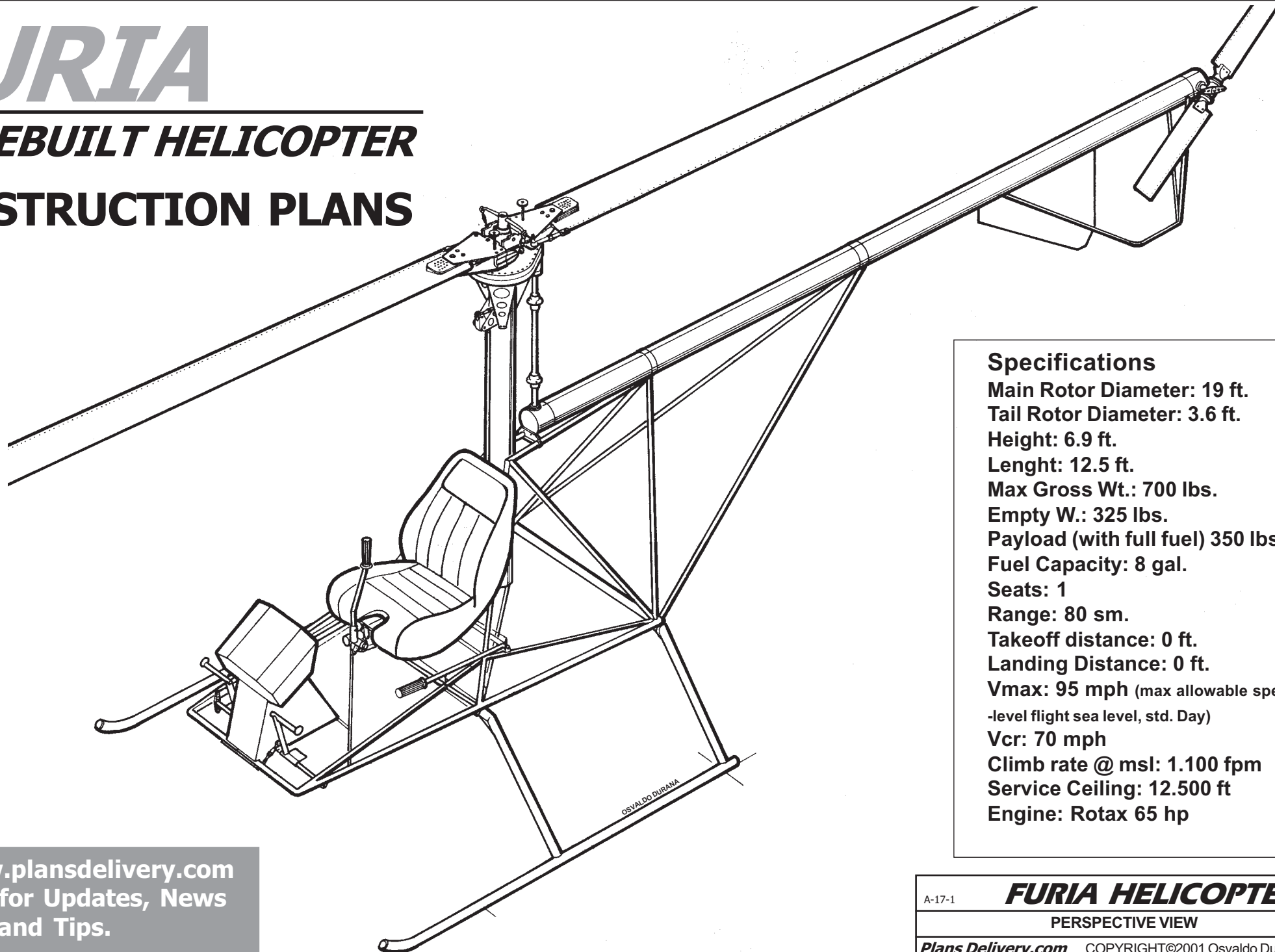


# FURIA

## HOMEBUILT HELICOPTER CONSTRUCTION PLANS



### Specifications

Main Rotor Diameter: 19 ft.

Tail Rotor Diameter: 3.6 ft.

Height: 6.9 ft.

Length: 12.5 ft.

Max Gross Wt.: 700 lbs.

Empty W.: 325 lbs.

Payload (with full fuel) 350 lbs.

Fuel Capacity: 8 gal.

Seats: 1

Range: 80 sm.

Takeoff distance: 0 ft.

Landing Distance: 0 ft.

Vmax: 95 mph (max allowable speed

-level flight sea level, std. Day)

Vcr: 70 mph

Climb rate @ msl: 1.100 fpm

Service Ceiling: 12.500 ft

Engine: Rotax 65 hp

Visit [www.plansdelivery.com](http://www.plansdelivery.com)  
regularly for Updates, News  
and Tips.

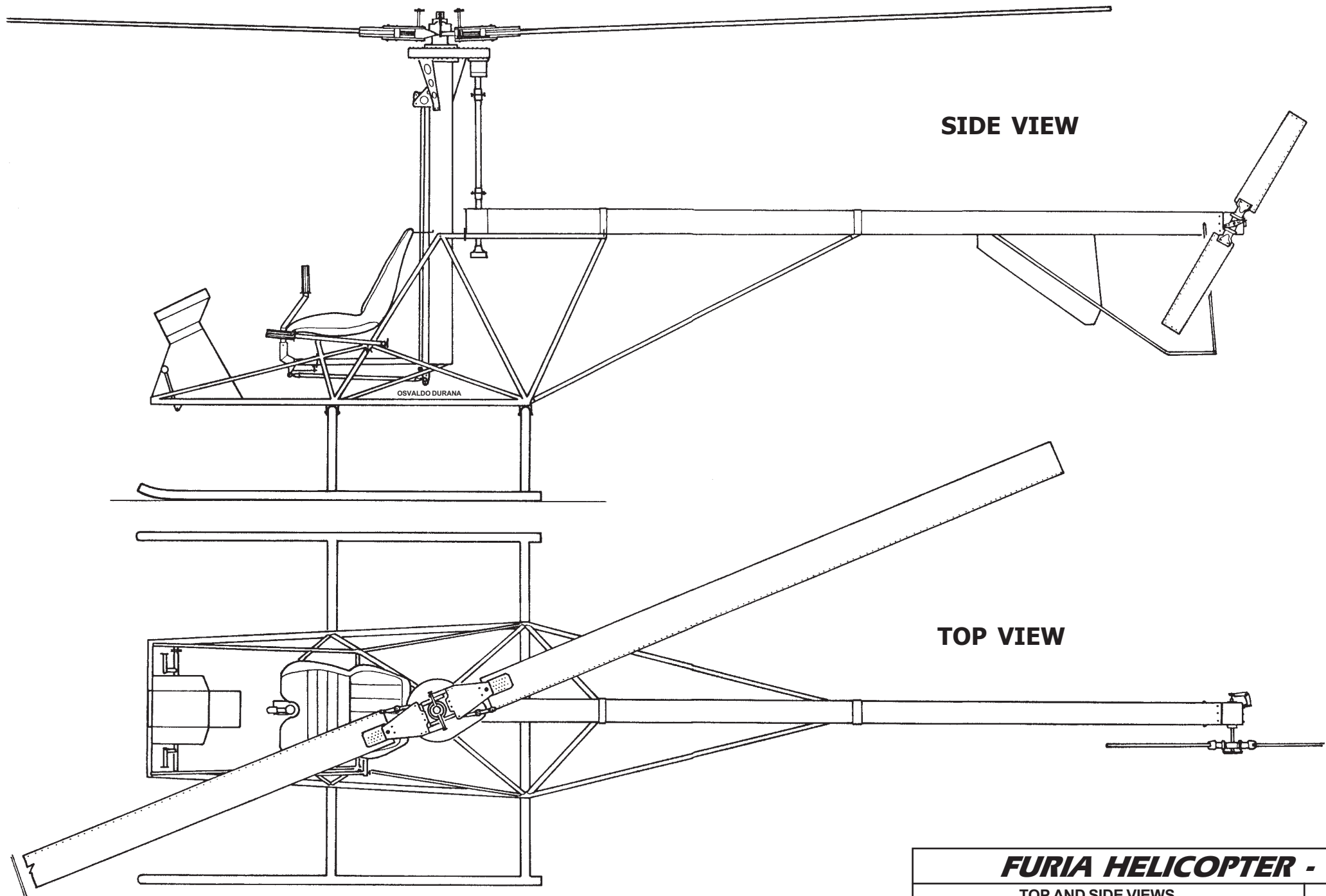
A-17-1

**FURIA HELICOPTER -**

PERSPECTIVE VIEW

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**1**



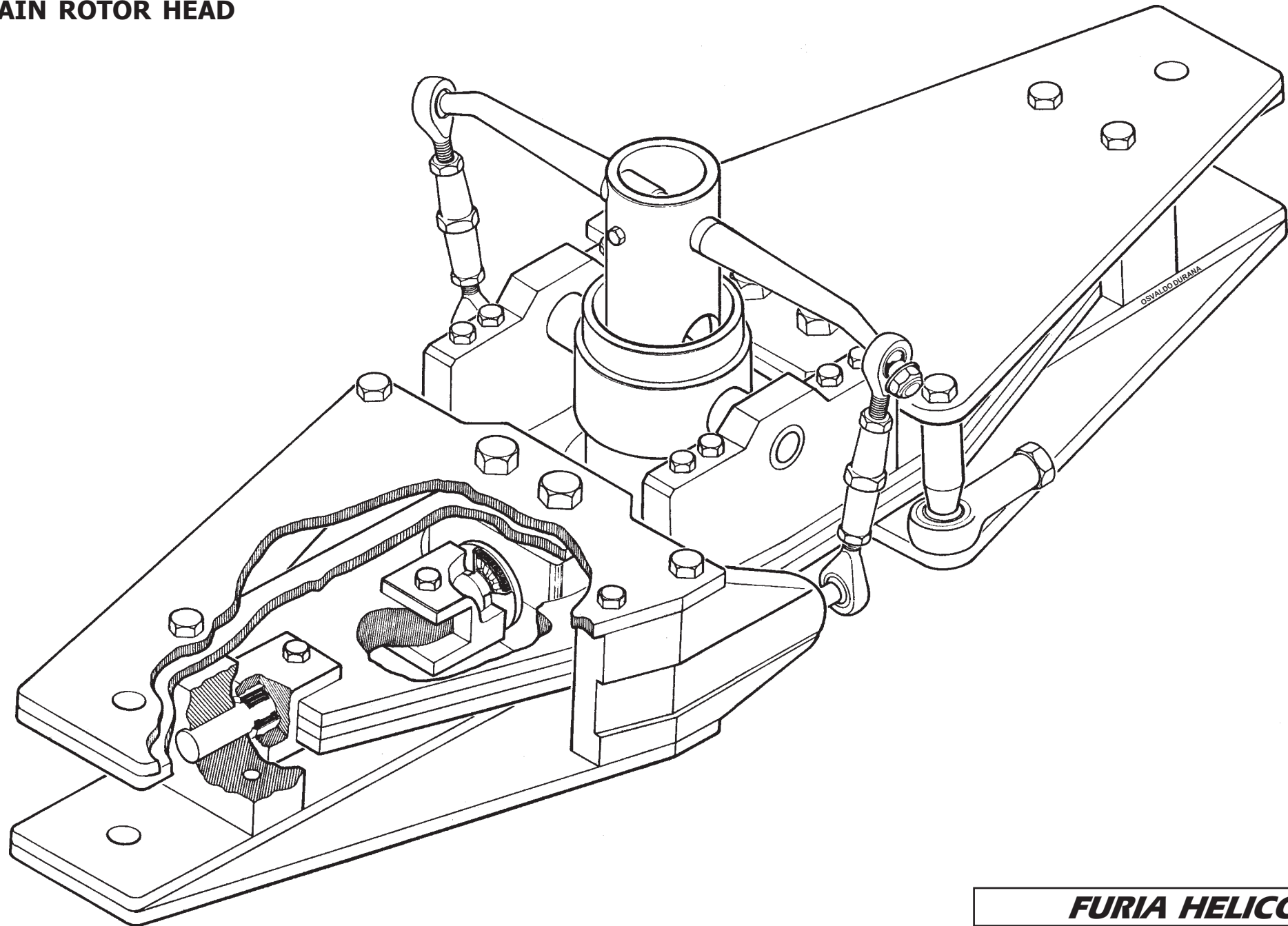
**SIDE VIEW**

**TOP VIEW**

***FURIA HELICOPTER -***

TOP AND SIDE VIEWS

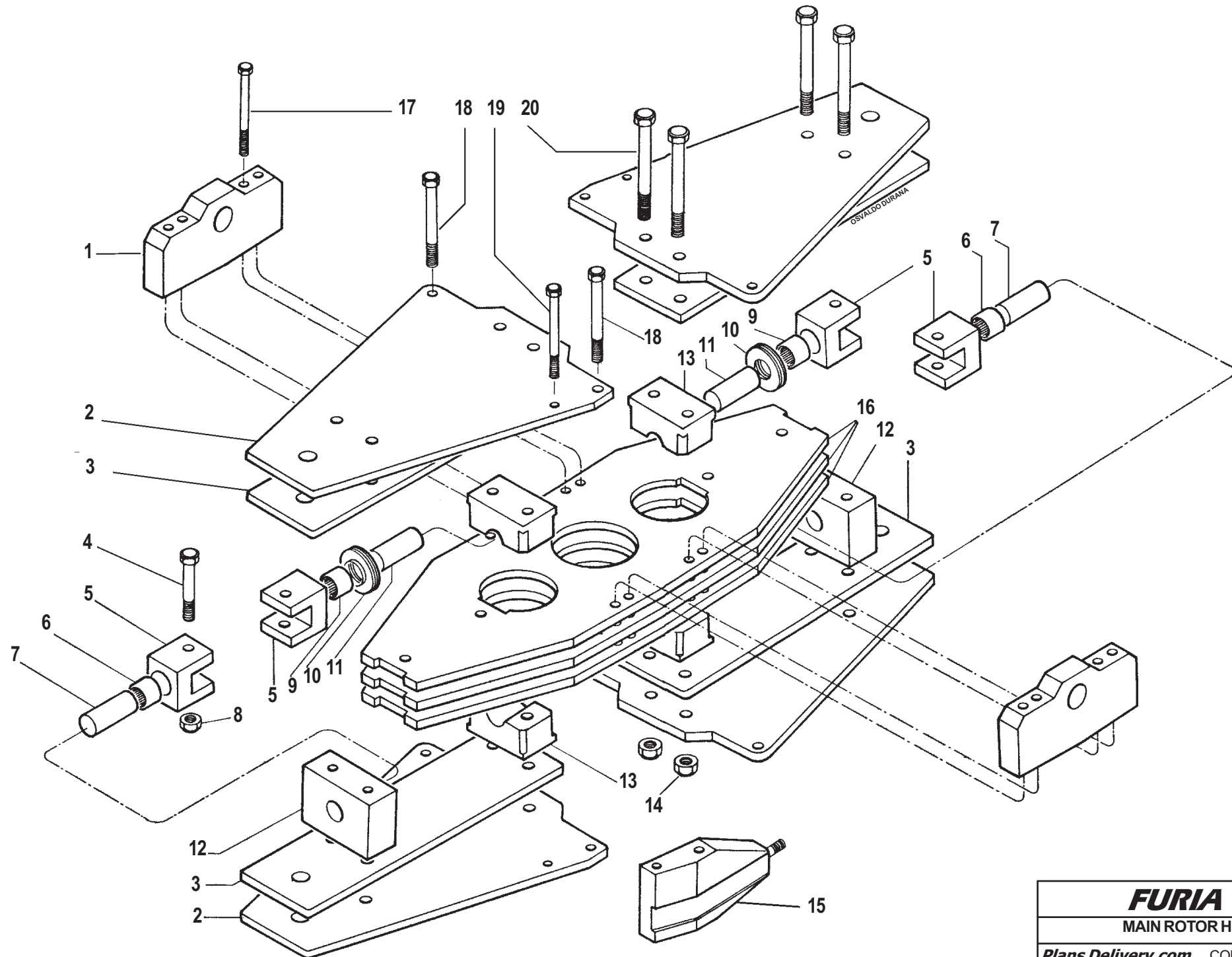
# MAIN ROTOR HEAD



**FURIA HELICOPTER -**

MAIN ROTOR HEAD

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



## PART LIST -

### Key number / Name / (Quantity)

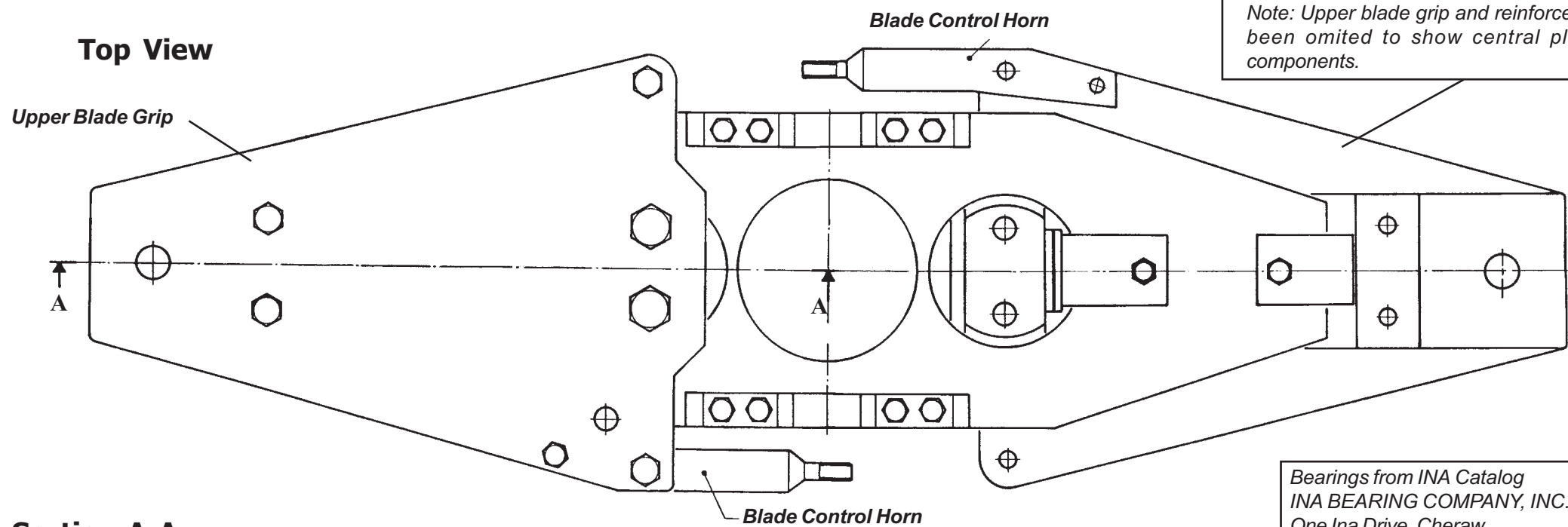
- 1 - Pivot head (2)
  - 2 - Blade grip (4)
  - 3 - Reinforcement strap (4)
  - 4 - Bolt AN3 (2)
  - 5 - Claw (4)
  - 6 - Shell type bearing BK1514RS (2)
  - 7 - Axle A (2)
  - 8 - Elastic stop nut AN 364-1032 (2)
  - 9 - Shell type bearing BK1522 (2)
  - 10 - Thrust bea. AXW15 - (2)  
washers AS1528 (2)  
LS1528 (2)
  - 11 - Axle B (2)
  - 12 - Axle housing (2)
  - 13 - Axle grip (2)
  - 14 - Elastic stop nut AN 365-524 (4)
  - 15 - Blade control horn (2)
  - 16 - Center plates (3)
  - 17 - Bolt AN3 (8)
  - 18 - Bolt AN4 (8)
  - 19 - Bolt AN3 (2)
  - 20 - Bolt AN5 (4)
- Not shown:  
Elastic stop nuts AN 365-428 (8)  
Elastic stop nuts AN 365-1032 (8)

**FURIA HELICOPTER -**

MAIN ROTOR HEAD ASSEMBLY

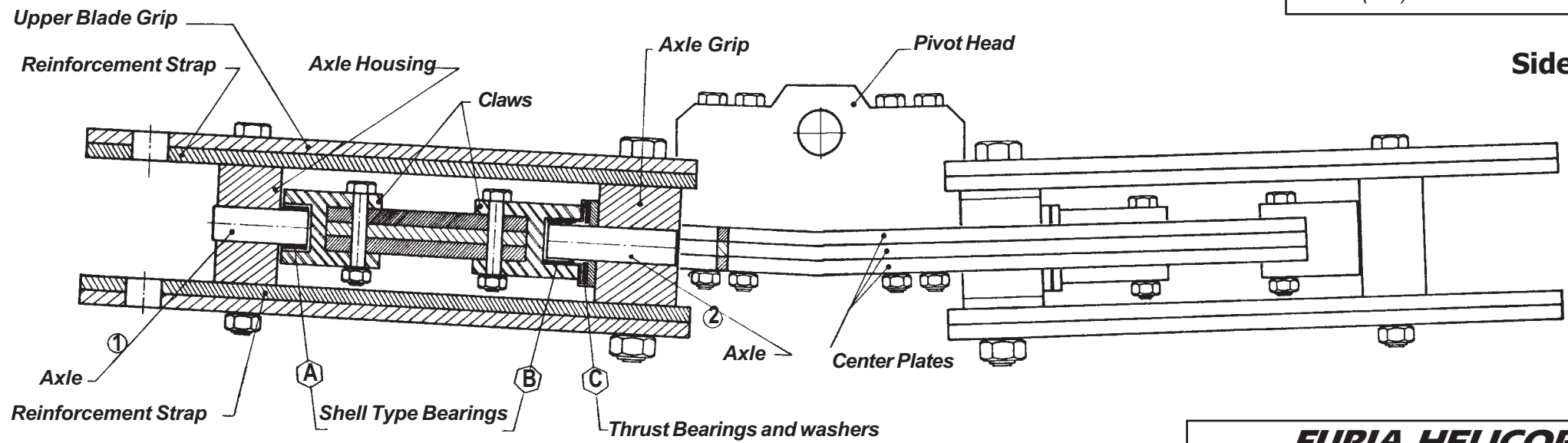
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**Top View**



Note: Upper blade grip and reinforcement strap have been omitted to show central plates and other components.

**Section A-A**

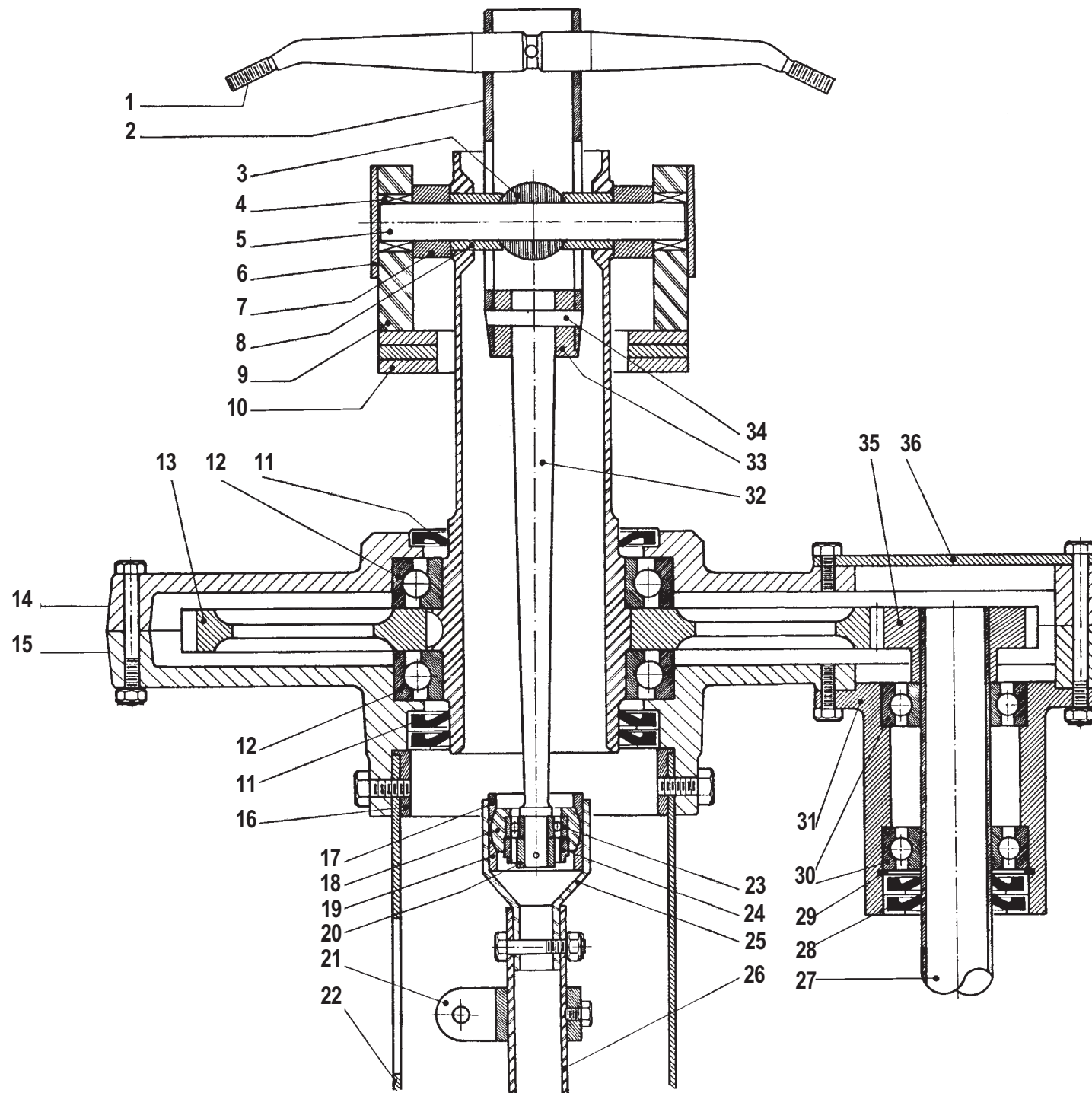


Bearings from INA Catalog  
 INA BEARING COMPANY, INC.  
 One Ina Drive, Cheraw,  
 South Carolina 29520  
 Phone: (803) 537-9341

**Side View**

Bearings: A= Shell Type BK1514 RS (sealed) 2 Req'd. B= Shell Type BK1522 (2 Req'd.) C= Thrust (needle roller) AX15- Washers AS 1528 and LS 1528 (2 of each one req'd)



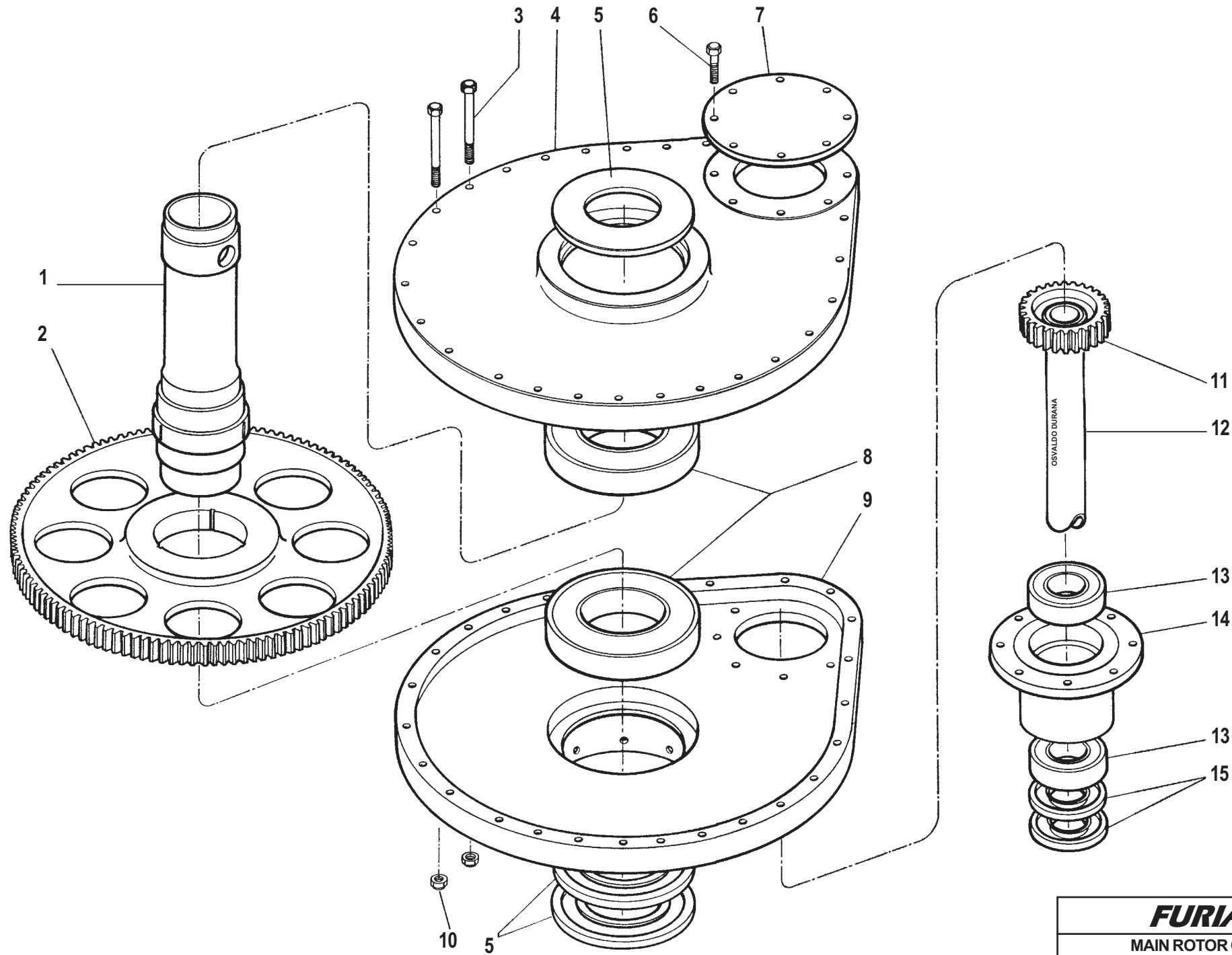


**Key number / Name / (Quantity)**

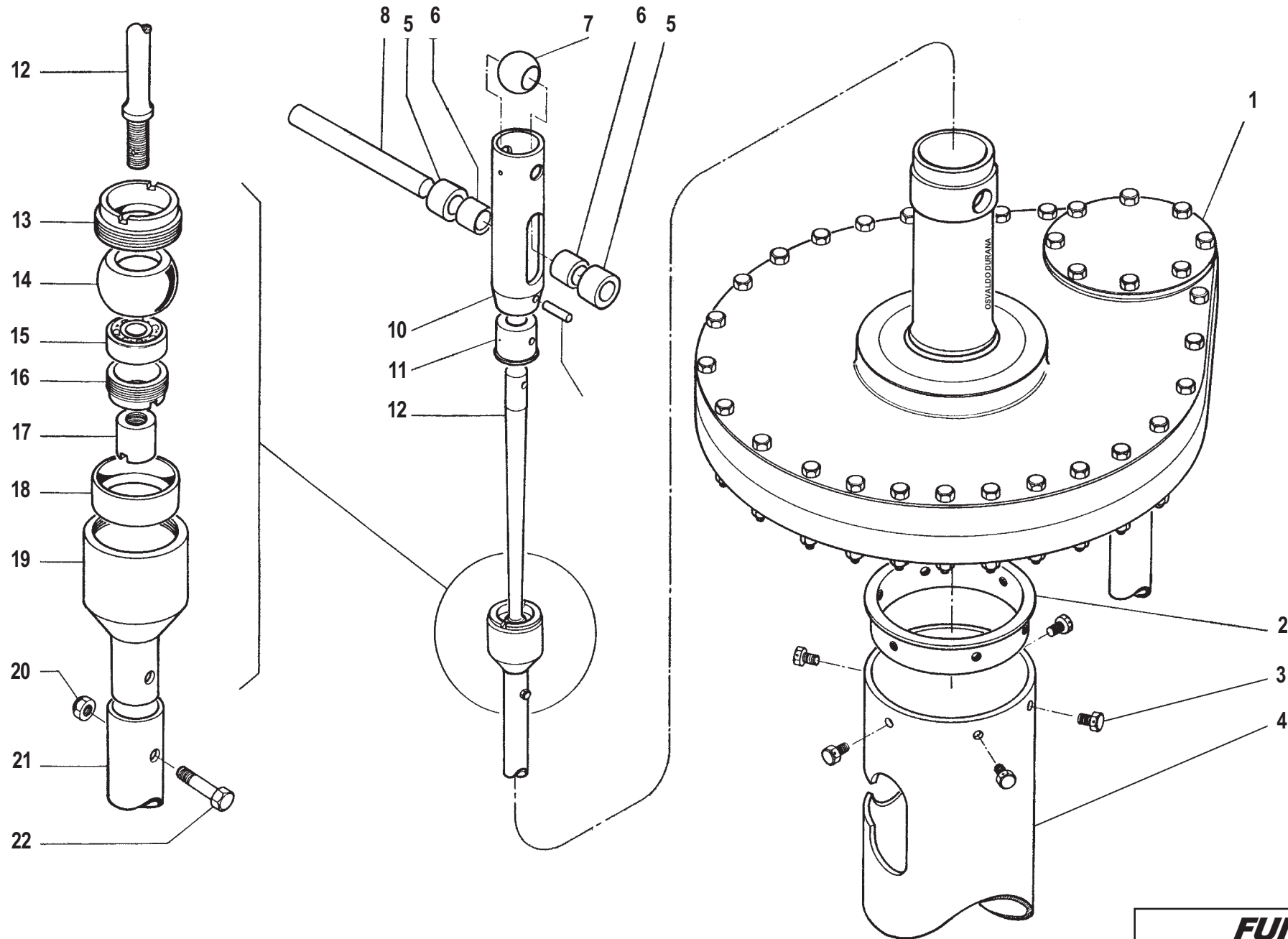
- 1) Blade control master horn
- 2) Control sliding axle
- 3) Ball
- 4) Shell type bearing HK 1522
- 5) Main rotor axle
- 6) Bearing cover
- 7) Bushing
- 8) Race / bushing
- 9) Pivot head
- 10) Center plates
- 11) Gasket
- 12) Bearing 7013
- 13) Main gear
- 14) Gearbox housing upper half
- 15) Gearbox housing lower half
- 16) Gearbox attachment ring
- 17) Race / nut
- 18) Ball / Bearing housing
- 19) Ball race
- 20) Nut B
- 21) Cyclic/Collective central link
- 22) Main rotor mast
- 23) Bearing 6002 Z
- 24) Nut A
- 25) Central uniball housing
- 26) Central Push-Pull tube
- 27) Pinion shaft
- 28) Gasket
- 29) Snap ring
- 30) Bearing 6205
- 31) Pinion housing
- 32) Push-Pull axle
- 33) Bushing
- 34) Pin
- 35) Pinion
- 36) Gearbox lid

**FURIA HELICOPTER -**

**MAIN ROTOR AND GEARBOX**



<b>Part List</b>		
Key number	name	Quantity
1)	Main rotor shaft	
2)	Main gear	
3)	Bolt AN3 (25)	
4)	Gearbox housing upper half	
5)	Gasket (3)	
6)	Bolt AN3 (10)	
7)	Gearbox lid	
8)	Ball bearing 7013 (2)	
9)	Gearbox housing lower half	
10)	Elastic stop nut AN 365-1032 (25)	
11)	Pinion	
12)	pinion shaft	
13)	Ball Bearing 6205 (2)	
14)	Pinion housing	
15)	Gaskets	
Not shown:		
*main shaft woodroff keys (3)		
*Pinion housing internal snap ring.		



## Part List

### Key number/name/quantity

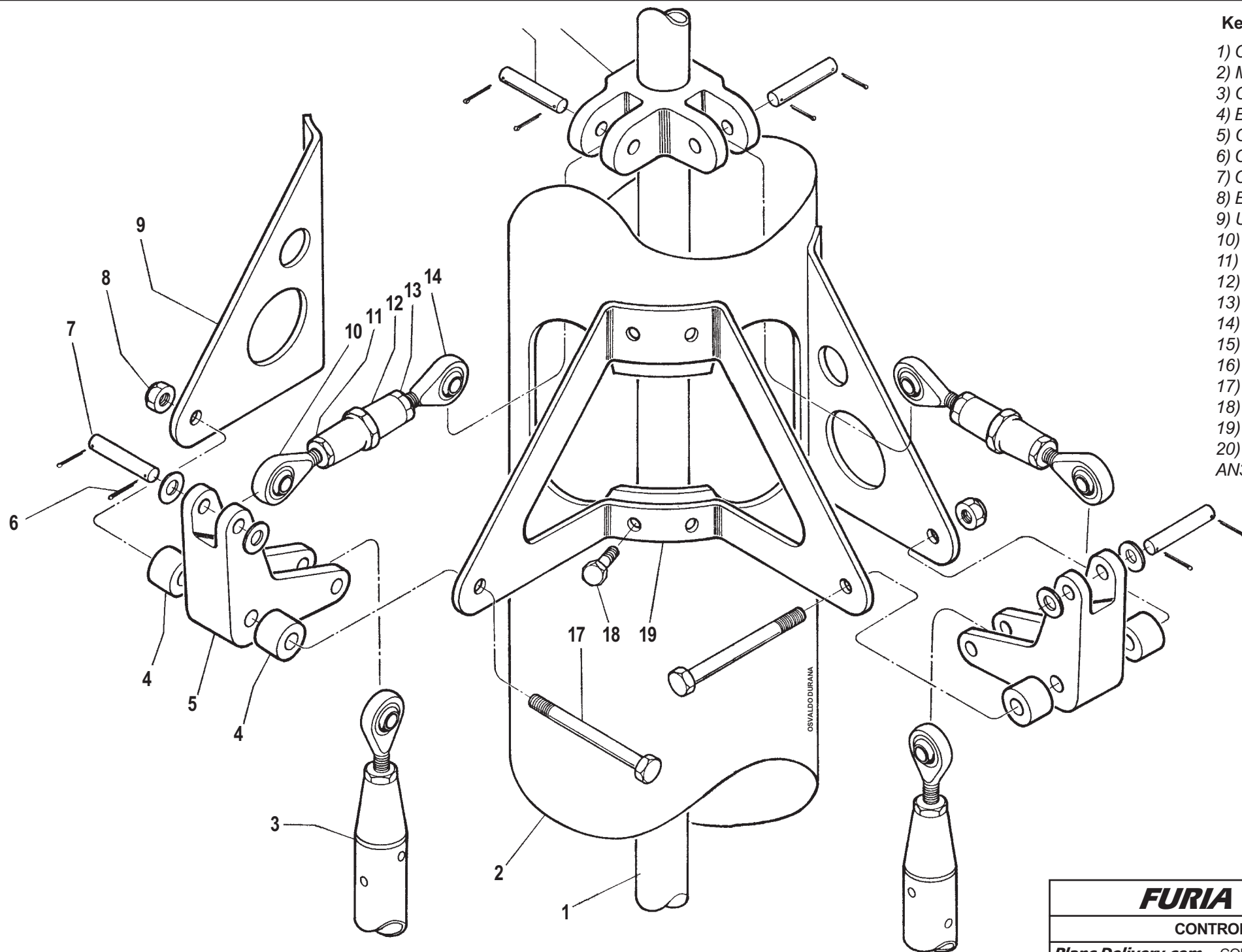
- 1) Main rotor gearbox
- 2) Gearbox attachment ring
- 3) Bolt AN4 (6)
- 4) Main rotor mast
- 5) Bushing (2)
- 6) Bushing A ( 2)
- 7) Ball
- 8) Main rotor axle
- 9) Pin
- 10) Control sliding axle
- 11) Bushing
- 12) Push-Pull axle
- 13) Race-nut
- 14) Ball bearing housing
- 15) Bearing 600 Z (1)
- 16) Nut A
- 17) Nut B
- 18) Ball race
- 19) Central uniball housing
- 20) Elastic stop nut AN364-1032 (1)
- 21) Central Push-Pull tube
- 22) Bolt AN3 (1)

**FURIA HELICOPTER -**

MAIN GEARBOX/CONTROL SYS. ASSY.

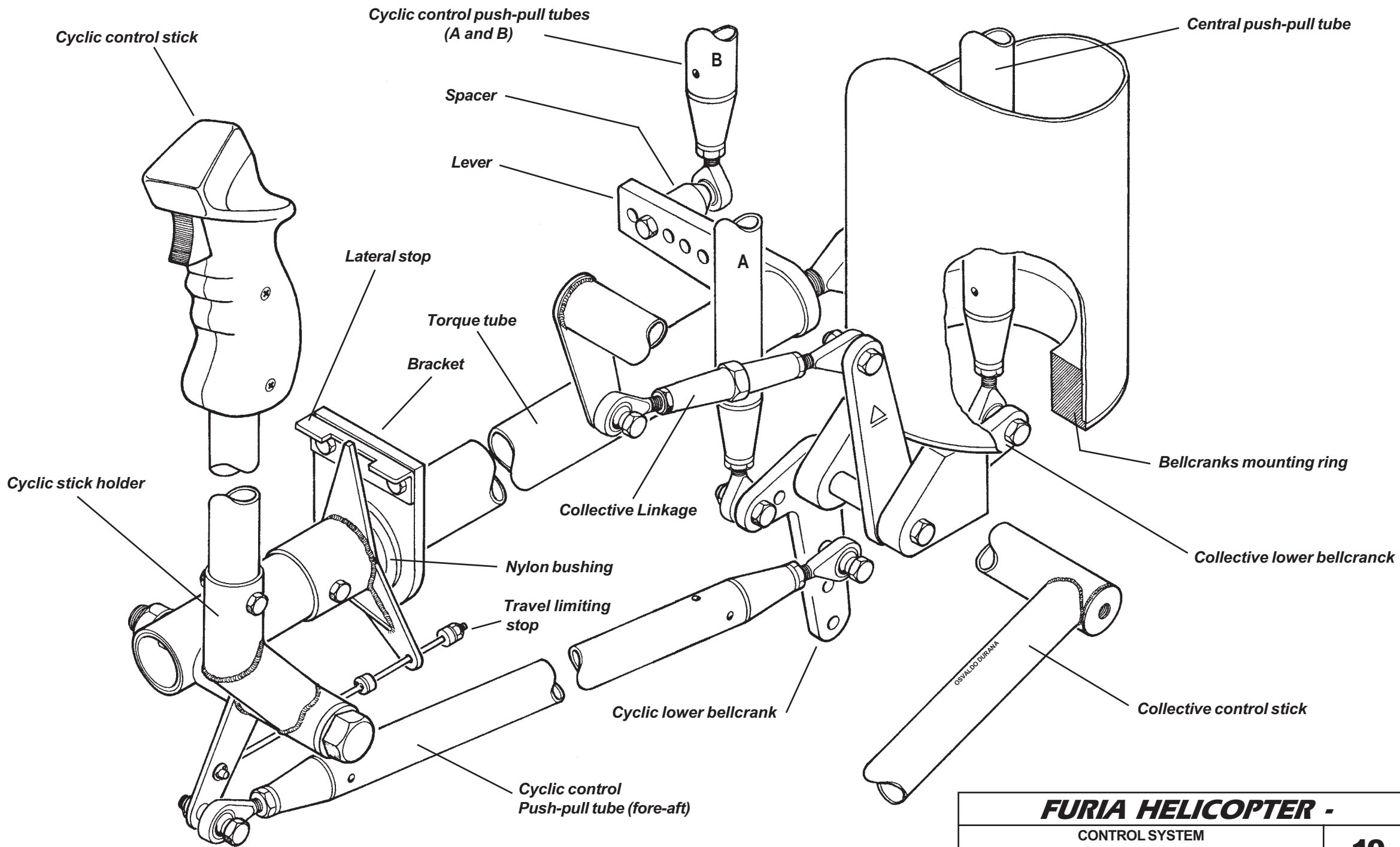
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

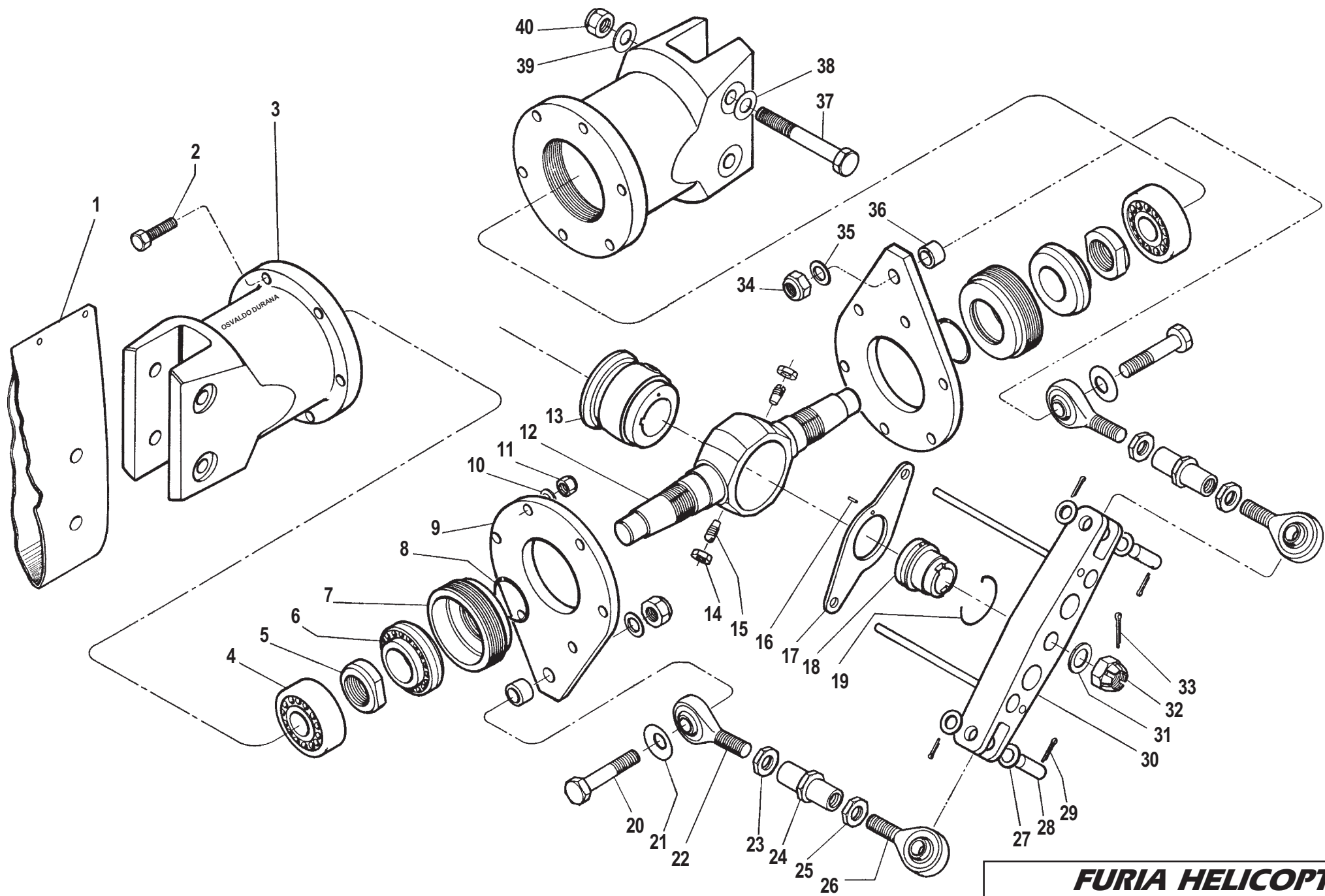


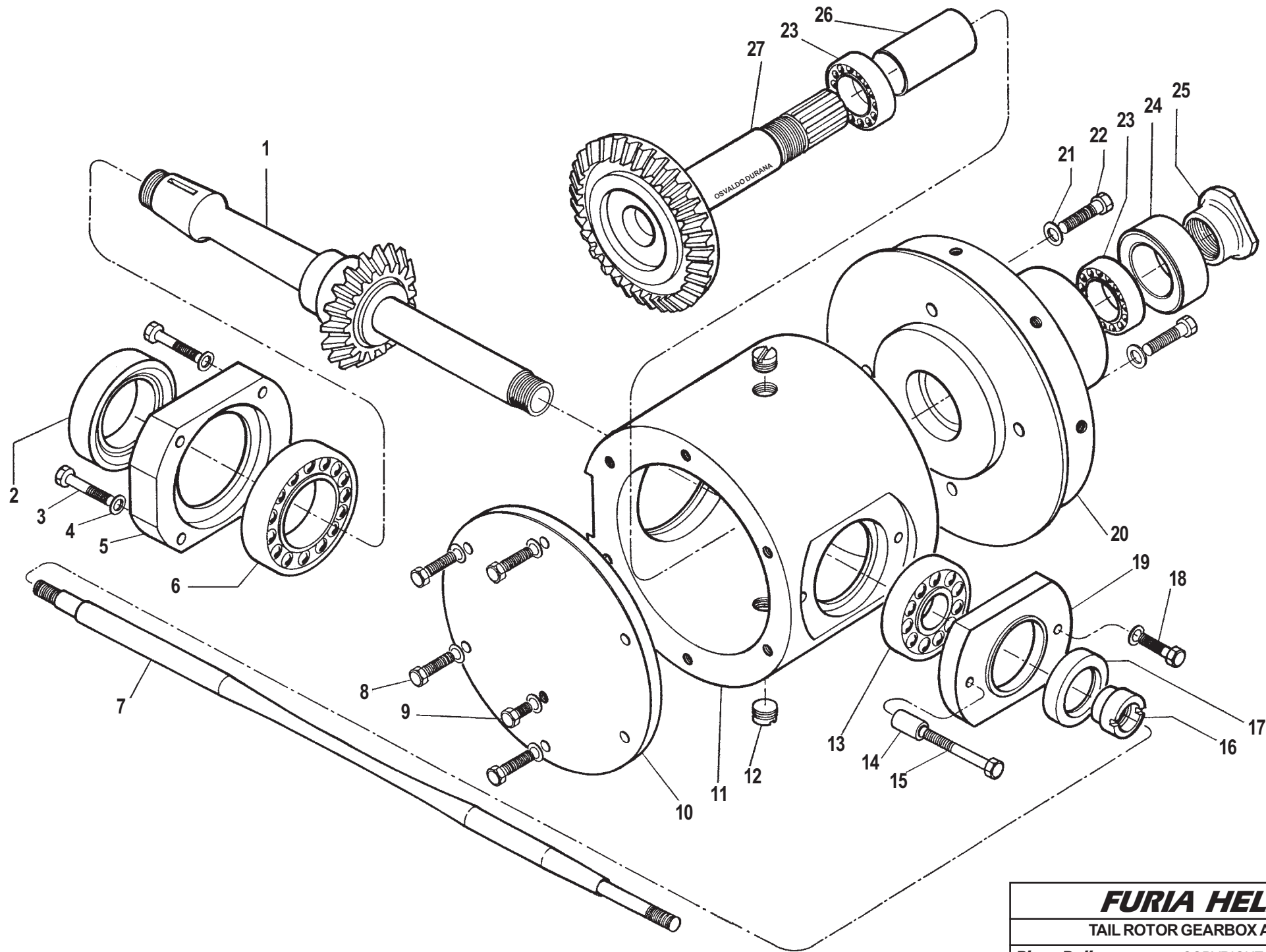


**Key number / Name / (Quantity)**

- 1) Collective central push-pull tube
- 2) Main rotor tube mast
- 3) Cyclic push-pull tube
- 4) Bushing spacers (4)
- 5) Cyclic upper bellcrank (2)
- 6) Cotter pin (6)
- 7) Clevis pin AN394 (4)
- 8) Elastic stop nut AN364-428 (2)
- 9) Upper Bellcrank mounting bracket (2)
- 10) Rod end HMVV-4 (2)
- 11) Locking nut AN316-4R (2)
- 12) Control linkage (2)
- 13) Locking nut AN316-4L (2)
- 14) Rod end HMLVV-4 (2)
- 15) Clevis pin AN394 (2)
- 16) Cyclic/collective central link (1)
- 17) Bolt AN4 (2)
- 18) Bolt AN3 (8)
- 19) Bellcranks central bracket
- 20) elastic stop nut (not shown) AN365-1032 (8)



