



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

INDEX TO SUSPENSION AND HALF AXLES

SERVICE BULLETIN No	Page No
#70 - DS 19 ID 19 CONFORT ID SW / ANTI-ROLL BAR KNUCKLES	2
#75 - DS ID ID 19 STATION WAGON / SHOCK ABSORBERS	3
#83 - ID 19 DS 19 DS GRAND ROUTE & STATION WAGONS / SHOCK ABSORBERS	4
#104 - ALL "D" SERIES / NEW MICHELIN 165x400 AX2 TIRES	6
#106 - "D" ALL TYPES (DS-DSGR-ID-SW) / SUPENSION SHOCK ABSORBERS	7
#D-166 - DS 21 (DX-DJ) DS 19a (DY-DL) SW 21 (DJF) SW 19a (DLF) ID 19b (DV) / FRONT END (Adjusting Toe-in)	9
#D-167 - DS 21 (DX-DJ) DS 19a (DY-DL) SW 21 (DJF) SW 19a (DLF) ID 19b (DV) / SUSPENSION (Rear Suspension Arms)	10
#D-189 - DS 21(DX-DJ) DS 19a (DY-DL) ID 19b (DV) / SUSPENSION (Front Half Axle)	11
#D-206 - DS 21 (DX-DJ) DS 19a (DY-DL) SW 21 (DJF) SW 19a (DLF) ID 19 (DE-DV 1966 and after) FRONT DRIVE TRAIN - Pivot lower ball joint	12
#D-206 - ADDENDUM TO D-206	13
#D-211 - ALL "D" MODLES / SUSPENSION (Connecting union of the LR Suspension)	14
#D-226 - SW 21(DJF) SW 19a(DLF) / REAR SUSPENSION CYLINDERS	17
#D-227 - DS 21 (DX-DJ) DS 19a (DY-DL) SW 21 (DJF) SW 19a (DLF) ID 19b (DV) / AXLES (Wheel Lugs and Spindles)	18
#D-231 - DS 21 (DX-DJ) DS 19a (DY-DL) SW 21 (DJF) SW 19a (DLF) ID 19b (DV) / SUSPENSION (Suspension Cylinders)	20
#DK240 - "AK" MODLES / SUSPENSION (Suspension Units)	24



TECHNICAL
INFORMATION

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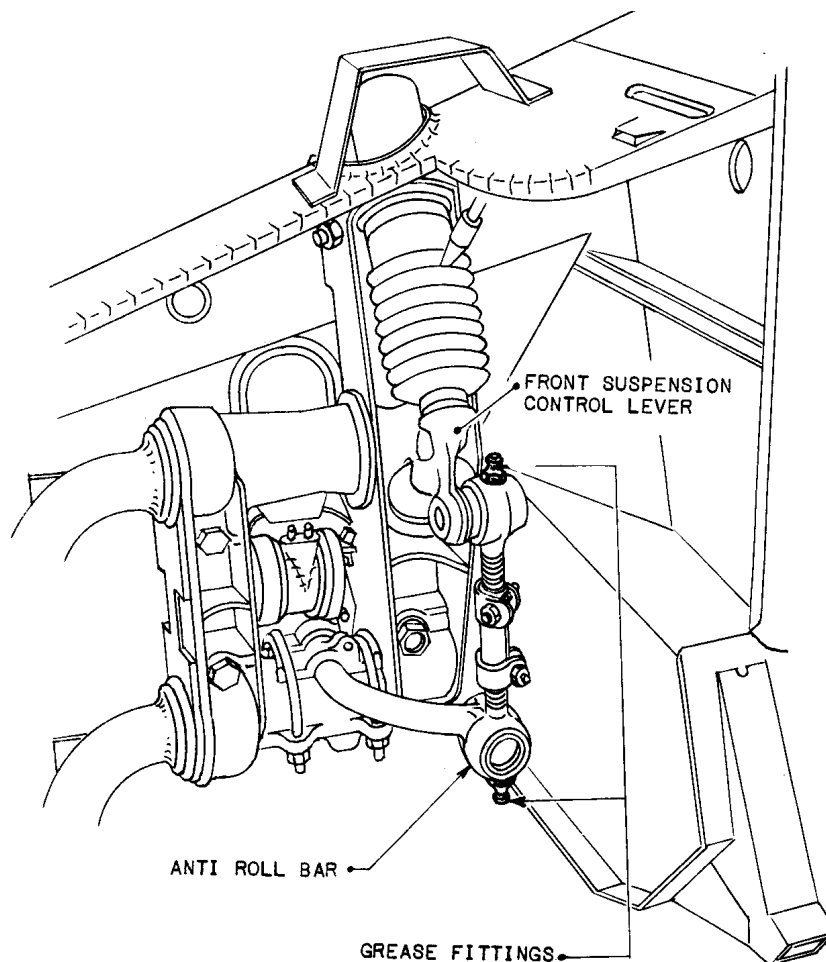
SERVICE BULLETIN# 70

DS 19 - ID 19 CONFORT - ID 19 STATION WAGON

ANTI-ROLL BAR KNUCKLES

The anti-roll bar knuckles as well as the front suspension control levers are now equipped with grease fittings.

In order to reach these grease fittings it is necessary to remove the front fenders and both upper and lower protection shields (Parts 1# D 434-5; D 434-5A; D 434-106; D 434-107). The greasing of these knuckles must be performed at the 300 mile inspection and thereafter everytime that shields are to be removed. Chassis grease is to be used.





**TECHNICAL
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**SERVICE BULLETIN #75
DS - ID - ID 19 STATION WAGON
SHOCK ABSORBERS**

Since January 1962, the reference marks on the shock absorbers are as follows:

1) Front shock absorber ID - DS & ID 19 Station Wagon:

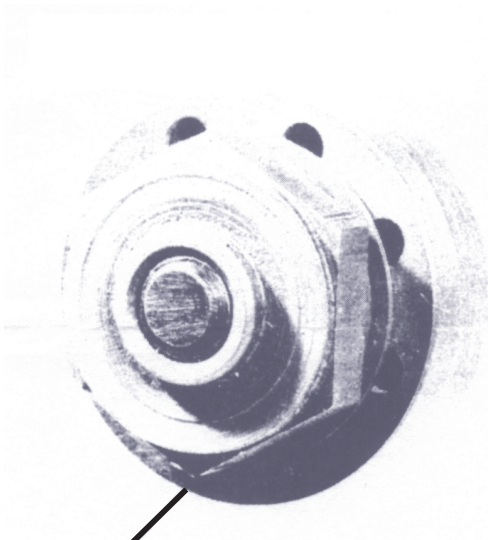
Part No. D 436-06a No marking

2) Rear shock absorber ID & DS:

