Brake
Hydraulic Components
Regulator
Booster

Quick Data

WARNING

Friction materials such as brake and clutch linings or brake pads may contain asbestos fibers.

Do not create dust by grinding, sanding or by cleaning with compressed air.

Avoid breathing asbestos fibers and asbestos dust.

Breathing asbestos may result in serious diseases, such as asbestosis or cancer.

Breathing asbestos may cause severe injury and death.

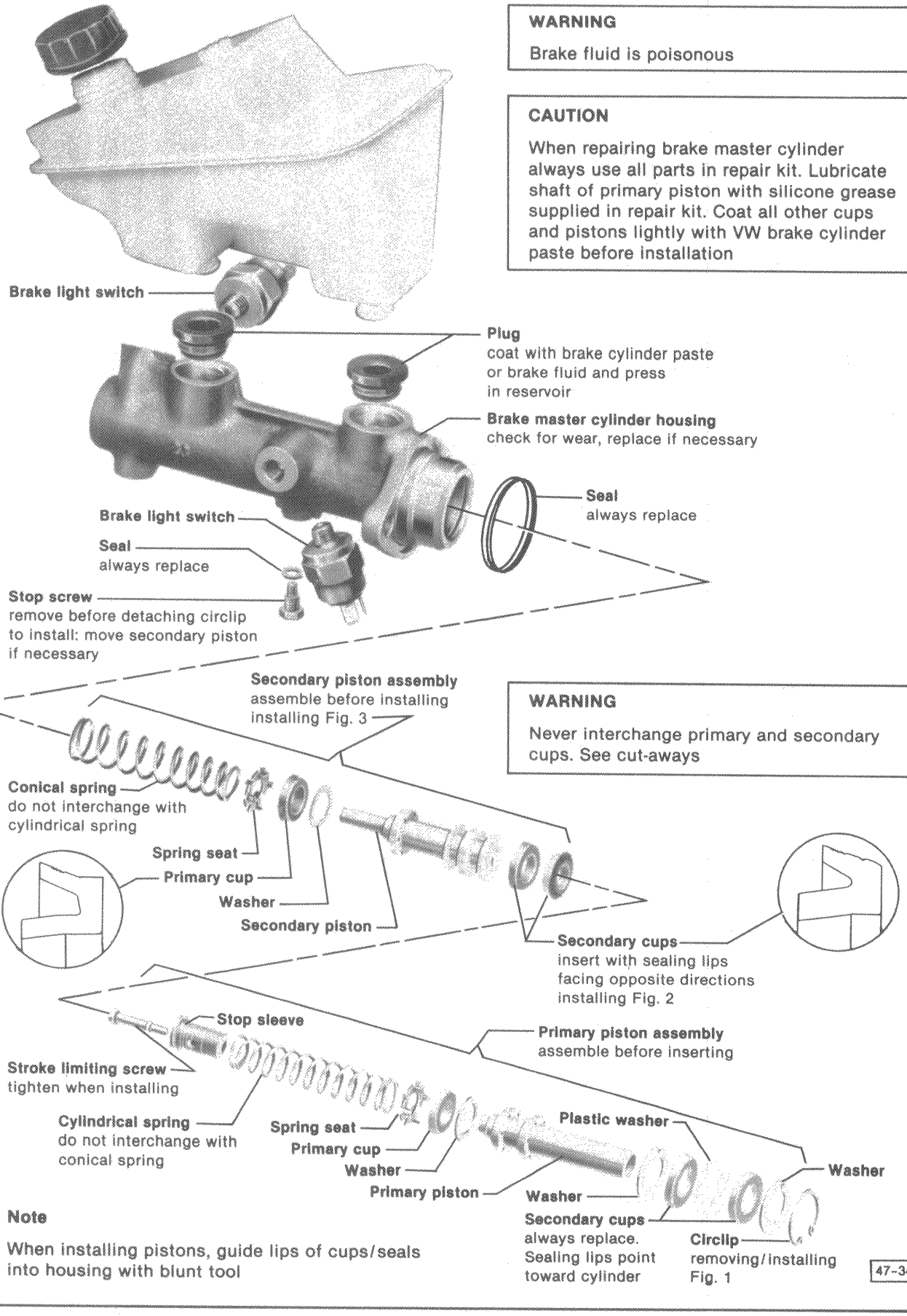
Index

WARNING

Brake fluid is poisonous

CAUTION

When repairing brake master cylinder always use all parts in repair kit. Lubricate shaft of primary piston with silicone grease supplied in repair kit. Coat all other cups and pistons lightly with VW brake cylinder paste before installation



WARNING

Never interchange primary and secondary cups. See cut-aways

Note

When installing pistons, guide lips of cups/seals into housing with blunt tool

Note

DOT 4 brake fluid is now used in all production vehicles. The new fluid is recommended for all Volkswagen brake systems and is completely compatible with the previous DOT 3 fluid.

DOT 4 brake fluid has been phased into the spare parts program effective June, 1984.

The previous DOT 3 version brake fluid, Part No. ZVW 247 101, has been superseded to the new DOT 4 version, Part No. ZVW 239 102.

