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 PANAMA

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Coding Information

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Title: Aggressive Brakes with Air Brake Foot Valve Leak on Bus

Applies To: CE200, CE300, FE300, RE200 and RE300 with Option Code 04WEA - Parking Brake Interlock - With Air Brakes Only

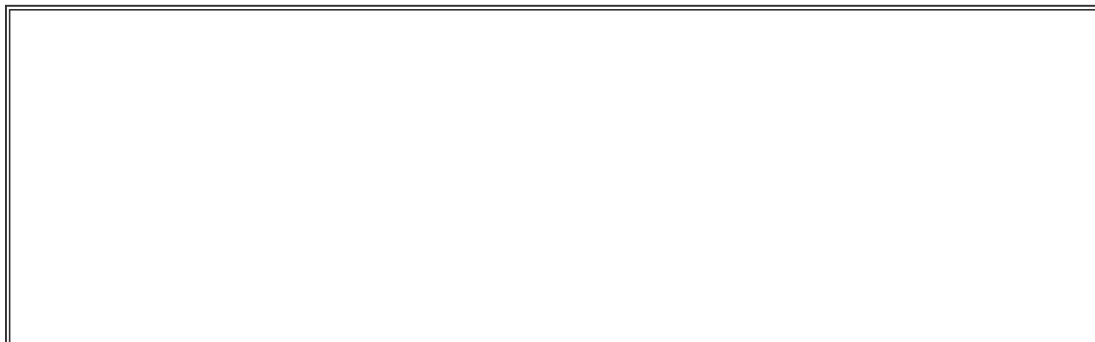
CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

11/05/2018 - Updated Symptoms and diagnostic information

DESCRIPTION

Vehicles equipped with Feature code 04WEA Park Brake Interlock require the key to be on and the brake pedal to be depressed to release the parking brake. To accomplish this there is additional (see Figure 1) air line routing and valving added to the base system (See Figure 2). When the brake is applied air is routed from the foot valve through a double check valve to an ignition controlled solenoid valve through another double check valve and to the control inputs on an SV-1 valve for the primary and the secondary air systems. The control air in the SV-1 valve opens the supply port to the delivery port and sends air to the park brake valve. Once the park brake is released there is air feed through the second double check valve to the SV-1 to provide air to hold the park brake in the released position.