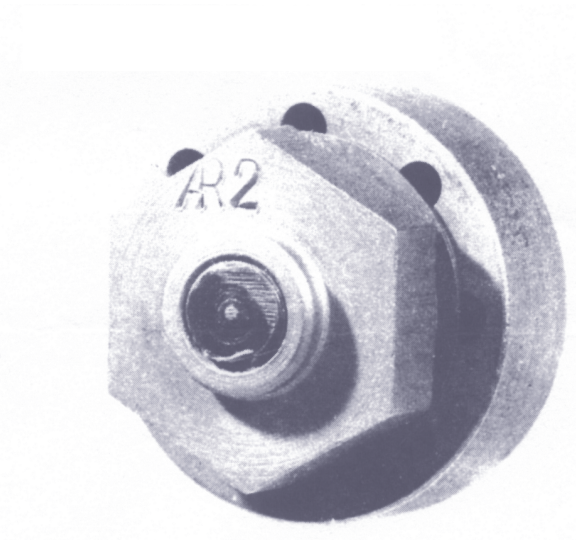
Part No: DS 436-06c

3) Rear shock absorber ID 19 Station Wagon:

Part No: DF 436-06



Shoulder on nut facing cylinder



Mark "AR 2" stamped on nut facing cylinder



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INFORMATION**

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SERVICE BULLETIN # 83

Models: DS-19 & DS GRAND ROUTE / ID-19 & STATION WAGON

Subject: SHOCK ABSORBERS

On the cars now leaving our plant, modified shock absorbers are installed. The new shock absorbers have a hole of 0.079" or 2mm on the central body piece parallel to the axis. The flow control shims are of the same thickness as the previous ones except that they are slightly dome shaped. The shims are to be mounted as shown on diagram.

Shims of 0.013" (0.03 mm) are no longer used.

The nuts differ only by their outer bevel.

PARTS: The reference numbers of the new parts are as follows:

FRONT: DS 436-06E for Sedans & Station Wagons

REAR: DS 436-06F for Sedans

REAR: DF 436-06A for Station Wagons.

SERVICE:

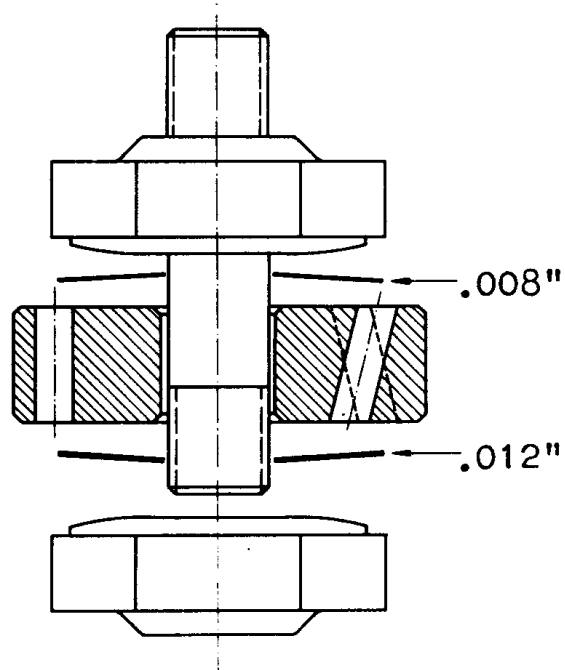
It is possible to install new shock absorbers instead of the old ones. When installing a new type shock absorber, always change the shock on opposite side, i.e. exemple: if a new type shock is installed on left front, install a new type shock on right front. Same applies to rear.

NOTE: It is preferable to replace all 4 units at the same time.

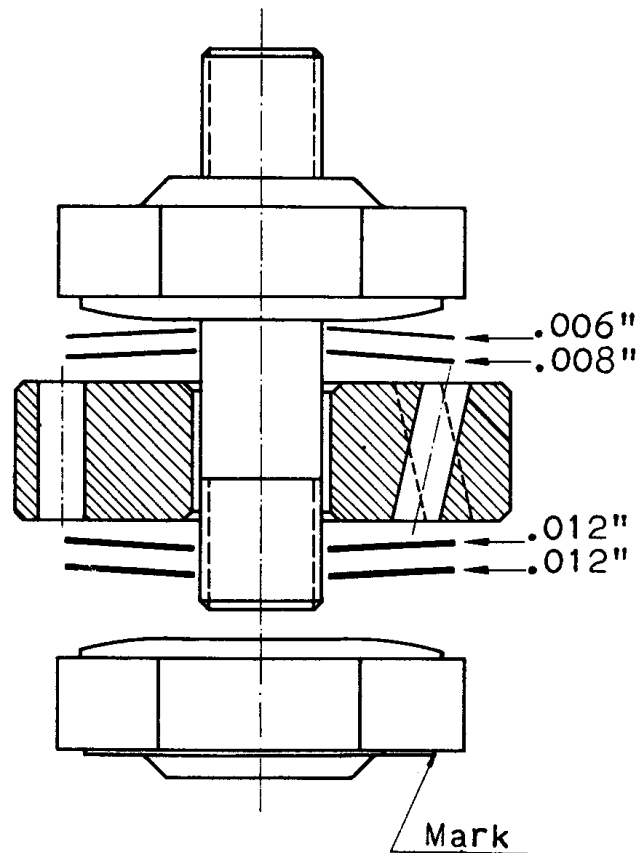
The tightening torque of the nuts is 14.5 ft/lbs or 2 m/Kgs The tightening torque of the shock absorber assembly on the suspension sphere is 11.5 ft/lbs or 1.6 m/Kgs. It is imperative to respect these torques. The use of a torque wrench is absolutely required.

SHOCK ABSORBERS

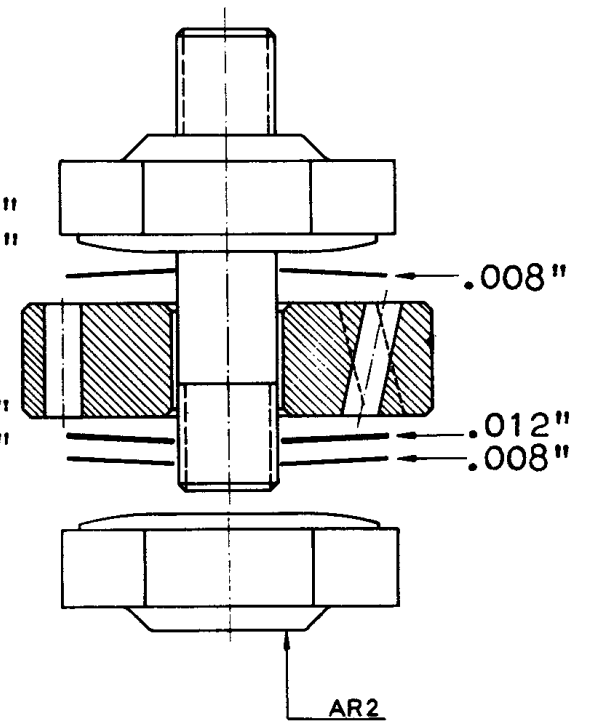
FRONT SEDANS
& STATION WAGON
DS 436-06e



REAR SEDANS
DS 436-06f



REAR STATION WAGON
DF 436-06a





TECHNICAL
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SERVICE BULLETIN #104

MODELS: ALL "D "

SUBJECT: NEW TIRES MICHELIN 165 X 400 (XA2)

Currently, cars are coming equipped with either Michelin 165 x 400 X tires or Michelin 165 x 400 XA2 tires. Ultimately, all new cars will be equipped with Michelin 165 x 400 XA2 tires as standard equipment.

