

Index

Air-cooled AFC

- Accelerator linkage/cable
auto. trans. 20.8, 20.9
manual trans. 20.6, 20.7
- Fuel filter 20.4
- Fuel gauge sending unit 20.4
- Fuel pump 20.7
- Fuel system 20.2, 20.3
leak checking 20.5
- Fuel tank 20.4, 20.5

Diesel

- Accelerator linkage/cable 20.14
- Fuel gauge sending unit 20.13
- Fuel system 20.10, 20.11
leak checking 20.13
- Fuel tank 20.12

Water-cooled Digijet

- Accelerator linkage/cable
auto. trans. 20.23, 20.24
manual trans. 20.22
- Charcoal filter valve 20.20
- Fuel filter 20.18
- Fuel gauge sending unit 20.18
- Fuel pump 20.19
- Fuel system 20.16, 20.17
leak checking 20.21
- Fuel tank 20.18, 20.19

Water-cooled Digifant

- Accelerator linkage/cable
adjusting 20.32
auto trans. 20.31
manual trans. 20.30
- Charcoal filter 20.33
- Fuel gauge sending unit 20.29
- Fuel pump 20.29
- Fuel system 20.26, 20.27
leak checking 20.21
- Fuel tank 20.28

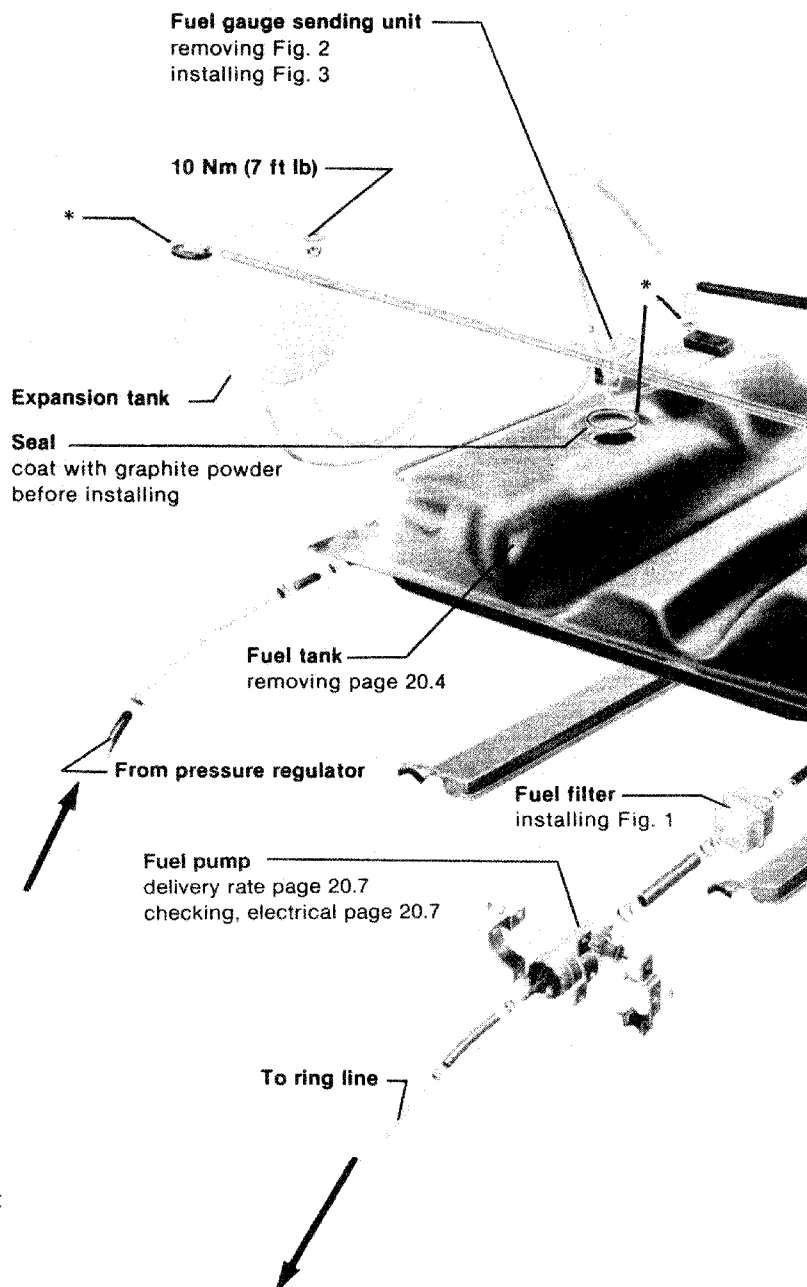
20 Fuel Supply

Note

California models, from 1981, have a:

- new fuel-tank filter that is self cleaning and requires **NO SERVICING**
- new and enlarged fine-mesh in-line fuel filter which requires **NO SERVICING**

Fuel supply system components, Removing and installing



Note

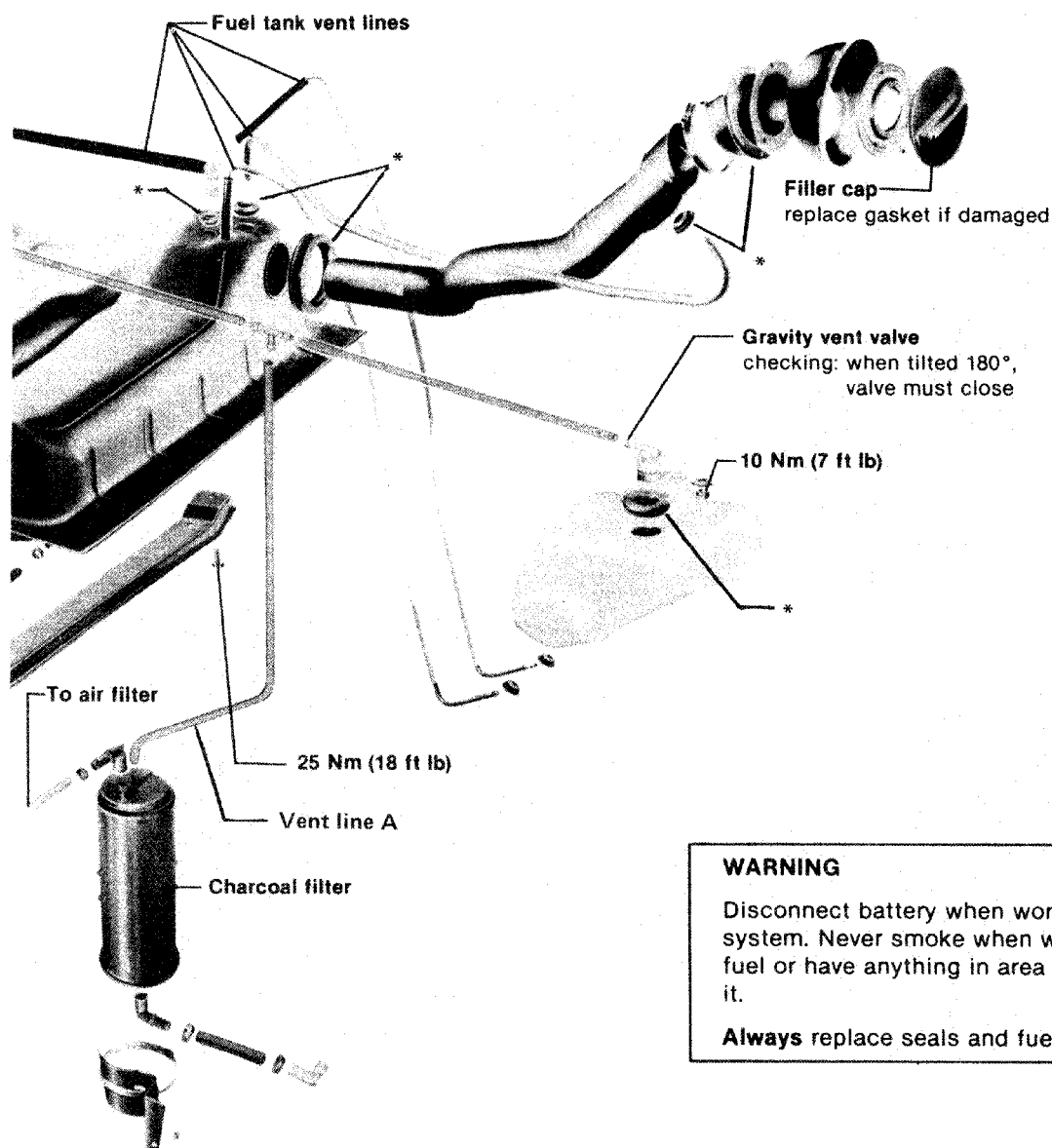
Check system for leaks using a soap solution at spots marked with an *. Seal if necessary.

20-304

20.2

Fuel system

Air-cooled AFC



WARNING

Disconnect battery when working on fuel system. Never smoke when working with fuel or have anything in area that can ignite it.

Always replace seals and fuel hose clamps

20-304

20 Fuel Supply

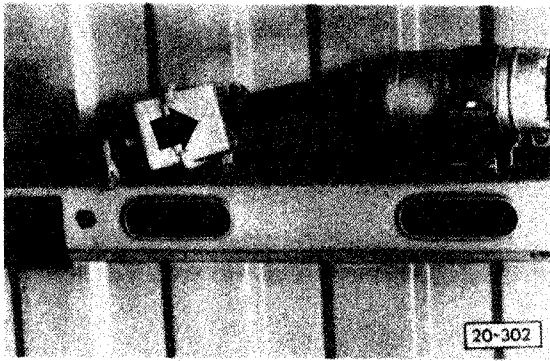


Fig. 1 Fuel filter, installing

- install with arrow pointing toward fuel pump

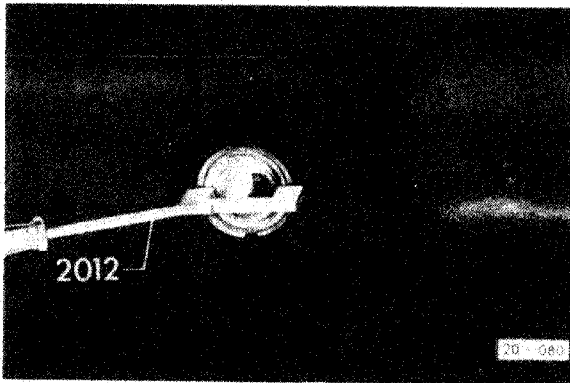


Fig. 2 Fuel gauge sending unit, removing

- first remove fuel tank

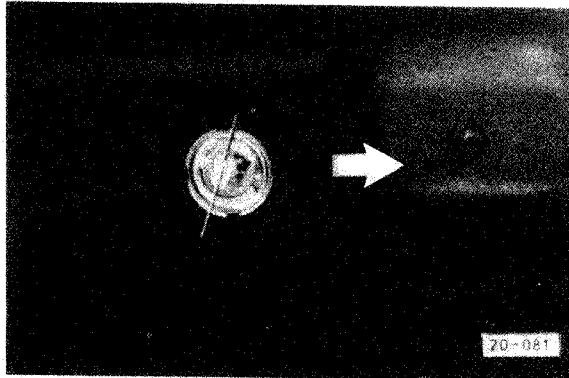


Fig. 3 Fuel gauge sending unit, installing

- coat seal with graphite powder and position carefully
- install sending unit with electrical connector as shown (arrow points to front of vehicle)

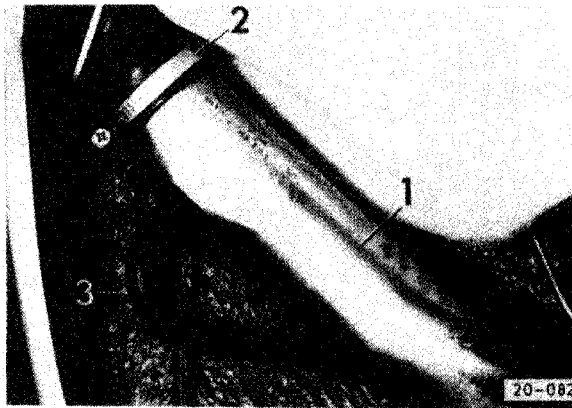
Fuel tank, removing

Work sequence

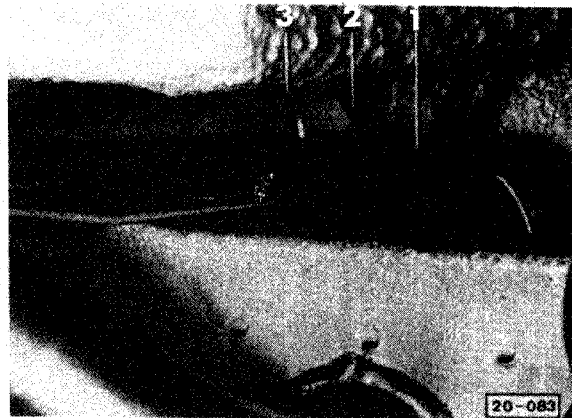
WARNING

Fire hazard! Do not smoke or have anything in area that can ignite fuel

- disconnect battery ground cable
- drain fuel tank



- loosen hose clamp 2
- remove filler neck 1
- remove vent hose 3

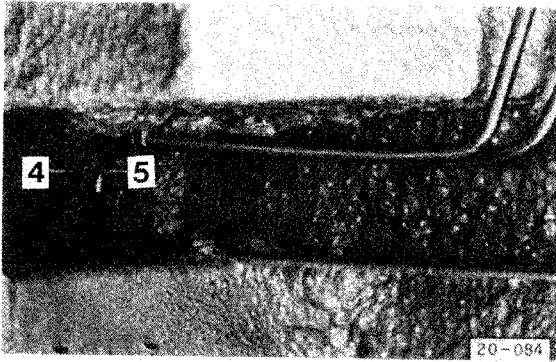


- remove vent hoses 1, 2 and 3

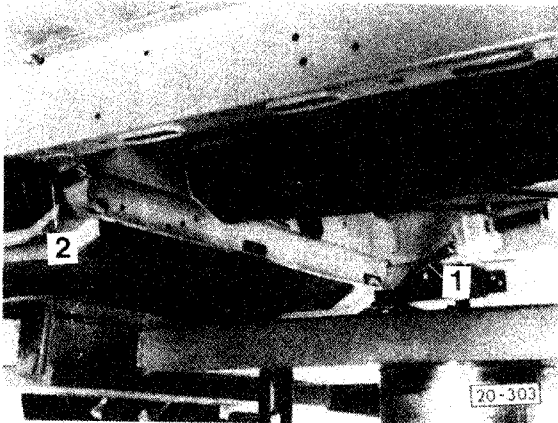
20.4

Fuel filter
Fuel gauge sending unit
Fuel tank, removing

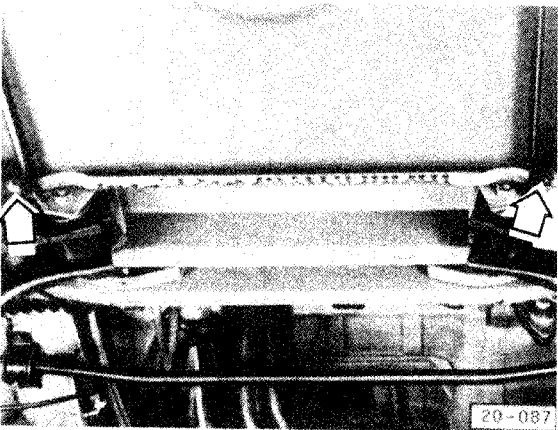
Air-cooled AFC



— remove vent hoses 4 and 5



— remove fuel supply hose 1 and fuel return hose 2 from fuel tank



- loosen bolts on fuel tank mounting rails (white arrows) and remove rails from rear channel
- lower fuel tank and disconnect electrical connector on fuel gauge sending unit
- remove fuel tank

Fuel system, leak checking

Refer to illustration on pages 20.2 and 20.3 for location of vent line indicated below.

