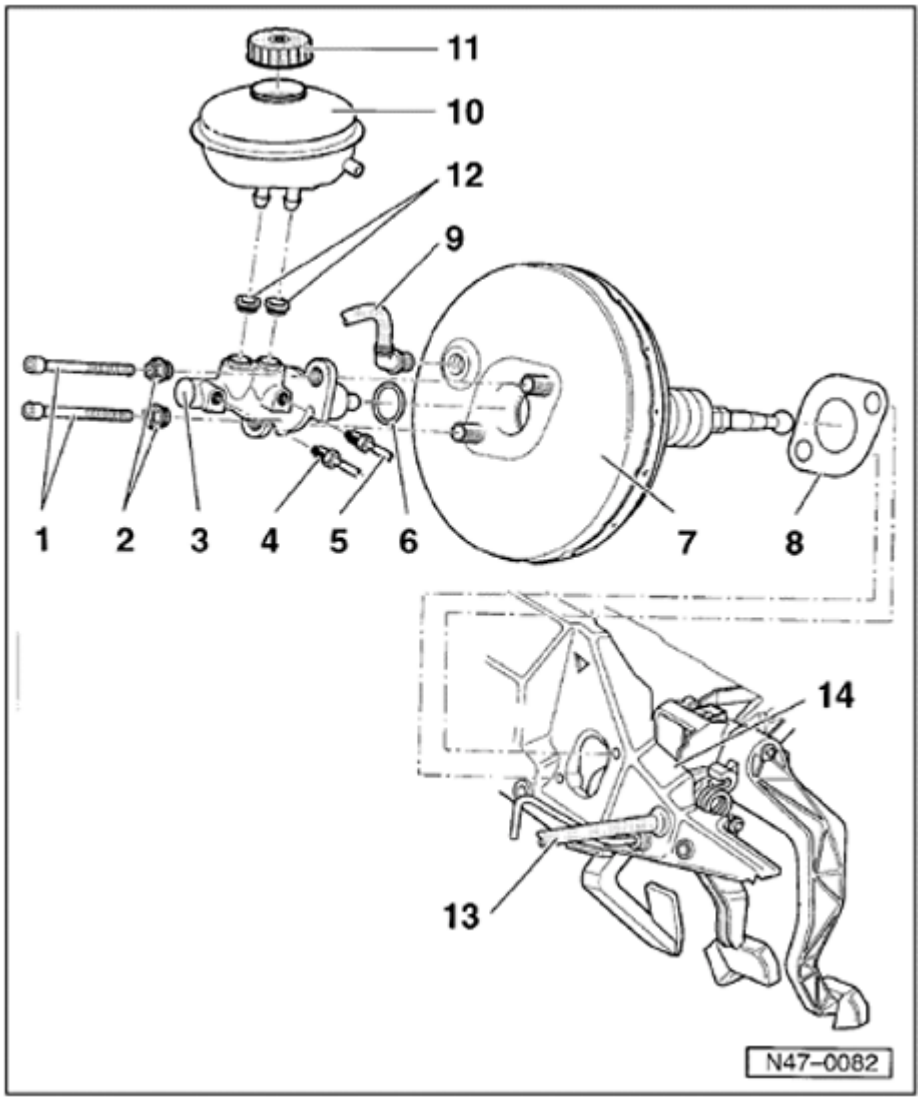


Brake master cylinder with 23.81 mm (0.937 in.) piston diameter and brake servo, component summary

Note:

- *Brake master cylinders and brake servos can be replaced separately.*
- *Brake master cylinders can no longer be disassembled, i.e. there is no provision for servicing.*
- *Use only fresh brake fluid. Pay attention to information on the brake fluid reservoir.*
- *Brake line connections to master cylinder, Bosch 5.0 ABS system (⇒ page 45-6), Bosch 5.3 system (⇒ page 45-18).*

