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Clutch

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Clutch hydraulic system

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Clutch linkage

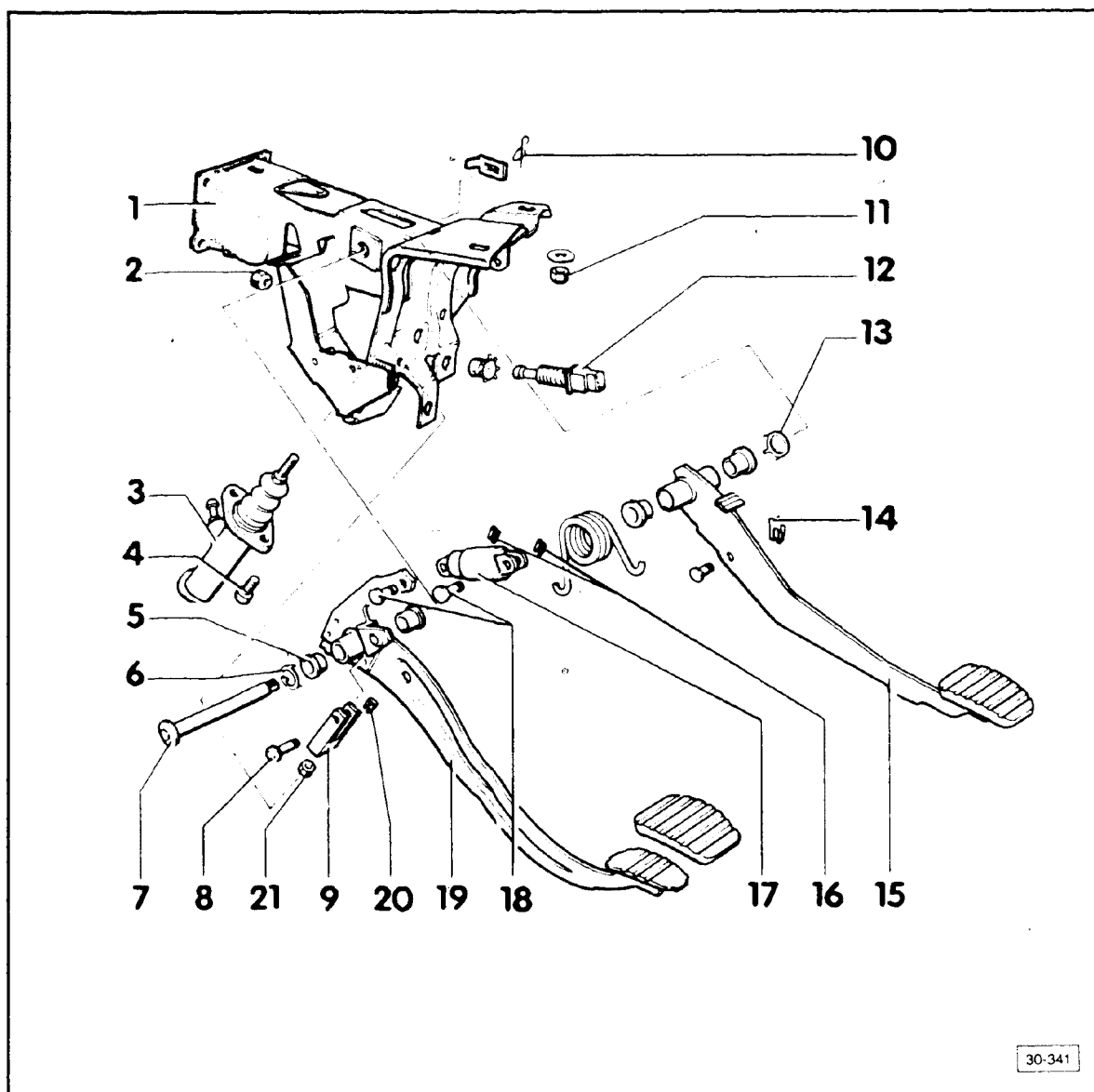
- installing 30-60
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Foot pedals and clutch controls

- repairing
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Overcenter spring

- removing/installing 30-20



30-341

Note

Grease all bearing and contact surfaces with white lubricating paste (Part No. AOS 126 000 05).

