DESCRIPTION AND MODIFICATIONS

VACUUM/HYDRAULIC SYSTEM

Description

The service system consists of a vertically split hydraulic system with vacuum servo assistance to all wheels. The secondary system is the unfailed half of the system i.e. full braking on one axle.

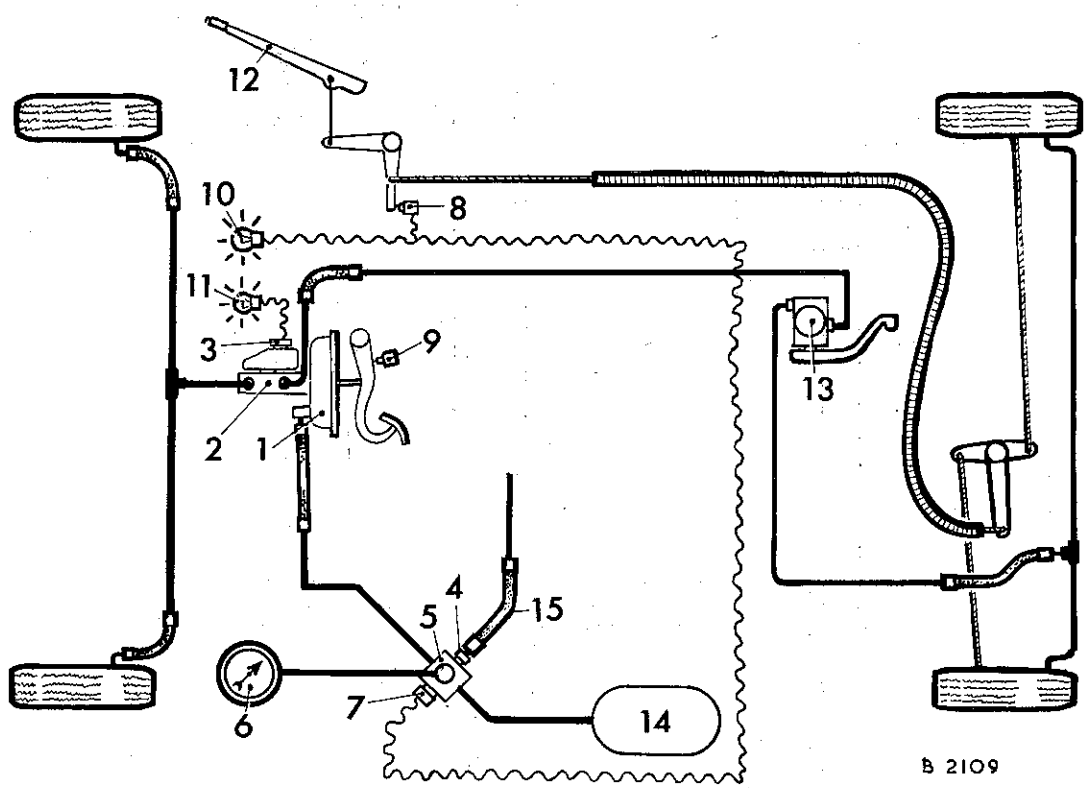
The parking brake is mechanically operated and acts on rear wheels only. The system incorporates the following features.

Brake Assemblies — Self adjusting wheel cylinders with manual override facility for brake drum removal and initial adjustment. Backplates incorporate lining inspection holes and adjuster holes which are sealed by means of rubber grommets.

Vacuum System — $\frac{3}{8}$ in. Bundy tubing is employed throughout. Vacuum is produced by manifold depression on petrol engines and by exhauster on diesel engines. The vacuum reservoir has a capacity of 5 litres. Girling vacuum servos are directly mounted to a Girling tandem master cylinder. The types used will be found in Data.

The system incorporates a vacuum gauge and a low vacuum warning light, the latter doubling as a handbrake warning light also.

Hydraulic System — 3/16 in. Bundy tubing is employed throughout. The tandem master cylinder with its direct mounted fluid reservoir is split vertically, the secondary cylinder operating the front brakes and the primary cylinder operating the rear brakes.



