Meccano Instructions For Outfit 00+

A combination of models from vintage Meccano manuals of the 1920s, and new models designed by Spanner members for the Christmas Challenge 2008.

Outfit conceived and designed by Peter Harwood
Manual by Charles Steadman

A few useful hints

It will be noticed that with each model in this Book of Instructions is given a list of the parts required to build it. For the first few models it is a good plan to lay out on the table all the parts required for the one it is proposed to build, and put the remainder of the Outfit to one side. To help you to pick out the correct parts for your model a complete list of Meccano parts is given on the next page, and all the principal parts are illustrated. There is no need, however, to measure the parts to find out which is which, as the size is easily found from the number of holes. All Meccano holes are spaced ½" apart, so that by counting two holes to the inch the size of a part can be found at once. For instance, Part No.2 is listed as a 5½" Perforated Strip, so you look in your Outfit for a Strip with eleven holes. Similarly No.17 is a 2" Axle, so you look for an Axle that is the same length as four holes of a Strip. By the time a few models have been built the names of the parts will have become familiar.

It is a good idea to start by getting all the parts out of the box and checking the quantities against the list on the next page. This will help you to recognise the different parts and let you check that every part is present before you start.

Beginners sometimes wonder which section of a model should be built first. There cannot be any definite rules for this, as it depends on the design of the model. In stationary models the base usually should be built first. In most of the small models a 5 ½" x 2 ½" Flanged Plated forms an important part of the structure, and often the best plan is to start building by bolting parts to this Plate. For other models a good general rule is that the sections that form supports for a number of other parts should be built first.

During the construction of a model it is best to screw up the nuts with the fingers, followed by a light turn with the screwdriver, leaving the final tightening until all the parts are connected up.

The importance of Lock-nutting

In some models it is necessary to join certain parts together so that, although they cannot come apart, they are free to pivot or move in relation to one another. To do this the parts are bolted together as usual, but the nut is not screwed up tightly, so that the parts are not gripped. Then, to prevent the nut from unscrewing, a second nut is screwed up tightly against it, the first nut being held with a spanner. This method of using a second nut is known as Lock-nutting.

When you have finished

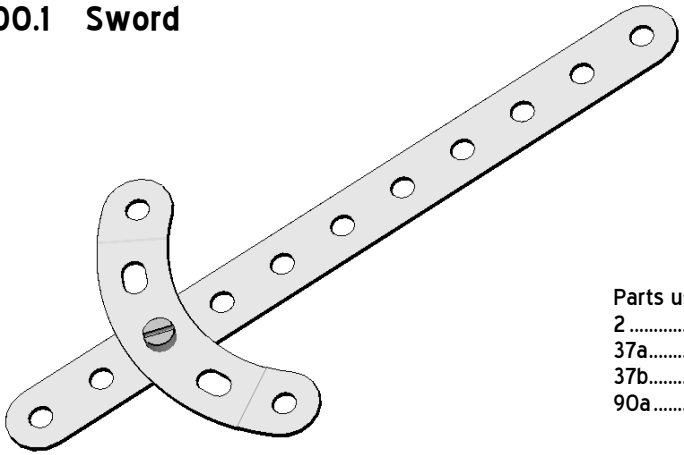
When you have finished with this outfit, leave it in the same condition you found it. Take any models apart and check the quantity of parts against the list on the next page.

Meccano parts in this outfit

Part No.	Description	Quantity
2	Perforated Strip, 5½"	4
5	Perforated Strip, 2½"	6
10	Fishplate	4
11	Double Bracket	1
12	Angle Bracket	6
16	Axle Rod, 3½"	2
17	Axle Rod, 2"	2
19s	Crank Handle	1
22	Pulley, 1" with boss	4
24	Bush Wheel	1
34	Spanner	2
35	Spring Clip	8
36	Screwdriver	1
37a	Nut	25
37b	Bolt	25
38	Washer	8
40	Hank of Cord	1
44	Bent Strip, Stepped	1
48a	Double Angle Strip, 2½" x ½"	2
52	Flanged Plate, 5½" x 2½"	1
57c	Hook	1
90a	Curved Strip, 2½"	2
111c	3/8" Bolt	4
125	Reverse Angle Bracket	1
126	Trunnion	2
126a	Flat Trunnion	2
142c	Tyre for 1" pulley	4
155	Rubber Ring for 1" pulley	4

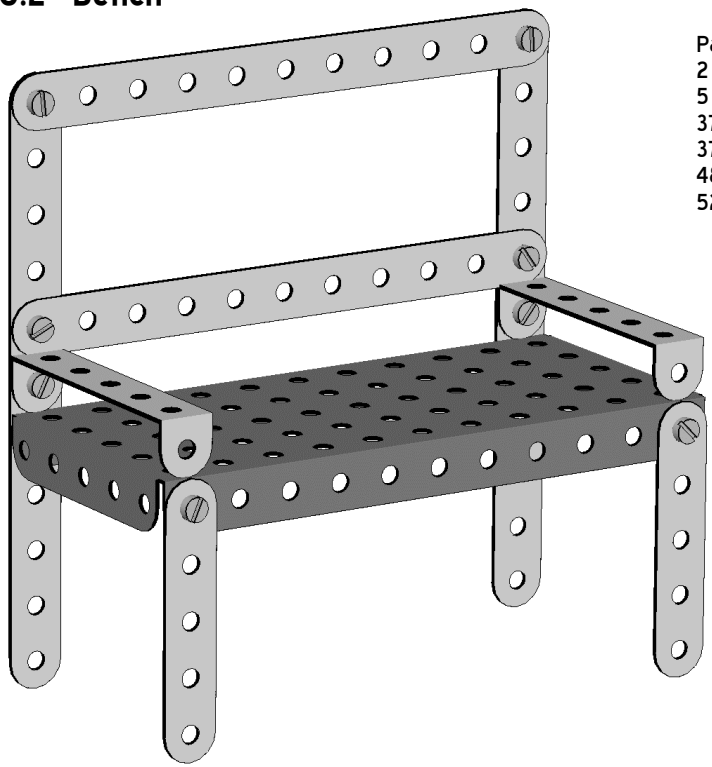
Always check you have all the parts you need before starting building, and when you have finished please count the parts to make sure none are missing.

