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2.007 Design and Manufacturing I
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Downloadable Solid Models of Kit Parts in Solid Works and ProEngineer

Note: Not all models are available in all software packages. Also, it is possible that solid models of parts are available for parts that are not in the kit. See the kit list page for the definitive list of kit parts.

Useful Stuff

Picture	Description	Solid Works	ProEngineer
	Green Container	container.sldasm (157 Kb)	
	Purple Top	top.sldprt (444 Kb)	
	Green Bottom	bottom.sldprt (632 Kb)	



Actuators







Picture	Description	Solid Works	ProEngineer
	The Tamiya Motor	tamiya_motor.sldprt (119Kb)	tamiya_motor.prt (104Kb)
	The Tamiya Motor Assembly (includes motor and all gear box parts)	tamiya_sw.zip (238Kb)	tamiya_proe.zip (913Kb)
	Solenoid	solenoida.sldasm (34 Kb)	solenoida.asm (81Kb)
	Solenoid housing	slndbody.sldprt (43 Kb)	slndbody.prt (107Kb)
	Solenoid plunger	slndplunge.sldprt (60 Kb)	slndplunge.prt (173Kb)

Wood






Picture	Description	Solid Works	ProEngineer
	16" x 16" x 3/8" birch plywood		

Aluminum

Picture	Description	Solid Works	ProEngineer
	Box Extrusion 3" x 1" x 12" x 0.125 Thick	3x12 box.sldprt (30 Kb)	
	Box Extrusion 1" x 1" x 18" x 0.125 Thick	1x24 box.sldprt (30 Kb)	









	Box Extrusion 1" x 1" x 12" x 0.125 Thick	1x1x12 box.sldprt (30 Kb)	
	Bar 2" x 1/4" x 12"	2x1-4x12 bar.sldprt (27 Kb)	
	Block 5" x 1/2" x 5"	5x5x1-2block.sldprt (35 Kb)	
	Rod 1/4" x24"	1-4x24 rod.sldprt (27 Kb)	
	Rod 3/8" x 12"	3-8x12 rod.sldprt (25 Kb)	
	1/16" x 18" x 18" sheet	18x18x1-16 sheet.sldprt (27 Kb)	


Steel

Picture	Description	Solid Works	
	Rod 1/2" x12"	1-2x12 rod.sldprt (27 Kb)	
	Rod 1/4" x 24"	1-4x24 rod.sldprt (45 Kb)	
	Hex Rod	hex rod.sldprt (38 Kb)	
	Strips 1" x 0.048"	1 strip.sldprt (52 Kb)	
	Piano Hinges 12" P1.prt P2.prt P3.prt	piano hinge.sldasm (192 K b) P1.prt (139 Kb) P2.prt (271 Kb) P3.prt (51 Kb)	




	Welding Rod 1/8" x 36"	1-8x36 welding rod.sldprt (26 Kb)	
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Plastic




Picture	Description	Solid Works	
	Black Plastic Wheel	black wheel.sldprt (233 Kb)	
	Delrin rod 1" dia x 6"	1in x6 rod.sldprt (27 Kb)	
	Delrin rod 2" dia x 3"	2in x3 rod.sldprt (28 Kb)	
	ABS sheet 12" x 12" x 1/4"	12x12x1-4 abs.sldprt (28 Kb)	
	Small PVC pipe 1.32" O.D. x 1.03" I.D. x 24"	small_PVC.sldprt (76 Kb)	
	Large PVE pipe 1.66" O.D. x 1.38" I.D. x 24"	large_PVC.sldprt (83 Kb)	
	HDPE Rod 1/2" x 1/2" x 6"	1-2square rod 6in.sldprt (27 Kb)	
	1/4 Nylon Snap-in Bearings	nylon bearing.sldprt (47 Kb)	
	1/4 Nylon Snap-in Bearings 2	nylon bearing2.sldprt (53 Kb)	
	Nylon Washer	washer.sldprt (29 Kb)	
	Nylon washer	washer2.sldprt (29 Kb)	

	Nylon washer	nylon washer.sldprt (29 Kb)	
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Rubber