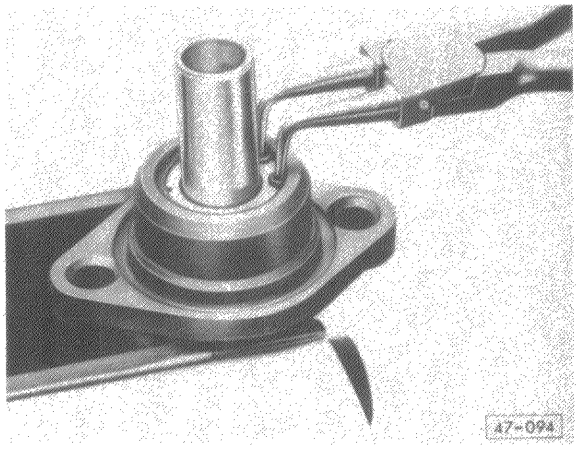


Fig. 1 Circlip, removing/installing

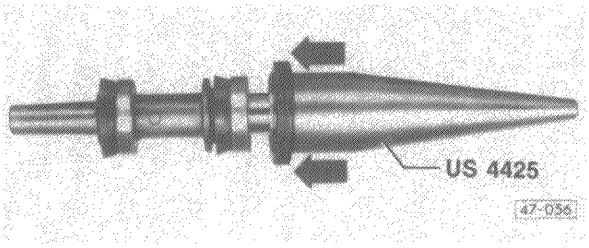


Fig. 2 Secondary cups, installing
- always use fitting sleeve US 4425

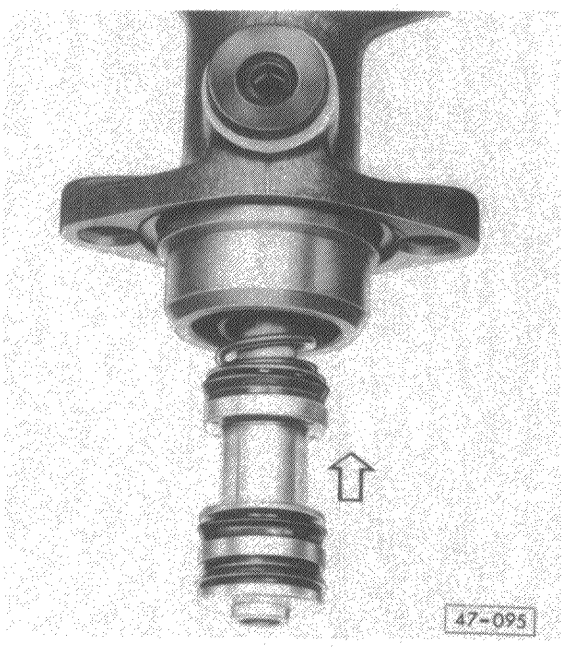


Fig. 3 Secondary piston, installing
— hold brake master cylinder with opening facing down
— guide lips of cups in carefully with blunt tool

Note

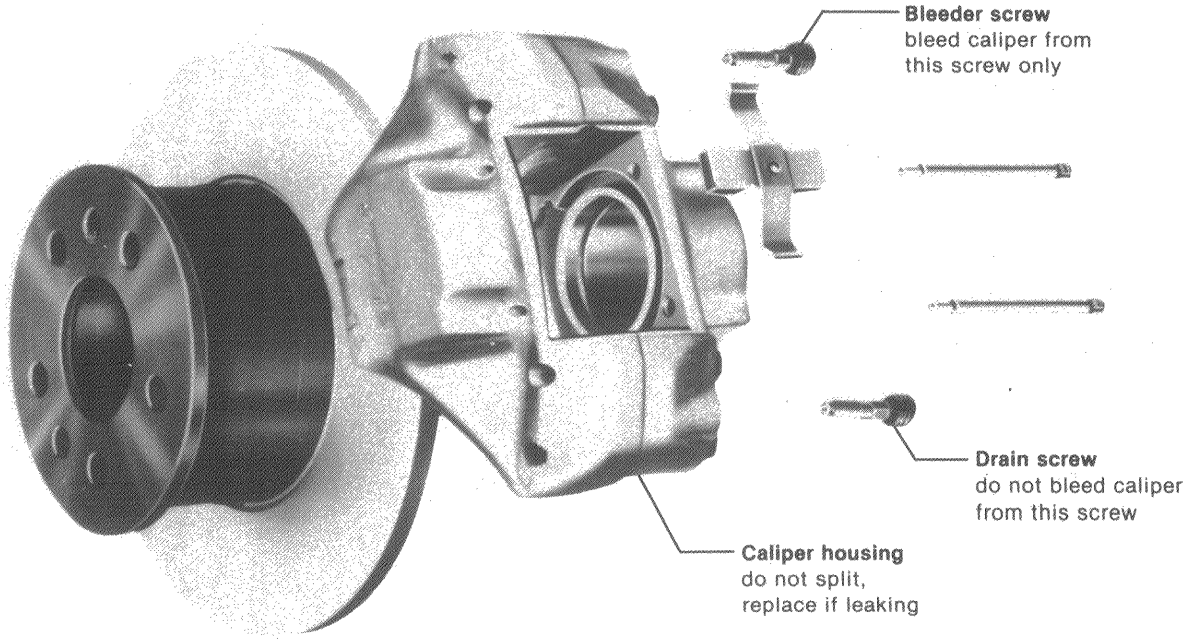
After installing brake master cylinder bleed brake system (see page 47.8)

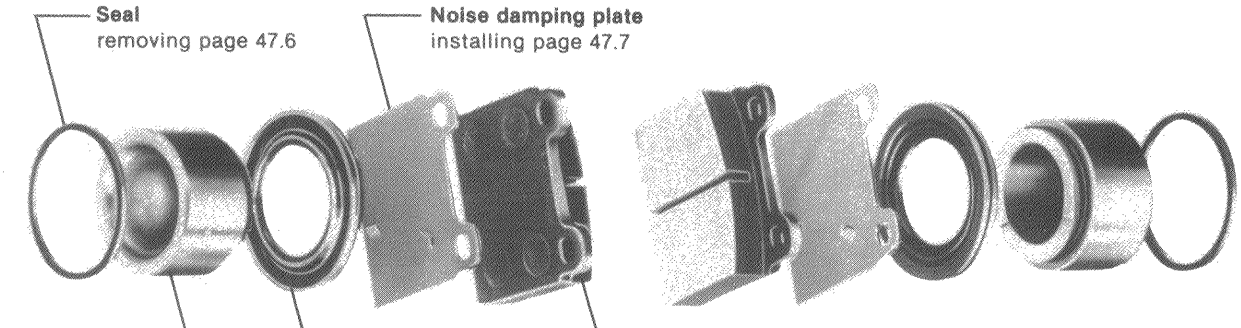
WARNING

Brake fluid is poisonous

CAUTION

Use all parts in repair kit. Coat seals and pistons lightly with VW brake cylinder paste or equivalent before installing





