

Service Info

Assembly instructions

Clutches
Shock absorbers

Fiat Ducato 1.0 / 1.3 / 1.4 / 1.8
Peugeot J5
Citroen C 25 1984 ➔

Please note

The three lightweight commercial vehicles, the Fiat Ducato, Peugeot J5 and Citroen C25 were developed jointly by Fiat and Peugeot-Citroen. The range included various engines from

- 1795 cc and 1970 cc (petrol engines)
- 2445 cc and 2499 cc (diesel engines), the latter with an optional turbocharger.
- Since 1989, the Ducato has also been available with four-wheel drive.

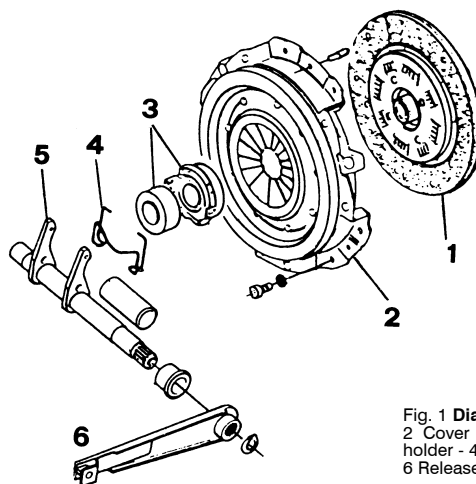


Fig. 1 **Diaphragm clutch:** 1 Clutch disc - 2 Cover assembly - 3 Release bearing with holder - 4 Retaining spring - 5 Release fork - 6 Release shaft lever.

The original Sachs components for each type are given in the current vehicle lists.

The engines are transversely mounted and drive the front wheels via a four- or five-speed gearbox with a final drive and differential. To remove the diaphragm spring clutch, which is operated mechanically by means of a cable, the entire engine/gearbox unit must be lifted out.

Removing the engine/gearbox unit and the clutch

- Remove the spare wheel and then empty the cooling system.
- Disconnect the battery and the electrical connections of the temperature sensor for the water pump and the radiator, the air filter warning lamp of the radiator fan, the headlight and flasher system.

Clutch

- Remove the bonnet opening mechanism, the radiator cowl and the spare wheel holder.
- Disconnect the water hoses from the radiator.
- Remove the two upper nuts of the radiator grille on both sides and remove it together with the air filter.
- Disconnect the vacuum line at the engine or at the vacuum pump, the water hoses for the heating system at the heating element and the engine block and the fuel feed and return lines.
- Remove the water reservoir of the windshield washer system, the intake air housing and, in the case of diesel engines, the diesel filter.
- Pull out the double plug, the cables of the stop switch, the starter, the oil pressure monitor, the reversing light switch, the earth connection and the supply lead to the ignition or preheating plugs.

For work under the vehicle, it should be jacked up at the front or raised on a lift that leaves the wheels free. The wheels must hang down freely.

- Undo and detach the accelerator cable from the carburetor or diesel injection pump, the drive shaft of the speedometer, the clutch cable and the exhaust line.

To remove the right-hand half shaft

- Remove the hub cap and undo the wheel hub nuts on the right-hand side of the vehicle.
- Remove the fastening bolts of the support (Fig. 3) for the lower control arm.
- Undo the two bolts of the steering lever at the steering knuckle and push the lower control arm down to enable you to turn the steering lever outwards and against the wing.

- Remove the wheel hub from the half shaft.
- Undo the two nuts of the central drive shaft bearing (with diesel engines the bearing support is cast integrally with the engine), push the two halves of the bearing apart and remove the drive shaft together with the O-ring seal and gaiter.

To remove the left-hand half shaft

- The wheel hub does not have to be removed from the half shaft in order to remove it.
- Undo the fastening bolts of the support for the lower control arm and the two bolts connecting the steering lever to the steering knuckle.
- Pull the control arm downwards and push it outwards and against the wing.
- Insert a screwdriver or a chisel between one bolt of the differential case and the housing of the half-shaft joint and pull the stub axle, which is held by a retaining ring, out of the differential.