- 1 — Pedal bracket
- 2 — Self-locking nut
25 Nm (18 ft lb)
- 3 — Master cylinder
- 4 — 20 Nm (15 ft lb)
- 5 — Bushing
 - drive out with drift
 - press in using vise jaws

- 6 — Axial shim
always replace
- 7 — Pivot pin
- 8 — Bolt
- 9 — Clevis
adjusting, section 30-30
- 10 — Circlip
- 11 — Self-locking nut
25 Nm (18 ft lb)
- 12 — Brake light switch
- 13 — Axial shim
always replace

**Steel pedal bracket
through May, 1986**

Foot pedals and clutch controls, repairing

30-10-1

- 14 — Circlip
- 15 — Brake pedal
- 16 — Circlip
- 17 — Overcenter spring
removing installing. section 30-20
- 18 — Bolt
- 19 — Clutch pedal
- 20 — Circlip
- 21 — Lock nut

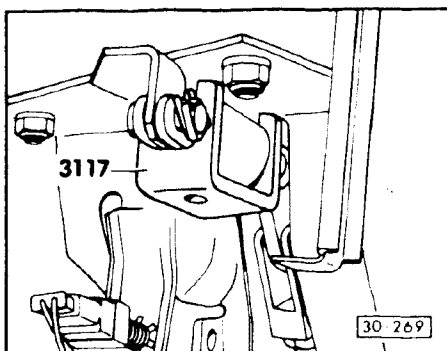
Steel pedal bracket
through May, 1986

Foot pedals and clutch controls, repairing

30-10-2

Overcenter spring, removing/installing

- remove and install using tool 3117



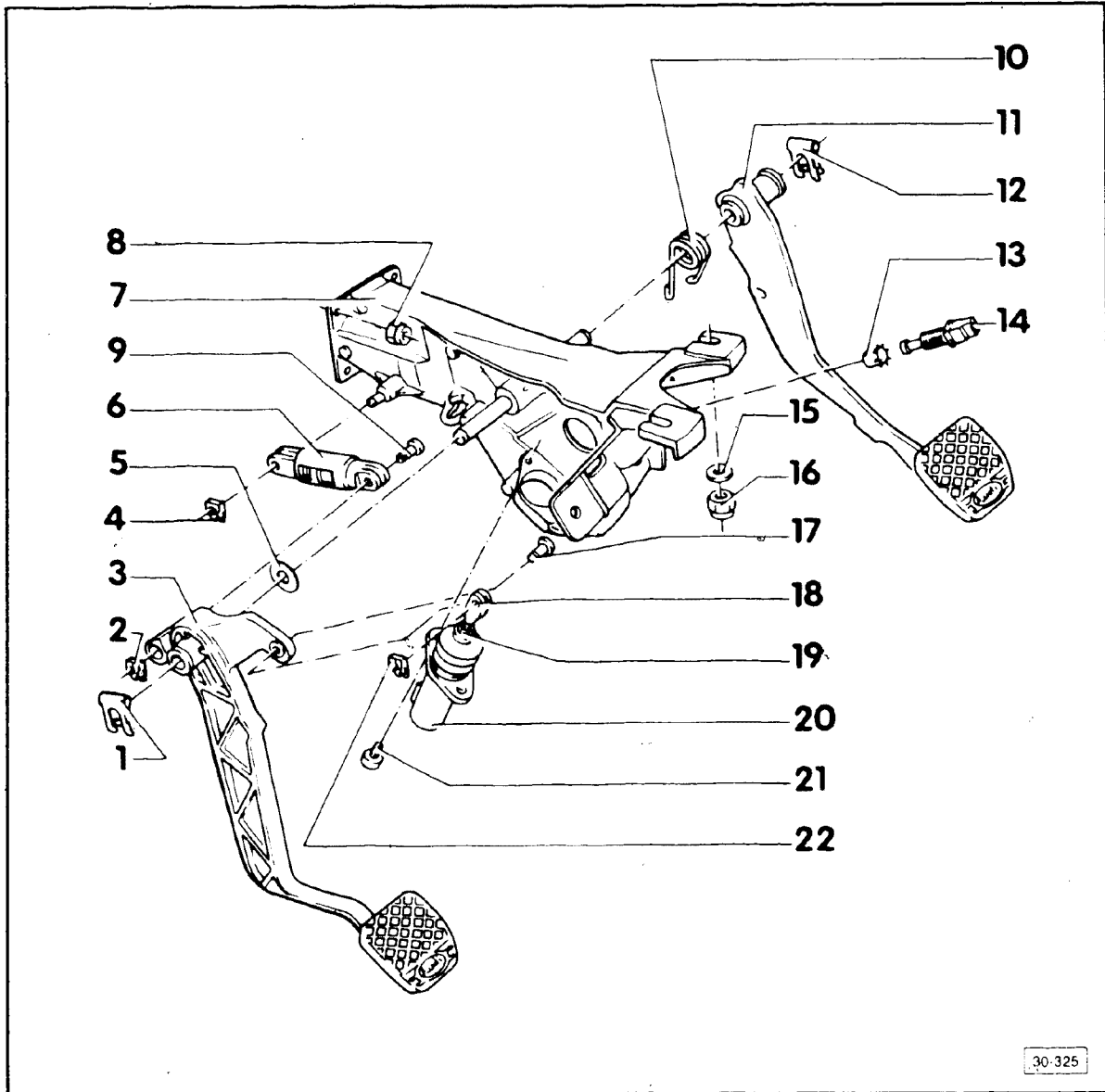
Steel pedal bracket
through May, 1986

Overcenter spring, removing/installing

30-20-1

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Note

Grease all bearing and contact surfaces with white lubricating paste (Part No. AOS 126 000 05).

CAUTION

The brake pedal path must not be shortened by excess carpeting.

CAUTION

If clutch pedal does not automatically return when the clevis is properly adjusted

- there is air in the hydraulic system, and or
- the pedal or overcenter spring may not be moving freely

