



A Textron Company

ALERT SERVICE BULLETIN

427-21-44

15 February 2021

MODEL AFFECTED: 427

SUBJECT: TRANSMISSION OIL CHECK VALVE 209-062-520-001, INSPECTION AND REPLACEMENT OF.

HELICOPTERS AFFECTED: Serial numbers 56001 through 56084, 58001, and 58002.

COMPLIANCE:

Part I: Within the next 25 flight hours or 30 days, whichever comes first after the release date of this bulletin.

Part II: Within the next 25 flight hours or 30 days, whichever comes first after accomplishment of **Part I** and every 25 flight hours or 30 days thereafter until **Part III** is accomplished.

Part III: No later than 600 flight hours or 12 months, whichever comes first after accomplishment of **Part I**.

DESCRIPTION:

Bell recently received a report of a cracked transmission oil check valve manufactured by Circor Aerospace (Circle Seal). This check valve was manufactured in 2009 which is outside of the manufacturing date range (October 2011 to March 2015) addressed in Alert Service Bulletin (ASB) 427-15-37. Corrective actions implemented in 2015 by Circor Aerospace to prevent cracking of the check valve housings are indicated by the "TQL" marking.

A recent check valve cracking report indicates that additional oil check valves 209-062-520-001 manufactured by Circor Aerospace (Circle Seal) not having the "TQL" marking may be susceptible to cracking with time in service.

This Alert Service Bulletin (ASB) mandates a one-time inspection of the suspected oil check valve for housing dimension measurement. Oil check valves that do not meet the inspection requirements outlined in the **Part I** of the **Accomplishment Instructions** of this bulletin will require replacement. Check valves found serviceable after accomplishment of **Part I** of this bulletin will not require further inspection or replacement.

Alert Service Bulletin 427-15-37 mandated a one-time inspection of transmission oil check valves manufactured between October 2011 and March 2015 without the "TQL" marking. Following the release of ASB 427-15-37, Bell received reports from operators indicating that some transmission oil check valves did not have a manufacturing date stamped on the housing. Based on additional information provided by Circor Aerospace, this bulletin mandates the inspection of all transmission oil check valves manufactured by Circor Aerospace at the Corona facility in California, not having the "TQL" marking. Transmission oil check valves manufactured at the Corona facility have the "CORONA CA" marking. Regardless of the manufacturing date, transmission oil check valves with the "TQL" marking are not affected by this bulletin.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

MANPOWER:

Approximately 1 man-hour is required to accomplish **Part I** of this bulletin and 0.5 man-hour to accomplish **Part II**. Approximately 1 man-hour is required to accomplish **Part III** of this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>
209-062-520-001	Oil check valve	A/R (1)
M25988/1-910	Packing	A/R (1)

NOTE 1: Replacement will be required only if the check valve does not meet the inspection requirements of **Part I** of this bulletin.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-427-MM, Maintenance Manual, Chapter 79.

PUBLICATIONS AFFECTED:

None affected.

ACCOMPLISHMENT INSTRUCTIONS:

Part I. Oil check valve inspection.

1. Prepare the helicopter for maintenance and gain access to the transmission oil check valve. The transmission oil check valve is located on the transmission oil cooler (Figure 1, Details A).

-NOTE-

It is not necessary to remove the transmission oil check valve for inspection; however, some clamping may require removal for better access. Regardless of the manufacturing date, any transmission oil check valves with the "TQL" marking are not affected by this bulletin. Oil check valves manufactured by other suppliers are also not affected by this bulletin. Transmission oil check valves with the "CORONA CA" marking and without the "TQL" marking are affected by this bulletin. (Figure 1, Detail B).

