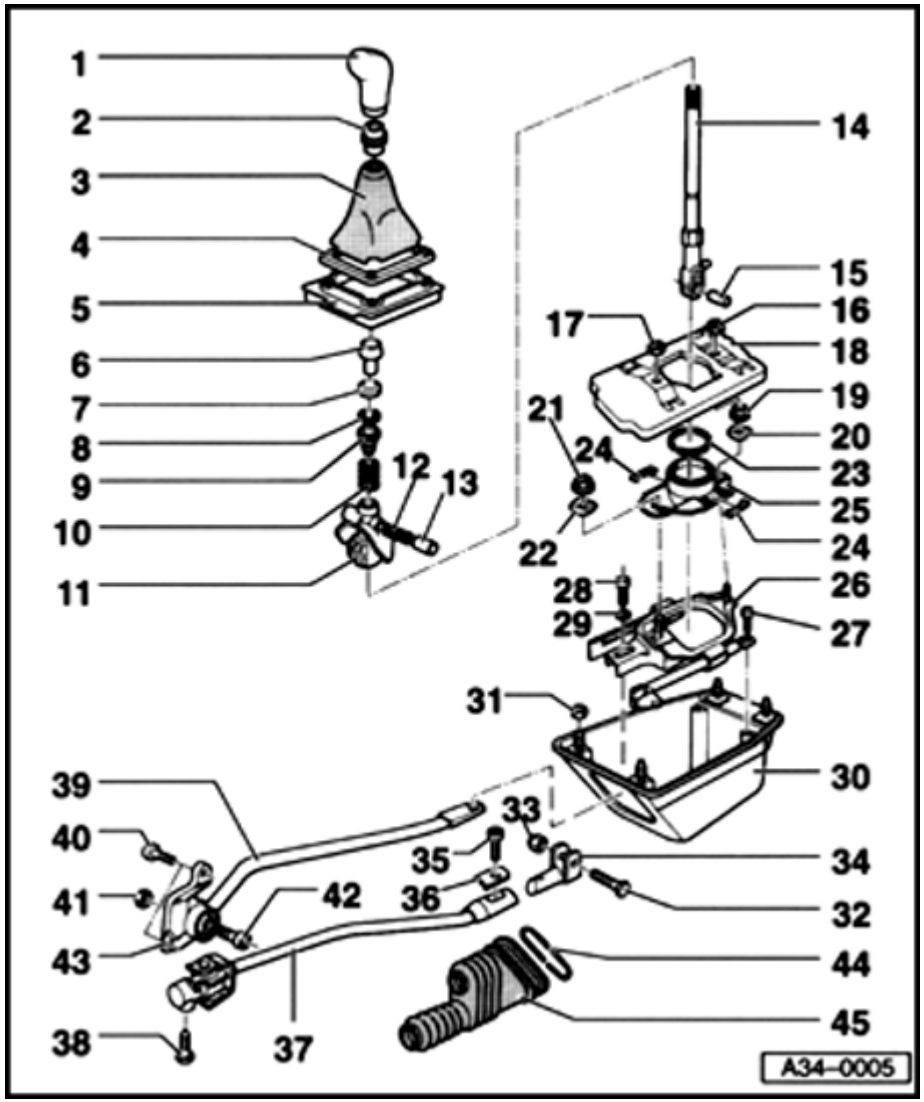
9 - Spacer bushing

10 - Compression spring

11 - Ball stop

- Insert compression spring and bushing into the ball stop and assemble on shift mechanism so that compression spring and bushing are on right (direction of travel)
- Install circlip (item - 23 -) before installing

34-3



12 - Compression spring

13 - Bushing

- Rounded side faces shift lever

14 - Shift lever

- Can be installed into ball housing in one position only

15 - Spacer tube

16 - Nut

- 8 Nm (71 in. lb)

17 - Nut

- 8 Nm (71 in. lb)

18 - Cover

19 - Nut

- 10 Nm (7 ft lb)

