



TECHNICAL
INFORMATION

CITROËN

CITROËN CARS CORPORATION

20 WEST END AVENUE
NEW YORK 23, NEW YORK
Judson 2-5920

960 NORTH LA BREA
LOS ANGELES 38, CALIF.
Oldfield 6-6610

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SERVICE BULLETIN # 78

ID-19; ID-19 STATION WAGON

POWER STEERING

On 1963 models some ID-19 Sedan and ID-19 Station Wagon come equipped with a power steering similar to the type used on DS-19.

This Bulletin includes

A schematic of the ID-19 Sedan hydraulic steering circuit (Fig.1)

A schematic of the ID-19 Station Wagon hydraulic steering circuit (Fig.2)

The modified parts are

1. ID-19 Sedan:

- a) High pressure pump same as Station Wagon high pressure pump.
- b) Main camshaft: same as Station Wagon main camshaft pulley.
- c) Power steering - identical to DS-19 power steering. The pressure feed to the steering branches from a 3 way union located on the pipe going from the safety valve to the rear suspension. The return to the reservoir is through a 4 way union identical to the one used on DS-19. The steering adjustments are the same as applied to the DS-19.
- d) Steering relay & Upper relay arms: identical to that used on DS-19.
- e) Pressure regulator & main accumulator: the pressure regulator is the same that the one used on DS-19 and the main accumulator is the same as the one used on the ID-19 (pressure 40 Kg/cm²).
- f) Steering wheel & Column. The steering wheel (Part 441-1A) is wrapped with white binding.

2. ID-19 Station Wagon.

- a) Power Steering. Identical to DS-19 power steering. The pressure feed to the steering branches from a 3 way union located on the pipe going from the pressure regulator to the distribution block. The return to the reservoir is through a one way union identical to that used on DS-19. The steering adjustments are the same as applied on DS-19.
- b) Steering relays & Upper relay arms. Identical to that used on DS-19.
- c) Steering wheel & Column. The steering wheel (Part # D 441-1A) is wrapped with white binding.

Fig. 1

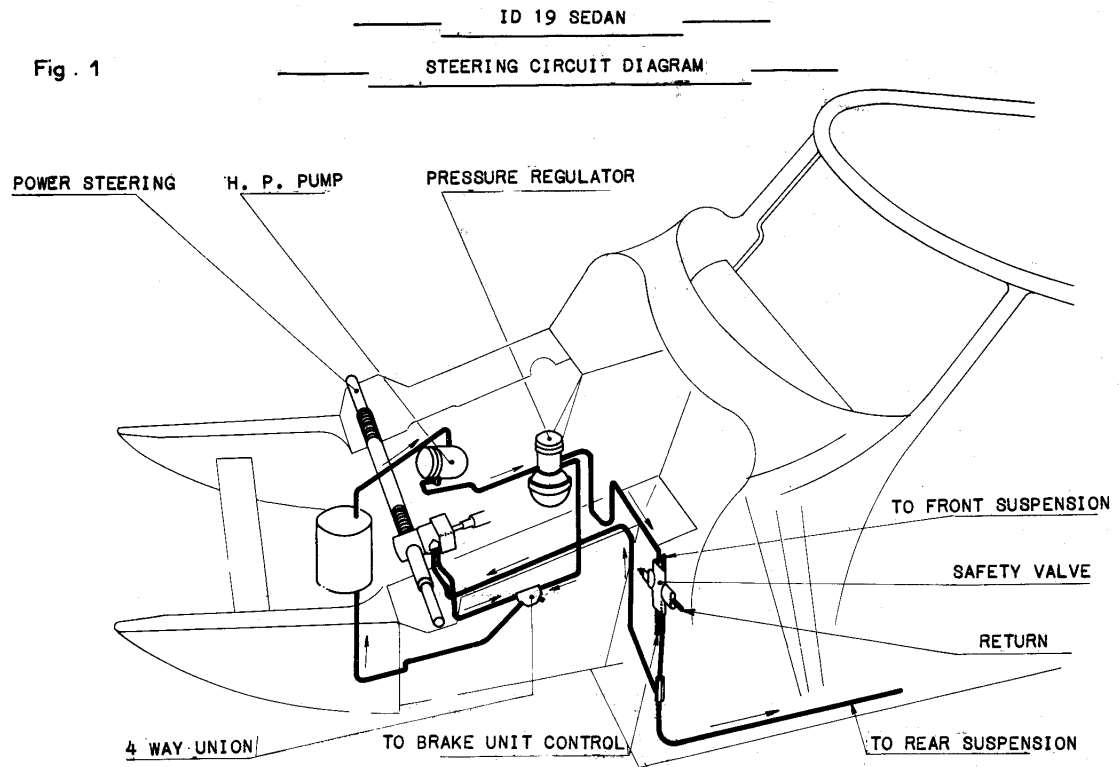
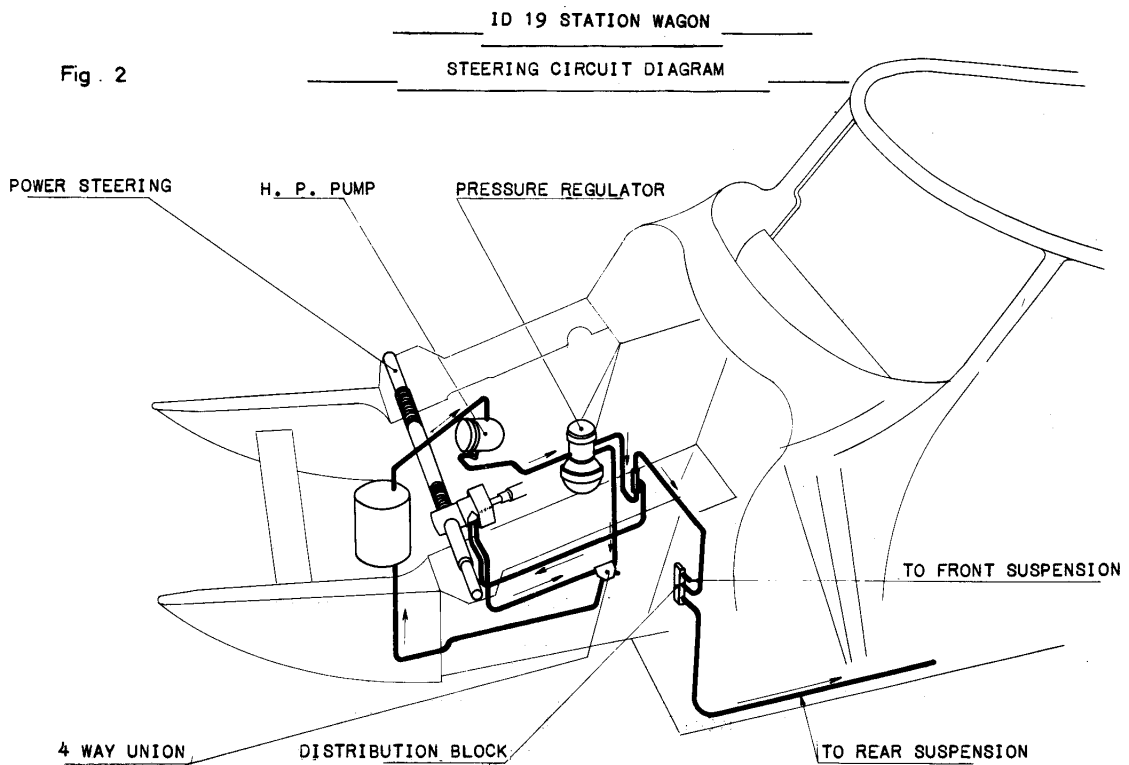