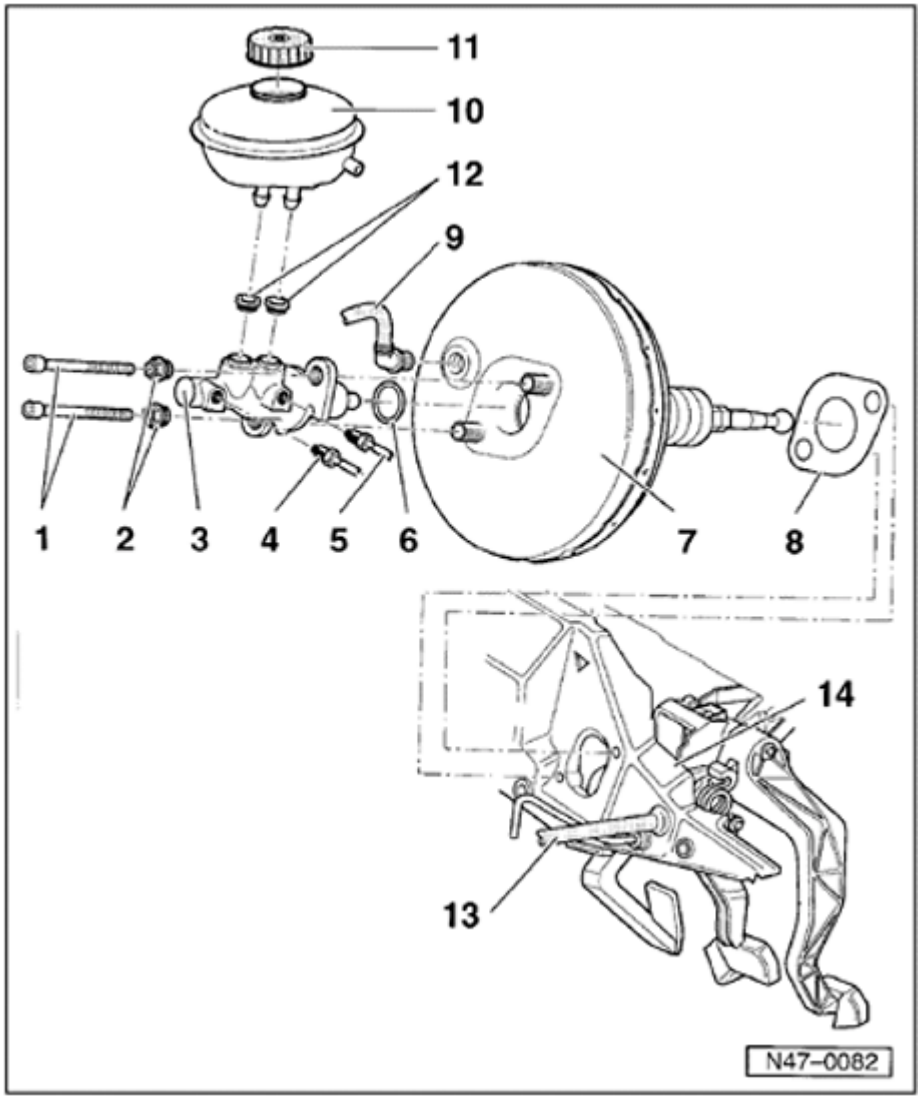
1 - T45 Torx®

- 25 Nm (18 ft lb)

2 - Self-locking nut

- 49 Nm (36 ft lb)

47-30



3 - Brake master cylinder

- Diameter: 23.81 mm (0.937 in.)
- Cannot be repaired. If malfunctioning, replace as complete unit only.
- Removing and installing ⇒ page 47-34

