

**Detailed
Building Guide**
for
**THE AFAB
MOTORCYCLE
TABLE LIFT**



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INTRODUCTION

The following pages will assist you in the construction of your **AFAB Motorcycle Table Lift**. You will find this a great addition to your garage or shop. Lift your motorcycle, lawn mower, snowmobile, atv, etc. Also makes a great movable work bench.

This guide is just that. You may make any changes that you think will make your lift a better product. The jack base and jack lift items in this guide are to fit my floor jack. You should have the jack you are going to use before you make your steel cuts. The floor jack I used, item # 4172-2VGA, is readily available from Harbor Freight Tools (www.harborfreight.com) and should not be a problem to find, you may have to make minor changes to make the one you use fit properly if it is a different model. Do not use one of those compact, cheap jacks from the auto parts store.

This Guide is setup in four sections.

- I The materials and cutting list.
- II Drilling the holes.
- III Laying out the pieces and welding.
- IV AFAB Motorcycle Table Lift Component Drawings.

You need to have a steel cutoff saw. This is not something you want to try with a hacksaw. You will need a 220 volt welder, stick or mig. Do not try to gas weld this together with a torch. You will also need a 3/8" electric drill, drill press is best, and the proper size drill bits. I used all 3/8" - Category 8 bolts, 1/8" bit for the pilot holes and a 25/64" bit for the bolt holes. I used a framing square to set up the pieces before welding and a c-clamps and vice grips to clamp the pieces while drilling the pilot holes. Again, this is just a guide. Make any changes you feel will improve your table lift.

COMMON SENSE AND CAUTION ARE FACTORS WHICH CANNOT BE BUILT INTO ANY PRODUCT OR PROJECT. THESE SAFETY FACTORS MUST BE SUPPLIED BY THE BUILDER OR OPERATOR.

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Materials List - all numbers in (mm) are millimeters

Angle Iron - 2"(51) x 2"(51) x 40'(12192) [1/4"(6) wall], cut into the following:

**	4 - 92"(2337)	Long Base Pieces [1/4"(6) wall]
	2 - 20 1/2"(521)	Front & Rear Cross Support [1/4"(6) wall]
	1 - 17"(432)	Front Jack Cross Support [1/4"(6) wall]
	2 - 4 1/2"(114)	Center Jack Support Brace [1/4"(6) wall]
	4 - 3 1/4"(83)	Outer Jack Support Brace [1/4"(6) wall]
	2 - 1/2"(13)	Adapter Hook on Base [1/4"(6) wall]

Angle Iron - 2"(51) x 2"(51) x 40'(12192) [3/16"(5) wall], cut into the following:

**	4 - 92"(2339)	Long Top Pieces [3/16"(5) wall]
	2 - 30"(762)	Top End Pieces [3/16"(5) wall]
	1 - 26"(660)	Rear Upright Support [3/16"(5) wall]
	2 - 2"(51)	Top Front Ramp Brackets [3/16"(5) wall]

Angle Iron - 1 1/2"(38) x 1 1/2"(38) x 2'(610) Long [1/8"(3) wall], cut into:

***	12 - 1 5/8"(41)	Safety Latch Stops [1/8"(3) wall]
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Angle Iron - 1"(25) x 1"(25) x 5'(1524) Long [1/8"(3) wall], cut into the following:

	3 - 13 1/2"(343)	Lift Moving Adapter
	1 - 5"(127)	E-Z Stand Cross Brace Bracket
	2 - 3"(76)	E-Z Stand Tire Stop Bracket

Angle Iron - 4"(102) x 4"(102) x 8"(203) Long [1/4"(6) wall], E-Z Stand tire stop.

Angle Iron - 3 1/2"(89) x 3 1/2"(89) x 3'(914) [1/4"(6) wall], cut into the following:

	2 - 12"(305)	Rear Wheel Jack Support Plate [1/4"(6) wall]
	2 - 4 1/2"(114)	Front Caster Bracket [1/4"(6) wall]

** Have the metal shop/yard cut your 92"(2337) angle iron pieces for transport.

Square Tubing - 2"(51) x 2(51)" x 20'(6069) [1/4"(6) wall], cut into:

	4 - 32"(813)	Lift uprights
	1 - 30"(762)	Base Front Cross Brace
	1 - 11 1/2"(292)	Jack Lift Upright Center Piece
	2 - 7 1/2"(191)	Base Rear Cross Brace
	2 - 5"(127)	Jack Lift Upright Center Pieces
	2 - 3"(76)	Jack Lift Upright Center Pieces

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Materials List - all numbers in (mm) are millimeters - *continued*

Square Tubing - 1 1/4"(32) x 1 1/4"(32) x 20'(6096)[1/8"(3) wall], cut in:

*** 2 - 36"(914)	Safety Stop Cross Brace
1 - 26"(660)	E-Z Stand Front Brace
1 - 25"(635)	Front Upright Support Cross Brace & Table Down Stop
*** 4 - 18"(457)	Safety Stop Upright

Channel Iron - 1/4"(6) thick

2 - 3"(76) x 1 1/2"(38) x 18"(457)	Jack Front Wheel Support
1 - 5"(127) x 2"(51) x 16"(406)	E-Z Stand Wheel Support

