

SERVICE INFORMATION

NO. SI 40NG-057/1

supersedes SI 40NG-057

NOTE: SI's are used only:
1) To distribute information from DAI to our customers.
2) To distribute applicable information/documents from our suppliers to our customers with additional information.
Typically there is no revision service for SI's. Each new information or change of that will be sent along with a new SI.

I. TECHNICAL DETAILS

1.1 Airplanes affected:

All DA 40 NG airplanes with S/N 40.N091 and subsequent, or converted via MSB 40NG-018, or with RSB 40NG-011 carried out.

1.2 Subject:

Installation of turbo charge air system.

ATA-Code: 81-00

1.3 Reason:

A failure of the charge air hose which connects the charge air tube between turbocharger and intercooler and the V-clamp, was reported. Investigation suggests that improper installation and handling caused this failure.

1.4 Information:

Service experience has shown that when installing the charge air hoses and tubes between turbocharger and intercooler special attention must be paid to perform the installation without pretension on the turbocharger connecting tube, as this might damage the V-Clamp over time. Of great importance is also the 30 mm clearance between the two aluminium charge air tubes as this provides flexibility and reduces loads on the turbo charger. In addition avoid kinking and excessive deformation of the charge air hoses as this might pre-damage them. Pretension in the charge air system, improper free hose length, as well as pre-damage of the charge air hoses might increase and possibly lead to failure of the V-clamp or charge air hoses and subsequent loss of engine power.

1) General Installation Information

- **DO NOT install the aluminium charge air tube with pretension to the turbocharger as this may damage and possibly lead to a failure of the V-**

clamp and subsequent loss of engine power.

- **Make sure that the clearance between the two aluminium tubes (#1 and #3) is 30 mm (see “Installation of the charge air system between turbocharger and intercooler”), as this provides the necessary flexibility in the system and reduces the loads to the turbocharger flange.**
- **DO NOT kink or excessively deform the charge air hoses during installation as this might pre-damage them and possibly lead to failure of the charge air hoses and subsequent loss of engine power.**
- **To ease installation of the hoses onto the connecting tubes, always moist the inside of the hoses and outside of the aluminium tubes with water prior to assembly.**

2) Installation of the charge air system between turbocharger and intercooler:

a) Preparation of the charge air system installation

The charge air system between turbocharger and intercooler contains the following parts:

1. Turbo connector assy (#1)
2. Charge air hose (#2)
3. Charge air tube (#3)
4. Charge air elbow (#4)

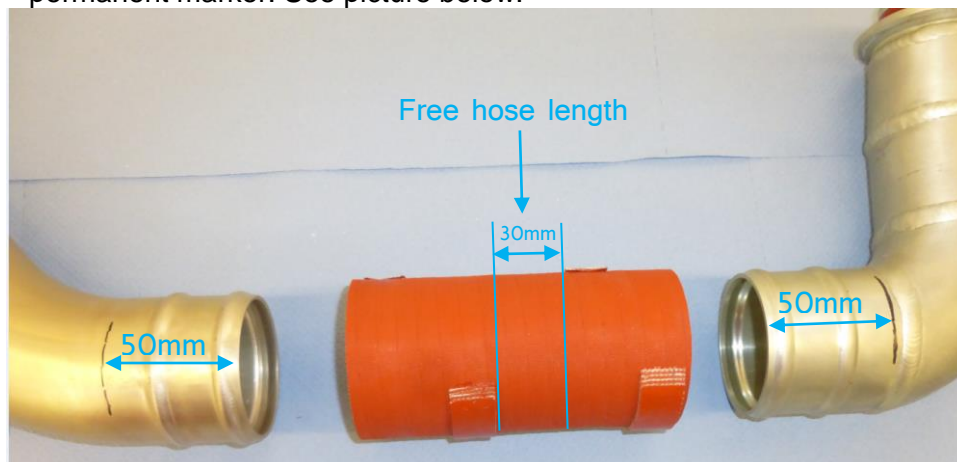


b) Pre-assemble the charge air system

- 1) Moisten inside of the hoses and flanges of the aluminium tube with water or soap water to ease installing the hose onto the tube.



- 2) Mark the overlapping of the charge air hose on the tubes with a permanent marker. See picture below.



- 3) Pre-assemble the hose and charge air tubes (overlap the hose up to the markings) as shown below. Position also the six worm drive clamps. DO NOT tighten the worm drive clamps.



- c) Install the pre-assembled charge air hose/tubes on the engine
1) Position the charge air assembly on the engine



- 2) Moisten inside of the hoses and flanges of the aluminium tube with water or soap water to ease installing the hose onto the tube.