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Note

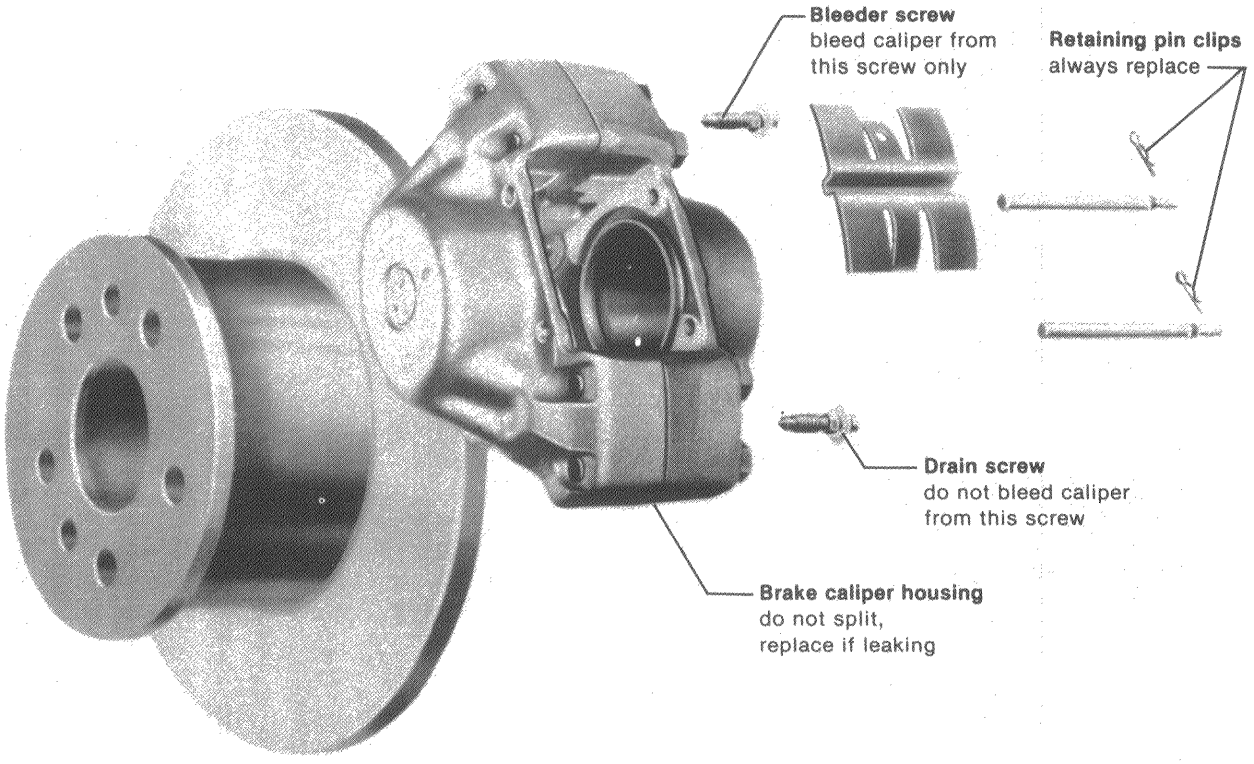
Cars may have either Teves or Girling calipers

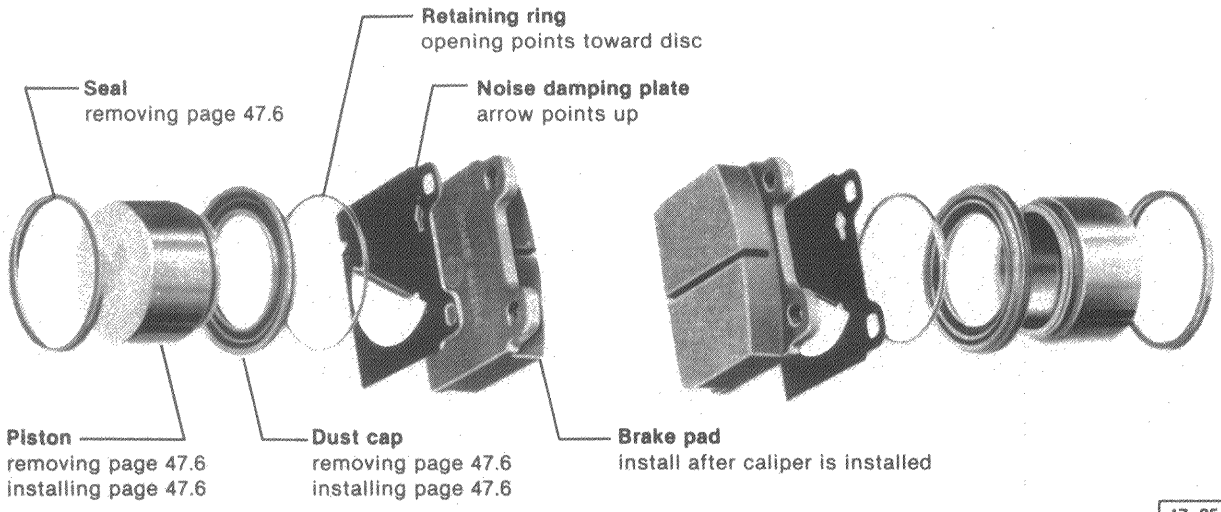
CAUTION

Use all parts in repair kit. Coat seals and pistons lightly with VW brake cylinder paste or equivalent before installing