2. Verify if the installed check valve is affected by this bulletin.
3. If the check valve is not affected, go to step 5.
4. If the check valve is affected, proceed as follows:
 - a. Using a caliper or equivalent, measure the check valve housing at the center and record the dimension (Figure 2).
 - b. Measure the housing at the inlet end where the threaded fitting is installed and record the dimension.
 - c. If the dimension measured at the inlet end is no more than 0.003 inch (0.0762 mm) greater than the measurement at the center, the valve is serviceable and does not require accomplishment of **Part II** or **Part III** of this bulletin. Go to step 5.

-NOTE-

Due to possible delay in getting replacement check valves, Bell recommends that owner/operators place their order as soon as **Part I** is accomplished if the check valve is found cracked or not meeting dimensional criteria and would require replacement in accordance with **Part III** of this bulletin.

- d. If the dimension measured at the inlet end is greater than 0.003 inch (0.0762 mm) when compared to the measurement at the center, the valve will require replacement. **Part III** can be accomplished immediately, or **Part II** can be accomplished until the affected check valve can be replaced in accordance with **Part III**.
- e. If the defective check valve is not replaced immediately, **Part II** must be accomplished every 25 flight hours or 30 days, whichever comes first, until **Part III** is accomplished.

5. Make an entry in the helicopter logbook and historical service records indicating the findings and compliance with **Part I** of this Alert Service Bulletin.

Part II. Recurring 25 flight hour or 30-day inspection.

1. Prepare the helicopter for maintenance and gain access to the transmission oil check valve (Figure 1, Details A).
2. Using a strong light source, visually inspect the transmission oil check valve for general condition and oil leaks. Inspect for cracks at the inlet end where the threaded fitting is installed (Figure 2).
3. If a crack is found, perform, **Part III** of this bulletin prior to next flight. Figure 3 shows an example of a cracked check valve.
4. If no cracks or any other defects that would cause the check valve to be unserviceable are found, go to step 5.
5. Make an entry in the helicopter logbook and historical service records indicating the findings and compliance with **Part II** of this Alert Service Bulletin.
6. For affected transmission oil check valves, **Part II** of this bulletin shall be performed every 25 flight hours or 30 days, whichever comes first, until **Part III** of this bulletin is accomplished.

Part III. Transmission oil check valve replacement.

-NOTE-

The accomplishment of **Part III** of this bulletin constitutes the terminating action of this ASB.

1. Prepare the helicopter for maintenance and gain access to the transmission oil check valve (Figure 1, Detail A).
2. Replace the affected transmission oil check valve (BHT-427-MM, Chapter 79).
3. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part III** of this Alert Service Bulletin.