00.1 Sword



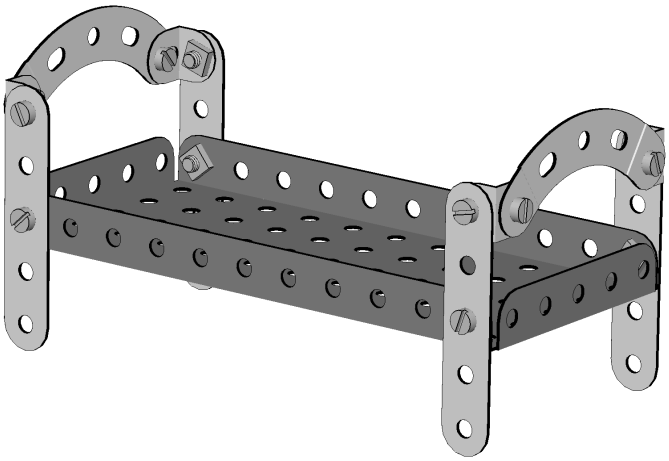
Parts used:
2 1
37a.....1
37b.....1
90a.....1

00.2 Bench



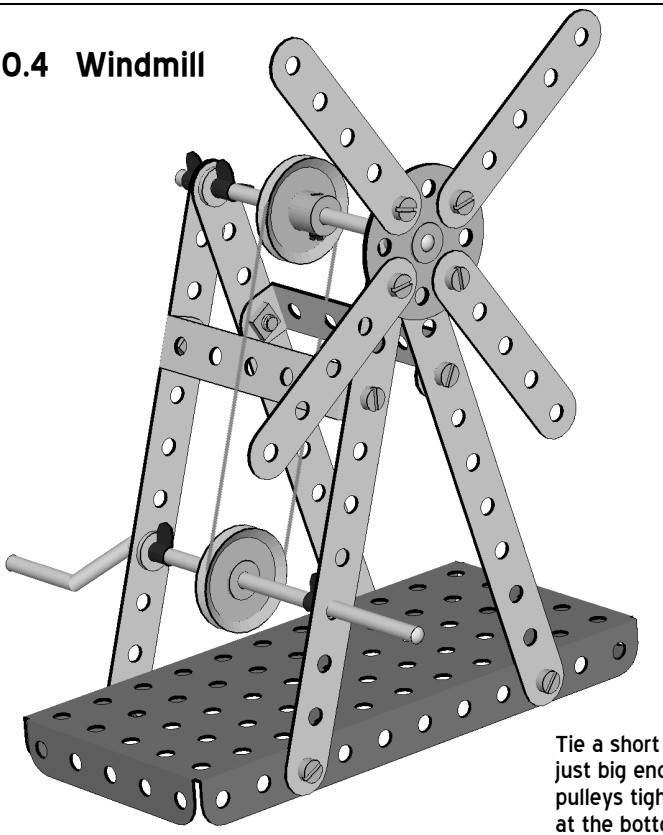
Parts used:
2 4
5 2
37a.....10
37b.....10
48a 2
52.....1

00.3 Crib



Parts used:
5 4
12 4
37a.....12
37b.....12
52.....1
90a 2

00.4 Windmill

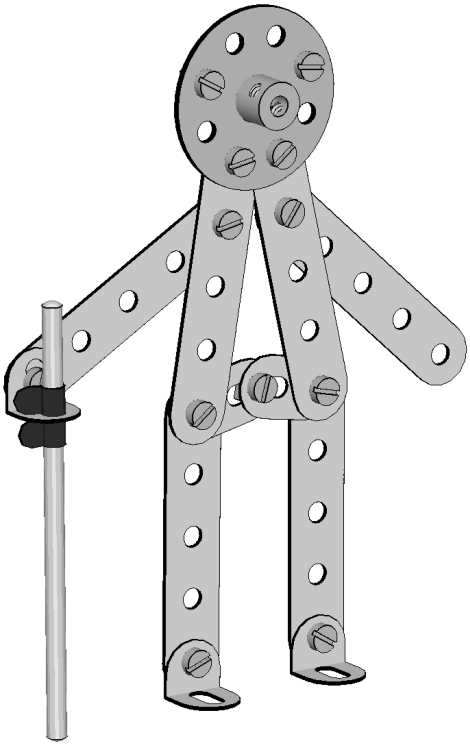


Parts used:
2 4
5 4
16 1
19s.....1
22.....2
24.....1
35.....5
37a.....12
37b.....12
38 5
48a 2
52.....1

Tie a short piece of string into a loop just big enough to fit over the two pulleys tightly, and then the handle at the bottom will turn the sails.

00.5 Meccano Man

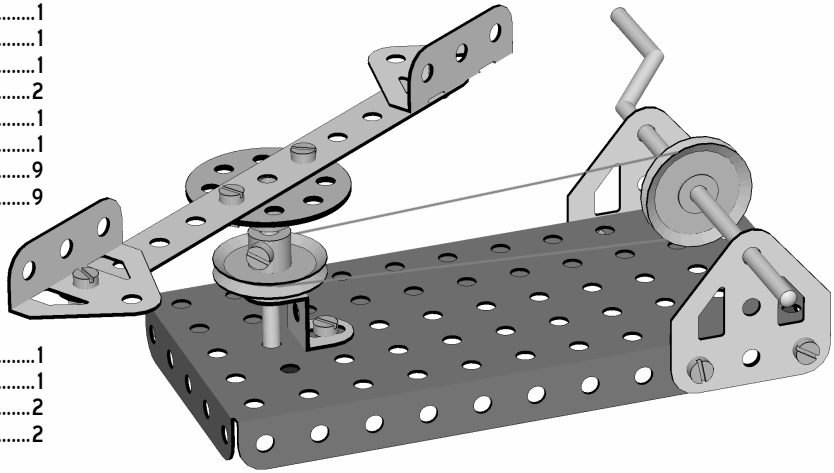
Parts used:
5 6
10.....2
12 3
16 1
24.....1
35 2
37a.....13
37b.....13