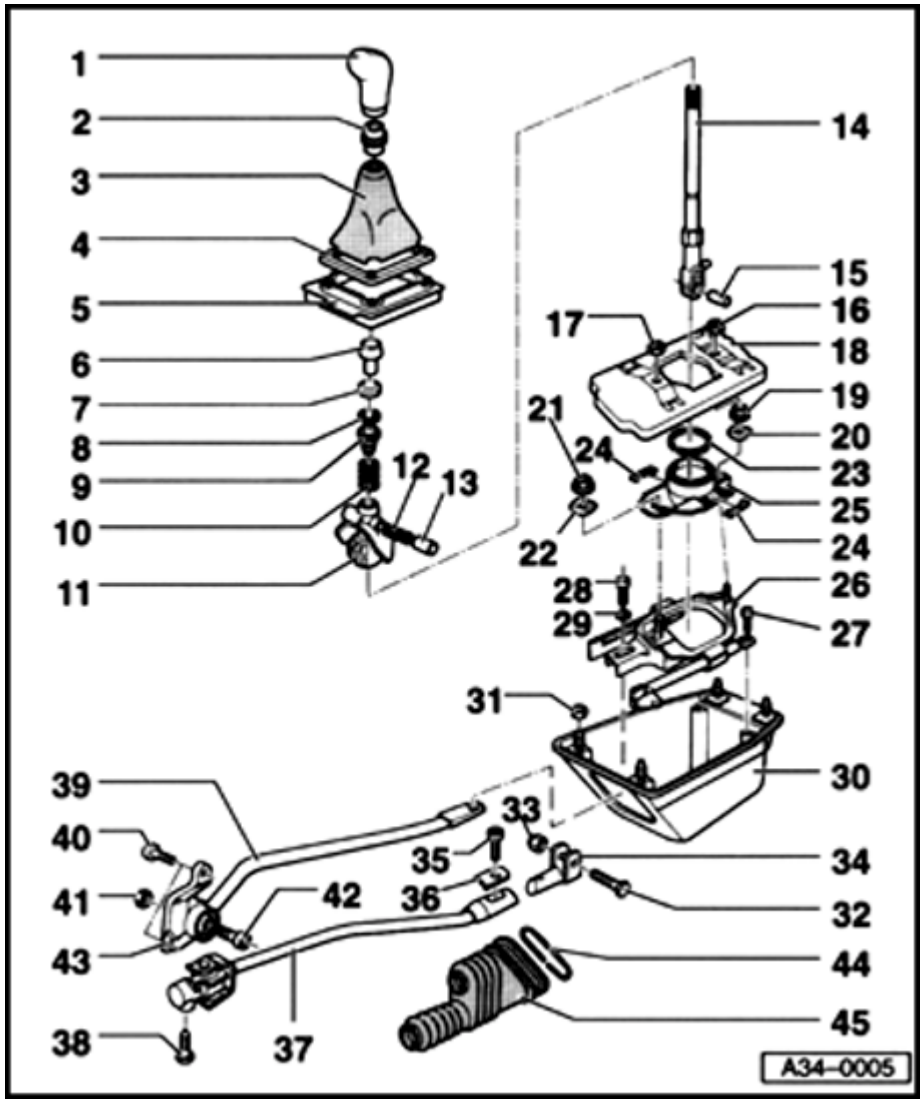
20 - Connecting piece

21 - Nut

- 23 Nm (17 ft lb)

22 - Connecting piece

34-4



23 - Circlip

- Always replace
- Remove before removing ball stop
- Rounded side faces ball housing (item - 25 -)

24 - Buffer

25 - Ball housing

- Buffers for ball stop on left and right must be in place
- Insert so that shift detent for reverse gear faces toward left

26 - Rear shift rod

27 - Bolt

- 10 Nm (7 ft lb)

28 - Bolt

- 23 Nm (17 ft lb)

