WR600-karhotin toimii parhaiten etunostolaitteeseen kytkettynä.

Agronic WR600

RAKE ON THE FRONT OR ON THE BACK

The mid-sized Agronic WR600 rake is available with a headstock that allows for mounting on the front loader, front linkage, and as well as on the rear linkage. We tried the new model for both raking both silage and straw.

■ Seppo Nykänen, translated by Jeff Lancaster

A few years ago, Agronic introduced the WR500, which is capable of both the front linkage and front loader mounting. The WR500's concept was radically different from other rakes. The model's polyamide rake tines are mounted on a round drum at a slight angle. In addition, the rotors have short wings which work to transition the material the tines to the windrow. The WR500's rotors are hydraulically driven directly by hydraulic motors, the same concept as used in Agronic's four rotor WRT 900 model.

The frame of the WR600 differs from that of the smaller model, as the rotors are folded vertically for transport. The folding cycle is done by lifting the rotors until the cylinders have been retracted to their maximum position. The hydraulic pressure is then transferred to the lock valves for each rotor, holding the rotors up during transport.

The cylinders control the width of the swath. The working height is adjusted by removable spacers on the axles of the 7 caster wheels.

The WR600 is pushed from the front or pulled from the rear, so that the working direction always remains the same. The front loader, front linkage, and rear linkage all have their own mounting systems. The rear linkage headstock is also removable.

Raking and Baling in a Single Pass

A total of about thirty hectares of different types of material were swathed in the trial run: dry hay, fresh silage, and peas/straw. Some of the crop had been mowed in wide swaths with either a mower conditioner or a plain butterfly mower. All the swathed material was baled, some swathing and baling together, and some separately.

It is not advisable to have an inexperienced driver to do swathing and baling together. While there is nothing special about driving, it does take some getting used to.

Both the combination baler and the hydraulically driven rake require a return line for the tractor's hydraulics. LS technology should also be available on the tractor so that the rake does not interfere with the operation of the wrapper. Hydraulic requirements are for 1 x DA output, pressure supply for the rotor drive, and a free-flow return line.

The biggest benefit of working with the front rake is achieved when working with a baler or a self-loading wagon. The front rake reduces the driving time and the fuel consumption. Labour is also saved, and field compaction is also reduced. However, the overall length of the combination sometimes causes problems. Transporting the rake and accompanying implement over long distances does not make sense.

Raking in combination with the baler works very well. However, sharp turns are needed on the headlands to assure baler alignment with the windrow, and to avoid the tractor tire making contact with the pick-up.

The swath left from the butterfly mower was not as successfully windrowed, as the layout did not match well with the rake. Sometimes the rotors picked-up the hay in the middle of mowing width, leaving some at the edges.

Working mower conditioner produces with a mower conditioner produces well formed windrows, whereas working with a mower alone does not. On the next pass around the field, with wide windrows of a plain mower, you will need to drive on the raked swath in order to collect all material. The working width can be continually varied while driving. However, the width of the swath being formed is also constantly changing. When the rake is at the maximum working width, the outer wheels tread on the mower windrow. ■

Narrow windrows provide an opportunity for increased maneuverability.

↑ Polyamide tines collect the hay, but usually leave the stones on the ground. Dirt contamination in minimal, even when the tine encounters the ground.

← Loivissa kaarroksissa paalain ottaa karheen noukkimeen. Kun ajetaan jyrkemmissä kulmissa, joutuu alueen ajamaan kahteen kertaan. Kuvassa näkyy karheen pätkä, joka on jäänyt keräämättä paalaimen oikaistessa.

← When attached to the front linkage, the rake is slightly closer to the tractor then when attached to the front loader. To ensure free movement, there is a chain between the adapter and the frame instead of a toplink.

→ The rear linkage has its own removable headstock.

The working width is adjusted hydraulically. When the cylinders a retracted fully, the pressure switches to lift the rotors into the upright position.

The working height is adjusted by moving the limiters above and below the frame on the vertical axles of the caster wheels.

Front Linkage is the Easiest

For testing the rake was attached to the front linkage, front loader, and rear linkage. In all positions the rake must be adjusted so that it runs on its own wheels. When the front linkage is used, the arms must be placed in the floating position if possible, to allow the arms to float freely. While on the rear linkage the floating position is the default setting. The front loader adapter frame has long holes that allow for free movement. In all cases the toplink must be replaced by a chain.

From a driving point of view, the rake mounted on the front linkage is the easiest to operate. The rake is positioned close to the tractor and is best suited for turning, only the sharpest turns does the rake leave material. On the front loader the rake is slightly further away, and in the curves more material can be left while turning due to it's straighter mounting position. In front mounting the tractor does not drive on the swath when two swaths are merged. While on the rear linkage, combining two rows into one does not make sense, as the tractor may drive on the two rows before raking. Also, the WR600 is not at it's best when it comes to raking stale material.

Tweaking

Due to the design of the rotor, the WR600 is relatively precise to adjust. The best result is achieved when the tines follow the stubble just above the ground. In hay and silage this works well, in fresh cereal the stubble may not keep the material elevated. With fresh cereals, the tines must be lowered and then there is a danger that the soil will get into the feed. The biggest weakness of the WR600 is the difficulty of adjusting the working height: moving the shims on the vertical shafts of the wheels is laborious. The situation is improving, as Agronic has just announced that next year's models will have the option of adjusting the front wheels quickly.

The WR600 rides entirely on 7 support wheels when working.

Raking and baling is a single pass works successfully. Baling does not slow down while raking.

Adjustments must be made quite diligently, as the height of the tines must be adjusted even when the soil type changes. On soft surfaces, such as marshy terrain, the tines must be raised and lowered on harder surfaces.

When properly adjusted, the WR600 provides a good working impression. The feed stays clean and the windrows are well formed when the rotor speed as adjusted to suit the driving speed. When the rotor rpm is correct, the tines do not significantly move any stones into the feed

Saves Time

The front rake is suitable for farms with up to a few dozen hectares of forage and with only one worker at a time. A shortage of labour is a fact, and here the Agronic WR600 offers one solution, as the wide working width reduces the number of passes required.

The Agronic WR600 is already a functional machine, and the manufacturer's promised quick front wheel height adjustment will only further enhance usability.

Technical Data Agronic WR600	
Weight	860 kg
Max. Working Width	6,1 meters
Transport Width	2,8 meters with
Max. Swath Width	2,2 meters
Tines pcs. Polyamide 20mm	2 x 36
Tires 16x 6.50-8	7 pcs