Fig. 2





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SERVICE BULLETIN #87

MODLES: DS19 AND DS19 "GRAND ROUTE" / ID19 and Station Wagon

SUBJECT: STEERING UNITS

The following changes are effective since September 1963.

- 1) On power steering unite: The two nylon washers DS444-105 are discontinued.
- 2) On both power and standard steering units:
 - The upper bearing of the steering pinion is modified.
 - The inside diameter of the outer race is increased.
 - The balls are held by a nylon retainere

PARTS.

Designations	Previous	New
Nylon ball retainer		DS 442-103
Outer race for upper bearing of the		
steering pinion	620-068	620-121

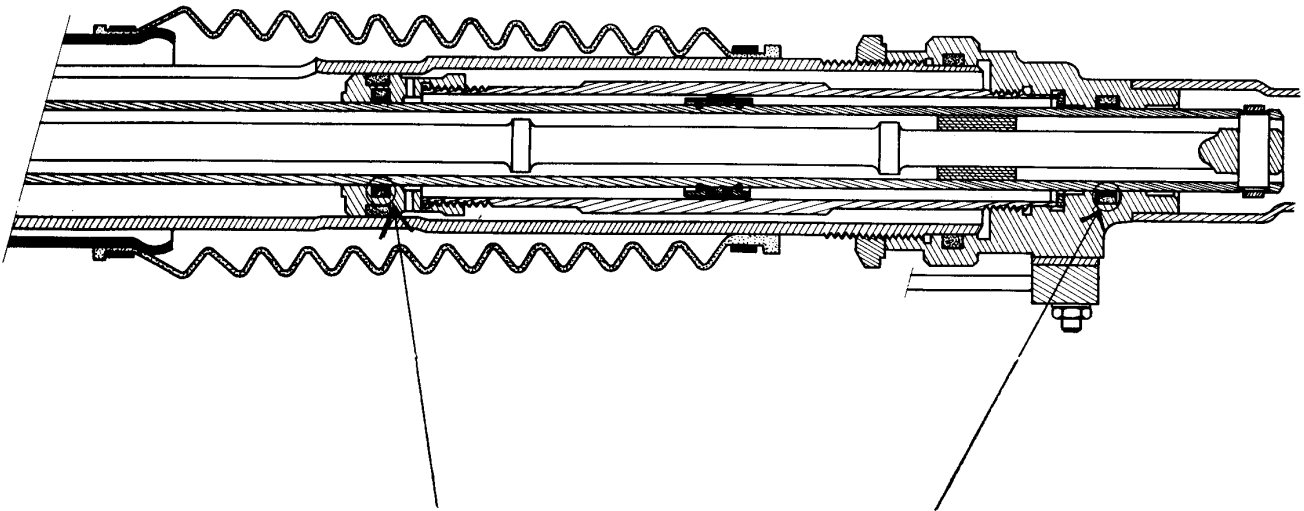
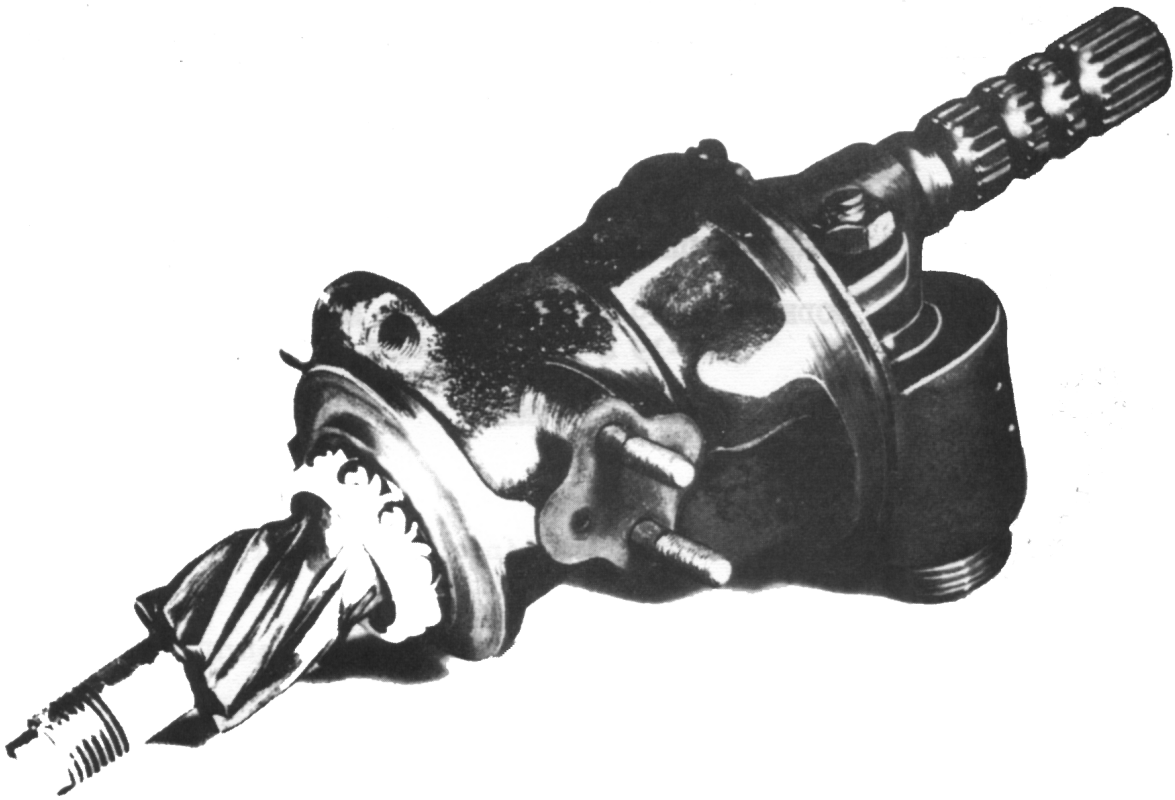
SERVICE.

1.-INSTALLATION OF THE NEW BEW BEARING. Since the nylon retainer cannot be installed complete with balls, it must be set in place alone and balls inserted thereafter. The correct position of the retainer is shown in fig. 1.

