

LANDWIRTSCHAFT AUF DEN PUNKT GEBRACHT

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PFLANZE+TECHNIK

ENGLISH VERSION

ALL TUCKED  
INSIDE THE BOOM



# ALL TUCKED INSIDE THE BOOM

The designers at Austrian manufacturer Hauer got their heads together to research into a new front-end loader. They came up with a solution where the rams and parallel control components are housed inside the boom. We tested the 'inner values' of this boom and were surprised.

**T**he invention is based on the traditional loader design – two arms, one cross brace and rams – which has not changed since its beginnings. Indeed, except for the introduction of Z-kinematics and multi-couplers, no major changes have been made to the kit during the last few years. In fact, today manufacturers focus on boosting operator comfort by spec'ing their loaders with electronic control systems. And yet,

there is always something capable of improvement, as we can see from the new generation of XB Bionic front-end loaders from Hauer. And it's not just the appearance that has changed, styling not being the priority in this project.

The new Bionic family is a line-up of eight members that cater for tractors in the 50-280hp range. We compared the XB Bionic 110 in bespoke John Deere paint finish with

its predecessor, the POM-VX 110, working them side by side for one season. Each loader was paired with a 105hp John Deere 6330 and operated by means of the electronic joystick. The good news for Hauer customers is that the new models couple to the same brackets as their predecessors – provided the boom width is the same; and this applies to all new models all the way up to the XB Bionic 110.



The con rods for the parallel control linkages and the attachment rams are housed inside the boom.

**LINKAGES AND RAMS MOVE INTO THE BOOM**

The stand-out feature of the new booms is a curved con rod inside the boom which constantly adjusts the current angle of the attachment on its way up or down. But the design team not only moved the parallel control components into the boom but also the rams that operate the attachments. This is in fact a unique Hauer feature.

Unlike externally fitted rams, internal rams must extend to tip the bucket or fork, thereby making use of the full size of the piston and developing higher (break-out) forces. Although we didn't measure the exact forces, we noticed they were clearly higher than on the predecessor.

Yet one drawback is that the levers of the attachment control rams are vertically more prominent to the effect that they impaired operator view of the roof and beams of the barn when stacking hay and straw bales.

**IN A NUTSHELL**

- XB Bionic is the brand new loader range from Hauer.
- The new loader generation stand out for integrating the attachment control rams and parallel control components into the boom.
- The rams that control the attachment extend to crowd the bucket, an approach that develops a higher break-out force.

Yet upsides on the Bionic booms are more acutely angled elbows which move the attachment closer to the front axle and the new pentangular cross-section of the arms, which brings several benefits: it reduces the number of necessary welds to one, increases stability and eliminates the issue of material collecting on the arms. When handling muck, our experience was that this compact design makes the Bionic much easier to clean.

**HIGH LIFT AND GOOD TIPPING ANGLES**

A 3.98m lift is quite a statement for a loader of this class. As the boom rises from its down position, the tipping angle remains at about 58° up to a height of 1m. That's very good and helps with filling the bucket to the brim when handling grain.

We used a sensor on the bucket to track its angle and verify how effectively the new »



- 1 The bird's eye view shows clearly that the XB Bionic boom has wider arms.
- 2 The valve chest inside the double-walled cross brace is in excellent reach and yet well protected.
- 3 The carriage comes equipped with bespoke Hauer couplers or with Euro latches.
- 4 The multi-coupler connects hydraulics and electrics fast and conveniently.
- 5 Our XB Bionic loader was married to the tractor with traditional eccentric pins.
- 6 Due to the different set-up, the attachment rams push the attachment to crowd it, thereby developing higher break-out forces.

parallel control maintains its position. In fact, the angle variation is an acceptable 2° throughout the lift range – and without causing the bucket to dump. Only at its limit stop at full height does the angle change by -1°, which is still a very acceptable variation.

The dump angle at maximum height is 49°, which was absolutely fine in our applications. Digging depth is the next important parameter that determines how deep the bucket can work below ground level. This is nearly 25cm for our Bionic.

Attachment and lift modulation is very well controlled, which does not apply to the last few centimetres of tipping to unload the bucket. Another hitch is the long booms that reach far under the pivot points of the attachment and sometimes even under the pallet fork (if it's not a genuine Hauer fork), so watch out when loading a trailer.

#### NO CHANGE TO THE MOUNTING BRACKET

Anything but a high-end solution yet still a well-proven one, the Bionic loaders are still secured to the tractor by means of the pin system: drive the tractor into the boom, dump the attachment and the boom locks home in the brackets. In our experience, this works equally well on rough ground. Excellent!

