Temporary Maintenance Instruction
TMI 139-541

Emergency flotation system - Operation test

AW139 Helicopters with P/N
4G9560F00111 / 4G9560F00211

The technical content of this document is approved under the authority of DOA nr. EASA.21J.005.

The present TMI will be evaluated for its introduction in the standard set of Technical Publication.
If no further notice is received, the present document expires on: March 03rd 2022.

2021-03-03

Introduction

This TMI provides the instructions and requirements to perform the Operation test of the Emergency flotation (Dart) and life raft (15 pax) system kit P/N 4G9560F00111 and 4G9560F00211.

All the information reported in the subsequent pages will be updated in the IETP revision 39, Data Module 39-C-95-61-00-00A-320A-K.

Emergency flotation system - Operation test

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Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)

Table 2 Access points

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Access Panel / Door Id	Data Module
No Zones	

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The access panel/door 183AL and 180GL must be removed/open	39-A-06-41-00-00A-010A-A

Support Equipment

Table 5 Support Equipment

Nomenclature	Identification No.	Qty
Electrical wire	ZZ-00-00	1
Multimeter	ZZ-00-00	1

Supplies

Table 6 Supplies

Nomenclature
No Supplies

Spares

Table 7 Spares

Nomenclature
No Spares

Safety Conditions

WARNING

Put ropes around the work area and put the jack warning signs at the four end sides of the helicopter. Do this to prevent not necessary persons go near the helicopter. This condition prevents damage or injury to persons during the operational check procedure.

Procedure

Note

The emergency flotation control panel is referred to in this procedure as the control panel.

1 For the components of the emergency flotation system that follows do the applicable operation test:

- For the control panel (5, Figure 1), do the step 2 thru step 5
- For the submersion switches (9), (11), (13) or (15), do the step 4.

2 **Armed function test**

2.1 Get access to the circuit breaker panel (1), in the cockpit. Make sure that these circuit breakers are open:

- The MAU2 PRI PWR (CB110)
- The MAU2 AUX PWR (CB118)
- The EMERG FLOAT (CB141)
- The AUTO FLOAT (CB142)
- The MAU1 PRI PWR (CB109)
- The MAU 1 AUX PWR (CB117).

2.2 Get access to the bottle assembly (7) trough the opening of the access panel 180GL.

2.3 Disconnect the electrical connector E135P1 (6) from the bottle assembly (E135) (7).

2.4 Get access to the circuit breaker panel (1) in the cockpit.

2.5 Close the AUTO FLOAT (CB142) circuit breaker.

2.6 Close the MAU1 PRI PWR (CB109) and MAU 1 AUX PWR (CB117) circuit breakers.

2.7 On the control panel (5), set the ARMED/OFF switch to ARMED.

2.8 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

2.9 On the circuit breaker panel (1), open the MAU1 PRI PWR (CB109) and MAU 1 AUX PWR (CB117) circuit breakers.

2.10 Close the MAU2 PRI PWR (CB110) and MAU2 AUX PWR (CB118) circuit breakers.

2.11 On the MFD (2), make sure that the FLOAT ARM caution is in view.

2.12 On the circuit breaker panel (1), close the circuit breakers that follow:

- The MAU1 PRI PWR (CB109)
- The MAU1 AUX PWR (CB117)
- The MAU2 PRI PWR (CB110)
- The MAU2 AUX PWR (CB118).

2.13 On the MFD (2), make sure that the FLOAT ARM caution is in view.

2.14 On the control panel (5), set the ARMED/OFF switch to OFF.

2.15 On the MFD (2), make sure that the FLOAT ARM caution goes out of view.

2.16 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) circuit breaker.

2.17 On the pilot collective stick (3), lift the FLOAT guard. Then set the FLOAT switch to the Armed position.

2.18 On the MFD (2), make sure that the FLOAT ARM caution is not in view.

2.19 On the control panel (5), set the ARMED/OFF switch to ARMED.

2.20 Make sure that, on the control panel (5), the LH SYS and RH SYS lights come on.

2.21 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

2.22 On the pilot collective stick (3), set the FLOAT switch to the OFF position. Then lower the FLOAT guard.

2.23 On the MFD (2), make sure that the FLOAT ARM caution is in view.

2.24 On the control panel (5), make sure that the LH SYS and RH SYS lights go off.

2.25 On the copilot collective stick (4), lift the FLOAT guard. Then set the FLOAT switch to the Armed position.

2.26 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

2.27 On the control panel (5), make sure that the LH SYS and RH SYS lights come on.

2.28 Set the ARMED/OFF switch of the control panel (5), to OFF.

2.29 On the MFD (2), make sure that the FLOAT ARM caution goes out of view.

2.30 On the control panel (5), make sure that the LH SYS and RH SYS lights go off.

2.31 On the copilot collective stick (4), set the FLOAT switch to the OFF position. Then lower the FLOAT guard.

2.32 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) and the AUTO FLOAT (CB142) circuit breakers.