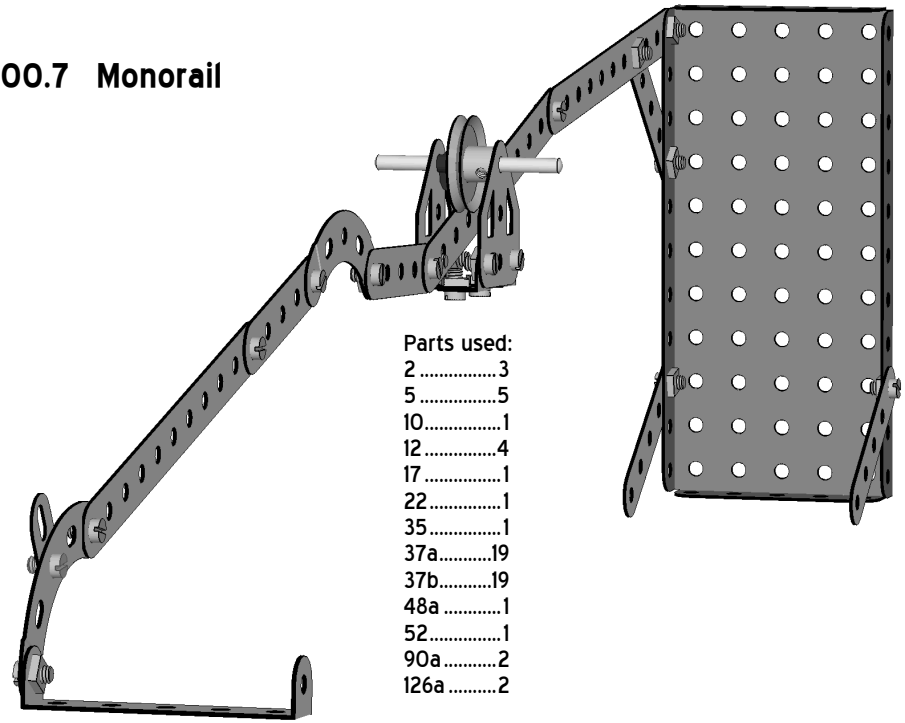
00.6 Roundabout

The loop of string in this model can drive the roundabout even though the two pulleys aren't pointing in the same direction.

Parts used:
2 1
17 1
19s.....1
22.....2
24.....1
35.....1
37a.....9
37b.....9
52.....1
125.....1
126.....2
126a 2



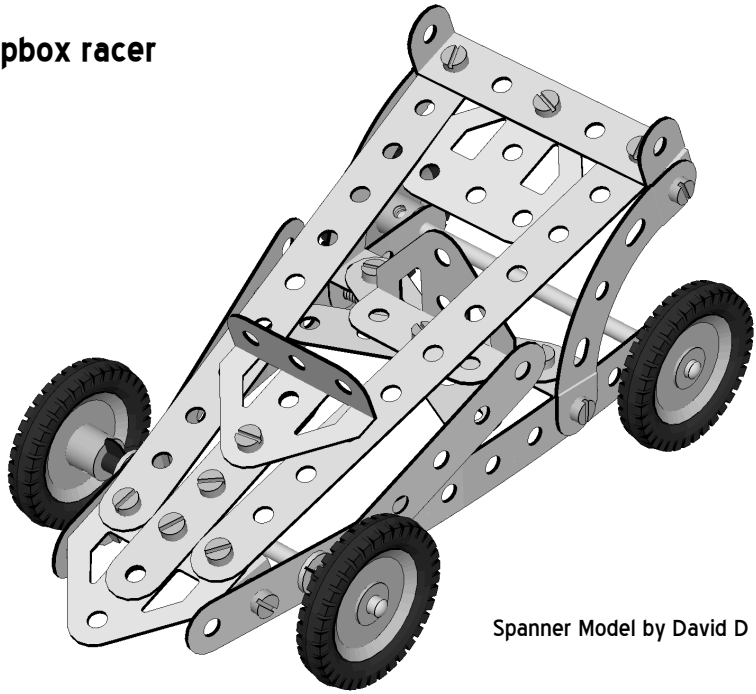
00.7 Monorail



Parts used:
2 3
5 5
10.....1
12.....4
17.....1
22.....1
35.....1
37a.....19
37b.....19
48a 1
52.....1
90a.....2
126a 2

00.8 Soapbox racer

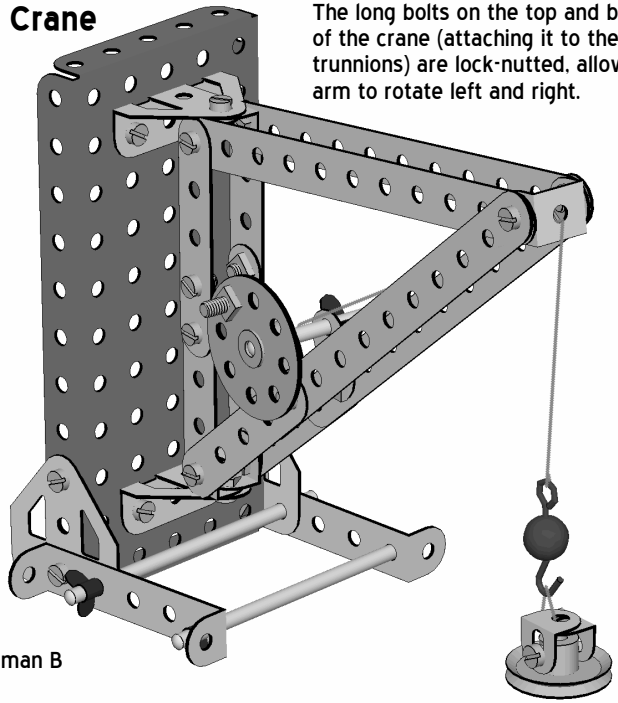
Parts used:
2 4
5 5
12.....6
16.....2
22.....4
35.....2
37a.....18
37b.....18
38.....4
48a 1
90a.....2
126.....2
126a 2
142c 4



Spanner Model by David D

00.9 Foundry Crane

Parts used:
2 4
5 6
10.....2
11 1
12 6
16 2
17 1
22 1
24 1
35 5
37a..... 25
37b.....20
48a 2
52 1
57c.....1
111c.....3
126.....2
126a 2



The long bolts on the top and bottom of the crane (attaching it to the trunnions) are lock-nutted, allowing the arm to rotate left and right.