WARNING

Brake fluid is poisonous



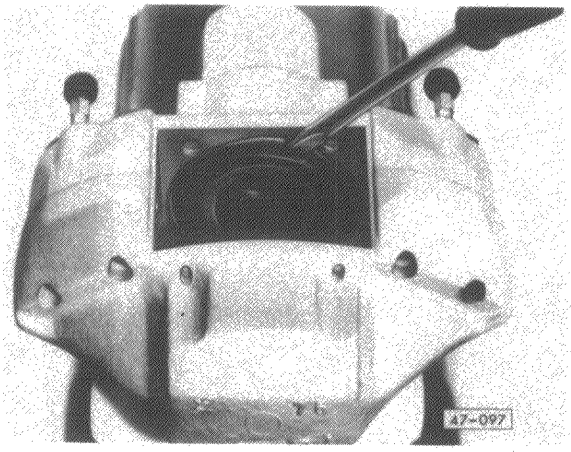


Note

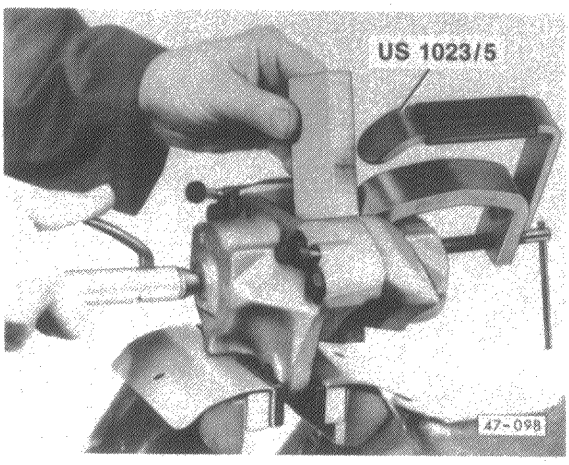
Cars may have either Girling or Teves calipers

Brake caliper, disassembling

Work sequence



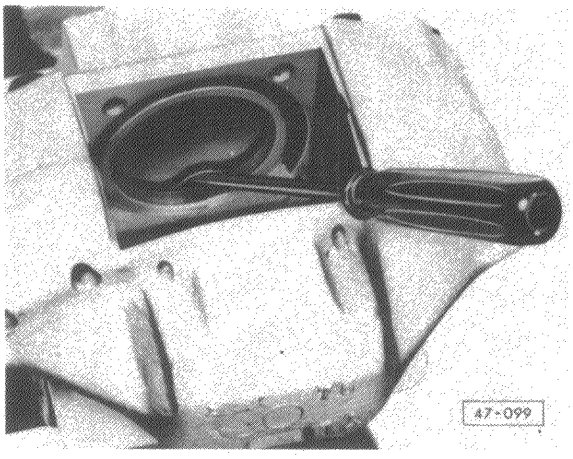
— pry dust cap out without scratching piston



— blow out piston with compressed air

Note

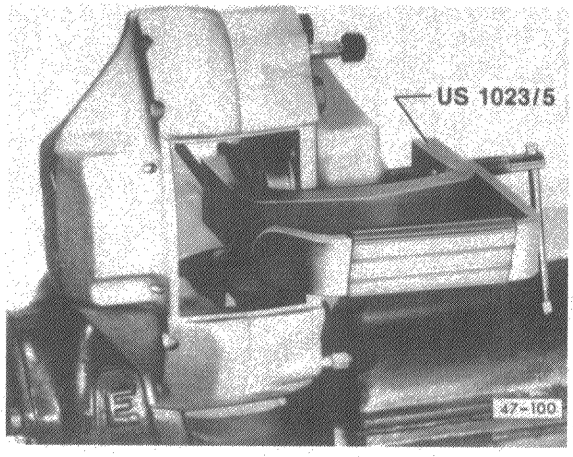
Hold other piston with clamp US 1023/5. Place wooden block in caliper to prevent damage to piston



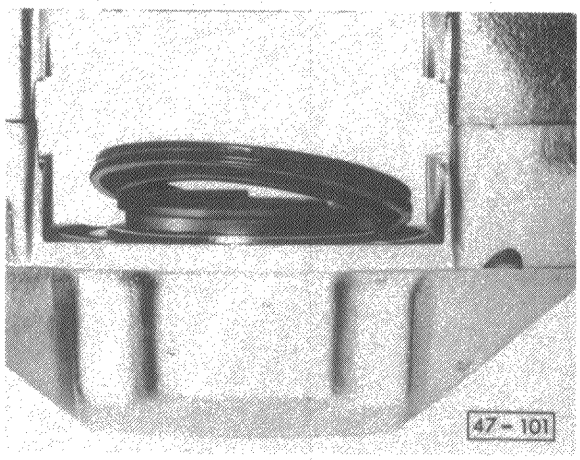
— remove seal without scratching cylinder

Brake caliper, assembling

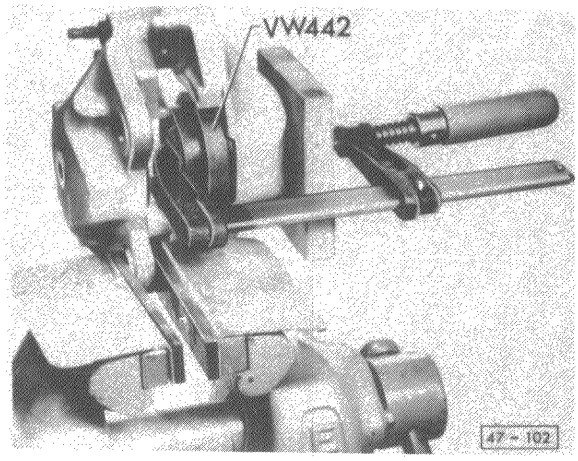
Work sequence



— install seal
— lubricate piston and cylinder bore lightly with brake cylinder paste
— press in piston with installing clamp



