TASK 55-46-09-001

Inspection of the Rudder Hinge and Actuator Attach Fittings

1. Purpose of Inspection

   The inspection is intended to detect cracks on the surfaces of the rudder actuator attach fittings.

   NOTE: The procedure is effective for all RRJ-95 models.

2. Recommended Inspection Procedure

   A. Eddy current inspection ***(Ref. NDT 51-60-00)***.

3. Alternative Inspection Procedure

   A. None

4. Inspection Area

   A. Internal and external surfaces of the rudder actuator attach fittings.

5. Material

   A. Hinge bracket material — aluminum alloy 1933 T3.

   B. Coating the ЭП-140 (cyrillic) enamel. Paint-coating thickness – 0.15-0.35 mm.

6. Description of the Defects Detected

   A. Surface cracks of 6 mm (0.24 in) and more in length extended on the hinge brackets external surfaces.

7. References

   A. Flaw detector operations manual

   B. Eddy current inspection. Introduction ***(Ref. NDT 51-60-00)***.

   C. Eddy current inspection. Main characteristics of flaw detectors ***(Ref. NDT 51-61-01)***.

   D. Eddy current inspection. Eddy current inventers ***(Ref. NDT 51-62-00)***.

   E. Eddy current inspection. Standard samples ***(Ref. NDT 51-63-00)***.

   F. Eddy current inspection. Standard samples of the surface flaw detectors ***(Ref. NDT 51-63-01)***.

   G. Eddy current inspection. Determination of the crack length ***(Ref. NDT 51-66-02)***.

   H. Eddy current inspection. Adjustment of sensitivity ***(Ref. NDT 51-66-03)***.

   J. Eddy current inspection. Detection of surface defects ***(Ref. NDT 51-66-04)***.

   K. Eddy current check of the edge areas ***(Ref. NDT 51-66-05)***.

L. Eddy current inspection. Detection of the surface defects under the paint-coating layer ***(Ref. NDT 51-66-06)***.

8. Inspection Tools

A. Use the tools for inspection in accordance with ***(Ref. NDT 51-61-00)***, ***(Ref. NDT 51-61-01)***, ***(Ref. NDT 51-62-00)***.

NOTE: It is permitted to use other type of certified flaw detectors and ECT with similar technical parameters if the procedure of their application is agreed with the developer.

B. The pen-type eddy current inventors, long-type or L-types are recommended for use. ***(Ref. NDT 51-62-00)***.

C. While inspecting the bracket lugs covered with enamel adjust the inspection sensibility at sample No. 1 (or the sample with three slots of 0.2, 0.5 and 1 mm in depth) with the paint-coating simulator ***(Ref. NDT 51-63-01)***.

9. Preparation for Inspection

A. Do the visual inspection of the inspection area.

Mark the areas where the surface is not integral if you detect such areas during the visual inspection.

B. Mark the ECT installation points in the inspection areas while doing adjustment.

10. Adjustment of Equipment

A. Do the adjustment and inspection with the pen-type, long and L-shaped ECT.

B. Install the ECT on the sample No. 1 (or the sample with three slots of 0.2, 0.5 and 1 mm in depth) with the paint-coating simulator and do the correction of the flaw detector amplification in accordance with the NDTM ***(Ref. NDT 51-66-03)***, ***(Ref. NDT 51-66-05)***, ***(Ref. NDT 51-66-06)***.

C. Check the flaw detector adjustment with the artificial defect of 0.5 mm (0.02 in) in depth of the sample No. 1 (or the sample with three slots of 0.2, 0.5 and 1 mm in depth) with the paint-coating simulator.

D. Make sure that while scanning the sample No. 1 (or the sample with three slots of 0.2, 0.5 and 1 mm in depth) through paint-coating layer ***(Ref. NDT 51-63-01)*** the defect simulator is detected clearly, the maximal ECT signal on the flaw detector locates in the area of the flaw detector AFI.

11. Inspection Procedure

A. Inspection of the Rudder Hinge and Actuator Attach Fittings

(1) Install the ECT on the surfaces in the inspection areas 1 and 2 in the inventor adjustment point at 2–3 mm from the bracket rib and bolts (Ref. ***Fig. 401, Sheet 1***, ***Fig. 401, Sheet 2***).

