

**PROCESS SPECIFICATION**

Doc.-No.: PS-OMF100-0006

ATA-Chapter: -

Title: Repair Instruction for Cage, outside tube, supporting main landing gear leg - OMF-100-160

Issue / Date: 1 / 01.10.2003

Purpose: This specification establishes the requirements and procedures applicable to repair the cage outside tube supporting the main gear leg. It contains the preparation, the welding and inspection of the welding.

Scope: This specification shall govern the preparation, welding and lamination required for this repair on the fuselage cage, glass fiber body and related components of the OMF-100-160 aircraft.

## Applicable Documents:

- Engineering Drawing 530-SB-05000-01/-02 Sheet 1 to 5
- Alert Service Bulletin No.: 1107/0002, dated 16. September 2003
- AC 43-13
- MIL-STD-2219, 1595,
- DIN 29595, 65118
- Maintenance Manual, Chapter 51-20-00
- LN 9368

Prepared: U. Trettin

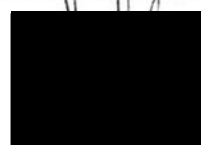


Signature.

Checked: D. Hermann



Approved: W. Bäßler



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## REVISION PAGE

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## 1. Introduction

### 1.1 Purpose

This specification establishes the OMF-Aircraft requirements and procedures applicable for the repair of the cage outside tube supporting the main gear leg. It contains the specification for the preparation, welding and inspection of the welding. OMF estimates 67hrs to carry out the repair.

### 1.2 Scope

This specification shall govern all preparations, welding, laminations required for this repair on the fuselage cage, the glass fiber body and related components of the OMF-100-160 aircraft. It contains all information needed to perform and inspect the repair. Applicable regulations, standards, instructions and technical rules must be considered, both prior to the work and after welding and also during the welding process.

### 1.3 Applicable Documents

The following specifications form a part of this process specification:

|                |               |                                                                              |
|----------------|---------------|------------------------------------------------------------------------------|
| MIL-STD-453    | DIN 54 111    | Inspection, Radiographic                                                     |
|                | DIN 54 109    |                                                                              |
| MIL-STD-1595   | DIN 29591     | Qualification of Aircraft, Missile, and Aerospace Welders                    |
| MIL-STD-2219   | DIN 29 595    | Fusion Welding for Aerospace Applications                                    |
| MIL-STD-6866   | DIN 54 152    | Inspection, Liquid Penetrant                                                 |
| MIL-R-5632     |               | Rods, Steel; Welding (for aircraft applications)                             |
| MIL-H-6875     |               | Process for Heat Treatment of Steel                                          |
| MIL-W-8611     |               | Welding; Metal, Arc and Gas, Steels, and Corrosion and Heat Resistant Alloys |
| MIL-STD-20     |               | Welding Terms and Definitions                                                |
| MIL-C-16173    |               | Corrosion preventive compounds                                               |
| TT-C-490       |               | Cleaning Methods for Ferrous Surfaces and Pretreatments for Organic Coatings |
| AWS A2.4-76    |               | Symbols for Welding and Nondestructive Testing                               |
| AWS A3.0       |               | Welding terms and Definitions                                                |
| AWS A5.12      | DIN EN 26 848 | Tungsten Arc-Weld Electrodes                                                 |
| ISO 6848       | DIN 32 528    |                                                                              |
| DVS 2711       |               | Welding Quality control for aerospace application                            |
| AC 43.13-1A/2A | DVS 2708      | Weld repair for aerospace application                                        |
| Chapter 2      |               |                                                                              |
| DIN 65 118     |               | Welded aerospace components, Design                                          |

Particular accident prevention rules must be considered:

- VBG 1: „General Rules“, („Allgemeine Vorschriften“)
- VBG 15: „Welding, Cutting and related procedures“, („Schweißen, Schneiden und verwandte Verfahren“)

If the company performs the welding intends to use other methods or standards then the ones specified in this process specification, OMF quality assurance must be informed. Deviations from this Process Specification must be approved by OMF.

