

# **Chapter 32**

## **Landing gear**

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## 32-10-00

## LANDING GEAR

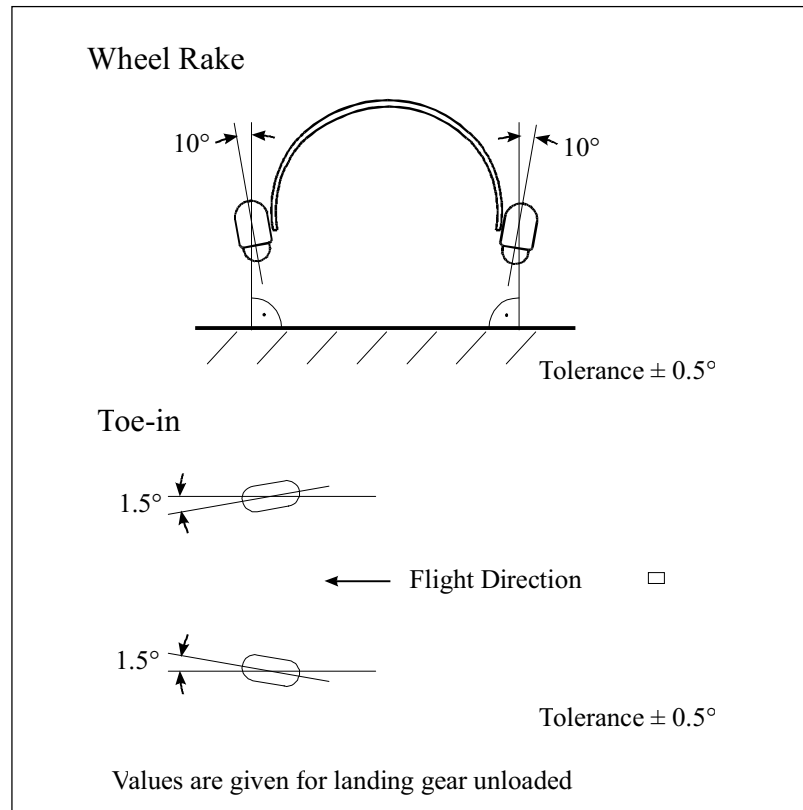
The EXTRA 200 is designed as a conventional tail wheel airplane, with an unretractable landing gear.

The landing gear consists of a 2 wheel main landing gear and a tail wheel.

The main wheels are interconnected and attached to the fuselage by means of an U-shaped carrier. This carrier is of integral glasfibre design and incorporates wheel alignment, spring and dampening action.

The tail wheel is self steering with full swivel capability.

The values for wheel rake and toe-in of main landing gear are given in Figure 1.



*Wheel Rake and Toe-in  
Figure 1*

## **32-11-00**

## **MAINTENANCE PRACTICES**

### **32-11-01**

### **Main Landing Gear**

#### **Removal/Installation**

Refer to Figure 2

- 1 Remove the engine cowling, the landing gear cuffs and the bottom covering sheet as per chapter 51-00-01.
- 2 Shore the aircraft as per Chapter 07-20-00
- 3 Drain brake system.
- 4 Unfasten the ventilation tubings and brake lines, and disconnect the brake lines from the brake assembly.
- 5 Remove the four landing gear attachment stop nuts (LN9348-8) (1) and the DIN 125 M8 washers.
- 6 Remove the bottom halves of the mounting clamps (2), the anti abrasion strips (3) and the landing gear (4).
- 7 Install in reverse sequence of removal using new stop nuts. For correct position of landing gear the mandrel, which is located at the bottom of the fuselage, is to put into the respective sleeve at the top of the landing gear spring. Replenish brake fluid.

