evolution : hydractive suspension regulation
HYDRACTIVE SUSPENSION

Vehicle concerned :
XANTIA hydractive (with or without SC.CAR).

Applicable from RPO number : 8155.

N.B. : SC.CAR : CITROEN active roll-control system.

Change in supplies to the hydractive suspension regulators (switching from "firm" state to "soft" state and vice versa) :

- fitting of new hydractive suspension regulators
- discontinuation of the hydraulic pipes between the suspension regulators and the anti-sinking valves

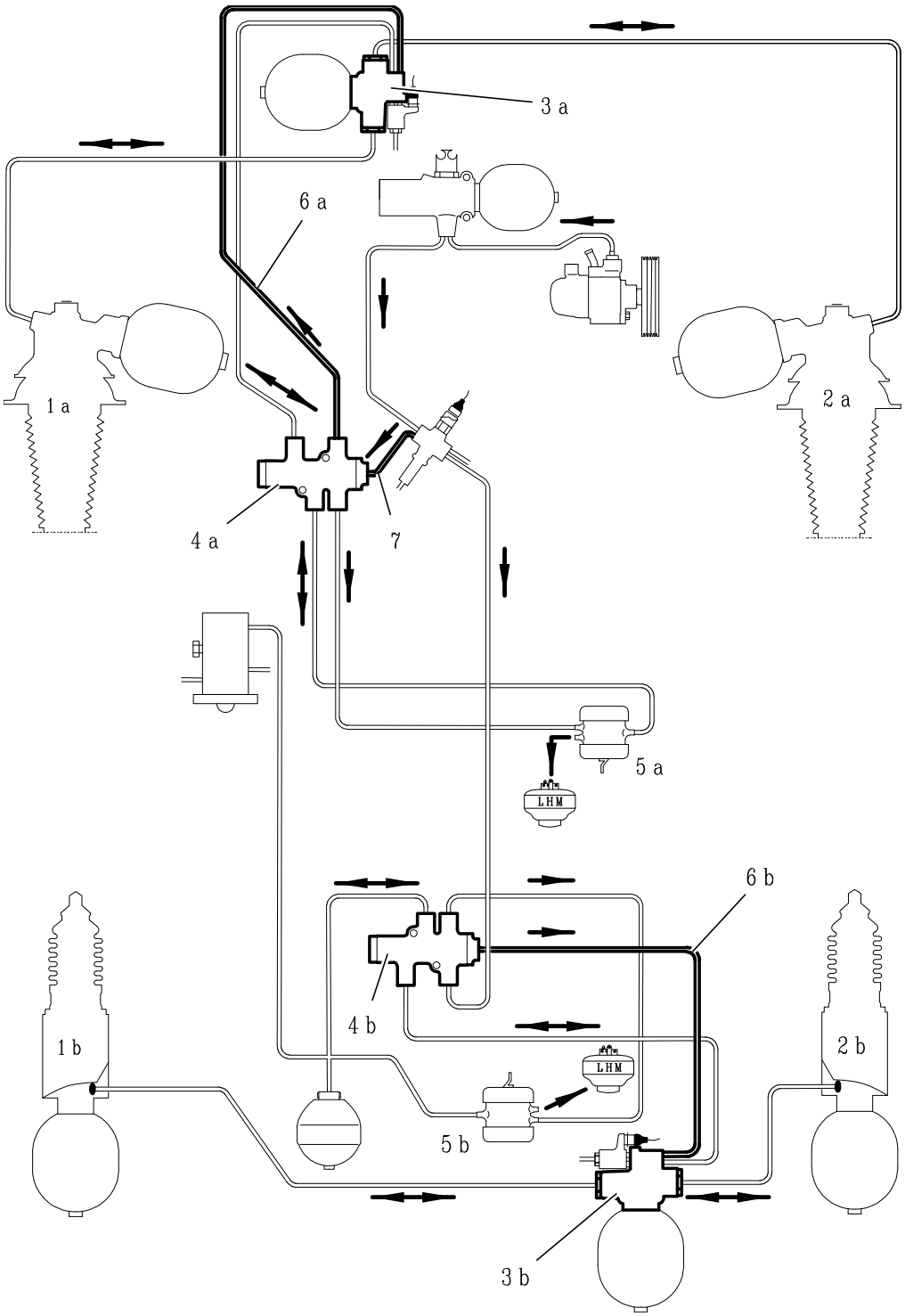
1 Description

The drawings in this document contain indices :

- index a =
  front suspension strut
- index b =
  rear suspension unit

1.1 Previous assembly

1.1.1 Presentation



- Fig. : 1 -

(1a) L.H. front suspension unit.