On cars equipped with XA2 tires, the following parts are modified:

- Front axle support
- Side panels and bottom panels protection for the front suspension mechanism
- Front height corrector tube to and from suspension cylinders
- Bar supporting the spare wheel
- Hood

SERVICE

All the above parts can be used on cars manufactured previously without modification. Michelin X tires and XA2 are not interchangeable, neither can they be mixed on the same car.

The tire pressures for Michelin XA2 are:

	Sedan	Station Wagon
Front	26	26
Rear	22	27
Spare	29	30

IMPORTANT:

THE SIDE WALLS OF THE AX2 ARE MARKED "COTE EXTERIEUR VOITURE" (OUTER SIDE OF CAR) AND "COTE INERIEUR VOITURE" (INNER SIDE OF CAR). THESE RECOMMENDATIONS MUST BE FOLLOWED EXACTLY.



TECHNICAL
INFORMATION

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SERVICE BULLETIN #106

MODLES: "D" All types (DS - DS GR- ID - SW)

SUBJECT: SUSPENSION - Shock Absorbers

Our Parts Department has now available shock absorber shim kits for normal (original equipment) or heavy duty.

PARTS

Description	Parts No.	
	orig equipment	heavy duty
Sedan, SW front shims kit	D 436-07c	DS 436-07e
Sedan rear	DS 436-07d	DS 436-07f
Station Wagon rear	DS 436-07a	

SERVICE

These shims may be used on the same shock absorber body provided the plate, stud and nuts are in good condition. The kits are adaptable only to the shock absorbers announced in service bulletin # 83.

The assembly sequence is shown on the attached sketches. The method of assembly is explained in bulletin #83, and repeated below.

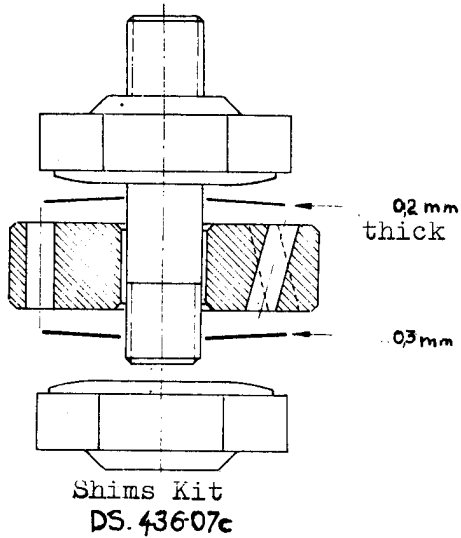
- The shims are bent across a diameter. The concave side **MUST** face the plate. It is not necessary to have the shim center line in the same direction.
- The tightening torque of the cap nuts is 15 ft.lbs.
- Assemble the complete shock absorber to the sphere with 12 ft/lbs of torque.

NOTE:

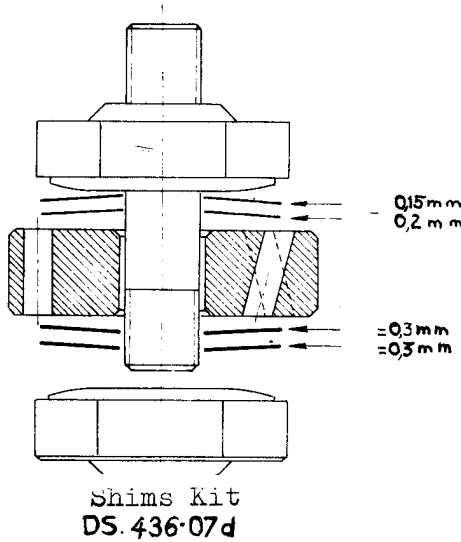
BOTH FRONT SHOCK ABSORBERS MUST BE ABSOLUTELY IDENTICAL. THE SAME APPLIES TO THE REAR. HOWEVER, THE FRONT ASSEMBLY IS NOT THE SAME AS THE REAR.

NORMAL SHOCK ABSORBERS

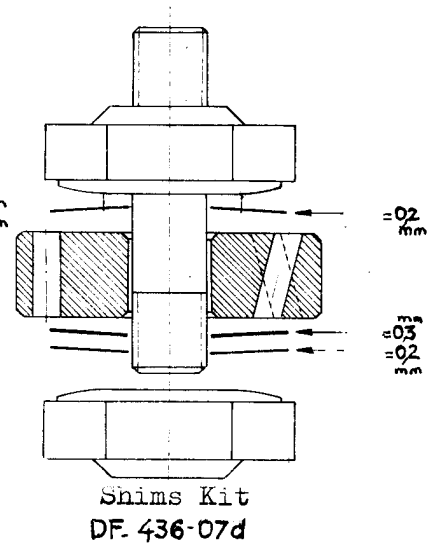
Front (Sedan & SW)
DS. 436-06e



Rear (Sedan)
DS. 436-06f

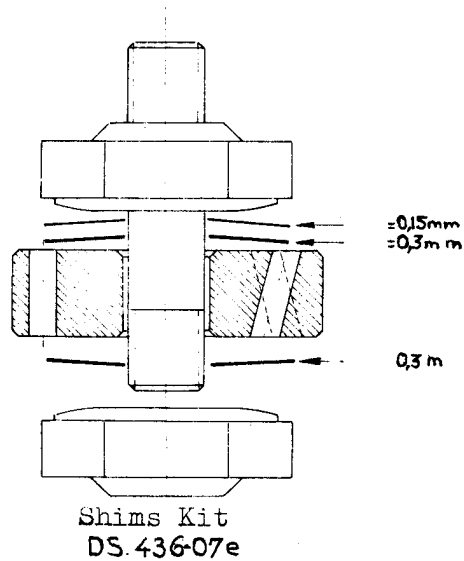


Rear (SW)
DF. 436-06a

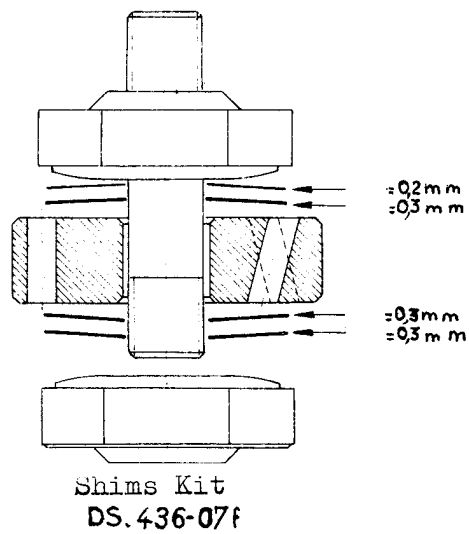


HEAVY DUTY

Front (Sedan & SW)