1 — Circlip

- always replace
- install on pedal bracket shaft

2 — Circlip

- always replace
- install on bolt 9

Alloy pedal bracket
after May, 1986

Foot pedals and clutch controls, repairing

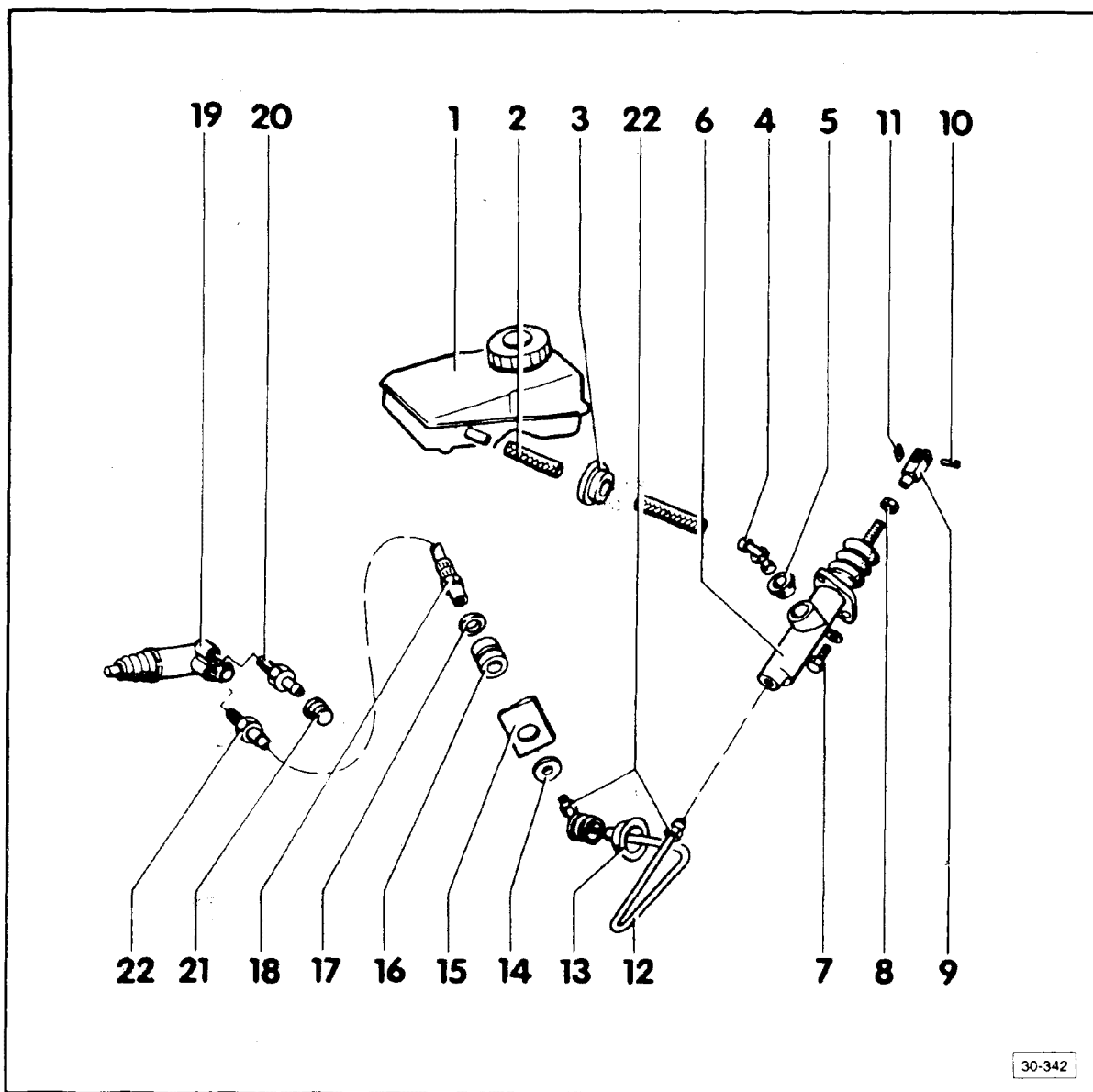
30-30-1

- 3 — **Clutch pedal**
 - fixed in place by adjustment of clevis
 - install on pedal bracket shaft
 - bearing bushing is molded in, it can't be replaced
 - supplied as replacement part with bearing bushing
- 4 — **Circlip**
 - always replace
 - install on bearing bolt
- 5 — **Washer**
 - install on pedal bracket shaft
- 6 — **Overcenter spring**
 - coat with white grease before installing
 - must not touch master cylinder hose
- 7 — **Pedal bracket**
- 8 — **Self-locking nut**
 - always replace
 - 25 Nm (18 ft lb)
- 9 — **Bolt**
 - mounts overcenter spring on clutch pedal
- 10 — **Brake pedal return spring**
 - attach one end to brake pedal and other end to pedal bracket
- 11 — **Brake pedal**
 - mount on pedal bracket shaft
 - install with pressed-in bearing bushing
 - pedal with molded-in bearing bushing will be phased in gradually
- 12 — **Circlip**
 - always replace
 - install on pedal bracket shaft
- 13 — **Clips**
 - for brake light switches
 - install in pedal bracket
- 14 — **Brake light switch**
 - adjusting
 - operate brake pedal
 - press brake light switch in to stop
 - press brake pedal back to stop by hand
- 15 — **Washer**
- 16 — **Self-locking nut**
 - always replace
 - 25 Nm (18 ft lb)
- 17 — **Bolt**
 - mount clevis on clutch pedal
 - bolt can also be installed turned 180
- 18 — **Clevis**
 - adjust via push rod until clutch pedal is approximately 10 mm above brake pedal
 - check that overcenter spring returns clutch pedal
 - check that clutch pedal in rest position does not contact pedal bracket
- 19 — **Lock nut**
 - tighten after adjusting clevis
- 20 — **Master cylinder**
- 21 — **20 Nm (15 ft lb)**
 - mounts master cylinder to pedal bracket
- 22 — **Circlip**
 - always replace
 - install on bolt

**Alloy pedal bracket
after May, 1986**

Foot pedals and clutch controls, repairing

30-30-2



Note

Do not operate the clutch pedal after the slave cylinder is removed.

Fill the brake fluid reservoir to the "max" marking with brake fluid before bleeding the hydraulic clutch system with a brake bleeding device.