#### 1.4 Table for welding details, description in drawings

Rules DIN 65118 Part 1 are to be followed for the weld joints. Any drawing including the welding must have a table defining the basic welding details on the drawing itself or on the first page of this drawing set. All welding details are valid for the whole set if it is not stated otherwise. If some details are specified differently, the others remain unchanged. All welding joints not called out in the drawings must be done as per DIN 29595 Annex 1. In this case the tables 2 and 3 are valid. The symbolic description as per DIN EN 22553 is advised.

This Table should look like the following sample and the welding supervisor must sign the drawing.

| Welding details in accordance with DIN 65 118 Part 1 / MIL-STD-2219 |                                                                                 |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Welding Process<br><b>141 / WIG / TIG</b>                           | Service requirement category<br><b>III / Class C except where noted</b>         |
| Filler metal<br><b>1.7324.0 / 1.7734.2 / 4130VM</b>                 | Acceptance level<br><b>BG III / Class C except where noted</b>                  |
| Material prior to weld<br><b>AISI 4130 (normalised)</b>             | Inspection per<br><b>DIN 29 595<br/>MIL-STD-2219<br/>PS-OMF100-0002 Issue 0</b> |
| post weld thermal treatment<br><b>none</b>                          |                                                                                 |
| post weld mechanical treatment<br><b>none</b>                       | Welding supervisor<br><b>Dipl.-Ing. D. Walter</b>                               |
| welding details checked :                                           |                                                                                 |
|                                                                     | date:                                                                           |

#### 1.5 Welding Procedure

Tungsten Inert-gas arc welding (Wolfram-Inergasschweißen WIG) per DIN 1910 with code number 141 per ISO 4063 is required as welding method.

## 2. Materials for Repair of Cage

### 2.1 Base Materials

The primary base material for welding parts and assemblies is AISI/SAE 4130 low alloy steel in normalised condition as per AMS 6345. Material must have been produced according to an approved specification. Proof of certification for any lot of material must be provided and this includes an analyse of chemical and mechanical material properties and must be filed in the company's quality management department. Replacement parts are shown in Engineering Drawing 530-SB-05000-01/-02 SHT4.

### 2.2 Filler Rod

For TIG welding 4130 steel the following filler materials are approved:

- 1.7734.2 per German WLB
- 1.7324.0 per German WLB
- 4130VM per AMS 6457

To prevent Filler Rods from oxidation, which could result in unacceptable oxygen in the weld bead, only copper plated Filler Rods should be used.

### 2.3 Tungsten Electrodes

For all TIG welds the use of tungsten electrodes with 1,70-2,20% m/m ThO<sub>2</sub> (thorium oxide), Type WT20 per AWS A5.12, ISO 6848, DIN EN 26848, DVS instruction leaflet no. 0911, DVS instruction leaflet no. 2716 or DIN 32528 is recommended. The Diameter must be 1,6 mm. The colour code's is red (RAL 3000).

### 2.4 Protective Gas

All materials noted under 2.1 can be welded by use of the following protective gases per DIN EN 439 (Designation: DIN EN 439-I 1...3):

- Argon Welding grade 99.9% pure  
per MIL-A-18455, CGA G11.1, EN 439 or equivalent
- Helium Welding grade 99.9% pure  
per BB-H-1168, CGA G9.1, EN 439 or equivalent
- Mixture gas Argon-Helium (30% Ar, 70% He)  
per DIN EN 439 or equivalent

### 2.5 Fiberglass materials

After welding and the partial painting of the replaced section, the outside shells must be closed with the segment previously cut out and repaired with fiberglass material.

The following materials are necessary for the repair (see also Maintenance Manual, Chapter 51-20-00):

- ~1 m<sup>2</sup> fiberglass fabric
- EP-285 epoxy resin (optional EPON 862)
- Hardener 286
- microballoons or cabosil as filler material

## 2.6 Miscellaneous materials

After laminating the inside and the outside surface of the segment of the outside shells the area must be painted from outside. The following materials will be applied:

- Filler material for closing the gaps caused by cut out of outside shell segment
- Primer as basis for painting
- Top coat, colour as per RAL 9010 white, otherwise match the colour with acrylic paint

Linseed oil is required for preservation of inner steel tube surface.