Nuts & Bolts

2 - 3/8"(10) x 3 1/2"(89)	Eye - Bolts, Nuts, Washers
4 - 3/8"(10) x 3 1/2"(89)	Category 8 Bolts - Lift Base & Top
*** 4 - 3/8"(10) x 5"(127)	Category 8 Bolts - Safety Lock
8 - 3/8"(10)	Lock Nuts
18 - 3/8"(10)	Flat Washers
28 - 1/4"(6) x 1 1/2"(38)	Carriage Bolts - Lift Plywood Top & Ramp
28 - 1/4"(6)	Lock Nuts and Flat Washers

All bolts which are holding a movable item should be Cat-8 hardness, 5 lines on the head.

*** I have included enough materials to add a safety latch to both the front and rear uprights. I have not had any problem using just the one on the front, but I have decided to add one to the rear jack upright. The reason for this is I would feel better when I take the jack out of the Lift for other uses and because the jack moves in the lift there can be a small amount of "spring" in the rear. I don't believe from a strength standpoint more than the front one is required - your choice.

2 1/4 ton or up Floor Jack. I used a Harbor Freight item # 4172-2VGA

Casters - 3" wheels - Luna Casters # 7750 - 1-800-255-5862

Plywood - One 4'(1219) x 8'(2438) x 3/4"(19) sheet - exterior grade, cut in:

1 - 30"(762) x 8'(2438)	Lift Top (have your lumber yard cut for you)
1 - 18"(457) x 30"(762)	Lift Top Ramp (my Home Depot cuts free)
1 - 18"(457) x 66"(1676)	Left over - I may make some side extensions later by ripping in half and use angle iron brackets. Idea?

Paint - One gallon grey deck latex, about 10 spray cans of enamel.

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Drilling the Holes

Drilling the holes needs to be pretty close to the actual dimensions in the plans. If you do it in the steps described below you can be off just a little (hey it happens) and nobody will know. The important thing is to make all the holes line up for the bolts, because of the length of the pieces. Lay the pieces out in proper order and measure them all from the same end. Your lift will work just fine.

Lift Base Frame - 4 Pieces - See Page 8

Clamp two 92" (1/4" thick angle iron) pieces for one side together - measure 7" from the end and 3/4" down from the top edge - drill an 1/8" pilot hole. Measure 48" from the center of the hole you just drilled and 3/4" down from the top edge - drill the second hole. OK you have one side of the base pilot holes drilled - Now to make the other side match. Take one of the drilled pieces and clamp it to a 92" base plate that is not drilled yet - drill through the existing holes into the new piece with the 1/8" bit. Take the other two 92" pieces and do the same thing, these pieces have to be a mirror of each other. Set the base plate pieces to the side.

Lift Top Frame - 4 Pieces - See Page 10

Clamp the two 92" (3/16" thick angle iron) pieces together - measure 30" from the end and 3/4" down from the top edge - drill an 1/8" pilot hole - measure 48" from the center of the hole you just drilled and 3/4" down from the top edge - drill the second hole. Take the other two 92" pieces and do the same thing. Drill the 5/16" holes to attach the plywood top - see page 10 for details. Set the lift top pieces to the side.

Lift Support Uprights - 4 Pieces - See Page 11 & 12

Measure 1/2" from the end and 1" down from the edge (center of the 2" square tube) - drill a 1/8" pilot hole. Drill the other end the same, now measure the center between the two holes and drill a 1/8" hole in the center. Drill the other 3 and set the jack upright pieces to the side.

Lift Safety Latch Uprights - 4 Pieces - See Page 12

Measure 3/4" from the end and in the center of the 1 1/4" square tube - drill a 1/8" pilot hole. Drill the other 3 and set the safety upright pieces to the side.

Now drill out all your pilot holes with the 25/64" or larger drill bit.

We have a couple little pieces you can drill now. The Ramp Brackets on Page 10, drill a 5/16" hole centered 1/2" from the edge. The front Wheel Bracket on page 8 drill 4 - 5/16" holes to mount the caster. E-Z Stand Cross Member - Page 13 - 3/8 hole each end.

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Laying out the Pieces, Welding and Assembly

Before we start I want to talk about a couple of steps that are very important.

The first is the construction and welding of the Floor Jack Support and Lift Cross Member. I have designed this to be super strong. Please pay attention detail in this section.

The other is table height when your lift is in the down position. We want the lift to go as low as possible and still be able to side the floor jack under the table. There are two pieces that can determine the front of the table height. One is the front upright cross member and the other is the front safety latch cross member. The rear height is determined by the 26" long rear upright support. The rear uprights rest on this in the down position. The measurements in this guide should put you close. I would tack these pieces in last when you are testing, with no plywood on, before you do the finish welds. This will allow you to check everything while it is possible to change it without destroying all of you hard work.