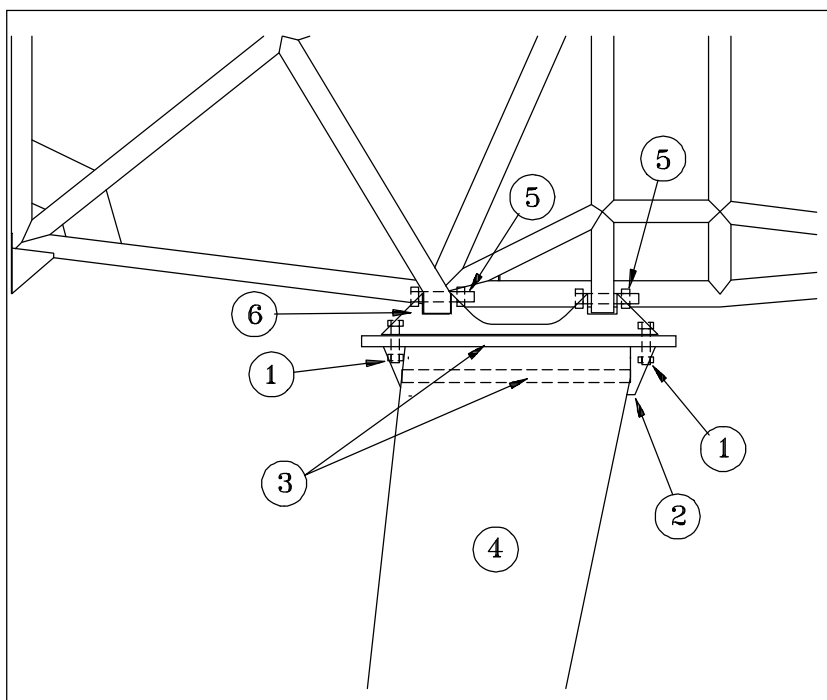
### **32-11-02**

### **Top Half of the Mounting Clamp**

#### **Removal/Installation**

Refer to Figure 2

- 1 Remove the main landing gear as per Chapter 32-11-01.
- 2 Remove the LN9348-10 stop nuts, the DIN125 M10 washers and the LN9037-10054 bolts (5).
- 3 Remove the top half of the mounting clamp (6).
- 4 Reverse procedure for installation.



*Main Landing Gear Mounting  
Figure 2*

**32-11-03**

## **Tail spring**

### **Removal/Installation**

- 1 Shore the tail as per Chapter 07-20-02.
- 2 Remove the tail cone access panel per Ch. 51-00-01.
- 3 Disconnect connector spring kit (7, Figure 3) from the rudder bottom hinge bellcrank by removing the attachment bolts (8).
- 4 Remove the tail spring attachment bolts (1-3).
- 5 Remove the tail spring (4).
- 6 Disconnect the tail spring cuff (5) from the tail spring by removing the bolts (12) and remove grease nipple if necessary.
- 7 Reverse procedure for installation; consider to fasten the breather line using the MS21919-DG12 clamp (6). Install the lighter spring of the connector spring kit at the left side.

## 32-11-04

### Tail Wheel Fork Assembly

#### Removal/Installation

- 1 Shore the tail as per Chapter 07-20-02.
- 2 Disconnect the connector spring kit (7, Figure 3) from the rudder bottom hinge bellcrank by removing the attachment bolts (8).
- 3 Remove the attachment stopnut (10) with washer and steering arm (11) with the connector spring kit.
- 4 Turn wheel fork (15) to 90°-position to press pin (14) inside.

#### WARNING

**Prevent pin (14) from shooting out when appearing at the bottom of the tail spring cuff (5) during removal of the wheel fork by pressing it inside by finger.**

