

Kuhn VB7190 round baler:

Gobble, gobble

We tested one of Kuhn's pre-series VB7190 variable-chamber balers throughout last season in straw hay and a bit of silage ... to assess its potential. Read on to discover our findings



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Kuhn introduced us to the VB variable-chamber baler at Agritechnica 2019, and, while testing continued during 2020, we had the chance to use one of the pre-production VB7190 models, which produces an 80 to 185cm diameter bale. But the VB7190 model is not alone; there's also the VB7160 that knocks out a slightly smaller 80-160cm bale. And, in addition, there's a choice of two different chopping systems for both models or just a straight rotor feed version.

Getting hitched

To get the hitch height right, the long drawbar can be placed in several positions for upper and lower mounting, albeit the latter will be the most popular here. You can also exchange the normal pin end for a spoon for an extra cost of £556.

While the hose routing was OK on the pre-series machine, Kuhn has improved it further on production spec machines, with all of the hydraulic and electric lines bundled together

so they won't stretch when going from lock-to-lock. For the hydraulics you'll need one single- and one double-acting line, an ISObus socket and, of course, the obligatory road lights socket and brakes (choice of hydraulic or air). Neat decals and hose markings make it easy to identify and plumb in the hydraulic pipes correctly.

The parking stand is well placed to the left of the drawbar, next to the easy-to-reach shut-off valve for the back door. We also liked the foldable ladder for reaching the netting unit. Because the drawbar, pto shaft and stand are positioned at a suitable height, there was no snagging crop and creating of lumps.

Kuhn's VB7190 variable-chamber baler performed well in our test, producing neatly shaped bales of straw and silage.

THE SHORT VERSION

- ▶ The Kuhn VB7190 ejects its bales quickly, even on slopes.
- ▶ The big intake swallows large amounts of material.
- ▶ Moisture sensors are accurate.





The drawbar (which can be positioned high as shown for a ladder hitch, or lower for a pick-up hitch) is not cluttered. The stand is well positioned. An extendable hose holder will be on production machines.

Gobbling crops

Drive flows through a six-spline Bondioli and Pavesi pto shaft needing 540rpm. This leads into a gearbox with a cam clutch for protection. Power is then distributed to both sides of the baler – to the rotor and pick-up on the left of the machine, and the bale chamber rollers and belts on the right.

The floating pick-up is suspended on two springs. Our machine had fixed gauge wheels for height control, but there is the option of having steerable solid rubber wheels (£325). Both versions can stay in place when heading down the road. An extensive hole pattern allows the height to be finely adjusted.

Five rows of cam-controlled tines collect the crop, doing their job exceptionally well even when speeding along in brittle straw. The crop

press roller is infinitely adjustable in slotted holes, and the deflector tines provide initial pre-compaction of the forage.

Next up in the crop channel is Kuhn's integrated 480mm diameter rotor: we say integrated because the outer part of the rotor includes the auger flights rather than having them as separate items. This ensured a dense flow of material to the middle and into the chamber. A hydraulically operated, rear-hinged drop floor allows the baler to manage reasonably sized lumps.

Indeed, the intake is able to handle massive amounts of crop. Kuhn claims that 'bung ups' are no longer an issue with this baler. That sounded like a bit of challenge to us, so we pushed the baler to its performance limit, but this meant driving at speeds you wouldn't

TEST ASSESSMENT

Kuhn VB7190

Technical

Tractor attachment	+
Parking stand	+
Pick-up	++
Rotor	++
Crop roller	+
Cutting system	+
Overload protection	+
Net wrap system	++
Net roll storage box	++
Operator terminal	++

In-field performance

Pick-up performance	++
Throughput	++
Operating the blades	○
Cutting quality	+
Inserting the net	○
Adjusting the bale size	++
Maintaining bale size	++
Power requirement	○
Maintenance	++
Cleaning	++

General

Build quality	+
Handling	++
Operator's manual	+

Grading: ++ = very good; + = good; ○ = average; □ = below average; ■ = poor; / = not available

normally operate at. In practice, the intake is not the limiting factor, but, if by some feat you do manage to completely stuff it, there is a large crank handle to manually reverse the baler driveline.



The net sits in this tray and is threaded from there. We liked the push-fit adjustable side plates for different widths of net roll.

DATA SHEET

Kuhn VB7190

Length/width/height	5.40/2.90/3.20m
Total weight (empty)	4,700kg
Tyres	600/50 R22.5
Gauge wheels	160/65-6
Hydraulic requirement	One single-, one double-acting
Pick-up width	1.90m
No. of tine rows	Five
Tine spacing	60mm
Rotor width	120cm
Knife spacing	70mm
No. of blades	14
Chamber width	121cm
Bale diameter	80 to 185cm
No. of belts	Four
Net width	1.30m
No. of net rolls	Two + one
Base price without VAT	£66,455
Test equipment without VAT	£74,060

Chopping with 14 knives

The test baler was the Opticut 14 version with 14 knives that can be engaged in groups of 0/7/7/14. Theoretically, the minimum chop is 70mm. If this isn't enough you can go for the 23-blade chopping system, with a VB7190 Opticut 23 costing £3,230 more. For those that don't want any form of chopping there is the entry-level rotor feed variant.

