PACKING LIST, CONSTRUCTION AND ASSEMBLY MANUAL

8-41 AIRFRAME MATERIALS

Model B8 or B8M — Drawings Attached

DO NOT USE the 8-104-100 drawings contained with your plans, as they are dimensioned for a complete home-built machine only.

Parts and materials described in this Manual are designed to be used for the construction of Models B8 Gyroglider, and B8M Gyrocopter airframes. This Manual is complete in all respects for construction and assembly of your airframe. Contained herein are the very latest procedures, and with the attached drawings; the only referral to the Building and Operating Manual will be for general flight procedures only. All Bensen Material Packs are designed for use with this materials pack.

Part No.	Qty.	Description	Use Area
8-41-001	1	1/8 x 2 x 2 x 99-3/4 Alum. Sq. Tube	Keel
-002	1	1/8 x 2 x 2 x 58 Alum. Sq. Tube	Axle
-003	1	1/8 x 1 x 2 x 58 (2) Paired Alum. Tubes	Redundant Mast
-004	2	1/8 Sheared & Drilled Alum. Sheet	Cluster Plate
-006A	2	1/8 x 1 x 1-1/4 x 3-1/4 Alum. Angle	Seat Clamp
-007	1	1/8 x 1 x 1 x 18 Steel Angle	Seat Bottom
-010B	1	1/2 x 1-7/8 x 2 Alum. Rect.	Tow Hitch
-011	2	1/8 x 3/4 x 3/4 x 28 Alum. Angle	Brace
-012	2	1/8 x 3/4 x 3/4 x 26-1/4 Alum. Angle	Tow Boom
-012A	1	.063 x 3 x 3-1/2 Alum. Sheet	Gusset
-013	2	1/8 x 3/4 x 3/4 x 48 Alum. Angle	Tow Boom
-013A	2	.063 x 3 x 3-3/4 Alum. Sheet	Gusset
-014	2	1/8 x 3/4 x 3/4 x 10-3/8 Alum. Angle	Tow Boom
-014A	1	.063 x 3 x 3-1/2 Alum. Sheet	Gusset
-015	2	1/8 x 3/4 x 3/4 x 13 Alum. Angle	(Left & Right Seat Bottom)
-016	2	1/8 x 3/4 x 3/4 x 14-1/2 Steel Angle	Brace
-017	2	1/8 x 3/4 x 3/4 x 13-31/32 Alum. Angle	Brace
-018A	1	.065 x 1 x 18 Steel Tube	Wheel Axle
-018B	4	1/2 x 1-1/2 x 2 Alum. Drilled Rect.	Clamp Blocks
-021A	1	1/8 x 3/4 x 3/4 x 4 Alum. Angle	Tube Mount
-021B	1	.065 x 1 x 80 Alum. Tube	Rudder Tube
-021C,D,F	1	1/8 x 3/4 x 3/4 x 40 Alum. Angle	Rudder Pedals
-021E	2	.125 x 2 x 5-1/2 Alum. Sheet	Pedal Gusset
-021G	1	1/8 x 3/4 x 5 Alum. Strip	Pedal Stops
-022A	1	7/8 Dia. x 4 Hardwood Dowel	Wood Plug
-022B	1	.065 x 1 x 6 Alum. Tube	Plug Sleeve
-024A	1	0 to 80 MPH Airspeed Indicator	Speed Gauge
-024B	1	Yarn Strip	Drift Indicator
-024C	1	1/8 x 3/4 x 3/4 x 9 Alum. Angle	-024A Bracket
-024D	1	.063 x 5/8 x 10 Alum. Strip	-024A Bracket
-025	1	1/8 x 7 ft. (7 x 7) Aircraft Cable	Guy Support Cable
-029	1	1000 lb. rated strength, Quick Release	Safety Belt
-032	1	1/16 x 17 ft. (7 x 7) Aircraft Cable	Rudder Cable

Part No.	Qty.	Description	Use Area
CONSTRUCTION AIDS			
TK-101	1	Hole Layout Took Kit, Consisting of:	
-101	1	Transfer Fixture, 1/8 x 3/4 x 3/4 x 4	
-101A	1	1/4 Dia. Transfer Punch	
-101B	1	3/16 Dia. Transfer Punch	
1-C-1	1	#2 Center Drill and Countersink	
(Be sure to read the "Tooling Technique Manual" for proper use of the TK-101)			
TK-132	1	Nicopress Tool Kit, Consisting of:	
-132	1	5/8 x 1 x 6 Steel Bar	
6-24A	2	3/8-24 x 1-15/16 Grip Bolt	
960-616	2	3/8 x 5/8 Flat Washers	
360-6	2	3/8-24 Plain Nut	
(Be sure to read the "Tooling Technique Manual" for proper use of the TK-132)			
TK-140	1	1/8 x 2 x 2 Practice Drilling Tube(12")	
-140A	1	1/8 x 1-1/2 x 1-1/2 x 1 Alum. Angle	Sight Gauge
(Be sure to read the "Tooling Technique Manual" for proper use of the TK-140)			
. . . . .		**8-41 Airframe Hardware Package**	
8-41-H1			
4-44A	2	1/4-28 x 4-1/16 Grip Bolt	Axle to Keal
4-40A	1	1/4-28 x 3-9/16 Grip Bolt	Cable Guide
4-26A	6	1/4-28 x 2-5/16 Grip Bolt	Cluster Plates
3-5A	2	10-32 x 1/4 Grip Bolt	Mast Inner Web
2333	2	1/4 x 1-1/4 Flat Washer	Cable Guide
960-10	2	3/16 x 7/16 Flat Washer	Mast Inner Web
364-1032	2	10-32 Lock Nut	" " "
8-41-H3			
4-6A	2	1/4-28 x 5/16 Grip Bolt	See Drawing 41-4 for
4-26A	3	1/4-28 x 2-5/16 Grip Bolt	hardware placement.
4-25A	6	1/4-28 x 2-3/16 Grip Bolt	
3-5A	2	10-32 x 1/4 Grip Bolt	
-30A	1	1/4-28 x 2-9/16 Grip Bolt	
8-41-H4			
380-2-2	1	1/16 Cotter Key	Guy Cable Attachment
4-32	1	1/4-28 x 2-13/16 Grip Bolt	Cable to Tow Hitch
4750	4	1/4 x 3/4 Flat Washers	Cable Retention
310-4	1	1/4-28 Castellated Nut	
100-4	2	1/8 Thimbles	Cable Eye
18-3-M	2	1/8 Nicopress Sleeves	Cable Clamp
8-12	1	1/2-20 x 9/16 Grip Bolt	Tow Hitch Attachment
960-816	1	1/2 x 7/8 Flat Washer	" " "
310-8	1	1/2-20 Castellated Nut	" " "
380-3-4	1	3/32 x 1 Cotter Pin	" " "
515-6-8	6	6-32 x 1/2 Machine Screws	Airspeed Brackets
960-6	6	5/32 x 1/2 Flat Washers	" "
364-632	6	6-32 Lock Nuts	" "
515-8-4	1	8-32 x 1/4 Machine Screw	Drift Indicator
960-8	1	5/32 x 3/8 Flat Washer	" "
364-832	1	8-32 Lock Nut	" "

Part No.	Qty.	Description	Use Area
PPC-2	1	1/8 Plastic Clamp	Drift Indicator
PPC-3	2	3/16 Plastic Clamps	Tow Release Cord
470AD4-5	30	1/8 x 5/16 Rivets	Gusset Plates
8-41-010A	1	Sweitzer Quick Release	Tow Hitch Assembly
8-41-025A	1	.065 x 3/8 x 1 Steel Tube	Cable Sleeve
8-41-H5 ✓			
4-37A	8	1/4-28 x 3-7/16 Grip Bolt	Axle Clamp Blocks
3-21A	2	10-32 x 1-3/4 Grip Bolt	Axle Sleeve Retention
8-41-018C	4	1 x 1-3/4 x 3/4 Phenol Fiber	Axle Sleeves
8-41-H6 ✓			
3-14A	2	10-32 x 1-1/8 Grip Bolt	Rudder Pedal Assembly
3-6	4	10-32 x 3/8 Grip Bolt	" " "
42-13A	4	10-32 x 1 Grip Eye Bolt	" " "
1183	4	3/16 x 3/4 Flat Washer	" " "
310-3	4	10-32 Castellated Nut	" " "
380-2-2	4	1/16 x 1/2 Cotter Pin	" " "
470AD4-9	4	1/8 x 9/16 Rivet	" " "
470AD4-6	14	1/8 x 3/8 Rivet	" " "
3-6	4	10-32 x 3/8 Grip Bolt	Rudder Cable Retention
1183	8	3/16 x 3/4 Flat Washer	" " "
310-3	4	10-32 Castellated Nut	" " "
380-2-2	4	1/16 x 1/2 Cotter Pin	" " "
100-3	4	1/16 Thimbles	Cable Eye
18-1-C	4	1/16 Nicopress Sleeve	Cable Clamp
8-41-021J	1	.032 x 1/4 x 1-1/2 Steel Sleeve	Cable Sleeve
8-41-H7 ✓			
364-428	35	1/4-28 Lock Nut	Washers, Nuts & Spares
364-1032	10	10-32 Lock Nut	" " "
960-416	36	1/4 x 1/2 Flat Washers	" " "
960-10	10	3/16 x 7/16 Flat Washers	" " "

CONSTRUCTION AND ASSEMBLY MANUAL

8-41 Airframe Materials

Parts and Materials described in this Manual are designed to be used for the construction of Models B8 Gyroglider, and B8M Gyrocopter airframes. This Manual is complete in all respects for construction and assembly of your airframe. Contained herein are the very latest procedures, and with the attached drawings; the only reference to the Building and Operating Manual will be for general flight procedures only. DO NOT USE the 8-104-100 drawings contained with your plans, as they are dimensioned for a complete home-built machine only.

The following items are supplied finished, or in a partially completed stage.

1. The Head Plate and Cluster Plate holes in the -003 Redundant Mast are pre-drilled. All hole dimensions to be laid out should be measured from the factory numbered end.

2. The -004 Cluster Plates are pre-punched and finished.

3. The Cluster Plate attaching holes are pre-drilled in the -001 Keel Tube. All hole dimensions to be laid out should be measured from the factory numbered end. The 9 degree alignment of Mast to Keel will be correct when assembled.

4. The Seat Back and Bottom are formed to the correct shape, and are of the correct leg length.

5. All angles, with the exception of the -021C,D,F, Rudder Pedal angles, are cut to the proper length with the ends notched and coped for you.

READ CAREFULLY AND THROUGHLY THE COMPLETE 8-41 TEXT BEFORE ATTEMPTING AND FABRICATION. THIS IS THE LATEST AIRFRAME DESIGN, THEREFORE INCLUDED YOU WILL FIND PERTINENT NEW ASSEMBLY PROCEDURES. BE CERTAIN THAT YOU UNDERSTAND EACH PROCEDURE PRIOR TO CUTTING MATERIAL. Your construction can be completed with common hand tools and a 1/4 Drill Motor. A stand mounted drill is better, if available, to obtain perpendicular holes. (See separate "Tooling Techniques Manual" for proper drilling procedure.)

WITH A MAGIC MARKER OR GREASE PENCIL MARK ALL PACKAGE PARTS AS THEY ARE IDENTIFIED BY THE PACKING LIST, AND DRAWINGS. LEAVE ALL HARDWARE IN IDENTIFIED BAGS UNTIL NEEDED TO PREVENT LOSS OR MISPLACEMENT.

A. CONSTRUCTION HINTS

1. Read the "Tooling Technique Manual" for procedural sequence of drilling holes, use of the Hand Drill, angle hole layout, nicopress sleeves, proper use of the TK-101 Transfer Fixture, etc.

2. Hardware Selection and Replacement: Refer to the assembly drawing No. 41-4 and packing List, for correct selection of attaching hardware. A flat washer is installed under all attaching nuts.

3. Recommended Torque Values:

	Bolts In Shear	Bolts In Tension
3/16 Dia. Bolts.....	20-25 inch lbs.	40 inch lbs.
1/4 Dia. Bolts.....	50-70 inch lbs.	100 inch lbs.
3/8 Dia. Bolts.....	160-190 inch lbs.	390 inch lbs.

Use these values consistently unless instructed otherwise in the Procedure.

B. CONSTRUCTION STEPS

The following procedural steps have been developed for the easiest construction sequence for the Gyro Airframe. We suggest that you complete one step at a time, and follow the numerical sequence of steps. Be sure and read the Manual completely before beginning your construction.