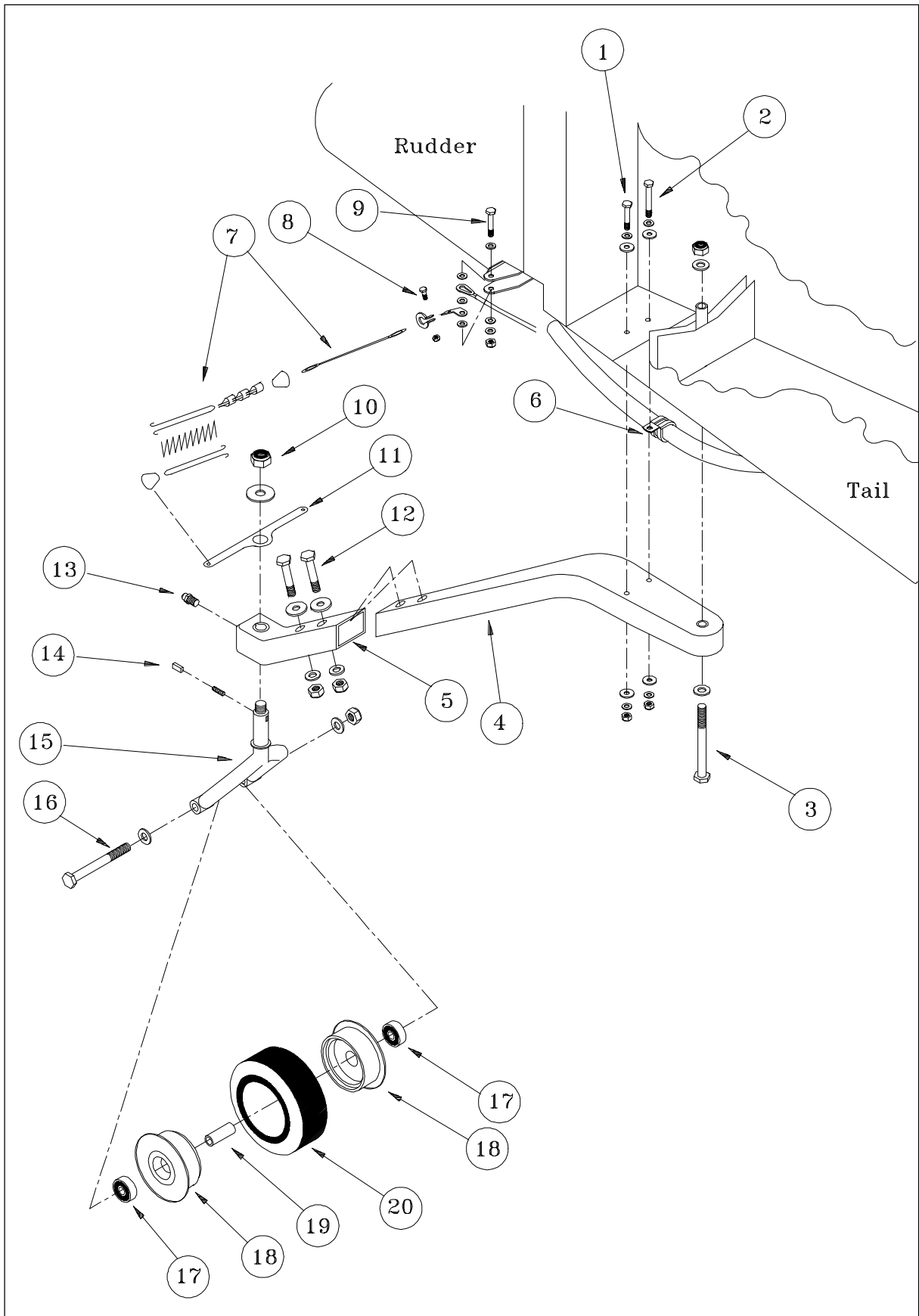
- 5 Remove wheel fork with pin and spring (14).
- 6 Reverse procedure for assembly. Install the lighter spring of the connector spring kit at the left side.

## 32-11-05

### Tail Wheel

#### Disassembly/Assembly

- 1 Shore the tail as per Chapter 07-20-02.
- 2 Remove the attachment bolt (16, Figure 3), washers, and stopnut.
- 3 Remove the tailwheel.
- 4 Disassemble the bearings (17), the wheel halves (18), the spacer sleeve (19), and the solid rubber tire (20).
- 5 Reverse procedure for assembly.



*Tail Wheel, Fork and Spring  
Figure 3*

## 32-40-00

## WHEELS AND BRAKES

### 32-40-01

### General

The main wheels have standard brand 500x5 rims, six-ply rated 5.00-5-tyres with tubes, according to FAA Standard TSO-C62. Cleveland 40-151 wheels with 30-164 brake assemblies are used. The main wheels are covered with glass fibre designed fairings of which Figure 4 shows the layer sequence.

The tailwheel consists of a 5 inch tire and an aluminium rim.

The Cleveland design features an external brake in which the disc is external to the wheel with the brake caliper floating over the disc.