(1b) L.H. rear suspension unit.

(2a) RH front suspension unit.

(2b) RH rear suspension unit.

(3a) front suspension regulator.

(3b) rear suspension regulator.

(4a) anti-sinking valve (front).

(4b) anti-sinking valve (rear).

(5a) front height corrector.

(5b) rear height corrector.

(6a) hydraulic supply pipe of the front suspension regulator (switching from "firm" state to "soft" state and vice versa).

(6b) hydraulic supply pipe of the rear suspension regulator (switching from "firm" state to "soft" state and vice versa).

(7) main hydraulic supply pipe of the front anti-sinking valve.

The above diagram shows the hydraulic circuit of the hydractive suspension with the anti-sinking device :

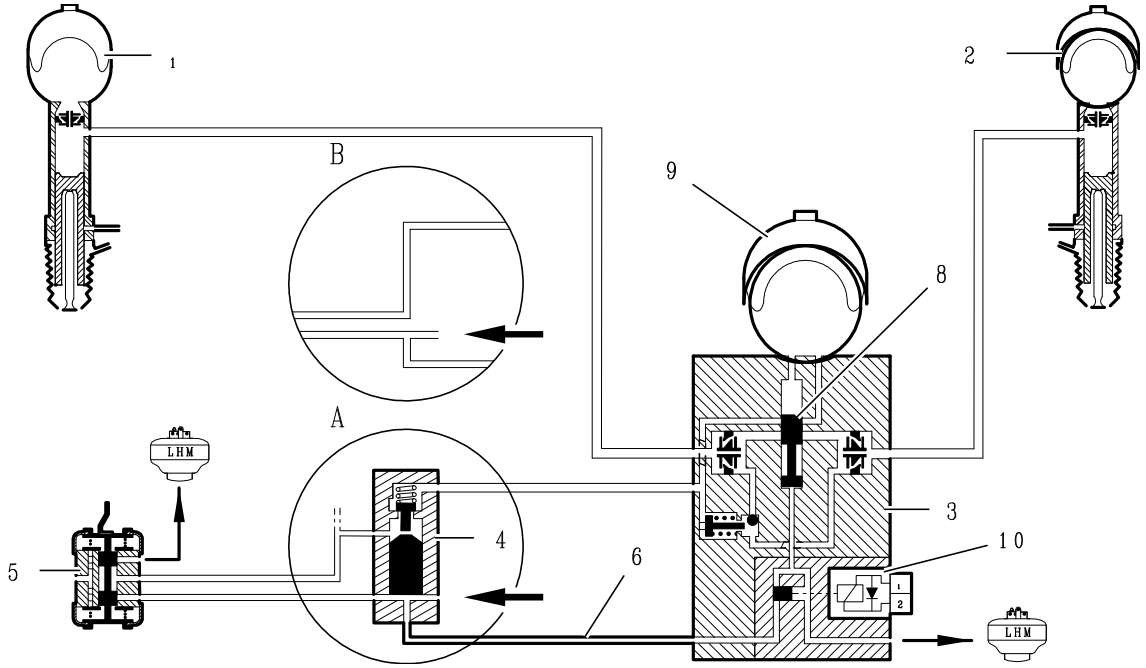
- the suspension regulator (3a) is supplied by the hydraulic pipe (6a)
- the suspension regulator (3b) is supplied by the hydraulic pipe (6b)
- the hydraulic pipe (7) supplies the front anti-sinking valve (4a) at its end

Features of a hydractive suspension hydraulic circuit without anti-sinking device :

- the anti-sinking valves (4a) and (4b) are not fitted
- the hydraulic pipe (6a) connects the regulator (3a) to a 3 -way connector of the hydraulic supply located on the front sub-frame (L.H. side)
- the hydraulic pipe (6b) connects the regulator (3b) to a 3 -way connector of the hydraulic supply located on the rear sub-frame (RH side)

1.1.2 Operating principle

Layout of the front and rear circuit regulation shown with ignition off ("firm" state).



- Fig. : 2 -

A -
assembly with anti-sinking valve.

B -
assembly without anti-sinking valve.

(1) left hand suspension component.

(2) right hand suspension component.

(3) hydractive suspension regulator.

(4) anti-sinking valve.

(5) height corrector.

(6) hydraulic supply pipe of the suspension regulator.

(8) slide valve of the suspension regulator.

(9) sphere of the suspension regulator.

(10) electrovalve of the suspension regulator.