KEEL TUBE...Drawing No. 41-1

1. Square the factory-numbered end of the -001 Keel Tube. The squared end has sides pre-numbered in a clockwise manner.

2. Drill hole locations in each of the (4) sides as per the attached drawing. (Note: Optional hole locations are provided for mounting the 8-30B Rudder Steerable Fork Pack Nosewheel of 6" to 9" from the front end of Keel. Use the 6" location if you have long legs; pant leg length of 33" and up. Use the 9" location

if you have short legs; pant leg length of 30" and under. You may also choose an intermediate hole position between 6" and 9" to fit your length.) The 66-1/2" hole will not be used until the 8-81B Engine Mount Pack is installed. (Note: THE DISTANCE BETWEEN THE 50" and the 51-15/32" HOLE MUST BE 1-15/32" PLUS .000" or MINUS 1/64".)

MAST TUBE...Drawing No. 41-2

3. The -003 Redundant Mast tubes are factory paired, with end and sides numbered. Insert a 1/4" bolt in one hole of each end for proper alignment.

4. Locate the (2) 3/16" holes on side 2, 1" from each end, and through drill the three sides of stacked tube, deburr, and bolt together their two inner faces.

5. Clamp tubes at mid-span to flush sides and square the cluster plate end. Drill the remaining hole locations. The 20" and 23" holes will not be used until the 8-81B Engine Mount is installed. (If an alignment problem exists because the drill "walked" on the inner side, the assembly should be unbolted, and the inner holes can be opened to a maximum diameter of 9/32".)

6. Cut bevel at the cluster plate end of Mast.

AXLE TUBE...Drawing No. 41-3

7. Square the ends of -002 Axle Tube and number from left end in a clockwise manner. Drill hole locations in each of the four sides as per drawing.

8. Attach the Axle Tube to Keel with a 4-44A bolt, washer and nut. Square Axle with the Keel and clamp in position. Transfer punch through Keel to Axle the remaining 51-15/32" hole location. Remove the Axle and drill a 1/4" hole in the Axle Tube through both tube walls. (Be careful starting your hole on inside wall of Axle tube. To prevent drill "walk"make double sure the drill bit is vertical to the tube face.)

****

If you have the 8-30 Wheel Package, follow construction and assembly procedures as outlined with the 8-30 Pack, and install Nosewheel, 8-30B; and Tailwheel, 8-30C; on your Keel Tube. Mounting these two items prior to airframe assembly is a much more convient method, and easier to assemble.

****

AXLE CLAMP BLOCKS...Drawing No. 41-5

9. The -018B Axle Clamp Blocks are supplied with a centered 1" hole. Center and clamp the 2" width of blocks over the 3/8, 3-3/8, 54-5/8, and 57-5/8" holes of Axle Tube ends. Transfer punch the 1/4" locating holes through Axle to Clamp Blocks, remove and drill (8) Holes.

10. Mark or number the 1/2" sides of blocks so as to keep pairs together. Saw blocks in half on the centerline, thus making a split block clamp assembly as shown on drawing. Install in pairs on Axle Tube ends, but do not tighten nuts.

WHEEL AXLE TUBE AND PHENOLIC SLEEVES... Drawing No. 41-5

11. Cut -018A Steel Axle Tube to print length. Deburr ends, and prime or paint the length of tube where it will not be covered by the -018 Mainwheel bearings; both inside and out to prevent rust.

12. Press outside -018C Phenolic Sleeves on -018A tube ends, flush with end. Drill (1) 3/16" retaining hole in each end, and bolt.

13. Grease -018 Main Wheel bearings as described with the 8-30 Packing List, and slide Wheels on Axles.

14. Notch (2) -018C Sleeves as shown. Press notched sleeve on Axle, against inside of -018 Wheel, and adjust to provide a running fit.

15. Install both wheel assemblies in Axle Clamp Block retainers on main -002 Axle, and torque the nuts alternately to obtain uniform pressure on each pair of Clamp Blocks. Make sure -018 Main Wheels are adjusted between -018C Sleeves for a running fit.

Assemble Mast, Keel, Axle, and Cluster Plates. Refer to Drawing 41-4 for airframe bolt locations.

ANGLE BRACES...Drawing No. 41-6, 41-7, and 41-8

16. -007 Angle... Drawing No. 41-6: Lay out and drill the outboard (2) 1/4" holes for Seat Bottom attachment. Clamp angle center over the 9-3/4" Mast holes. Check for symmetry and right-angle alignment, and transfer punch holes through Mast to angle. Remove, drill, prime and paint.

17. -016 Angle.... Drawing No. 41-7: Complete ends of angle, prime and paint. Attach -007 and -016 angles to Mast tube, and -016 Angle to Axle. Refer to Drawing No. 41-8 for angle location.

18. -012, -013, and -015 Angles....Drawing No. 41-7: Lay out and complete angle ends. (Note: -015 angle has a left and right, and one end has a 1/4" hole where the other has a 3/16".)

19. -011, -014, and -017 Angles....Drawing No. 41-7: Lay out and complete one angle end of each angle ONLY.

20. Drawing No. 41-8: Install -012, -013, and -015 angles on frame. Temporarily install bolt a junction of -012 and -013. Attach -012 angle to Keel with 4-6A bolts, with washers and nuts on the inside of Keel tube.

21. Drawing No. 41-8: Locate finished end of -014 angle in place on Keel tube. Center other end over the predrilled 3/16" hole in -013 angle. Clamp, transfer punch, remove, drill and attach. (Note: -013 angle attachment end of -014 angle, will have a 3/16" hole with a center to end of angle dimension of 3/8", rather than 1/2".)

22. Drawing No. 41-8: Locate finished end of -011 angle on 18" hole in Mast tube with bolt. Center end of angle over the 68-1/2" hole in Keel using hole locating method explained in the "Tooling Technique Manual". Remove and drill. Repeat procedure with the other -011 angle, and install on Mast and Keel.

GUSSET PLATES, -012A, -013A, and -014A, Drawing No. 41-9

23. Gusset plates are pre-cut to size. Layout and drill hole locations as per drawing.

24. Clamp plates in a centered position on their respective angles and drill through both plate and angle. Rivet in place with provided rivets. (Note: Leave the front top two holes of -013A open for later installation of the airspeed bracket.)

TOW HITCH BLOCK...Drawing No. 41-5

25. Lay out and drill -010B Tow Hitch Block. Temporarily install between junction of -012 and -013 angles. Leave nut off for later installation of the -025 Guy Cable.

SEAT BACK AND SEAT BOTTOM...Drawing No. 41-10

26. Lay out and drill -006A Seat Clamp Angle. Clamp angles together, center drill and drill the (2) 1/4" holes.

27. Cut -008A Hardwood Dowel to: (2) pcs. 3" long; and (2) pcs. 6" long.

28. Press a 3" dowel into each leg of the -008 Seat Back, and a 6" dowel into each leg of the -009 Seat Bottom. Sand dowel as necessary to obtain a snug press fit into tubes.

29. Lay out and drill 1/4" holes on Seat Back ends, 1/2" from tube ends, and centered on the 1" side diameter, and at right angles to Seat Bottom.

30. Drawing No. 41-11: Lay out and drill -009 Seat Bottom holes.

31. Attach Seat Bottom to -007 angle. Attach Seat Back to Seat Bottom.

32. Drawing No. 41-10: Attach -006A Seat Clamp angle to Mast. Slide up or down on Mast to contact bottom of Seat Back. Move Seat Back rearward to allow seat frame to just clear heads of 1/4" bolts. Align, center and clamp in this position.

33. Drawing No. 41-10: Drill (2) 3/16" holes through Seat Back frame and -006A angles, making sure the drill is perpendicular to web of angle. Attach Seat Back to angle. Trim angle edges to a smooth radius.

34. Drawing No. 41-11: Uniformly space 8-41-030 Bungee Seat Cords on -009 Seat Bottom as a base for your seat cushion. Attach -015 angle to Seat Bottom front (2) 3/16" holes. With a rubber or plastic hammer, tap the top Seat Bottom Angle edges down to conform with the tube radius, and file or sand smooth.

35. Drawing No. 41-8: Locate finished end of -017 angle on Keel tube 40" hole location. Center web of angle over the 20" and 38" Axle hole location. Transfer punch, remove and drill. Attach angle to Keel and Axle, and make sure Axle is square with the Keel tube.

RUDDER PEDAL-AND-TUBE ASSEMBLY, Drawing No. 41-12

36. Cut and bevel -021C,D,F angles, and drill all holes shown that do not require a rivet.

37. Lay out rivet hole locations in -021E Gusset and center-punch only.

38. Clamp all Pedal components above in place, and drill rivet hole locations through -021E and angles.

39. Lay out and drill the (2) Outboard holes, 3/16", in -021B Rudder Pedal tube for the 42-13A Eye Bolts, and install bolts.

40. Cut -021G Pedal Stops to length, lay out and drill holes. Mount finished Rudder Pedal Assemblies to eye-bolts with the -021G Pedal Stops in place.

41. Clamp -021A Pedal Mount Angle, centered over the rear (2) holes that you chose for your Nosewheel assembly in Keel Tube. Transfer punch, remove and drill. Lay out and drill the (2) 3/16" Pedal Tube mount holes in -021A, and install angle on Keel Tube.

42. Clamp Rudder Pedal-and-Tube Assembly in a centered position on the -021A angle. Rotate tube until pedals, when against the back stop of -021G, are vertical and when against forward stops, 40 degrees forward. Transfer punch the 3/16" holes through -021A angle to -021B tube, remove and drill.

43. Re-install entire assembly with instructions and base plate, as outlined with the 8-30B Unitized Steering Nosewheel instruction Manual

AIRSPEED INDICATOR BRACKET...Drawing No. 41-13

44. Form, lay out, and drill -024C and -024D Brackets.

45. Install finished bracket angle on -013A Gusset with machine screws provided. Install Airspeed Indicator -024A as shown with -024D retaining bracket. Install -024B Drift Indicator (Yarn Strip)to cable as follows. Slip one end of strip into a PPC-2 Plastic Clamp with approximately 1/4" out on the end. Force the clamp eye with strip over the -025 Guy cable approximately 8" up from the tow hitch end of cable. Retain with the 1/4" long 515 screw provided.

CABLE AND GUIDES,...Drawings 41-6 and 41-14

46. Complete the Nicopress Clinching Tool, TK-132 as shown.

47. Cut -025A Cable Spacer Sleeves to size, and deburr holes.

48. The -025Guy Cable can be installed only after the 8-20A Gimbal Control Head is in place on your Mast.

a. Fabricate one end of -025 Cable as detailed, using the TK-132 to clinch the 18-3-M Sleeve.

b. Attach finished end of cable to Tow Hitch Block 1/4" bolt at the Tow Boom end junction, using the -025A Cable Spacer over the bolt, with a 4750 Washer on each side of cable thimble assembly. (Note: Be sure 1/4" bolt through the Tow Hitch Block and ends of block are lubricated. Torque 310-4 castellated nut only to allow a free pivot of block, and cotter-pin the nut. See attached picture for reference.)

c. Load the Gyro Seat Frame Bottom with approximately 300 lbs with sandbags or lead to deflect the airframe.

d. Locate -025A Spacer and cable with washers shown on head plate bolt described with the 8-20A Instructions. Pull tight with pliers and clinch sleeve. Cut off excess cable. (Be sure Tow Hitch is still capable of free pivot.) To prevent the cable from pulling hair, a 1/8" ID plastic or rubber tube can be placed over cable between the (2) 18-3-M sleeves prior to clinching the last sleeve.

49. Cut -022A Hardwood Dowel, and -022B Plug Sleeve to print length.

50. Drill Dowel hole as shown and saw slot to print dimensions.

51. Saw slot in -022B Sleeve, and deburr. Make sure cut edges are smooth and free of burrs.

52. Cut -021J Rudder Cable Spacers to print dimensions and hold until you are ready to install the Rudder Assembly.

53. The Seat Belt is attached to the Seat Bottom leg on the area between Seat Back and the -007 Steel Angle. Thread the belt end through the two slots in the slide provided and around the Seat Bottom. Thread the exposed end up through the same two slots leaving approximately 2" of belt end out of slide. The slide assembly should be faceing up, and on top of Seat Bottom leg.

54. A Seat Cushion can be purchased from most any Marine supply store. We recommend you use approximately a 14 x 14 x 3. Be sure and tie the cushion to the seat frame or Bungee Cords to prevent it from falling off.

55. Your Seat Back Cushion can be made by sewing a 13" wide reinforced canvas band, and lacing it across the back frame.

The Rudder Cables and Rudder are installed as instructed with the 8-61 Metal Tail Materials, and Butterfly Horizontal Stablizer Pack.

This completes the assembly of your 8-41 Airframe Materials Package. Be sure and double check all your work. Re-torque all nuts to the proper torque, and check for a free pivot or running fit wherever applicable.

