

CHECK : POWER STEERING PRESSURE (GEP)

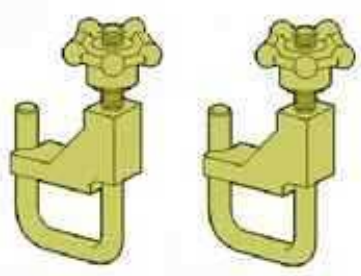
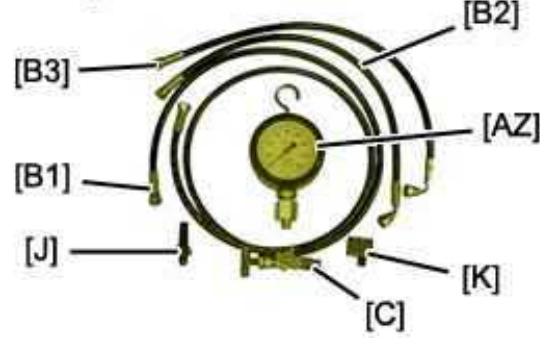
ESSENTIAL : Observe the safety and cleanliness recommendations ⓘ .

ESSENTIAL : Deactivate the pneumatic suspension before lifting the vehicle ⓘ (or 4 post lift, workshop jack or vehicle jack).

CAUTION : Before performing the steering assistance pressure checks, confirm by means of a prior test that there is an actual lack of assistance.

CAUTION : Only the power steering electropump unit can be checked The steering (integral ram or power steering valve) is suspected by default.

1. Tooling

Tools	Reference	Designation
[1512]  Figure : E5AB0CZT	[1512]	Hose clamp
	[0710-ZW]	Kit for checking power steering oil pressures
[0710-ZW]  Figure : E5AB140T	[0710-AZ]	pressure gauge
	[0710-B1]	Hose
	[0710-B2]	Hose
	[0710-B3]	Hose
	[0710-C]	Tap
	[0710-J]	Union for pressure take-off on power steering pump
	[0710-K]	Union for pressure take-off on power steering pump

2. Precautions to be taken

CAUTION : Proceed with care in order to avoid entry of pollutant particles.

N.B. : The correct operation of the device requires the power steering fluid and the hydraulic components to be kept meticulously clean.

Verify :

- The power steering fluid level
- The condition of the pipes and unions

3. Setting up the equipment

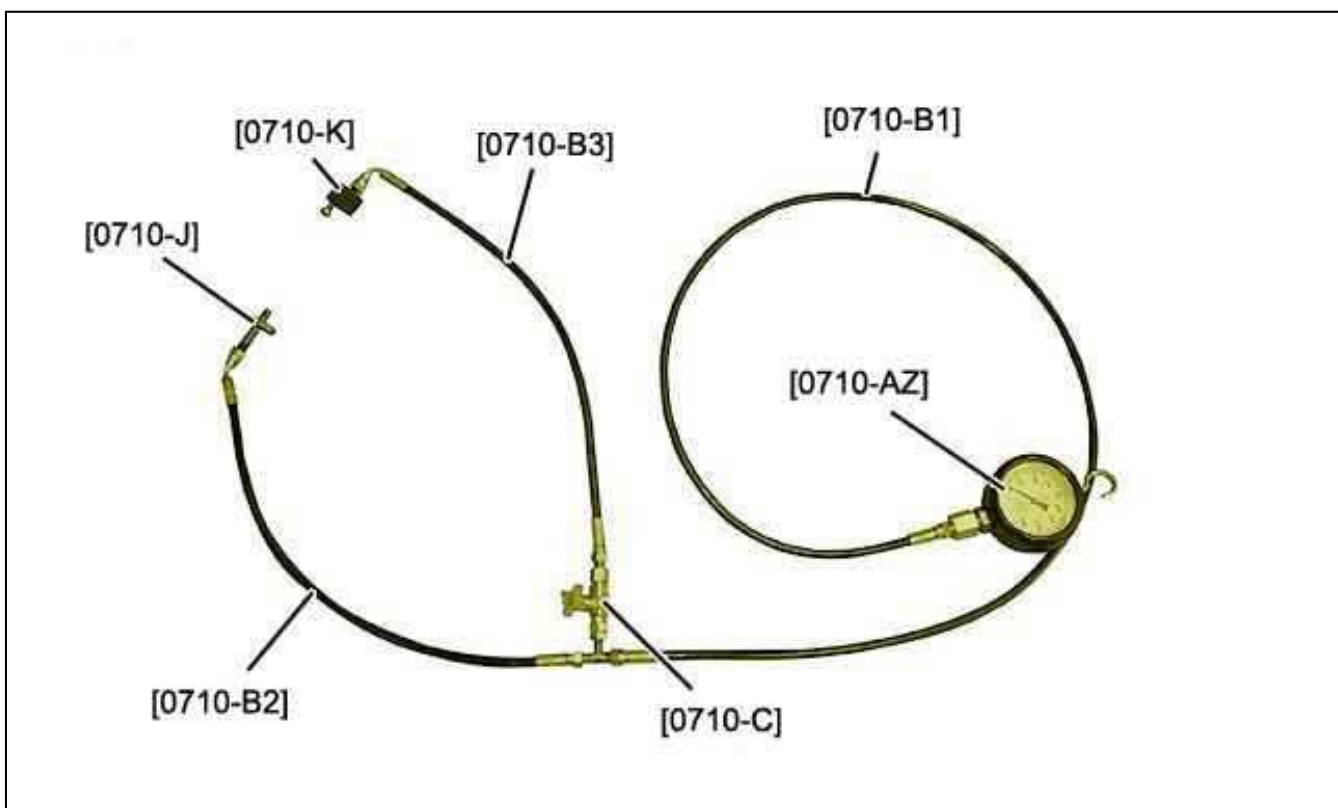


Figure : E5AB142D

Prepare the checking equipment by assembling tools [0710-AZ], [0710-B1], [0710-C], [0710-B2], [0710-B3], [0710-K] and [0710-J].

4. Preliminary operations

Lift and support the vehicle.

