SS 301: Update Jouley Transmission Cooler Hoses

Applicable Vehicles

eC2 Jouley buses built before April 2025

Symptoms

Difficulty checking fluid level on transmission.

Issue

Jouley buses built before April 2025 use transmission cooler line routing that allows for excess drainback into the transmission. This complicates fluid level checks.

Solution

Install updated transmission cooler lines that limit drainback and simplify fluid checks as a result.

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Service Solution #301: Jouley Transmission Cooler Hose Update

Thomas Built Buses Service Bulletin

- **>Saf-T-Liner C2 Jouley Electric Bus**

General Information

Jouley buses built before April 2025 use transmission cooler hose routing that allows for excess drainback into the transmission. This complicates fluid level checks. The new cooler hoses change the transmission oil flow and reduce drainback into the transmission, improving serviceability.

Please read through all instructions prior to beginning work. Follow safe procedures for lifting the vehicle and for dealing with hot fluids.

Parts

Parts are available from the PDCs.

Item Number	Description	Qty.
48-26094	Shell SPIRAX S6 GME 50	**6.2 liters**
230514 705012	Cooler port block off plug	**2**
A23-12315-037	37" Transmission Cooler Hose	**1**
A23-12315-046	46" Transmission Cooler Hose	**1**
23-11000-801	90* Elbow	**2**
TYCHDM250HIR	Zip Tie Mount, 1/4"	**2**
23-13476-000	Zip Tie	**4**
23-10742-100	1/4-20 x 1" bolt	**2**
23-10900-025	1/4" washer	**2**
23-13861-104	1/4-20 lock nut	**2**
TYCDCT110HIR	Saddle style dual hose clamp	**1**
23-13805-062	Knock on zip tie mount, 5/8" stud	**2**

Table 1, Parts Required

Tools Required

1. Brake clean solvent and shop towels
2. Oil catch pan
3. Fluid pump or other means of filling oil cooler and transmission.
4. 7/16”, 1/2”, 7/8”, 1”, 1-1/16”, 1-1/4”, and 24mm wrenches
5. 14mm hex key

Hose Replacement Procedure

1. Take the vehicle for a five minute drive to warm up and circulate fluid, then bring the vehicle to service area with a lift and raise the vehicle for service. Be sure to follow all safe lift procedures.
2. Using rags and solvent, clean all areas to be opened on transmission, lines, and cooler.
    a. Transmission drain and fill plugs and surrounding area on transmission.
    b. Transmission cooler line fittings at transmission, and at cooler body.
    c. Block off plugs on top of cooler body.
3. Prepare a catch pan for the used transmission oil. Use safe practices to avoid burns from hot fluids. Remove transmission oil drain plug (14mm hex) located low on the driver's side of the transmission and allow oil to drain out. Once drained, reinstall the plug and torque to 25 ft-lb.
4. Disconnect hose retaining clamp hardware from cooler mounting bracket. (7/16" and 1/2" wrenches)
5. Disconnect hoses (1" wrench) from straight adapter fittings (1-1/16" wrench) at the transmission. Use a backing wrench on adapter fittings to ensure they do not loosen as well. Catch all oil that drains out.
6. Disconnect hoses from the 90* fittings at the transmission cooler end tanks (1" wrench) and set aside.
7. Remove 90* fittings (Fig. 1, #3) from transmission cooler end tanks (1-1/4" wrench).
8. Install new cooler port block off plugs (1-1/4") side of unit where hoses were previously located. (Fig. 2, #1) Torque to 46 ft-lb.

Note: During the installation of new braided hoses and mounting hardware, it is recommended to not torque any fittings or hardware, or fully tighten down any zip ties, until all parts are installed. This is to allow the steel braided hose to flex and rotate freely.

9. Remove the block off ports at the top of the cooler body (24mm wrench).
10. Install new 90* adapter fittings (7/8" wrench) onto the ports at the top of the cooler end tanks. The rear fitting needs to point towards the rear of the vehicle, and the forward fitting needs to point towards the front of the vehicle. (Fig. 2, #2). An additional 7/8" wrench can be used to hold the 90* fitting steady.
11. Connect the shorter 37" hose to the rear fitting at the cooler and the lower port on the transmission. (Fig. 2, #3)
12. Using a pump, fill the cooler with new transmission fluid through the open front fitting until fluid begins to leak out. Note that turning the fitting to a different angle than the final install direction can provide easier access for fluid pump or syringe. Clean off any fluid that drains out. The total capacity of the cooler is 1.6L, but if the unit is not removed from the bus to fully drain, less will be required.

