

BUILDING INSTRUCTIONS FOR A CUSTOM RC LEGO MODEL

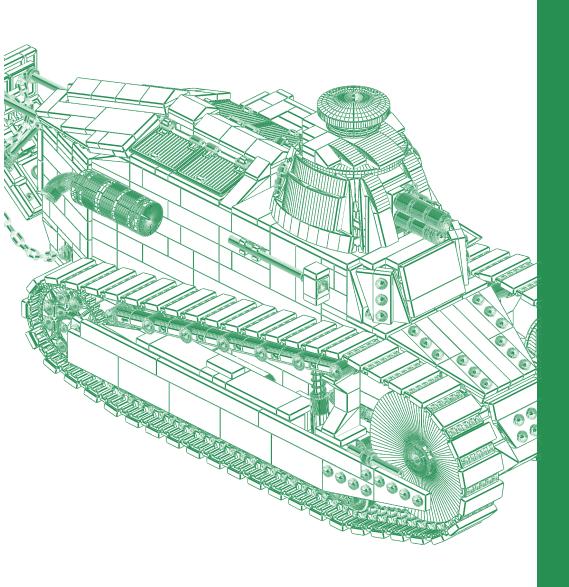
CREATED BY SARIEL

IMPORTANT NOTE

These instructions are a result of many weeks of hard work and enable you to build a copy of a model that took many months to develop (inspections by hamsters are not easily passed). You are kindly asked not to resell these instructions nor to share them with more than just your closest friends. If I see these instructions being pirated or resold, the effect will simply be that I won't be making any such instructions for other models in the future. It's your choice.

Please play fair. Do it for the hamsters.



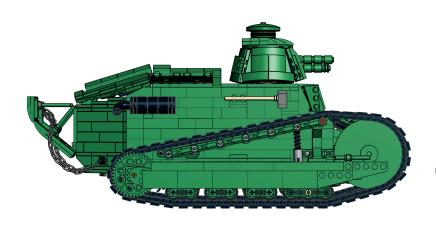


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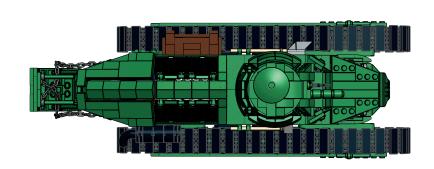
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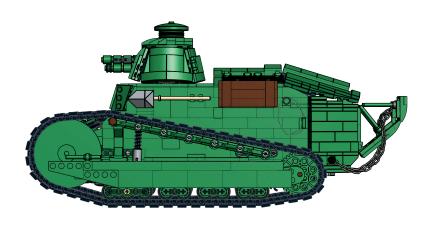
*NOTE: you can download the textual parts list in a single Excel file here: http://sariel.pl/down/renaultft17.xlsx

ABOUT THE MODEL

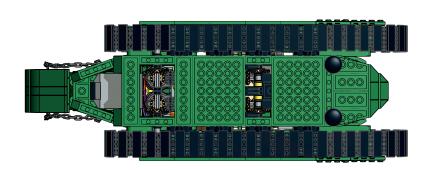












Completion date: 14/09/2018

Power: electric (Power Functions)