The first piece you should layout and weld together is the rear jack lift upright. Take a look at the detail drawing of this (see page 11). Tack weld the jack lift cross member first as per drawing. Lay two of the 32" uprights on a flat level surface and tack weld the cross member 12" up from the bottom bolt holes of the uprights as per drawing. Use a square to make sure you have everything lined up - the bottom of pieces should be even and the cross brace is straight across. *Tip - pick up a couple lengths of threaded 3/8" rod at the hardware store. Use these to hold the uprights in position with nuts and flat washers when you tack weld it.*

Use the Rear Jack Upright to line up and hold the rear of the Long Base Rails of the lift. This will allow you to square the front cross member and tack the long base rails to it. (page 8). Assemble the Floor Jack Support section and tack in place as per page 9.

Assemble the Top Lift Frame and tack weld in place as per page 10.

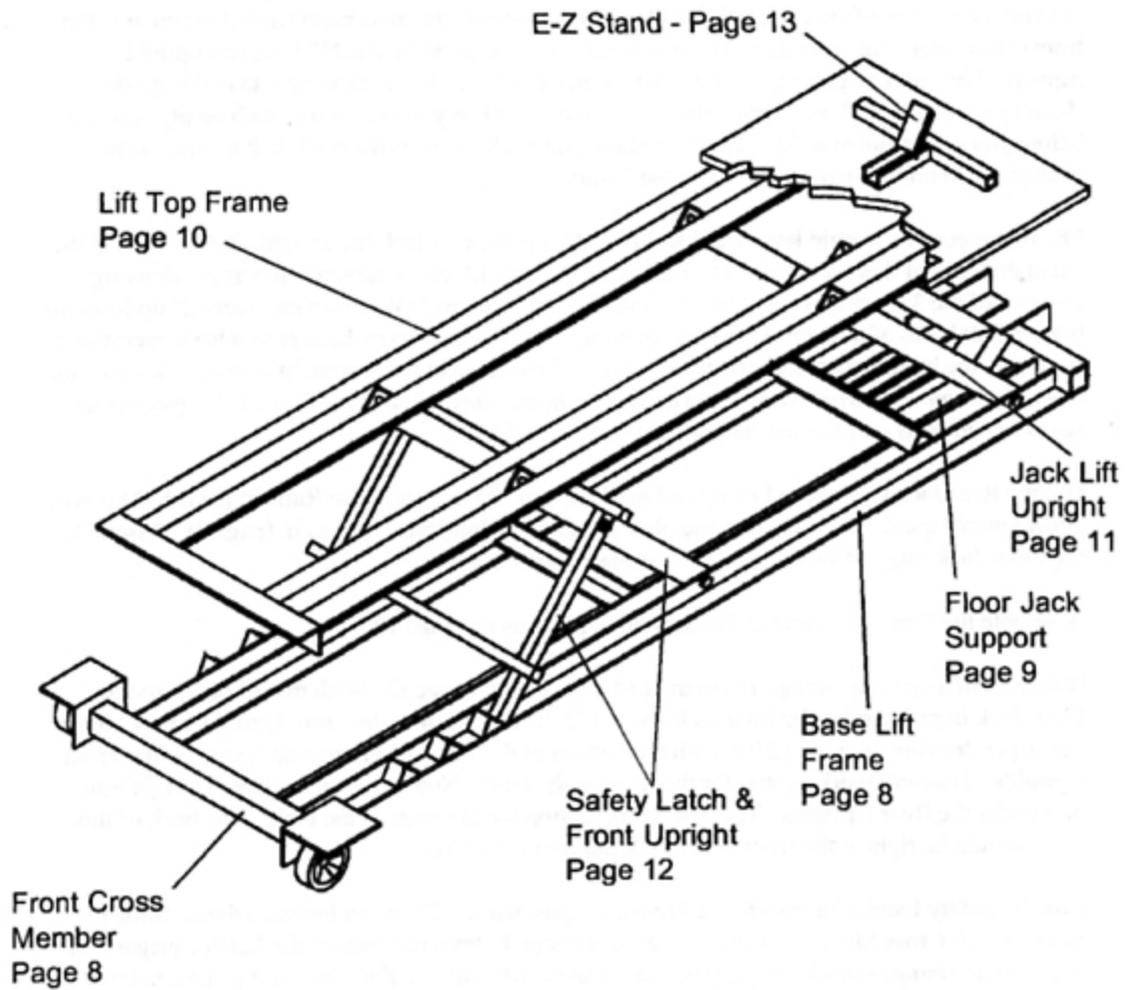
Bolt the Lift Top Frame (page 10) to the Lift Base Frame (page 8). With the lift down and the Floor Jack in place, raise the floor jack about 1/2" to 1". Position the Front Upright Cross Member as per drawing on Page 12 between the bottom of the Top Lift Frame and laying on the Front Uprights. This will work as stop for the front of the table. Now position the Rear Upright Support under the Rear Uprights. This will work as stop for the front of the table. The back of this piece should be right at the front of the Jack Support Assembly.

Bolt the Safety Latch Uprights to the Front Uprights, use a 1/2" spacer between them. Slide the Safety Latch Cross Member in and tack weld it about 4" from the ends of the Latch Uprights. If you want to change (check) the stop height, raise the lift with the floor jack and place a Safety Latch Stop on the base rail up against the Safety Latch Uprights on each side and tack in place.