13. Connect the longer 46” hose to the upper port on the transmission and the forward fitting at the cooler. (Fig. 2, #4)
14. Install new zip tie mount onto cooler mounting bracket (Fig. 2, #5). Loosely Install zip ties.
15. Install knock on hose clamps to exposed threads of 5/8” frame bolts (Fig. 2, #6). Loosely install zip ties.
16. Loosely Install saddle clamp on hoses approximately 8” from transmission straight adapter fittings (Fig. 1, #4)
17. Verify sufficient clearance between hoses and all exposed bracketry and the frame. Once hose routing is satisfactory, revisit all new parts installed and follow all final torque specs.
    a. 90* fittings (x2): 39 ft-lb
    b. Hose end swivel nuts (x4): 58 ft-lb
    c. 1/4” hardware for zip tie mounts: 6 ft-lb
18. Tighten down all zip ties and trim excess length.
19. Remove fill plug on transmission (14mm hex or 24mm wrench) located next to the cooler hoses on the transmission body and add appropriate transmission oil through fill port until it begins to drain out of fill plug. Transmission fluid capacity is approximately 4.6L. Replace fill plug and torque to 32 ft-lb.
20. Once work is complete, take vehicle for a 10 mile test drive to bring transmission to operating temperature and circulate fluids. After the test drive is complete, return to the service area. Check the transmission oil level and add more oil if required. Proper fill level is when oil is at the same height as the fill plug as per Figure 3. Inspect all transmission cooler lines and components for any leaks.
21. Record all work completed on vehicle.

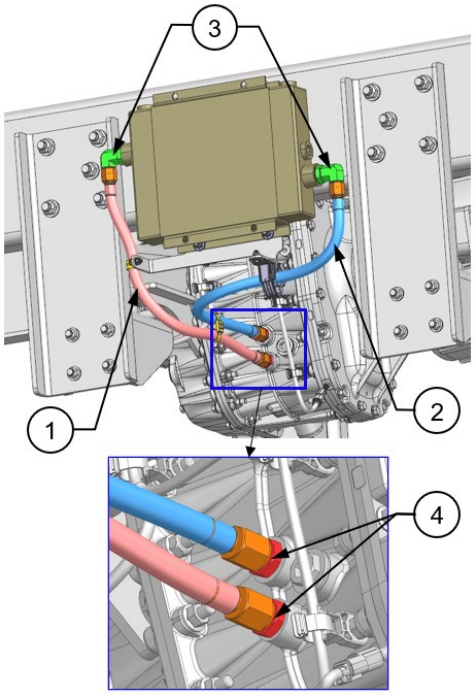

Figure 1 – Diagram of old hose layout. Parts 1 and 2 are the hoses. Part 3 are the 90* fittings. Part 4 (Shown in Red) are the straight adapter fittings. Hose ends are colored orange.

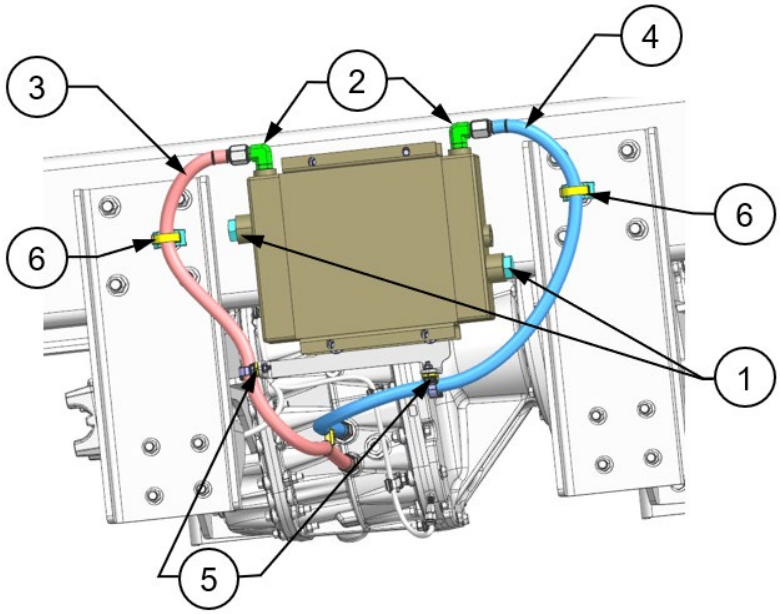

Figure 2: Updated hose routing. Part 1 are block off plugs, Part 2 are the 90* fittings, Part 3 is the 37” hose, Part 4 is the 46” hose, Part 5 are the new hose clamps, Part 6 are the new knock on hose clamps

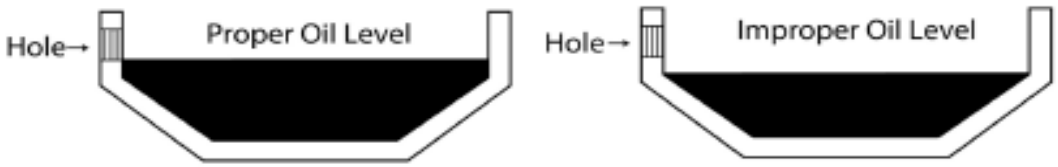

Figure 3: Proper transmission fluid level is when oil level is at the height of the fill hole.

Warranty

This procedure is not covered under warranty. Standard powertrain warranty is unaffected and remains in place.