On vehicles with four-wheel drive

- Disconnect the cardan shaft of the rear wheel drive at the front joint and hang it from the bottom of the vehicle using a wire.
- Hang the engine/gearbox assembly by a cable from a crane.
- Undo the fastening of the lower mounting at the gearbox.
- Remove the bolts of the upper engine mounts and remove the engine from the engine compartment.
- To separate the engine from the gearbox, remove the V-belt pulley from the camshaft and then remove the mount on the clutch housing.
- After separating the gearbox from the engine, unscrew the clutch cover assembly, working uniformly, and remove it together with the clutch disc.

Assembly and fitting

- With the projecting part of the torsional vibration damper facing the gearbox, centre the clutch disc with a clutch mandrel (Sachs Order No. 18 4200 080 550) and tighten the fastening screws uniformly, working cross-wise.
- Clean the clutch shaft and coat its splines and the sliding surfaces of the release bearing and the release fork with Sachs clutch grease.
- Connect the gearbox to the engine and attach the mounts and the V-belt pulley to the clutch housing and the engine (camshaft).
- Mount the engine/gearbox unit in the engine compartment in the reverse order to that for removal. Fit the half shafts carefully, ensuring that the gaiters and ring seal are in good condition, and fit the wheel mounting suspension components correctly.

Please note

Due to the action of the return spring, the co-rotating release bearing remains permanently in contact with the diaphragm spring. The clutch pedal thus has no play.
It is only necessary to **adjust** the clutch cable at the bottom end to bring the clutch pedal level with the brake pedal when the nominal value has changed due to wear of the linings.

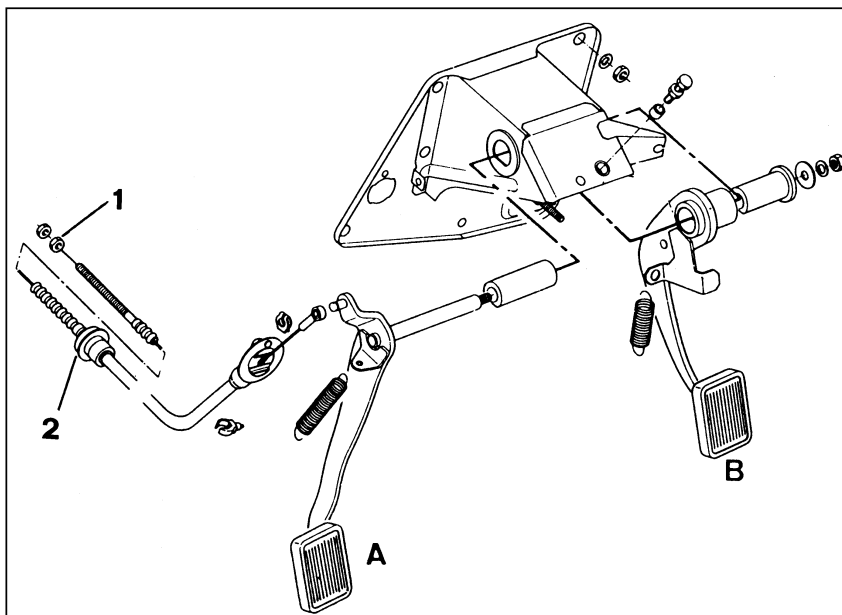


Fig. 2 Arrangement of the clutch (A) and brake pedal (B): 1 Adjusting and lock nut for the clutch cable - 2 Cable sleeve anchoring.