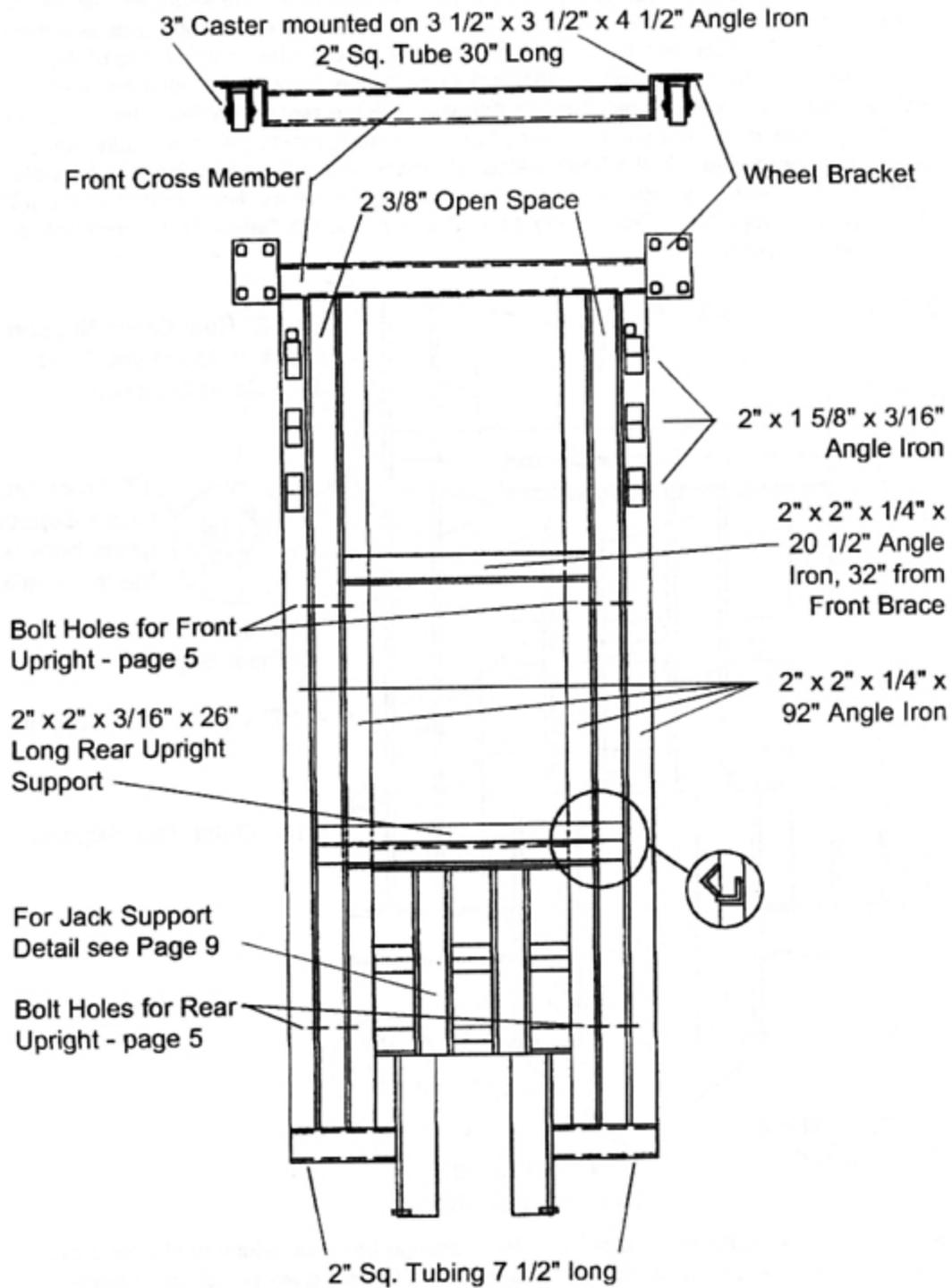
If everything has went as planned your Lift Top Frame, without the plywood, should be a little over 7" in the front and about 8" in the rear.

You are now have all the parts tacked in place. Go back and finish any welds not completed. If you are going to paint your lift disassemble it and paint the components. Assemble the steel pieces and bolt the Top Plywood on. Bolt the E-Z Stand on. Put the two bolts on the Ramp and we are done.

