Review 8049: Tractor with Log Loader

A good introduction to Pneumatics

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Images by lluisgib and LEGO® Systems A/S

Set: Tractor with Log Loader
Set number: 8049
Part count:: 525
Includes: Tractor, Trailer with pneumatic functions, a log.

Introduction

It's a bit strange for an AFOL like me – being a City fan – to do a review of a Technic set. It's not that I don't like Technic; I have a couple of sets from this line, like the Bulldozer, but it's not a line I follow as a rule and I had never before built any set with Pneumatics. To me that is an interesting world and I believe this review will have a slightly different angle, since I will be looking at the set through the eyes of someone who discovers Pneumatics in Technic.

As its name already indicates, the set consists of a tractor with

trailer for carrying logs. The tractor itself isn't very hard to build nor does it have any special characteristics apart from the fact that, like most Technic sets, it has steering (front) wheels. The only thing that stands out is the stylised design due to the use of Lime Technic, Liftarm 1 x 11.5 Double Bent Thick for the front and Lime Slope, Curved 2 x 4 x 2/3 No Studs for the rear mudguards. The steering can be accessed from a Round Brick 2x2 behind the cab and which also serves as a signaling light.

Construction

The trailer is where are all the functional design of the set is located. It has an arm with three segments and a claw at the end, designed to pick up logs and load them on the trailer. But let's take it one step at a time.

The first thing you build is the chassis of the trailer and right at the start the first Pneumatics element is incorporated: the

pump. It is placed on the rear of the trailer so you can operate it once the model is finished. The rod is surrounded by a spring to make the cylinder work as a pump. After this, an axle is introduced which traverse the whole trailer in order to allow manual operation of the turning of the arm. Next up is the block that holds the switches for the air. At this point you start appreciating how the whole system works. Two switches are used, one for each cylinder. Each switch has three ports
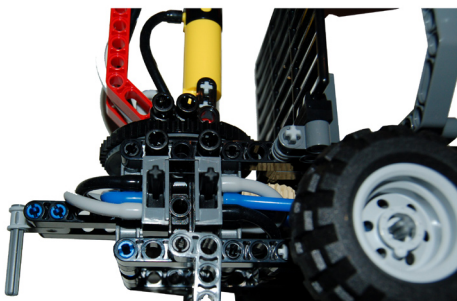
through which air can circulate: one inlet (the central port) and two outlets. I connect the manual pump to the two inlets using a T piece. I also connect the tubes to the outlets which will later be connected to the cylinders. In order to avoid confusion with the connections, the tubes that will make the cylinders expand are grey and the ones that will make the cylinders contract are black.

The construction continues by connecting the parts that will allow the arm to turn and the tubes are pulled through its centre to guide them towards the
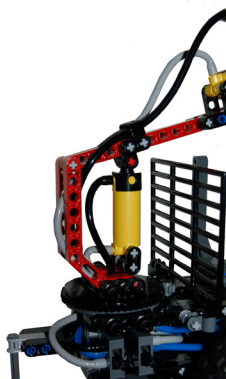

cylinders. The first segment of the arm starts at this turntable which is fixed to the chassis. Four liftarms make up the second segment of the arm and the cylinder is placed between the first and second segment. Then the tubes are connected to the cylinder; the gray one to the bottom port, to make it expand, and the black one to the top port, to make it contract. At this point curiosity takes over and makes me test the functioning of the cylinder before finishing the rest of the construction. I pressurize the circuit and push the lever on the switch upwards. Automatically the cylinder expands, and with it the arm. After this test I continue with the third segment and the second cylinder.

The third segment is made up of 3 liftarms. I attach it to the arm with a long pin and place the other cylinder. This cylinder is connected to the second segment and the rod is fixed to the end of the third segment. I connect the tubes and the Pneumatics circuit is complete.

Finally, I attach the claw and build the trunk and the set is finished.

It is interesting to do some tests with the Pneumatics system. I have fun watching the cylinders expand and contract and look for different combinations to make the arm go where I want it.

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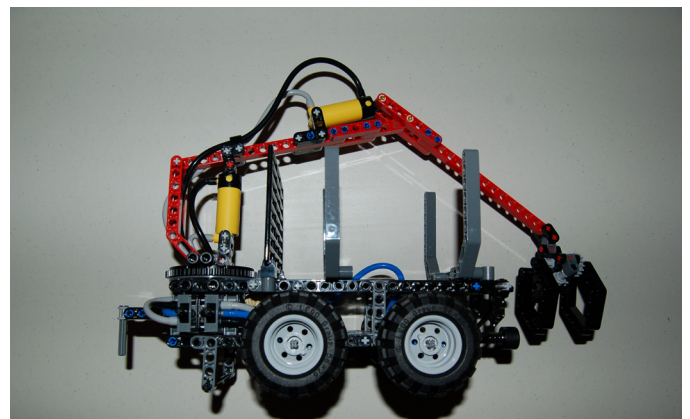
There is only one fault: Each time I want to make a movement I need to pump air into the circuit.

The guys over at LEGO® Technic have thought about this as well and have found a way to solve this problem. To implement the solution the set has a number of extra parts including a small cylinder to which you need to add a Power Functions battery box, a Power Function M motor and a 24 tooth gear with clutch. All of these parts can be found in the 8293 set (Power Functions motorization set)

The instruction booklet gives step by step instructions on how to implement this conversion. You need to take out the large cylinder that acts like as a pump and substitute it for a smaller one that is connected to the motor and the clutch. You also need to make some small changes to add the battery box.

After making these changes I realize the air circuit is permanently pressurized. Even when the pressure level is high, making it harder to operate the small cylinder, the circuit is not overloaded due to the clutch gear and the motor can be left on all the time.

On the official website there are instruction for an alternative model which allows you to explore the world of Pneumatics a little further.

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Conclusions

This set is very recommendable for someone who, like me, wants a first introduction to Pneumatics. The building steps and colour coding of the parts make the construction and the comprehension of the pneumatic circuit easy. Operating the model is fun and didactic. In my opinion is has been a good decision to add the necessary parts and instructions to pressurize the system constantly with Power Functions elements. Likewise, the fact that LEGO has published additional building instructions on their website gives extra value to the set and motivates anyone who buys the set to experiment with new solutions.

On the other hand, for builders who are used toTechnic and Pneumatics, maybe the set is a little simple, but for the price of the set they get a good assortment of Technic and Pneumatics parts.

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