

# **Chapter 55**

## **Stabilizers**

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## 55-00-00

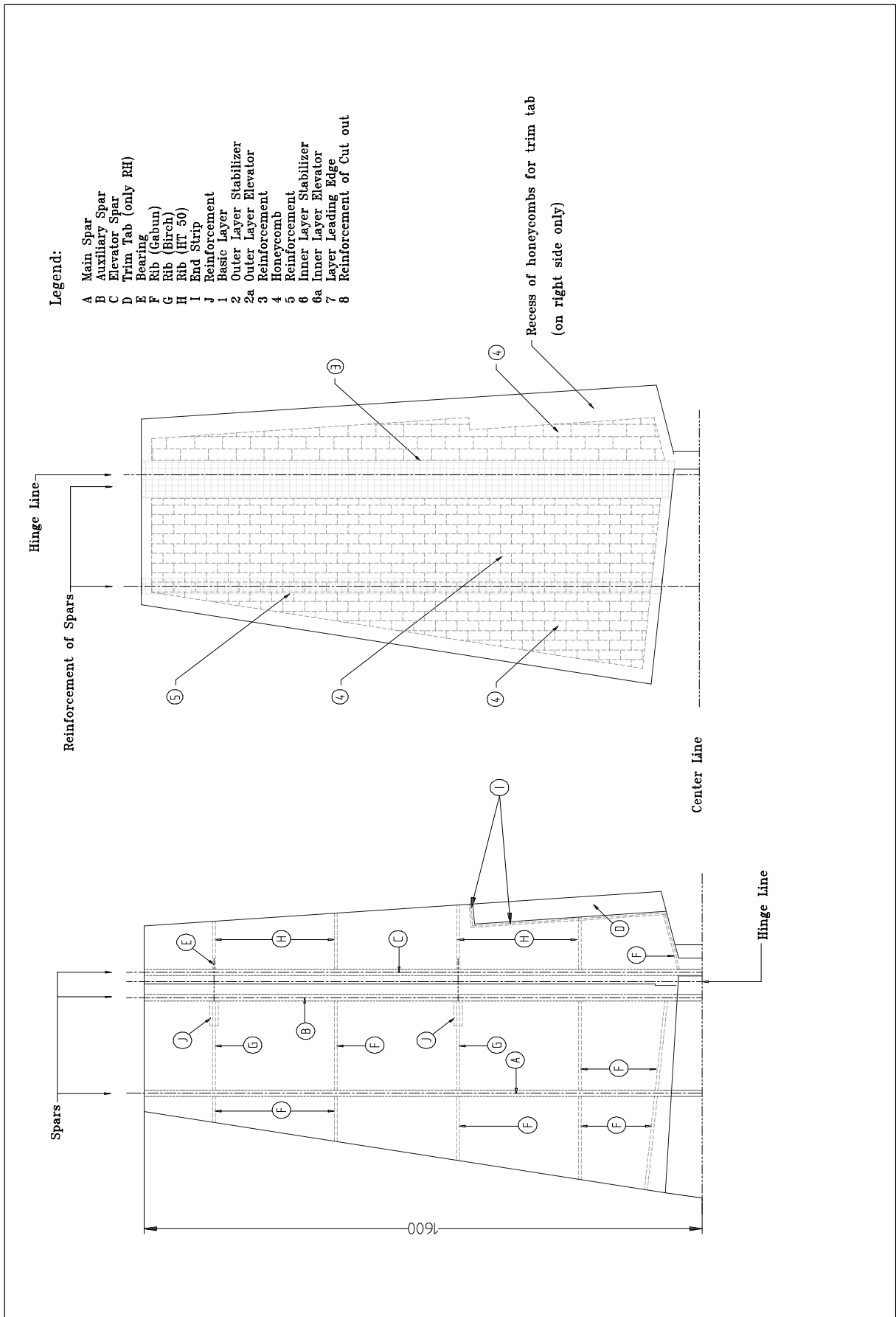
## GENERAL

The EXTRA 200 has a conventional empennage with stabilizers and moveable control surfaces. The spars consist of carbon roving caps, carbon fibre webs and PVC foam cores. The shells are built of honeycomb sandwich with glass fibre or optional carbon fibre laminate. Also buckling is prevented by plywood ribs. Deviating from this, the elevator is constructed in the same manner as the ailerons (refer to Chapter 57). On the R/H elevator half a trim tab is fitted with a piano hinge.