Any pencil lay out lines or marks should be erased, and the entire airframe cleaned with paint thinner or alcohol. Wax the entire surface with a good grade of automotive wax to prevent corrosion of exposed aluminum surfaces.

Be sure to read and follow the "Testing The Airframe" section included with the Gyroglider Building and Operating Manual.

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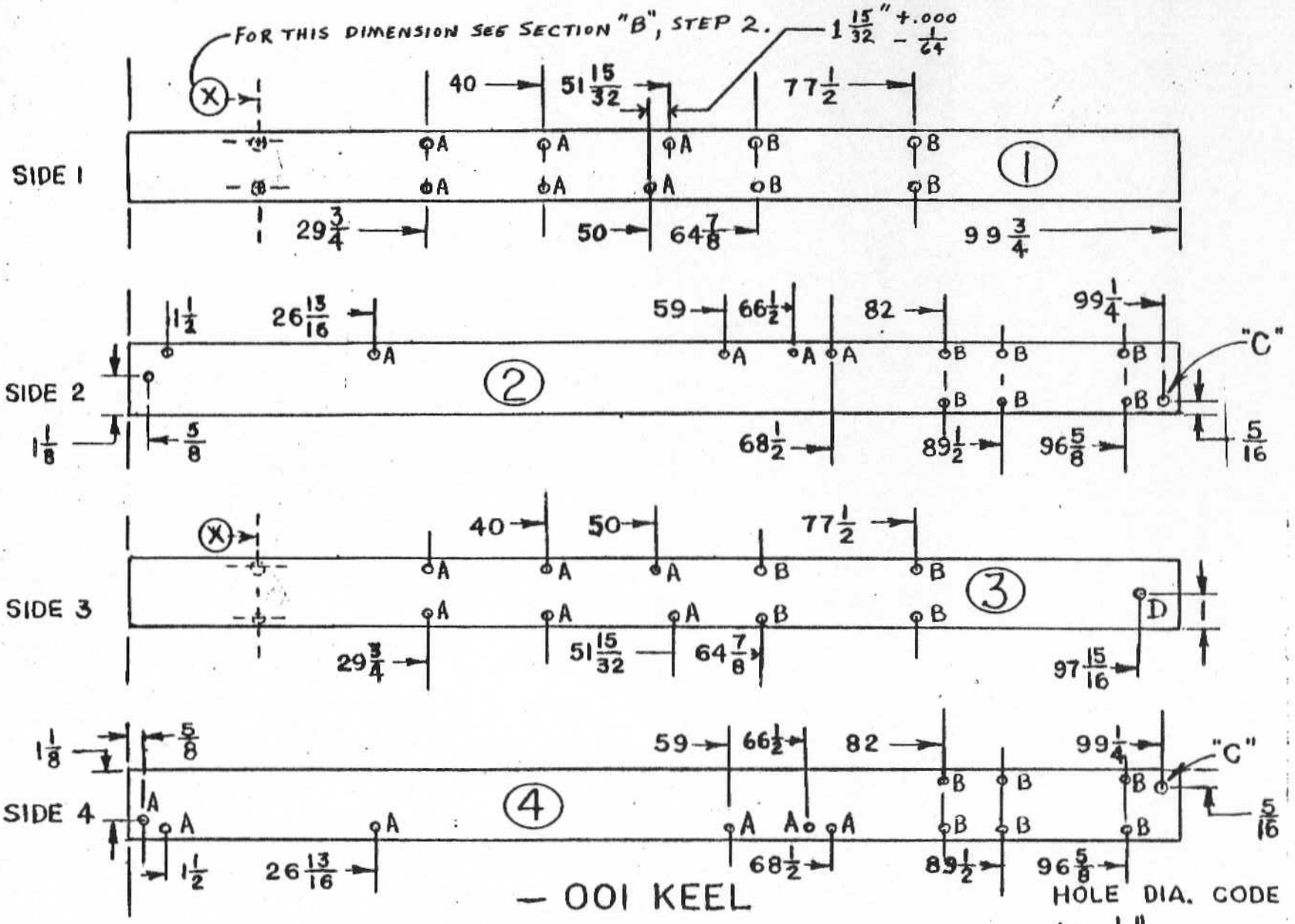


- 001 KEEL

NOTE: FACTORY PREDRILLED HOLES NOT SHOWN.

USE TK-101 TOOL KIT FOR PROPER HOLE EDGE DISTANCE

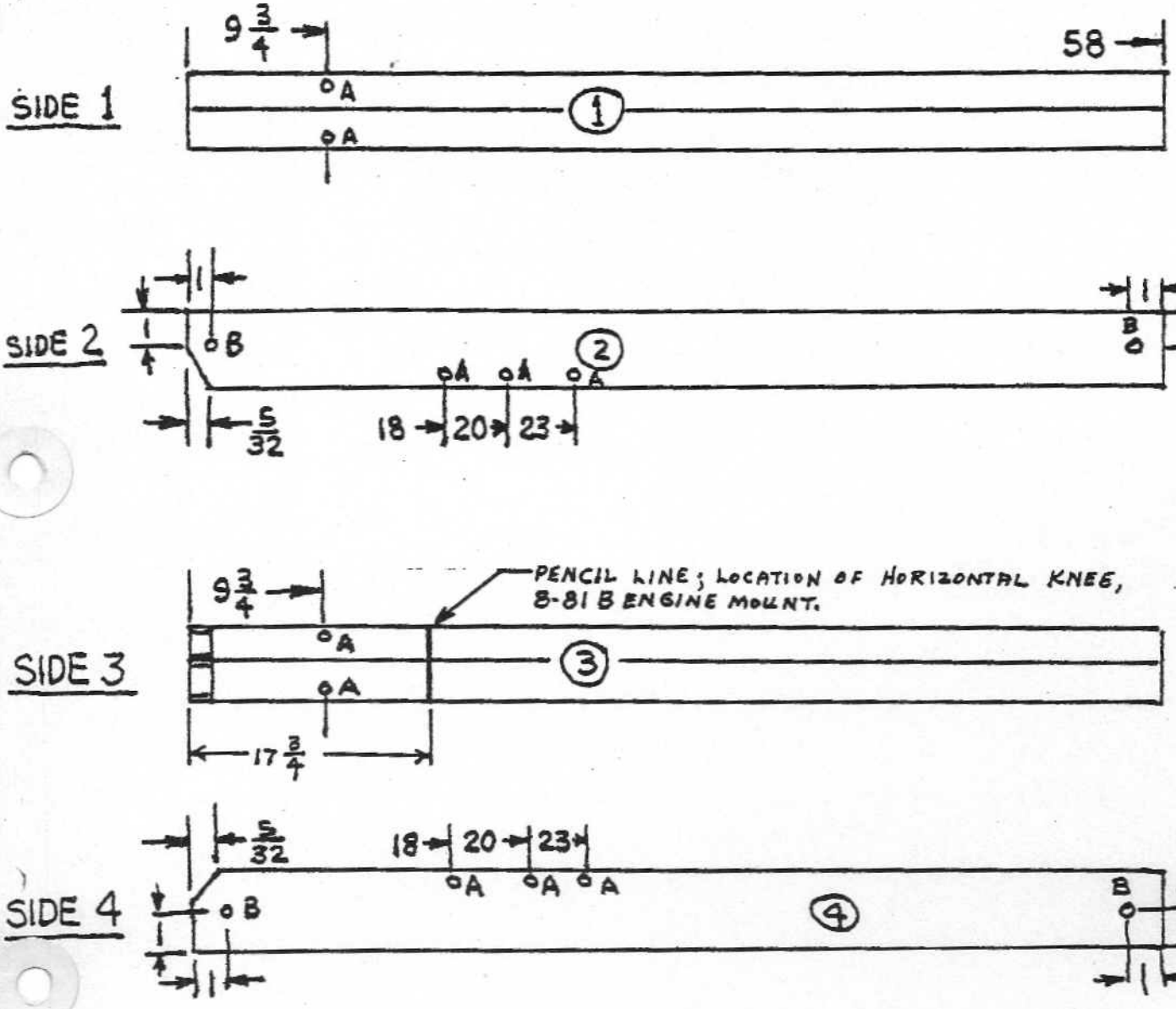
HOLE DIA. CODE

A = 1/4"

B = 3/16"

C = 5/16"

D = 3/8"

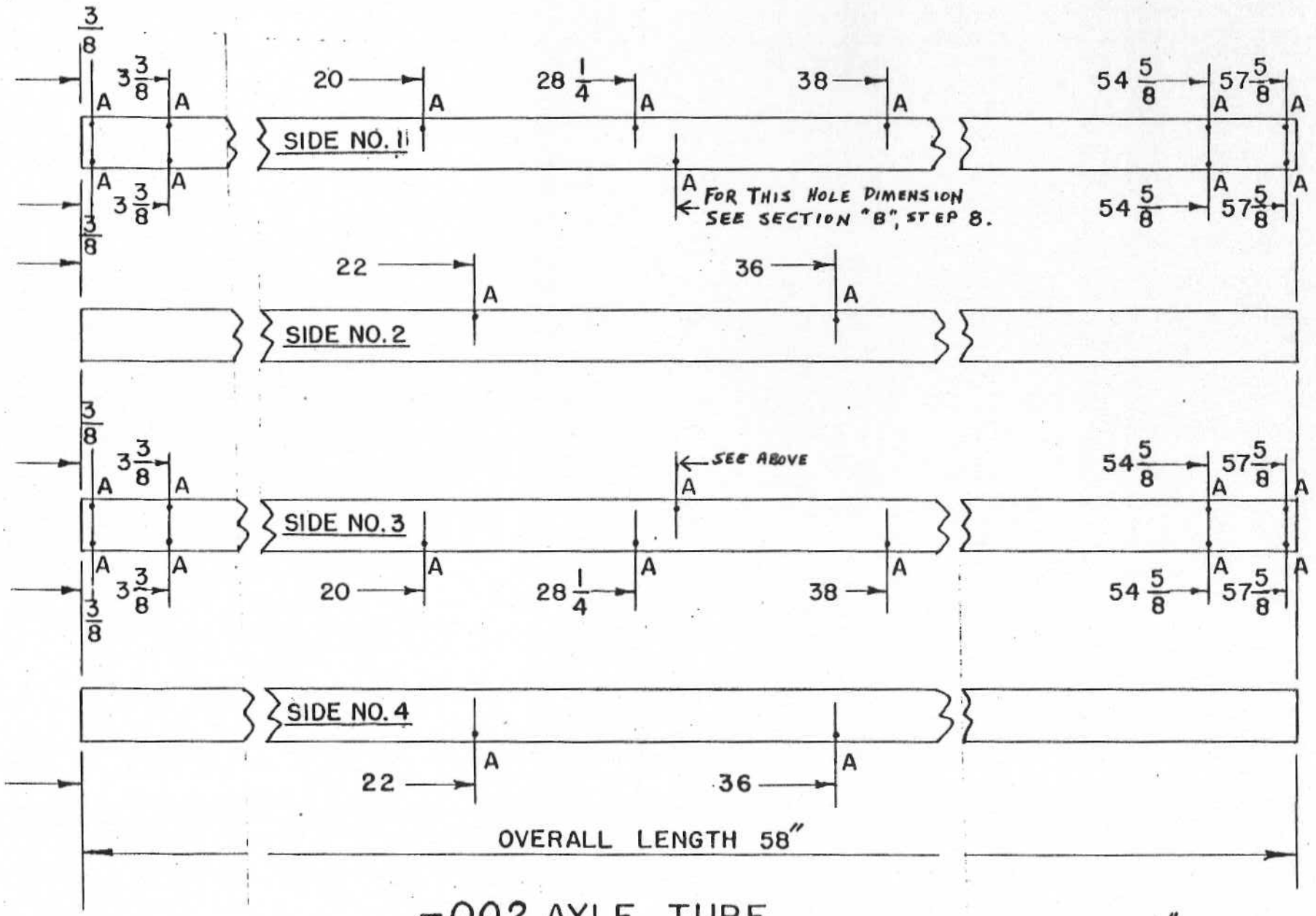


-003 MAST

"A" HOLES 1/4"
"B" HOLES 3/16"

NOTE: FACTORY PREDRILLED HOLES NOT SHOWN. USE TK-101 TOOL KIT FOR PROPER HOLE EDGE DISTANCE.