29 - Washer

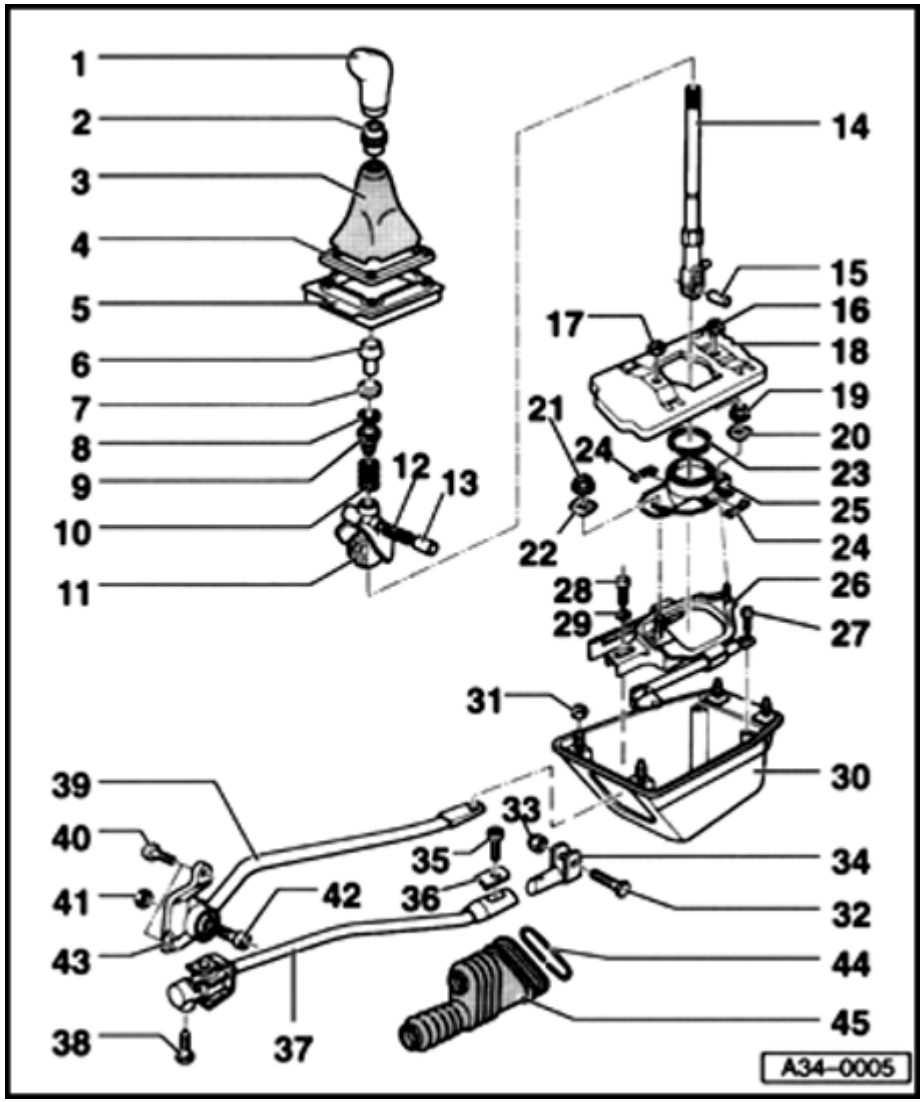
30 - Shift mechanism housing

31 - Nut

- 10 Nm (7 ft lb)

32 - Bolt

34-5



33 - Nut

- Always replace
- 10 Nm (7 ft lb)
- Self locking

34 - Shift fork

35 - Bolt

- 23 Nm (17 ft lb)

