CITROEN

Front Wheel Drive

6H

SERVICE ADJUSTMENTS

CITROEN CARS LTD., TRADING ESTATE, SLOUGH, BUCKS.

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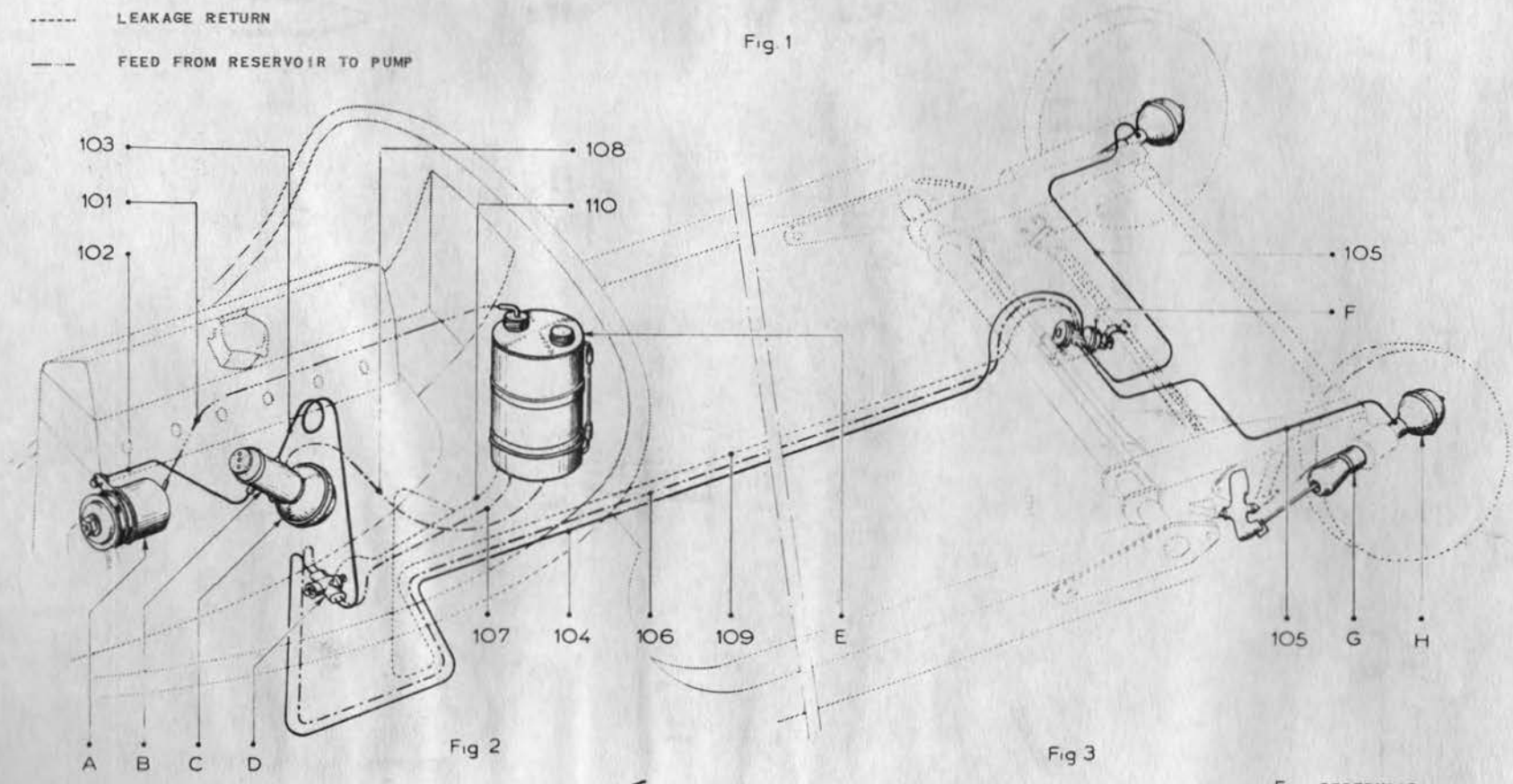

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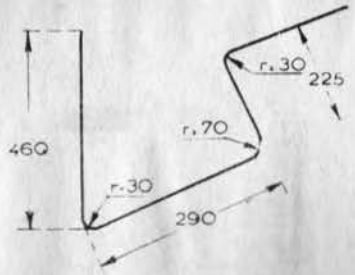
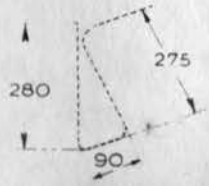


Fig 3



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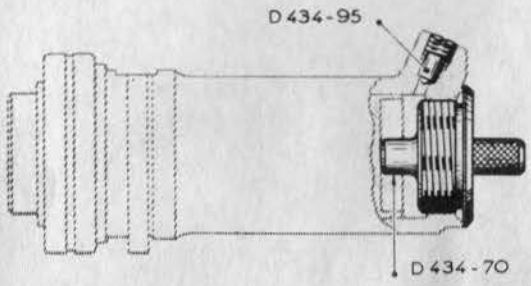
SOLD UNDER THE NOS. SHOWN

Fig.1



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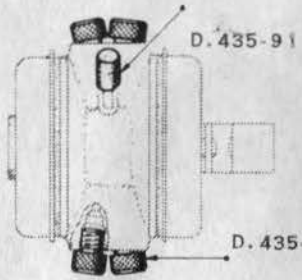


Fig.3

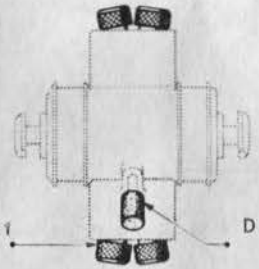


Fig.4

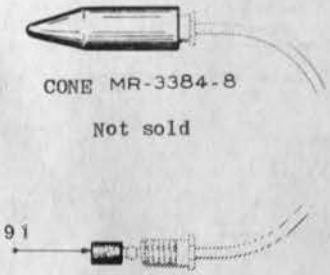


Fig.5 - **CONE MR-3384-8**

Not sold

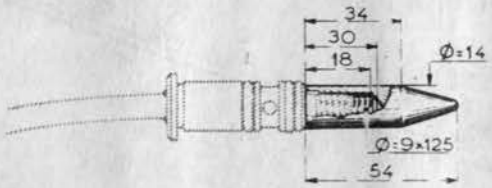
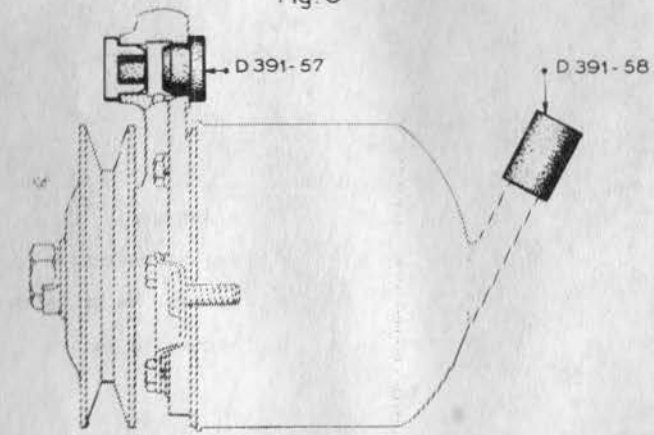


Fig.6



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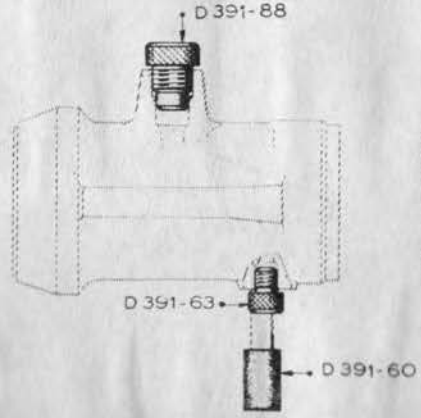
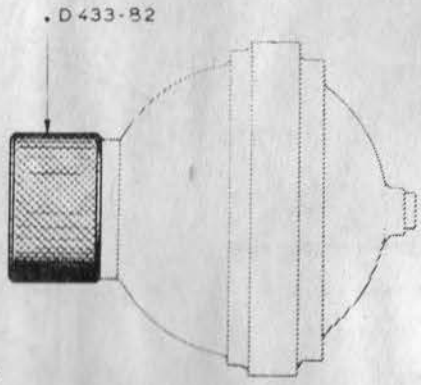


Fig.8



HYDRAULIC SUSPENSION

CONTROL VALVE - ACCUMULATOR

Fig 1

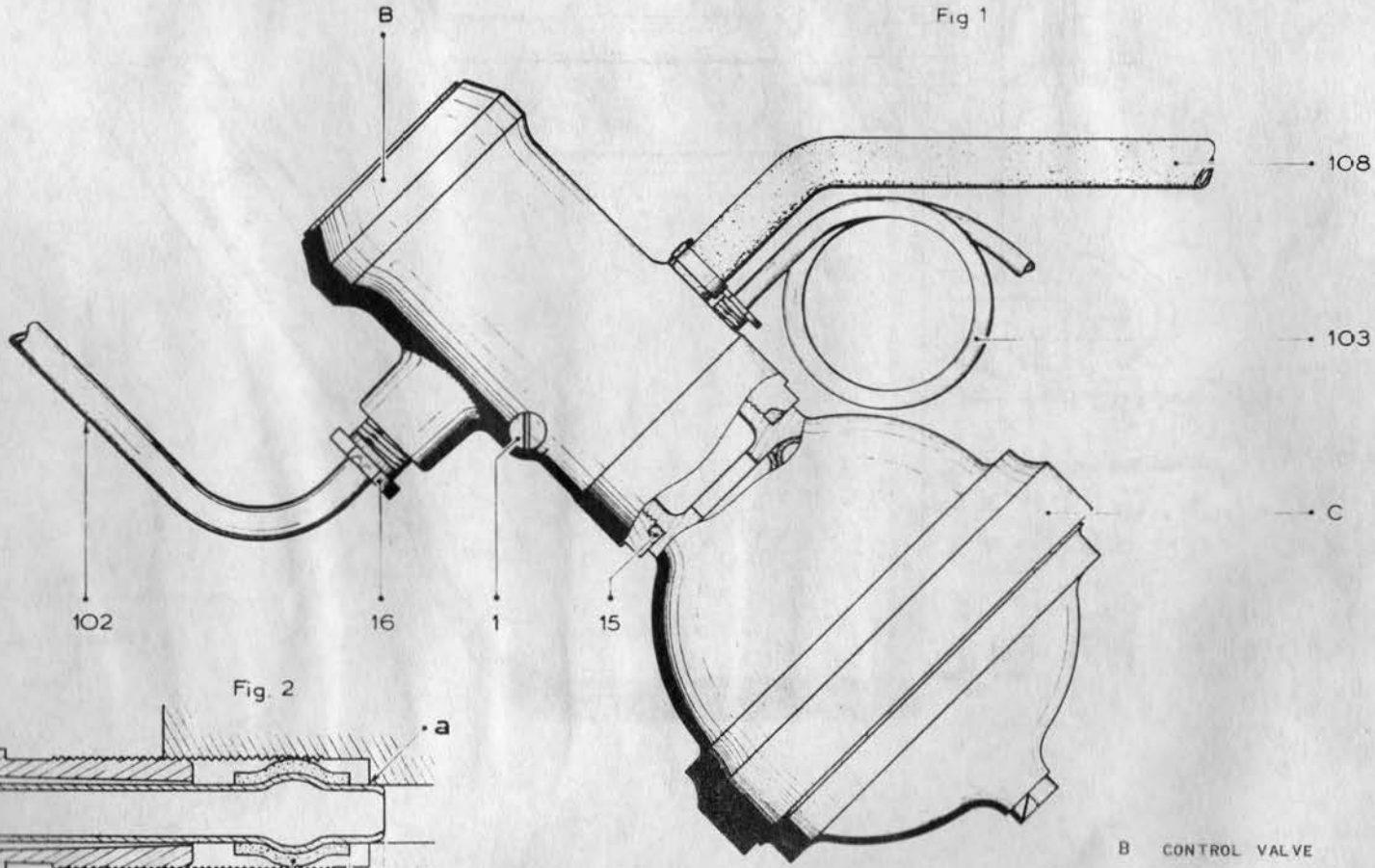
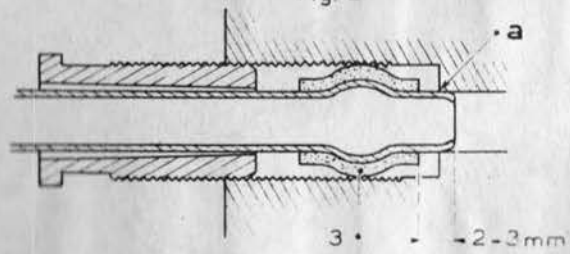


