

plans



MINI BIKE PLANS

INTRODUCTION

Before starting to build your Mini-Bike, be sure that you have all the parts shown on the material list. You will note that tubing has been used in the construction. The advantages of using tubing far out-weigh the additional time for building. You will need all the common household tools, plus a 2" radius conduit bender {available at almost any electrical shop} and a welder. You are now ready to start to build.

1. Lay out 2 pieces of 7/8" tubing and mark for bending as shown. Remember that the bend is in the shaded area as shown below in Figure 1.

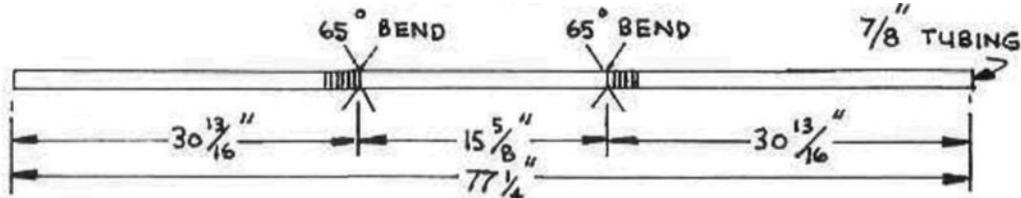


FIGURE 1

2. After you have your first 2 bends, mark for the next 2 bends as shown. Be sure that you bend in the shaded area only. See Figure 2 below.

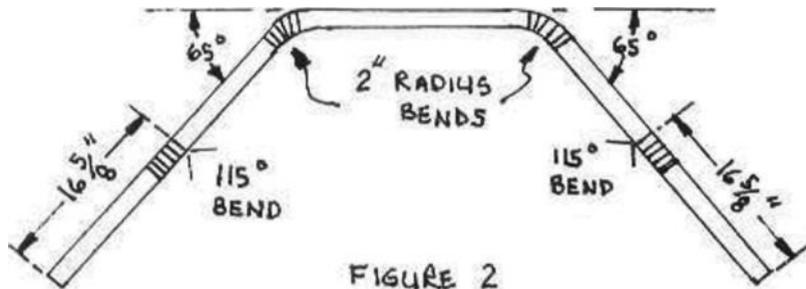


FIGURE 2

3. Now you have all four bends completed, weld each side member together as shown. Your main side members are now complete. (Figure 3 below)

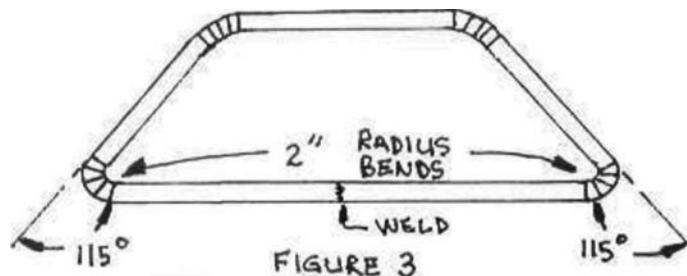


FIGURE 3

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4. Lay out 2 pieces of 7/8" tubing each 31" long. Mark and bend in shaded area as shown below.

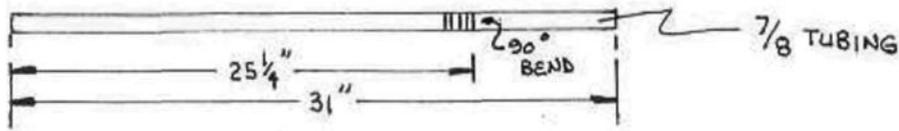
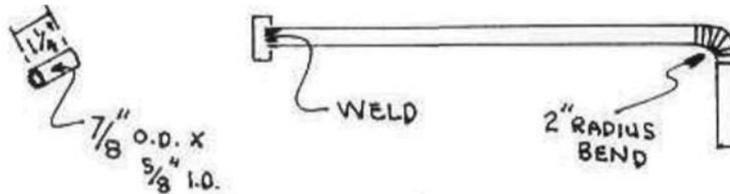


FIGURE 4

5. Cut 2 pieces of 7/8" tubing, with a 5/8" inside diameter, as shown in Figure 5. Weld to the 2 pieces of tubing you have just bent as shown in Figure 6.