## 3. Classifications

### 3.1 Weld Classification

Weld classification is generally defined per MIL-STD-2219 and DIN 29595 as follows:

- Class A / BG I: Critical application. A weld is critical where a failure of any portion would cause loss of system, loss of major component, loss of control, or endangering of personnel.
- Class B / BG II: Semi-critical application. A weld is semi-critical when a failure would reduce overall efficiency of the system but loss of the system or endangering of personnel would not be experienced.
- Class C / BG III: Non-critical application. A weld is non-critical where a failure would not affect the efficiency or function of a flight essential system or endanger personnel.

If only a Class or a BG statement is given on the drawings, the equivalent statement is valid vice versa.

As stated on the drawings (see appendix) applied for the repair, all welding are classified as Class C / BG III.

### 3.2 Welding Operator Classification

Manual welding for the repair must be performed by an operator, who was tested and approved in accordance with MIL-STD-1595 or DIN 29591. The welder must be qualified for the welding process, base material and welding class to be performed.

Mechanical welding is permitted with suitable machines and skilled personnel. All welding measures must be shown by protocols. It is recommended, that the company have different coloured stamps for each welder to mark the weld joints made by each welder in the related protocols.

### 3.3 Welding Equipment

In accordance with DIN EN 729 Part 2-4 the welding equipment shall be suitable for the type of welding to be performed. Quality Assurance and acknowledgeable welding supervision shall verify the suitability of both, the certification and the condition of the welding equipment. Equipment shall be utilized as per the equipment manufacturer's instructions and/or guidelines to guarantee appropriate implementation, quality and reproducibility.

Welding must be performed within workshops where climatic influences can not affect the quality of welded joints.

Protective devices (i.e. glasses and gloves) must be of high quality to ensure best conditions for the welder.

### 3.4 Protection and Safety

Adequate means as prescribed in national work safety requirements must be used to protect the personnel, involved in this repair, from injuries or health hazards by adequate means detailed prescribed in national work safety requirements. The use of protective glasses suitable for the welding process performed, gloves and adequate venting of the workplace is mandatory.

## 4. Procedure of Repair

The procedure for repair is based on the drawing no. 530-SB-05000-01/ -02. Before starting the repairs, the following preparations have to be done:

- a) Remove the seats, seat fairings, wall fairings and fuselage tank cover (fig.1...4).
- b) Remove the upper and lower strut fairings.
- c) Remove the quarter roof panels at wing roots.
- d) Securing the plane against rolling with chocks.
- e) Hang up the plane with straps at the roof section of the cage with a suitable lifting device.
- f) Support the wings, until the strut fitting is out of tension.
- g) Remove the lower strut fitting bolts and securing the struts e.g. with smaller bolts.
- h) Protect the interior, the primary structure and fuel lines by suitable means.
- i) Removal of the main gear wheel pants, brake lines and brakes.
- j) Unscrewing the main gear legs and related parts.

