



## Review: 42055 Bucket Wheel Excavator

By Jesús García Martín

Pictures by Jesús García Martín and LEGO® System A/S

**Set:** Bucket Wheel Excavator

**Set Number:** 42055

**Parts:** 3929

**Current Value:** 239,99 € / \$279,99

One of the largest LEGO sets ever has fallen into my hands. Within the Technic theme it is the absolute top: 3929 parts — over a thousand more than its immediate predecessor, the Mercedes-Benz Arocs 3245. Numbers are always cold, but they give you an idea of the size of this spectacular set. On a personal level, aside from my devotion to TECHNIC, I have a passion for everything that is black and yellow, that is to say, excavator and cranes. However, this type of mega excavators has never drawn my attention. It is far too different from the typical excavator or back-hoe. But that doesn't mean I don't face this build with the same expectation I would have for any mega LEGO® build. And if it is TECHNIC, so much the better.

But let's start at the beginning: What on earth is a Bucket-Wheel Excavator? It is one of the largest terrestrial vehicles built by mankind. They are used in open pit mining. More specifically, in open air operations in which these large vehicles advance horizontally over the surface to extract carbon or lignite.

The German versions of these vehicles are the largest, with the Bagger 293 being the largest BWE ever built. It is 96m high and 225m long. The excavation wheel is over 20m tall and contains 18 buckets, each of which can extract 15 cubic metres of material. The weight is impressive: 14,200 tons with a capacity to extract 240,000 cubic metres of material per day. The LEGO model (MKIII) would have real-world dimensions of 74x38m and a weight of 3,200 tons — somewhat more discreet than the Bagger 293.



Now that we know what we are talking about, let's start (as usual) with the enormous box (58x48x17cm).



Simply spectacular. The picture of the main model requires some perspective to fit on the box. The lid flips up to reveal the size of the model in more detail and show the motorised functions.

As usual, the back of the box shows the secondary model which can be built from the same parts. It looks like a mineral processing plant, which could be an interesting set on its own, but which is much less spectacular than the main model.

The box opens on one side and is chock full of (numbered) bags. There are over 50, not counting the bags in bags with pins and other smaller elements. I estimate the bags take up about 80% of the available volume of the box. Some of the bags come inside a white box in order to prevent the large box collapsing.

The instruction book contains 550 pages. "No more questions, your honour ..."

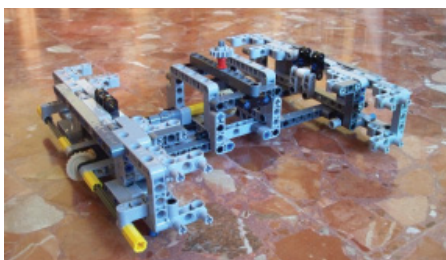


After taking the mandatory pictures, I start opening the bags numbered 1 with an uncontrollable craving to start building. I start off slowly, building a mining truck that is dwarfed by the size of the excavator, but full of details, including HOG steering (Hand of God, controlled from the top) and a mechanism to empty the bucket.

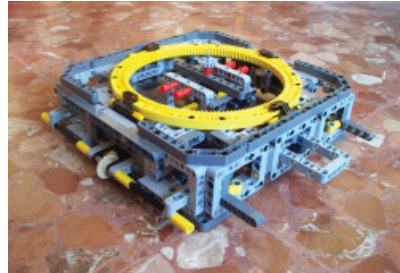


The truck is similar to the 42035.

After building the truck, the really good stuff starts with the bags numbered 2: the base of the beast. I have made some pictures of the intermediate steps so you can see some of the gears and mechanisms, although at this stage of the model there isn't much to discuss aside from the single transmission from the top (where the motor will be placed) towards the axles in the base that connect to the tracks.



The number of liftarms that are used to reinforce the structure is truly impressive. It is clear we are facing something large and heavy. And where there are liftarms you need lots and lots of pins. There are no less than 724 (with friction, 2L) and 457 (3L), in addition to 162 axle pins 2L and 60+28 times 3L. All these pins are used to join, among other elements, 75 liftarms 1x15, 59 liftarms 1x11 and 53 frames 5x7 open center! These rectangular frames provide much stability to the different parts of the excavator. As you can see, cold numbers never lie.



Continuing with the base, I notice both tracks turn together in the same direction. Logical for a vehicle that only moves horizontally and doesn't need to turn.

What stands out in this part of the build is an important new part: Technic, Gear Rack 11 x 11 Curved.