4 - Brake line

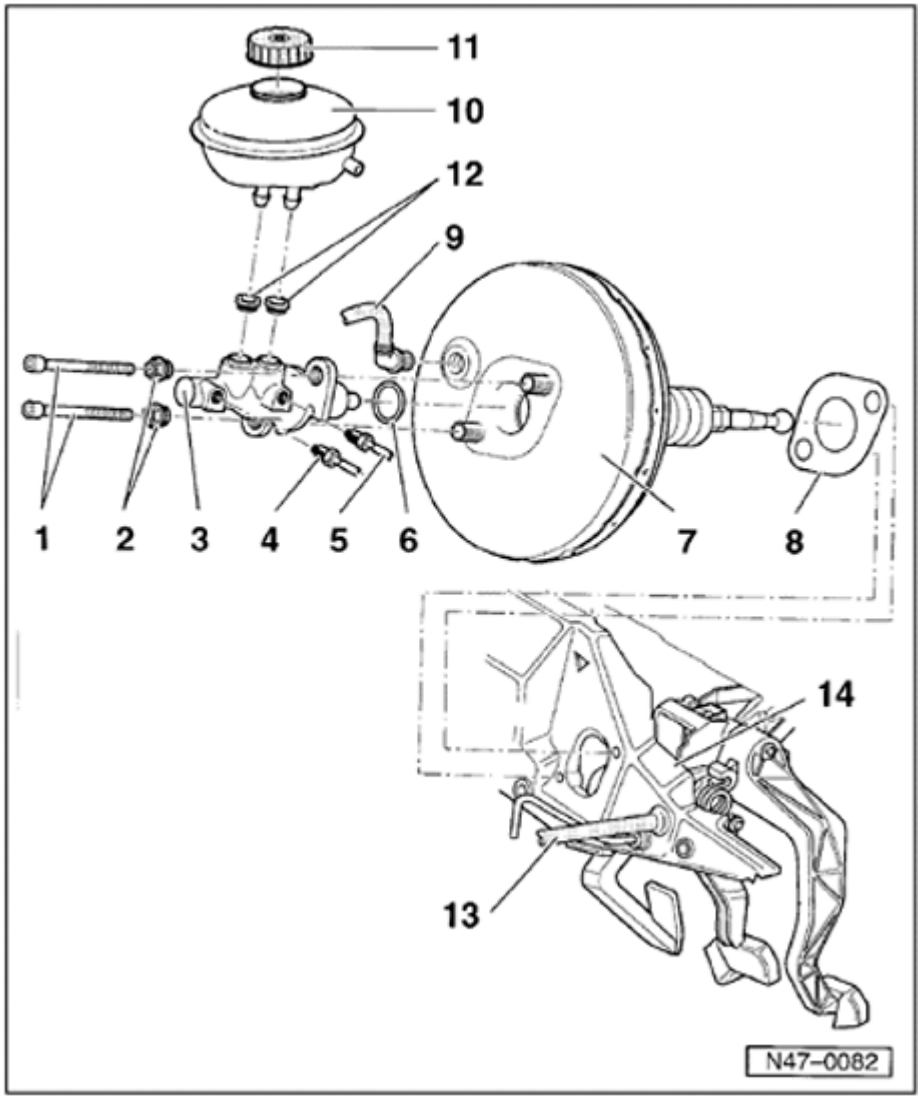
- 15 Nm (11 ft lb)
- Brake master cylinder/secondary piston circuit to hydraulic control unit

5 - Brake line

- 15 Nm (11 ft lb)
- Brake master cylinder/primary piston circuit to hydraulic control unit

6 - Seal

- Always replace



7 - Brake servo

- On gasoline engines vacuum is supplied from the intake manifold
- On Diesel engines vacuum is supplied from the vacuum pump

Functional check:

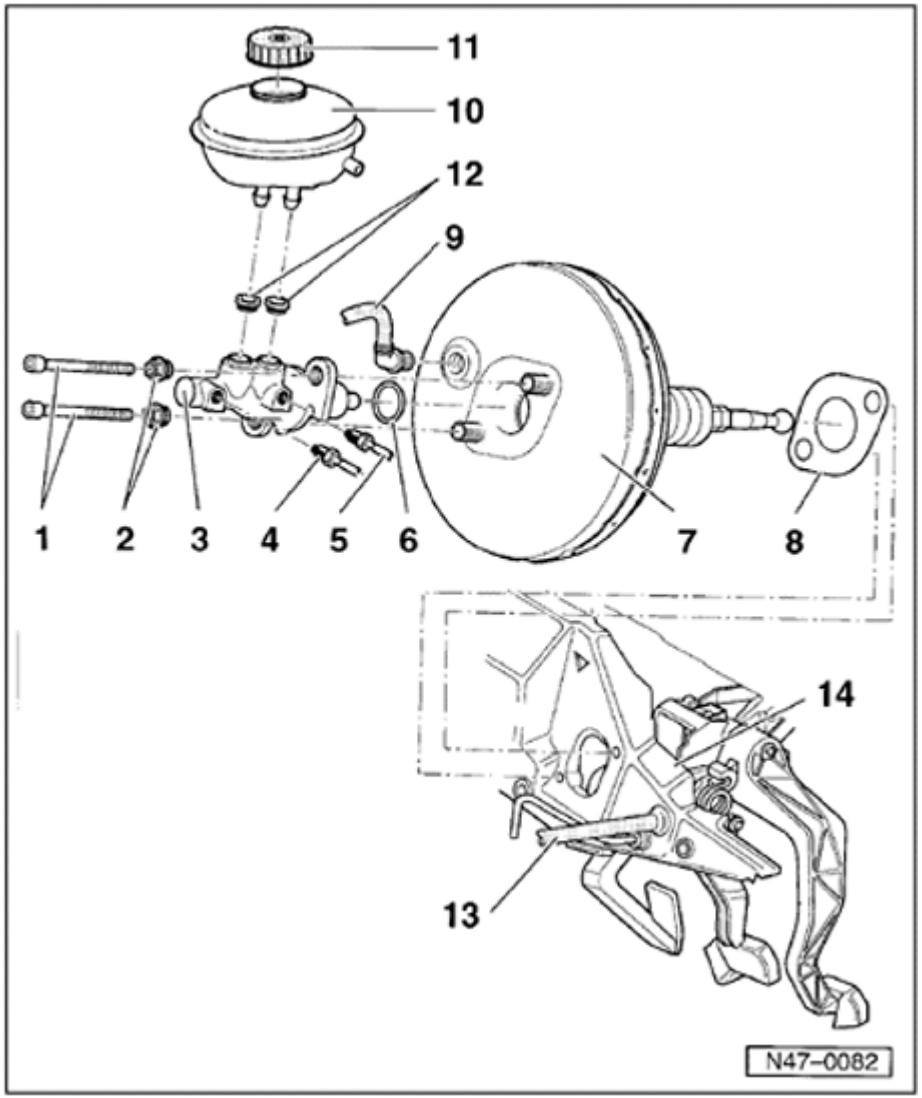
- With engine switched off, depress brake pedal firmly several times (to deplete vacuum in brake servo).
- Depress and hold brake pedal with average foot pressure and start engine. If servo is working properly, pedal will be felt to give slightly under foot (servo assistance becomes effective).