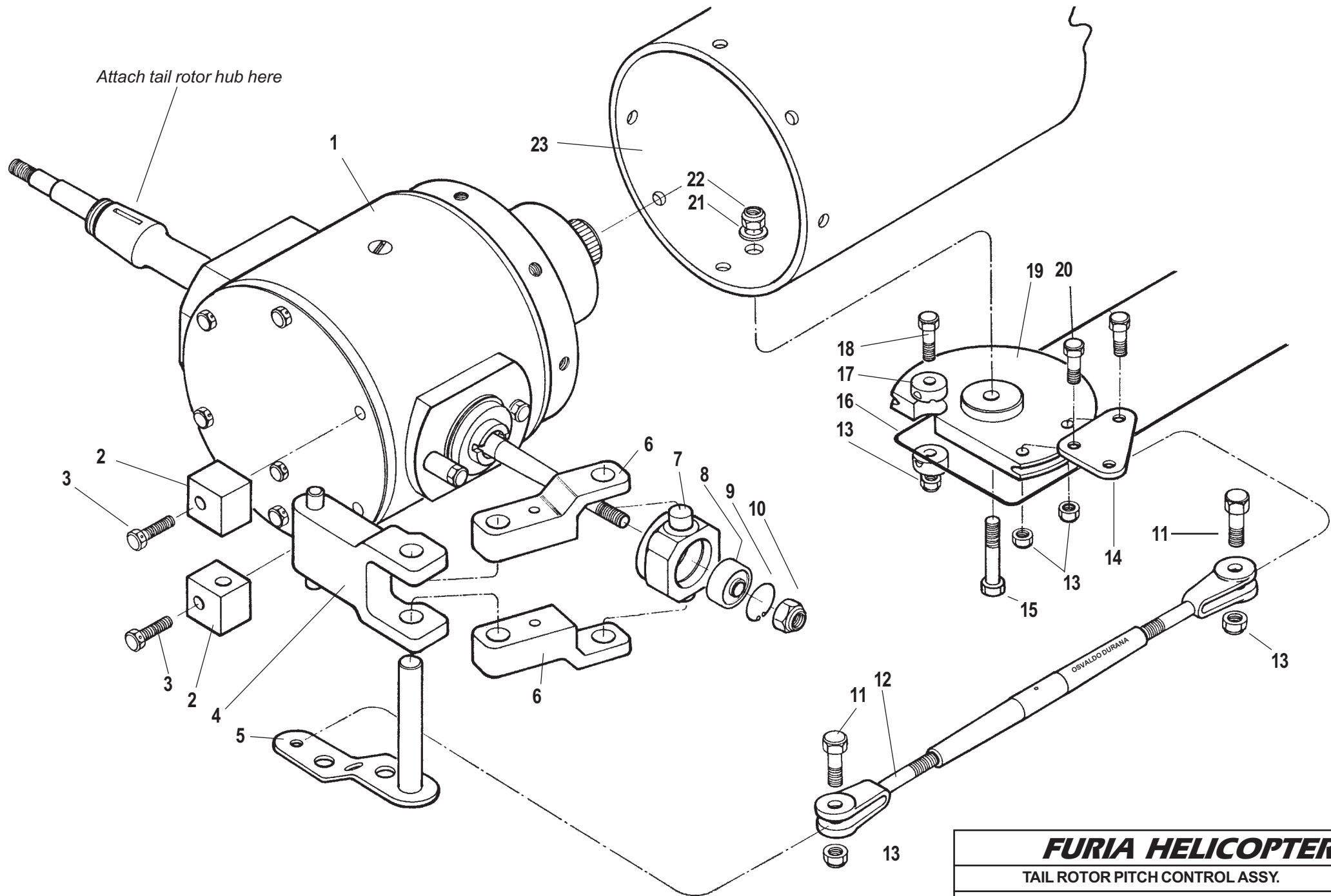




**FURIA HELICOPTER -**

**TAIL ROTOR GEARBOX ASSEMBLY**

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

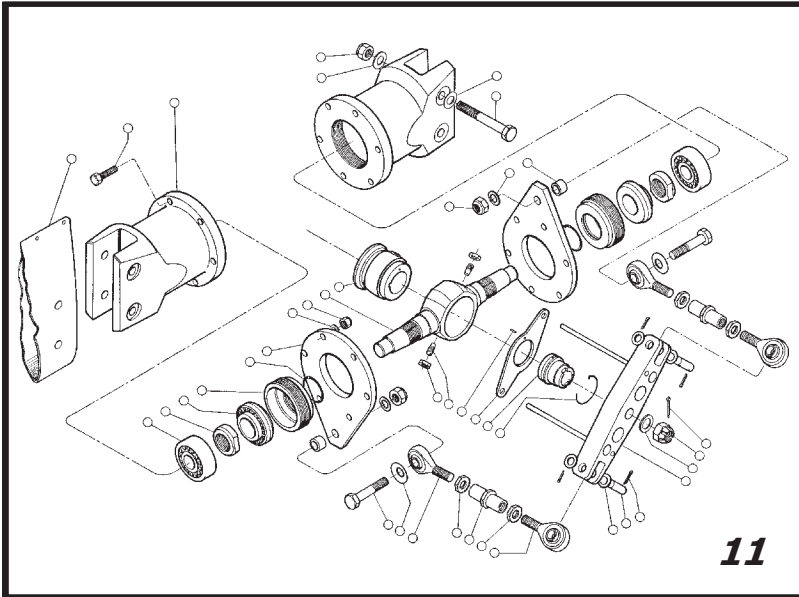


**FURIA HELICOPTER -**

**TAIL ROTOR PITCH CONTROL ASSY.**

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



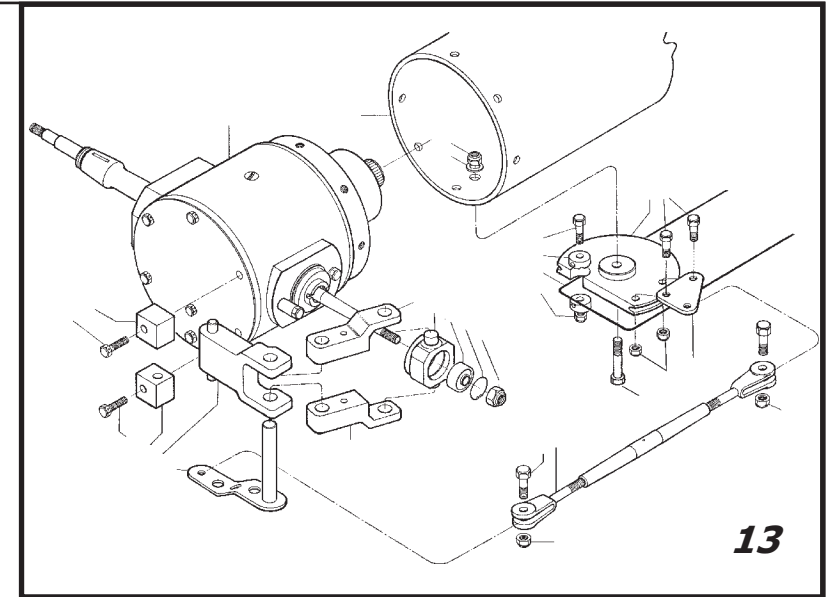


**11**

## TAIL ROTOR GEARBOX

Part List - page 12

- |                          |                           |
|--------------------------|---------------------------|
| 1) Pinion                | 15) Bolt AN3              |
| 2) Gasket                | 16) Nut C                 |
| 3) Bolt AN3              | 17) Gasket                |
| 4) Flat Washer           | 18) Bolt AN3              |
| 5) Bearing Cover (Large) | 19) Bearing Cover (Small) |
| 6) Bearing 16005         | 20) Gearbox Rear Cap      |
| 7) Pitch Control Axle    | 21) Flat Washer           |
| 8) Bolts AN3             | 22) Bolts AN4             |
| 9) Bolts AN3             | 23) Bearing               |
| 10) Gearbox Lid          | 24) Gasket                |
| 11) Gearbox Housing      | 25) Nut D                 |
| 12) Oil Screws           | 26) Steel Bushing         |
| 13) Bearing EE5          | 27) Gear                  |
| 14) Bushing Spacer       |                           |

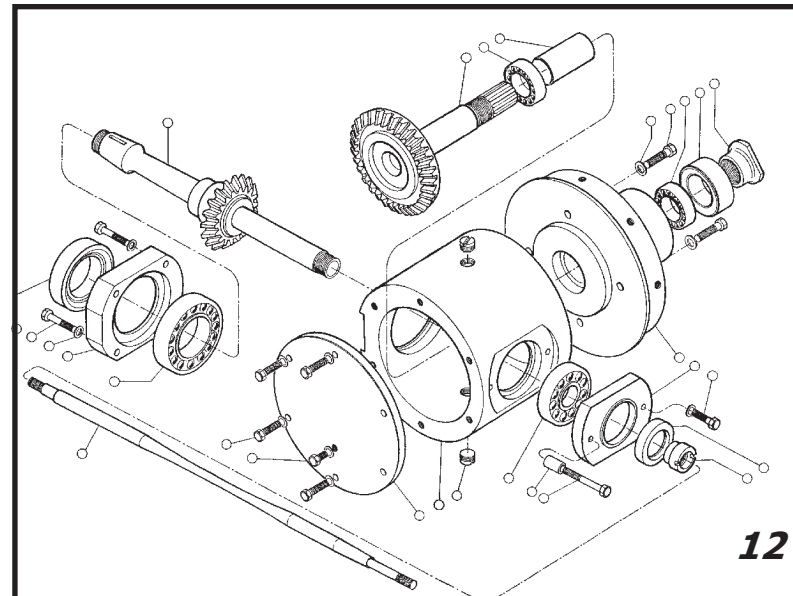


**13**

## TAIL ROTOR ASSEMBLY

Part List - page 11

- |                              |                          |
|------------------------------|--------------------------|
| 1) Tail Rotor Blade          | 21) Conical Washer       |
| 2) Bolt AN3                  | 22) Rod End Male HMLVV-4 |
| 3) Tail Blade Grip           | 23) Nut AN316-4R         |
| 4) Bearing 6200              | 24) Control Linkage      |
| 5) Axle Nut                  | 25) Nut AN316-4R         |
| 6) Bearing FAG 525277        | 26) Rod End Male HMVV4   |
| 7) Blade Grip Nut            | 27) Flat Washer          |
| 8) O'Ring                    | 28) Clevis Pin           |
| 9) Pitch Control Horn        | 29) Cotter Pin           |
| 10) Flat Washer              | 30) Pitch Control Head   |
| 11) Elastic Stop Nut         | 31) Flat Washer          |
| 12) Axle                     | 32) Castle Nut           |
| 13) Tail Rotor Hub           | 33) Cotter Pin           |
| 14) Axle Pivot Nut           | 34) Elastic Stop Nut     |
| 15) Axle Pivot Screw         | 35) Flat Washer          |
| 16) Pin                      | 36) Bushing              |
| 17) Pitch Control Head Guide | 37) Bolt AN4             |
| 18) Retainer Nut             | 38) Flat Washer          |
| 19) Safety Wire Spring       | 39) Flat Washer          |
| 20) Bolt AN4                 | 40) Elastic Stop Nut     |



**12**

## TAIL ROTOR PITCH CONTROL ASSEMBLY

Part List - Page 13

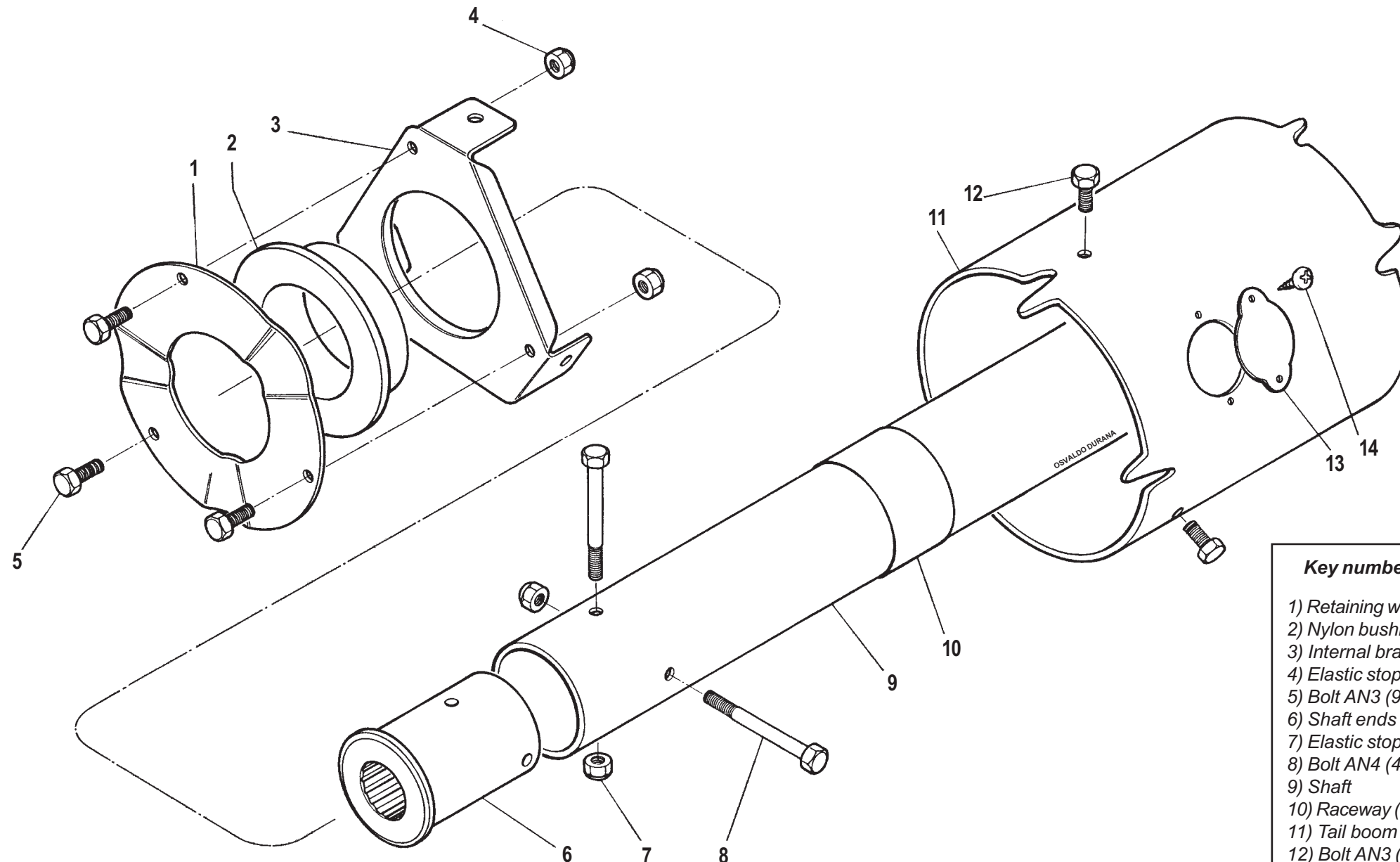
- |  |  |
|--|--|
| 1) Tail Rotor Gearbox                  | 18) Bolt AN3   |
| 2) Scissors Hinge                      | 19) Control Pulley                                   |
| 3) Bolt AN3H                           | 20) Bolt AN3   |
| 4) Scissors B and Axle                 | 21) Flat Washer                                      |
| 5) Lever                               | 22) Elastic Stop Nut AN365-428                       |
| 6) Scissors A                          | 23) Tail Boom  |
| 7) Bearing Housing                     | Not Shown: Bolts AN3H to attach gearbox to tail boom |
| 8) Bearing                             |  |
| 9) Internal Snap Ring                  |  |
| 10) Self Locking Castle Nut/Cotter Pin |  |
| 11) Bolt AN3                           |  |
| 12) Turnbuckle Assy. AN150-16L         |  |
| 13) Elastic Stop Nut AN364-1032        |  |
| 14) Pulley Arm                         |  |
| 15) Bolt AN4                           |  |
| 16) Control Cable Galvanized 1/8"-7x19 |  |
| 17) Cable Clamp                        |  |

## FURIA HELICOPTER -

PART LIST - PAGES 11-12-13

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**14**

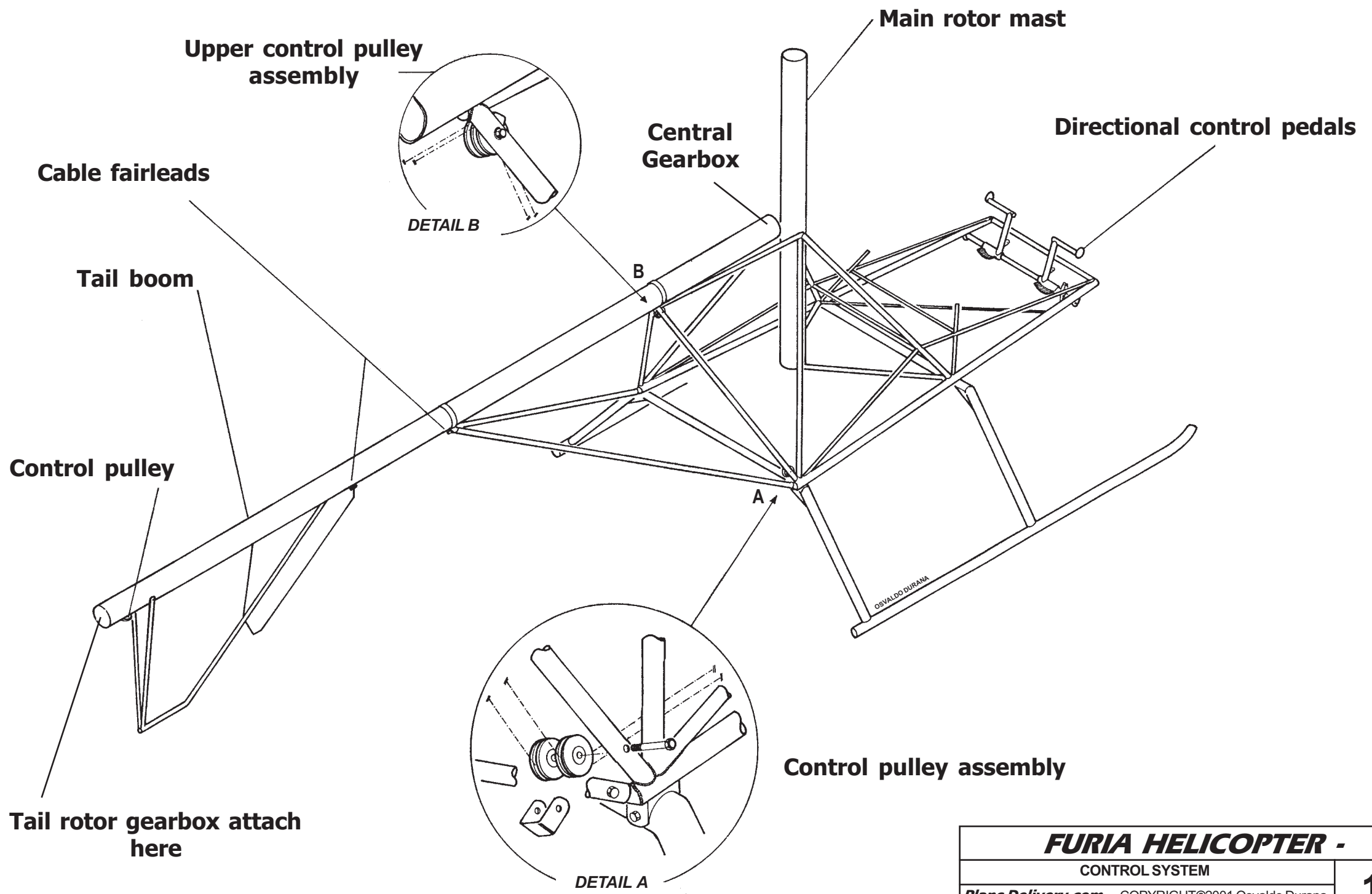


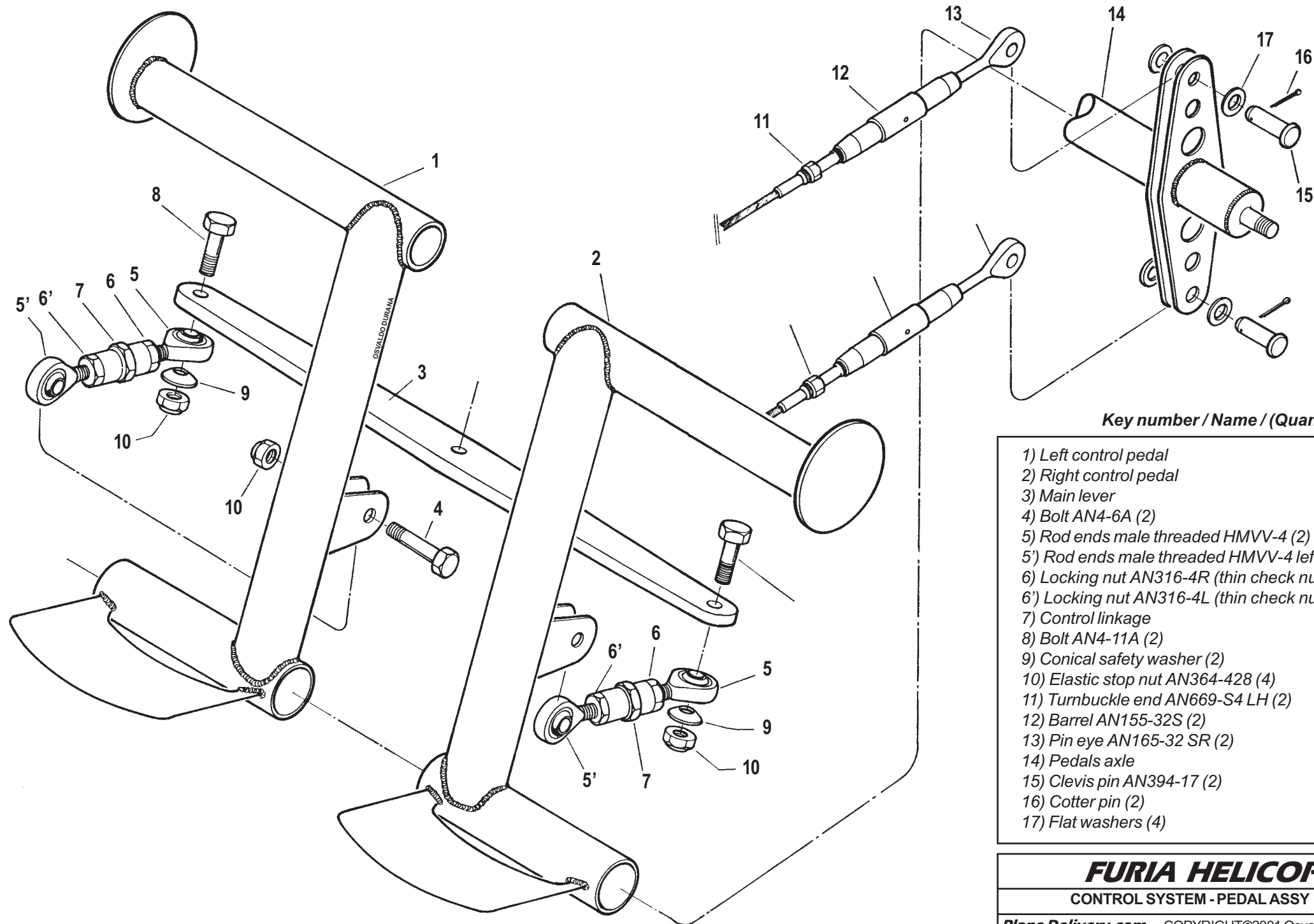
**Key number / Name / (Quantity)**

- 1) Retaining washer (3)
- 2) Nylon bushing (3)
- 3) Internal bracket (3)
- 4) Elastic stop nut AN365-1032 (18)
- 5) Bolt AN3 (9)
- 6) Shaft ends (2)
- 7) Elastic stop nut AN364-428 (4)
- 8) Bolt AN4 (4)
- 9) Shaft
- 10) Raceway (3)
- 11) Tail boom tube
- 12) Bolt AN3 (9)
- 13) Inspection hole cover (3)
- 14) Sheet metal screws (6)

**FURIA HELICOPTER -**

**TAIL BOOM SHAFT ASSY**





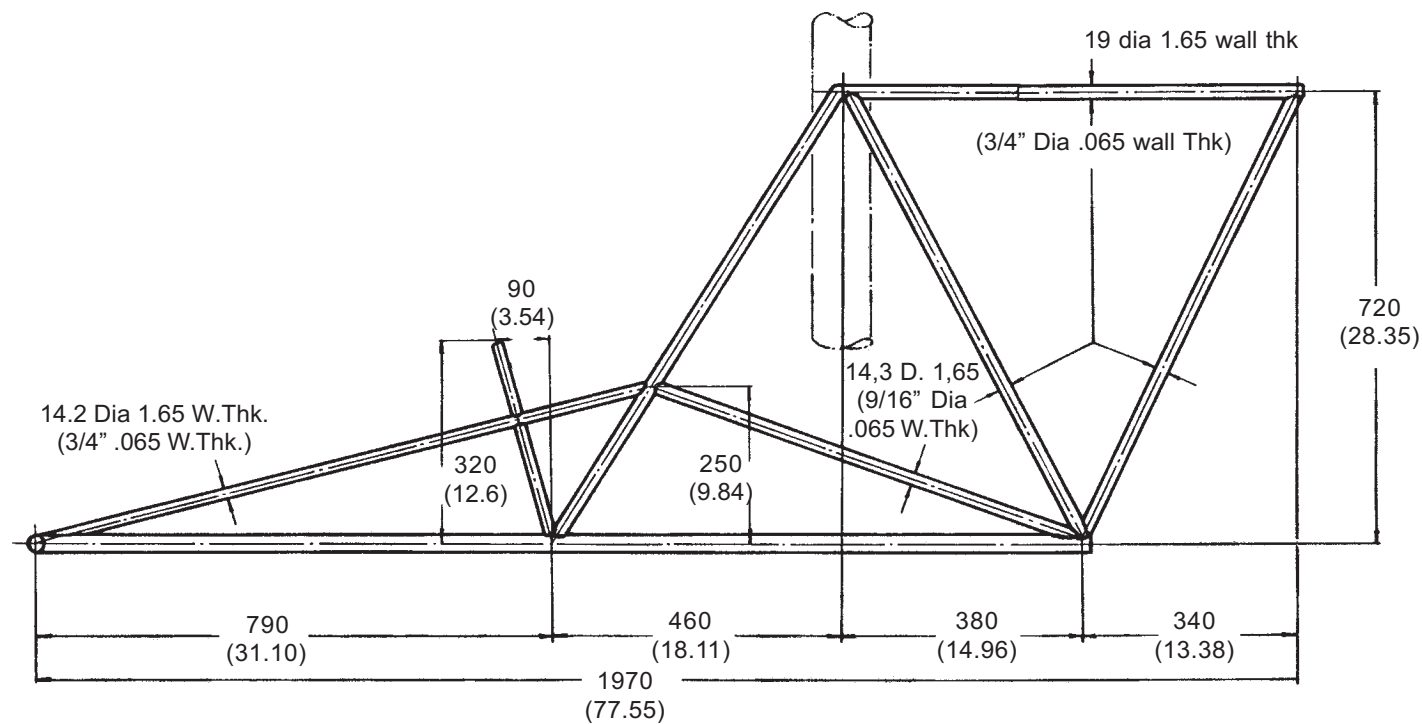
**Key number / Name / (Quantity)**

- 1) Left control pedal
- 2) Right control pedal
- 3) Main lever
- 4) Bolt AN4-6A (2)
- 5) Rod ends male threaded HMVV-4 (2)
- 5') Rod ends male threaded HMVV-4 left hand thd. (2)
- 6) Locking nut AN316-4R (thin check nut) (2)
- 6') Locking nut AN316-4L (thin check nut) (2)
- 7) Control linkage
- 8) Bolt AN4-11A (2)
- 9) Conical safety washer (2)
- 10) Elastic stop nut AN364-428 (4)
- 11) Turnbuckle end AN669-S4 LH (2)
- 12) Barrel AN155-32S (2)
- 13) Pin eye AN165-32 SR (2)
- 14) Pedals axle
- 15) Clevis pin AN394-17 (2)
- 16) Cotter pin (2)
- 17) Flat washers (4)

**FURIA HELICOPTER -**

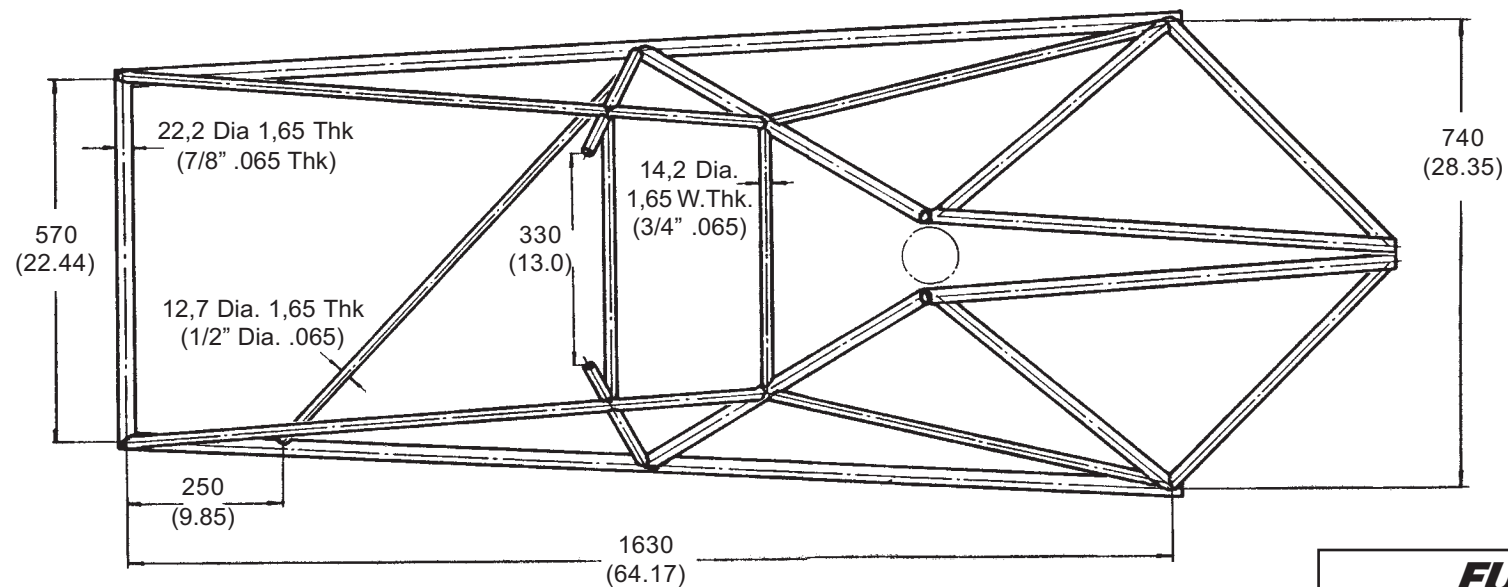
CONTROL SYSTEM - PEDAL ASSY

# SIDE VIEW



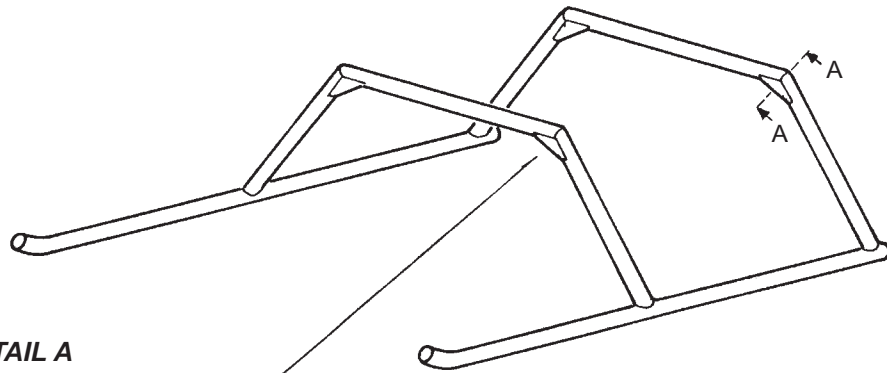
Material : 4130 Steel tubing

# TOP VIEW

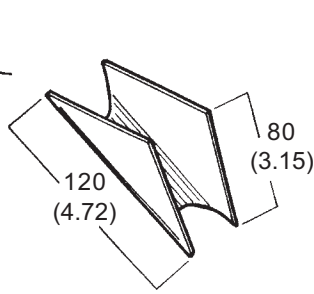




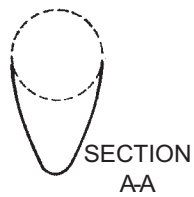
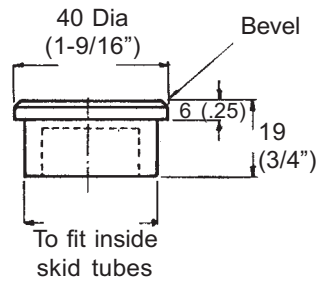
**PERSPECTIVE VIEW**



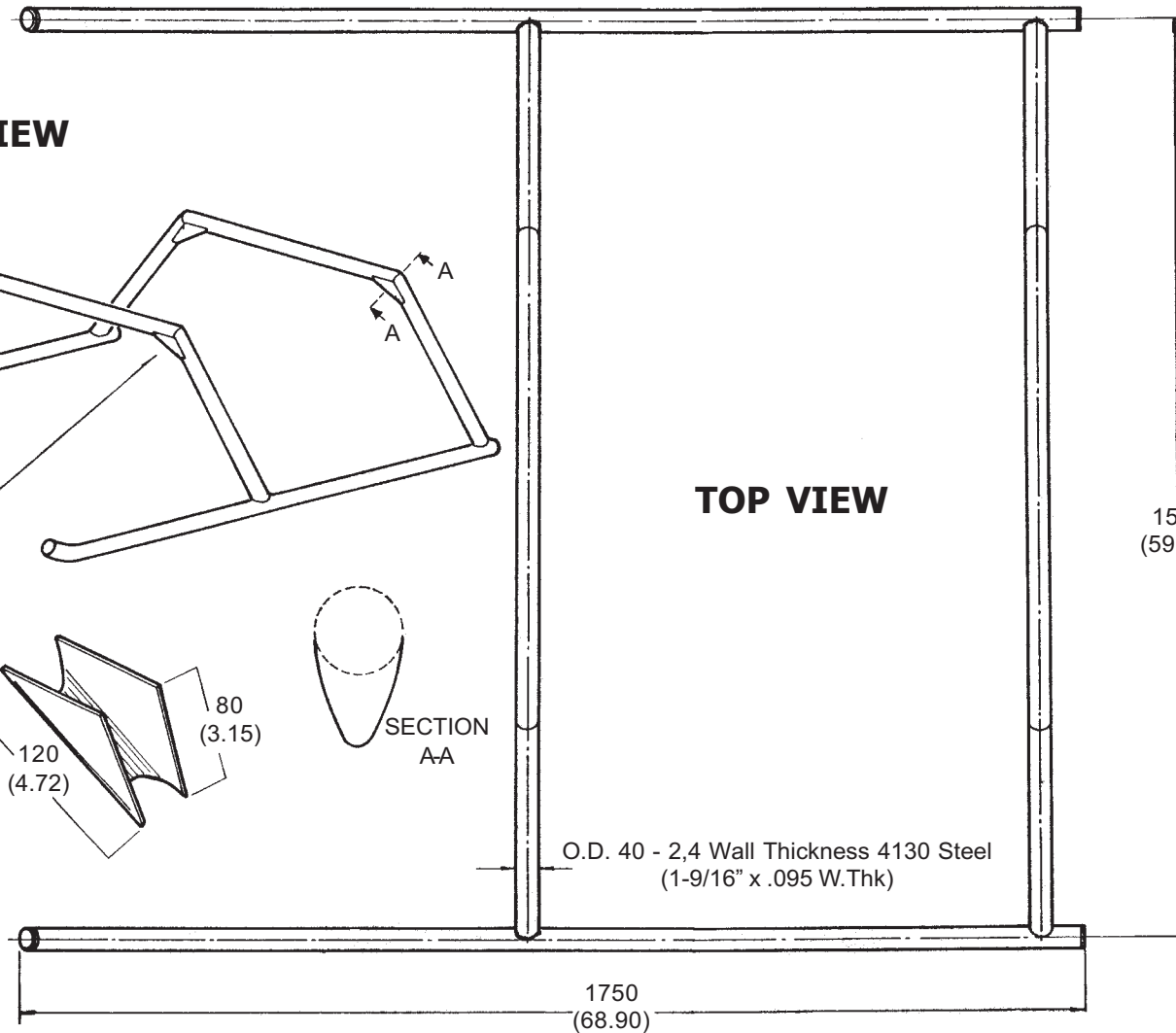
**DETAIL A**  
Reinforcements  
4130 Steel 2,3 (.090)



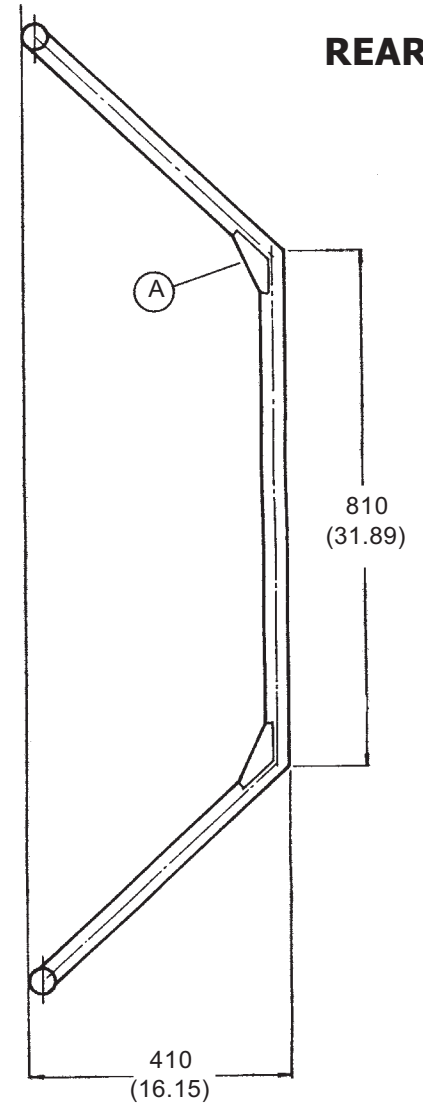
**DETAIL B**  
Skids Caps  
Mat: Aluminum 4 Req'd



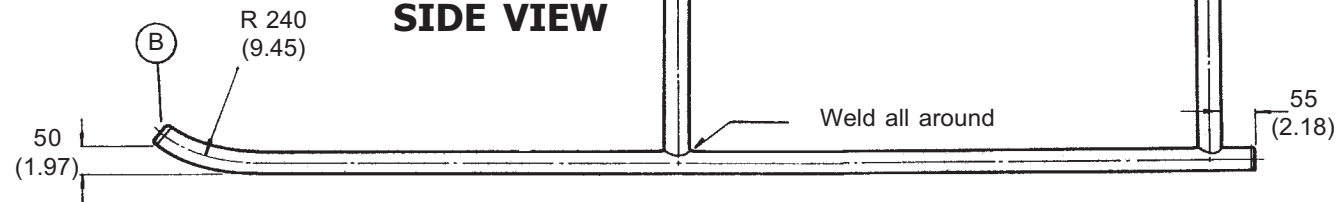
**TOP VIEW**



**REAR VIEW**



**SIDE VIEW**



**FURIA HELICOPTER -**

LANDING GEAR SKIDS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**DETAIL A** Rotor mast attachment brackets

Inner ring  
Mat: Steel (.198)  
W.Thk

Mat: 4130 Steel  
2 (.080) Thk  
Lenght 40 (1.57)

Pop Rivet ring in  
proper position,  
then drill and tap  
according brackets

Drill and tap for AN4-H  
Bolts 1/4" - 28  
USE SAFETY WIRE

**Main rotor mast**

**Tail boom**

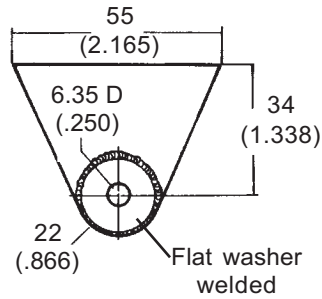
**Bracket B**

**Bracket A**

**Tail skid**

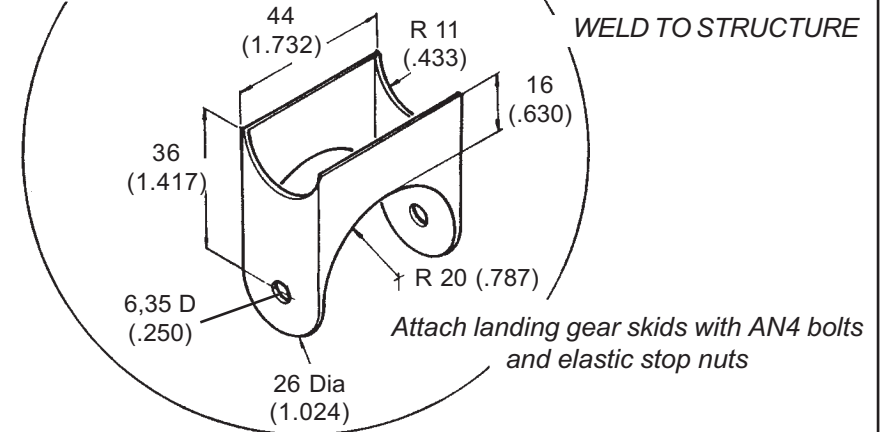
**DETAIL D**

Pedals brackets mat: 4130 Steel 2  
(.080) Thk 2 req'd



**DETAIL C**

Landing gear skid seat  
Mat: 4130 Steel 2 (.080) Thk  
4 req'd



**DETAIL B**

Rotor mast lower bracket  
8 (.315)

Attach to bellcranks ring with AN5H bolts

2) 4130 Steel tubes  
3/4" O.D.  
.065 wall thk

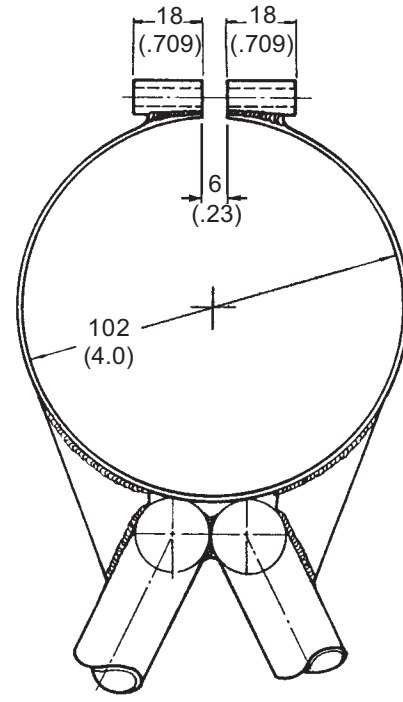
USE SAFETY  
WIRE

**FURIA HELICOPTER -**

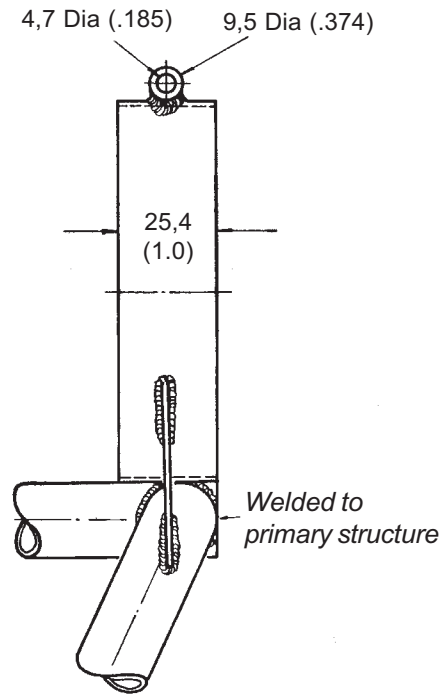
PRIMARY STRUCTURE

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

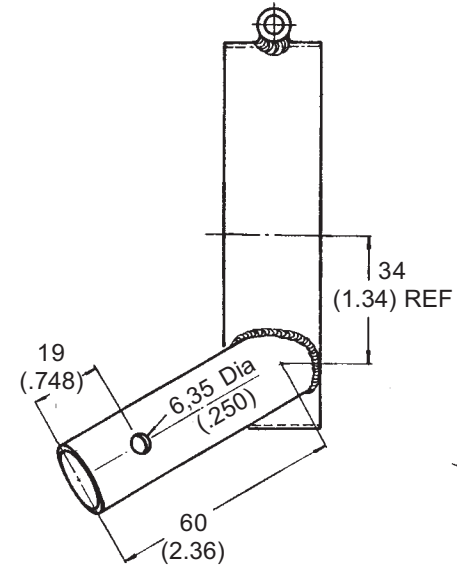
**Bracket A**



REAR VIEW

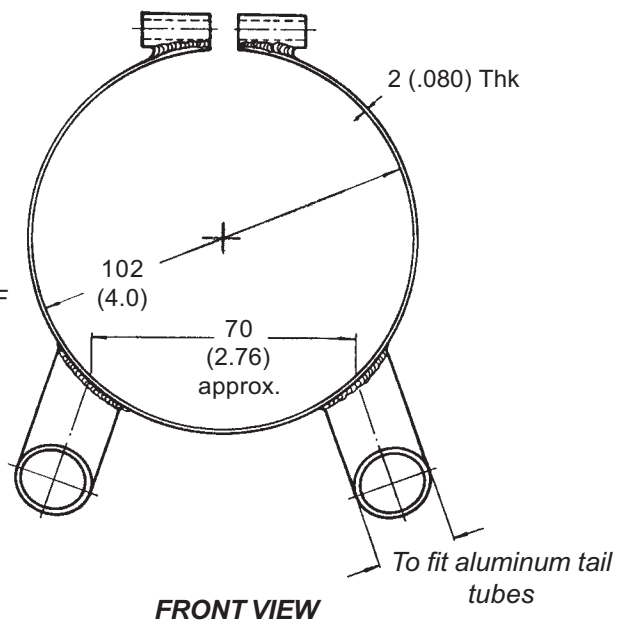


SIDE VIEW



SIDE VIEW

**BRACKET B**



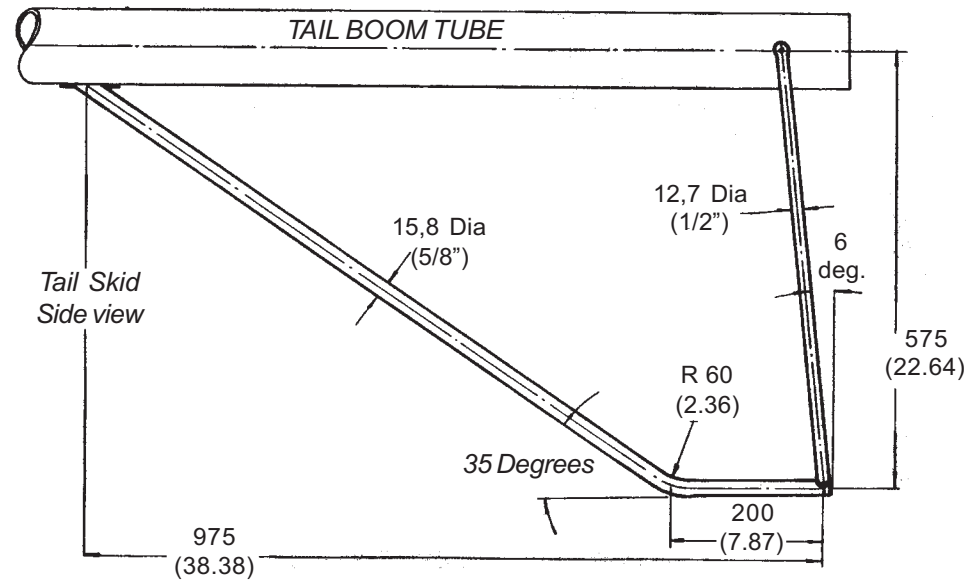
FRONT VIEW

**TAIL BOOM BRACKETS**

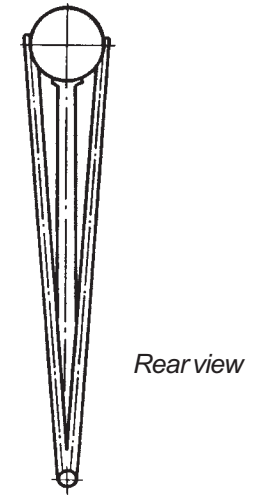
Material: 4130 Steel

**TAIL SKID (Tail rotor protector)**

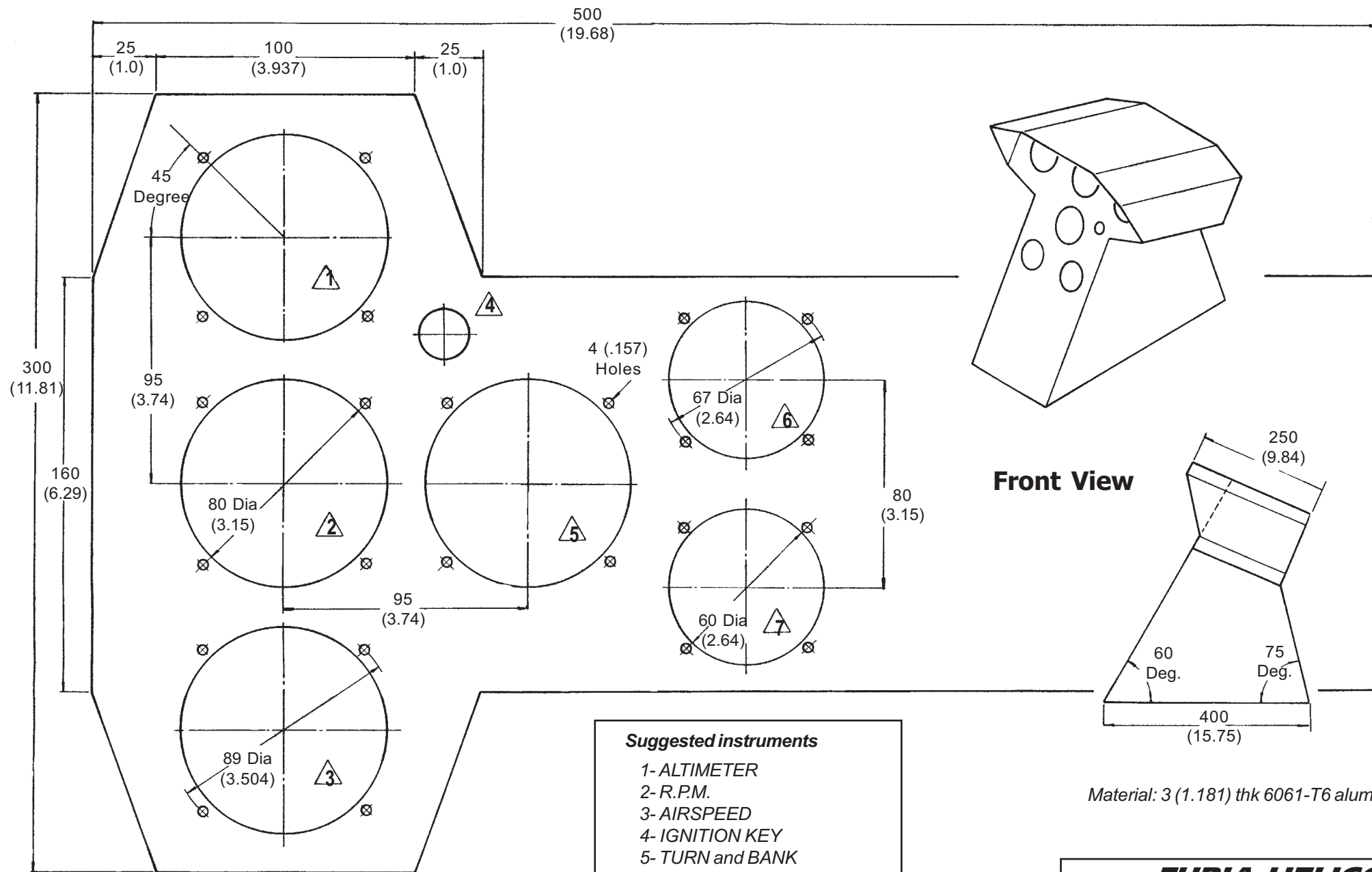
Material: 4130 steel tubes 0,8 (.035) Wall Thickness



Tail Skid Side view



Rearview



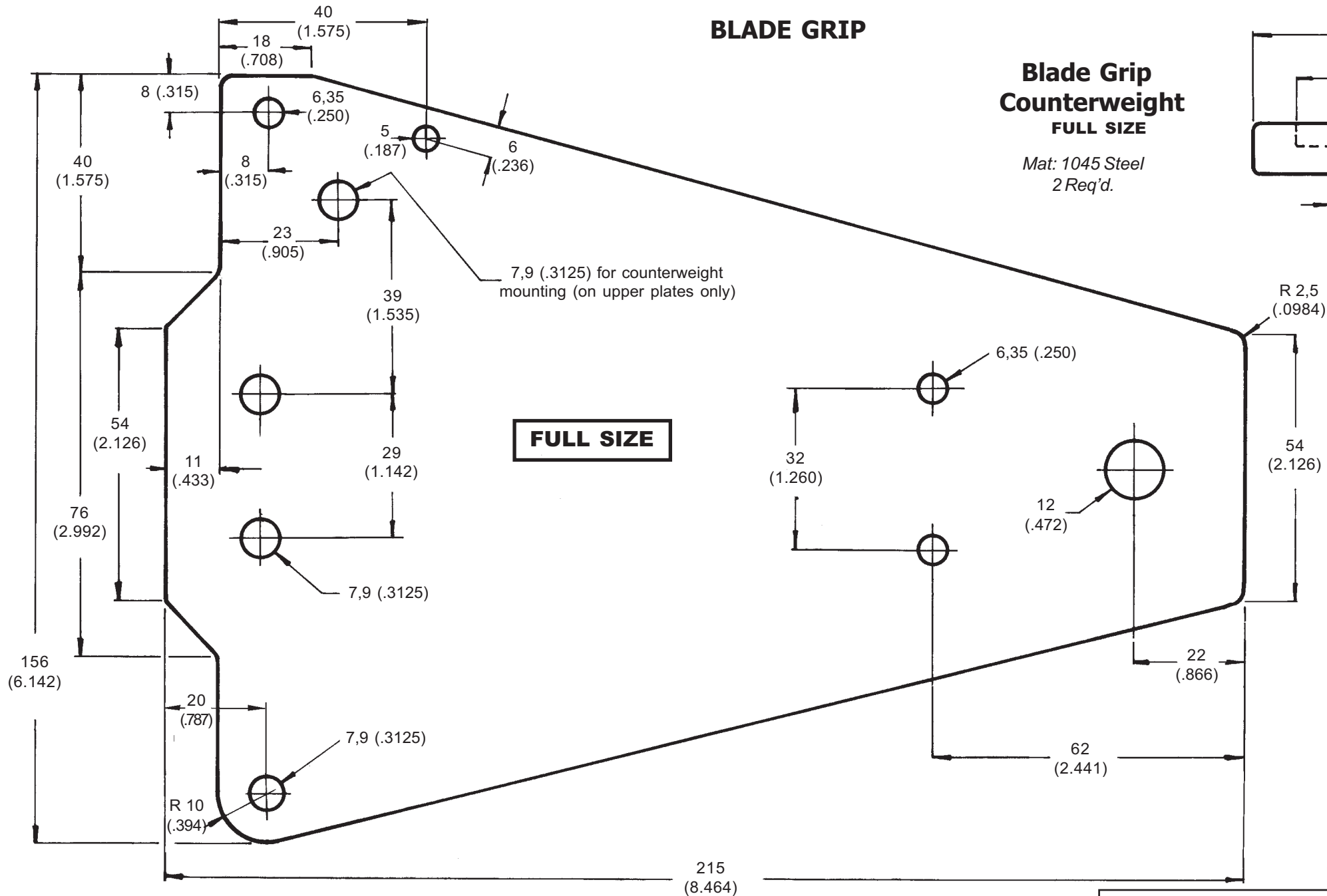
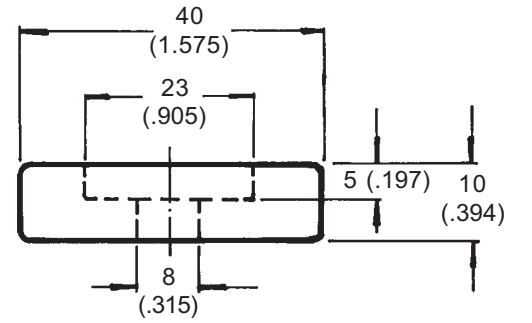
- Suggested instruments**
- 1- ALTIMETER
  - 2- R.P.M.
  - 3- AIRSPEED
  - 4- IGNITION KEY
  - 5- TURN and BANK
  - 6- CYLINDER HEAD TEMP
  - 7- EXHAUST GAS TEMP

Material: 3 (1.181) thk 6061-T6 aluminum

# BLADE GRIP

## Blade Grip Counterweight FULL SIZE

Mat: 1045 Steel  
2 Req'd.