The layer sequences of the stabilizers, the elevator and the rudder are shown in Figures 1-2.

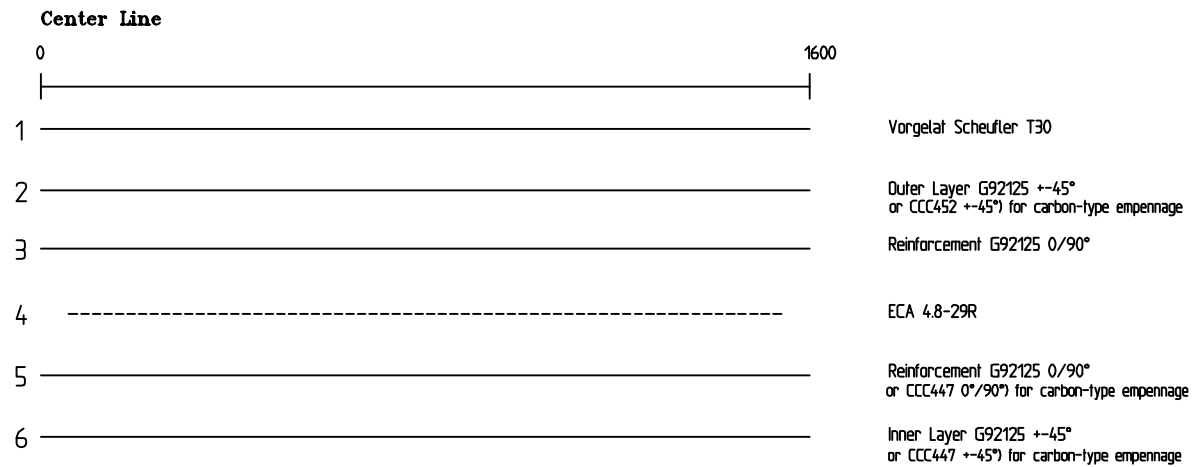
All composite parts, as protection against moisture and UV radiation, are coated with an unsaturated polyester gel-coat, an acrylic filler and finally with an acrylic paint.

For repair of composite parts refer to Chapter 51.