2.-OVERHAULING THE STEERING RACK CONTROL ASSEMBLY

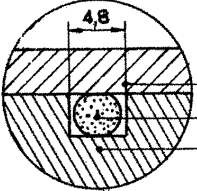
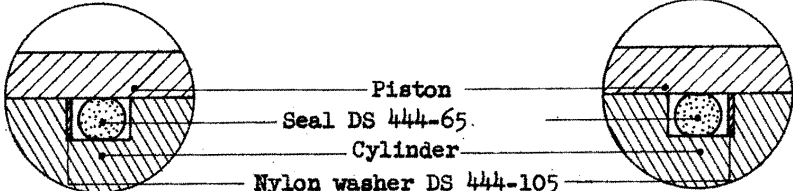
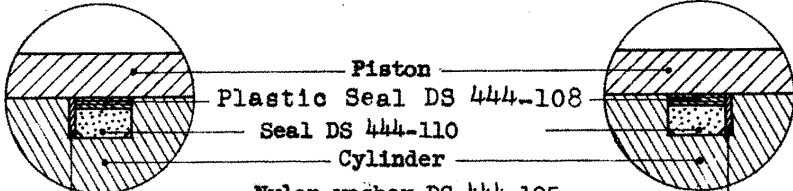
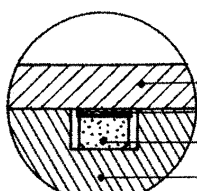
Refer to fig. 2 on the next page.

NOTE: Never install seals DS 445-65 in grooves width of 5.1mm(.200") without a nylon washer DS 444-IO5.



Circled areas shown on this diagram are copyrighted on following page.

STEERING RACK CONTROL ASSEMBLY PISTON SEALS INSTALLATION

Original installation	Recommended repairs
<p>① Until May 1958</p>  <p>Piston Seal DS 444-65 Cylinder</p> <p>both sides identical</p>	<p>It is recommended to replace the steering cylinder D 444-3A with groove width of 4.8 mm. (.189") by cylinder DS 444-3 with groove width of 5.1 mm. (.200").</p>
<p>② From May 1958 to March 1962 (groove width: 5.1 mm. or .200")</p>  <p>Piston Seal DS 444-65 Cylinder Nylon washer DS 444-105</p> <p>Left side Right side</p>	
<p>③ From March 1962 to September 1963 (groove width 5.1 mm. or .200")</p>  <p>Piston Plastic Seal DS 444-108 Seal DS 444-110 Cylinder Nylon washer DS 444-105</p> <p>Left side Right side</p>	<p>For proper installation refer to your shop manual.</p>
<p>④ From September 1963 (groove width 5.1 mm. or .200")</p>  <p>Piston Plastic Seal DS 444-108 Seal DS 444-110 Cylinder</p> <p>Both sides identical</p>	<p>Service Bulletin # 87</p>



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SERVICE BULLETIN # 91

MODELS: DS-19 ALL TYPES

ID-19 & ID-19 STATION WAGONS WITH POWER STEERING

MODIFIED CYLINDER LEAKAGE PREVENTION ON POWER STEERING.

Since January 1964 a rubber seal (See fig. 2) is installed to prevent leakage between the cylinder end housing and the cylinders. On previous assembly this seal was of flat fibbr type (see fig. 1).

SPARE PARTS.

Designations	Previous	New
Steering cylinder	DS 444-3	DS 44-3c
Rack control seal	D 444-78	DS 444-63
Rack control assembly (complete)	D 444-01b	D 444-01b

SERVICE.

The cylinder and its seal are not interchangeable with the previous ones but new and complete rack control assembly can be installed on the previous steering.

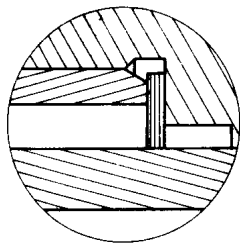
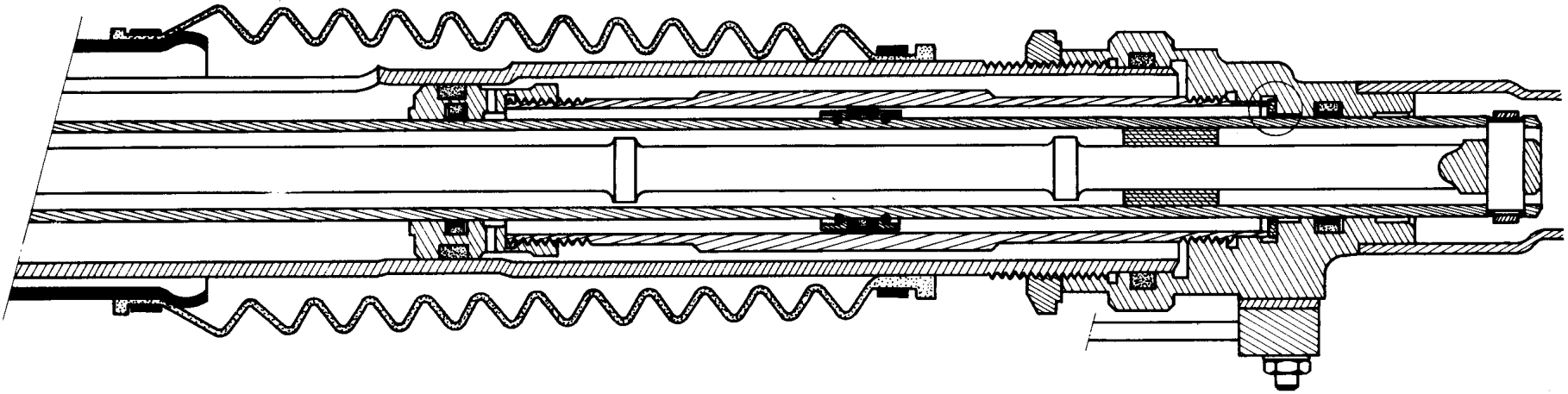


Fig. 1

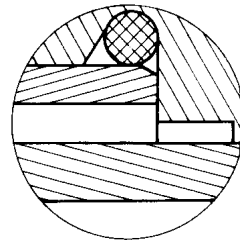


Fig. 2



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SERVICE BULLETIN # 92

MODELS : ID, DS AND STATION WAGONS : ALL TYPES

SUBJECT : STEERING

Since February 1964 a "lubricator fitting" is mounted on the lower relay arms swivel joints DS 443-06 and DM 443-06a.

MAINTENANCE:

These fittings should be lubricated every 1200 miles together with the driveshaft and swivel joints fittings.