**FULL SIZE**

## Bushing FULL SIZE

Mat: Steel tube  
O.D. 1/2" I.D. 5/16" - (2) Req'd

# FURIA HELICOPTER -

MAIN ROTOR COMPONENTS

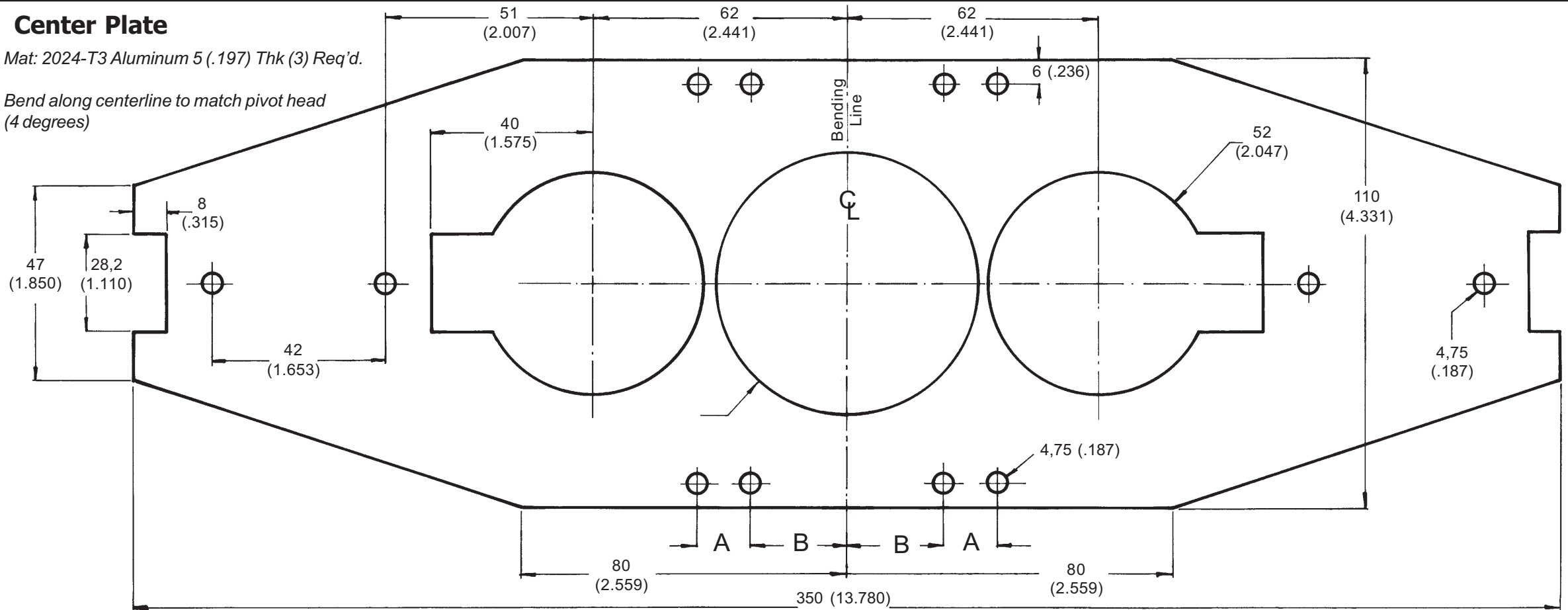
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



# Center Plate

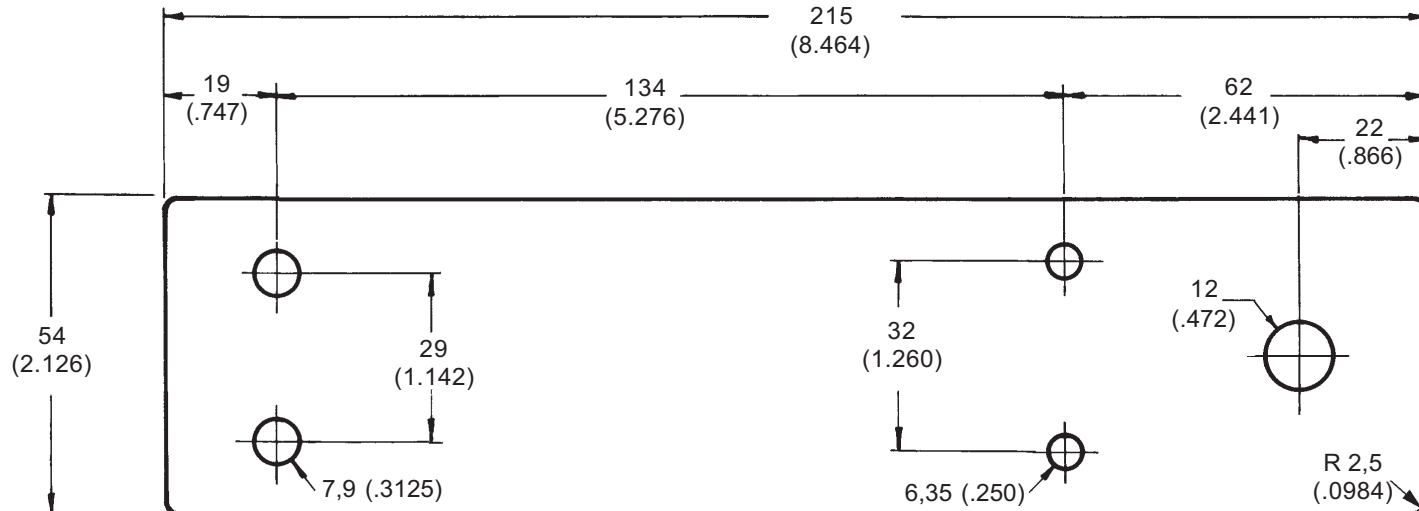
Mat: 2024-T3 Aluminum 5 (.197) Thk (3) Req'd.

Bend along centerline to match pivot head  
(4 degrees)



# Reinforcement Strap

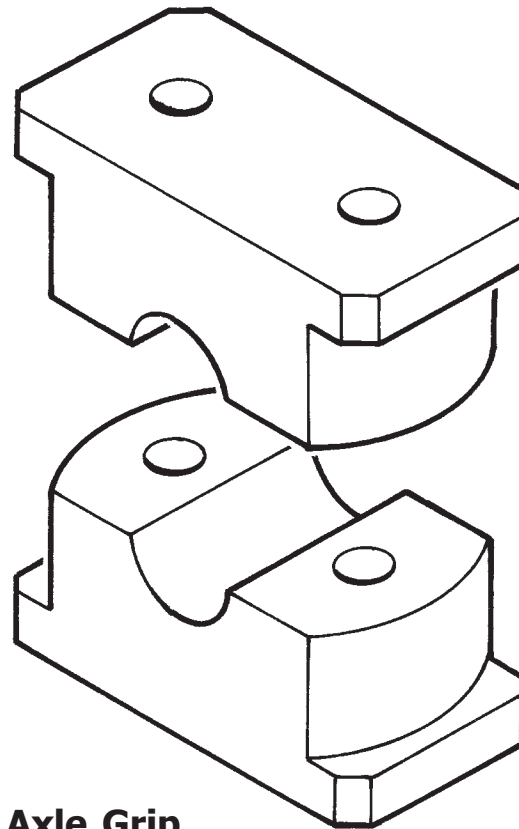
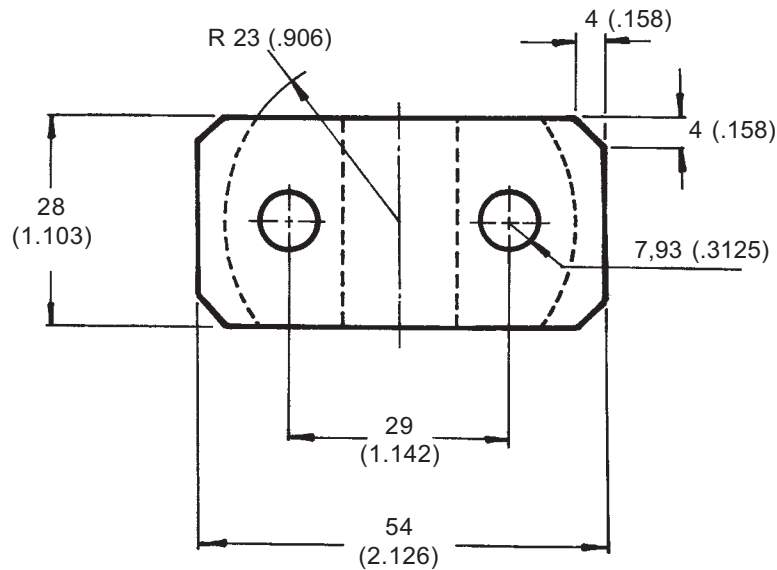
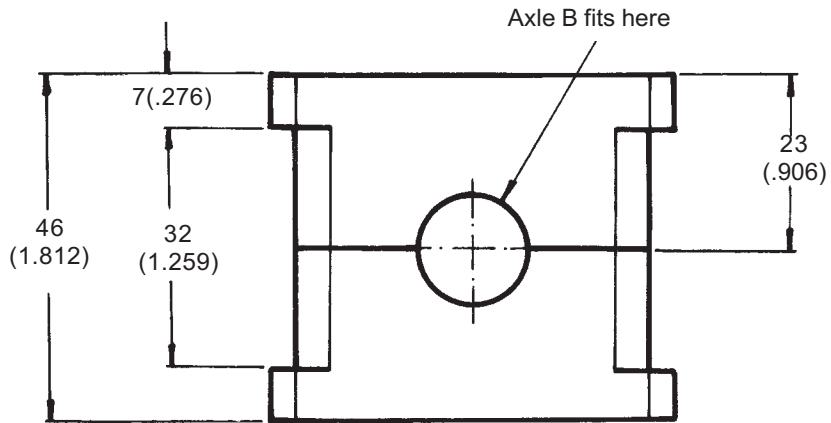
Mat: 2024-T3 Aluminum  
5 (.197) Thk (4) Req'd.



**FURIA HELICOPTER -**

MAIN ROTOR COMPONENTS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



**Axle Grip**

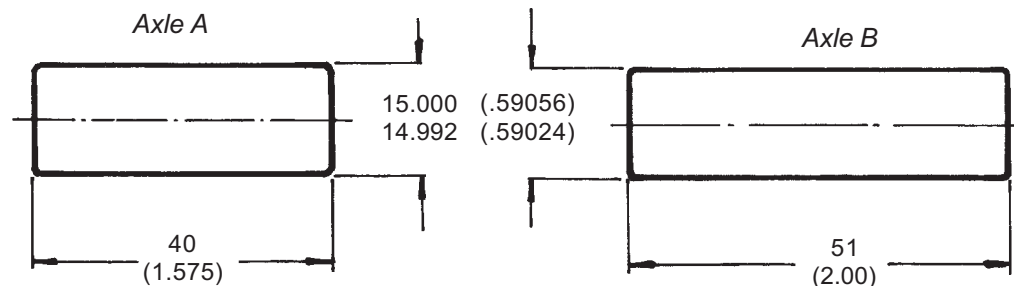
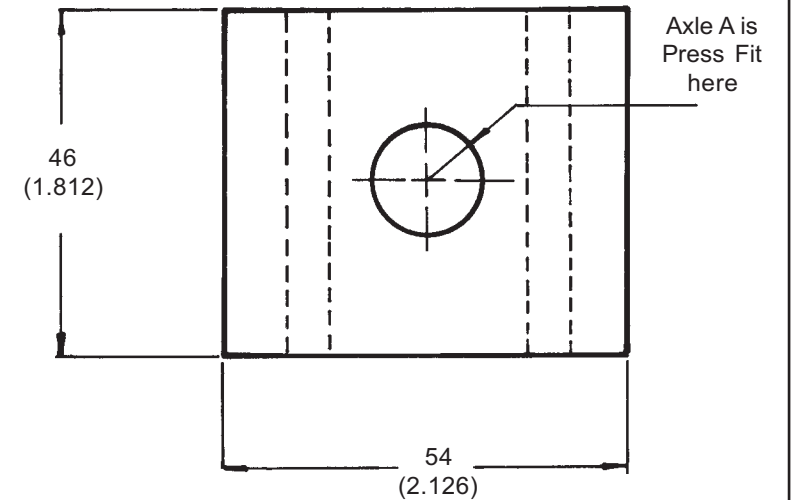
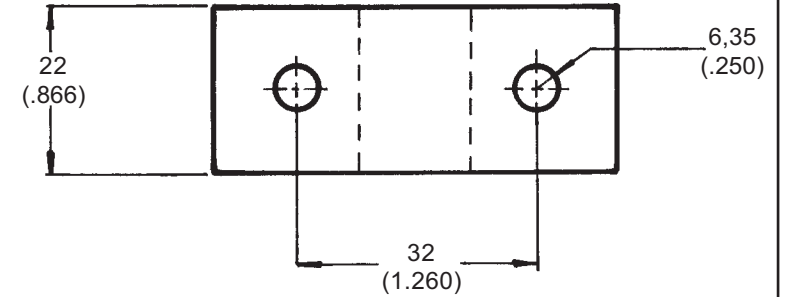
**FULL SIZE**

Mat: 2024-T3 Aluminum  
(2) Req'd.

**Axle Housing**

**FULL SIZE**

Mat: 2024-T3 Aluminum  
(2) Req'd.



**Axles**

**FULL SIZE**

(2) of each req'd.  
Mat: 8620 Steel  
Heat Treatment: Case hardening  
Minimum surface hardness:  
58 Rockwell C  
Effective case depth: 0,3 (.012)  
(after finish grinding)

**FURIA HELICOPTER -**

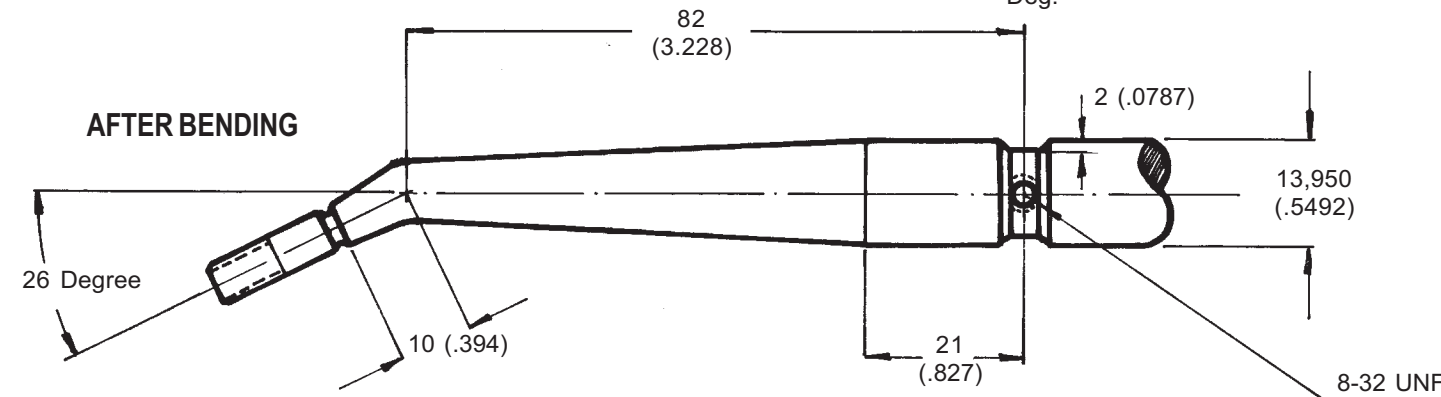
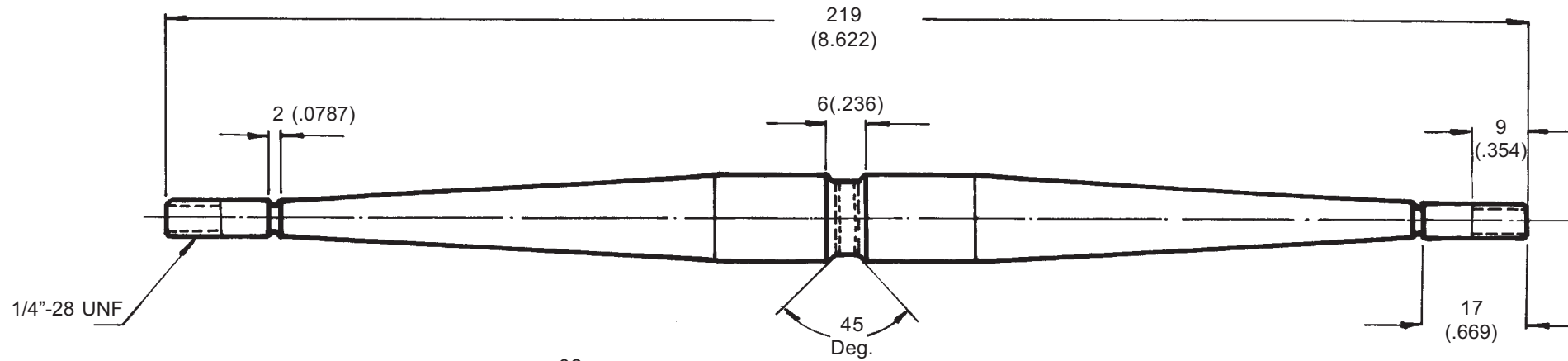
MAIN ROTOR COMPONENTS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

# BLADE CONTROL MASTER HORN

Mat: 1045 Steel  
(1) req'd

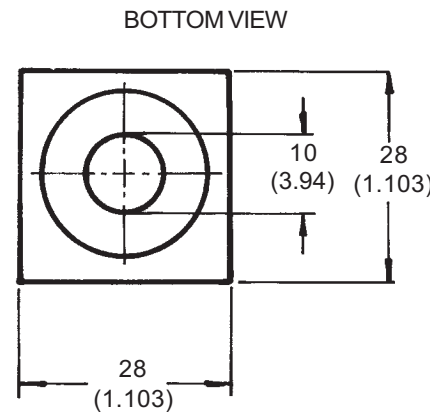
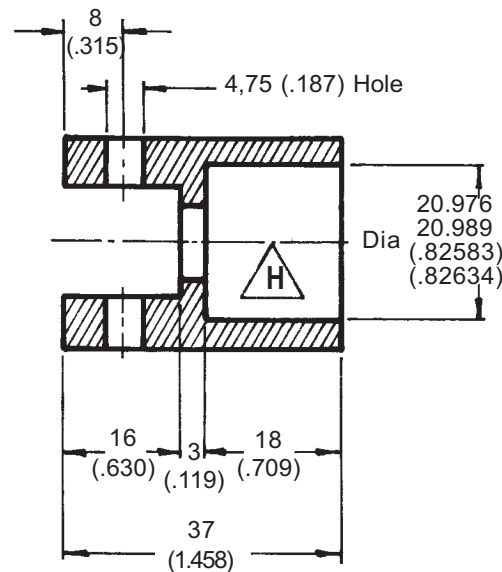
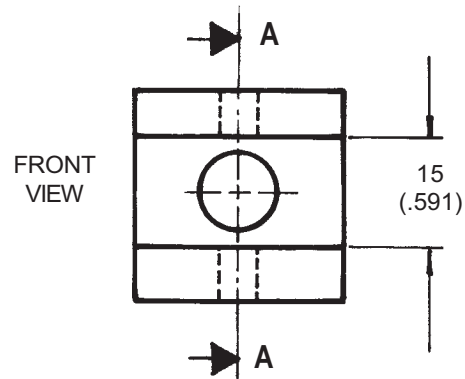
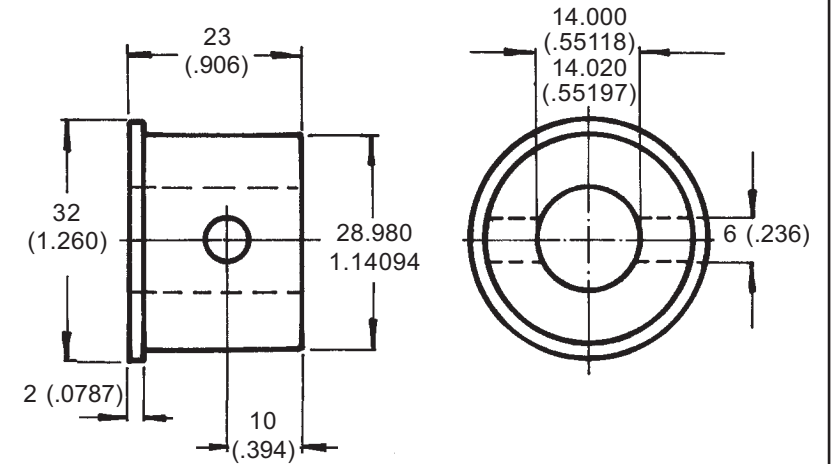
**FULL SIZE**



# BUSHING

Mat: Steel (1) Req'd.

**FULL SIZE**



# CLAW

**FULL SIZE**

Mat: 4140 Steel  
(4) Req'd.

# H Bearing housing

Shell type bearings are installed here with the aid of a press

# FURIA HELICOPTER -

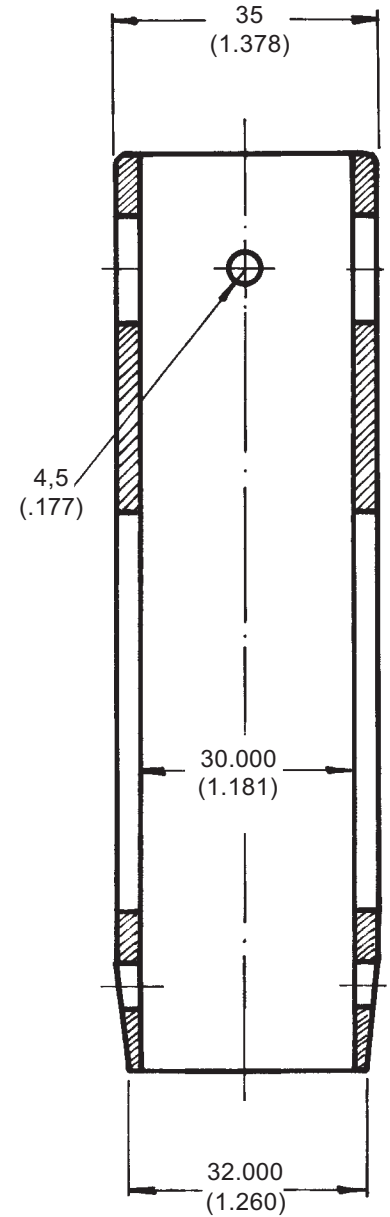
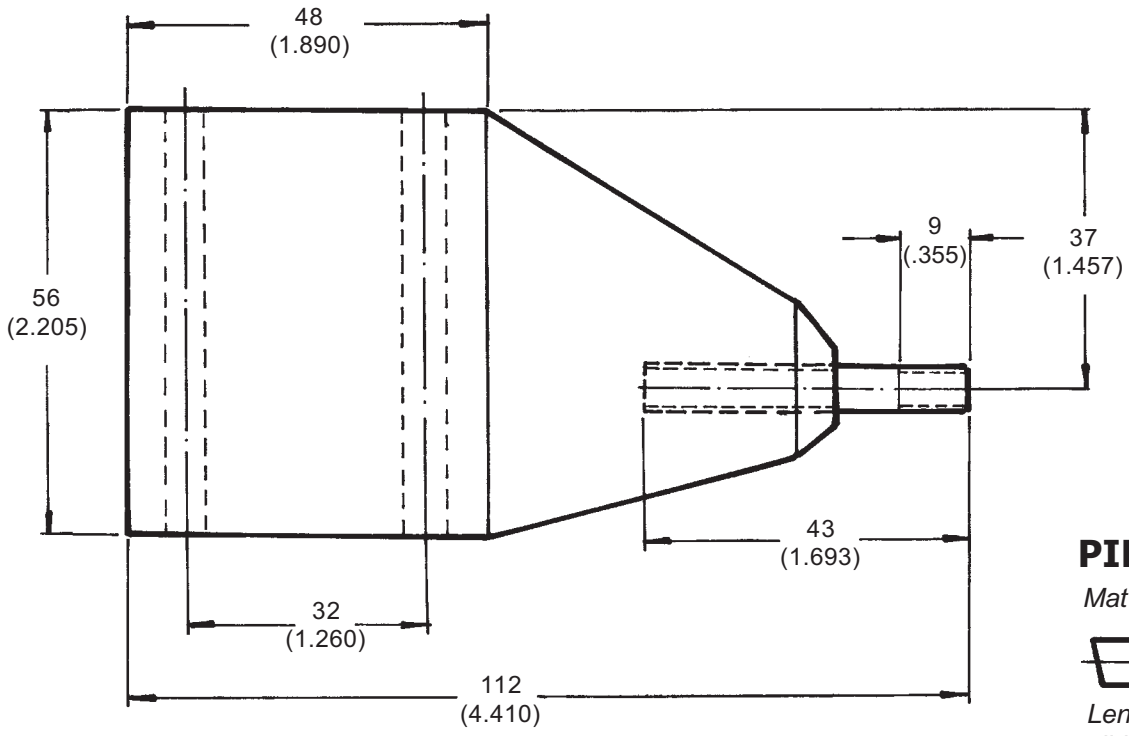
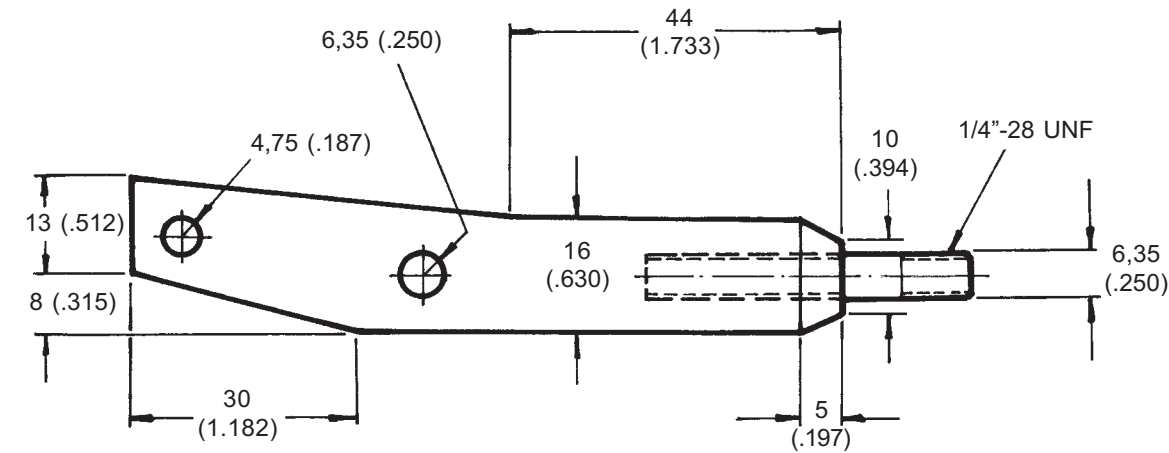
MAIN ROTOR COMPONENTS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

# BLADE CONTROL HORN

Mat: 2024-T3 Aluminum (2) req'd

**FULL SIZE**



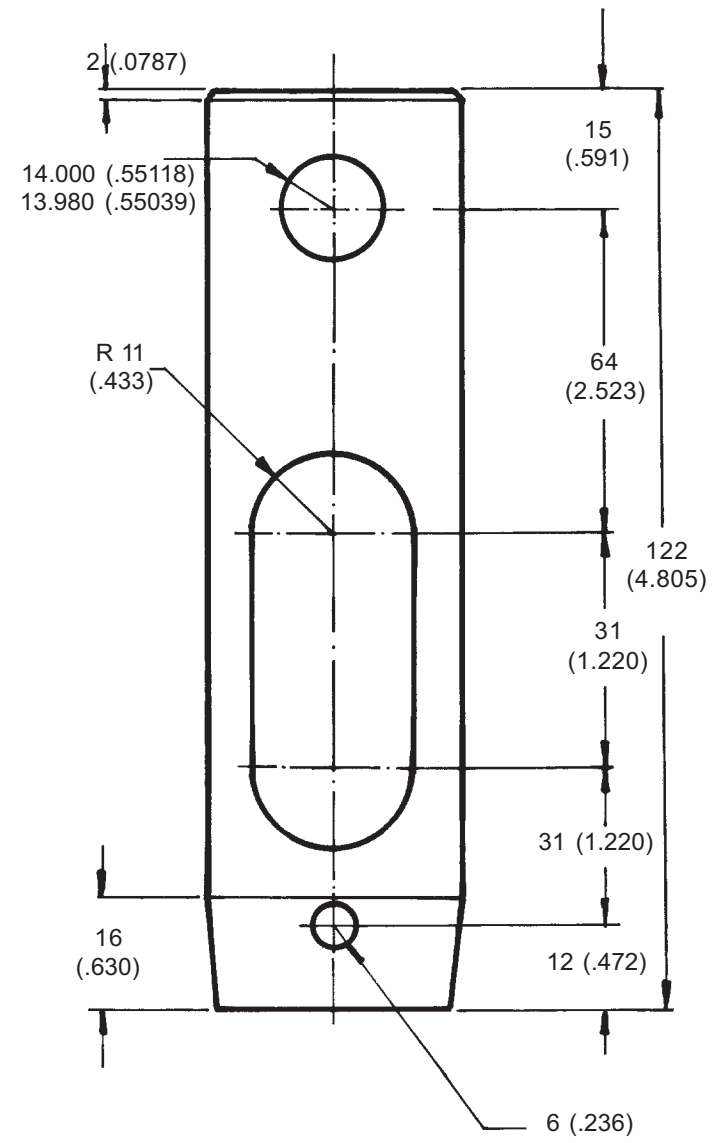
## PIN

Mat Steel (1) req'd.



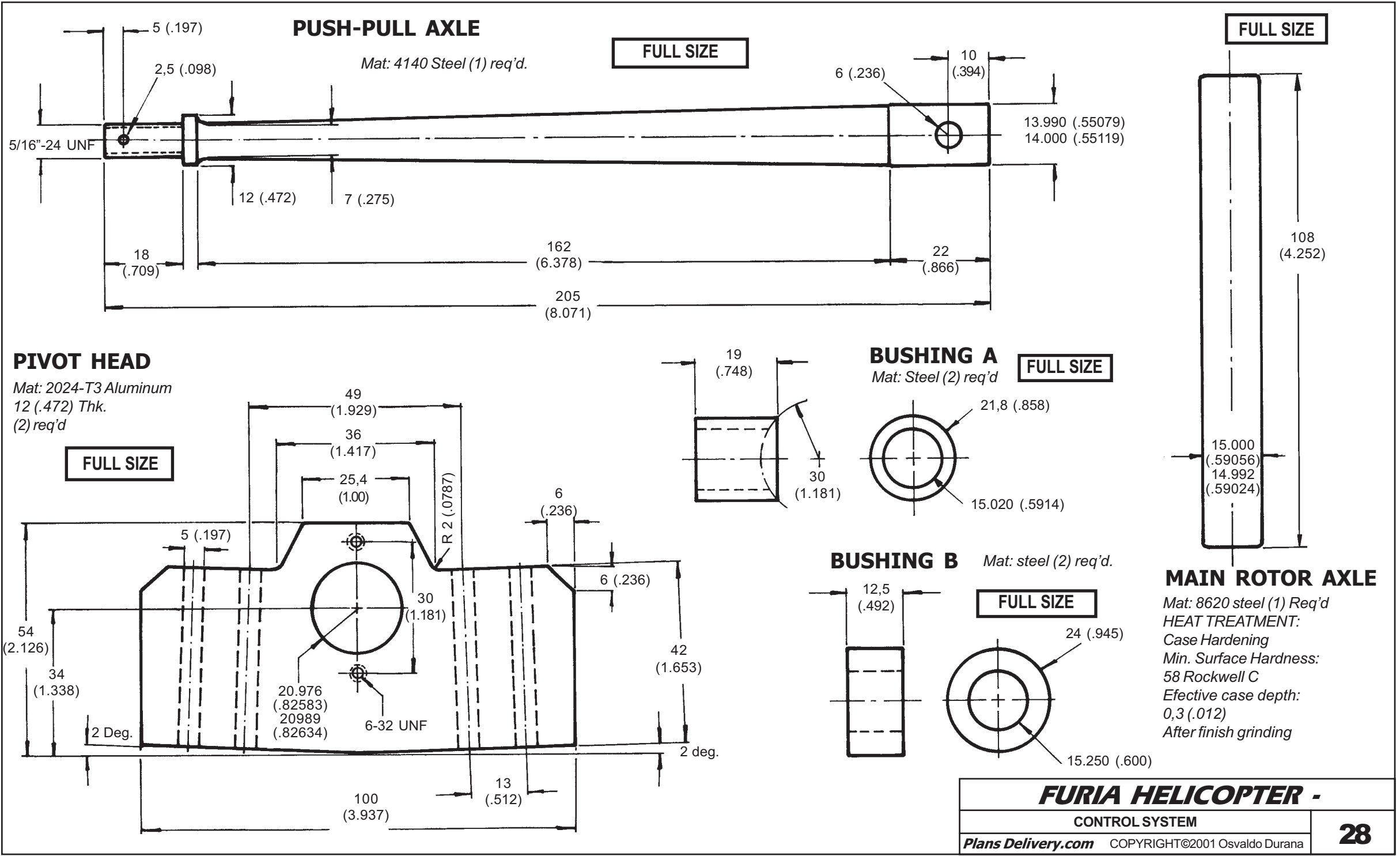
## CONTROL SLIDING AXLE

Mat: 41410 Steel (1) req'd.



**FULL SIZE**

<b>FURIA HELICOPTER -</b>	
MAIN ROTOR/CONTROL SYSTEM	
Plans Delivery.com	COPYRIGHT©2001 Osvaldo Durana
<b>27</b>	



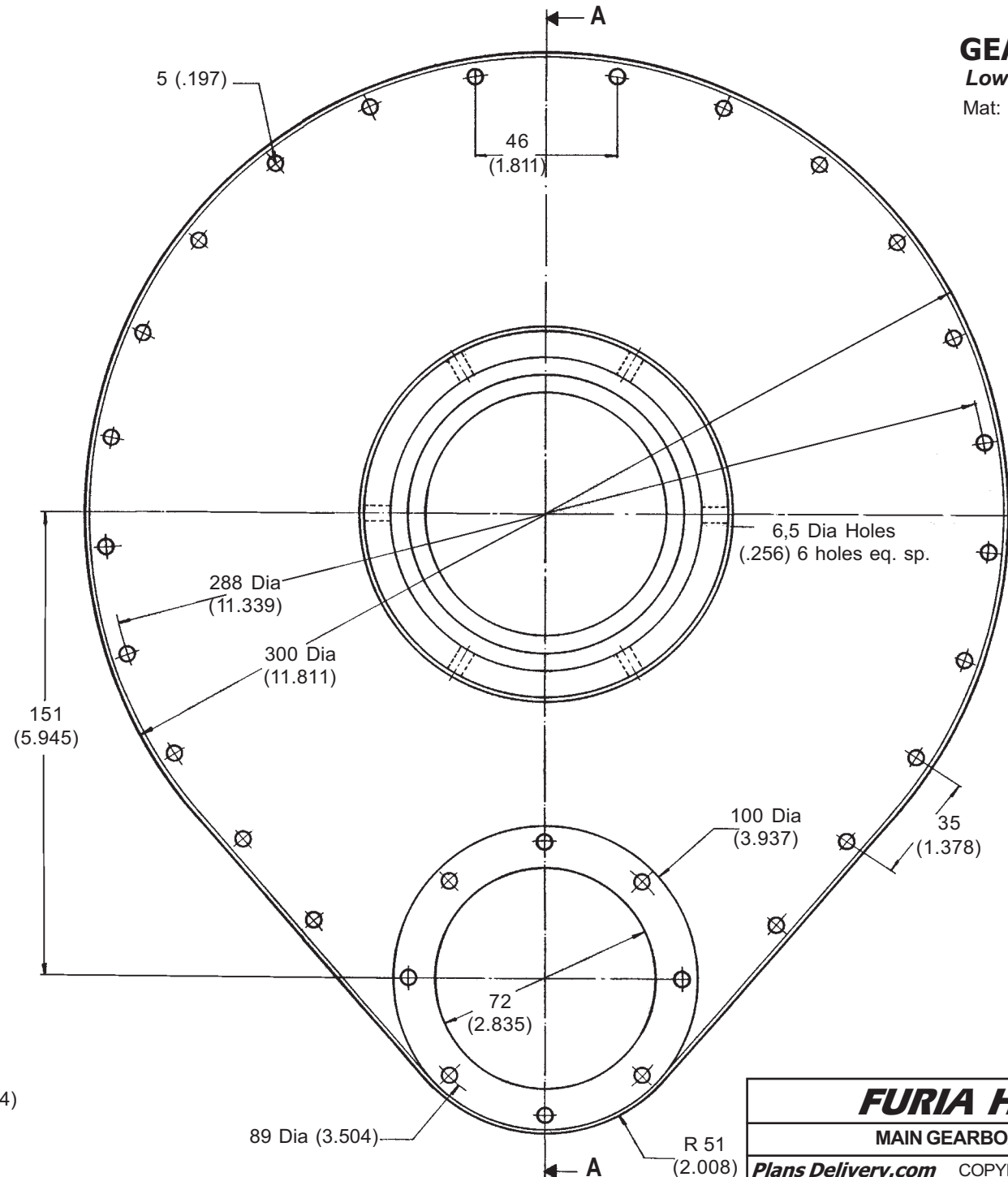
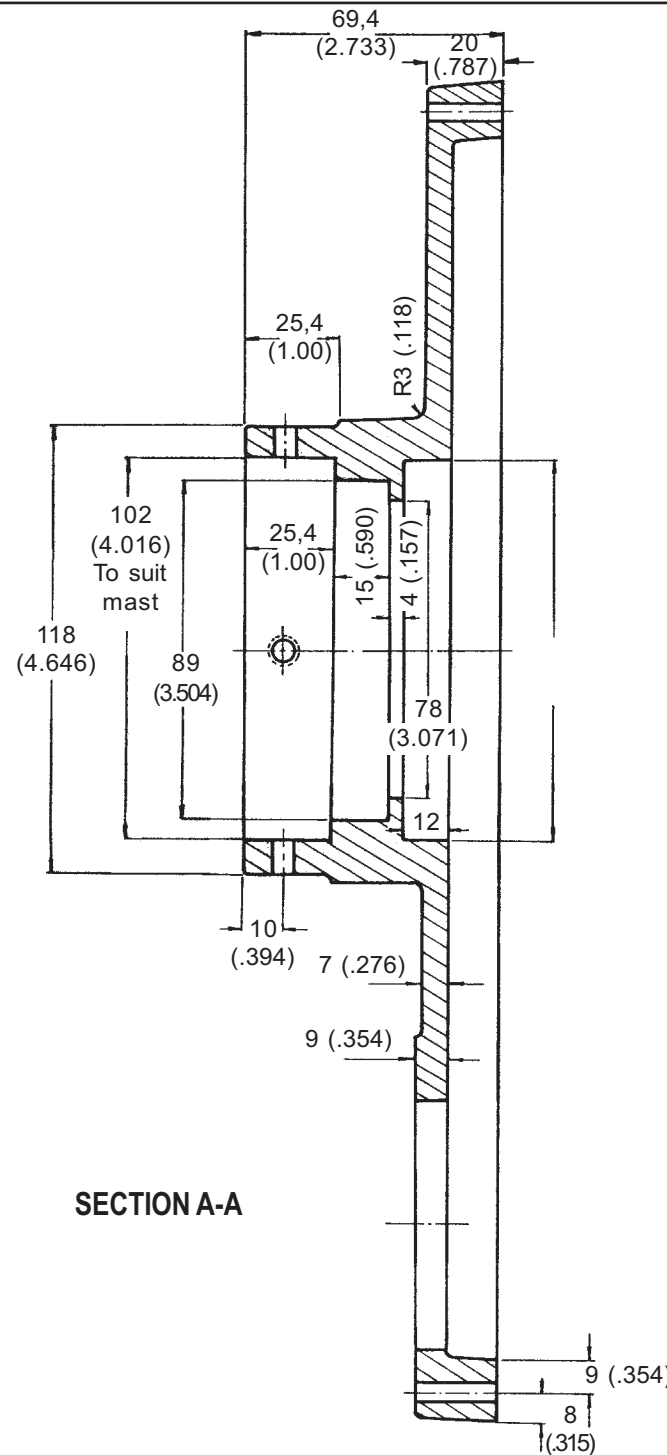




# GEARBOX HOUSING

Lower Half

Mat: Aluminum casting



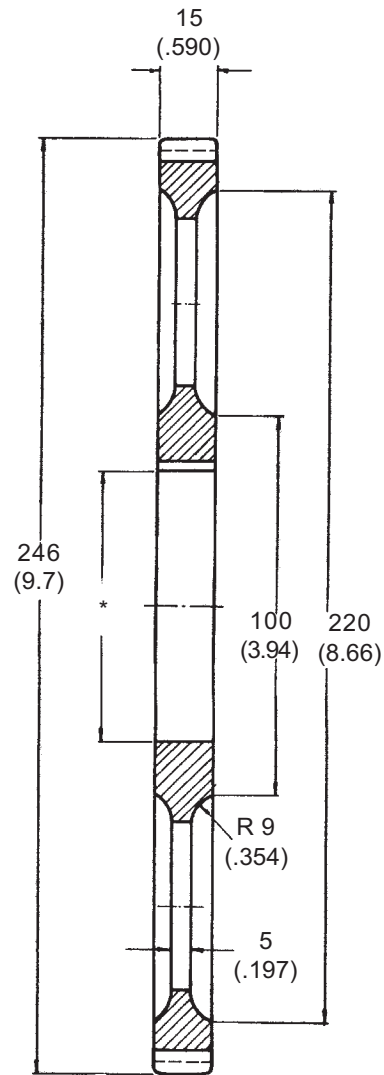
**FURIA HELICOPTER -**

MAIN GEARBOX HOUSING

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

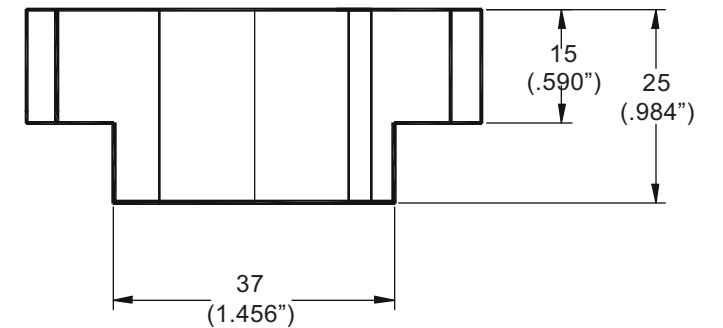
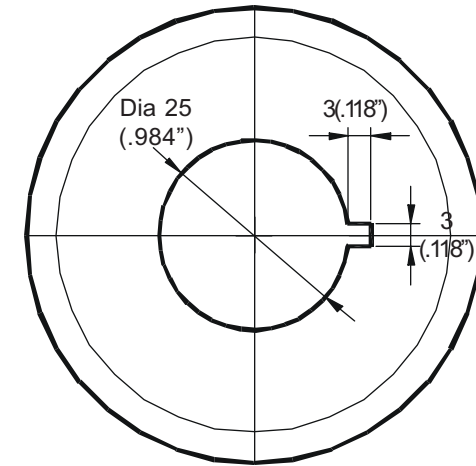
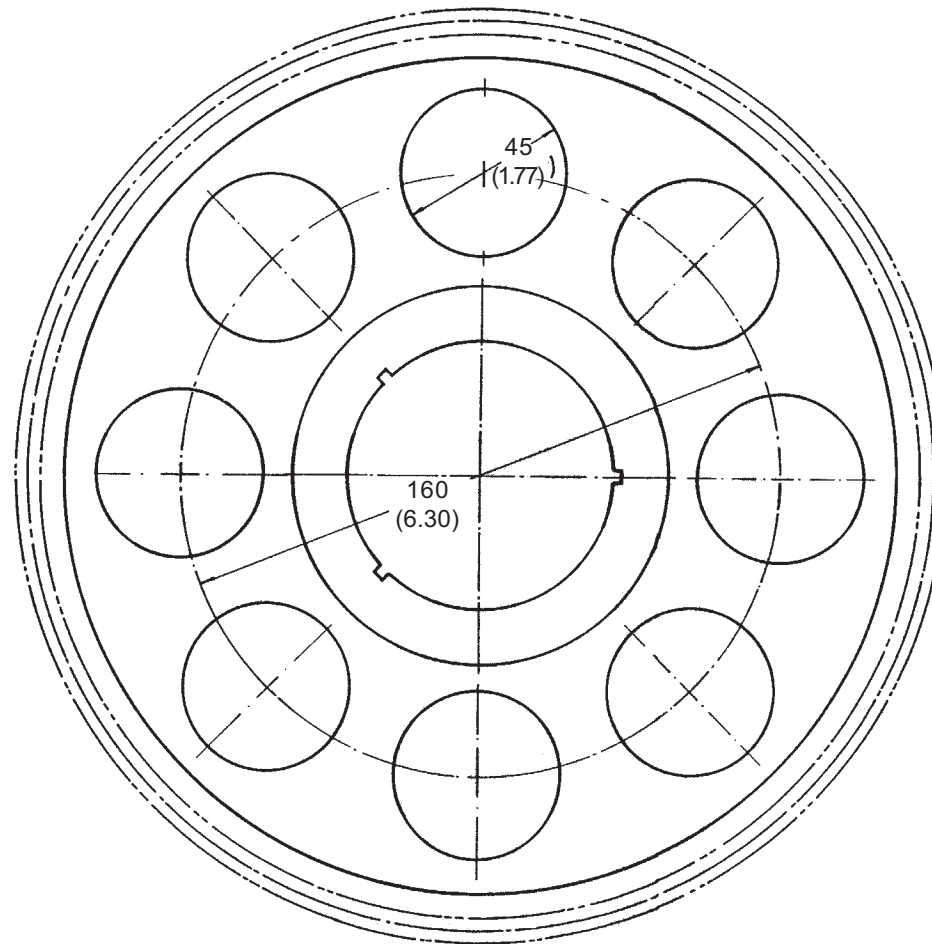


### GEAR



\*) To fit in main rotor shaft

### PINION Full Size



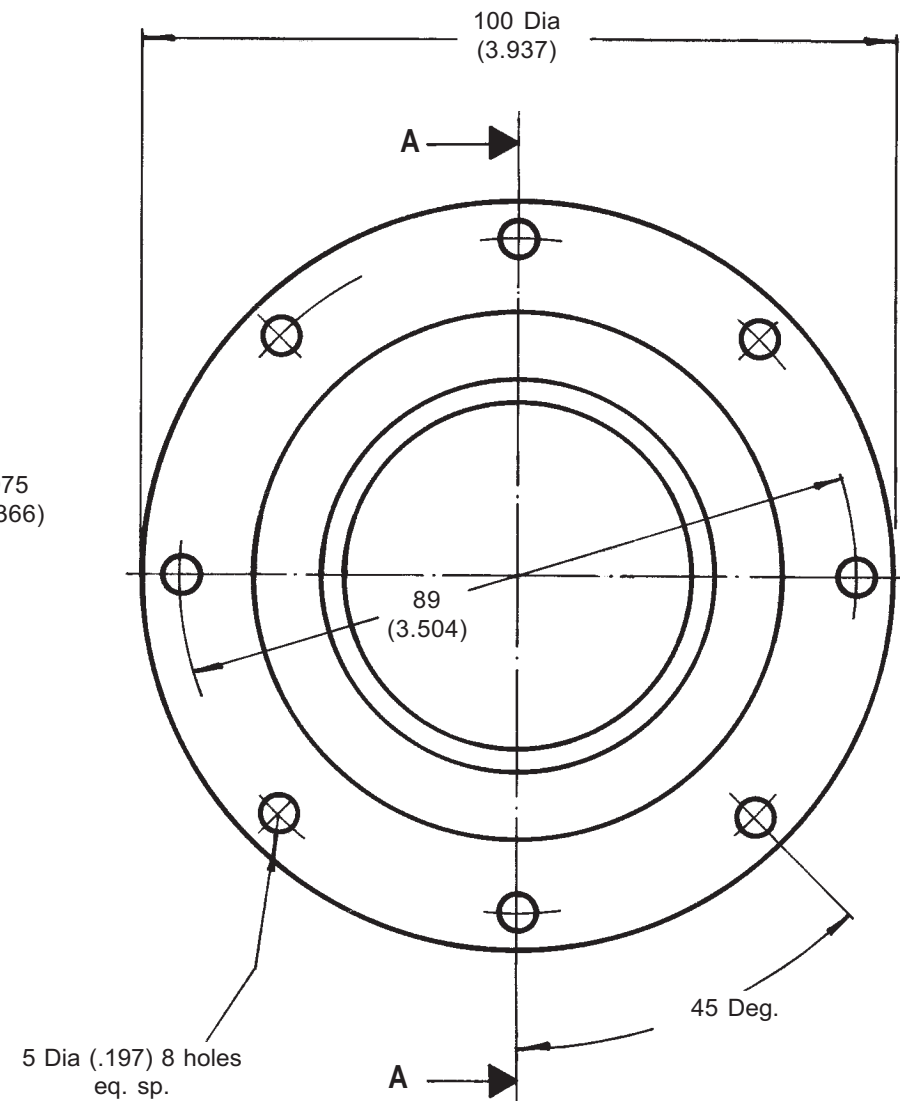
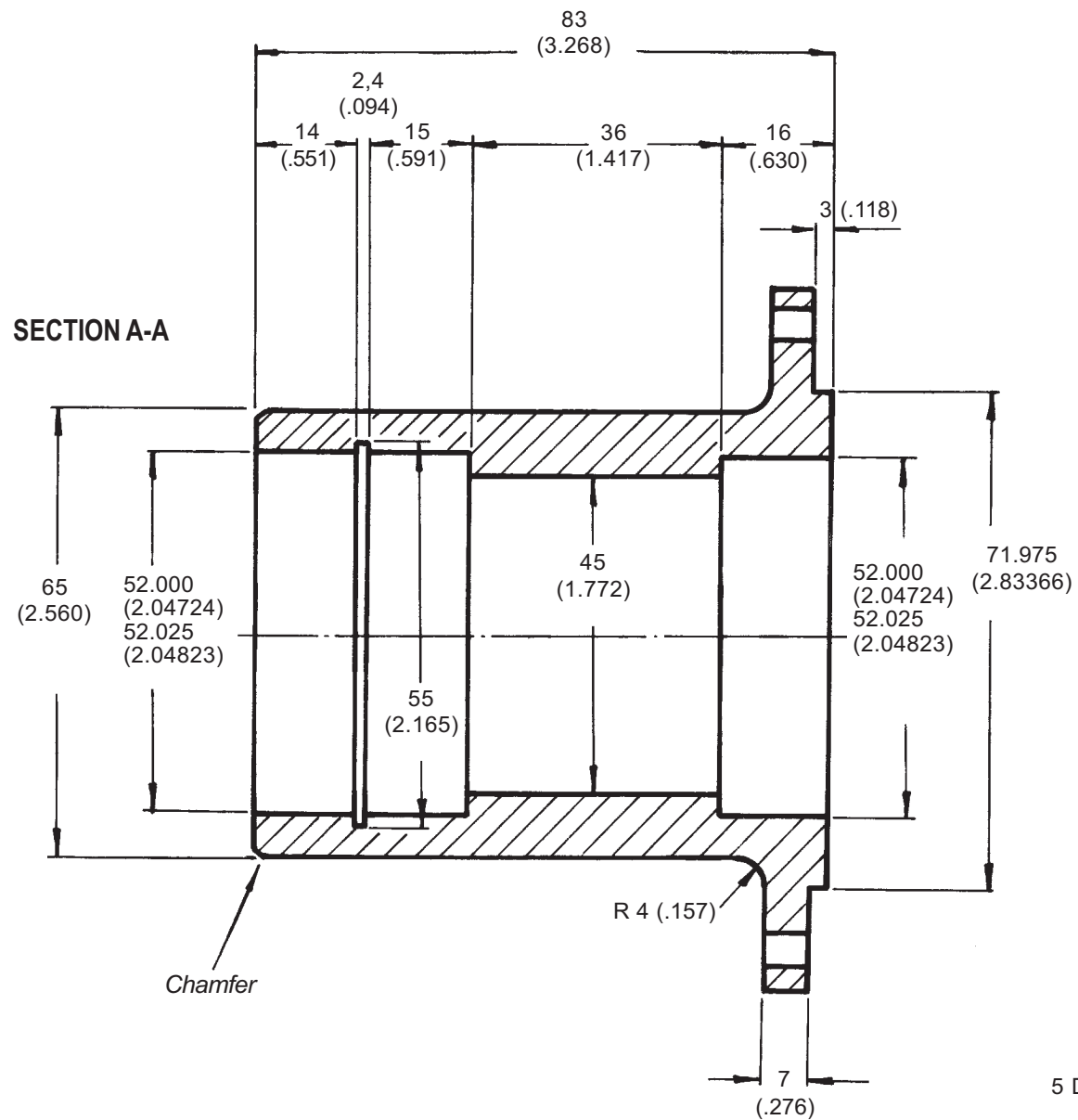
### CUTTING DATA

	GEAR	PINION
NUMBER OF TEETH	95	23
DIAMETRAL PITCH	10	10
PITCH DIAMETER	9.5	2.3
OUTSIDE DIAMETER	9.7	2.5
CENTERDISTANCE	5.9	5.9
ADDENDUM	.1	.1
DEDENDUM	.1157	.1157
CLEARANCE	.0157	.0157
WHOLE DEPTH	.2157	.2157

**FURIA HELICOPTER -**

MAIN ROTOR GEARS

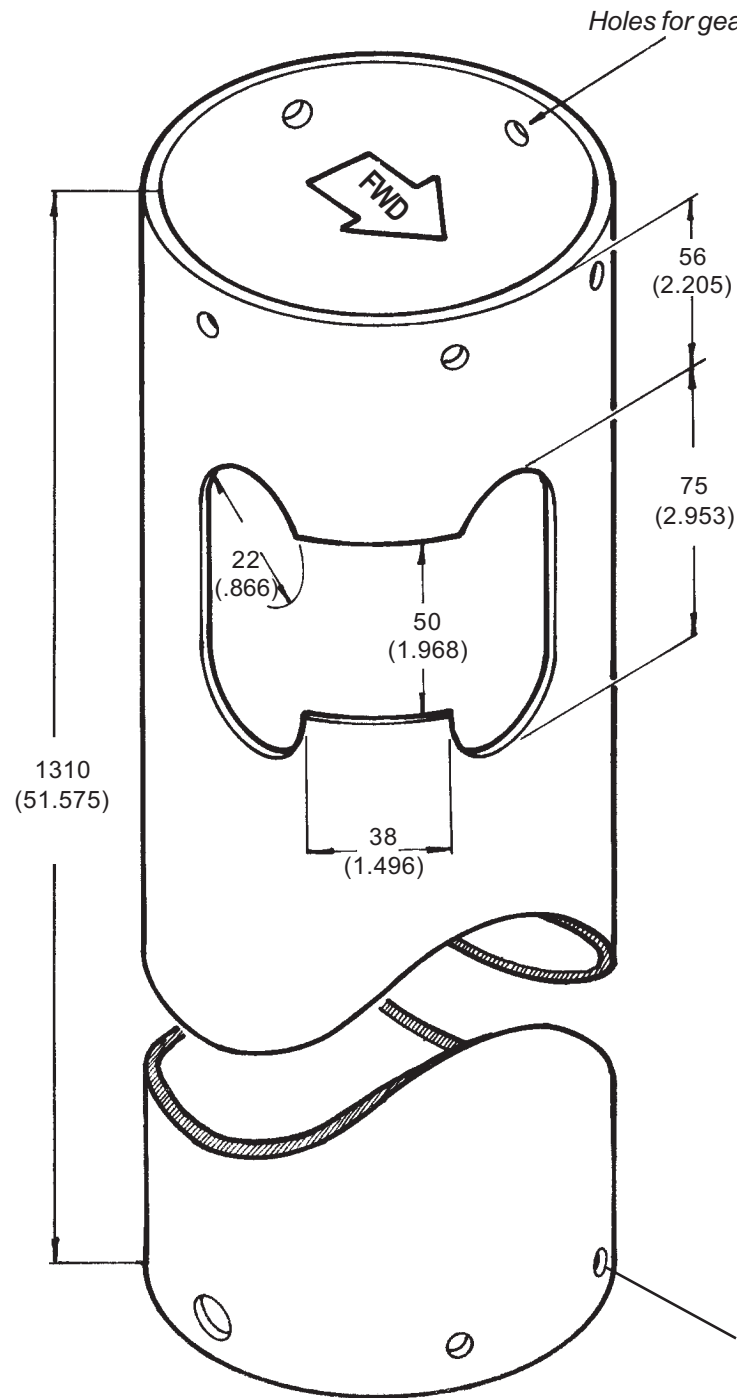
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



**PINION HOUSING**

Mat: Aluminum (1) req'd.