After removal/repairs on fuel tank, always check fuel system for leaks as follows:

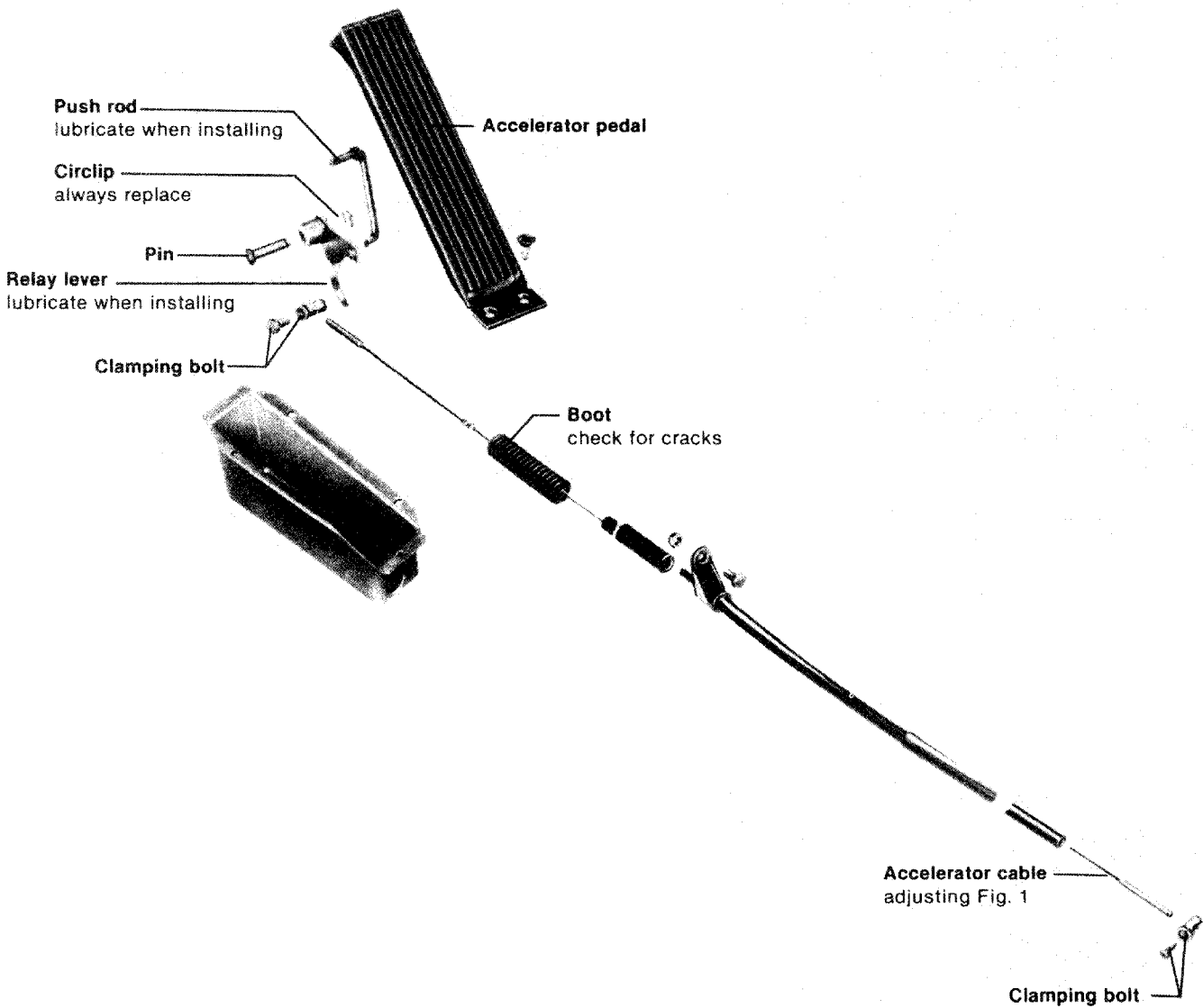
- remove small hose **A** from activated charcoal filter and connect to leak tester US 4487.
- set leak tester scale to "0".
- pressurize system with hand pump to 1.3 in. of mercury.
- system OK if pressure is 1.0 in. or greater after 5 minutes.
- system leaking if pressure drops below 1.0 in. after 5 minutes.

Note

Check system for leaks using soap solution at spots marked with an *. Seal if necessary.

20 Fuel Supply

Accelerator linkage/cable Manual transmission



20-093

20.6

Accelerator linkage/cable

Air-cooled AFC

Manual Trans.

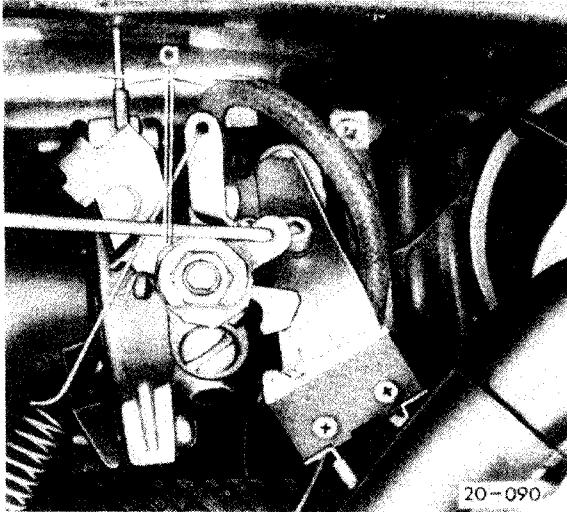


Fig. 1 Accelerator cable, adjusting

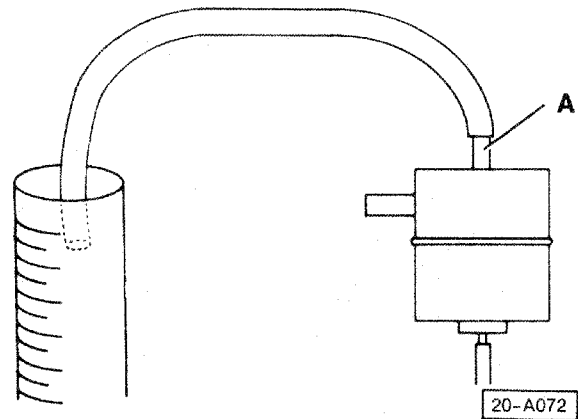
- adjust cable so that clearance is obtained between throttle valve lever and stop on throttle valve housing
- $a = 1.0-1.5\text{mm}$ (0.040-0.060 in.)

Fuel pump delivery rate, checking

Work sequence

WARNING

Fire hazard! Never smoke or have anything in area that can ignite fuel



- disconnect fuel return line at pressure regulator
- attach hose to return line fitting on pressure regulator **A** and place other end of hose in one quart measuring container
- turn on ignition and open air sensor (or bridge air sensor plug terminals 36 and 39). Run pump exactly 30 seconds
 - delivery quantity should be at least 500 cc (approx. 1/2 quart)
- If **NO**, check fuel filter is not blocked, ground connections are O.K. and voltage at pump is at least 11.5 volts before replacing pump

Fuel pump, checking (electrical)

Note

Battery must be fully charged

- connect ammeter at fuel pump in series with pump and current supply

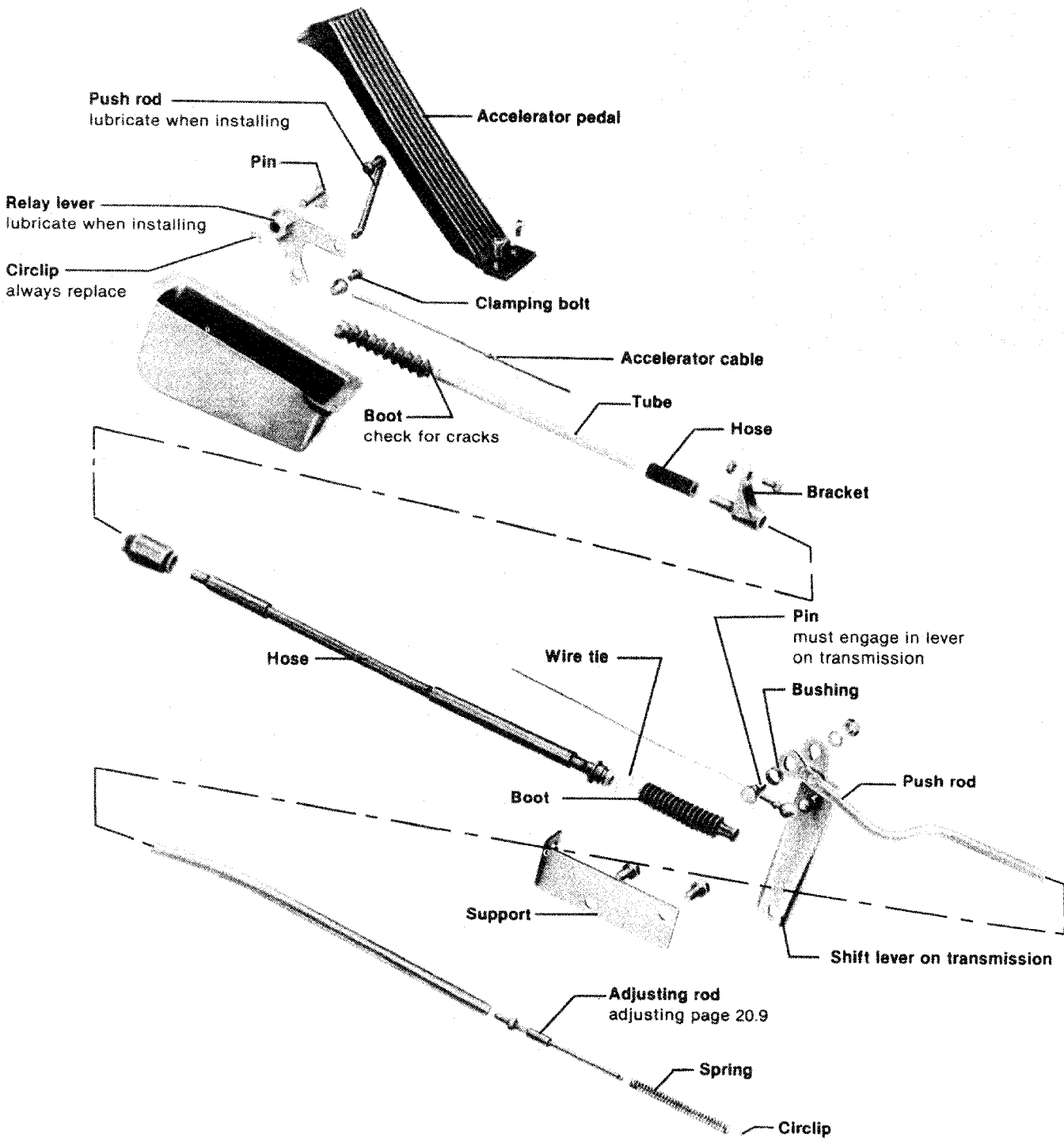
CAUTION

Do not touch positive connection to ground

- turn on ignition and open air sensor flap (or bridge air sensor plug terminals 36 and 39)
 - ammeter should read 6.5-8.5 amps
 - lower reading may indicate poor ground connections
 - higher reading usually indicates dragging pump motor and unit must be replaced

20 Fuel Supply

Accelerator linkage/cable Automatic transmission



37-435

20.8

Accelerator linkage/cable

Air-cooled AFC

Auto. Trans.

