Blackwidow

Go Kart Plans

SPIDERCARTS	00		Ver.	0.1.2.6		
			Authorized	Robert Dicken		
		BLACKWIDOW PLANS				

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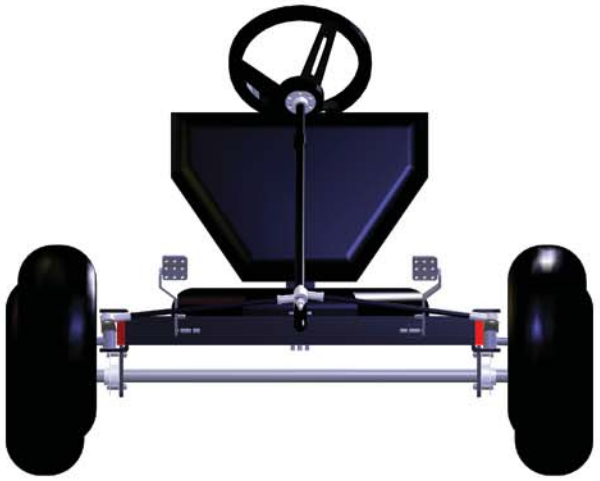

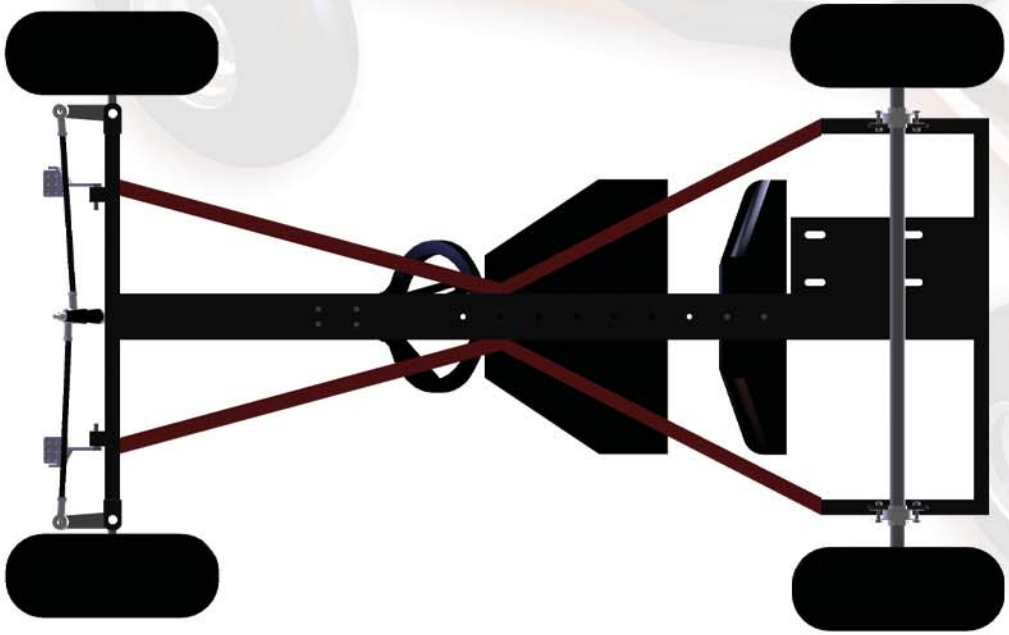

Length	60"
Width	26"
Wheel Base	40"

Tires

145/70-6 Carlisle Balloon

Clearance	6" to Frame
Chassis	#14 Square
Weight	52 Pounds
Motor	6.0 hp Horz Shaft
Transmission	Centrifugal Clutch
Brakes	Band surface
Steering	Tie Rods/ Pitman

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		SPECIFICATIONS				

Thank you and welcome to your new BlackWidow eBook.

As you can see these plans are easy, fun and full of great information to walk you through completing your BlackWidow Go Kart.

Our special feature in these eBooks is the "Exploded View". Exploded view is a brand new concept we have implemented and we think you will love it. Use this like a webpage with links. You just click on the part you need to build or get info on and it will take you right to it. So use the bookmarks and the exploded view to quickly navigate the eBook. Give it a whirl!

Tools section will just give you brief overview of tools you could use to build the Recluse. Of course use what you have or find fits your needs.

Materials section will give you a shopping list for the raw metal you will need to finish your kart.

Step by Step will walk you through the correct order of the build.

Diagrams detail every part and section of the kart.

Parts List is a list of all the hardware needed to finish off the kart after you are done welding. We have linked all the parts to a vendor we use for your convience.

Revisions will be a work in progress. Sometimes we will get feedback on our designs and people tell us what might make the kart better. If we think they are good ideas they end up in the Revisions page. So feel free to let us know of anything we could improve on and we will post it.

Resources are just some of the internet sites we have found to be helpful.

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		INTRODUCTION				

Here is a list of tools that we used on our first karts.
This list is probably a minimum and any other tools that make your kart building easier would be that much better.

- A truck or trailer. Most of the metal houses carry steel in 20- 24 foot lengths. They will sometimes cut them in half for you for a small charge but even a 12 foot piece of tubing can be hard to get home in moms minivan.
- We are going to need to measure and mark this new metal, so a tape measure and some good soap stone or a silver sharpie will be needed.
- Cutting the metal can be done in a wide variety of ways. I would suggest a chop saw. They are not to expensive and very easy to use. Most of them have a angle guard so you can set it for different degrees when cutting.
- After cutting the metal there is usually very sharp edges. Now you can get a grinder and grind them all smooth or just be very careful with the cut metal till you weld it all together. The welding will melt the rough edges and you wont have to worry about them any longer. Your Choice!
- Some Vice grip clamps are handy to use as extra hands if you are tackling this project solo. Sometimes its nice to have another hand.
- We must hook all this metal together somehow, so a welder is a must. Now using 14 gauge metal it doesn't have to be anything to big but more power is always better than not enough. If you don't weld or have a welder handy, you can always take it to your local welder and have him put it together for you. They might charge a bit but its good work!
- Protective gear is a must! Get some good gloves. Get some good eye protection. Always think safety first. There is no fun in getting hurt.
- Well the rest of the tools should be hanging out around the shop or garage. Socket sets, hammers, pliers, drills and drill bits, wire brush, hand grinder and maybe some painting supplies.
  Well that should get us started. Lets get to work.

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		TOOLS				

Materials Needed

Below are the materials needed to complete all the cutting, fabrication and welding portions of building your new kart. There is a lot more that needs to go on it after it is built such as bearings, tires and wheels,
motor, etc.

10 - Feet of 1" X 2" X 9' 14GA Rectangle Steel Tubing
About $1.00 per foot.

6 - Feet of 1" X 1" 14 GA
About $1.00 per foot.

5 - Feet 2" X 3" 14GA Rectangle Steel Tubing
About $1.50 per foot.

2' X 3' feet Expanded Metal
About $30.00 per sheet.
(can be replaced with 1/8" plywood to keep cost down)

3 - Feet of 1" flat stock. 3/16 is a good thickness.

Extra Metal can be used to make your own weldments for the pedals, seat bracket, and steering support.

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		Materials				

Steps

In the next few pages I will step through the process of making the frame.

Make sure you are comfortable with all of your tools

and know how to use them.

If not get a qualified person to help. Everybody likes to build go karts!!

Read all of your diagrams carefully

and understand them before making any final cuts.

And remember this is only a reference.

Make any changes to fit your needs or tastes.

Have fun!!

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		Steps				

Step 1

Ready to get to work?

Collect all the tools listed

and prepare a location you can use for your project.

If you don't have some of the more expensive tools,

you can always take your parts to a professional

welder to do the final assembly for you.

They charge about 50.00 per hour.

(But sometimes it looks a lot better and is stronger to have it done)

Step 2

Lets start cutting.

The Chop Saw (or hand hacksaw) is the first tool we will use.

We need to cut our metal to the proper lengths

The part numbers correspond to the Parts Diagram. Match them up and lay it out as pictured.

Remember when you are cutting the lengths that some are at angles and may need to be

longer on the inside or outside depending on the angle.

(Its a good idea to lay it all out and mark your angles with the soap stone before you cut)

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		Step 2				

Step 3

Holes For Mounting Seat, Steering, and Brake.

You don't have to drill holes for the seat if you just want to weld it into one position. But if you are going to want to move it around then I suggest drilling holes for your seat bracket. The Steering can be welded right to the MF-56 also. The brake however does need a hole for mounting.

OK - Now on the Main Frame (MF-56)
We will be drilling 9 holes for the seat bracket and seat pad.
These holes are 3/8 inch holes and they go all the way through the MF-56.

The first hole will be dead center and 13 3/4 inches from the back end of the MF-56.
(see holes diagram)

Also we need to drill 4 holes in the same piece for the steering bracket.
(also see drawing)

Then finally we need to drill a hole for the band brake.
It is 6 inches from the back end of the MF-56 and will be drilled from the side.
*NOTE: It is very important that you drill this hole before welding or you will not be able to get your drill into the correct position to drill it properly.

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		Step 3				

Step 4

BETTER THAN GLUE!

After its all cut out,

take that grinder and clean up any rough edges

and get it ready to assemble.

Put it on a good strong table or a cement floor and lay it all out.

Use the square to make sure all of your 90's are correct.