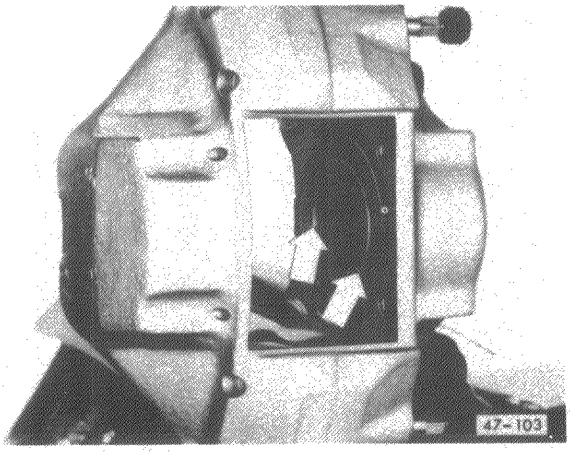
— install dust cap by hand



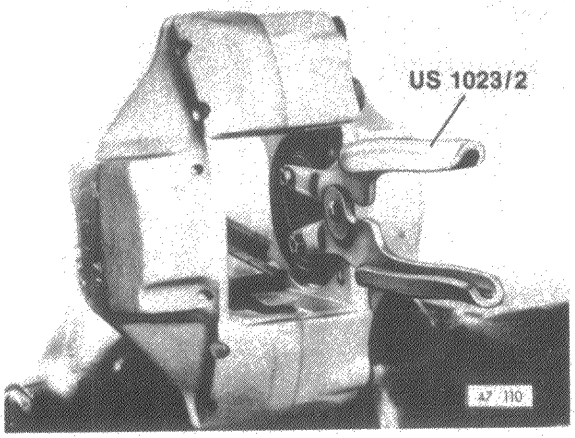
— press dust cap with VW 442 against recess
• piston is now fully seated
— Teves caliper, continue on next page

Noise damping plates, installing
(Teves caliper)

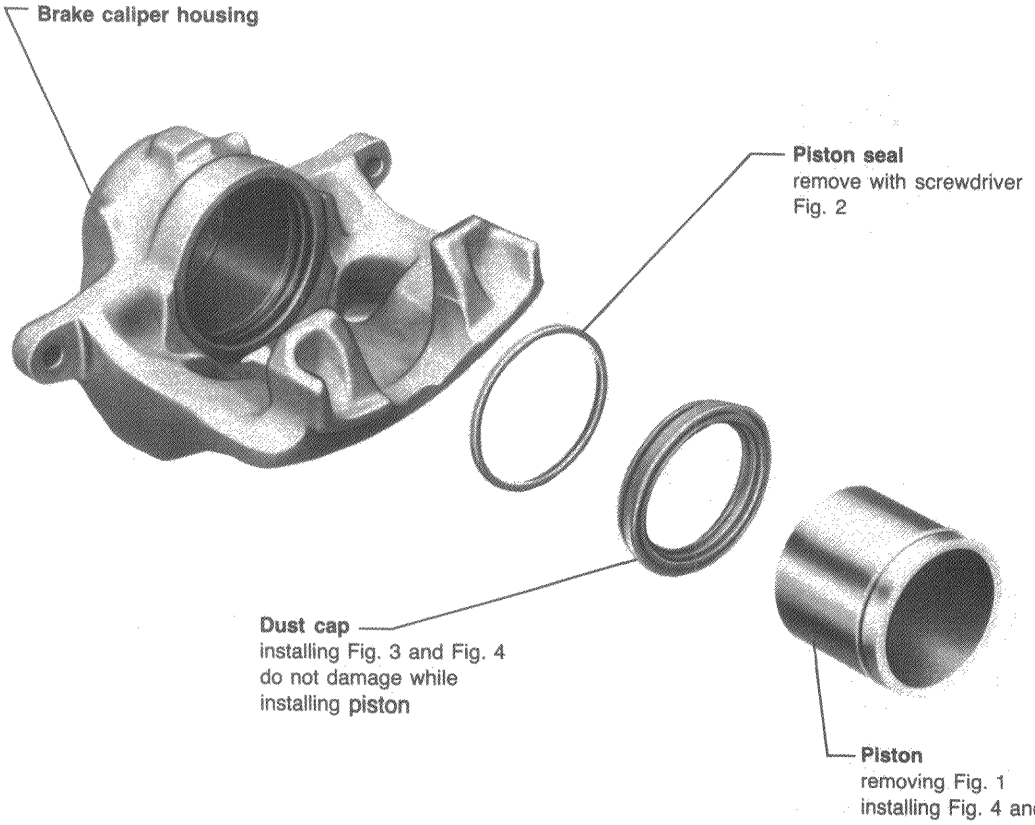
Work sequence



— insert noise damping plates and check position of piston
- recess in piston (arrows) point against direction of brake disc rotation when moving forward. Lugs on noise damping plates engage in recess on piston



— if necessary readjust position of piston by using turning pliers US 1023/2



CAUTION

Use all parts in repair kit. Coat seals and pistons lightly with VW brake cylinder paste or equivalent before installing.