2.33 Connect the electrical connector E135P1 (6) to the bottle assembly (E135) (7).

3 **System function test**

3.1 On the circuit breaker panel (1), make sure that the AUTO FLOAT (CB142) and the EMERG FLOAT (CB141) circuit breakers are open.

3.2 Make sure that the electrical connector E135P1 (6) is connected to the bottle assembly (E135) (7).

3.3 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) circuit breaker.

3.4 On the control panel (5), push the TEST button.

3.5 Make sure that the LH SYS and RH SYS lights come on.

3.6 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) circuit breaker.

3.7 On the control panel (5), push the TEST button.

3.8 Make sure that the LH SYS and RH SYS lights stay off.

3.9 On the circuit breaker panel (1), close the AUTO FLOAT (CB142) circuit breaker.

3.10 On the control panel (5), set the ARMED/OFF switch to ARMED.

3.11 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

3.12 On the circuit breaker panel (1), open the AUTO FLOAT (CB142) circuit breaker.

3.13 On the MFD (2), make sure that the FLOAT ARM caution goes out of view.

3.14 On the control panel (5), set the ARMED/OFF switch to OFF.

4 **Automatic function test**

4.1 Disconnect the electrical connector E135P1 (6) from the bottle assembly (E135) (7).

4.2 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) and the AUTO FLOAT (CB142) circuit breakers.

4.3 On the control panel (5), set the ARMED/OFF switch to ARMED.

4.4 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

4.5 Get access to the forward-left submersion switch (11) adjacent to the copilot pedal set in the cockpit.

4.6 Disconnect the electrical connector S331P1 (10) from the forward-left submersion switch (S331) (11).

4.7 Get access to the aft-left submersion switch (9) on left-main landing-gear bay.

4.8 Disconnect the electrical connector S103P1 (8) from the aft-left submersion switch (S103) (9).

4.9 Get access to the forward-right submersion switch (13) adjacent to the pilot pedal set in the cockpit.

4.10 Disconnect the electrical connector S330P1 (12) from the forward-right submersion switch (S330) (13).

4.11 Get access to the aft-right submersion switch (15) on right-main landing-gear bay.

4.12 Disconnect the electrical connector S102P1 (14) from the aft-right submersion switch (S102) (15).

4.13 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S331P1 (10).

4.14 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.15 On the control panel (5), make sure that the LH SYS and RH SYS lights come on.

4.16 Remove the electrical wire from the pin A and pin C of electrical connector S331P1 (10).

4.17 On the control panel (5), make sure that the LH SYS and RH SYS lights go off.

4.18 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S103P1 (8).

4.19 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.20 On the control panel (5), make sure that the LH SYS and RH SYS lights come on.

4.21 Remove the electrical wire from the pin A and pin C of electrical connector S103P1 (8).

4.22 On the control panel (5), make sure that the LH SYS and RH SYS lights go off.

4.23 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S330P1 (12).

4.24 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.25 On the control panel (5), make sure that the LH SYS and RH SYS lights come on.

4.26 Remove the electrical wire from the pin A and pin C of electrical connector S330P1 (12).

4.27 On the control panel (5), make sure that the LH SYS and RH SYS lights go off.

4.28 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S102P1 (14).

4.29 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.30 On the control panel (5), make sure that the LH SYS and RH SYS lights come on.

4.31 Remove the electrical wire from the pin A and pin C of electrical connector S102P1 (14).

4.32 On the control panel (5), make sure that the LH SYS and RH SYS lights go off.

4.33 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) circuit breaker.

4.34 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S331P1 (10).

4.35 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.36 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S103P1 (8).

4.37 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is 28 VDC power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is 28 VDC power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.38 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) circuit breaker.