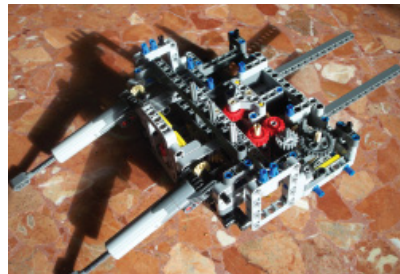


Four of these parts create a circular turning base that is large enough for the central body of the excavator; in other words, it's huge!

The bags numbered 3 contain the parts you need for the two tracks that support the tremendous weight of the structure. After finishing the base, it is time to move on to the bags numbered 4 and start building the body of the excavator.

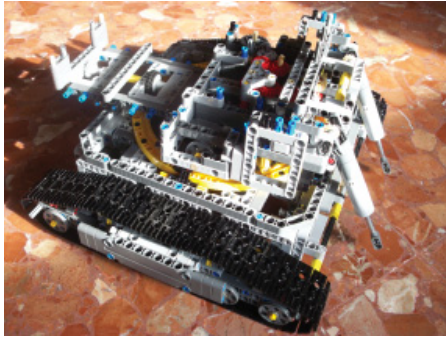


For now, there is a single mechanism: the transmission that propels the tracks.

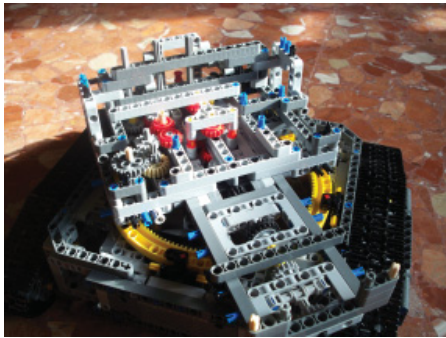


But in the next part of the build you start to see more gears and transmissions, aside from 2 linear actuators that will lift the heavy arm of the excavator. In my humble opinion, they look altogether insufficient. I mean, the arm can be lifted, but it supports a lot of weight. In addition, the mechanism is manual. The motor power could have been channelled to this part of the excavator. Maybe the designers decided to go for a manual solution because of the small range of lift the arm has.

After starting on the central body, it is attached to the base and the set starts to look massive.

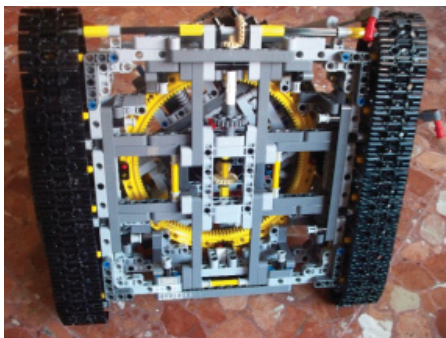


There are three Technic axles that control three motorised movements in the excavator: turning the main platform, moving the tracks and - the most important one - moving the wheel with the buckets together with the transport belts.

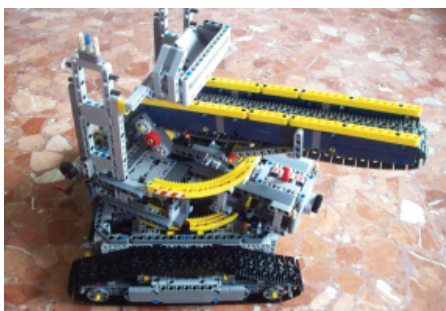


The lower transport belt turns at the same time as the main belt in the arm and bucket wheel. It can be turned to the left and the right to deliver the material to the trucks. In order to prevent unwanted turning of the delivery angle the position can be locked.

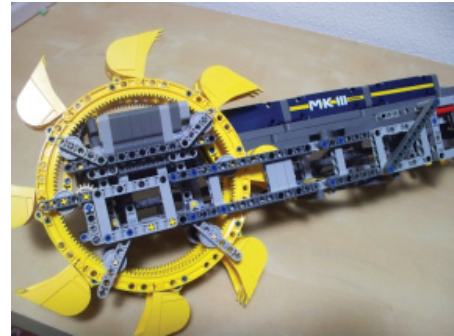
I love taking pictures of the "innards" of this kind of set from the rear. In this case, the dimensions of the base are startling and you can clearly see the transmission that leads to the tracks and to the rotating base.