Fig. 2



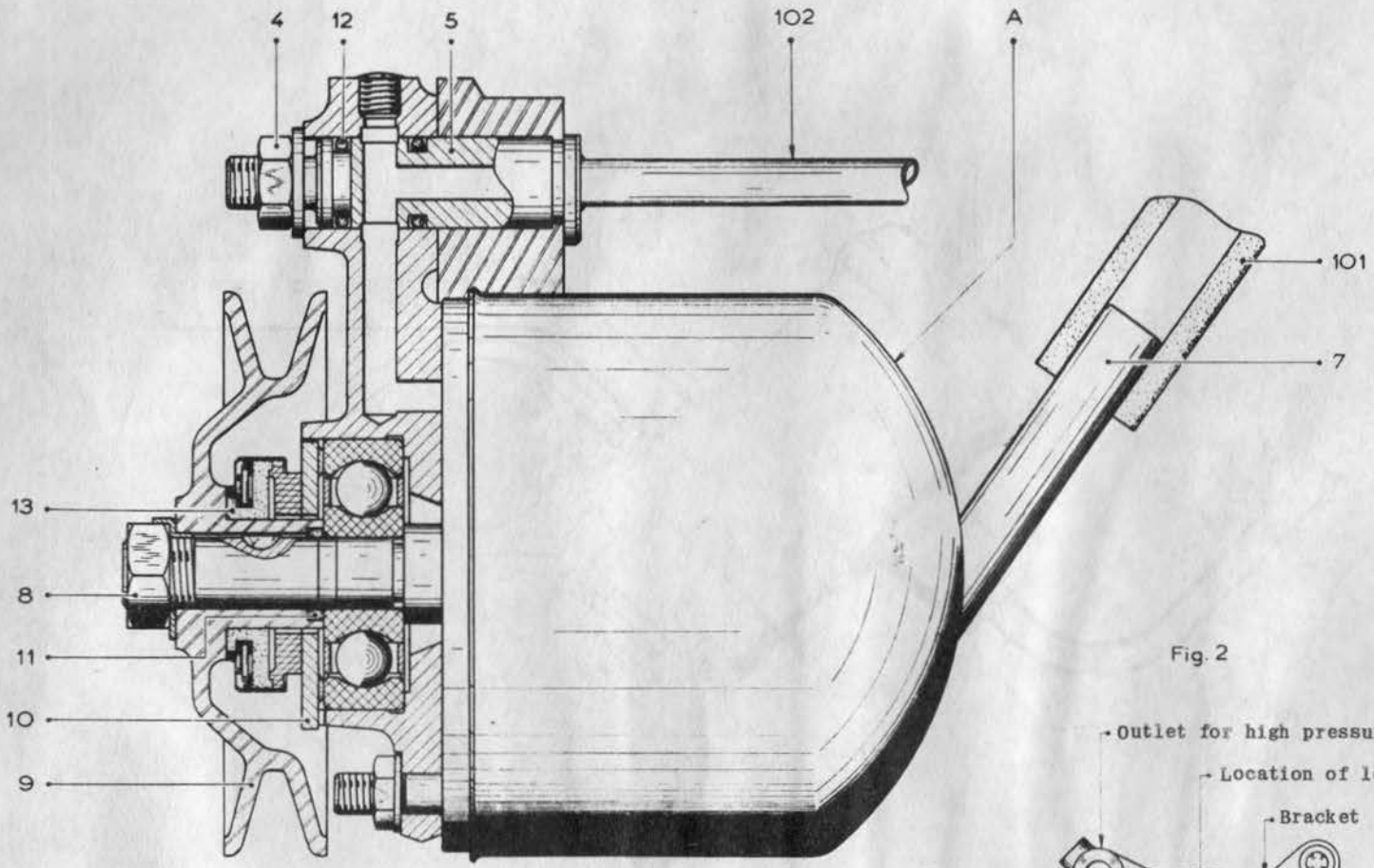
B CONTROL VALVE

C ACCUMULATOR

HYDRAULIC SUSPENSION

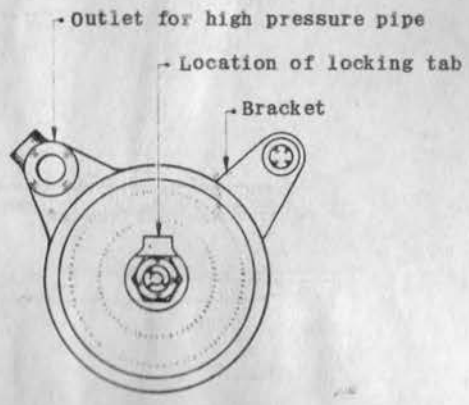
HIGH PRESSURE PUMP

Fig.1



A HIGH PRESSURE PUMP

Fig. 2



LOCK FOR HEIGHT CORRECTOR

Fig. 1

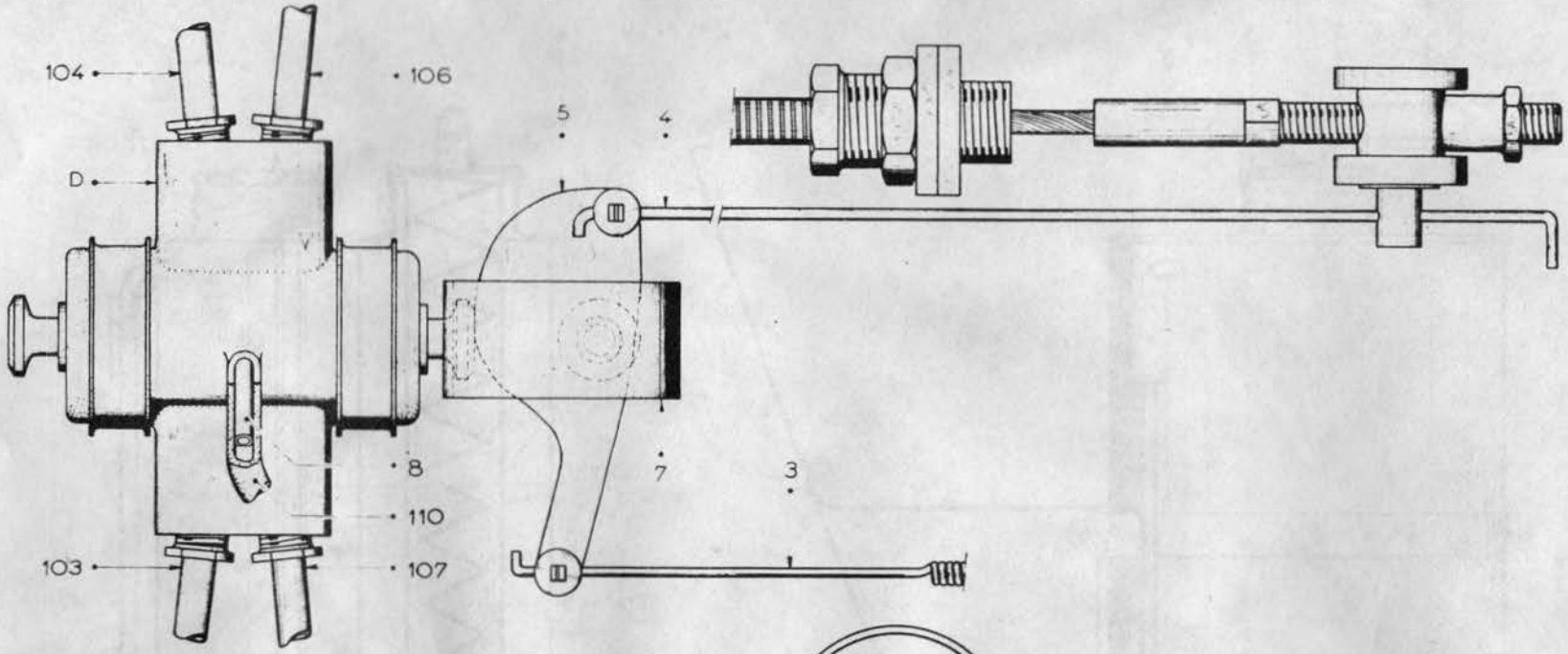
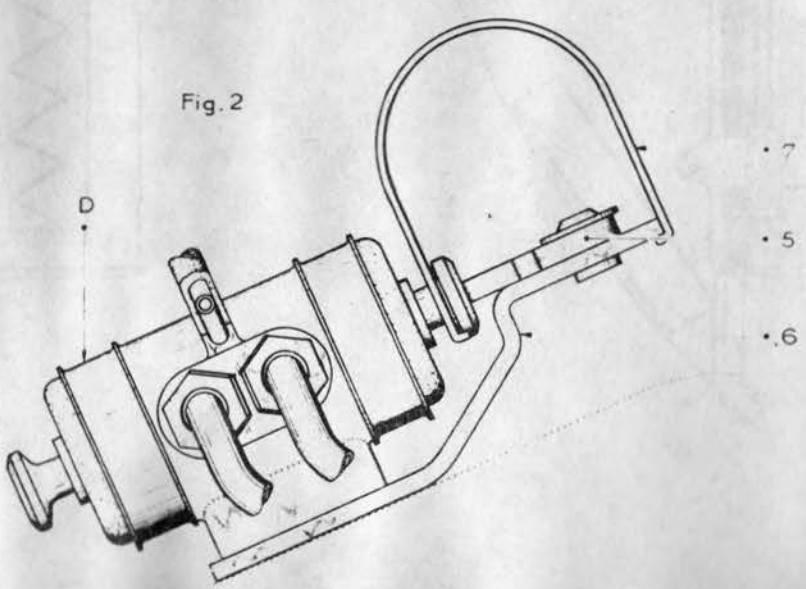


