DESCRIPTION

VACUUM/HYDRAULIC SYSTEM

The service system consists of a vacuum servo assisted, vertically split hydraulic system to all wheels. The secondary system is the unfailed half of the system, i.e. full braking on one axle. In the event of vacuum failure there is direct mechanical action between foot pedal and master cylinder requiring additional effort by the driver. A Telma retarder assists the service brake on P.S.V. models.

The parking brake is mechanically operated by handlever and acts on the rear wheels

Vacuum System — Vacuum source is provided by a gear driven exhauster on diesel engines and a belt driven exhauster on the petrol engine. The vacuum reservoir has a capacity of 5 litres. The direct acting tandem vacuum servo is attached to the back of the tandem master cylinder and mounted on the bulkhead. A warning buzzer indicates low vacuum.

Hydraulic System — 4,76mm diameter steel tubing transfers the hydraulic pressure generated in the master cylinder to the brake assemblies. The secondary cylinder operates the front disc brakes and the primary cylinder the rear drum brakes. The brake fluid reservoir is mounted directly on top of the master cylinder. The reservoir is divided and both halves of the reservoir are filled automatically from one filler neck. The filler cap incorporates a fluid level switch which operates a warning light when the brake fluid reaches a minimum level. The switch has a facility for manually checking its operation.

Brake Fluid Low Level Warning System — To check the low level warning light bulb open a cab door and the warning light will illuminate. To check the operation of the low level warning switch, ensure that the cam interior lamps are switched to the courtesy position, i.e. lamp only lights when doors are open. Close both doors. Press the reservoir filler cap and the interior light and the warning light will illuminate.

Brake Assemblies — Self adjusting brake assemblies are fitted, disc front and duo-servo drum rear. The rear brakes have a manual override facility for initial adjustment and to assist drum removal. The back plates have lining inspection holes and adjuster holes which are sealed by rubber grommets.

Load Sensing Valve — Rear wheel braking is controlled by a load sensing valve linked to the rear axle. The valve regulates the braking effort applied at the rear wheels relative to the load on the rear axle.

Parking Brake — The parking brake is operated by a hand lever through a cable and axle mounted compensator linkage. There is a warning light to indicate handbrake 'ON'.

PUBLIC SERVICE VEHICLES

These vehicles are fitted with a Telma retarder. The retarder is controlled by a three or four position micro-switch actuated by the brake pedal. Initial movement of the brake pedal operates the retarder but a delay valve in the front hydraulic circuit prevents front brake operation until a pressure of 12,4 bar (180 p.s.i.) is achieved in the hydraulic system. The rear hydraulic circuit operates normally. During normal braking, the delay on the front brakes will not be apparent.