**Note 1:** Before welding, disconnect the battery, remove the avionics, pull all circuit breakers.

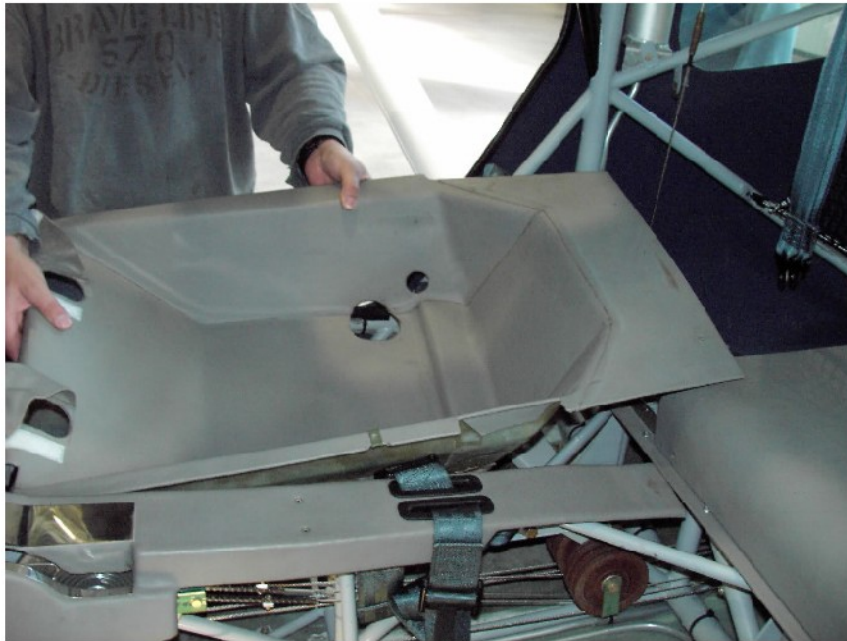


Figure 1: Removal of seat fairings



Figure 2: Removal of fuselage tank cover



Figure 3: Removal of wall fairings



Figure 4: Removal of top and top-side wall fairing is optional

During the repair the following measures must be taken:

- k) Removal of the outer fuselage shell segment according to engineering drawing no. 530-SB-05000-01/ 02 Sht1 (fig. 5). We Recommend using an abrasive type cutting wheel or saw blade.
- l) Removal of the defective tubing segment (according to 530-SB-05000 Sht1,2 and figure 6) at the 4 indicated interfaces: tube supporting the main landing gear leg forward of the wing strut fitting and related tubes.
- m) Installation of the new tubing segments and the inner sleeve tubes (10) as shown in 530-SB-05000-01/ 02 Sht2, trimmed to fit. Use rosette welds to secure the inner sleeve tubes in place (see fig. 7).
- n) Install the new tubing segments; first segments 2, and 10, then segment 20 and 30 (see fig. 8 to 10). To insure the bushings are positioned correctly it is necessary to jig their location with an aluminium or steel angle. (see fig. 9).
- o) Slide the fish-mouth tube (30) forward to provide access for the butt weld.
- p) Tack weld the segments 10, 20 and 30. and insure proper alignment.
- q) Complete the butt weld and blend it smooth (blend tubing segment 30 smooth with the frame), see fig. 11.
- r) Slid the fish mouth tube (30) over the butt weld joint of detail A and tack it in place. Rosette weld the holes as shown in 530-SB-05000-01/ 02 Sht3.
- s) Weld detail A as shown in 530-SB-05000-01/ 02 Sht2.
- t) Complete welding 100% of all the tubing repair joints (see fig. 12).
- u) After cooling down the whole section at ambient air temperature: install the gussets as per drawing 530-SB-05000-01/ 02, tack weld in place and then complete all welds 100%.
- v) Clean all weld seams and paint with PPG DP-90 LF primer and PP401LF catalyst. Topcoat with two-component finish coating 5020 + 5112 as per LN 9368.
- w) Install the main gear legs and related parts.
- x) Insert the fiberglass segment and laminate it with fiberglass fabric and resin, see figure 13, 14 and Maintenance Manual, Chapter 51-20-00.
- y) Fill gaps with filler material, blend smooth and paint with primer, see figure 14. Use a small space heater for hardening of the surface.
- z) Partially paint the outer shell area with color as per RAL 9010 white and blend it to the existing area, see Maintenance Manual, Chapter 51-20-00. If no RAL-color is available match the color with acrylic urethane paint.

**Note 2:** Connect welding ground as close as possible to the weld area to minimize cage magnetization (a galvanometer used for magnetic particle inspection is recommended to check for magnetization)