Remote control: SBrick

Dimensions: length 45 studs / width 15 studs /

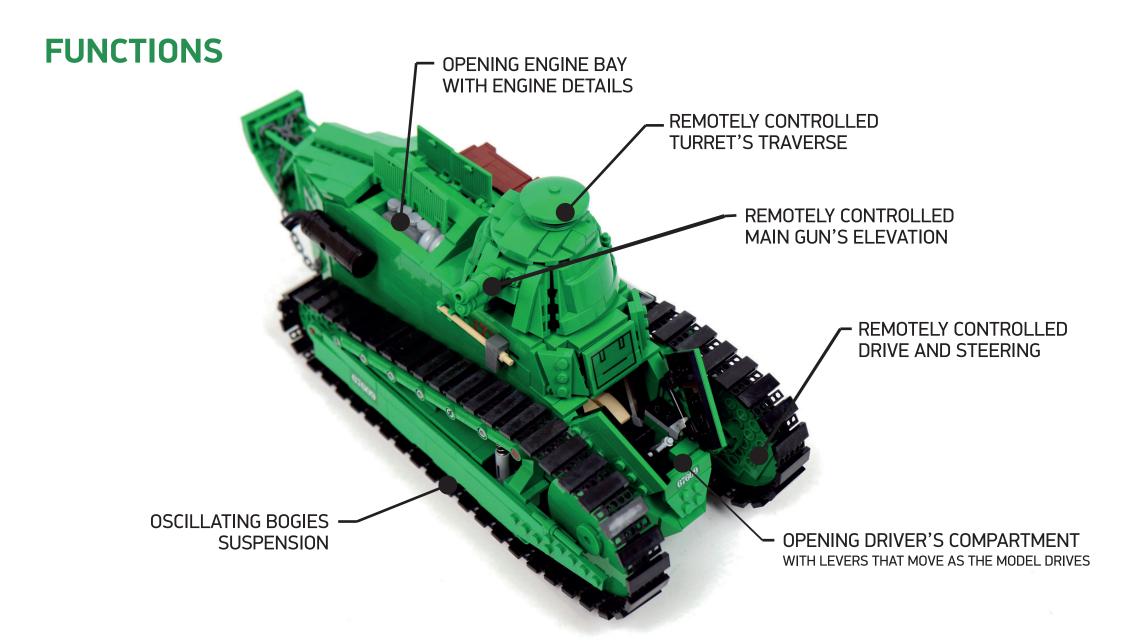
height 22 studs

Weight: 1.042 kg

Suspension: oscillating bogies

Propulsion: 2 x PF M motor geared 8.33:1

Motors: 3 x PF M motor, 1 x Micromotor

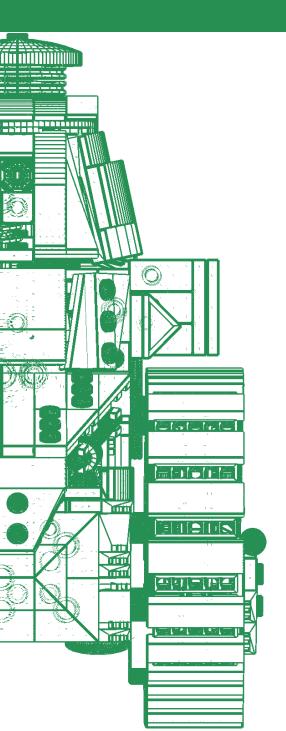


NOTE: This model was designed to be powered using the LEGO 8878 rechargeable battery and controlled remotely using SBrick. It can also be powered using the LEGO 88000 AAA battery box, but you'll need to take the box out of the model to replace the batteries. With some modifications, it should be possible to power it and control it remotely using BuWizz. And if you remove driver's seat, it shoule also be possible to replace the Micromotor with a PF M motor.