1 — Brake fluid reservoir

2 — Return hose

3 — Grommet

4 — Angle connector

5 — Sealing plug
moisten with brake fluid to install

6 — Master cylinder

7 — 20 Nm (15 ft lb)

8 — Lock nut

9 — Clevis
adjusting, section 30-30

10 — Bolt

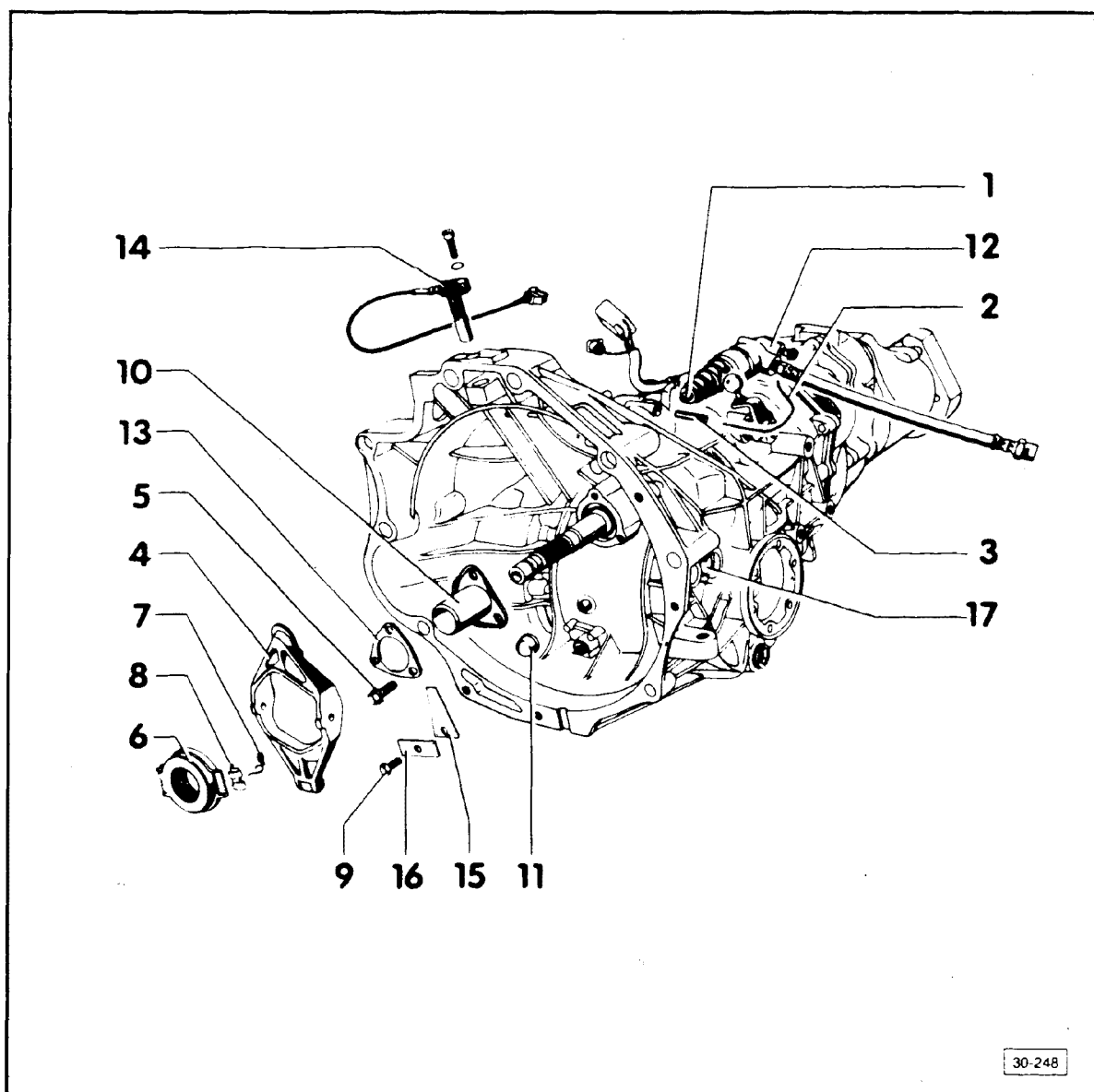
11 — Circlip

12 — Pressure line

13 — Grommet

14 — Washer
smaller inner diameter than washer 17

- 15 — **Bracket**
- 16 — **Bushing**
- 17 — **Washer**
 - larger inner diameter than washer 14
- 18 — **Pressure hose**
- 19 — **Slave cylinder**
 - installing (through 12 87). section 30-50
 - installing (after 12 87). section 30-60
 - do not operate clutch pedal after slave cylinder is removed
- 20 — **Breather valve**
 - only open to bleed
 - only bleed hydraulic system with brake bleeding device
 - maximum working pressure ~ 2.5 bar
 - fill brake fluid reservoir to "max" marking with brake fluid before bleeding hydraulic clutch system
- 21 — **Dust cap**
- 22 — **Pipe connection nut**
 - 15 Nm (11 ft lb)



30-248

- 1 — Push rod**
lightly grease push rod end with multi-purpose grease
- 2 — Clamp**
- through 12'87, combines with spring pin (3) to mount clutch slave cylinder
 - insert in spring pin and use to pre-stress clutch slave cylinder
 - installing, section 30-60
 - after 12'87, clutch slave cylinder is mounted on transmission housing with a bolt
 - installing, section 30-60
 - 25 Nm (18 ft lb)
- 3 — Spring pin**
drive out to remove clutch slave cylinder
- 4 — Clutch release lever**