(* The 90's square up the frame and make it drive straight)

Use your discretion, but I like to tack weld it all together, make sure its all square,

then I weld it. Make it all strong and clean.

This is a great design and been tested over and over, but it can only be as strong as your welds.

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		Step 4				

Step 5

Color and Polish!

Now its all up to you.

Wire brush all of the welding sledge off and wipe off with a

grease cutting cleaner.

Primer it and let it dry good before painting.

Pick some fun colors and go wild.

Hope you enjoy!

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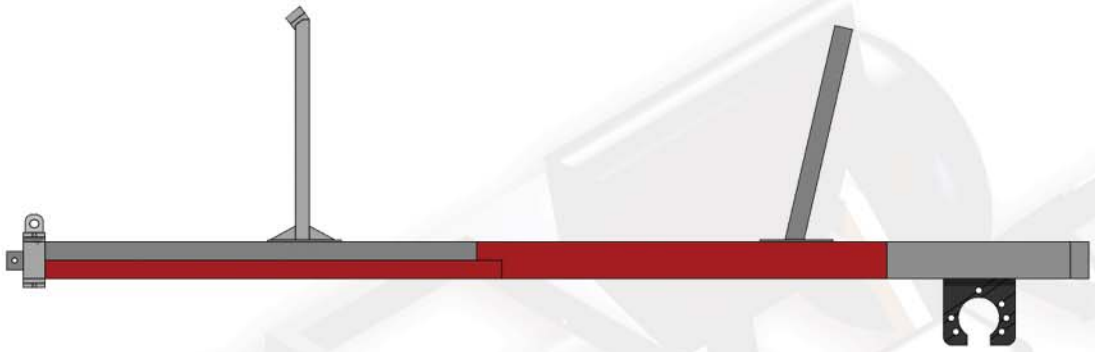
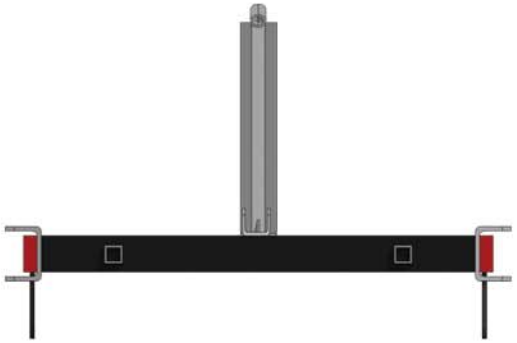
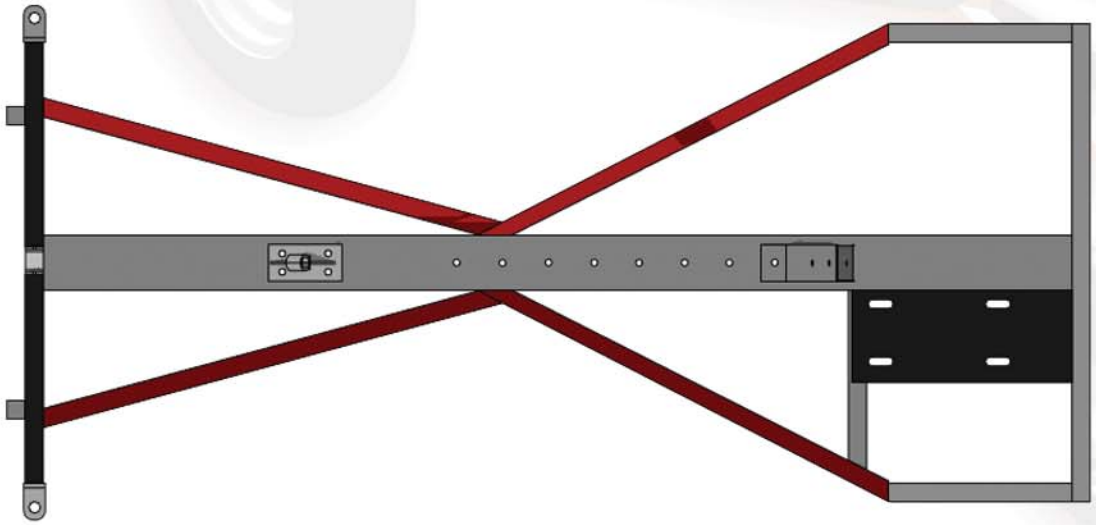
		Step 5				







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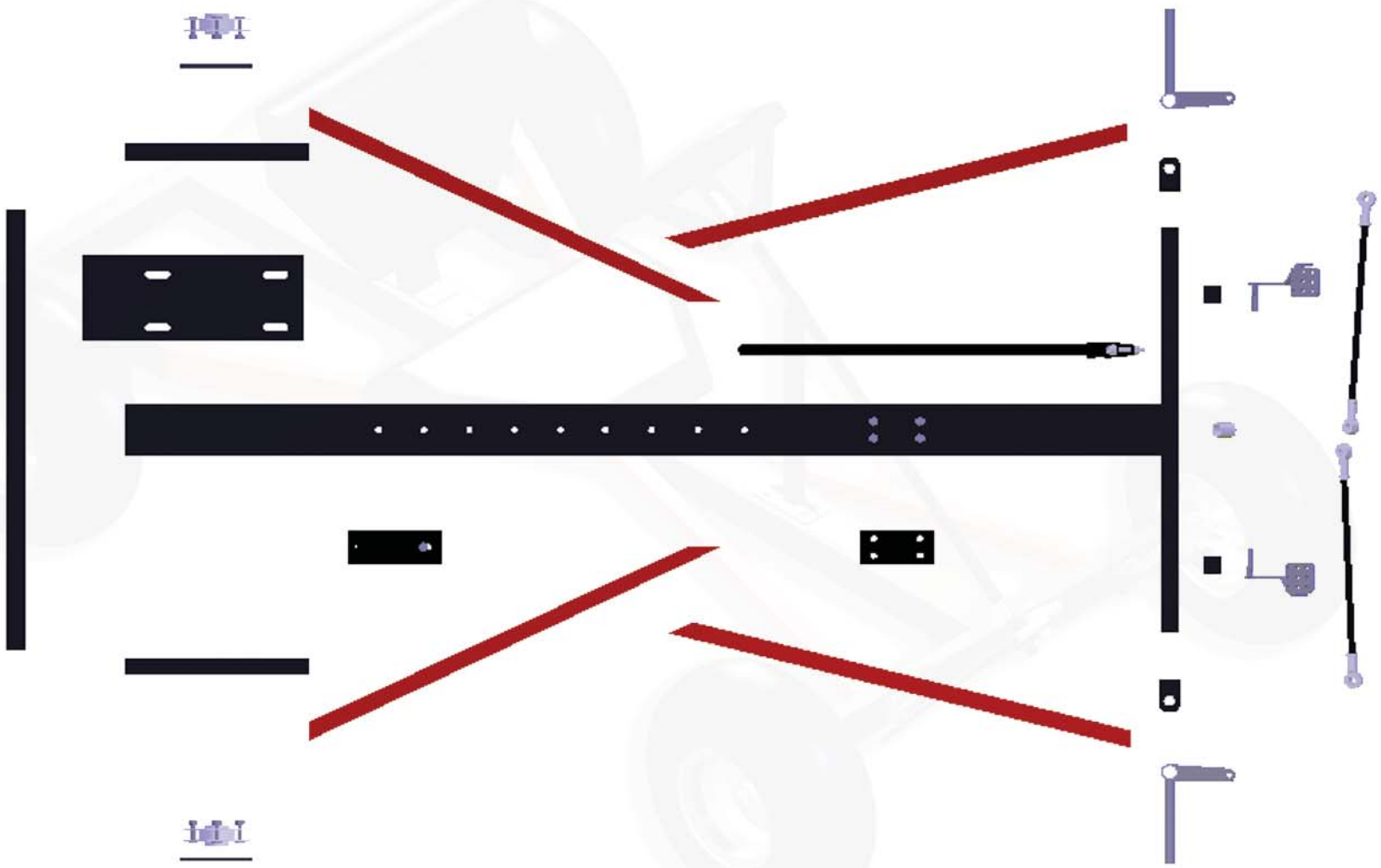
		TOTAL WELD				



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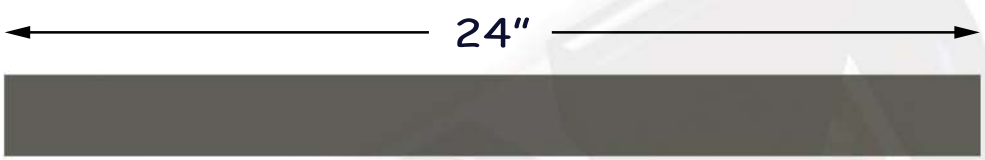
		Exploded View				