1 VACUUM SERVO UNIT
2 TANDEM MASTER CYLINDER
3 FLUID LEVEL WARNING INDICATOR SWITCH
4 NON RETURN VALVE
5 ADAPTOR — 5 WAY
6 VACUUM GAUGE
7 VACUUM SWITCH
8 HANDBRAKE WARNING SWITCH
9 STOP LIGHT SWITCH
10 LOW VACUUM WARNING/HANDBRAKE WARNING LIGHT
11 FLUID LEVEL WARNING LIGHT
12 HANDBRAKE
13 LOAD SENSING VALVE
14 VACUUM RESERVOIR
15 TO VACUUM SOURCE

Fig. 1 *Diagrammatic Brake System (Vac/hyd)*

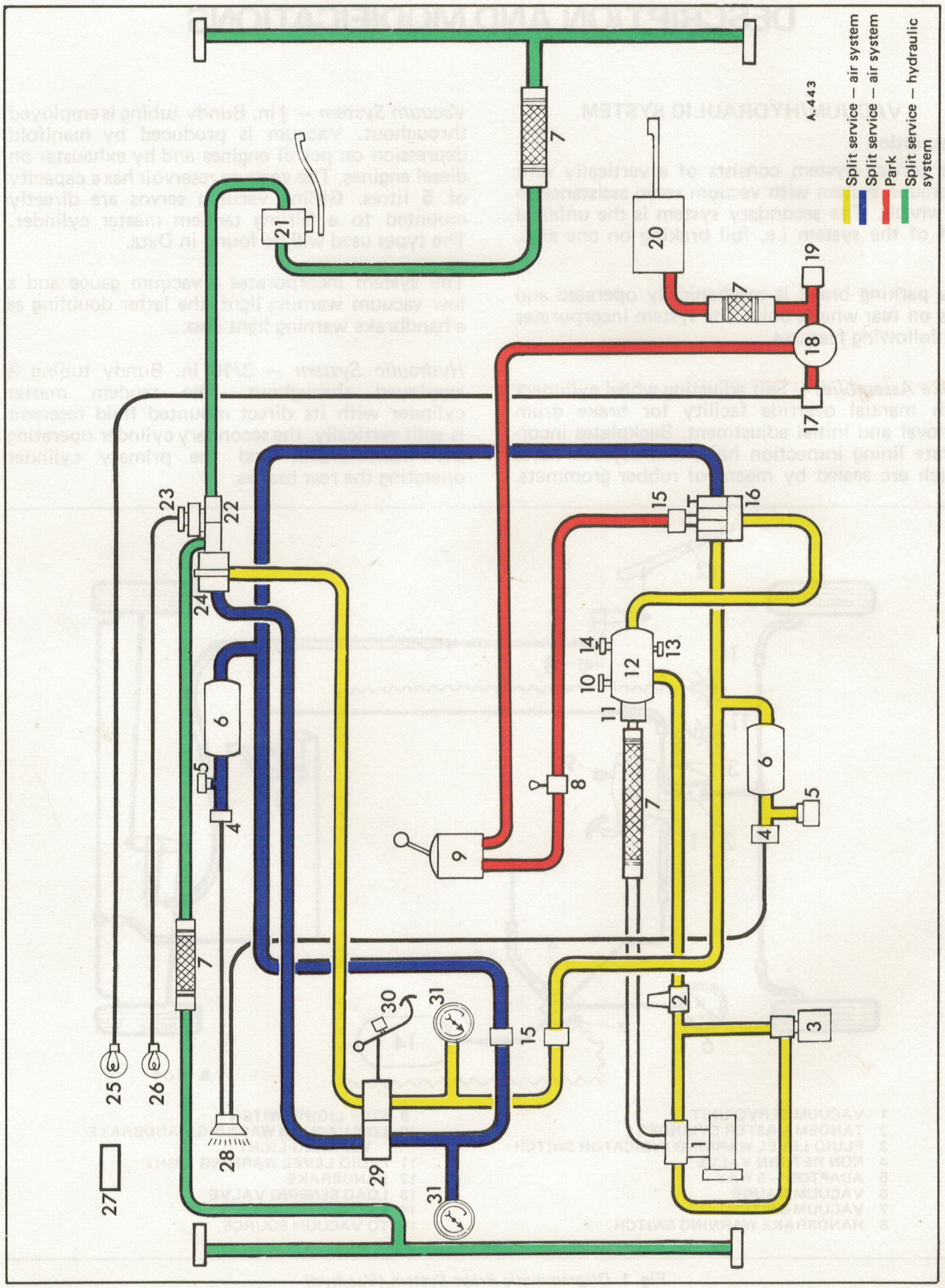


Fig. 2 *Diagrammatic brake system (Air/hyd)*

A low fluid level indicator is located in the reservoir cap and this has the facility for manually testing its integrity. The integrity of the low fluid level warning light, mounted on the instrument panel, is checked each time a cab door is opened.