ABOUT THE COLORS



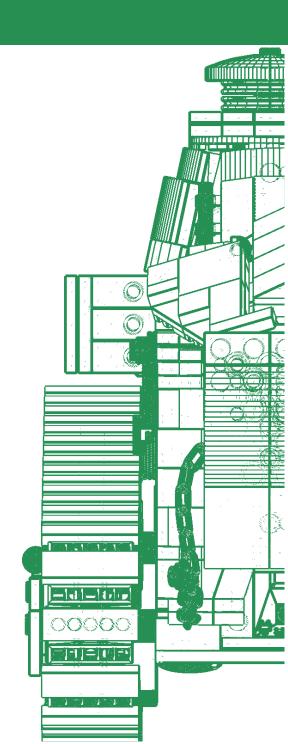
BEFORE YOU START



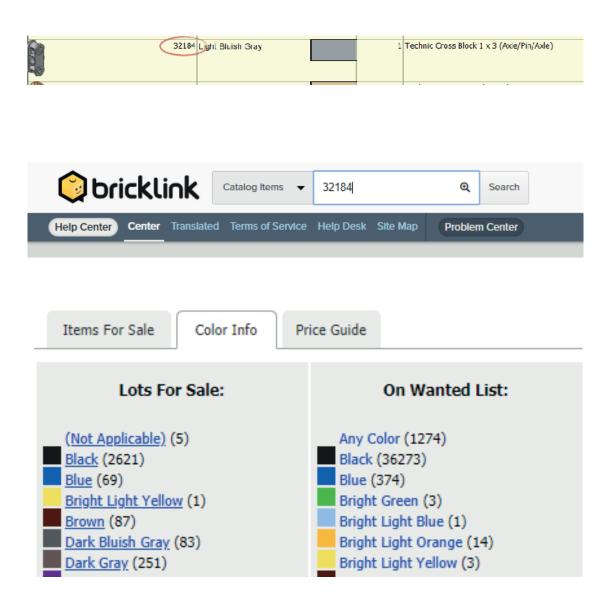
The model presented here isn't like the official LEGO sets. Nor is it a clearly Technic or System model - it's rather a blend of these two. It's using some challenging building techniques and some parts of it are rather fragile. You will quite likely often wonder why the instructions tell you to build something in this particular way. I strongly suggest to first build the model exactly as shown, so you can see it whole and observe how it works, before you try altering the design. A lot of effort went into finding optimal solutions here, and while it's certainly possible (and encouraged, even) to improve on this design, it probably shouldn't be how you start.

These instructions were developed with desktop computers in mind. For that reason they're kept in landscape mode and include some relatively small elements - because you can zoom in a PDF document on your screen. I don't recommend printing these instructions, as they may simply turn out to be unusable, unless you print at some enlarged format.

I've done my best to provide instructions that should let you make a model that looks and works exactly like my original one. I'm keeping my fingers crossed as you work on it, and I hope you'll be pleased with the results.