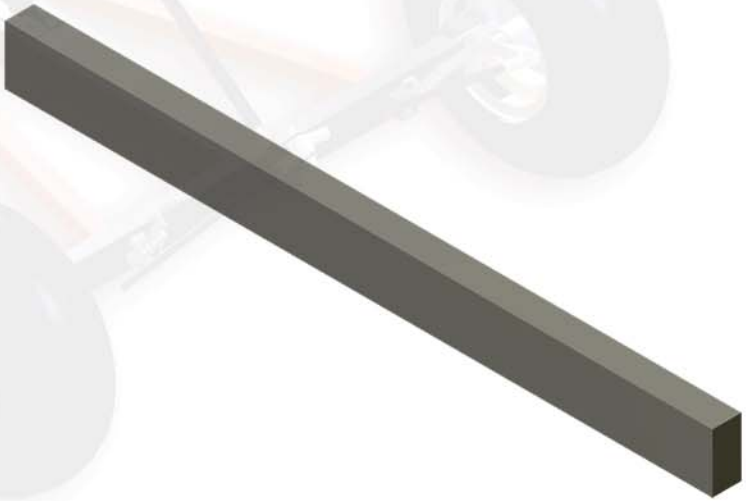
Side View



Notes

Okay its time to start cutting. We Will be using the 1" x 2" Rectangle tubing for this part. Start with a straight 90° end and measure 24" and make another 90° cut.
You need 1 of these.
This is Part F-24

Iso View



Top View

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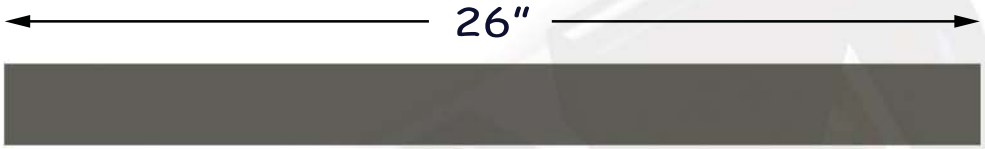
		Parts / F-24			Qty-1	

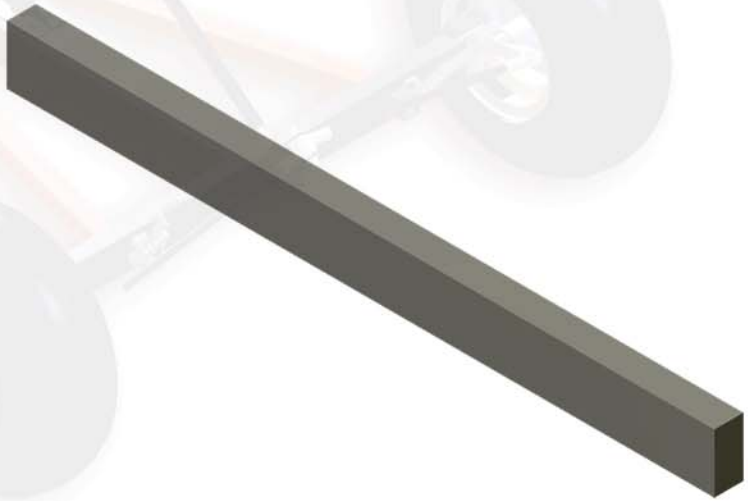
Side View



Notes

You Will be using the 1" x 2" Rectangle tubing for this part. Start with a straight 90° end and measure 26" and make another 90° cut. You need 1 of these.
This is Part B-26

Iso View



Top View

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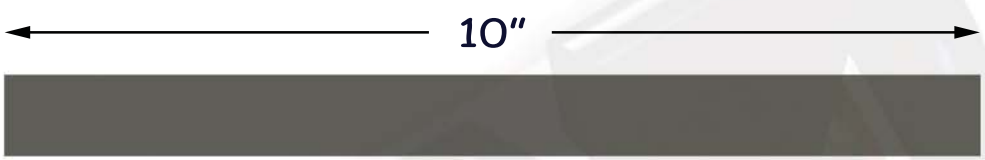
		Parts / B-26			Qty-1	

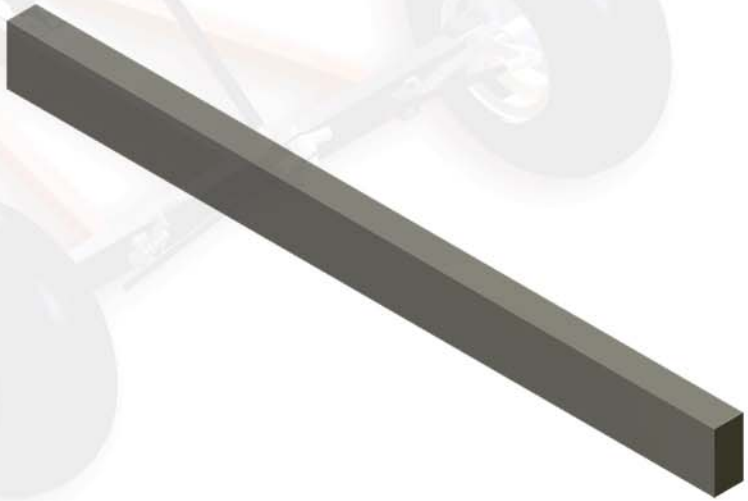
Side View



Notes

You Will be using the 1" x 2" Rectangle tubing for this part. Start with a straight 90° end and measure 10" and make another 90° cut. You need 2 of these.
This is Part B-10

Iso View



Top View

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		Parts / B-10			Qty-2	

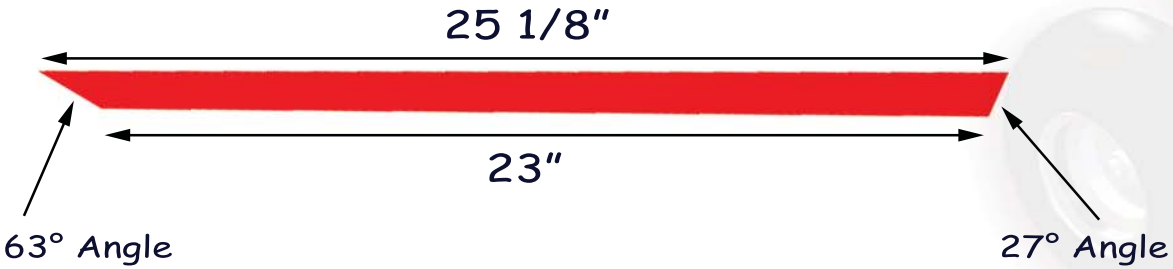
Side View

Notes

You Will be using the 1" x 2" Rectangle tubing for this part. Start by cutting a 27° angle then measure out 25 1/8" and cut a 63° angle. Both angles need to be cut inward and the 25 1/8" is the outside measurement. Most saws with a clamping device will only make up to a 45° angle cut so you might have to cut the 63° angle with a hack saw or cutting wheel of sorts.
You need 2 of these.
This is Part A-23

Iso View

Top View



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		PARTS / A-23			QTY-2	

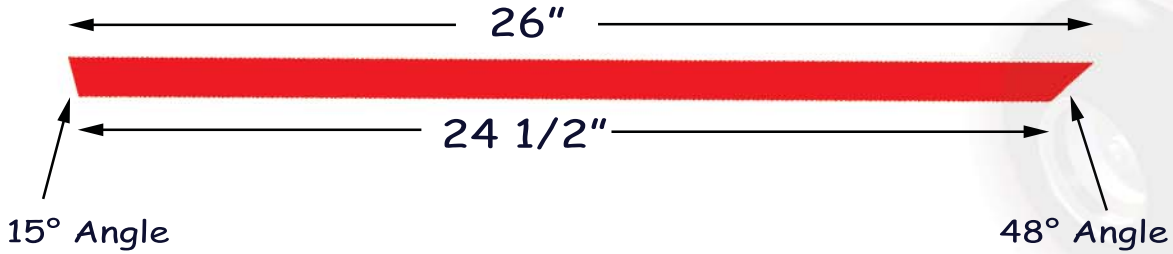
Side View

Notes

You Will be using the 1" x 1" Square tubing for this part. Start by cutting a 15° angle then measure out 26" and cut a 48° angle. Both angles need to be cut inward and the 26" is the outside measurement. Most saws with a clamping device will only make up to a 45° angle cut so you might have to cut the 48° angle with a hack saw or cutting wheel of sorts.
You need 2 of these.
This is Part A-28

Iso View

Top View



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		PARTS / A-28			QTY-2	

Side View

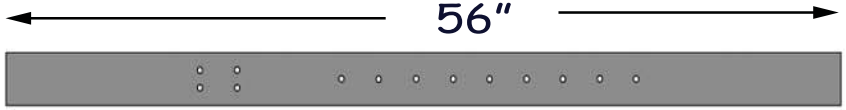
Notes

You Will be using the 2" x 3" Rectangle tubing for this part. Start with a 90° edge and measure 56" and make another 90° cut. Now before you weld any ends on this piece I would drill all your holes. If you are going to make your own seat and want to adjust it then you will need to follow the directions for drilling your holes in the Holes diagram. Also dont forget about the Brake hole as it will be very hard to drill once the welding is done.

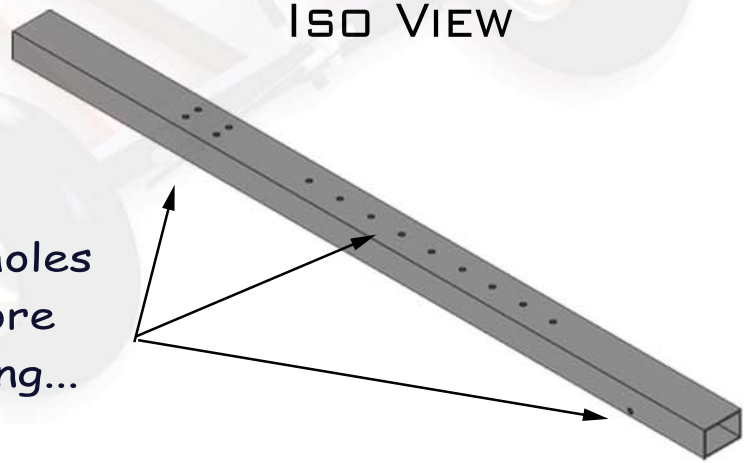
You need 1 of these.