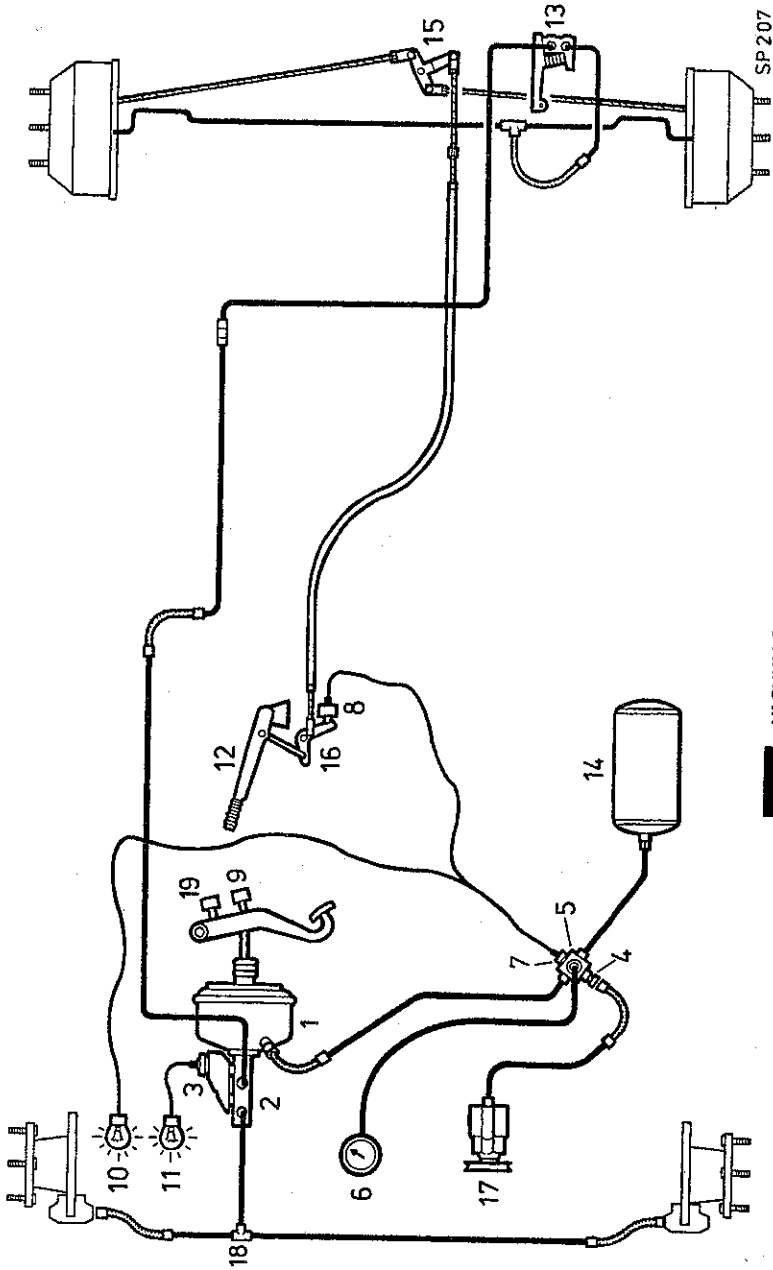

Fig. 1 *Diagramatic Brake System (Vac./Hyd.)*

AIR/HYDRAULIC SYSTEM — HAULAGE

The service system consists of a tandem actuator unit supplying hydraulic pressure to all brakes. Both air and hydraulic systems are split. The secondary brake is the unfailed half of either the air or the hydraulic system.

Parking is by a spring brake unit mounted on the rear axle being operated by a hand control valve at the side of the drivers seat.

Air System – Compressed air is supplied by an engine mounted compressor gear driven from the rear of the timing case. The air is fed to a sensing reservoir in which the pressure is monitored and regulated by a governor valve. The sensing reservoir supplies two independant service reservoirs which then separately supply the two inlet ports of the dual brake pedal valve. Air pressure relative to the driver's effort on the brake pedal is fed to the tandem actuator. The tandem actuator is fitted to the back of the tandem master cylinder.

If a failure occurs in one half of the air system, the other half will provide reduced but effective braking on both axles.

Hydraulic System – 6mm diameter steel tubing transfers the hydraulic pressure generated in the master cylinder to the brake assemblies. The primary cylinder operates the front brakes and the secondary cylinder the rear brakes. The brake fluid reservoir is mounted directly on top of the master cylinder. The reservoir is divided and both halves of the reservoir are filled automatically from one filler neck. The filler cap incorporates a fluid level switch which operates a warning light when the brake fluid reaches a minimum level.

The switch has a facility for manually checking its operation.

If a failure occurs in one half of the hydraulic system, full braking effort is still available on one axle.

Brake Fluid Low Level Warning System – To check the low level warning light bulb, open the cab door and the warning light will illuminate. To check the operation of the low level warning switch, ensure that the cab interior lamps are switched to the courtesy position, i.e. lamp only lights when doors are open. Close both doors. Press the reservoir filler cap switch and the interior light and warning light will illuminate.

Brake Assemblies – Self adjusting drum brakes are fitted, 2 leading shoe at the front and duo-servo at the rear. All brakes have a manual override facility for initial adjustment and to assist drum removal. The rear brakes have lining inspection holes in the back plates. The holes for access to adjustment points and the lining inspection holes are sealed by rubber grommets.

Load Sensing Valve – Rear wheel braking is controlled by a load sensing valve linked to the rear axle. The valve regulates the braking effort applied by the rear brakes relative to the load on the rear axle.

Parking Brake – The parking brake is operated by a hand control valve in the cab. With the valve in the 'OFF' position, air under pressure is compressing a spring. Application of the valve to the 'ON' position dumps air to atmosphere allowing the spring to expand and apply the rear brakes mechanically through the compensator mechanism.