Remove :

- The front left-hand splash-shield
- The front bumper ⓘ
- Air filter unit air entry scoop

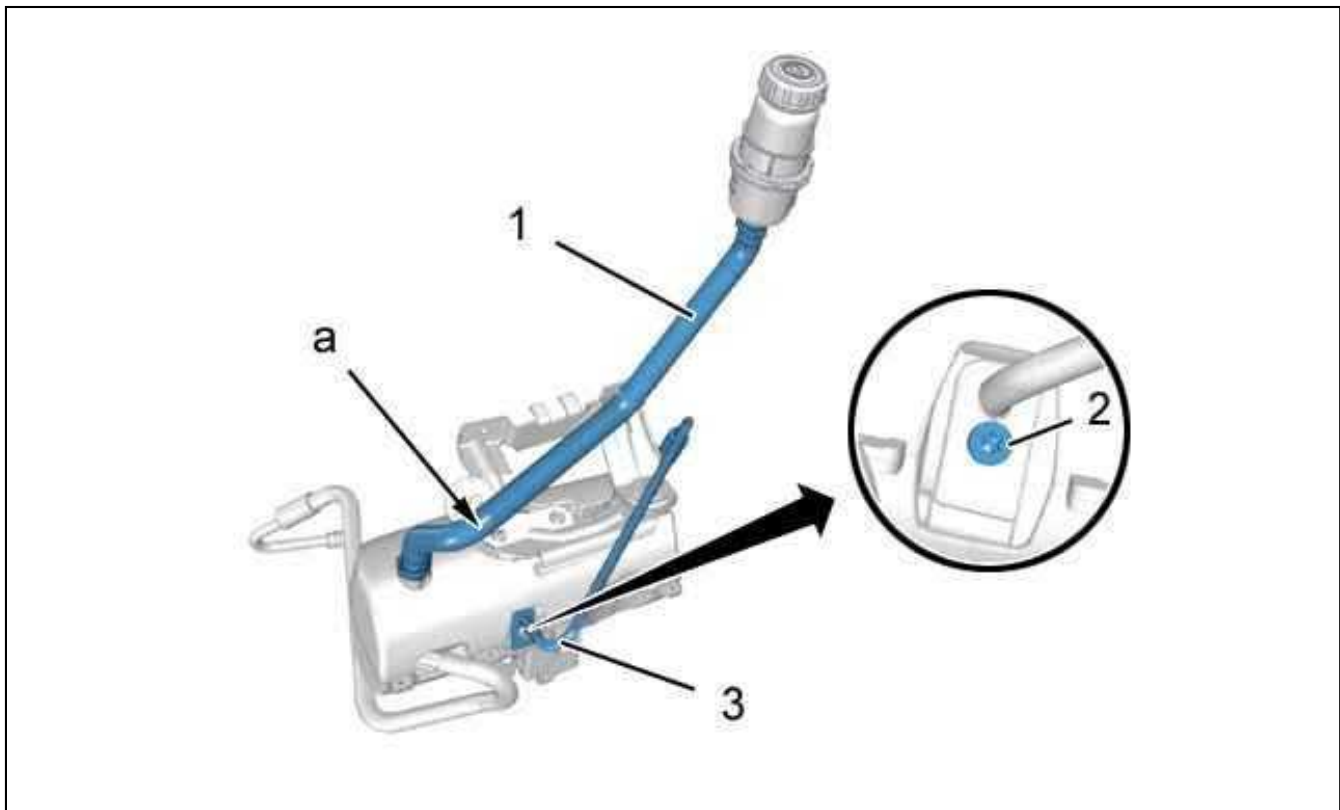


Figure : B3ED03KD

Clamp the supply pipe to the power steering electropump unit (1) (as "a") ; Using tool [1512].
Remove the bolt (2).

CAUTION : Prevent the power steering fluid from flowing onto the connectors of the electropump unit .

Disconnect the power steering high pressure pipe (3).

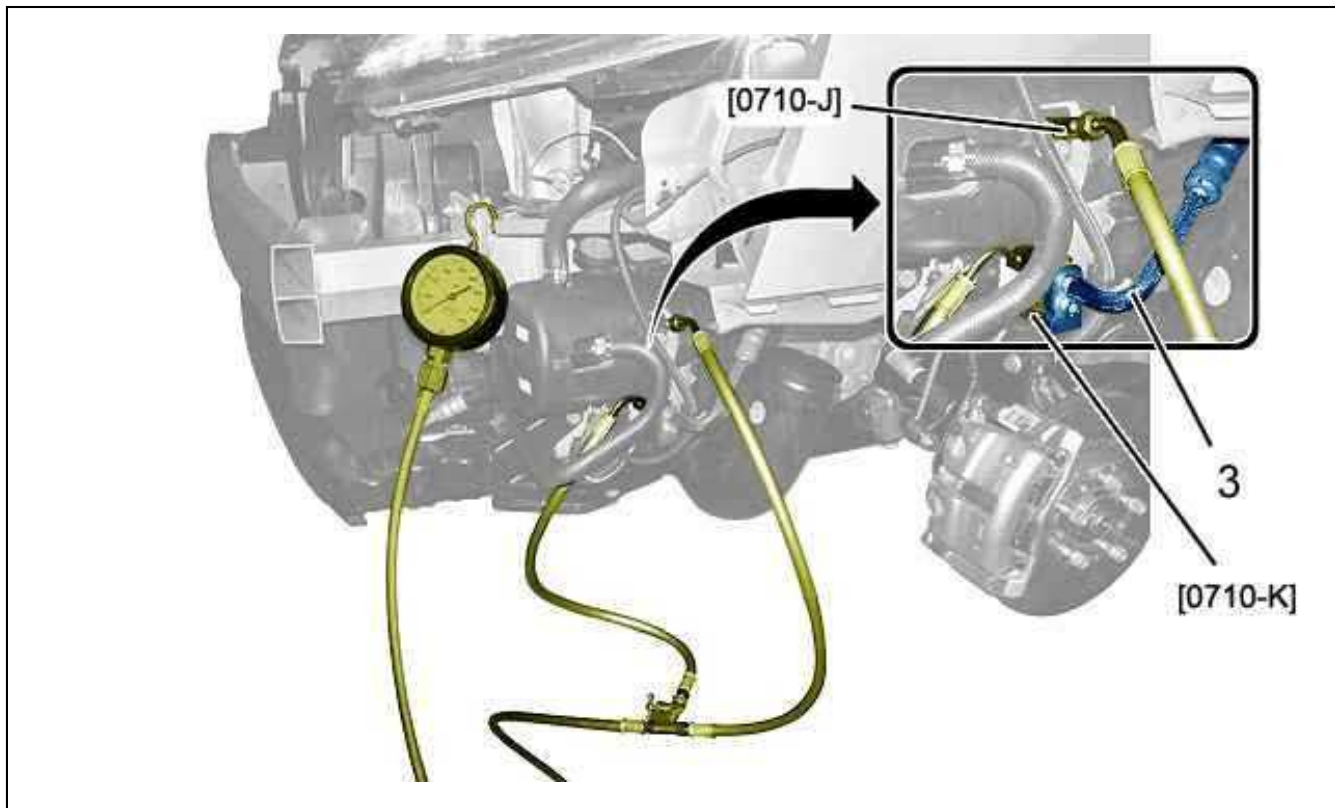


Figure : B3ED03LD

Do up :

- Connector [0710-J] on the power steering electropump unit
- Connector [0710-K] on the power steering high pressure pipe (3)

Tighten all the unions.