Accelerator linkage/cable adjustment, checking (automatic transmission)

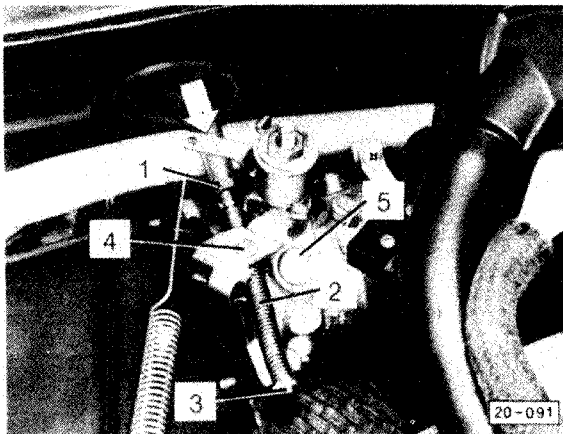
Work sequence

- depress accelerator pedal to full throttle position
 - throttle valve lever must contact stop, but kickdown lever on transmission must **not** be in kickdown position
- press accelerator pedal beyond full throttle to floor
 - override spring must be tensioned and kickdown lever on transmission must be in kickdown position

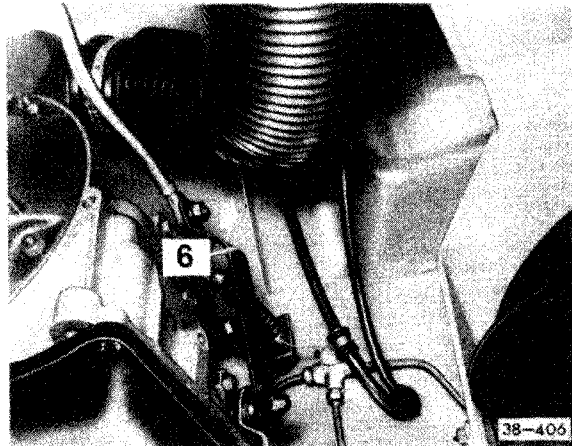
if **NO**, adjust as follows:

Accelerator linkage/cable, adjusting (automatic transmission)

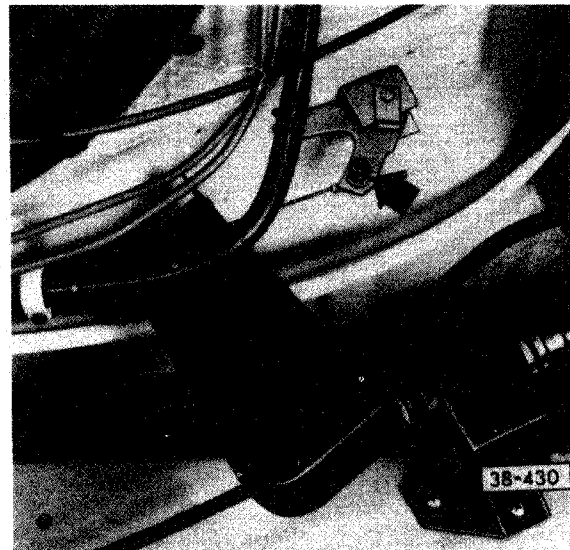
Work sequence



- loosen nut 1
- remove override spring 2
- start engine and let idle
- adjust idle speed at screw 5 (see Repair Group 24)
- shut engine **OFF**
- press accelerator rod in direction of arrow to stop
- turn adjusting rod 3 with screwdriver until shoulder of adjusting rod just contacts pivot of throttle lever 4
- reinstall override spring 2
- start engine and check idle speed
 - adjust if necessary by turning rod 3
- lock adjusting rod 3 in position with nut 1



- press accelerator pedal to floor
 - lever 6 must be in kickdown position (arrow), with approx. 1-2mm (1/32-3/32 in.) free play between lever and stop
- release accelerator pedal
- lever must be in idle position (out of kickdown)



- if necessary, adjust accelerator cable at clamping bolt (arrow)

20 Fuel Supply

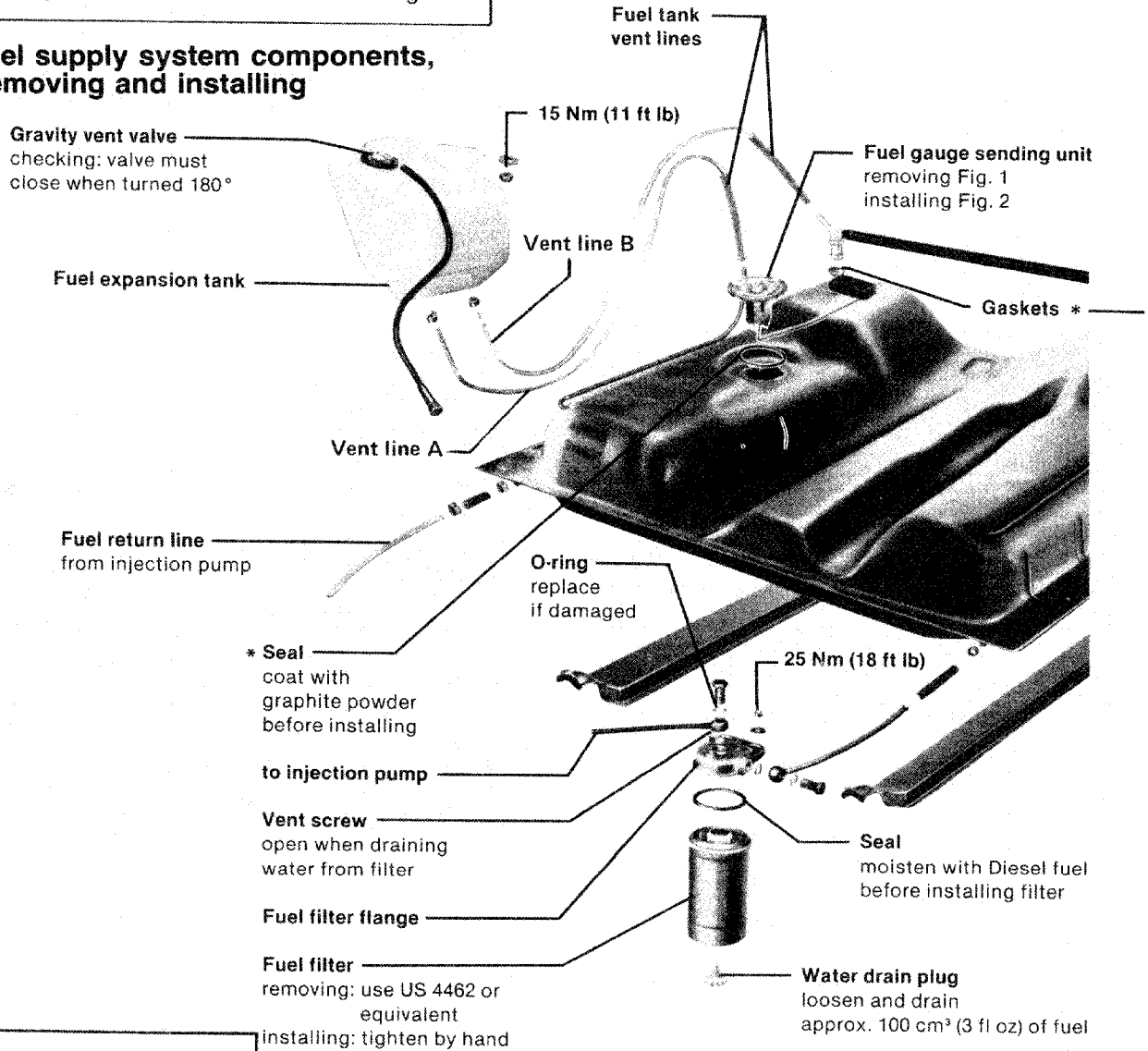
WARNING

Disconnect battery when working on fuel system. Never smoke when working with fuel or have anything in area that can ignite it.

Always replace seals and fuel hose clamps.

Always clean fuel lines before loosening

Fuel supply system components, Removing and installing



CAUTION

Use only approved fuel filters for maintenance service or repairs. Not all after-market filters meet the filtering, fuel flow, or water separation requirements of the injection system.

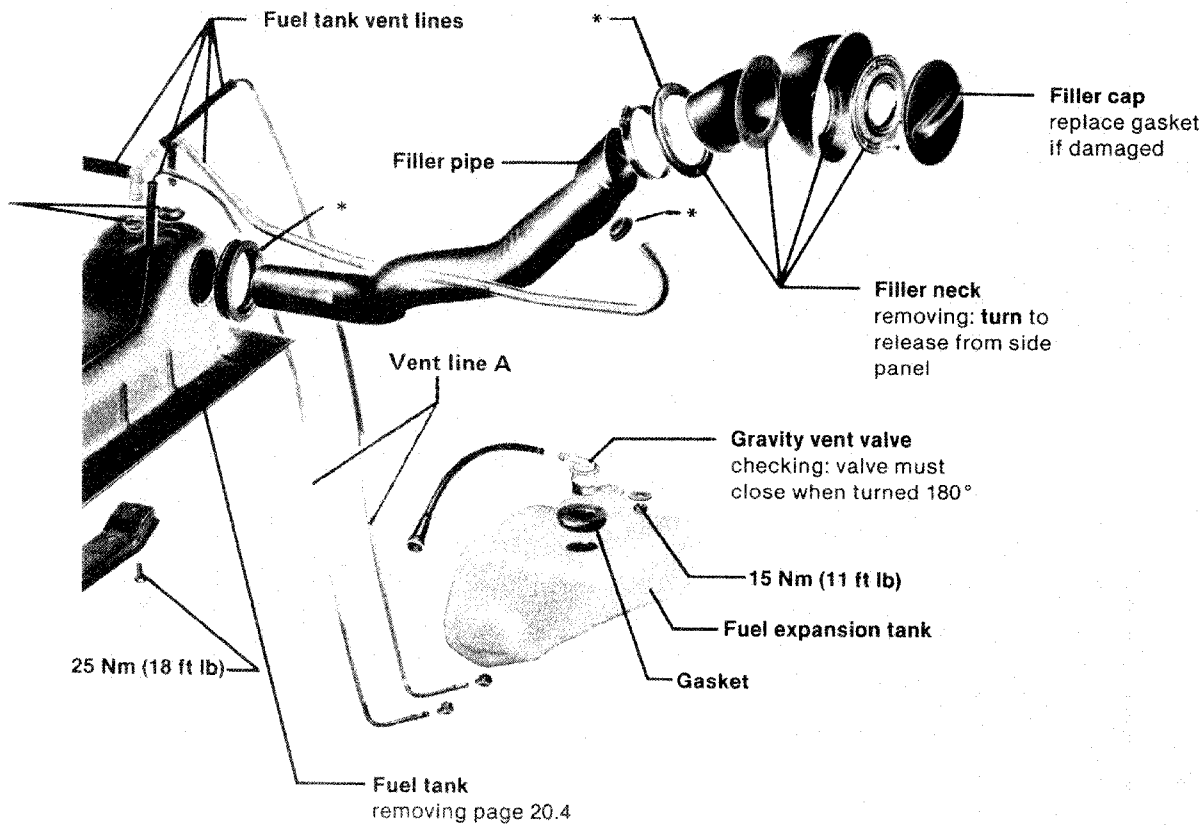
23-094

WARNING

Disconnect battery when working on fuel system. Never smoke when working with fuel or have anything in area that can ignite it.

Always replace seals and fuel hose clamps.

Always clean fuel lines before loosening



Note

Check system for leaks using a soap solution at spots marked with an *. Seal if necessary.

20 Fuel Supply

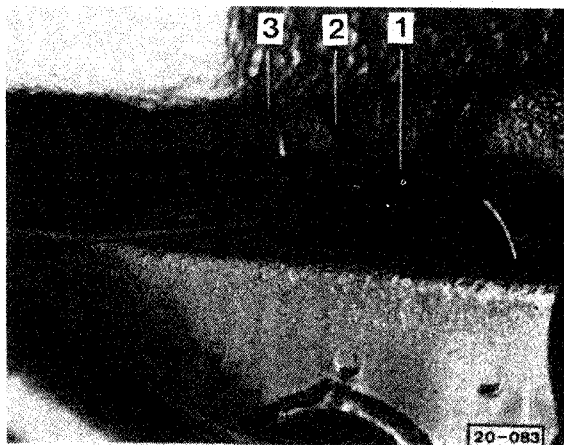
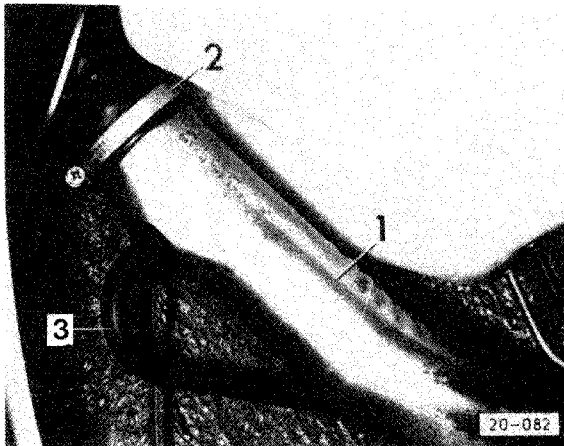
Fuel tank, removing

Work sequence

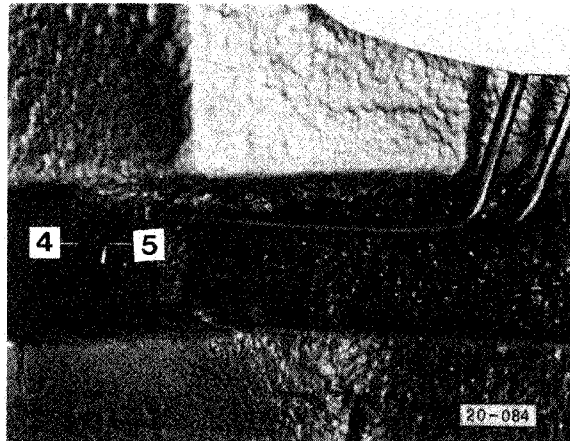
WARNING

Fire hazard! Do not smoke or have anything in area that can ignite fuel

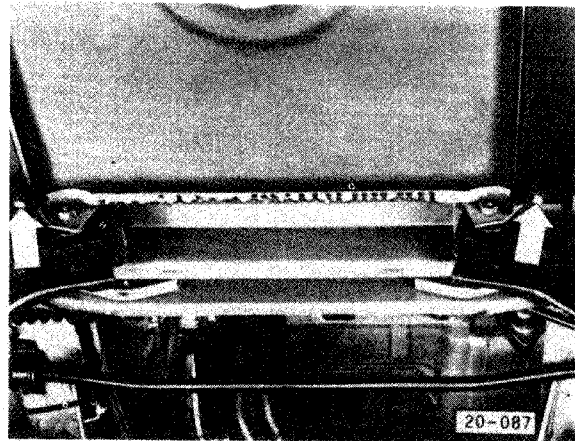
- disconnect battery ground cable
- drain fuel tank



- remove vent hoses 1, 2 and 3



- remove vent hoses 4 and 5
- pull fuel suction line (to fuel filter on right side) and fuel return line (from injection pump, left side) off fuel tank