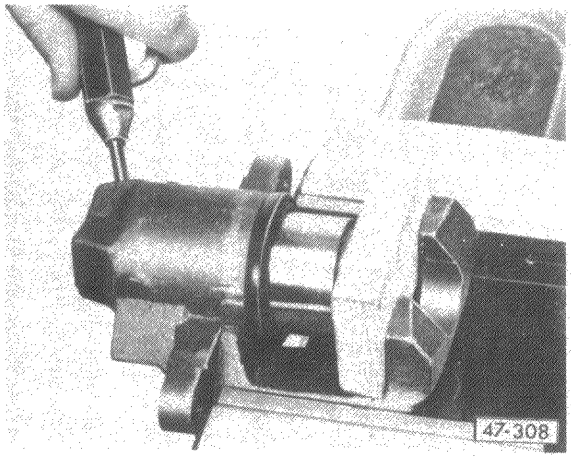


Fig. 1 Caliper piston, removing with compressed air

Note

Place a wooden block in caliper to prevent damage to piston.

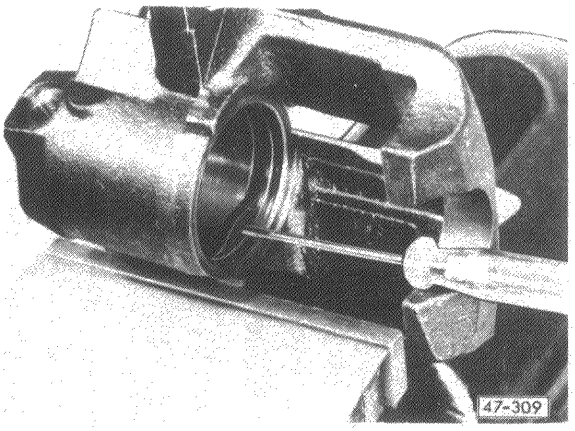


Fig. 2 Piston seal, removing

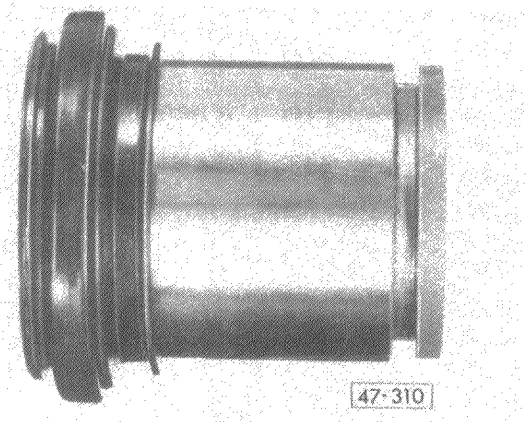


Fig. 3 Dust cap, installing

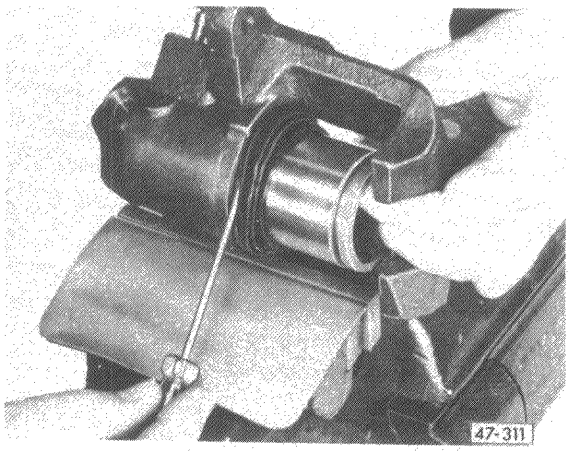


Fig. 4 Piston and dust cap, installing

— insert inner lip of cap into groove in cylinder while holding piston

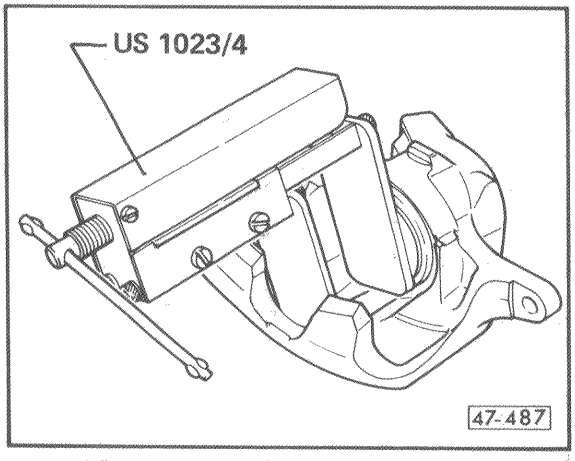


Fig. 5 Piston, installing

— press piston as far as it will go

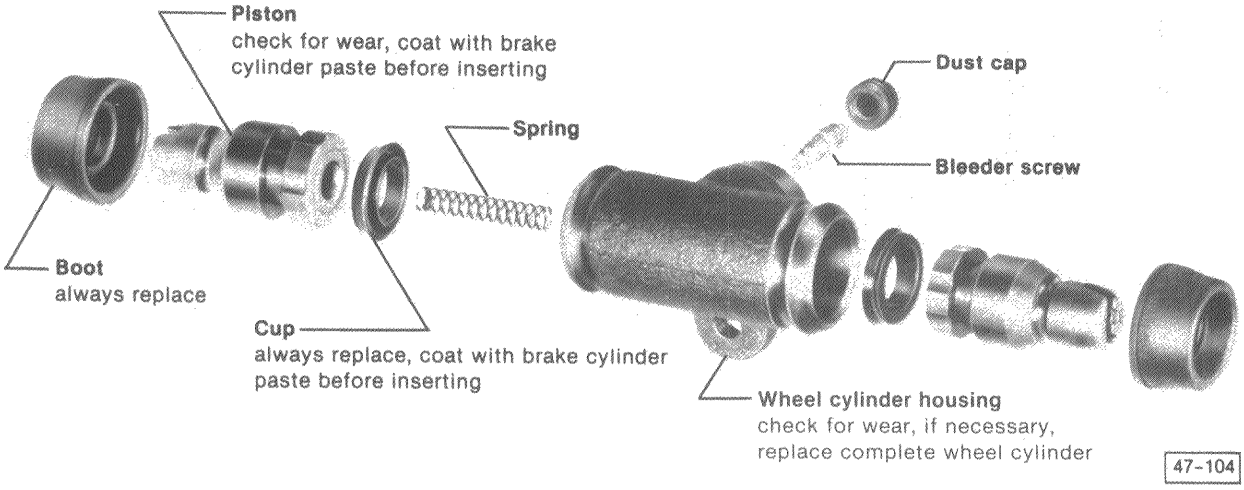
CAUTION

Outer lip of dust cap must slip into groove in piston.