Fig. 2

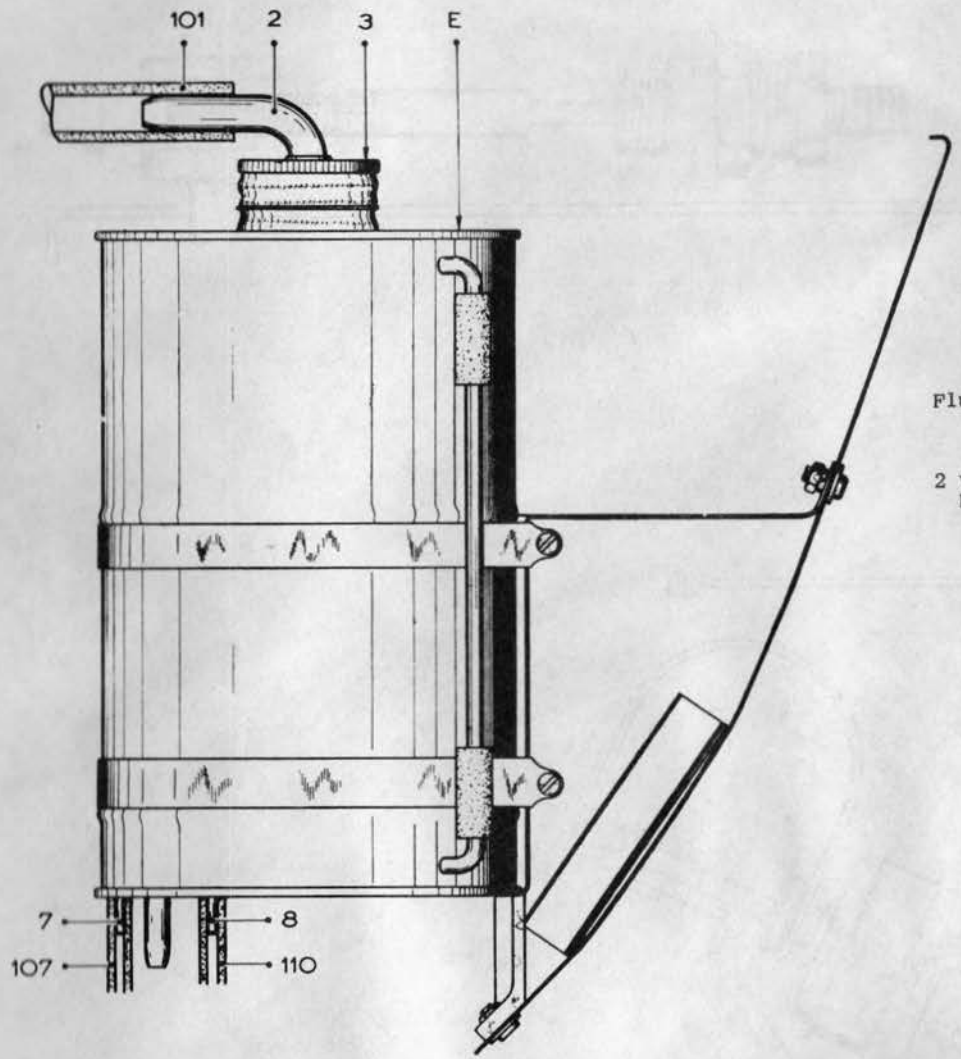


D LOCK FOR HEIGHT CORRECTOR

HYDRAULIC SUSPENSION

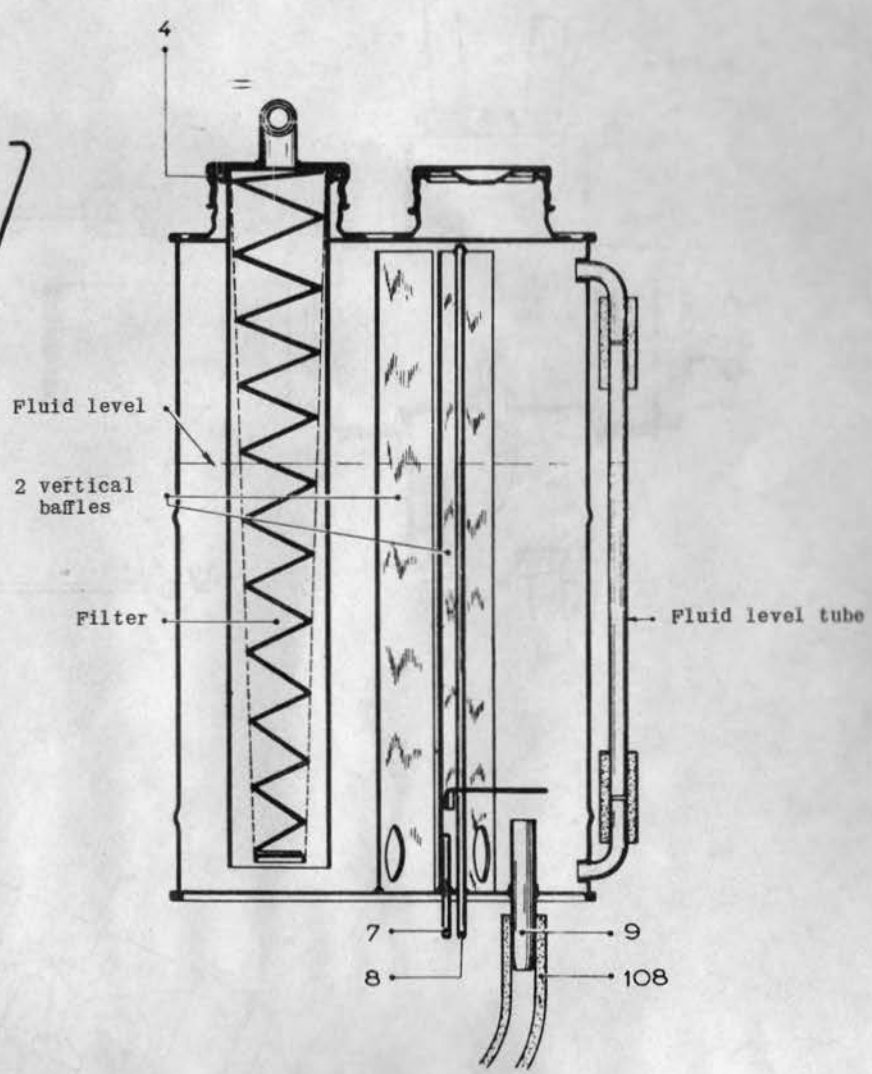
RESERVOIR FOR HYDRAULIC FLUID

Fig 1



E RESERVOIR

Fig. 2



PNEUMATIC UNIT AND SUSPENSION CYLINDER

Fig. 2

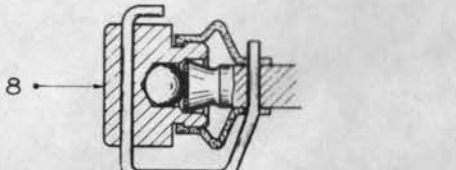
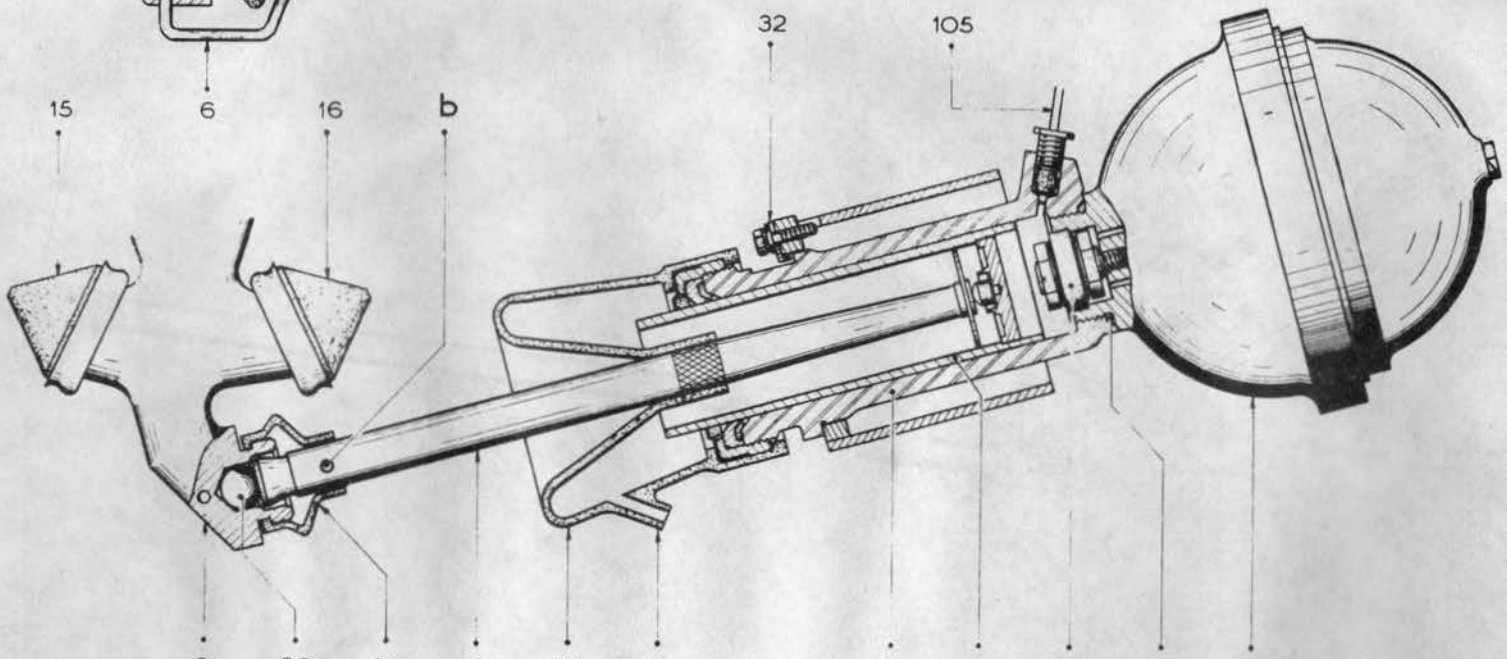