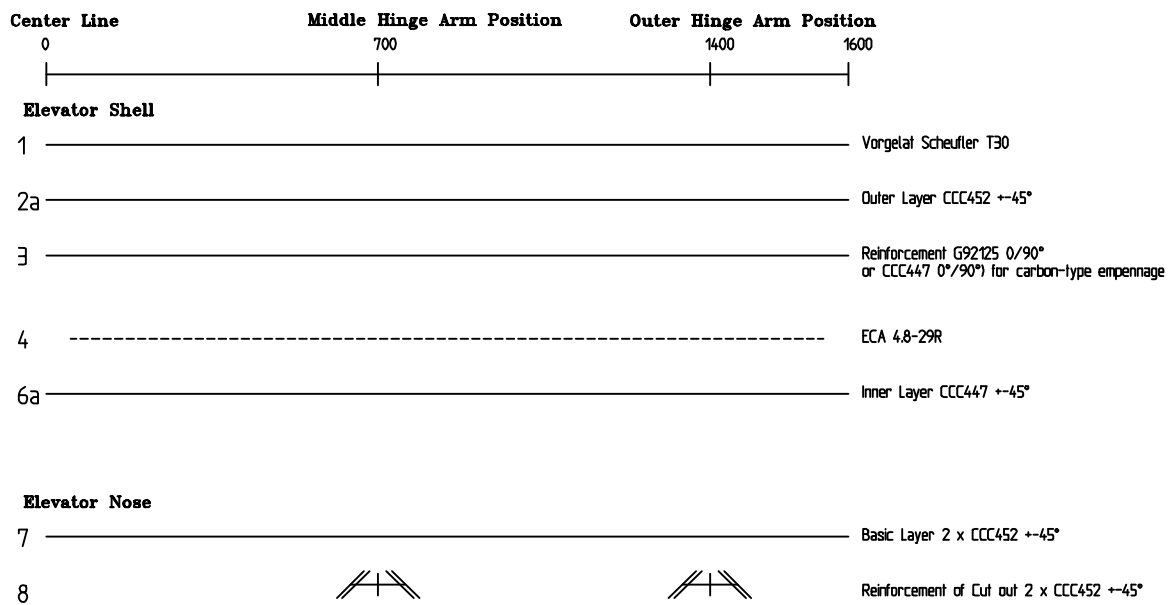


*Layer Sequence Horizontal Tail*  
*Figure 1, Sheet 1*

**Layer Sequence Horizontal Stabilizer**

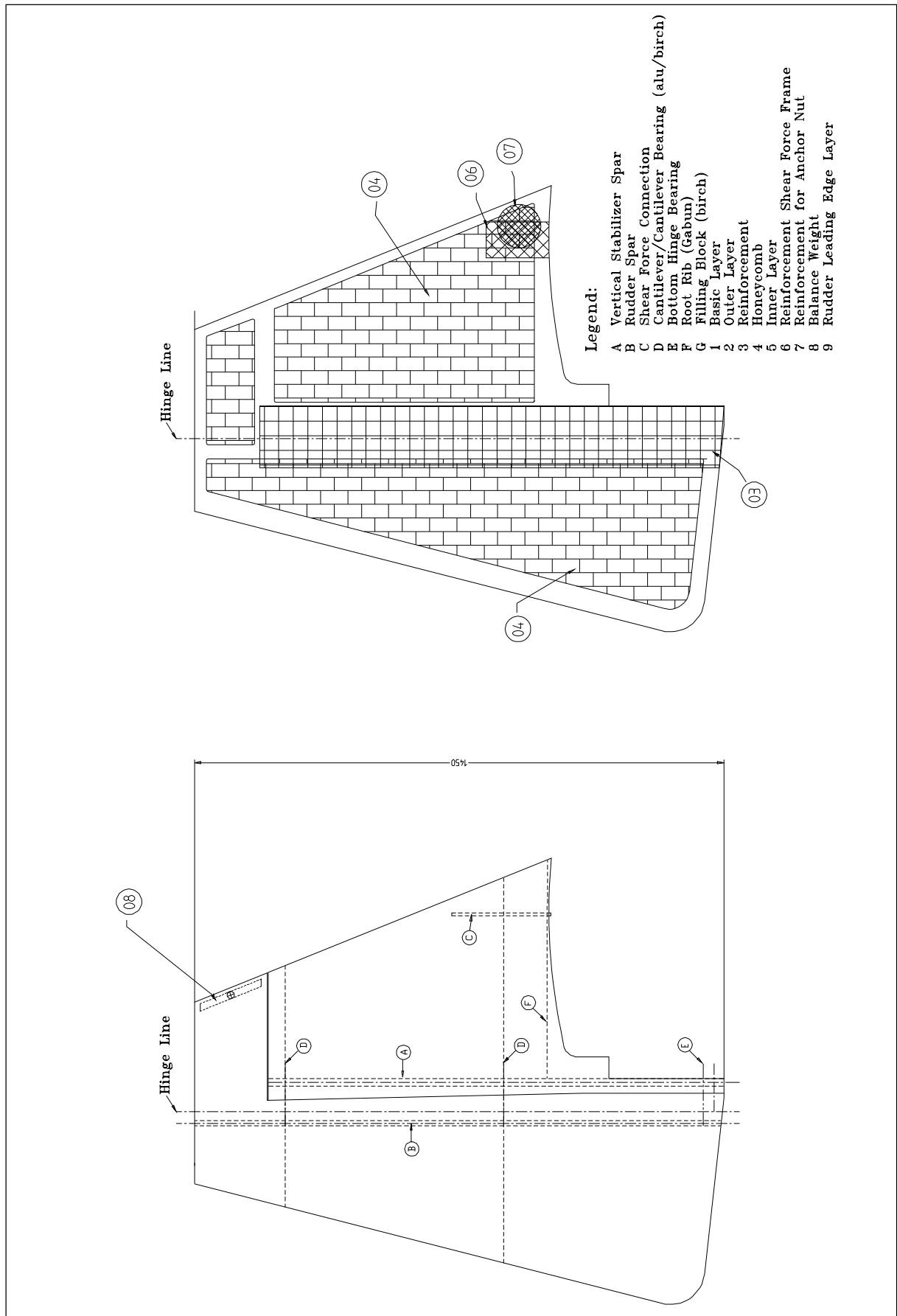