The brake system (refer to Figure 5) consists of a brake assembly located at the inner side of the wheel, a master cylinder (1) at the rear rudder pedals each, and a brake fluid reservoir (2) mounted at the engine side of the firewall. The particular parts of the brake system are interconnected by brake lines consisting of aluminium tubes and flexible hoses (A-F). However from Serial No. 22 the brake lines in the cockpit area are replaced by a KNAPP hose system.

The tail wheel has no brake.

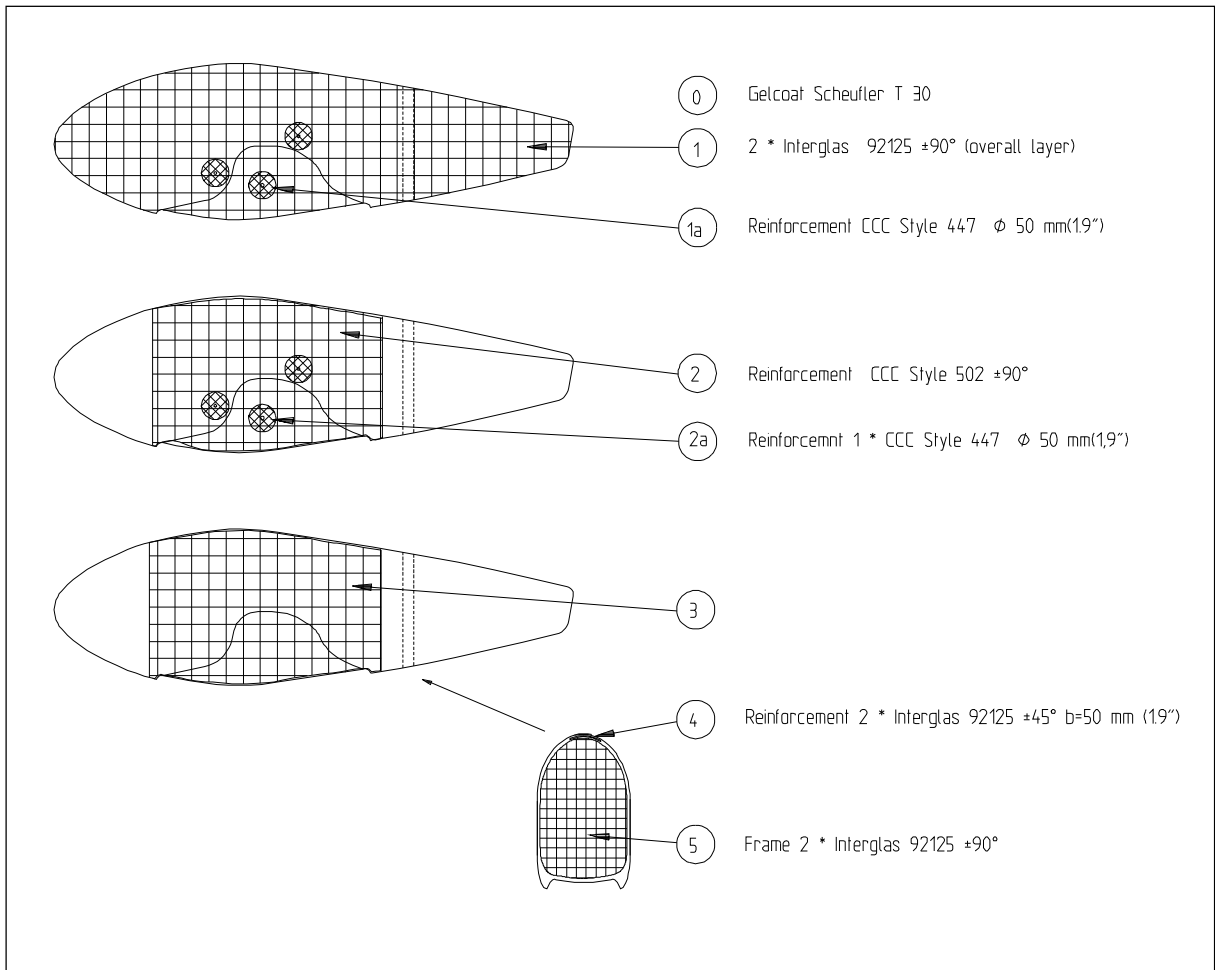
#### IMPORTANT

**Test brakes after maintaining the brake system. Actuated brakes shall keep the aircraft standing with engine running at 1800 rpm and maximum propeller angle of attack. With applied brakes and powersetting above 1800 rpm the wheels may slide on grass.**