- loosen bolts on fuel tank mounting rails (white arrows) and remove rails from rear channel
- lower fuel tank and disconnect electrical connector on fuel gauge sending unit
- remove fuel tank

20.12

Fuel tank, removal

Diesel

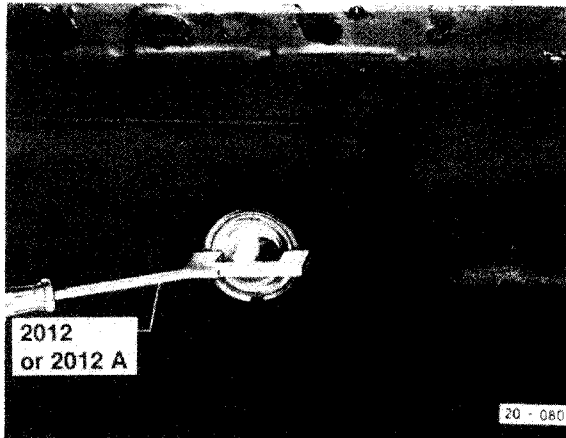


Fig. 1 Fuel gauge sending unit, removing
—first remove fuel tank

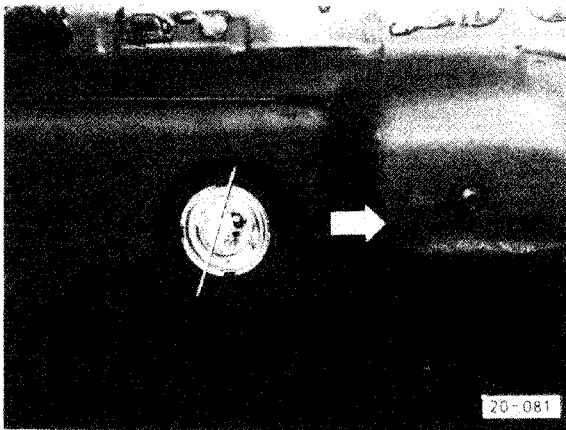


Fig. 2 Fuel gauge sending unit, installing
—coat seal with graphite powder and position carefully
—install sending unit with electrical connector as shown (arrow points to front of vehicle)

Fuel system, leak checking

Refer to illustration on pages 20.10 and 20.11 for location of vent lines indicated below.

After repairs/removal of fuel tank, always check fuel system for leaks as follows:

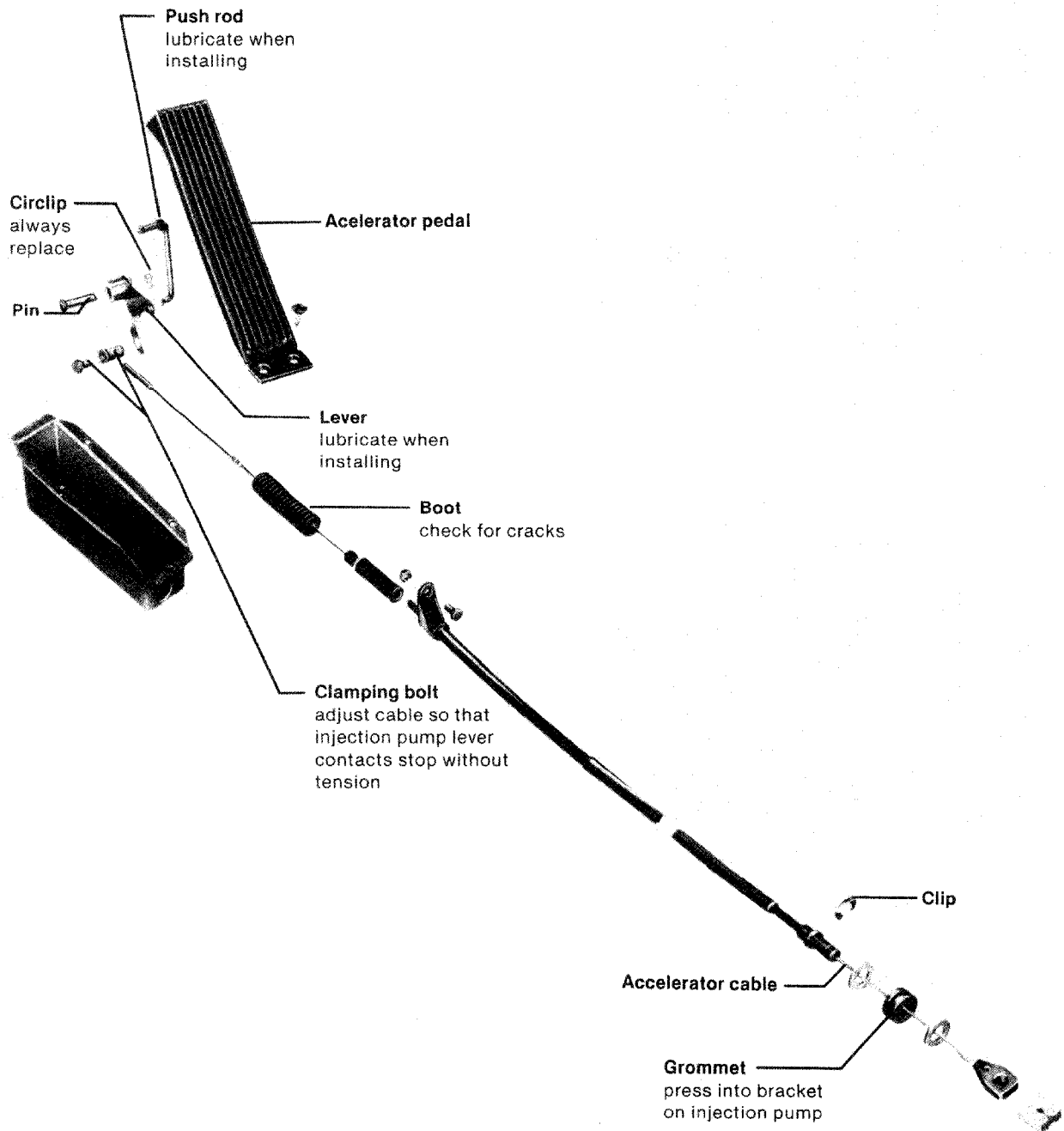
- pinch off all 3 vent hoses **A** with clamp.
- remove vent hose **B** from canister and connect to leak tester US 4487.
- set leak tester scale to "0".
- pressurize fuel system with hand pump to 1.3 in. of mercury.
 - system OK if pressure remains at 1.0 in. Hg or greater after 5 minutes.
 - system not OK if pressure drops below 1.0 in. Hg after 5 minutes.

Note

Check system for leaks using a soap solution at spots marked with an *. Seal if necessary.

20 Fuel Supply

Accelerator linkage/cable Manual transmission



23-096

20.14

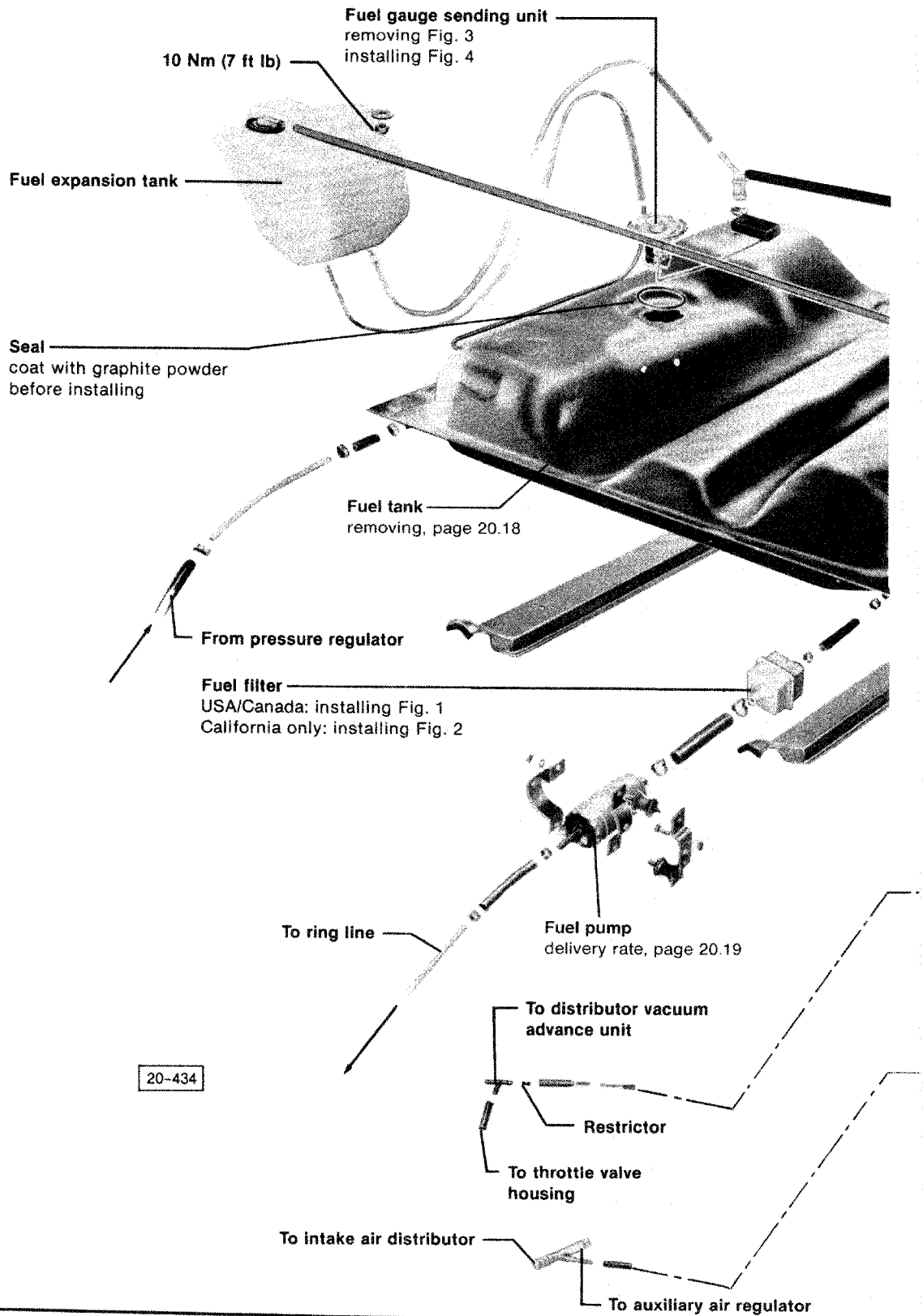
Accelerator linkage/cable

Diesel

20 Fuel Supply

Fuel supply system components, Removing and installing

Fuel system
checking for leaks, see
page 20.21



20.16

Fuel system

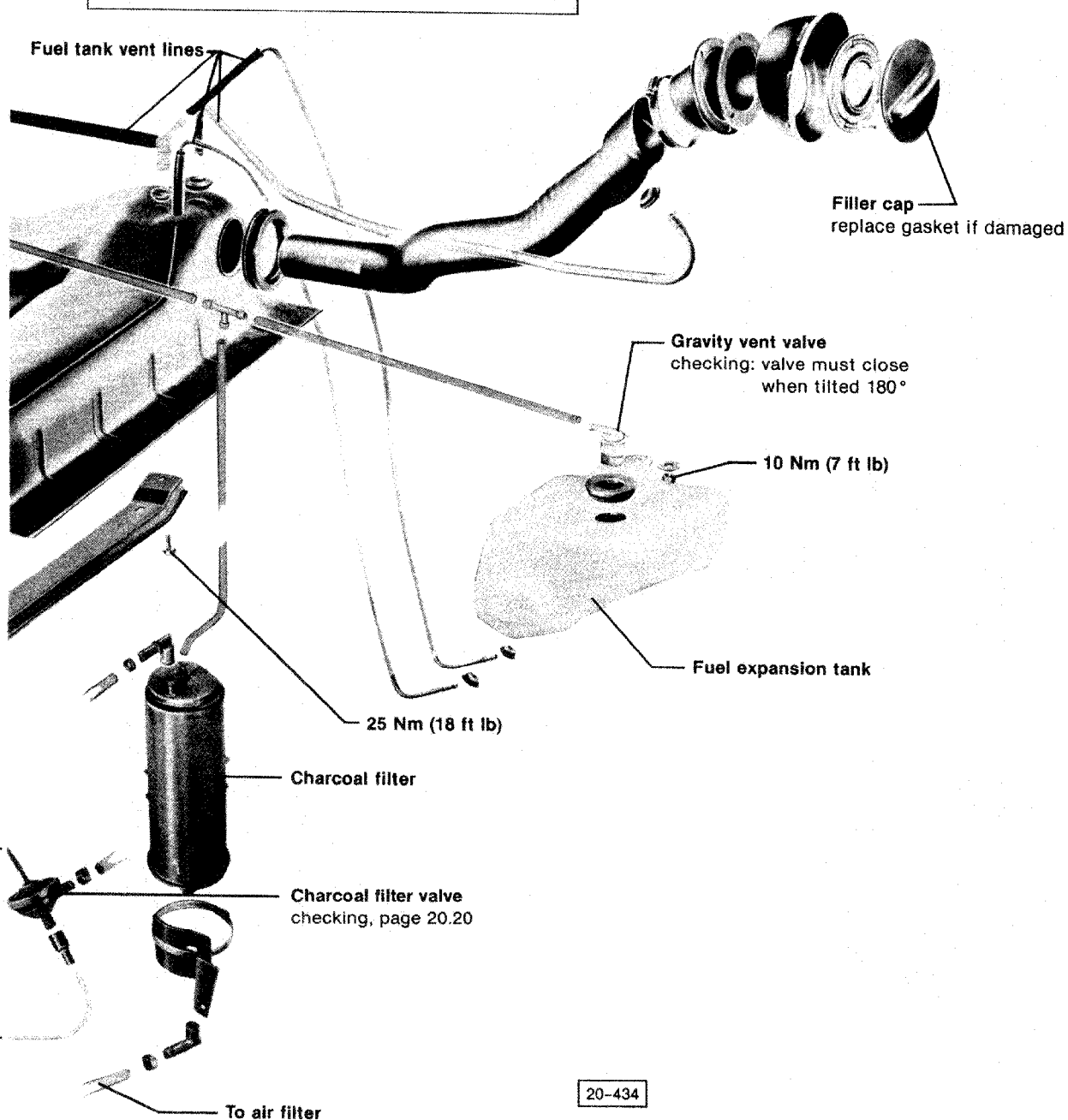
Water-cooled

Digijet

WARNING

Disconnect battery when working on fuel system. Never smoke when working with fuel or have anything in area that can ignite it.