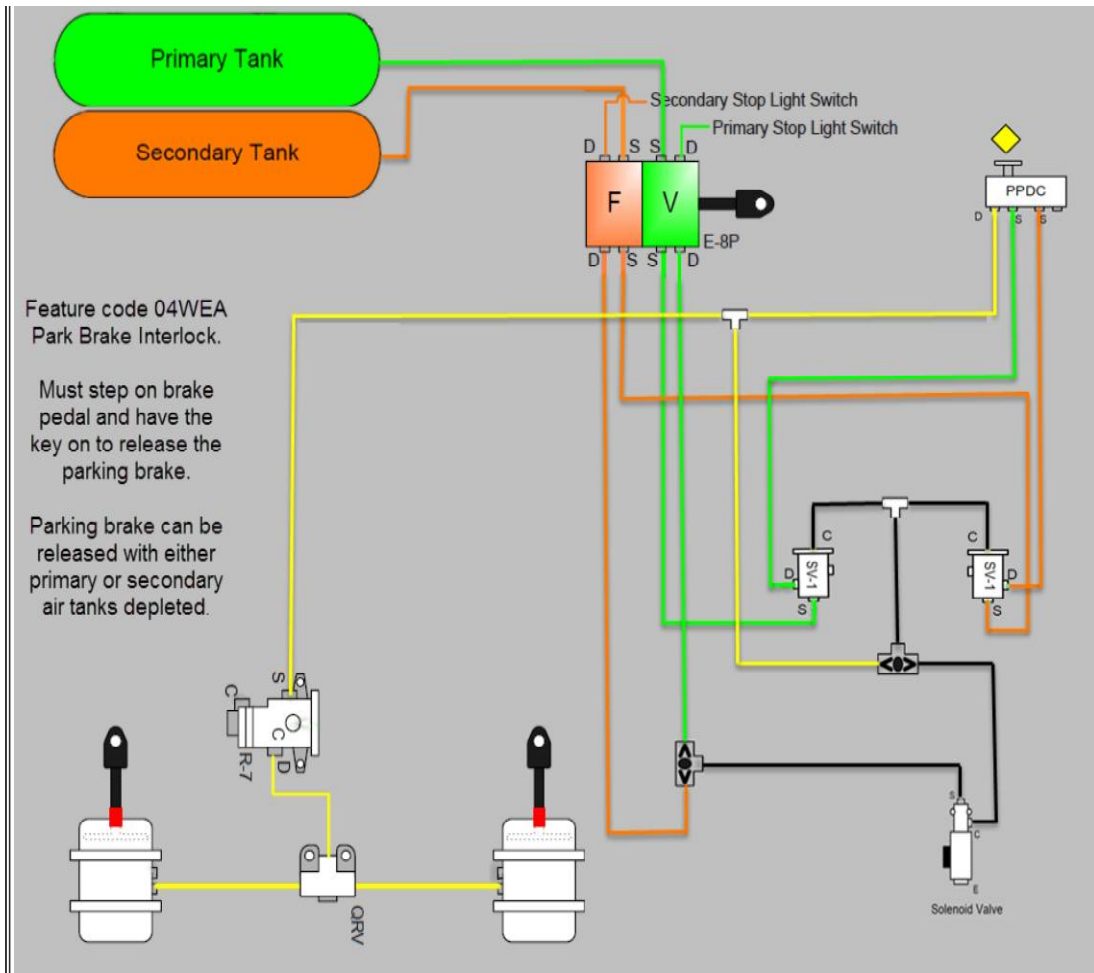


Figure 1: Feature Code 04WEA add on Air Schematic

Yellow = Park brake circuits
 Green = Primary air circuits
 Orange = Secondary air circuit
 Black = 04WEA control circuit