WHERE TO GET THE PIECES

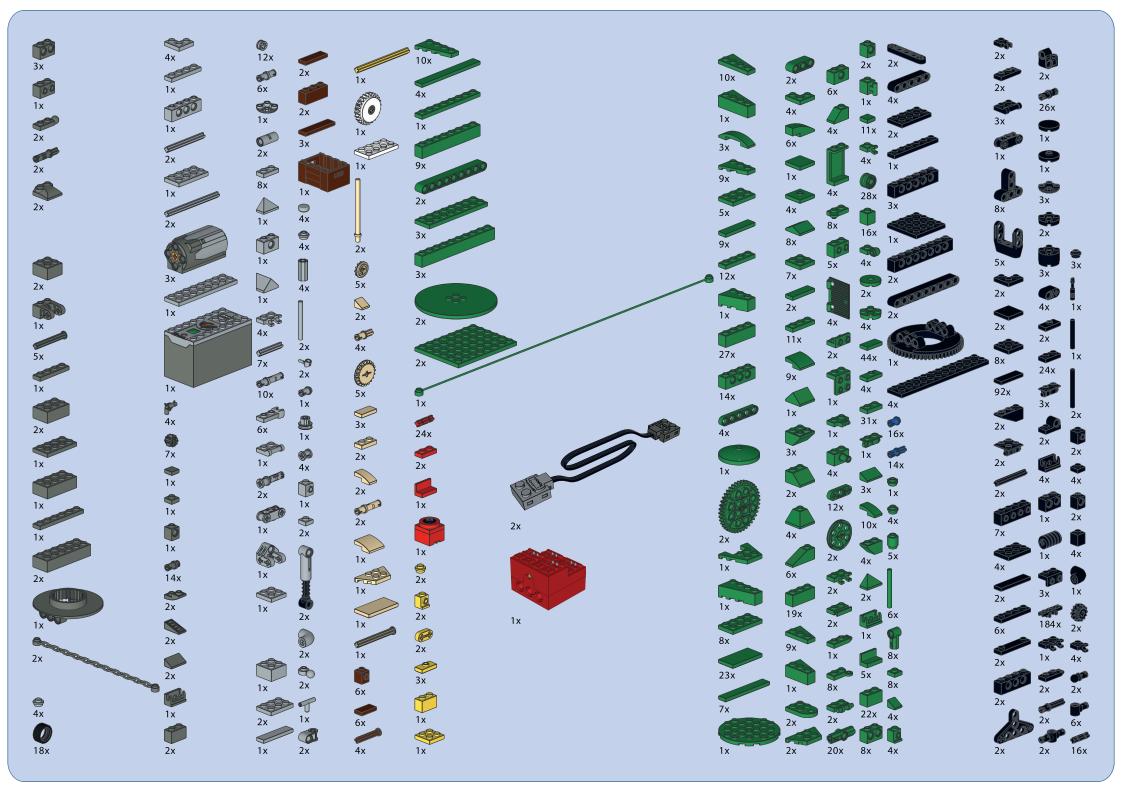


From Bricklink.com, of course.

Step 1: see the textual parts list in these instructions. Each type of part comes with a unique part number shown in the list's first column.

Step 2: visit Bricklink.com. In the top bar, next to the Bricklink logo, select "Catalog Items" and type the number of the part you're looking for. Don't forget to hit the "Search" button!

Step 3: on the results page, click the "Color Info" tab and pick the color you want from "Lots For Sale" column. You will be redirected to a list of all the shops that currently have this part in that color for sale. From here, you can filter the list e.g. by seller's location and by quantity of the desired part. From here, you can easily choose the right shop and make the purchase. See Bricklink's Help Center (www.bricklink.com/helpMain.asp) for more details on buying!



Part number	Color	Quantity	Part name
10928	Dark Bluish Gray	7	Technic Gear 8 Tooth Reinforced
11211	Green	5	Brick 1 x 2 with Two Studs on One Side
11211	Dark Bluish Gray	1	Brick 1 x 2 with Two Studs on One Side
11213	Green	1	Plate 6 x 6 Round with Hole and Snapstud
11214	Dark Bluish Gray	2	Technic Axle Pin Long with Friction with 2L Pin
11458	Black	2	Plate 1 x 2 with Offset Peghole
11477	Green	10	Slope Brick Curved 2 x 1
11477	Tan	2	Slope Brick Curved 2 x 1
11478	Black		Technic Beam 5 x 0.5 Liftarm with Axle Holes at Both Ends
14418	Light Bluish Gray	6	Plate 1 x 2 with Socket Joint-8 with Friction
14769	Black	1	Tile 2 x 2 Round with Round Underside Stud
15068	Green	9	Slope Brick Curved 2 x 2 x 0.667
15068	Tan	1	Slope Brick Curved 2 x 2 x 0.667

15100	Black	6	Technic Pin with Friction with Perpendicular Pin Hole
15462	Dark Tan	1	Technic Axle 5 with Stop
15535	Green	2	Tile 2 x 2 Round with Hole
15571	Green	2	Slope Brick 45 1 x 2 Triple with Bottom Stud Holder
18651	Black	2	Technic Axle Pin Long with Friction with 2L Axle
18674	Black	1	Plate 2 x 2 Round with 1 Centre Stud
30104	Dark Bluish Gray	2	Chain 21 Links
22890	Dark Bluish Gray	2	Plate 1 x 2 with Ball Joint-8 on End
2420	Black	2	Plate 2 x 2 Corner
2420	Green	4	Plate 2 x 2 Corner
2420	Light Bluish Gray	4	Plate 2 x 2 Corner
24201	Dark Bluish Gray	2	Slope Brick Curved 2 x 1 Inverted
2429	Green	8	Hinge Plate 1 x 4 Base
2430	Green	8	Hinge Plate 1 x 4 Top