Rear (Sedan)





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December 9, 1966

SERVICE BULLETIN #D-166

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

SUBJECT: FRONT END - Adjusting the Toe-In

The front wheel parallelism of the models mentioned above is now adjusted to obtain a toe-in of 2 to 4mm (0.079" - 0.150"). See Operation DX 410-0 of the Shop Repair Manual (N0 518 or 527).

SERVICE:

This adjustment is also applicable to 1966 model cars.



**TECHNICAL
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December 9, 1966

SERVICE BULLETIN #D-167

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

SUBJECT: SUSPENSION - Rear Suspension Arms

The rear suspension arms of the above mentioned models are modified.

The seat of the suspension cylinder rod fulcrum ball is demountable. The pin connecting the suspension cylinder rod with the arm lever, likewise maintains the ball seat in place.

SERVICE:

The new suspension arms are interchangeable, without modification with the old type. The instructions for removing and replacing a rear arm or a rear suspension cylinder are unchanged.



**TECHNICAL
INFORMATION**

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March 29, 1967

SERVICE BULLETIN #D-189

MODELS: DS 21(DX-DJ) / DS 19a(DY-DL) / ID 19b (DV)

SUBJECT: SUSPENSION - Front half axle.

The front suspension levers of the above mentioned models are modified. The seat of the ball supportin& the suspension cylinder rod is removable. The pin, connecting the suspension rod with the lever of the arm, also holds the seat of the ball in position. The protection pans of the suspension mechanism are modified.

PARTS

Part	Old number	New number
Left lever	DS 434-4d	DX 434-4
Right lever	DS 434-4e	DX 434-4a
Ball seat		DX 434-58

SERVICE:

The new suspension levers are interchangeable with the old. However, it is necessary on reassembly, to check the clearance between the lever and the protection pan (bend the pan slightly if necessary). The operation instructions, of removal and replacement of a front half axle are unchanged.



**TECHNICAL
INFORMATION**

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December 26, 1967

SERVICE BULLETIN NO D-206

**MODELS: DS 21(DX-DJ) / DS 19a(DY-DL) / SW 21(DJF) / SW 19a(DLF)
ID 19(DE-DV - 1966 and after)**

SUBJECT: FRONT DRIVE TRAIN - Pivot lower ball joint

For the models mentioned above the Parts Department supplies the lower ball joint assembly of the pivot with two ball-pin seating cups. A round spacer (adjusting shim), attached to the assembly, provides the clearance between the ball seat of the lower cup and the ball seat of the upper cup.

The adjustment spacers sold vary in thickness by 0.05 mm (.002"), that is, the spacers have a thickness of: 5.5 mm - 5.55 mm - 5.60 mm, etc..; up to 6.20 mm.

SERVICE -

The operation for changing a pivot lower ball joint (Operation DX 413-1 of the Repair Manual No 527) is therefore to be modified as follows:

Add to the end of paragraph 18:

"Choose, from the spacers sold by the Parts Department, those which are of the nearest thickness greater than the dimension found".



**TECHNICAL
INFORMATION**

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2-13-68

SERVICE BULLETIN No. D-206

MODELS: DS 21(DX-DJ) / DS 19A(DY-DL) / SW 21(DJF) / SW 19A (DLF)
ID 19(DE-DV 1966 Models and after)

SUBJECT: ADDITIVE TO SERVICE BULLETIN No. D-206

FRONT DRIVE: Lower Ball Joint of the Pivot

The dimension between the lower surface of the lower cup and the lower surface of the upper cup of the pivot lower ball joint assembly (Part No. DX 413-04a) is inscribed on a self-sticking label placed on the seat of the lower cup of the ball joint.