Tightening torques (Nm)	
Flywheel screws * B/D	66 / 90-100
Fastening screws of cover assembly B/D	20 / 20 - 25
Wheel hub nuts	420 - 510
Control arm support bolts	49
Leading arm fastening bolts	49
Steering lever bolts	125
Wheel bolts	180
* secure with Loctite B = petrol / D = diesel	

Shock absorbers

Front suspension

The front suspension consists of two struts, which are attached to the wheel arches at the top and are guided at the bottom by a sloping control arm and a leading link. A ball-headed pin provides a swivel joint with the wheel carrier.

Removing and disassembling the suspension struts

- Place the vehicle on a lift that leaves the wheels free.
- In the engine compartment, undo the three nuts of the upper strut fastening but do **not** undo the piston-rod nut.
- Undo the two steering-lever bolts and the two other bolts at the wheel carrier, lower the wheel carrier and then lift the strut out backwards.
- To separate the coil spring from the shock absorber, clamp the strut in a clamping device (Sachs Order No. 18 4200 081 510) and compress the spring with a suitable spring compressing device (Sachs Order No. 11 4200 081 150 - spring shoes 11 4200 081 152).
- Unscrew the piston rod nut and remove the flange, the thrust bearing, the sealing ring and the compression stop.

Assembly and fitting

When replacing the shock absorber, always fit a new thrust bearing, stop washer and sealing ring.

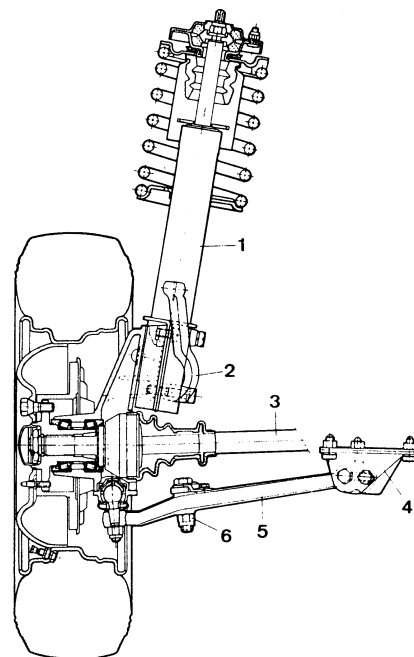


Fig. 3 Front strut suspension: 1 Strut - 2 Steering lever - 3 Half shaft with double universal joint - 4 Control arm support - 5 Control arm - 6 Fastening bolt for the leading arm.

- The components should be fitted in the order shown in Fig. 4.
- Always fit a new self-locking piston-rod nut.
- Before releasing the spring compressing device, make sure that the ends of the spring are aligned correctly on the spring seats.

- For installation, raise the wheel carrier and then insert the upper strut fastening carefully into the body.

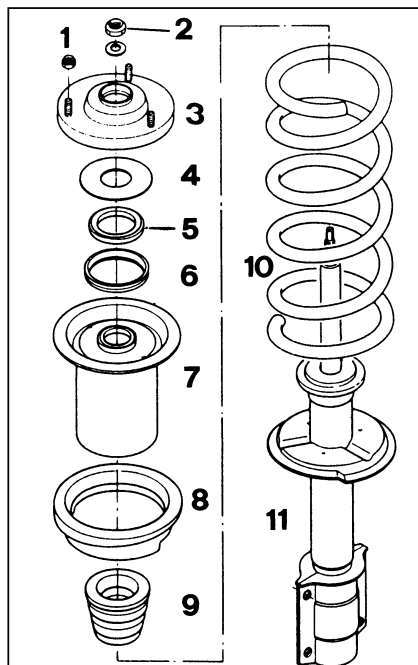


Fig. 4 **Components of the suspension strut**:
1 Strut fastening nut (3) - 2 Piston-rod nut - 3 Strut flange - 4 Washer - 5 Thrust bearing - 6 Sealing ring - 7 Protective sleeve - 8 Spring support - 9 Compression stop - 10 Coil spring - 11 Strut.