If malfunctioning:

- Replace as complete unit only.

- Check valve in vacuum hose - 9 -
- Removing and installing ⇒ page 47-37
- Adjusting ball head ⇒ Fig. 1

47-32



8 - Gasket

9 - Vacuum hose

- Insert into brake servo

10 - Brake fluid reservoir

11 - Fluid reservoir cap

12 - Sealing plugs

13 - Supply hose

- Where applicable
- From brake fluid reservoir to clutch master cylinder

14 - Bulkhead

47-33

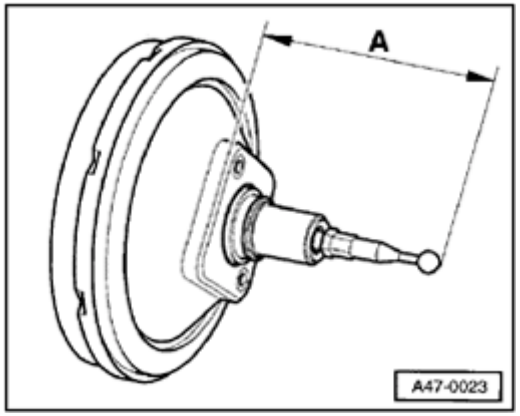


Fig. 1 Adjusting ball head

Dimension -A- = 159 ± 0.5 mm (6.26 ± 0.020 in.)

Note:

- *The ball head must be positioned at right angles to the mounting surface of the brake servo unit when measuring.*
- *Measure up to end of ball head with no gasket installed.*

Brake master cylinder with 23.81 mm (0.937 in.) diameter piston, removing and installing

Special tools and equipment

Sealing plugs from repair kit, Part No. 1H0 698 311A

CAUTION!

Part numbers are listed here for reference only. Always check with your Parts department for the latest information.

Removing

- Attach bleeder hose and bleeder bottle to left-front brake caliper bleeder screw and open bleeder screw.

- Operate brake pedal to pump out as much brake fluid as possible.

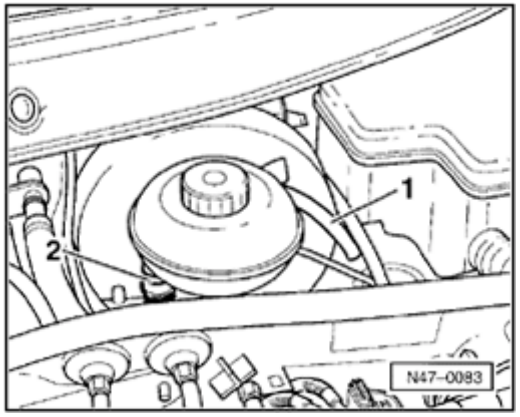
- Close left-front bleeder screw.

- Cover engine compartment to catch any spilled brake fluid.