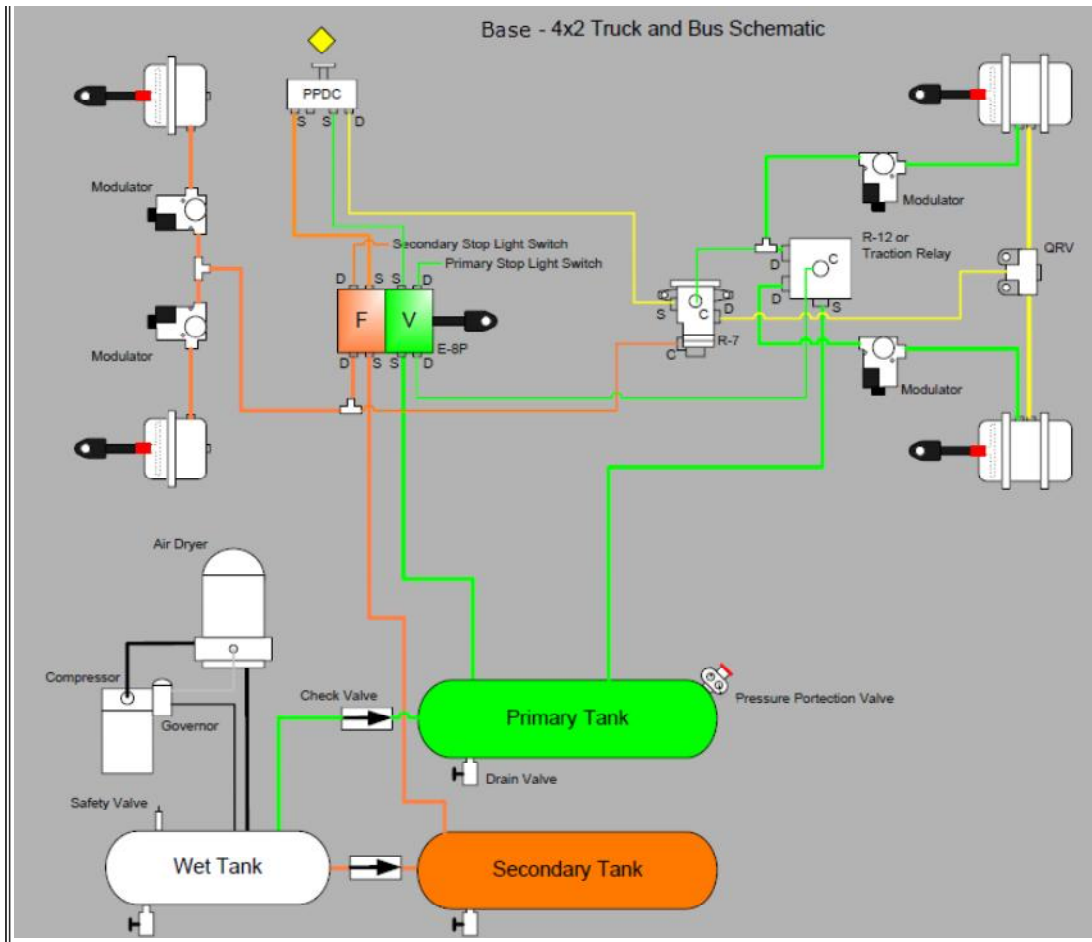


Figure 2: Base Truck and Bus Air Schematic

SYMPTOM(s)

An air leak at the foot valve can be caused by a leaking double check valve in the 04WEA control circuit. This will back-feed air into the delivery port on the foot valve and will be exhausted out the exhaust port on the foot valve at key on with the parking brake released and the brake pedal not depressed.

It is also possible for back-feeding air to cause the brakes to become touchy or grabby during a light brake application. This is due to the fact that the exhaust port on the foot valve is closed off once the brake pedal is applied and the back-feeding air now is trapped between the foot valve and the brake chambers. There is also the normal application air being added to the delivery circuit based on the amount of travel on the brake pedal. The back-feeding air and the normal application air has a compounding effect and creates a greater than desired braking force.

Note: At times it is possible to get the double check valve to seat by having a full service brake application.

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
Double Check Valve	3604589C1	1	

WARNING:

To prevent unexpected movement of the vehicle and possible serious personal injury or death, park the vehicle on a flat, level surface, set the parking brake, turn the engine off and chock the wheels to prevent vehicle from moving in both directions.



WARNING:

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

Step	Action	Decision
1	<p>DIAGNOSTIC: Verify leak at foot valve.</p> <p>Attempt to verify the air leak is present at the foot valve with the Key on and the parking brake release. It may take multiple time setting and releasing the parking brake before a leak will be present.</p> <p>Were any leaks found (see figure 3)?</p>	<p>Yes: Proceed to step 2.</p>
		<p>No: End of diagnostics.</p>

Step	Action	Decision
2	<p>DIAGNOSTIC: Key Off air leak</p> <p>With the air leak at the foot valve, turn the key to the off position and leave the parking brake released.</p>	<p>Yes: Replace the double check valve.</p>
		<p>No: Diagnose other source of back-feeding air.</p>

Does the air leak move to the ignition controlled solenoid (see figure 4)?