This is Part MF-56

Top View



Iso View



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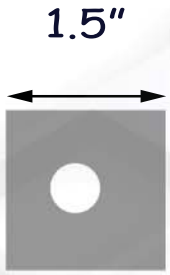
		PARTS / MF-56			QTY-1	

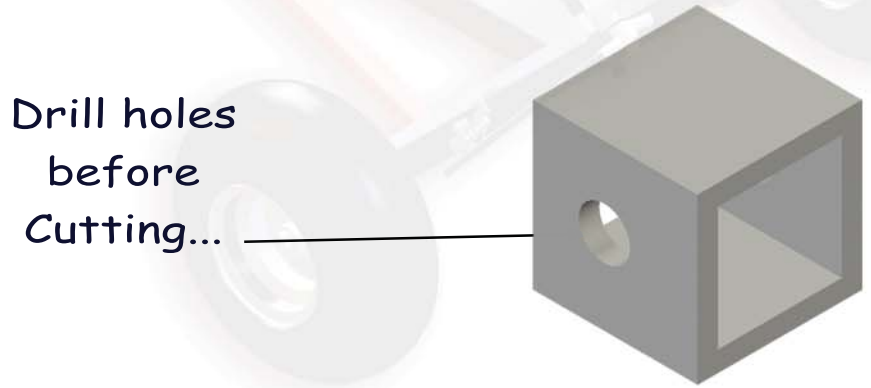
Side View



Notes

You Will be using the 1" x 1" Square tubing for this part. Start with a 90° edge and measure 1 1/2" and make another 90° cut. This is for mounting your pedals, so you will need to drill a 5/16 hole in the side of them. Might be easier to drill the hole before you cut them so you have a longer piece to clamp onto while you drill. Be very careful when cutting pieces this small...
You need 2 of these.
This is Part PA-1

Iso View



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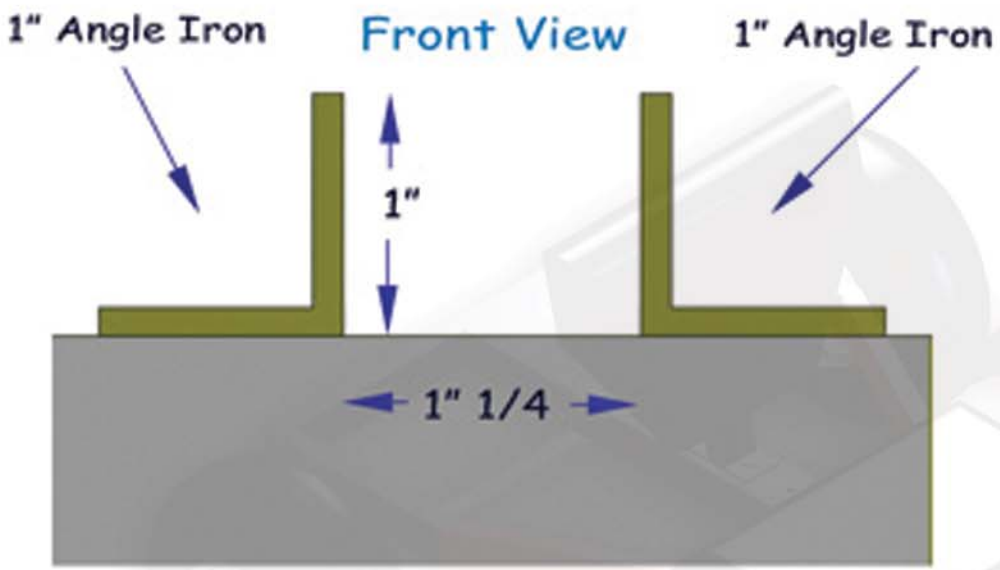
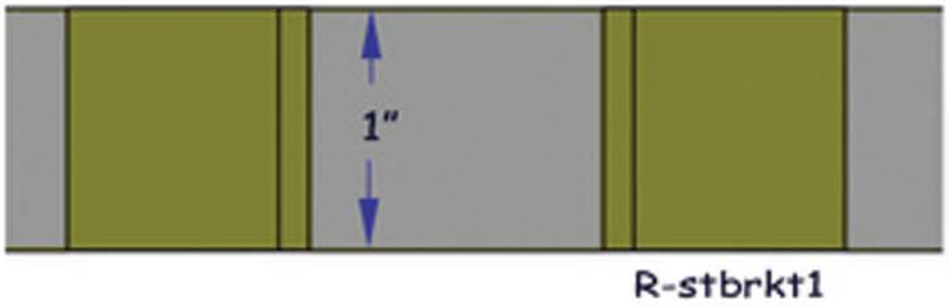
		Parts / PA-1			Qty-2	



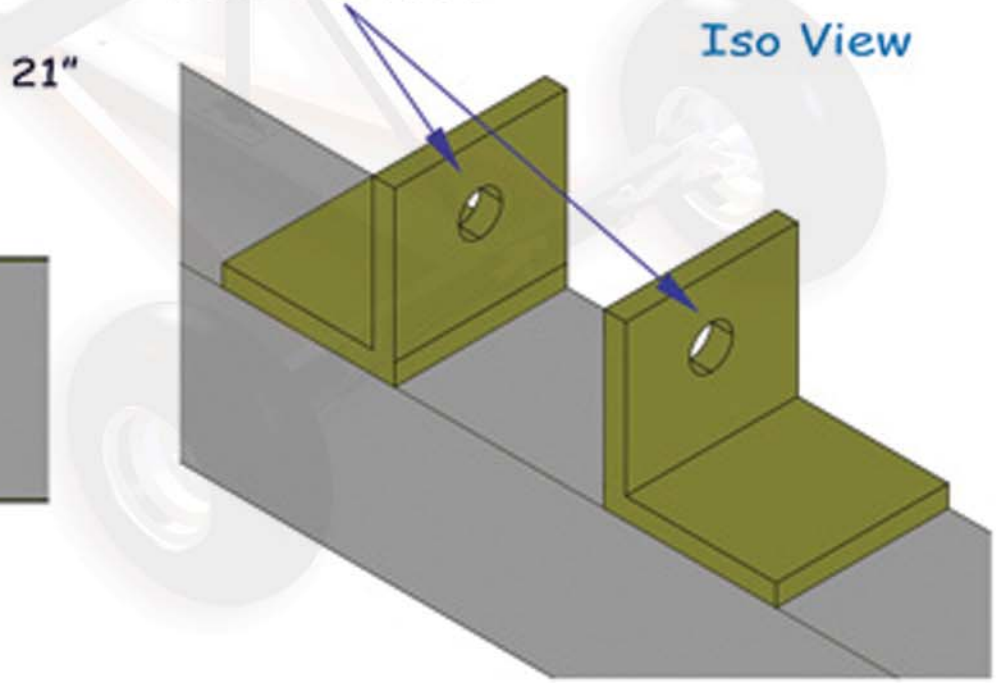
Notes

This is the front steering Bracket. Very easy to make. Take that piece of 1" angle iron and cut yourself two 1" sections. Then drill a 5/16 hole in it anout 1/4" from the top edge. These will weld right to F-24. This is part SA-1.

Drill 5/16" Hole for mounting plastic steering block - lower #GM SBS



R-stbrkt1



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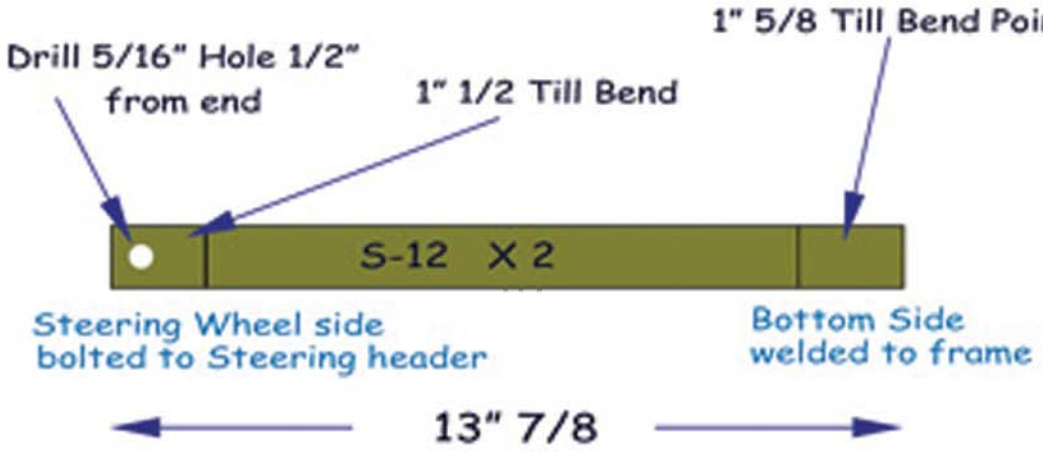
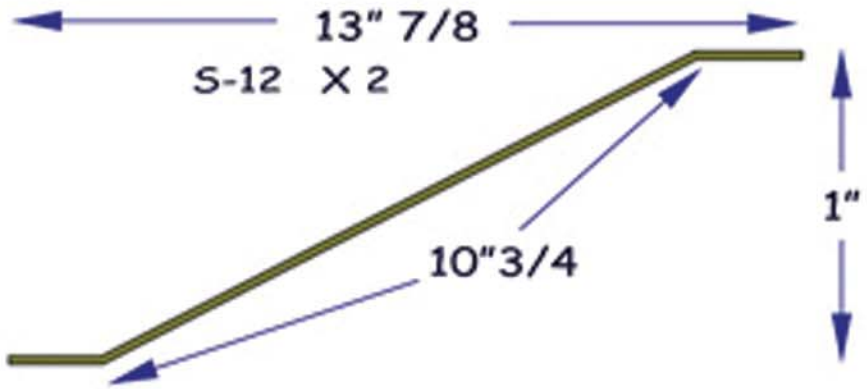
		PARTS / SA-1			QTY-1	



