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2.007 Design and Manufacturing I
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The 2.007 Kit List for 2005

This page contains the printable copy of the 2.007 kit parts. Consult this list if you ever have any questions. The web page is always the most up-to-date and is always the best source to check!

Students get to keep their machines intact. We only ask that students recycle unused components after the contest, especially motors!


Important Kit Related Notes:

1. Some items may vary slightly from what is listed on this web page (dimension, color, material property, etc).
2. If the quantity is specified as available in lab or available as justified, these items will not be present in your kit box. You must get them from the course staff or in the bins.
3. The quantities on the web page are correct. The quantities on any other page or this printed version may or may not be correct. Consult the website for the always correct number.
4. Please note that you must have a drawing before using the large machines (milling machines, lathes, water jet, etc). The shop guys will help you process the parts, but they will not make the parts for you. Drawings are not necessary, but are highly suggested, before processing materials using machines in the general area (belt sanders, drill presses, etc).
5. With the following exceptions, each machine must be constructed solely from materials provided in the kit.
 - o You may use additional fasteners and adhesives, but ONLY for fastening and joining (no ballast, caltrops, table sticking devices etc.).
 - o You may use washers as simple bearings and/or parts of a fastening system.
 - o You may use bolts under 1 inch long as posts of pivot joints, but not as structural elements.
 - o You may use lubricants, but only to reduce friction WITHIN your own machine (no oil slicks please).
 - o You may use any materials for non-functional decorations (make your machine look really cool).
6. The following items are not to be used inside the actual machine:
 - o Green FREM boxes and purple lids or the Rubbermaid boxes and their lids
 - o Catalogs and flyers
7. Not all models are available in all CAD software packages. Also, it is possible that solid models of parts are not available for parts that are in the kit. Some models may differ in length or some minor dimensions. If you are concerned about the accuracy of a solid model, you should create your own.






The 2.007 Kit List for 2005

1		One black permanent marker - Use it to write your name on everything in your kit	1 in kit
2		One set of assembly instructions for the Tamiya Kit with coupon for metric gears	1 in kit
3		16" x 16" x 3/8" birch plywood	1 in kit
4		6063-T6 Box Extrusion - 1" x 3" x 12" and 1/8" thick Note: limited replacements available if you damage this piece	1 in kit
5		6063-T6 Box Extrusion - 1" x 1" x 18" and 1/8" thick	1 in kit
6		6063-T6 Box Extrusion - 1" x 1" x 18" x 1/16" thick	4 in kit
7		6061-T6 Bar - 2" x 12" x 1/4" thick	1 in kit
8		6061-T6 Angle Bar - 1.5" x 1.5" x 12" and 1/4" thick	1 in kit
9		6061-T6 Rod - 1/4" x 18" (~6.35mm x 18")	1 in kit
10		6061-T6 Rod - 5/16" x 12" (~7.95mm x 12")	1 in kit

11		6061-T6 Rod - 5/16" x 18" (~7.95mm x 18")	2 in kit
12		5052-H32 Sheet - 18" x 18" x 1/16"	2 in kit
13		2011 Hex Rod - 5/16" by 12" - Sized to fit the 4in wheel	2 in kit
14		Plain Steel, 1/4" - 20 Thread Rod, 12" length	1 in kit
15		Strips 1" x 0.048"	up to 24" total length supplies are as available as justified
16		18" x 18" x 1/32" Steel Sheet	1 in kit
17		12" Long Piano Hinge	1 in kit
18		1/8" diameter x 36" Welding Rod	4 available in lab (To be used as structural elements only, NOT to be used as filler weight)
19		Delrin Rod 1" Diameter x 6" Length	1 in kit
20		Delrin Rod 2" Diameter x 4" Length	1 in kit
21		ABS Sheet 12" x 12" x 1/4"	2 in kit

