

Just wondering if someone could tell me the type of hub they bought to attach the sprocket and if there would be away to attach a brake to it? A model, part number, or website would be great.

Thanks

Jason Faust

Make sure its a free wheel. If you want to add a brake to it I'd use a caliper type brake. I don't have any specific info right now, but could check on the brand we have now.

NO CALIPER BRAKES!!! Watertown has as stated in the "Wheels Category"...

**Rear Wheel Assemblies:** *(2nd year)*

Hub: Shimano Hone: 3/8-24 Axle assembled - 36 hole - Disc Brake mount & Cassette Mount

Rim: 20" aluminum Alexrims "DM24"

Disc: 8" Shimano Brake Disc

Tires: Kenda Kwest "K-193-05" - 20x1.50 - 100psi

Cassette: Student designed & CNC machined & Splined. Aluminum. Standard Cassette nut holds assembly on hub.

Jesse Domer, Watertown High School

Don't waste the time and money on caliper brakes in the rear. Caliper brakes are designed for a light bicycle and rider, not for the weights of a typical Electrathon vehicle. I know some teachers are going to say, "We've been using caliper brakes...." but we had rain (AND SNOW!) at Road America this last year. I was more worried of having a competitor's car with caliper brakes not being able to stop and run into something or someone. Get mechanical disk (which is what we used) or step up to a hydraulic disk. Students will have a ton of braking power if they design for disks at all three (or four?) tires. The only teams I've seen have problems meeting the braking requirements were using caliper brakes. Not once have I seen a disk brake equipped car not pass. This is one area of the vehicle you don't want to try to cut costs.

Rear hub can be a heavy duty BMX hub with 14 mm axles.

Easy way to attach a sprocket WITHOUT having to spline an adapter.

Make a .2" thick 6" diameter steel plate with the standard kart sprocket bolt pattern. This way you will have a wide range of rear sprocket to choose from. In the center of the plate, make a hole larger than the splines of the rear cassette. This is where it gets easy. Make a step at the center to match the OD of the teeth of the standard bicycle sprocket, but only cutting in to the plate about halfway. This will allow you to center the bicycle sprocket on the plate and allows the student material to MIG weld the teeth of the sprocket to the adapter plate. Just have the student use a star pattern when welding to minimize warpage AND TAKE THEIR TIME! Allow the parts to cool after every other weld. You now have an adapter plate that has hardened steel splines but allows the use of larger aluminum kart sprocket.

If the students have access to a water jet, they can lighten the plate up by designing in a pattern, such as a sponsor's name, school name, etc... The students can even get a rough idea of how much it will weigh from their 3D models.

I agree somewhat about the caliper brakes in the rear. What I was referring to was using the rear wheel as a third braked wheel for the braking contest. I can't recall seeing a wheel with both a sprocket and a disk brake - but maybe it does exist. We don't have one, so my students were planning on putting a caliper on the third wheel for some extra brakeage.

Jeremie and I have both stated two options to put a rear drive wheel with disc brakes. I do not know about Jeremie, but Watertown runs three disc brakes with a rear single drive wheel. Just work with your bike supplier and they will make it happen. If they are stumped, find a new bike parts supplier and move on!

In Colby, we ran Gas cars and the motor was always on the wrong side and we did not want a jack shaft, so we had a local machine shop custom fabricate a hub from a student print to be driven with an opposite side disc brake mount :) That was fun! Not sure how good it was compared to Shimano, but it worked fine!

Jesse Domer, Watertown High School

We are able to put a disc brake on our single rear wheel but we haven't simply because our brakes are good enough to lock up the wheels in a timely matter (if you consider that desirable). We have therefore looked at reducing the weight to reduce our stopping distance.