Notes

OK this is where we use that flat metal. It should be 1" wide and at least 3/18 thick. This will take a bit of fabrication and can be changed to fit your needs. I like to measure my points then cut the metal half way through where I need to bend it. After I bend it I run a weld bead where I cut it to give it strength again. Just a tip that works for me. You will need 2 of these. This is Part Number S-12 it will weld onto your MF-56

Top View



Iso View

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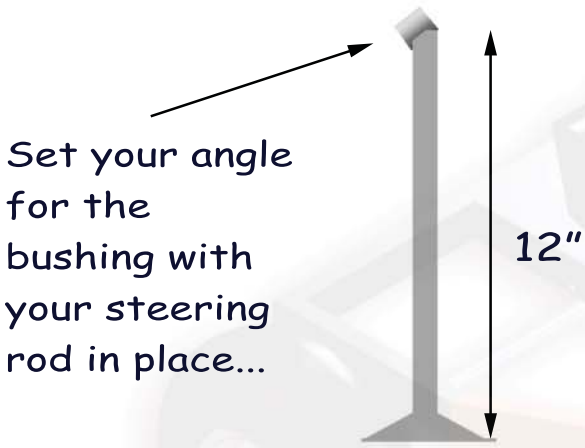
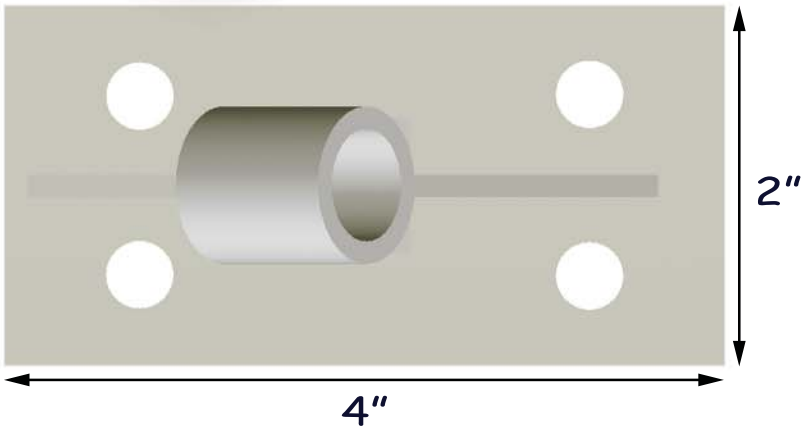
		PARTS / S-12			QTY-2	

Side View



Top View



Notes

This is another version of the S-12 if you would rather use this one it will make it so you can bolt it on instead of welding it. You will need some 2" flat stock steel for the base, a 5/8" steel bushing, and a 12" long 3/4" x 3/4" square tubing. Just assemble as shown. Just remember to use a very low setting on the welder when welding the bushing as you want it in good shape so the steering shaft will move freely when you are done. Also... the holes should match up with the holes you make in the MF-56

Iso View

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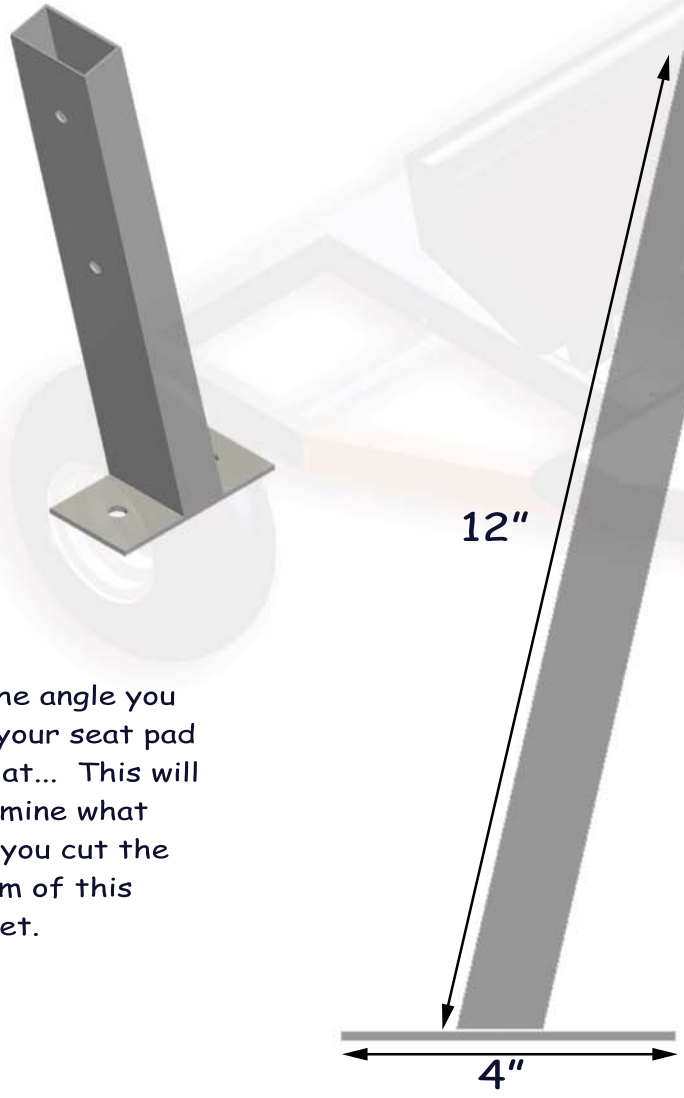
		Parts / S-12			Qty-1	

Side View



Set the angle you want your seat pad to be at... This will determine what angle you cut the bottom of this bracket.

Notes

Here is an option for a seat bracket to hold a home made seat cusion. Now this just depends on what kind of seat you are wanting and you can change this to suite your needs. But you can just use a 12" piece of the 1" x 2" tubing. Cut the top at a 90° and the bottom at what ever angle you want your seat to be at. Make sure your not to far back and hitting the motor when you get to that point. I welded a 2" x 4" x 1/4" plate on the bottom so I could bolt this piece on and make it adjustable. You the hole diagram will show holes for this plate. Make sure the hole you drill in this and the holes you drill in your MF-56 line up...
You will only need one of these