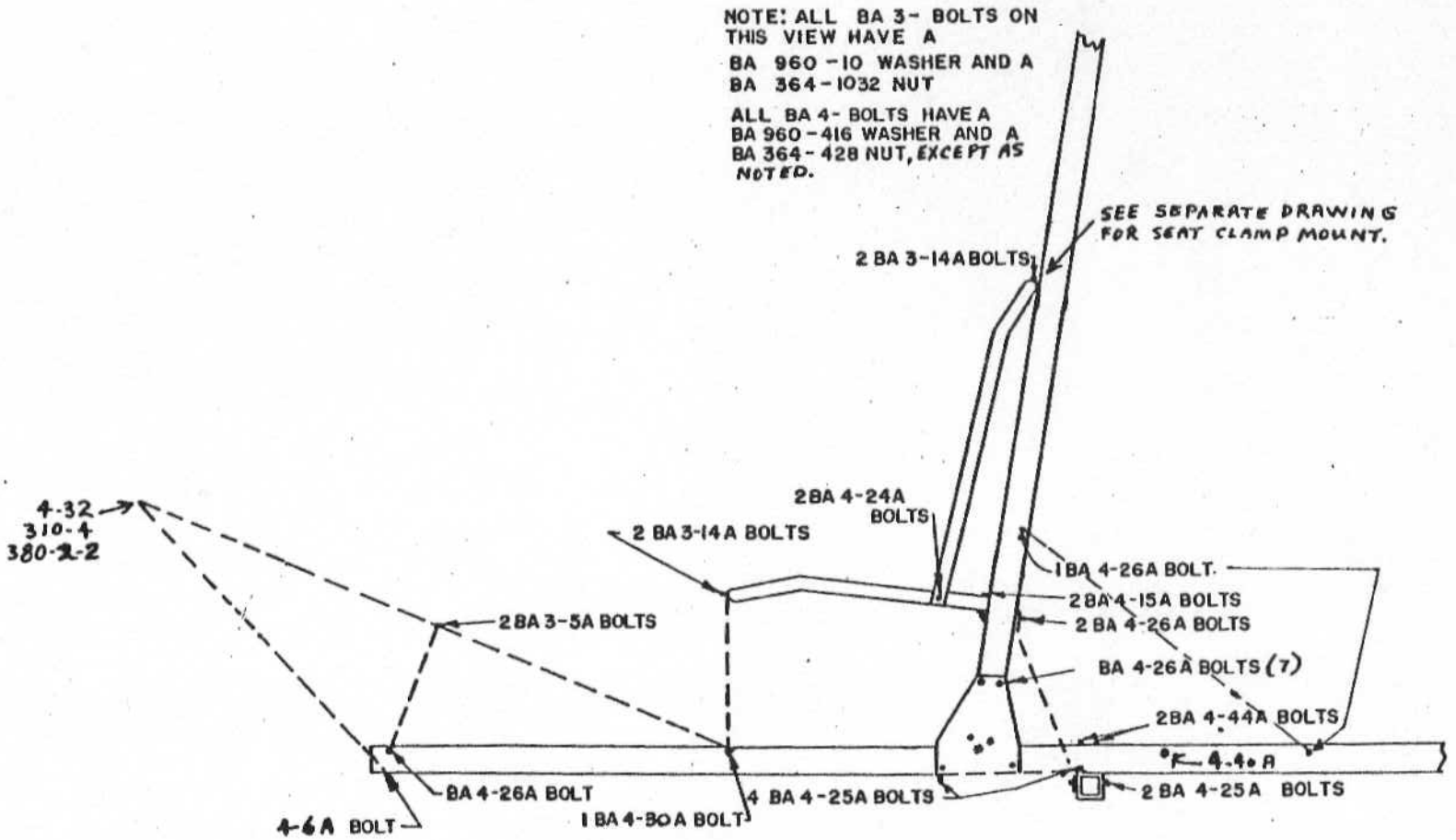
DWG. 41-2



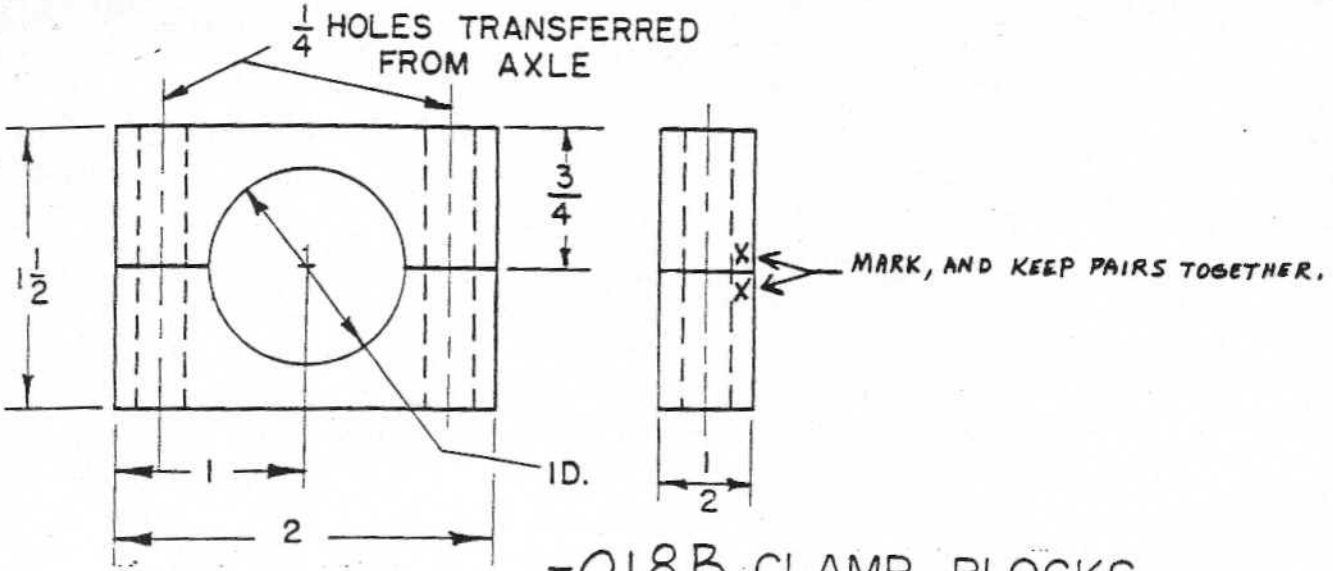
-002 AXLE TUBE

ALL HOLES 1/4"

DWG. 41-3

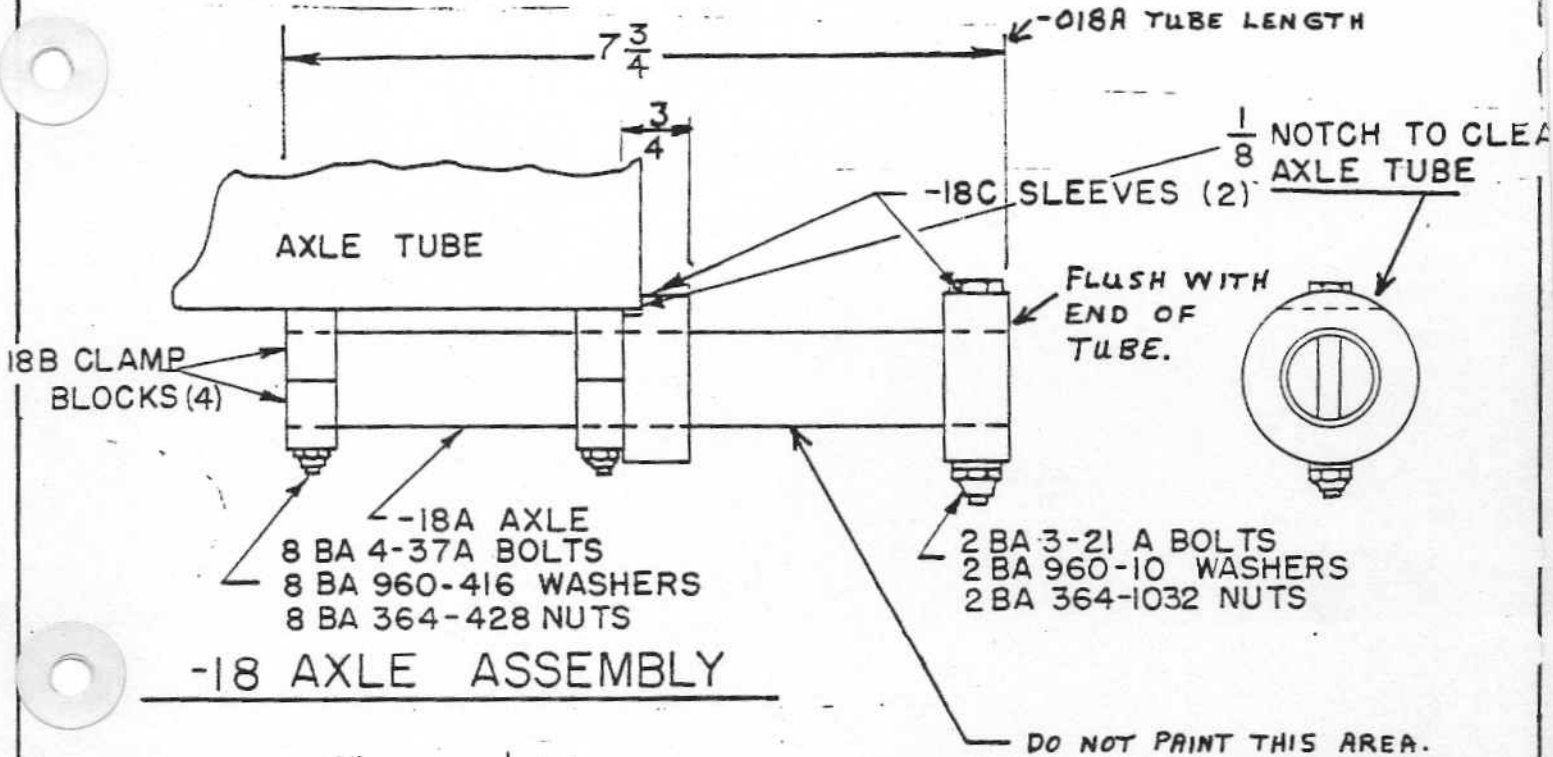


VIEW SHOWING MAJOR AIRFRAME BOLTS

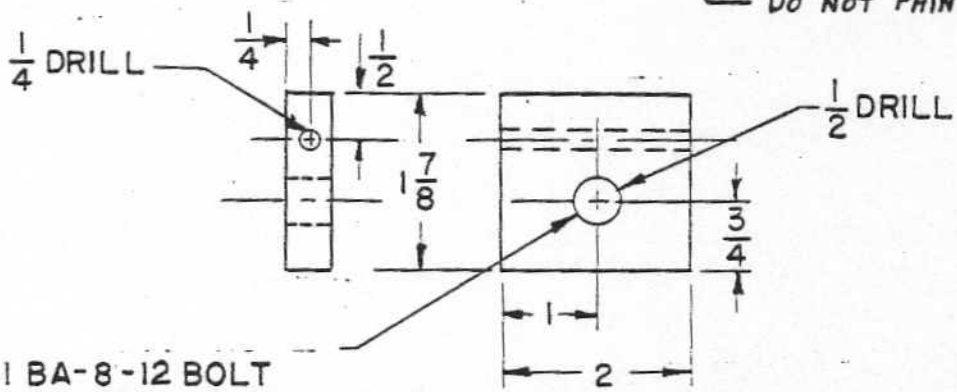


SAW BLOCKS IN HALF AFTER DRILLING

-018B CLAMP BLOCKS



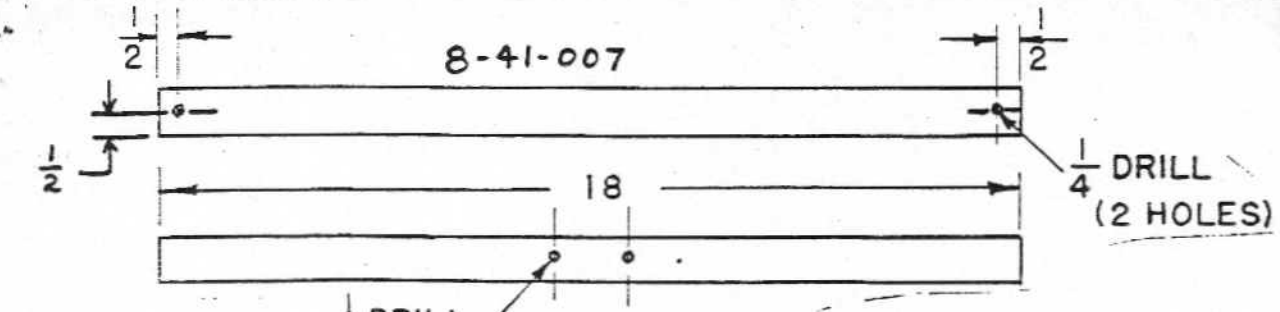
-18 AXLE ASSEMBLY

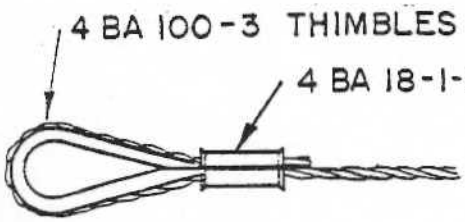


1 BA-8-12 BOLT
1 BA-960-816 WASHER
1 BA-310-8 NUT & 1BA 380-3-3 KEY

-010 TOW HITCH BLOCK

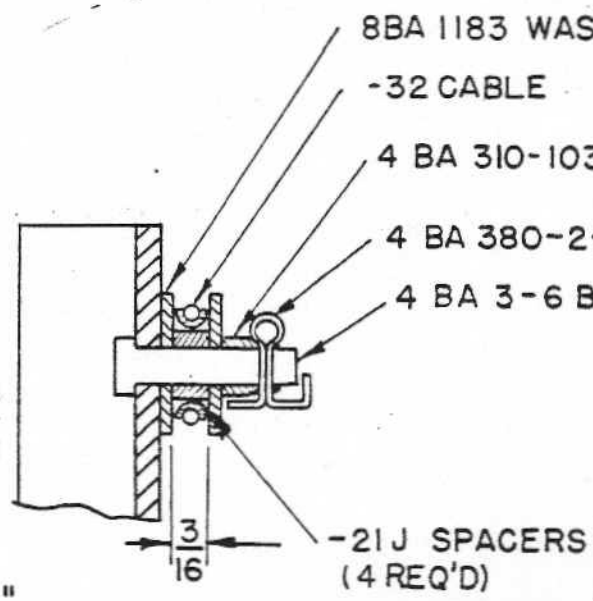
DWG. 41-5





1/16" CABLE END (TYP.)