36 - Clamp

37 - Shift rod

- With shift coupling

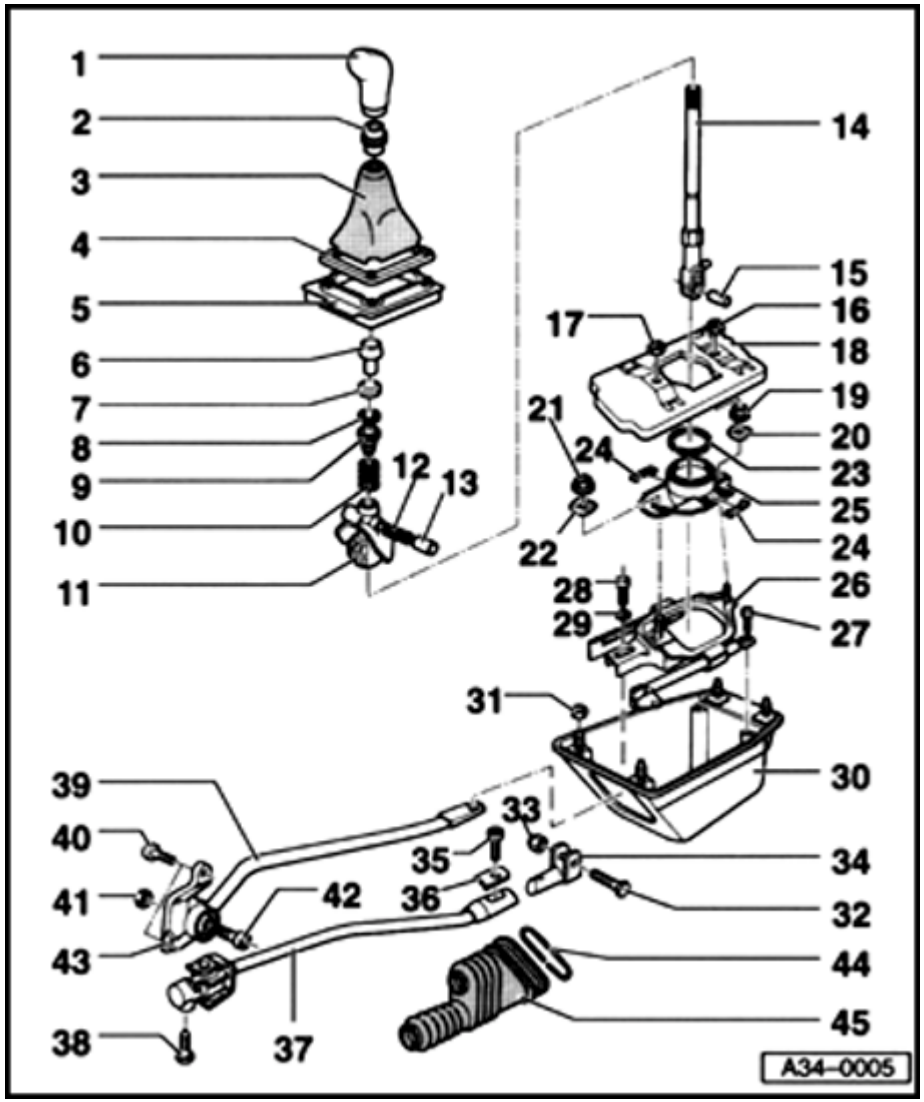
38 - Bolt

- Always replace
- 23 Nm (17 ft lb)
- Self locking

39 - Pivot rod

- Avoid tension by first connecting pivot rod to shift mechanism housing and rear shift rod
- Hold bolt (item -42-) in place when tightening nut (item -41-)
- Pivot rod, fastening 06.96 ⇒ Fig. 1

34-6



40 - Bolt

- 40 Nm (30 ft lb)

41 - Nut

- 40 Nm (30 ft lb)

42 - Bolt

43 - 4546Mounting bracket for pivot rod

- Revised after 06.96 ⇒ Fig. 1

44 - Tensioning ring

45 - Boot

- To remove and install, remove Three Way Catalytic Converter (TWC) and heat shield
- Carefully pull over shift rod and pivot rod
- When installing, place on markings of shift rod and pivot rod
- Pivot rod, fastening 06.96 ⇒ Fig. 1

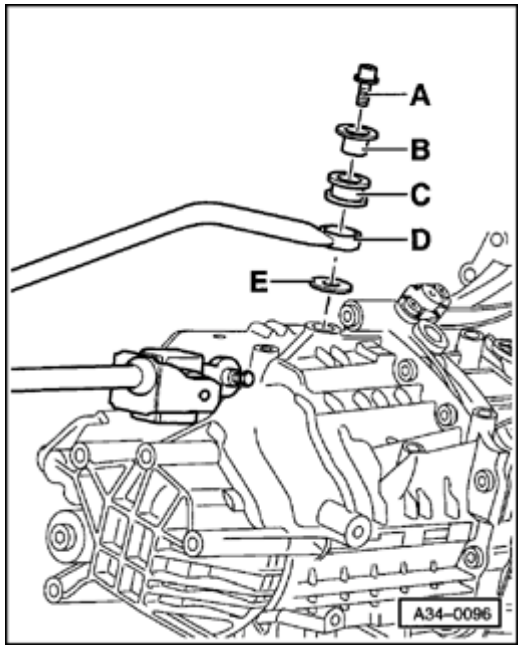


Fig. 1 Pivot rod fastening to transmission 06.96

As of 06.96 the pivot rod is bolted directly to the transmission cover. The additional mounting bracket (item -43-, ⇒ Page 34-6) and its bolts are deleted. For this reason the transmission cover was revised and equipped with an additional mounting point.