Always replace seals and fuel hose clamps



20 Fuel Supply

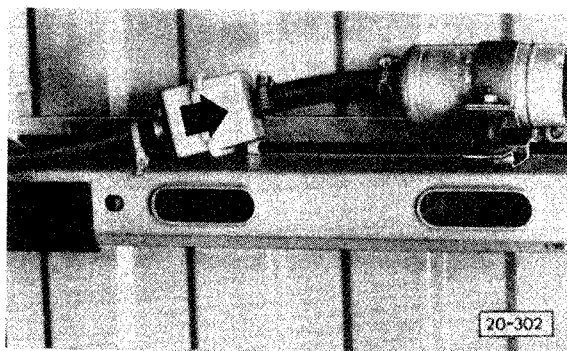


Fig. 1 Fuel filter, installing (USA and Canada)

- arrow on filter faces toward fuel pump

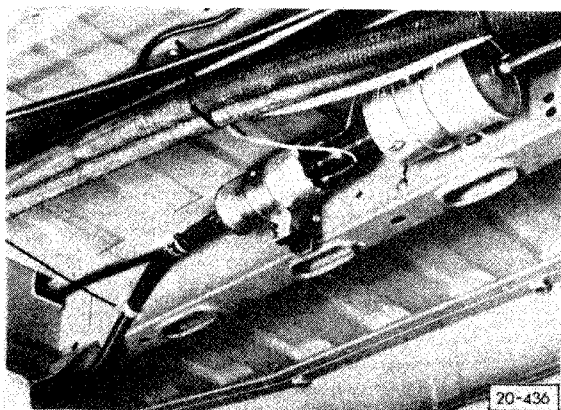


Fig. 2 Fuel filter, installing (California only)

- arrow on filter faces toward engine

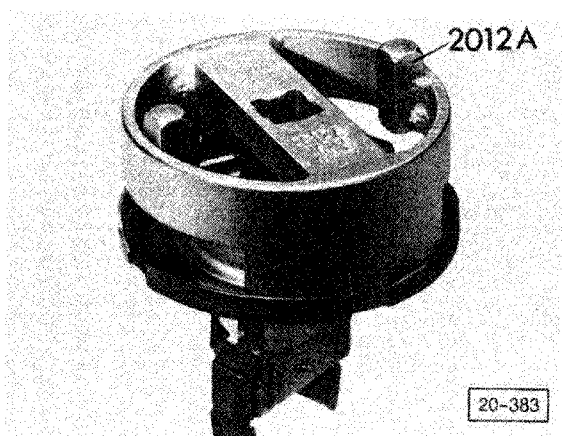


Fig. 3 Fuel gauge sending unit, removing

- before removing unit, remove fuel tank

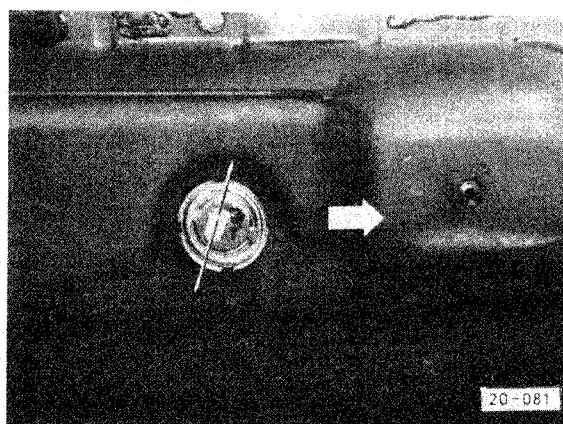


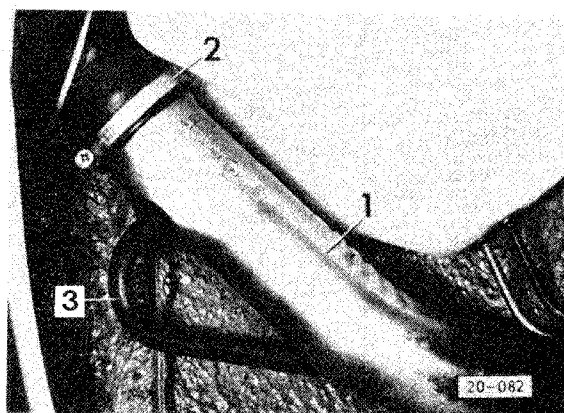
Fig. 4 Fuel gauge sending unit, installing

- coat seal with graphite powder and position carefully
- install sending unit so that electrical connector is aligned with dotted line
- arrow points to front of vehicle

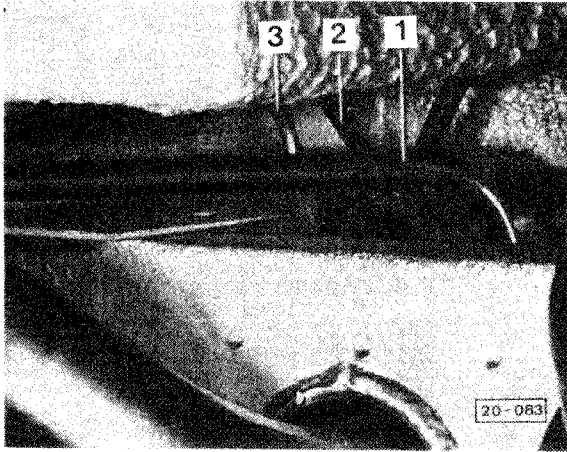
Fuel tank, removing

Work sequence

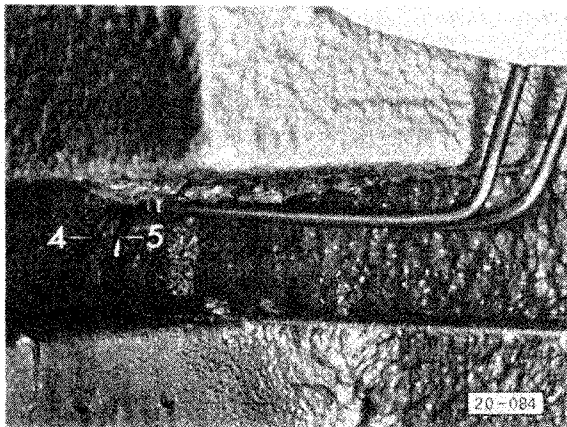
- disconnect battery ground strap
- drain fuel tank



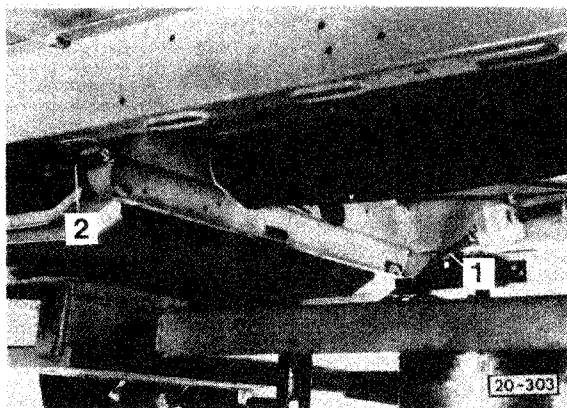
- loosen clip 2 on filler elbow
- remove filler pipe 1 and pull out breather pipe 3
- go to next page



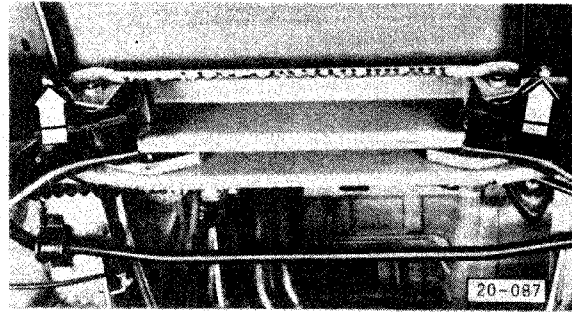
— remove vent hoses (on right) 1, 2 and 3



— remove vent hoses 4 and 5



— remove fuel supply hose 1 and fuel return hose 2 from fuel tank



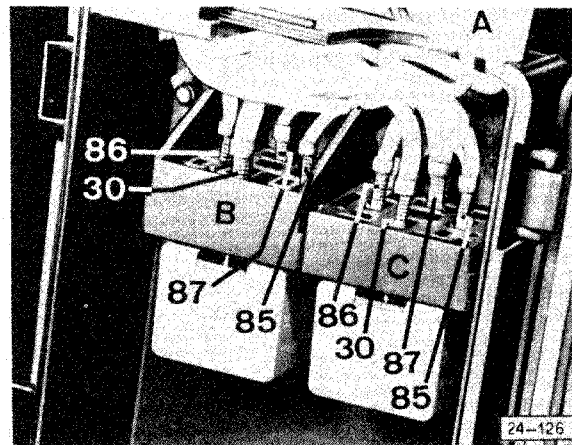
- loosen bolts on fuel tank mounting rails (white arrows) and remove rails from rear channel
- lower fuel tank and disconnect electrical connector on fuel gauge sending unit
- remove fuel tank

Fuel pump delivery rate, checking

Work sequence

WARNING

Fire hazard! Never smoke or have anything in area that can ignite fuel



- disconnect fuel return line at pressure regulator and block line
- attach hose to return line fitting on pressure regulator and place other end of hose in one quart measuring container
- remove relay C
- connect terminals 30 and 87 with tester US 4480/3
- switch on for 30 seconds
 - minimum fuel delivery rate should be 500 cm³

20 Fuel Supply

Charcoal filter valve, checking



- disconnect hose 1 from charcoal filter valve 2
- connect vacuum pump to filter valve connection instead of hose 1
- disconnect hose 3 from T-piece 4
- operate vacuum pump and suck with mouth on hose 3
 - filter valve must be **open**
- **without** operating vacuum pump suck with mouth on hose 3
 - filter valve must be **closed**

If NOT, replace charcoal filter valve

Fuel system, checking for leaks

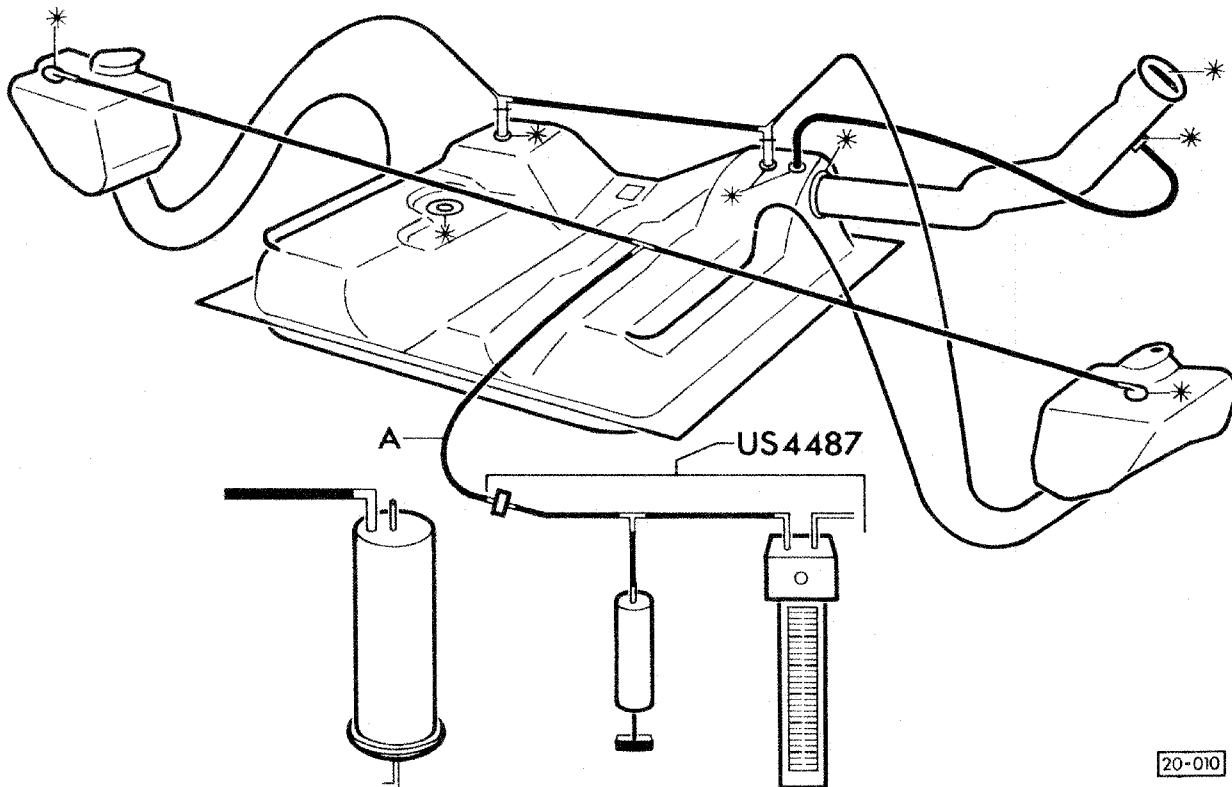
(Vehicles with rear wheel drive ONLY)

WARNING

Disconnect battery when working on fuel system. Never smoke when working with fuel or have anything in area that can ignite it.