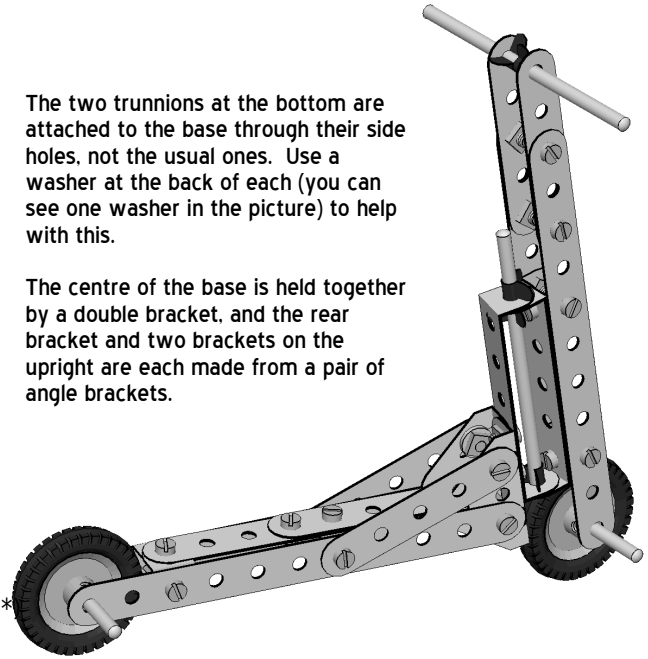
Spanner model by Norman B

00.10 Scooter

Parts used:
2 4
5 6
11 1
12 6
16 2
17 2
22 2
35 6
37a..... 23
37b..... 23
38 6
48a 2
69a.....2
126.....2
142c 2

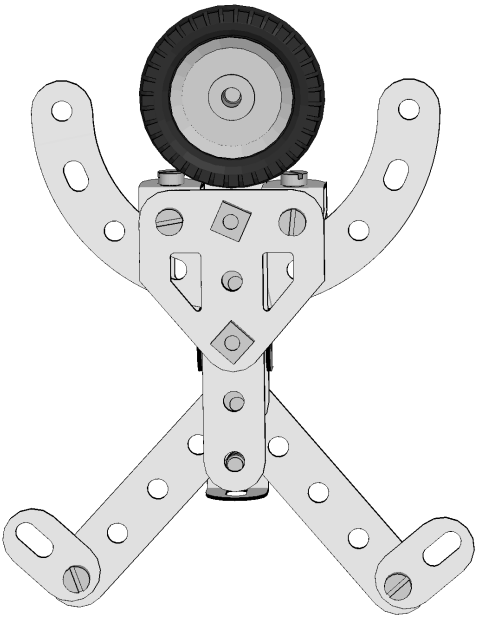
The two trunnions at the bottom are attached to the base through their side holes, not the usual ones. Use a washer at the back of each (you can see one washer in the picture) to help with this.

The centre of the base is held together by a double bracket, and the rear bracket and two brackets on the upright are each made from a pair of angle brackets.



Spanner model by Chris F (*

00.12 Football Fan

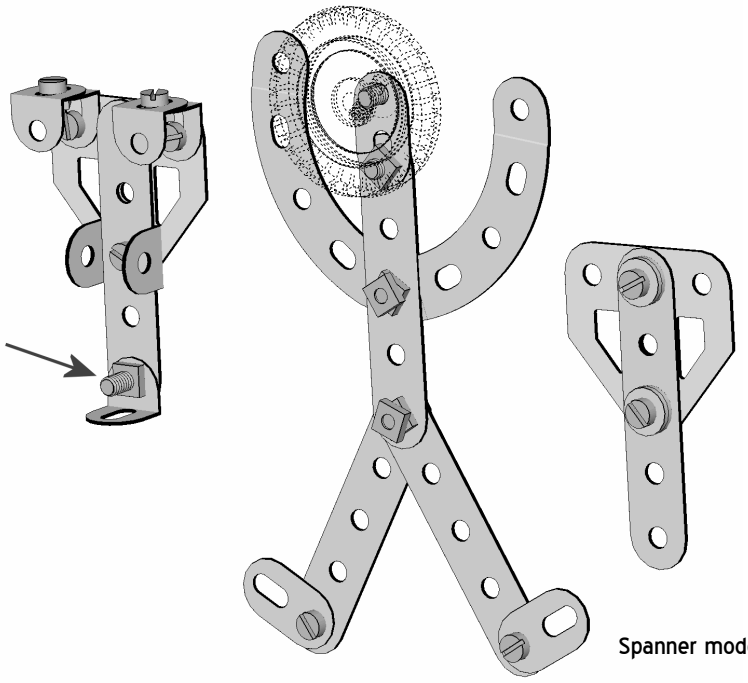


Make the three separate parts (frame, body, and front) as shown below. The bolt on the frame marked with an arrow is the long bolt (part 111c).

Use a standard bolt and two nuts to lock-nut the arms and legs on to the body.

Note the two washers under the head of each bolt on the 'front' of the man, in the third picture below.

Place the body into the frame, and bolt the front on to the frame at the shoulders. Make sure the front is the right way around as shown to the right. When complete, hold the figure from behind by the double bracket at his waist, and move the head up and down. The arms and legs will leap up and down in celebration!