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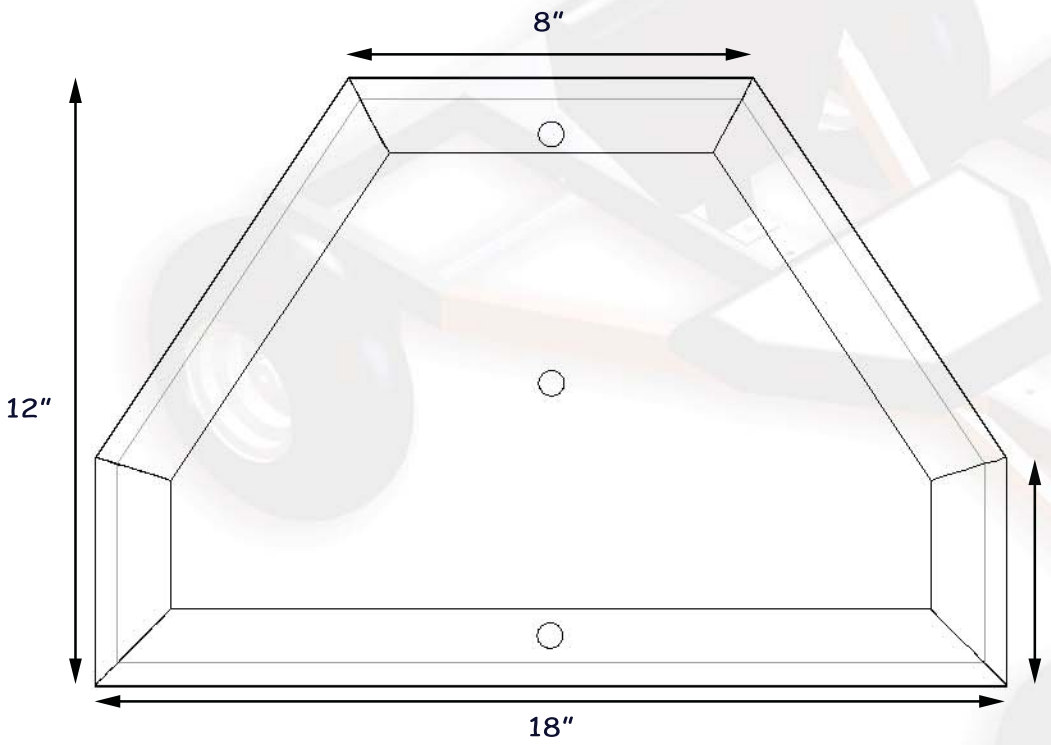
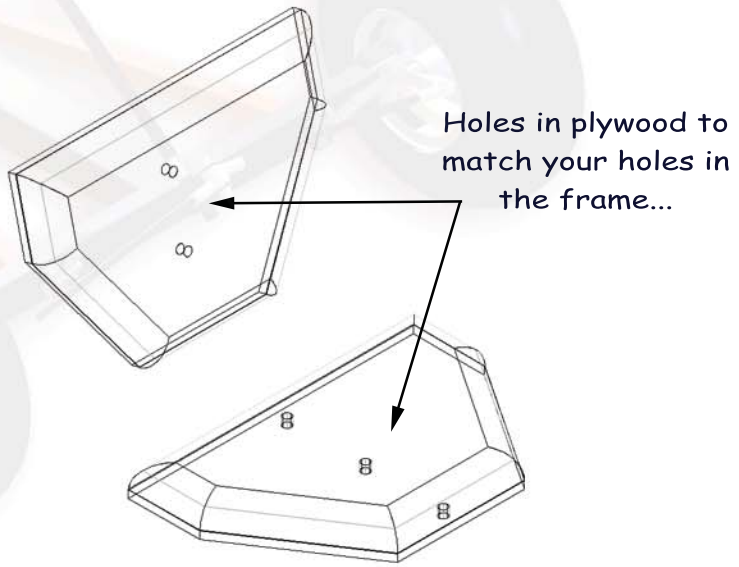
			Authorized	Robert Dicken		
		Parts / SB-12			Qty-1	

Side View



Notes

Here is an idea for a seat. You just need some 3/8" Plywood, Foam, Vinyl, a Stapler and some countersinkable nuts. Just cut the shape you want, drill some holes that match up with your MF-56 for the bottom and holes that line up with your SB-12 for the back rest, cut the foam to match. Then cut the Vinyl to match the shape as well with a couple inches extra so you can pull it around to the mottom. Hammer your countersink nuts in your pre-drilled holes in the plywood, put the foam on, cover it with your vinyl and staple it to the bottom... Its ready to bolt on!



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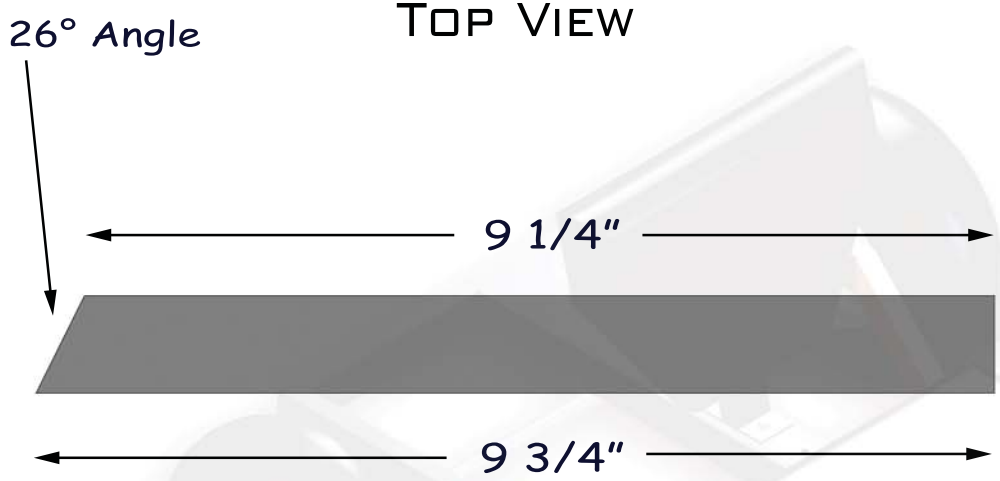
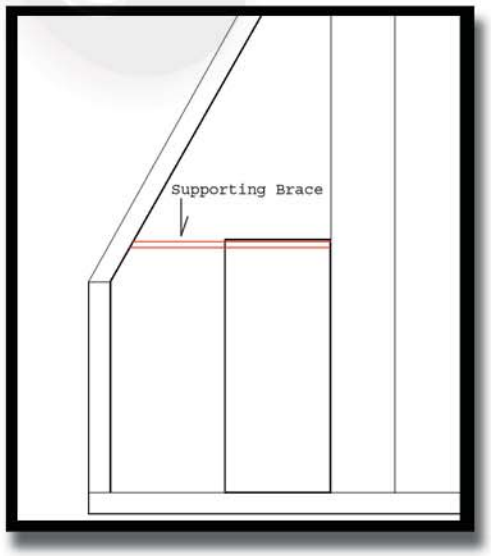
		Parts / Seat			Qty-2	

Notes

One of our customers built the Blackwidow and found that the Motor Mount was bending with a larger motor so we have added this support into the plans. Use a piece of the 1" x 1" square tubing, start with a clean 90° cut on one side and measure out 9 3/4" and make a cut at 26°. This will weld right in at the end for the motor mount as shown in the renderings...

Top View





Iso View

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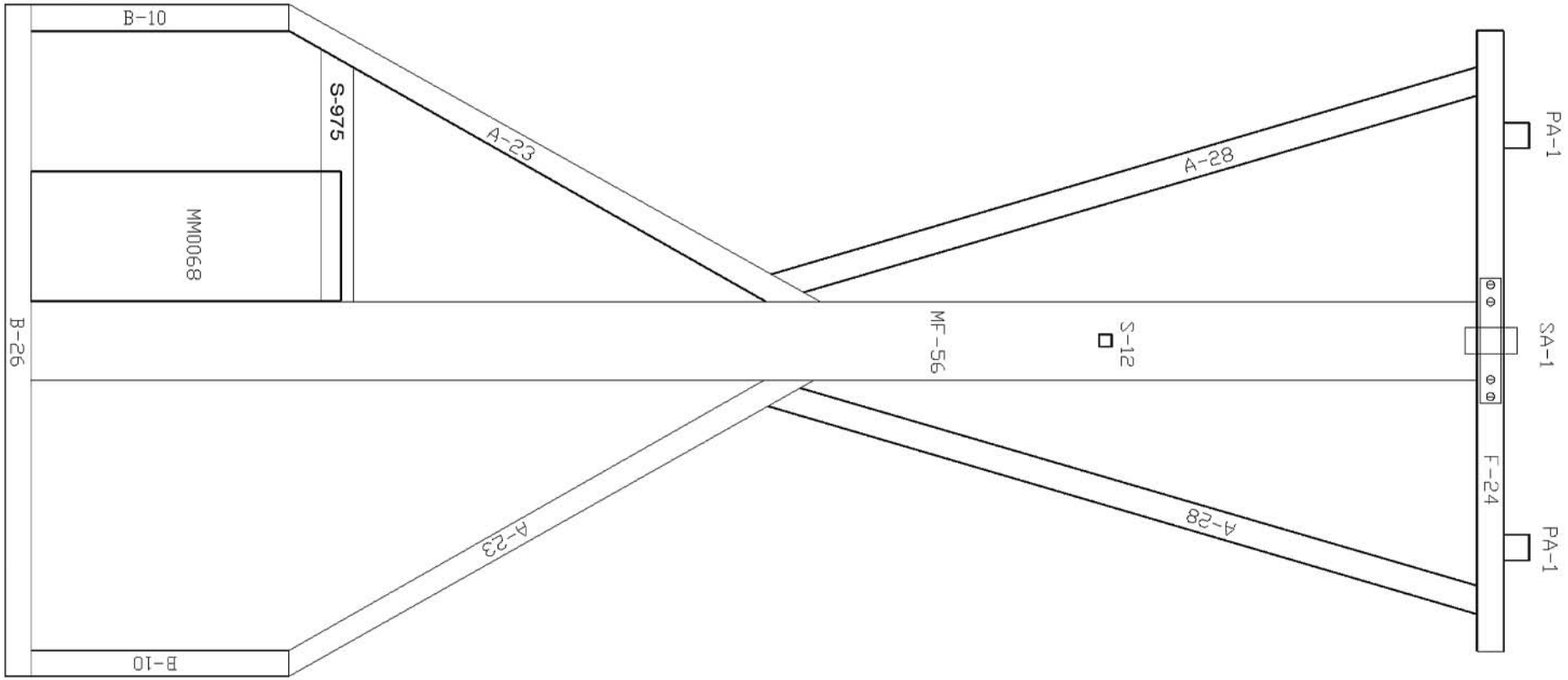
		Parts / S-975			Qty-1	