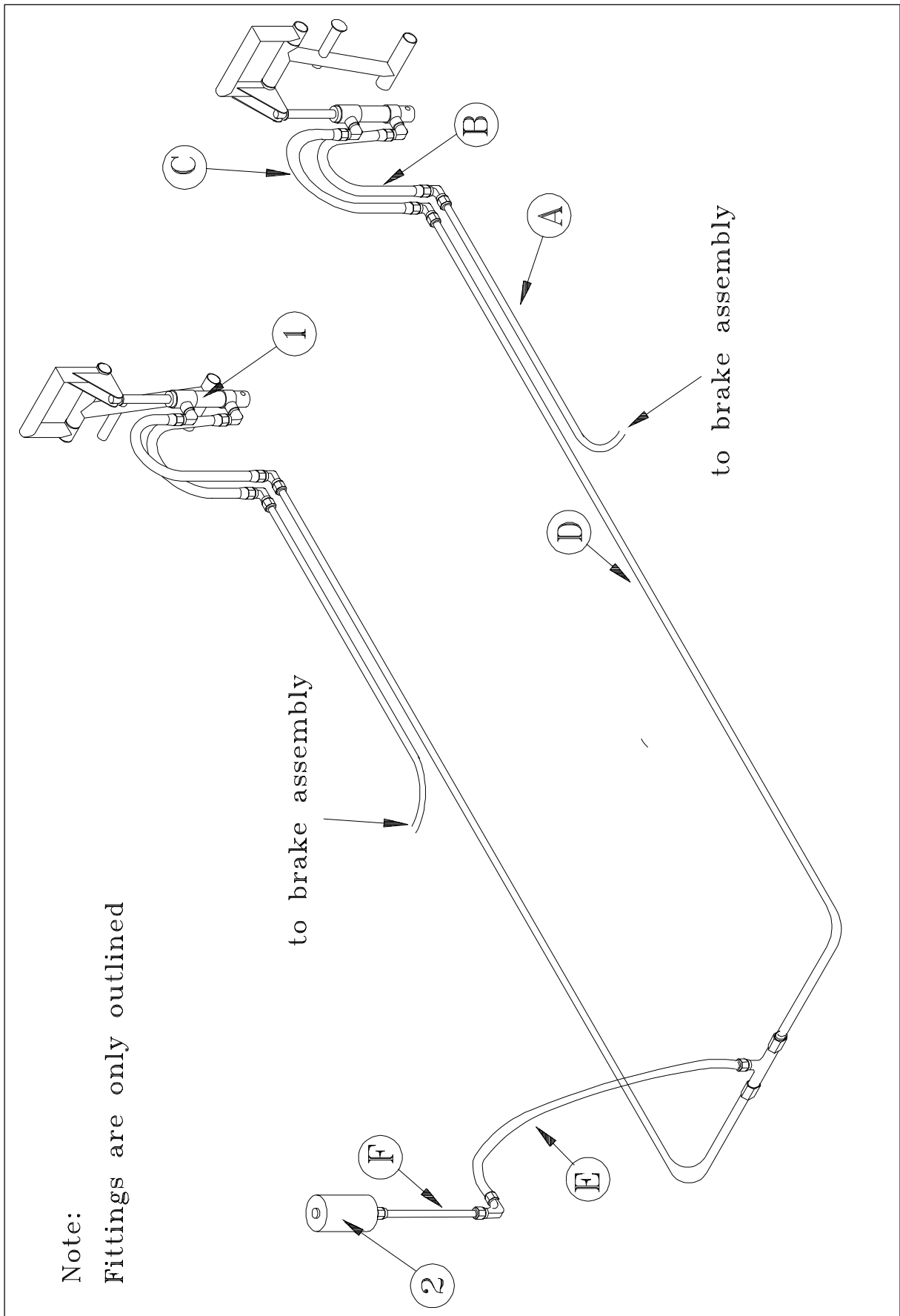
#### NOTE

**For further information concerning main wheels and brakes refer to Cleveland Wheels and Brakes Maintenance Manual.**





*Layer Sequence Wheel Fairing up to Ser. No. 16*  
**Figure 4**



**Brake System**  
**Figure 5**

## 32-41-00

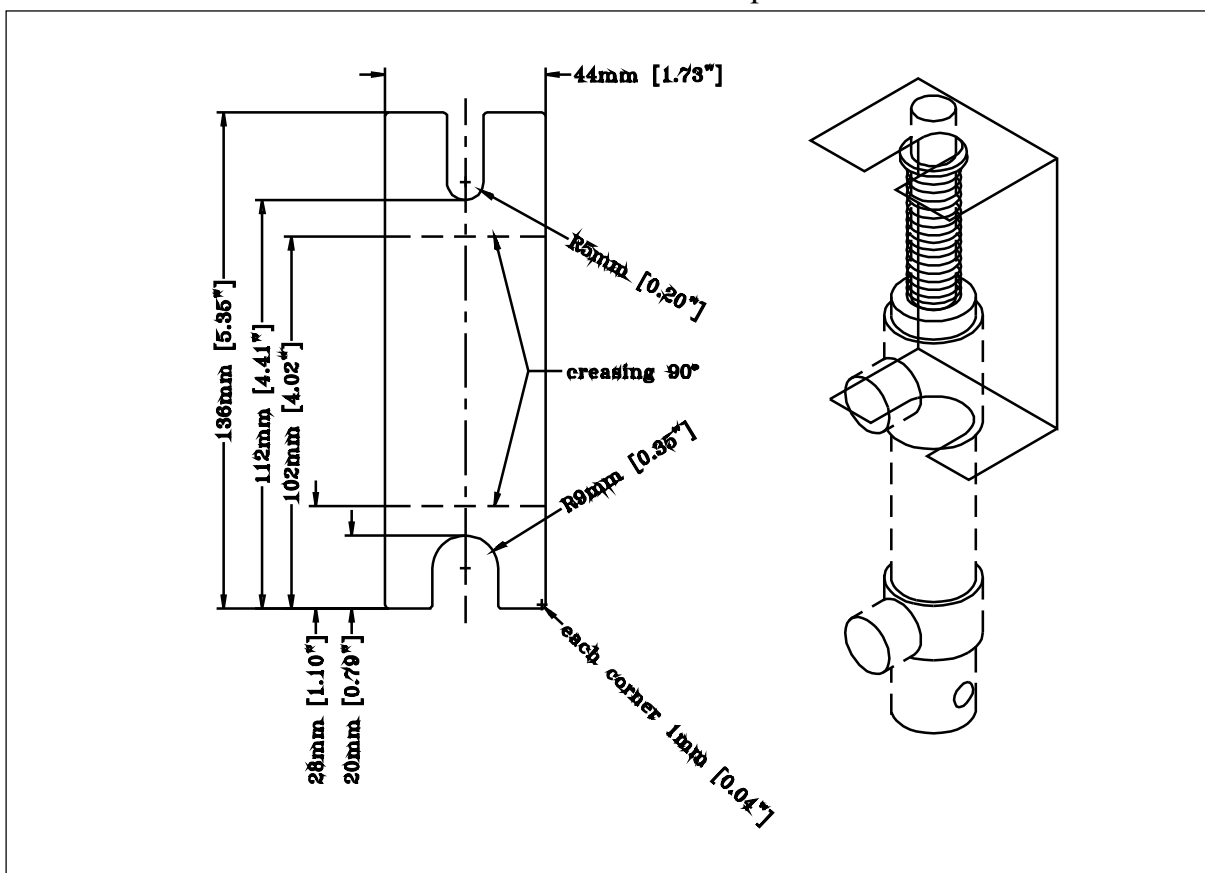