A - Socket-head bolt

40 Nm (30 ft lb)

B - Washer

Rounded side faces pivot rod

C - Rubber bushing

D - Pivot rod

E - Washer

Note:

Illustration shows manual transmission 012.

34-8

Shift mechanism, removing and installing

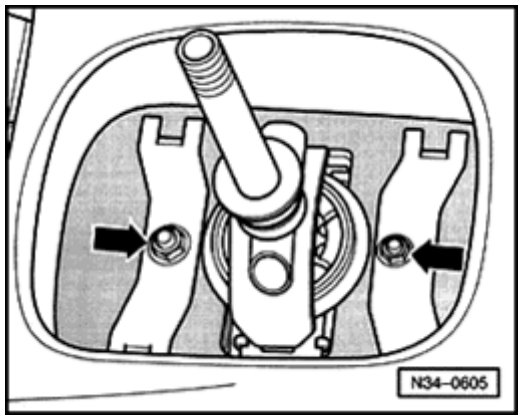
Removing

- Remove shift knob and housing cover.

- Remove center console

  ⇒ *Repair Manual, Body Interior, Repair Group 70*

- Remove cover.



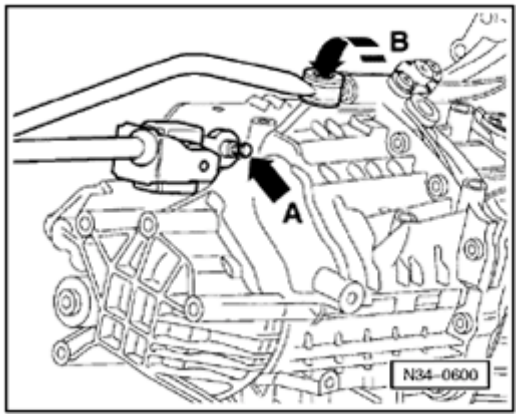
- Remove cover for shift mechanism housing (arrows).

- Remove nuts securing shift mechanism housing (arrows).

- Separate exhaust system behind Three Way Catalytic Converter (TWC), if necessary remove front exhaust system together with Three Way Catalytic Converter (TWC).

⇒ Repair Manual, Engine Mechanical, Repair Group 26

- Remove driveshaft ⇒ Page 39-71 .

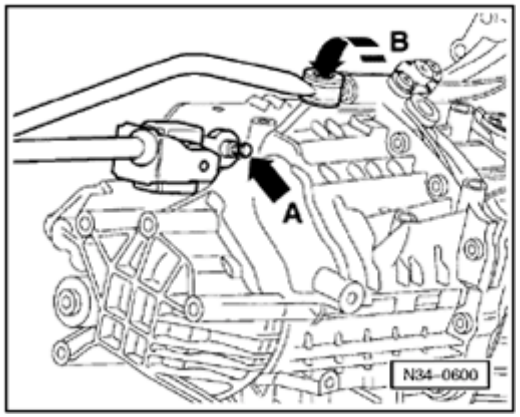


- Remove shift rod (arrow -A-).
- Remove socket-head bolt on pivot rod (arrow -B-).

Note:

Illustration shows manual transmission 012.

- Swing shift mechanism housing together with shift rod and pivot rod downward and remove.



Installing

Install in reverse order of removal, note the following:

- Push shift rod on so that securing bolt fits into recess of shift rod.

➢

- Secure shift rod (arrow -A-).
- Secure pivot rod to transmission (arrow -B-).
- Adjust shift linkage ⇒ Page 34-12 .
- Install driveshaft ⇒ Page 39-71 .
- Adjust driveshaft ⇒ Page 39-79 .
- Align exhaust system free of stress.