**Note 3:** Check compass deviation after aircraft is reassembled.



Figure 5: cut fuselage shell



Figure 6: cutting the cage

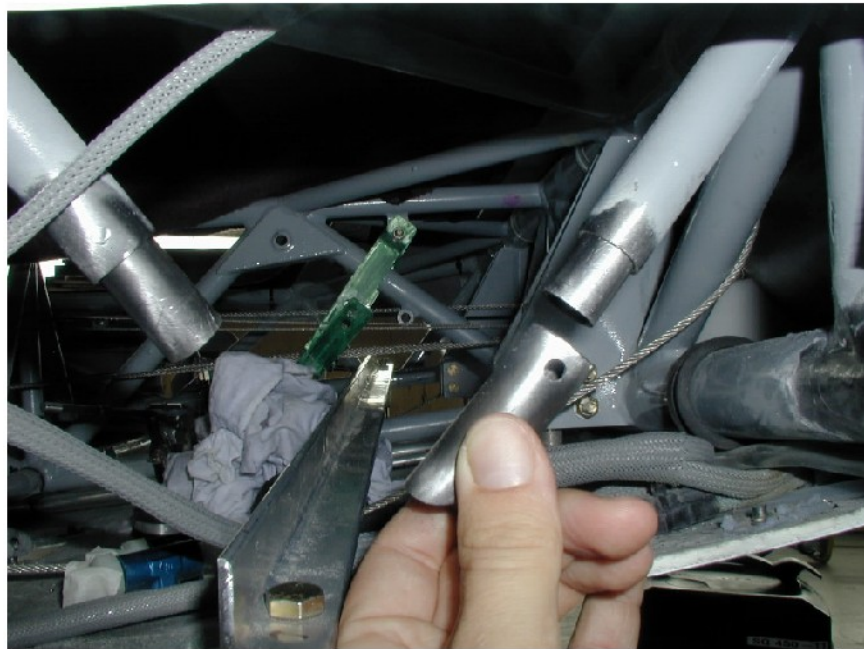


Figure 7: adaptation of bushings



Figure 8: new tube supporting main landing gear leg

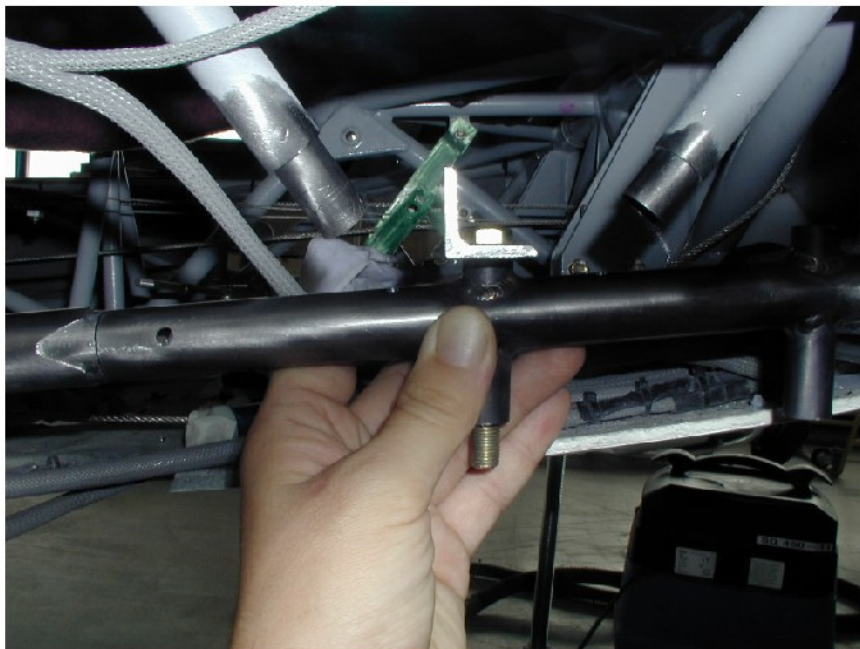


Figure 9: new tube supporting main landing gear leg, adapted to cage



Figure 10: detail A as drawn in 530-SB-05000-01/ 02 Sht2



Figure 11: detail A, welded as drawn in 530-SB-05000-01/ 02 Sht2



Figure 12: replaced segment (without gussets), welded



Figure 13: insert the fiberglass segment (gussets are not shown)



Figure 14: filling of gaps with filler material and lamination form inside and outside (gussets are not shown)

Afterwards the aircraft will be assembled in reverse order as written before.

## 5. Additional requirements for welding of replaced structure

### 5.1 General requirements prior to welding

- a) All materials used must be identified (supplier and lot no.).
- b) Venting holes must be drilled if tubes are closed at both ends. At least .063 in / 1.5 mm hole size is recommended, if possible venting holes shall be .15 in / 4 mm and placed in a way, that later installed tubes cover the holes, so they can remain open and all tubes are interconnected. To fit the inner sleeve tubes in the defective area holes have to be drilled per Engineering Drawing 530-SB-05000-01/-02 Sht3.
- c) See DIN 65 118 Part 2, Page 3, Picture 2 as an example.
- d) Holes can be used for internal corrosion protection per chapter 4.6.5 and must be close welded before surface protecting the cage.
- e) All parts must be deburred at the welding edges.
- f) A general preparation for welding is recommended by DIN EN 29692.