	Black		Tile 1 x 4 with Groove
2431	Green	9	Tile 1 x 4 with Groove
2431	Reddish Brown	3	Tile 1 x 4 with Groove
2431	Light Bluish Gray	1	Tile 1 x 4 with Groove
24316	Reddish Brown	4	Technic Axle 3 with Stop
2445	Black	4	Plate 2 x 12
2452	Green	1	Hinge Plate 1 x 2 with 3 Fingers On Side
2456	Dark Bluish Gray	2	Brick 2 x 6
2458	Green		Brick 1 x 2 with Pin
25214	Black	1	Cylinder 2 x 2 Elbow with Axle Holes
25214	Light Bluish Gray	2	Cylinder 2 x 2 Elbow with Axle Holes
2540	Green	2	Plate 1 x 2 with Handle
2654	Black	3	Dish 2 x 2
2654	Light Bluish Gray	1	Dish 2 x 2

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2780	Black	26	Technic Pin with Friction and Slots
2905	Black	2	Technic Beam 5 x 3 x 0.5 Liftarm Triangle
2921	Green	1	Brick 1 x 1 with Handle
2983	Light Bluish Gray	1	Electric Technic Micromotor Pulley
2986c01	Red	1	Electric Technic Micromotor (Complete)
3001	Dark Bluish Gray	1	Brick 2 x 4
3002	Dark Bluish Gray	2	Brick 2 x 3
3003	Light Bluish Gray	1	Brick 2 x 2
3003	Dark Bluish Gray	2	Brick 2 x 2
3004	Green	22	Brick 1 x 2
3004	Yellow	1	Brick 1 x 2
3004	Dark Bluish Gray	2	Brick 1 x 2
3005	Black	4	Brick 1 x 1
3005	Green	16	Brick 1 x 1

3008	Green		Brick 1 x 8
3010	Green		Brick 1 x 4
30132	Dark Bluish Gray	4	Minifig Gun Revolver
30150	Reddish Brown	1	Container Adventurers Chest
3020	Black	2	Plate 2 x 4
3020	Green	8	Plate 2 x 4
3020	Light Bluish Gray	1	Plate 2 x 4
3021	Black	4	Plate 2 x 3
3021	Green	5	Plate 2 x 3
3021	Light Bluish Gray	2	Plate 2 x 3
3022	Black	8	Plate 2 x 2
3022	Green	7	Plate 2 x 2
3022	Yellow	1	Plate 2 x 2
3022	Light Bluish Gray	1	Plate 2 x 2

	Black		Plate 1 x 2
3023	Green	31	Plate 1 x 2
3023	Red	2	Plate 1 x 2
3023	Tan	2	Plate 1 x 2
	Light Bluish Gray	8	Plate 1 x 2
3024	Black	4	Plate 1 x 1
	Green	8	Plate 1 x 1
3024	Light Bluish Gray	2	Plate 1 x 1
3024	Dark Bluish Gray	1	Plate 1 x 1
3031	Black	1	Plate 4 x 4
	Green	3	Plate 2 x 8
3034	Light Bluish Gray	1	Plate 2 x 8
3036	Green		Plate 6 x 8
30374	Black	2	Bar 4L Light Sabre Blade

30374	Green	6	Bar 4L Light Sabre Blade
30374	Light Bluish Gray	2	Bar 4L Light Sabre Blade
3039	Green	2	Slope Brick 45 2 x 2
3040b	Green	4	Slope Brick 45 2 x 1
30414	Black	7	Brick 1 x 4 with Studs on Side
3043	Green	1	Slope Brick 45 2 x 2 Double
3045	Green	4	Slope Brick 45 2 x 2 Double Convex
3048a	Light Bluish Gray	1	Slope Brick 45 1 x 2 Triple without Bottom Stud
3049c	Light Bluish Gray		Slope Brick 45 1 x 2 Double / Inverted without Centre Stud
3062b	Green	5	Brick 1 x 1 Round with Hollow Stud
3068b	Black	2	Tile 2 x 2 with Groove
	Green	1	Tile 2 x 2 with Groove
3069b	Green	44	Tile 1 x 2 with Groove
3069b	Tan	3	Tile 1 x 2 with Groove