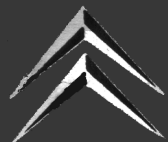
PARTS

1. For Power Steering unit

DESIGNATION	Previous	New
Lower relay arm -right	DS 443-06	DS 443-06b
-left	DS 443-06	DS 443-06a
Complete relay assy -right	DS 44303a	DS 443-03a
-left	DS 443-03	DS 443-03

2. For Standard Steering unit

DESIGNATION	Previous	New
Lower relay arm -right	DM 443-06a	DM 443-06c
-left	DM 443-06a	DM 443-06b
Complete relay assy -right	DM 443-07	DM 443-03a
-left	DM 443-03a	DM 443-03d



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SERVICE BULLETIN # 94

MODELS: DS-19, ID 19, ID 19 STATION WAGON: ALL TYPES

SUBJECT: "NYLSTOP" NUTS ON PIVOTS AND STEERING LINKAGE.

Since January 1963 the slotted nuts locked by cotter pins have been replaced by self-locking "NYLSTOP" nuts.

This modification took place in succession on:

- Joints between steering rods and pivot coupling levers.
- Steering rod spindles on steering shackle.
- Steering shackle.
- Upper and lower swivel pivots.

These "NYLSTOP" nuts have:

- A nylon insert on the upper section.
- A nylon collar on the lower section.(except on nuts for steering shackle and steering rod spindles).

SPARE PARTS:

Our Parts Department delivers on order either the previous or the new nuts.

"Nylstop" nuts are sold under the following part numbers:

- | | |
|--|--------|
| - "Nylstop" nut for steering rod spindles | 615749 |
| - "Nylstop" nut for steering shackle | 615750 |
| - "Nylstop" nut for joints between the steering rods and pivot coupling levers | 615751 |
| - "Nylstop" nut for swivel pivots | 615752 |

SERVICE:

The above nuts can be used several times provided the nylon insert is still in good condition.

When reinstalling a nut, the friction must remain sufficient not to allow the nut to be turned by hand. The purpose of the nylon collar is to create a pressure on the ball in its socket to prevent turning while the self tapping nut is being threaded on to the ball shank. However, if the nylon collar is removed the same result can be achieved by using a fork shaped spacer (for instance an open end wrench) and applying a pressure on the nut.

CAUTION: The installation of the "Nylstop" nuts on the previous shafts with cotter pin holes is expressly prohibited.

REQUIRED TORQUE:

- | | |
|---|------------------|
| - Nut for steering shackle | 25 to 31 ft/lbs. |
| - Nuts for steering rod spindles | 17 to 19 ft/lbs. |
| - Nuts for swivel pivots | 73 to 80 ft/lbs. |
| - Nuts for joints between steering rods and pivot coupling levers | 23 to 28 ft/lbs. |



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SERVICE BULLETIN #125

MODELS : 2 CV AZ / 3 CV SEDAN, STATION WAGON, TRUCKETTE

SUBJECT: STEERING - Modification of the Rack Ball Pins

The steering rack ball pins, part #A 442-8A, are replaced by ball pins, part #AM 442-8. The cotter pin hole is eliminated.

The castellated nuts, part #2614S (10x150) are replaced by "Simmons" nuts having a nylon lock section, part #615 900.

SERVICE:

Mounting the "SIMMONS" nuts on the old ball pins having a cotter pin hole is EXPRESSLY PROHIBITED.

These nuts can be used several times provided the inner nylon ring is in good condition and the nut is still hard to turn (it should not be able to be screwed on by hand).

While tightening the nut on the ball pin, before the nylon section comes in contact with the threads, use a fork-shaped wedge of suitable thickness to hold the pin and prevent it from turning. Tightening torque: 3 to 4 mkg (21-28 ft/lbs.)



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SERVICE BULLETIN # E-I31

MODELS : DS - ID and STATION WAGONS - ALL MODELS

SUJECT : STEERING - Modification of the Relay Housings

The steering relay housings are modified:

- the mounting of the housing on the chassis has not been changed.
- the space occupied by the new body is of greater importance than that of the old type.

SERVICE

It is possible to mount a new housing in place of the old type.

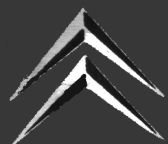
When mounting it is necessary to check to determine if the positioning of the new housing body is not troubled by the welded edge of the sheet metal forming the chassis rail. If necessary, with the aid of a mallet, moderately reshape the sheet metal interfering with the body.

Important

Do not cut the flangings with a file or a saw.

PARTS

The new steering relay housing number is: DX 143-05



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SERVICE BULLETN #E-202

MODELS: DS 21(DX-DJ) / DS 19a(DY-DL) / SW 21(DJF) / SW 19a(DLF) / ID 19b(Dv)

SUBJECT: STEERING - Steering Piston

The hydraulic control of the steering unit on the above mentioned models is modified.

- 1)The diameter of the rod of the control piston is decreased: (old rod 21 mm. dia. - new rod = 19 mm. dia.).
- 2)The length of the rack control rod is increased: (old rod: L = 460 mm. - new rod: L = 464 mm.).
- 3)The alignment of the piston rod is assured by two bronze sleeves.

Name	Old Part Number	New Part Number
Rack control complete with cylinder housing end and piston (SAE 70R3 brake fluid)	D 444-01b (red marking)	DX 444-01 (red marking)
Rack control complete with cylinder housing end and piston (LHM fluid)	DXN 444-01 (green marking)	DXN 444-01a (green marking)
Rack control Rod	D 444-6	D 444-6
Coupling pin spring clip	D 444-81	DX 444-81
Coupling pin	D 444-97a	DX 444-97
Rubber anti-rattle sleeve (SAE 70R3 brake fluid)	D 444-100 (red)	DX 444-100 (red)
Rubber anti-rattle sleeve (LHM fluid)	DXN 444-100 (green)	DXN 444-100a (green)
Complete steering unit (SAE 70R3 brake fluid)	DS 442-05b (red)	DX 444-05 (red)
Complete steering unit (LHM fluid)	DXN 442-05 (green)	DXN 444-05a (green)

SERVICE-

The parts department will supply only the new type as a rebuilt unit.

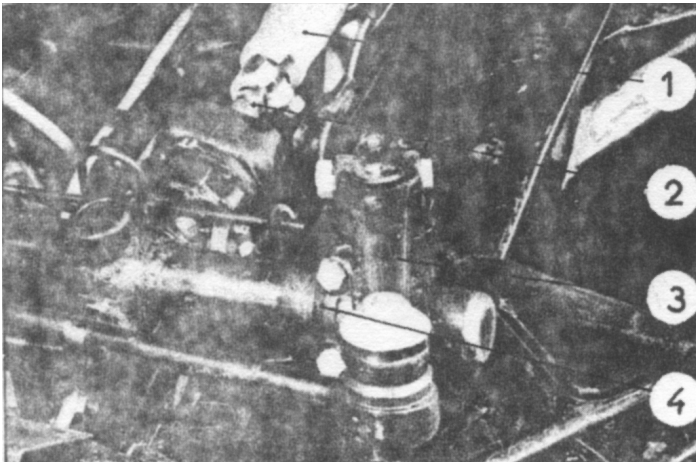
It is possible to replace an old type steering unit by a new type without any other modification.