To secure the jib, the operator slides eccentric pins into position. The boom is now

married to the tractor, come what may. No need for any readjusting of stops or similar elements. An automatic locking system is also available and is very useful for users who remove the loader quite often. The automatic locking system comes as standard on the bigger loaders from XB 130 Bionic upwards. A very convenient detail for attaching a shear grab is the fact that the operator does not have to walk around the machine to couple the third service after leaving the cab.

”  
3.98 m  
lift height is  
a whopper in this  
loader class.

Those clever Austrians also came up with a smart solution for repairing a hose, seal or bearing: remove the pin that secures the attachment ram and the ram slides down to the end of the boom. Its supply hose is long enough.

Fittingly for a premium loader, the bronze bushes are replaceable and the pins are secured against twisting. The valve chest is fully integrated in the cross beam where it is easily accessible after removing a cover.

#### OTHER POINTS WORTH MENTIONING:

- During removal from the tractor the loader pushes the tractor back. The hand brake must be released.
- The grease nipples are easy to get at, and the service openings are covered.

#### SUMMARY

The Bionic from Hauer is a new step in the evolution of loaders. The new boom offers improved visibility, boosts break-out forces and integrates all components. This does not affect the parallel control and 'inner values' compared with the predecessors. With a price tag of around €9,000, the Hauer is pitched among the premium-price loaders, but at the same time this evolutionary step is not another step up the price ladder. On the contrary, the XB Bionic does not cost much more than its predecessor.

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The POM-VX boom (right) has rectangular, the new XB-Bionic pentangular arms.

## HAUER BIONIC XB SPREADSHEET

### PLUS & MINUS

- + excellent visibility
- + higher break-out forces than the predecessor model
- + mechanical parallel control without tipping
- automatic locking to the tractor is only a standard on the higher models from XB130 Bionic

**Minimum use:  
219h/year**

$$MU = \frac{F_c}{rc - vc} = \frac{€903}{€5.3 - €1.20} = 219 \text{ h/year}$$

### Explanation

MU	Minimum use
Fc	fixed costs: €903/year (= 10% off the purchase price)
Vc	running costs: €1.20/h (wear, service)
RC	Rental costs: €5.30/h

### USER TESTIMONIALS



Our contracting business focuses on chopping wood, marketing woodchip and trimming trees. We use the Bionic XB 110 on our Valtra 101 N and the pair of them clock up about 400 hours per year, most of which are spent on handling woodchip. I control the loader from a joystick, which is a peach. The shake facility is particularly useful. Our dealer hooked the loader up to the tractor and I was surprised that our existing bracket offered a perfect fit for the new job. Housing the parallel control inside the boom is very smart, because it makes for excellent visibility – a great advantage when we work in confined barns and buildings. Yet, the view of the attachment hooks could do with being better. The quality of build is very good. Greasing as well as attachment/removal to/from the tractor is no trouble at all.

**Arnd Kampmann, northern Germany**

### Hauer XB Bionic 110 front-end loader specifications

Tractor power	90 -120hp
Lift power at maximum height	2.09 t
Lift power at 1.50m	2.34 t
Break-out force	2.9t
Parallel control	Mechanical
Carriage	Euro
Boom shock absorption	Nitrogen
Locking attachments	Mechanical
Coupling oil lines	Multi-coupler
Boom attachment	Eccentric pins

### Our measurements

Internal/total boom width	0.78m/1.05m
Lift height	3.98 m
Digging depth	0.25 m
Max. load-over height	2.83 m
Crowd angle at ground level	58.5°
Crowd angle at 1m	58.1°
Dump angle at max. lift	48.9°
Time to 3.5m lift	8.3 s
Front wheel to pivot pin distance	1.67m
Unloading width	1.08m
Time to remove the loader	1 min 15 s

### Prices

XB110 Bionic complete with bracket	€7,795
Multi-coupler, shock absorber, 3rd circuit	€1,100
John Deere paint finish	€134
<b>Total price</b>	<b>€9,029</b>

Source: Manufacturer information, list price excl. VAT



Folded into storage position, the parking stands automatically cover the pipework offering excellent protection should the boom foul with trailer sides.

# X|B BIONIC



- for tractors from 50 – 280 hp
- completely integrated mechanical parallel guidance, tilting cylinders and hydraulic valves
- robust construction for every task
- new driving experience by optimal view of the working area

For further information contact your



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