

Coweta Grand Prix Basic Racer Frame Materials List

Qty	Item	Lowes Item #	Aisle	Bay	Cost	Total Cost
2	Hillman 1/2-in x 3-ft Coarse Thread Zinc-Plated Steel Threaded Rod	69889	15	20	\$7.48	\$14.96
4	Arnold 8-in Front Wheel for Universal Application	446994	28	9	\$5.99	\$23.96
12	Hillman 1/2-in Zinc-plated Standard Flat Washer	63309	15	8	\$0.25	\$3.00
6	Hillman 1/2-in x 13 Zinc-plated Steel Nylon Insert Nut	63406	15	8	\$0.26	\$1.56
2	RELIABILT 1/2-in x 4-in x 2-ft Unfinished Clear S4S Radiata pine Common Softwood Board	50257	19	15	\$3.15	\$6.30
2	Hillman 1/2-in x 6-in Zinc-Plated Coarse Thread Hex Bolt	63377	15	10	\$1.93	\$3.86
1	Grip-Rite #9 x 2-1/2-in Yellow zinc Interior Wood screws (85 -Per Box)	787548	15	23	\$9.48	\$9.48
1	23/32-in x 2-ft x 2-ft Pine Sanded Plywood	7709	19	22	\$12.52	\$12.52
2	RELIABILT Black Screen/Storm door Replacement Pull handle	803447	16	24	\$4.98	\$9.96
3	Interfor 2-in x 4-in x 8-ft Euro spruce Kiln-dried Stud	6005	21	1	\$3.85	\$11.55
1	Power Pro One #10 x 1-1/2-in Epoxy Exterior Wood screws (15 -Per Box)	875082	15	2	\$3.98	\$3.98
					Total	\$101.13
					With Tax	\$108.21

STEPS

1. Cut Wooden Axle Components:

- a. Cut Wooden Axle Base (2 x 4) to 31 ½” (This is for front axle)
- b. Cut Wooden Axle Base (2 x 4) to 31 ½” (This is for rear axle)
- c. Cut Front Axle Riser Block (2 x 4) to 6”
- d. Cut Front Axle Riser Block (2 x 4) to 6”
- e. Cut Front Axle Wooden Cap Block (2 x 4) to 16 ¾”
- f. Cut Seat Back Block (2 x 4) to 3 ½”
- g. Cut the seat back support to 17”
- h. Cut a 45 degree cut on one end and a 20 degree cut on the other end of the seat back support
- i. Cut Brake (2 x 4) to 24”
- j. Cut Brake Brace (2 x 4) to 24”
- k. Cut Seat to 24” x 14” (If you buy a pre-cut square of plywood from item list, the seat back will be the remaining piece)

2. Create Channel for Treaded Rod Axle

- a. Measure to center of the Wooden Axle Base – 1 ¾” from edge of wood
 - i. Mark multiple times along the length of the base
 - ii. Use a straight edge to create a line connecting the marks
- b. Measure ¼” to the right of the center line just created in step 2a
 - i. Mark multiple times along the length of the base
 - ii. Use a straight edge to create a line connecting the marks
- c. Measure ¼” to the left of the center line just created in step 2a
 - i. Mark multiple times along the length of the base
 - ii. Use a straight edge to create a line connecting the marks
- d. Set saw blade depth on saw to 9/16”
- e. Cut along left line, center line, and right line
- f. Use a small chisel or flat head screwdriver to break strips of wood away
- g. Check to make sure the threaded rod sits neatly in the channel and if below the face of the wooden axle base
- h. Repeat steps 2a – 2g for the second wooden axle base

3. Assemble Threaded Rod

- a. Tighten one stop hex nut onto one end of the threaded rod. Only tighten enough that the end of the rod is even with the end of the hex nut for now.**
- b. Slide a flat washer onto the rod from the end that does not have the hex nut**
- c. Slide a wheel onto the rod**
- d. Slide a flat washer onto the rod**
- e. Slide a flat washer onto the rod**
- f. Slide a wheel onto the rod**
- g. Slide a flat washer onto the rod**
- h. Tighten a stop hex nut onto the end of the rod the same as in step 3a.**
- i. Repeat steps 3a – 3h for the second axle**