Remove the tool [1512].

Open the tap [0710-C].

Start the engine and let it run for 5 seconds.

Stop the engine.

Check :

- The oil level
- The absence of leaks

5. Pressure check

Start the engine.

Close the tap [0710-C] for 7 seconds.

Accelerate to between 1200 and 1500 rpm, the pressure should be 110 ± 5 bars.

Stop the engine.

Pressure of the power steering electropump unit low : Replace the power steering electropump unit .

Pressure of the power steering electropump unit correct : The problem comes from the steering mechanism.

N.B. : After confirming an actual lack of power-assistance (by prior test), change the power steering mechanism.

6. Refitting

Clamp the supply pipe to the power steering electropump unit (1) (as "a") ; Using tool [1512].

Remove :

- The pipe [0710-K]
- The pipe [0710-J]

N.B. : At each removal, always replace the O ring of the power steering high pressure pipe (3).

Couple up the power steering high pressure hose (3).

Refit bolt (2).

Remove the tool [1512].

Refit :

- Air filter unit air entry scoop
- The front left-hand splash-shield
- The front bumper 

Uncouple : Tools [0710-AZ], [0710-B1], [0710-C], [0710-B2], [0710-B3], [0710-K] and [0710-J].

CAUTION : Use new oil for filling and topping up the hydraulic power steering circuit.

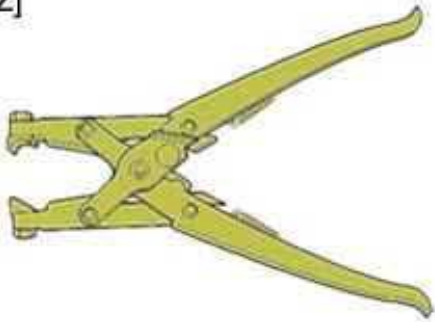
Fill the power steering reservoir to the maximum mark.

Bleed the steering assistance circuit  .

REMOVING - REFITTING : POWER STEERING ELECTROPUMP ASSEMBLY

ESSENTIAL : Observe the safety and cleanliness recommendations ⓘ .

1. Tooling

tool	Reference	Designation
 Figure : E5AB0PPT	[0172-Z]	CLIC clip pliers

2. Removing

CAUTION : After switching off the ignition: wait 15 minutes before disconnecting the battery, to ensure that the initialisations of the various ECUs are memorised.

Disconnect the battery.

Remove :

- The protective panel under the engine ⓘ
- The front splash shield
- The front bumper ⓘ

Drain the steering assistance circuit ⓘ .

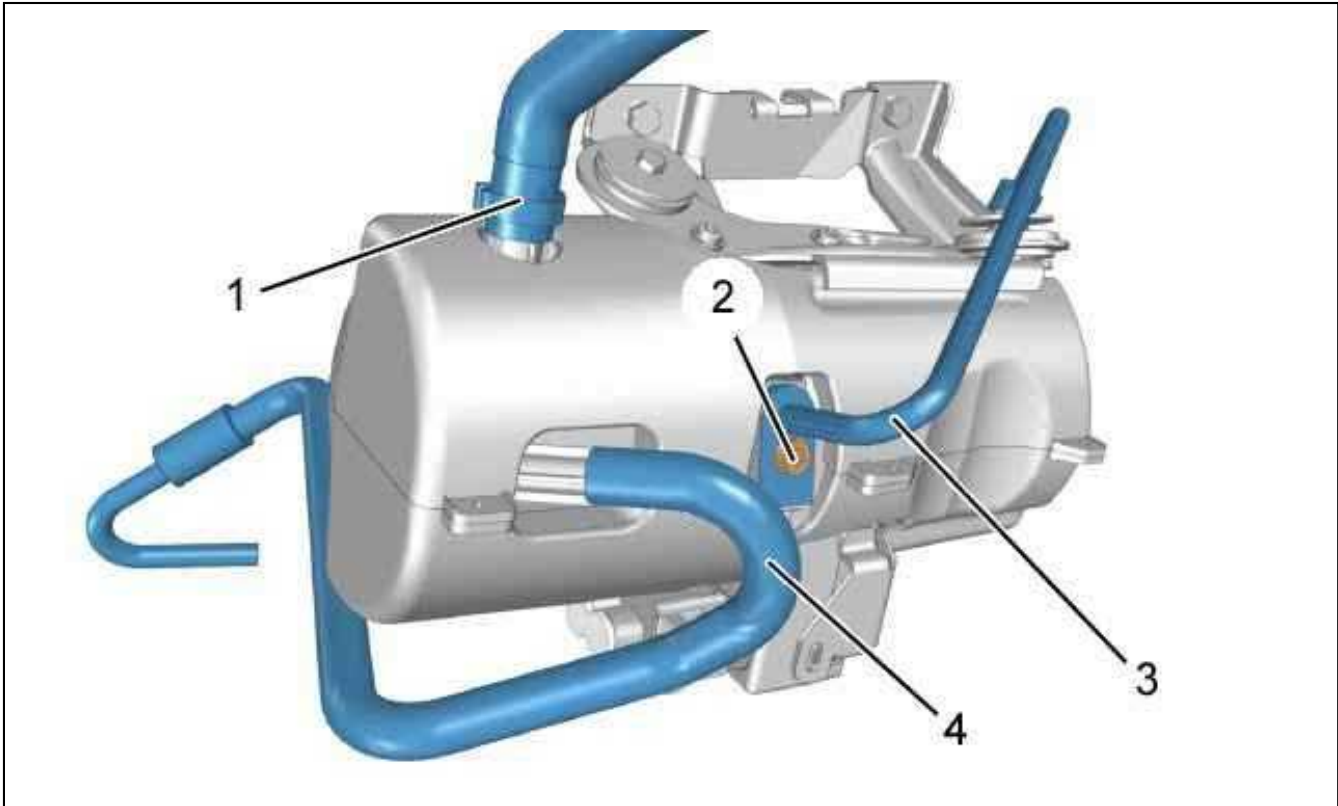


Figure : B3EG0HND

Uncouple the power steering electropump assembly oil supply pipe (1); Using tool [0172-Z].

