

# SERVICE BULLETIN

FUJI HEAVY INDUSTRIES LTD.

JCAB APPROVED

HEAD OFFICE; SUBARU BLDG  
SHINJUKU, TOKYO, JAPAN

NO. 200-015                      DATE 2006. 2. 28.

(SUPERSEDES NO.                      )

REV.                                      DATE

(SUPERSEDES NO.                      )

REASON

1. SUBJECT : Wing Main Spar; Corrosion Inspection and Repair of
2. AIRCRAFT AFFECTED : All FA-200 series aircraft
3. PRIORITY : Mandatory
4. REASON : To inspect and, if necessary, repair the flanges of the main wing spars, since field reports indicate a possibility of corrosion occurrence on these flanges.

## 5. DESCRIPTION:

5-1. Creation of inspection holes in the forward web at the spar root end.

Create two inspection holes (φ 10 mm) in the front web of each main spar at the root end.

5-2. Corrosion inspection of the main spar

Using an inspection mirror or other suitable tools, inspect the upper and lower flanges of the main spar for corrosion. Insert a fiberscope through the inspection holes provided in paragraph 5-1 and main spar attaching bolt holes to inspect the closed (inside) areas of main spar structure at the root end.

5-3. Repair of corrosion

- (1) If corrosion is found on main spar flanges in fuel tank bay (located between W. STA 1255 and 2338), remove corrosion and then measure flange thickness after corrosion cleanup. If the measured thickness exceeds specified limits, contact Fuji Heavy Industries Ltd. (FHI) for structural integrity evaluation.

- (2) If corrosion is found on main spar flanges in areas other than fuel tank bay, contact FHI for corrosion removal instructions.

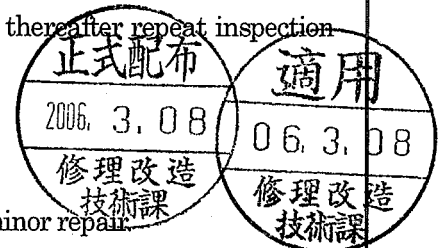
5-4. Removal of sealing compound (Applicable to #170 and subsequent only)

Remove part of sealing compound that seals gap between lower flange and stiffener

6. ACCOMPLISHMENT: Within one year after receipt of this bulletin; and thereafter repeat inspection in accordance with paragraph 13-3 every five years.

7. APPROVAL: JCAB Approval (No -Kou-06 -004) Feb 28, 2006

8. WORK CLASSIFICATION: The work as per this bulletin is classified as minor repair.



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## 9. PARTS REQUIRED:

The following parts are required to accomplish this bulletin:

| No | P/N                         | NOMENCLATURE | QTY/AC | REMARKS |
|----|-----------------------------|--------------|--------|---------|
| 1  | MS24665-132                 | PIN, COTTER  | 4      |         |
| 2  | MS24665-134                 | PIN, COTTER  | 2      |         |
| 3  | MS24665-283                 | PIN, COTTER  | 8      |         |
| 4  | NAS679A4W                   | NUT          | 8      |         |
| 5  | NAS679A5                    | NUT          | 32     |         |
| 6  | MIL-P-8585 or<br>EQUIVALENT | PRIMER       | AR     |         |

10. SPECIAL TOOL: (1) Dial caliper gage for measuring outside dimensions (See Figure 1 for requirements of the gage.)

(2) Fiberscope

11. WEIGHT AND BALANCE: Not affected.

12. REFERENCE: Service Manual

13. DETAILED INSTRUCTIONS:

### 13-1. Preparation

(1) Remove left and right wings, wing tips, fuel tanks and inspection covers (left and right wings – 1, left and right wings – 4). (Refer to Service Manual, Figure 3-5, Paragraphs 6-3-1, 7-11-1 and 7-12-1)

(2) Create inspection holes in the location of main spar web as indicated below (See Figure 2).