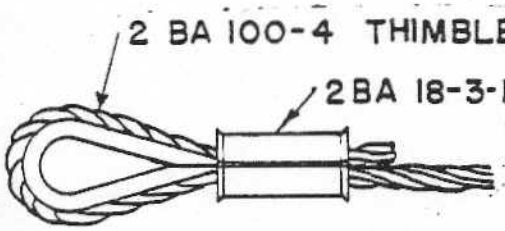
FULL SCALE



-32 TYP. 1/16" CABLE ATTACHMENT

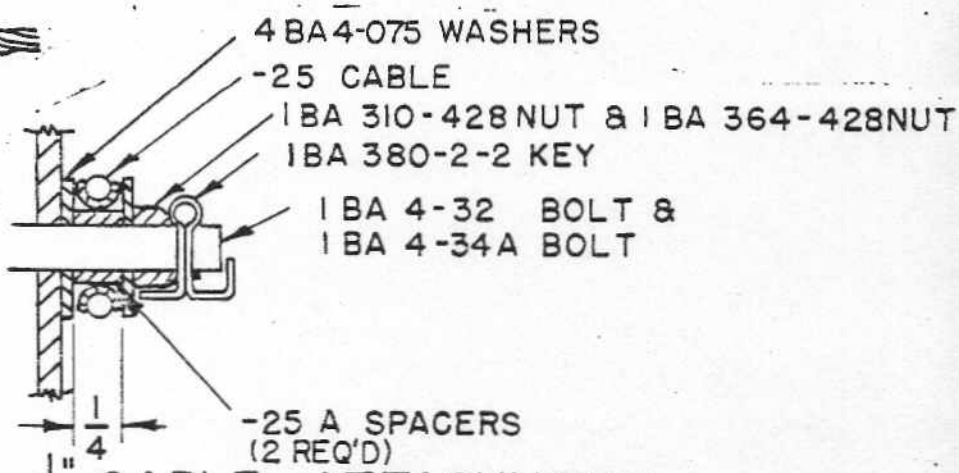
FULL SCALE

FOR RUDDER CABLE



1/8 CABLE END (TYP.)

FULL SCALE



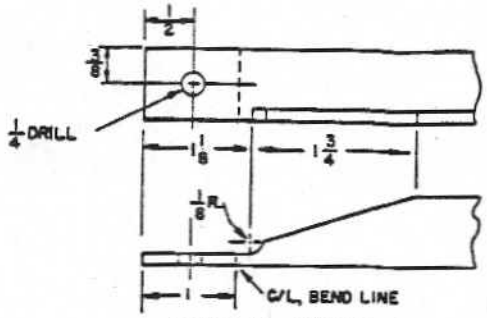
-25 TYPICAL 1/8" CABLE ATTACHMENT

FULL SCALE

FOR AIRFRAME CABLE

DWG. 41-6

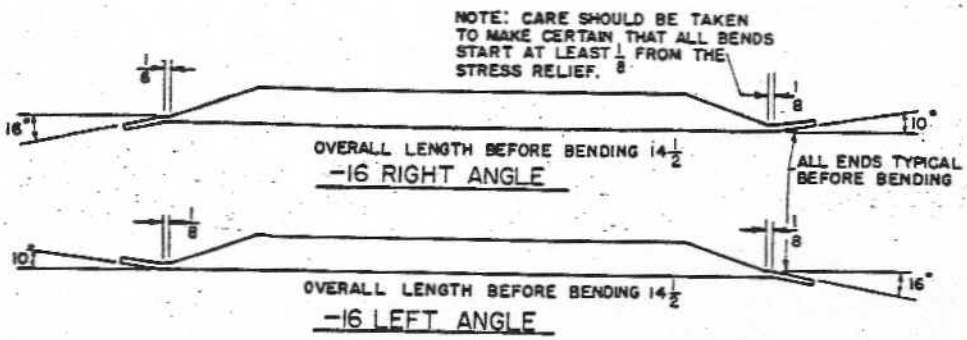
Angle hole locations for: -011, -012, -013, -014, -015, -016, and -017 Brace and Tow Boom Structure Angles.



TYPICAL ANGLE END

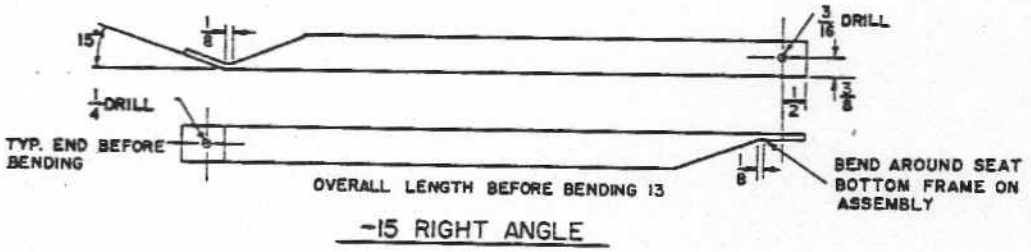
Use "Typical Angle End" hole locations for all angles except as noted in Section "B", Step 21 of construction procedures. Remember that in Step 19, you are completing (1) one angle end only.

Drill a 3/16" hole, 23-1/2" from the center of the 1/4" hole in -013 Tow Boom Angle, and on the same angle web. This is for attachment of the -014 Angle.