### 5.2 Cleaning requirements

- a) The surfaces and edges of all parts must be cleaned to base metal to a width of 2 times the weld bead size. All oxidation or similar surface coatings (i.e. left from laser cutting) must be removed completely. All dirt, grease, oil, paint or plating must be removed in the area of at least 1 tube diameter or 1/2 inch / 15mm from the welding joint or where temperature is high enough to have affects (melting, burning) on it, whichever is greater.
- b) To remove paint and oxidation abrasive cleaning is recommended, Sand paper, Emery or Al-Oxide cloth or paper may be used. Each abrasive shall be used for steel only and not to have been previously used on other metals. Power tools must be used very carefully to reduce removal of base material to a minimum, all parts must meet their original permissible tolerances after abrasive cleaning.
- c) If wool is used for cleaning, only steel and stainless steel wool must be used. Aluminium or any other metal wool is not allowed. If metal brushes are used for cleaning, only steel brushes are recommended, the use of brass or other metal brushes shall be avoided. Brushes can be used by hand or power tools. All these abrasive cleaning devices must be used for carbon steel only.
- d) If cleaning devices have been already used for aluminium, corrosion resistant steel or any other metal they should not be used for cleaning prior to weld carbon steel.
- e) All particles produced by the abrasives must be removed completely by air jet immediately upon completion of the cleaning. Ensure no oiled air is used from lines used for power tools requiring this.
- f) Special care must be taken so no particles remain in the tube if the tubes are closed and already welded at the other end.

- g) If the ends of tubes already connected to other tubes cover a vent hole, provisions must be made to assure that no particles get into this second tube.
- h) Oil, grease and oil based corrosion protective agents are removed best by use of fast vaporising solvents like acetone or alcohol. The use of slower vaporizing organic solvents (i.e. gasoline, kerosene) shall be avoided to ensure that no remains are left during welding.
- i) If chemical devices are used to clean the surface or remove the plating they must be removed completely from the parts before welding. For most materials an additional baking is necessary to remove the remains of hydrogen from the material surface if a pickling process is used to remove plating. See EN 2231 or equivalent for more details.
- j) If a tube inner surface is chemically cleaned, the whole tube (not only the area near to the welding) must be completely free of remains before welding. This is even more important, if flammable agents are used. See the appropriate work safety instructions of the country where work is done for details.
- k) If weld joints are produced in more than one step, cleaning may be necessary between each welding step to remove oxidation or traces of fume. Cleaning with a steel brush is recommended for this purpose.
- l) If abrasive cleaning is used, not more than 10% of tube or plate wall thickness may be removed. In cases that the 10% is exceeded, the material must be replaced.

### 5.3 Preheating

Preheating is not recommended because the wall thickness of the 4130-tubes is not very different. Cooling of weld joints will be done at ambient air temperature.

### 5.4 Joint fit-up

A close joint fit-up is essential for good welding results. OMF recommends that the joints have a **zero gap fit-up**. Jigs and other tooling shall assure zero gaps fit-up with maximum alignment and minimum distortion.

DIN 29595 allows the following gap sizes for fillet joints if the weld bead root does not penetrate the whole wall thickness:

|                  |        |          |
|------------------|--------|----------|
| Class A / BG I   | 0.2 mm | 0.008 in |
| Class B / BG II  | 0.4 mm | 0.015 in |
| Class C / BG III | 0.8 mm | 0.030 in |

If full penetration of the root is provided by the welder and proven by samples, larger gaps can be accepted:

('t' is the nominal wall thickness of the thinnest member)

|                  |            |                  |                       |
|------------------|------------|------------------|-----------------------|
| Class A / BG I   | max. 1/3 t | 0,5 mm = 0.02 in | whichever is smallest |
| Class B / BG II  | max. 1/2 t | 0,8 mm = 0.03 in |                       |
| Class C / BG III | max. 2/3 t | 1,5 mm = 0.06 in |                       |