#### CAUTION

Drill inspection holes in the forward web only. Extreme caution must be taken when drilling not to damage or drill through the aft web or adjacent areas.

a. Drill a  $10 \pm 0.8$  mm diameter hole in the exposed portion of main spar forward web (triangle area) between main spar attaching bolt holes and rib at W. STA. 615.7, using a 3/8 inch drill.

b. Drill a  $10 \pm 0.8$  mm diameter hole in main spar forward web between ribs at W. STA. 615.7 and W. STA 795, using 3/8 inch drill.

(3) Remove burrs from the inspection holes, two places in each wing, drilled in the above step (2), and apply a coat of zinc chromate primer (MIL-P-8585 or equivalent) to bare metal exposed holes.

### 13-2. Removal of sealing compound (Applicable to #170 and subsequent only)

Remove part of sealing compound that seals gap between lower flange and stiffener (See Figure 2, Section A-A)

### 13-3. Corrosion inspection of left and right wings

(1) Inspect upper and lower flanges of main spar for corrosion, using an inspection mirror or other suitable tools through access opening for fuel system hoses (left and right wing – 1), access opening for Pitot tube and Pitot heater wiring (left wing – 4), access opening for stall limit switch wiring (right wing – 4) and lightening holes in each rib at W. STA 1255, 2338 (fuel tank bay) and W. STA 4460 (wing tip). (See Figure 3) At this time, also inspect main spar flanges at fuel tank bay for damages

or removal of paint flaking that may result in corrosion.

(2) For areas from wing-fuselage joint of main spar to rib W. STA 795, inspect main spar upper and lower flanges for corrosion, inserting a fiberscope through the inspection holes provided in the forward web and main spar attaching bolt holes.

#### CAUTION

When accomplishing repetitive inspection every five years, after compliance of this bulletin, the wings need not be removed from the fuselage. A fiberscope can be inserted through cabin inside, access openings in left and right wing lower skins (left and right wing - 1), lightening holes in each rib at W. STA 1255, and through clearance between the wing and fuselage skins (by removing wing root covers).

- (3) Depending on a result of the above inspection procedures (1) and (2), accomplish the following:
- a. If corrosion is found on main spar flanges in fuel tank bay (located between W. STA 1255 and 2338), remove corrosion in accordance with step 13-4 of this bulletin.
  - b. If corrosion is found on main spar flanges in areas other than fuel tank bay, contact FHI for corrosion removal instructions.
  - c. If corrosion is not found, reassemble the aircraft (as per step 13-5) for return to service

#### 13-4. Repair of corrosion

#### CAUTION

This paragraph provides repair procedure for corrosion that has occurred on the surface [A] (see Figure 4) of main spar flanges in fuel tank bay (located between W. STA 1255 and 2338). If corrosion is found on main spar flanges in areas other than fuel tank bay, contact FHI for specific corrosion removal instructions. Careless corrosion removal may adversely affect structural integrity of wings. Also, careless disassembly may result in failure of proper reassembly of aircraft.

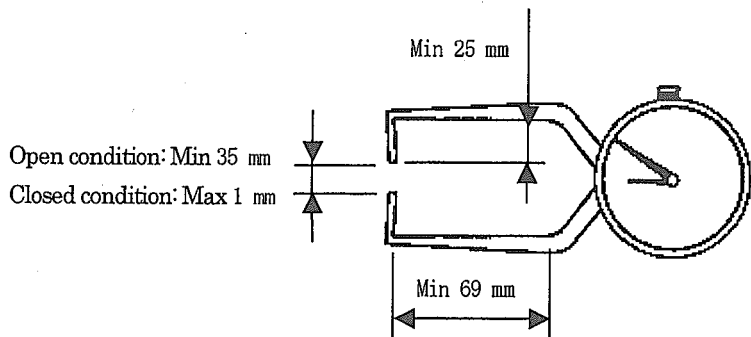
- (1) Remove and blend corrosion, by sanding, on main spar flanges in fuel tank bay. Carefully inspect repaired area using a 10x magnifying, and polish out affected surface until corrosion has been completely eliminated. After corrosion removal, perform dye penetrant inspection or fluorescent penetrant inspection on the cleanup areas to ensure all corrosion has been removed.
- (2) Using a micrometer, dial caliper gage or other suitable tool, carefully measure the remaining thickness where corrosion has been removed. (see Figure 4) If the measured thickness exceeds minimum allowable limits (as specified in Figures 5 and 6), contact FHI for structural integrity evaluation.
- (3) Apply a coat of zinc chromate primer (MIL-P-8585 or equivalent) to the corrosion cleanup area.