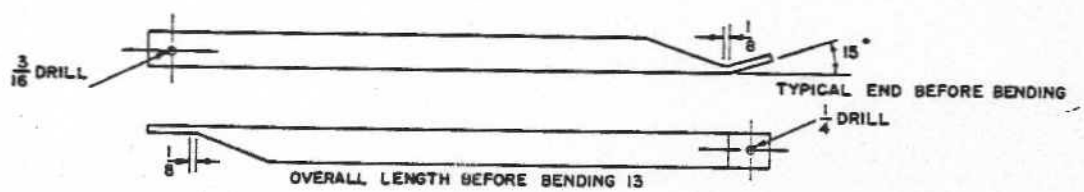


-16 RIGHT ANGLE

-16 LEFT ANGLE



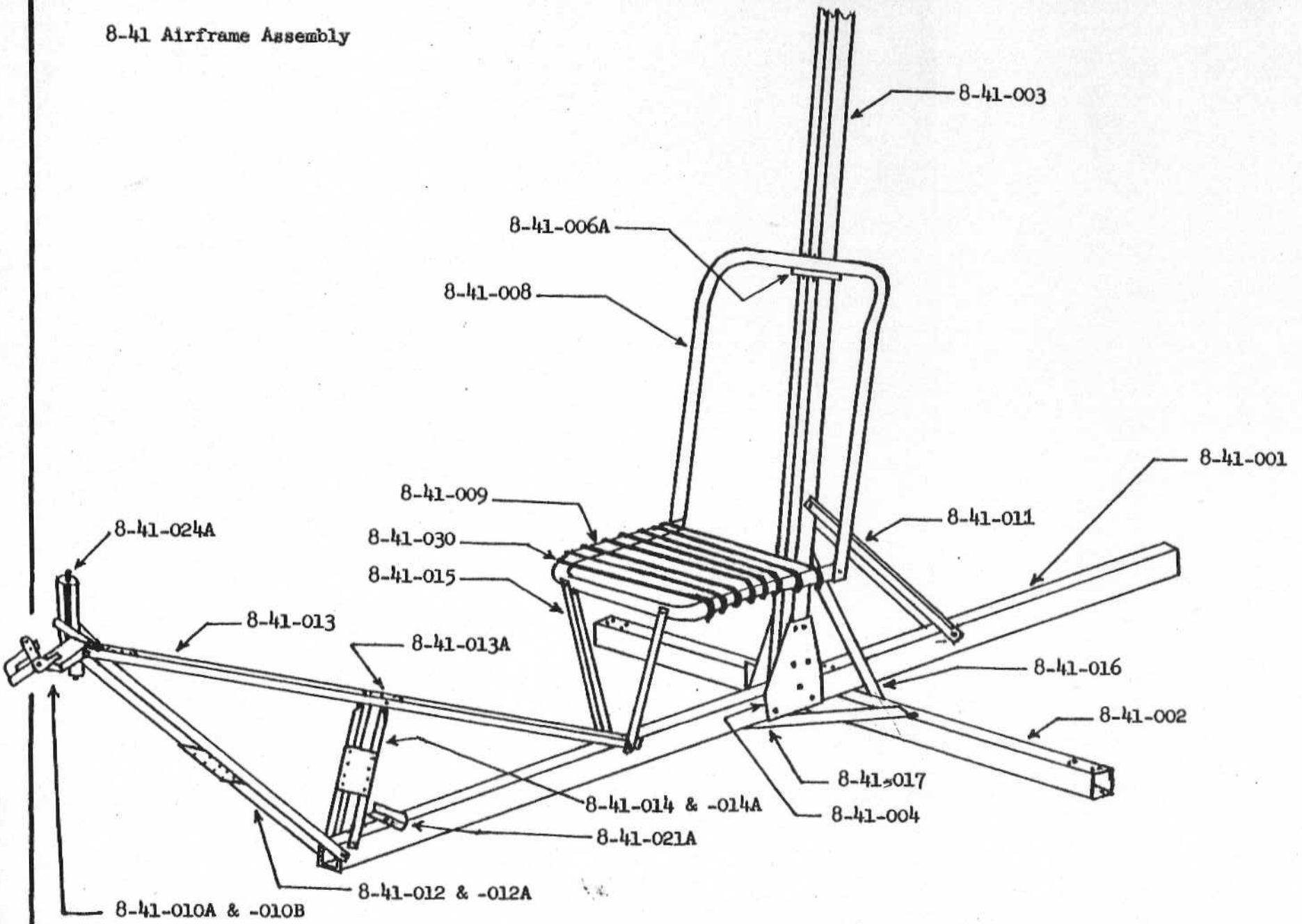
-15 RIGHT ANGLE



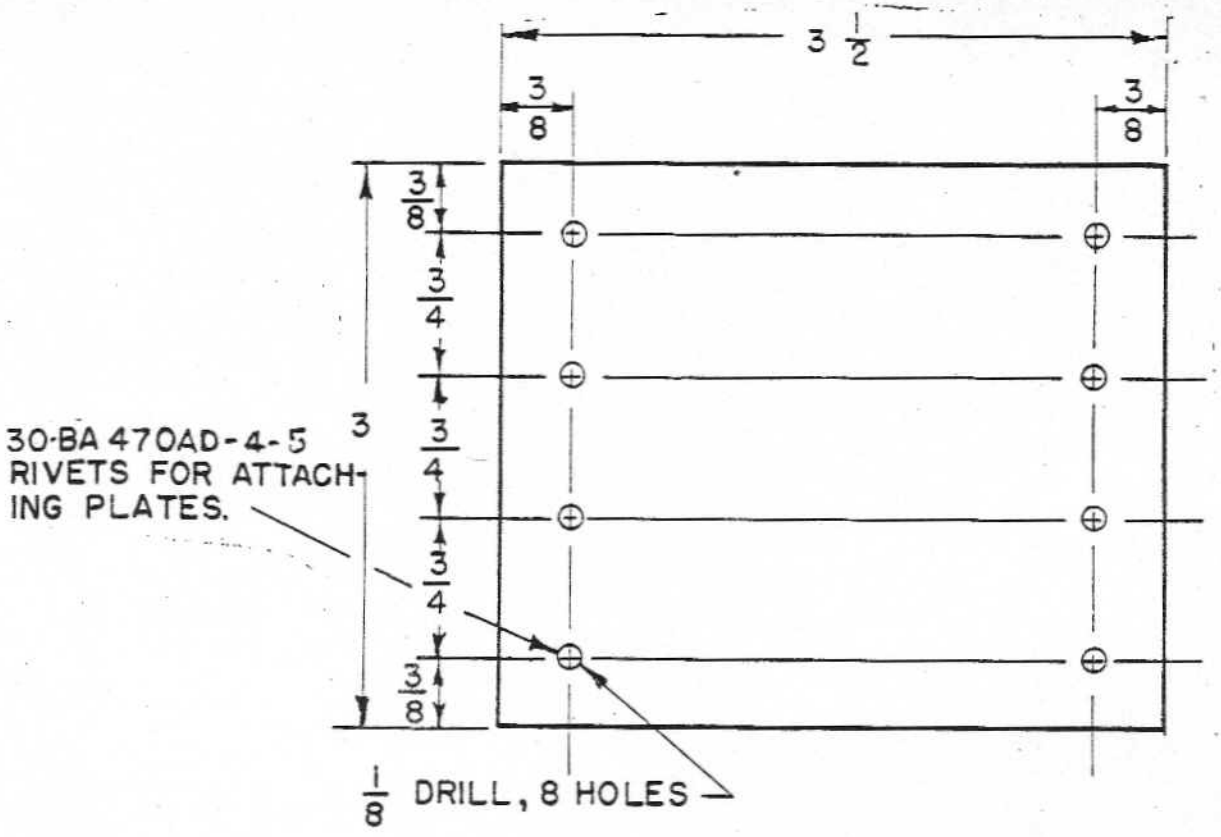
-15 LEFT ANGLE

DWG. 41-7

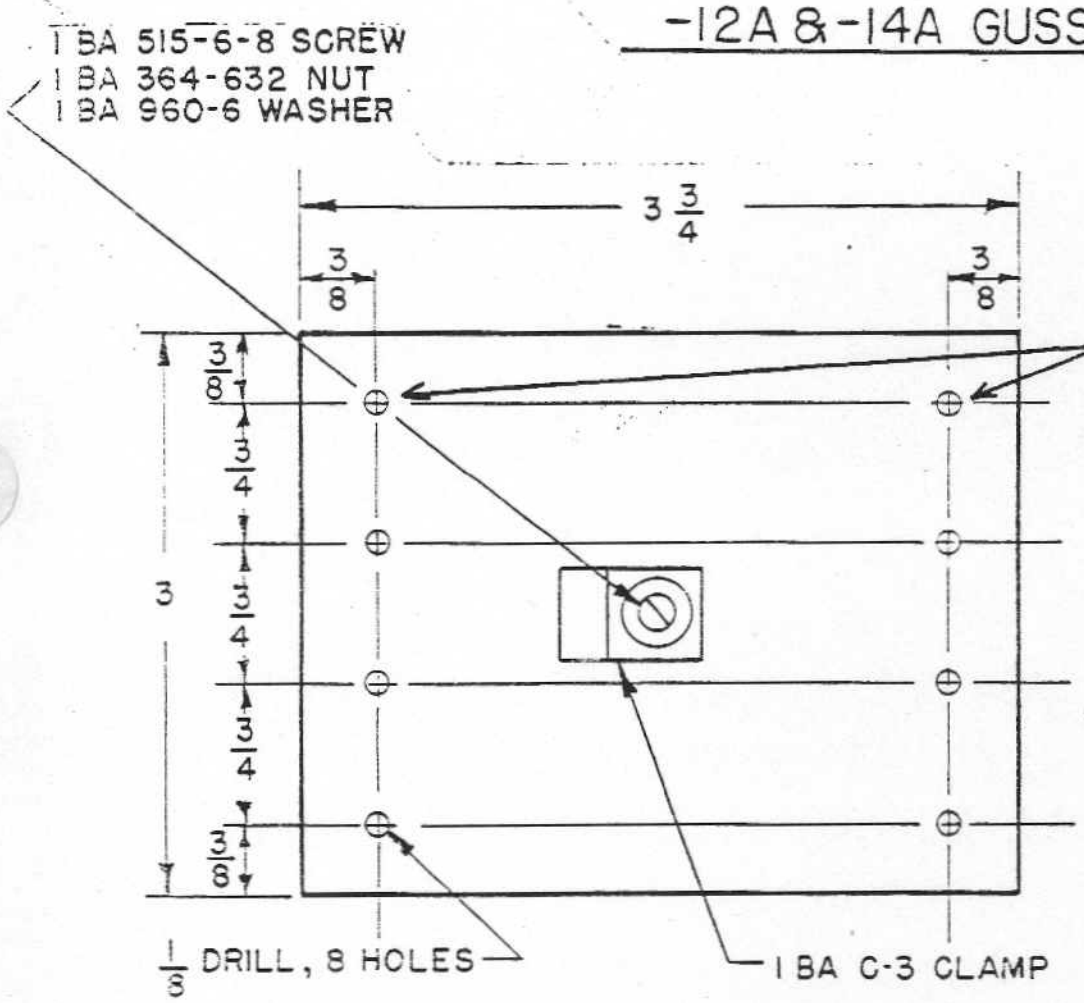
8-41 Airframe Assembly



DWG. 41-8

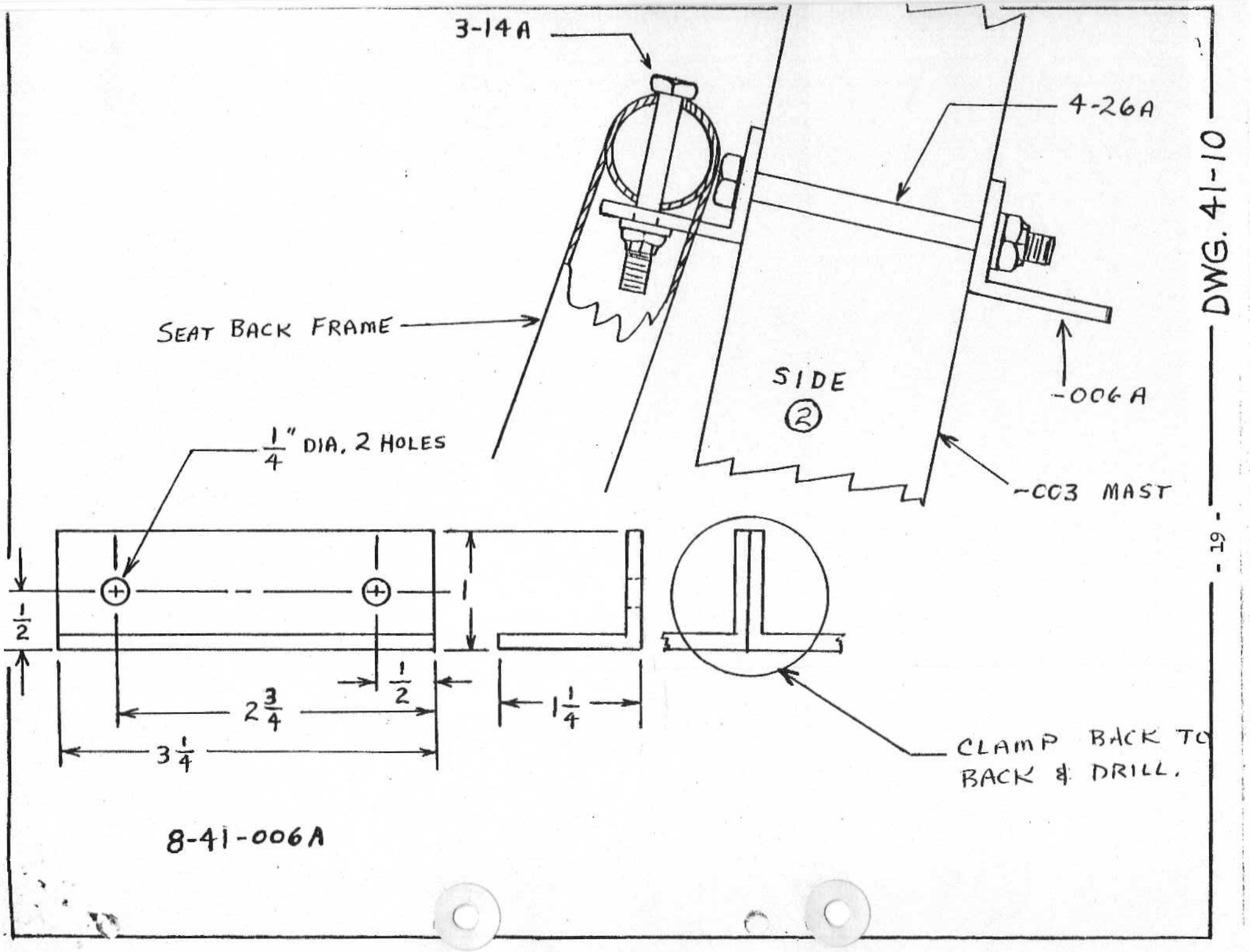


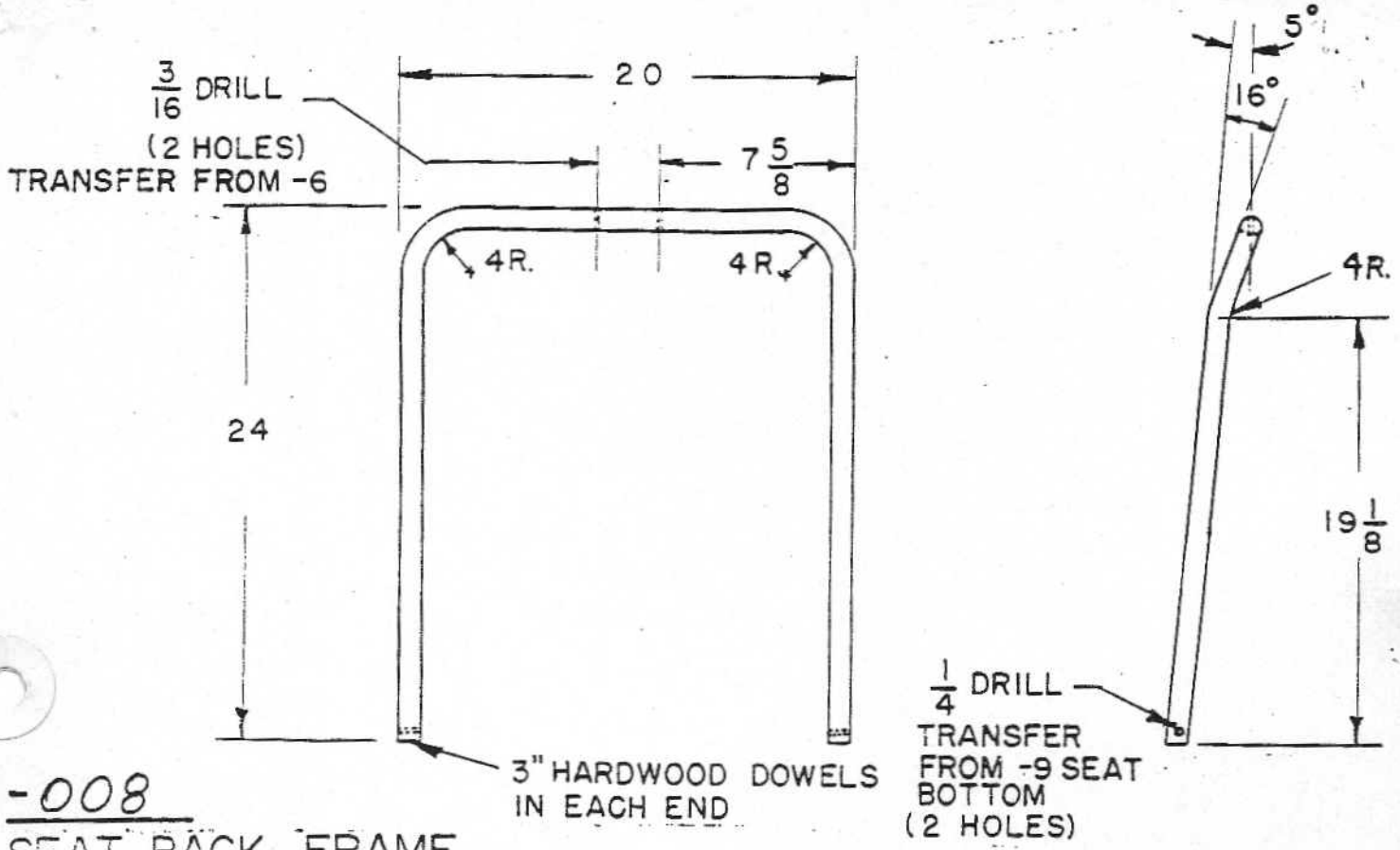
-12A & -14A GUSSET PLATES



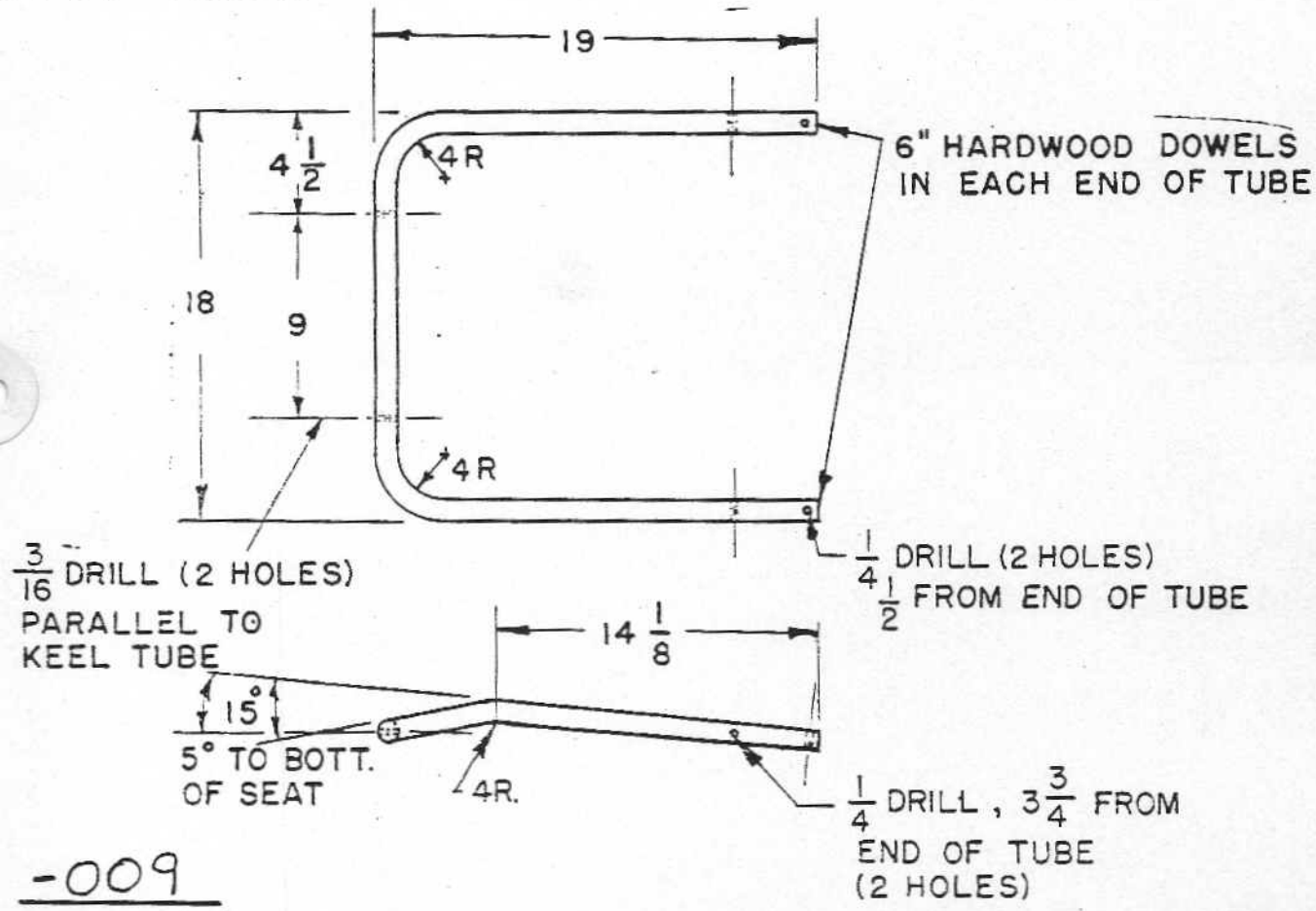
-13A GUSSET PLATE

DWG. 41-9


3-14A