**FULL SIZE**

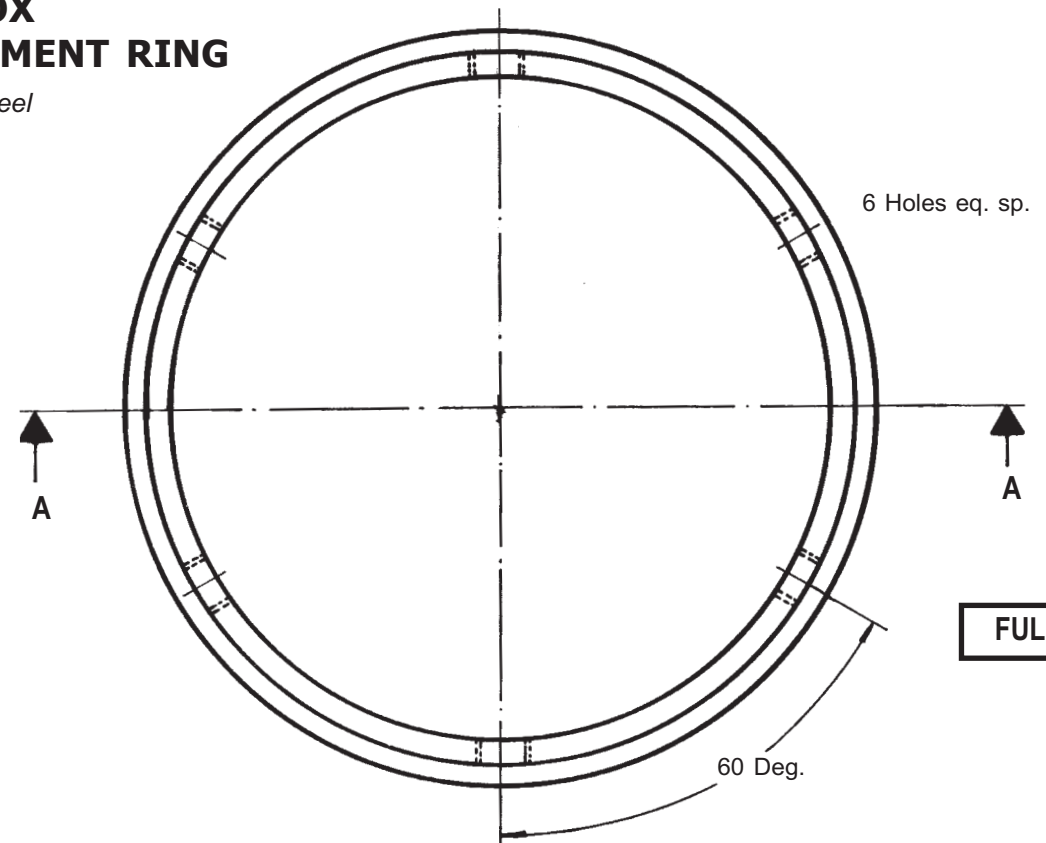
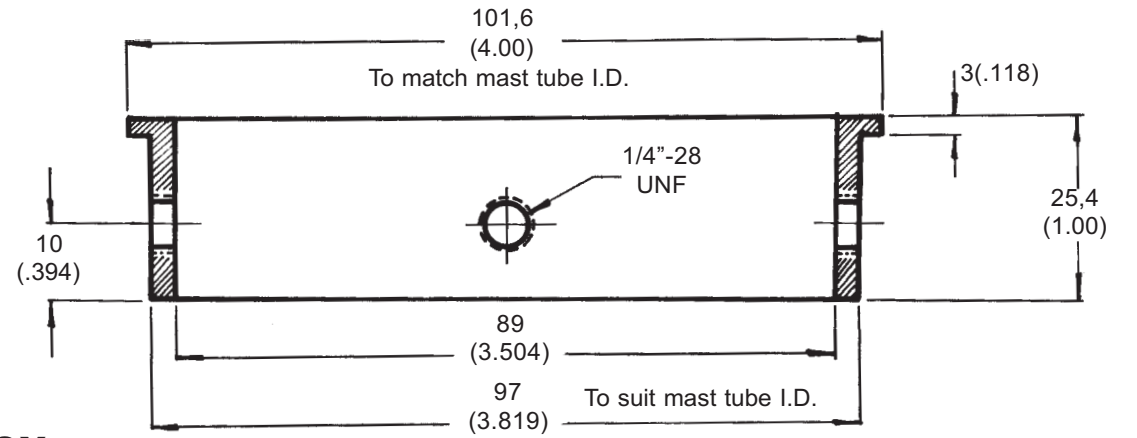


### MAIN ROTOR MAST

Mat.: 6061-T6 Aluminum Tube  
 O.D. 400 (101.6)  
 I.D. 97 (3.819) (Approx.)

### GEARBOX ATTACHMENT RING

Mat: 4130 Steel



FULL SIZE

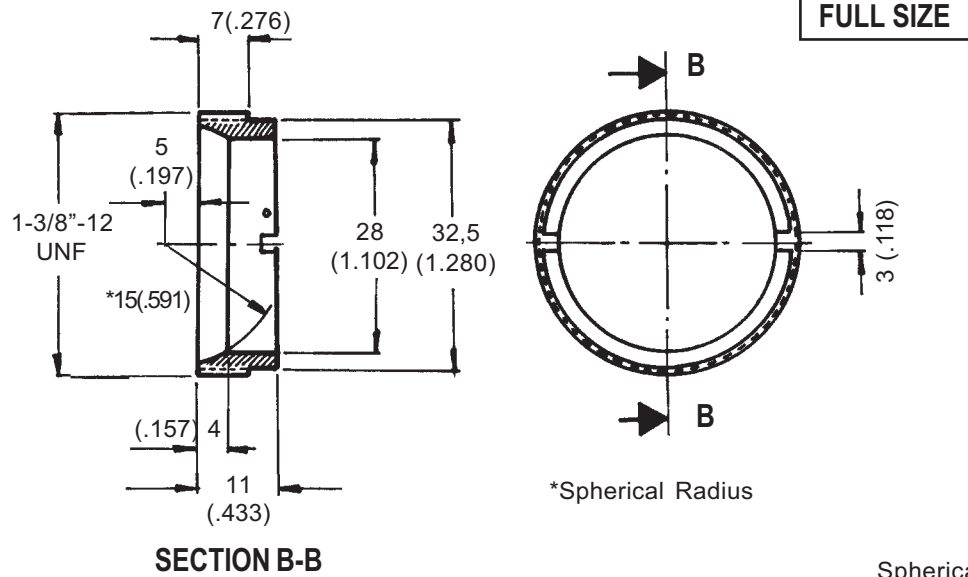
**FURIA HELICOPTER -**

MAIN ROTOR MAST

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

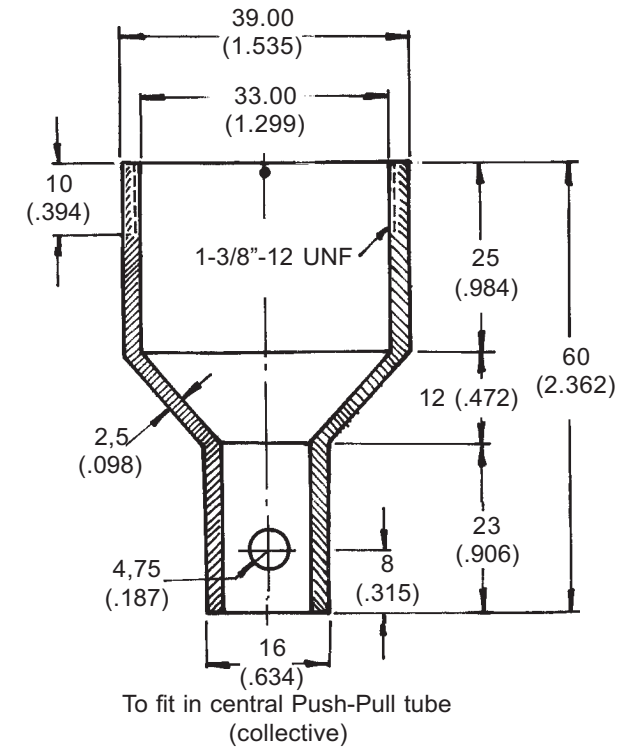
### RACE/NUT

Mat: 1050 Steel (1) req'd



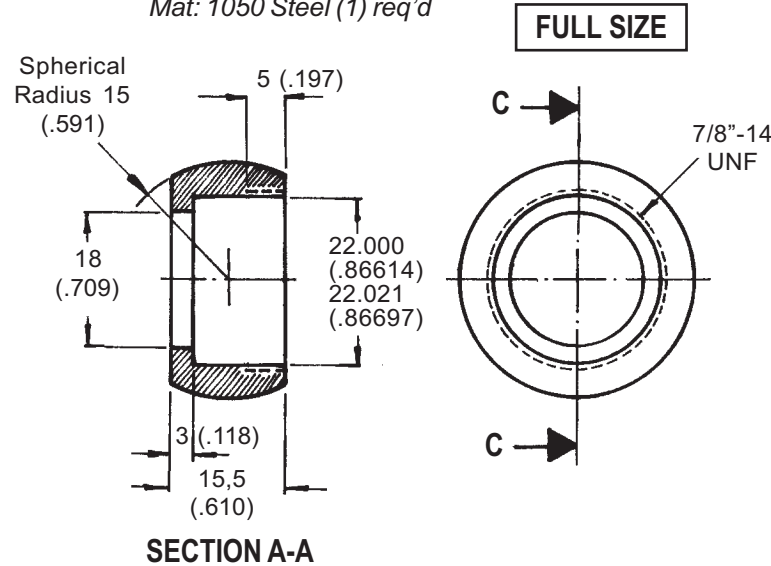
### CENTRAL UNIBALL HOUSING

Mat. 1045 Steel (1) req'd



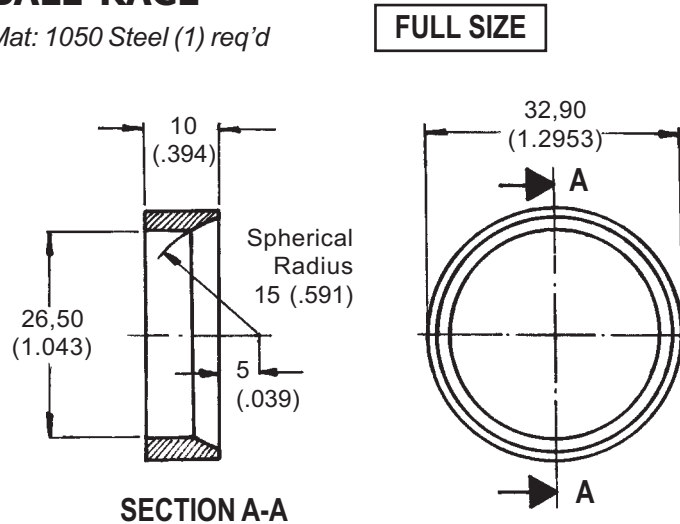
### BALL/BEARING HOUSING

Mat: 1050 Steel (1) req'd



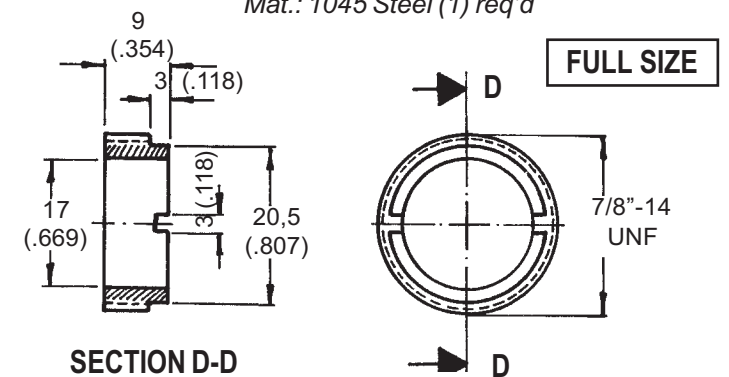
### BALL RACE

Mat: 1050 Steel (1) req'd



### NUT A

Mat.: 1045 Steel (1) req'd

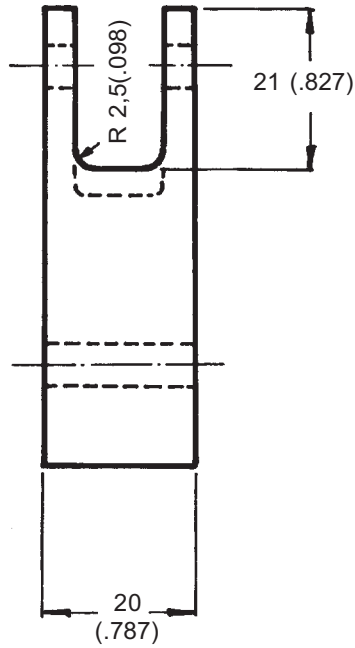
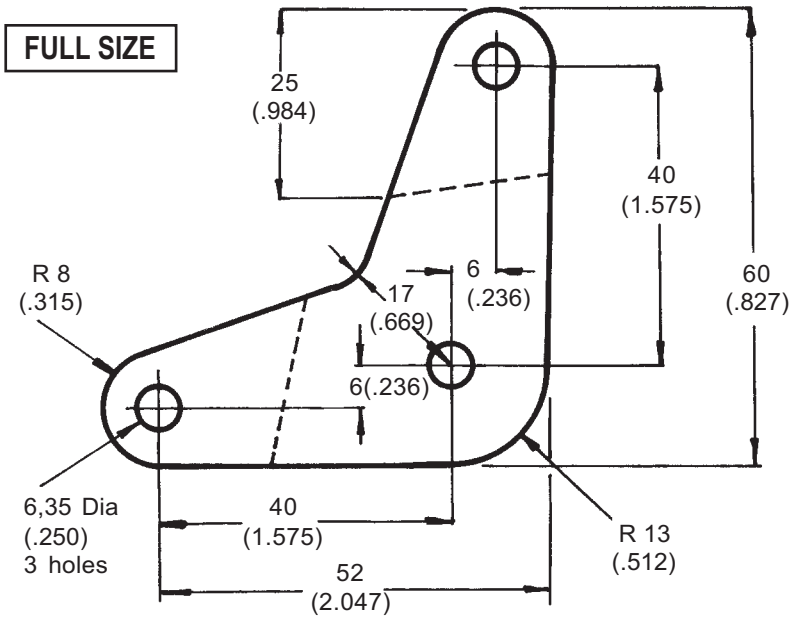


**HEAT TREATMENT**  
 Ball and races must have hardened surfaces (raceways)  
 Minimum surface hardness:  
 58 Rockwell C



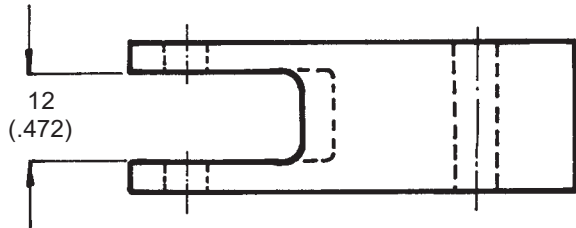
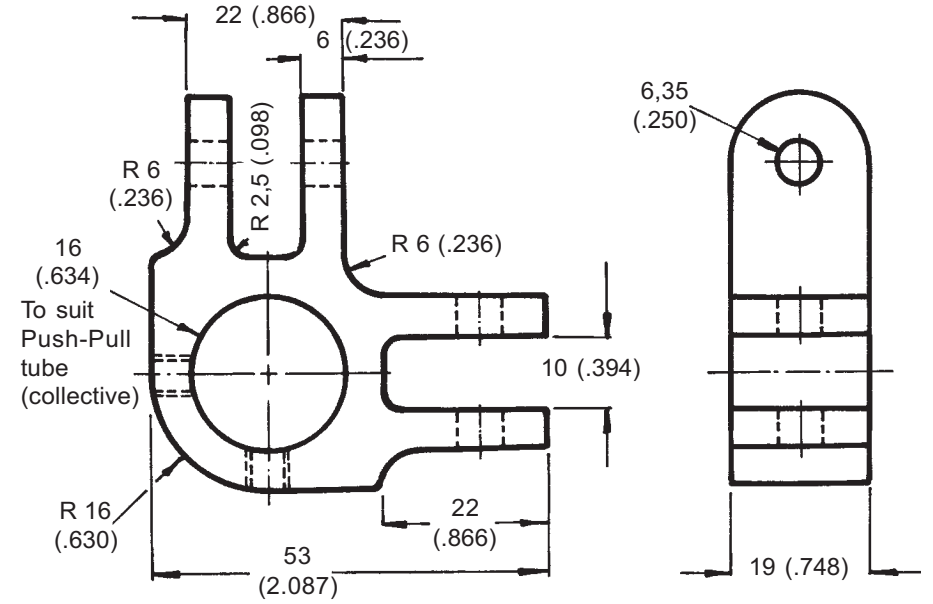
**CYCLIC UPPER BELLCRANK**

Mat: 2024-T3 Aluminum (2) req'd



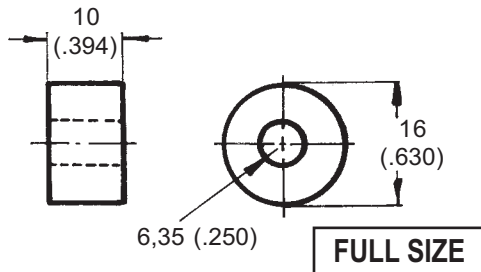
**CYCLIC/COLLECTIVE Central Link**

Mat: 2024-T3 Aluminum (1) Req'd



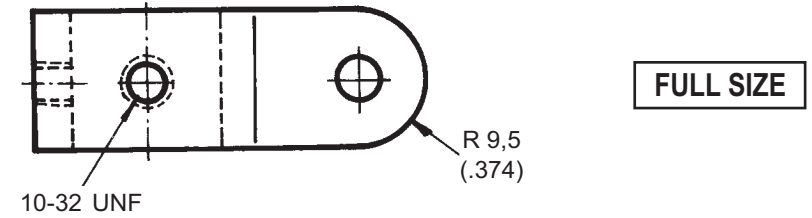
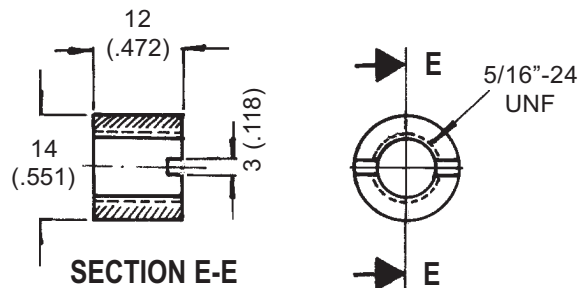
**BUSHING -SPACER**

Mat: 2024-T3 Aluminum (4) Req'd



**NUT B**

Mat: 1045 Steel(1) req'd

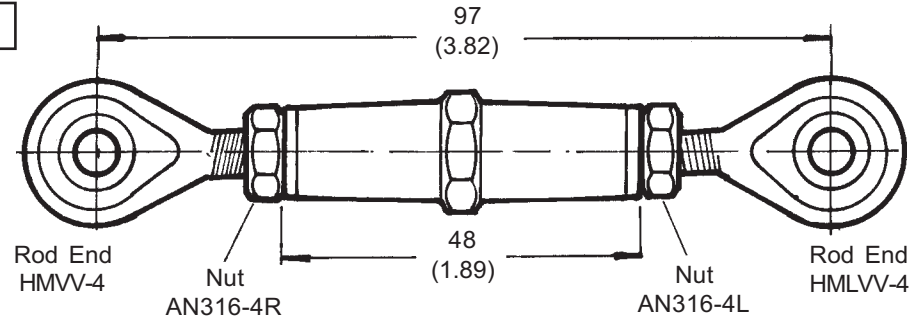


**FULL SIZE**

### BLADE CONTROL LINKAGE

Mat: 2024-T3 Aluminum (2) req'd

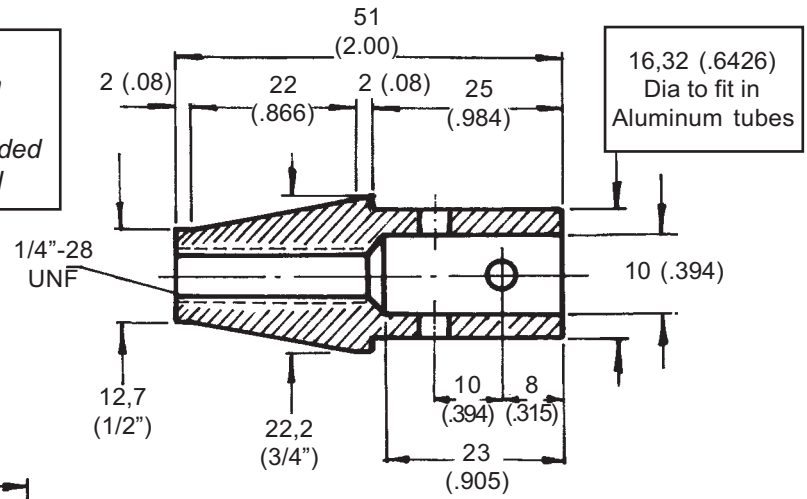
FULL SIZE



### PUSH-PULL TUBES THREADED ENDS

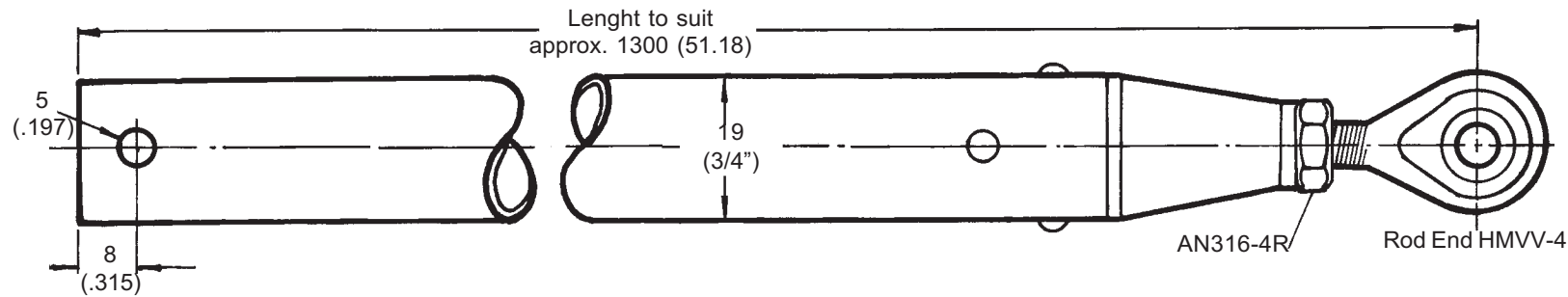
Mat: 2024-T3 or 6061-T6 aluminum (7) req'd  
make 4 right threaded and 3 left threaded

FULL SIZE



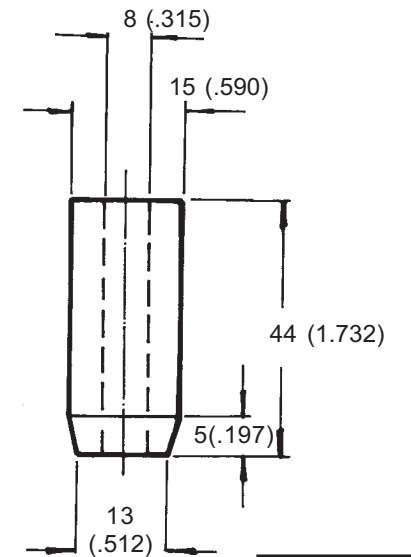
### CENTRAL PUSH-PULL TUBE

Mat: 4130 steel tube (1) req'd



### DRAG BRACE BUSHING

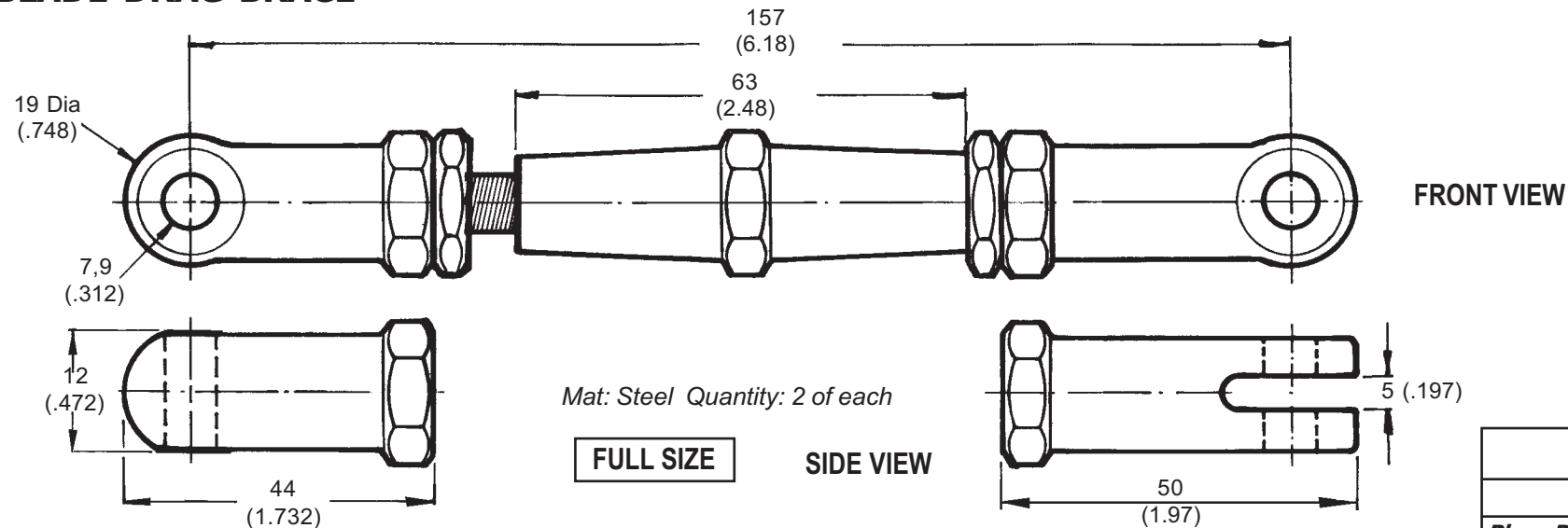
Mat: 2024-T3 aluminum (2) req'd



FULL SIZE

### BLADE DRAG BRACE

Mat: Steel Quantity: 2 of each



FULL SIZE

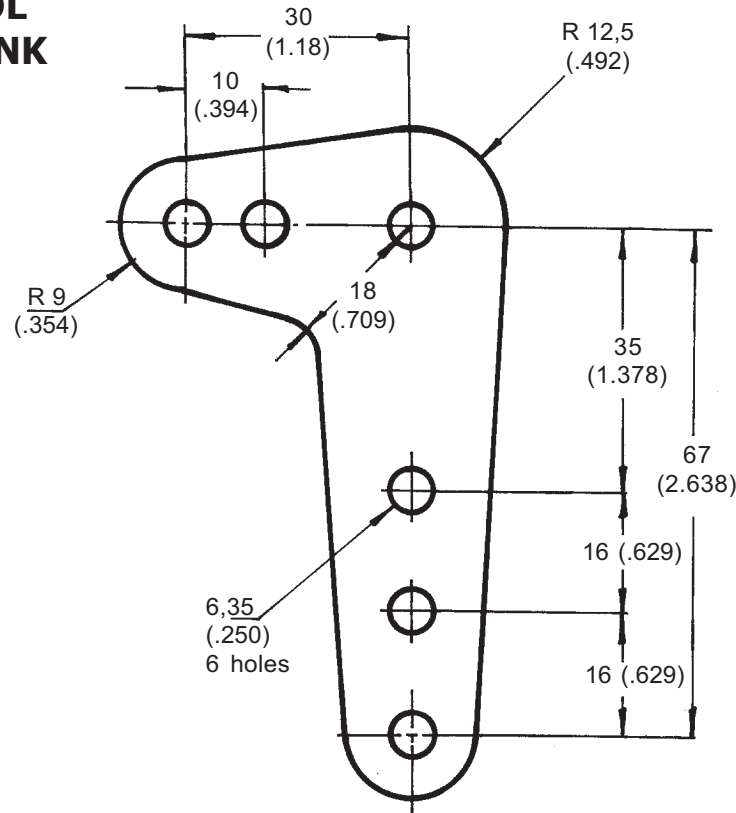
SIDE VIEW

FRONT VIEW

### CYCLIC CONTROL LOWER BELLCRANK

Mat: 2024-T3 aluminum  
5 (.197) Thk.  
(1) req'd

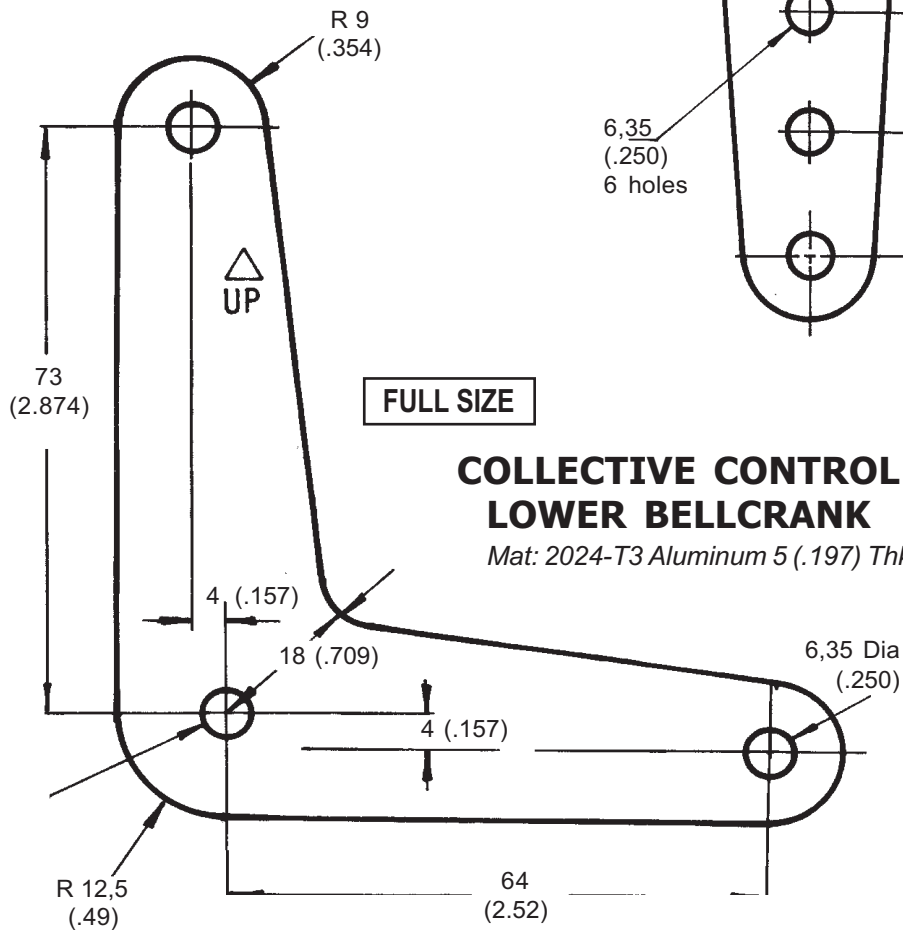
FULL SIZE



FULL SIZE

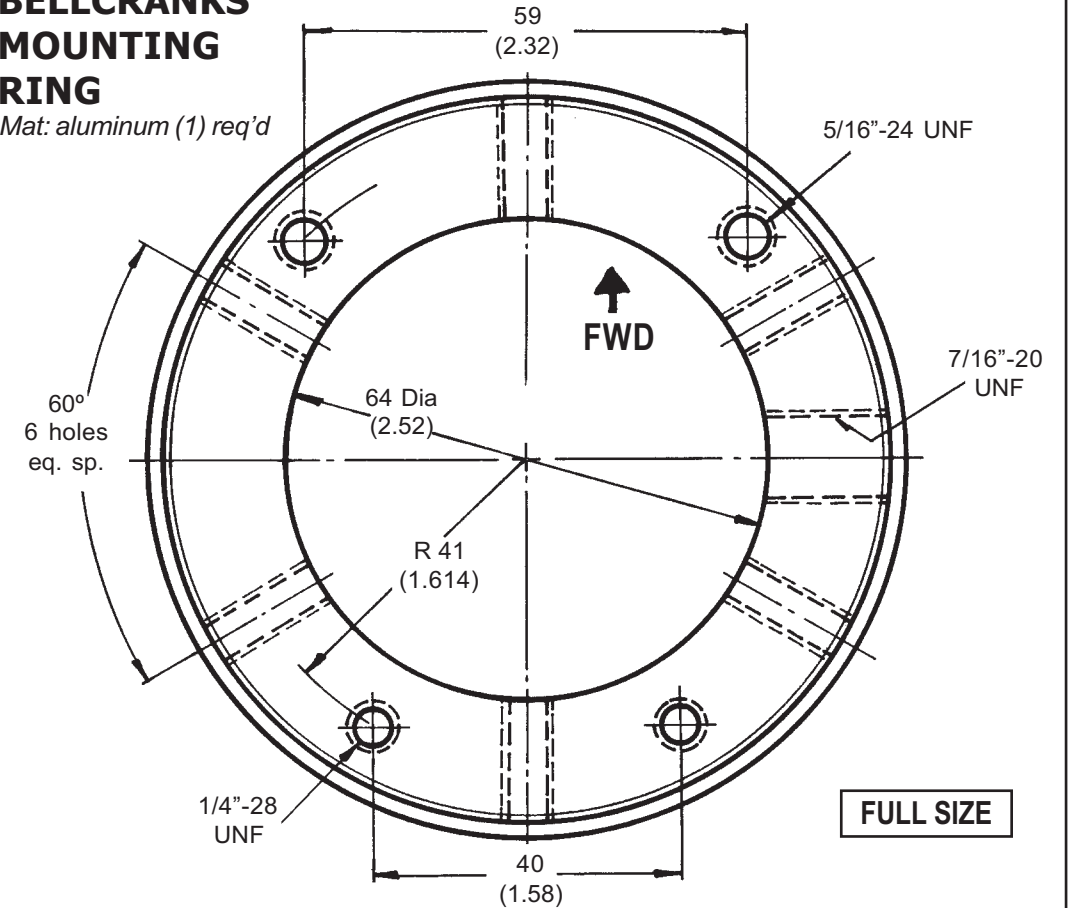
### COLLECTIVE CONTROL LOWER BELLCRANK

Mat: 2024-T3 Aluminum 5 (.197) Thk (1) req'd



### BELLCRANKS MOUNTING RING

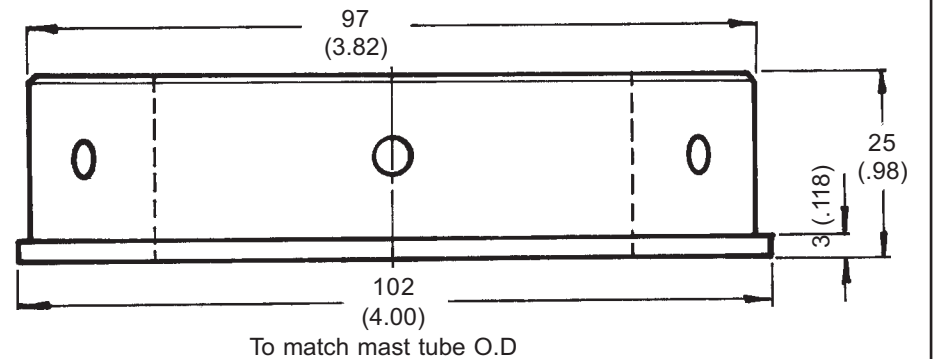
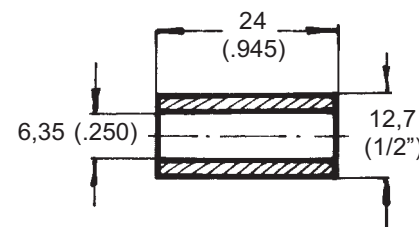
Mat: aluminum (1) req'd



FULL SIZE

### SPACER BUSHING

Mat: steel or brass (1) req'd

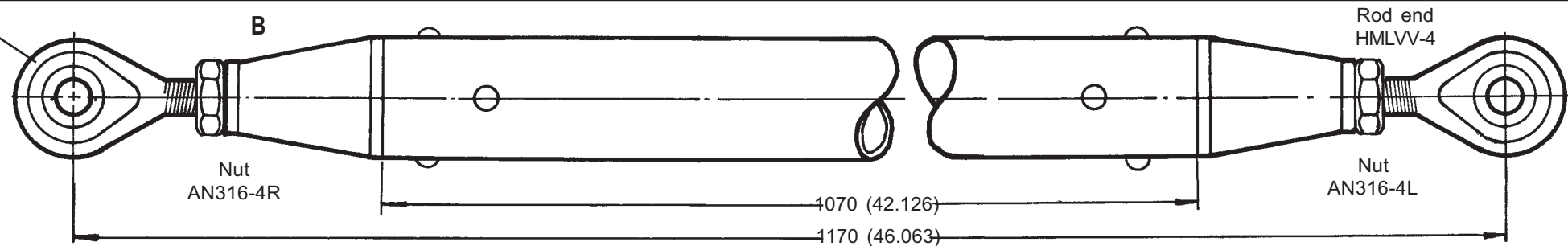
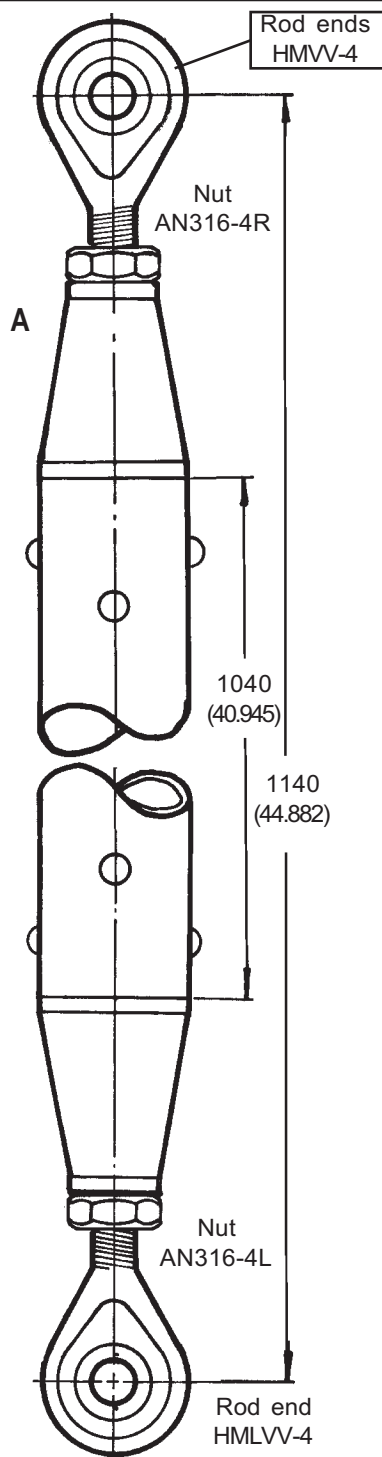


FULL SIZE

**FURIA HELICOPTER -**

CONTROL SYSTEM

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



**CYCLIC CONTROL  
PUSH-PULL TUBES**

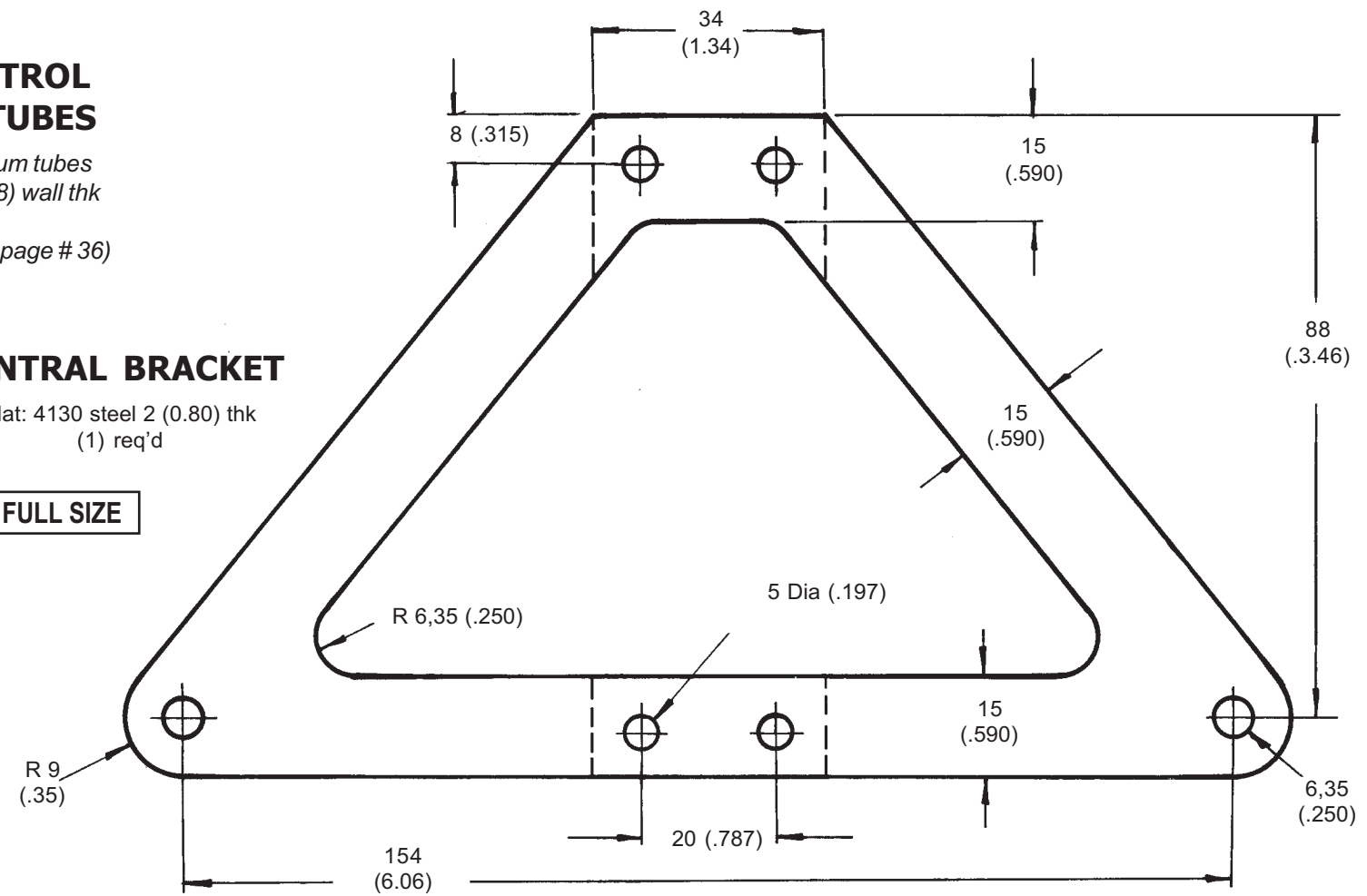
Mat: 6061-T6 aluminum tubes  
19 Dia (3/4") 1,5 (.058) wall thk  
(1) of each req'd  
Threaded ends : (see page # 36)

**FULL SIZE**

**CENTRAL BRACKET**

Mat: 4130 steel 2 (0.80) thk  
(1) req'd

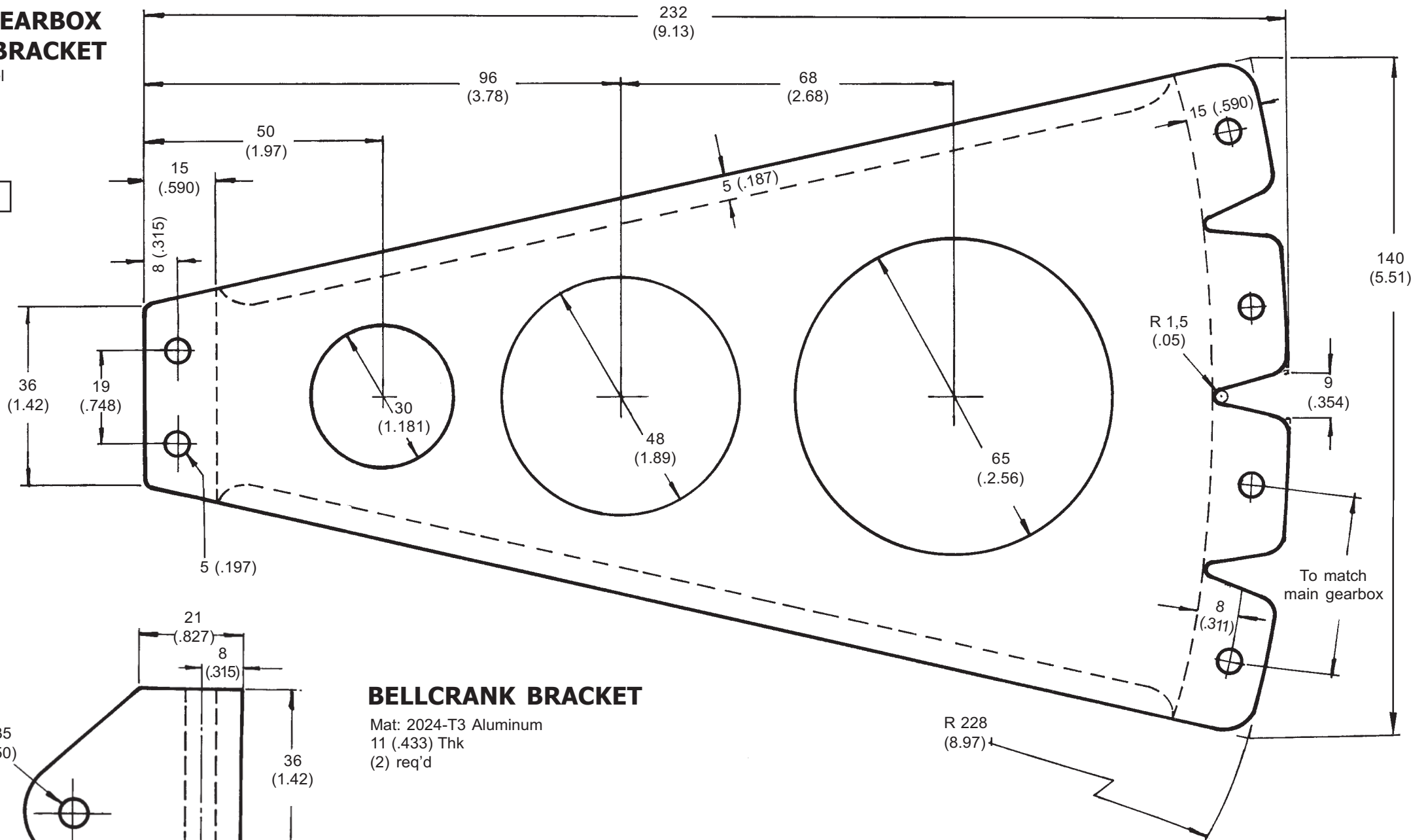
**FULL SIZE**



# MAIN GEARBOX FRONT BRACKET

Mat: 4130 Steel  
2 (.080) thk.  
(2) req'd

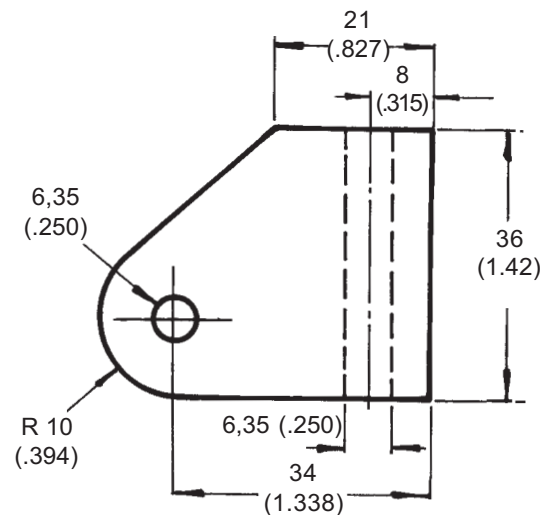
FULL SIZE

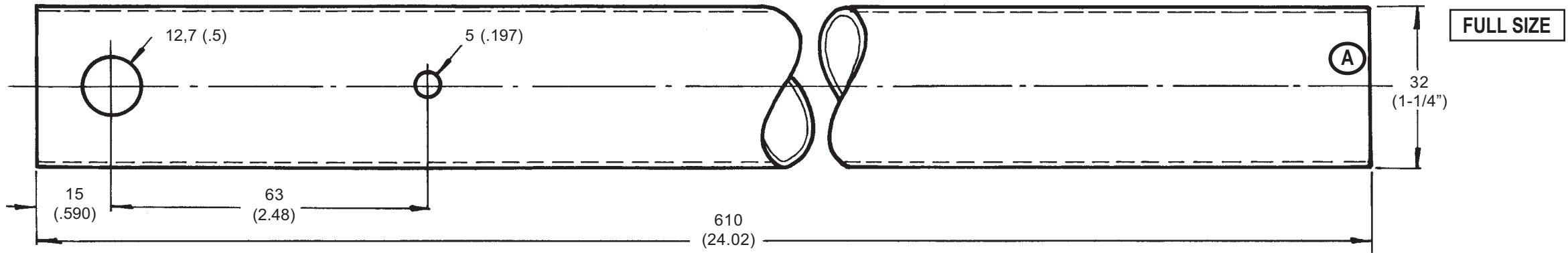


# BELLCRANK BRACKET

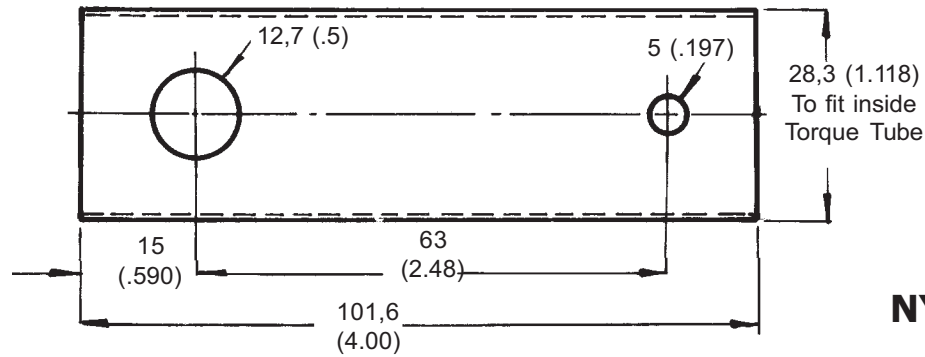
Mat: 2024-T3 Aluminum  
11 (.433) Thk  
(2) req'd

FULL SIZE





**TORQUE TUBE** Mat: 6061-T6 Aluminum 1,6 (.065) wall thk. (1) req'd.

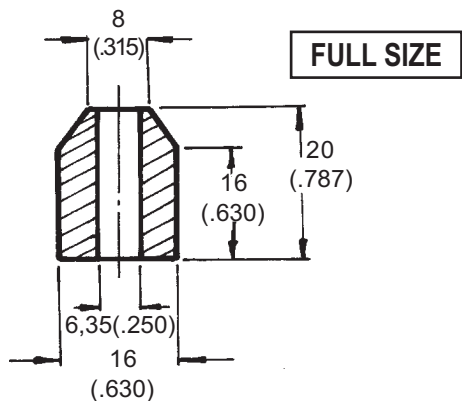


**INNER REINFORCEMENT TUBE**

Mat: 4130 Steel 2,10 (.083) wall thk (1) req'd

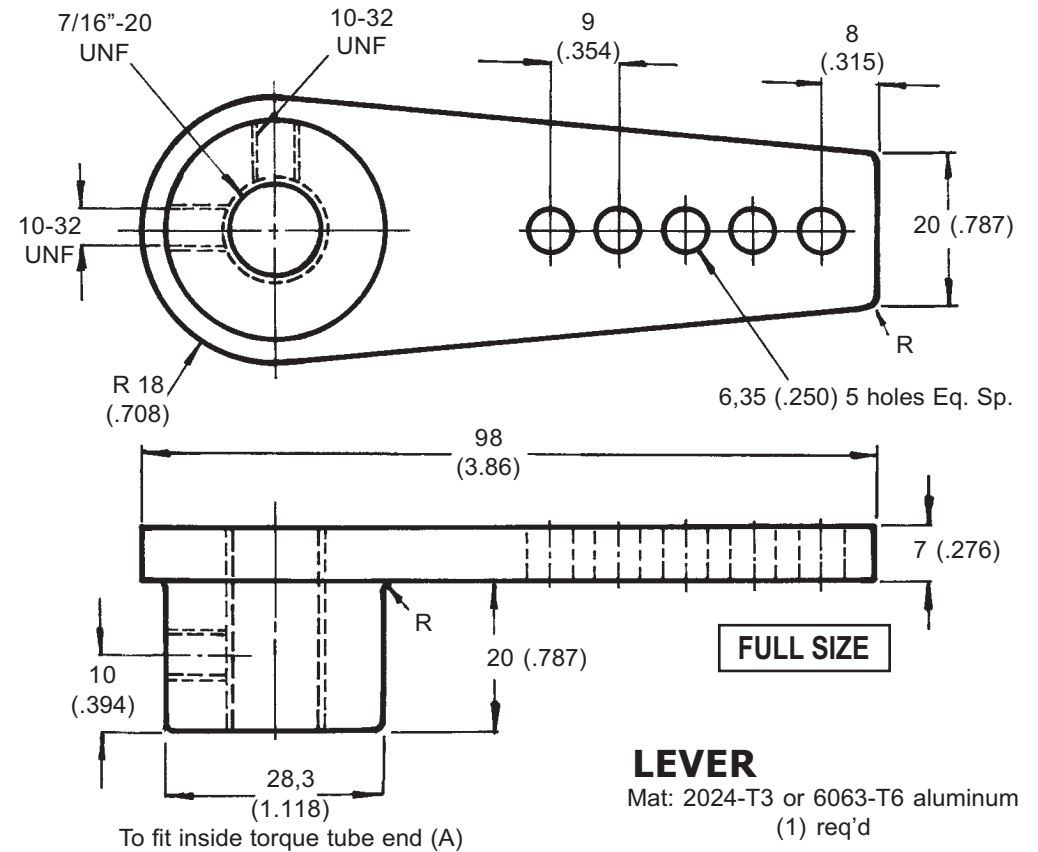
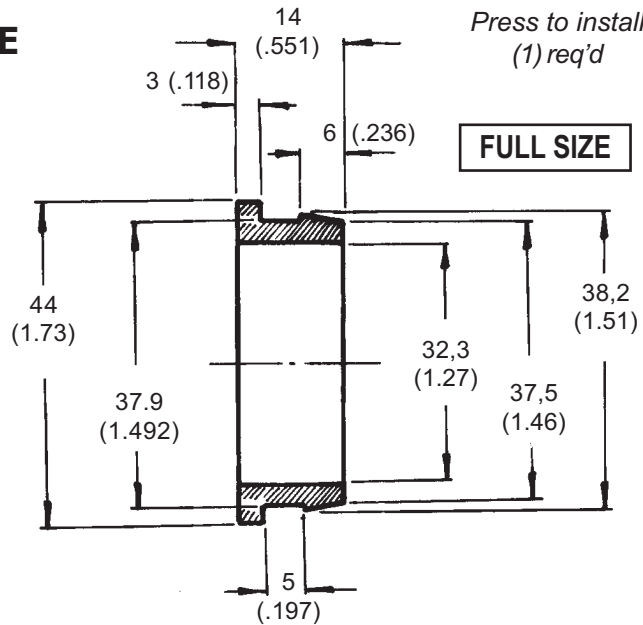
**SPACER**

