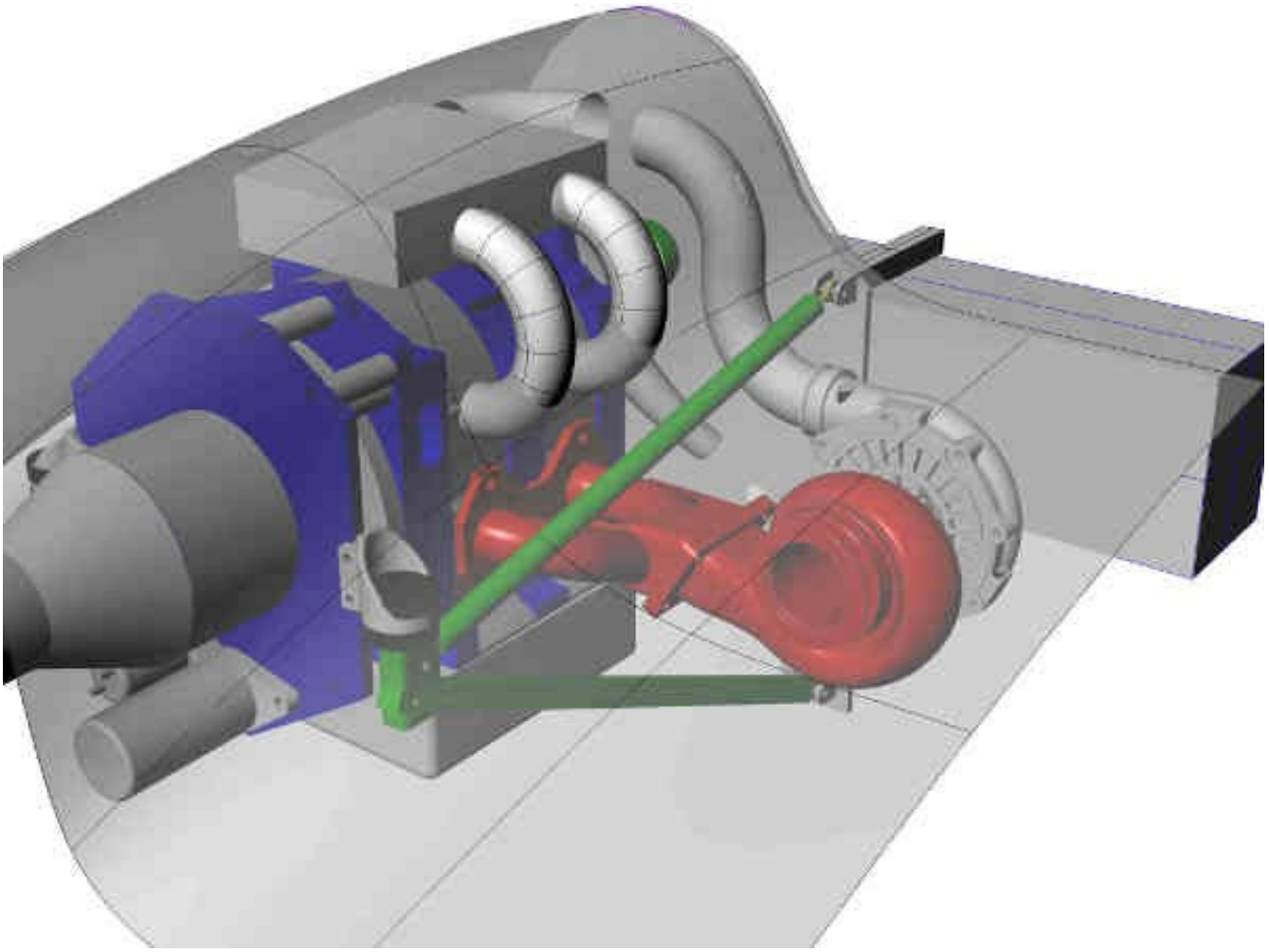
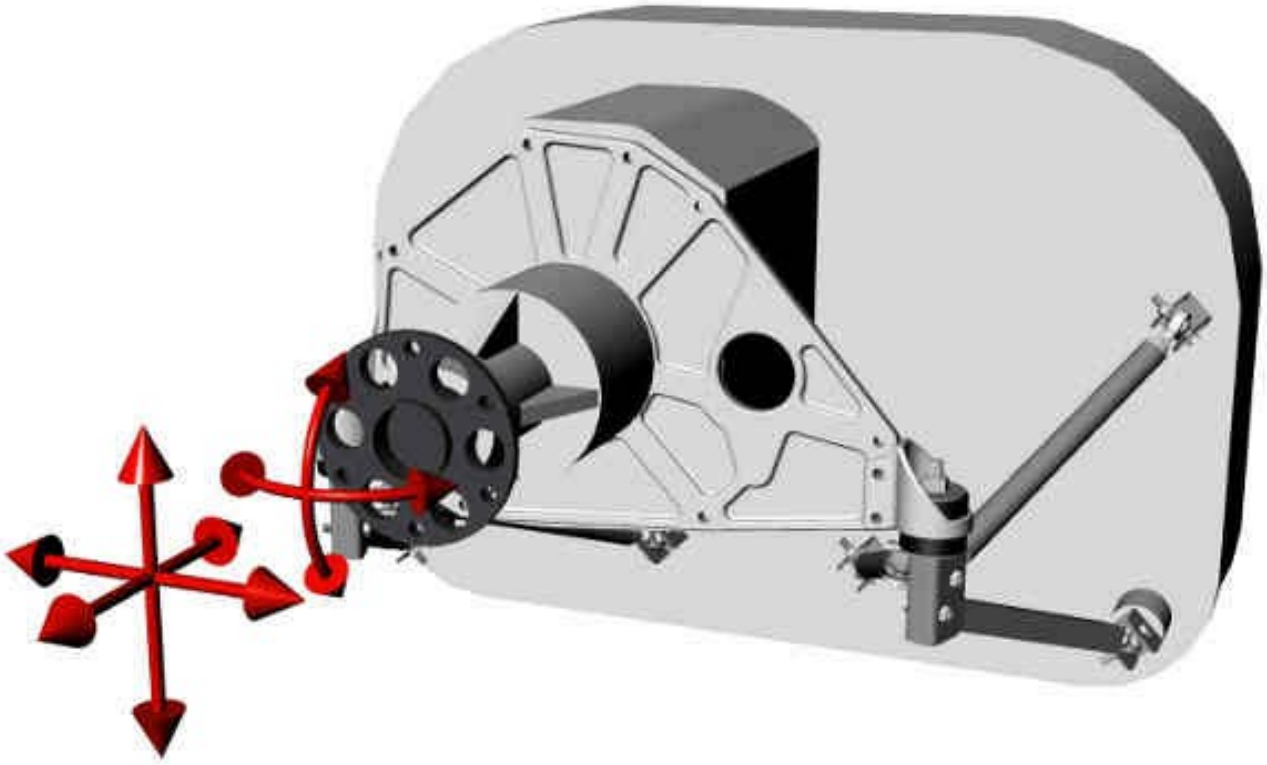
UNIVERASL ROTARY ENGINE MOTOR MOUNT

