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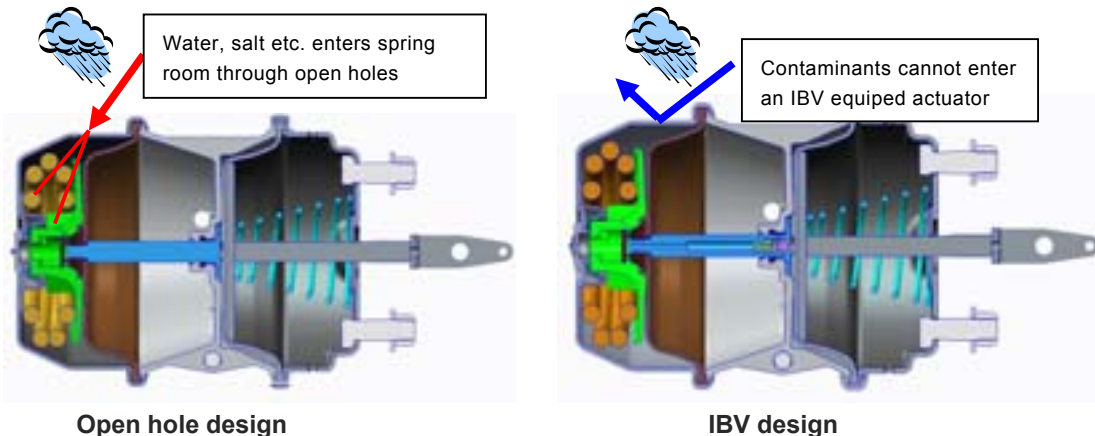
**CAUTION:** PRIOR TO BEGINNING ANY SERVICE OR INSPECTION, MAKE SURE THE VEHICLE IS PROPERLY PARKED WITH THE PARKING BRAKES APPLIED AND WHEELS CHOCKED.

## SERVICE INFORMATION FOR ACTUATORS WITH INTERNAL BREATHING VALVE (IBV)

The purpose of this Service Information is to offer an overview of the operation of WABCO Actuators with an Internal Breathing Valve (IBV) used on commercial vehicle braking systems.

### OPEN HOLE DESIGN VS. IBV

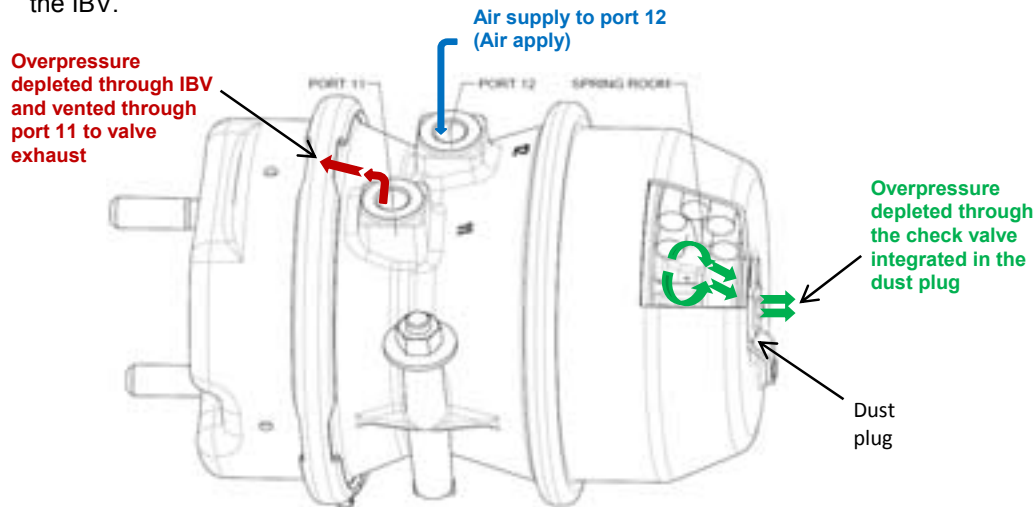
- The Open Hole Design allows contaminants to enter the spring room through vent holes
- The IBV design eliminates corrosion by sealing the spring room from contaminants



A fully encapsulated spring chamber with WABCO's integrated IBV ventilation system prevents corrosive environment elements from entering the spring room extending the service life of the spring room components.