Mat: Aluminum (1) req'd



**NYLON BUSHING**

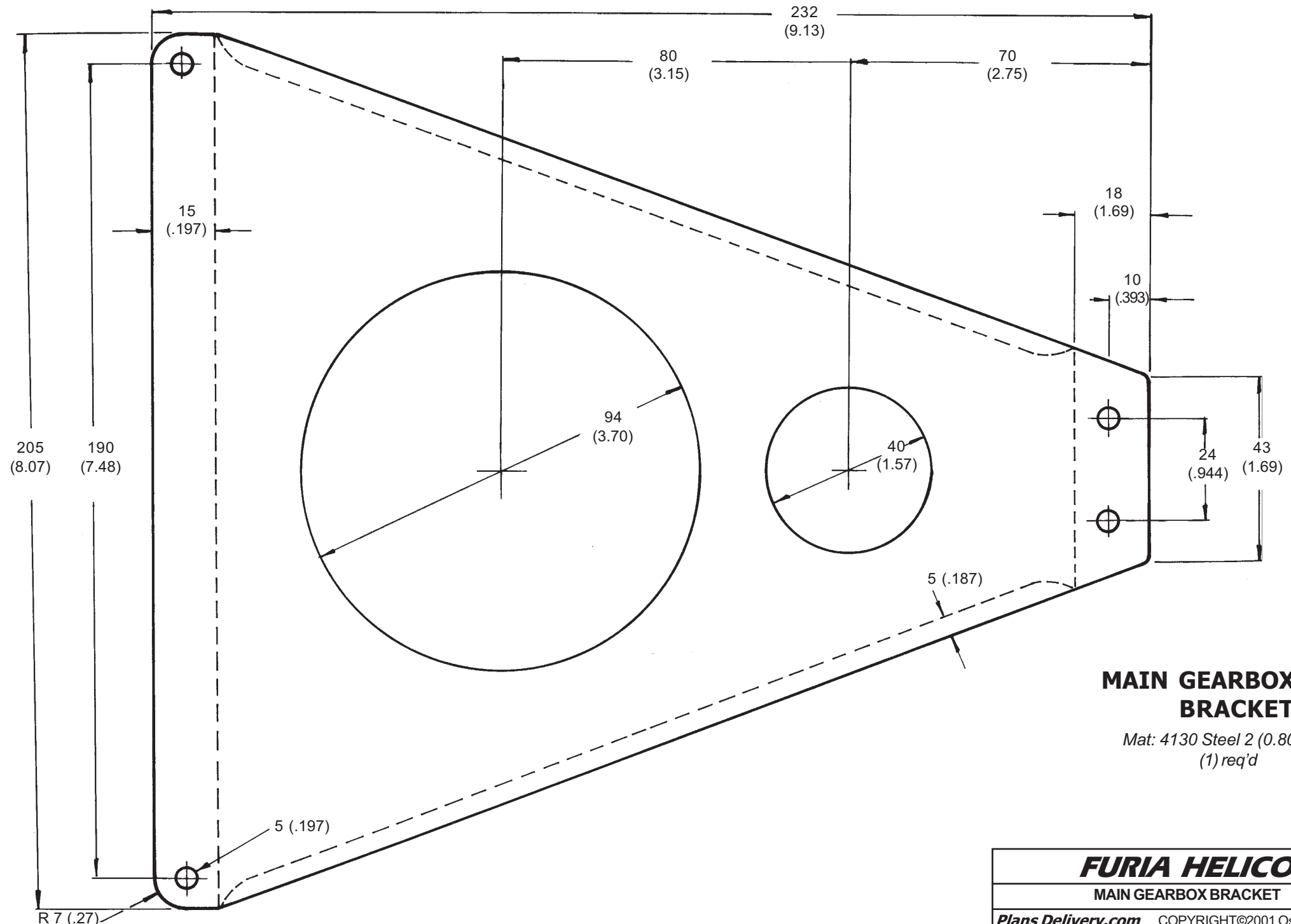
Press to install  
(1) req'd



**LEVER**

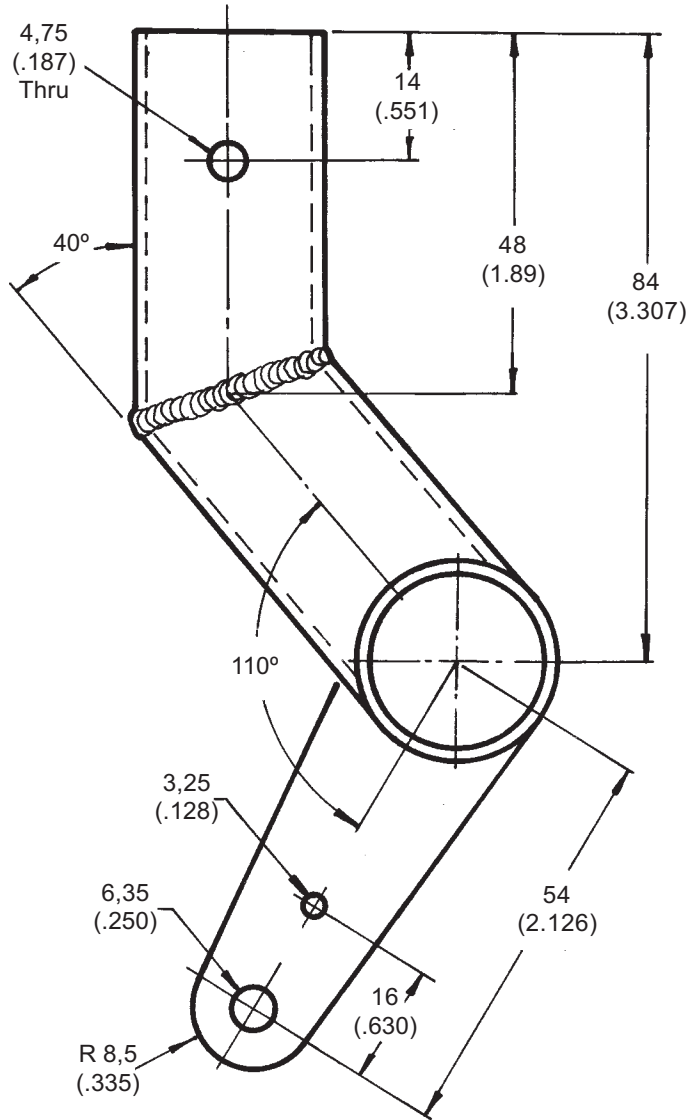
Mat: 2024-T3 or 6063-T6 aluminum  
(1) req'd



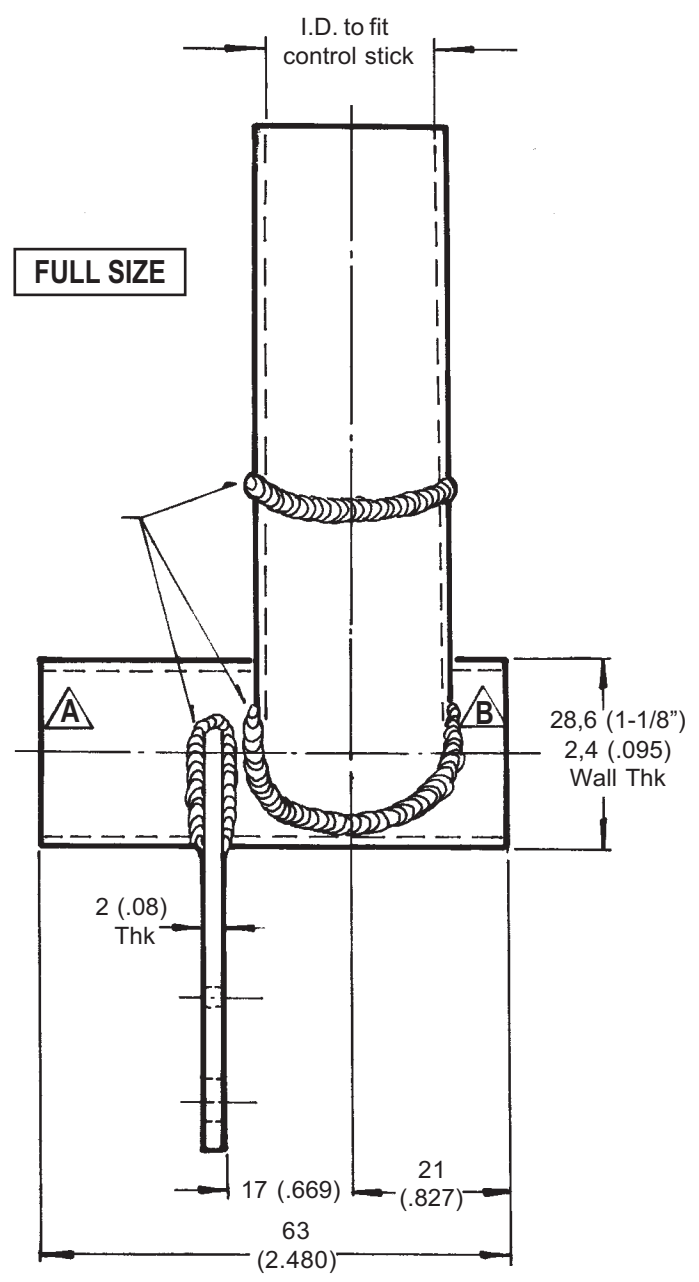


**MAIN GEARBOX REAR BRACKET**

Mat: 4130 Steel 2 (0.80) Thk  
(1) req'd

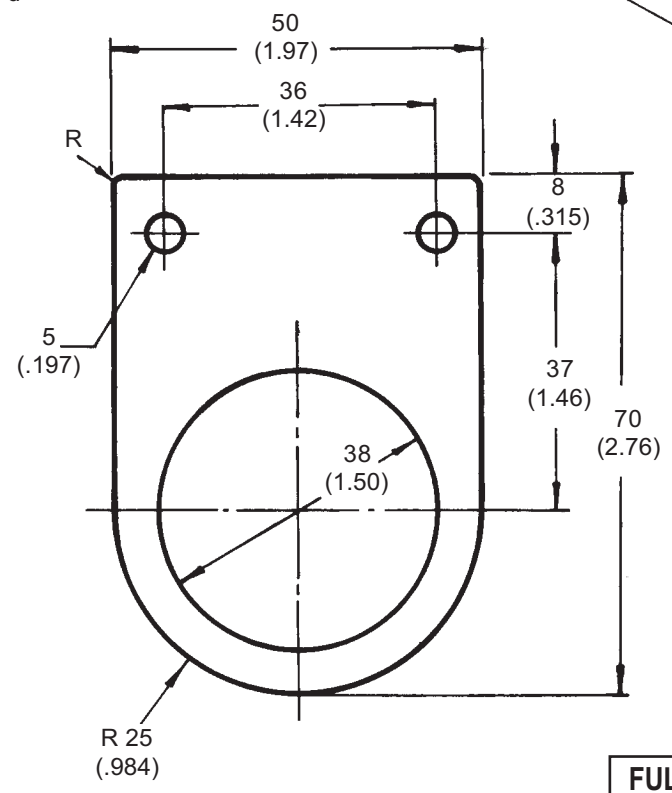
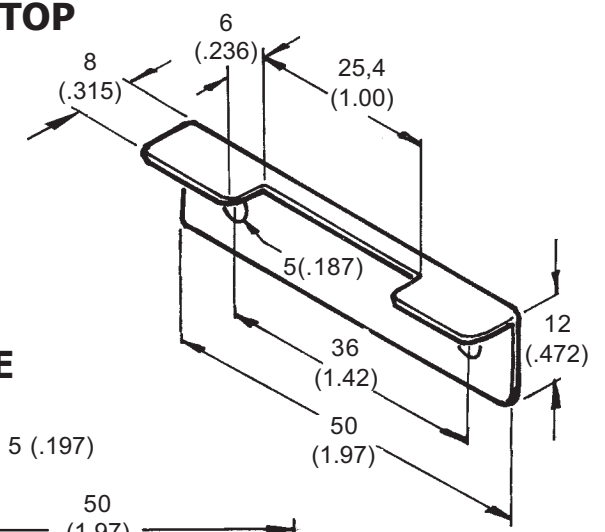


**CYCLIC CONTROL STICK HOLDER**  
 Mat: 4130 Steel (1) req'd



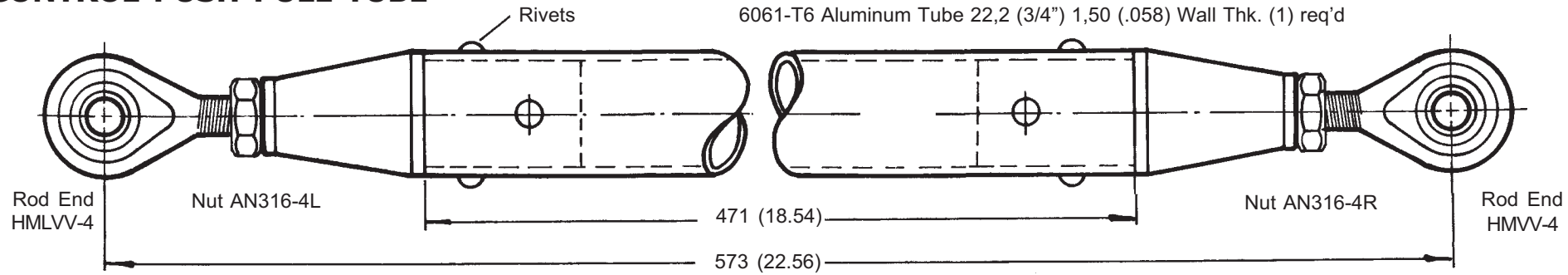
**LATERAL STOP**  
 Mat: 4130 Steel  
 2 (.08) Thk

**TORQUE TUBE BRACKET**  
 Mat: 2024-T3 aluminum 5 (.197)  
 (1) req'd



FULL SIZE

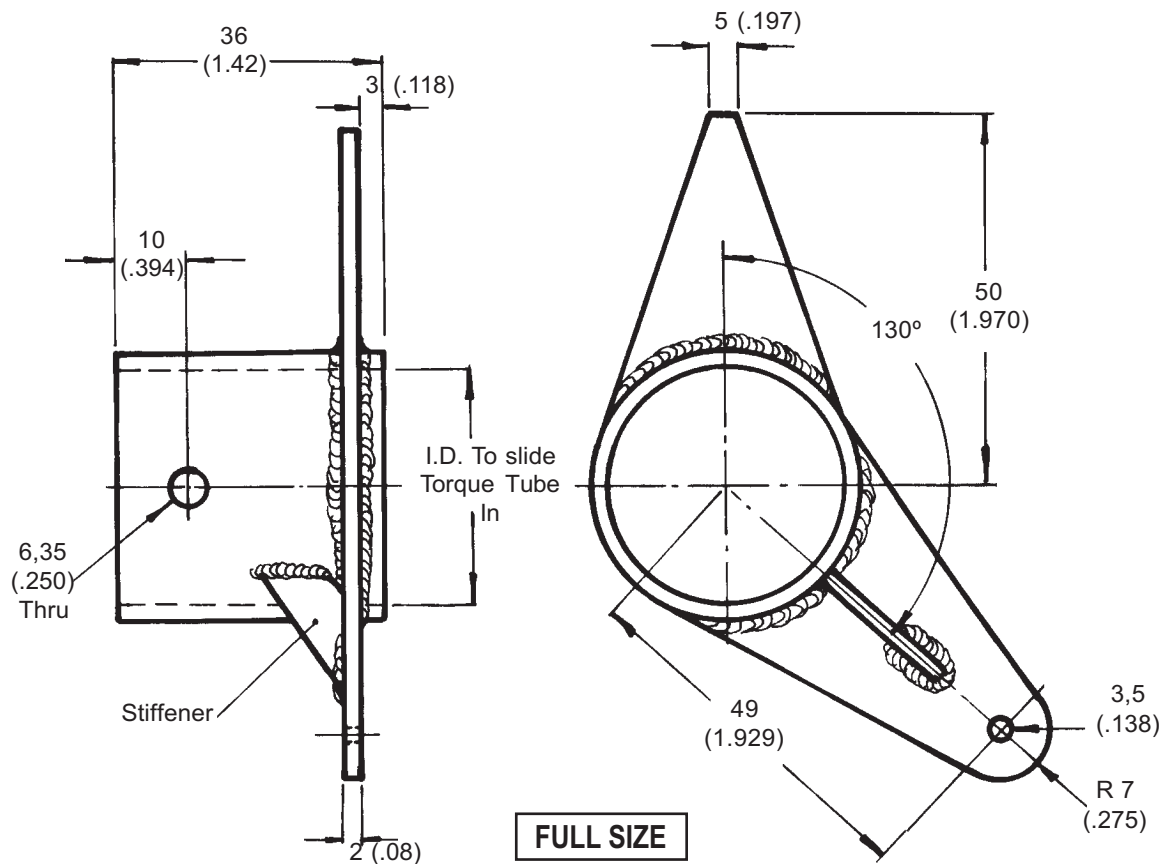
### CYCLIC CONTROL PUSH-PULL TUBE



FULL SIZE

### TRAVEL LIMITING STOP

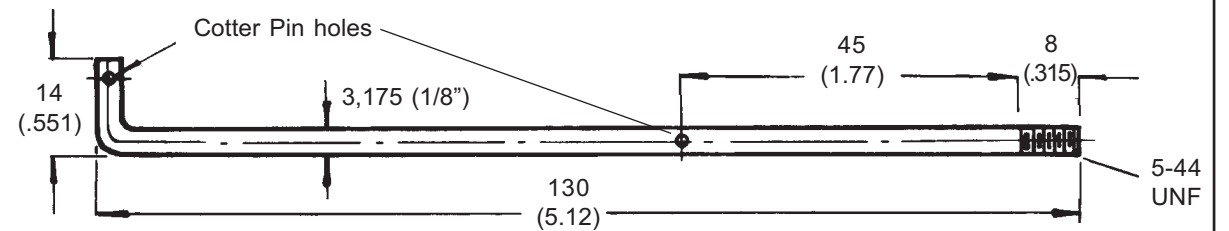
Mat: 4130 Steel (.095) Wall Thk (1) Req'd



FULL SIZE

### LIMITING BAR

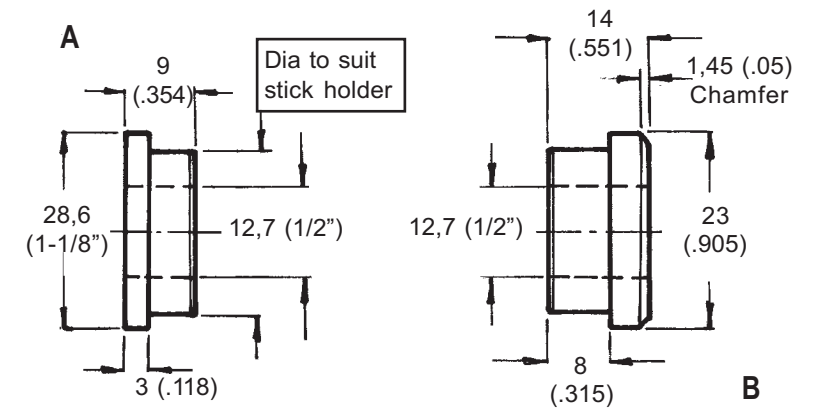
Mat: Steel (1) req'd



FULL SIZE

### STICK HOLDER CAPS

Mat: Aluminum (1) of each req'd

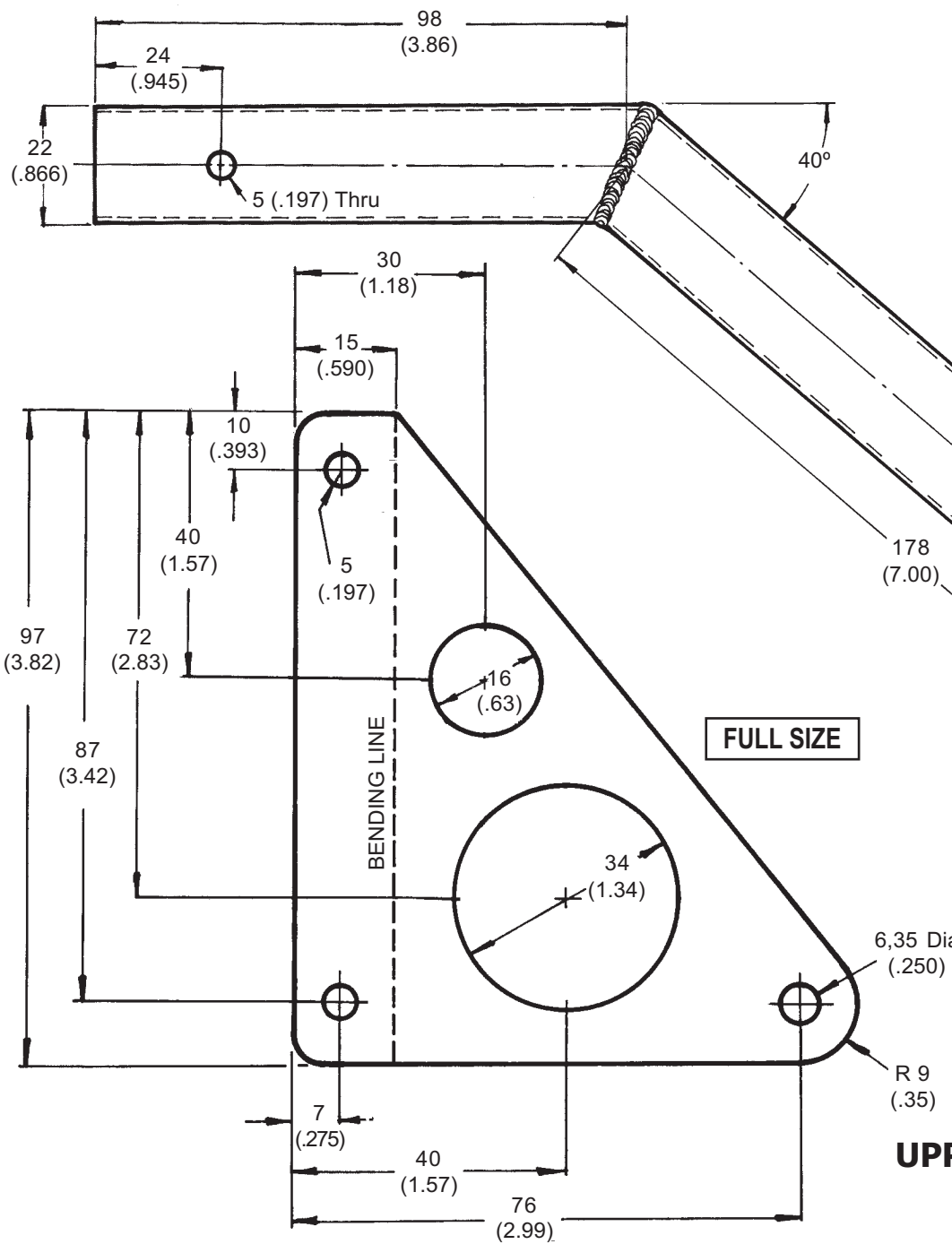


FULL SIZE

**FURIA HELICOPTER -**

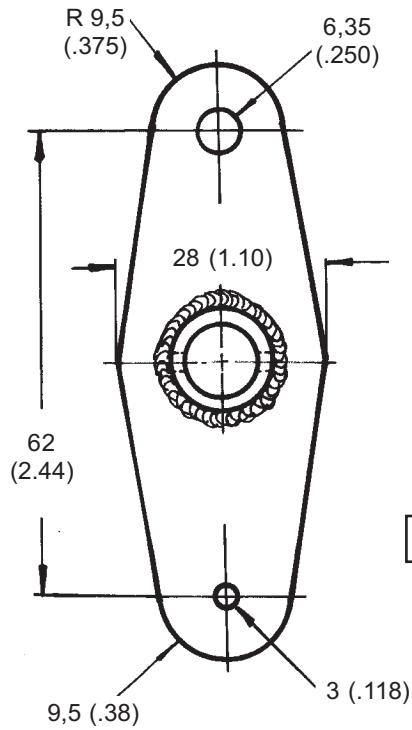
CONTROL SYSTEM

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

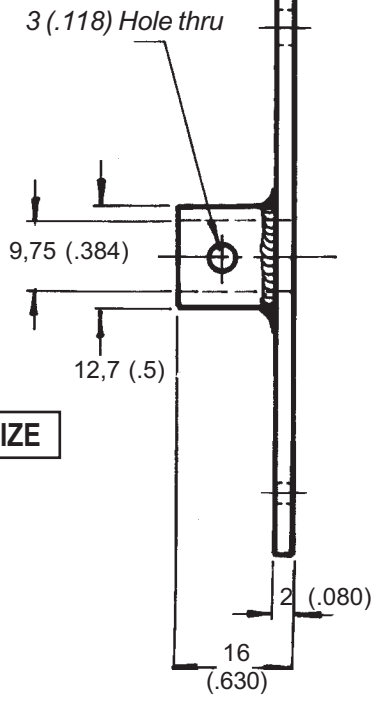


**THROTTLE LEVER**

Mat: 4130 Steel (1) Req'd



FULL SIZE



**CYCLIC CONTROL STICK**

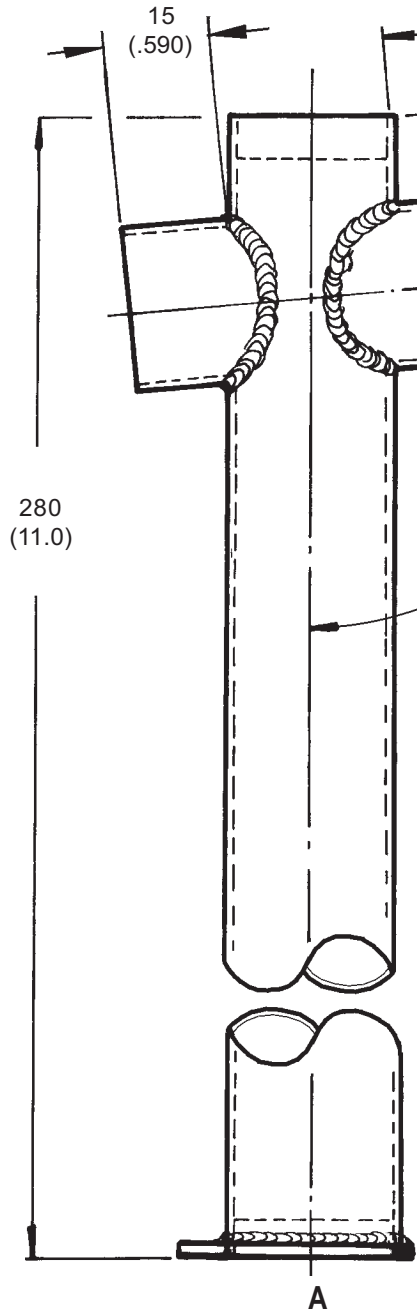
Mat: 4130 Steel (1) Req'd  
22,2 (7/8") O.D. 1,65 (.065) Wall Thk (1) Req'd

**UPPER CYCLIC BELLCRANKS MOUNTING BRACKET**

Mat: 4130 Steel - 2 (.080) Thk  
(2) req'd (left and right)

# COLLECTIVE CONTROL STICK

Mat: 4130 Steel tubing (1) req'd

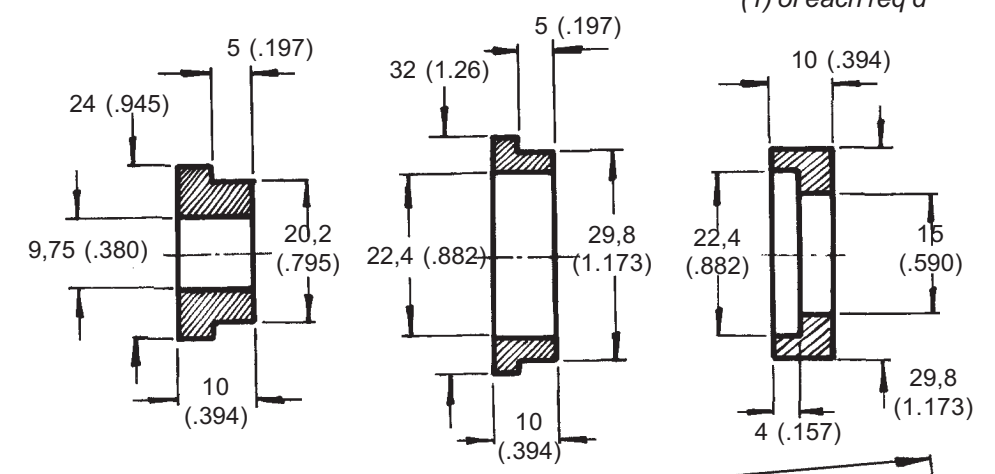


500  
(19.68)

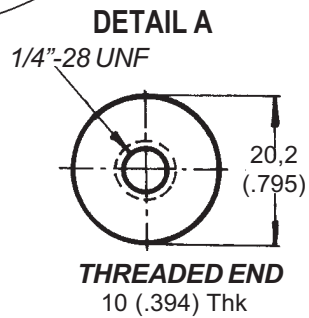
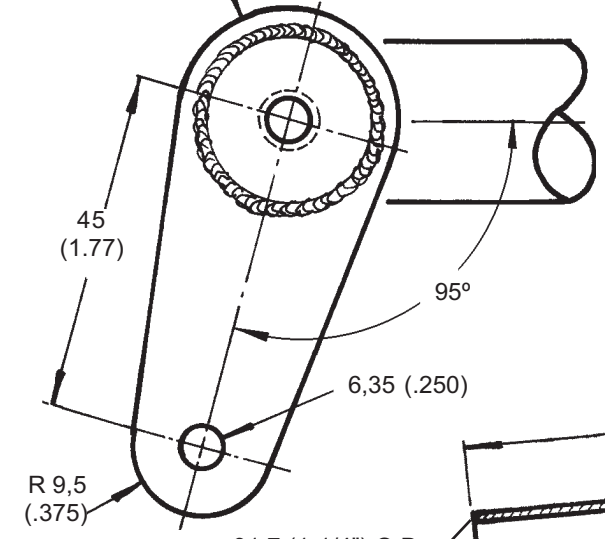
**FULL SIZE**

22.2 (7/8") O.D.  
(.035) Wall Thk

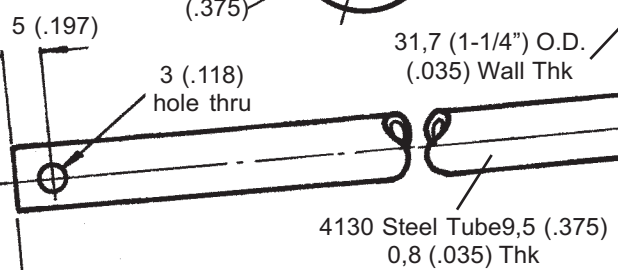
## NYLON BUSHINGS (1) of each req'd



## COLLECTIVE LEVER Mat: 4130 2(.080) Thk



**THREADED END**  
10 (.394) Thk



**FULL SIZE**

568  
(22.36)

## HANDLE THROTTLE CONTROL

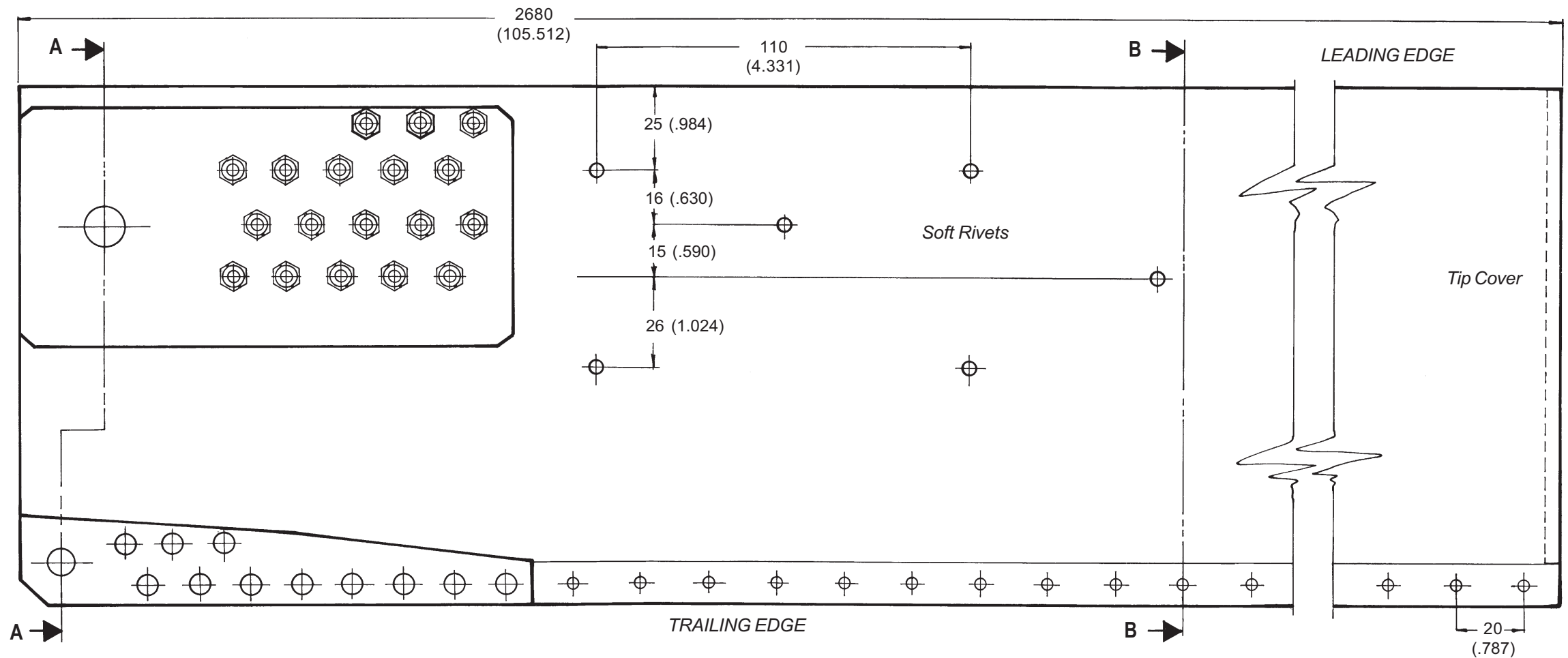
4130 Steel Tube 9,5 (.375)  
0,8 (.035) Thk

## FURIA HELICOPTER -

CONTROL SYSTEM

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

# MAIN ROTOR BLADE TOP VIEW

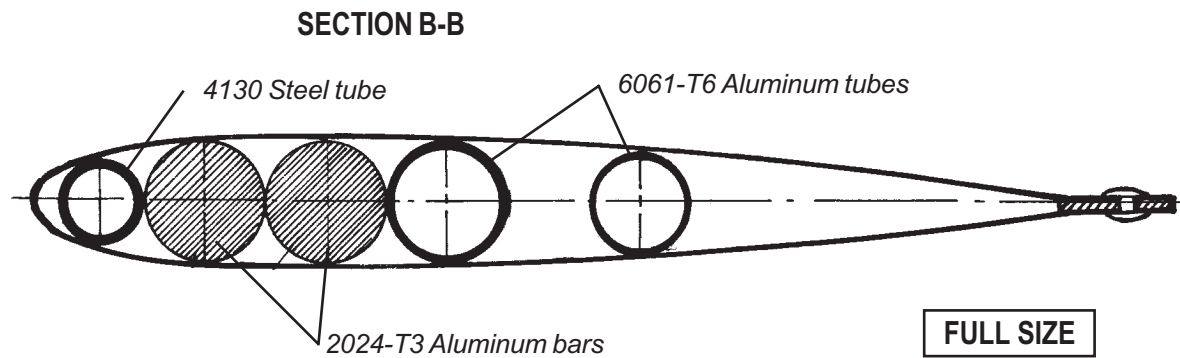
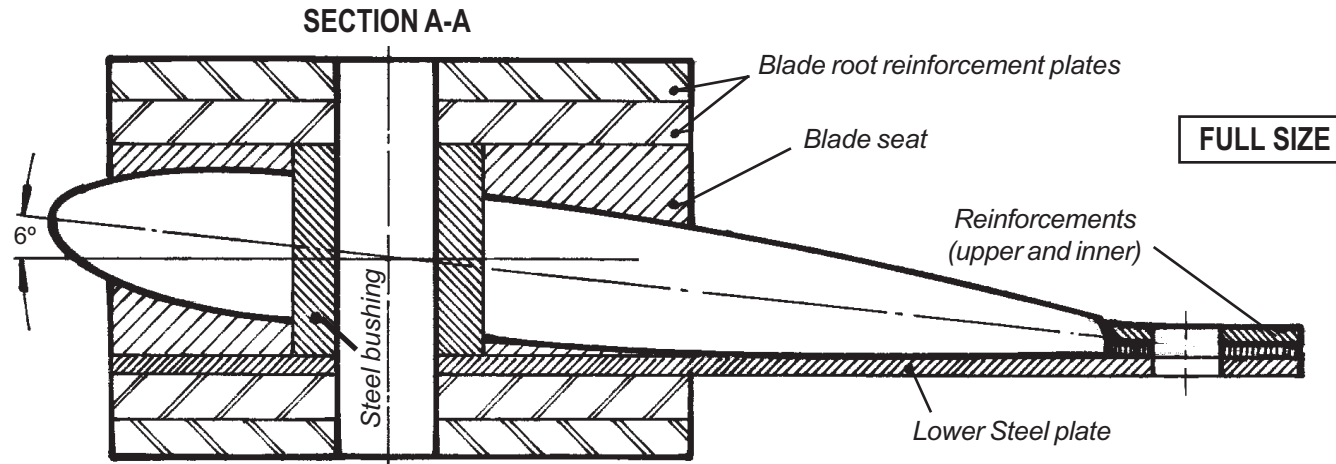


SEE SECTIONS A-A and B-B on page # 47

Note:  
All tubes must have a inner aluminum bar at the root - Lenght: 150 (5.905)

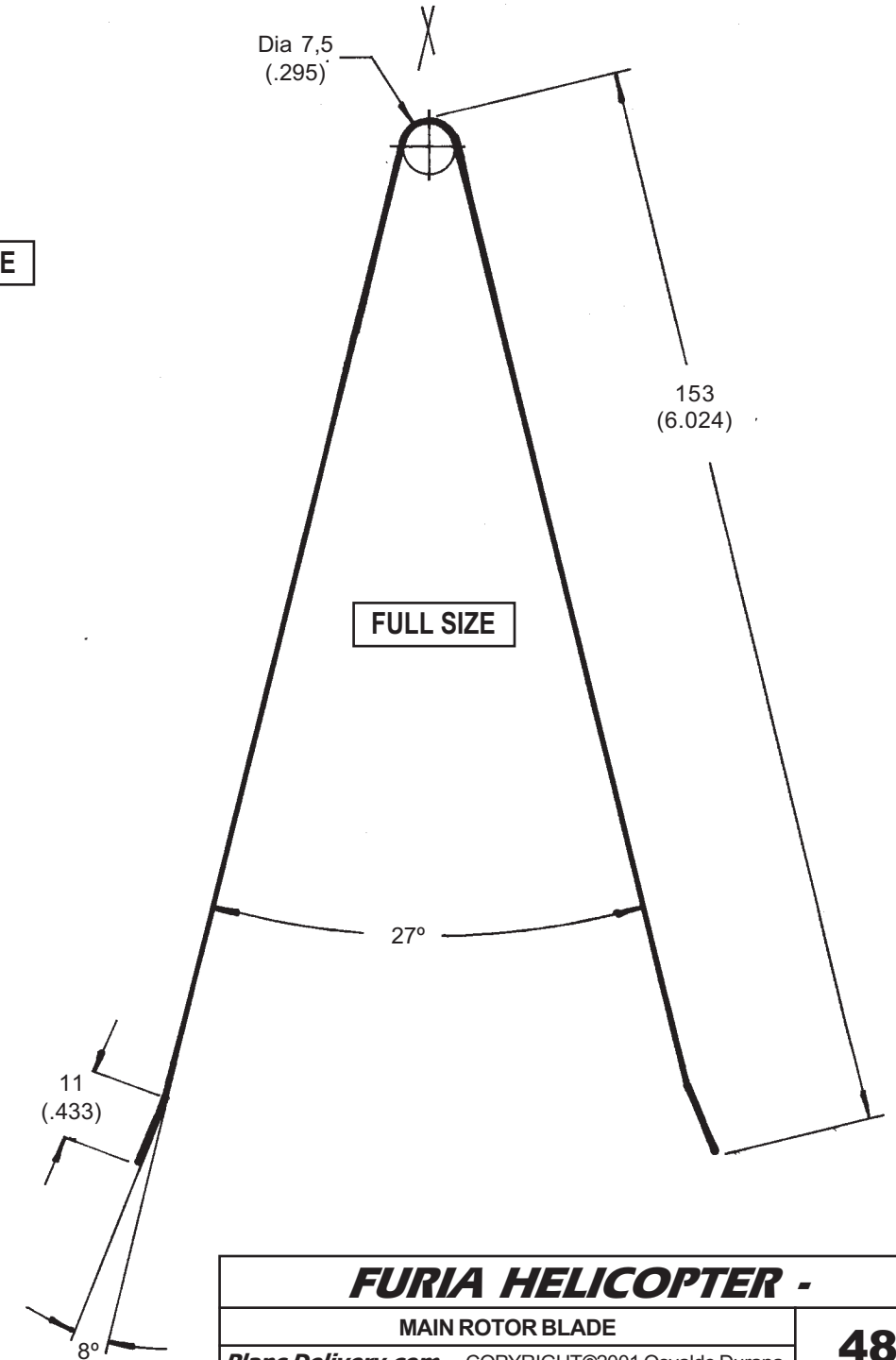


# MAIN ROTOR BLADE CROSS SECTIONS



## MAIN BLADE SKIN SECTION

Mat: 2024-T3 Aluminum 0,5 (.020) Thk  
 Length: 2680 (105.51) (2) Req'd  
 Bend the aluminum sheet to conform this shape

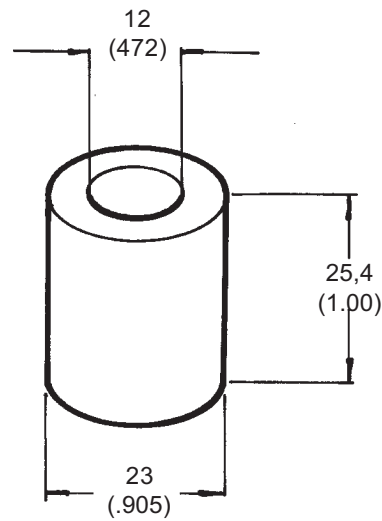


**FURIA HELICOPTER -**

MAIN ROTOR BLADE

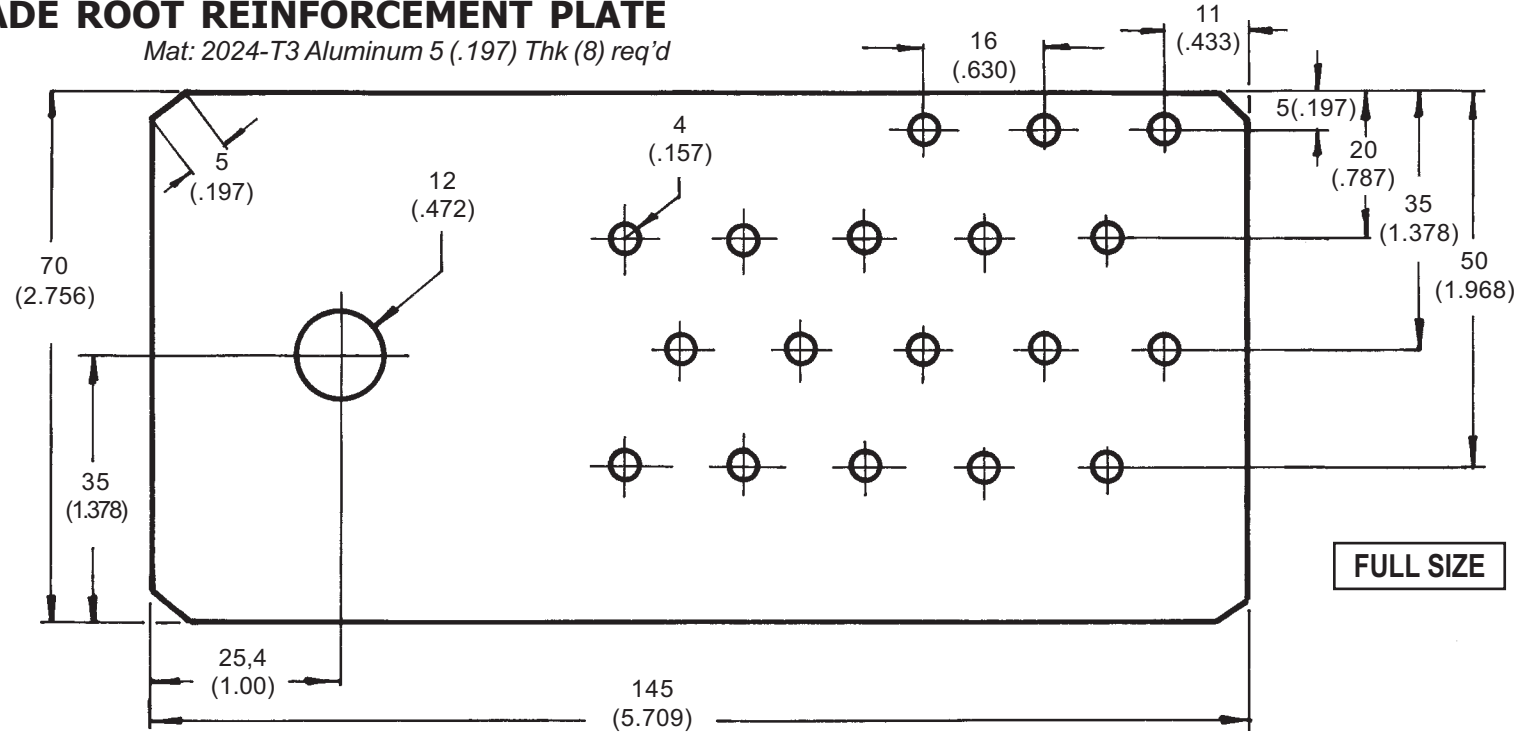
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**STEEL BUSHING**



**BLADE ROOT REINFORCEMENT PLATE**

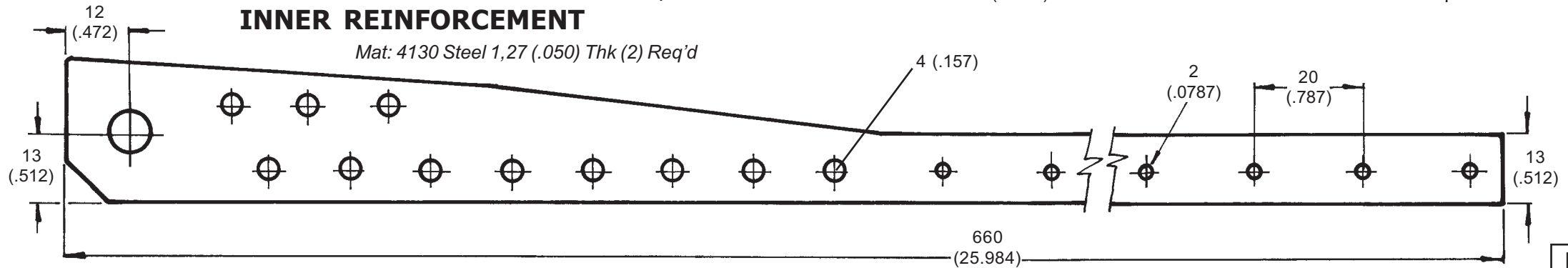
Mat: 2024-T3 Aluminum 5 (.197) Thk (8) req'd



FULL SIZE

**INNER REINFORCEMENT**

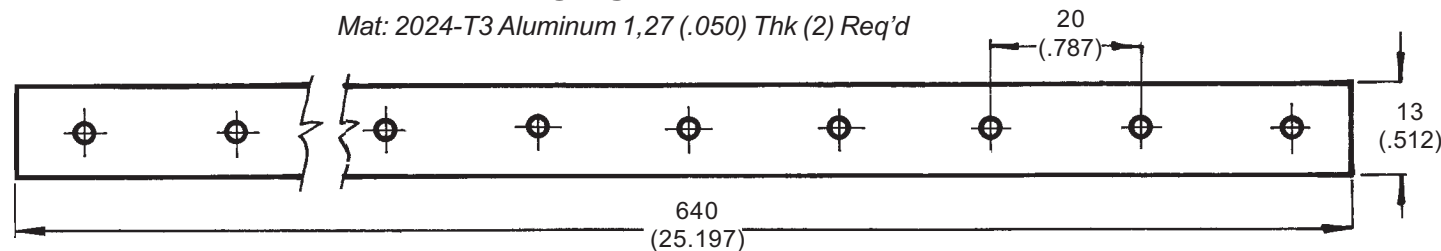
Mat: 4130 Steel 1,27 (.050) Thk (2) Req'd



FULL SIZE

**INNER REINFORCEMENT**

Mat: 2024-T3 Aluminum 1,27 (.050) Thk (2) Req'd



FULL SIZE

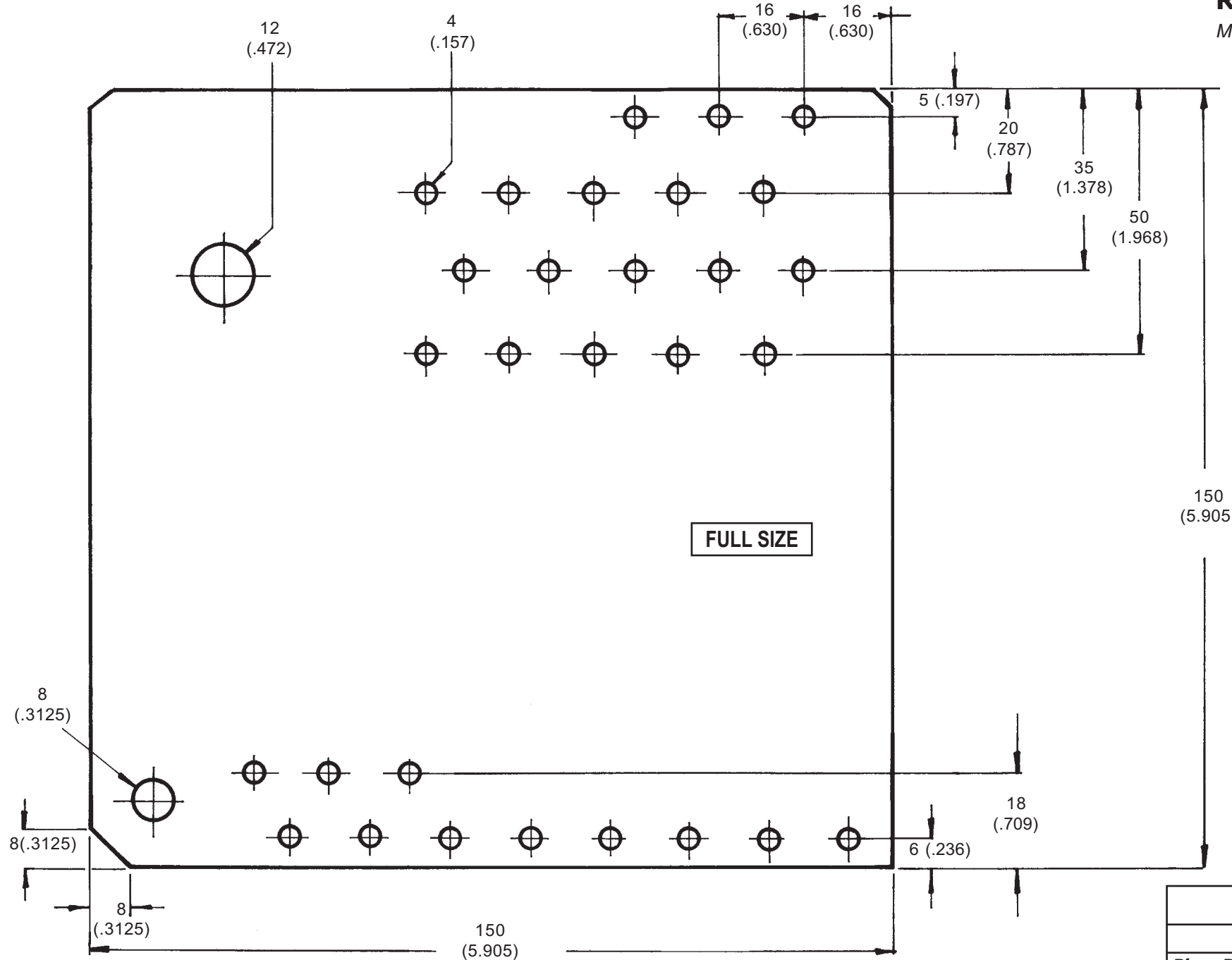
**FURIA HELICOPTER -**

MAIN ROTOR BLADE

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

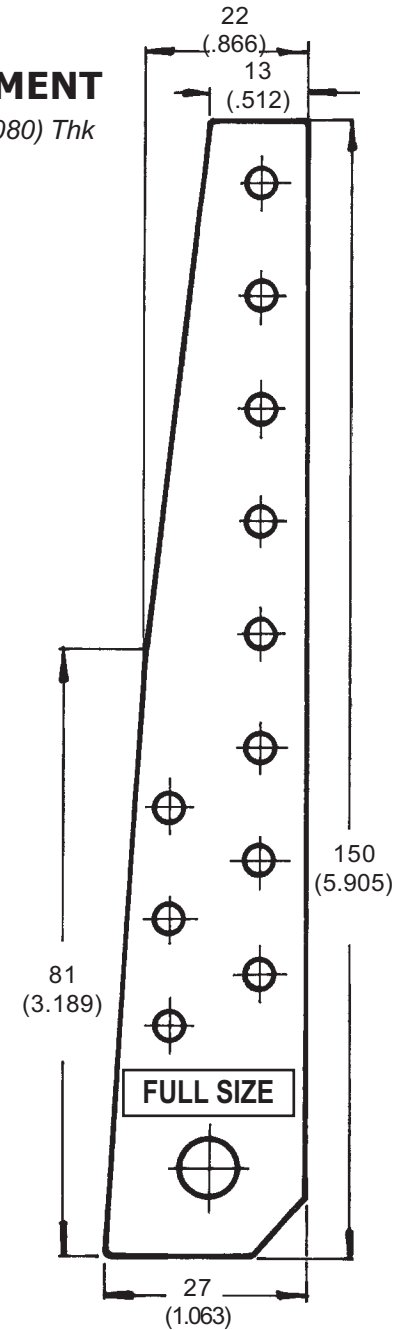
# LOWER BLADE PLATE

Mat: 4130 Steel 2 (.080) Thk (2) Req'd



# UPPER REINFORCEMENT

Mat: 4130 Steel 2 (.080) Thk (2) Req'd



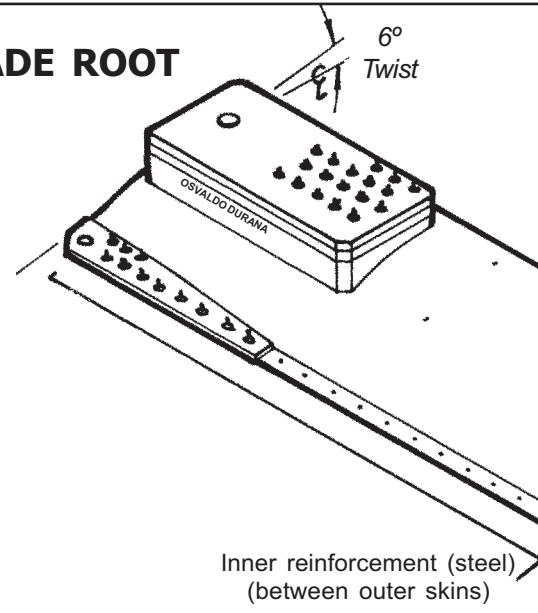
**FURIA HELICOPTER -**

MAIN ROTOR BLADE

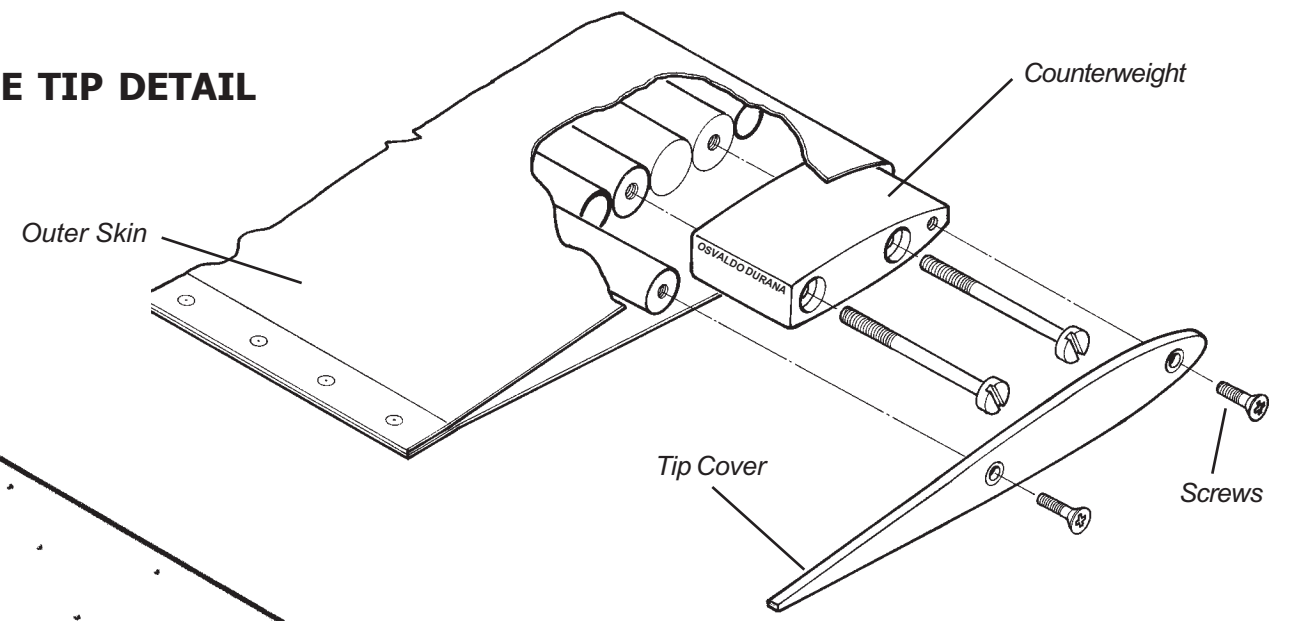
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**50**