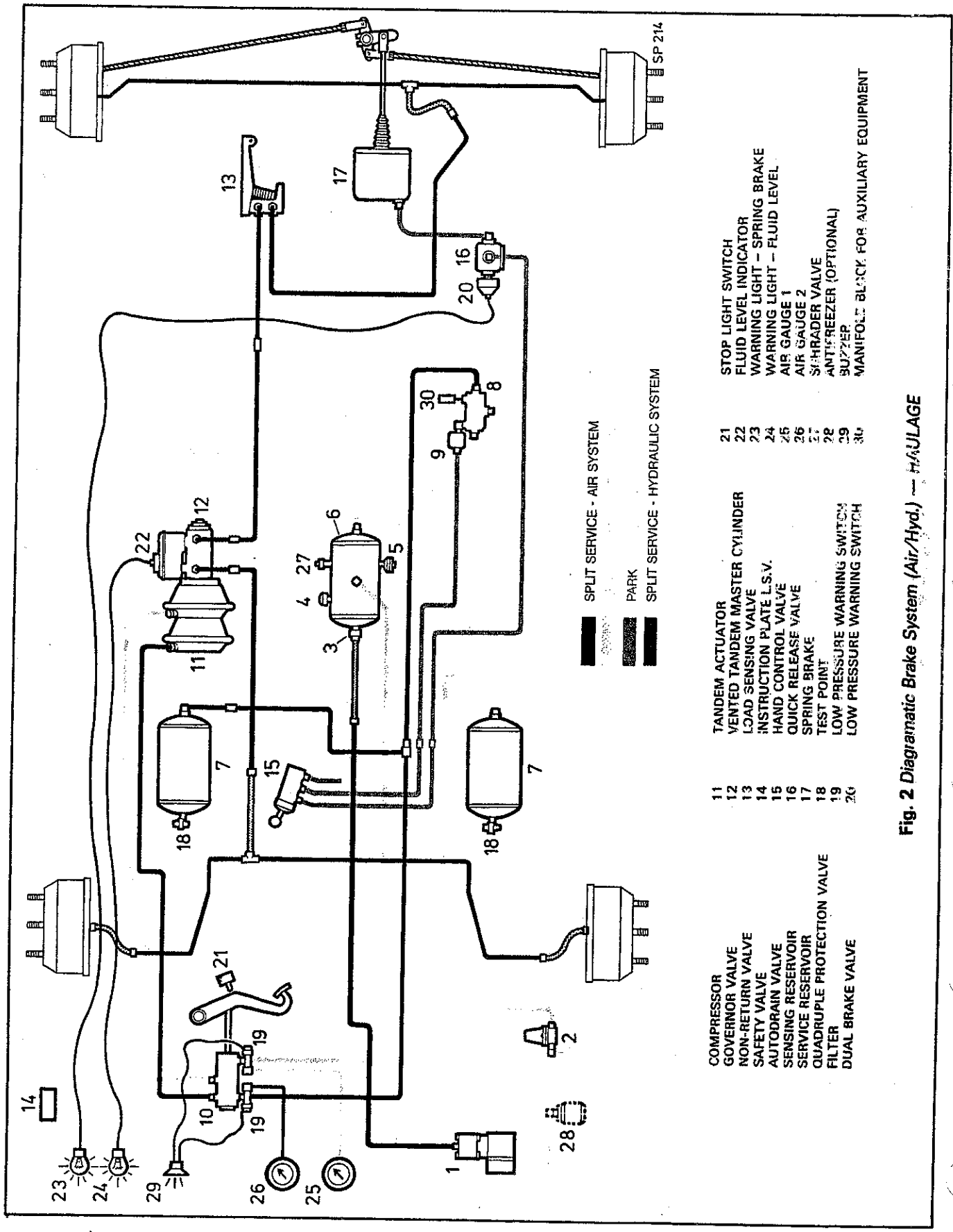

Fig. 2 *Diagramatic Brake System (Air/Hyd.) — HAULAGE*

AIR/HYDRAULIC SYSTEM — P.S.V.

The service system consists of a tandem actuator unit supplying hydraulic pressure to all brakes. Both air and hydraulic systems are split. The secondary brake is the unfailed half of either the air or the hydraulic system. On P.S.V. models a Telma retarder assists the service brake.

Parking is by a spring brake unit mounted on the rear axle being operated by a hand control valve at the side of the drivers seat.

Air System — Compressed air is supplied by an engine mounted compressor gear driven from the rear of the timing case. The air is fed to a sensing reservoir in which the pressure is monitored and regulated by a governor valve. The sensing reservoir supplies two independant service reservoirs which then separately supply the two inlet ports of the dual brake pedal valve. Air pressure relative to the driver's effort on the brake pedal is fed to the tandem actuator. The tandem actuator is fitted to the back of the tandem master cylinder.

If a failure occurs in one half of the air system, the other half will provide reduced but effective braking on both axles.

Hydraulic System — 6mm diameter steel tubing transfers the hydraulic pressure generated in the master cyclinder to the brake assemblies. The primary cylinder operates the front brakes and the secondary cylinder the rear brakes. Each cylinder is supplied by its own fluid reservoir. Each reservoir has a low fluid level switch which operates a warning light when the brake fluid reaches a minimum level.

If a failure occurs in one half of the hydraulic system, full braking effort is still available on one axle.

Brake Fluid Low Level Warning System — To check the low level warning light bulb, open the cab door and the warning light will illuminate. To check the operation of the low level warning switch, ensure that the cab interior lamps are switched to the courtesy position, i.e. lamp only lights when doors are open. Close both doors. Unscrew the filler caps one at a time and lift. As the float falls the switch will make contact and the interior lamp will light.

Brake Assemblies — The front brakes are two leading shoe and are manually adjusted. The rear brakes are duo servo and are self adjusting. The rear brakes have a manual override facility for initial adjustment and to assist in drum removal.