4-26A
SEAT BACK FRAME
SIDE
(2)
-006A
-003 MAST
1/4" DIA. 2 HOLES
1/2
1
1/2
2 3/4
3 1/4
1 1/4
CLAMP BACK TO BACK & DRILL.
8-41-006A
DWG. 41-10
- 19 -

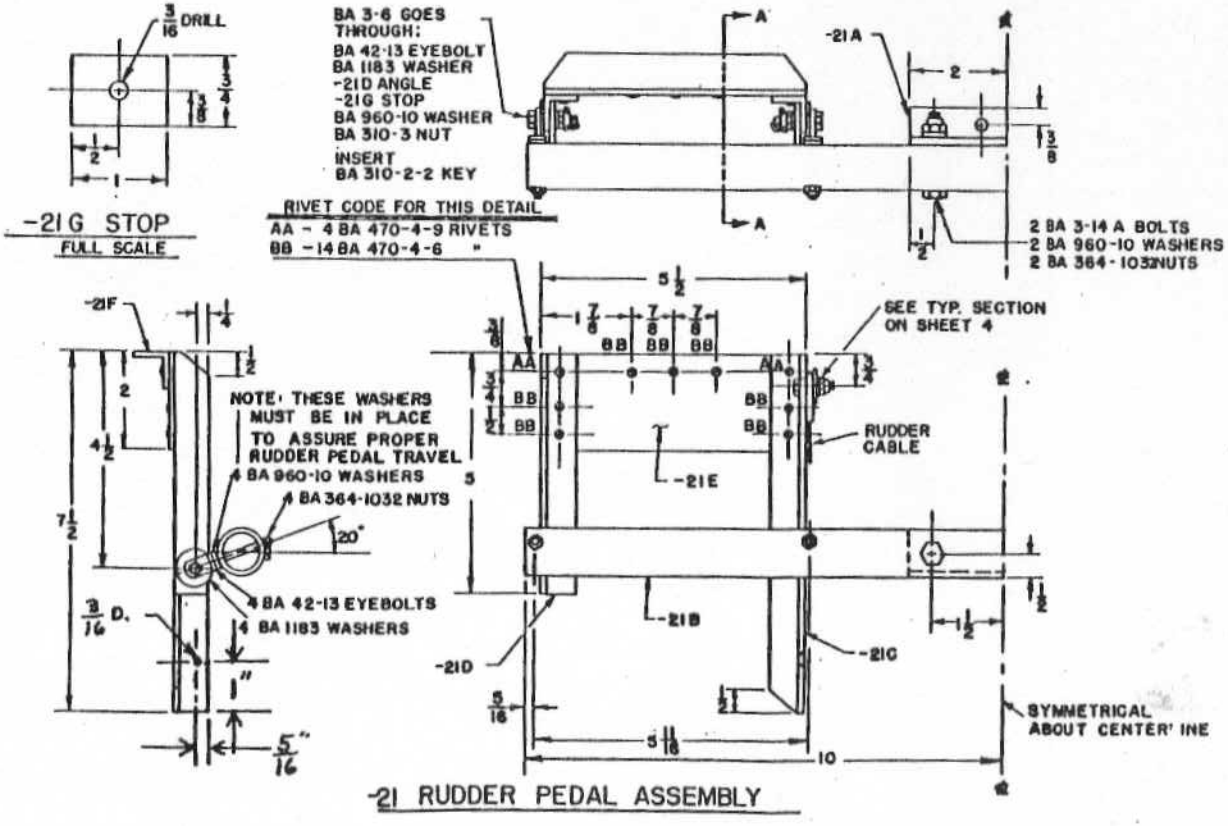


-008
SEAT BACK FRAME

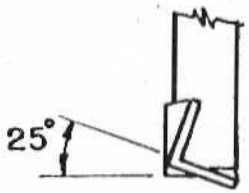


-009
SEAT BOTTOM FRAME

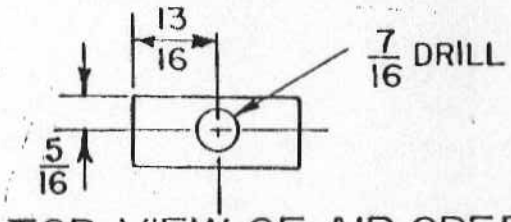
DWG. 41-11



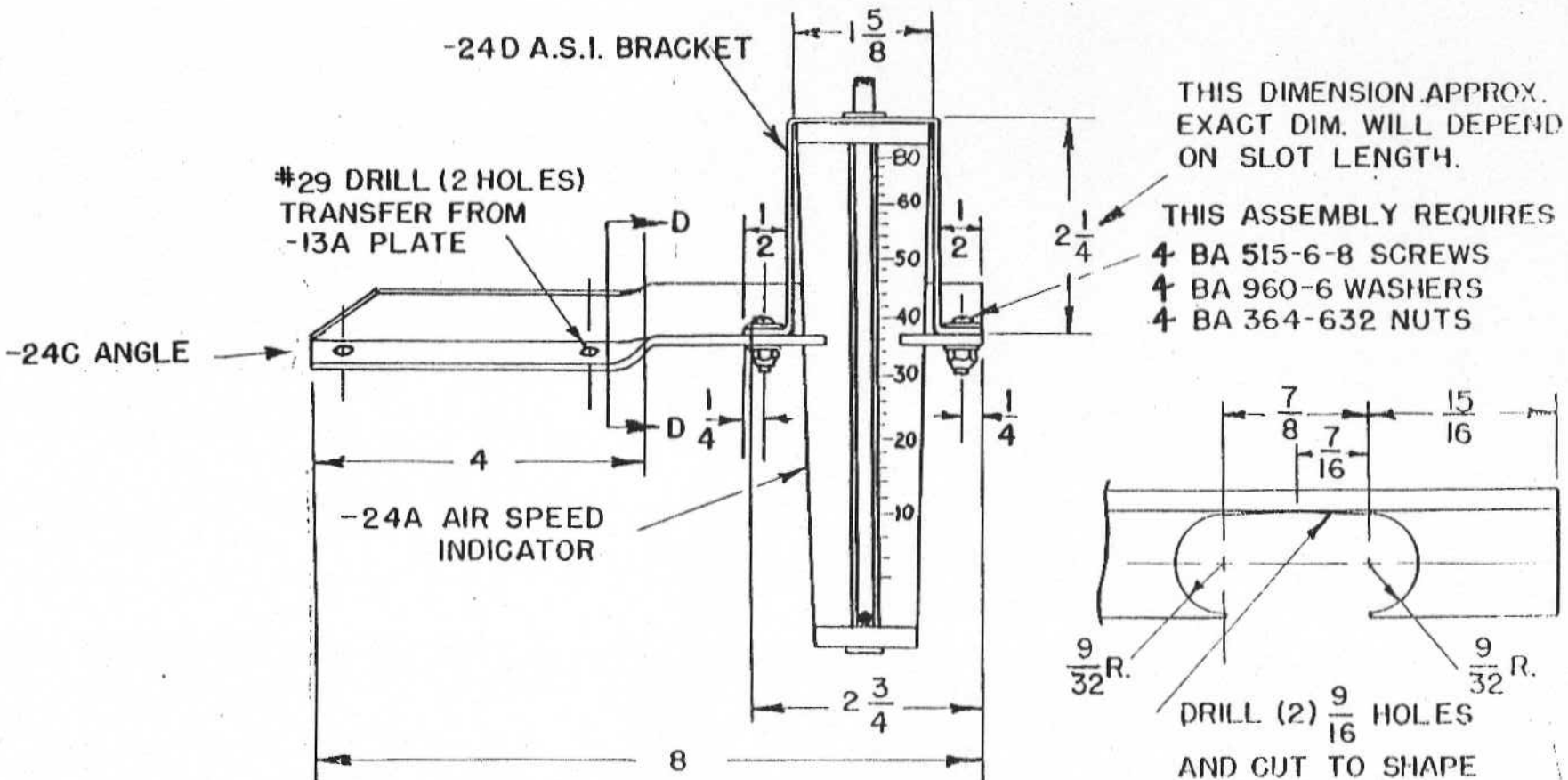
-021C-D-F	PEDAL FRAME
-021B	PEDAL TUBE
-021A	PEDAL TUBE ANGLE
-021E	PEDAL GUSSETS
-021G	PEDAL STOPS