#### 13-5 Reassembly for return to service

Reinstall left and right wings, wing tip, fuel tank and inspection covers (left and right wings - 1, left and right wings - 4). (Refer to Service Manual, Figure 3-5, Paragraphs 6-3-3, 7-11-3 and 7-12-1)

#### 14. AIRCRAFT LOG ENTRY:

After compliance with this bulletin, make entry in aircraft log book.



The measuring portion of the gage must conform to the requirements as shown, to prevent interference with main spar flanges

Figure 1 Measuring Gage (Example)

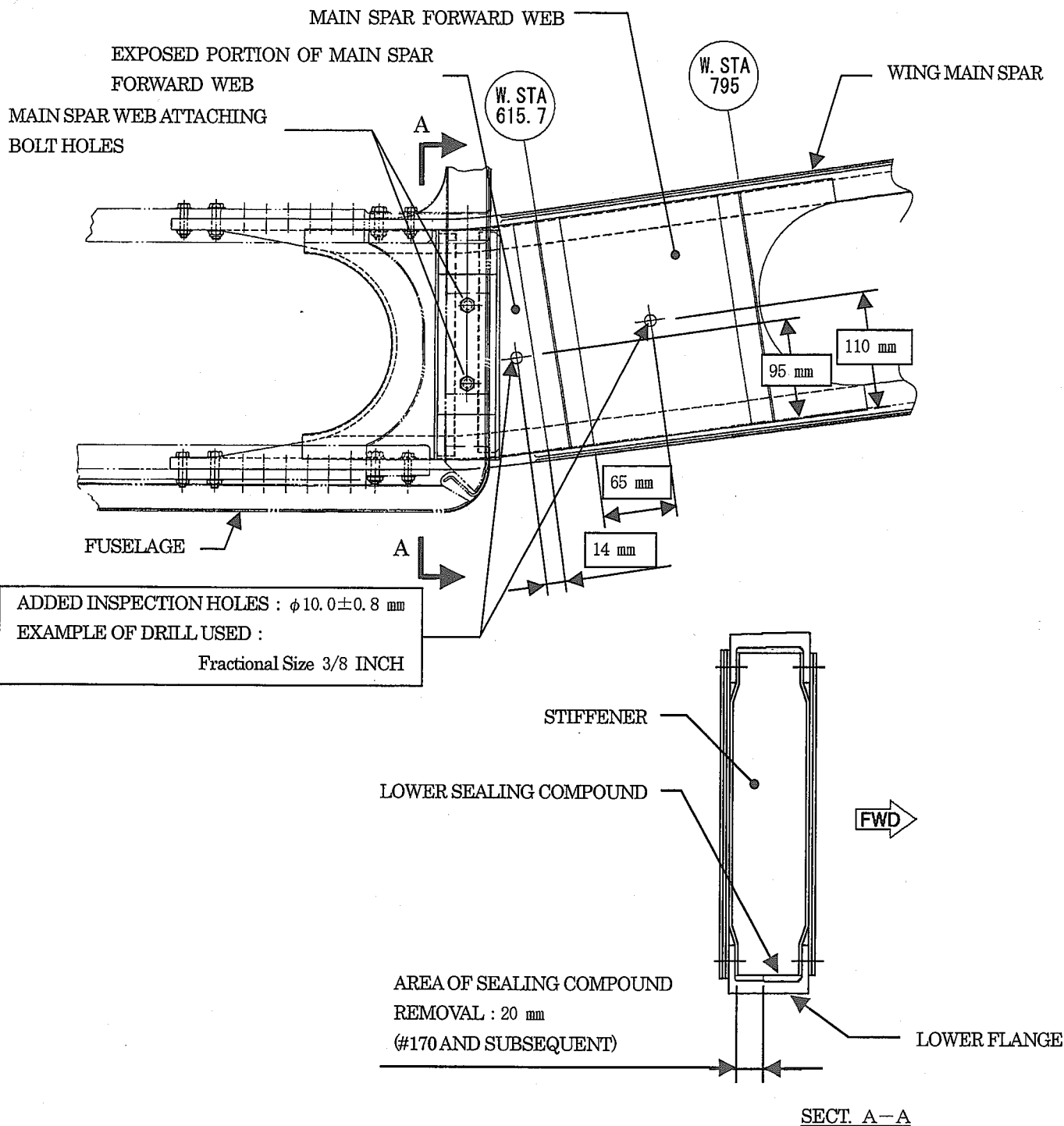


Figure 2 Addition of Inspection Holes and Partial Removal of Sealing Compound