Fig. 1

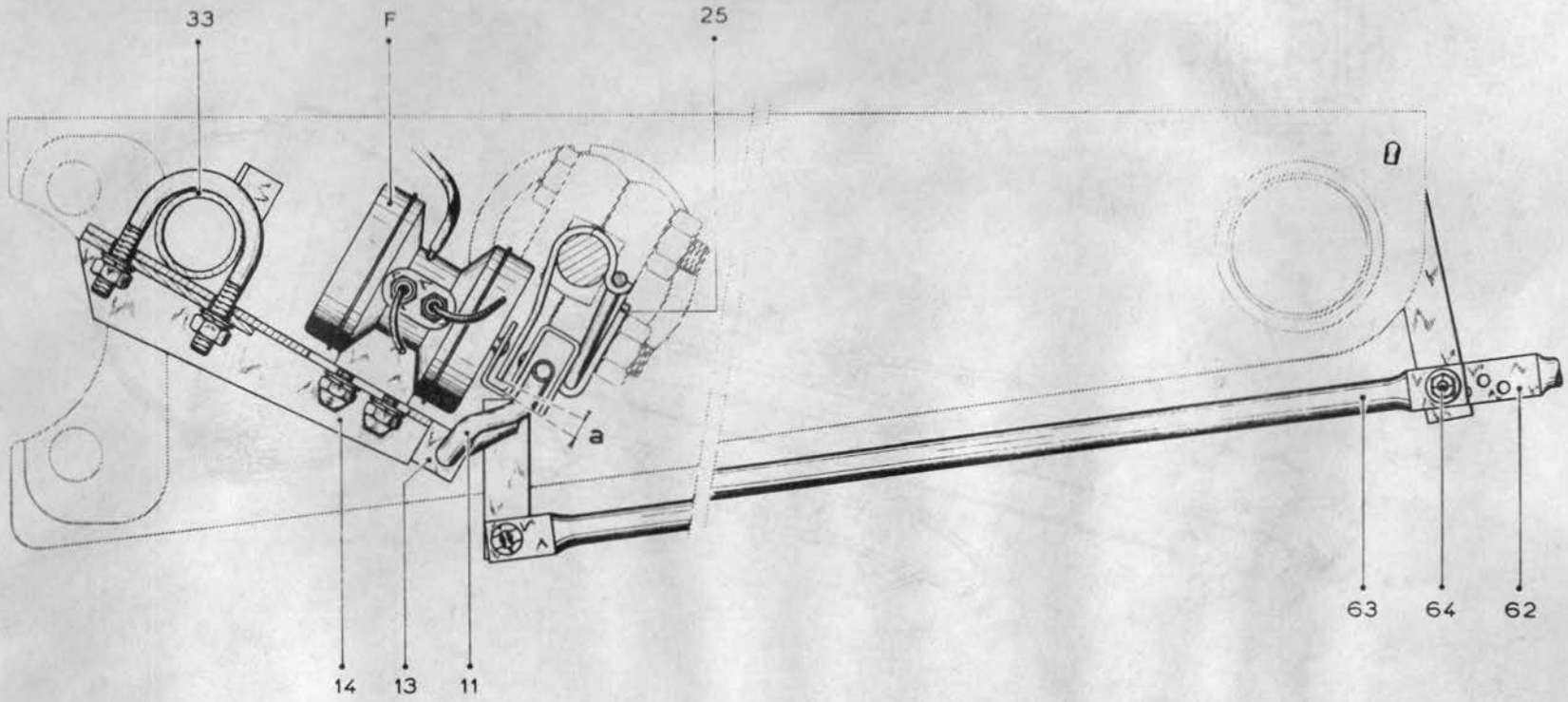


G SUSPENSION CYLINDER

H PNEUMATIC UNIT

HYDRAULIC SUSPENSION

HEIGHT CORRECTOR



F HEIGHT CORRECTOR

REAR AXLE

ASSEMBLY

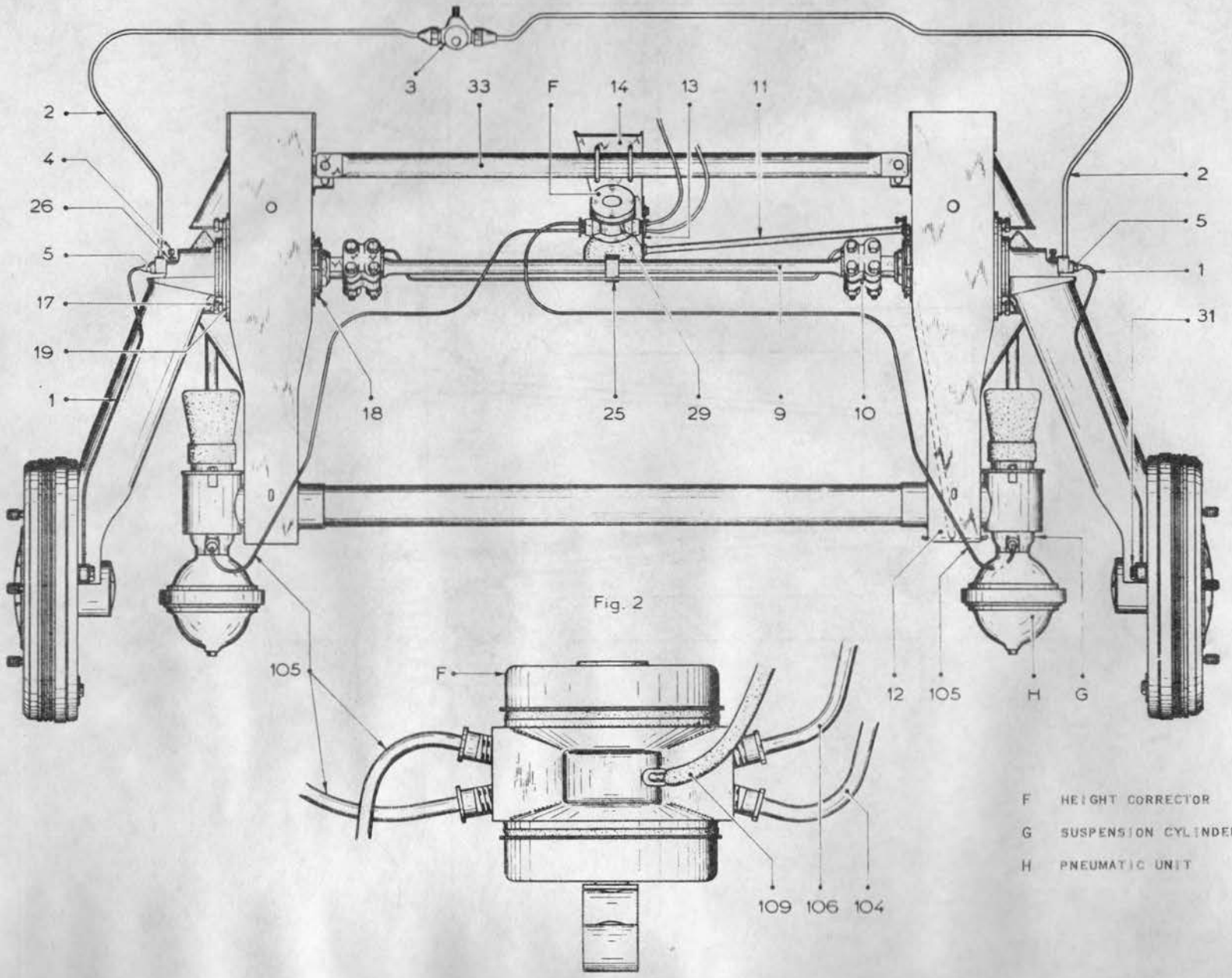
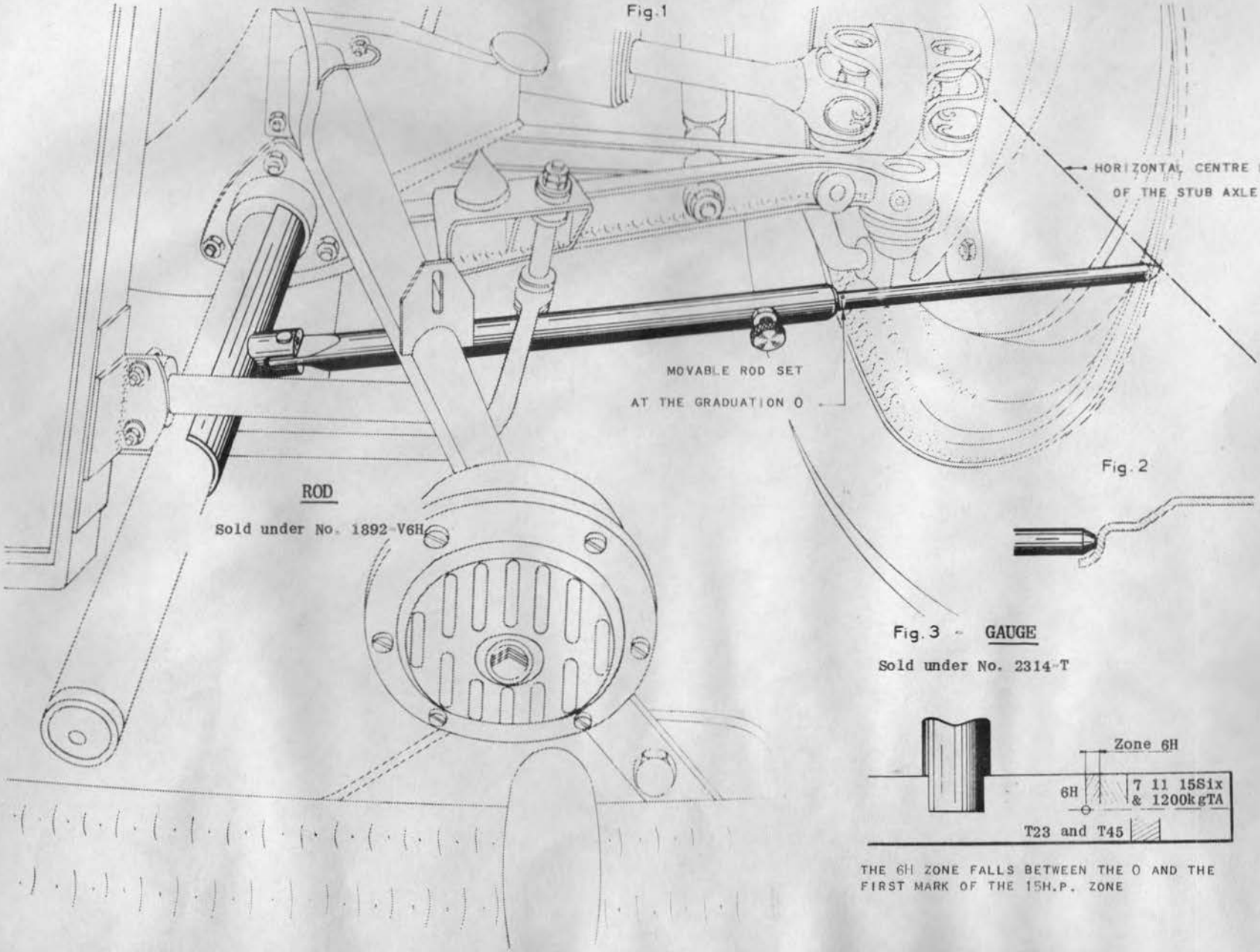


Fig. 2

ADJUSTMENT OF STEERING LOCK AND WHEEL CAMBER

Fig.1



ROD

Sold under No. 1892-V6H

Fig. 2

Fig. 3 - **GAUGE**

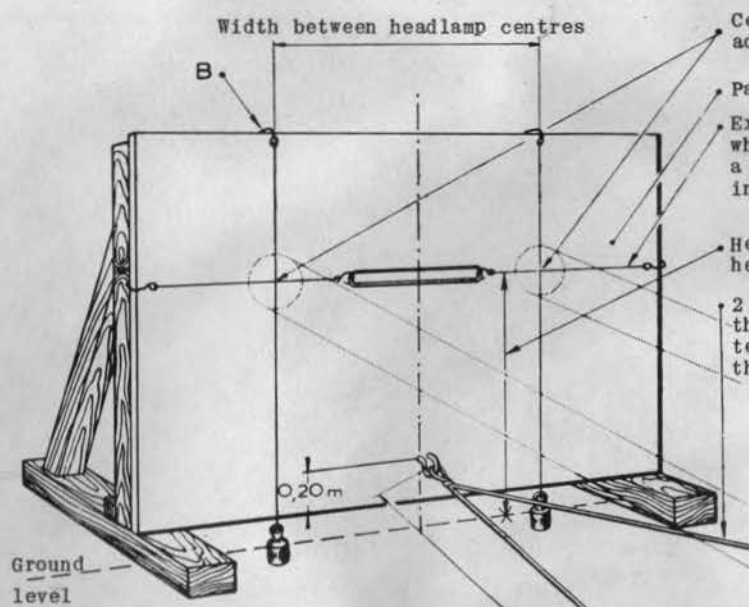
Sold under No. 2314-T

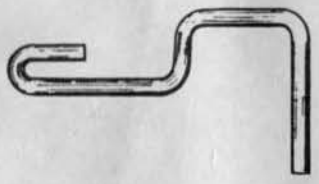
THE 6H ZONE FALLS BETWEEN THE 0 AND THE FIRST MARK OF THE 15H.P. ZONE