**Layer Sequence Elevator**



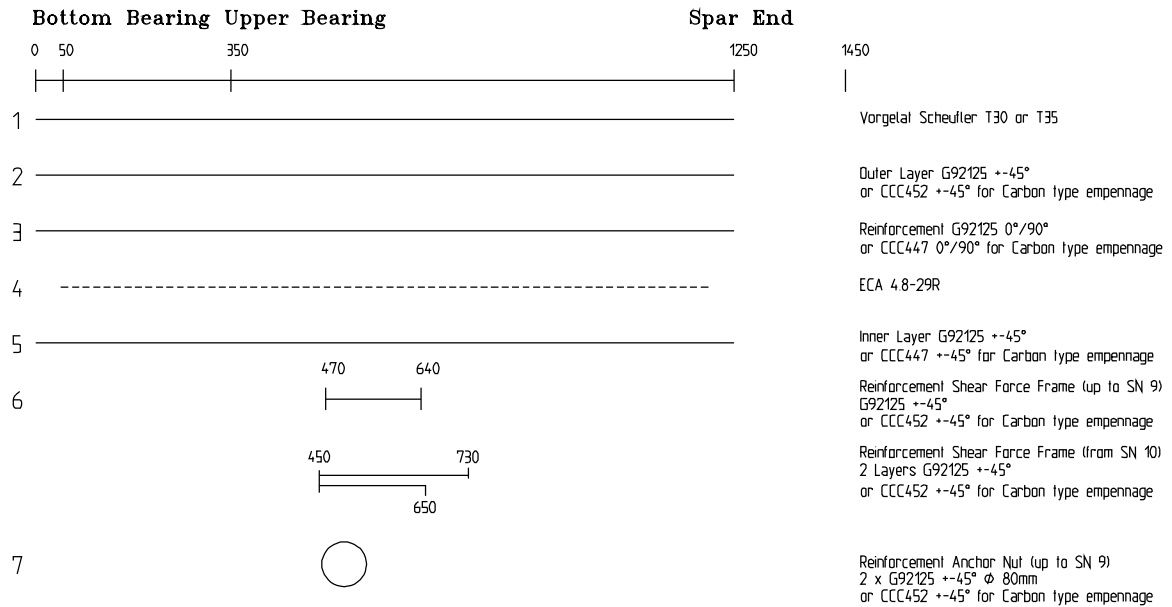
**Note:** Markings refer to the legend of sheet 1 of this Figure.