Parking Brake — The parking brake is operated by a hand control valve in the cab. With the valve in the 'OFF' position, air under pressure is compressing a spring. Application of the valve to the 'ON' position dumps air to atmosphere allowing the spring to expand and apply the rear brakes mechanically through the compensator mechanism.

PUBLIC SERVICE VEHICLES

These vehicles are fitted with a Telma retarder. The retarder is controlled by pressure switches which are sensed by the pressure advance in the outlet side of the foot brake valve. The brake system is designed so that the retarder operates first followed by the normal service brake. This is achieved by the front and rear hydraulic circuits being fitted with delay valves. The delay valves do not open until a pressure of 12,4 bar (180 p.s.i.) is reached. The retarder will cover most of the "check" braking. During normal brake application the delay in the service brake will not be apparent.

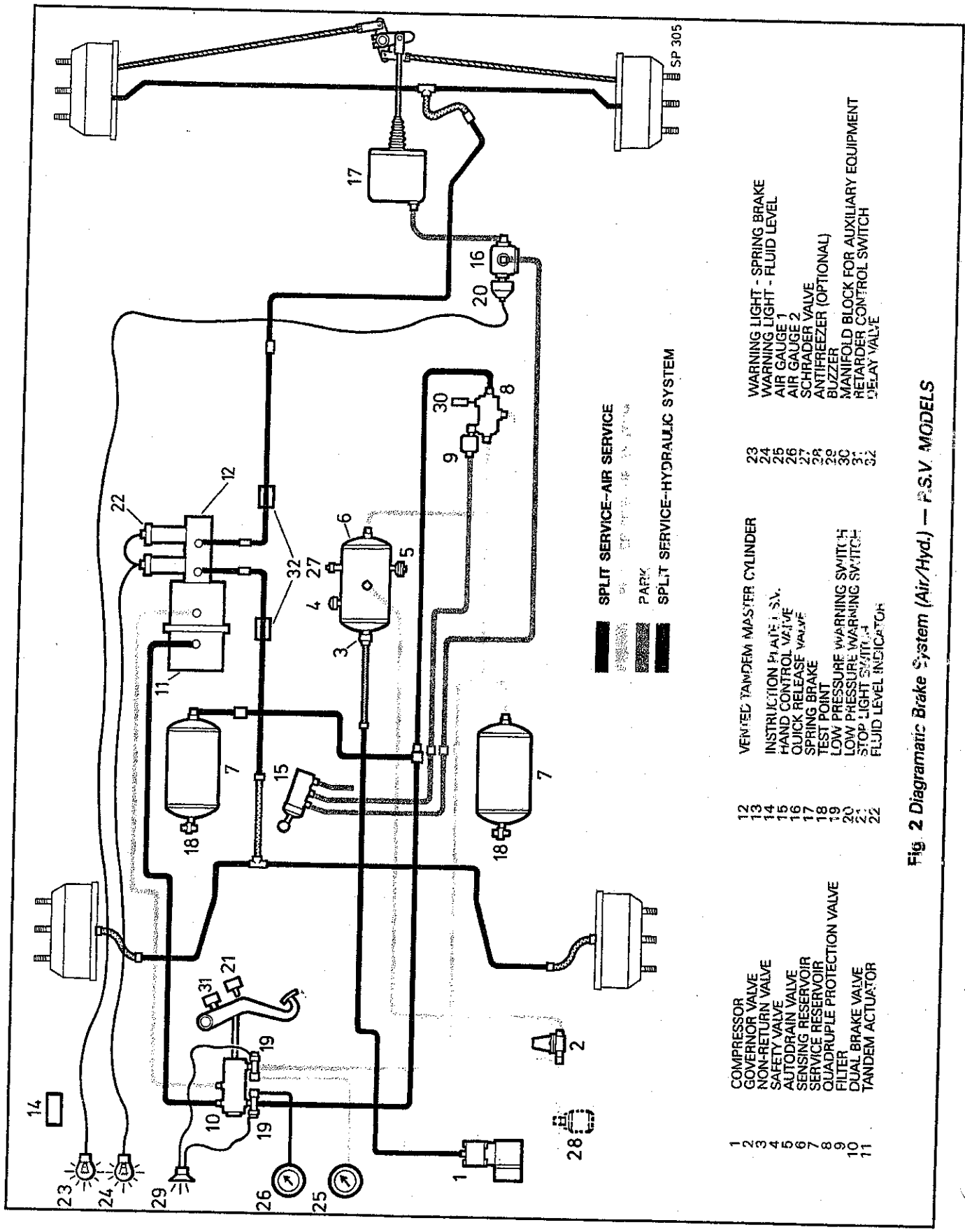

Fig. 2 *Diagramatic Brake System (Air/Hyd.) — P.S.V. MODELS*