Note

After performing repairs on fuel tank, always check fuel system for leaks as follows:



20-010

Work sequence

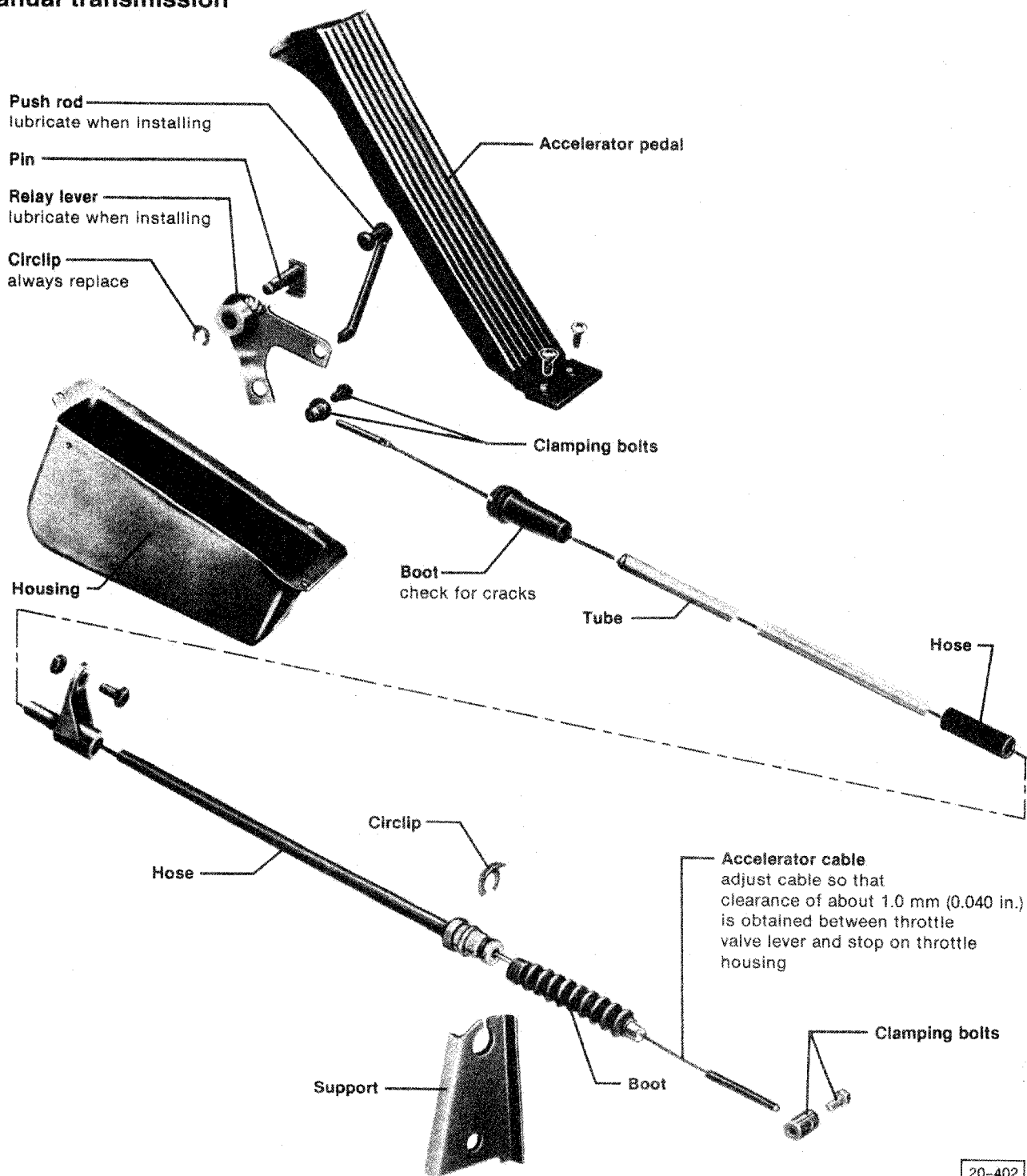
- Remove small hose **A** at charcoal filter and connect to leak tester US 4487
- Set leak tester scale to "0"
- Pressurize system with hand pump to 3.3 cm (1.3 in) of mercury
 - system OK if pressure is 2.54 cm (1.0 in) or greater after 5 minutes
 - system leaking if pressure drops below 2.54 cm (1.0 in) after 5 minutes

Note

Check system for leaks using soap solution at spots marked with*. Seal if necessary.

20 Fuel Supply

Accelerator linkage/cable Manual transmission



20-402

20.22

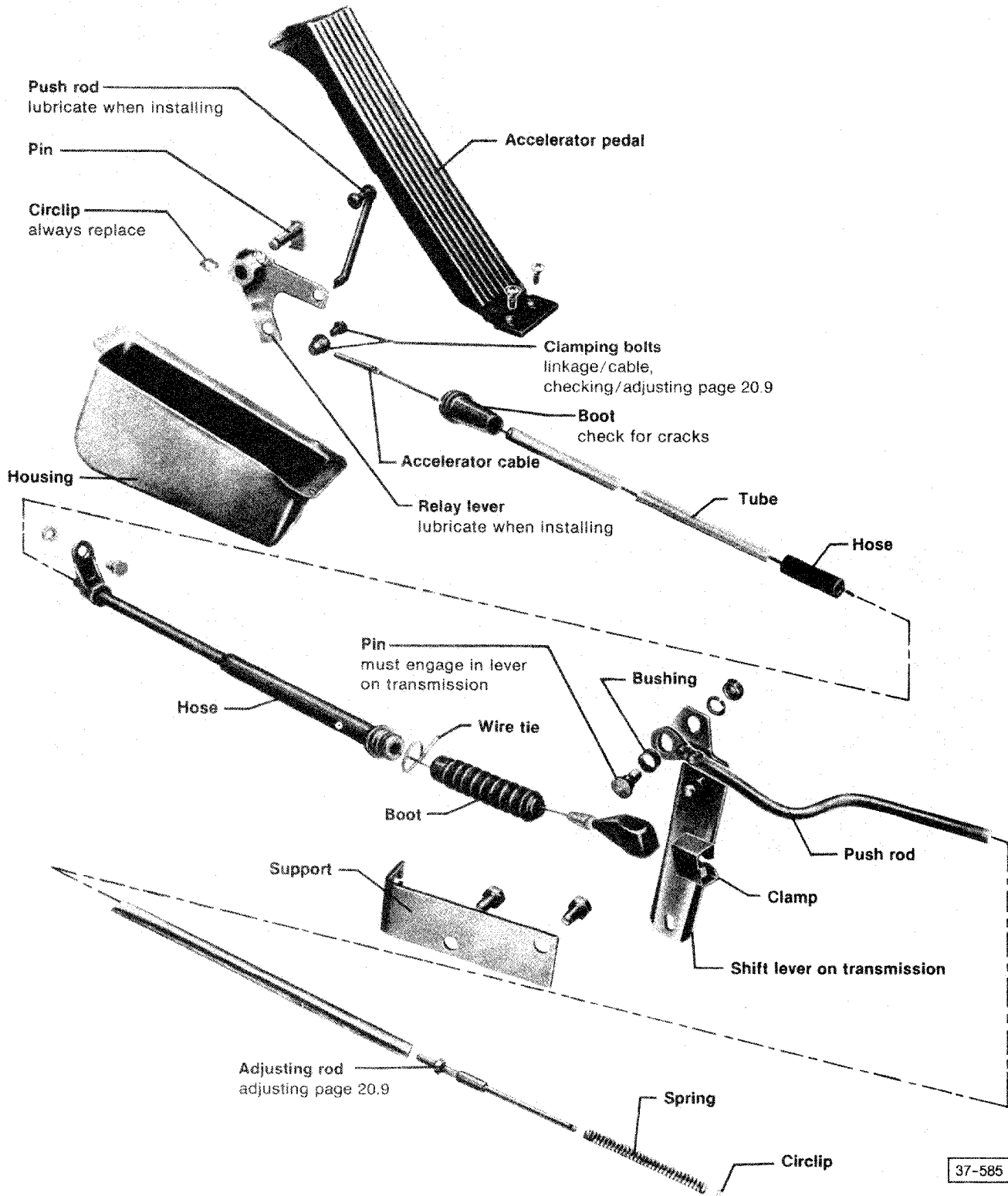
Accelerator cable/
linkage

Water-cooled

Digijet

Manual Trans.

Accelerator linkage/cable Automatic transmission



Water-cooled

Digijet

Auto. Trans.

Accelerator cable/
linkage

20.23

20 Fuel Supply

Accelerator linkage/cable adjustment, checking

(automatic transmission)

Work sequence

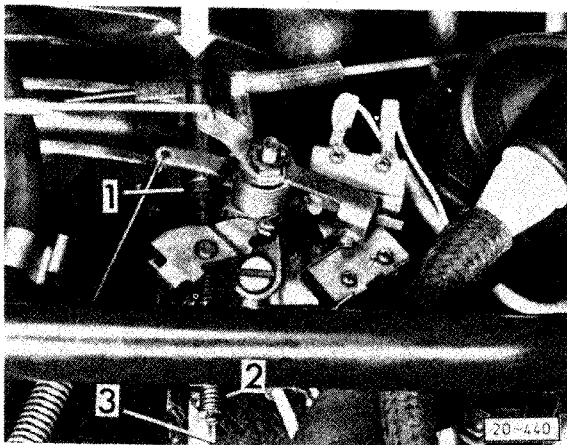
- depress accelerator pedal to full throttle position
 - throttle valve lever must contact stop, but kickdown lever on transmission must **not** be in kickdown position
- press accelerator pedal beyond full throttle to floor
 - override spring must be tensioned and kickdown lever on transmission must be in kickdown position

if **NO**, adjust as follows:

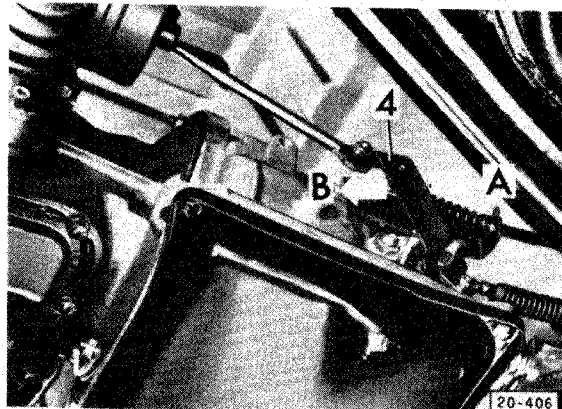
Accelerator linkage/cable, adjusting

(automatic transmission)

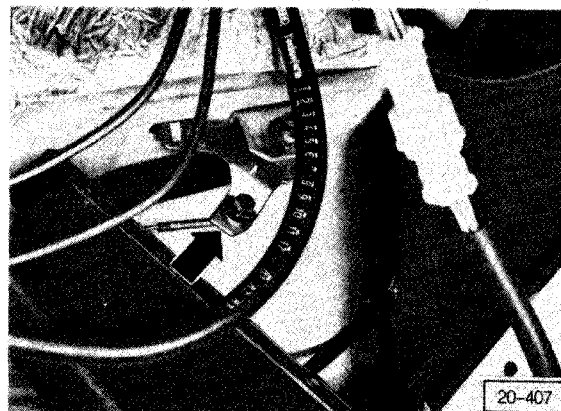
Work sequence



- loosen nut 1
- remove override spring 2
- start engine and let idle
- adjust idle speed at screw (see Repair Group 24)
- shut engine **OFF**
- press accelerator rod in direction of arrow to stop
- turn adjusting rod 3 with screwdriver until shoulder of adjusting rod just contacts pivot of throttle lever
- reinstall override spring 2
- start engine and check idle speed
 - adjust if necessary by turning rod 3
- lock adjusting rod 3 in position with nut 1



- press accelerator pedal to floor
 - lever 4 must be on stop in kickdown position (arrow A)
- release accelerator pedal
- lever must be in idle position (out of kickdown) (arrow B)



- if necessary, adjust accelerator cable at clamping bolt (arrow)