The slide valve (8) of the suspension regulator (3) is held by the pressure from the sphere (9).

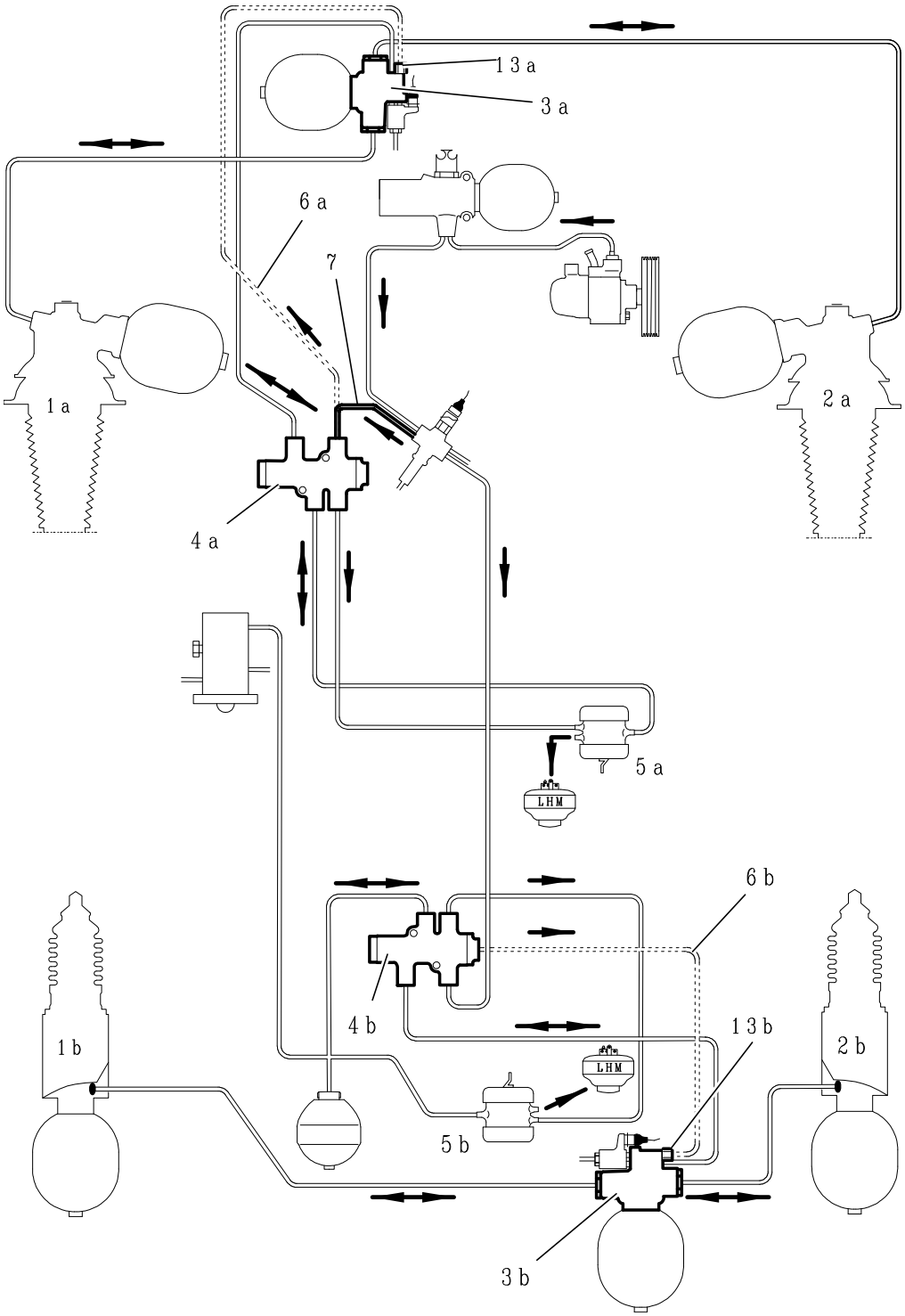
When the electrovalve (10) is energised by the suspension ECU
:

- the slide valve (8) moves under the action of the pressure acting in the hydraulic pipe (6)

- the suspension components (1) and (2) are connected with the sphere (9) of the suspension regulator
- the suspension is in the "soft" state

1.2 New assembly

1.2.1 Presentation



- Fig. : 3 -

(1a) L.H. front suspension unit.

(1b) L.H. rear suspension unit.

(2a) RH front suspension unit.

(2b) RH rear suspension unit.

(3a) front suspension regulator.

(3b) rear suspension regulator.

