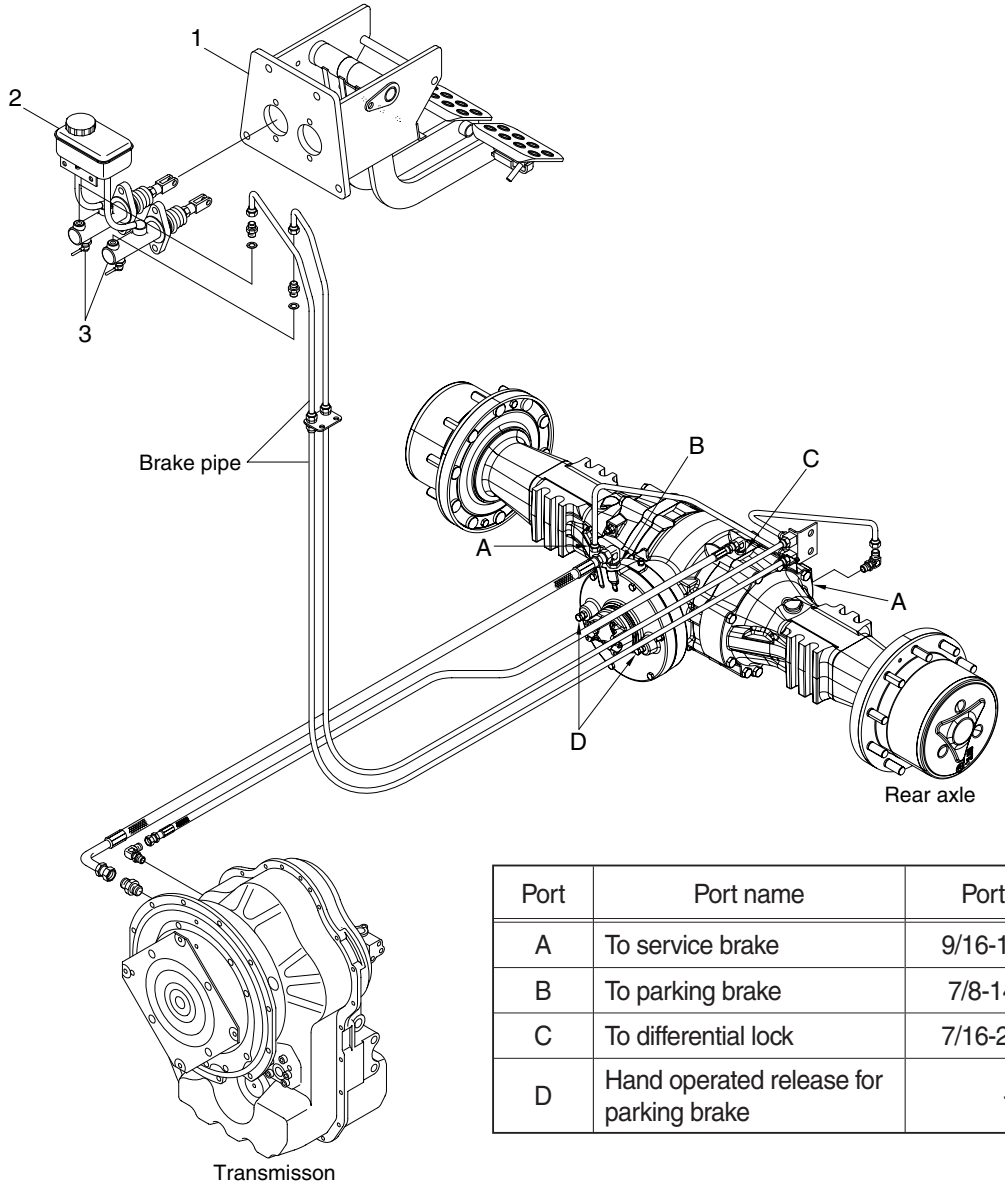
SECTION 4 BRAKE SYSTEM

GROUP 1 STRUCTURE AND FUNCTION

1. OUTLINE



Port	Port name	Port size
A	To service brake	9/16-18UNF
B	To parking brake	7/8-14UNF
C	To differential lock	7/16-20UNF
D	Hand operated release for parking brake	-

HB100BS01

1 Brake pedal & bracket assembly
2 Reservoir tank assembly
3 Brake master cylinder

2) OPERATION

Compensating master cylinders overcome the problem of unequal wear between the right and left brake. The units incorporate both master cylinder and compensating valve.
Each brake has its own master cylinder, brake pedals, servo units and associated pipework. Both master cylinders have one common reservoir.