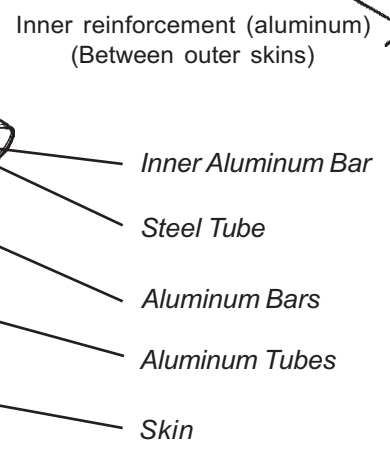
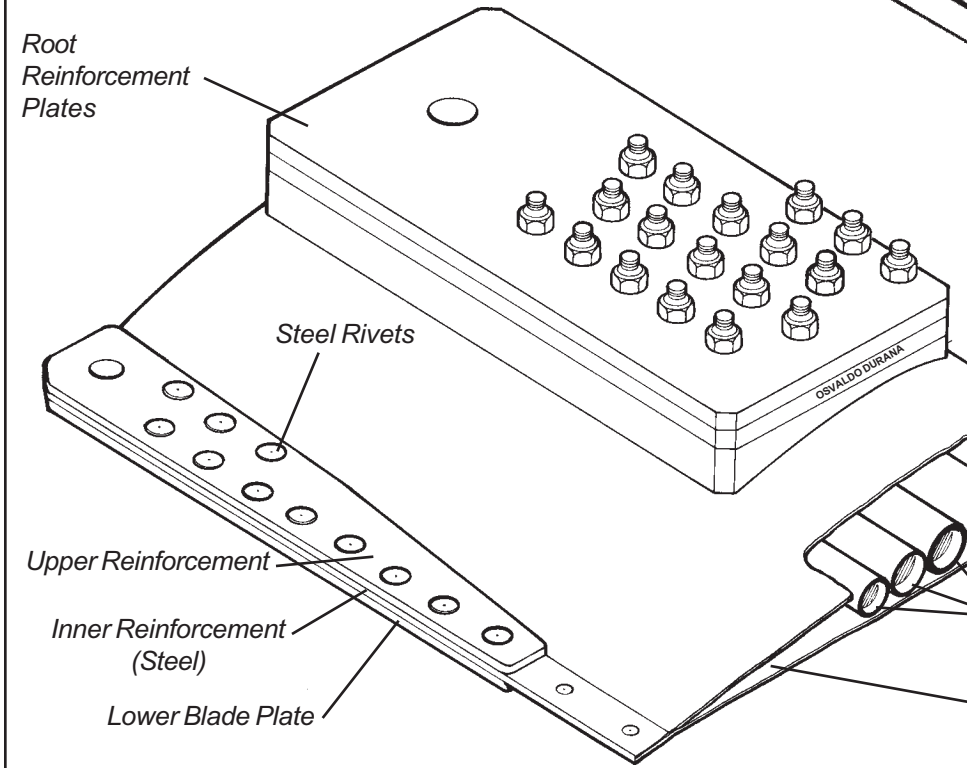
### BLADE ROOT



### BLADE TIP DETAIL



### BLADE ROOT DETAIL

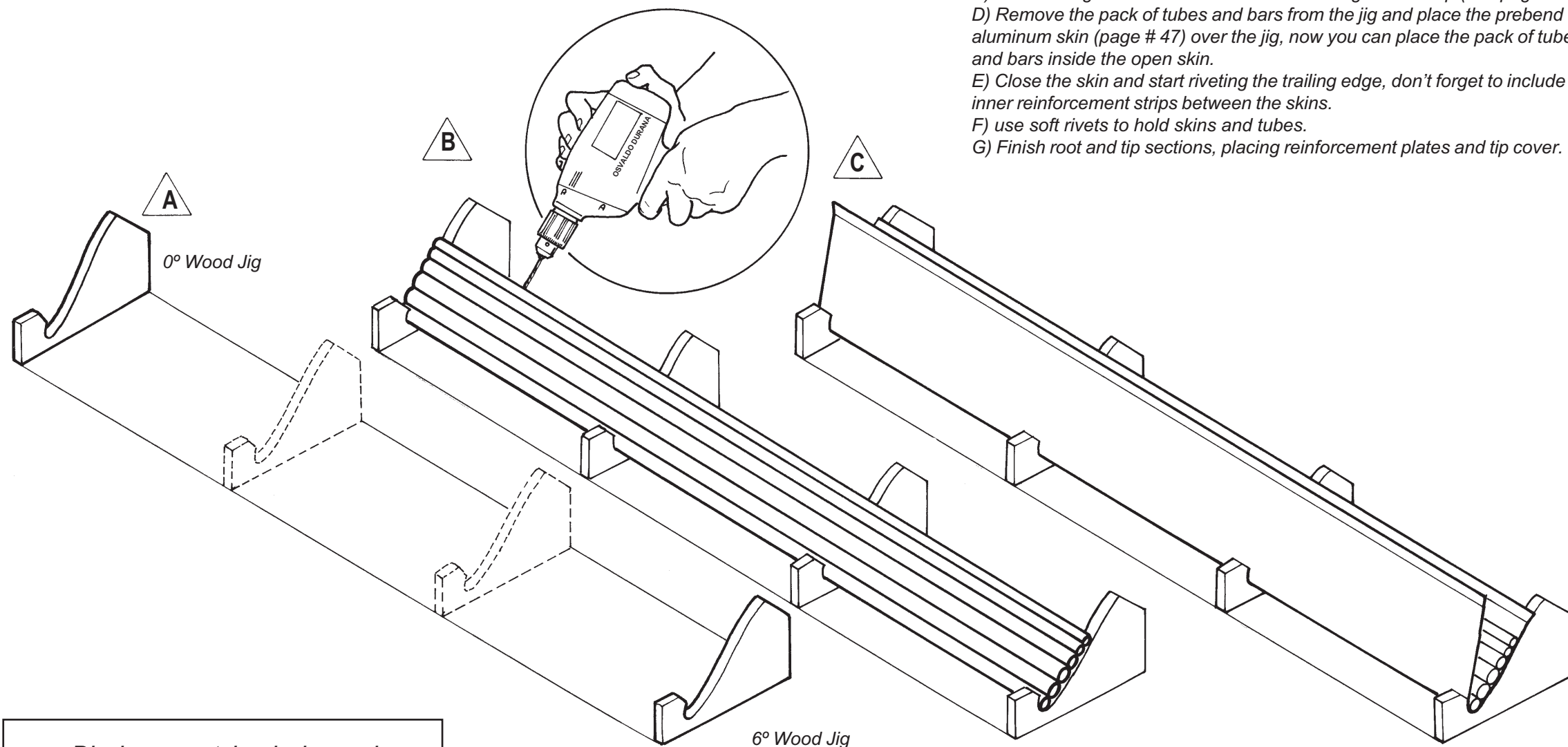


Leading Edge

Trailing Edge

### BLADE TIP

## MAIN ROTOR BLADE CONSTRUCTION



- A) Setting wood jigs, check alignment and determine jigs #1 and #2. You can add wood stringers between the jigs to make the assembly stronger.
- B) Mount the tubes and bars over the jig so you can rivet them together, Check that tubes follow the twist. (6°)
- C) After cutting the tubes to allow fit counterweight at the tip (see page # 50).
- D) Remove the pack of tubes and bars from the jig and place the prebend aluminum skin (page # 47) over the jig, now you can place the pack of tubes and bars inside the open skin.
- E) Close the skin and start riveting the trailing edge, don't forget to include the inner reinforcement strips between the skins.
- F) use soft rivets to hold skins and tubes.
- G) Finish root and tip sections, placing reinforcement plates and tip cover.

*Blades must be balanced*

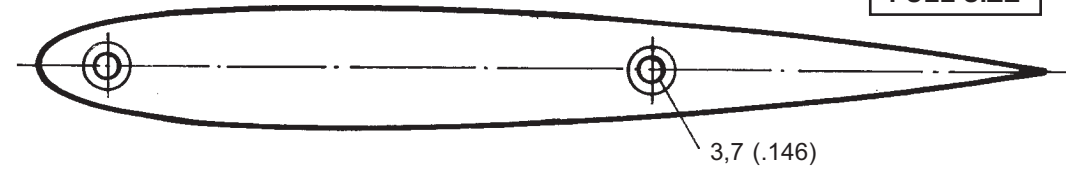
**FURIA HELICOPTER -**

MAIN ROTOR BLADE CONSTRUCTION

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**52**

FULL SIZE

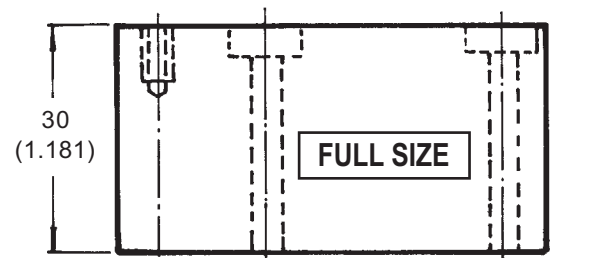
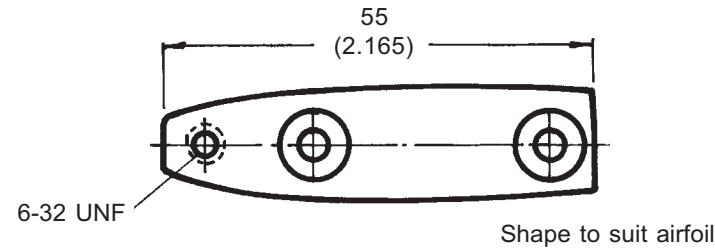


### BLADE TIP COVER

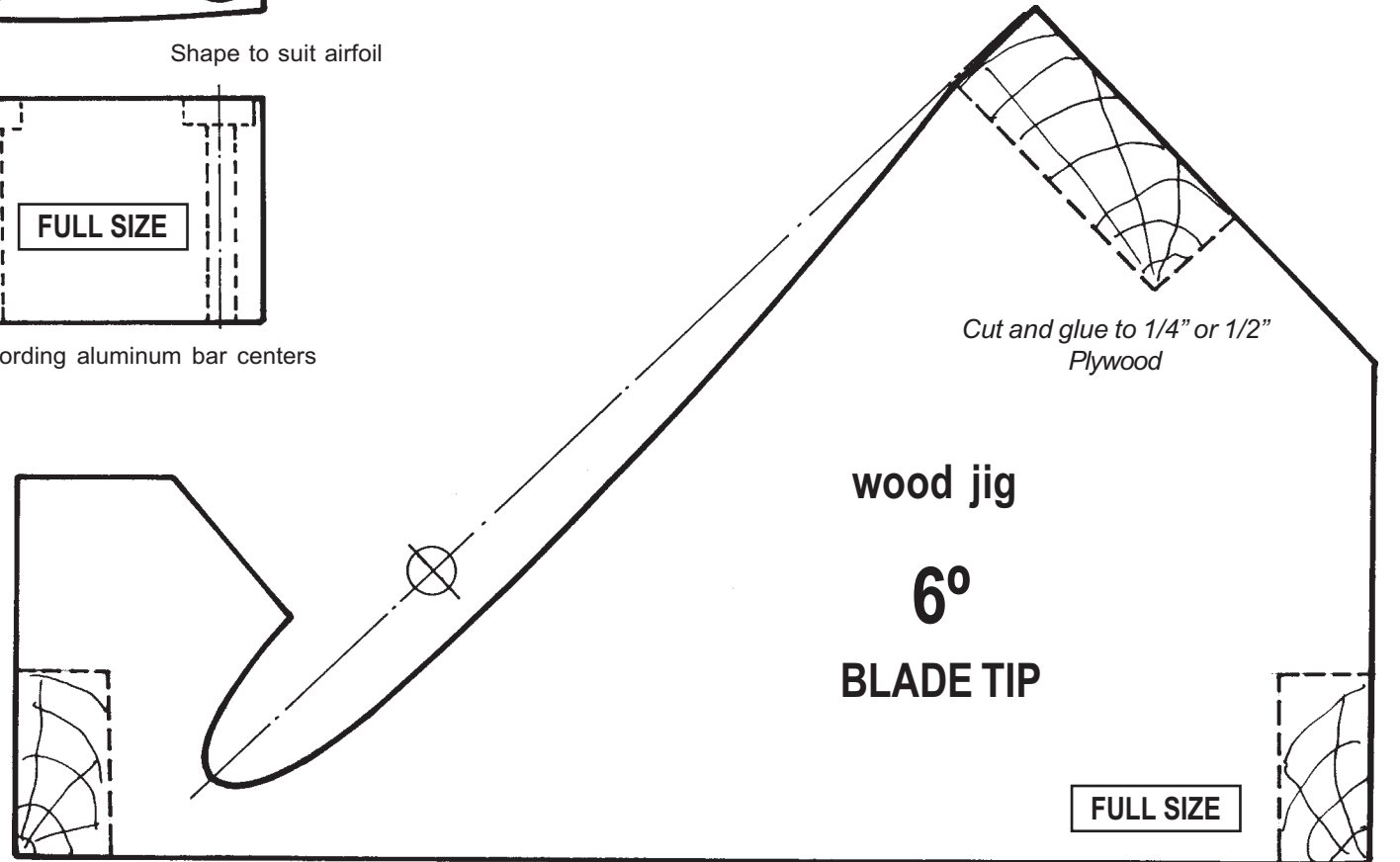
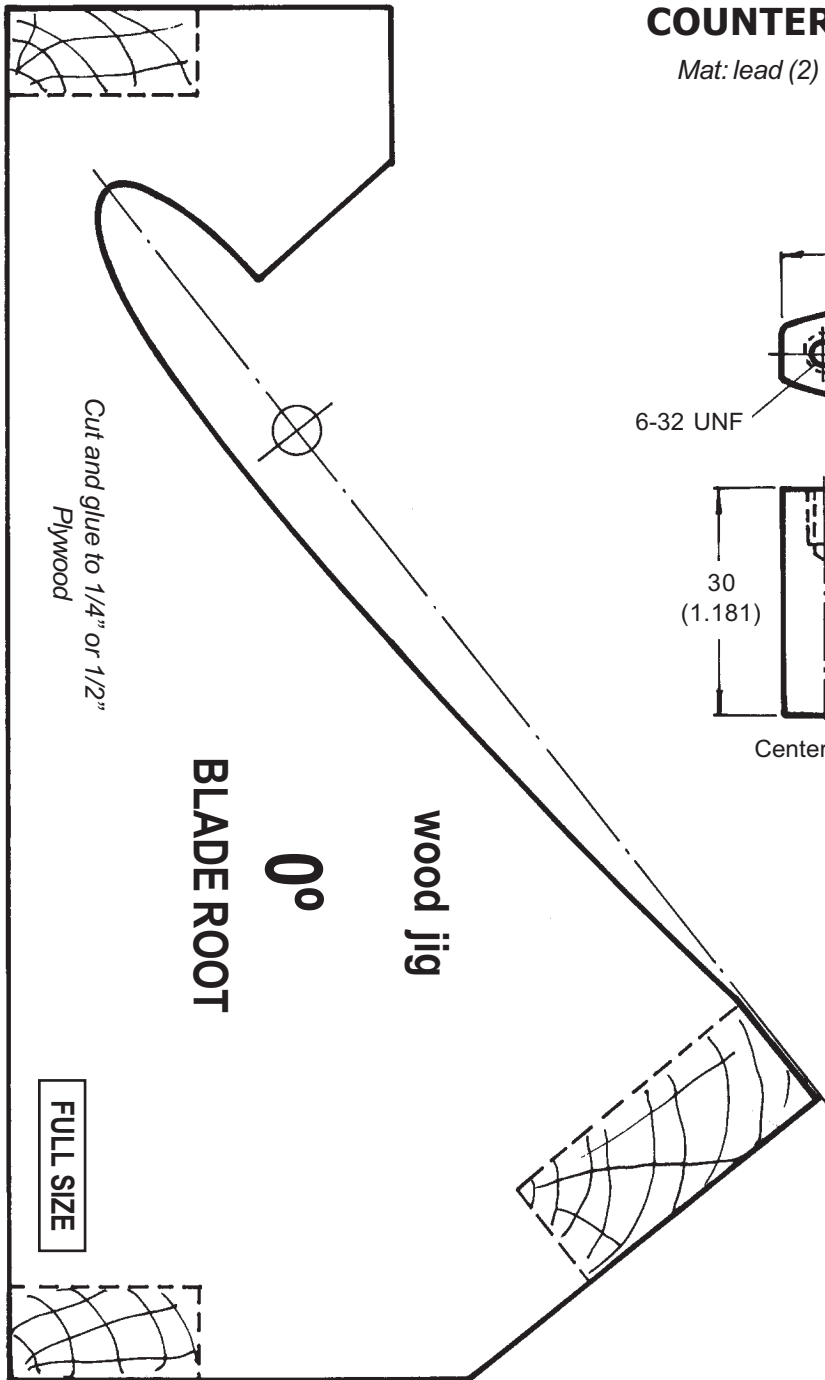
Mat: 2024-T-3 aluminum 5 (.197) Thk (2) req'd  
(Shape to suit airfoil)

### COUNTERWEIGHT

Mat: lead (2) Req'd



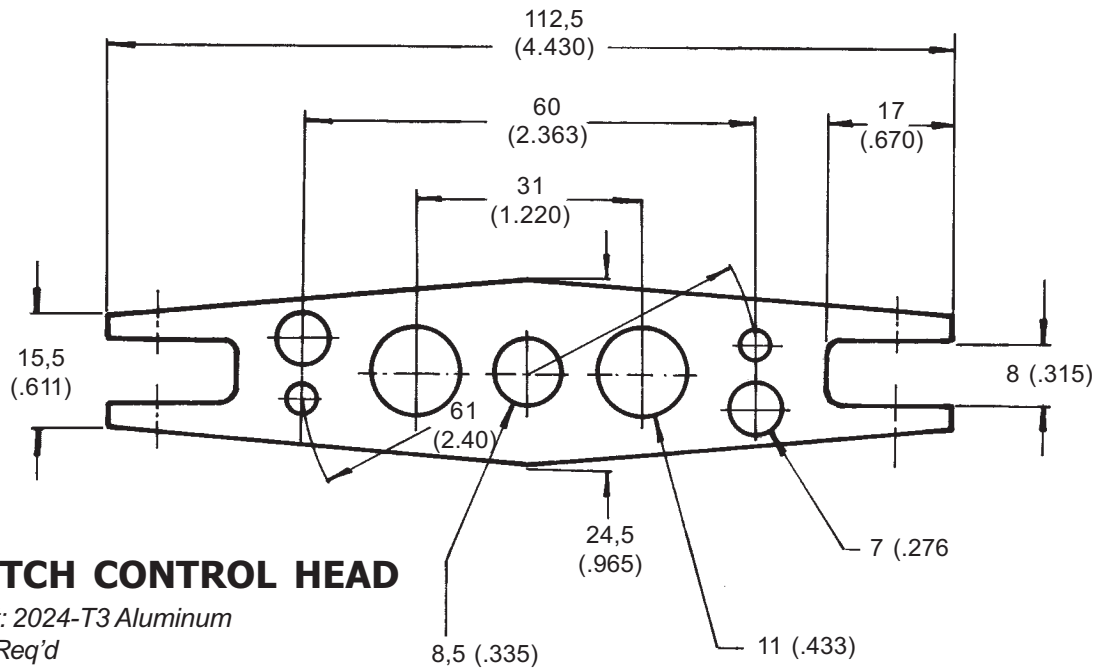
Center holes according aluminum bar centers



## FURIA HELICOPTER -

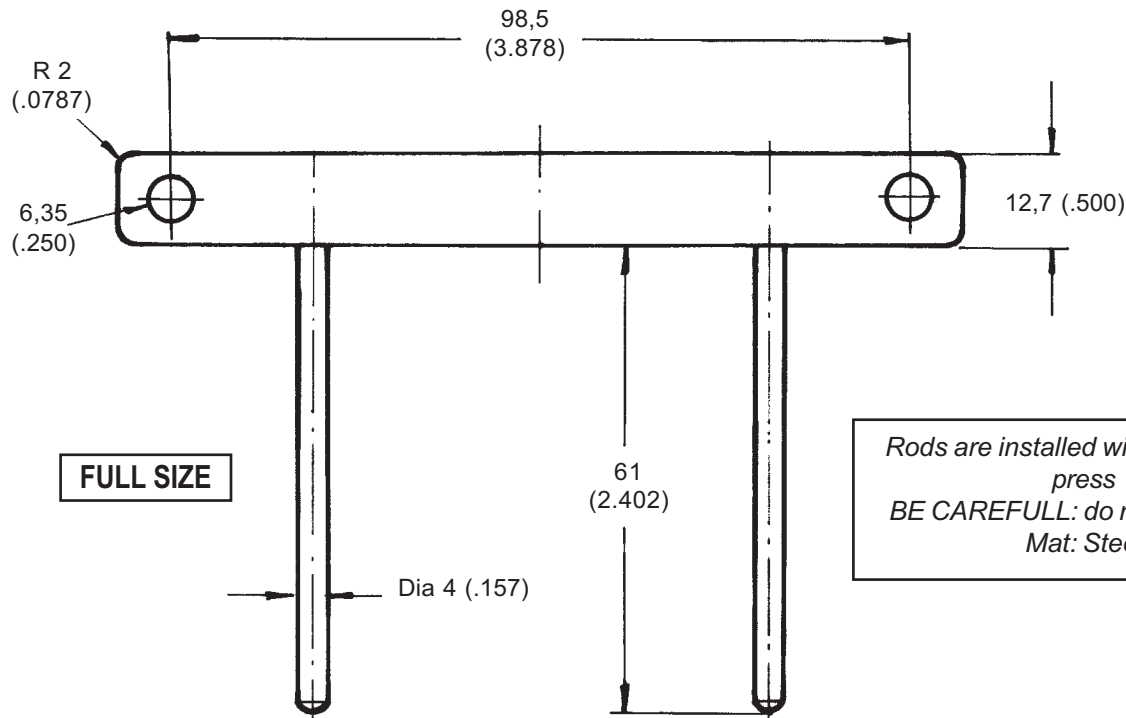
MAIN ROTOR BLADE

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



**PITCH CONTROL HEAD**

Mat: 2024-T3 Aluminum  
(1) Req'd

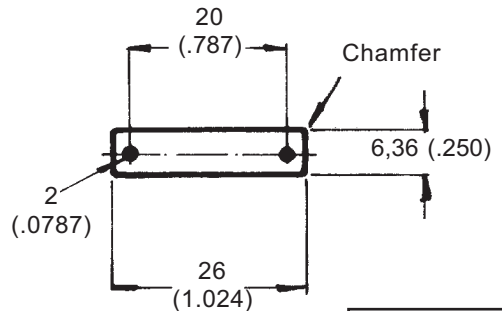


FULL SIZE

Rods are installed with the aid of a press  
BE CAREFULL: do not bend rods  
Mat: Steel

**STEEL PIN**

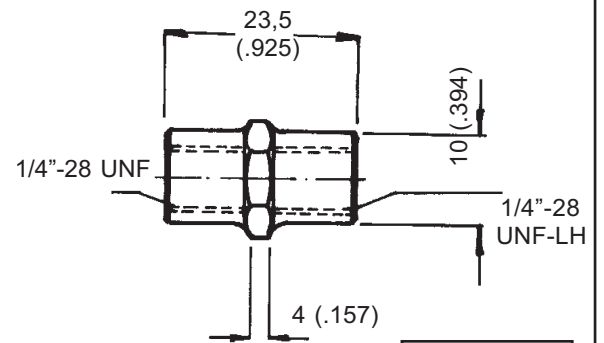
(2) Req'd



FULL SIZE

**PITCH CONTROL LINKAGE**

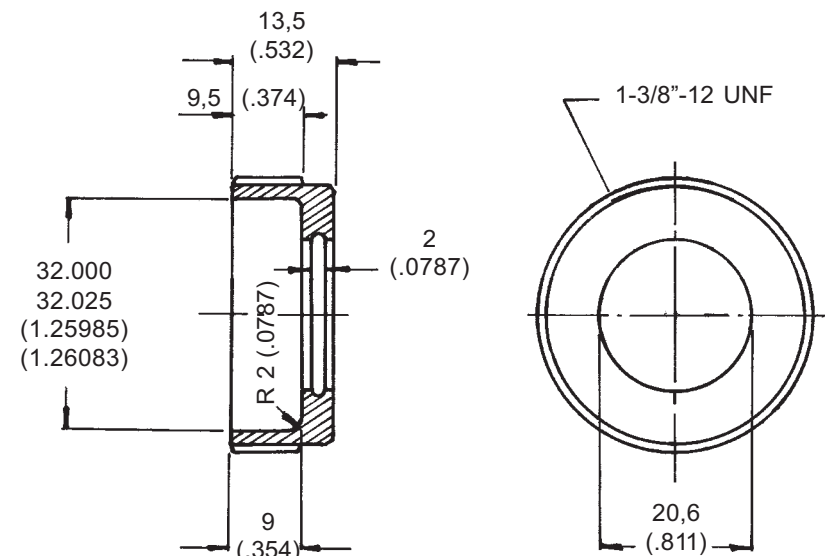
Mat: 1/2" hex aluminum bar (2) Req'd



FULL SIZE

**BLADE GRIP NUT**

Mat: 4130 Steel (2) Req'd



FULL SIZE

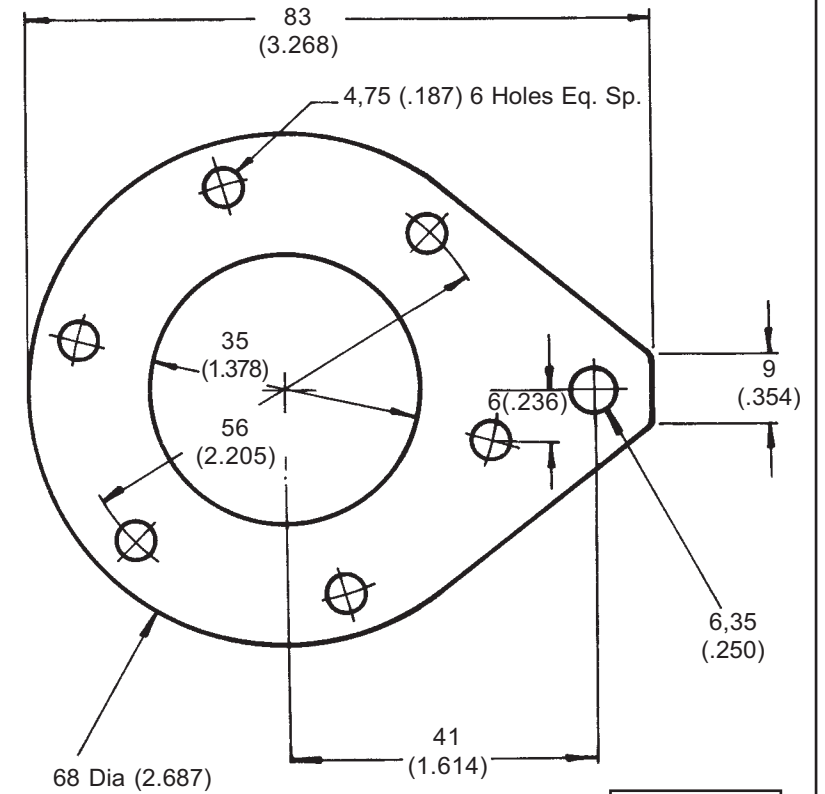
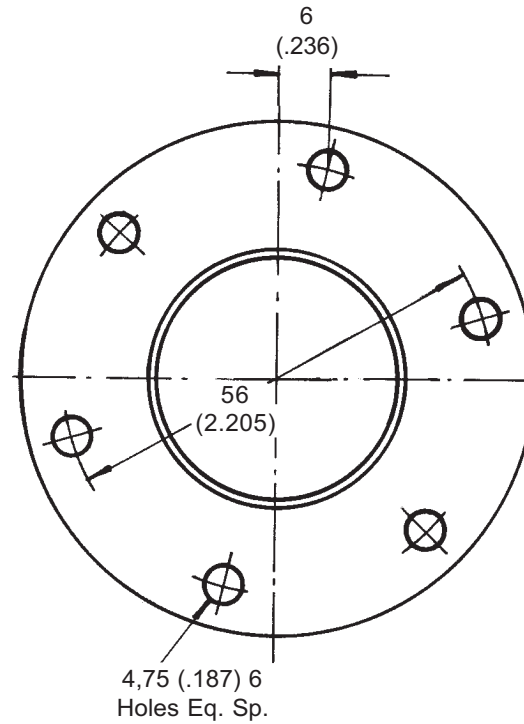
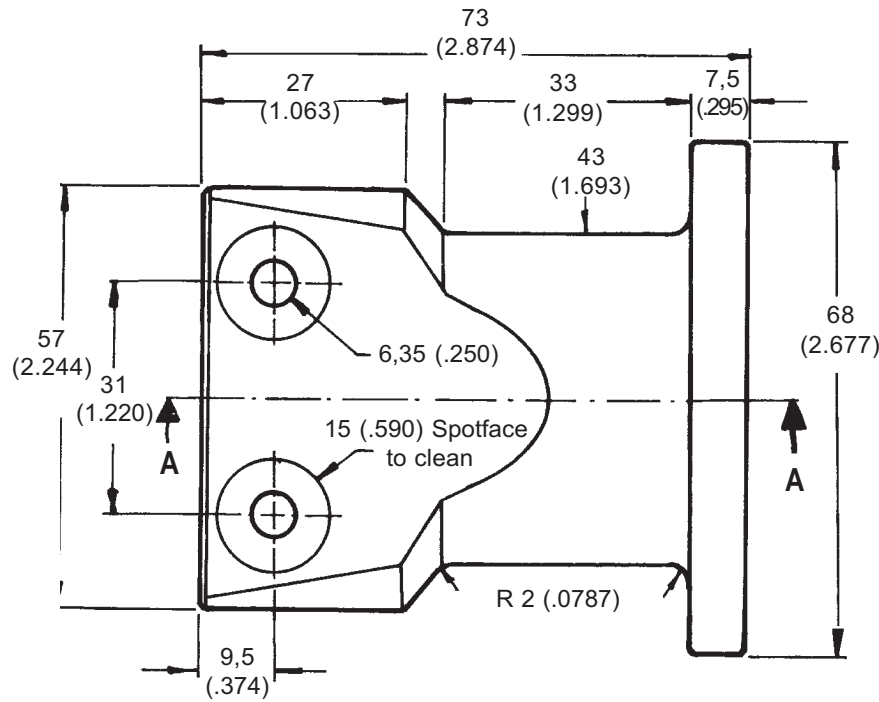
**FURIA HELICOPTER -**

TAIL ROTOR



# TAIL BLADE GRIP

Mat: 6061-T6 or 2024-T3 Aluminum (2) Req'd



# PITCH CONTROL HORN

Mat: 2024-T3 Aluminum 4 (.157) Thk (2) Req'd

# AXLE NUT

Mat: Steel (2) Req'd

FULL SIZE

FULL SIZE

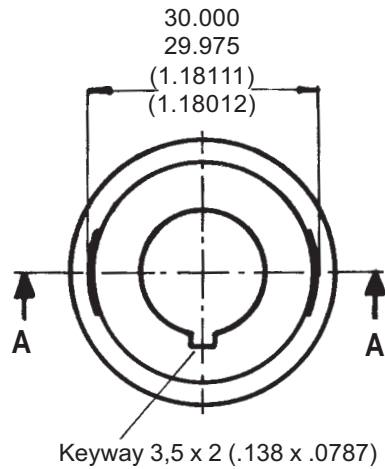
FULL SIZE

**FURIA HELICOPTER -**

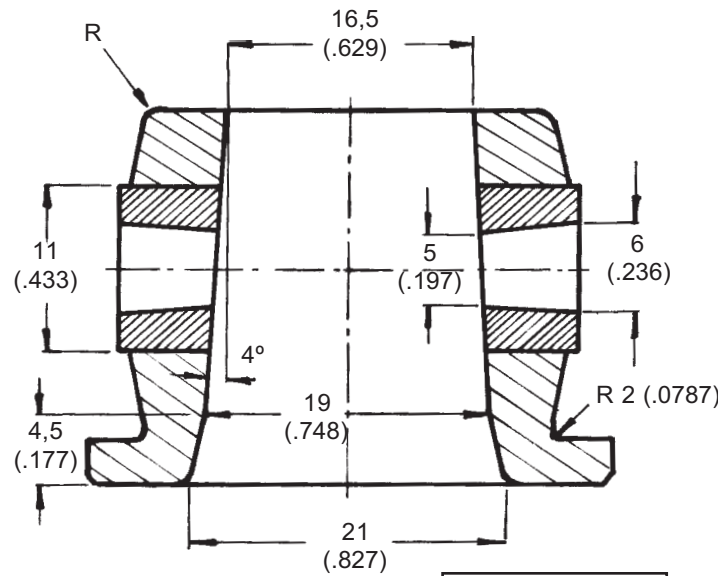
TAIL ROTOR

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

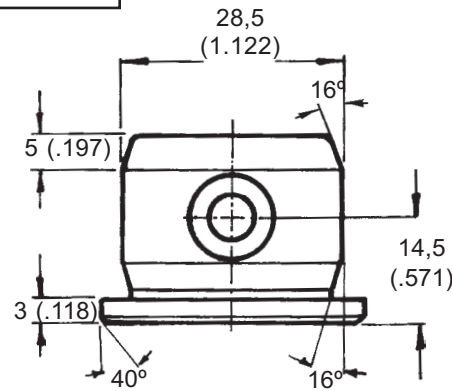
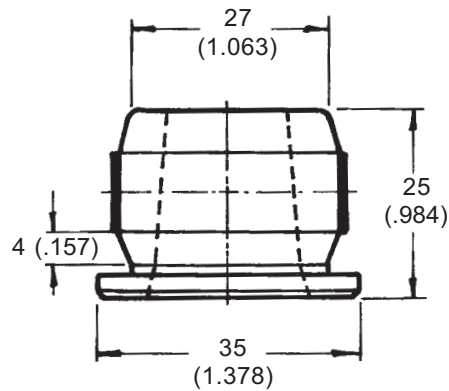
# TAIL ROTOR HUB



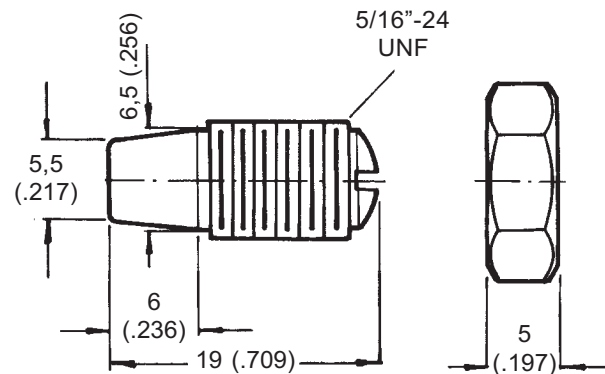
FULL SIZE



SECTION A-A  
ENLARGED



**TAIL ROTOR HUB**  
(1) Req'd  
Mat: 2024-T3 Aluminum with Bronze inserts (tapered bushings)  
Use anaerobic adhesive to fix bushings in place (Loctite®)



# AXLE PIVOT SCREWS AND NUTS

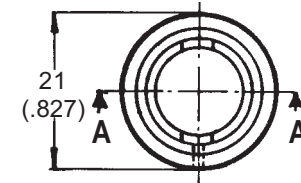
Mat: Steel (2) Req'd

(ENLARGED)

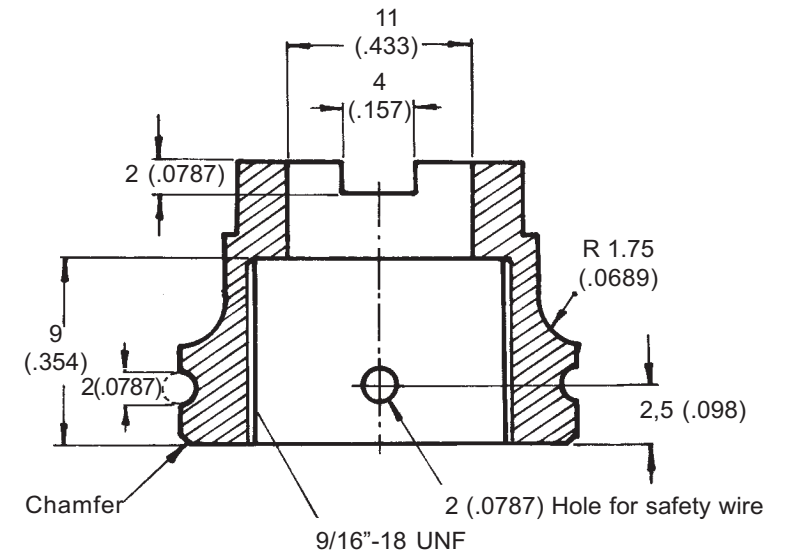
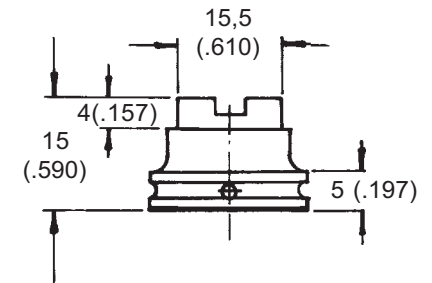
FASTEN SCREWS WITH ADHESIVE (Loctite)

# RETAINER NUT

Mat: Steel (1) Req'd



FULL SIZE



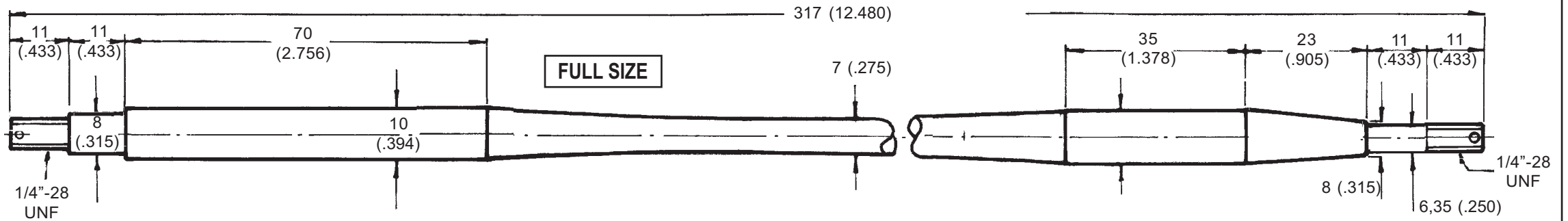
SECTION A-A ENLARGED

# FURIA HELICOPTER -

TAIL ROTOR

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

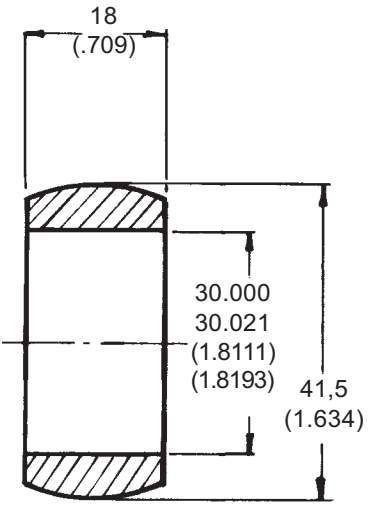
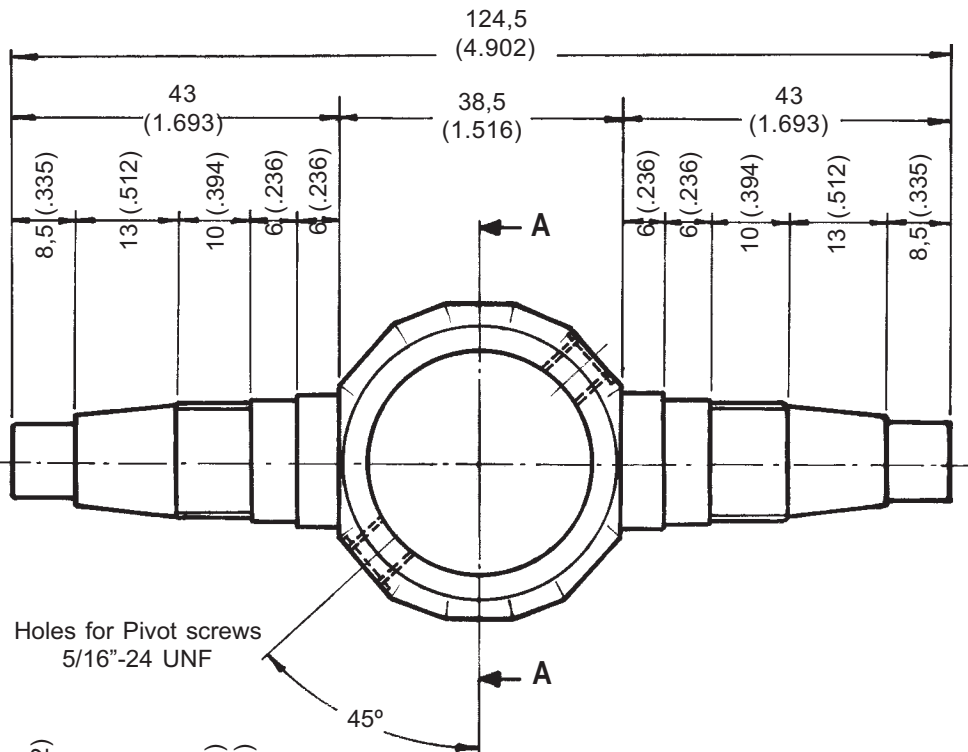
**PITCH-CONTROL AXLE** *Mat: Steel (1) Req'd*



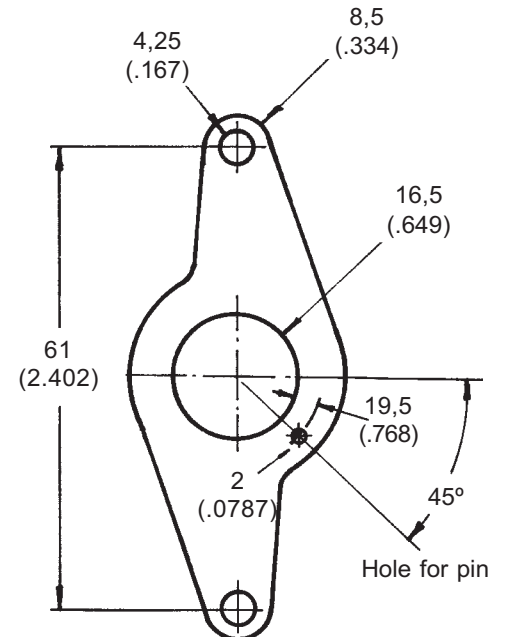
**FULL SIZE**

**CONTROL HEAD GUIDE**

*Mat: Steel 2 (.0787) Thk (1) Req'd*



**SECTION A-A**

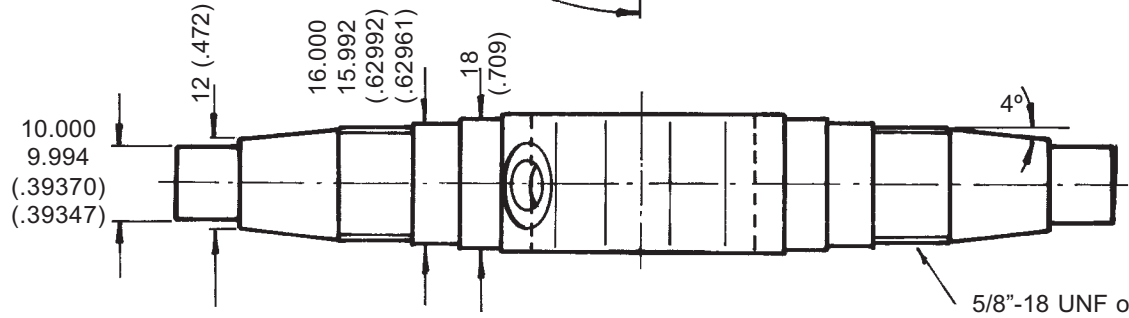


Once installed properly over the hub, make the 2 mm (.0787) hole on Tail Rotor Hub and place a Pin ( See tail Rotor Exploded view Page # 11

**FULL SIZE**

**AXLE**

*Mat: 4140 Steel (1) Req'd*



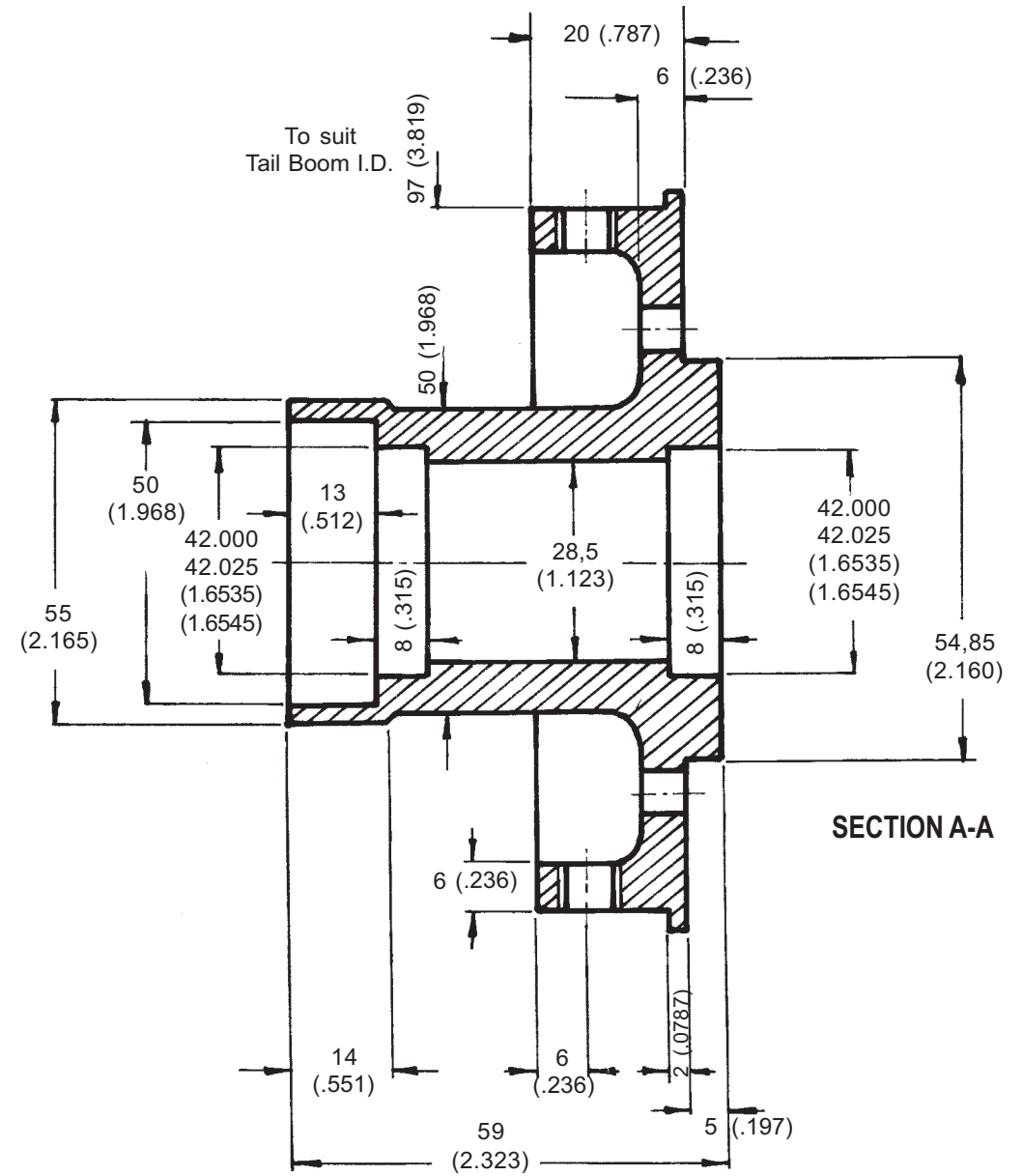
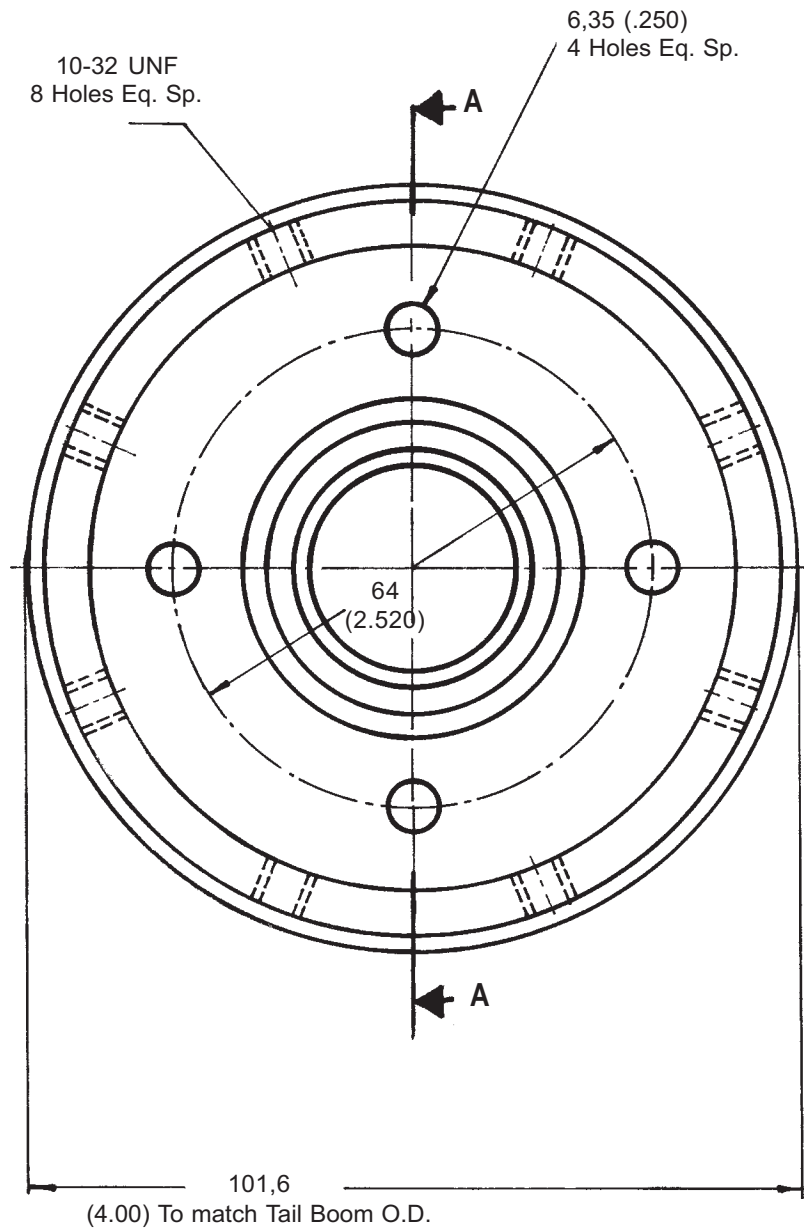
**FULL SIZE**