Do the balancing of the flaw detector (adjustment to the bracket material).

Make sure that the flaw detector is off in two other points when the ECT displaces at ±5 mm along the scanning path ***(Ref. NDT 51-66-03)***.

(2) Do the scanning of the lugs on the upper radius in the areas 1 and 2 within the limit.

Do the inspection by taking the ECT two or three times on the scanning path.

(3) Exceeding of the ECT signal of the set level (damage level) and flaw detector activation shall be identified as a crack.

(4) If you detect cracks mark them and determine their nominative length. ***(Ref. NDT 51-66-02)***.

(5) As you finish the area inspection check the flaw detector adjustment (para 10 C).

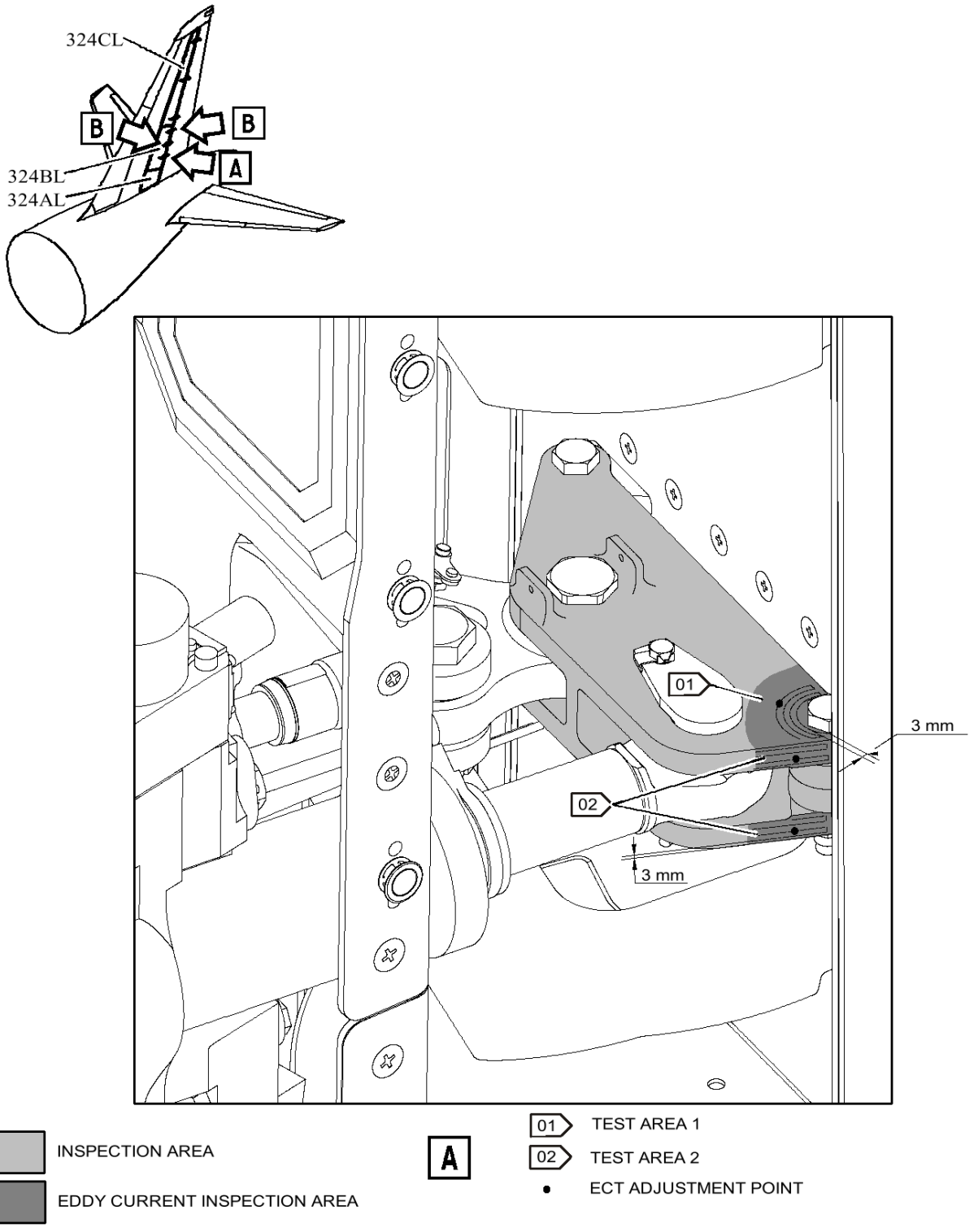
(6) Do again paras 11.A(1-6) when inspectioning the other areas of caps lugs of the brackets.