4.39 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is 28 VDC power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is 28 VDC power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.40 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) circuit breaker.

4.41 Remove the electrical wire from the pin A and pin C of the electrical connector S331P1 (10) and the electrical connector S103P1 (8).

4.42 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S330P1 (12).

4.43 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.44 Connect an Electrical wire (ZZ-00-00) between the pin A and pin C of the electrical connector S102P1 (14).

4.45 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is 28 VDC power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is 28 VDC power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.46 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) circuit breaker.

4.47 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is 28 VDC power between pins A (+) and B (-) of the electrical connector E135P1 (6)

- Make sure that there is 28 VDC power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.48 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) circuit breaker.

4.49 Remove the electrical wire from the pin A and pin C of the electrical connector S330P1 (12) and the electrical connector S102P1 (14).

4.50 On the control panel (5), set the ARMED/OFF switch to OFF.

4.51 On the circuit breaker panel (1), open the AUTO FLOAT (CB142) circuit breaker.

4.52 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

4.53 On the MFD (2), make sure that the FLOAT ARM caution does not come in view.

4.54 Connect the electrical connector S331P1 (10) to the forward-left submersion switch (S331) (11).

4.55 Connect the electrical connector S103P1 (8) to the aft-left submersion switch (S103) (9).

4.56 Connect the electrical connector S330P1 (12) to the forward-right submersion switch (S330) (13).

4.57 Connect the electrical connector S102P1 (14) to the aft-right submersion switch (S102) (15).

4.58 Connect the electrical connector E135P1 (6) to the bottle assembly (E135) (7).

5 Manual function test

5.1 Disconnect the electrical connector E135P1 (6) from the bottle assembly (E135) (7).

5.2 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) and the AUTO FLOAT (CB142) circuit breakers.

5.3 On the pilot collective stick (3), lift the FLOAT guard. Then set the FLOAT switch to the Armed position.

5.4 On the MFD (2), make sure that the FLOAT ARM caution does not come in view.

5.5 On the control panel (5), set the ARMED/OFF switch to ARMED.

5.6 Make sure that the LH SYS and RH SYS lights come on.

5.7 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

5.8 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

5.9 On the pilot collective stick (3), push the FLOAT FIRE button.

5.10 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is 28 VDC power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is 28 VDC power between pins C (+) and D (-) of the electrical connector E135P1 (6).

5.11 On the control panel (5), make sure that the LH SYS and RH SYS lights stay on.

5.12 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) circuit breaker.

5.13 On the pilot collective stick (3), push the FLOAT FIRE button.

5.14 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

5.15 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

5.16 On the control panel (5), make sure that the LH SYS and RH SYS lights are off.

5.17 Set the ARMED/OFF switch to OFF.

5.18 On the pilot collective stick (3), set the FLOAT switch to the OFF position. Then lower the FLOAT guard.

5.19 On the copilot collective stick (4), lift the FLOAT guard. Then set the FLOAT switch to the Armed position.

5.20 On the MFD (2), make sure that the FLOAT ARM does not come in view.

5.21 On the control panel (5), make sure that the LH SYS and RH SYS lights are off.

5.22 On the circuit breaker panel (1), close the EMERG FLOAT (CB141) circuit breaker.

5.23 On the control panel (5), set the ARMED/OFF switch to ARMED.

5.24 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

5.25 On the control panel (5), make sure that the LH SYS and RH SYS lights come on.

5.26 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

5.27 On the copilot collective stick (4), push the FLOAT FIRE button.

5.28 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is 28 VDC power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is 28 VDC power between pins C (+) and D (-) of the electrical connector E135P1 (6).

5.29 On the control panel (5), make sure that the LH SYS and RH SYS lights stay on.

5.30 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

5.31 On the circuit breaker panel (1), open the EMERG FLOAT (CB141) circuit breaker.

5.32 On the copilot collective stick (4), push the FLOAT FIRE button.

5.33 Do the checks that follow with the Multimeter (ZZ-00-00) :

- Make sure that there is no power between pins A (+) and B (-) of the electrical connector E135P1 (6)
- Make sure that there is no power between pins C (+) and D (-) of the electrical connector E135P1 (6).