The universal low cost motor mount is one third the cost of the traditional welded tube motor mount. It uses rod end jointed links to support the engine. It was used by Bristol aircraft radial engines in WW II. It is a major breakthrough for mounting rotary engines in a wide variety of airplanes.



It will adjust in all dimensions for fitting into cowls exactly. Frequently a gear box prop flange will mis the cowl opening by a

small amount. It is non problem with this mount. Also most kits require a small down thrust or side thrust angle. This too can be adjusted with this mount.



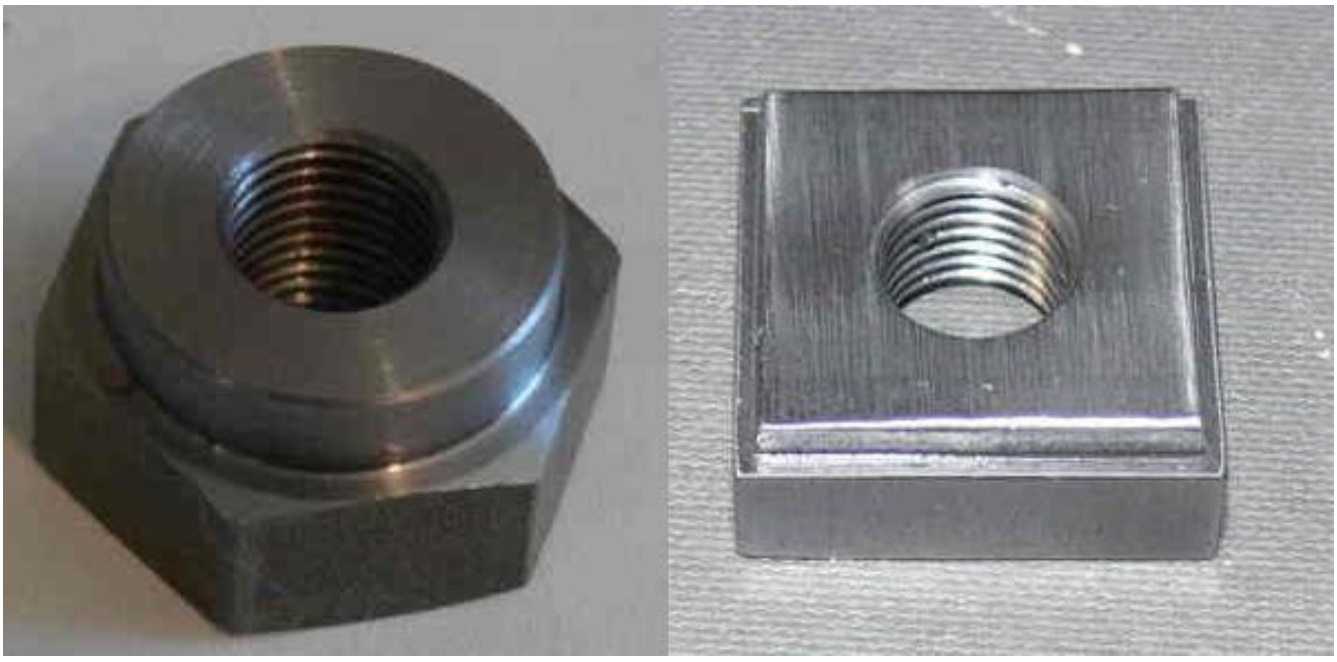
It will fit almost any firewall bolt pattern. Check out the end of the first page on http://www.rotaryeng.net for prices on some of the required bits. It will fit both composite and aluminum airplanes.