(4a) anti-sinking valve (front).

(4b) anti-sinking valve (rear).

(5a) front height corrector.

(5b) rear height corrector.

(6a) hydraulic supply pipe of the front suspension regulator (switching from "firm" state to "soft" state and vice versa).

(6b) hydraulic supply pipe of the rear suspension regulator (switching from "firm" state to "soft" state and vice versa).

(7) main hydraulic supply pipe of the front anti-sinking valve.

(13a) bleed screw on the front suspension regulator.

(13b) bleed screw on the rear suspension regulator.

Features of the new assembly
:

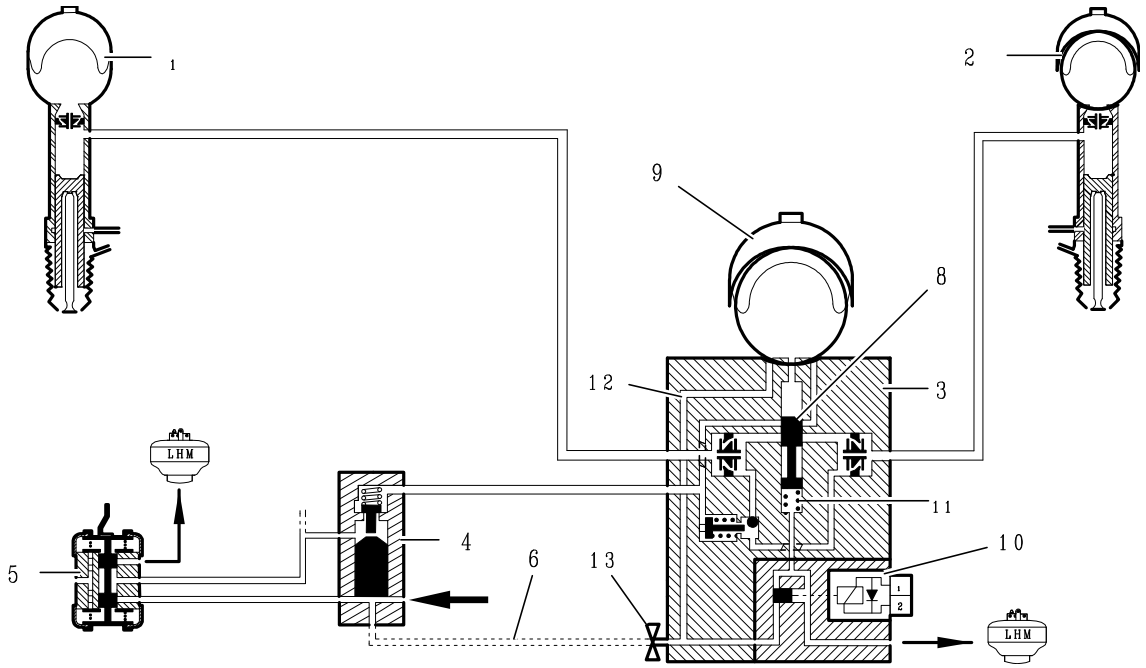
- discontinuation of hydraulic pipes (6a) and (6b), their functions are incorporated into the suspension regulators (3a) and (3b)
- the hydraulic pipe (7) supplies the front anti-sinking valve (4a) through a side orifice (instead of at its end)

New parts
:

- hydractive suspension regulators (3a) and (3b)
- anti-sinking valves (4a) and (4b) (fitting of a plug on the end of the valves)
- main hydraulic supply pipe (7) of the front anti-sinking valve (4a)

1.2.2 Operating principle

Layout of the front and rear circuit regulation shown with ignition off ("firm" state).



- Fig. : 4 -

(1) left hand suspension component.

(2) right hand suspension component.

(3) hydractive suspension regulator.

(4) anti-sinking valve.

(5) height corrector.

(6) hydraulic pipe discontinued.

(8) slide valve of the suspension regulator.

(9) sphere of the suspension regulator.

(10) electrovalve of the suspension regulator.

(11) spring inside the suspension regulator.

(12) supply pipe inside the suspension regulator.

(13) bleed screw.

The slide valve (8) of the suspension regulator (3) is held by the pressure from the sphere (9).