Rear wheel cylinder, disassembling/assembling

CAUTION

When repairing wheel cylinders always use all parts of repair kit



Brake system bleeding

WARNING

Brake fluid is poisonous

Bleeding sequence

1 — Right rear wheel cylinder
2 — Left rear wheel cylinder
3 — Right front caliper (upper screw)
4 — Left front caliper (upper screw)

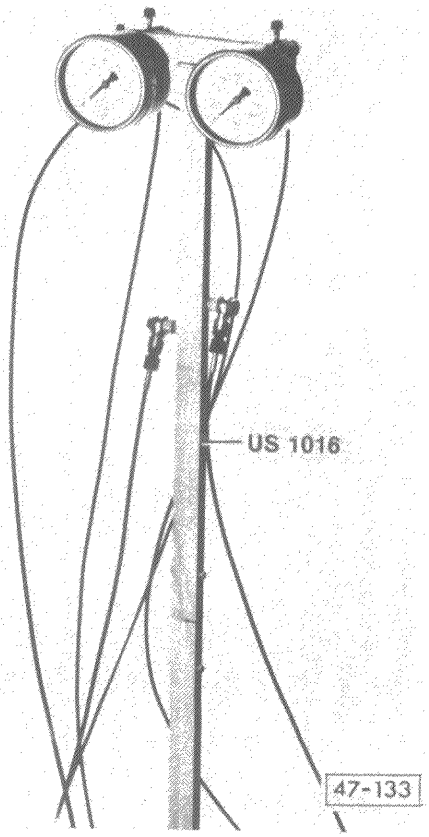
— after bleeding, fill reservoir to maximum mark

CAUTION

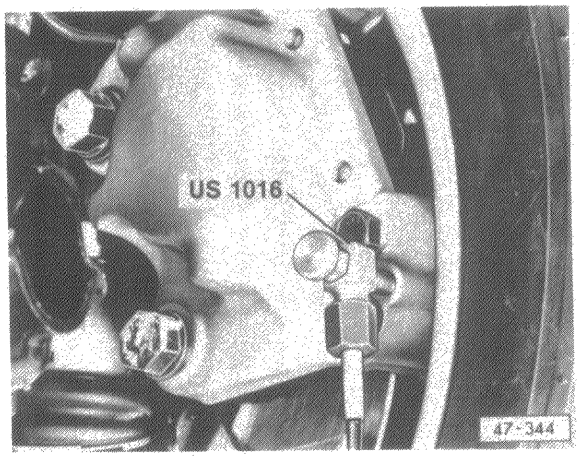
Brake fluid must not come into contact with paint
Brake fluid absorbs moisture from air and must be replaced every 2 years.
Only use new DOT 3 or DOT 4 brake fluid according to SAE recommendation J 1703 and conforming to MOTOR VEHICLE SAFETY STANDARD 116. Do not add or mix DOT 5 silicone type brake fluid with brake fluid in car as severe component corrosion may result. Such corrosion could lead to brake system failure

Brake pressure regulator, checking

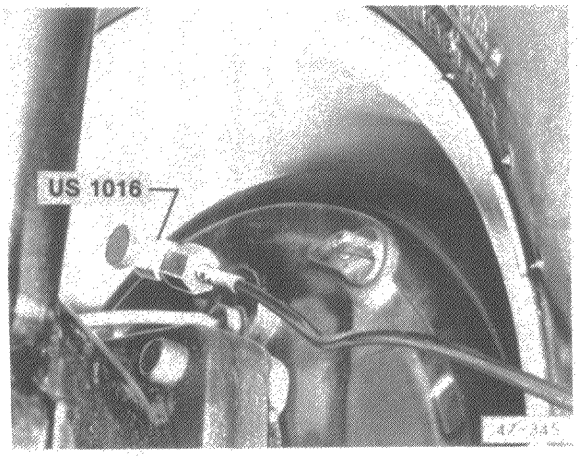
Work sequence



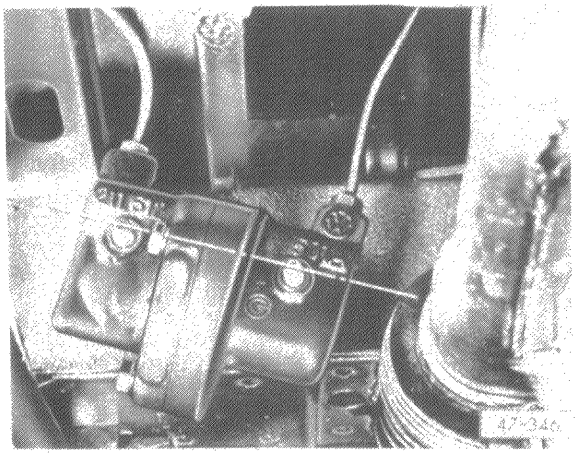
— lift vehicle with hoist
— go to next page