⇒ Repair Manual, Engine Mechanical, Repair Group 26

Tightening torques

Component	Tightening torque
Shift mechanism housing to body	10 Nm (7 ft lb)
Shift rod to transmission	23 Nm (17 ft lb)1)
Pivot rod to transmission	40 Nm (30 ft lb)
1) Always replace bolt	

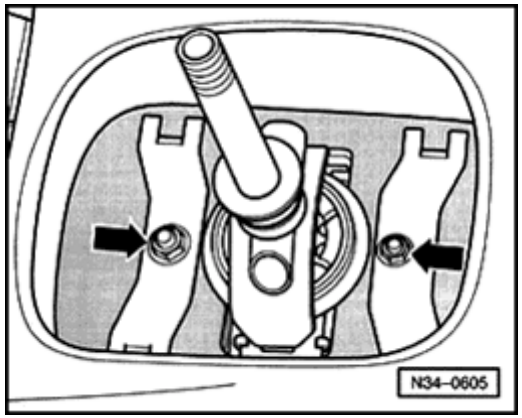
34-12

Shift linkage, adjusting

Requirements

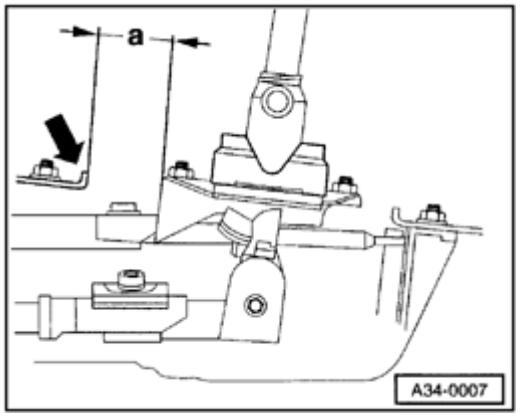
- Components of shift mechanism and linkage must be in proper working condition
- Shift mechanism must move freely
- Transmission, clutch and clutch assembly must be in proper working condition
- Transmission in neutral

- Remove shift knob and housing cover.



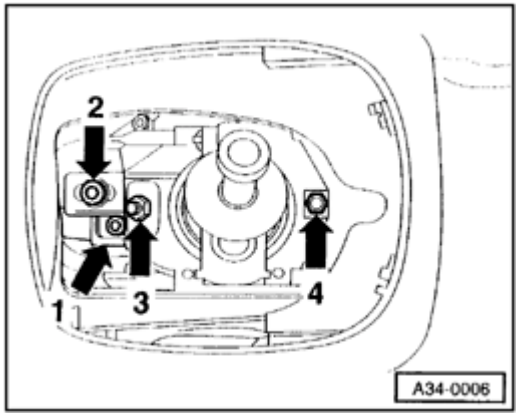
- Remove cover for shift mechanism housing (arrows).

- Measure dimension between body opening and rear shift rod (in shift mechanism).



Dimension -a-: 37 mm (1.456 in.)

If dimension -a- is not attained



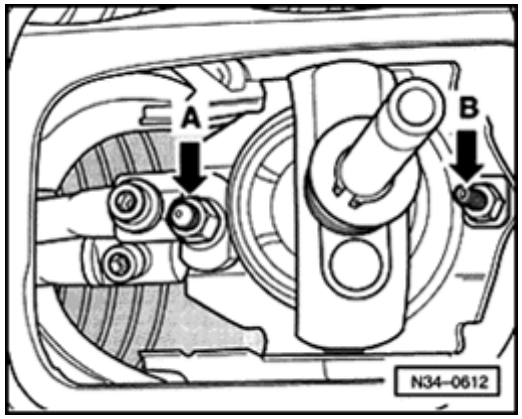
- Loosen bolt for pivot rod (arrow -2-).

  Rear pivot rod (in shift mechanism) should move freely in both directions on slide.