2. SPECIFICATION

1) SERVICE BRAKES

Item	Specification
Type	Oil-immersed multi-plate disc, self-adjust
Actuation	Hydraulic servo assisted.
Location	Inside the rear axle center casing (2 brake packs).

2) MASTER CYLINDER

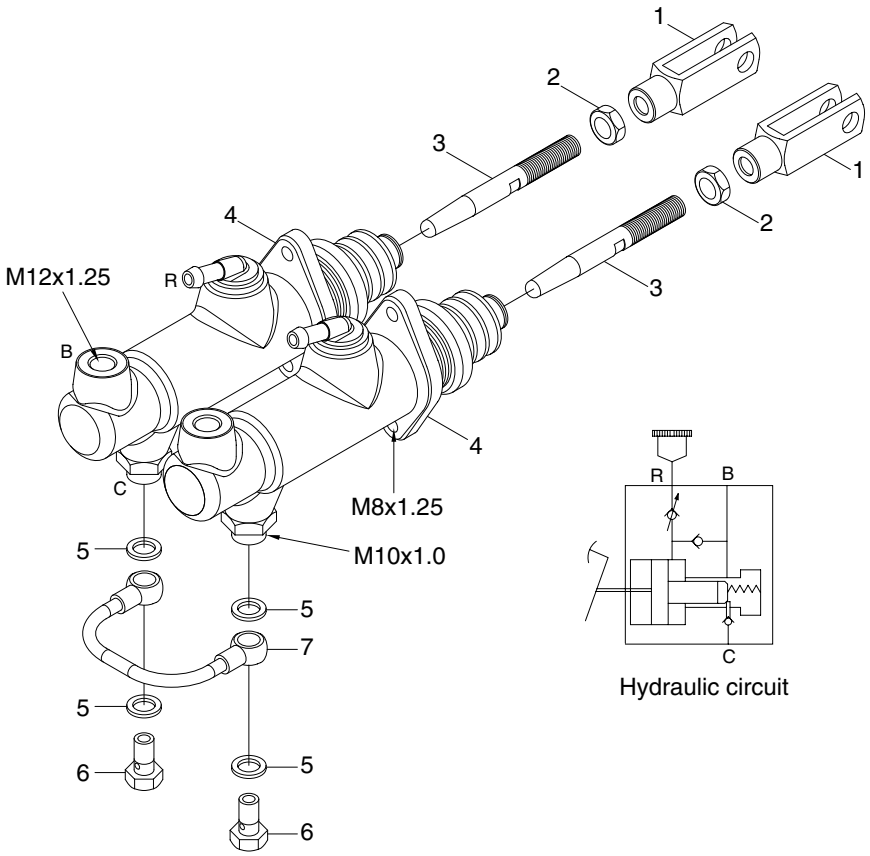
Item	Specification
Type	Compensated master cylinder.
Number of cylinders	2
Piston diameter	Ø 32 / Ø 20

3) PARKING BRAKE

Item	Specification
Type	Oil-immersed multi-plate disc.
Actuation	Hydraulic
Location	Inside the rear axle input casing.