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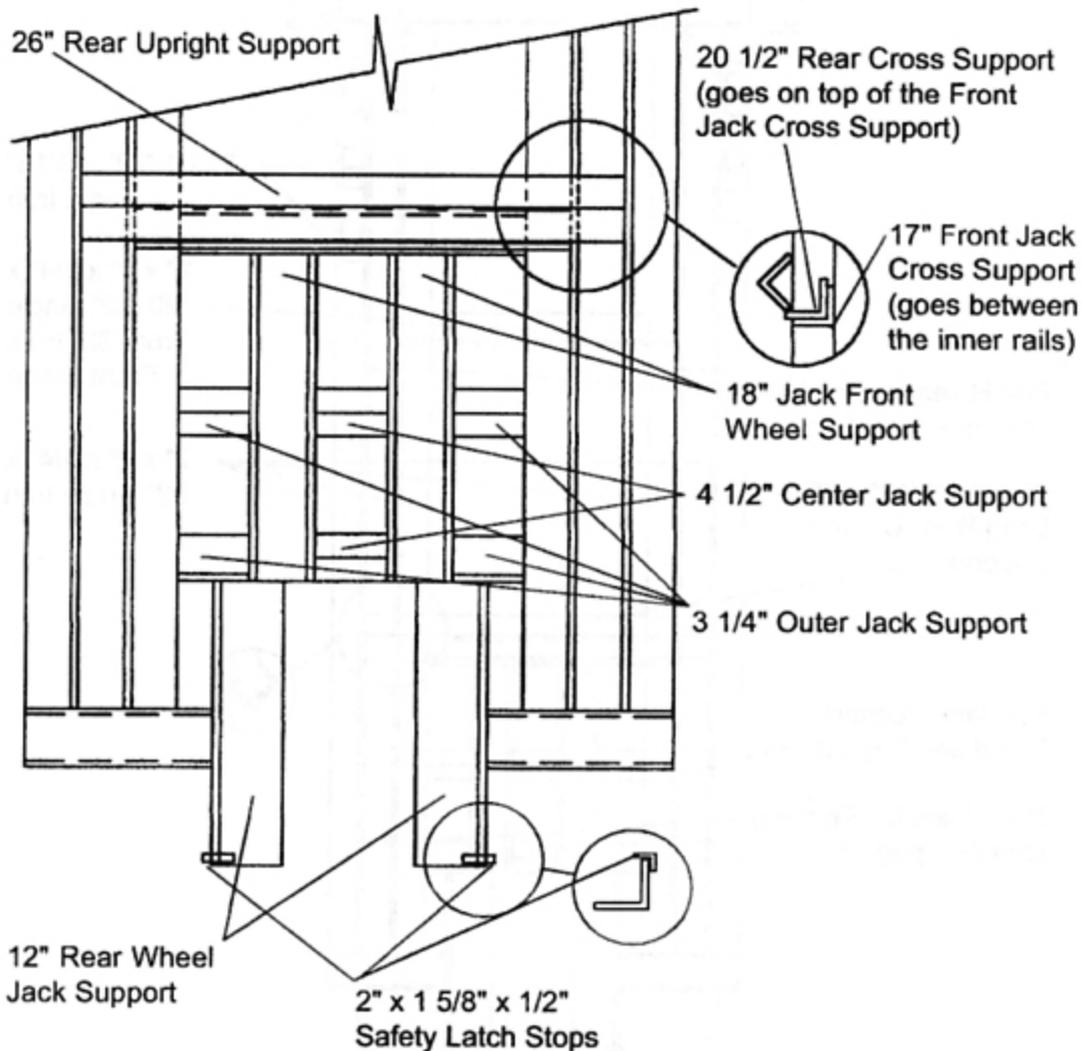