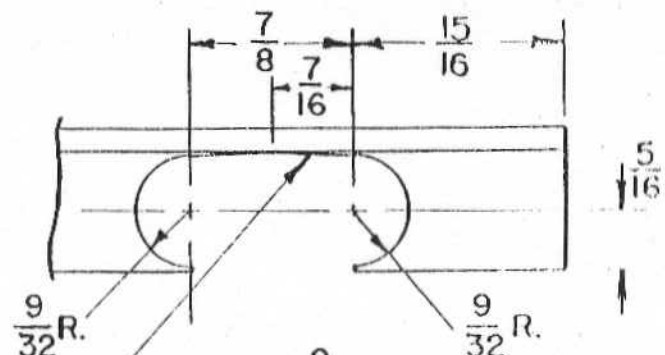
SECTION D-D



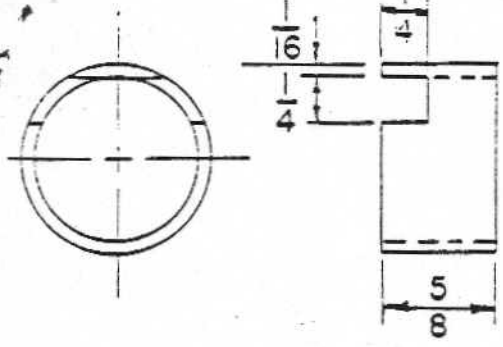
TOP VIEW OF AIR SPEED INDICATOR BRACKET



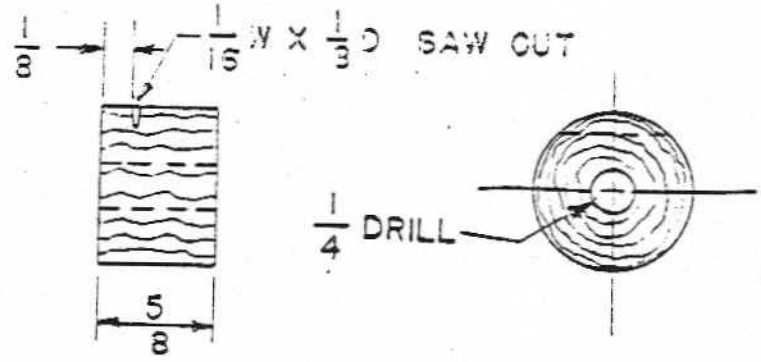
-24 INDICATOR ASSEMBLY



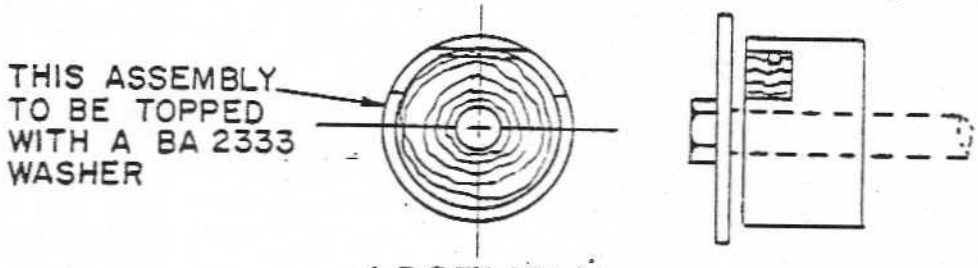
SLOT FOR -24A



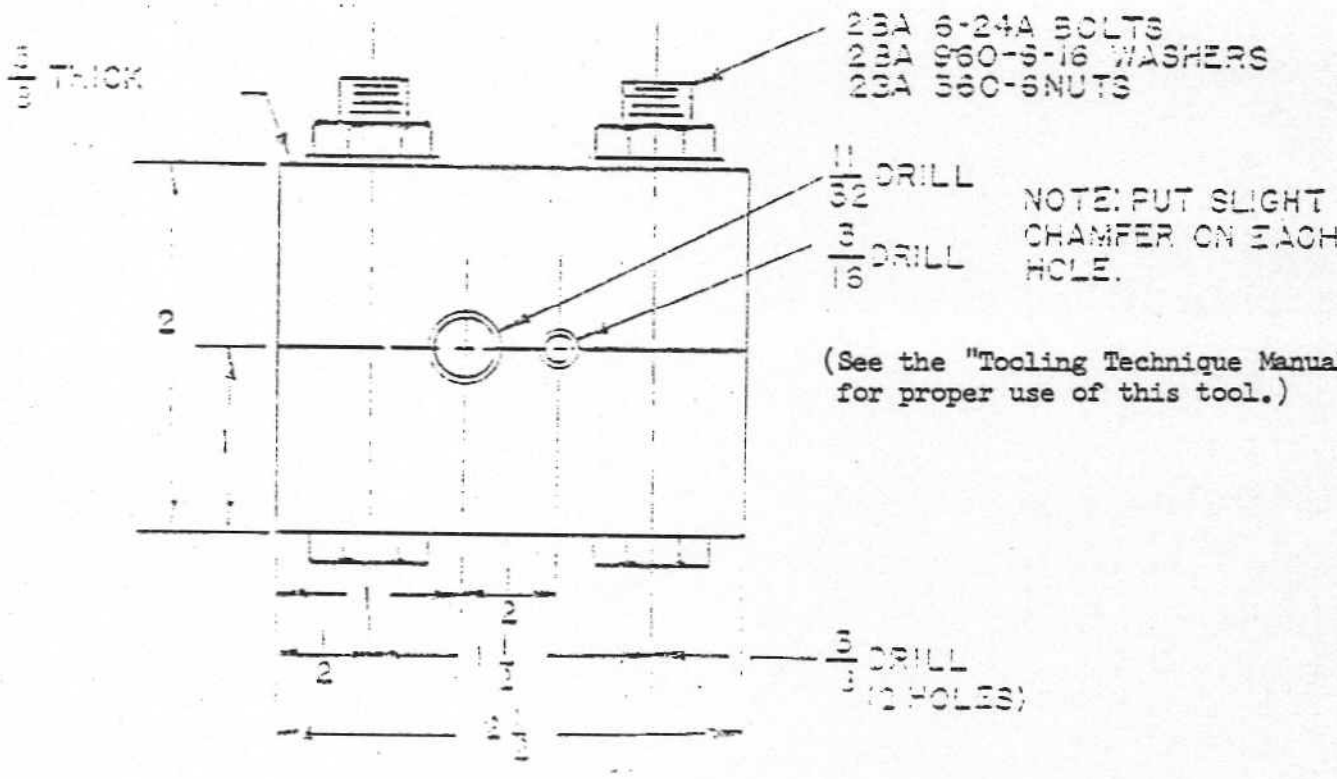
-022 B TUBE SLEEVE



-022 A PLUG



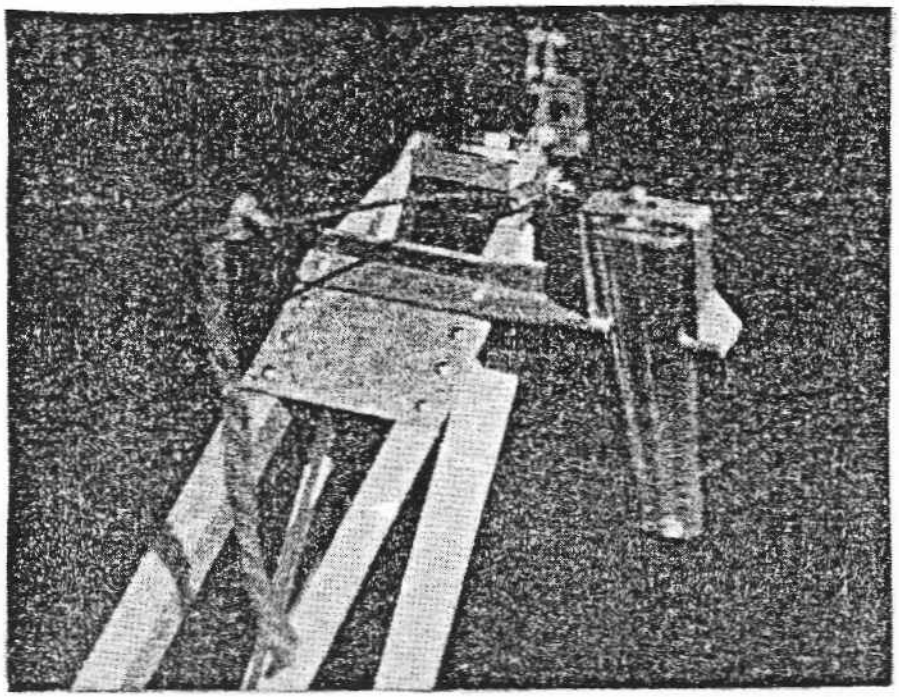
ASSEMBLY



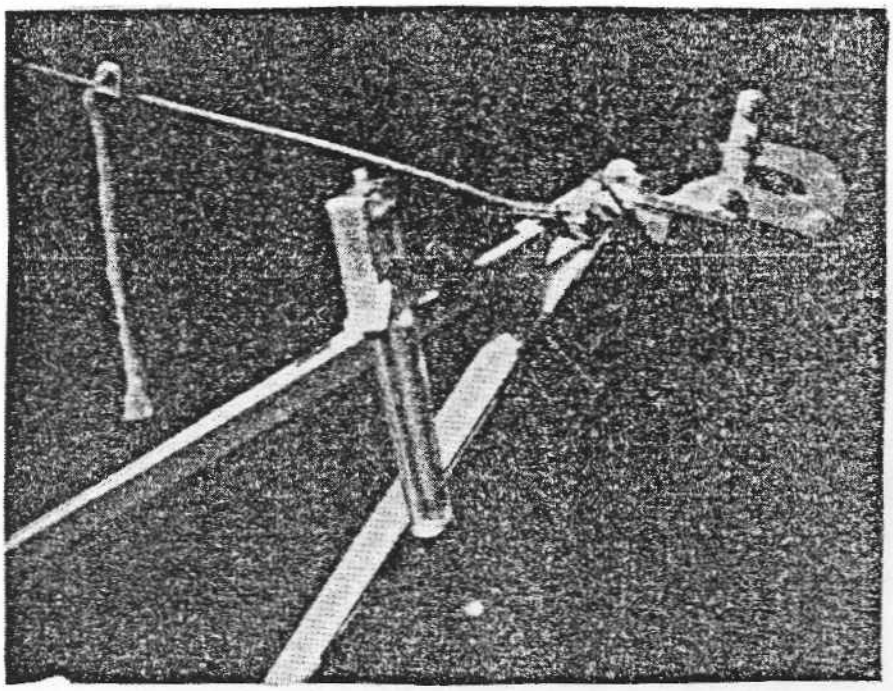
(See the "Tooling Technique Manual" for proper use of this tool.)

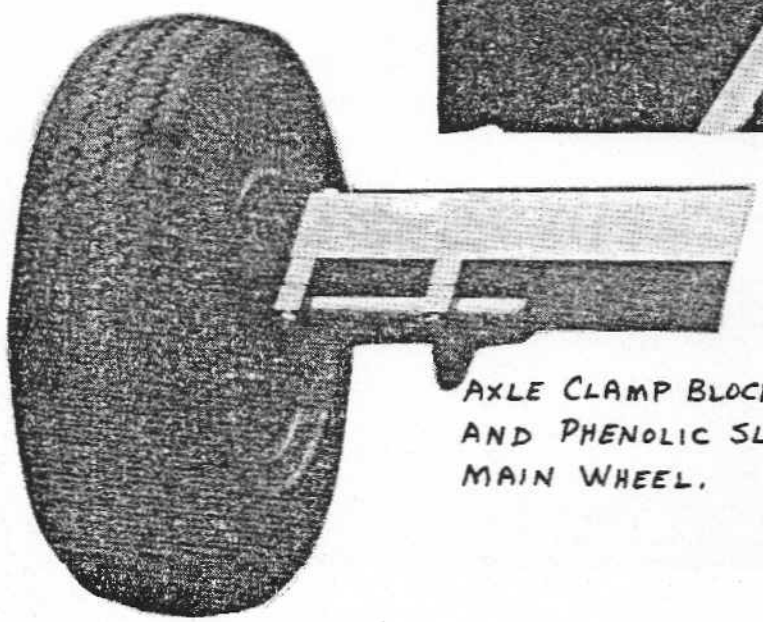
TK-132

DWG. 41-14



ASSEMBLY: TOW BOOM, TOW HITCH, -025 CABLE, AIRSPEED AND BRACKET AND DRIFT INDICATOR.





AXLE CLAMP BLOCKS, PAINTED STEEL AXLE, AND PHENOLIC SLEEVES ASSEMBLY TO MAIN WHEEL.