12. Rejection Criteria

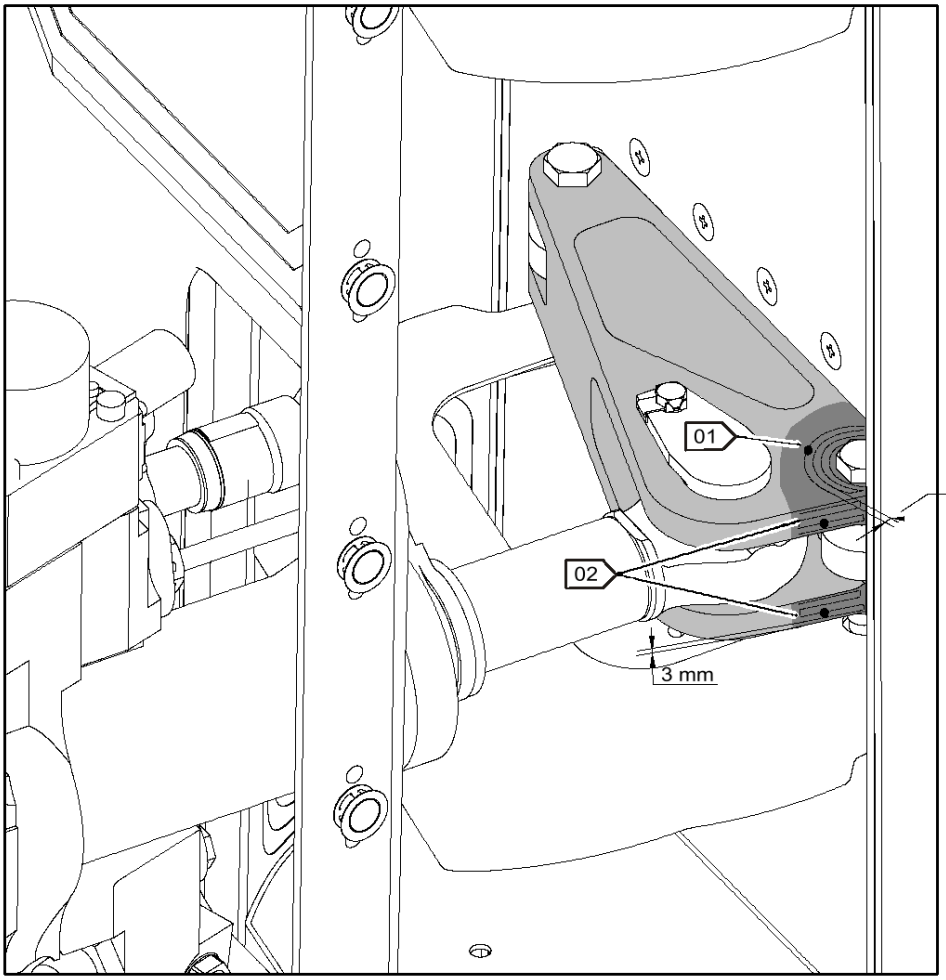
A. Cracks are not permitted.

13. Job Close-Up

A. None.



Inspection of the Rudder Hinge and Actuator Attach Fittings
Figure 401 (Sheet 1 of 2)



IDT_RRJ_NDT_55_46_09_001_002_A01_E

Inspection of the Rudder Hinge and Actuator Attach Fittings
Figure 401 (Sheet 2 of 2)

INTENTIONALLY LEFT BLANK