Remove the bolt (2).

Uncouple :

- The power steering circuit oil supply pipe (3)
- The power steering circuit oil return pipe (4) ; Using tool [0172-Z]

Remove the connector cover (according to model).

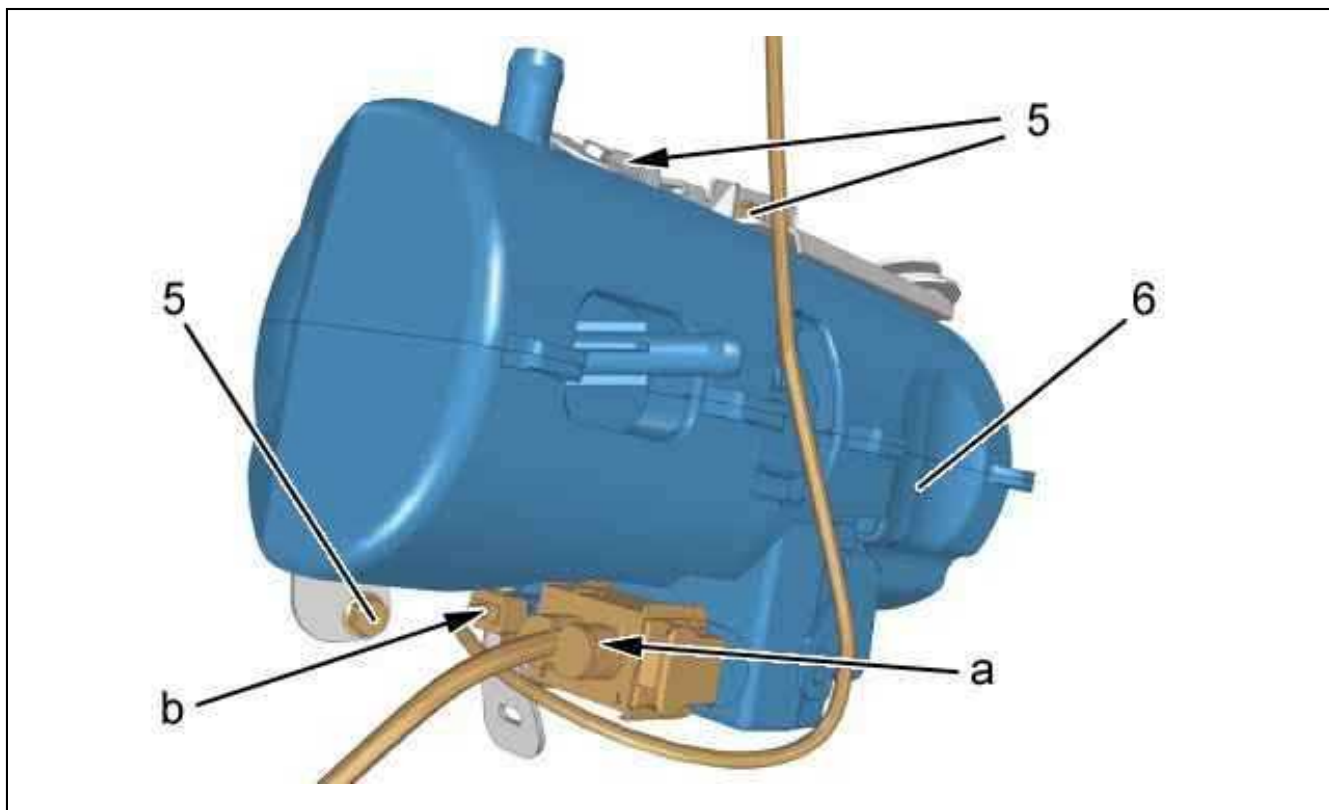


Figure : B3EG0HOD

Disconnect the connectors (as "a", "b").

Remove :

- The bolts (5)
- The power steering electropump assembly (6)

3. Refitting

CAUTION : Adhere to the tightening torques ⓘ .

Refit :

- The power steering electropump assembly (6)
- The bolts (5)

Connect the connectors (as "a", "b").

Refit the connector cover (according to model).

N.B. : Whenever it is removed, always replace the O-ring of the oil supply pipe of the power steering circuit (3).

Couple up :

- The power steering circuit oil return pipe (4) ; Using tool [0172-Z]
- The power steering circuit oil supply pipe (3)

Refit bolt (2).

Couple up the power steering electropump assembly oil supply pipe (1); Using tool [0172-Z].

Refit :

- The front bumper ⓘ
- The front splash shield

Reconnect the battery.

Fill and bleed the power steering system ⓘ.

Refit the under-engine protection ⓘ.

CAUTION : Perform the operations to be carried out following reconnection of the battery.

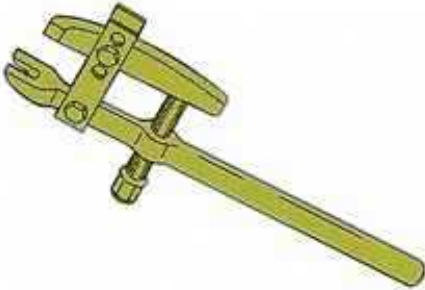
Reconnect the battery.

REMOVING - REFITTING : STEERING MECHANISM

ESSENTIAL : Deactivate the pneumatic suspension before lifting the vehicle ⓘ (2 or 4 post lift, workshop jack or customer's jack ⓘ).

ESSENTIAL : Observe the safety and cleanliness recommendations ⓘ.

1. Tooling

tool	Reference	Designation
 Figure : E5AG02WT	[0709]	ball-joint extractor

2. Removing

2.1. Common operations

CAUTION : After the ignition has been switched off : Wait 15 minutes before disconnecting the battery to ensure that the programmed values of the various ECUs are stored.

Disconnect the battery.

CAUTION : Proceed with care in order to avoid entry of pollutant particles.

Release the front wheel bolts.

Lift and support the vehicle.

Remove :

- The front wheel bolts
- The front wheels
- The protective panel under the engine ⓘ

Drain the steering assistance circuit ⓘ.