- after 12'87 secured with a holding spring in some transmissions
 - installing, section 30-60
- 5 — 15 Nm (11 ft lb)**

- 6 — **Release bearing (steel guide)**
 - after 2 86 release bearing has plastic guide
 - when repairing only install release bearing cup (steel) and plastic guide sleeve
 - do not wash, only wipe off
 - replace bearing if noisy
 - always replace bearing when replacing clutch
 - lightly grease contact surfaces with MoS2
 - after 12 87 mounting assembly is revised section 30-60
- 7 — **Holding spring**

install in holding clip (8) and then in clutch release lever
- 8 — **Holding clip**

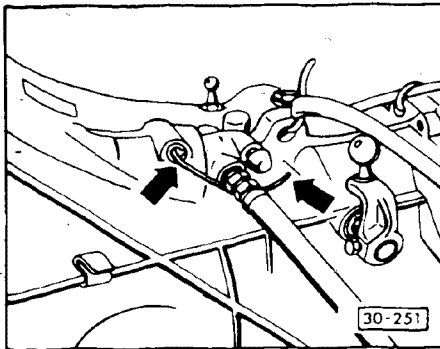
install in release bearing with holding spring (7)
- 9 — **15 Nm (11 ft lb)**
- 10 — **Guide sleeve (plastic)**
 - do not grease
 - after 2 86 guide sleeve is steel
 - when repairing, replace the plastic guide sleeve together with the release bearing
- 11 — **Ball cap**
 - lightly grease steel cap with MoS2
 - do not grease plastic cap
- 12 — **Clutch slave cylinder**
 - lightly grease machined surfaces before installation
 - installing after 12 87 section 30-60
- 13 — **Spacer ring**

omitted after 2 86 with steel guide sleeve
- 14 — **TDC sender bracket**

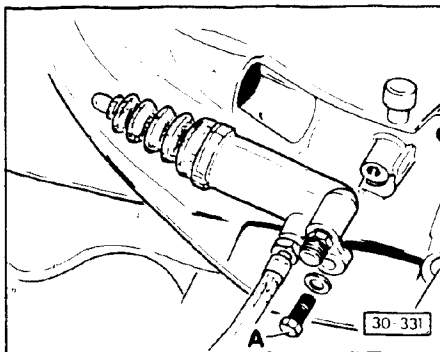
for 228 mm (9 in) and 240 mm (9 5 in) diameter clutches
- 15 — **Leaf spring**
- 16 — **Holding plate**
- 17 — **Spacer ring**

only on vehicles with 240 mm (9 5 in) clutch diameters

Clutch linkage, installing



Clutch slave cylinder clamp (through 12/87), installed position (arrows)