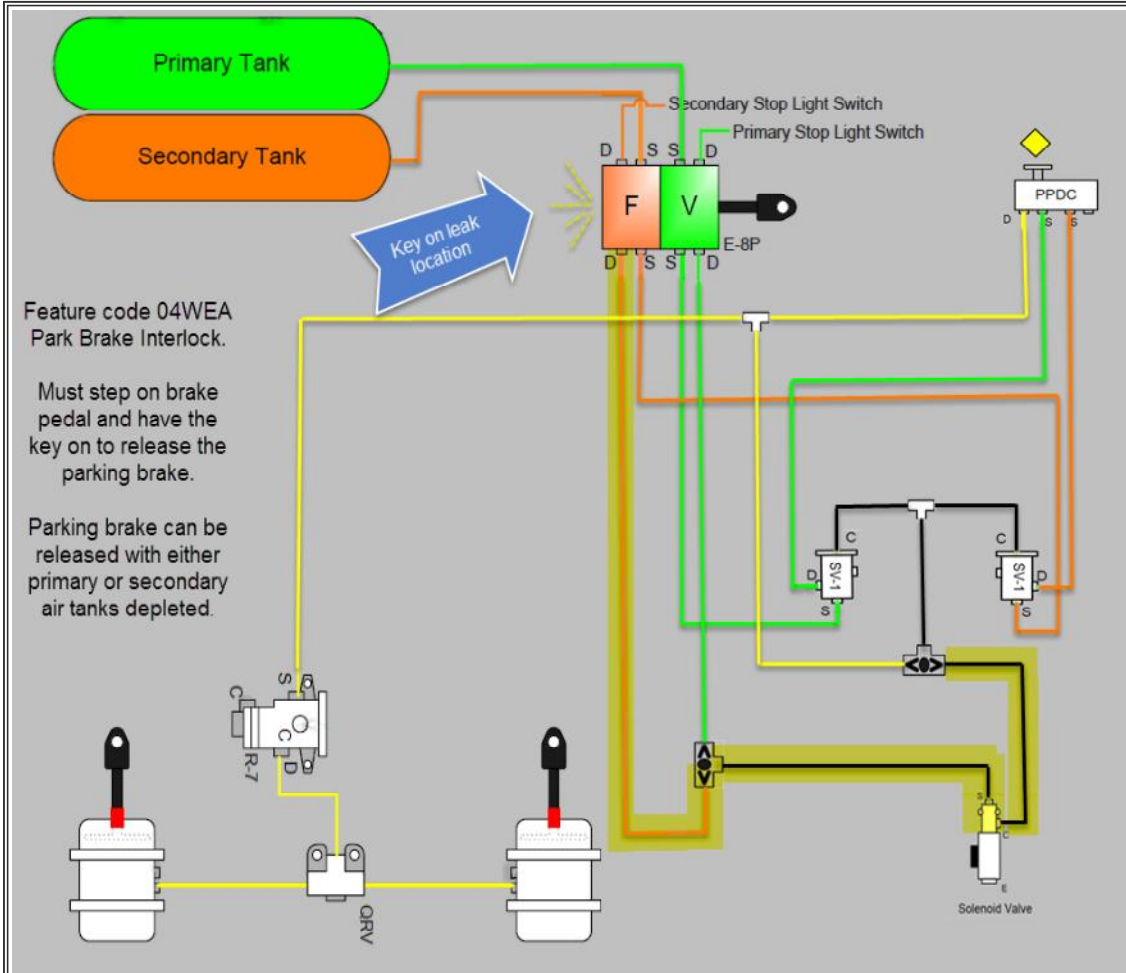


Figure 3: Air leak from the foot valve

Highlighted yellow shows path of back-feeding air.
Air leaks from the foot valve at key on, parking brake released, service brakes not applied.