We had a guy building good motor mounts but he retired. Typically they cost $1500 plus expensive shipping. The trouble is; no two motor mounts are exactly the same for the wide range of rotary powered aircraft. Hand cutting and fitting tubes is an art. It can be done by a laser cutter but that is expensive and still requires a custom welding jig for welding.

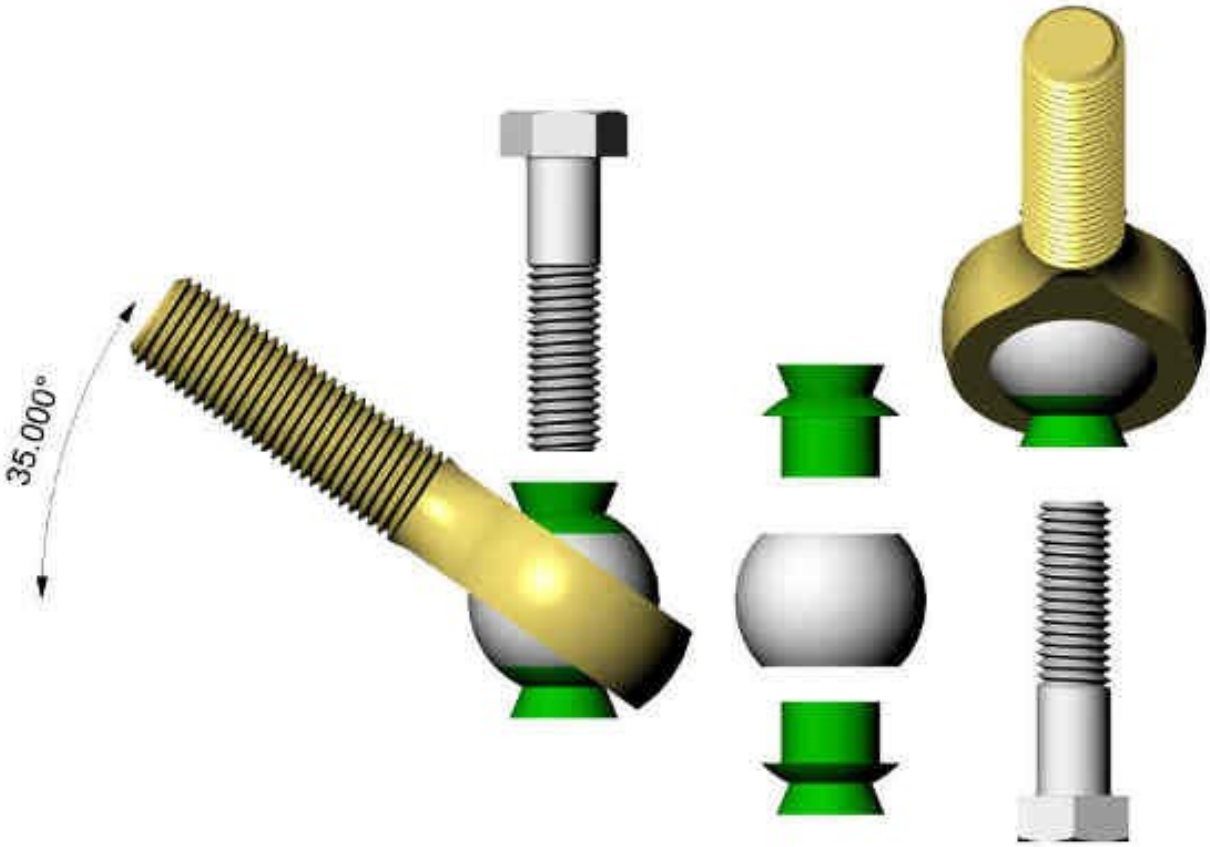
The universal motor mount is super low cost to ship. That is the real cost saving of this approach. I recently had an engine shipped in a 3 foot cube box from Oregon to SoCal and it cost me $1000.