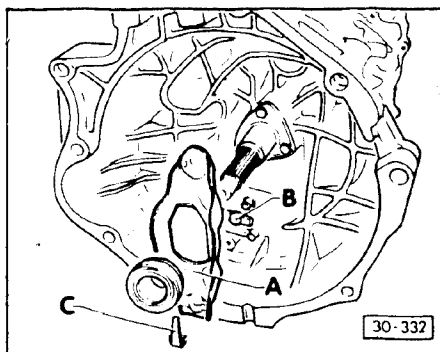


Clutch slave cylinder (after 12/87), installing

- push back far enough so that mounting screw **A** can be installed
 - washer on bolt **A** is attached to the bolt in some transmissions

Note

To make installation easier, a mounting screw with turned tip (listed in replacement parts catalog) can be used.



Release lever and bearing (after 12/87), installing

Note

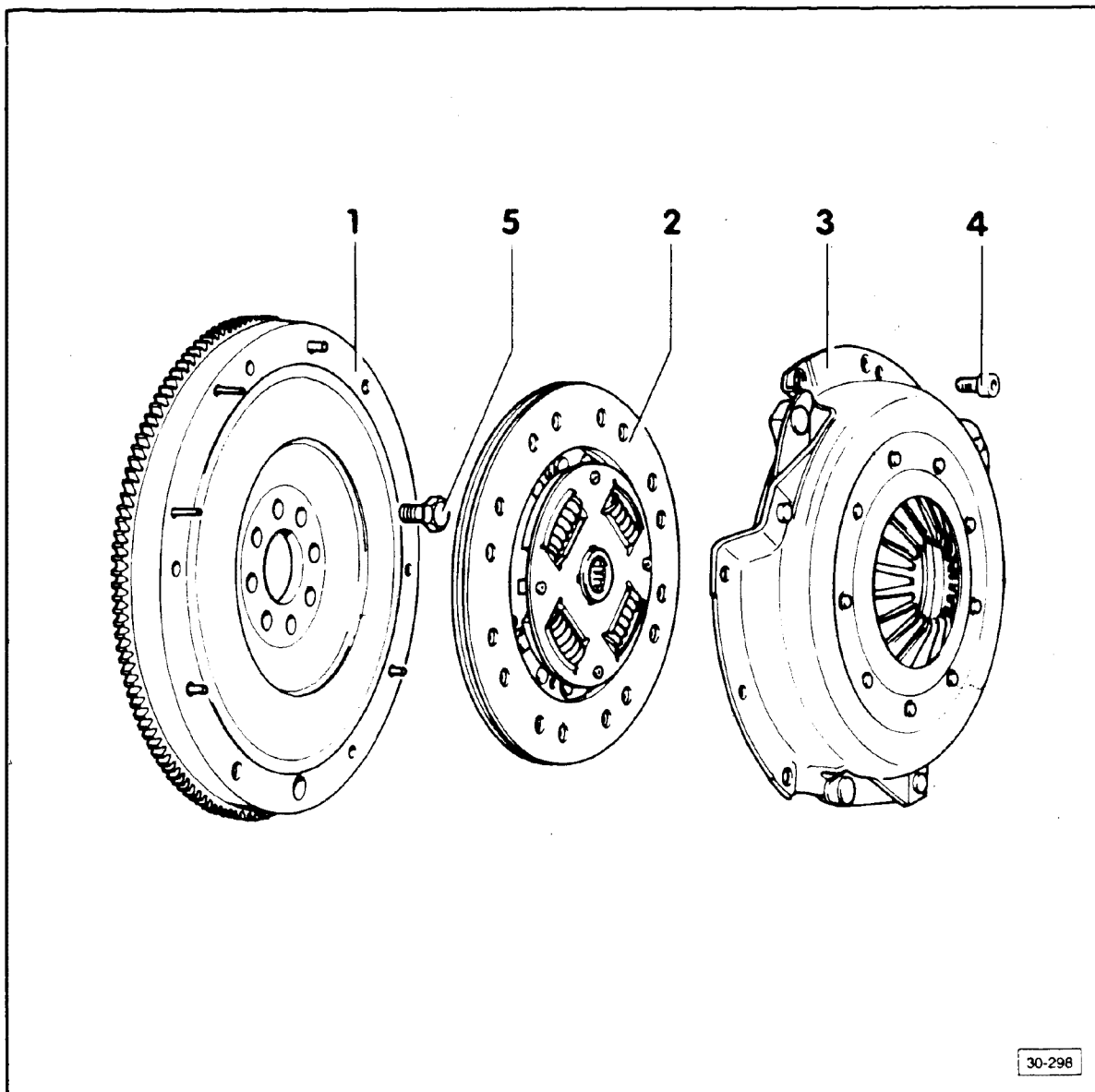
The release lever **A** is supported by connecting piece **B** on the ball stud. In some transmissions, it is secured with a holding spring **C**. When repairing, the release lever must be installed with a mounting bolt, a holding plate, and a leaf spring in all transmissions. See section 30-50.