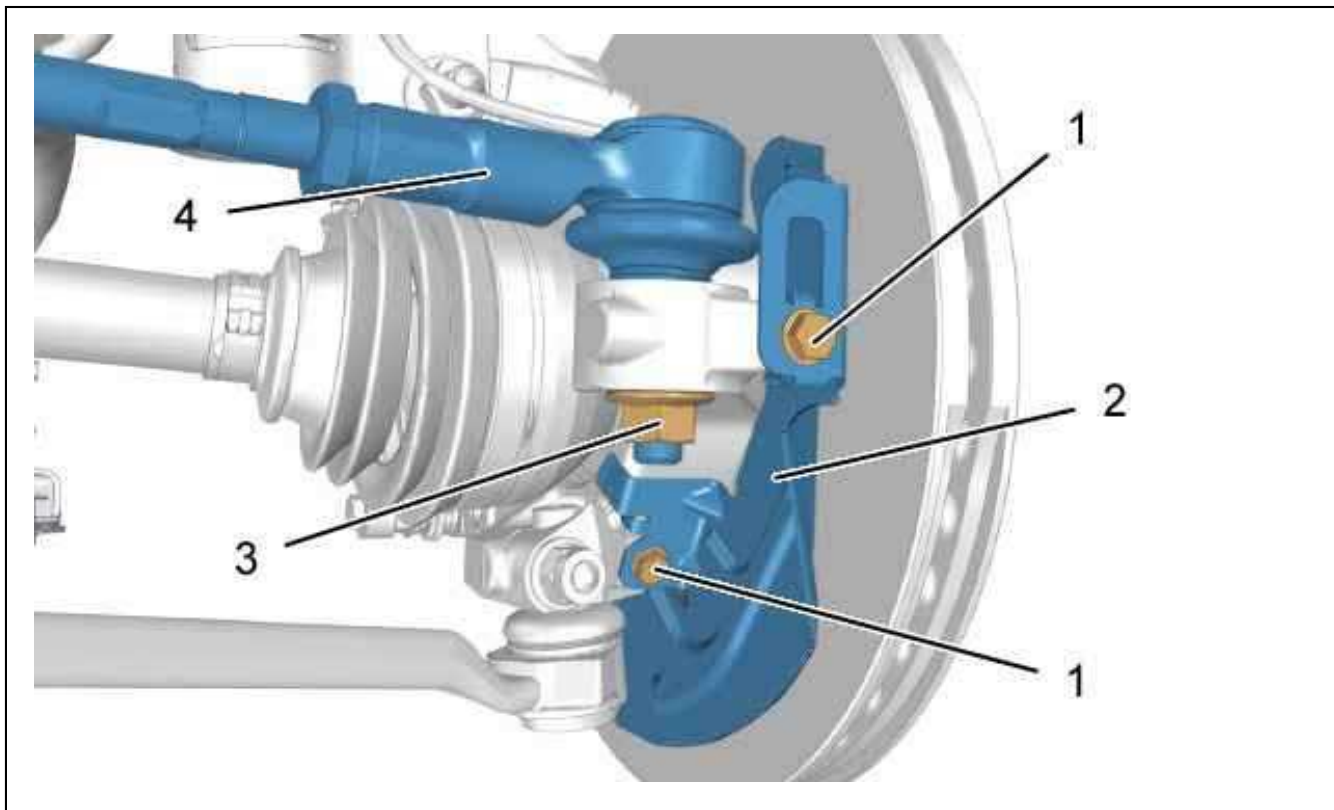


Figure : B3EG0IAD

CAUTION : Place the front wheels in the straight ahead position Lock the steering wheel in this position.

Remove :

- The bolts (1)
- The ball-joint protector (2)
- The nut (3)

Uncouple the steering ball-joint (4) ; Using tool [0709].

N.B. : Proceed in the same way for the other side.

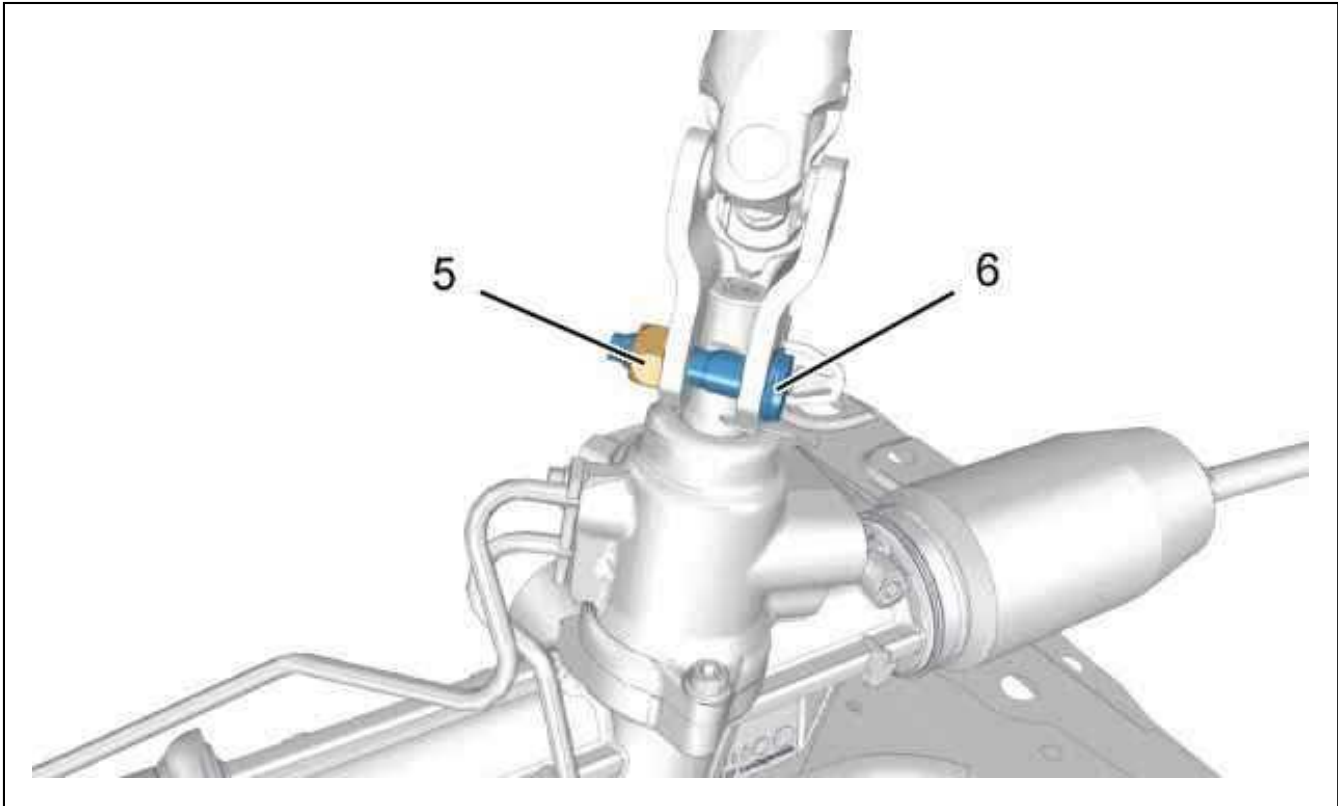


Figure : B3EG0IBD

Remove :

- The nut (5)
- The (6) bolt

Uncouple the steering column from the power steering valve .