3. MASTER CYLINDER

1) STRUCTURE



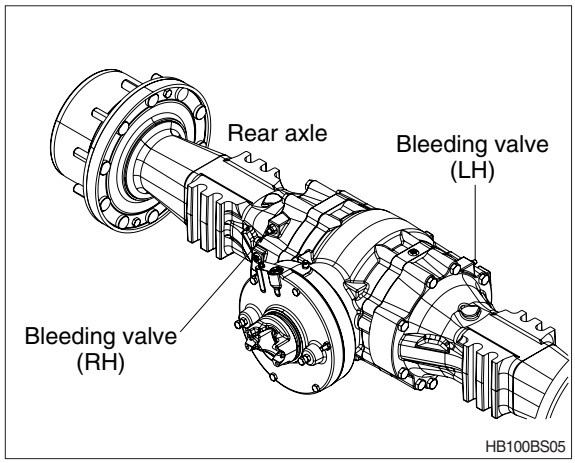
HB100BS04

1	Fork	4	Master cylinder assy	7	Hose
2	Hexagon nut	5	Cooper washer		
3	Push rod	6	Screw		

2) BLEEDING

(1) Low pressure bleeding

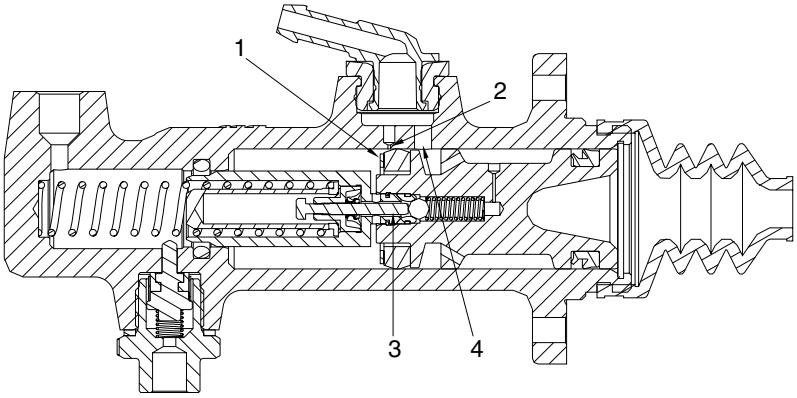
① Unscrew the bleeding valve of the brake.
② Push the brake pedal up to the stroke's end.
③ Screw the bleeding valve.
④ Release the brake pedal.
⑤ Wait for about 10 seconds.
⑥ Repeat point ① to ⑤ until no more air bubbles come from the bleeding valve.



(2) High pressure bleeding

① Push the brake pedal.
② Unscrew the bleeding valve keeping the pedal applied.
③ When the fluid has been flowed, screw the bleeding valve.
④ Release the brake pedal.
⑤ Wait for about 10 seconds.
⑥ Repeat point ① to ⑤ until :
- No more air bubbles come from the bleeding valve
- The applied pedal is not too spongy but stiff (stroke quite short)

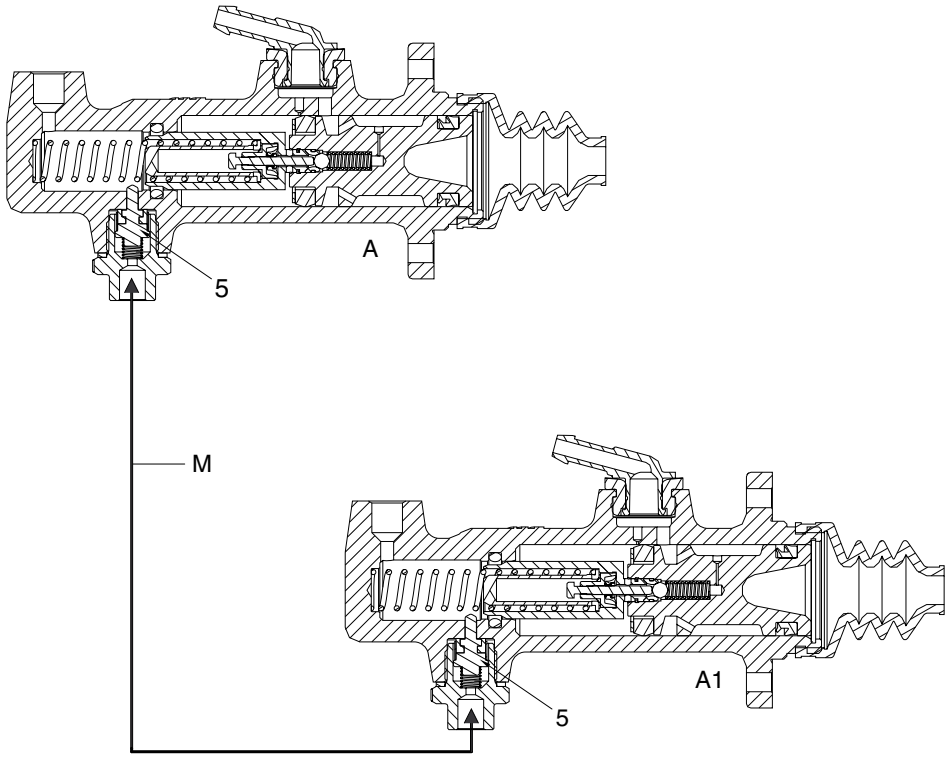
3) SINGLE CYLINDER OPERATION



HB100BS02

When the braking line is bleeded correctly, power cylinder is full of braking fluid.
When the cylinder is actuated, the seal (1) closes the feeding hole (2) increasing the pressure in the braking line.
When the pre-setted pressure is achieved, the switch valve (3) closes and the line is pressurized by the smaller bore section of the cylinder.
As the force on push rod is released, the valve (3) opens and let the brake fluid flow to the tank through the discharge hole (4).

4) TWIN CYLINDER-COMPENSATING OPERATION



HB100BS03

When the pedals are pushed down, the function of the power cylinders is as described in the single cylinder operation.
If brakes require for any reason different displacements, a sort of compensation is required to avoid different pressure in the two different lines.
Pedals operate the pistons down the bores activating the compensating valves (5).
When the valves (5) in both cylinders are activated, fluid is displaced from A to A1 via bridge pipe M until the pressure are equalised. In this condition both compensating valves are open and both brakes are applied evenly.