Rear wheel braking is controlled by a load sensing valve mounted on the rear axle.

The setting instructions for this valve are extremely important and will be found in sub-section M 241.

Handbrake — the handbrake acting on duo-servo type rear brakes through cable linkage and axle mounted compensator is extremely efficient when correctly adjusted (see M 311). A warning light in the cab indicates when the handbrake is not fully released.

AIR/HYDRAULIC SYSTEM

Description

Compressed air is supplied to a tandem actuator which in turn operates a tandem hydraulic master cylinder. The air system is split, and each section is supplied with air by separate reservoirs. The hydraulic circuit is also split, the separate chambers of the master cylinder each operating the brake units on one axle. In this system failure of one part of the air system allows reduced but effective braking on both axles, whilst a failure of one part of the hydraulic system provides full braking on one axle.

The secondary brake is considered to be the unfailed part of the system.

The hand control valve on this system provides park braking. Exhausting air from a single spring brake unit on the rear axle releases a powerful spring to operate the brake units mechanically through a compensator linkage.

Brake Assemblies

Front brakes are of two leading shoe design and incorporate a self adjusting mechanism mounted on each shoe. Two single acting cylinders are fitted to each assembly.

Rear brakes of the duo-servo type are each fitted with a single double acting cylinder and the automatic adjuster, which is floating, fits between the two shoe webs.

Both types of adjuster have the facility for manually de-adjusting to assist brake drum removal.

Air System

Air is supplied by a compressor, belt driven on the 6.247 engine and gear driven on the 4.236 engine.

The system incorporates a dual air gauge, a low air pressure warning switch fitted to each service reservoir operating a warning buzzer in the cab. A low air pressure warning switch fitted in the park brake circuit operates a warning light on the instrument panel.

Hydraulic System

The tandem master cylinder with its direct mounted fluid reservoir is split vertically, the primary cylinder operates the front brakes and the secondary cylinder operates the rear brakes.

A low fluid level indicator is located in the reservoir cap and this has the facility for manually testing its integrity. The integrity of the low fluid level warning light, mounted on the instrument panel, is checked each time a cab door is opened.

Rear wheel braking is controlled by a load sensing valve mounted on the rear axle.

The setting instructions for this valve are extremely important and will be found in sub-section M 241.

Key to Fig. 2

1. COMPRESSOR
2. GOVERNOR VALVE
3. ANTI-FREEZE EQUIPMENT - WHEN FITTED
4. LOW PRESSURE WARNING SWITCH
5. TEST POINT
6. SERVICE RESERVOIR
7. FLEXIBLE HOSE
8. AUTO RELEASE VALVE - WHEN FITTED
9. PARKING BRAKE CONTROL VALVE
10. SAFETY VALVE
11. NON-RETURN VALVE
12. SENSING RESERVOIR
13. AUTOMATIC DRAIN VALVE
14. SCHRADER VALVE
15. FILTER
16. QUADRUPLE PROTECTION VALVE
17. LOW PRESSURE WARNING SWITCH
18. QUICK RELEASE VALVE
19. STOP LIGHT SWITCH
20. SPRING BRAKE
21. LOAD SENSING VALVE
22. TANDEM MASTER CYLINDER
23. FLUID LEVEL SWITCH
24. TANDEM ACTUATOR
25. SPRING BRAKE WARNING LIGHT
26. FLUID LEVEL WARNING LIGHT
27. INSTRUCTION PLATE - LOAD SENSING VALVE
28. LOW PRESSURE WARNING BUZZER
29. FOOT CONTROL VALVE
30. STOP LIGHT SWITCH
31. AIR GAUGE