2.2. Vehicles fitted with a steering assistance electropump assembly

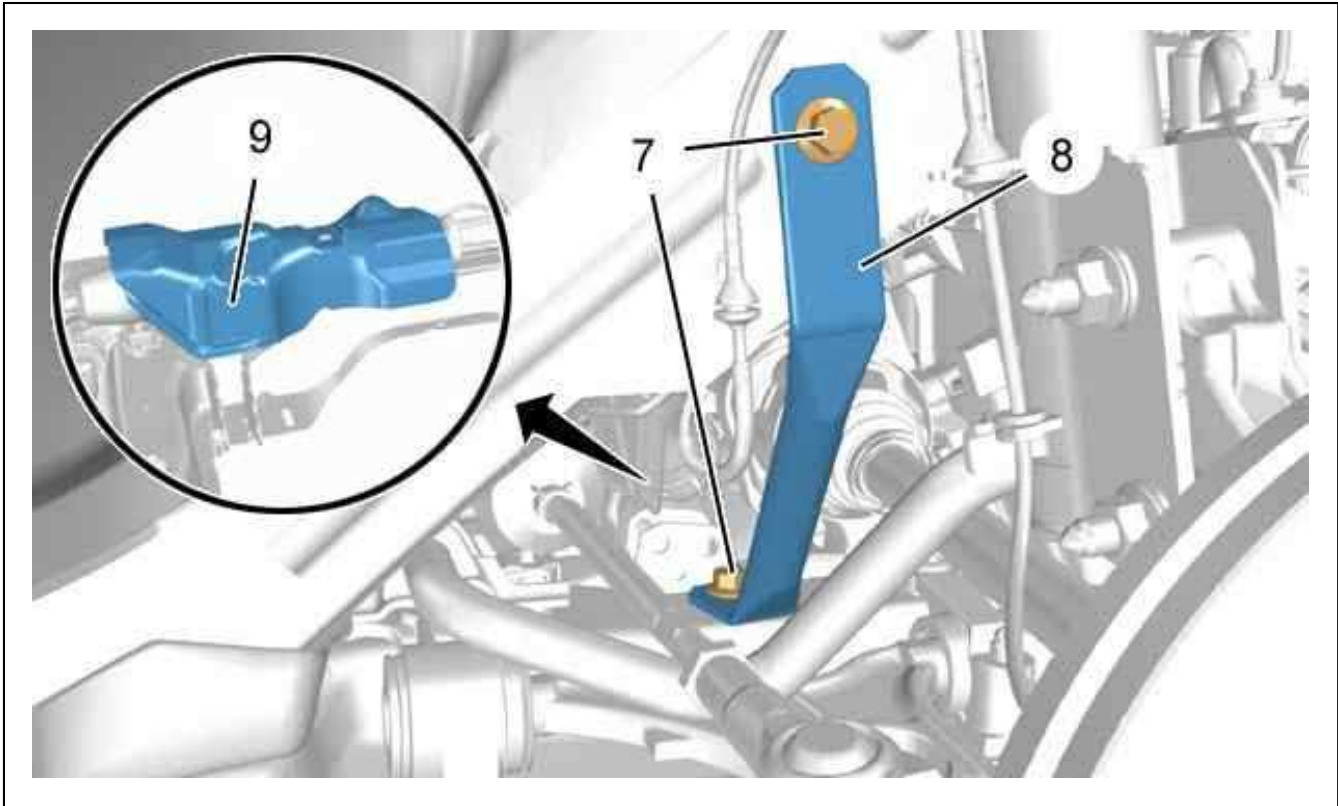


Figure : B3EG0ICD

Remove (according to assembly) :

- The bolts (7)
- The right-hand subframe tie-rod (8)
- The steering mechanism heat shield (9)