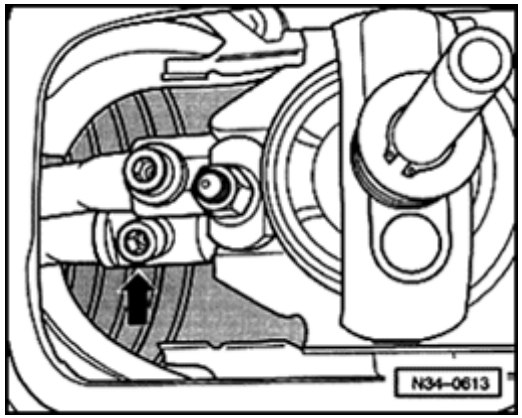
- Adjust dimension -a- by moving pivot rod.

- Tighten pivot rod bolt.

  Tightening torque: 23 Nm (17 ft lb)

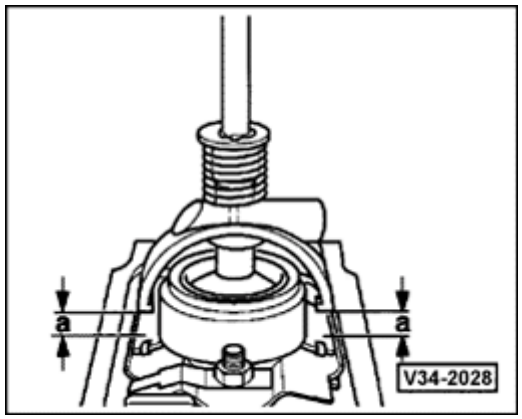


- Loosen ball housing nuts (arrows -A- and -B-).
- Align ball housing horizontally (item 25), ⇒ Page 34-4 .
- Tighten ball housing nuts (arrows -A- and -B-).
  - Arrow -A-: 25 Nm (18 ft lb)
  - Arrow -B-: 10 Nm (7 ft lb)



- Loosen bolt for shift rod (arrow).

  Connection between shift rod and shift mechanism must move freely.



- Align shift lever so it is positioned slightly toward rear.

➢ Dimension -a- between ball stop buffers and ball housing should be equal on both sides.

- Have second technician hold shift lever.
- Tighten bolt for shift rod.

  Tightening torque: 23 Nm (17 ft lb)

Note:

The position of the shift lever should not change when bolt is tightened.

Shift mechanism adjustment, checking

Requirement

- Shift lever must rest in 3rd/4th gear gate when transmission is in neutral.

- Operate clutch.

- Make sure all gears can be engaged properly.

- Check operation of reverse gear lock.

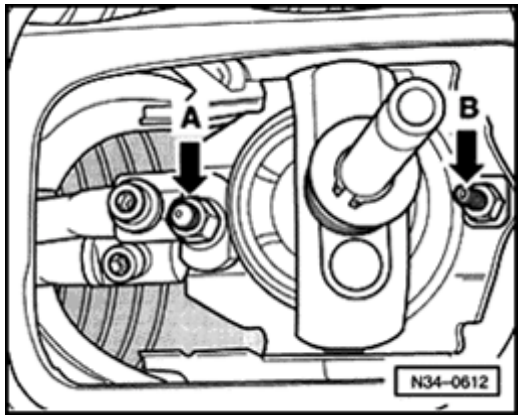
- Move shift mechanism into 5th/reverse-gear gate and move in direction of reverse gear (do not push shift lever too hard).

  The movement up to stop reverse-gear lock must be 5-10 mm (0.196-0.394 in.) (measured at shift knob).

- Reduce pressure on shift lever, so it can move back.

  Shift lever should return by itself from the 5th/reverse gear gate and move into 3rd/4th gear gate.

- Check fine adjustment if necessary ⇒ Page 34-17 .



Fine adjustment

If shift adjustment is not OK, proceed as follows:

- Loosen nuts for ball housing (arrows -A- and -B-).
- Move shift lever together with ball housing to right toward 5th/reverse gear gate up to stop in transmission and hold in position.
- Press ball housing to left against shift lever.
- Hold shift lever and ball housing in position and tighten ball housing nuts.
  - Arrow -A-: 25 Nm (18 ft lb)
  - Arrow -B-: 10 Nm (7 ft lb)
- Install covers and shift knob.

Note:

If only 5th gear and reverse gear cannot be engaged, the 5th and reverse gear lock must be checked and replaced if necessary ⇒ *Page 34-86* .