When the electrovalve (10) is energised by the suspension ECU

:

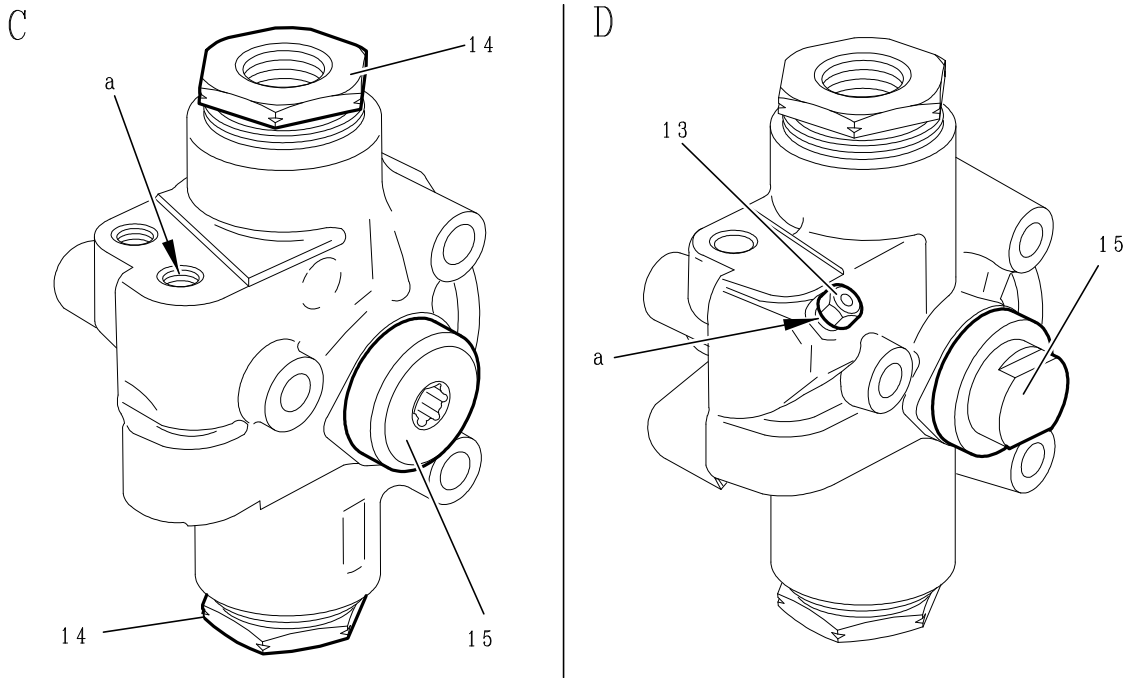
- the slide valve (8) moves due to the pressure supplied by the suspension sphere (9) (through the

internal supply pipe (12), combined with the action of the spring (11))

- the suspension components (1) and (2) are connected with the sphere (9) of the suspension regulator
- the suspension is in the "soft" state

2 Identification

2.1 Hydractive suspension regulator



- Fig. : 5 -

C -
old part
:

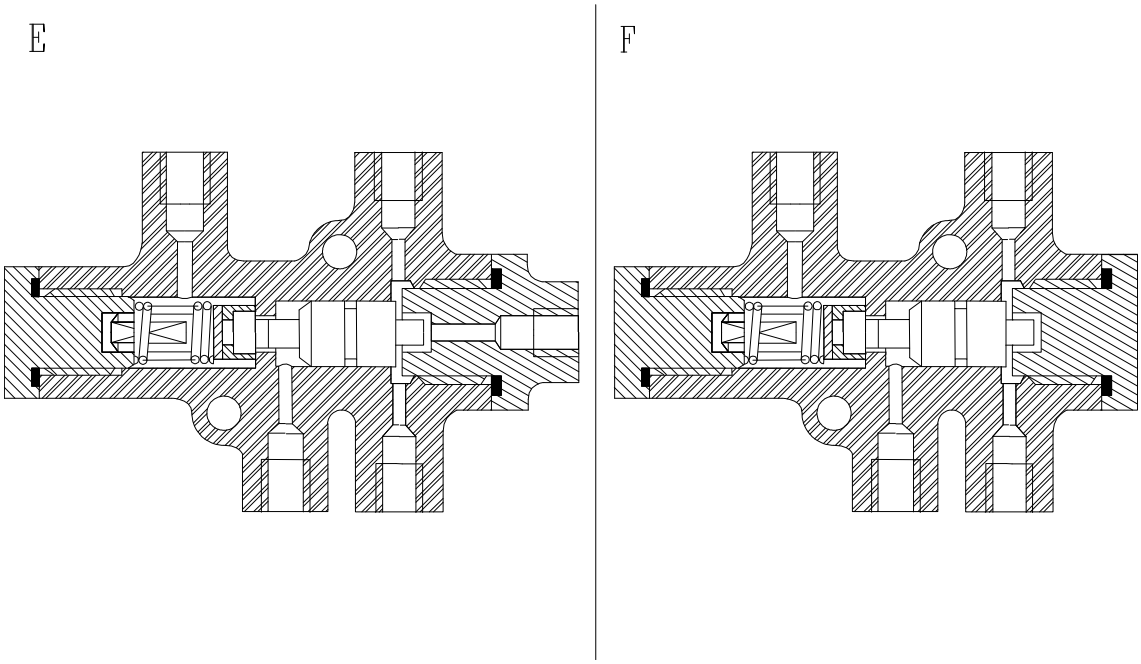
- the plug (15) is not shouldered
- the orifice " a " receives the hydraulic supply pipe of the suspension regulator
- the hexagonal part of the union nuts (14) contains notches, on the regulators designed to receive the new CITROEN hydraulic union