2.3. Common operations

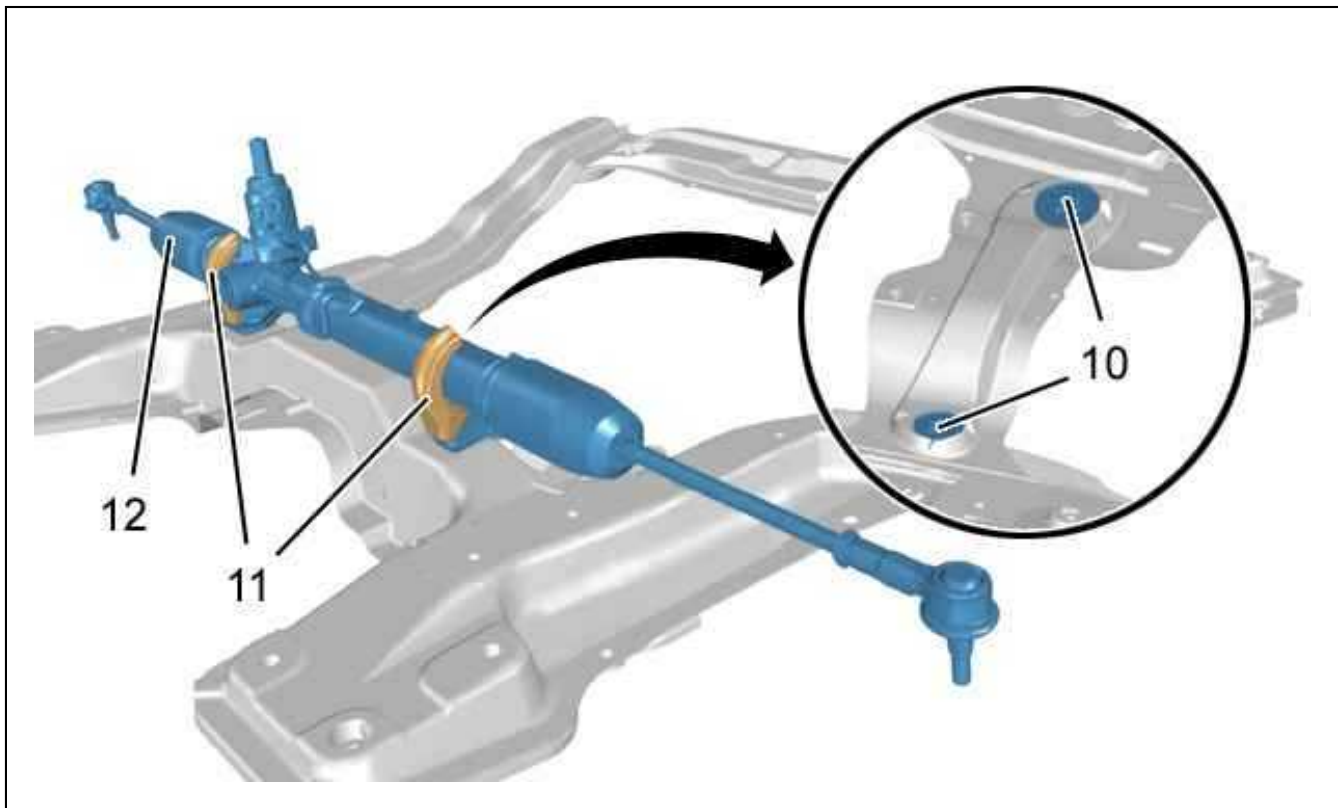


Figure : B3EG0IDD

Remove :

- The bolts (10)
- The clamps (11)

CAUTION : When removing the steering mechanism (12), take care not to damage the gaiters .

Extract the steering mechanism (12) from the right-hand side of the vehicle.

3. Refitting

CAUTION : Adhere to the tightening torques.

Tightening torques : **Steering** ⓘ .

Tightening torques : **road wheels** ⓘ .

3.1. Common operations

Refit the steering mechanism (12) from the right-hand side of the vehicle.

Couple the steering column to the power steering valve .

Refit : The clamps (11).

Position and centre the steering mechanism (12) on the subframe.

Refit :

- The bolts (10)
- The (6) bolt
- The nut (5)

3.2. Vehicles fitted with a steering assistance electropump assembly

Refit :

- The steering mechanism (12) heat shield (9)
- The right-hand subframe tie-rod (8)
- The bolts (7)

3.3. Common operations

Attach the steering knuckle (4).

Refit :

- The nut (3)
- The ball-joint protector (2)
- The bolts (1)
- The protective panel under the engine ⓘ
- The front wheels
- The front wheel bolts

N.B. : Proceed in the same way for the other side.

Return the vehicle to its wheels.

Tighten the front wheel bolts .

CAUTION : Perform the operations to be carried out following reconnection of the battery.

Reconnect the battery.

Fill and bleed the power steering system ⓘ .

Check the front wheel tracking and adjust it if necessary.

DRAIN AND REFILL - REFILLING - BLEEDING : POWER STEERING CIRCUIT

ESSENTIAL : Deactivate the pneumatic suspension before lifting the vehicle ⓘ (2 or 4 post lift, workshop jack or customer's jack ⓘ).

ESSENTIAL : Observe the safety and cleanliness recommendations.

1. Precautions to be taken

CAUTION : Proceed with care in order to avoid entry of pollutant particles.

CAUTION : Draining of the hydraulic circuit must be carried out with the engine switched off.

2. Draining of the power steering hydraulic circuit

2.1. Common operations

Slacken the front left wheel bolts.

Lift and support the vehicle.

Remove :

- The front left wheel bolts
- The front left-hand wheel
- The protective panel under the engine ⓘ

Open the power steering hydraulic circuit filler cap .

2.2. Power steering electropump assembly

Oil quality : TOTAL FLUIDE DA.

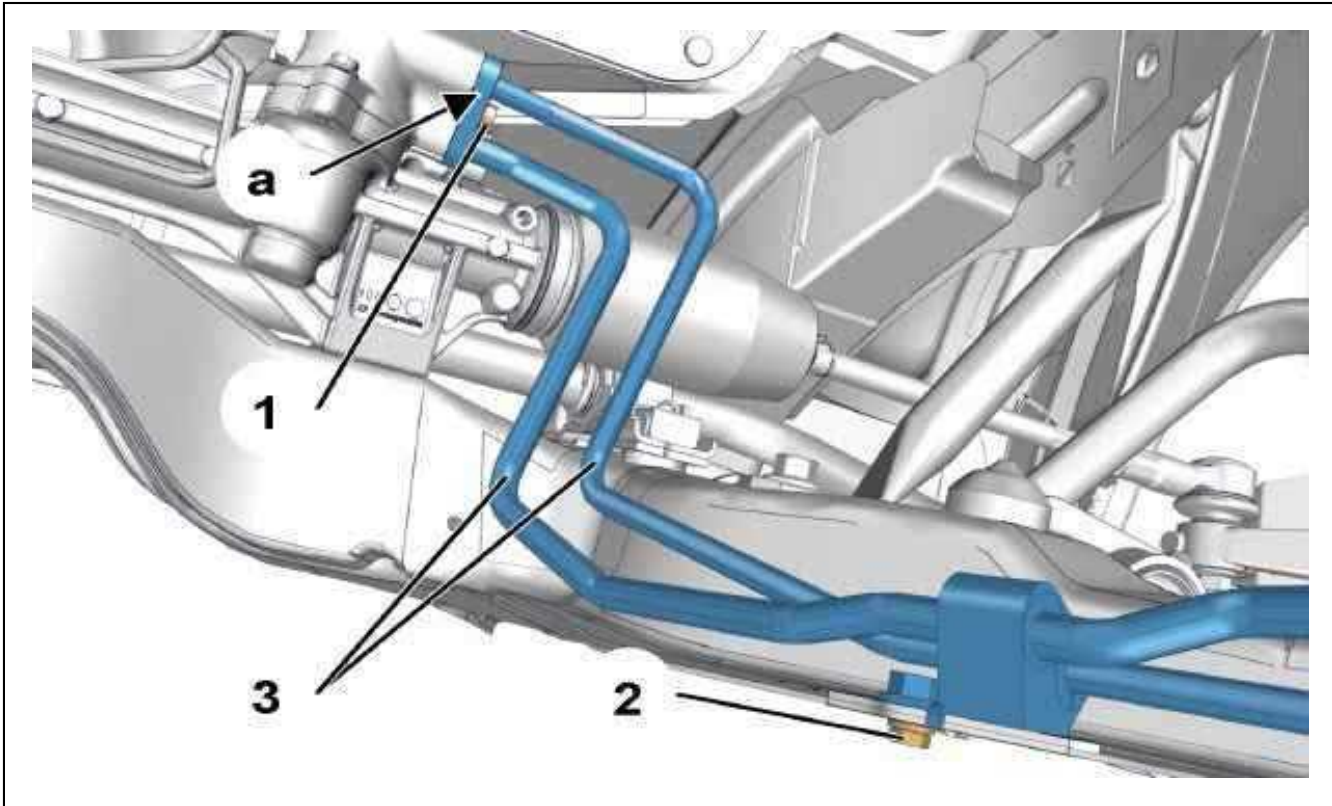


Figure : B3EP1CPD

Remove :

- The (2) bolt
- The (1) bolt

CAUTION : Handle delicately and use a clean tool, so as not to damage the power steering valve.