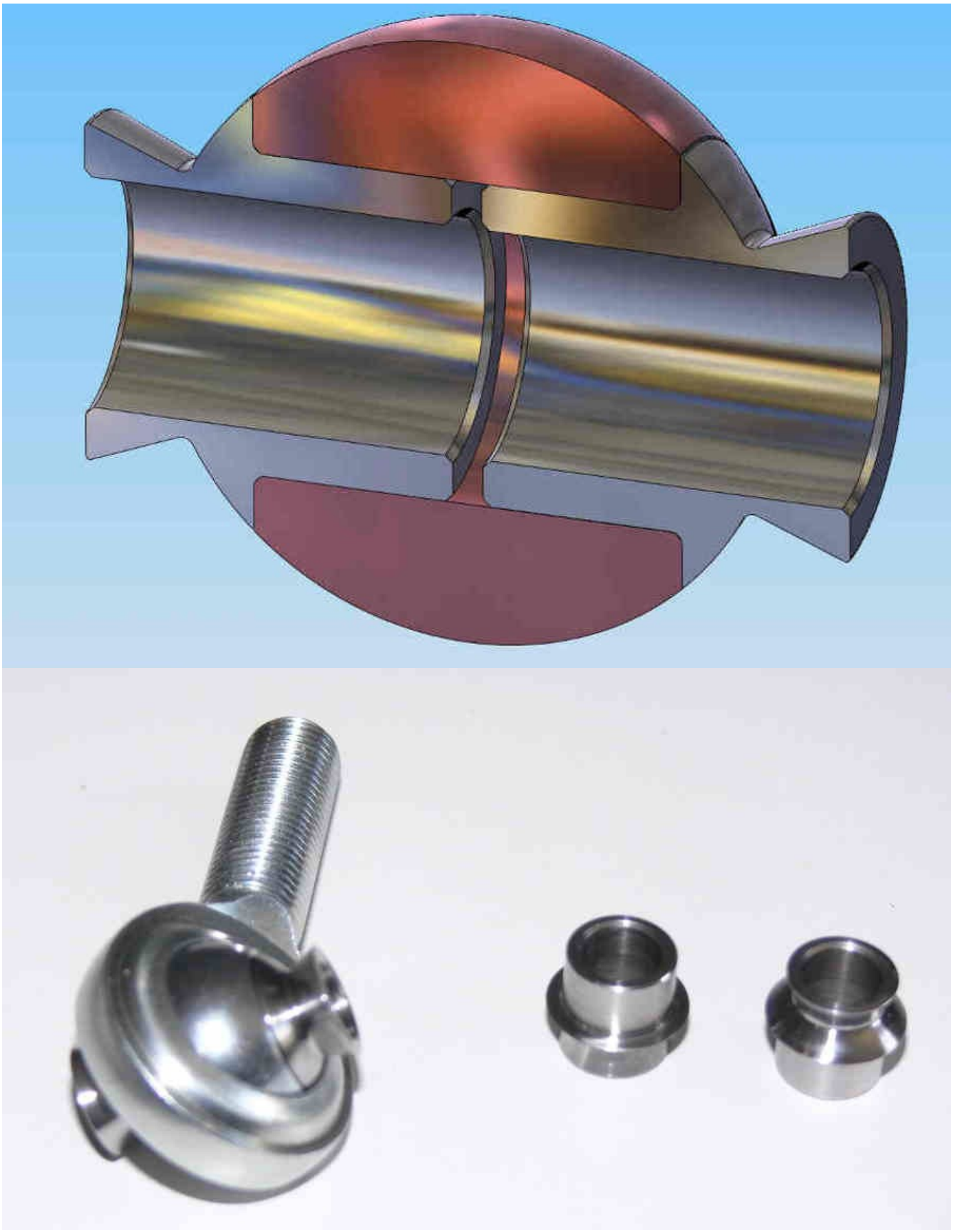
Nothing high tech, high buck here. No laser trimming of tubes. Any welder can make it. Coupling nuts are welded to the ends of the tubes to accepted the ball joints. These are machined on NC tools for accuracy. One of the lower tubes on each side is one inch square to stabilize the Barry rubber bushing holder.

The idea is at least one side tube keeps the rubber bushing cup aligned vertically.



Occasionally it requires a high angle rod end on certain airplanes so we have had some adapters machined to fill that need. Stock high angle rod ends are limited to about plus or minus 20 degrees.