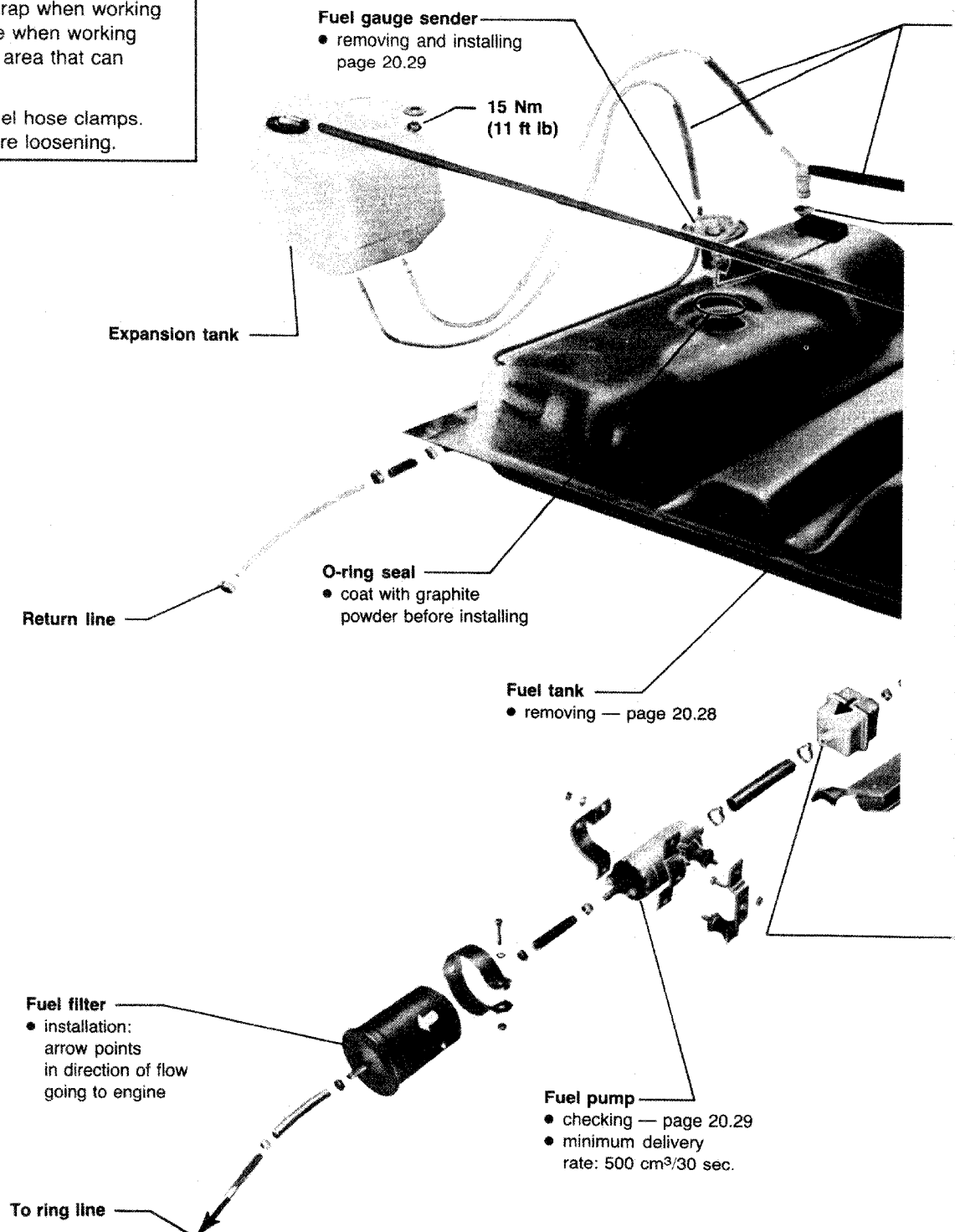
20 Fuel Supply

Fuel supply system components, Removing and installing

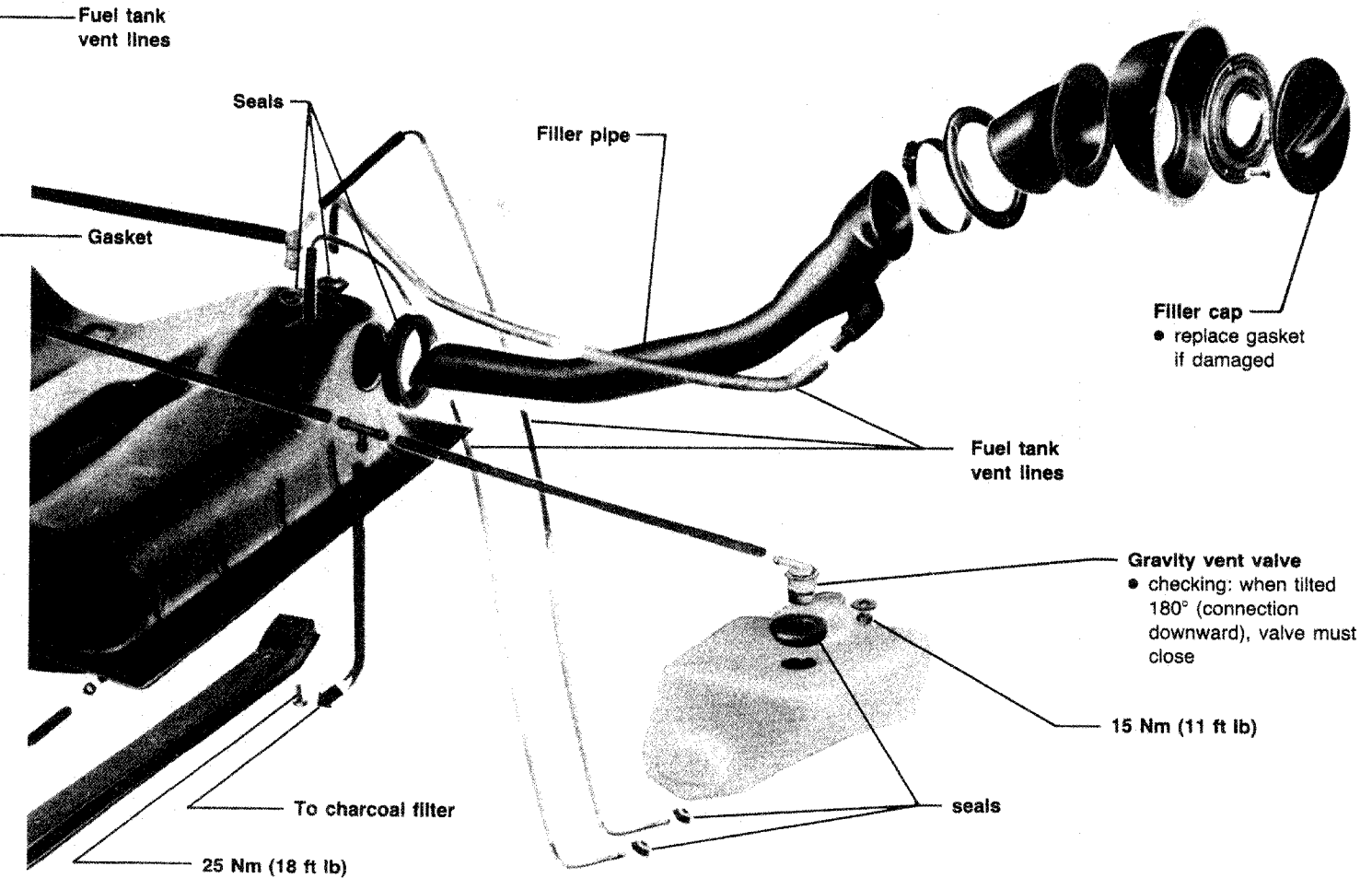
WARNING

Disconnect battery ground strap when working on fuel system. Never smoke when working with fuel or have anything in area that can ignite it.

Always replace seals and fuel hose clamps.
Always clean fuel lines before loosening.



- Rules of cleanliness, 20.28
- Checking for leaks, 20.21



Fuel filter

- installation:
 - arrow points in direction of flow going to engine
- used only with fuel pump having no filter

20-547

Digifant

Fuel supply parts
removing, installing

20.27

Rules of cleanliness

CAUTION

When working on the fuel system, the following rules of cleanliness must be carefully followed.

- Thoroughly clean connecting points and surrounding areas **before loosening**.
- Lay pieces that have been removed on a **clean** surface and cover them with plastic film or paper — do not use cloths with lint.
- Carefully wrap or close parts that have been opened if repair will not be completed.
- Use only **clean** parts.
 - Do not unwrap replacement parts until immediately before installing.
 - Do not use parts that have been stored unwrapped (i.e. in tool boxes).
- With system open:
 - Avoid the use of compressed air as much as possible.
 - Avoid moving vehicle as much as possible.

Fuel tank, removing

Vehicles with rear wheel drive only

- Disconnect battery ground strap
- Empty fuel tank
- Remove filler pipe
- Remove vent lines
- Remove feed and return lines from fuel tank
- Unscrew splash plate from body and take out of brackets
- Lower fuel tank and remove electrical connector from fuel gauge sender
- Remove fuel tank

Syncro vehicles

Note

Removing and installing the fuel tank is possible after removing the transmission.

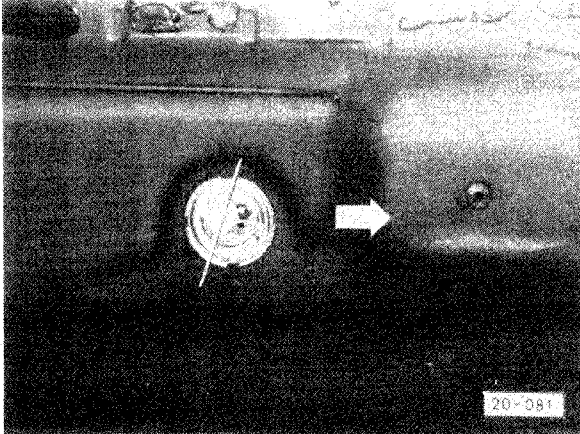
For transmission removal and installation: see Repair Group 34.

- Disconnect battery ground strap
- Drain fuel tank
- Remove filler pipe
- Remove vent and fuel lines
- Remove restraining straps
- When taking out fuel tank, carefully push or secure coolant pipes and hoses to one side

Fuel gauge sender, removing and installing

Vehicles with rear wheel drive only

- Remove fuel tank — page 20.28



- Remove and install sender with tool 2072 A.

Note

Installing: electrical connector must line up with dotted line. Arrow points in driving direction.

Syncro vehicles

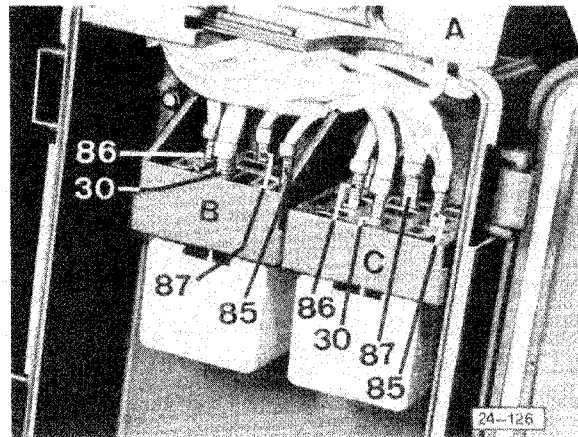
- Disconnect battery ground strap
- Empty fuel tank until float lies below level of sender opening
- Remove sender behind rear wheel house
- When installing the sender, make sure that return line is inserted into expansion tank inside of fuel tank (see Fig. 20-549, Page 20.34)

Note

After installation of sender:
Rocker arm must be able to be swung downwards.

Fuel pump delivery rate, checking

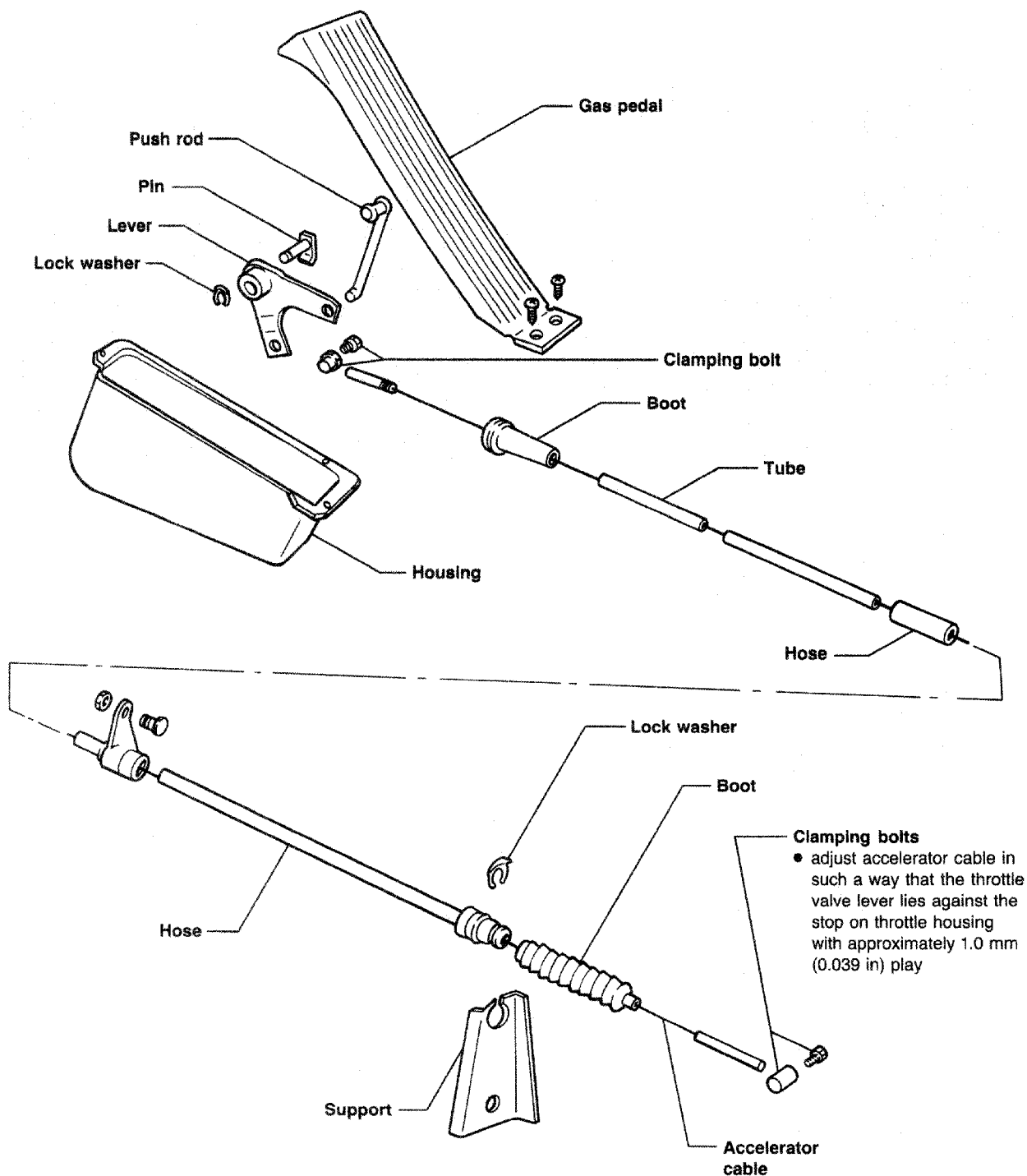
- Remove return line from pressure regulator and close
- Push hose onto open connection of pressure regulator, insert free end of hose into measuring container