*Layer Sequence Horizontal Tail  
 Figure 1, Sheet 2*

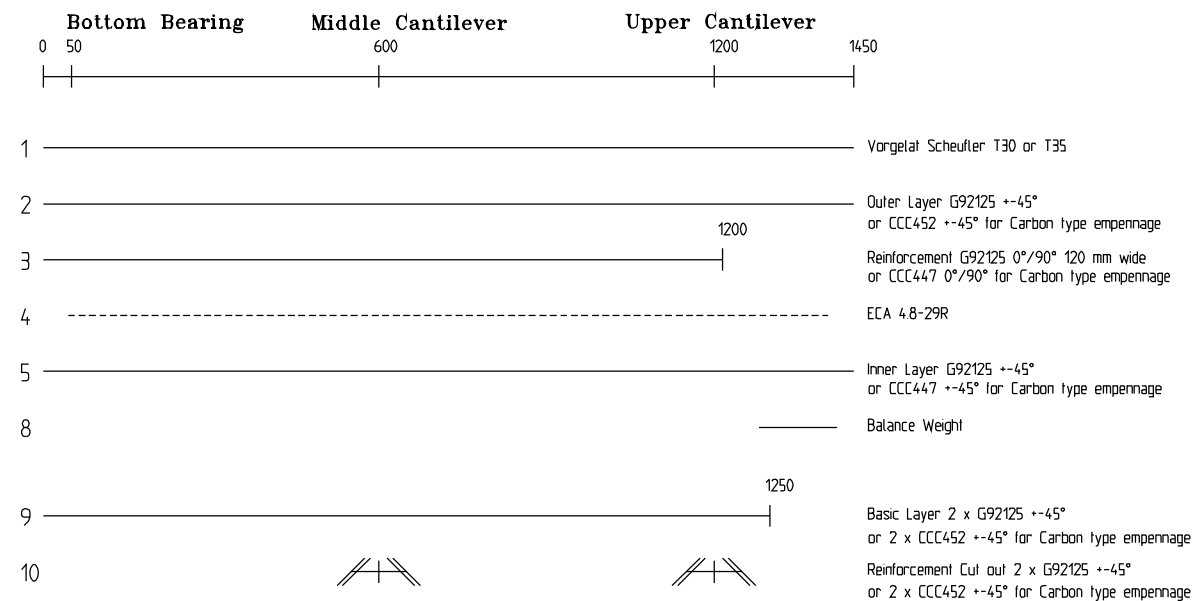


*Layer Sequence Vertical Tail  
 Figure 2, Sheet 1*

**Layer Sequence Vertical Stabilizer**



**Layer Sequence Rudder**



Note: Markings refer to the legend of Sheet 1 of this Figure

*Layer Sequence Vertical Tail  
 Figure 2, Sheet 2*

## 55-21-00

## MAINTENANCE PRACTICES

### 55-21-01

### Horizontal Stabilizer

#### Removal

Remove elevator and rudder per Chapter 27-31-01, remove the vertical stabilizer per Chapter 55-21-02 and then reverse procedure of installation.