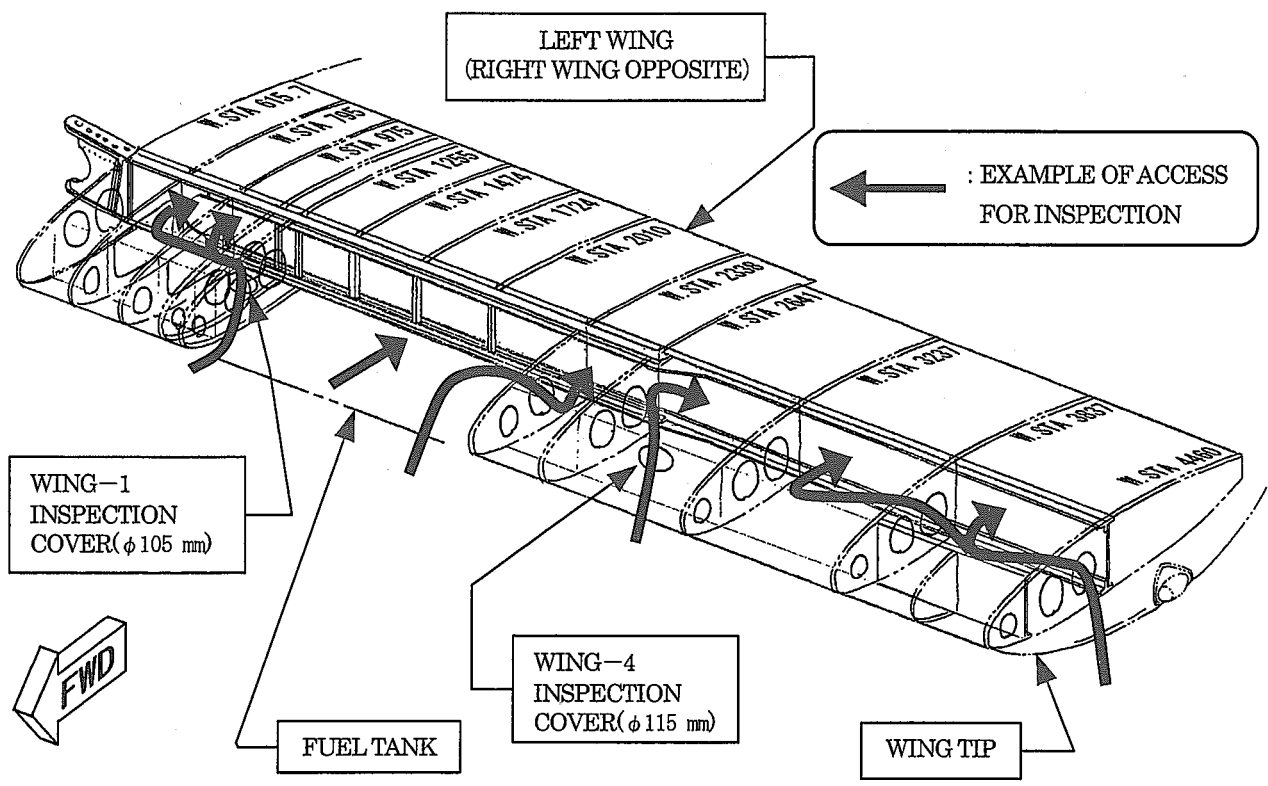


Figure-3 Inspection for Corrosion

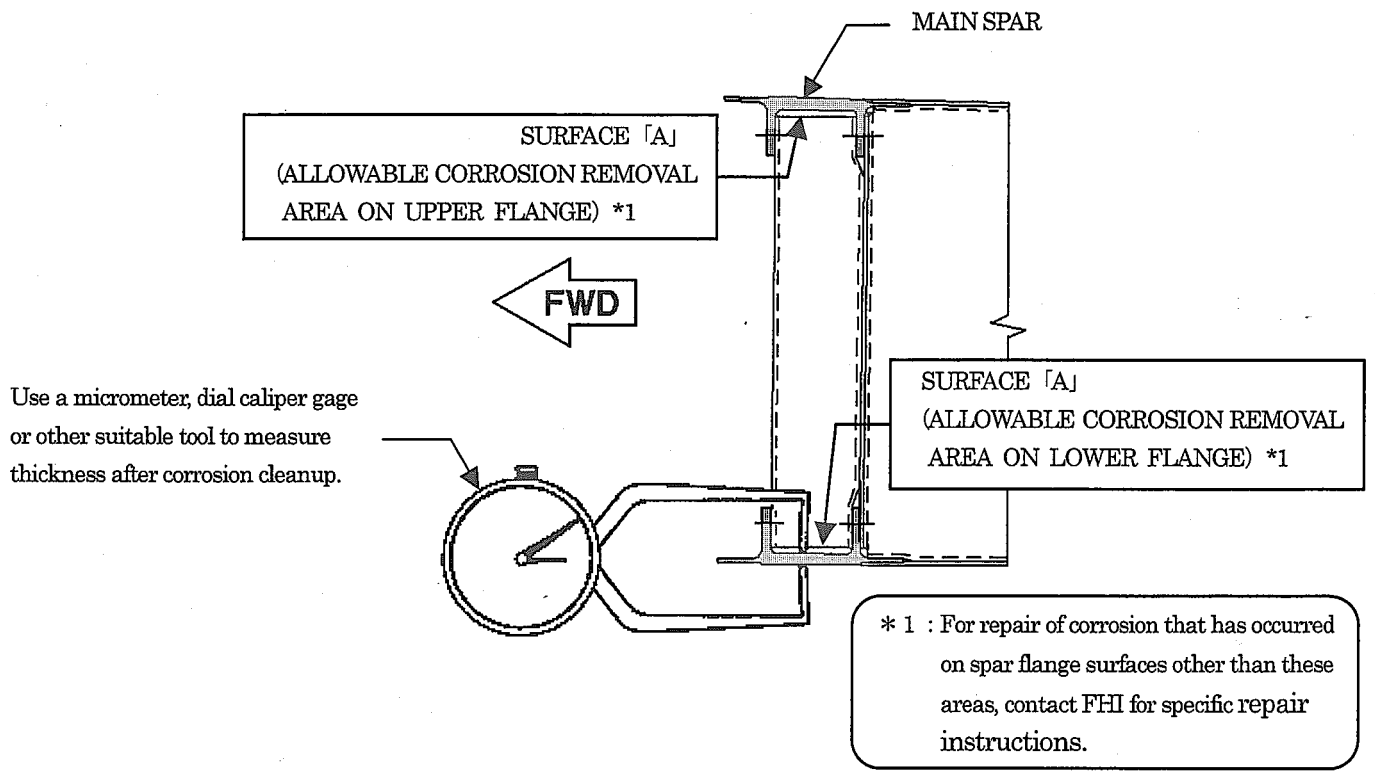
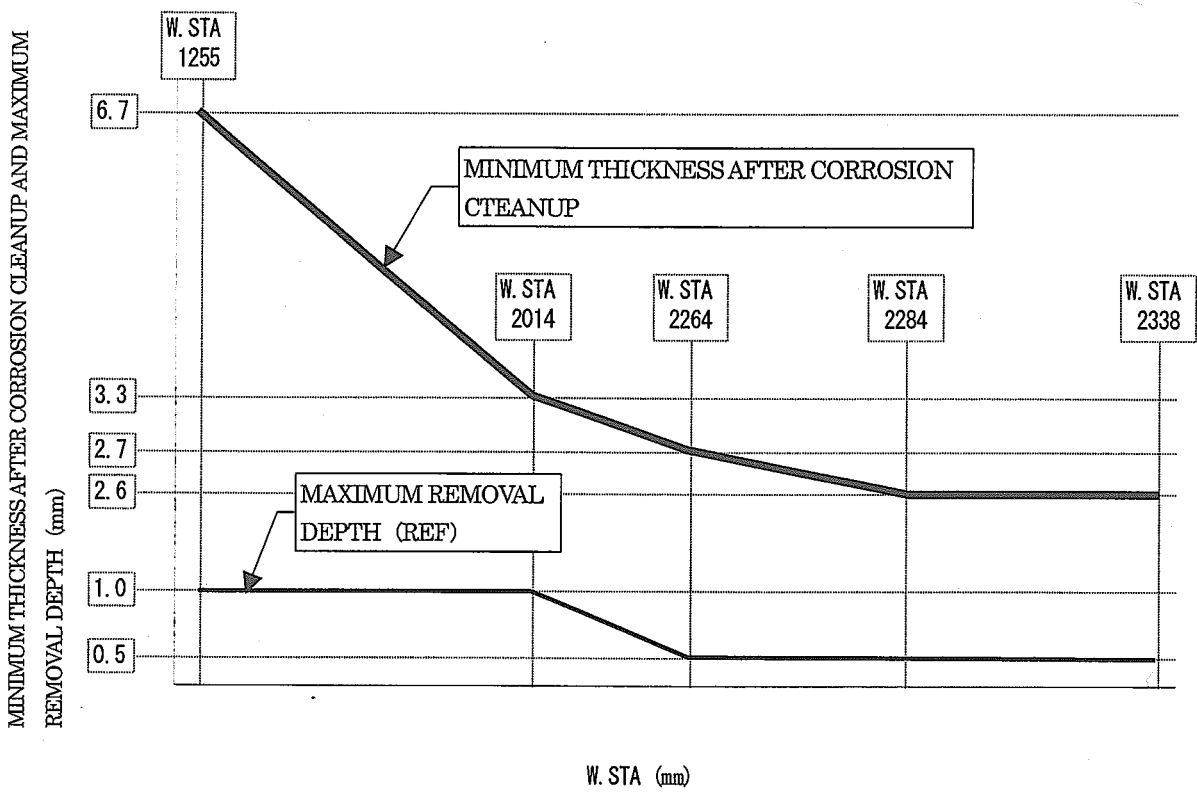
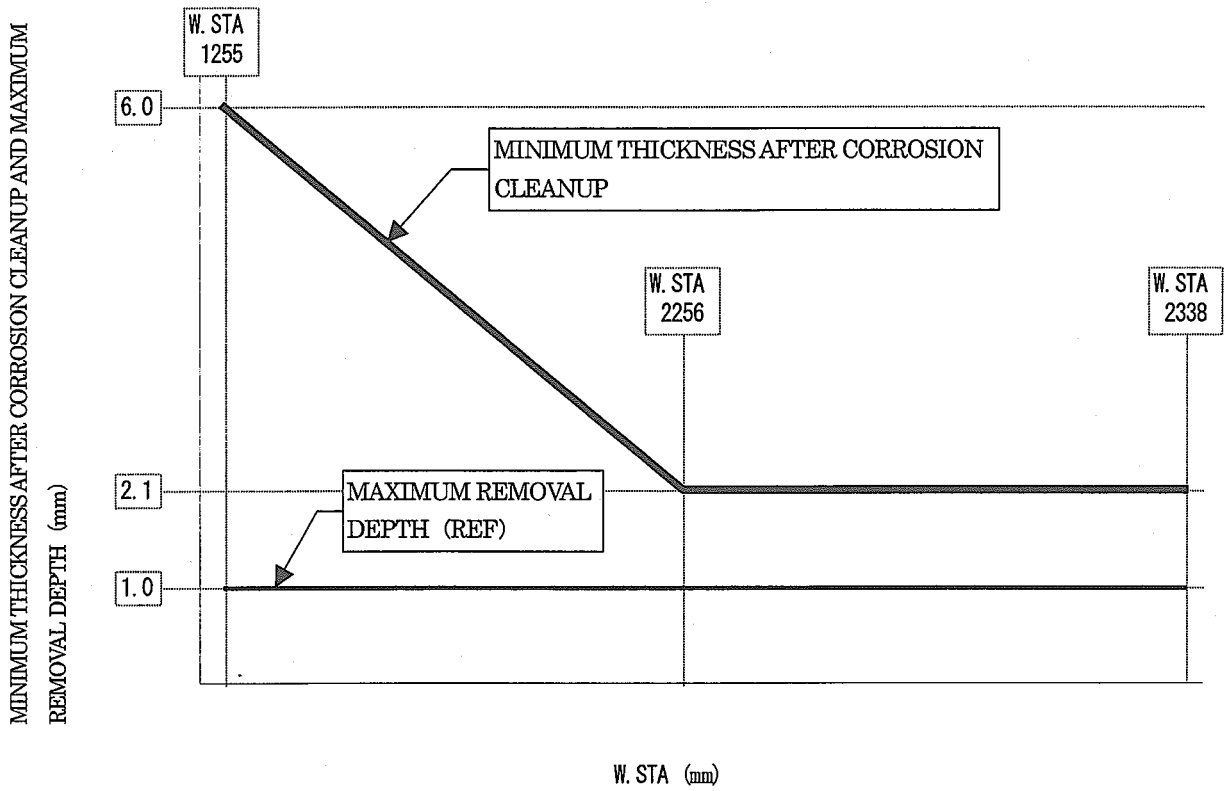