6. Make 2 pieces as shown in Figure 7 out of 1/8" plate steel. There is a full size pattern on the back of this sheet. Using 5/8" bolts to line up the plates and the axle, weld the front fork assembly as shown in Figure 8.

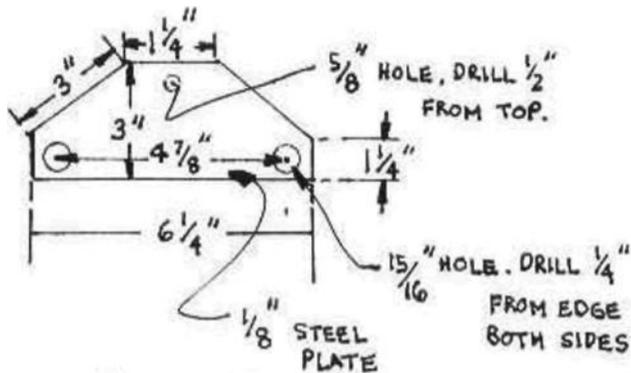


FIGURE 7

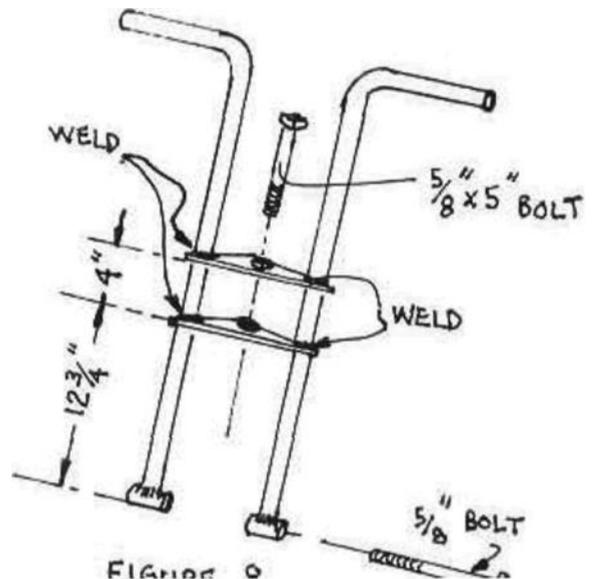
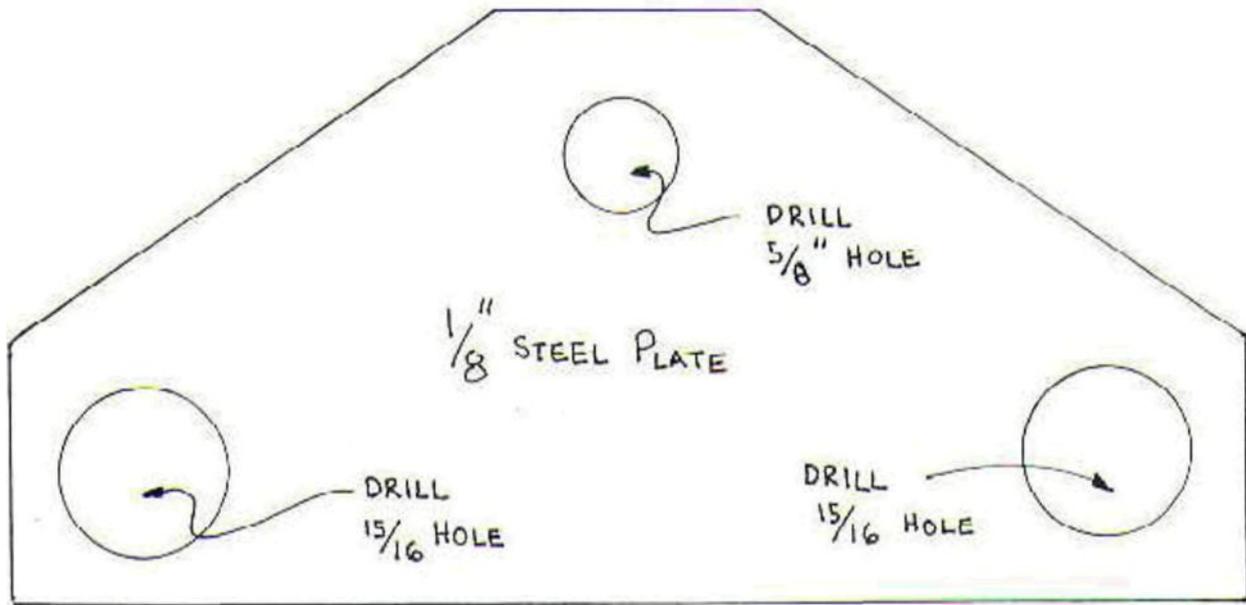
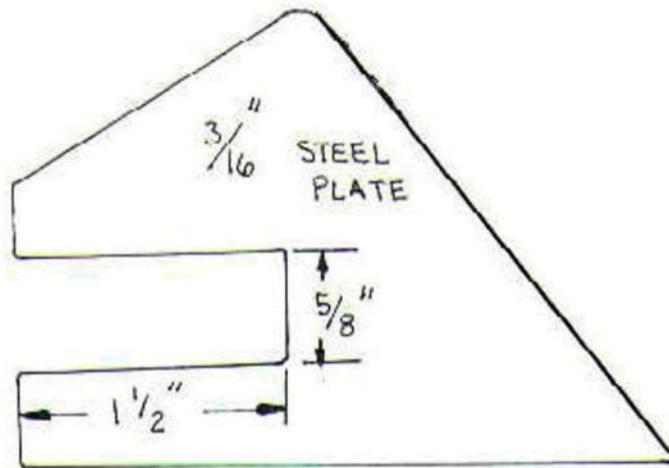