35.000°



I have standardized on a 5/16 AN bolt with a grip length of 1.25 inch. This allows a 7/16 rod end to be used with the high angle spacers. Vans is a good place to buy AN bolts as he stocks them in the thousands.

Also if you make a mistake in the ordering stage on a tube over all dimensions it is easy to fix as all you have to do is make two new tubes at the most. One inch 4130 .049" thick wall tube is about $3.30 a foot and each tube is about 2 foot long. Weight is a low 1/2 pound per foot. 4130 tubing is available from Aircraft Spruce.

This does not include the bolts to hold the clips to the firewall. They come with Vans kits or they should come with other companies kit aircraft. Generally they are AN5 or AN6.

Here is what our standard Firewall Clip looks like. They are . 090" thick 4130 bent up on a press brake to have a sufficient radius. This can be used on all airplanes. For composite airplanes it is rather easy to move hard points on a sandwich firewall.



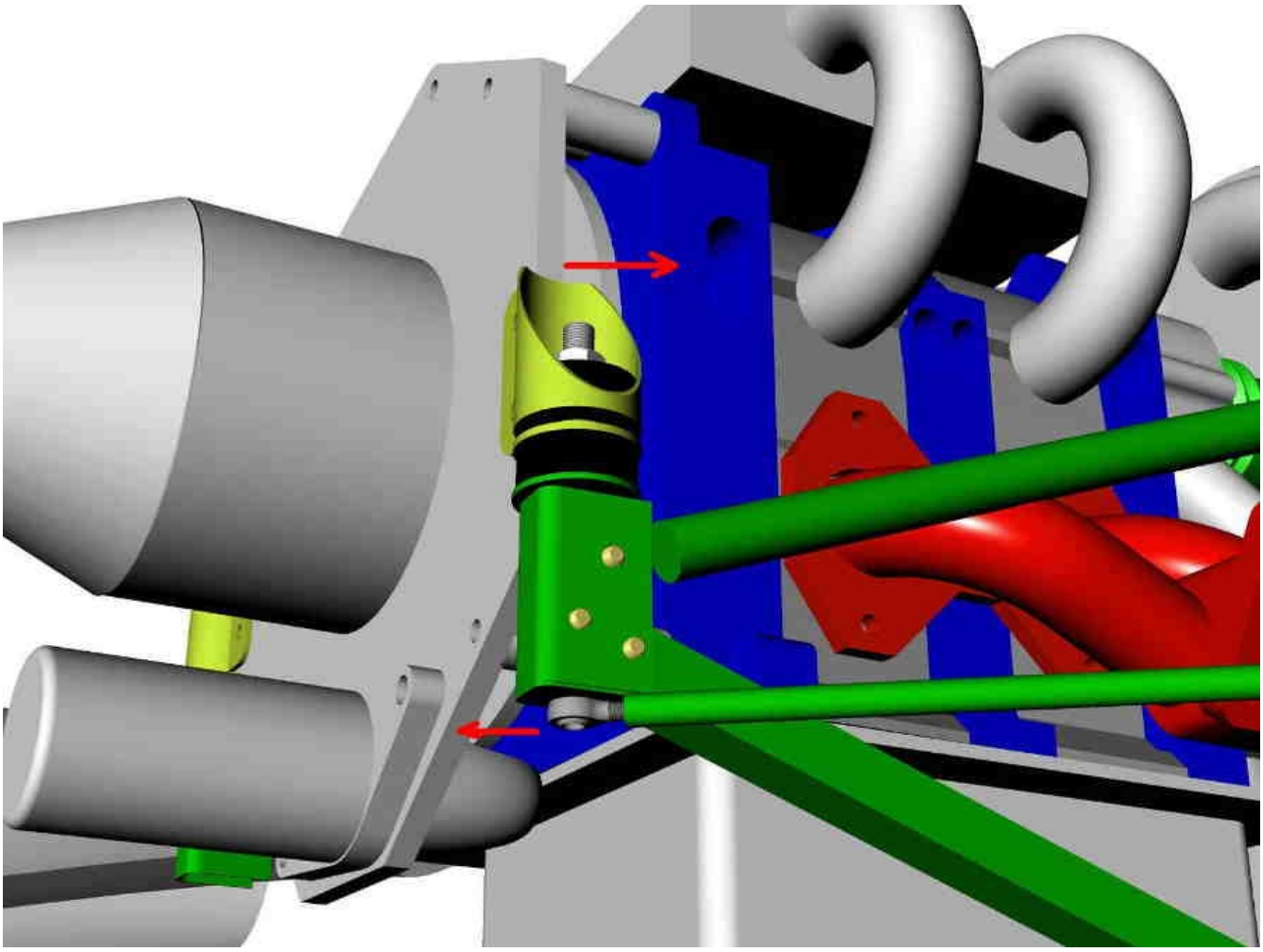
Here is the Barry rubber bushing holder called the Main Fitting. These are 4130 .090” thick tig welded.

