

Milestone #6 – Continuing Vehicle Construction, Part II

DUE: 20 March

DESCRIPTION:

Continue the fabrication of your vehicle this and next week! **Your vehicle must be ready for a Rolling Frame inspection on Wednesday, 3 April, as stipulated in the syllabus.** That's 3 weeks from now.

The vehicle should be mechanically together at the inspection – motors and drivetrain should turn (not necessarily under its own power) and the brakes and steering should work. After Spring Break, you will concentrate more on electrical wiring, debugging, refining, and powered testing.

It is important to keep working now and preparing for fabrication time as your parts ship so you have an idea of what parts need to be made, how they should be made, and in what sequence you should build them. You should be aware of your design well enough to pace yourself through the next few milestones, which will focus exclusively on fabrication. Your Solidworks model should be nearing total completion – while some parts may still be “datasheet dimensions”, you should still update them once you have the part in-hand.

Parts Ordering:

Parts order will continue to be aggregated and sent every Wednesday. To request a purchase, send to the instructor and master of parts purchasing (charlesg@mit.edu) a **TEXT FILE**, with the following information for each item requested:

- **Vendor, [Part number], Quantity, or**
- **[Direct link to product (e.g. Amazon or eBay)], Quantity**

Please name your file something easily identifiable with your team members' names. For example, *SmithWilliams-20feb2013.txt* is acceptable, *stuff.txt* is not.

McMaster is encouraged if possible – the delivery turnaround is one to two days only. You are encouraged to organize with your classmates for bulk material orders to reduce cost per team.

Waterjet Queue:

Pursuant to the class focus on rapid prototyping and construction, waterjet access will be available. To submit files for waterjet cutting, email the instructor a **2D DXF** file and **Dimensioned technical drawing of each type of part** (there can be multiple copies of one part) exported from a Solidworks drawing of R2000-2002 format (do not use “Export to DXF/DWG” on a part face – this uses the latest version by default). Your parts may be individual or pre-tiled. Tiled parts and specific placement instructions must be approved by the instructor first.

The instructor will take your file and your plates of material and use the Building 35 (LMP) waterjet or the Hobby Shop waterjet to machine the parts. Files submitted by **End of lab Wednesday** will be turned around by **the following Tuesday by 1PM**, unless special arrangements are made.

FORMAT OF DELIVERABLE:

- 2-4 pages in your notebook documenting your progress this week.
- A list of the remaining steps you need to take in order to finish your vehicle mechanically – be detailed and specific as to the parts you need to use and what tools/machinery you will need to make them, as well as operations if applicable.

OTHER ACTIVITY: I will personally inspect your vehicle progress on Wednesday, 20 March. If your vehicle does not appear to be approaching mechanical integrity, you must present a completion plan which must include time spent outside of the mandatory lab hours (Regular 2.007 students have to do this also!) and date of anticipated completion.

RESOURCES:

Reading through the vehicle build reports for MIT student vehicles (links found in the STELLAR EV Resources document and on the sidebar of my website, etotheipiusone.net) will likely be helpful to your design and fabrication process.