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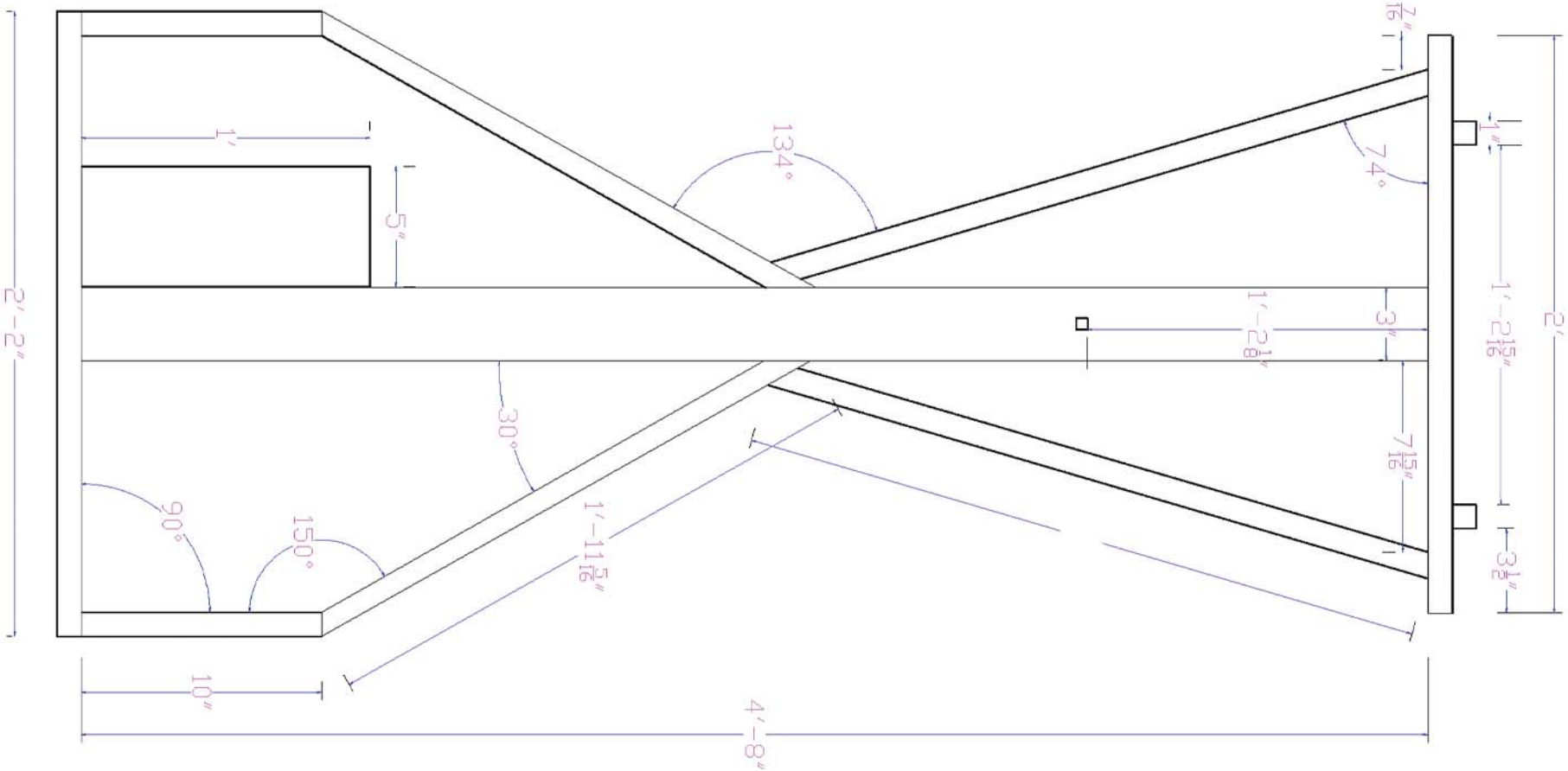
		PART NUMBER DIAGRAM				



Dimensions Diagram

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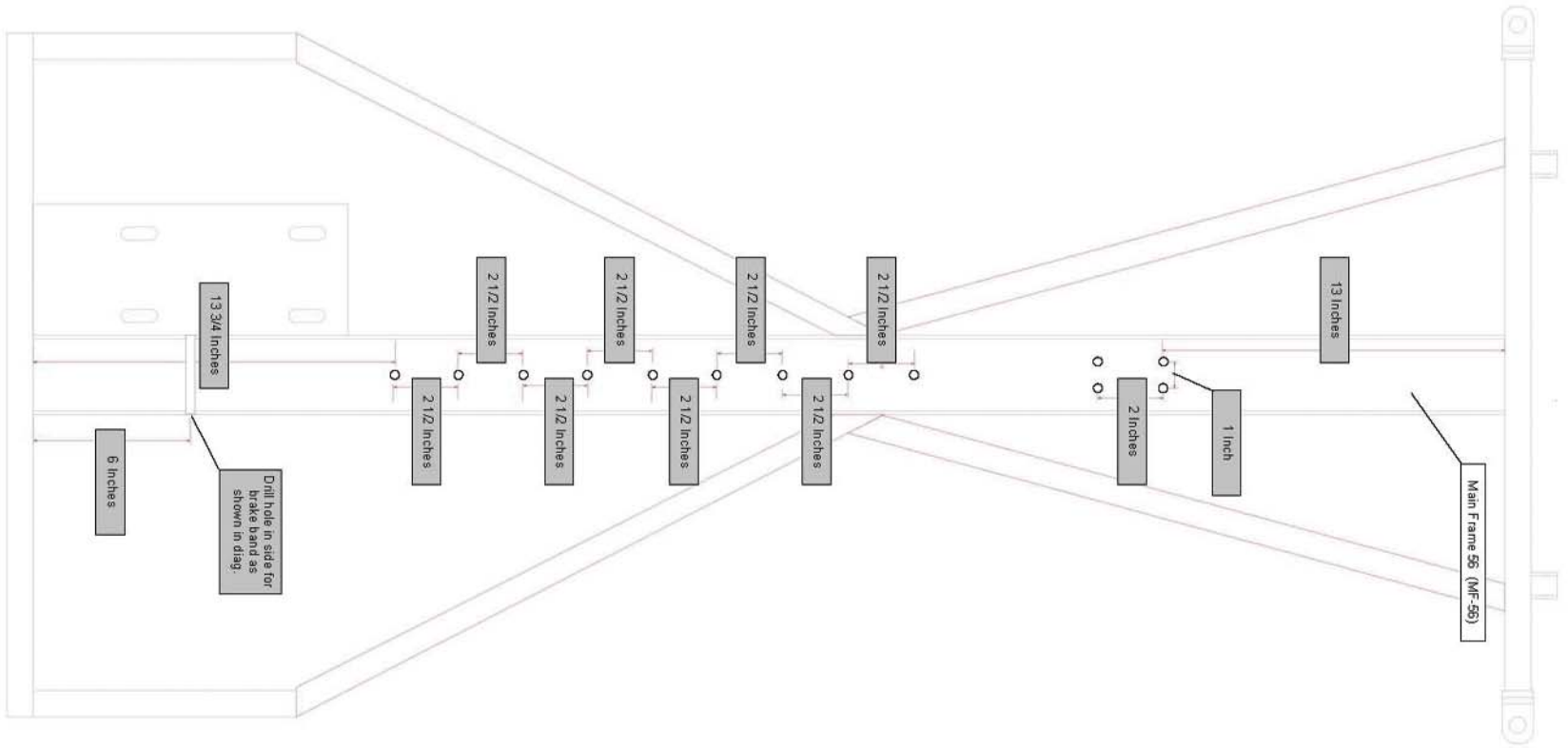
			MEASURMENTS LAYOUT			



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		HOLES DIAGRAM				










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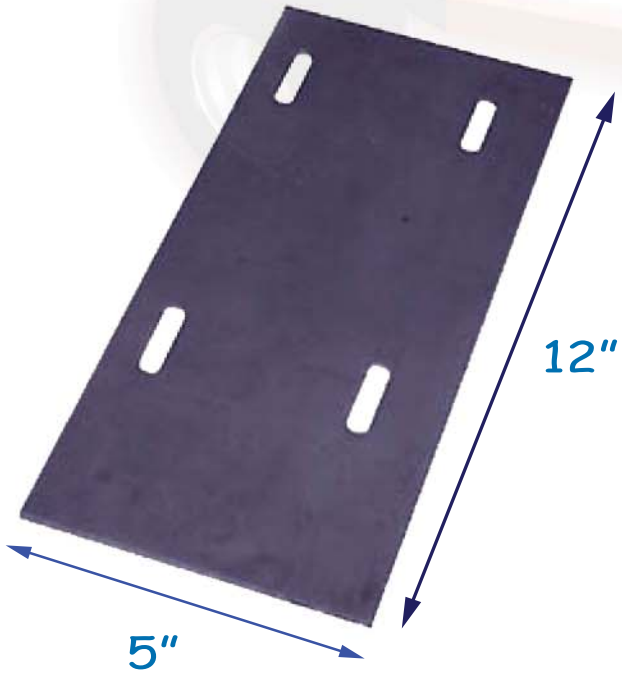
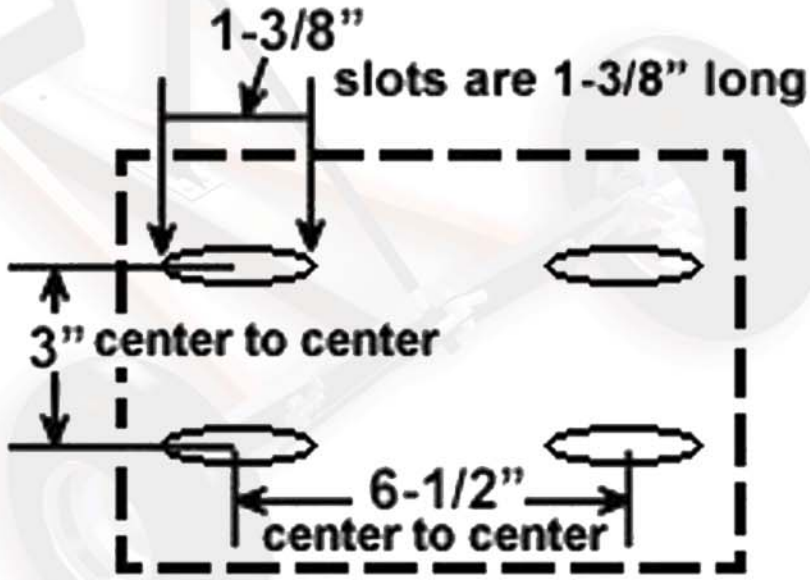
Motor Mount Plate

An engine mounting plate that allows the engine to be moved back and forth to remove the slack from the chain is needed. Most engines use the same mounting hole pattern. If you are going to make your own, follow the pattern shown in.