CAUTION : Take care not to twist the pipes (3).

Place a receptacle underneath the vehicle.

Uncouple the power steering valve pipes (3)(as "a") (Be prepared for the flow of power steering fluid).

Turn the steering from lock to lock in each direction.

Wait for the oil to finish draining.

2.3. power-assisted steering pump

Oil quality : TOTAL AT42 (With the exception of vehicles for very cold countries).

Use only the hydraulic fluid PENTOSIN CHF11S (vehicles for extremely cold countries).

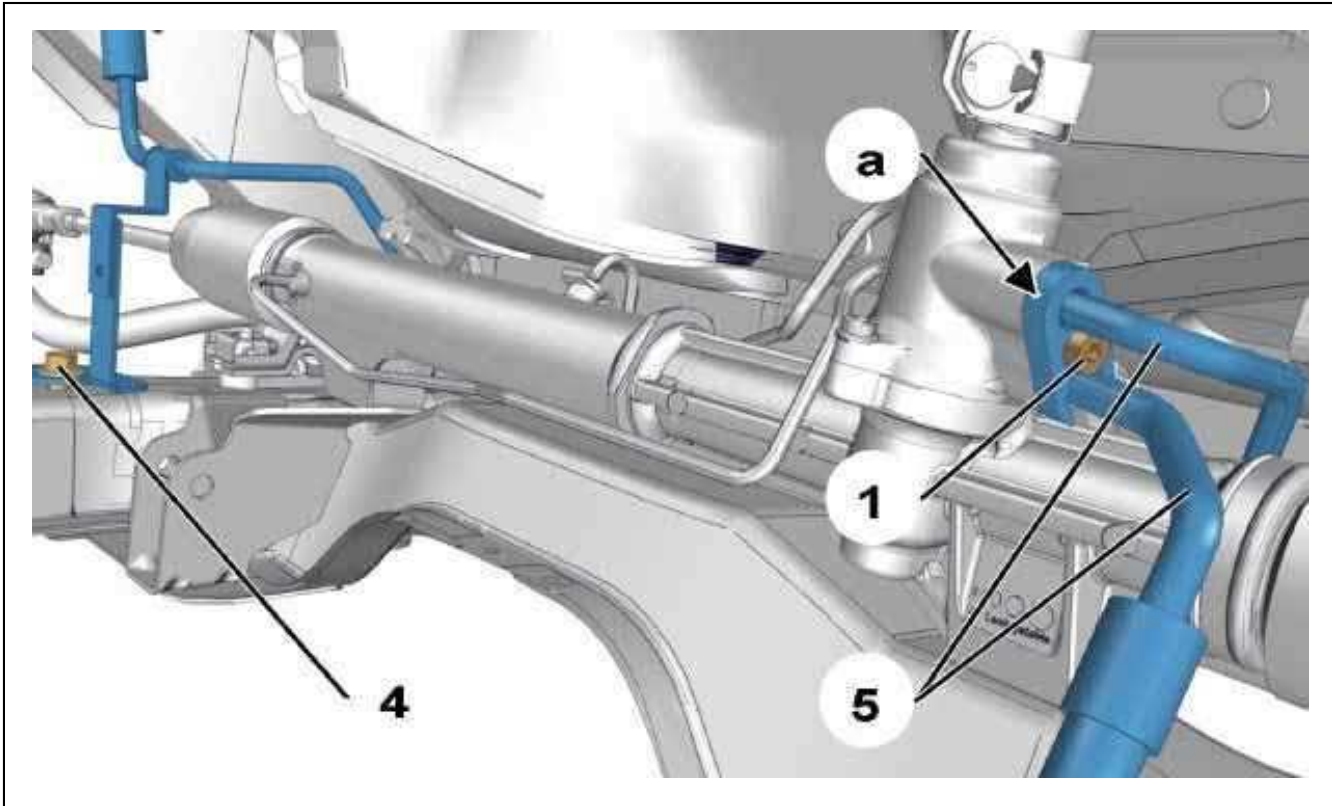


Figure : B3EP1CQD

Remove :

- The (4) bolt
- The (1) bolt

CAUTION : Handle delicately and use a clean tool, so as not to damage the power steering valve.

CAUTION : Take care not to twist the pipes (5).

Place a receptacle underneath the vehicle.

Uncouple the power steering valve pipes (5)(as "a") (Be prepared for the flow of power steering fluid).

Turn the steering from lock to lock in each direction.

Wait for the oil to finish draining.

3. Filling the hydraulic power steering circuit

3.1. power-assisted steering pump

Fit new seals on the pipes (5).

Couple the pipes (5) to the power steering valve (as "a").

Refit :

- The (1) bolt ; Tighten to $1,9 \pm 0,2$ daN.m
- The (4) bolt

3.2. Power steering electropump assembly

Fit new seals on the pipes (3).

Couple the pipes (3) to the power steering valve (as "a").

Refit :

- The (1) bolt ; Tighten to $1,9 \pm 0,2$ daN.m

- The (2) bolt

3.3. Common operations

Refit :

- The protective panel under the engine ⓘ
- The front left-hand wheel
- The front left wheel bolts

Tighten the wheel bolts ⓘ .

CAUTION : Use new oil for filling and topping up the hydraulic power steering circuit.

Fill the power steering reservoir to the maximum mark.

4. Bleeding the hydraulic power steering circuit

Turn the steering slowly, from lock to lock, in both directions, approximately ten times (engine off), wheels placed on the ground.

Top up the oil level to the maximum mark.

Turn on the engine and let it idle for 2 to 3 minutes, without moving the steering wheel.

Work the steering slowly, going from lock to lock in both directions, about ten times.

Top up the oil level to the maximum mark.