3069Ь	Reddish Brown	6	Tile 1 x 2 with Groove
Э 3070Ь	Green	11	Tile 1 x 1 with Groove
3070Ь	Dark Bluish Gray	1	Tile 1 x 1 with Groove
3176	Green	2	Plate 3 x 2 with Hole
32000	Black		Technic Brick 1 x 2 with Holes
32000	Green	8	Technic Brick 1 x 2 with Holes
32000	Dark Bluish Gray	3	Technic Brick 1 x 2 with Holes
32002	Dark Bluish Gray	14	Technic Pin 3/4
32013	Green	8	Technic Angle Connector #1
32017	Green	4	Technic Beam 5 x 0.5
32028	Green	2	Plate 1 x 2 with Door Rail
32034	Green	20	Technic Angle Connector #2 (180 degree)
32054	Light Bluish Gray	2	Technic Pin Long with Stop Bush
32062	Black	16	Technic Axle 2 Notched

32062			Technic Axle 2 Notched
32073	Light Bluish Gray	2	Technic Axle 5
32123a	Light Bluish Gray	12	Technic Bush 1/2 Smooth with Axle Hole Reduced
32184	Black	1	Technic Cross Block 1 x 3 (Axle/Pin/Axle)
32184	Light Bluish Gray	1	Technic Cross Block 1 x 3 (Axle/Pin/Axle)
32198	Tan	5	Technic Gear 20 Tooth Bevel
32270	Black	2	Technic Gear 12 Tooth Double Bevel
32316	Black	4	Technic Beam 5
32523	Green	2	Technic Beam 3
32556	Tan	2	Technic Pin Long
32556	Light Bluish Gray	10	Technic Pin Long
3300	Green	8	Slope Brick 33 2 x 2 Double
33291	Green	1	Plate 1 x 1 Round with Tabs
3460	Green	1	Plate 1 x 8

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3614	Light Bluish Gray	2	Plate 1 x 1 Round with Towball
3622	Green	19	Brick 1 x 3
3622	Reddish Brown	2	Brick 1 x 3
3623	Green	11	Plate 1 x 3
3649	Green		Technic Gear 40 Tooth
3660	Green		Slope Brick 45 2 x 2 Inverted
	Green		Slope Brick 45 2 x 1 Inverted
3666	Black	1	Plate 1 x 6
3666	Dark Bluish Gray	1	Plate 1 x 6
3673	Light Bluish Gray	6	Technic Pin
3700	Green	6	Technic Brick 1 x 2 with Hole
3700	Light Bluish Gray	1	Technic Brick 1 x 2 with Hole
3701	Black	2	Technic Brick 1 x 4 with Holes
3701	Green	14	Technic Brick 1 x 4 with Holes

000	Light Bluish Gray		Technic Brick 1 x 4 with Holes
000000	Black		Technic Brick 1 x 8 with Holes
3705	Black	2	Technic Axle 4
3709Ь	Dark Bluish Gray	1	Technic Plate 2 x 4 with Holes
3710	Black	6	Plate 1 x 4
3710	Green	12	Plate 1 x 4
3710	Light Bluish Gray	1	Plate 1 x 4
3710	Dark Bluish Gray	1	Plate 1 x 4
3713	Light Bluish Gray	4	Technic Bush with Two Flanges
3749	Tan	4	Technic Axle Pin
3794b	Black	2	Plate 1 x 2 with Groove with 1 Centre Stud
3794b	Green	4	Plate 1 x 2 with Groove with 1 Centre Stud
3794b	Yellow	3	Plate 1 x 2 with Groove with 1 Centre Stud
3820	Light Bluish Gray	2	Minifig Hand