ADJUSTMENT OF HEADLAMPS

Fig. 1 - SCREEN MR. 1572

Not sold

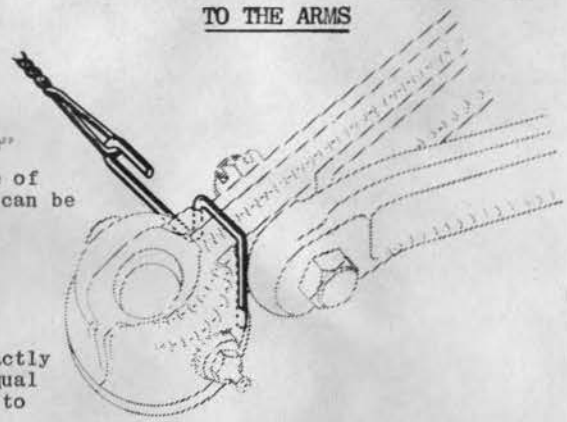




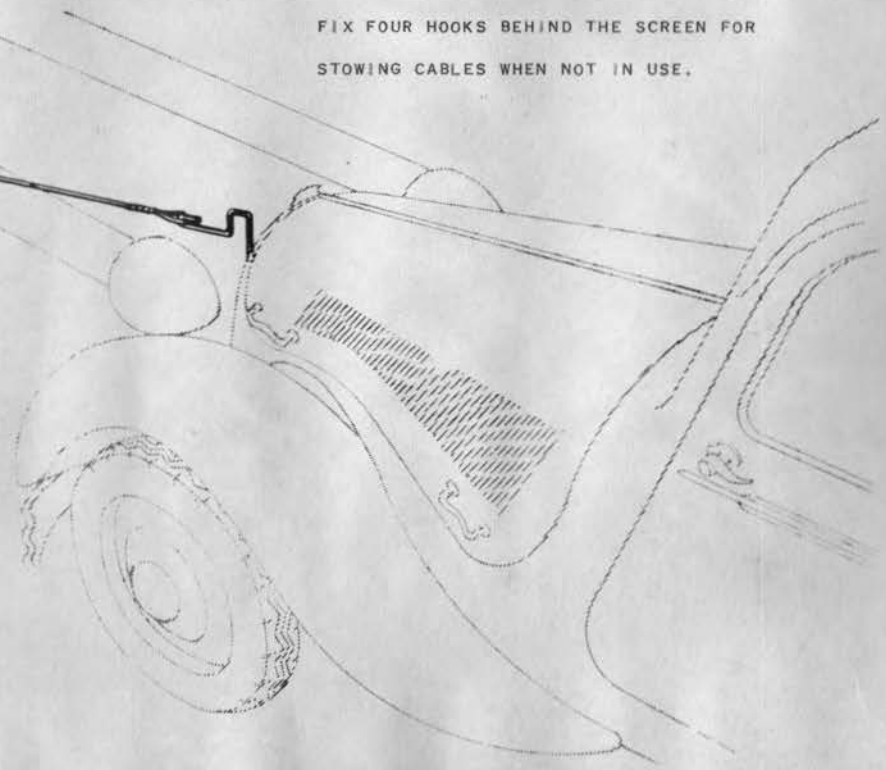
FIXING HOOK A ON THE ARM

FIXING HOOK B ON THE SCREEN

Fig. 2 - ATTACHMENT OF THE CABLES TO THE ARMS



FIX FOUR HOOKS BEHIND THE SCREEN FOR STOWING CABLES WHEN NOT IN USE.



C I T R O E N

SERVICE SUPPLEMENT 6-CYLINDER TYPE 6H

HYDRO-PNEUMATIC SUSPENSION

This supplement comprises operations necessary to the servicing of 6-Cylinder cars fitted with hydro-pneumatic rear suspension. With the exception of these operations the servicing of this model is generally the same as for 6-Cylinder cars fitted with torsion bar suspension front and rear.

The special tools shown in this supplement, the numbers of which have the suffix T or V6H or the prefix D, can be obtained on application to our Spare Parts Department. For those with the prefix MR sufficient information is given to enable them to be made locally.

Any enquiry concerning the servicing of this model should be addressed to The Service Manager, Citroen Cars Limited, Trading Estate, Slough, Bucks, England.

IMPORTANT NOTE:- WHENEVER WORK IS CARRIED OUT ON THE HYDRAULIC UNITS OR SYSTEM, EVERY PRECAUTION MUST BE TAKEN TO ENSURE PERFECT CLEANLINESS. READ AND STRICTLY OBSERVE THE INSTRUCTIONS GIVEN IN OPERATION 1, PAGE 5.

Operation 1

WORK ON HYDRAULIC SYSTEM.

CLEANLINESS (see Pl. 2):

Op. 1 - 1

a). The correct working of the suspension depends on perfect cleanliness of the liquid and the hydraulic units. It is therefore necessary to take meticulous care when working on the units.

Before commencing any work, carefully wash the car or at least the area in which the work is to be carried out. Example:

When replacing a suspension cylinder, wash the corresponding wheelarch. Before uncoupling a union, carefully clean the union and the area round it with alcohol. The pipes will be blocked at each end immediately after being disconnected as follows:-

For metallic pipes : use plugs (plug D.435-91, see fig. 4).
For rubber pipes : use cylindrical pins.

3.5mm. diameter; 50mm. long for leakage return pipe.
8 mm. diameter; 50mm. long for the return line from the accumulator to the reservoir.
12 mm. diameter; 50mm. long for the feed pipe to the pump.

Also block the openings in the hydraulic units as follows:-

for the high pressure pump:
1 plug D.391-58 for the inlet pipe; 2 plugs D.391-57 for the high pressure outlet (see fig. 3).

for the pipe connecting the pump and control valve:
1 plug D.391-60 (see fig. 7).

for the control valve:
1 plug D.391-60 for the return pipe to the reservoir (see fig. 7).
1 plug D.391-88 for the union for the inlet to the pump.
1 plug D.391-63 for the union for the pipe joining the control valve to the lock.

for the accumulator:
1 plug D.433-82 (see fig. 8).

for the lock and the height corrector:
4 plugs D.391-63; 1 plug D.435-91 (see fig. 2 and 3).

for the suspension cylinder:
1 plug D.434-95; 1 plug D.434-70 (see fig. 1).

for the pneumatic units:
1 plug D.433-82 (see fig. 8).

NOTE:- All these plugs and pins must be *perfectly clean before use.*

Pipes, units and spare parts must be carefully protected from dust. In stores, the joints and rubber tubes in stock must be protected from dust, air, light and heat.

Too

Plugs

Tools

Before assembly:

b). Steel tubes must be blown out with compressed air. Rubber tubes and rubber joints must be washed in alcohol and blown out with compressed air. The cleaning of the hydraulic units must be carried out in alcohol to the exclusion of any other material. After washing, blow out the parts with compressed air.

Op. 1 - 2 **Releasing the pressure** (see Pl. 3).

a). Work on the pump, control valve, accumulator or their pipe systems:

Close the lock. Undo the bleed screw (1) (one and a half turns approximately), of the control valve (B). Allow the pressure to be released and retighten the screw.

b). Work on the lock, on the pipes under the coque. Replacement of an engine or a rear axle:

Place the wheel change control lever in the 'LOW' position. The lock being open, unscrew the bleed screw (1) on the control valve (B) (one and a half turns approximately). Retighten the bleed screw when the car is completely in the 'LOW' position. Make sure that no pressure remains in the rear circuit. To do this, move the suspension cylinders by hand, they should be in their supports.

c). Work on the height corrector, suspension cylinders or their pipes:

Check that the lock is open. Place the wheel change control lever in the 'LOW' position. Close the lock. Make sure that there is no pressure remaining in the rear circuit. To do this, move the suspension cylinders by hand, they should be free in their supports.

Op. 1 - 3 **Unions and circular joints:**

NOTE:- The seals for the unions are to be replaced every time they are taken out.

a). **Replacing a seal** (see Pl. 3, fig. 2).

Put the seal (3) in position on the tube. This seal must be located from 2 to 3mm. from the end of the tube. Centre the tube in the bore keeping it in the centre of the hole.

VERY IMPORTANT:- Make sure that the end of the tube enters the small bore (at 'a').

Take the union nut in the hand. On certain units the centre line of the hole is at an angle to the face of the boss receiving the nut. Tighten the nut moderately (0.6 to 0.8 m/kgs) (4½ to 5¾ ft/lbs). *This comparatively light tightening is sufficient to ensure a good joint. Excessive tightening can cause leakage.*

b). **Circular joints** (see Pl. 4).

NOTE:- By their construction, the circular joints become more effective as the pressure is increased. *The efficiency of the joint is not increased by tightening the nut (4) on the pivot pin.*

Replacing the circular joints:

Moisten the joints with hydraulic fluid. Screw a cone (use the cone MR.3384-8, see Pl. 2, fig. 5) on the end of the pin (5). Put the joints (12) in position by sliding them on the cone. Tighten the nut (4) to 1.5 to 2 m/kgs. (11 to 15 ft/lbs).

Cone MR.3384-8

		Tool
Op. 1 - 4	**Units.**	
	All the units must be filled with hydraulic fluid before connecting.	
Op. 1 - 5	**Putting the circuit under pressure. Check the circuits for leakage.**	
	After connecting a unit put the suspension unit under pressure.	
	a). For all work except on the suspension cylinders and the height corrector, run the engine, check that there is pressure in the accumulator, the lock is open, and the wheel change control lever is in the 'NORMAL' position.	
	b). For all work on the height corrector and the suspension cylinders, carry out the operations given above, but with the wheel change control lever in the 'HIGH' position.	
Operation 2	WORK ON THE HIGH PRESSURE PUMP	
	REPLACING A HIGH PRESSURE PUMP BELT.	
	Removal (see Pl. 4).	
Op. 2 - 1	Unscrew the nut (4) from the pivot (5) of the pump.	16mm.
Op. 2 - 2	Uncouple the tie rod from the adjusting plate on the pump.	12mm.
Op. 2 - 3	Remove the air deflector from the clutch housing.	12mm. bo
Op. 2 - 4	Remove the belt. Clean the grooves of the pulleys on the camshaft and on the pump.	
	Fitting.	
Op. 2 - 5	Put the belt in position on the pulleys. Run up the nut (4) on the pivot (5).	
Op. 2 - 6	Couple up the pump tie rod. Adjust the tension of the belt. Tighten the nuts of the tie rod. Tighten the nut (4) of the pivot (5) to 1.5 to 2 m/kgs. (10.5 to 14.5 ft/lbs).	12mm. 16mm.
Op. 2 - 7	Fit the air deflector. Tighten the screws.	12mm. bo
	REPLACING A HIGH PRESSURE PUMP PULLEY.	
	Removal (see Pl. 4).	
Op. 2 - 8	Make sure that everything is perfectly clean (see Op. 1, para. 1).	