FIGURE 8

Note: Be sure that you insert the 5/8" guide bolts as shown in Figure 8. If you don't, the fork assembly will be out of line.



Full size front fork plate pattern to be made out of 1/8" steel plate. 2 required.



Full size rear axle support to be made out of 3/16" plate. 2 required.

7. Make 2 rear axle supports out of 3/16" plate as shown in Figure 9. See back of page 2 for full size pattern. Cut off a piece of 5/8" ID tubing for the front fork support as shown in Figure 10. Make the motor mount and seat plate out of 1/8" plate as shown in Figure 11 and 12. Do not drill holes for the engine yet.

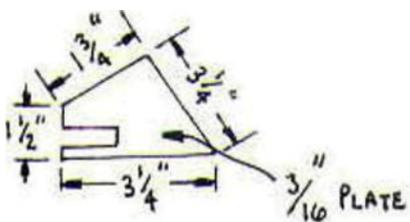


FIGURE 9



FIGURE 10

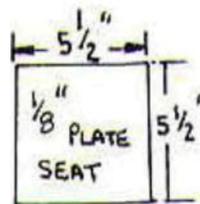


FIGURE 11

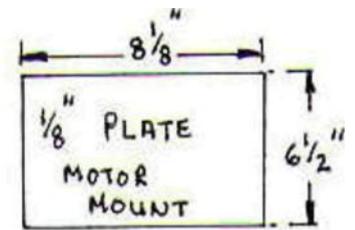
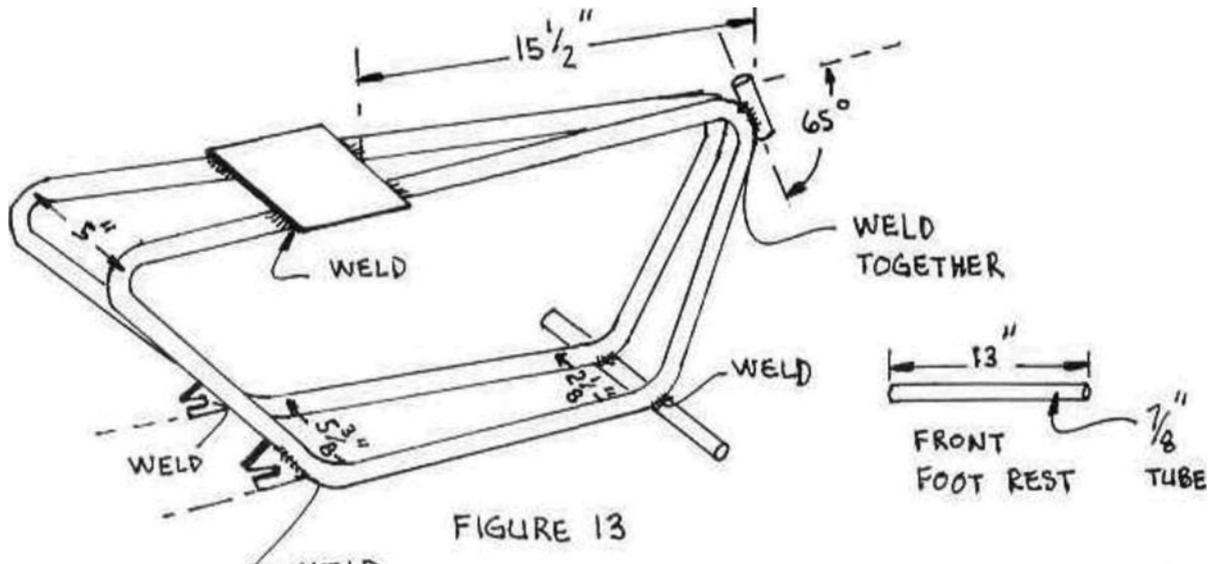
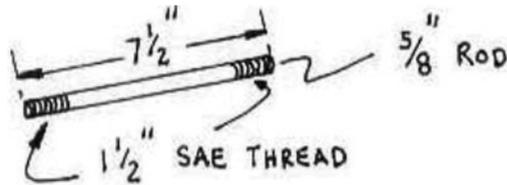


FIGURE 12

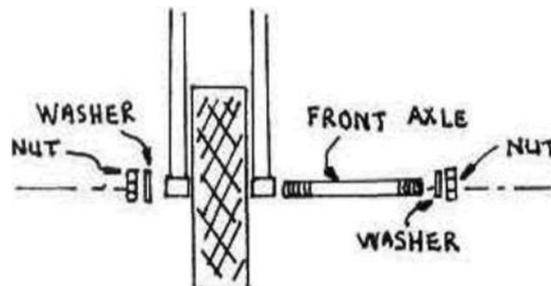
Weld the 2 main side members you have made as shown in Figure 13 below. To hold the proper distance between each side member, we would suggest that you make wood blocks the proper length to use as spacers between the side members and clamp together before welding. Weld the seat plate as indicated. Next weld the front foot rest as shown. Weld the front fork tube at the proper angle as indicated. Weld on the 2 rear axle supports so that the bottom of each support is flush with the top of the frame tube. Better use 5/8" axle bolt to make sure you have lined them up correctly. Be sure to weld to the inside of the frame as shown. Note that you are not to weld the engine mount on yet.



9. Bolt on the front fork assembly, using 5/8" x 5" bolt and self-locking nut. Spray paint the entire frame your favorite color.
10. Make 2 axles as shown in Figure 14 below using an SAE thread 1 1/2" each end.



11. Install the front wheel assembly as shown in Figure 15, using a self-locking nut at each end of the axle.



12. Weld the brake drum and sprocket assembly to the hub of the rear wheel as shown in Figure 16 below. Before welding check to make sure that you have $\frac{3}{8}$ " clearance between the sprocket and the tire. Bolt the hub to the rear wheel.