**FURIA HELICOPTER -**

**TAIL ROTOR**

# TAIL ROTOR GEARBOX REAR CAP

Mat: Aluminum (2) Req'd

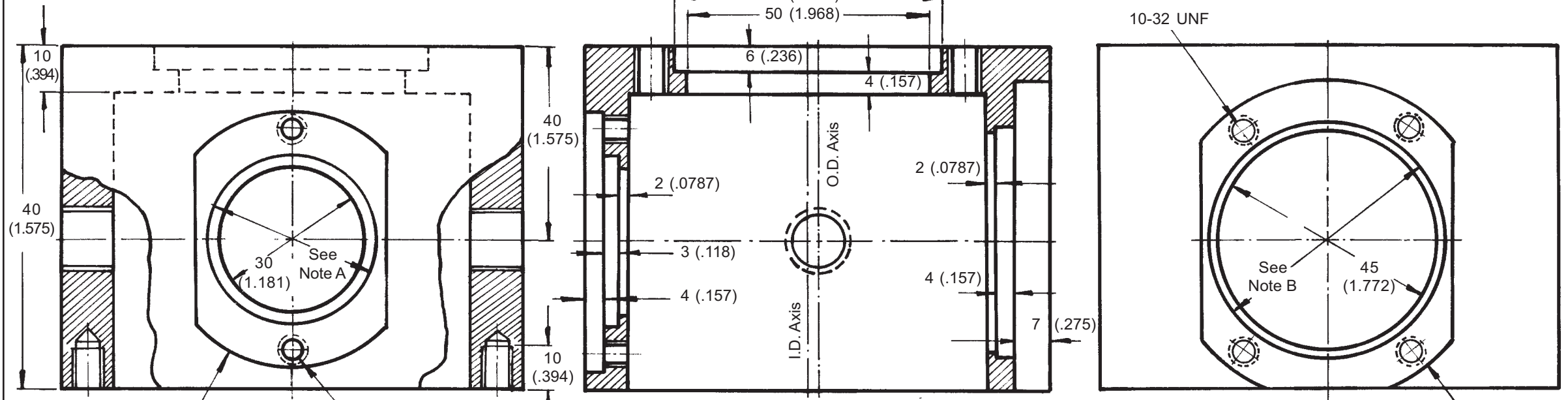


FULL SIZE

<b>FURIA HELICOPTER -</b>	
TAIL ROTOR GEARBOX CAP	
Plans Delivery.com	COPYRIGHT©2001 Osvaldo Durana

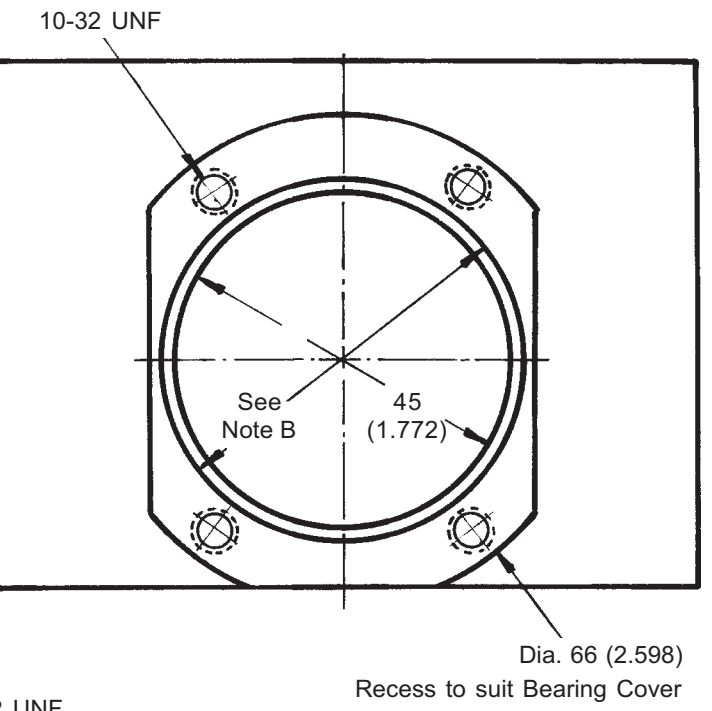


**SECTION A-A**

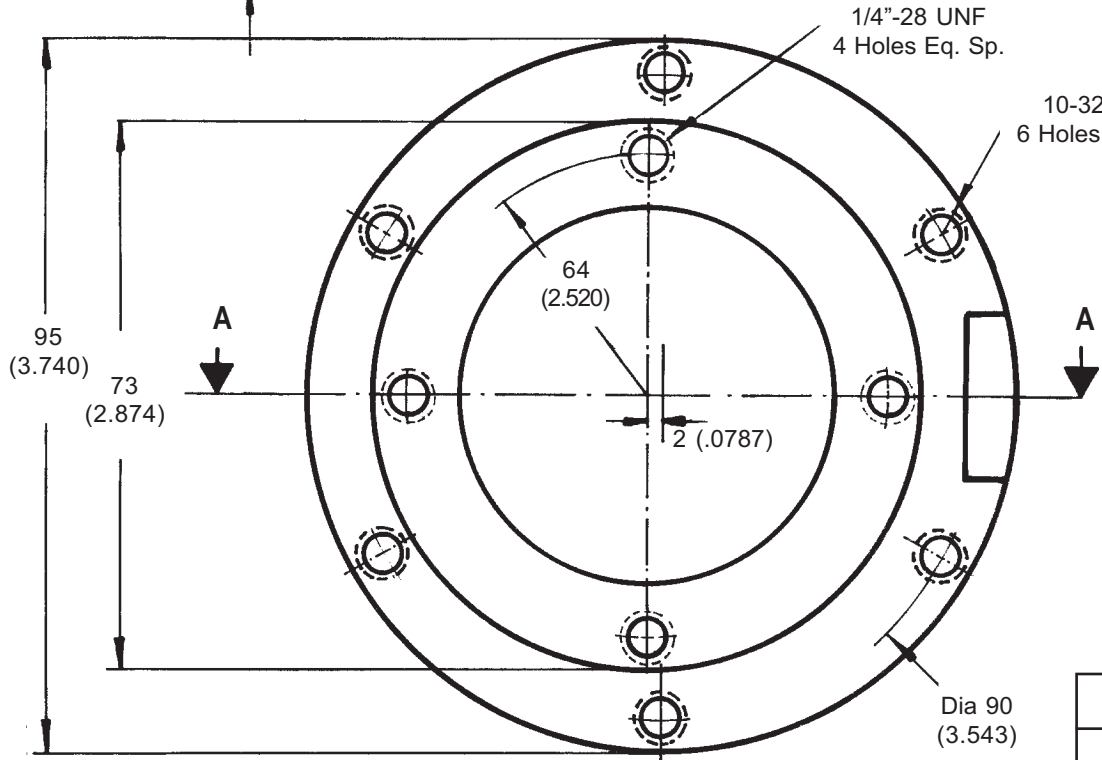


Dia 54 (2.125)  
10-32 UNF  
Recess to suit Bearing Cover (Small)

**Note A:**  
Diameter  
35.000  
35.025  
(1.3779)  
(1.3789)



**Note B**  
Diameter  
47.000  
47.025  
(1.85040)  
(1.85138)

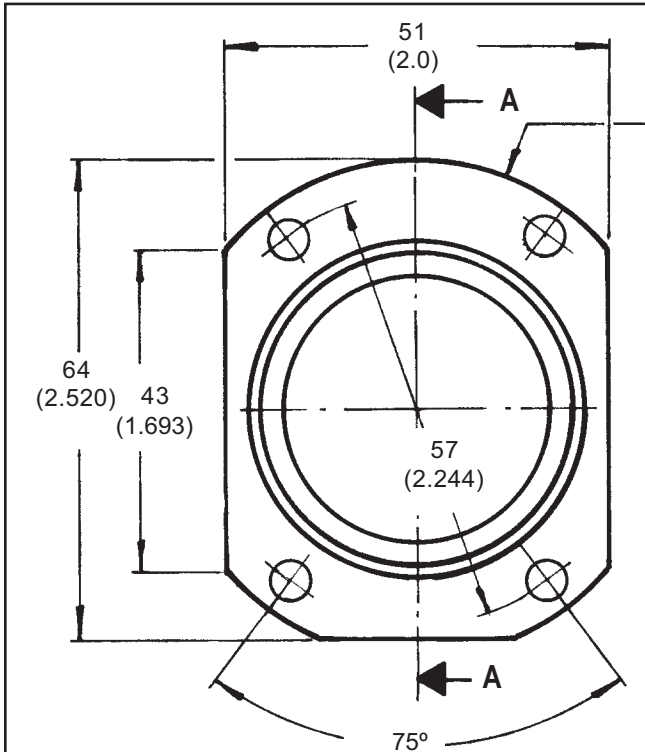


**FULL SIZE**

**TAIL ROTOR GEARBOX**

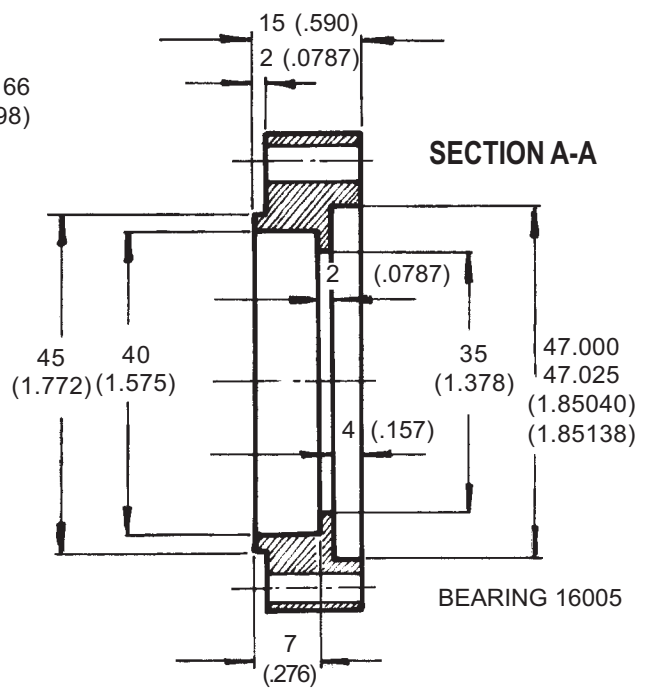
Mat: Aluminum (2) Req'd





FULL SIZE

Dia. 66  
(2.598)

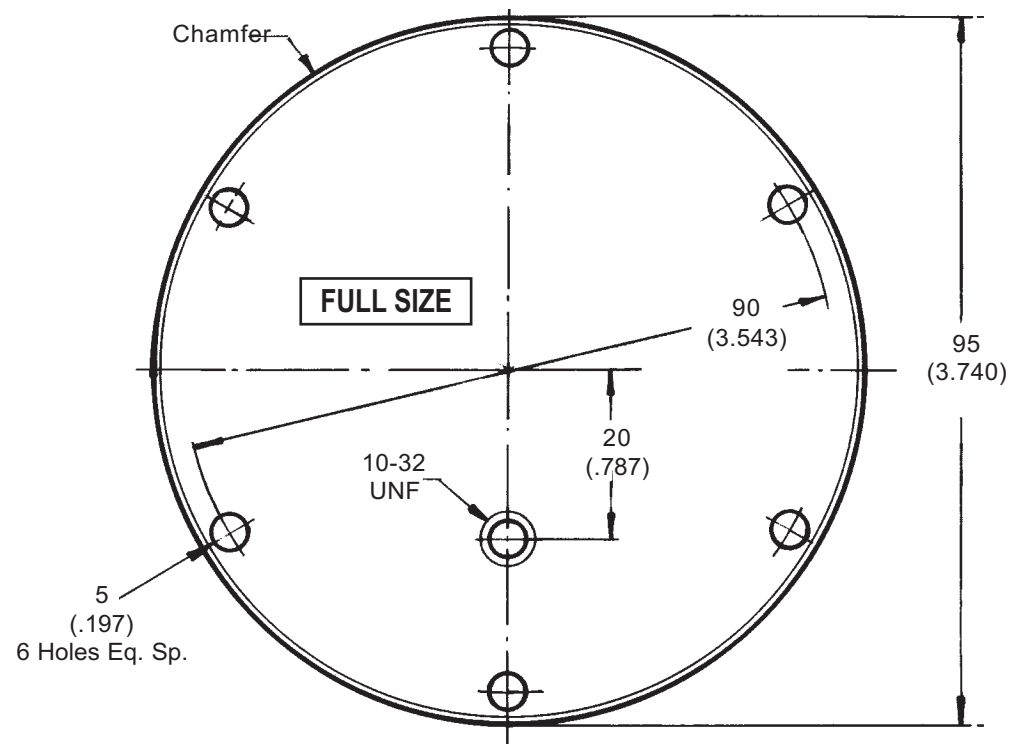


SECTION A-A

BEARING 16005

**TAIL ROTOR LID**

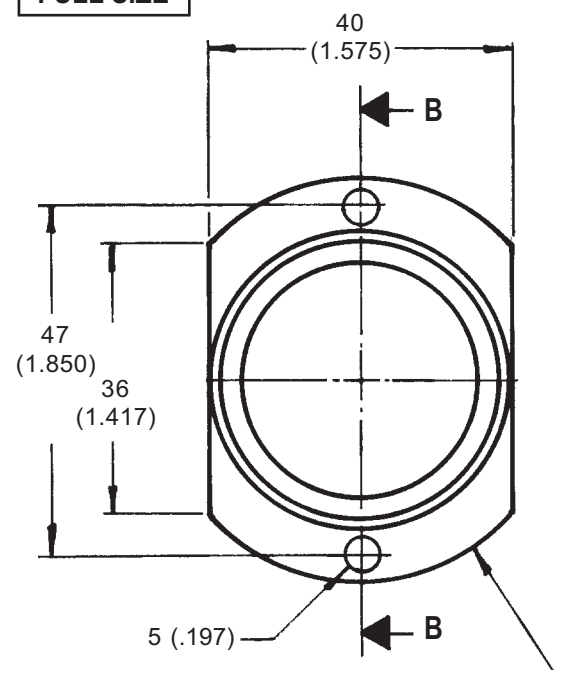
Mat: Aluminum 6 (.236) Thk (2) Req'd



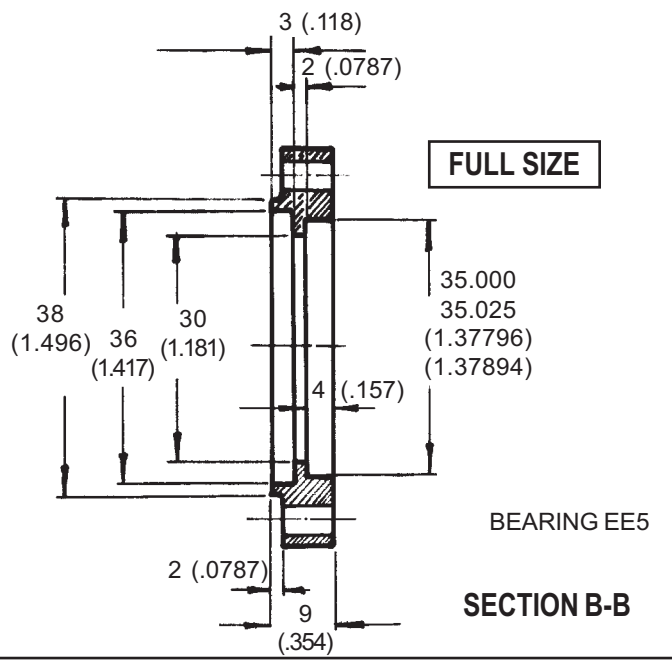
FULL SIZE

**BEARING COVERS**

Mat: Aluminum (2) of each Req'd

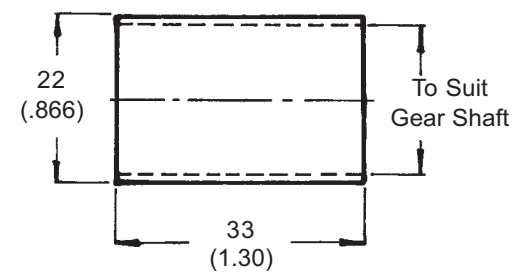


FULL SIZE



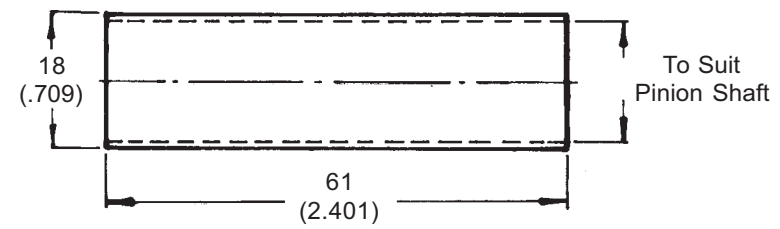
SECTION B-B

BEARING EE5



**GEARS  
STEEL BUSHINGS**

Mat: Steel (1) of each Req'd

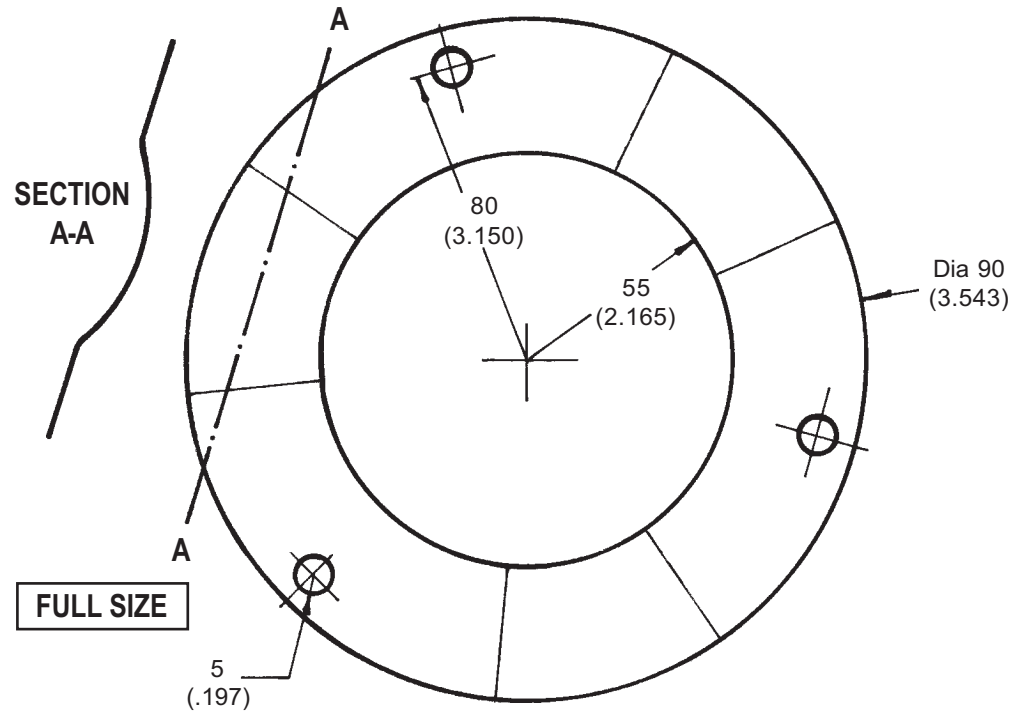


FULL SIZE

<b>FURIA HELICOPTER -</b>	
TAIL ROTOR GEARBOX	
Plans Delivery.com	COPYRIGHT©2001 Osvaldo Durana
<b>61</b>	

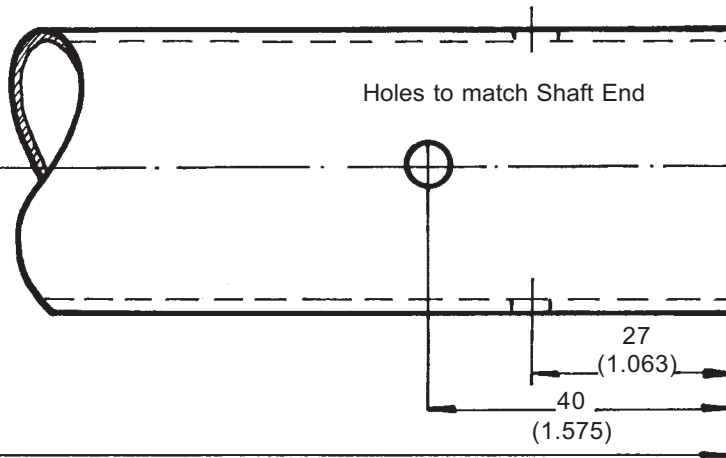
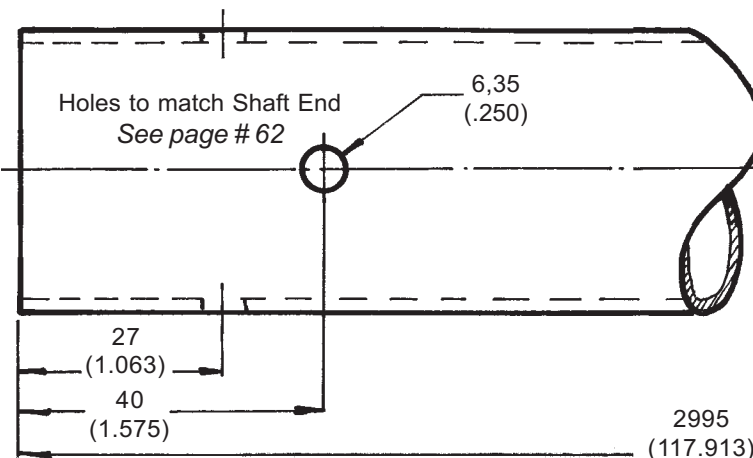
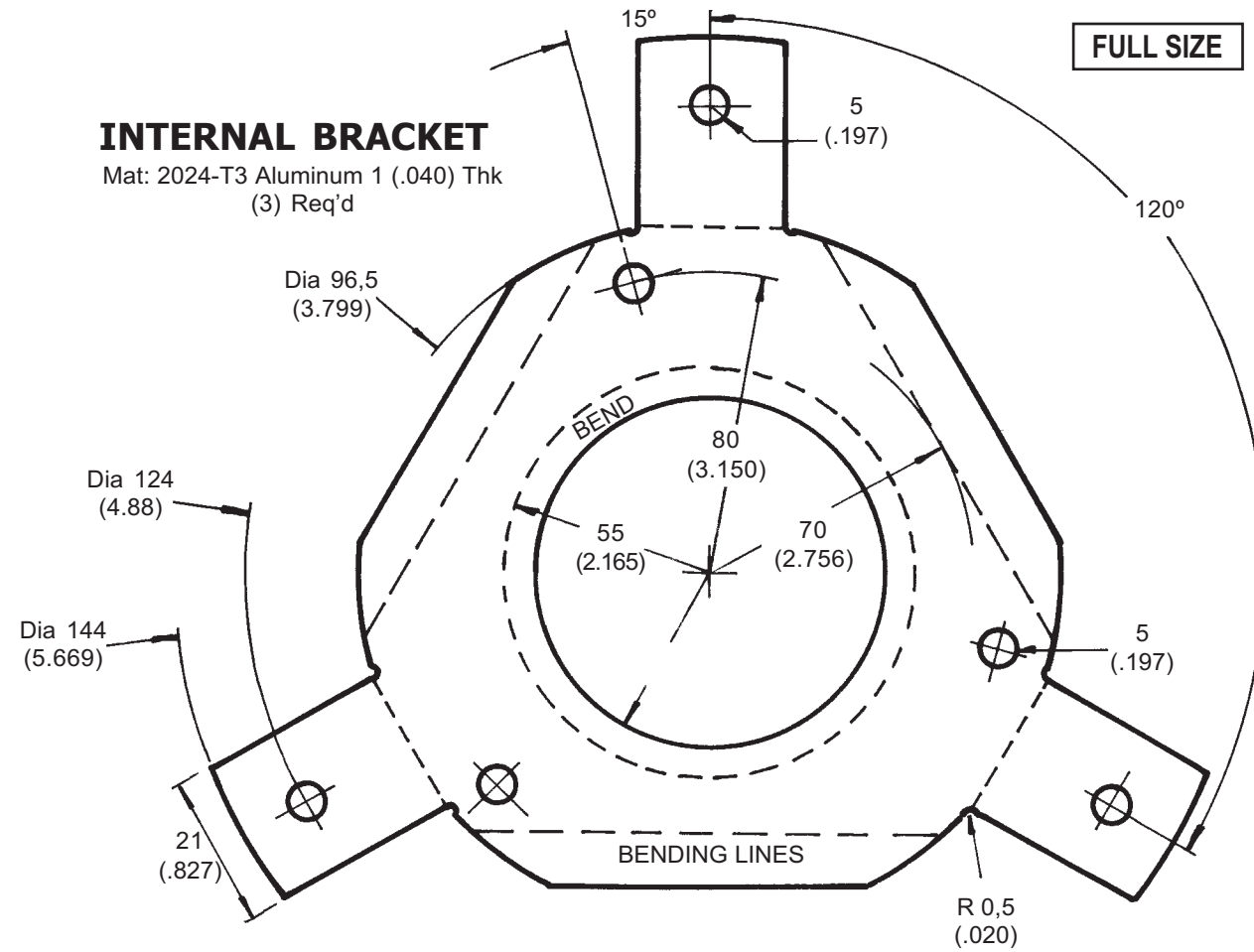


**RETAINING WASHER** Mat: Aluminum 0,8 (.032) Thk (3) Req'd



**INTERNAL BRACKET**

Mat: 2024-T3 Aluminum 1 (.040) Thk (3) Req'd



**SHAFT**

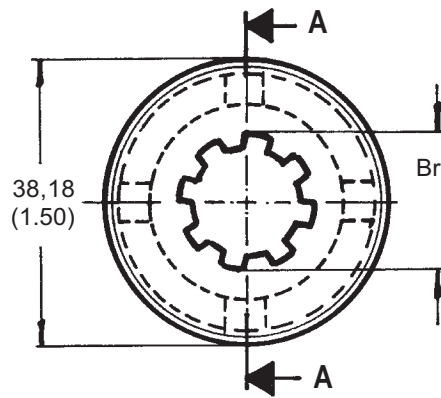
Mat: 6061-T6 Aluminum O.D. 1-1/2" (.080) Wall Thk (1) Req'd

**FULL SIZE**

**FURIA HELICOPTER -**

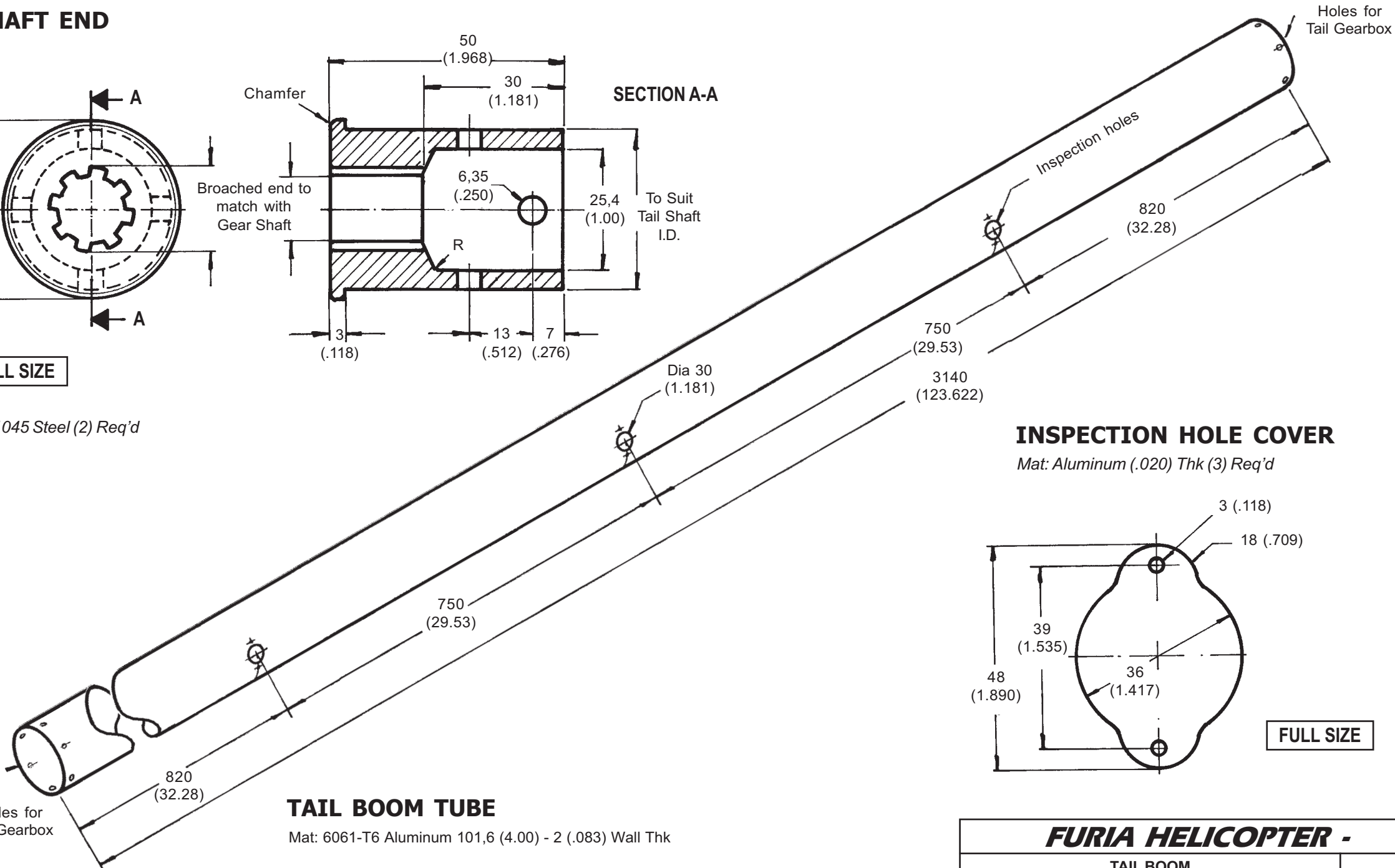
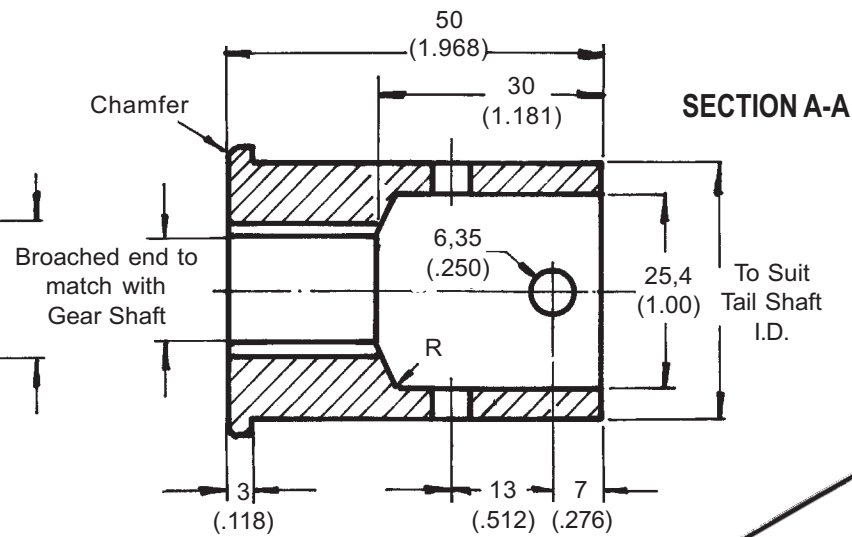
TAIL BOOM SHAFT

**SHAFT END**



**FULL SIZE**

Mat: 1045 Steel (2) Req'd

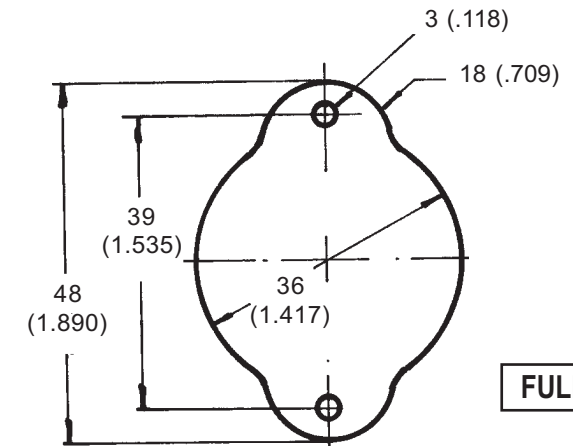


**TAIL BOOM TUBE**

Mat: 6061-T6 Aluminum 101,6 (4.00) - 2 (.083) Wall Thk

**INSPECTION HOLE COVER**

Mat: Aluminum (.020) Thk (3) Req'd



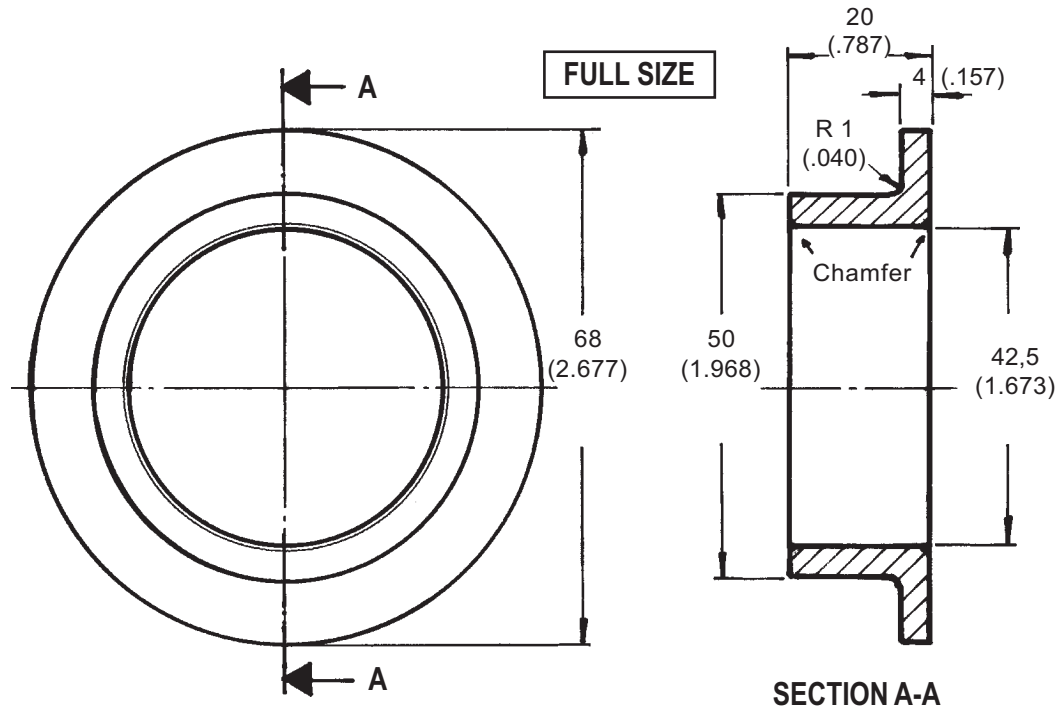
**FULL SIZE**

**FURIA HELICOPTER -**

TAIL BOOM

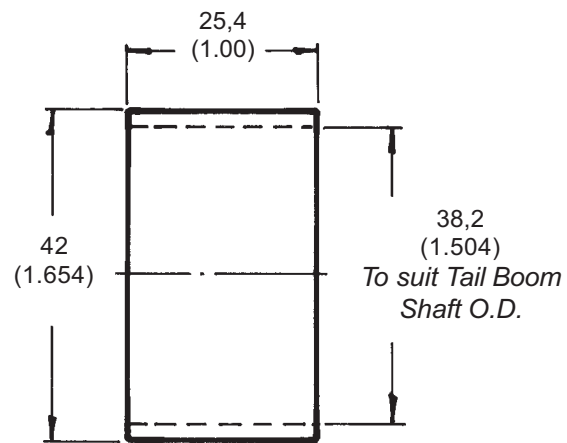
# BUSHING

Mat: Black Grillon (with Molikote) (3) Req'd

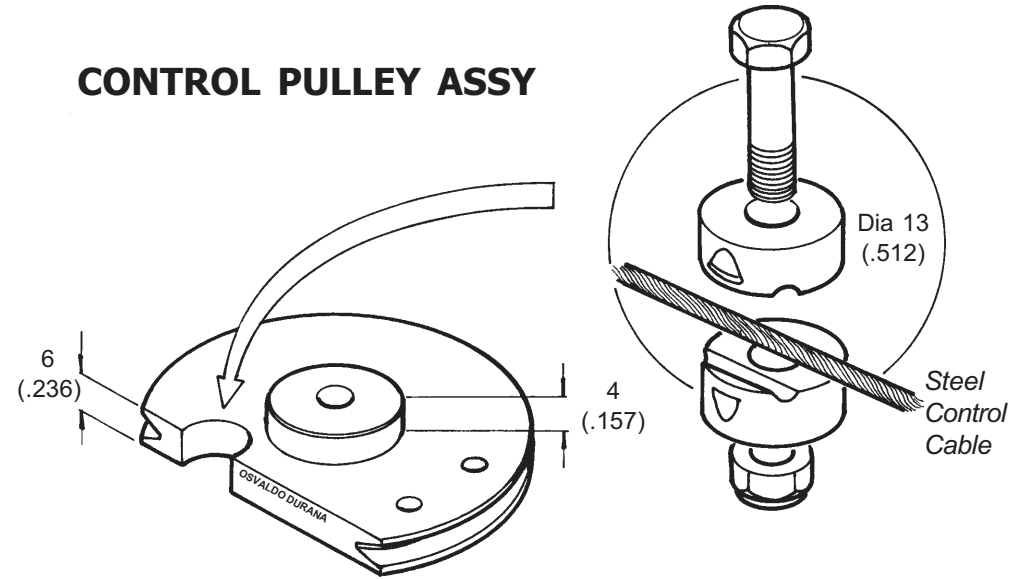


# RACEWAY

Mat: 8620 Steel (3) Req'd  
 HEAT TREATMENT  
 CASE HARDENING  
 Min Surface Hardness  
 58 Rockwell C  
 Effective Case Depth  
 0,3 (.012)  
 (After Finish Grinding)

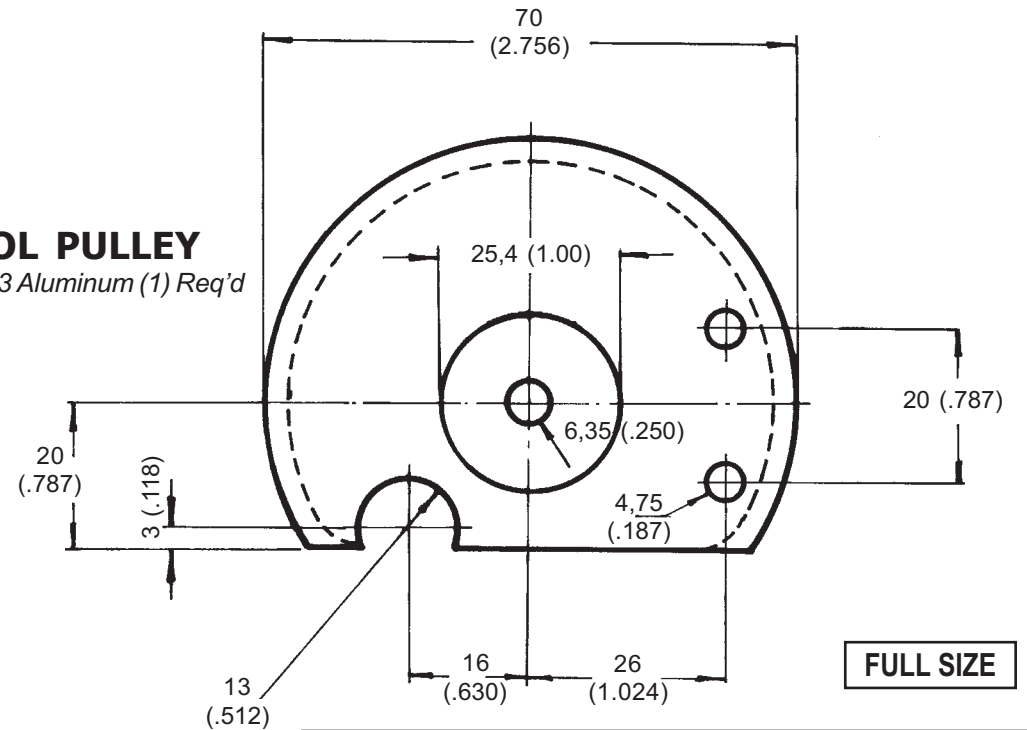


# CONTROL PULLEY ASSY



# CONTROL PULLEY

Mat: 2024-T3 Aluminum (1) Req'd



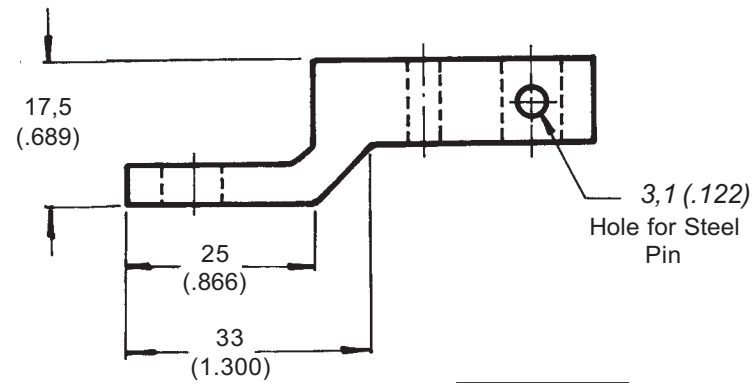
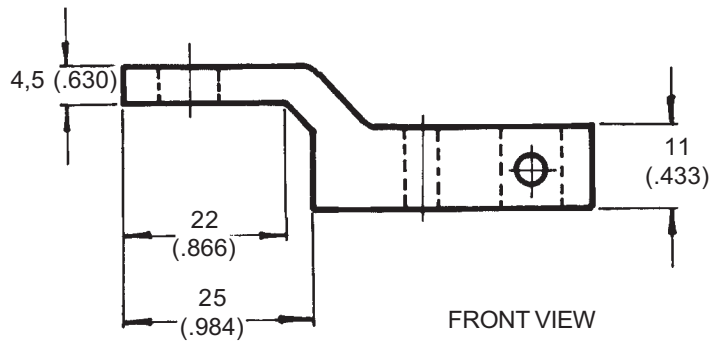
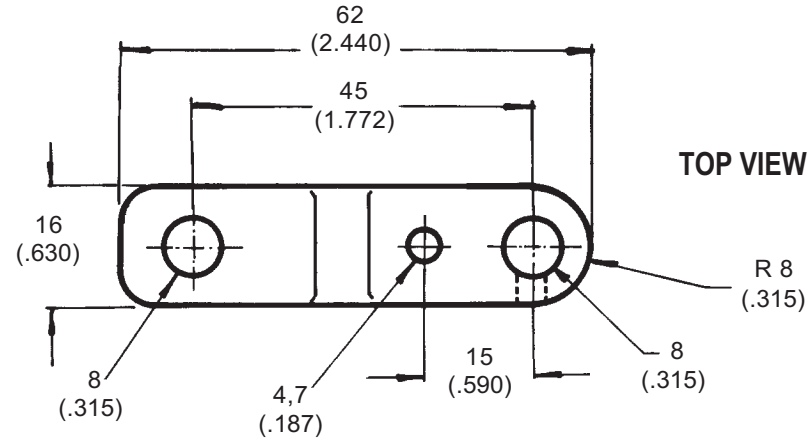
**FURIA HELICOPTER -**

**TAIL BOOM**

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**SCISSORS A**

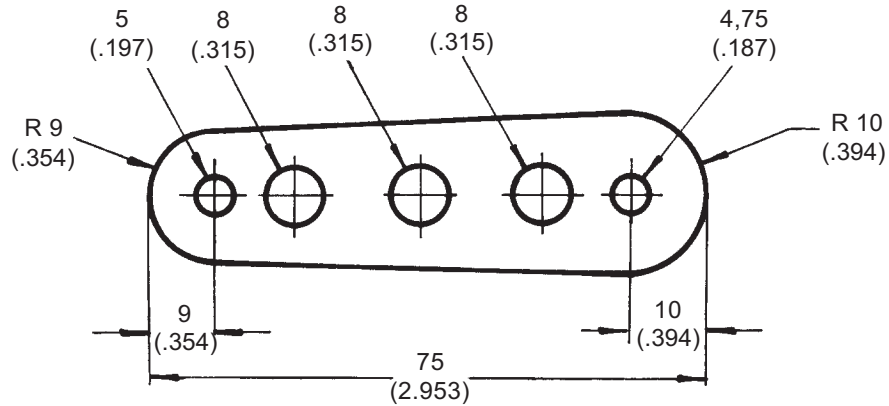
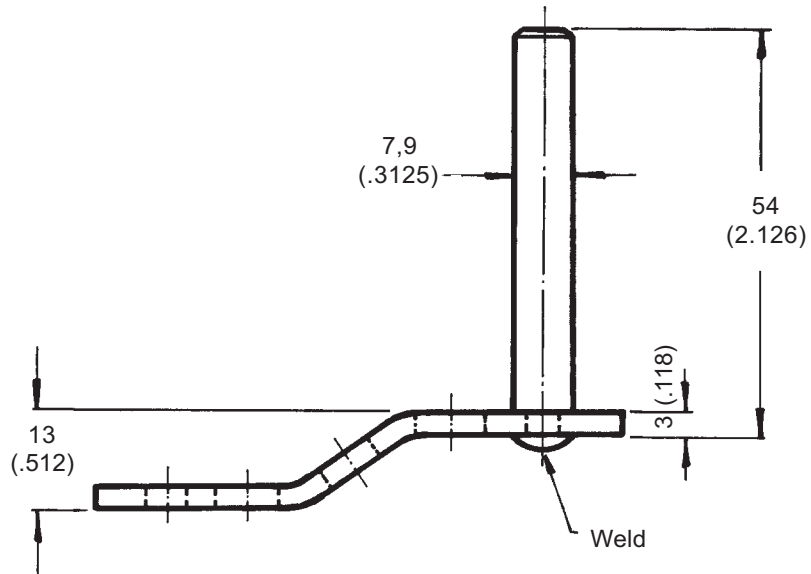
Mat: 2024-T3 Aluminum (1) Req'd



FULL SIZE

**LEVER**

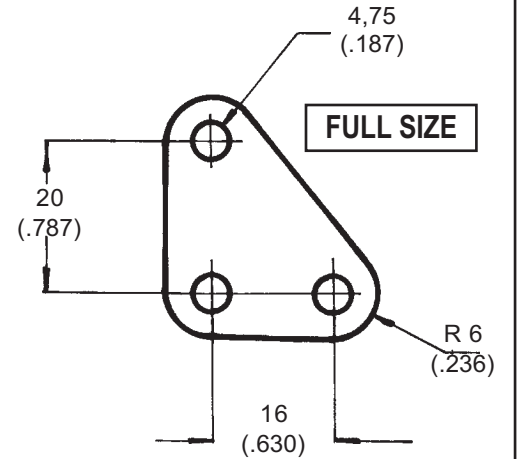
Mat: Steel (1) Req'd



FULL SIZE

**PULLEY ARM**

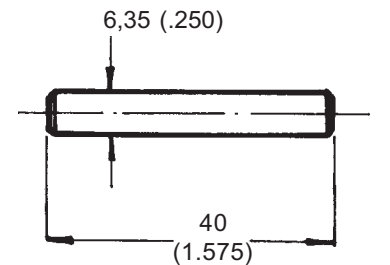
Mat: Steel (1) Req'd  
2 (.0787) Thk



FULL SIZE

**AXLE**

Mat Steel (1) Req'd



FULL SIZE

**FURIA HELICOPTER -**

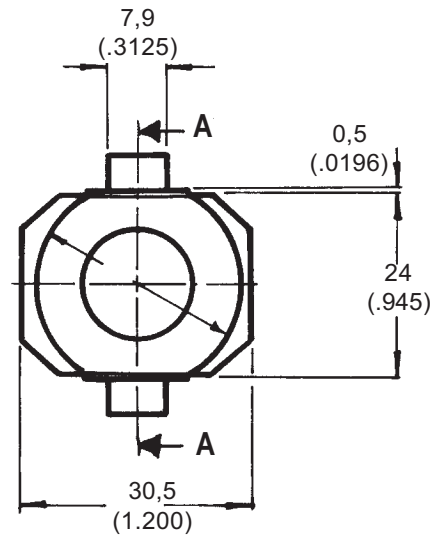
TAIL ROTOR CONTROL

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

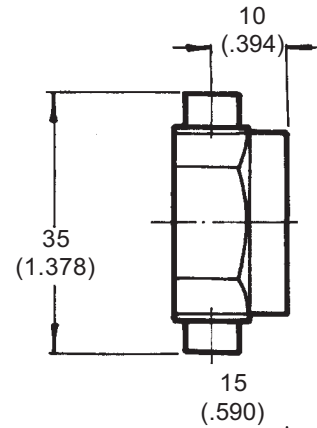
### BEARING HOUSING

Mat: 2024-T3 Aluminum (1) Req'd

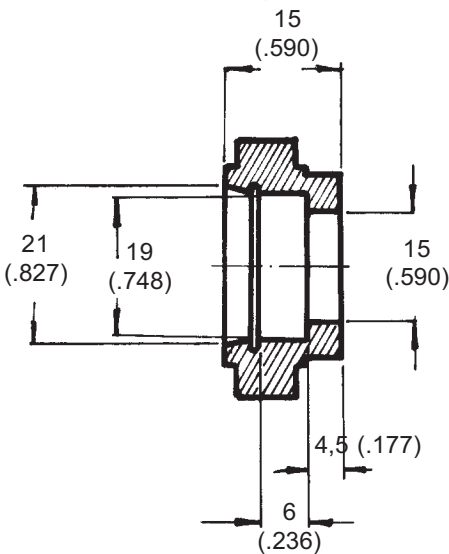
FULL SIZE



FRONT VIEW



SIDE VIEW

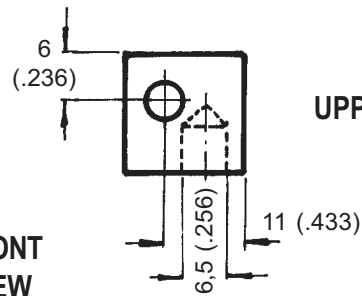


SECTION A-A

### SCISSORS HINGE

Mat: 2024-T3 Aluminum (2) Req'd (Upper and Lower)

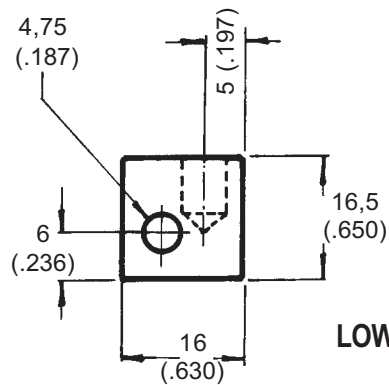
FRONT VIEW



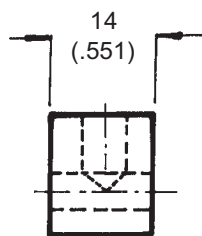
UPPER



SIDE VIEW



LOWER

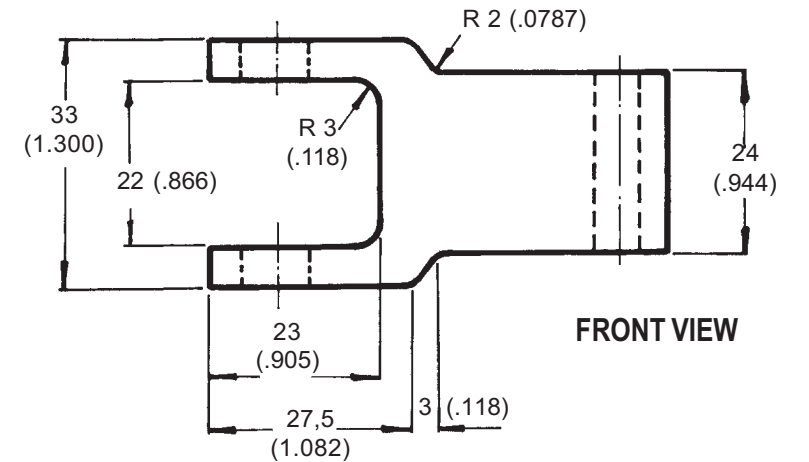
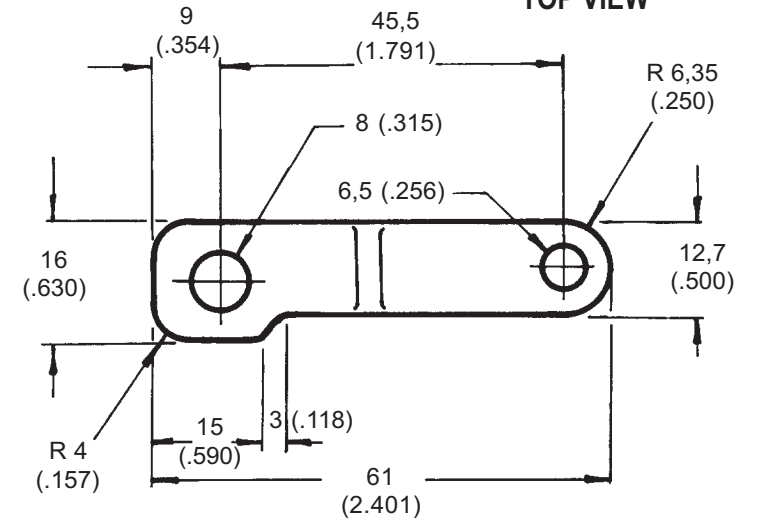


FULL SIZE

### SCISSORS B

Mat: 2024-T3 Aluminum (1) Req'd

TOP VIEW



FRONT VIEW

FULL SIZE

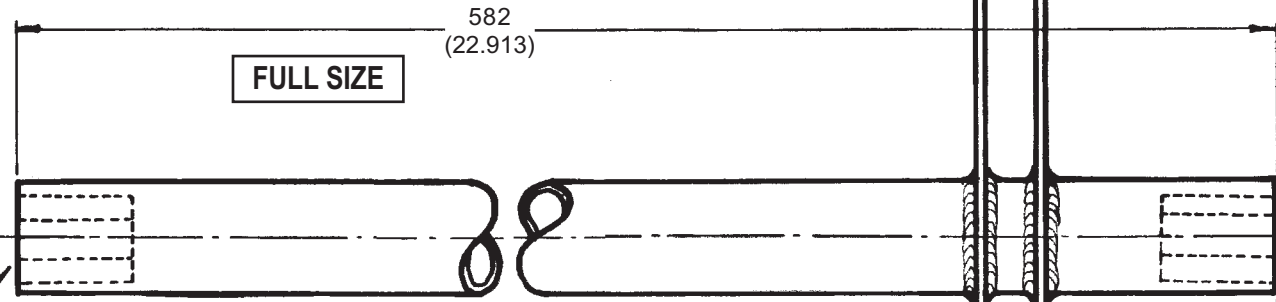
**FURIA HELICOPTER -**

TAIL ROTOR CONTROL

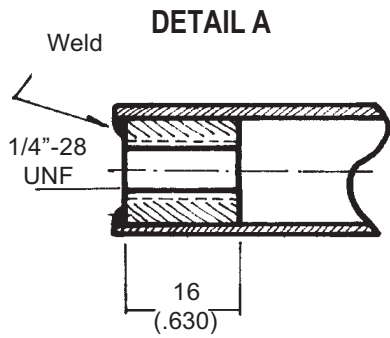
Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