TECHNICAL
INFORMATION

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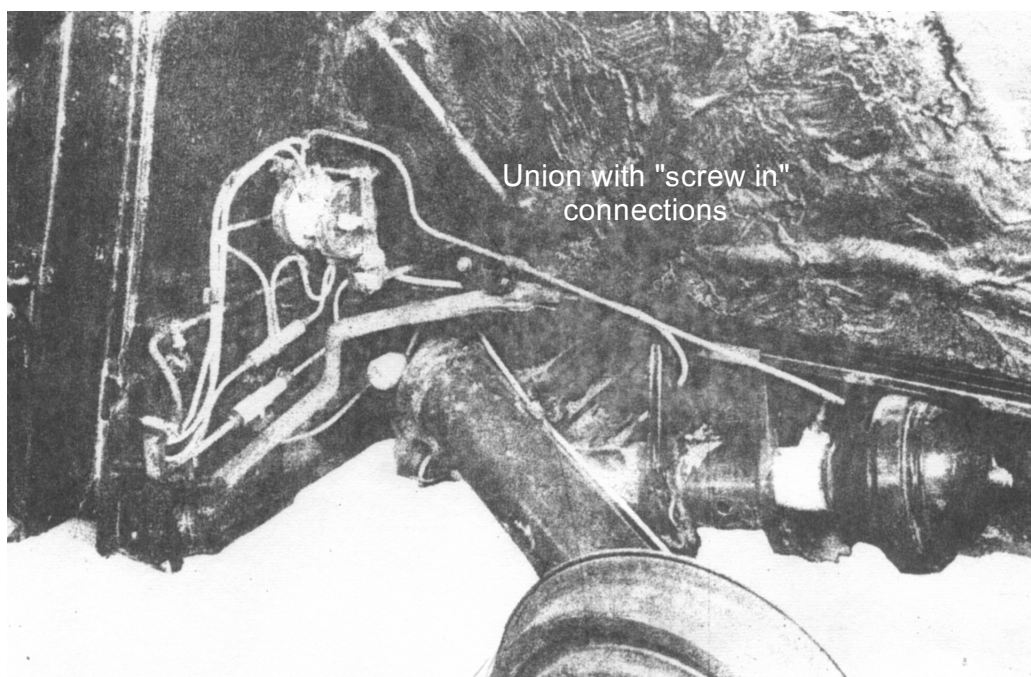
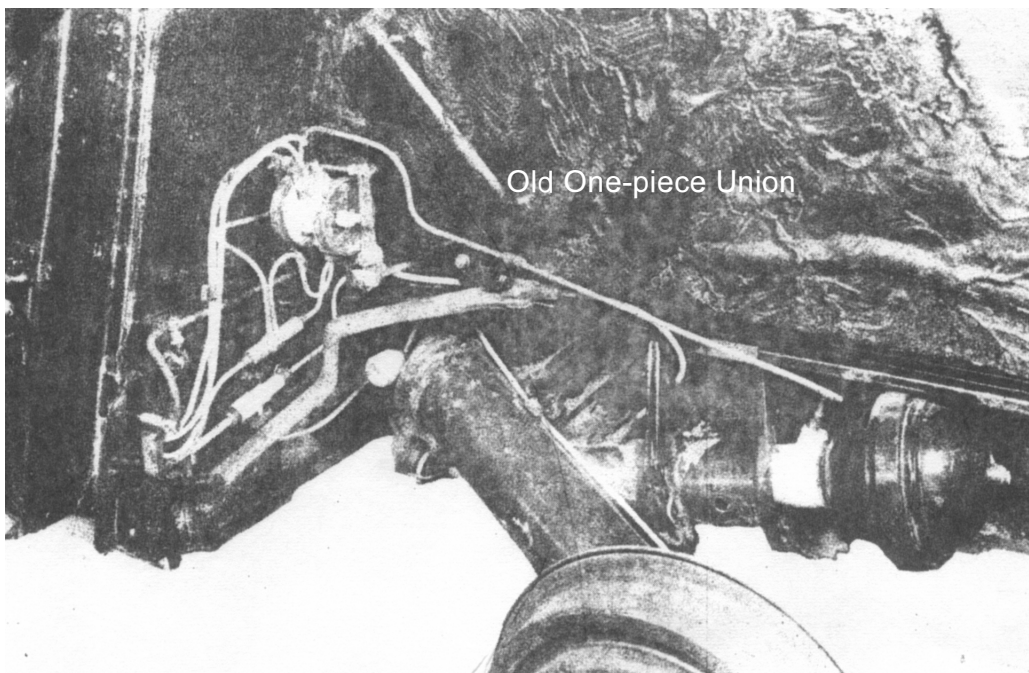
February 28, 1968

SERVICE BULLETIN No D-211

MODELS: ALL "D" MODELS

SUBJECT: SUSPENSION - Connecting union of the left rear suspension

The connecting union of the left rear suspension is modified on the above mentioned models. It is replaced by a new union with "screw-in" connections.



P A R T S :

Name	Old Number	New Number
1) ID 19 - Until 1962 Models		
Rear suspension feed group composed of:	DM 435-125	DM 435-125 a
- line connecting the 3 way union to the left rear suspension		DX 394-171
- line connecting the 3 way union to the height corrector		DX 394-170
- 3 way union		HY 453-134
- mounting bracket for the 3 way union		DJ 394-51
2) DS, All Types - ID 19, 1962 Models and after - Station Wagon, All Types		
Rear suspension feed group (red reference)	DS 435-125	
Rear suspension feed group (green reference)	DXN 394-30	
composed of:		
- line connecting the 4 way union to the left rear suspension ..		DX 394-471
- line connecting the 4 way union to the height corrector		DX 394-170
- 4 way union		DX 394-46
- mounting plate for the 4 way union		DJ 394-51



**TECHNICAL
INFORMATION**

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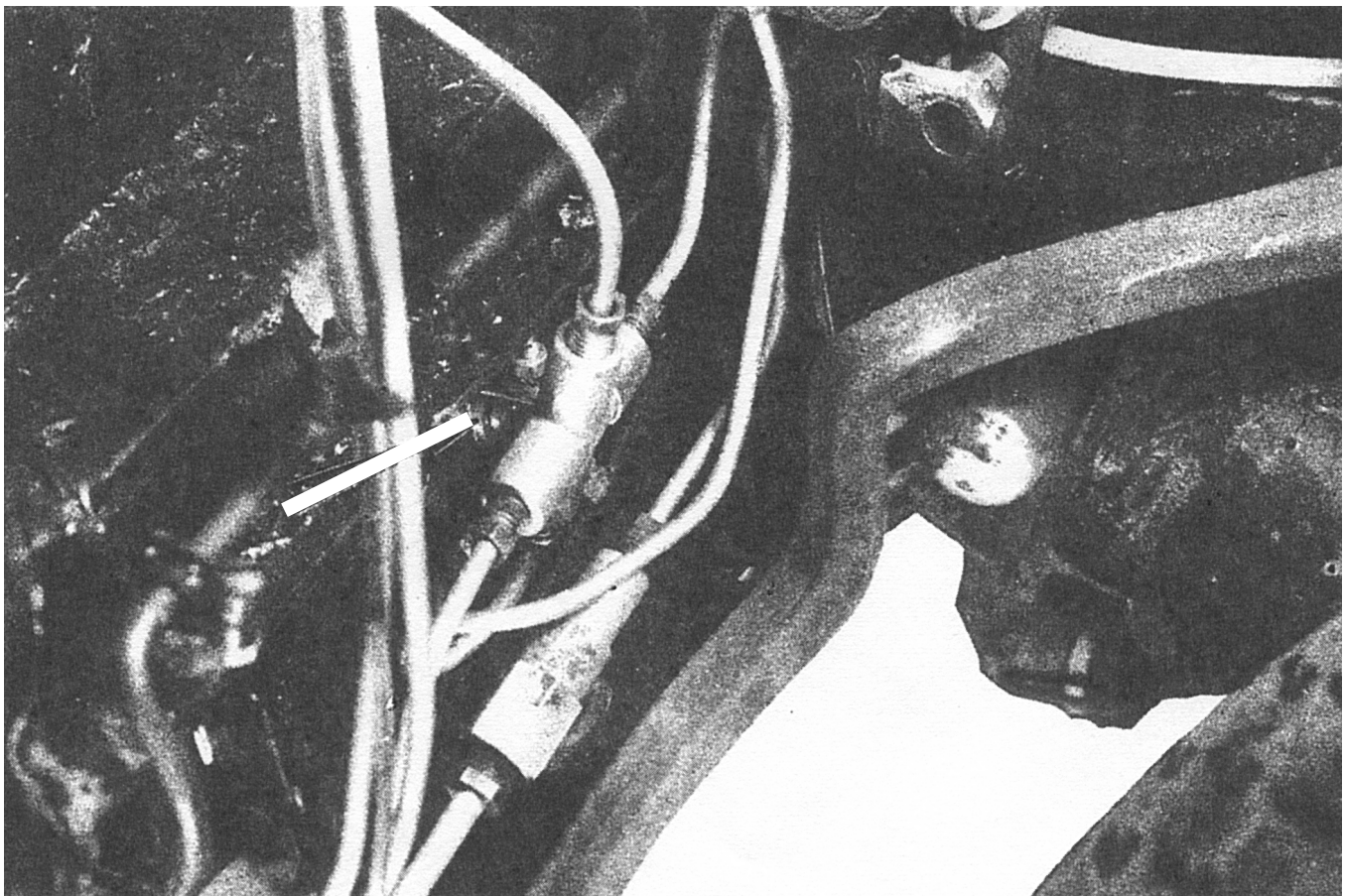
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SERVICE -

When replacing an old union by a new one:

- 1) Connect the union to the hydraulic lines.
- 2) Mount the spring steel support plate of the 3 or 4 way union on the rear unit of the body (see figure). Pierce a hole with a pick and use a self-tapping screw.