22		Small PVC pipe - 1.0" I.D. x 18"	2 in kit
23		Large PVC pipe - 1.5" I.D. x 18"	2 in kit
24		Square HDPE Bar 1/2"x1/2" x6"	2 in kit
25		Four Inch Wheels - 4" diameter x 1" thick for 5/16" axle, 4" wheels may be traded for 3" while supplies last	4 in kit
26		Caster Wheels - 2" diameter x 13/16" thick x 2.5" high	2 in kit
27		Timing Belt - 4 feet long, 0.25" wide, 0.2" pitch	1 available with calculations
28		Pulleys - 1" diameter, mesh with timing belt	4 available with calculations
29		M3 Nylon Spacer - 3mm diameter	20 in kit
30		M6 Nylon Spacer- 6mm diameter	20 in kit
31		M8 Nylon Spacer- 8mm diameter	20 in kit
32		Nylon washer for 3/8" screw	20 in kit
33		Nylon washer for size 6 screw	20 in kit
34		Nylon washer for M8 screw	20 in kit

35		1/8" x 48" Buna-N Corde	Available as justified
36		3" x 24" x 1/16" Buna-N Sheet Stock	1 24" strip in kit
37		Rubber stopper	Available as justified from bins
38		Rubber Bands (3 sizes - 33, 62, 117B)	Available as justified from bins
39		Constant force spring	4 in kit
40		Compression spring	4 max from bins
41		Extension springs (3 sizes - small, medium, large)	4 max of each size from bins
42		Torsion spring (2 sizes - small and large for 1/4" shaft)	4 max of each size from bins
43		Spring pins	available in lab
44		Gear, Module 1, 12 Teeth	4 (coupon in kit)
45		Gear, Module 1, 24 Teeth	4 (coupon in kit)
46		Gear, Mod 1, 36 Teeth	4 (coupon in kit)
47		Nylon bevel gear, 24 Diametral Pitch, 24T	2 max from bins
48		Nylon bevel gear, 24 Diametral Pitch, 48T	2 max from bins
49		Nylon Rack - 24 Diametral Pitch, 1/4" face, 1/4" height, Mod 1 metric gears are similar enough to mesh with the rack	12" length from bins

50		Control Box Connector - Motor Plug (14 pin) Control Box Connector - Battery Plug	1 in kit
51		Control Box Connector - Battery Plug (4 pin)	1 in kit
52		1/4" electrical spade connectors	4 in kit
53		Wires for AMP Connector - You will receive only 12 wires. Additional wires will cost \$5 a piece!	12 in kit
		Some electrical tape for electrical insulation purposes (for electrical purposes only - no tying parts together!)	Available in your 2.670 tool box
		Loose wire in a variety of colors (for electrical purposes only - no tying parts together!)	As justified from bins
54	????	Handheld drill to be used in lab. Batteries will be used to power the machines. Make and model are to be determined.	1 in kit
55		Syringe 50 ml Shell Plunger	2 (max from bin)
56		Flanged Bearings (Manufacturer's info at http://www.nationalprecision.com/m45.htm , similar to part number SSRIF4)	4 (Available in lab with justification)
		25' of your choice of string from 2.007 rolls	Available in lab
57		Alcohol wipes	12 in kit
		An Assortment of Glues and Loctites	Available in lab 58
58		Two Part Epoxy in Bubble Packets - Additional adhesives can be purchased at any hardware or arts store.	20 in kit 5959
59		E-clips for 8mm shaft	~20 in kit
60		M6 Flat Push-On Retaining Clips	~20 in kit
61		M8 Flat Push-On Retaining Clips	~20 in kit
62		Magnetic Tape, Adhesive Backed - To be used for attaching control box only!	2 in kit
		Pop Rivets - 1/8" diameter, grip 0.062"-0.125"	Available in lab
63		Zip Tie Wraps - 4" length (0.6" max diameter in bundle)	100 in kit
64		Cable Tie Mount	5 in kit