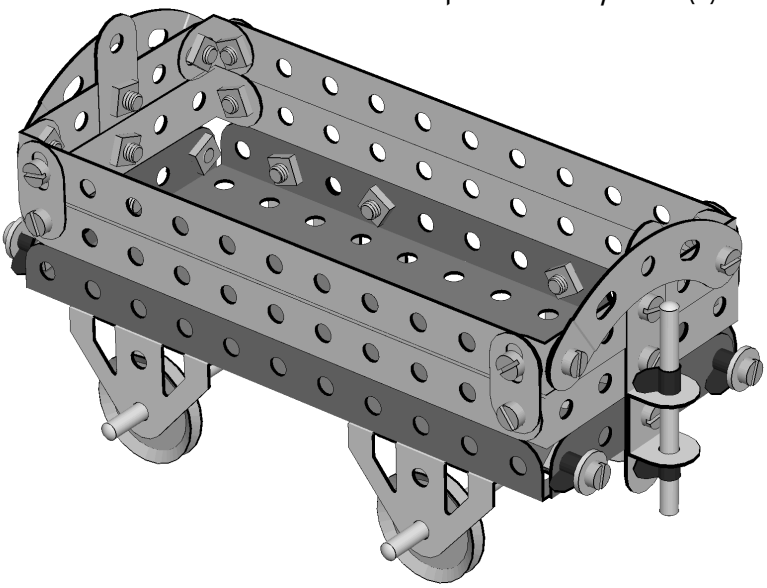
Parts used:

5	5
10	3
11	1
12	5
22	1
37a	17
37b	15
38	4
69a	1
90a	2
111c	1
126a	2
142c	1

Spanner model by Craig L

00.13 Rail truck

Spanner model by Chris F (*)



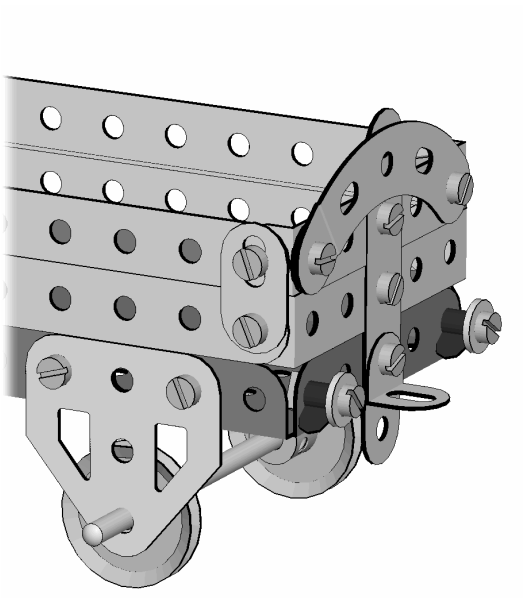
Parts used:
2 4
5 4
10.....4
11 1
12 5
16 2
17 1
22.....4
35.....6
37a..... 25
37b.....21
38 8
48a 2
52.....1
69a.....4
90a 2
111c.....4
126.....2
126a 2

This model uses all the nuts in the outfit, and even then three of the trunnions used to support the wheels can only have one nut and bolt each (they would be better with two, as shown in the picture to the right).

The top of the sides use strips and four angle brackets, the lower part of the sides are strips and two of part 48a.

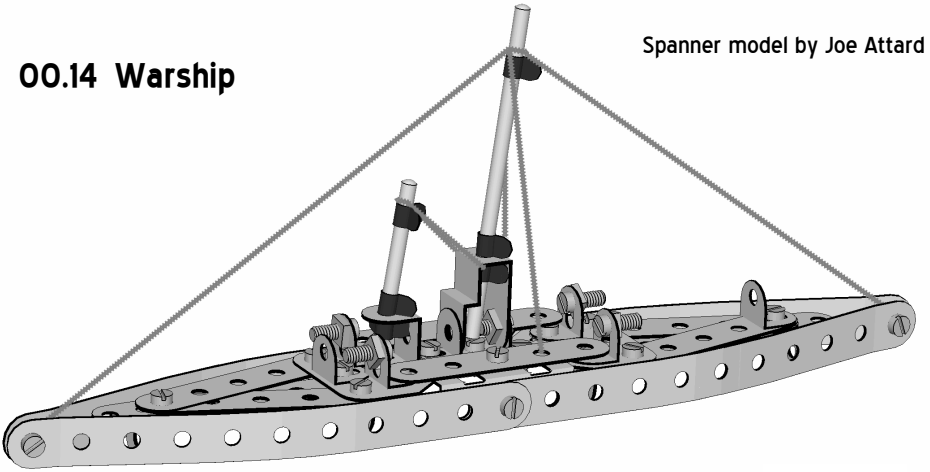
Note that the two ends are slightly different, and the two sides use the trunnions and flat trunnions mounted in different ways.

The buffers are represented by long bolts, with a washer and spring clip under each one. There is also a washer between each wheel and the trunnions, to help the wheels run freely.



00.14 Warship

Spanner model by Joe Attard



Parts used:

2	4
5	6
10	4
11	1
12	6
16	1
17	1
35	6
37a	25
37b	21
38	4
44	1
48a	2
111c	4
125	1
126	2
126a	2

Start by building the deck. Study carefully how the parts go together from the underside picture shown below. Note that the double angle strip at the rear only has one nut and bolt attaching it to the other parts.

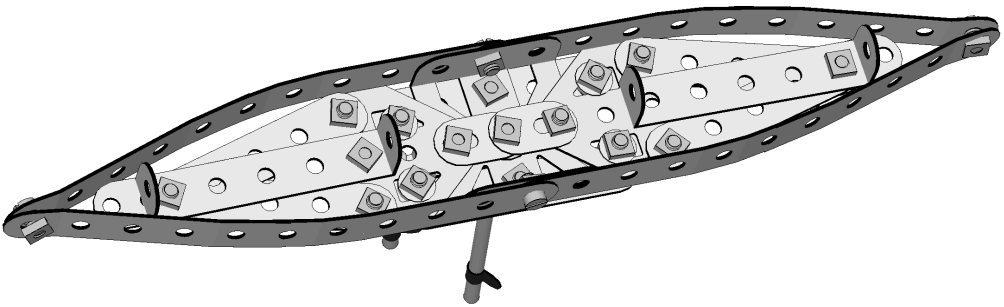
The angle brackets representing the gun turrets are bolted through the oddly shaped holes in the flat trunnions, with a washer underneath each nut as shown below.

Bolt the sides on to the two trunnions, and gently press together the ends at the bow and the stern before bolting them together very carefully. Try not to bend the parts more than you need to.

The forward mast is mounted in the reverse angle bracket. The main mast is mounted in the bent strip that is bolted to the double bracket by one bolt as shown.