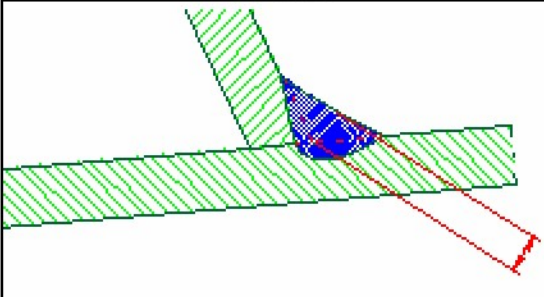
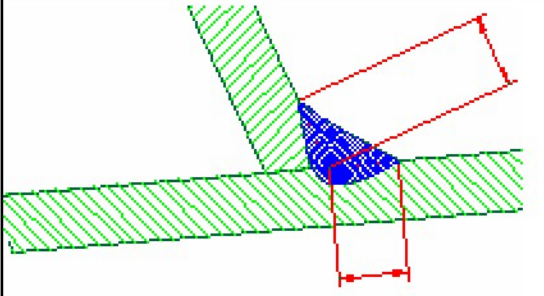
Parts are machine grinded to fit-up, proper grinding machine speed must be selected, to avoid excessive heating of the material. Cooling the parts during the grinding process by use of water or air jet is strictly forbidden to prevent hardening of the material.

## 5.5 Welding

- Unless stated otherwise on the drawings, nominal fillet weld size must be derived from the following table  
or from **table 5-3 of MIL-STD-2219**  
or from **table 2 of Supplementary Sheet 1 of DIN 29 595** equivalent.
- For all of these tables the wall thickness of the thinnest member must be used.

| Nominal Fillet Weld Size Table 4.5.1 |          |            |                              |                              |
|--------------------------------------|----------|------------|------------------------------|------------------------------|
| Tube WT                              | Sheet WT | Nominal WT | Fillet weld Size<br><b>a</b> | Fillet weld Size<br><b>K</b> |
| [in]                                 | [in]     | [mm]       | [mm]                         | [in]                         |
| .035                                 |          | 0,889      | 1,2                          | .047                         |
|                                      | .050     | 1,27       | 1,3                          | .051                         |
| .058                                 |          | 1,473      | 1,4                          | .055                         |
|                                      | .063     | 1,6        | 1,5                          | .059                         |
| .065                                 |          | 1,65       | 1,5                          | .059                         |
|                                      | .090     | 2,286      | 1,8                          | .071                         |
| .120                                 |          | 3,048      | 2,0                          | .078                         |
|                                      | .125     | 3,175      | 2,1                          | .083                         |

Note the difference between German and U.S. fillet weld dimensions and the letter normally used to define this dimension:

| Picture                                                                            | German Style           | U.S. Style             |
|------------------------------------------------------------------------------------|------------------------|------------------------|
|   | <b>a</b><br>(standard) | <b>K</b>               |
|  | <b>z</b>               | <b>L</b><br>(standard) |

- Unless stated otherwise on the drawings, nominal butt weld size must be twice the nominal wall thickness of the members.
- Only parts with similar wall thickness must be butt welded on high dynamically stressed aircraft parts. Underfilling of butt welds is not allowed, protrusion is limited to the values stated in the "Inspection" Chapter and should be reduced to a minimum of about 1/4 of the wall thickness.
- To minimize heat affect, warpage and residual stress, the weld size should be as close to the minimum size as possible. Welding will be done in one layer. If possible, fillet weld beads should have slightly concave surface to reduce stress peaks due to stiffness jump.
- The protective gas flow must be adjusted to an adequate value if the welding position requires changing the distance from protective gas nozzle to the weld bead, gas flow must be sufficient to prevent oxidation at maximum distance.
- After finishing a weld, the protective gas flow must be maintained for a time period necessary to prevent oxidation of the hot weld bead.
- Mechanical post weld treatment (like grinding away weld bead protrusion) is allowed only in Detail A of Engineering Drawing 530-SB-05000-01/-02 Sht.2. Cleaning the weld after completion i.e. by use of a steel brush is recommended to make inspection easier.