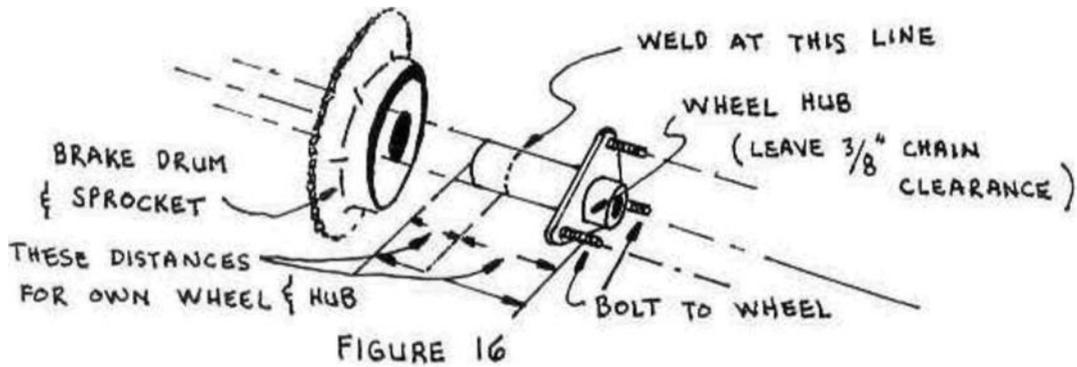


FIGURE 16

13. Install the rear wheel assembly to the frame as shown in Figure 17 below. (Insert the axle through the hub of the wheel, put on $\frac{5}{8}$ " jam nuts. Then put on a washer on each side and slide onto the frame. Install another washer and $\frac{5}{8}$ " nut and tighten.)

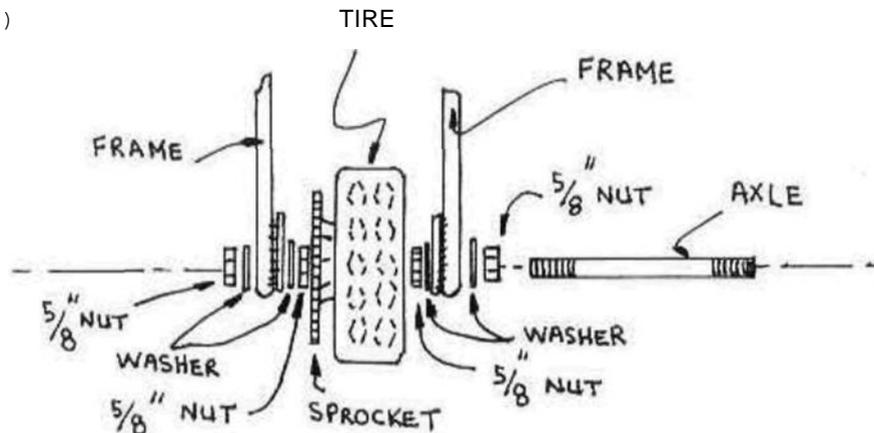


FIGURE 17

14. Install your clutch to the engine shaft, keeping the sprocket of the clutch as close to the engine as possible. Now, place the engine mount on the frame and weld in the proper position. Next, place your engine on the mount, using a chain to line the clutch and rear sprocket. Mark and drill holes and bolt your engine to the mount. Install chain. Connect the twist grip throttle control on the right handle bar to the engine, and brake handle on the left to the brake drum.

15. Cut a piece of $\frac{3}{8}$ " plywood as shown in Figure 18. Cut a piece of 2" or 3" foam the same size as the plywood. Cover with water resistant fabric, using tacks to fasten the fabric to the plywood. Drill two holes in the seat plate on the frame, and using wood screws, screw the seat to the frame. You are now ready to ride your Mini Bike. Drive carefully.