It is possible to replace an old type steering piston by a new type on condition that the following parts are also replaced

No. required	Name	Part Number
1	Rack control rod	DX 444-6
1	Coupling pin spring clip	DX 444-81
1	Coupling pin	DX 444-97

The operation for exchanging the rack control is herein attached.

REPLACEMENT OF A HYDRAULIC RACK CONTROL WITH A 21mm DIAMETER PISTON WITH A HYDRAULIC RACK CONTROL WITH A 19mm DIAMETER PISTON (WITH REMOVAL OF STEERING UNIT FROM CAR)



Removal

Disconnect the negative cable from the battery.

Remove the fenders.

Release the pressure by loosening 1/3 turn the bleed screw of the pressure regulator.

Uncouple:

- the steering mast (1) from the rotating union control pinion (2).

Loosen the screw of the spring adjustment collar of the steering mast support (key wrench # 1994-T).

Disengage the steering mast (1).

- the steering relay arms (3),
- the fluid feed flange of the rotating union.

Remove the flange gaskets and place a seal plate on the flange of the feed tubes to prevent drainage of the reservoir.

Remove the caps (4) of the relay housings.

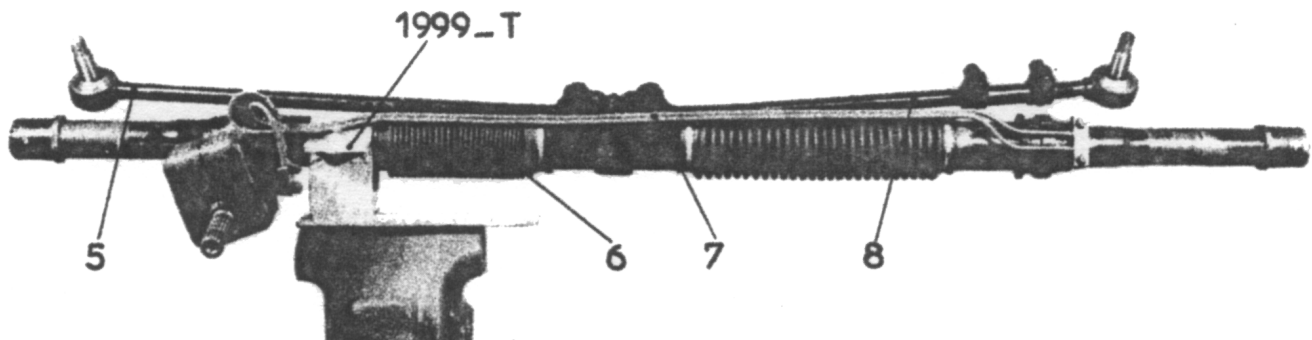
Remove the steering unit from the left side of the car:

to do this,

- turn the left front wheel toward the outside,
- loosen the screw of the radiator tie strap on the radiator to facilitate removal of the steering unit.

Hold the steering unit in a vise using the support 1999-T.

Remove the left clamp of the left dust cover (6) and disengage the boot in order to attach the steering unit support.

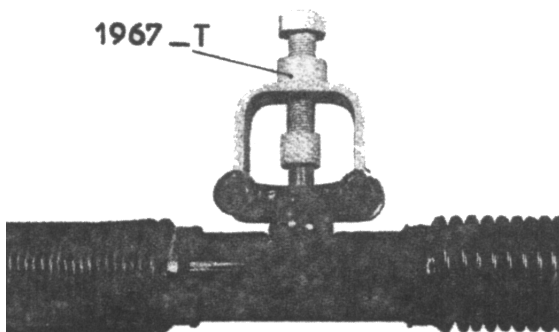


Remove:

- the tubing (7) between the rotating union and the hydraulic rack control,
- the plate gaskets,
- the steering rods (5) and (8).

Drain the steering unit by turning the rack control pinion end to end from right to left.

Loosen the lock nut blocking the end section of the steering unit housing.

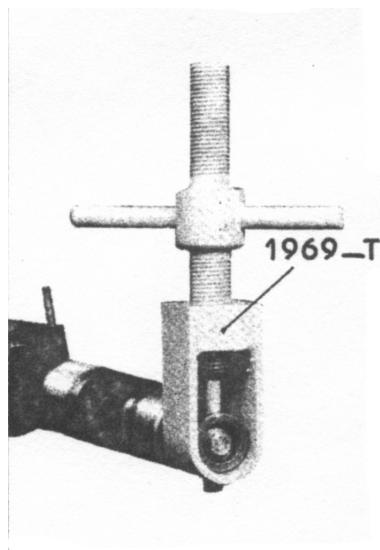


Remove the rack travel adjustment caps.

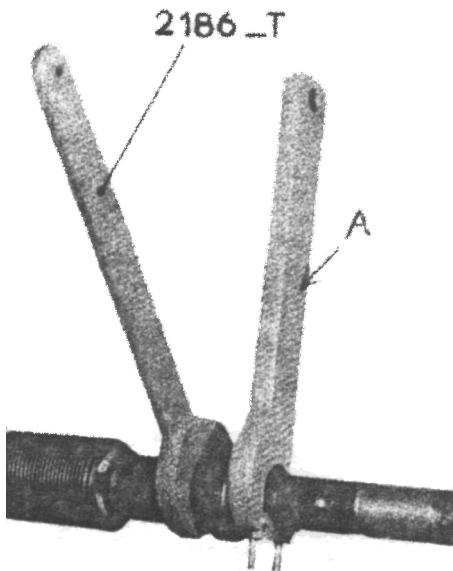
Remove the nut locking the steering rod bracket on the ball joint.

Remove the retaining spring. Uncouple the steering rod bracket from its ball joint by using the extractor 1967-T.

Remove the rubber seal washer. Uncouple the cylinder-piston assembly from the rack control rod,



- turn the steering rack all the way to the right
- remove the coupling pin spring clip
- remove the coupling pin of the rack control piston with the help of the extractor 1969-T.



Unlock the counter-nut of the housing end piece using the wrench 2186-T and a flat wrench (A), or a pipe wrench, the jaws of which will be held away from the sealing surface of the feed tubes to avoid any burrs which will cause a leak.