5.34 On the MFD (2), make sure that the FLOAT ARM caution comes in view.

5.35 On the control panel (5), make sure that the LH SYS and RH SYS lights are off.

5.36 On the circuit breaker panel (1), open the AUTO FLOAT (CB142) circuit breaker.

5.37 On the MFD (2), make sure that the FLOAT ARM caution goes out of view.

5.38 On the copilot collective stick (4), set the FLOAT switch to the OFF position. Then lower the FLOAT guard.

5.39 On the control panel (5), set the ARMED/OFF switch to OFF.

5.40 Connect the electrical connector E135P1 (6) to the bottle assembly (E135) (7).

Requirements After Job Completion

1 Remove all the tools and the other items from the work area. Make sure that the work area is clean.

2 Install/close the access panel/door 183AL and 180GL. Refer to 39-A-06-41-00-00A-010A-A

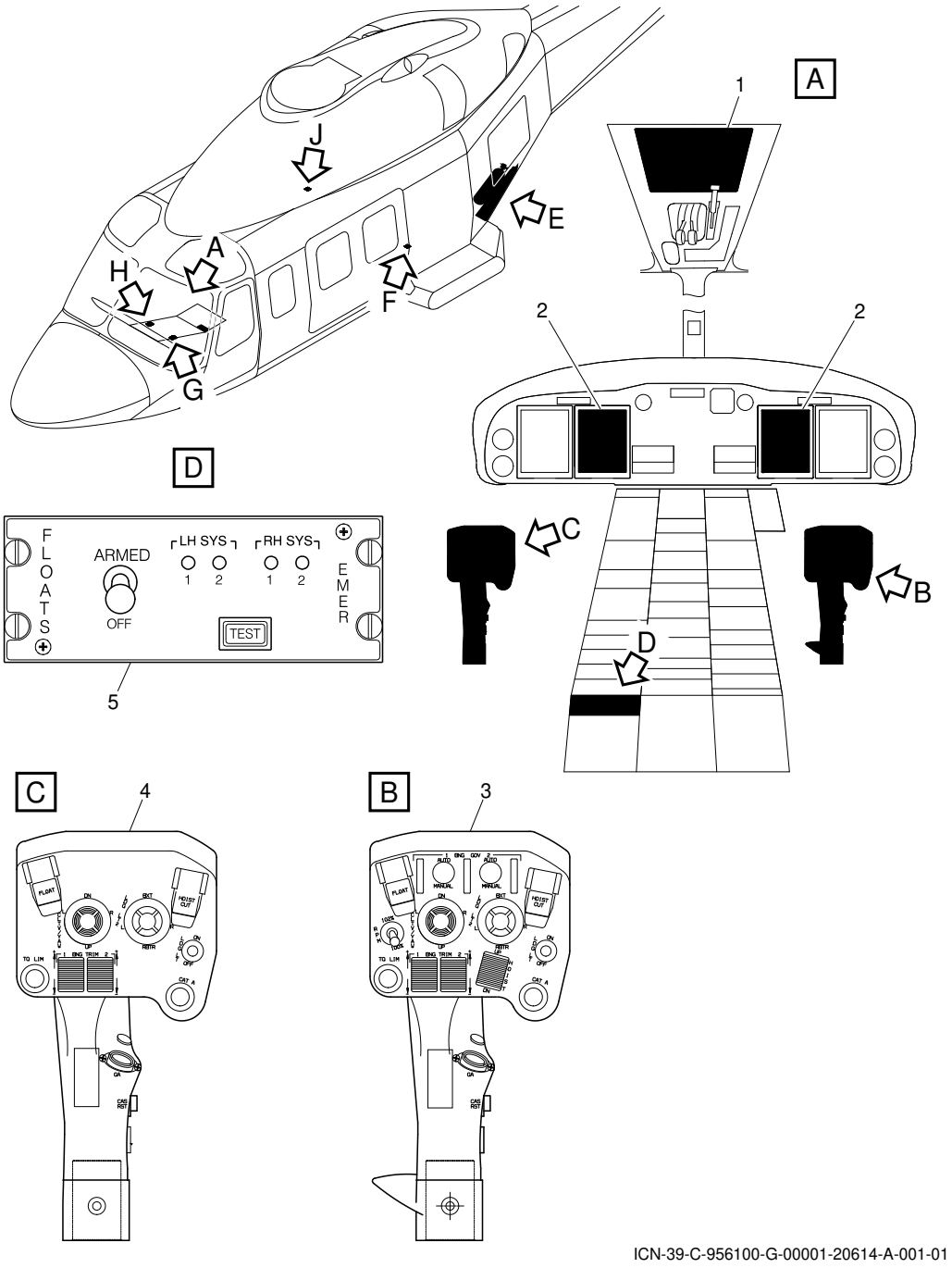

Figure 1 (Sheet 1 of 2) Forward left float assembly - Operation test

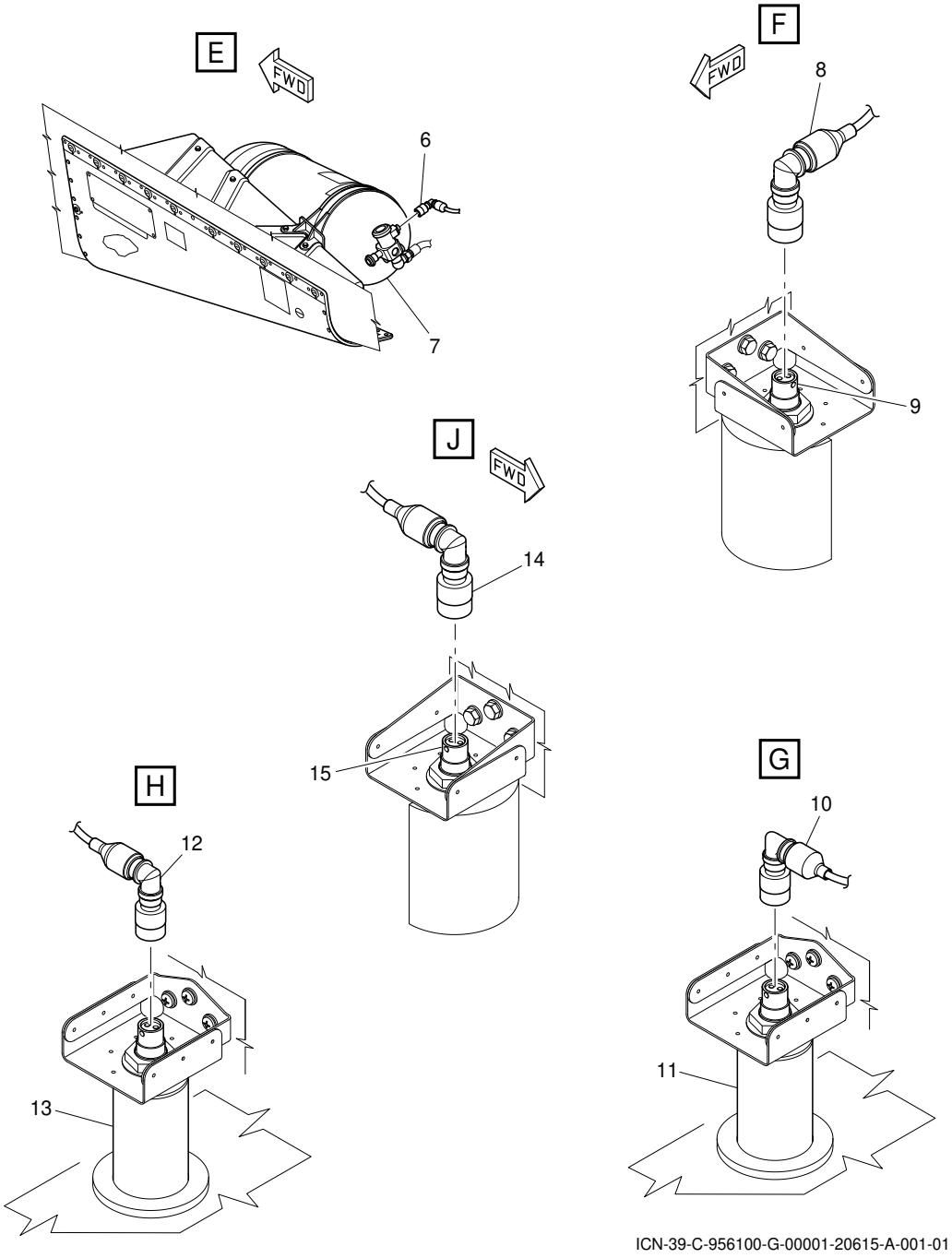

Figure 1 (Sheet 2 of 2) Forward left float assembly - Operation test