D -
new part
:

- the plug (15) contains a shoulder to house the spring in the regulator
- the orifice " a " is moved and blanked by a bleed screw (13)

Application of the new CITROEN hydraulic union :
from RPO N° 8053 (see specific evolution note).

2.2 Anti-sinking valve



- Fig. : 6 -

E -
old part.

F -
new part :
the anti-sinking valve contains a plug on its 2 ends.

3 Replacement parts

The Replacement Parts Department supplies both the old and the new parts :

- anti-sinking valve
- hydraulic pipes

The suspension regulator is only available with an internal supply hose (once stocks of the old part have been exhausted).

The following variations of hydractive suspension regulator exist :

- compatible with the ISO hydraulic union

- compatible with the new CITROEN hydraulic union

Additional parts to blank the orifice of the anti-sinking valve :

- bleed screw :
  part number 1210 06
- cap :
  part number 2088 15

4 Repairs

The circuit must be depressurised before working on the front or rear suspension circuit.

4.1 Depressurising the suspension

List of operations (engine running, vehicle on the ground).

Repair sequence.	The following operations should be carried out.	Consequences.
1.	Start the engine, pressure regulating bleed screw of the pressure regulator tight.	The SC/MAC valves are operated.
		The electrovalves of the hydraulic regulators are operated.
2.	Put the height control in the low position.	Depressurise the following components.
		The 4 spheres of the suspension components.
		The 2 spheres of the hydractive suspension regulators.
		SC/MAC accumulator (rear).
3.	Stop the engine.	
4.	Unscrew the pressure regulator release screw by one turn.	Depressurise the accumulator of the pressure regulator.

SC/MAC : anti-sink suspension system.

4.2 Replacing a suspension regulator

There are 3 assembly possibilities.

Prior to RPO No. 8052.	Between RPO N° 8053 and 8154.	From RPO N° 8155.
Suspension regulator with external pipework.		Suspension regulator with internal pipework.
Compatible with the ISO hydraulic union.	Compatible with the new CITROEN hydraulic union (see specific evolution note).	

Replacement :
the suspension regulator is only available with an internal supply hose (once stocks of the old part have been ex hausted).