		Tools
Op. 2 - 9	Uncouple the pump bleed tube (101) from the end (7) on the cover. Raise this tube so that the fluid returns to the reservoir.	
Op. 2 - 10	Knock back the lockwasher on the nut (8) fixing the pulley.	
Op. 2 - 11	Grip the sides of the belt by hand so as to hold the pulley. Untighten the nut (8) without undoing it completely.	19mm. spanner
Op. 2 - 12	Unlock the nut (4) on the pivot (5) on the pump and that of the tie rod. Disengage the belt from the pump pulley.	12mm. spanner 16mm. spanner
Op. 2 - 13	Turn the pulley so that the tongue of the nut lockwasher is located as shown in fig. 2. Introduce a rod 6mm. diameter, approximately 150mm. long, into the end (7) of the cover. This rod should enter approximately 115mm. into the pump, if not, slightly turn the pulley. This operation is carried out to prevent the pump shaft moving back.	
Op. 2 - 14	Unscrew the nut (8). NOTE:- Hold the pulley, it must not turn.	
Op. 2 - 15	Remove the pulley (9) and the joint washer (10). The woodruff key and the circular joint (11) remain in position. Remove the joint AD (13) from the pulley.	
Op. 2 - 16	Clean the parts (see Op. 1, para. 1b).	
	Refitting (see Pl. 4).	
Op. 2 - 17	Check that: the rubber seal, the bearing face of the joint AD on the washer, the graphite of the joint, do not show signs of grooves or cuts. NOTE:- Check that the bearing races do not have any inscription which would show that the bearing is fitted the wrong way round. In this case it will be necessary to change the pump.	
Op. 2 - 18	Steep the parts in hydraulic fluid.	
Op. 2 - 19	Fit the joint AD (13) on the pulley (9) (see Pl. 4 for location). Fit the washer (10), the pulley (9), the lockwasher, and run up the nut (8).	
Op. 2 - 20	Fit the belt, the tie rod. Lock the nut on the tie rod, tighten the nut (4) on the rotating joint on the pivot (5) to 1.5 to 2 m/kgs. (11½ to 14½ ft/lbs).	12mm. spanner 16mm. spanner
Op. 2 - 21	Remove the rod.	
Op. 2 - 22	Lock the nut (8) of the pulley (3 to 4 m/kgs) (21½ to 29 ft/lbs), bend over (without hammering) the lockwasher with pliers.	19mm. spanner

		Tool
Op. 2 - 23	Put back in position the rubber feed pipe (101).	
Op. 2 - 24	Tighten the bleed screw (1) (see Pl. 3).	
	REPLACING AN OIL SEAL WASHER.	
Op. 2 - 25	Same operation as the preceding (see paras. 8 to 24). It is useless to remove the joint AD (13) from the pulley (9).	
	REPLACING A HIGH PRESSURE PUMP.	
	Removal (see Pl. 4).	
Op. 2 - 26	Release the pressure (see Op. 1, para. 2).	
Op. 2 - 27	Uncouple the tie rod from the pump. Remove the belt from the pulley (9).	12mm. sp 12mm. box
Op. 2 - 28	Uncouple the tube (101) from the end (7) from the pump housing. Raise the tube (101) so as to prevent siphoning the fluid from the reservoir. Block the openings (see Op. 1, para. 1).	
Op. 2 - 29	Remove the nut (4) locking the pivot (5), remove the steel washer.	13mm. sp
Op. 2 - 30	Disengage the pump (A) from the pivot (5). Block up the union and the openings in the pump (by means of adhesive paper) (see Op. 1, para. 1).	
	Fitting (see Pl. 4).	
Op. 2 - 31	Replace the two circular joints (12) sealing the pivot (see Op. 1, para. 3). Remove the plugs from the outlet union on the pump. Refill the pump with special hydraulic fluid. Put the pump in position on the pivot (5). Fit the steel washer, run up the nut (4) on the pivot.	18mm. sp
Op. 2 - 32	Remove the plugs blocking the opening of the rubber inlet and the end on the pump. Put the rubber inlet pipe (101) on the end, (7).	
Op. 2 - 33	Place the belt on the pump pulley. Couple up the tie rod to the pump, place on the fixing screw the collar holding the petrol pipe. Adjust the tension of the belt moving the angular position of the pump. Tighten the fixing screw, fitting a plain washer and a spring washer under the nuts. Tighten the nut (4) of the pivot (5) on the pump to 1.5 m/kgs. (11 ft/lbs).	12mm. box 12mm. sp 13mm. sp
Op. 2 - 34	Start the engine. Unscrew the bleed screw (1) (see Pl. 3). Let the engine run for one or two minutes. Tighten the bleed screw.	
Op. 2 - 35	Check the pressure in the accumulator. The rubber pipe (108) (see Pl. 3) jerks at the moment of cut off.	

		Tools
Operation 3	WORK ON THE CONTROL VALVE - ACCUMULATOR.	
	REPLACING AN ACCUMULATOR.	
	Removal (see Pl. 3).	
Op. 3 - 1	Release the pressure (see Op. 1, para. 2).	
Op. 3 - 2	Unscrew the accumulator (C) from the control valve (B) (using a chain spanner if necessary). Remove the rubber joint (15).	
Op. 3 - 3	Block the opening in the accumulator (see Op. 1, para. 1).	
	Fitting.	
Op. 3 - 4	Remove the plug protecting the opening in the accumulator. Put the rubber joint (15) in position on the accumulator. Soak it in hydraulic fluid.	
Op. 3 - 5	Screw the accumulator on the body of the control valve (B). Screw up by hand.	
Op. 3 - 6	Check the pressure in the accumulator. The rubber tube (108) will jerk at the moment of cut off.	
	REPLACING A CONTROL VALVE - ACCUMULATOR.	
	Removal (see Pl. 3).	
Op. 3 - 7	Release the pressure (see Op. 1, para. 2).	
Op. 3 - 8	Uncouple from the control valve the rubber tube (108) returning to the reservoir. Attach this tube to the down pipe to avoid draining the reservoir. Block the opening in the tube and that in the control valve (see Op. 1, para. 1).	
Op. 3 - 9	Completely unscrew the union (16) from the tube (102) joining the pump to the control valve on the control valve, without taking off the tube, so as not to deform it. Unscrew the nut (4) from the pivot (5) of the pump (see Pl. 4).	15mm. spanner
Op. 3 - 10	Uncouple from the control valve the tube (103) joining the control valve and the lock. Block the opening in the control valve and in the tube (see Op. 1, para. 1).	
Op. 3 - 11	Remove the control valve, disengage the clip. Block the end of the tube and the opening in the control valve (see Op. 1, para. 1).	12mm. box spanner
Op. 3 - 12	Remove the control valve bracket from the cylinder block.	12mm. box spanner

		Tool
	Fitting (see Pl. 3).	
Op. 3 - 13	Fit the control valve bracket on the cylinder block. Fit the distance pieces between the support and the cylinder block. Tighten the screws, fitting spring washers under the head of each screw.	12mm. box
Op. 3 - 14	Place the clip on the control valve.	
Op. 3 - 15	Put the sealing ring in position on the end of the tube (102) (see Op. 1, para. 3).	
Op. 3 - 16	Offer up the control valve on its bracket. Put the clip on the lower end of the bracket without fixing the control valve, hold it by hand.	
Op. 3 - 17	Engage the tube (102) in the hole in the control valve (see Op. 1, para. 3), hold the union in the hand. Fix the control valve while holding the tube in place. Tighten the union (16) to 0.6 to 0.8 m/kgs. (4½ to 5¾ ft/lbs).	15mm. sp
Op. 3 - 18	Fix the control valve on its support, fitting a plain washer and a spring washer under the nut. Tighten the screw of the clip. Tighten the nut on the pump pivot to 1.5 m/kgs. (11 ft/lbs) (see Op. 1, para. 3).	12mm. sp 16mm. sp
Op. 3 - 19	Couple the tube (103) connecting the control valve to the lock to the control valve (see Op. 1, para. 3). Couple the petrol tube (108) returning to the reservoir to the control valve. Lock the tube on the end of the control valve with a clip.	
Op. 3 - 20	Put the system under pressure. Check for leaks. Check that there is pressure in the accumulator (see Op. 1, para. 5).	
Operation 4	REPLACING THE LOCK.	
	Removal (see Pl. 5).	
Op. 4 - 1	Release the pressure (see Op. 1, para. 2).	
Op. 4 - 2	Disconnect the leakage return tube (110) from the lock. Stop the opening in the tube and the opening in the lock (see Op. 1, para. 1). *a*). Disconnect the return tube to the reservoir (107) from the lock. Lift up the tube against the reservoir and fix it by means of a piece of wire to the down tube, to avoid draining the reservoir. *b*). Disconnect the other tubes from the lock. Immediately block up the ends of the tubes and the openings in the lock (see Op. 1, para. 1).	
Op. 4 - 3	Uncouple the rods (3 and 4) from the lock control from the control cam (5).	

		Tools
Op. 4 - 4	Remove the plate holding the rubber plate for the hole for the Lockheed brake pipes and the cover plate from the coque.	
Op. 4 - 5	Uncouple the lock from the cover plate and remove the bracket (6) for the lock control and the spring (7).	
	Fitting (see Pl. 5).	
Op. 4 - 6	Place the bracket (6) for the control and the spring (7) on the lock. Fit the assembly on the cover plate. (NOTE:- the end (8) of the leakage return tube (110) must be located towards the left of the coque). Run up the screw, fitting a spring washer. Put the control cam (5) in the closed position, tighten the screw.	12mm. box spanner
Op. 4 - 7	Fit the cover plate on the coque. Fit a plain washer and a spring washer under the head of each screw or nut. Fit the rubber plate in the hole for the brake pipe. Fit the plate for retaining the rubber, and fit the attachment (for the cable harness).	8mm. box spanner
Op. 4 - 8	Couple up the rods (3 and 4) to the control cam for the lock. Bend the end of the rod (4) for the foot control. Also bend the end of the rod (3). Tighten the screws of the cable clips, the cam (5) of the lock should not be gripped during these operations. Check that the cam bears on the lock on its centreline. A misalignment can cause jamming in the lock.	
Op. 4 - 9	Couple up the feed tubes (103 and 104) and the leakage return tube (110) and the return tube (108) from the height corrector to the lock (see Op. 1, para. 3). Complete the connection of the tubes with the return tube (107) to the reservoir.	10mm. spanner
	NOTE:- Make sure that the clutch cable does not touch the pipes.	
Op. 4 - 10	Put the hydraulic system under pressure. Check for leakage (see Op. 1, para. 5).	
Operation 5	WORK ON THE RESERVOIR AND FEED TO THE PUMP.	
	CLEANING THE FILTER.	
	Removal (see Pl. 6).	
Op. 5 - 1	Uncouple the rubber feed pipe (101) to the pump, from the feed pipe on the filter assembly (2) in the reservoir, block the opening in the rubber tube (see Op. 1, para. 1).	
Op. 5 - 2	Unscrew the cap (3) of the filter assembly. Remove the filter assembly and the filter.	
Op. 5 - 3	**Clean the filter.**	
	Wash the filter by immersing it in alcohol. Blow out with compressed air through the opening in the feed pipe assembly. Check the filter assembly for leakage by holding the hand over the end, immersing it in water and blowing compressed air through the tube (2). After carrying out this check, wash the assembly again in alcohol and blow it out with compressed air.	