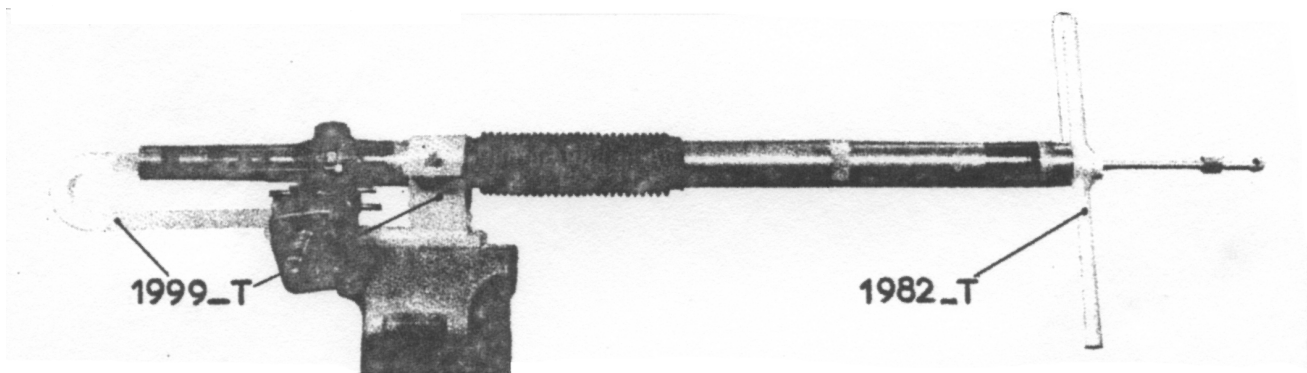
Uncouple the steering/cylinder/piston end piece assembly.

Remove the counter-nut (3). (p.8)

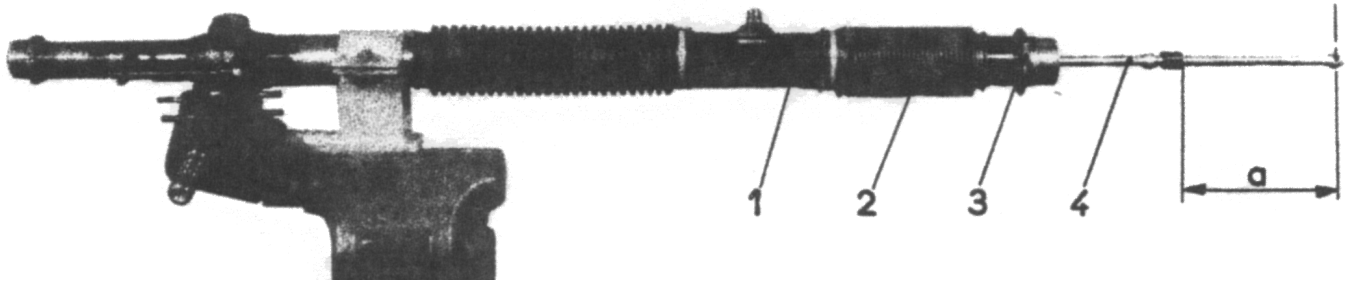
Remove the right dust boot (2), the slide covers (1), and the guide thumb of the rack.

Uncouple the rack control rod:

- Move the steering unit in the support 1999-T to bring the control pinion toward the underside,



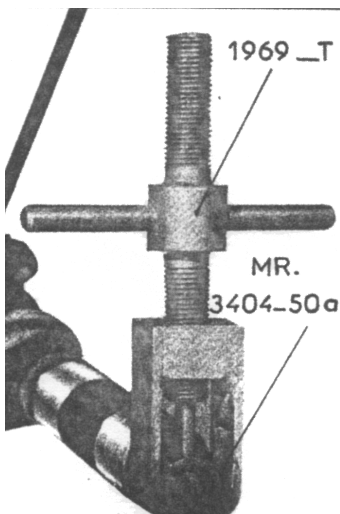
- Engage the "screw-driver" of the support assembly 1999-T in the slot of the rack,
- Adjust the position of the rack and the steering unit to permit mounting the "screw-driver" section on the support 1999-T,
- Raise the tab of the lockwasher on the center ball joint,
- Uncouple the control rod (4) by unscrewing it with the help of the wrench 1982-T.



Assembly

Screw in the new control rod (4). With the help of the wrench 1982-T, tighten it to approximately 50 ft/bs (7m.kg.).

Bend the lock-washer tab down. Remove the "screw driver" of the tool assembly 1999-T.



Engage the right dust boot (2). Start this engagement from the end having the greater diameter.

Place the previously greased guide thimble on the stem of the ball joint.

Replace the slide covers (1).

Set the dust boots in place over the ends of the slide covers. Attach the clamps.

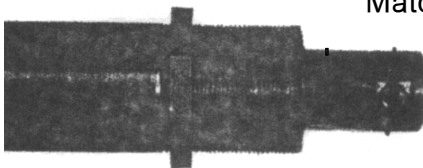
Place the rubber anti-rattle sleeve on the control rod at a distance of 140-145 mm (5 1/2" - 5 11/16") from the coupling pin.

Thread the counter-nut on the end of the steering unit housing.

Engage the cylinder-piston assembly (previously coated with the particular liquid used in the hydraulic system of the car being repaired) into the steering housing.

Screw the end piece all the way to the end of the threads, then loosen it slightly (1 turn maximum).

Match the coupling holes of the piston and the control rod with the help of a drift punch.

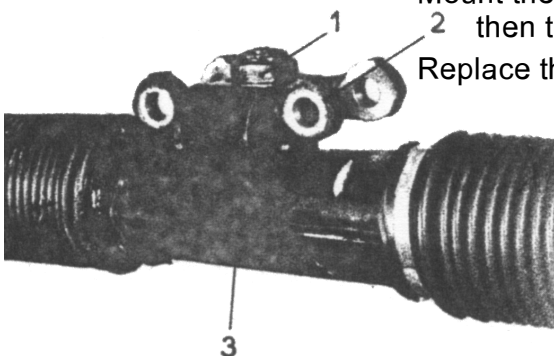


Insert the coupling pin using the extractor 1969-T provided with its shim and plate MR 3404-50a.

Turn the slot of the coupling pin by hand in order to seat the locking spring clip. The plate MR 3404-50a prevents turning of the coupling pin while driving it in place. The coupling pin must be replaced if it is too free in its hole.

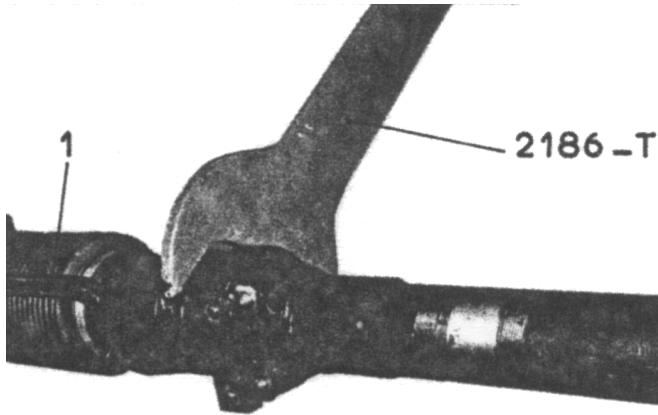
Mount the steering rod bracket (2), replace the rubber seal washer, then the bracket.

Replace the spring (3).



Tighten the nut (1) to 35 m.kg (253 ft/lbs.).