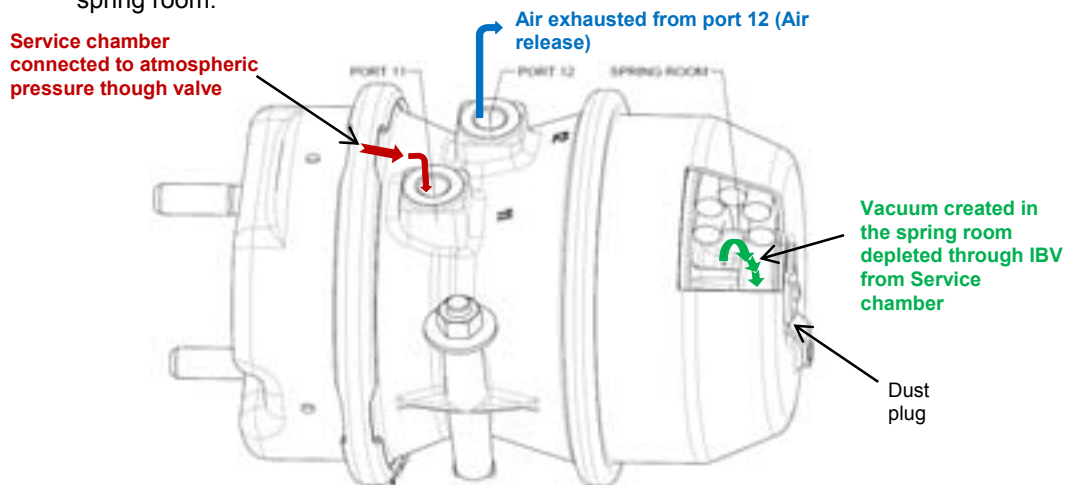
## NORMAL RUNNING CONDITION PARKING BRAKE NOT APPLIED

- **Service side:**  
Service Piston is kept in its rest position by means of a return spring and the brakes are in the released condition.
- **Spring side:**  
The parking brake valve should be kept in Brakes 'OFF' position. Supply air acts via port 12 on the diaphragm in the parking chamber and compresses the power spring and brakes are in the released condition.
- **Internal Breather:**  
IBV is covered by the lip seal and there is no inflation or deflation of spring brake room.  
Overpressure in the spring room is depleted through the check valve in dust plug and through the IBV.



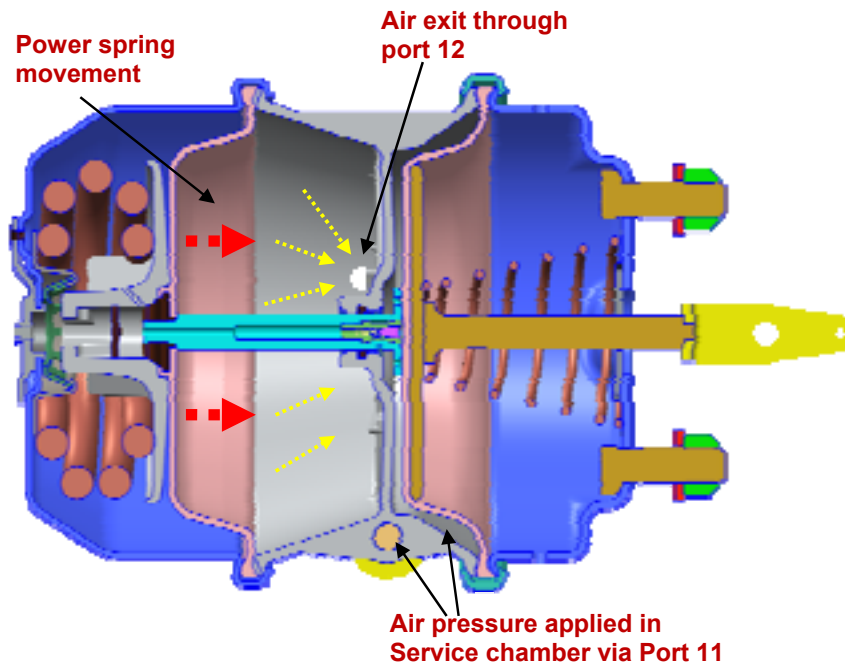
## PARKING BRAKE APPLIED:

- IBV is not covered by lip seal, air flows through the IBV.
- Inflation and deflation of spring room is enabled.
- Vacuum created in spring room is depleted through IBV by connecting service chamber with spring room.



## FUNCTION OF IBV IN A COMPOUNDING CONDITION

- When pressure applied in the service chamber is low (<1.5 bar 21.7psi), the IBV remains open and air is allowed to reach the spring room.
- When the pressure in the service chamber exceeds 1.5 bar (21.7psi), IBV piston moves down against the spring force thus restricting the air flow further.



Air flows through the IBV when pressure is less than 1.5 bar (21.7psi) in service chamber

IBV piston moves down and restricts air flow when pressure is greater than 1.5 bar (21.7psi) in service chamber

### Conditions allowing air venting through the IBV that causes the audible sound of air passing through the chamber

#### Condition that allows Air Venting through IBV & Check Valve

- Air venting through IBV & Check Valve occurs when the Parking Brake is applied and the Service Brake is applied with air pressure < 22 psi.

#### Condition than does not allow Air Venting through IBV & Check Valve

- When the Parking Brake is not applied and system pressure for the parking brake >100 psi. and the Service brake is applied with air pressure < 22psi.  
Parking Brake is applied and the Service Brake is applied with pressure > 22psi.