4. Assemble Rear Axle

- a. Place the assembled threaded rod assembly from step 3 into the channel of one wooden axle base.**
- b. Center the ½” x 4” x 2’ pine board on the channel side of the wooden axle base**
- c. Drill 8 pilot holes through the pine board and install 8 1 ½” screws**
- d. Tighten the hex nuts on the end of the rod to remove any wobble of the tires, but not too tight to limit wheel rotation**

5. Assemble Front Axle

- a. Place the assembled threaded rod assembly from step 3 into the channel of one wooden axle base.**
- b. Center the ½” x 4” x 2’ pine board on the channel side of the wooden axle base**
- c. Drill 8 pilot holes through the pine board and install eight 1 ½” screws**
- d. Tighten the hex nuts on the end of the rod to remove any wobble of the tires, but not too tight to limit wheel rotation**
- e. Measure 23 ¼” from one end of the wooden axle base on the top side and mark a line**
- f. Measure 23 ¼” from the other end of the wooden axle base on the top side and mark a line**
- g. Place one wooden axle riser block on the wheel side of the line marked in 5e and secure with three to four 2 ½” screws**
- h. Place one wooden axle riser block on the wheel side of the line marked in 5f and secure with three to four 2 ½” screws**
- i. The space between the two riser blocks should be 4 ½”**
- j. Place the wooden axle cap block on top of the riser blocks and secure it to the riser blocks with three to four 2 ½” screws into each block**

6. Install Center Frame Support

- a. Measure 14” from one end of the rear wooden axle base and make a mark**
- b. Measure 14” from the other end of the rear wooden axle base and make a mark**
- c. Place a full 2 x 4 x 96” board inside the two marks made from 6a and 6b. The end of the board can be even with the back edge of the axle base or can extend several inches past.**
- d. Secure the 2 x 4 to the axle base with four 2 ½” screws.**

7. Temporary Install of Front Axle Assembly

- a. Slide the opposite end of the 2 x 4 x 96 board into the 4 ½” opening in the center of the front axle until several inches are revealed on the other side of the axle assembly**

8. Install Seat Assembly

- a. Measure from the back edge of the rear axle assembly along the center frame support 13” and make a mark**
- b. Measure from the back edge of the rear axle assembly along the center frame support 41 ¾” and make a mark**
- c. Place the 24” x 14” at the mark made in step 8b. The seat should be on the rear wheel side of the mark**
- d. Center the seat on the center frame support and secure it with several 1 ½” screws**
- e. Place the seat back block at the mark from step 8a. The block should be on the seat side of the mark.**
- f. Secure the block with two to three 2 ½” screws**
- g. Place the seat piece of plywood between the seat and the seat back block**
- h. Install the seat back support with two 1 ½” screws through the plywood and two 2 ½” screws into the center frame support (see seat diagram illustration for further details)**
- i. Install a handle on the left side of the seat were it is comfortable for the rider to grab**

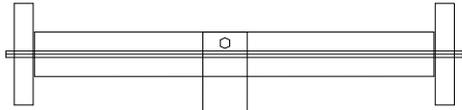
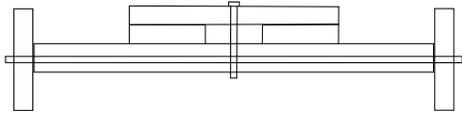
9. Install Front Axle Assembly

- a. Slide the front axle assembly down the center frame support towards the seat to the appropriate distance for the racer to sit comfortably in the seat with their backs against the back rest and their feet rest against the front axle assembly.**
- b. Make a mark one or two inches from the front side of the axle assembly on the center support frame**
- c. Make a mark at the front edge of the axle assembly on the center support frame**
- d. Slide the axle assembly out of the way and cut the center support frame at the mark made in step 9b**
- e. Return the front assembly to the mark made in step 9c**