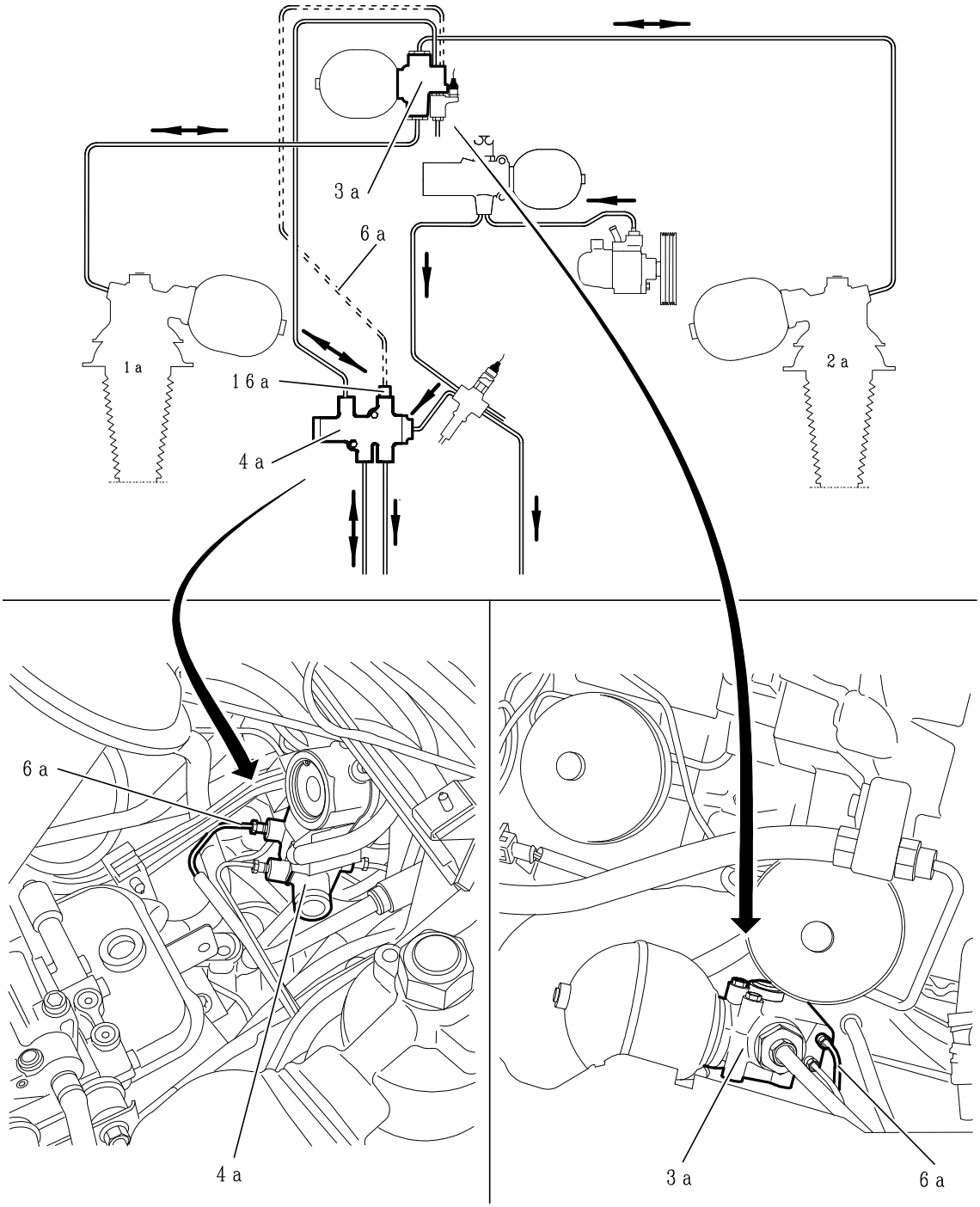
Vehicles manufactured up to RP N° 8052 :
a suspension regulator with internal pipework suited to the ISO hydraulic union is available from the Replaceme nt Parts Division.

Adjustment to be made for fitting the new regulator.

Prior to RPO No. 8052.	Between RPO N° 8053 and 8154.	From RPO N° 8155.
Suspension regulator with internal pipework.		
Compatible with the ISO hydraulic union.	Compatible with the new CITROEN hydraulic union.	
Refer to chapters 4.2.1 and 4.2.2.		Original assembly.

4.2.1 Replacing a suspension regulator (front)

Vehicle concerned :
XANTIA (prior to RPO No. 8154).



- Fig. : 7 -

The above diagram shows the hydraulic circuit of the hydractive suspension with the anti-sinking device.

Features of a hydractive suspension hydraulic circuit without anti-sinking device :
the hydraulic pipe (6a) connects the regulator (3a) to a 3 -way connector of the hydraulic supply located on the front sub-frame (L.H. side).

Operations to be carried out

:

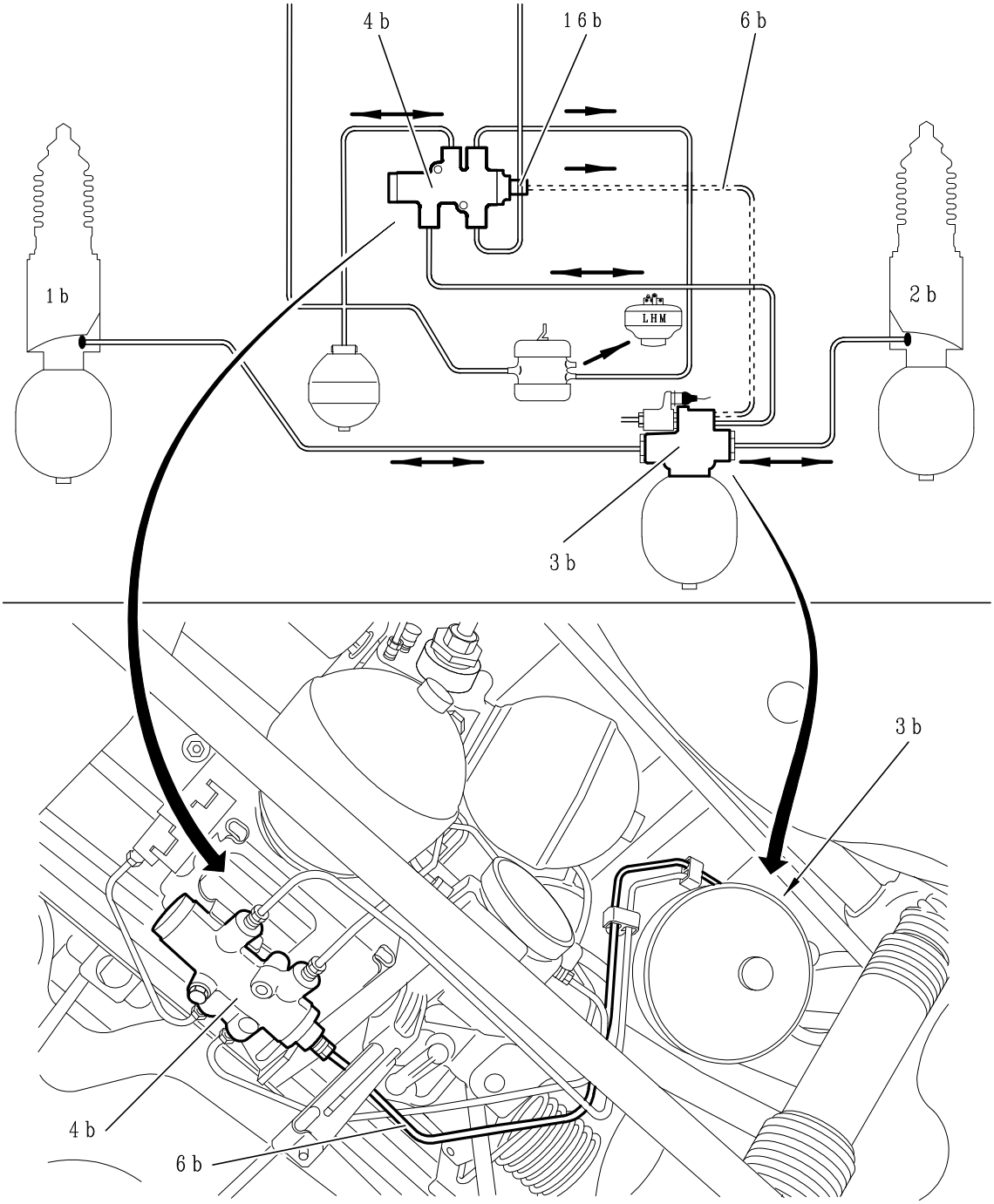
- depressurising the suspension
- disconnect and remove the hydraulic pipe (6a) by cutting it into sections
- remove the seal in the orifice of the anti-sinking valve (4a) (or in the 3 -way connector for a device without anti-sinking)
- insert a bleed screw (16a) into the anti-sinking valve (4a) (or into the 3 -way connector for a device without anti-sinking)
- fit the new suspension regulator (3a)
- check the level of the hydraulic system

URGENT : Check the union is sealed by varying the height of the vehicle, engine running.

CAUTION : The following variations of the new suspension regulator exist :
compatible with the ISO hydraulic union (prior to RPO No. 8052) .
Compatible with the new CITROEN hydraulic union (from RPO No. 8053).

4.2.2 Replacing a suspension regulator (rear)

Vehicle concerned :
XANTIA (prior to RPO No. 8154).



- Fig. : 8 -

The above diagram shows the hydraulic circuit of the hydractive suspension with the anti-sinking device.

Features of a hydractive suspension hydraulic circuit without anti-sinking device :
the hydraulic pipe (6b) connects the regulator (3b) to a 3 -way connector of the hydraulic supply located on the rear sub-frame (L.H. side).

Operations to be carried out

:

- depressurising the suspension
- disconnect and remove the hydraulic pipe (6b) by cutting it into sections
- remove the seal in the orifice of the anti-sinking valve (4b) (or in the 3 -way connector for a device without anti-sinking)
- insert a bleed screw (16b) into the anti-sinking valve (4b) (or into the 3 -way connector for a device without anti-sinking)
- fit the new suspension regulator (3b)
- check the level of the hydraulic system

URGENT : Check the union is sealed by varying the height of the vehicle, engine running.

CAUTION : The following variations of the new suspension regulator exist :
compatible with the ISO hydraulic union (prior to RPO No. 8052) .
Compatible with the new CITROEN hydraulic union (from RPO No. 8053).