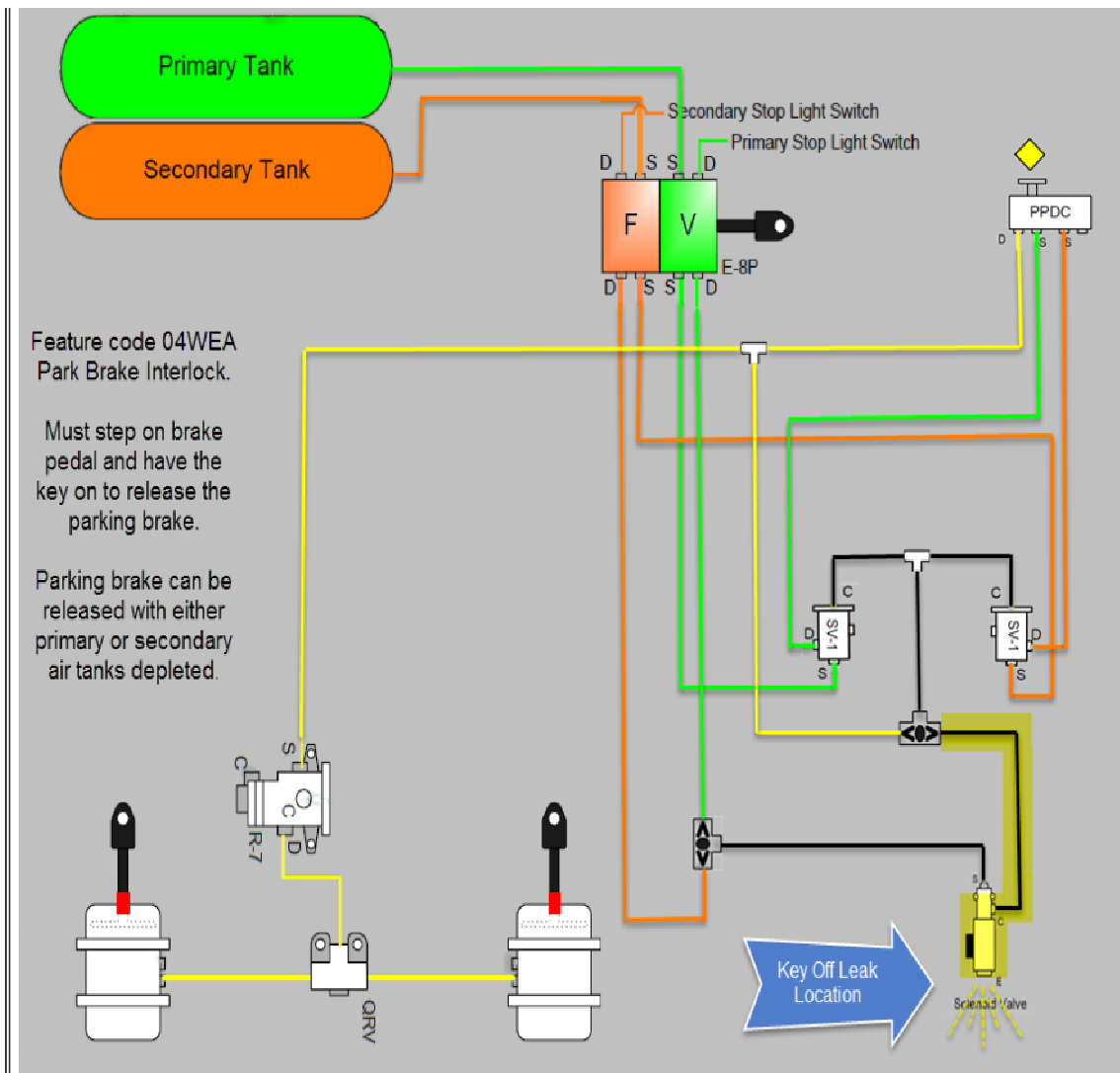


Figure 4: Key off leak location

Highlighted yellow shows path of back-feeding air.
Air leaks from the ignition controlled solenoid at key off with park brake released.