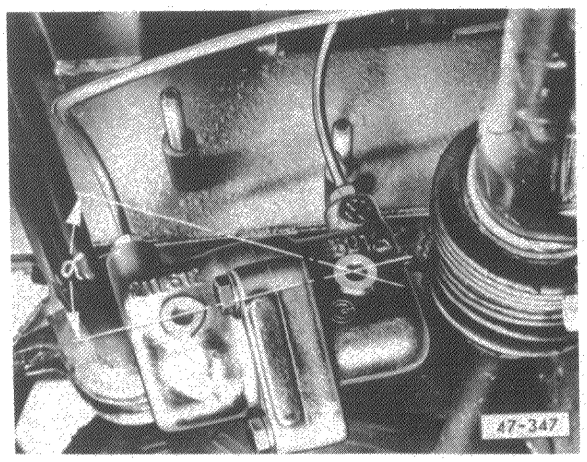
— connect gauge US 1016 to front brake caliper



— connect gauge US 1016 to rear wheel cylinder
— bleed both gauges
— depress brake pedal several times



— remove nuts holding regulator and remove regulator from studs
— press brake pedal until both gauges read 50 bar (725 psi)



— tilt regulator forward
• angle $\alpha = 30°$

CAUTION

Do not damage brake lines

— increase pressure on brake pedal until gauge connected to front brake caliper reads 100 bar (1450 psi)
• pressure at gauge connected to rear wheel cylinder must read 55-65 bar (798-943 psi)

if **NO**, replace brake pressure regulator

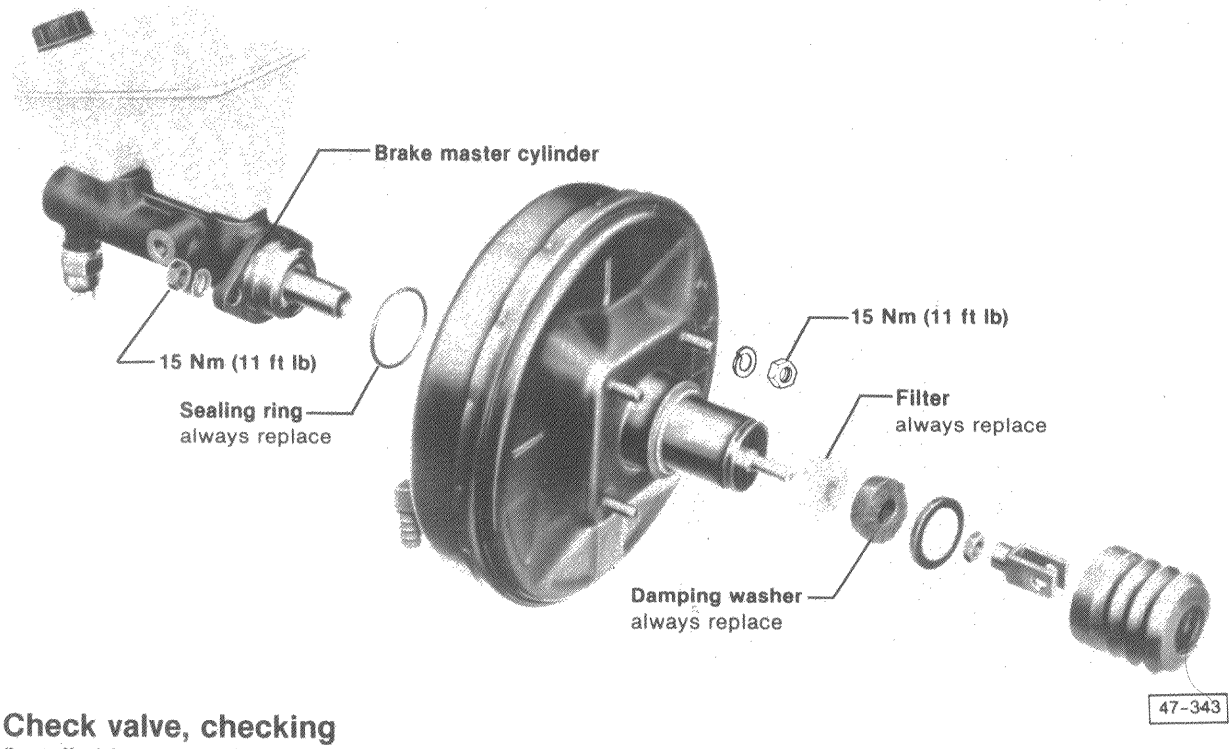
— reinstall regulator
— disconnect gauges
— bleed brakes

Brake booster, checking

— depress brake pedal firmly several times with engine off to exhaust vacuum in system
— depress pedal with medium pressure and hold
— start engine
  • if brake booster is working properly, pedal will fall slightly and then hold

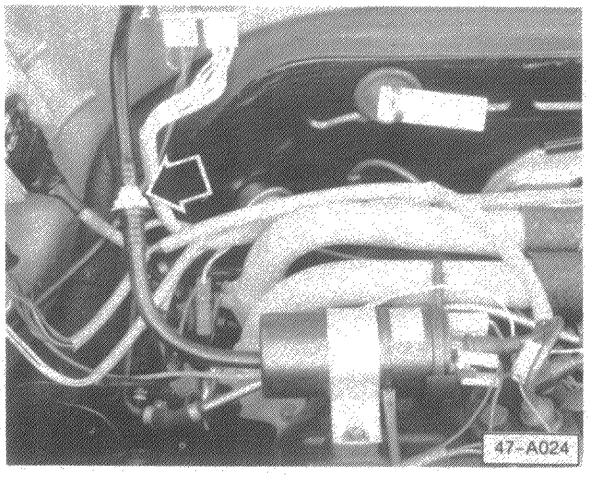
CAUTION

Do not repair brake booster.
If necessary, replace



Check valve, checking
(installed in vacuum hose)

Work sequence



— remove valve (arrow) from hose
— blow through valve in direction of arrow (on housing)
  • air must pass through valve
— blow through valve in opposite direction
  • no air must pass through valve