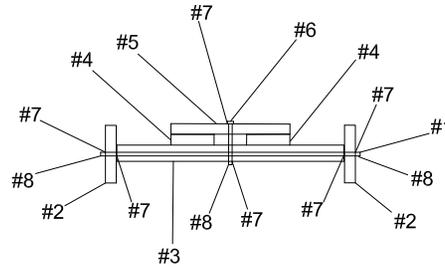
- f. Measure 8 3/8" from one end of the wooden axle cap block and make a mark
- g. Measure 7/8" from the front edge of the wooden axle cap block at the mark made in step 9f
- h. Center the center support frame in the 4 1/2" opening
- i. At the intersection of the marks from step 9f and 9g and drill a 1/2" hole as deep as the drill bit allows.
- j. If the drill bit does not allow to travel out the bottom of the front axle assembly, remove the top cap block, slide the center frame support out of the way and finish drilling through the front axle assembly
- k. Re-install the cap block and center support
- l. Put a flat washer onto a 6" hex bolt and then hammer it through the hole just drilled
- m. Install a flat washer and stop hex nut onto the end of the hex nut
- n. Tighten the stop hex, but not too tight to prevent the front axle assembly from pivoting

10. Install Brake Assembly

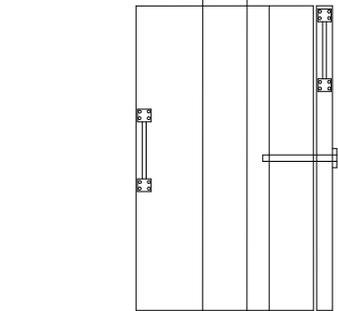
- a. Hold the brake brace under the right edge of the seat and secure with either 1 1/2" or 2 1/2" screws.
- b. Measure 12" from the end of the brake brace and make a mark
- c. Measure 1 1/2" from the top of the seat to the center of the brace at the mark made in step 10b
- d. Drill a 1/2" hole at the intersection of steps 10b and 10c all the way through the brake brace
- e. Measure 12" from the end of the brake and make a mark
- f. Measure 1 1/2" from the edge of the brake to the center of the brake at the mark made in step 10e.
- g. Drill a 1/2" hole through the brake
- h. Install a flat washer onto the 6" hex bolt and hammer the bolt through the brake and brake brace
- i. Install a flat washer and stop hex nut onto the end of the hex nut
- j. Tighten the stop hex, but not too tight to prevent the brake from pivoting
- k. Allow the racer to sit on the frame and install the brake handle at the appropriate place within reach anywhere on the front half of the brake



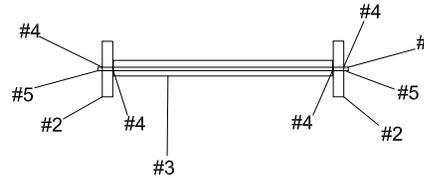
Front Axle Assembly



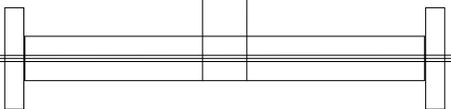
Front Axle Assembly Components			
QTY	Part #	Part Description	Dimensions
1	#1	Threaded Rod	1/2" x 3'
2	#2	Wheel	8"
1	#3	Wooden Axle Base (2 x 4)	1 1/2" x 3 1/2" x 31 1/2"
2	#4	Wooden Axle Riser Blocks	1 1/2" x 3 1/2" x 6"
1	#5	Wooden Axle Cap Block	1 1/2" x 3 1/2" x 16 3/4"
1	#6	Front Axle Steering Bolt	1/2" x 6"
6	#7	Flat Washer	1/2"
3	#8	Stop Hex Nut	1/2"