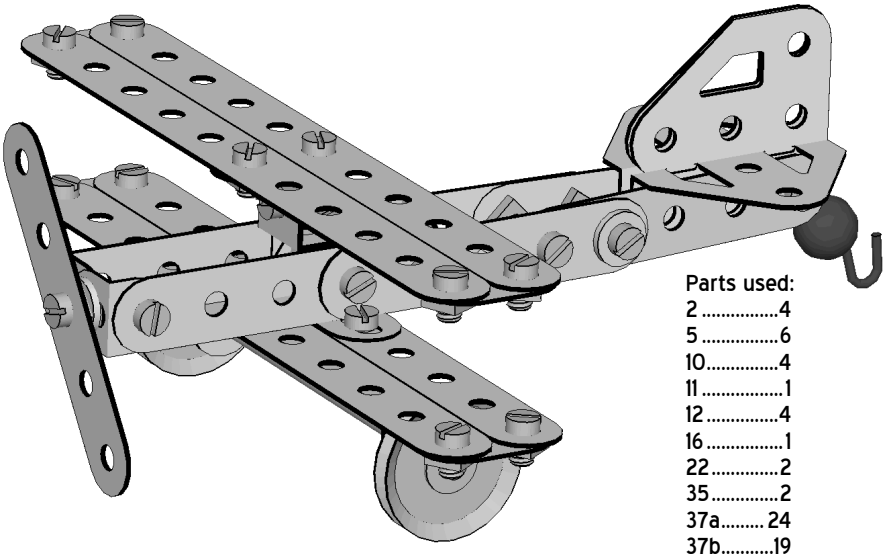
The two 2½" strips on each side sit on top of the bolts at their ends, and the bolt in the centre that holds them on to the trunnions is only very gently tightened up.

Use the string for rigging.



00.15 Biplane

Spanner model by John N



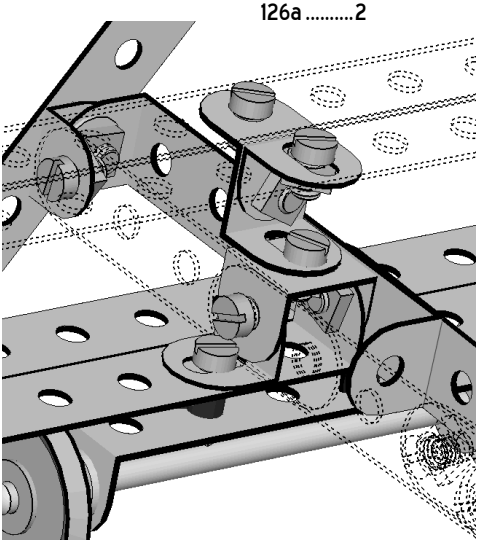
Parts used:
2 4
5 6
10.....4
11 1
12 4
16 1
22.....2
35.....2
37a..... 24
37b.....19
38 6
48a 2
57c.....1
111c.....4
125.....1
126.....2
126a 2

The inset below shows how to build the connection between the two wings. Two angle brackets hold a double bracket, then on top is bolted the reverse angle bracket and another angle bracket facing backwards.

The propeller is held on by a long bolt, which holds the propeller first, then a nut, then a washer, then the angle bracket and double angle strip (the far side of the fuselage), and finally another nut. The two nuts are tightened against each other, leaving the propeller to run freely.

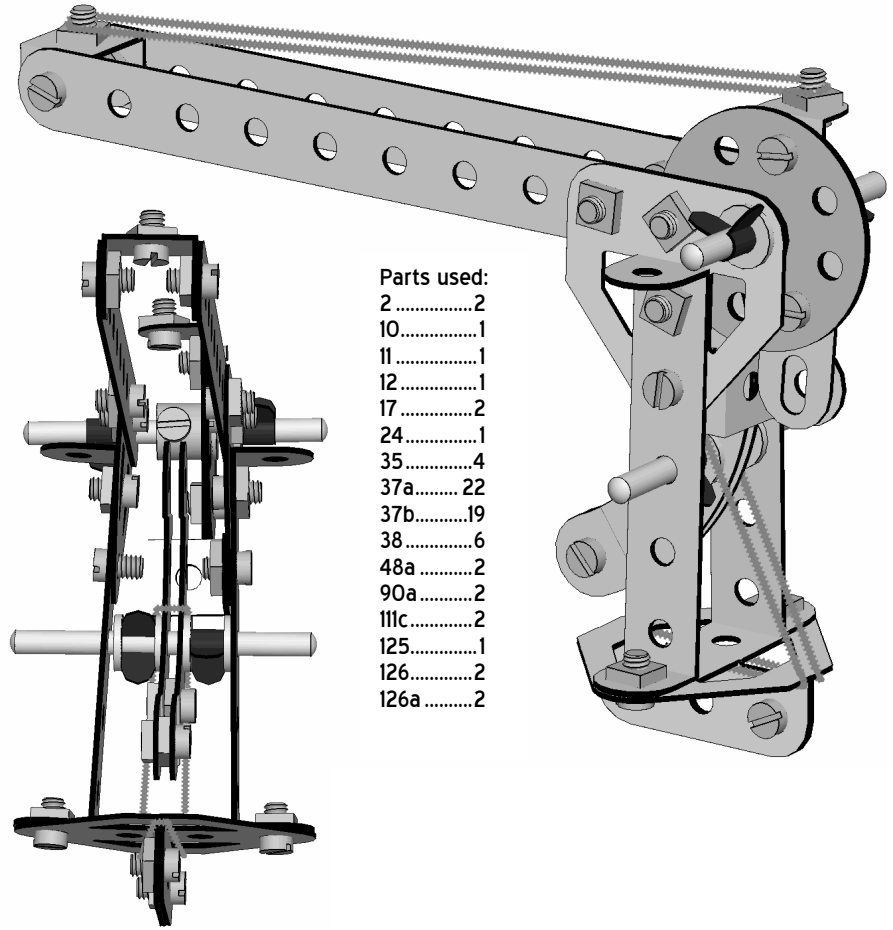
Another long bolt is used at the rear, running through the two sides of the fuselage, the two trunnions for the rear wing, the two flat trunnions for the tail, and the hook in the middle acting as the rear skid.