Position of the Support Plate



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5-10-68

SERVICE BULLETIN No. D-226

MODELS: SW 21(DJF) / SW 19A(DLF)

SUBJECT: SUSPENSION - Rear Suspension Cylinders

On the above mentioned models, the sealing of the rear suspension cylinders is now modified.

A ring seal with a square cross-section, assures the sealing between the body of the cylinder and the inside surface of the screw threads. The assembly identical to that existing on the front and rear suspension cylinders of the ID and DS sedans and the front of the Station Wagons.

PARTS:

NAME	OLD PART No.	NEW PART No.
Rear suspension cylinder nut	DVF 434-89	DVF 434-89a
Support washer of the rear piston seal	DVF 434-90	DVF 434-90a
Rear suspension seal for the cylinder		DV 434-120



TECHNICAL
INFORMATION

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5-14-68

SERVICE BULLETIN No. D-227

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

SUBJECT: AXLES - Wheel Lugs and Spindles

The wheel lugs, rear wheel spindles and hubs of the front pivots are modified.

PARTS :

NAME	OLD PART	NEW PART
Wheel lug	DX 426-2	DX 426-2a.

The part numbers of the rear spindle with lugs and the complete pivot are unchanged.

DX 426-2

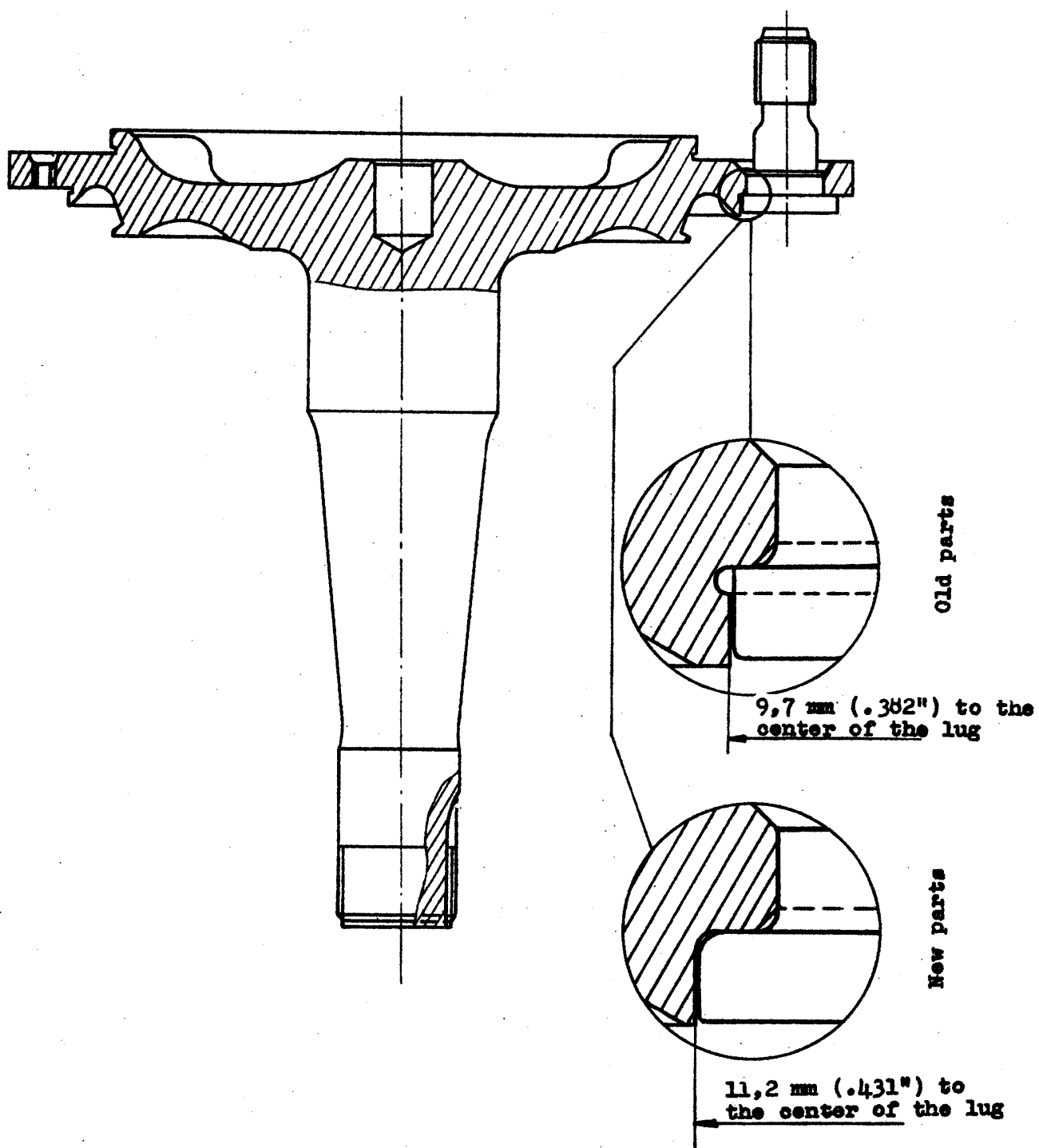


Old lug

DX 426-2a



New lug



SERVICE

The assembly of a new wheel lug on an old rear spindle is not possible. The assembly of an old type lug on a new rear spindle is not possible.

- The replacement of a wheel lug on a pivot is not possible. It is necessary to exchange the pivot.



TECHNICAL
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July 23rd, 1968

SERVICE BULLETIN D-231

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

SUBJECT : SUSPENSION - Suspension Cylinders

The sealing of the suspension cylinders is now modified. A squared cross-section "O" ring assures the sealing between the body of the cylinder and the interior surface of the nut.