Base Lift Frame



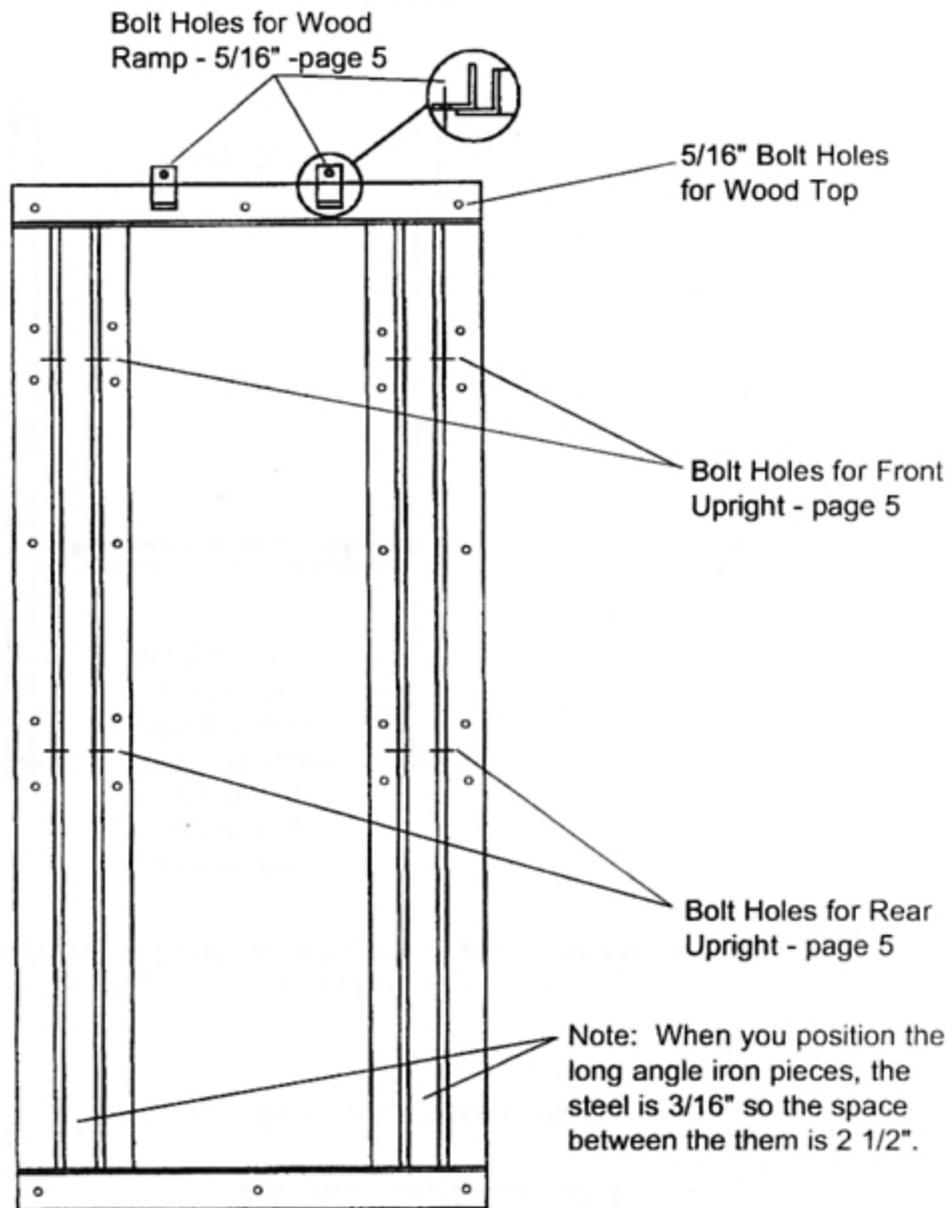
Floor Jack Support

The front of the floor jack support is a key area. I have made it the strongest part of the AFAB Table Lift. Take a look at the detail of the jack front wheel support braces shown below: The 17" Front Jack Cross Support Brace is tack welded to the inside of the base side rails with the front of the 18" Jack Front Wheel Support (3" channel iron) tack welded to the brace. I recommend that you tack the rest of the Floor Jack Support assembly together so that you can test all of the measurements and make sure you have it right before you do the finish welds. After you are sure everything is right, weld in the 20 1/2" Rear Cross Support. You can now determine the final position of the 26" Rear Upright Support, the Front Upright Cross Brace and the Safety Stop Cross brace. Complete all welding.



If you are using a different model Floor Jack, change the dimensions to fit your jack. You just need the jack to be able to roll back about 6" as it goes up. Again, please don't try to use one of those compact, cheap jacks at the auto parts store. Spend the extra money and get a decent jack.