Our machine did a good job of chopping both straw and wilted grass. To select the number of knives poking into the crop channel, you have to leave the tractor seat and reposition the easy-to-reach handle located between the pick-up and the axle. The chopper blades are also unlocked here if you want to whip them out when sharpening.

Each blade has its own overload protection courtesy of a spring and is easily accessible from the chamber. The blades have no auto-retract function, so, if you're not using them, you need to remember to retract them every now and again to prevent their slots from clogging up. Alternatively, if you are not going to be chopping for a while, you can fit the filler plates, which are conveniently stored on the side of the machine.

Know the moisture

The bale chamber comprises three rollers and four belts. The bales are 1.20m wide and, as mentioned, the diameter can be set from 80cm to 185cm. We didn't have any problems with the bale starting to form. As the chamber



On the left is the driveline for the pick-up and the auto-greaser as well as the stowage space for the filler plate or removed blades.



The rotor and starter roller are driven from the right side of the machine. The storage tank for the chain oil is also positioned on this side.

is relatively small and shaped like a triangle, the bale starts to roll early and compaction can begin.

Baling pressure is determined hydraulically using the control box. On the VB, Kuhn has what it calls I-Dense, a nifty feature that enables the user to select two density zones inside the bale – technology that allows operators to adjust the machine to individual conditions.

I-Dense can also utilise information from the optional moisture sensor unit to automatically adjust the density in relation to the moisture of the crop. The baler comes with three different default settings for hay, silage and straw.

The moisture sensor did its job throughout our test, with the current reading (measured within a range of 5-40%) shown on the control box. It is a really useful feature in the evening hours when the damp sets in.

Bale shape is exceptionally good, and the VB was able to precisely adhere to the selected bale size. With regards to throughput in wheat straw, at 80% bale density and a diameter of 1.60m punched into the control box, it was taking an average of 49 seconds to produce a bale, net it and get it out the door – a very good result. Bale weight during this part of the test was an average 320kg, which is also a creditable result.

However, the VB does require a reasonably sized tractor up front. Kuhn recommends 130hp, which is fine, but, if you want to crack on, it is better to up this to 160hp plus. We mainly baled wheat and barley straw and to

a lesser extent silage and hay with positive experiences in these crops, too. The belts give the appropriate push so the bale rolls out and clear of the chamber every time.

Trouble-free binding

The binding also worked well in our test in every crop. When threading in the net, it is best to stand on the right of the machine; a special mention to the steps on both sides and the well located storage boxes under the side panels, which are easy to open/close using the decent-sized handles. The insides of these side panels are nice and smooth, so operators shouldn't get showered with dust and chaff. Happy days.

Lifting heavy rolls of net into the cradle isn't too bad, and it's easy to align the roll thanks to the simple-to-adjust side plates, which just slot into position. Even on rolls with damaged or soft cardboard cores, there's not an issue.



We really liked the neat handles and, with the smooth inside of the panels, hardly any chaff drops out when you open them.

Simple to use

The VB7190 is ISObus-compatible so it can be used with a corresponding tractor terminal; this worked well on test. Alternatively, Kuhn offers the small CCI 800 (£2,260) or large CCI 1200 (£3,525) display. The test machine also came with the latter and ticks all of the boxes, with the touch screen allowing you to move the icons to suit your way of working.

Overall, the menus are simple to understand; the actual user interface is not cluttered and is logically designed. Chamber-fill indicators show the operator whether one side of the bale needs more material to optimise bale shape and how the bale is progressing, all at a quick glance of the screen.

The design of the bale core with the I-Dense system is also relatively simple to understand and use. The same applies to the changing of the crop presets; you can program individual operating parameters for each crop in three separate programs.

Audible alarms and signals, such as when to open and close the door, work well.

Summary: We mainly used the VB in straw where we had a really good experience. The baler is a highly efficient machine while still being simple to operate and also maintain. The bales were excellently formed, and the throughput was impressive. Even though we only baled a small amount of silage, we were still happy enough with the final outcome. The price? With a list of £66,355 for the VB7190 Opticut 14, the machine isn't cheap. And even for the non-chopper version you're still looking at nearly £63k.

Despite our VB7190 being a pre-production unit, we couldn't suggest any major improvements. It's a solid machine that knocks out a good bale in all types of forage. Which is exactly how it should be.

Christian Brüse



Three rollers and four belts are responsible for making well-shaped, firm bales. The metal plate on the side above the roller is part of the I-Dense moisture measuring system.

As its name suggests, the Opticut 14 chopping system has 14 knives.



Operation is intuitive through the optional ISObus CCI 1200 terminal.