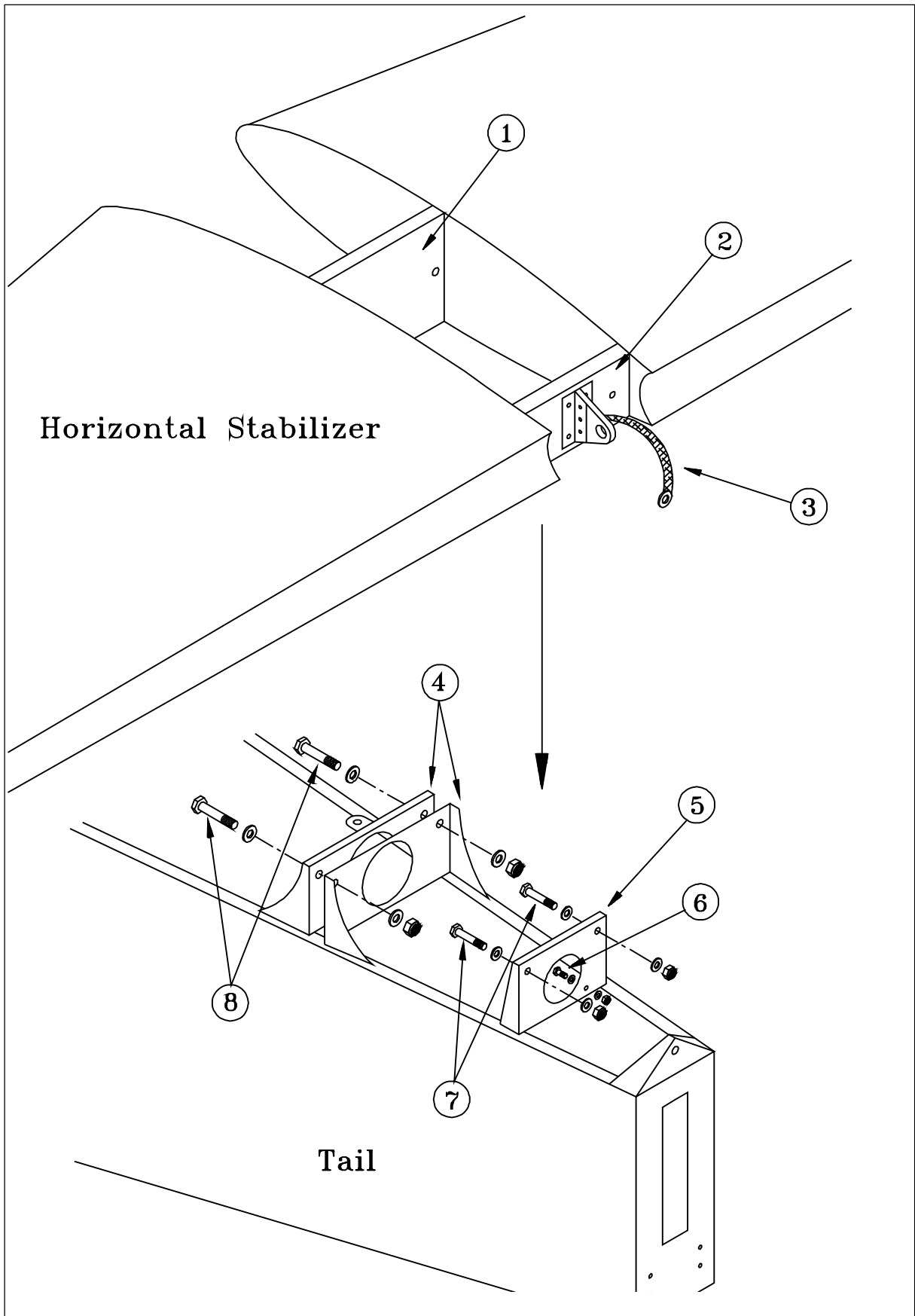
#### Installation

#### CAUTION

**Make shure that the trim bowden cable will not be damaged when installing the horizontal stabilizer.**

- 1 Slide the horizontal stabilizer with its front spar (1, Figure 3) into the attach brackets (4) on fuselage. The rear spar (2) is situated behind the rear attachment bracket (5). (Trim tab is on the right side.)
- 2 Slide in LN 9037-10054 front spar attachment bolts (8) with an additional DIN 125 M10 washer under bolt head from the front to the rear. These bolts are also used for the vertical stabilizer attachment. So do not apply stop nuts before the vertical stabilizer is fitted to the fuselage.
- 3 Slide in the rear spar attachment bolts (7) from front to rear. Use LN 9037-10042 bolts in connection with LN 9348-10 stop nuts and DIN 125 M10 washers. Torque nuts for fastening.
- 4 Fasten the ground bonding lead (3) by means of the DIN 933 M5x12 bolt (6), the DIN 125 M5 washers and the LN 9348-05 stop nuts.
- 5 Follow the procedure of Vertical Stabilizer Installation (refer to Chapter 55-21-02).





*Horizontal Stabilizer Removal/Installation*  
*Figure 3*

## 55-21-02

## Vertical Stabilizer

### Removal

- 1 Remove the tail fairing and the tail cone access panel per Chapter 51-00-01.
- 2 Remove the rudder per Chapter 27-21-01.
- 3 Remove the bottom hinge bracket assembly per Chapter 27-21-02.
- 4 Remove the two LN 9348-10 stop nuts (2, Figure 4) and DIN 125 M10 washers of the front main bolts.
- 5 Remove the rear LN 9037-10042 main bolt (3) with the DIN 125 M10 washers and the LN 9348-10 stop nut.

### CAUTION

**Do not put the fin too far backward, the antenna could be damaged.**

- 6 Put the fin backward and lift the fin over the antenna.