In all transmissions after 12/87:

- install release bearing on clutch release lever
- turn approximately 45°
- engage with a rotating motion

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30-298

Note

Remove transmission to perform repairs on clutch.

Clean teeth on input shaft. If clutch plates are used, clean teeth on hub. Remove corrosion and apply a **very thin** coating of grease, part number **G 000 100**, to the teeth on the input shaft. Move the clutch disc back and forth on the input shaft until the hub moves easily on the shaft. Remove any excess grease.

For the diameter of the clutch disc, see Technical Data in section 00.

CAUTION

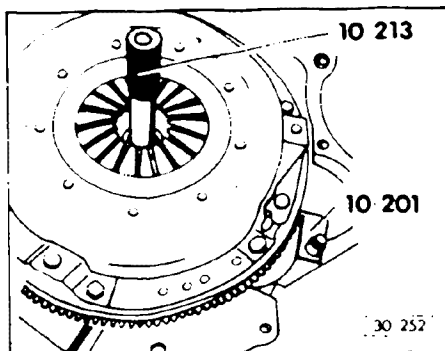
Before replacing the clutch disc, note Troubleshooting Clutch and clutch control complaints.

CAUTION

Pressure plates are greased and have protection against corrosion. Only the contact surface may be cleaned, otherwise, the service life of the clutch will be shortened.

- 1 — **Flywheel**
 - make sure that centering pins are tight
 - contact surface for clutch lining must be free of grooves, oil, grease and burns
 - use holder **10-201** to remove and install
- 2 — **Clutch disc**
 - centering, section 30-80
 - note installation position, spring cage faces pressure plate
- 3 — **Pressure plate**
 - removing/installing, section 30-80
 - check diaphragm spring ends, section 30-80
- 4 — **25 Nm (18 ft lb)**
- 5 — **Mounting bolt**
 - install with locking compound **D 000 600**
 - bolt without collar, **75 Nm (55 ft lb)**
 - bolt with collar, **100 Nm (74 ft lb)**

Clutch, removing/installing



Bolts, removing/installing

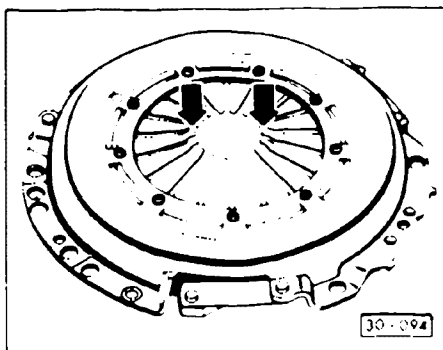
- loosen or tighten bolts in stages in a diagonal sequence
 - tighten bolts to 25 Nm (18 ft lb)
- use holder 10-201 when removing clutch

Note

The special tool 10-213A will be supplied instead of 10-213 when placing new orders.

CAUTION

The pressure plate must lie completely against the flywheel. Only then should the securing bolts be inserted. Never pull against the pressure plate. The pressure plate centering holes and the flywheel pins will be damaged.



Diaphragm spring ends, checking

- wear grooves up to half the thickness of the diaphragm spring are permissible

CAUTION

When repairing, the pressure plate and clutch disc must be matched according to the replacement parts catalog using the engine identification code.