Picture	Description	Solid Works	
	1/4" x 48" buna cord	1-4x48 buna cord.sldprt (27 Kb)	
	6" x 24" x 1/16" buna sheet	6x24x1/16 buna sheet.sldprt (28 Kb)	
	Rubber Stopper	rubber stopper.sldprt (30 Kb)	

Springs

Picture	Description	Solid Works	
	Compression Spring	compression.sldprt (467 Kb)	
	Constant force spring	constant force spring.sldprt (40 Kb)	
	Tension Spring	tension.sldprt (146 Kb)	





Gears

Picture	Download	Solid Works	
	The 24 pitch 12 tooth gear		gear12t.prt (115Kb)
	The 24 pitch 16 tooth gear White	16t-24p white gear.sldprt (32 Kb)	
	The 24 pitch 18 tooth gear		gear18t.prt (92Kb)
	The 24 pitch 24 tooth gear White	24t-24p white gear.sldprt (45 Kb)	
	The 24 pitch 25 tooth gear		gear25t.prt (182Kb)
	The 24 pitch 32 tooth gear White	32t-24p white gear.sldprt (44 Kb)	
	The 24 pitch 24 tooth gear Black	24t-24p black gear.sldprt (70 Kb)	
	The 24 pitch 42 tooth gear		gear42t.prt (212Kb)
	The 24 pitch 48 tooth gear Black	48t-24p black gear.sldprt (49 Kb)	gear48t.prt (229Kb)
	The gears for the Black&Decker motor	black and decker gear.sldprt (30 Kb)	black and decker gear.prt (57Kb)





	Brass Rack	rack.sldprt (342 Kb)	
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Note: The displayed diameter of all gears is the pitch diameter. To set the correct distance between any two gears, simply bring the surface of the pitch diameters into contact

Miscellaneous

Picture	Description	Solid Works	
	Actuator Connector	connector.sldprt (98 Kb)	
	E-clip	e-clip.sldprt (38 Kb)	
	Magnet	magnet.sldprt (50 Kb)	
	Syringe	syringe.sldasm (78 Kb)	
	Shell	shell.sldprt (55 Kb)	
	Plunger	plunger.sldprt (98 Kb)	

Miscellaneous

Picture	Description	Solid Works	
UNC 4-40			
	4-40 screw, 0.25" to 0.625" long	bolt_4_40.sldprt (49 Kb)	bolt_4_40.prt (114Kb)
	4-40 nut	nut_4_40.sldprt (41 Kb)	nut_4_40.prt (76Kb)
	4-40 washer	washer_4_40.sldprt (33 Kb)	washer_4_40.prt (54Kb)
UNC 6-32			
	6-32 screw, 0.5" to 1.5" long	bolt_6_32.sldprt (50 Kb)	bolt_6_32.prt (114Kb)
	6-32 nut	nut_6_32.sldprt (42 Kb)	nut_6_32.prt (76Kb)
	6-32 washer	washer_6_32.sldprt (33 Kb)	washer_6_32.prt (55Kb)
UNC 8-32			
	8-32 screw, 0.5" to 0.75 long	bolt_8_32.sldprt (50 Kb)	bolt_8_32.prt (114Kb)
	8-32 nut	nut_8_32.sldprt (42 Kb)	nut_8_32.prt (77 Kb)
	8-32 washer	washer_8_32.sldprt (34 Kb)	washer_8_32.prt (54Kb)
UNC 10-32			
	10-32 screw, 0.5" to 2" long	bolt_10_32.sldprt (50 Kb)	bolt_10_32.prt (114Kb)
	10-32 nut	nut_10_32.sldprt (86 Kb)	nut_10_32.prt (77Kb)
	10-32 washer	washer_10_32.sldprt (33 Kb)	washer_10_32.prt (55Kb)

Note: The diameter for all holes that are actually threaded, is the mean thread size. This is labeled Decimal Equivalent column in the [Tap and Drill Handout](#) below.

Also: bolt files are user defined features (UDF) and contain all lengths available in the shop. Simply select the appropriate length from the window that opens up as you place the bolt. For any other lengths, choose "generic" and modify the bolt length yourself.