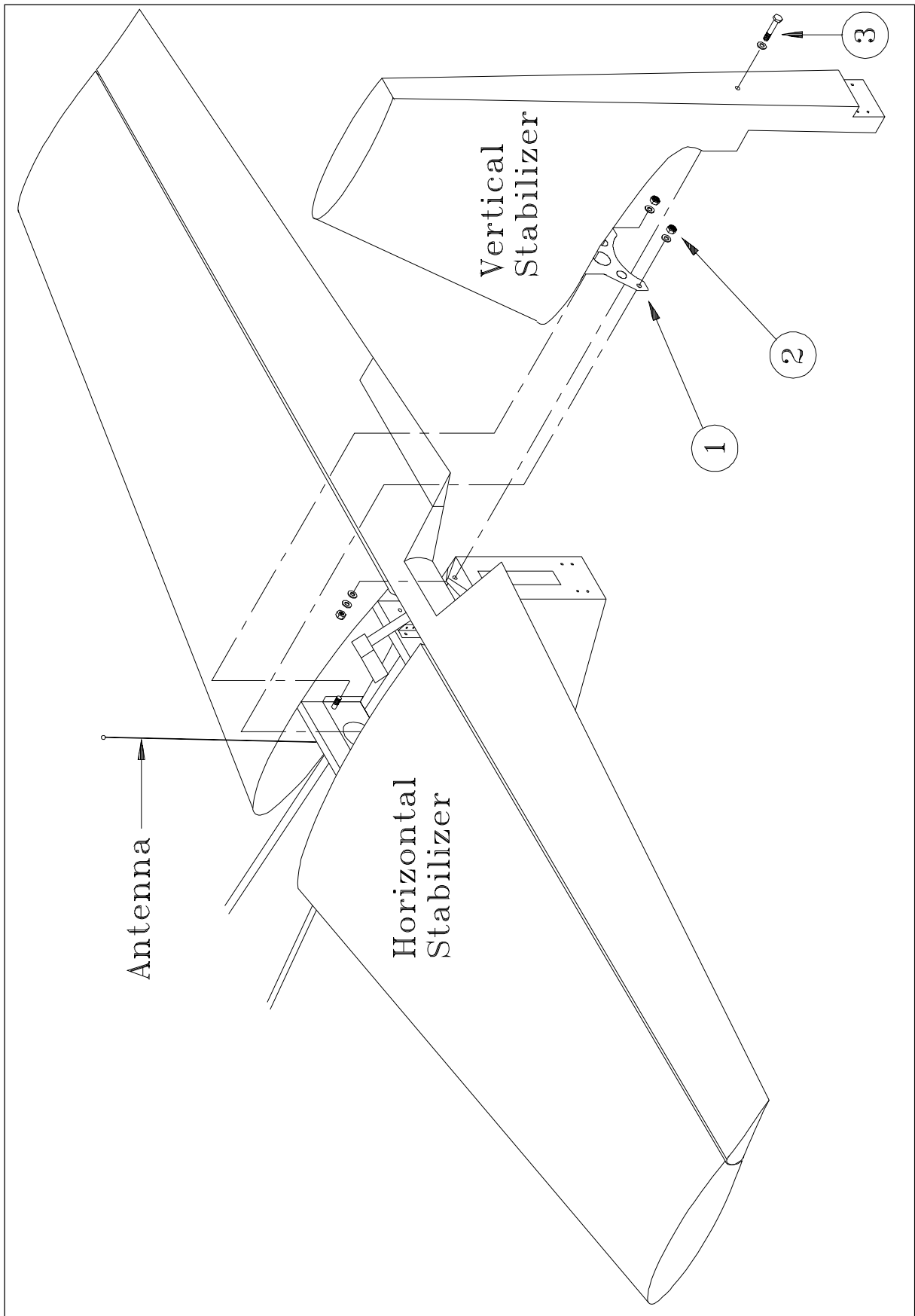
### Installation

- 1 Put the vertical stabilizer leading edge over the antenna.

### CAUTION

**Do not put the fin too far backward, the antenna could be damaged.**

- 2 Slide the auxiliary spar attachment sheet (1, Figure 6) of the vertical stabilizer from the rear over the preinstalled horizontal stabilizer front spar bolts and install the DIN 125 M10 washers and LN 9348-10 stop nuts (2).
- 3 Insert the LN 9037-10042 bolt (3) to the main spar from rear to front. Use LN 9348-10 stop nuts and DIN 125 M10 washers.
- 4 Install the bottom hinge bracket to the tail per Chapter 27-21-02.
- 5 Reinstall the tail fairing, the tail side skins and the tail cone access panel per Chapter 51-00-01.



**Vertical Stabilizer Removal/Installation**  
**Figure 4**