You'll need a way to cut the holes in the plate. A jig saw with a metal blade would work. Some have drilled lots of holes and then used files to cut away the rest of the material. A cutting torch would work as well. But buying the plate is often cheaper and much less of a pain. We purchased an 12" x 5" x 1/4" piece of metal in 2005 for $9 locally. A parts house was selling a mounting plate for $7 with pre-cut, pretty holes.





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		MOTOR MOUNT PLATE			QTY - 1	

Spindle Brackets

This is another weldment. The spindles are what you attach your front wheels to and the spindle brackets hold the spindles. These are also very cheap to buy as a kit. I would suggest just buying them from a supplier. You can get the entire set for under $40.00.

you can purchase Spindle brackets that are longer and have springs included with them if you would rather... Not really much of a shock but it looks kinda cool!

Spidercarts	50		Ver.	0.1.2.6		
			Authorized	Robert Dicken		
		Spindles / BW-411300			Qty - 2	

Bearing Hangers

The bearing hangers are so cheap I would suggest just buying them from a supplier. You can get the entire set with the bearings, hangers, and hardware for under $50.00. The hangers are what we call a weldment and get welded directly onto the frame. Then the bearings and hardware bolt right on to the hanger...

Spidercarts	51		Ver.	0.1.2.6		
			Authorized	Robert Dicken		
		Hangers / 400170			Qty - 2	

Blackwidow Parts List

These parts are listed as reference only!

Please make sure the parts you purchase are the ones you need to fit your project as parts and prices may have changed.

Qty	Item	Price	Total	Vendor
2	14" Balloon Tire/Rim Front	$29.99	$59.98	BMI Karts
2	14" Balloon Tire/Rim Rear	$28.99	$57.98	BMI Karts
1	1" x 40" Axle	$25.00	$25.00	BMI Karts
1	#41 54T Sprocket	$14.99	$14.99	BMI Karts
1	Unihub	$12.99	$12.99	BMI Karts
1	Brake Pedal	$5.99	$5.99	BMI Karts
1	Throttle Pedal	$5.99	$5.99	BMI Karts
1	12" Steering Wheel	$19.99	$19.99	BMI Karts
1	Steering Block - Lower	$2.36	$2.36	BMI Karts
1	Steering Block -Upper	$6.93	$6.93	BMI Karts
1	Steering Shaft Kit	$13.64	$13.64	BMI Karts
1	Steering Wheel Hub Kit	$8.21	$8.21	BMI Karts
1	5/8" Spindle assy. Right Side	$12.99	$12.99	BMI Karts
1	5/8" Spindle assy. Left Side	$12.99	$12.99	BMI Karts
2	Tie Rod Kit - 420020 - 13"	$10.49	$20.98	BMI Karts
4	2 Piece Steel Locking Collar 1" with Keyway	$6.00	$24.00	BMI Karts
1	1" Rear axle assy.	$53.50	$53.50	BMI Karts
1	1" Comet Clutch #41	$49.00	$49.00	BMI Karts
1	Motor Mount 12" x 5"	$6.99	$6.99	BMI Karts
5	Chain $2.00/ft. x 5ft.	$2.00	$10.00	BMI Karts
1	Kill Switch	$4.65	$4.65	BMI Karts
	Your choice of brake parts… there are several kinds and prices. Make sure they fit 1" axle			
1	Tecumseh 6hp Horizontal,7 Amp Alt / OHH60-71209-Alt	$260.00	$260.00	Small Engine Warehouse
	Total		$689.15	

Blackwidow Go-Kart Frame

www.spidercarts.com

Online Resources

Here are some of the best place we have found to get the parts needed to finish your kart. All of the parts needed can be purchased from these locations...

www.bmikarts.com

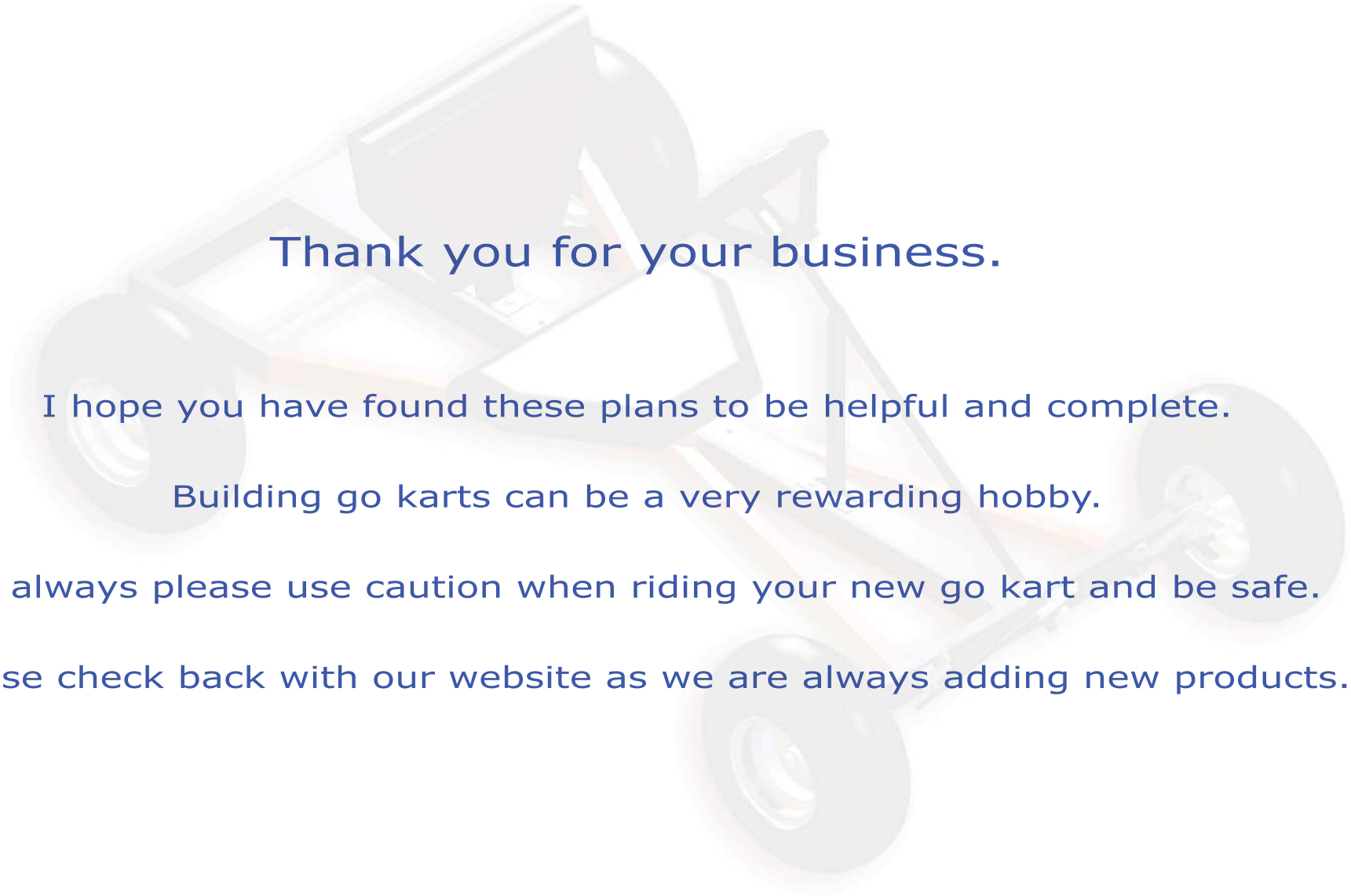
www.gokartsupply.com

www.mfgsupply.com

www.jackssmallengines.com

www.gokartnminibikeparts.com

Revised: 02/23/08..



Thank you for your business.

I hope you have found these plans to be helpful and complete.

Building go karts can be a very rewarding hobby.

As always please use caution when riding your new go kart and be safe.

Please check back with our website as we are always adding new products.

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			Authorized	Robert Dicken		
		THANK YOU				