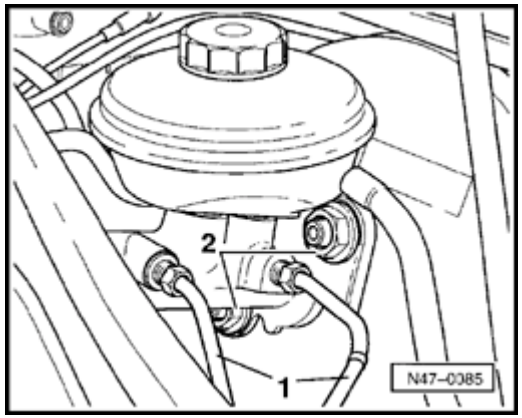
CAUTION!

Brake fluid must not be allowed to come into contact with paintwork because of its caustic effect.

47-35



- On vehicles with manual transmission, disconnect clutch master cylinder supply hose -1- and seal with plug.
- Disconnect harness connector from brake fluid level warning switch -2-.



- Disconnect brake lines -1- on brake master cylinder and seal brake lines and threaded holes using plugs from repair kit.
- Remove brake master cylinder mounting nuts -2-.
- Carefully remove brake master cylinder from brake servo.

Installing

When installing, note the following points:

- When installing brake master cylinder onto brake servo, make sure push rod is correctly located in brake master cylinder.

- Apply slight pressure to brake pedal to move push rod toward brake master cylinder; this makes it easier to guide brake master cylinder onto push rod.

Bleeding clutch hydraulics

- Connect US1116 brake bleeder but do not switch on yet.

- Open bleeder screw on clutch slave cylinder.

- Attach collector bottle hose.

- Switch on bleeder unit and allow approx. 100 cc (6 oz.) of brake fluid to flow out of clutch slave cylinder.

- Close bleeder screw.

- Bleed brake system ⇒ page 47-23 .

47-37

Brake servo for brake master cylinder with 23.81 mm (0.937 in.) diameter piston, removing and installing

Special tools and equipment

- Repair Manual, Body-Exterior
- Repair Manual, Body-Interior
- Sealing plugs from repair kit, Part No. 1H0 698 311A
- T10006 Brake pedal release tool

CAUTION!

Part numbers are listed here for reference only. Always check with your Parts department for the latest information.

Removing

- Remove driver's side storage compartment.

⇒ *Repair Manual, Body-Interior, Repair Group 68*

- Attach bleeder hose and bleeder bottle to left-front brake caliper bleeder screw and open bleeder screw.

- Operate brake pedal to pump out as much brake fluid as possible.

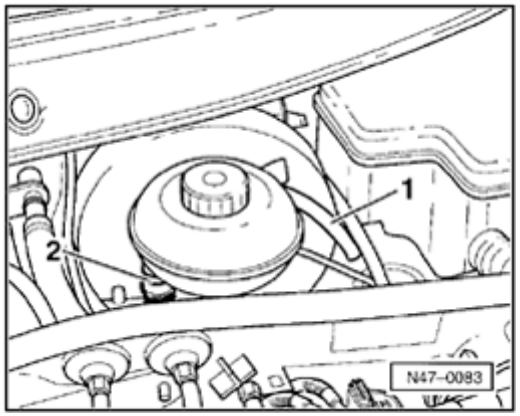
- Close left-front bleeder screw.

47-38

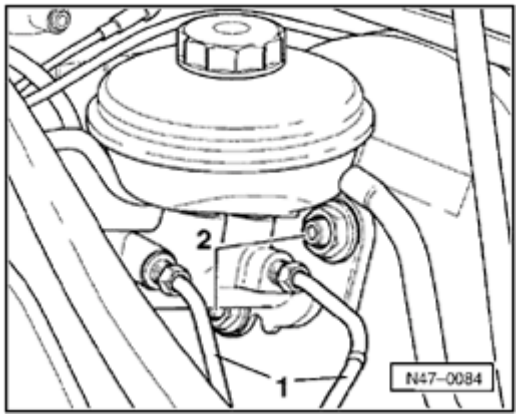
- Cover engine compartment to catch any spilled brake fluid.

CAUTION!

Brake fluid must not be allowed to come into contact with paintwork because of its caustic effect.