Position the charge air hose #4 on the intercooler and charge air tube #3. DO NOT tighten the worm drive clamps.



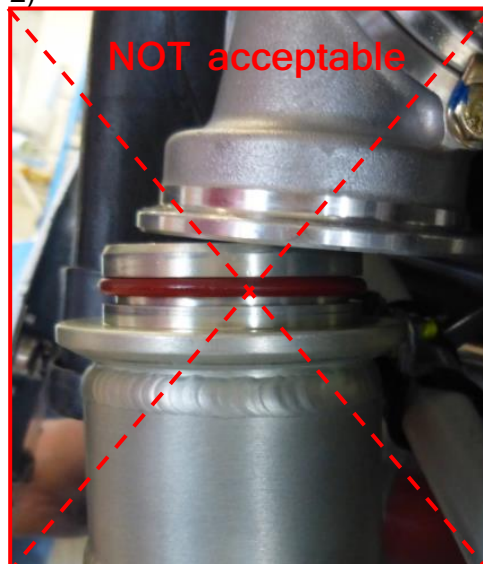
- d) Position and align the hoses and tubes of the charge air system
- 1) Position/align (rotate the tubes and hoses as necessary) the turbo connector Assy (#1), charge air tube #3 and charge air elbow #4 to obtain the required clearance to engine and firewall, as described in the AMM or AMM-TR-MÄM 40-820 if hose with bellows is installed.



e) Check charge air system installation between turbocharger and intercooler

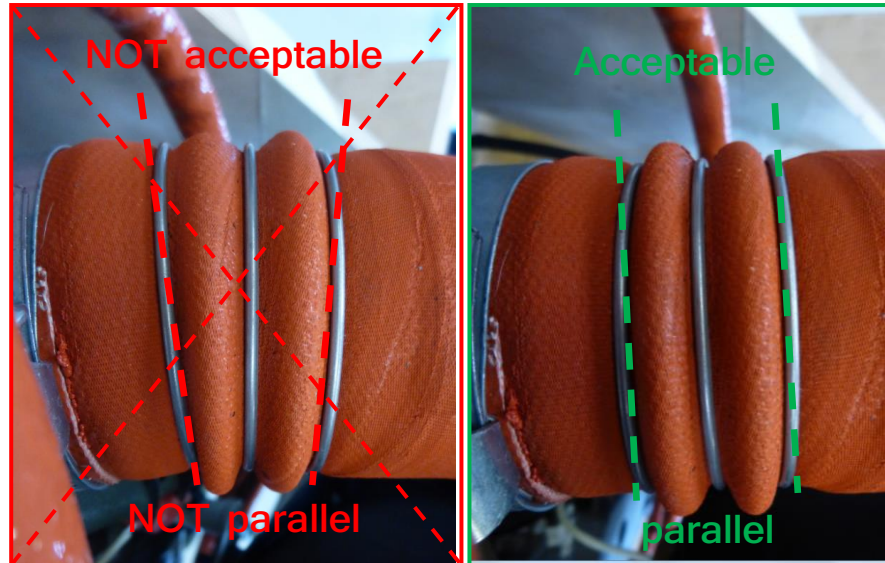
1) Verify that the turbo connector assy #1 has NO pretension when connected to the turbocharger. If a misalignment is detected realign the charge air system.

2)



3) Verify that the charge air hose #2 has the required overlapping (up to the markings, 50 mm). Check that the tension of the charge air hose #2 is equal along the circumference by squeezing the hose with the fingers in the area where no tube overlapping exists. If the tension is not equal along the circumference, realign the charge air hoses/tubes.

4) If hose with bellows is installed (MÄM 40-820) verify that the bellows of the charge air elbow hose #1 are free of pretension (NO compression/tension or angular deflection on the bellows allowed). If pretension is detected realign the hose by the overlapping on the tube connections or rotate the hose slightly.



- f) Position and tighten the worm drive clamps and V-clamp
- 1) Position and tighten and safety wire the worm drive clamps on the hose connections (use protective pads) as described in the AMM or AMM-TR-MÄM 40-820.
 - 2) Tighten the V-clamp as described in the AMM or AMM-TR-MÄM 40-853/b if MÄM 40-853/b is installed.
- g) Final turbocharger system installation check
- 1) Make a final check on the turbocharger system hose/tube installation to verify that all structural clearances, alignment and no pretension in the system exists (see AMM or AMM-TR-MÄM 40-820).

II. OTHERS

In case of doubt contact Diamond Aircraft Industries GmbH.