PARTS

NAME	OLD No	NEW No
Suspension cylinder nut (DX-DJ-DY-DX DL-DV) (front and rear)	DX 434-89	DX 434-89a
Support washer of the piston seal DJF-DLF (front only)	DX 434-90	DX 434-90a
Suspension cylinder seal		DX 434-111

SERVICE

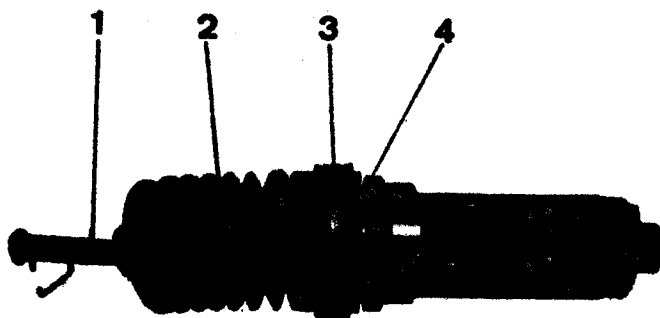
The new suspension cylinders are interchangeable with the old. On an old suspension cylinder where the sealing is made by a teflon "O" ring, it is possible to replace the nut and washer by the new parts: nut, washer, seal ring.

The instructions for removal and replacement are unchanged. Provisional instructions for reconditioning a suspension cylinder are attached.

IMPORTANT NOTES:

- The "square" ring seal must be set in place in the nut before mounting the nut on the suspension cylinder.
- The tightening torque of the cylinder nut should be 9-12 m/Kg (65-87 ft/lbs).

RECONDITIONING A SUSPENSION CYLINDER (with Teflon seals and square cross section "O" rings) RECONDITIONING A SUSPSION CYLINDER (with a ring seal securing of the nut)

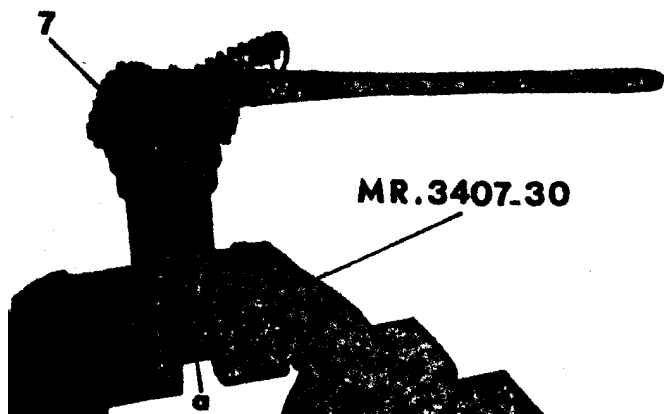
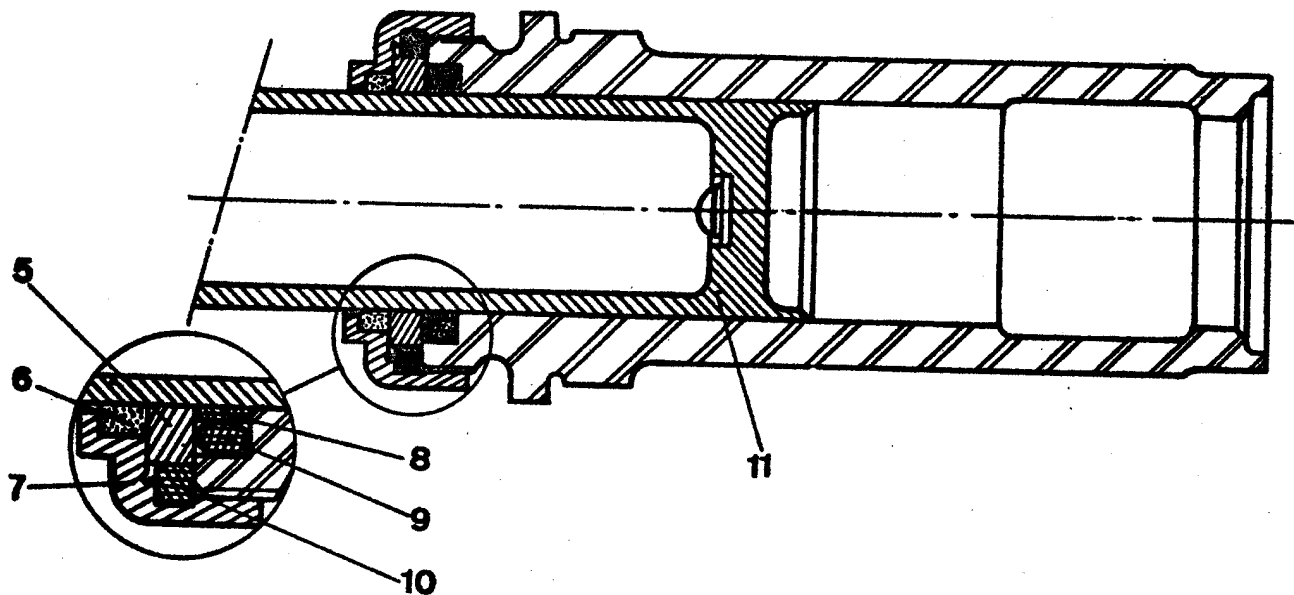


REMOVAL

1) Disassemble

- dust boot clamp (3)
- the elastic protection band (4)
- the dust boot assembly (2) and the rod (1) of the suspension piston.

Disengage the piston (11) from the cylinder.



2) Grasp the cylinder in a vise fitted with wooden jaws (MR 3407-30). Moderately tighten the vise, the boss of the feed line connection (a) serving as a stop.

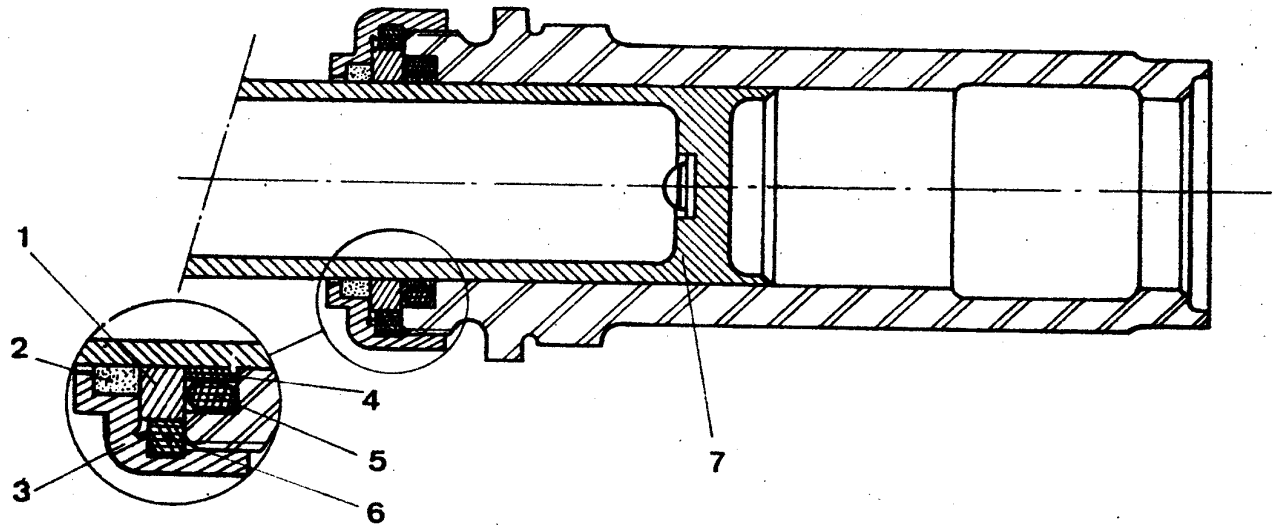
Loosen the nut (7) by means of a chain wrench (grip the nut with the outer side of the links).