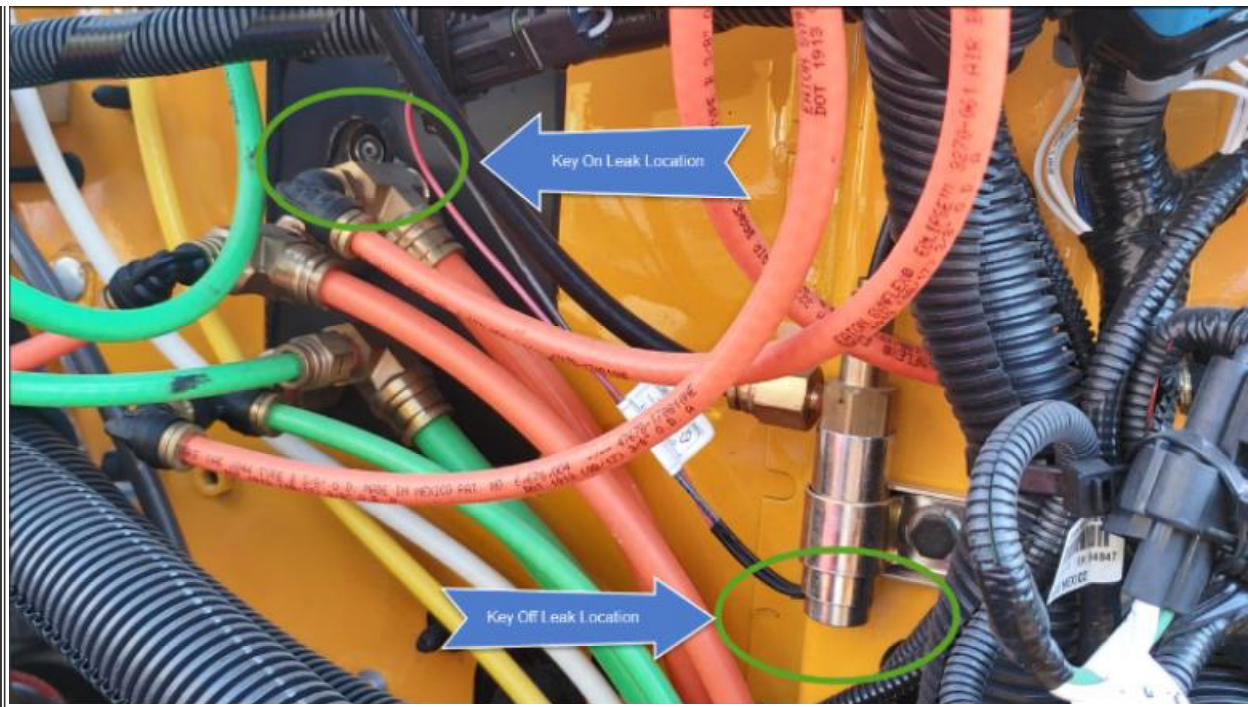


Figure 5: Leak Locations

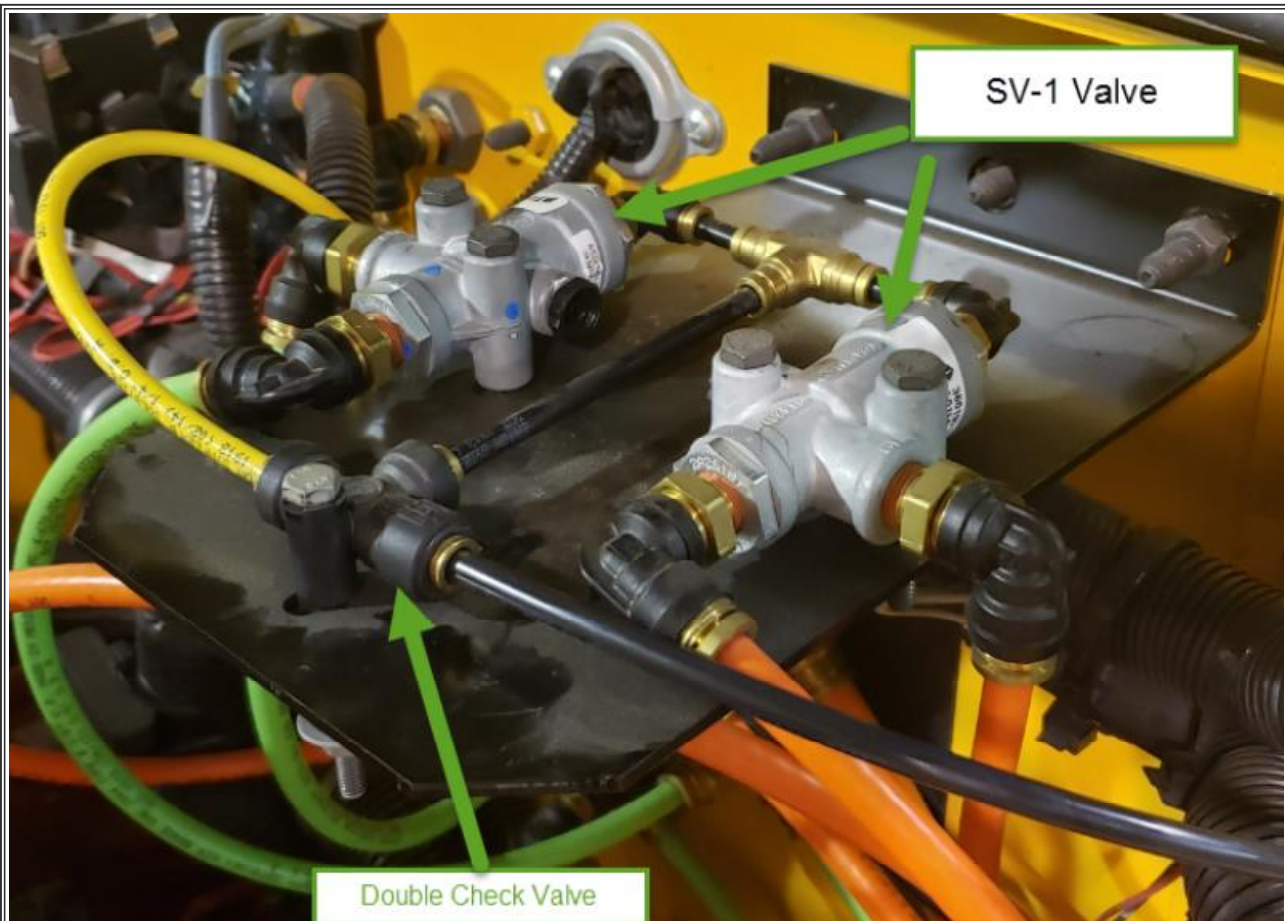


Figure 6: Double Check Valve and SV-1 Valves

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

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