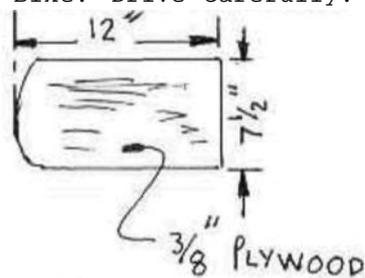


FIGURE 18

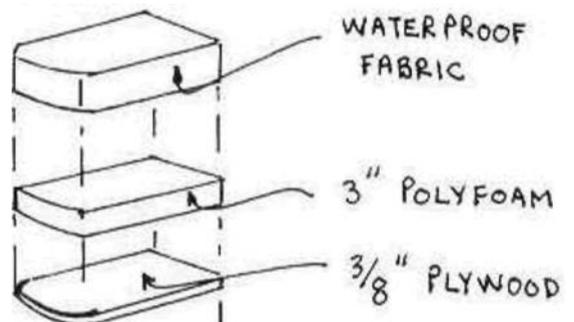


FIGURE 19

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MATERIAL LIST FOR MINI-BIKE

1. Steel

- (a) 20' of 7/8" OD x .085 wall welded 1025 grade tubing for frame and fork.
- (b) 7" of 5/8" ID approx. .085 wall seamless 1025 tubing for axle and fork support.
- (c) 2 pieces of 1/8" plate 3" x 7 1/4" for front fork support plates.
- (d) 2 pieces of 3/16" plate 2 1/2" x 3 1/4" for rear axle support brackets.
- (e) 1 piece of 1/8" plate 5 1/2" x 5 1/2" for seat plate.
- (f) 1 piece of 1/8" plate 8 1/8" x 6 1/2" for motor mount.
- (g) 2 pieces of 5/8" steel shaft 7 1/2" long for front and rear axles.

2. Engine

Should be of 2 cycle design with approximately 2 1/2 horsepower and a 5/8" shaft.

3. Wheels

You should have a 4:10 x 3:50 x 4 wheel assembly for the front and a 4:10 x 3:50 x 5 for the rear with demountable hub design. Hub should be 1 1/2" in diameter with 5/8" ball bearings.

4. Brake

An internal expansion brake, small enough so it will fit in the wheel, should be used. A combination brake with #35A60 tooth sprocket is recommended.

5. Clutch

An automatic clutch with a 10 tooth sprocket for #35 chain is needed. The 11 tooth sprocket and the 60 tooth rear sprocket give you an ideal gear ratio of 6:1. Be sure you order the correct bore for your engine shaft.

6. Chain

Any good #35 roller chain will work. You will need approximately 4 feet

7. Throttle Control

A twist grip throttle control with a 7/8" inside diameter for the front handle bar is needed. You will need about a 34" cable to your engine.

8. Brake Handle

A brake handle for 7/8" tube and 66" cable are needed for your brake control.

9. Bolts and Nuts

- (a) 1 only 5/8" x 5" bolt and self-locking nut to hold front fork to main frame.
- (b) 4 only 5/8" nuts (not self-locking) for rear axle.
- (c) 2 only 5/8" self-locking nuts for front axle.
- (d) 6 only 5/8" washers for front and rear axles.
- (e) 4 only 1/4" x 1" engine mounting bolts and self-locking nuts.
- (f) 2 only wood screws 1/2" roundhead to hold seat to seat plate.

10. Seat

The seat fabric should be of a waterproof type. You will need a piece of 3/8" plywood 7 1/2" wide by 12" long for the bottom board. You will also need a piece of 2 or 3" foam the same size.

11. Handlegrips

You will need 3 only 7/8" handle grips for the handle bars and foot rest.

12. Paint

Paint should be a spray on type enamel, quick drying. One small can will do.

SOURCES

WHEELS. CHAIN, AXLES, THROTTLE CONTROL, HAND BRAKE. AUTOMATIC CLUTCH:

Although some of these parts can be purchased from local hardware stores, for convenience we recommend:

AZUSA ENGINEERING

Box 2909, Covina CA 91722 USA

phone: () }

fax: (818) 966-4071

e-mail: azeng@earthlink.net

(\$5 catalog available)

NOTE: As a further convenience, the rear wheel assembly, including sprocket and internal expansion brake, can be purchased fully pre-assembled and ready for installation.

ENGINE:

It may be difficult to locate a 2 1/2 horsepower 2 cycle engine. If so any 3 1/2 to 5 horsepower 4 cycle engine will do. Check with your local small engine repair shop. If you do not have such a shop in your area, we recommend:

KART WORLD

phone: (216) 357-5569

The cover model is equipped with a Tecumseh 5 horsepower 4 cycle engine with a gas tank modification.