Wheel geometry

Toe-in	$0.5 \pm 1 \text{ mm}$
Camber (not adjustable)	$0 - 1^\circ$
Castor	$1^\circ 50' - 2^\circ 50'$

Tightening torques (Nm)

Nuts of the upper strut mount	15
Track-rod lock nuts	60
Ball pin nut	100
Wheel bolts	180

Rear suspension

The tubular rear axle is guided and sprung by leaf springs. Shocks are damped by shock absorbers that slope towards the rear.

- With the vehicle raised and the rear wheels

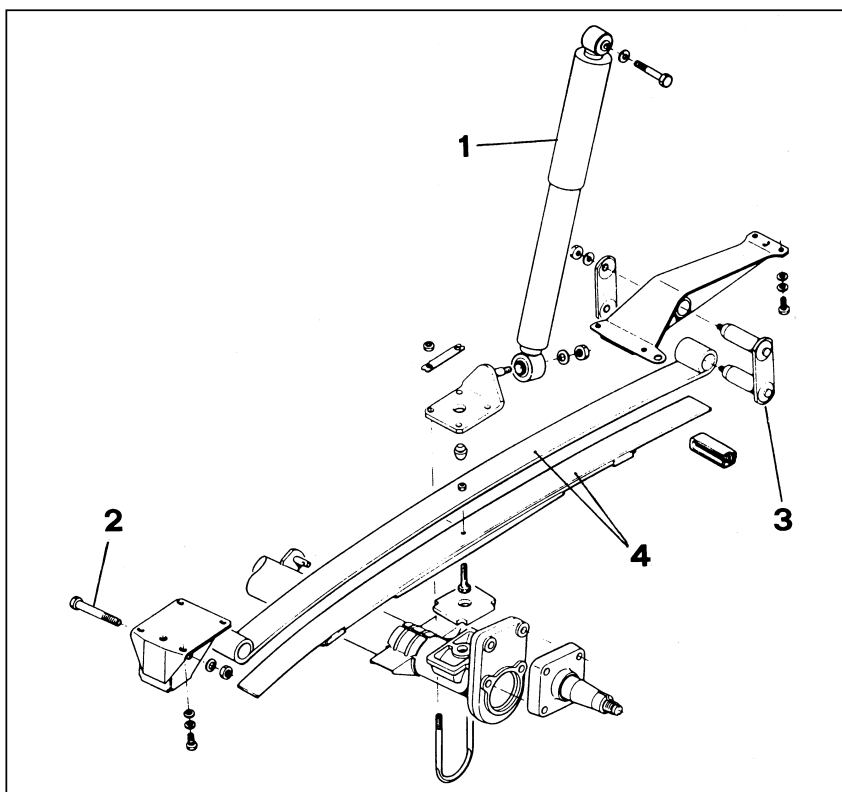


Fig. 5 **Rear axle suspension and control**: 1 Shock absorber - 2 Front spring bolt - 3 Spring strap - 4 Leaf springs.

removed, the shock absorbers, which have swivel eyes at the top and bottom, can be removed and fitted easily.

- If any of the spring bolts are unscrewed or replaced, their nuts should only be tightened at a clearance of 107 mm between the underside of the longitudinal member and the top of the rubber stops welded to the axle tube.

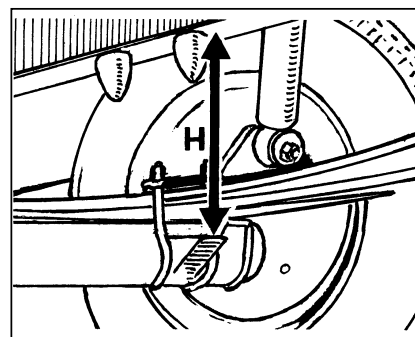


Fig. 6 Before tightening the spring bolts and shock absorber fastenings, the vehicle should be loaded so that the height "H" is 107 mm.

Tightening torques (Nm)

Shock absorber fastening bolts	30 - 35
Spring bolt nuts	150
Spring strap nuts	120