## MAINTENANCE PRACTICES

### 32-41-01

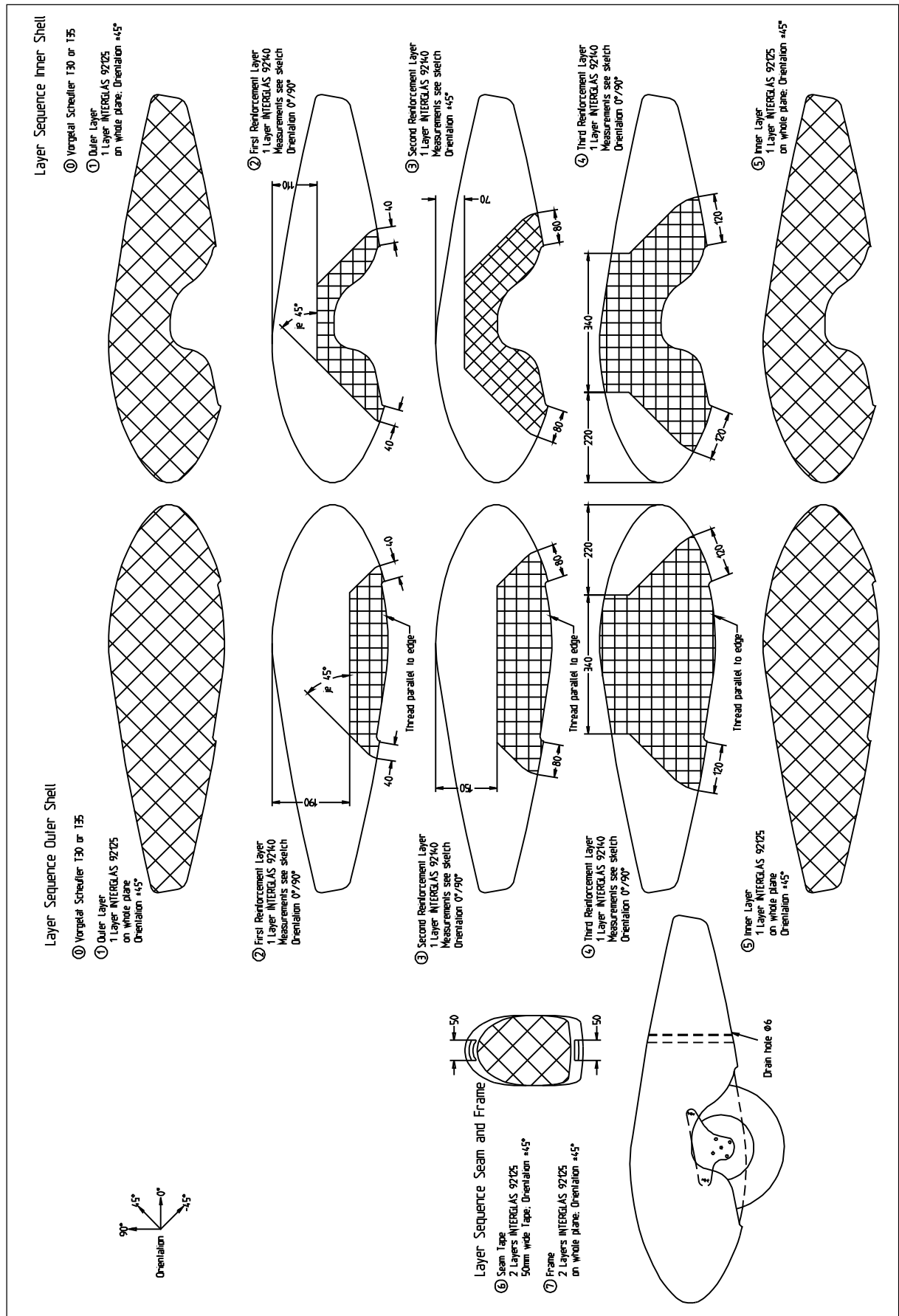
### Master Cylinder

#### Removal/Installation

- 1 Drain the brake system.
- 2 Disconnect the fuel lines.
- 3 Fix the master cylinder spring using a mounting aid as shown in Figure 6 (Cleveland master cylinder only).
- 4 Remove the attachment bolts.
- 5 Remove the master cylinder.
- 7 Remove mounting aid (Cleveland only).
- 6 Install in reverse sequence of removal.



*Master Cylinder Mounting Aid  
 Figure 6*



Layer Sequence Wheel Fairing from Ser. No. 17  
 Figure 3, Sheet 2