- Bridge terminals 30 and 87 on adapter C of fuel pump relay for 30 seconds

20 Fuel Supply

Accelerator linkage/cable Manual transmission



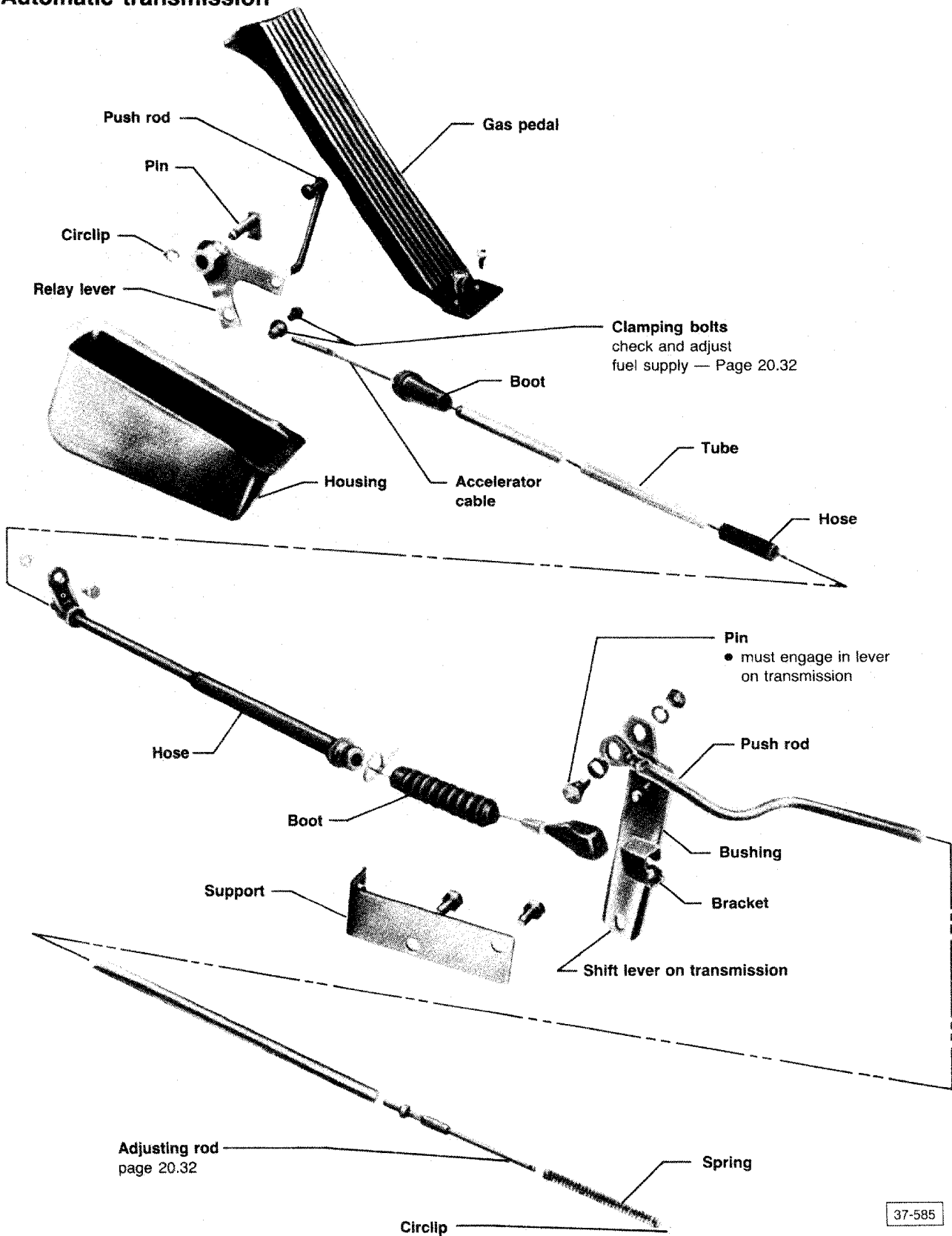
20-402

20.30

Accelerator cable linkage,
repairing (manual trans)

Digifant

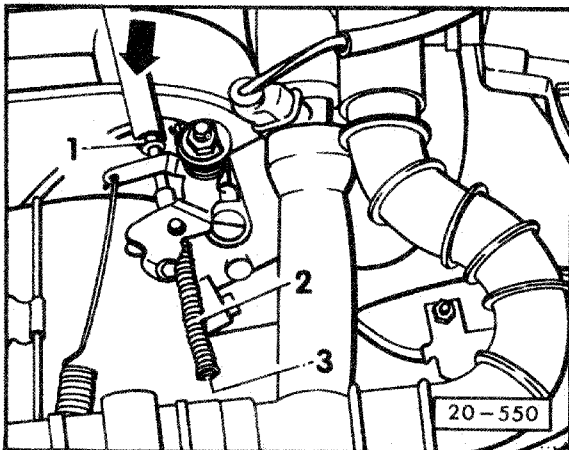
Accelerator linkage/cable Automatic transmission



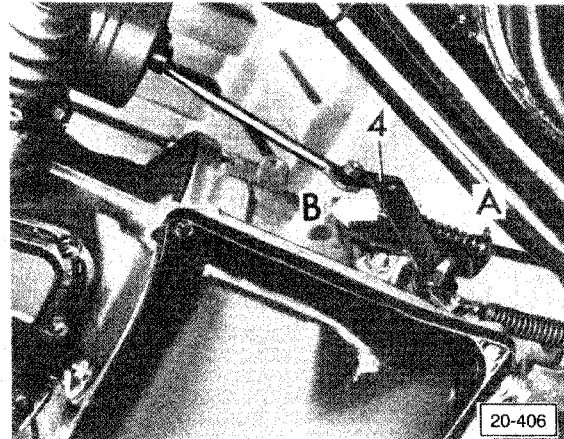
Accelerator linkage/cable, adjusting

The accelerator linkage/cable should be adjusted in such a way that with throttle valve closed, (idle), the lever on transmission is against stop in no-gas position; otherwise, shifting occurs too late in middle speed ranges.

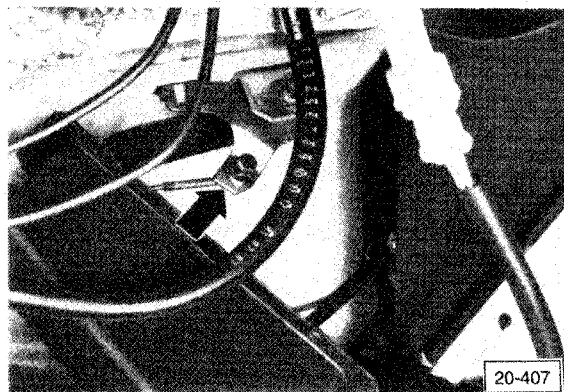
The accelerator linkage/cable should be adjusted as follows at idle speed (engine at operating temperature, with throttle valve closed):



- Loosen nut (1)
- Remove spring (2)
- Pull accelerator rod in direction of arrow
- Turn adjusting rod (3) with screwdriver until shoulder of adjusting rod just contacts pivot of throttle lever
- Install spring (2)
- Start engine and check to see if idle rpm is reached. If necessary, re-adjust by turning adjusting rod (3)
- lock adjusting rod with nut (1)



- Press gas pedal to floor. Lever (4) must be on stop in kickdown position (**arrow A**)
- Release gas pedal. Lever must be in idle position (out of kickdown) (**arrow B**)

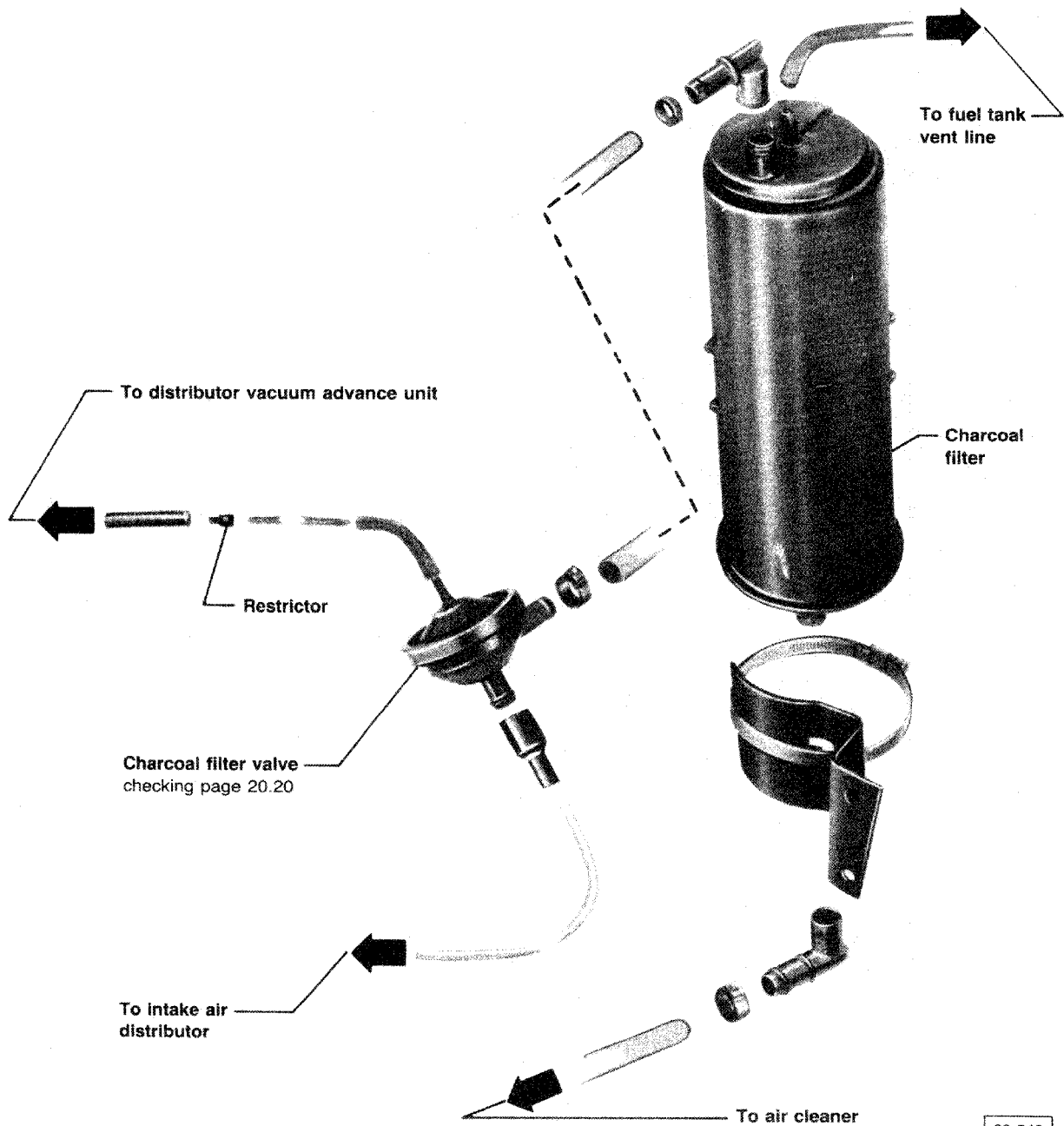


- If necessary, adjust accelerator cable at clamping bolt

Checking adjustment

- Push gas pedal down to full throttle point. Throttle valve lever must lie against stop (without kickdown)
- Push gas pedal past full throttle point to stop. Spring must be compressed. Lever on transmission must be in kickdown position (**A**).

Charcoal filter assembly



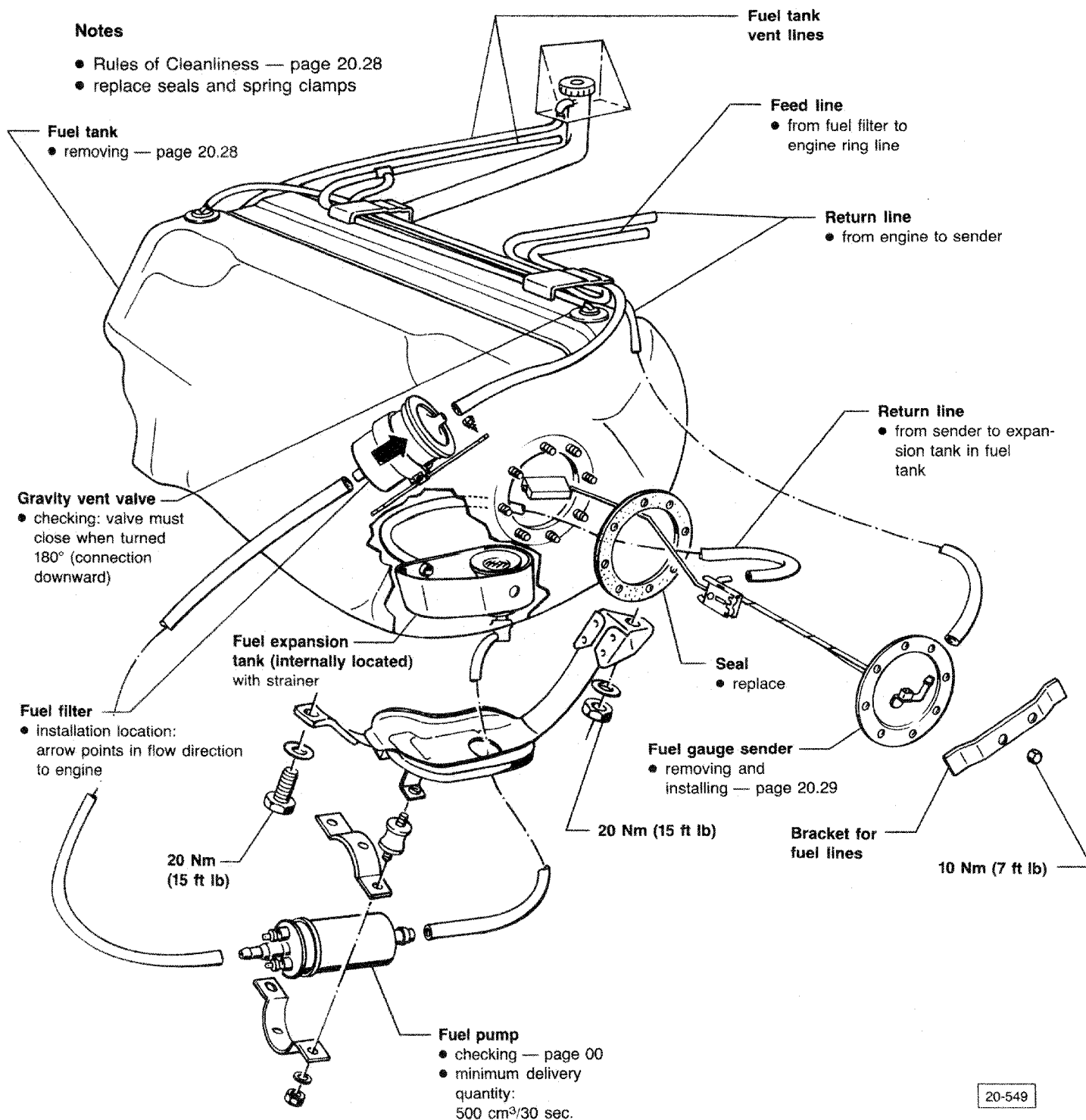
20-548

20 Fuel Supply

Fuel supply system, components Syncro vehicles

Notes

- Rules of Cleanliness — page 20.28
- replace seals and spring clamps



20-549