		Tools
Op. 4 - 4	Remove the plate holding the rubber plate for the hole for the Lockheed brake pipes and the cover plate from the coque.	
Op. 4 - 5	Uncouple the lock from the cover plate and remove the bracket (6) for the lock control and the spring (7).	
	Fitting (see Pl. 5).	
Op. 4 - 6	Place the bracket (6) for the control and the spring (7) on the lock. Fit the assembly on the cover plate. (NOTE:- the end (8) of the leakage return tube (110) must be located towards the left of the coque). Run up the screw, fitting a spring washer. Put the control cam (5) in the closed position, tighten the screw.	12mm. box spanner
Op. 4 - 7	Fit the cover plate on the coque. Fit a plain washer and a spring washer under the head of each screw or nut. Fit the rubber plate in the hole for the brake pipe. Fit the plate for retaining the rubber, and fit the attachment (for the cable harness).	8mm. box spanner
Op. 4 - 8	Couple up the rods (3 and 4) to the control cam for the lock. Bend the end of the rod (4) for the foot control. Also bend the end of the rod (3). Tighten the screws of the cable clips, the cam (5) of the lock should not be gripped during these operations. Check that the cam bears on the lock on its centreline. A misalignment can cause jamming in the lock.	
Op. 4 - 9	Couple up the feed tubes (103 and 104) and the leakage return tube (110) and the return tube (106) from the height corrector to the lock (see Op. 1, para. 3). Complete the connection of the tubes with the return tube (107) to the reservoir.	10mm. spanner
	NOTE:- Make sure that the clutch cable does not touch the pipes.	
Op. 4 - 10	Put the hydraulic system under pressure. Check for leakage (see Op. 1, para. 5).	
Operation 5	WORK ON THE RESERVOIR AND FEED TO THE PUMP.	
	CLEANING THE FILTER.	
	Removal (see Pl. 6).	
Op. 5 - 1	Uncouple the rubber feed pipe (101) to the pump, from the feed pipe on the filter assembly (2) in the reservoir, block the opening in the rubber tube (see Op. 1, para. 1).	
Op. 5 - 2	Unscrew the cap (3) of the filter assembly. Remove the filter assembly and the filter.	
Op. 5 - 3	**Clean the filter.**	
	Wash the filter by immersing it in alcohol. Blow out with compressed air through the opening in the feed pipe assembly. Check the filter assembly for leakage by holding the hand over the end, immersing it in water and blowing compressed air through the tube (2). After carrying out this check, wash the assembly again in alcohol and blow it out with compressed air.	

		Too
	Fitting (see Pl. 6).	
Op. 5 - 4	Make sure that the rubber joint (4) is in position in the filter assembly cap, and make sure that it is in good condition. Put the filter assembly (2) in position in the reservoir, tighten the cap (3) by hand.	
Op. 5 - 5	Couple the rubber feed pipe (101) to the feed pipe on the filter assembly (2) (see Op. 1, para. 1).	
Op. 5 - 6	Bleed the feed system. Start the engine. Unscrew the bleed screw (1) (see Pl. 3). Let the engine run for one or two minutes. Tighten the bleed screw.	
	REPLACING A RESERVOIR.	
	Removal (see Pl. 6).	
Op. 5 - 7	Close the lock. Lower the pressure (see Op. 1, para. 2).	
Op. 5 - 8	Uncouple from the control valve, the rubber return pipe (108) from the control valve to the reservoir (see Pl. 3). Lock the opening in the control valve (see Op. 1, para. 1). Put the end of the rubber tube in a receptacle, drain the reservoir (E). NOTE:- In no case must the liquid drained off be re-used.	
Op. 5 - 9	Uncouple the rubber tube (107) from the reservoir to the lock, from the pipe (7) on the reservoir (E). Block the opening in the rubber tube (see Op. 1, para. 1).	
Op. 5 - 10	Uncouple the rubber leakage return pipe (110) from the pipe (8) on the reservoir. Block the opening in the rubber tube (see Op. 1, para. 1).	
Op. 5 - 11	Uncouple the rubber feed pipe (101) to the pump, from the feed pipe on the filter assembly (2). Block the opening of the tube (see Op. 1, para. 1).	
Op. 5 - 12	Remove the clips fixing the reservoir to the bracket. Remove the reservoir.	8mm. box
Op. 5 - 13	Clean the parts (use alcohol to the exclusion of any other product).	
	Fitting (see Pl. 6).	
Op. 5 - 14	Fit the reservoir on the bracket. Put the clips in position, tighten the screws.	
Op. 5 - 15	Couple the pump feed pipe (101) to the feed pipe on the filter assembly (2); the rubber pipe (107) from the reservoir to the lock to the pipe (7) on the reservoir; the leakage return tube (110) to the pipe (8) on the reservoir; the return pipe (108) from the control valve to the pipe (9) on the reservoir and to the control valve.	

		Tools
	IMPORTANT NOTE:- The reverse connection of the pipes (107 and 110) can cause surcharging in the pipe (8) sufficient to blow off the tube (107) from the reservoir, causing complete loss of fluid from the system.	
Op. 5 - 16	Fill the reservoir to the correct level (3.5 litres approximately) (6 pints). *Use only the special brake fluid (Lockheed 55).*	
Op. 5 - 17	Bleed the hydraulic system. Start the engine. Unscrew the bleed screw (1) (see Pl. 3). Let the engine run for one or two minutes. Tighten the bleed screw.	
Operation 6	REPLACING THE HEIGHT CORRECTOR.	
	Removal (see Pl. 9).	
Op. 6 - 1	Put the wheel change control lever in the 'HIGH' position.	
Op. 6 - 2	Raise the vehicle with a jack. Pack under the coque to the height of the rear doors.	
Op. 6 - 3	Release the pressure (see Op. 1, para. 2).	
Op. 6 - 4	Uncouple from the corrector (F), the 5 pipes (see fig. 2). The feed pipe and the return pipe are marked by a paint mark, red for the feed and blue for the return. Block the openings in the 5 pipes immediately after disconnecting, as well as the opening in the height corrector (see Op. 1, para. 1).	Bent 10mm. spanner
Op. 6 - 5	Remove the height corrector (F) from the bracket (14).	12mm. box spanner
	Fitting (see Pl. 9).	
Op. 6 - 6	Remove the plug from the opening for the feed pipe on the height corrector, put a little hydraulic fluid into the corrector. Put back the plug.	
Op. 6 - 7	VERY IMPORTANT:- *Check that the leakage return pipe (109) is not blocked* (blow out with compressed air).	
Op. 6 - 8	Uncouple the wheel change control rod (11) from the height corrector bracket (14). Fit the height corrector (F) on the bracket. Put the lever end into the slot in the protector and in the yoke of the height corrector. Temporarily fix the height corrector on its bracket. Fit a plain washer and a spring washer under the head of each screw.	12mm. box spanner
Op. 6 - 9	Couple up the feed pipe (104), the return pipe (106), the leakage return pipe (109) and the feed pipe (105) on the suspension cylinders to the height corrector (see Op. 1, paras. 1 and 3).	10mm. spanner
Op. 6 - 10	Put the suspension system under pressure (see Op. 1, para. 5).	

		Tool
Op. 6 - 11	Adjust the heights (see Op. 10).	
Operation 7	WORK ON THE SUSPENSION CYLINDER.	
	REPLACING A PNEUMATIC UNIT.	
	Removal (see Pl. 7).	
Op. 7 - 1	Make sure that everything is clean (see Op. 1, para. 1).	
Op. 7 - 2	Raise the car with a jack, to the height of the front point of the rear wing.	
Op. 7 - 3	Remove the wheel.	Wheel b
Op. 7 - 4	Release the pressure (see Op. 1, para. 2).	
Op. 7 - 5	Remove the pneumatic unit (H) (it can be unscrewed by hand). Block the openings in the cylinder and in the unit (see Op. 1, para. 1).	
Op. 7 - 6	Clean the parts.	
	Fitting (see Pl. 7).	
Op. 7 - 7	Remove the plug from the opening of the pneumatic unit.	
Op. 7 - 8	Replace the joint (69). Look carefully to see that this joint is not kinked.	
Op. 7 - 9	Remove the plug blocking the opening in the cylinder.	
Op. 7 - 10	Screw on the pneumatic unit (H). Tighten it by hand.	
Op. 7 - 11	Put the suspension system under pressure. Check for leakage (see Op. 1, para. 5).	
Op. 7 - 12	Fit the wheel.	Wheel b
Op. 7 - 13	Lower the car to the ground.	

		Tools
	REPLACING A SUSPENSION CYLINDER.	
	Removal (see Pl. 7).	
Op. 7 - 14	See that everything is clean (see Op. 1, para. 1).	
Op. 7 - 15	Raise the car, block up under the coque to the height of the rear door.	
Op. 7 - 16	Release the pressure (see Op. 1, para. 2). Close the lock.	
Op. 7 - 17	Remove the wheel.	Wheelbrace
Op. 7 - 18	Unscrew (by hand) the pneumatic unit (H) from the suspension cylinder (G). Screw in the protecting plug in place of the pneumatic unit. Screw on the protecting cap to the pneumatic unit (see Op. 1, para. 1).	
Op. 7 - 19	Uncouple the feed pipe (105) from the cylinder. Immediately block up the holes in the tube and in the cylinder (see Op. 1, para. 1).	10mm. spanner
Op. 7 - 20	Remove the clip (32) holding the cylinder.	8mm. spanner
Op. 7 - 21	Remove the clip (6) holding the piston rod (7) to the bracket (8). Remove the rod from the ball socket dust cover.	
Op. 7 - 22	Turn the cylinder assembly through 180° so as to bring the boss for the feed pipe towards the ground. Then remove the cylinder assembly by drawing it towards the front.	
Op. 7 - 23	Remove the dust cover (23) and the rod (7) from the piston (22).	
Op. 7 - 24	Remove the dust cover (23) from the piston rod (7).	
	Fitting (see Pl. 7).	
Op. 7 - 25	NOTE:- Meticulously observe the conditions of cleanliness (see Op. 1, para. 1).	
Op. 7 - 26	**Fit the dust cover (23) on the piston rod (7) :**	
	a). Engage the piston rod (7) in the dust cover (23). The hole 'b' for the clip (6) must be at right angles to the outlet 'c' of the piston dust cover.	
	b). Fit the dust cover on the knurled portion of the piston rod (7).	
	c). Insert the piston rod in the piston. Put the dust cover (23) on the body of the suspension cylinder (G). Locate the outlet 'c' so that it is diametrically opposite the feed pipe union (105).	

		Tool
Op. 7 - 27	Very carefully clean the bore of the suspension cylinder bracket.	
Op. 7 - 28	Insert the front of the suspension cylinder in the bracket, the boss of the feed pipe union located towards the bottom. Turn through 180° to bring the boss towards the top. Fix the cylinder by means of the clip (32), the bent part of this clip bearing on the flat of the body of the suspension cylinder.	8mm. sp
Op. 7 - 29	Couple up the tube (105) to the suspension cylinder (see Op. 1, paras. 1 and 3).	Bent 10mm.
Op. 7 - 30	Remove the plug blocking the end of the suspension cylinder. Remove the cap protecting the pneumatic unit. Screw on the pneumatic unit, making sure that the rubber joint is in good condition. Tighten the pneumatic unit by hand.	
Op. 7 - 31	Grease the end of the piston rod. Make sure that the dust cover (24) of the ball socket is in good condition. Put the piston rod (7) in position. Fit the clip (6) (the longest part is the bracket (8)), knock over the end to lock it.	
Op. 7 - 32	Fit the wheel.	Wheelb
Op. 7 - 33	Lower the car to the ground.	
Op. 7 - 34	Put the system under pressure. Check for leakages (see Op. 1, para. 5).	
	REPLACING A REAR DAMPER VALVE.	
	Removal (see Pl. 7).	
Op. 7 - 35	Release the pressure (see Op. 1, para. 2c).	
Op. 7 - 36	Remove the pneumatic unit (H) (see paras. 1 - 5, this Operation).	
Op. 7 - 37	Remove the damper valve (65) (hold the unit in the hand).	19mm. sp
	Fitting.	
Op. 7 - 38	Put the damper valve (65) in position. Tighten it, holding the unit in the hand. *(The damper valve must never be disassembled).*	19mm. sp
Op. 7 - 39	Fit the pneumatic unit (see paras. 7 - 13, this Operation).	
Op. 7 - 40	Put the system under pressure (see Op. 1, para. 5).	