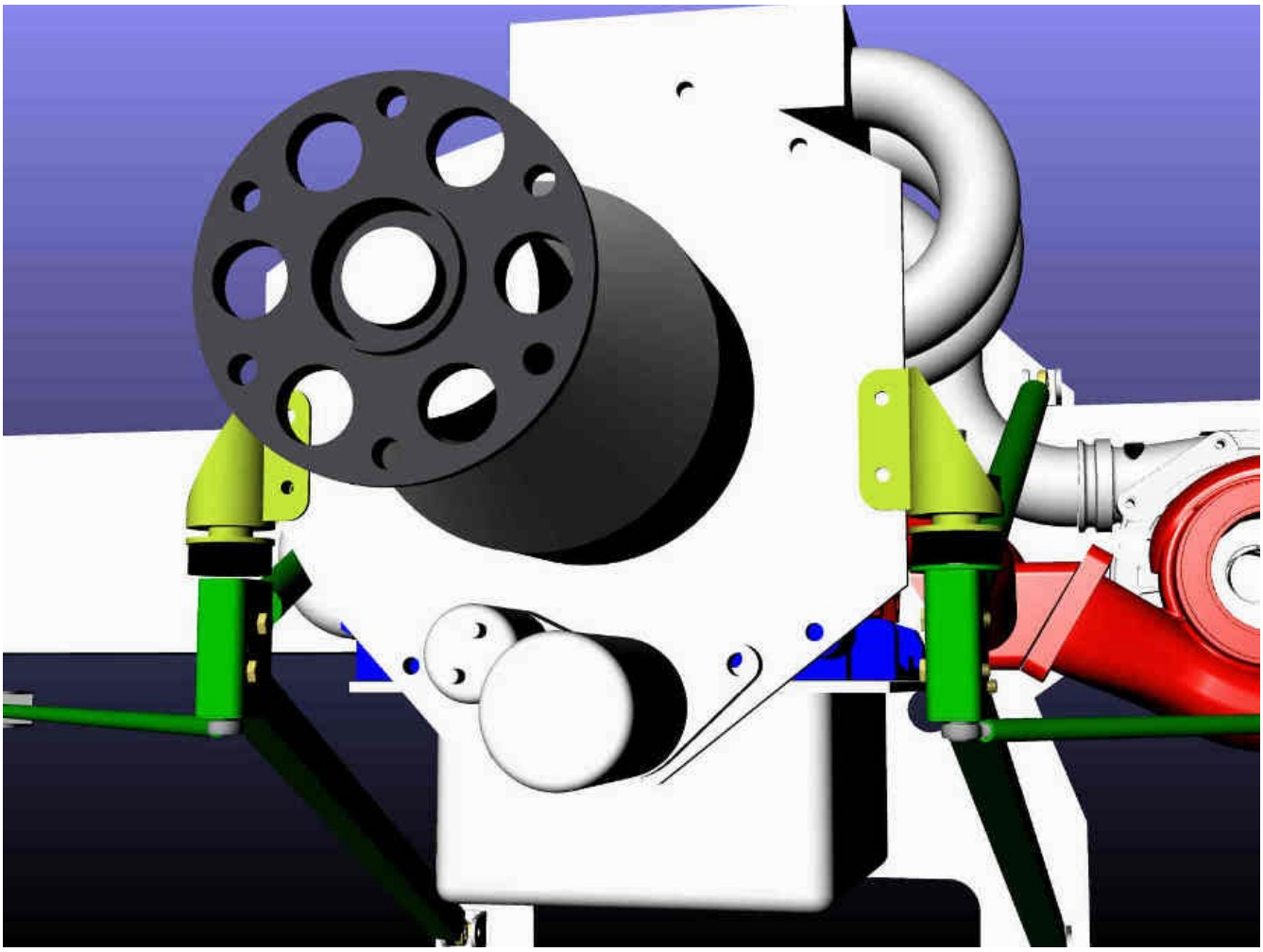


Here is a mock up of a universal rotary engine motor mount.



This shows the original idea of mounting the lateral braces to the side of the rubber bushing holders called the Main Fitting. The latest is mount the lateral links on the bottom of the rubber bushing holders. This works better with no small torques that tend to deflect the rubber bushing holder off vertical.





Here is a mock up with the motor plate adapter and an RX8 P-port engine. The gear box and starter are not mounted yet.