# PEDALS AXLE

Mat: 4130 Steel tubing 15,8 (5/8") O.D. - 2,4 (.095) Wall Thk.  
(1) Req'd

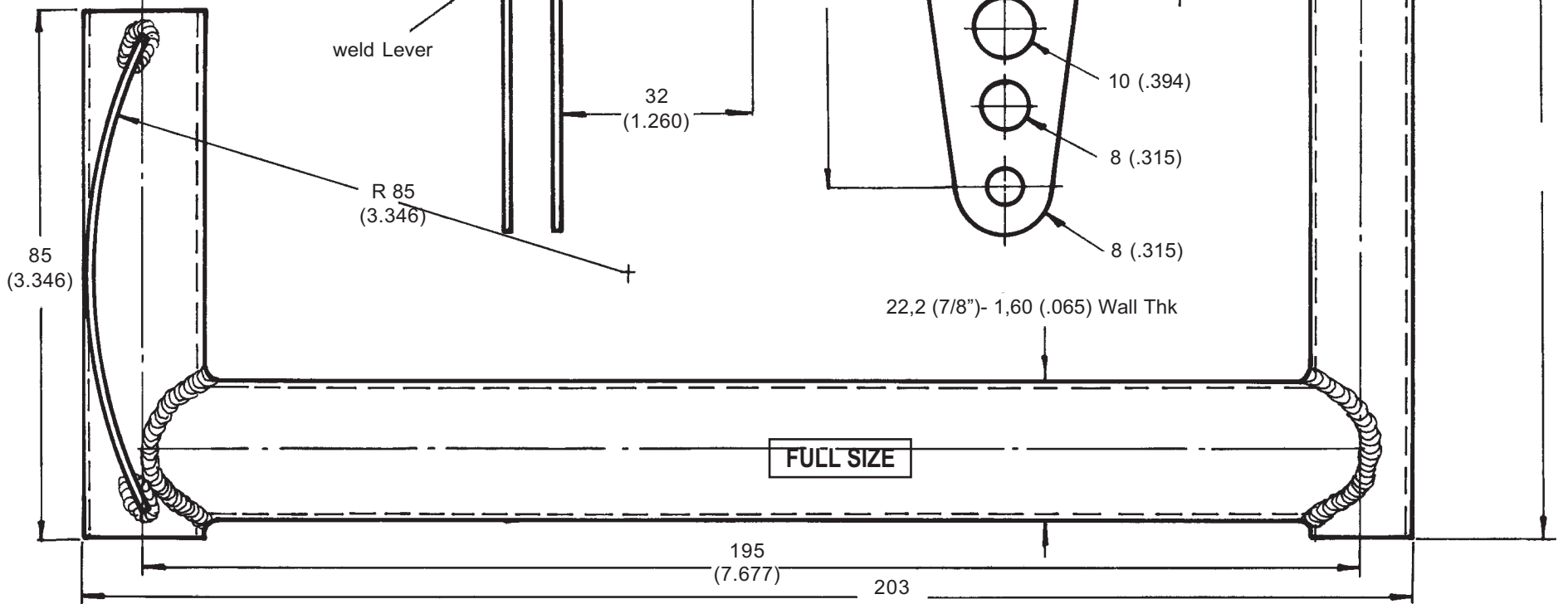


DETAIL A



Axle Threaded ends  
Mat: Steel

FULL SIZE



# LEVER

Mat: 4130 Steel 2 (.0787) Thk (2) req'd

# LEFT PEDAL FRONT VIEW

NOTE: Left pedal is fixed to axle by Clevis Pin  
Right pedal is free to rotate

# DIRECTIONAL CONTROL PEDALS

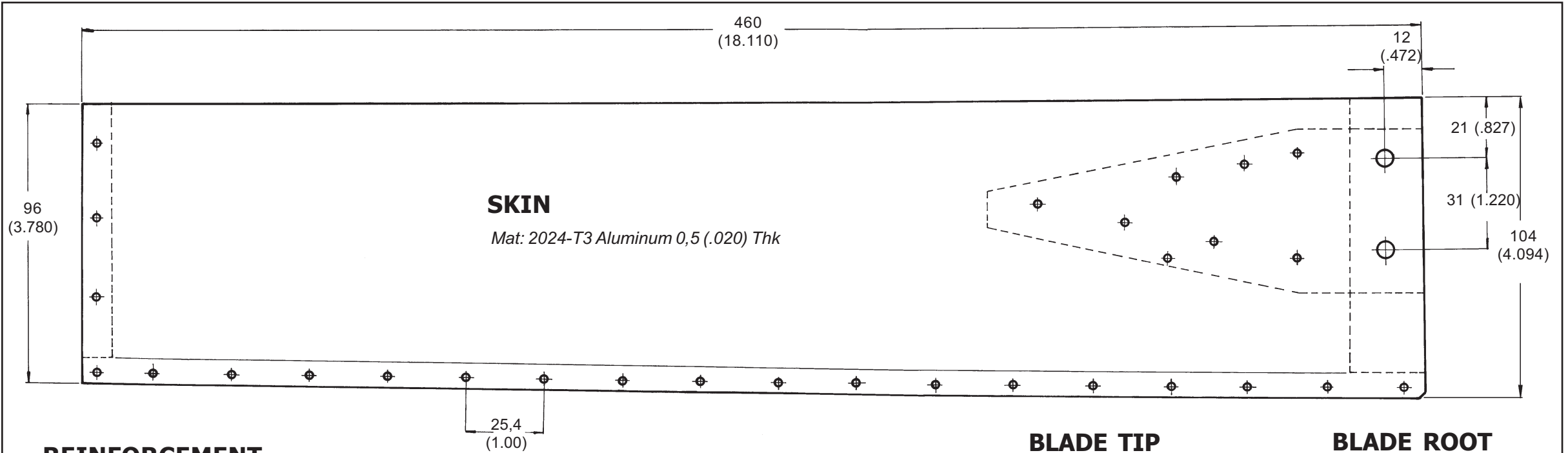
**FURIA HELICOPTER -**

CONTROL SYSTEM / PEDALS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

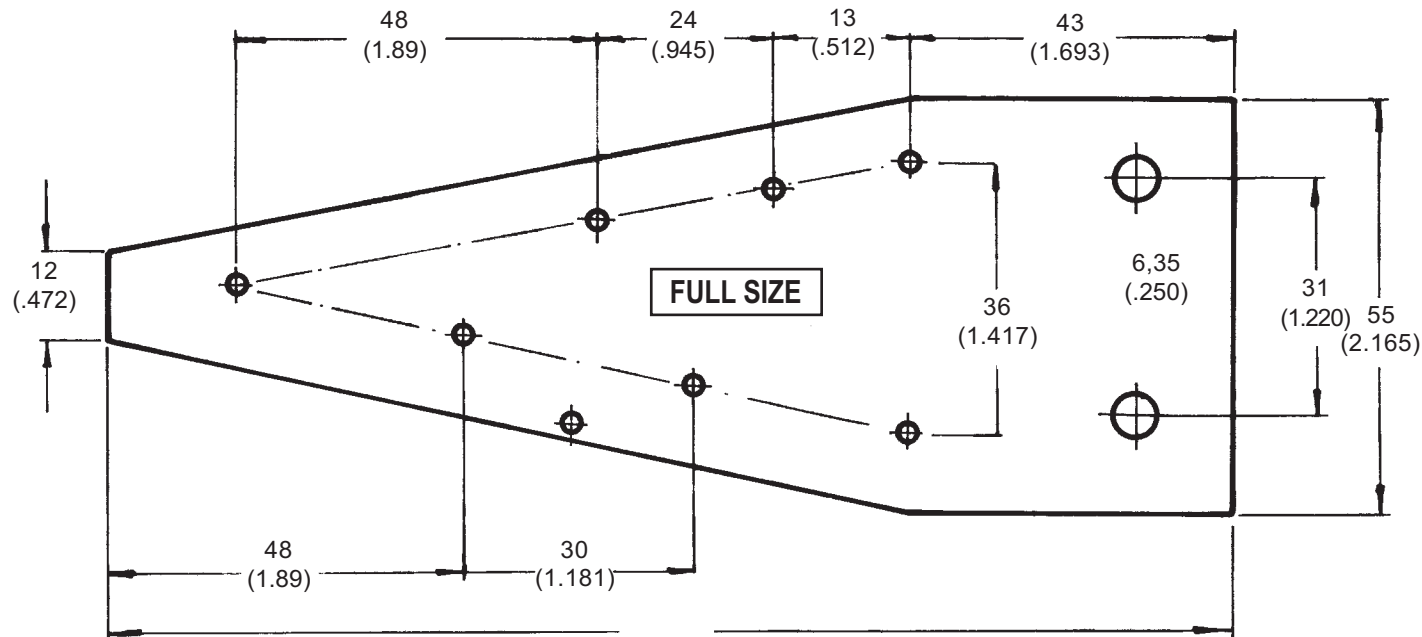






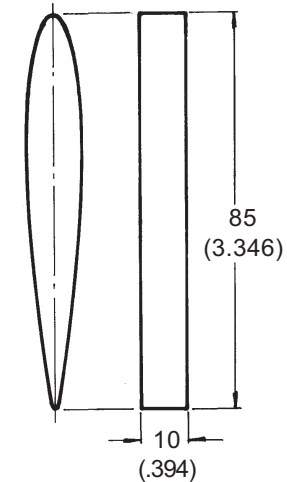
**REINFORCEMENT**

Mat: 2024-T3 Aluminum 0,5 (.020) Thk (4) Req'd One on each side (inner side only)



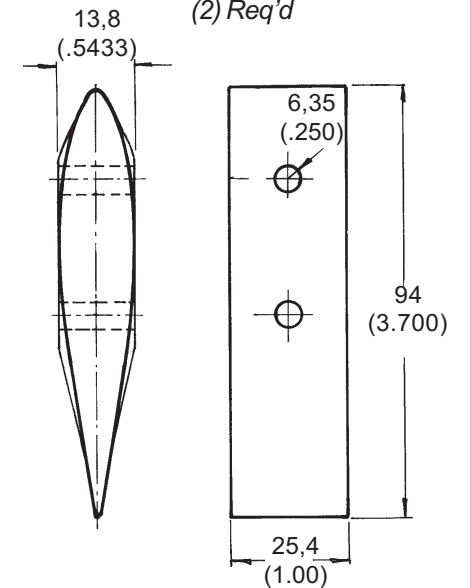
**BLADE TIP**

Mat: 2024-T3 Aluminum  
(2) Req'd



**BLADE ROOT**

Mat: 2024-T3 Aluminum  
(2) Req'd

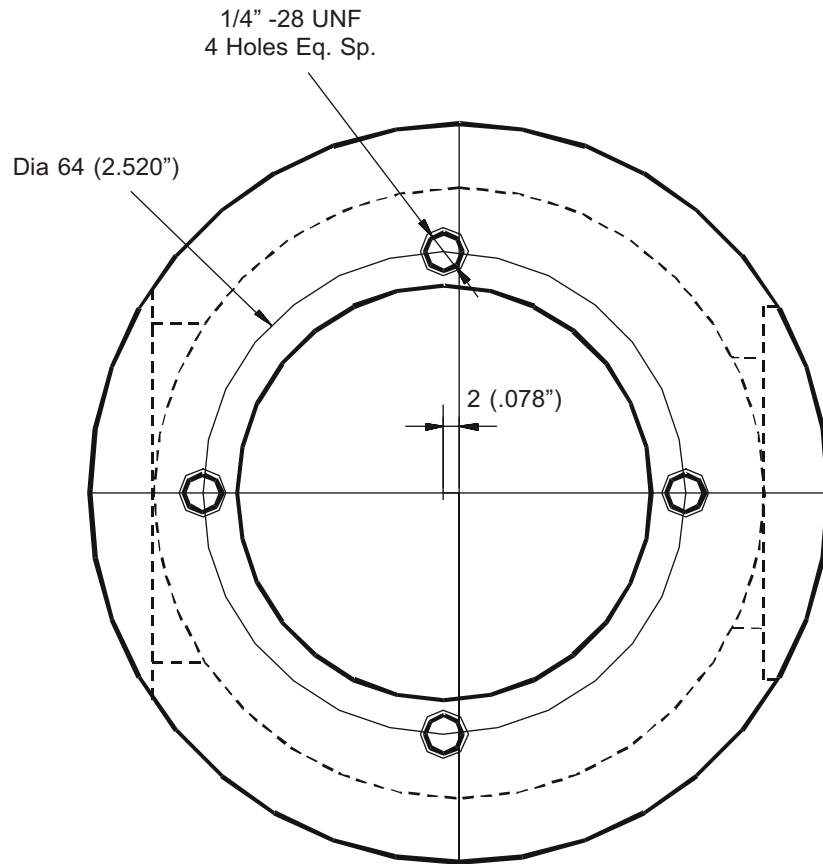


**FURIA HELICOPTER -**

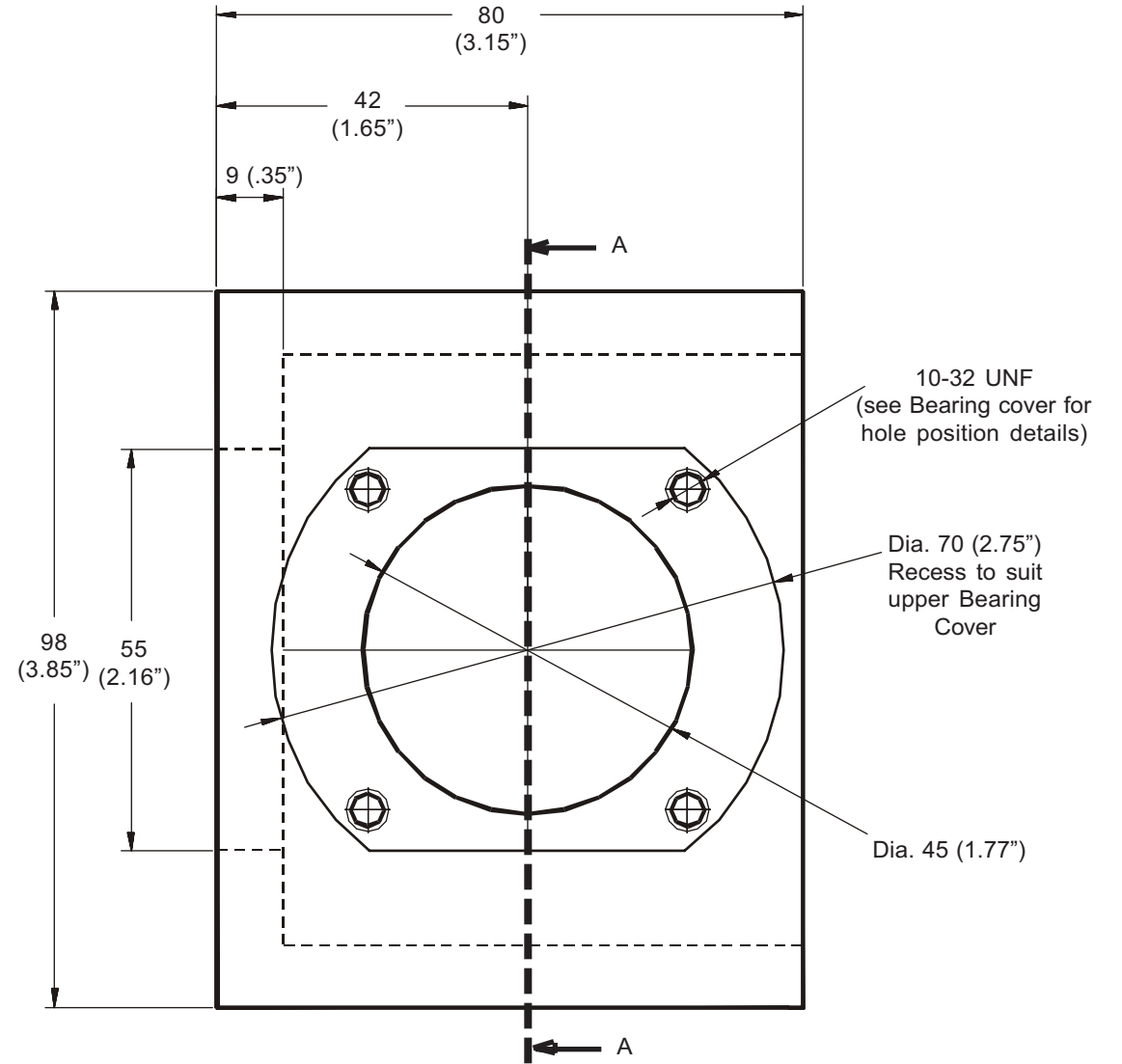
TAIL ROTOR BLADE

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

## CENTRAL GEARBOX END VIEW



Material: Aluminum 1-Reqd.



## TOP VIEW

**FURIA HELICOPTER -**

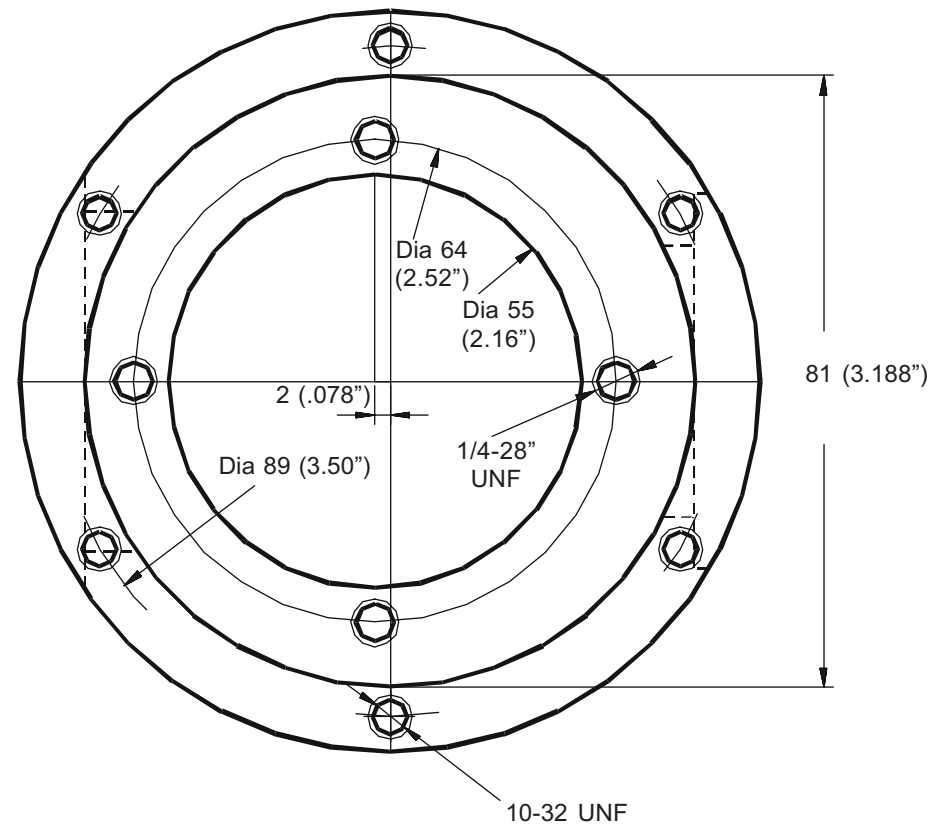
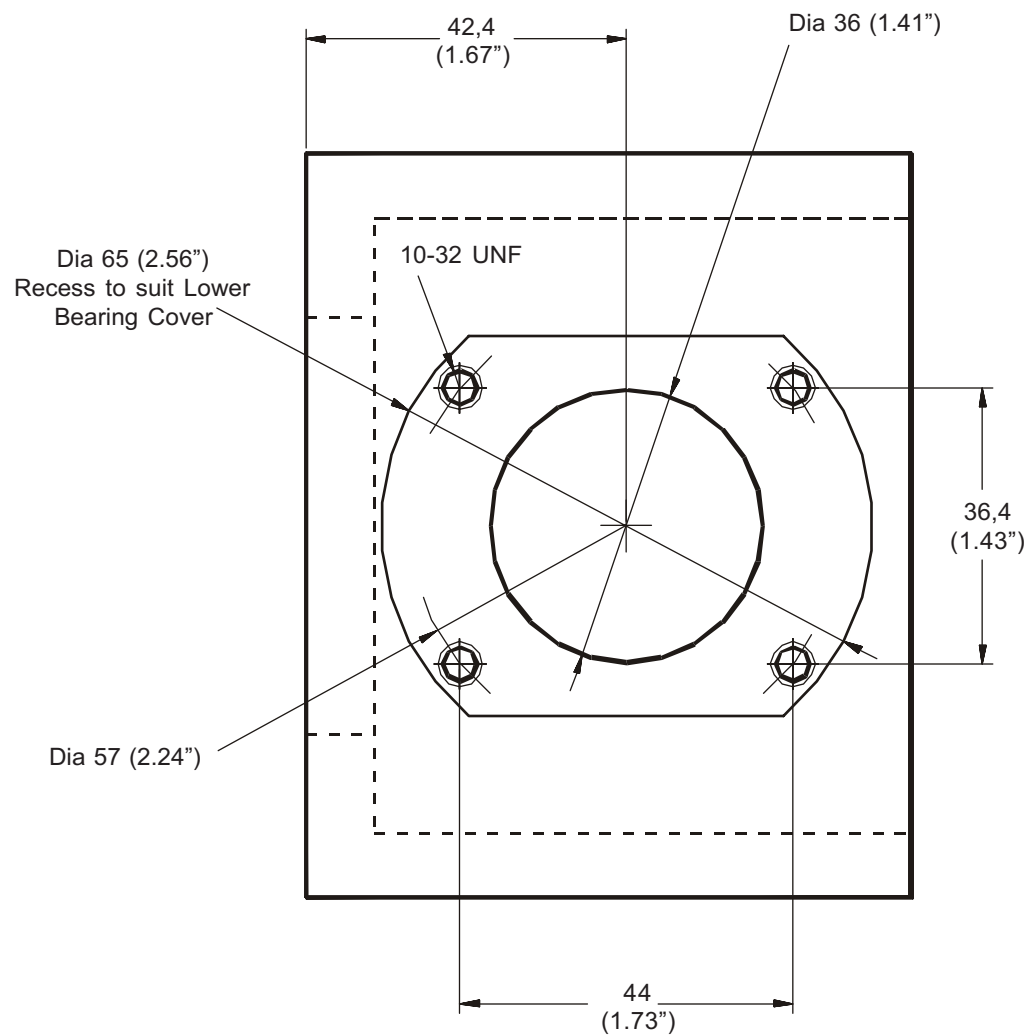
CENTRAL GEARBOX

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**70**

# CENTRAL GEARBOX BOTTOM VIEW

# FRONT VIEW



**FURIA HELICOPTER -**

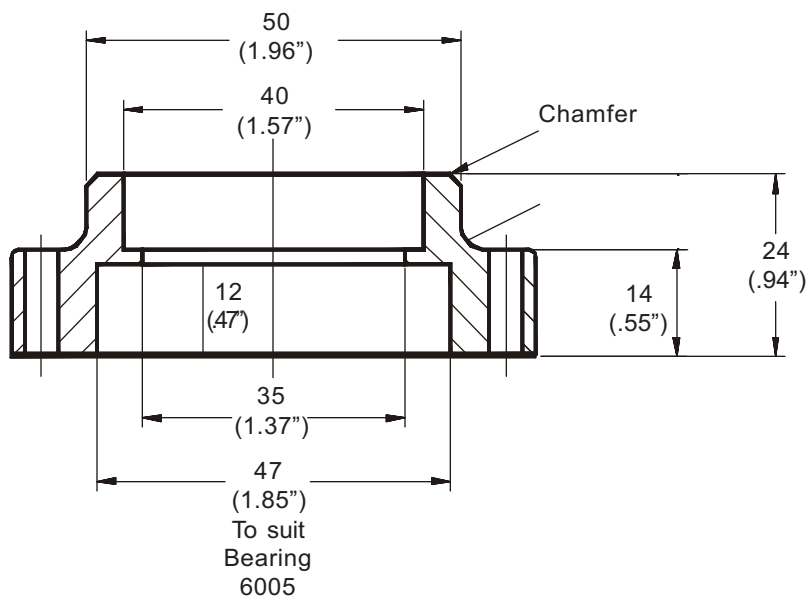
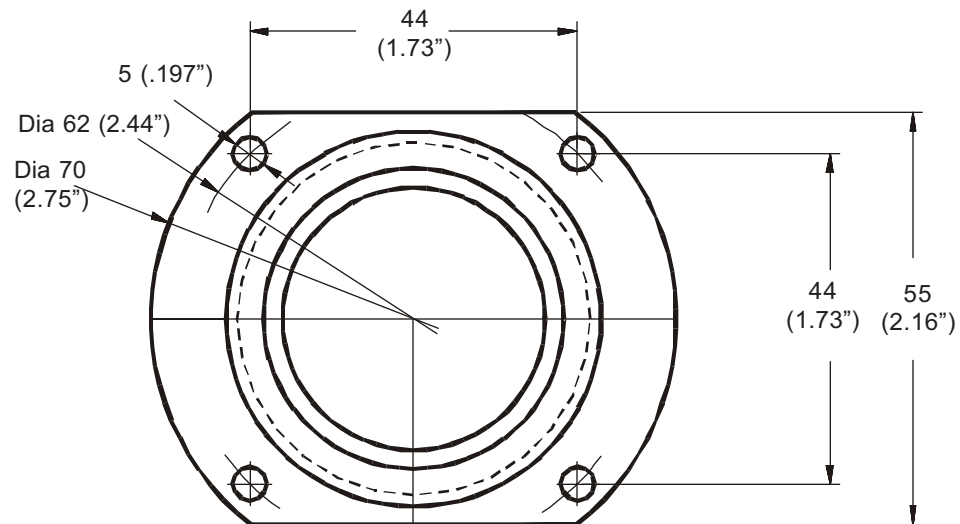
CENTRAL GEARBOX

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana



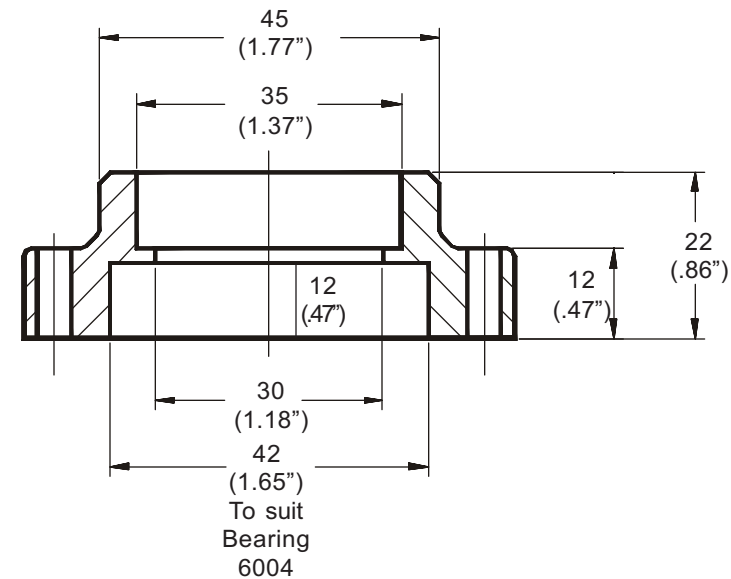
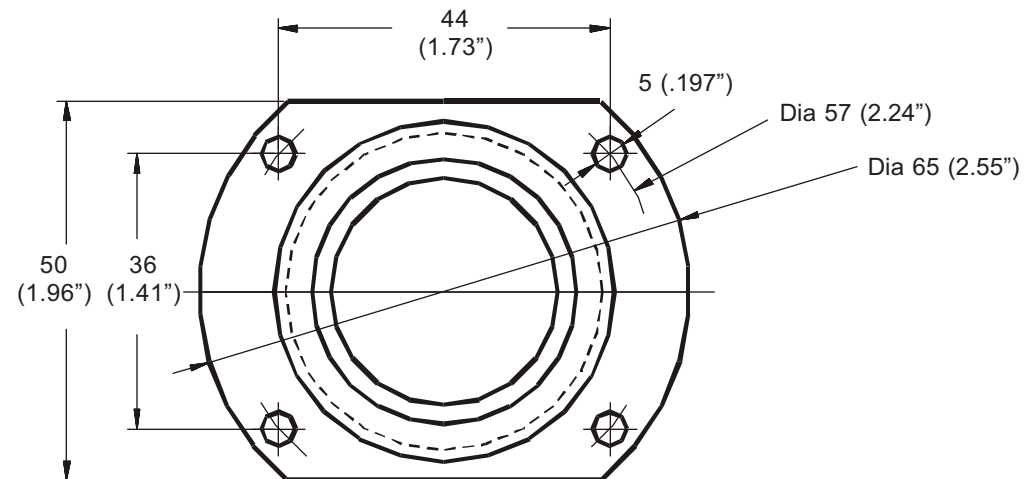
## UPPER BEARING COVER

Material: Aluminum, 1 Reqd.



## LOWER BEARING COVER

Material: Aluminum, 1 Reqd.



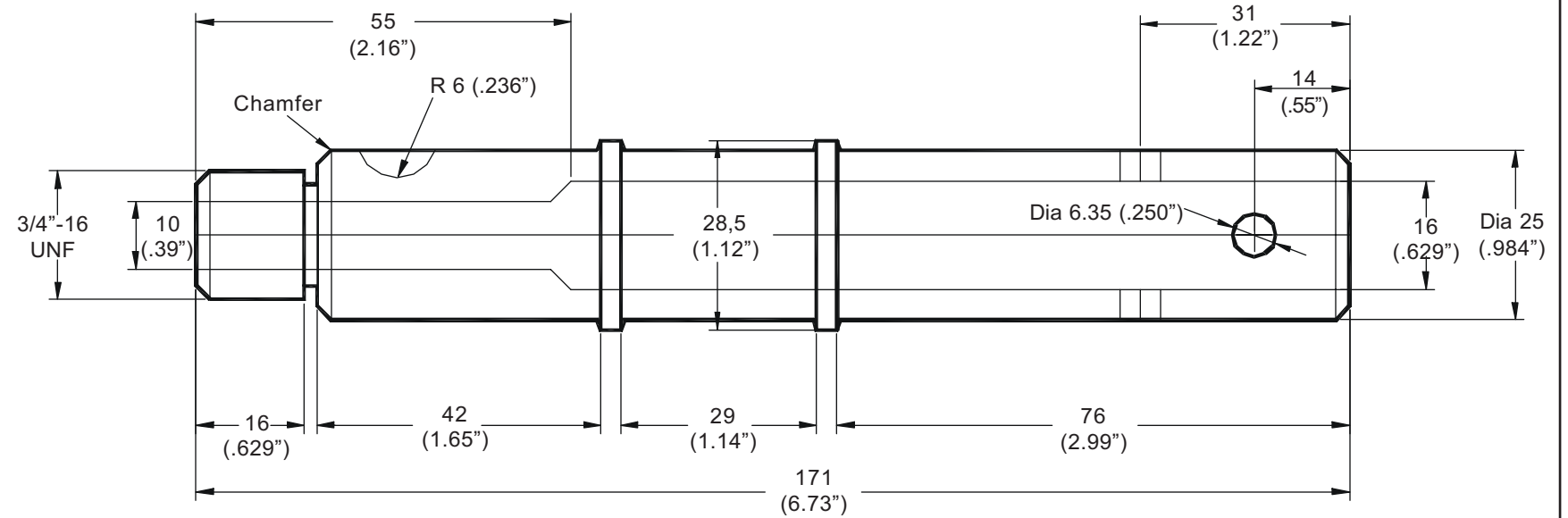
**FURIA HELICOPTER -**

CENTRAL GEARBOX BEARING COVERS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

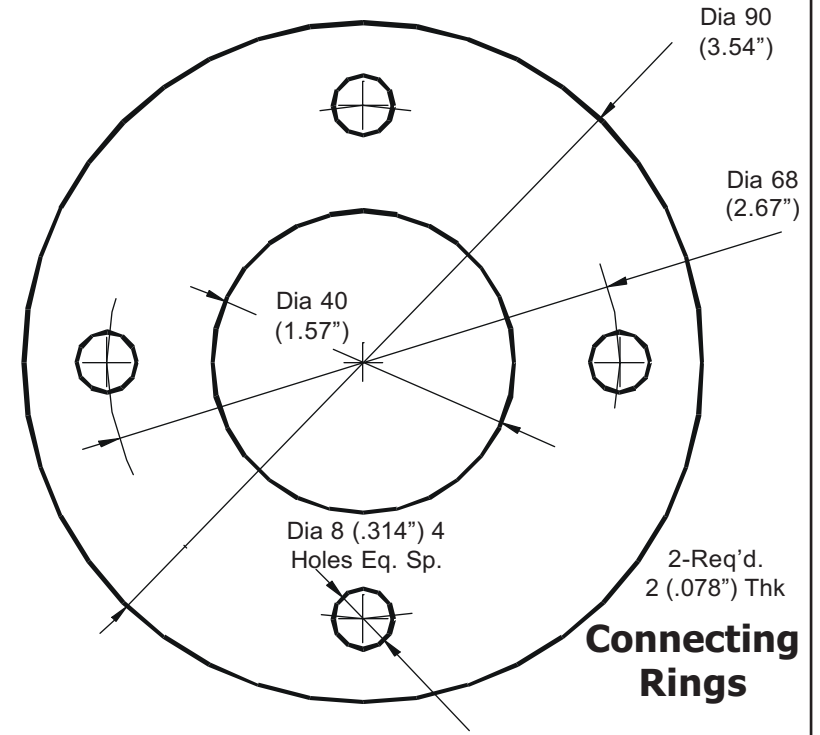
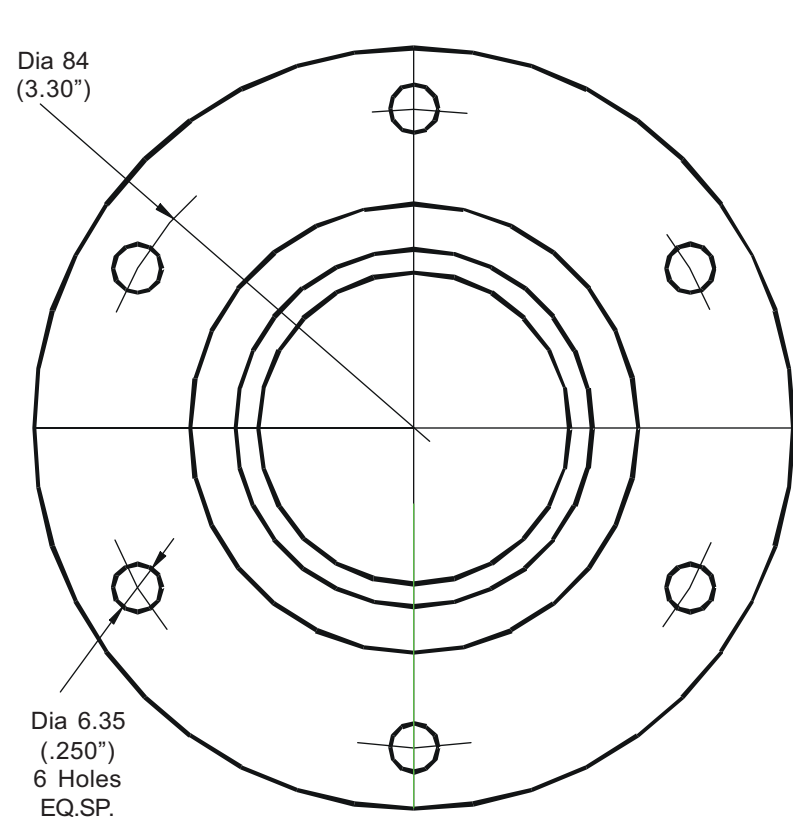
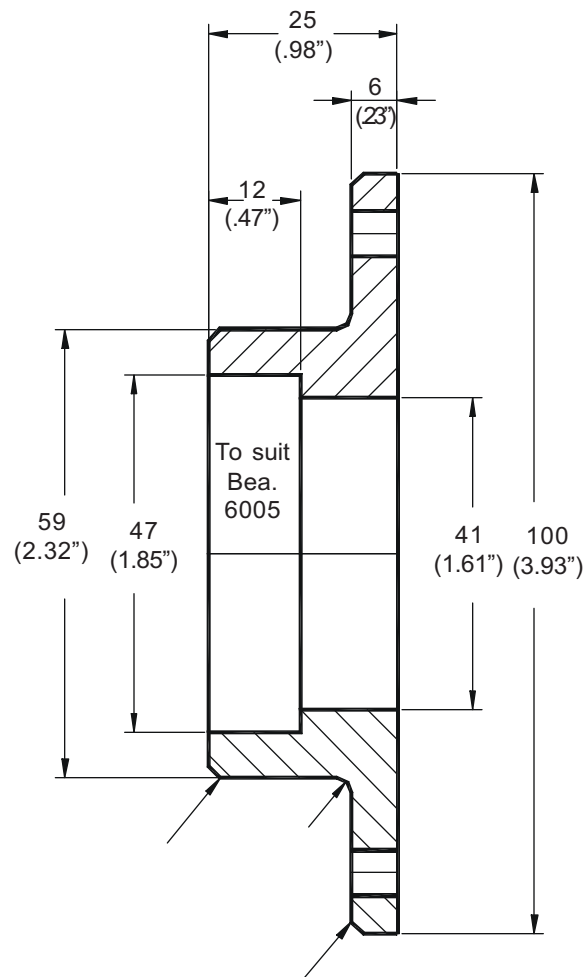
**73**

# MAIN ROTOR GEARBOX PINION AXLE



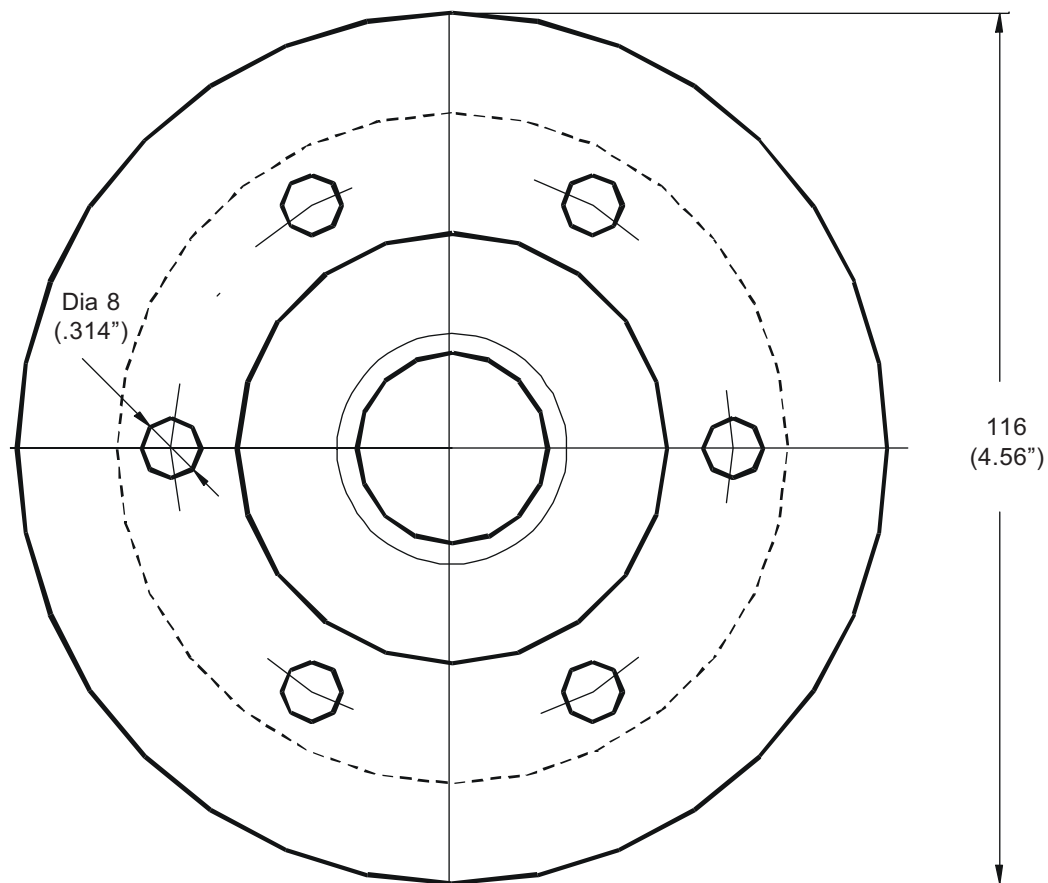
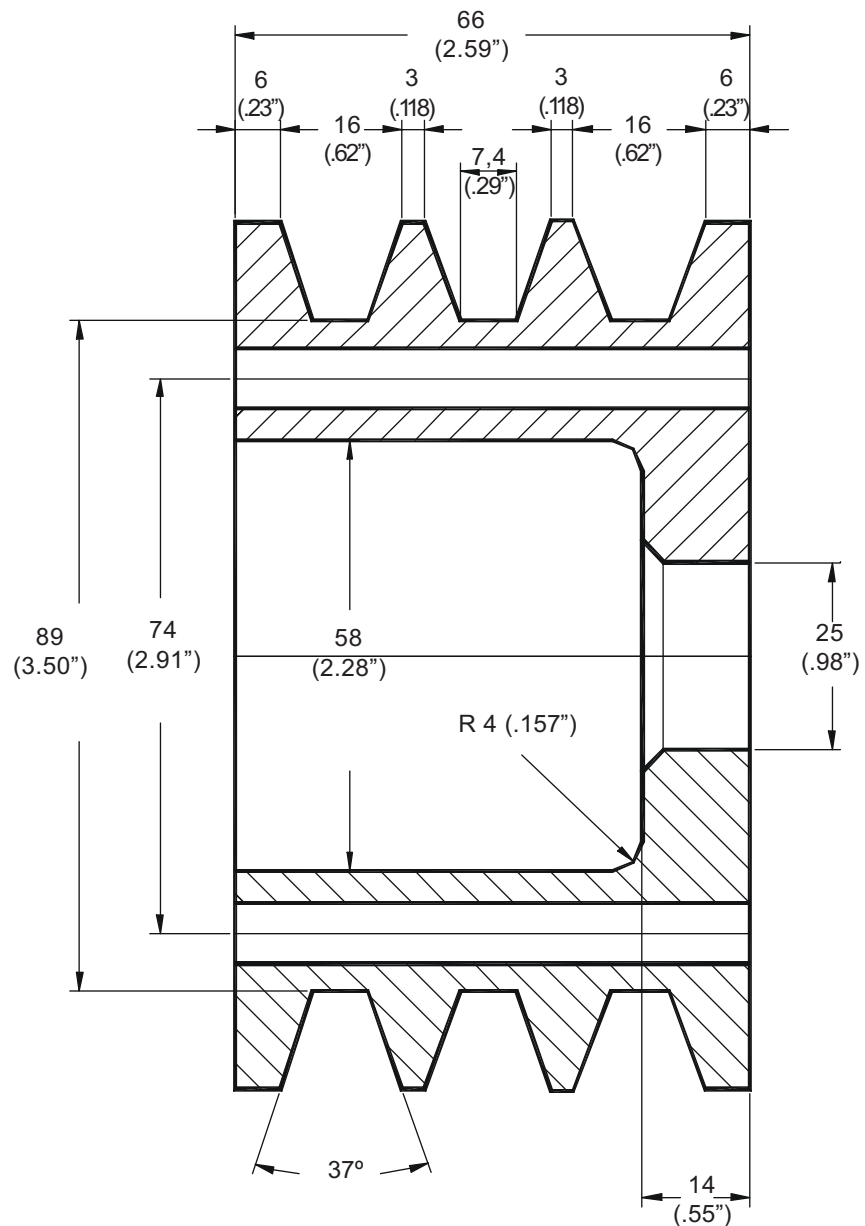
# PULLEY SUPPORT

Mat. Aluminum 1 Req'd.



# ENGINE PULLEY

Mat: Aluminum - 1 Req'd

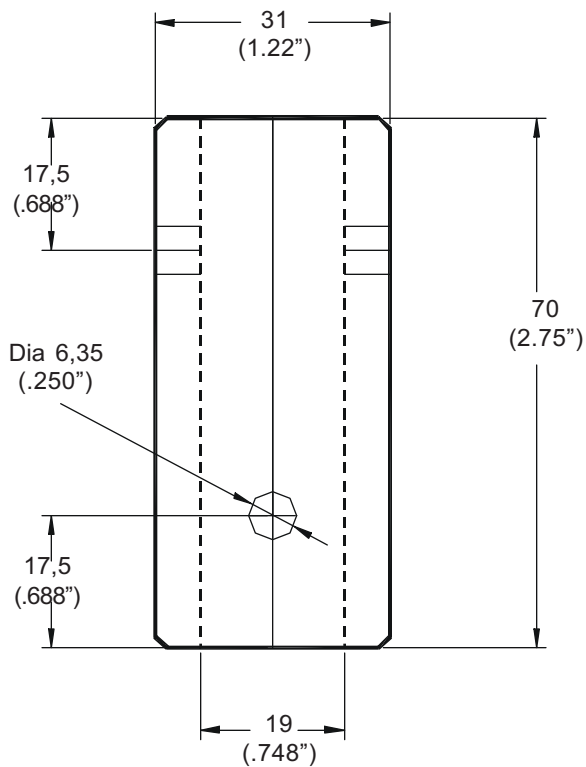
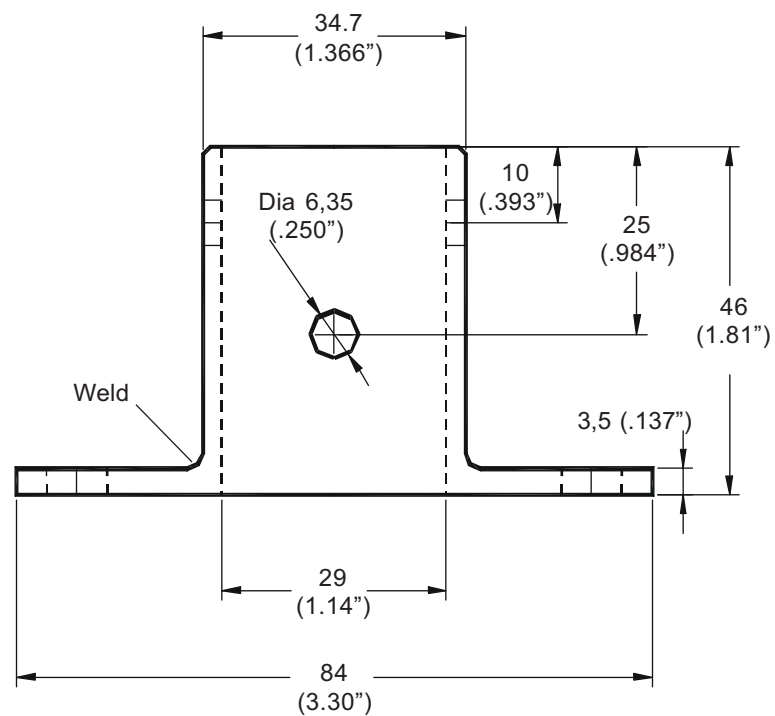
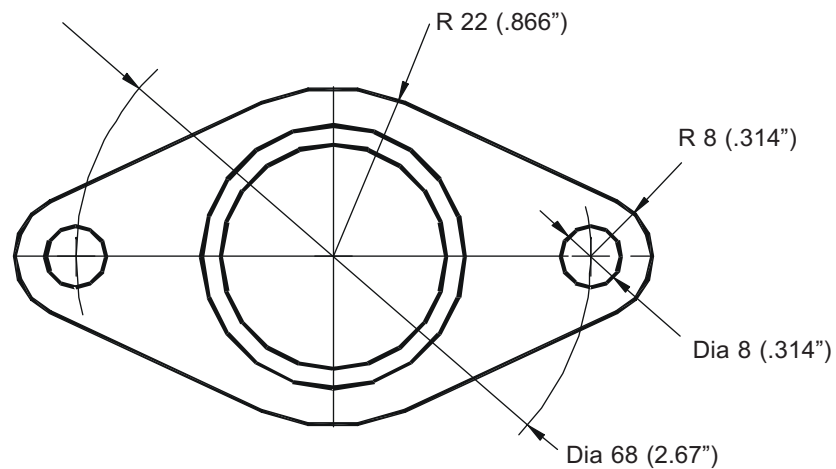






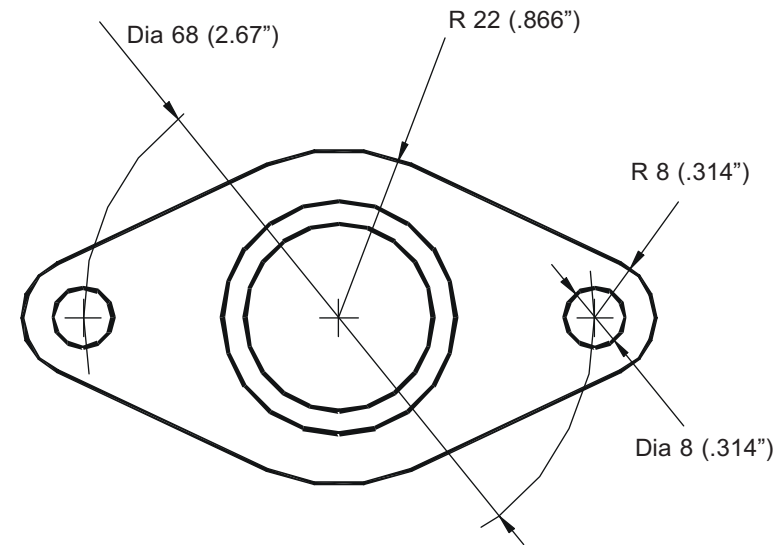
### SHAFT COUPLINGS

Mat: Steel - 2 Req'd.



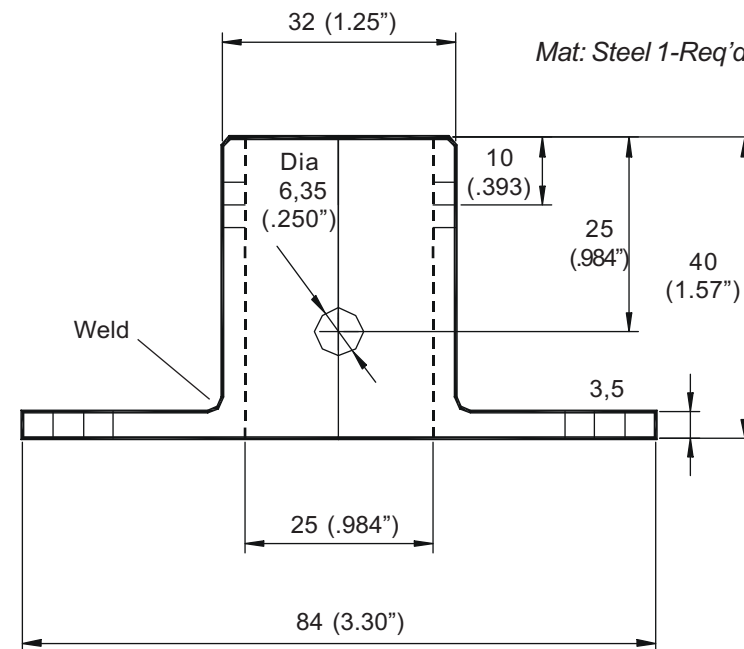
### LONG/FREEWHEEL AXLE COUPLING

Mat Steel 1 req'd



### MAIN ROTOR GEARBOX PINION AXLE COUPLING

Mat: Steel 1-Req'd



**FURIA HELICOPTER -**

TRANSMISSION COMPONENTS

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

**MAIN GEARBOX**

*Note: some elements have not been depicted to simplify views*

**MAST TUBE**

**PINION**

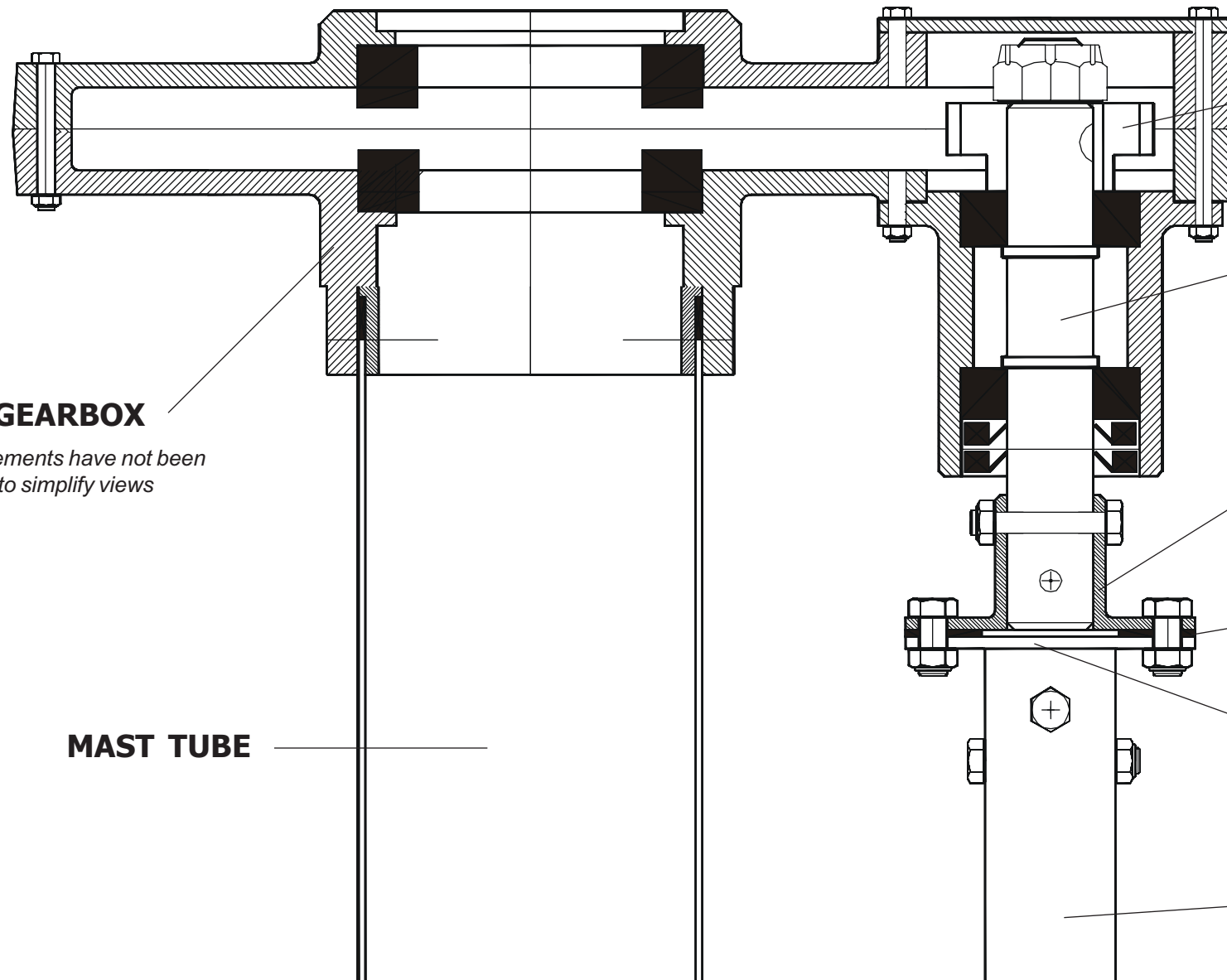
**PINION AXLE**

**PINION AXLE COUPLING**

**CONNECTING DISK**

**SHAFT COUPLING**

**SHAFT**



**FURIA HELICOPTER -**

TRANSMISSION SECTION VIEW

Plans Delivery.com COPYRIGHT©2001 Osvaldo Durana