3) Disengage

- the felt seal (6)
- the rubber seal (10)
- the support washer (5)
- the Teflon seal (8)
- the "O" ring seal (9)

4) Wash the parts. Dry them with compressed

REPLACEMENT



REMARK:

- In the case of shallow scoring, a slight resurfacing of the piston is tolerated using abrasive paper No 600 dipped in alcohol. Carefully wash it with alcohol and dry it with compressed air.

5) Coat the piston with the special liquid used in the hydraulic circuits.

Place the Teflon seal (4) on the lower part of the piston. (Be careful not to deform the seal).

Place the "O" ring (5), soaked in hydraulic fluid, into the shoulder of the cylinder.

Engage the piston (7) into the cylinder.

6) Mount the support washer (1) on the piston and set the Teflon seal in place by forcibly bearing on the support washer until it comes in contact with the cylinder.

7) Set into the nut (3) the felt seal (2), impregnated with hydraulic fluid, and the rubber seal (6).

REPLACEMENT (continued)

NOTE: The felt seals should only be mounted after immersion for several hours in the special liquid used for the hydraulic circuits.

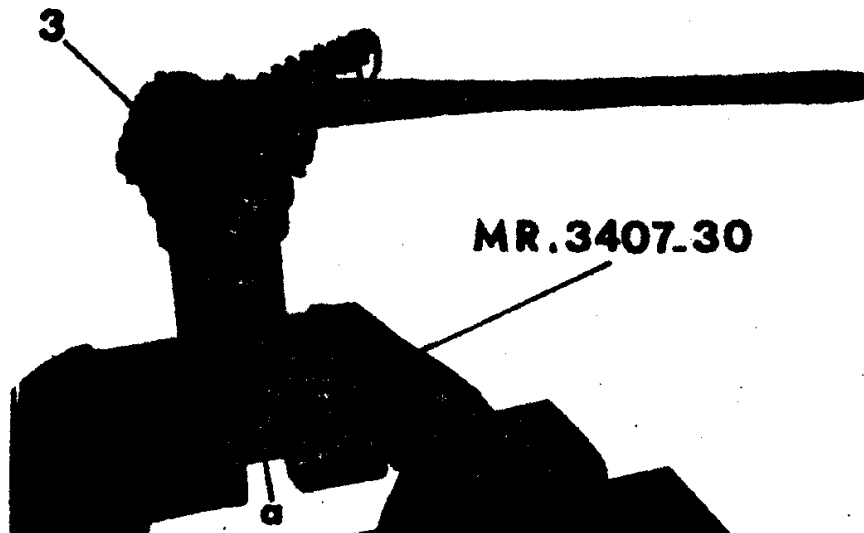
- 8) Hold the cylinder in a vise fitted with wooden jaws (MR 3407-30). Moderately tighten the vise, the boss of the feed line connection (a) serving as a stop.

Screw the nut (3) on the cylinder and tighten it to 9.5-12 m/Kg (69-75 ft-lbs).

Use a chain wrench (gripping the nut by the outer side of the links) and a torque wrench 2472-T. This tightening torque is very important.

It is necessary to respect this in order to assure a good seating of the support washer of the seal, thus avoiding either a chattering of the piston inside the cylinder or a serious leak of fluid.

Check the sliding of the piston.

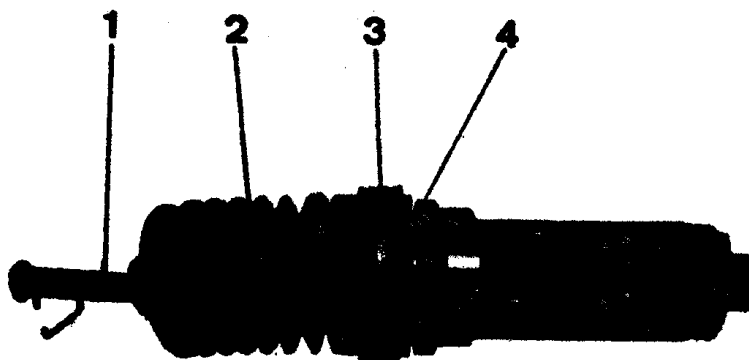


- 9) Test the sealing of the piston-cylinder assembly (See paragraphs 21 to 23, Operation.DX 433-3).

- 10) Mount

- the dust boot assembly (2) and the rod (1) of the suspension piston.
- the elastic protection band (4)

Tighten the clamp of the dust boot.





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INFORMATION**

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JUdson 2-5920

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

December 18, 1968

SERVICE BULLETIN D/K - 240

MODELS: "AK" MODLES SUBJECT: SUSPENSION - SUSPENSION UNITS

The Suspension units on the "AK" models is now modified
The front suspension spring AN-431-1 is replaced by the spring AM-431-1a.

Description	Wire diameter 17.5mm (0.689")
Free Height	192 mm (7.56")
Coils circling to the left.	

The front tie-rod of the suspension unit AU-434-91 is replaced by the tie-rod AM 434-91.

Length: 625.8mm (24.638")

The rear tie-rod of the suspension unit AM-434-91 is replaced by the tie-rod AW-434-92.

Length: 607.5 mm (23.917")

The front rubber stop A-135-76 of the suspension unit is replaced by the stop AK 435-76.

SERVICE:

It is possible to mount the new suspension units or the assembly of these new parts on earlier models.

The two suspension units of a car should be strictly identical. It is indispensable that the modification must be made simultaneously on the right and left suspension units.

The different operations for removal, replacament, reconditioning and adjustments are identical to those appearing in the Shop Repair Manual #546, Operations AM 433-0 and AM-434-3.

The rubber buffers of the front suspension system should be adjusted to obtain a clearance of 2mm (.080") between the rubber stop and the stop on the suspension arm.