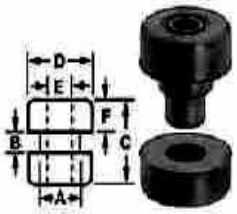


Here is what the Barry rubber motor mounts look like. These are real low cost typically less than $10 while Lycoming rubber mounts will cost over $100 is some cases. These are the same rubber mounts as used on Quester Venture's with a Continental O-550.

Versa-Mount Two-Piece Vibration-Damping Mounts

A two-piece design permits mounting in any direction for damping applications. These mounts have an unthreaded zinc-plated steel insert running through the center that enables them to handle both axial and radial loads. Mounts are made of oil- and ozone-resistant neoprene. They're easy to install and are furnished with a washer, which keeps equipment connected to the supporting base if the neoprene fails. Temperature range is -20° to +180° F. Color is black. To Order: Please specify load per mount from those listed in the table below.

Durometer is indicated with a color-coded dot: 35A is red and white, 45A is yellow and white, 55A is green and white, 65A is blue and white, and 75A is purple and white.

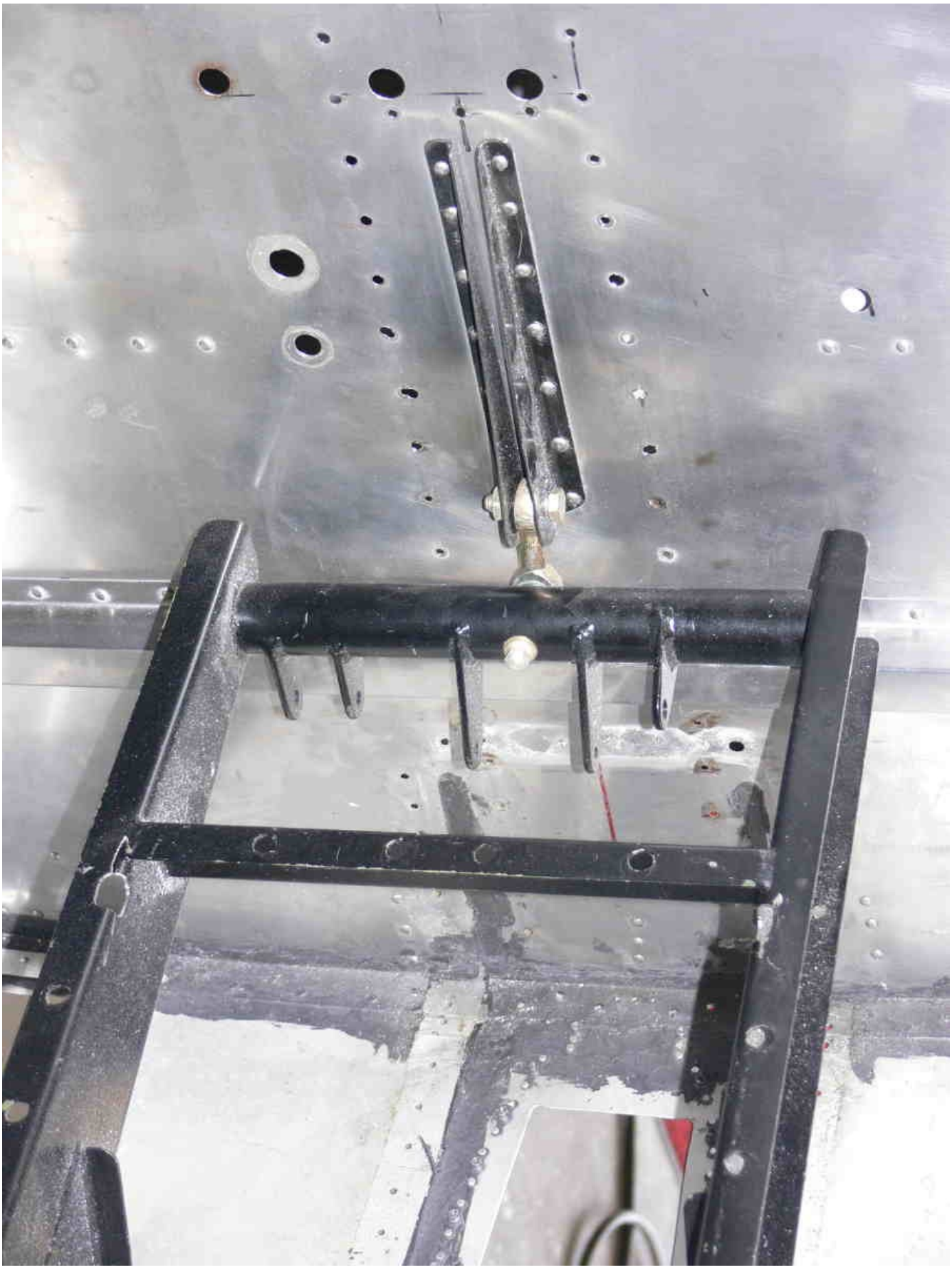


Available Loads Axial/Radial per Mount, lbs. (Durometer)		Deflection @ Max. Load Axial	Radial	(A)	(B)	(C)	(D)	(E)	(F)		Each
240/90	(55A)	0.07"	0.02"	1.30"	0.38"	1.94"	1.88"	0.53"	0.78"	6309K3	5.95