During this operation see that the spring does not rest against the bent lip of the slide covers. Place a shim between the spring and the slide covers to facilitate the glide of the spring and to assure that the bracket seats parallel to the steering unit. After tightening the nut remove the alignment shim from the spring.



Mount the rack control tubing,

- unscrew or screw the end assembly of the steering cylinder just to the point where the flange of the tubing aligns with its seat without forcing.
- lock the counter-nut of the end assembly housing to 10m kg (72 ft/lbs). Use the wrench 2186-T and a flat wrench, or a pipe wrench the jaws of which are to be held away from the sealing surface of the feed tubes to avoid any burrs which will cause a leak.

- attach the feed tubes (1) of the rack control to the rotating union at the end of the housing.
Insert the seal plates equipped with new seals. Tighten the nuts (use star washers under the nuts)

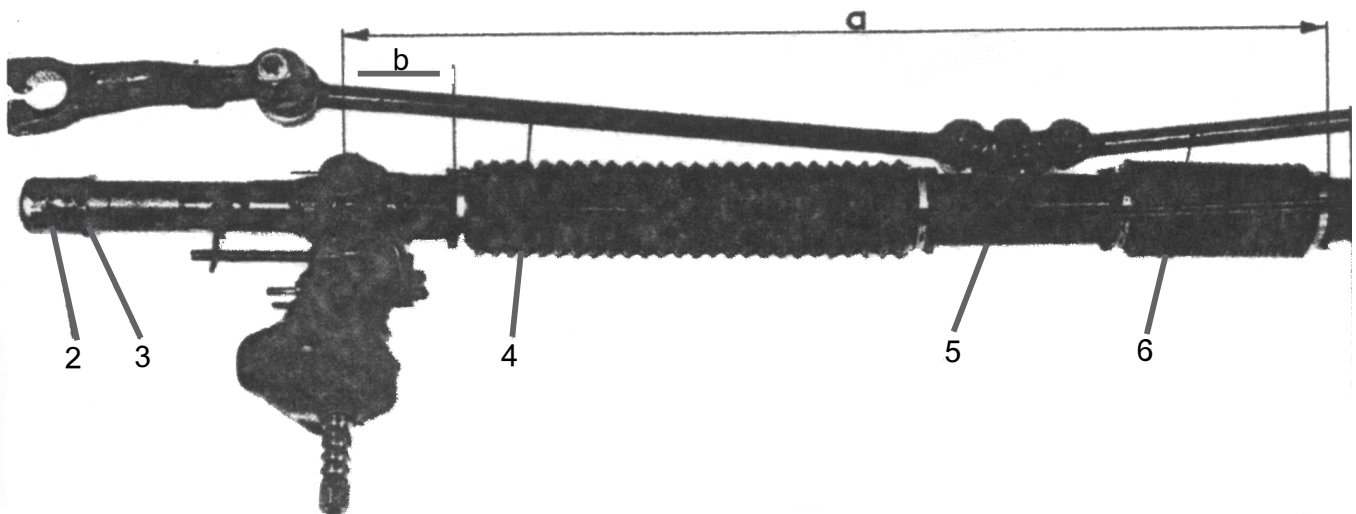
Mount the counter-nuts (3) and the steering radius adjustment caps (2).

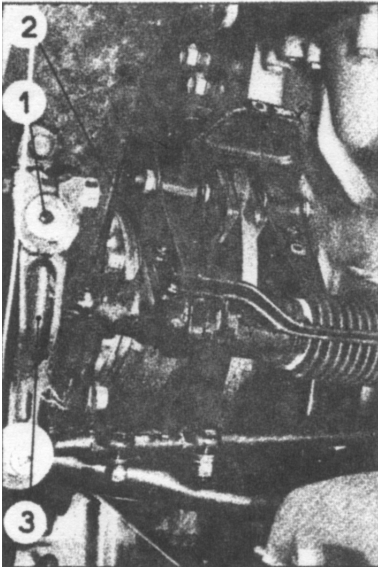
Mount the steering rods (4 and 6) on the steering rod bracket (5) (head of the bolt toward the top).

Tighten the nuts to 2.5 m.kg (18 ft/lbs).

Remove the steering unit from the support 1999-T.

Set the left dust boot to a distance "b" of 56 +/- 2.5 mm. (2.1" - 2.3") and the right dust boot to a distance "a" of 574 +/- 2.5mm (22 1/2" - 22 11/16"). Mount the steering unit on the car. (See Operation DX 442-1)





REPLACEMENT OF A HYDRAULIC RACK CONTROL WITH A 19 mm. DIAMETER PISTON WITH ANOTHER HYDRAULIC RACK CONTROL WITH A 19 mm DIAMETER PISTON (without removal of the steering unit from the car).

Removal.

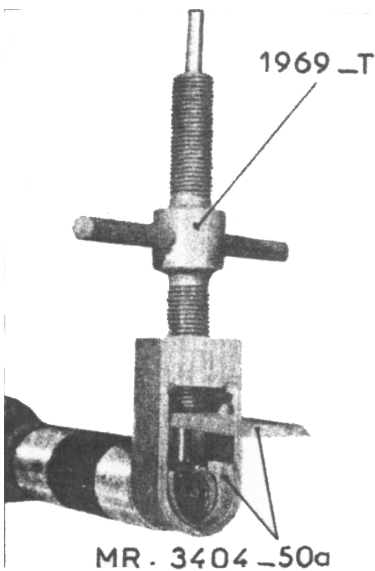
Disconnect the battery terminals.

Remove:

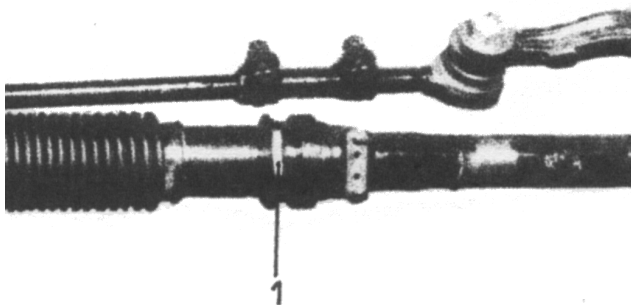
- the right front fender,
- the battery case with the battery and place it near the right front wheel, on a support, without disconnecting the terminals of the regulator. Exhaust the pressure by loosening 1/3 turn the bleed screw of the pressure-regulator.
- Drain the steering circuit by turning the steering wheel all the way to the stop at the right and at the left.

lay a wiping cloth under the flange (2).

- Uncouple the flange (2) of the tubing of the steering end housing and remove the seal plate.
- Uncouple the arm (3) of the right steering relay spindle (1).
- Loosen the counter-nut of the right side steering radius adjustment cap and remove the cap.
- Turn the steering unit completely to the right.
- Remove the right bearing cap and loosen the left bearing cap.
- Remove the coupling pin spring clip.