Figure-4 Measuring Method for Flange Thickness after Corrosion Clean-up



| MINIMUM THICKNESS AFTER CORROSION CLEANUP |                        | W.STA (mm) | MAXIMUM REMOVAL DEPTH TO CLEANUP CORROSION (REF) |                              |
|---|------------------------|------------|--|------------------------------|
| VARIATION BETWEEN EACH W.STA              | MINIMUM THICKNESS (mm) |            | MAXIMUM REMOVAL DEPTH (mm)                       | VARIATION BETWEEN EACH W.STA |
| PROPORTIONAL VARIATION                    | 6.7                    | 1255       | 1.0  | CONSTANT                     |
| PROPORTIONAL VARIATION                    | 3.3                    | 2014       | 1.0  |                              |
| PROPORTIONAL VARIATION                    | 2.7                    | 2264       | 0.5  | CONSTANT                     |
| CONSTANT                                  | 2.6                    | 2284       | 0.5  |                              |
|   | 2.6                    | 2338       | 0.5  |                              |

Figure 5 Minimum Allowable Thickness after Corrosion Cleanup (Upper Flange)



| MINIMUM THICKNESS AFTER CORROSION CLEANUP |                        | W. STA (mm) | MAXIMUM REMOVAL DEPTH TO CLEANUP CORROSION (REF) |                               |
|---|------------------------|-------------|--|-------------------------------|
| VARIATION BETWEEN EACH W. STA             | MINIMUM THICKNESS (mm) |             | MAXIMUM REMOVAL DEPTH (mm)                       | VARIATION BETWEEN EACH W. STA |
| PROPORTIONAL VARIATION                    | 6.0                    | 1255        | 1.0  | CONSTANT                      |
|   | 2.1                    | 2256        | 1.0  |                               |
| CONSTANT                                  | 2.1                    | 2338        | 1.0  |                               |

Figure 6 Minimum Allowable Thickness after Corrosion Cleanup (Lower Flange)