The undercarriage uses two long bolts, with a spring clip spacing the double angle strip from the lower wing to give clearance for the wheels.



00.16 Rubber band gun

Spanner model by Craig L



Parts used:

2 2
10.....1
11 1
12 1
17 2
24 1
35 4
37a..... 22
37b.....19
38 6
48a 2
90a 2
111c.....2
125.....1
126.....2
126a 2

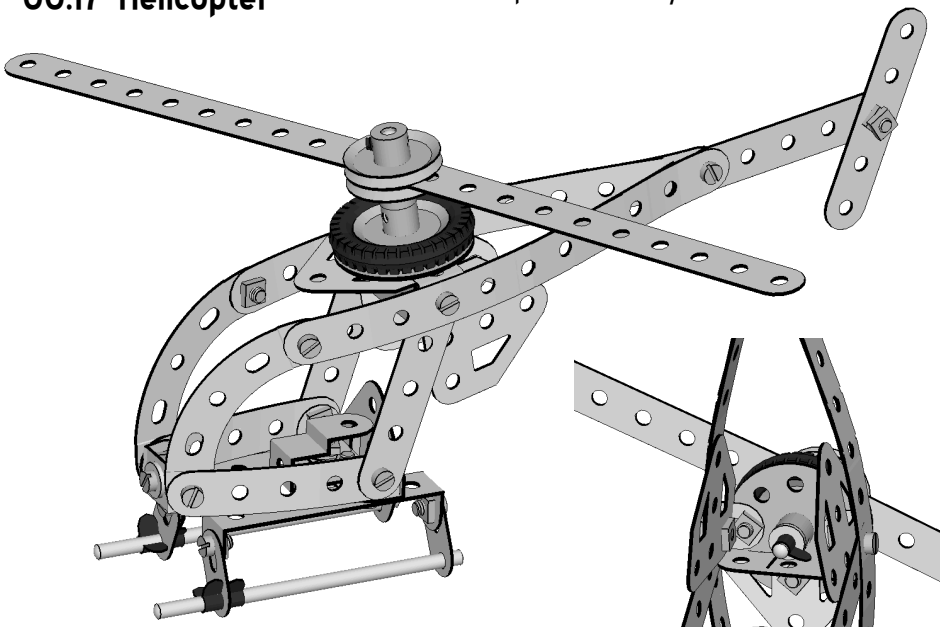
Begin by building the complete framework of strips, double angle strips, trunnions, and flat trunnions. Notice the reverse angle bracket bolted to the left-hand side, pointing backwards.

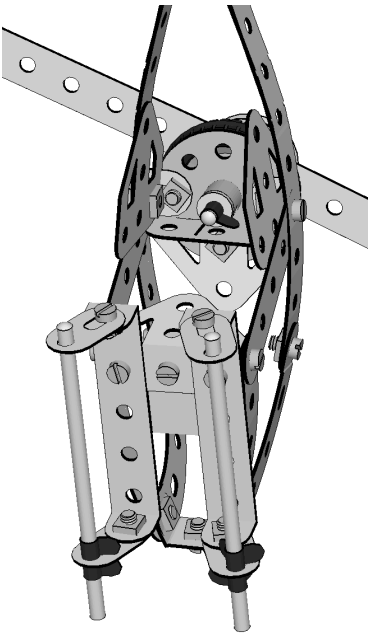
Build the trigger from two curved strips separated by an extra nut on each of the two bolts, and fit the trigger in place with the axle, spring clips, and washers.

The bush wheel is placed last, held on the axle by a long bolt (part 111c), which must sit against the trigger. Now add the angle bracket and fishplate to the bush wheel in the holes shown. The extra rubber band holding the trigger back isn't absolutely necessary, but improves the action.

00.17 Helicopter

Spanner model by Antoni G





Assemble each side of the helicopter and join the fronts with the double bracket. Build the base separately and attach the sides at the rear of the base with angle brackets.

Connect the two sides at the top with angle brackets bolted to the bush wheel, and the single trunnion facing forwards. Then ease the two strips together at the rear and attach the tail strip. Try to avoid making any bends in the two long strips, just a gentle curve.

The tail rotor in this illustration is held by a long bolt (part 111c), with a nut securing it to the tail, then a washer and the rotor with two nuts lock-nutting the rotor to the tail. There are various ways of lock-nutting this part on.

The main rotors are trapped tightly between the two pulleys at the top, and both pulleys are secured to the axle by their set screws. The lower pulley (with tyre) and bush wheel are not fixed to the axle. The washer and spring clip inside the cabin hold the axle on.

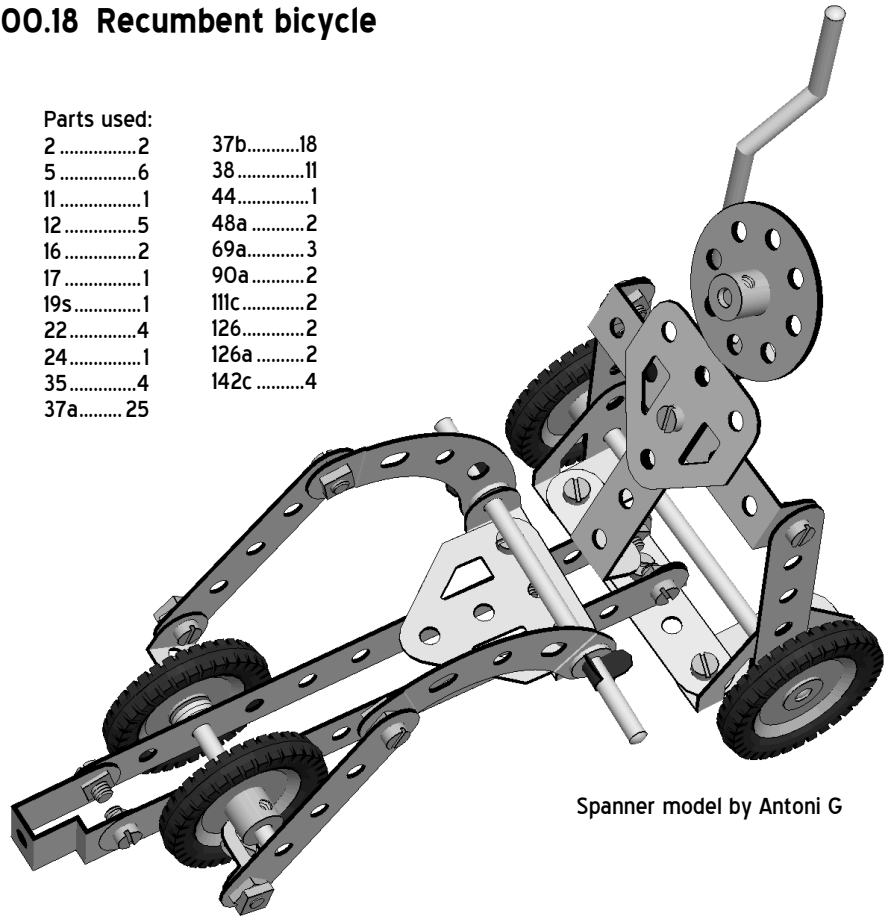
Parts used:

2 4	37a 23
5 6	37b 20
10 4	38 3
11 1	44 1
12 4	48a 2
16 2	69a 2
17 1	90a 2
22 3	111c 1
24 1	126 2
35 5	126a 2
	142c 1

00.18 Recumbent bicycle

Parts used:

2 2	37b.....18
5 6	38 11
11 1	44.....1
12 5	48a 2
16 2	69a.....3
17 1	90a 2
19s.....1	111c.....2
22.....4	126.....2
24.....1	126a 2
35.....4	142c 4
37a..... 25	



Spanner model by Antoni G

The base of the bicycle consists of the two 5½" Perforated Strips connected together at the rear by the Double Bracket. This Double Bracket is lock-nutted to the 2½" strip, from which the rear of the bicycle and the rider's body is built.

The flat trunnion on the base is attached by an angle bracket, using the same nut and bolt as one of the pair of angle brackets holding the axle at the rider's hips.

The angle brackets on the front wheels are attached by putting a nut on the bolt first, then passing it through the angle bracket and into the boss of the pulley. Make sure that these angle brackets on each side face in opposite directions. The legs are lock-nutted at the ankle and the knee. Note the two washers in between the front pulleys and the frame, to prevent the tyres from rubbing on the strips.

When the bicycle is moved (for example, by towing it with some cord tied to the Bent Strip at the front), the rider's legs move up and down and the bicycle 'steers' from the pivot at the rear.

00.19 Tow Truck

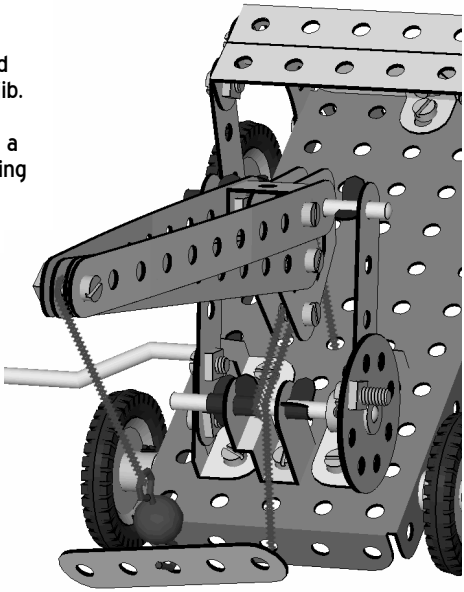
Parts used:

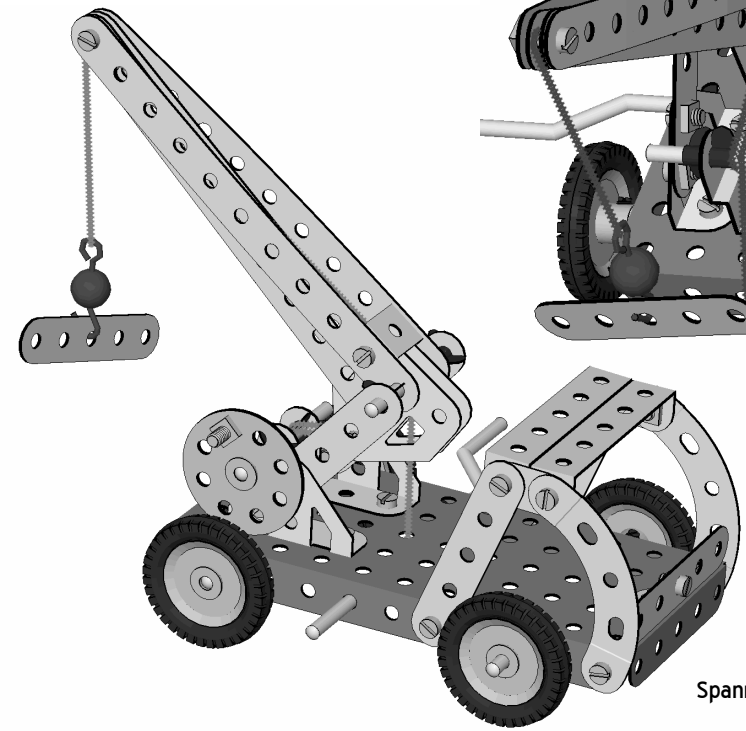
2	4	37a	25
5	6	37b	21
10	2	38	4
11	1	44	1
12	1	48a	2
16	2	52	1
17	2	57c	1
19s	1	90a	2
22	4	111c	4
24	1	126	2
35	8	126a	2
		142c	4

The outer two members of the crane jib are bolted to the double bracket. The inner two are bolted to the central and end holes of the flat trunnions with two long bolts (part 111c), the central one with a spring clip placed on the bolt to keep the trunnions apart.

The ends of the jib are also held with a long bolt, and the 2" axle is passed through the outer strips and trunnions as shown. A length of cord is tied to the rearmost hole of the flanged plate, over the 2" axle holding the bush wheel, round the lowest long bolt on the jib trunnions, and is tied back on to the axle. The bush wheel luffs the jib.

The crank handle for hoisting and lowering has a pair of spring clips inside the flanged plate, acting as a brake.





Spanner model by Les M