Transmission oil check valve and location
Detail A



Circor Aerospace Oil Check Valve Marked "TQL"
Detail B

Figure 1. Transmission Oil Check Valve Inspection

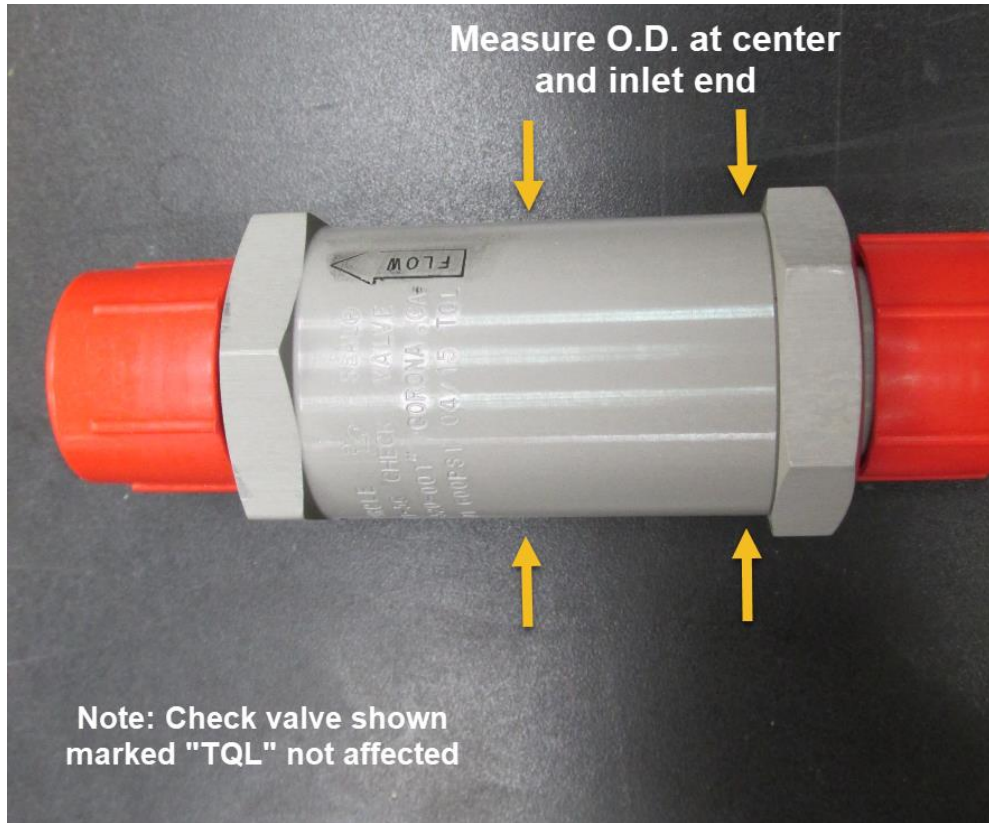


Figure 2. Transmission Oil Check Valve Outside Diameter Measurement

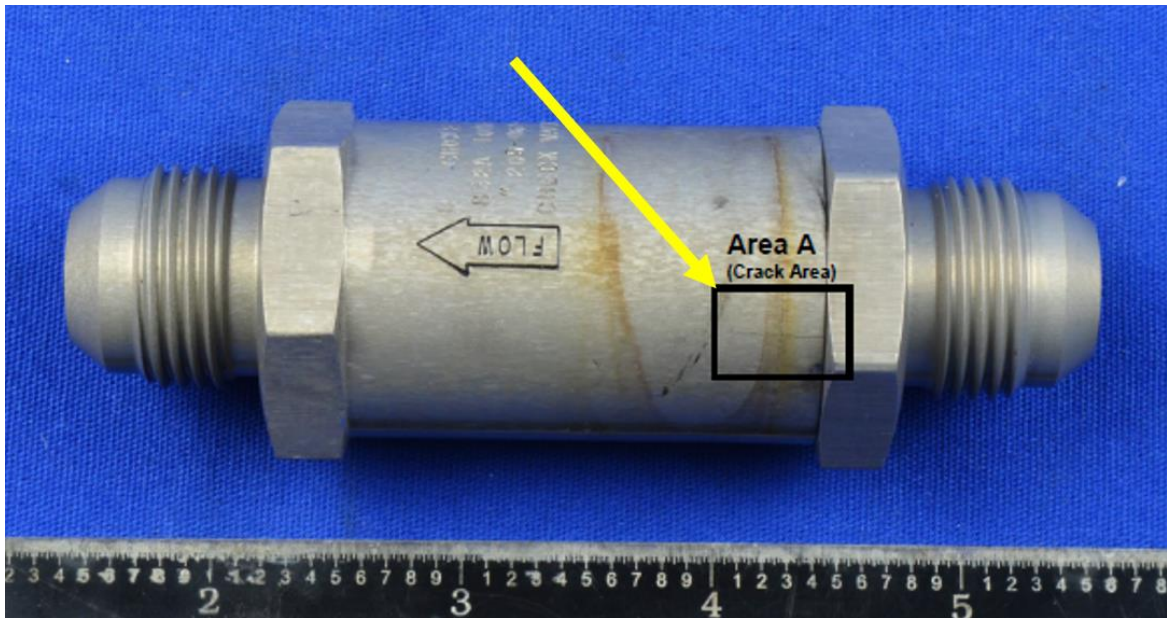


Figure 3. Cracked Oil Check Valve