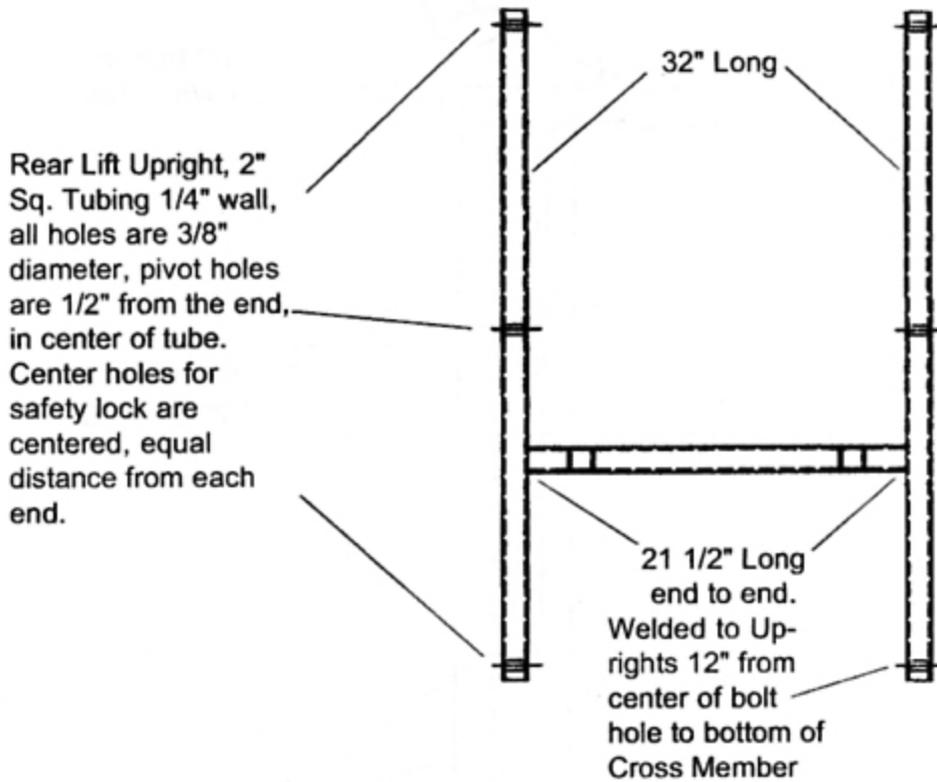
Top Lift Frame



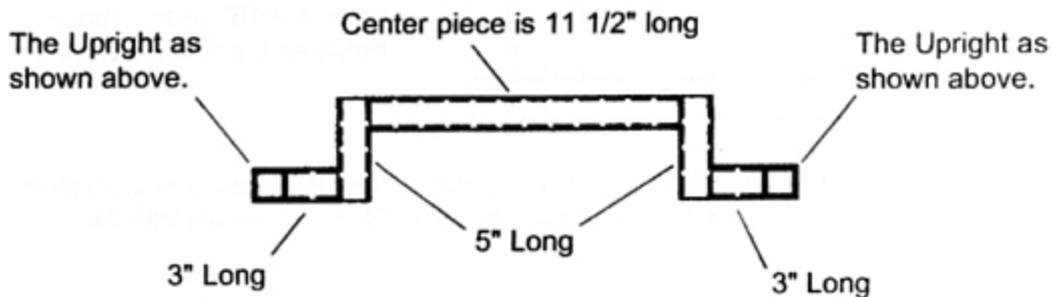
The Plywood Top is laid on the lift after it is assembled. Drill the holes from the bottom using the steel as a guide. Bolt the four corners and drill the rest, secure with the carriage bolts.

Center the Wood Ramp on the brackets with the lift in the down position, mark and drill the holes. Install the carriage bolts with no washers, tighten the bolts into the wood. You just drop the bolts through the bracket holes to use.

Jack Lift Upright (rear)

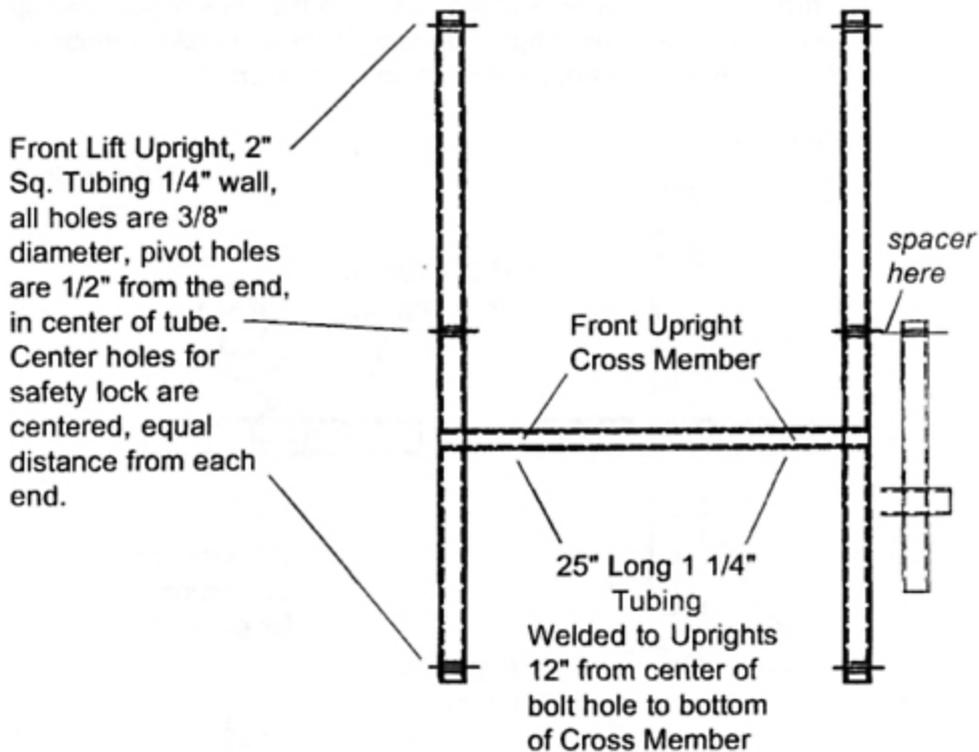


The Jack Lift Cross Member is made up of the same tubing as the Uprights - 2" sq. with 1/4" wall. Below is the drawing for this piece. The parts are:

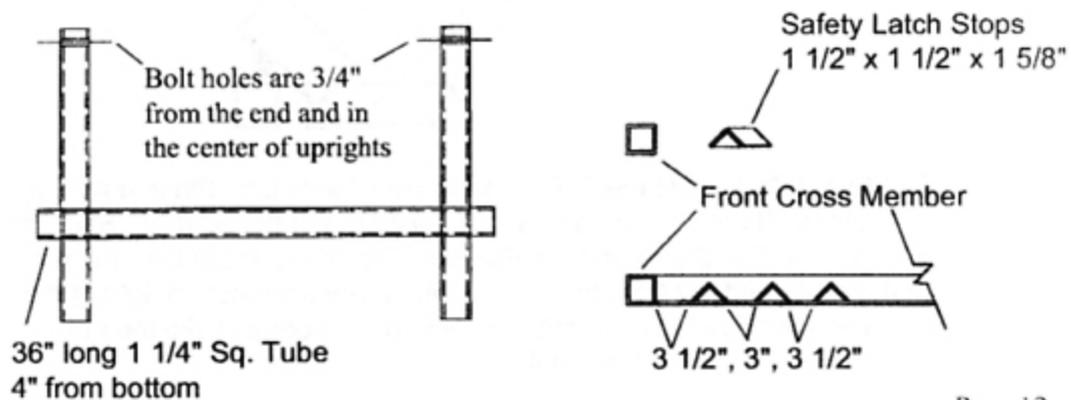


NOTE: Safety Latch for Rear Upright is the same as the one for the Front Uprights as shown on the next page.