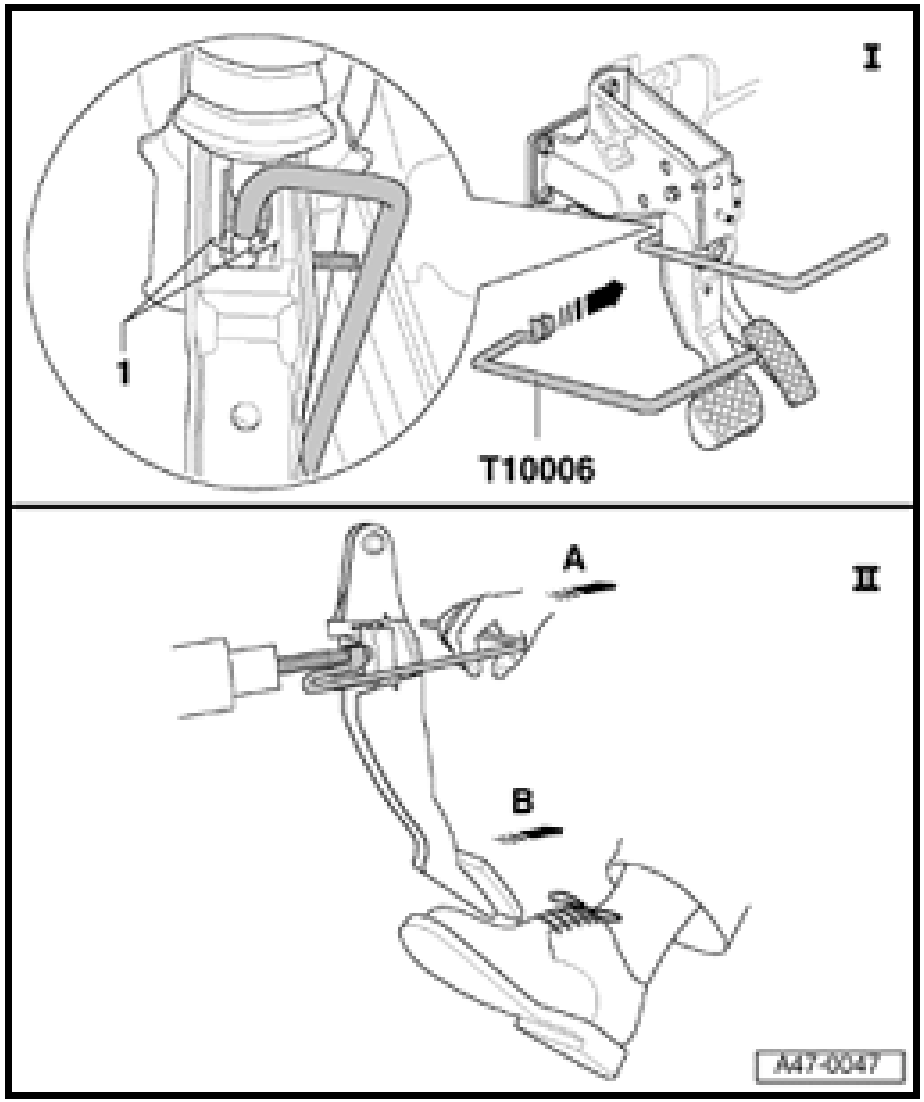


- On vehicles with manual transmissions, disconnect clutch master cylinder supply hose -1- and seal with plug.
- Disconnect harness connector from brake fluid level warning switch -2-.



- Disconnect brake lines -1- on brake master cylinder and seal brake lines and threaded holes using plugs from repair kit.
- Remove T45 Torx® bolts -2- from brake servo.
- Disconnect vacuum hose from brake servo.

47-39



Releasing brake pedal

- Remove brake light switch.

1 - Inserting T10006 brake pedal release tool

- ♦ Insert the tool from below

2 - Release procedures

- Tightly hold brake pedal.
- Lift catches off ball head using a slight pull on tool (arrow -A-).
- Tension tool so catches do not re-engage ball head.
- Pull brake pedal from ball head (arrow -B-).
- Remove brake servo from plenum chamber together with brake master cylinder.

Installing

Note the following points:

- Adjust brake light switch ⇒ page 46-50 .
- Adjust vent valve for cruise control system ⇒ page 46-54 .

Bleeding clutch hydraulics

- Connect US1116 brake bleeder but do not switch on yet.
- Open bleeder screw on clutch slave cylinder.
- Attach collector bottle hose.
- Switch on bleeder unit and allow approx. 100 cc (6 oz.) of brake fluid to flow out of clutch slave cylinder.
- Close bleeder screw.
- Bleed brake system ⇒ page 47-23 .