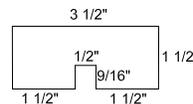
Rear Axle Assembly



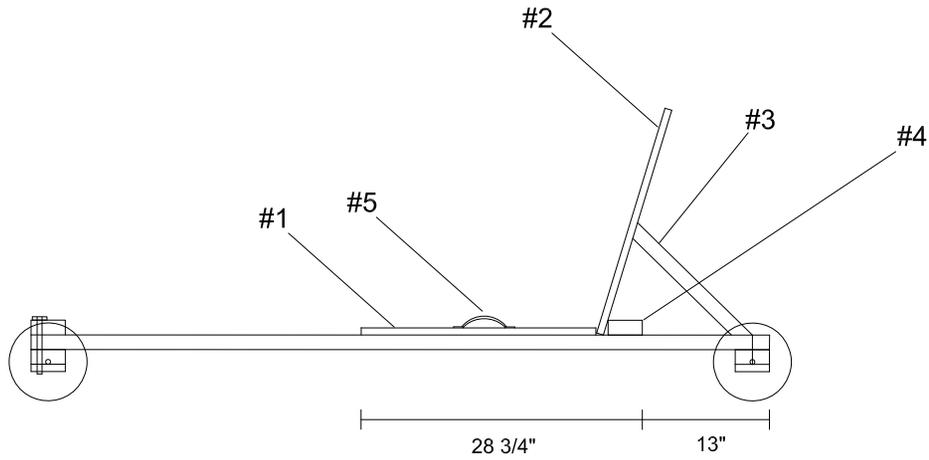
Front Axle Assembly Components			
QTY	Part #	Part Description	Dimensions
1	#1	Threaded Rod	1/2" x 3'
2	#2	Wheel	8"
1	#3	Wooden Axle Base (2 x 4)	1 1/2" x 3 1/2" x 31 1/2"
6	#4	Flat Washer	1/2"
3	#5	Stop Hex Nut	1/2"



Wooden Axle Base (Front and Rear)

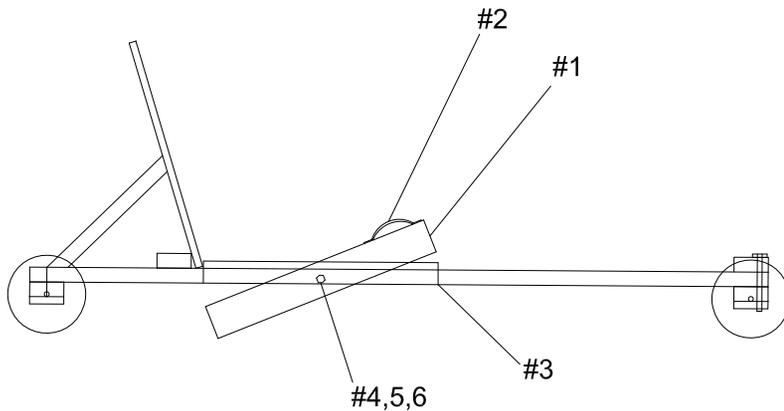


Seat Assembly



Seat Assembly Components			
QTY	Part #	Part Description	Dimensions
1	#1	Seat	24" x 14"
1	#2	Seat Back	24" x 10"
1	#3	Seat Back Support	1 1/2" x 3 1/2" x 17"
1	#4	Seat Back Block	1 1/2" x 3 1/2" x 3 1/2"
1	#5	Handle	6 1/2"

Brake Assembly



Brake Assembly Components			
QTY	Part #	Part Description	Dimensions
1	#1	Brake	1 1/2" x 3 1/2" x 24"
1	#2	Brake Handle	6 1/2"
1	#3	Brake Brace	1 1/2" x 3 1/2" x 24"
1	#4	Brake Bolt	1/2" x 6"
2	#5	Flat Washer	1/2"
1	#6	Stop Hex Nut	1/2"