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3873	Black	188	Technic Chain Tread 17
3894	Black	3	Technic Brick 1 x 6 with Holes
3937	Black	4	Hinge 1 x 2 Base
3937	Green	1	Hinge 1 x 2 Base
3937	Dark Bluish Gray	1	Hinge 1 x 2 Base
	Black		Hinge 1 x 2 Top
	Green	1	Hinge 1 x 2 Top
3941	Black	3	Brick 2 x 2 Round
3960	Green	1	Dish 4 x 4 Inverted
4032a	Black	2	Plate 2 x 2 Round with Axlehole Type 1
4032a	Green	4	Plate 2 x 2 Round with Axlehole Type 1
40490			Technic Beam 9
40490	Green	2	Technic Beam 9
4070	Green	4	Brick 1 x 1 with Headlight

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4070	Yellow	2	Brick 1 x 1 with Headlight
4081b	Green	4	Plate 1 x 1 with Clip Light Type 2
4095	Tan	2	Bar 6.6L with Stop
4162	Green	4	Tile 1 x 8
41677	Yellow	2	Technic Beam 2 x 0.5 Liftarm
41767	Green		Wedge 4 x 2 Right
	Green	1	Wedge 4 x 2 Left
41769	Green	10	Wing 2 x 4 Right
41770	Green	10	Wing 2 x 4 Left
41838	Light Bluish Gray	2	Technic Shock Absorber 6.5L Soft (Complete)
4185	Green	2	Technic Wedge Belt Wheel
	Green		Wheel Rim 8 x 11.2 with Centre Groove
) 4274	Blue	16	Technic Pin 1/2
6 4274	Light Bluish Gray	1	Technic Pin 1/2

4275b	Black	2	Hinge Plate 1 x 2 with 3 Fingers and Hollow Studs
4276b	Black	2	Hinge Plate 1 x 2 with 2 Fingers and Hollow Studs
4276b	Green	1	Hinge Plate 1 x 2 with 2 Fingers and Hollow Studs
4286	Green	6	Slope Brick 33 3 x 1
4287	Black		Slope Brick 33 3 x 1 Inverted
43093			Technic Axle Pin with Friction
	Green		Wing 2 x 3 Right
	Green		Wing 2 x 3 Left
44294	Yellow		Technic Axle 7
44294	Light Bluish Gray	2	Technic Axle 7
44728	Green		Bracket 1 x 2 - 2 x 2
44809	Black		Technic Cross Block 2 x 2 Bent 90 (Pin/Pin/Pin)
4519	Light Bluish Gray		Technic Axle 3
4697a	Light Bluish Gray	1	Technic Pneumatic T-Piece - Type 1

4716	Black	1	Technic Worm Gear
47457	Dark Bluish Gray		Slope Brick Curved 2 x 2 x 2/3 Triple with Two Top Studs
4757	White	1	Electric Plate 2 x 4 with Contacts
48168	Black	1	Technic Turntable Type 2 Top
48183	Green	1	Wing 3 x 4 with 1 x 2 Cutout with Stud Notches
48336	Black	3	Plate 1 x 2 with Handle Type 2
48336	Light Bluish Gray	1	Plate 1 x 2 with Handle Type 2
48452	Dark Bluish Gray	1	Technic Turntable Type 2 Base
4865a	Green	5	Panel 1 x 2 x 1 with Square Corners
50950	Green	6	Slope Brick Curved 3 x 1
50951	Rubber Black	18	Tyre 6/ 30 x 11
51739	Green	2	Wing 2 x 4
51739	Tan	1	Wing 2 x 4
54200	Green	4	Slope Brick 31 1 x 1 x 0.667

54200	Tan	2	Slope Brick 31 1 x 1 x 0.667
58120	Light Bluish Gray	3	Electric Power Functions Medium Motor
60656		2	Electric, Power Functions Extension Wire with one Light Bluish Gray End (length 20cm)
59443	Light Bluish Gray	4	Technic Axle Joiner Inline Smooth
60169k01	Dark Bluish Gray	4	Minifig Chain End for Chain 16L
6019	Black	4	Plate 1 x 1 with Clip Horizontal (Open U-Clip)
6019	Green	4	Plate 1 x 1 with Clip Horizontal (Open U-Clip)
604550	Black	1	Minifig Tool Screwdriver with Wide Head and 3- Rib Handle
60470a	Black	1	Plate 1 x 2 with 2 Clips Horizontal (Open U-Clips)
60470a	Green	2	Plate 1 x 2 with 2 Clips Horizontal (Open U-Clips)
60470a	Light Bluish Gray	4	Plate 1 x 2 with 2 Clips Horizontal (Open U-Clips)
60483	Black	4	Technic Beam 2 Liftarm
60484	Black	8	Technic Beam 3 x 3 T-shaped
60800a	Green	4	Window Shutter 1 x 2.667 x 3 with Handle

