

Technical Note TN.JS-015

07 April 2015

TITLE

Water Ballast Vent System Version 2 Installation

DESCRIPTION

The pressure vent system of the main water ballast has been revised. This TN provides information to change the JS1 water ballast vent system to Version 2. Version 2 of the system provides a higher discharge rate of the water due to improved ventilation.

Figure 1 illustrates Version 1 of the filler cap.



Figure 1: Filler cap, first version (1A-2.07.61)

JS1 Water Ballast Vent System Version 2 consists of two ball-type check valves in the filler cap, with the pressure relief valve relocated to the junction rib. Figure 2 illustrates Version 2 of the filler cap, while Figure 3 shows the pressure relief valve in the junction rib.

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1	REV	ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	EXT. REF
2		1	1	1C-2.07.61.1#V2	FILLER CAP V2	D1C-2.07.61
		2	2	6.9.12	BALL: CHECK: VALVE: RIGID: PVC: CLEAR	
J		3	1	8.2.07	O-RING: 26X1.5	

Figure 2: Filler cap, second version (1C-2.07.61#V2)



Figure 3: Pressure relief valve installed in junction rib

The first version filler cap 1A-2.07.61 can be replaced with the second version filler cap 1C-2.07.61#V2. Alternatively, it may be modified by inserting an adaptor (Filler Cap Adaptor, 1C-2.07.61.6) and a second check valve. Modifying the first version filler cap is shown in Figure 4.

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		REV	ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	EXT. REF
			1	1	1A-2.07.61.1	FILLER CAP	D1A-2.07.61
			2	1	1C-2.07.61.6	FILLER CAP ADAPTOR	D1C-2.07.61
\square			3	2	6.9.12	BALL: CHECK: VALVE: RIGID: PVC: CLEAR	
			4	1	8.2.07	O-RING: 26X1.5	
3 0	<u> </u>		5	1	1A-2.07.50	FILLER CAP SLEEVE	D1A-2.07.61

Figure 4: Filler cap, first version, with provision for a second check valve

INSTRUCTIONS

INSTALLING PRESSURE RELIEF VALVE ON JUNCTION RIB

- 1. De-rig the glider according to instructions given in the Flight Manual and ensure most of the water is drained.
- 2. Lay the wing on stands with the root at a lower level than the tip, allowing the excess water to flow to the root.



3. Drill a 14mm diameter hole through the inner junction rib in a position which would enable a clearance of 22mm around the hole, illustrated in Figure 5.



Figure 5: Pressure relief valve and retainer.

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- 4. Prepare the area around the drilled hole for bonding, by sanding it lightly and cleaning it with acetone. Prepare bonding areas on the pressure relief valve and retainer.
- 5. Mix a suitable amount of Spabond 345, or similar polyurethane bonding epoxy. Contact Jonker Sailplanes for assistance if Spabond 345 is not available.
- 6. Apply a small amount of bonding epoxy to the pressure relief valve and retainer. See Figure 3
- 7. Bond the pressure relief valve retainer into the rib area prepared in Step 5, and immediately scrape away any excess bonding epoxy. See Figure 3
- 8. Allow the bonding epoxy to fully cure.

INSTALLING CHECK VALVES INTO FILLER CAP

Installing the check valves may arise from either of the two following processes:

Using the existing, already profiled filler cap:

- 1. Remove the filler cap
- 2. Remove the pressure relief valve from the filler cap. See Figure 1.
- Insert the adaptor into the position where the pressure relief valve was removed from. See Figure 4.
- 4. Insert the second check valve into the adaptor in the filler cap. See Figure 4.
- 5. Replace the O-ring of the filler cap.
- 6. Install the filler cap into position, with the slot parallel to the airflow, as illustrated in Figure 6.



Figure 6: Filler cap position in line with airflow

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Installing a new filler cap:

- 1. The filler cap will need to be profiled to match the wing profile:
 - i. Fit the O-ring to the filler cap.
 - ii. Remove both check valves if they are already installed. If not removed, they may become clogged by shavings during the profiling process.
 - iii. Install the filler cap into position, with the slot in line with the flow of air, as illustrated in Figure 6.

NOTE: Install the filler cap by hand. If the filler cap is not in line with the air flow when turned finger tight, chase the cap thread with a M27x1.5mm die or a 1.5mm thread chase tool.

- iv. Mask off the entire area of the wing around the filler cap, leaving open an area of about 150mm radius around the filler cap.
- v. The filler cap can now be profiled.

NOTE: Take care not to damage the surface around the filler hole while profiling the cap.

- 2. Remove the filler cap and insert both check valves.
- 3. Install the filler cap into position, with the slot parallel to the airflow, as illustrated in Figure 6.

TESTING THE DISCHARGE RATE

After both the pressure relief valve and the check valves are installed, the main water ballast discharge rate should be tested to ensure sufficient flow. Refer to the Maintenance Manual for instructions on testing the discharge rate.

MATERIAL SUPPLIED

If the current filler cap is to be used:

- 1C-2.07.61.6, Filler cap adaptor
- 1C-2.07.61.5, Pressure relief valve retainer
- 1C-2.07.61.3, Pressure relief valve

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- 1A-2.07.61.2, 2x check valve
- 1A-2.07.61.4, O-ring 26x 0.5

If an entire new filler cap is required:

- 1A-2.07.61.1#v2, Filler cap v2
- 1C-2.07.61.5, Pressure relief valve retainer, attached to the pressure relief valve
- 1C-2.07.61.3, Pressure relief valve
- 1A-2.07.61.2, 2 check valves
- 1A-2.07.61.4, O-ring 26x 0.5

MATERIAL REQUIRED

- Hand drill with 12 mm diameter drill bit
- Spabond 345. (Datasheet attached.)
- 80 Grit Sanding Paper

If an entire new filler cap is required, which need to be profiled, the applicable paint system and materials and equipment to sand and spray is required.

MASS AND BALANCE

No change to mass or balance

MANUALS

No change to Flight or Maintenance Manuals

NOTES

This technical note must be completed by an approved maintenance person.

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