

**admin**

# **Wind generator from the tractor generator**

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This wind generator is made on the basis of the generator from the tractor. The generator screw has a two-blade design, which in the kit allows you to develop high speed even in small winds. The average power that the generator gives is 150 watts, it is already achieved with a wind of 6 m \ s. The article discusses the main points of modernization and constructive



features of the wind generator of this model.

Materials and details necessary for the construction of this type of windmill:

- 1) tractor generator
- 2) wire 0.8 mm thick about 200 meters.
- 3) profile pipe
- 4) dural pipe 110 mm
- 5) bolts m10

Consider in more detail the design of the windmill and its main components.

The main part of the windmill is the generator, which in this case was remade from the standard G-700 tractor generator. The tractor generator has the following characteristics: rated voltage is 14 V, rated current is 50 A, the generator weighs 5.4 kg without a pulley, and has a resource of 10,000 hours.

The only catch for using this generator without alterations was too high working revolutions from 5000 to 6000 revolutions. Therefore, for starters, the author took up the modernization of the generator.

The generator stator was completely rewound with a 0.8 mm thick wire of 80 turns. This was done in order to increase the voltage at the speed. So was processed and the excitation coil of electromagnets. On the coil with the same wire that was used for the stator, 250 turns were wound. Given the complete rewinding of the stator and the winding of the coil, the author spent about 200 meters of wire on a similar upgrade.

Then the author proceeded to create a mount for this generator. The mounting design was made of a profile pipe so that the drive went inside and twisted vertically. Also, the design of the windmill

provided protection from strong winds. In order to reduce the load, protection was organized with the help of "folding the tail", for this purpose a pin was welded, on which the tail of the wind generator will be subsequently dressed.



Since the generator still requires sufficiently high revolutions for high-quality operation, the design of the screw was chosen as a two-blade one. The screw itself turned out to be about 136 cm in diameter, and the duralumin pipe with a diameter of 110 mm became the material for its creation. Both blades of the screw were cut from this pipe. The length of each blade turned out to be 63 cm. In order to reduce the twist and make the blades more flat, the author rolled them out. As a result, it turned out as if the blades were made of a pipe with a diameter of 400 mm.

Due to the fact that the used generator has no sticking, the screw starts even from the lightest wind and develops high revolutions. The length of the mast of the wind generator is 5 meters. The height is also added by the pipe of the generator itself.

Mounting takes place in three places through the M10 bolts. To hold the mast of the wind generator in an upright position, it was fixed with stretch marks. the wire from the wind generator goes inside the pipe, so it is reliably protected from external conditions. The author did not use slip rings in the design.

Charging the battery begins already with a wind of 3.5 m \ s, and when

at a speed of 4 m \ s, the screw of the wind generator accelerates to 300 rpm, at 7 m \ s the speed reaches 800-900, when the wind is 15 m \ s, the screw reaches a speed of 1500 rpm.

The maximum power of the generator, which was recorded by the author was 250 watts. With a standard wind of 6 m / s, the wind generator produces 150 watts of energy every hour. This power is enough to charge a car battery.

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