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60897	Black	2	Plate 1 x 1 with Clip Vertical (Thick C-Clip)
6111	Green	3	Brick 1 x 10
6134	Black	2	Hinge 2 x 2 Top
61409	Dark Bluish Gray	2	Slope Brick 18 2 x 1 x 2/3 Grille
6141	Green	4	Plate 1 x 1 Round
6141	Yellow	2	Plate 1 x 1 Round
6141	Metallic Silver	4	Plate 1 x 1 Round
6177	Green	2	Tile 8 x 8 Round with 2 x 2 Center Studs
62462	Light Bluish Gray	2	Technic Pin Joiner Round with Slot
63864	Black	94	Tile 1 x 3 with Groove
63864	Green	2	Tile 1 x 3 with Groove
63864	Reddish Brown	2	Tile 1 x 3 with Groove
6536	Light Bluish Gray	2	Technic Cross Block 1 x 2 (Axle/Pin)
6541	Black	2	Technic Brick 1 x 1 with Hole

6541	Green	2	Technic Brick 1 x 1 with Hole
6541	Dark Bluish Gray	1	Technic Brick 1 x 1 with Hole
6564	Green	1	Wedge 3 x 2 Right
6565	Green	1	Wedge 3 x 2 Left
6589	Tan	5	Technic Gear 12 Tooth Bevel
6628	Black	2	Technic Pin Towball with Friction
6632	Green	12	Technic Beam 3 x 0.5 Liftarm
6636	Green	7	Tile 1 x 6
76019	White	1	Technic Gear 24 Tooth Clutch with DkGray Center
84599	Light Bluish Gray	1	Electric Power Functions Rechargeable Battery Box (Complete)
	Black	3	Plate 1 x 1 Round with Open Stud
85861	Light Bluish Gray	4	Plate 1 x 1 Round with Open Stud
85943	Dark Bluish Gray	1	Technic Brick 1 x 2 with Two Liftarms
85984	Green	3	Slope Brick 31 1 x 2 x 0.667

85984	Dark Bluish Gray	2	Slope Brick 31 1 x 2 x 0.667
87079	Green	23	Tile 2 x 4 with Groove
87079	Tan	1	Tile 2 x 4 with Groove
87082	Black	2	Technic Pin Long with Pin Hole
87083	Dark Bluish Gray	5	Technic Axle 4 with Stop
87087	Black	2	Brick 1 x 1 with Stud on 1 Side
87087	Reddish Brown	6	Brick 1 x 1 with Stud on 1 Side
87087	Light Bluish Gray	1	Brick 1 x 1 with Stud on 1 Side
87408	Black		Technic Connector Toggle Joint Double with Axle and Pin Holes
87544	Green		Panel 1 x 2 x 3 with Side Supports with Hollow Studs
87580	Green	4	Plate 2 x 2 with Groove with 1 Center Stud
87994	Black	1	Bar 3L
92593	Black	2	Plate 1 x 4 with Two Studs
92907	Light Bluish Gray		Technic Cross Block 2 x 2 x 2 Bent 90 Split (Pin/Twin Axle)

93273	Green	3	Slope Brick Curved 4 x 1 Double
98138	Light Bluish Gray	4	Tile 1 x 1 Round with Groove
99780	Green		Pracket 1 x 2 - 1 x 2 Up
99781	Black		Bracket 1 x 2 - 1 x 2 Down
sbrick	Red		Electric Power Functions S-Brick Bluetooth Receiver
14224	Green		String with End Studs 41L Overall (31cm)