Front Lift Upright

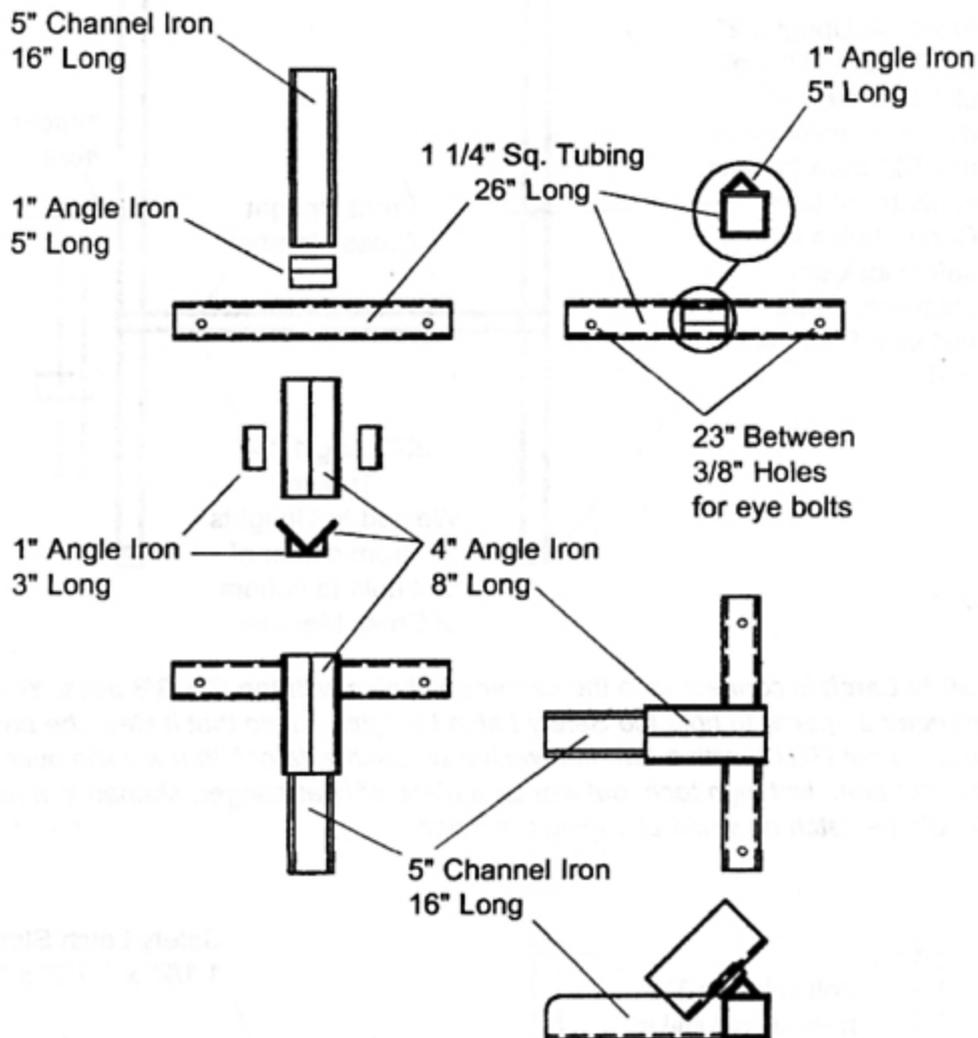


Safety Latch is connected to the center bolt holes with the 5" x 3/8 bolts. You will need a spacer to hold the Safety Latch Uprights out so that it clear the base. I used a nut (7/16") with a 3/8" flat washer on each side of it that will slip over a the 3/8" bolt. Not high tech, but works, a piece of coat hanger, shaped in a loop to hold the latch up when changing the height.



E-Z Stand

You will find the E-Stand a handy addition. Make one for your AFAB Motorcycle Table Lift and extra's for use as a work stand. Bolt it in the back of your pickup or trailer for hauling your bike. Use Angle Iron and Casters to make it mobile. E-Z Park Stand, under the rear wheel, roll the bike in the corner?



Use the 3/8" Eye Bolts to hold the E-Z Stand to your Table Lift. Place a nut on the Eye Bolt turned all the way up, add a lock washer, and flat washer. Stick the Eye Bolt through the E-Z Stand and the Plywood Top of the Table Lift. Finger tighten a flat washer and nut from the bottom. Now use a wrench to tighten the nut on top holding the Eye Bolt straight. To use on the floor just slip the nut inside the tubing and tighten the top nut.

Lift Moving Adapter

The Lift Moving Adapter allows you to move the AFAB Motorcycle Table Lift around, in and out of your shop or garage. Roll it up next to the wall and stand it on it's side when you are not using it. It is simple to use, slide the open end in under the lock tabs on the base. Put the closed end on the floor jack lift plate and raise the rear of the Table Lift with the floor jack. You can push, pull and steer with the floor jack.