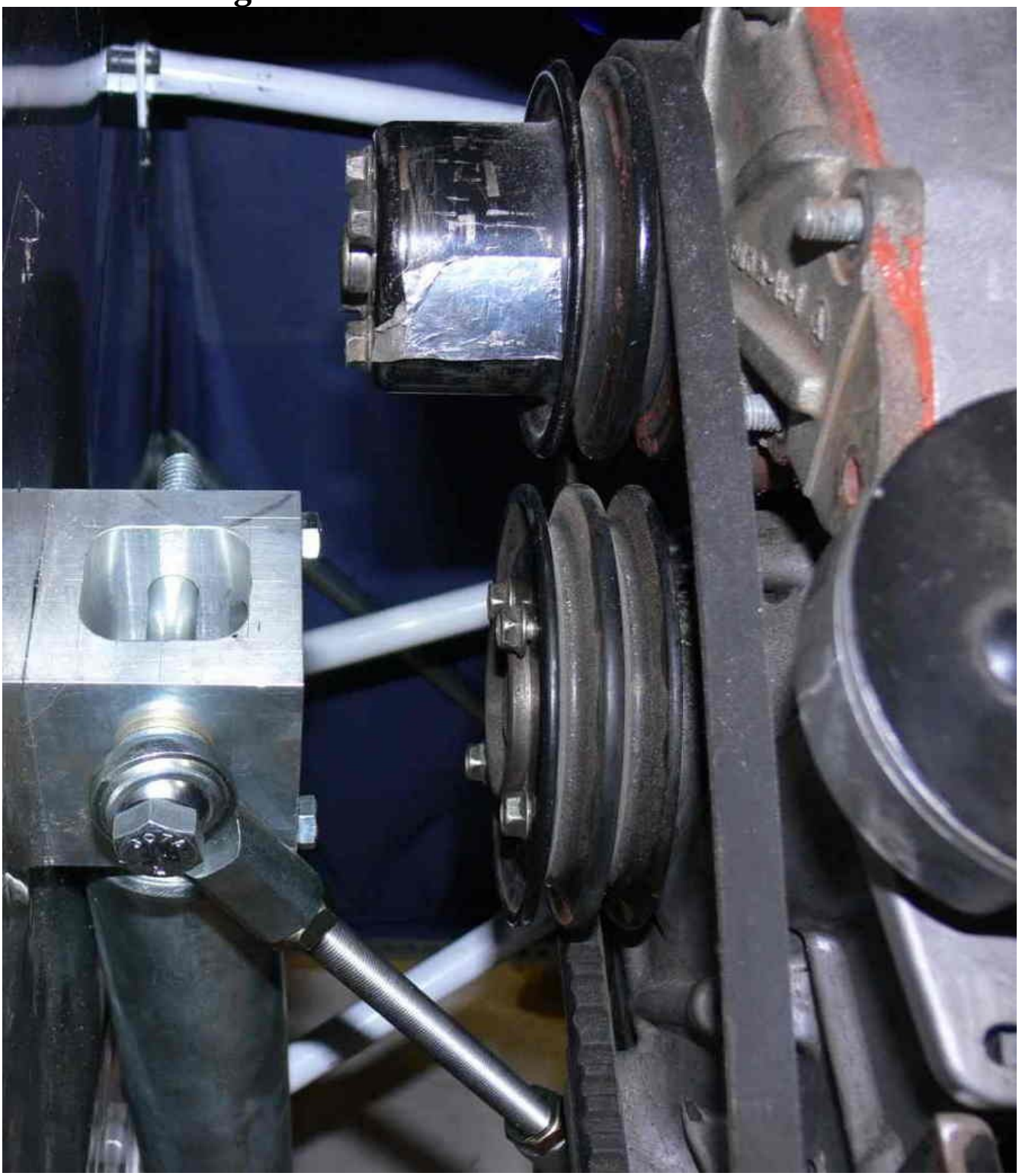
The rear motor mounts are very simple with lots of variations possible.

Another advantage of this mount is the rubber bushing are located near the CG of the engine, gearbox and prop CG so there is little or no load on the rear motor mount.

Here is what a rear mount looks like on a Quester Venture.



Here is a KIS cruiser rear motor mount and nose gear spring shock mounting block.



Here is the complete uni mount installed on Alex Molteno's

Tango with Tracy's gear box.



Paul Lamar