- i) To avoid arc strikes and end craters, the arc shall be struck and extinguished on metallic tabs.
- j) After welding the parts shall be cooled down at ambient temperature without using air pressure to speed the cooling.
- k) The following parameters must be adjusted:  
Amount of flow of inert gas: 5...7 l/min at nozzle diameter of 9 mm.

| <b>Direct Current</b> | <b>Thin parts</b> | <b>Thick parts</b> |
|-----------------------|-------------------|--------------------|
| <b>Amperage in A</b>  | 30 – 45           | 75 – 95            |
| <b>Voltage in V</b>   | Approx. 9.2       | Approx. 9.8        |

## 5.6 Inspection

Inspections must be performed by licensed inspectors and documented on appropriate forms.

### *Visual Inspection*

100 % of the welding joints must be visually inspected. Providing of adequate illumination and the use of a magnifying glass is recommended. The weld bead size must be checked, in case of doubts an appropriate gauge must be used.

OMF recommends the tolerances of DIN 29595 Chapter 5.1.1 noted on the according sheet in the appendix of this document. For the Details not noted on this sheet, either the requirements of DIN 29595 or of MIL-STD-2219 must be met to the decision, how is the company performing welding and inspection.

### *Non Destructive Inspection*

Weld joints must be inspected to be free of cracks by one of the following methods:

- **Penetrant Inspection**  
The welds shall be penetrant inspected per MIL-STD-6866, DIN 54 152 Part 1 or equivalent (recommended).
- **Magnet Powder Inspection**  
The welds shall be inspected per DIN 54 132 or DIN 29595 Chapter 5.1.2 and 5.1.3.

## 5.7 Rejection

- a) If any weld on a part or assembly is rejected, the affected part must be marked to be not operative by adequate means immediately.
- b) Any rejection must be noted on the inspection documents. The welder who performed the faulty weld must be informed about the welding errors found.

## 5.8 Corrosion Protection

- a) Corrosion protection should generally be applied after the inspection of the weld joints to give the best possible condition for the inspector. For internal protection the tube will be preserved with linseed oil. Afterwards the vent holes will be closed with rosette welds.
- b) Before corrosion protection, any material used during inspection (i.e. penetrant inspection) must be completely cleared from the parts.

## 5.9 Reworking

- a) If any weld is rejected during inspection, rework can only be done after approval and upon instructions of the Material Review Board. Use "Repair Instruction / Report" form (see appendix) or equivalent for documentation.
- b) Covering a faulty weld by a second weld bead without first removing the defective area is **not acceptable** in any case.
- c) Reworking shall generally be done by methods defined in the AC 43.13-1A/2A "Acceptable Methods, Techniques and Practices for Aircraft Inspection, Repair and Alternations" Chapter 2 : Welding.
- d) Depending on the nature and amount of the defect found the Material Review Board will determine the amount of rework required. It can define repair methods different from the ones stated in AC 43.13-1A/2A if the knowledge of the aeroplane's structural design details, experience in production and repairs would allow this.
- e) Small cracks within the weld metal, slight undercutting, porosity, end craters, inclusions, wrong weld bead size or insufficient penetration (cold welds) can be repaired by completely chipping or grounding out the defective weld area and re-weld.

- f) Larger defects like cracks in the base material, large undercuts, wrong position, misalignment or damaged parts (like melted bracket ends) require reworking a larger area of the assembly.
- g) After the rework of the welds affected, all seams must be inspected as defined in the drawings. Inspection must be performed according to the guidelines for new welds, MRB may request additional inspections, there will be noted on the "Repair Instruction / Report" form. Detail of the inspection results must be noted in this form.
- h) When all rework is completed and inspected the cage inspection can be finalized. All the rework performed on the cage must be entered in the "Repair Instruction / Report" form and attached to the Aircraft's cage documents.

## 5.10 Painting

Painting of the cage must be performed with a corrosion protective primer and a two-component finish coating 5020 + 5112 as per LN 9368 or equivalent unless stated otherwise on the drawings.