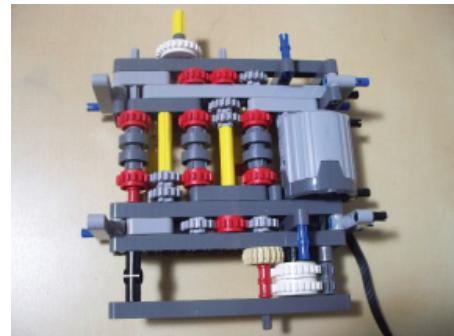
Ready for bags numbered 5. In this step you only build the transport belt for the material that will go directly to the mining truck.



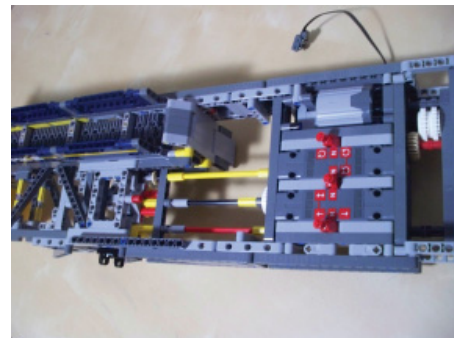
A small respite before heading on to the real battle of building the arm of the excavator (bags 6 and 7 for the controls). This is made up of two main stages: the first, in which aside from the transport belt and the bucket wheel, you build the main structure of the enormous arm and the second, the rear of the arm which contains a single motor (insufficient from my point of view) and the gear box to direct the force of the motor to one of the three motorised functions in the set.



The part that controls all the movement is the typical "gear box" you can find in many modern Technic models. If you make even the smallest mistake with the gears, you'll end up with an enormous paperweight that won't move.



The controls go into the arm, the arm onto the main structure and the set looks practically finished. Stickers indicate the possible movements combining the controls.



To finish off, the bags numbered 8 serve to embellish and add detail to the exterior of the vehicle.



Before making a final assessment, I would like to highlight the matter of the colours. It is becoming common to use different colours for smaller Technic parts. And sometimes in not so small parts. This set continues with this excellent idea.

Searching a single piece in an inventory of nearly 4000 can become quite an odyssey. The already traditional separation between black (2L) and blue (3L) pins continues with the axle pins. The 2L pins are blue and the 3L are grey and black, depending on their configuration. All the Technic bushes are red, while the 1/2 bushes are yellow.

However, I hadn't seen this variety of axle colours before. Over the last decade or more, odd lengths (3, 5, 7 and 9) were LBG, even (4, 6, 8, 10 and 12) were the traditional black and the smallest (2L) were red. But in this set some of these tendencies are maintained while new ones are added. For example, all 6L and 10L axles are red and all 5L, 9L and 11L axles are yellow.

In a nutshell, an excellent idea to reduce the time it takes to find them and to facilitate building.

### NEW PARTS

Aside from the yellow Technic Gear Rack 11 x 11 Curved and the buckets (Technic Digger Bucket 4 x 7), this set contains some very recent parts that have come out in 2016. Not so much in shape as in colour. For example, the Technic Axle 3 with Stop (Reddish Brown), which appears in 13 sets in 2016, or the Technic axle 5 and 11 (yellow).

Finally, there are the Technic Panel Curved 3 x 6 x 3, which appear only in this set and in the Mine Loader (42049).

### RATING THE SET

What can I say about a Technic set with almost 4000 parts, and an excavator to boot? Many good things and a few not so good

ones, derived from my expectations and imagination, which always wants more controls, more motors and more parts.

The build is a real challenge because of the dimensions of the set and the number of parts. It doesn't get boring at all; what is more, after finishing the set I felt like building more (I still have something large and orange waiting for me). Aesthetics aside, which are spectacular and impressive, watching it move is a joy. The buckets pick up the material (small parts that come in the set), lift it to the transport belt in the arm, which drops it on the lower belt. It's a kind of one-set GBC.

The less positive comments are mainly about the movement. I don't think using a single motor for a set this size is a good idea. Sometimes it is difficult to get the tracks or the rotation on the main platform going. And the bucket wheel and transportation belts have a jerky movement. I have been very careful to adjust the axles and gears to have as little friction as possible (I've been building Technic sets since 1979), but in this case, I don't know if I made a mistake somewhere or if there are simply too many axles and gears. In general, the movements are very slow. I suppose in the real world these enormous vehicles aren't designed to compete with F1 cars, but the movement of the tracks is exasperating.

Lastly, as always, I want more. Why not add an infrared kit to control the PF motors? More motors? Controlling the lifting and lowering of the arms with motors as well?

Possible improvements aside, this is a must-have for any Technic lover who can afford it.

I would like to thank LEGO AFOL Relations & Programs Team for providing the set for review. The opinions expressed in this review are of course entirely my own.

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