Tap and Drill Sizes

Tap and Drill Table For 2.007 Machine Screws

Size of Screw		Threads Per inch [per mm]	Tap Drills		Clearance Hole Drills			
No. or dia	Decimal equivalent (inches)		Drill size standard [metric]	Decimal equivalent	Close Fit		Free Fit	
					Drill size equiv.	Decimal	Drill size equiv.	Decimal
#2	0.086	56	50	0.0700	48	0.0760	46	0.0810
#4	0.112	40	43	0.0890	32	0.1160	30	0.1285
#6	0.138	32	36	0.1065	27	0.1440	25	0.1495
#8	0.164	32	29	0.1360	18	0.1695	16	0.1770
#10	0.190	32	21	0.1590	9	0.1960	7	0.2010
1/4	0.250	20	7	0.2010	F	0.2570	H	0.2660
3/8	0.375	16	5/16	0.3125	W	0.3860	25/64	0.3906
3/4	0.750	16	21/32	0.6562	49/64	0.7656	25/32	0.7812
M2	0.079	[0.4]	[1.60]	0.0630	45	0.0820	43	0.0890
M2.5	0.098	[0.45]	[2.05]	0.0807	39	0.0995	37	0.1040
M3	0.118	[0.5]	[2.50]	0.0984	1/8	0.1250	29	0.1360
M4	0.157	[0.7]	[3.30]	0.1299	20	0.1610	18	0.1695
M6	0.236	[1]	[5.00]	0.1968	C	0.2420	1/4	0.2500
M6	0.314	[1]	[7.00]	0.2756	P	0.3230	21/64	0.3281

Drill Sizes

60	0.0400	38	0.1015	17	0.1730	F	0.2570	24/64	0.3906
59	0.0410	37	0.1040	16	0.1770	G	0.2610	X	0.3970
58	0.0420	36	0.1065	15	0.1800	17/64	0.2656	Y	0.4040
57	0.0430	7/64	0.1094	14	0.1820	H	0.2660	13/32	0.4062
56	0.0465	35	0.1100	13	0.1850	I	0.2720	Z	0.4130
3/64	0.0469	34	0.1110	3/16	0.1875	J	0.2770	27/64	0.4219
55	0.0520	33	0.1130	12	0.1890	K	0.2810	7/16	0.4375
54	0.0550	32	0.1160	11	0.1910	9/32	0.2812	29/64	0.4531
53	0.0595	31	0.1200	10	0.1935	L	0.2900	15/32	0.4688
1/16	0.0625	1/8	0.1250	9	0.1960	M	0.2950	31/64	0.4844
52	0.0635	30	0.1285	8	0.1990	19/64	0.2969	1/2	0.5000
51	0.0670	29	0.1360	7	0.2010	N	0.3020	17/32	0.5312
50	0.0700	28	0.1405	13/64	0.2031	5/16	0.3125	9/16	0.5625
49	0.0730	9/64	0.1406	6	0.2040	O	0.3160	19/32	0.5938
48	0.0760	27	0.1440	5	0.2055	P	0.3230	5/8	0.6250
5/64	0.0781	26	0.1470	4	0.2090	21/64	0.3281	21/32	0.6562
47	0.0785	25	0.1495	3	0.2130	Q	0.3320	11/16	0.6875
46	0.0810	24	0.1520	7/32	0.2188	R	0.3390	23/32	0.7188
45	0.0820	23	0.1540	2	0.2210	11/32	0.3438	3/4	0.7500
44	0.0860	5/32	0.1562	1	0.2280	S	0.3480	25/32	0.7812
43	0.0890	22	0.1570	A	0.2340	T	0.3580	13/16	0.8125
42	0.0935	21	0.1590	15/64	0.2344	23/64	0.3594	27/32	0.8438
3/32	0.0938	20	0.1610	B	0.2380	U	0.3680	7/8	0.8750
41	0.0960	19	0.1660	C	0.2420	3/8	0.3750	29/32	0.9062
40	0.0980	18	0.1695	D	0.2460	V	0.3770	15/16	0.9375
39	0.0995	11/64	0.1719	E(1/4)	0.2500	W	0.3860	31/32	0.9688