		Tools
Operation 8	REPLACING PIPES OF THE SUSPENSION SYSTEM.	
	Removal (see Pl. 1).	
Op. 8 - 1	Make sure that everything is clean (see Op. 1, para. 1).	
Op. 8 - 2	Raise the vehicle about 0.50m. from the ground. Pack at the height of the point of the rear wings and under the lower arms of the front axle.	
Op. 8 - 3	Release the pressure (see Op. 1, para. 2b).	
Op. 8 - 4	Uncouple the inlet pipe (104) and the exhaust pipe (106) from the lock (D). Uncouple the rubber pipe from the steel leakage return pipe (109).	10mm. spanner
Op. 8 - 5	Block the openings in the tubes and those in the lock (see Op. 1, para. 1).	
Op. 8 - 6	Remove the pipes from the fixing plates on the coque and on the floorboard.	
Op. 8 - 7	Carefully straighten the end of the pipe leaving the section under the coque.	
Op. 8 - 8	Uncouple the left hand handbrake cable from the cross-shaft.	14mm. spanner
Op. 8 - 9	Remove the rubber tube protectors from the section of the coque.	
Op. 8 - 10	Uncouple the inlet pipe (104) and the exhaust pipe (106) from the height corrector (F). Uncouple the rubber pipe from the steel leakage return pipe (109).	10mm. spanner
Op. 8 - 11	Block the openings in the pipes and those in the height corrector (see Op. 1, para. 1).	
Op. 8 - 12	Carefully straighten the pipes.	
Op. 8 - 13	Remove towards the front the assembly of the pipes from the section under the coque.	
	Fitting (see Pl. 1).	
Op. 8 - 14	Make sure that everything is perfectly clean (see Op. 1, para. 1b).	
Op. 8 - 15	Screw a cone on the inlet pipe (104) union and the exhaust pipe (106) union (use the cone MR.3384-8, see Pl. 2, fig. 4).	Cone MR.3384-8

		Tool
Op. 8 - 16	The pipes are marked with a paint mark at each end, red for inlet, blue for exhaust.	
Op. 8 - 17	Prepare the front ends of the inlet and exhaust pipe (see fig. 2) and the leakage return pipe (see fig. 3). NOTE:- Sharp bends must not be allowed.	
Op. 8 - 18	Insert the pipes as prepared in the section under the coque. Put the part of the pipe coming on the coque in position by pivoting them (deflect the end of the tube within the elastic limit to pass in between the engine and the coque).	
Op. 8 - 19	Curve the front end of the inlet pipe and exhaust pipe on a mandrel of 40mm. diameter to allow their connection to the lock (D).	Mandrel 40mm
Op. 8 - 20	Fix the pipes by their fixing clips on the coque.	
Op. 8 - 21	Couple the pipes to the lock (see Op. 1, para. 3). Connect the rubber pipe to the steel leakage return pipe (109).	10mm.
Op. 8 - 22	Curve the rear ends of the inlet pipe (104) and the exhaust pipe (106) on a mandrel of 100mm. diameter to allow their connection to the height corrector (F).	Mandrel 100mm
Op. 8 - 23	Couple up the pipes to the height corrector (see Op. 1, para. 3). Connect the rubber pipe to the steel leakage return pipe (109) and to the height corrector.	10mm.
Op. 8 - 24	Start the engine. Bleed the system by turning the screw (1) of the control valve (see Pl. 3).	
Op. 8 - 25	Put the wheel change control lever in the 'HIGH' position. Check the unions for leakage.	
Op. 8 - 26	Lower the car to the ground. Put the wheel change control lever in the 'NORMAL' position.	
Operation 9	ADJUSTMENTS ON THE FRONT AXLE.	
	ADJUSTING THE CASTER ANGLE.	
Op. 9 - 1	This operation is the same as for the 8-Cylinder car without hydro-pneumatic suspension, except for the following points: The caster angle is $1^{o} \pm 15'$. This adjustment will be checked with the gauge 2319-VSH (this gauge is used in the same way as 2317-T).	Gauge 23

Tools

ADJUSTING WHEEL ALIGNMENT.

2 This operation is the same as for the 6-Cylinder car without hydro-pneumatic suspension.

The toe-out must be 0 to 2mm.

ADJUSTING THE STEERING LOCK.

3 This operation is the same as for the 6-Cylinder car without hydro-pneumatic suspension. Use the gauge 1892-V6H (see Pl. 24).

Gauge 1892-V6H

CHECKING THE CAMBER.

4 This operation is the same as for the 6-Cylinder car without hydro-pneumatic suspension. Use the gauge 2314-T after having carried out the modification (calibrated for 6H) as shown on Pl. 23, fig. 3.

The camber should be between 0° and 0°35' (0 to 4mm. on the diameter of the rim). It should be greater on the left hand side.

Gauge 2314-T

10 ADJUSTING THE HEIGHTS, FRONT AND REAR.

To carry out this operation it is necessary that the car should be unladen and in running order (with the spare wheel and 5 litres (1 gallon) petrol).

1 Check the pressure of the tyres (185 x 400X) :

Front:	1.6 kg/sq.cm.	(23 lbs/sq.in).
Rear :	1.7 kg/sq.cm.	(24½lbs/sq.in).

2 *Uncouple the front shockabsorbers.* Release the handbrake.

3 **Adjusting the front heights:**

Place the car on a level and horizontal surface. Adjust the spherical bearings of the adjusting levers. The front heights should be 251 ± 5mm., this dimension is taken from the underside of the splined shaft to the ground, as near as possible to the front silentbloc (use the gauge 2300-T, see Pl. 24).

4 **Adjusting the rear heights:**

(It is essential that the front shockabsorbers are uncoupled).

a). Place the car on a level, horizontal surface. Have the engine ticking over. Place the wheel changing control lever in the 'LOW' position. Wait while the car settles down.

Tools

b). Remove the rebound buffer (front buffer) (15) (see Pl. 7) from one arm, say the right hand arm. Replace the buffer (15) by a setting block 2305-V8H (see Pl. 25, fig. 2). — Setting block

c). Place the wheel change control lever in the 'HIGH' position. Wait until the car stops rising. Raise the left hand side of the vehicle with a jack. Put a block underneath for safety.

NOTE:- Raise the vehicle as high as possible, the right hand wheel remaining on the ground. This operation is required to give easy access to the height corrector.

d). Remove the buffer (rear buffer) (18) (see Pl. 7) from the left hand arm. Replace it by a setting block 2305-V8H (see Pl. 25, fig. 1). — Setting block

e). Stop the engine. Release the pressure (see Op. 1, para. 2). Return the wheel change control lever to the 'NORMAL' position.

f). Uncouple the wheel change control rod (11) from the corrector (14), disengage it from the yoke on the height corrector (F). Remove the end of the rod (11) from the pivot support (12) (see Pl. 9).

g). **Adjust the height corrector** (see Pl. 9 and 8).

Set the height corrector approximately:

A). Centre the height corrector (F) in relation to the control lever (25) by moving the bracket (14) on the crossmember (33).

B). Bring the yoke and the lever parallel to one another by rotating the bracket (14) on the crossmember (33).

Adjust the depth of engagement of the control lever (25) in the yoke of the height corrector (F), by moving the crossmember (33) supporting the height corrector so as to obtain a dimension 'a' = 4mm. (see Pl. 8). Distribute the clearance in the yoke on either side of the lever by moving the height corrector (F) on its bracket (14). Carry out this operation by sight. *Do not use a gauge of suficient thickness to move the valve of the height corrector.*

h). Couple up the wheel gauge control rod (11) and centre it in the yoke of the height corrector (F), by moving the bearing (13) for this rod on the height corrector bracket (14). Put the rubber protector (29) in position.

i). Start the engine. Open the lock, by pressing on the clutch pedal. Place the wheel change control lever in the 'HIGH' position. Remove the setting block 2305-V8H as fitted in para. *d)*, and put the buffer in position. Lower the car to the ground. Put the wheel change control lever in the 'LOW' position. Remove the setting block 2305-V8H from the right hand arm, and refit the rebound buffer.

NOTE:- Insert a screwdriver between the buffer and the cup to release any air trapped under the buffer.

j). Couple the front shockabsorbers.

Op. 10 - 5 **Checking the heights:**

a). Place the car on a car lift or a pit. Let the engine tick over. Do not apply the handbrake, chock the front. Do not pull the lock. *Uncouple the front shockabsorbers.*

b). Put the wheel change control lever in the 'LOW' position. Wait while the car becomes stabilised. Put the control lever in the 'NORMAL' position and wait while the car becomes stabilised.

Tools

c). Remove the wheel change control rod (11). Uncouple the bearing (13) from the height corrector bracket (14) (see Pl. 9).

d). Place a straight edge resting on the side of the pit or the car lift, and adjust it parallel to the rear tubular crossmember of the car. *The lower face of the straight edge must be in exact alignment with the contact patch of the wheels.* With certain car lifts it will be necessary to make a straight edge to give this condition.

e). Raise the car *very slowly* by the rear bumper. Stop when a resistance is felt, wait in this position until a whistle is produced, indicating that the liquid is completely exhausted.

NOTE:- It is necessary to use an effort of approximately 20 kg. and the duration of the lift should be 20 seconds at least.

Precisely at this moment have an assistant take the dimension 'e' between the underside of the tubular crossmember and the contact patch of the wheels (underside of the straight edge placed in para. *d).* Use a 15cm. rule.

f). Wait while the car becomes stabilised.

g). Lower the car slowly by pulling on the rear shockabsorber. Stop when some resistance is felt. Wait in this position until a whistling is heard, indicating the end of the inlet of the liquid. Have an assistant take the dimension 'a' between the underside of the crossmember and the bearing pads of the wheels (see para. *e)* NOTE).

h). Take the average of the dimensions $\frac{a + e}{2}$. This average should be between 269 and 285mm.

i). If this is not the case, remove the height corrector. By moving the height corrector towards the top the height under the coque is increased, and inversely. A movement of 1mm. of the height corrector corresponds to about 8mm. variation in the height of the car.

j). Couple up the wheel change control rod (11) and centre it in the yoke of the height corrector by moving the bearing (13) for the rod. Put the rubber protector (29) in position on the body of the height corrector (F) (see Pl. 9).

k). Couple up the front shockabsorbers.

Operation 11 — ADJUSTMENT OF HEADLAMPS.

Op. 11 - 1 — Use the board for headlamp adjustment MR.1572 (see Pl. 23). — Board MR.1572

Op. 11 - 2 — Place the car on a smooth, horizontal surface. The height and tyre pressures should be correct. Have the engine ticking over.

NOTE:- Do not sit in the car which must be unladen.

Hook the cables to the lower arms. Place the screen so that the cables are tensioned exactly in the same manner. The screen being circularly perpendicular to the centreline of the car.

Op. 11 - 3 — Adjust the headlamps by sight so that they are horizontal and parallel to the centreline of the car.

		Tools
Op. 11 - 4	Measure the distance between the headlamps. Place the vertical wires, adjust the vertical wires to this dimension, and equi-distant from the centreline of the hook.	
Op. 11 - 5	*Place the horizontal wire at 920mm. from the ground.*	
Op. 11 - 6	Adjust the headlamps in succession so that the centreline of the beams falls at the point of intersection of the wires. NOTE:- As the car does not take up the same position on the road as when standing, the dimension of height (920mm. from the ground) must be observed in order to obtain correct headlamp adjustment on the road.	