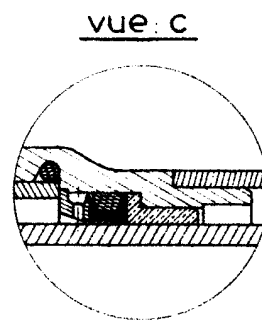
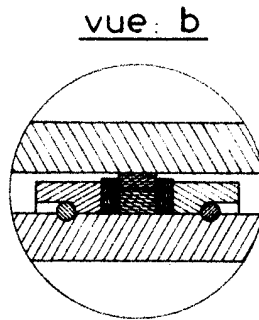
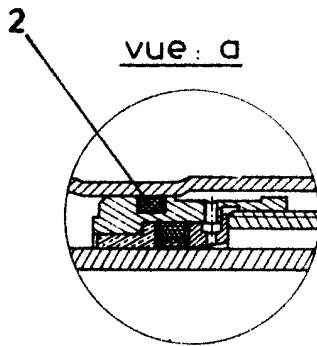
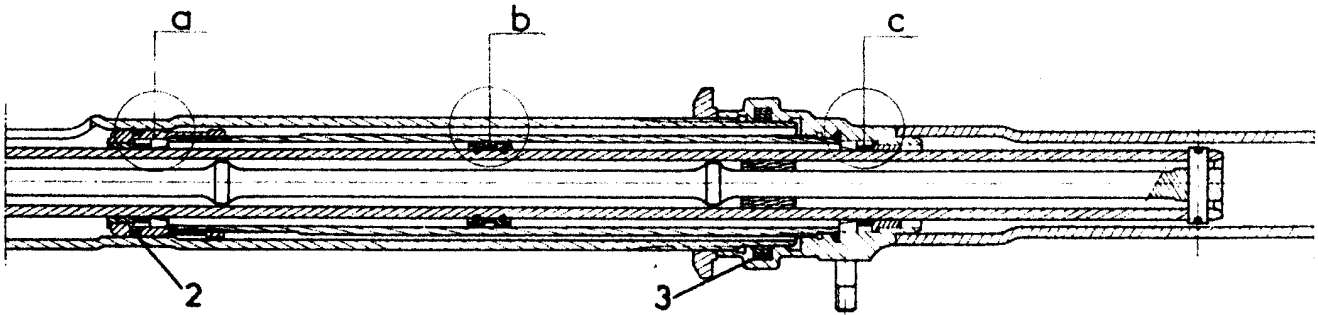
Disengage the coupling pin from the rack control piston with the help of the extractor 1969-T and the shims MR 3404-50a.



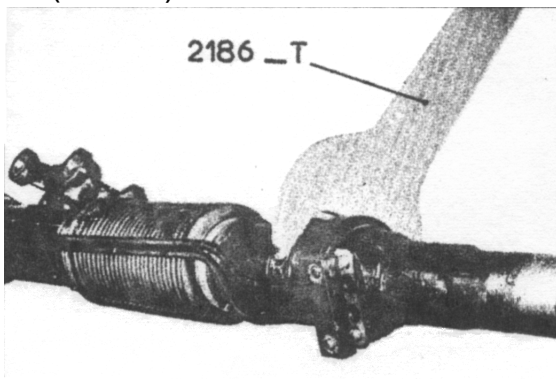
Unlock the counter-nut (1) of the end piece of the steering housing.

Unscrew the end piece assembly of the steering cylinder-piston, then, within the limits permitted, move the steering unit toward the front of the car. Disengage the end piece by drawing it from the steering unit.

Assembly.



Engage the cylinder-piston assembly (previously coated with the particular liquid used in the hydraulic system of the car being repaired) into the steering housing. Be sure to install the seals (2 and 3).



This operation is facilitated by moving the steering unit toward the front of the car within the limits permitted.

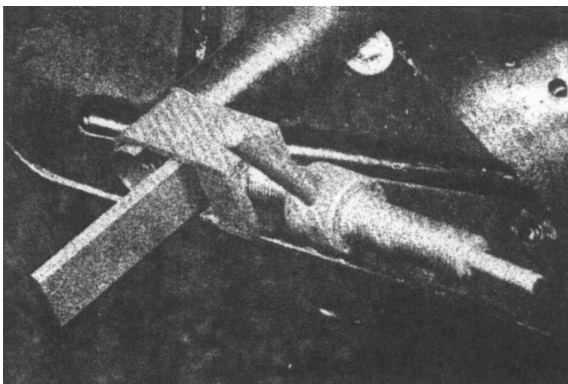
Screw the end piece assembly of the steering piston-cylinder just to the point where the flange of the tubing aligns with its seat without forcing. Hold the end of the steering housing and tighten the counter-nut to 10 m.kg (72 ft/lbs). Use the wrench 2186-T.

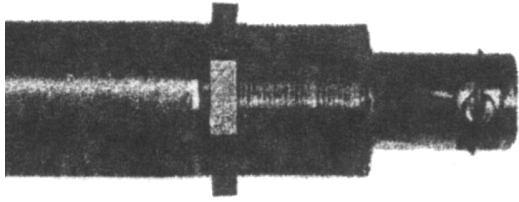
Turn the steering to the right so that the hole of the rack control rod meets the upper hole of the piston.

Align the holes of the piston and the rod with the help of a drift punch.

Insert the coupling pin with the help of the extractor 1969-T provided with its shim and plate MR 3404-50a.

Turn the slot of the coupling pin by hand in order to seat the spring clip. The plate MR 3404-50a prevents the pin from turning while it is being pressed in place.



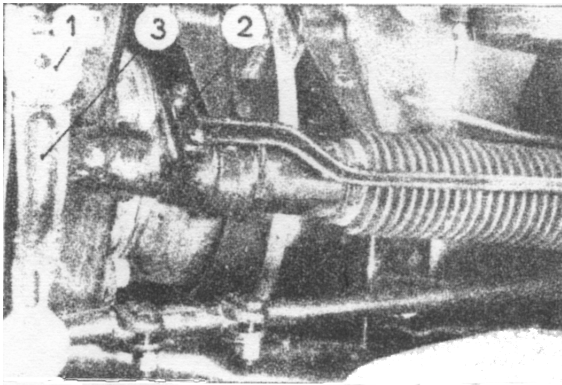


The coupling pin is to be replaced if it is too free in its holes.

Attach the right bearing cap (lock washers under the head of the screws).

Adjust the angular position of the steering unit (see Operation DX 442-1, paragraph 10).

Tighten the right and left bearing caps.



Attach the arm (3) to the steering relay spindle (1).

Attach the flange (2) of the tubing.

Insert the seal plates. Tighten the nuts (use lock washers).

Mount the battery case and the battery.

Connect the battery cables. Start the motor.

Bring the circuits under pressure, check the sealing of the connections.

Adjust the steering radius (see Operation DX 440-0, paragraphs 17 to 19).

Mount the right fender.