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Big enough for large acreages...



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Big enough for large acreages...

dlz endurance test ... and yet compact, the UX is the Amazone sprayer of choice for the demanding operator. The chassis, tank and L booms are all new, and the focus is on high productivity throughout the seasons. We tested the UX 3200 model, equipped with 24 m L spray booms.

Trailed sprayer buyers are increasingly dividing into two groups. Value-for-money entry level models are sought after by the first group, whereas the second group requires top quality equipment tailored for maximum output, service life and comfort. Amazone has responded to this trend by positioning its new UX series above the successful UG series (2200 and 3000 I, see Test UG 3000 in dlz 03/03). There are currently three models available. Alongside the large UX 5200 and UX 4200 there is the entry level model UX 3200; equipped with the same technology as its bigger brothers in the chassis, boom and electronics, but with a 55 cm shorter frame it is lighter and more compact.

New Super-L Boom

When it comes to booms, Amazone is a cut above the rest. The Super-S spray boom for the UG is a prime example. The sections are finished with four-sided U profiles and the boom sections are folded vertically behind the machine. The Super-S covers widths from 15 to 28 m and can also be mounted on the UX.

Now, Amazone's engineers have developed the stronger Super-L boom specifically for the UX, with widths from 24 to 40 m. We worked with the 24 m L in our test.

Its similarity to the S boom is obvious. For example, the nozzle holders are integrated into the 4mm thick carriers within the 120 x 45 mm sided U profile. The L boom can also be used at reduced widths, and even with one side folded in (at up to 6 km/h).

The boom sections, however, are more elaborately and sturdily built. The inner sections, for example, are made with upper beams of 50x50 mm square tube. In addition to that there are double braces between the tie rods.

The L boom is mounted in a parallelogram and a nozzle height of up to 2.5 m is possible. The suspension is dampened four times overall.

When we put it to the test, it became clear that the vertical damping is impeccable. There is no horizontal swing-back with the 24 m L boom. The swing compensation even copes well with driving

straight across wheel tracks. When the tilt is manually readjusted there is a slight delay before the boom responds, but it is nevertheless easy to control.

Depending on the ground surface, the kingly boom ride gradually starts to reach its limits at speeds above 10.5 km/h. That is a decent speed. On our fields a forwards and backwards vibration in the outermost boom section began to develop when we started to reach the limit. With the Super-S, our progress had been slower - by an average of 1.5 km/h.

One state-of-the-art optional extra is the sprayer pressure recirculation system. This ensures that the spray liquid is immediately available at full concentration. It is an effective system. The sprayer can also be shut off for rinsing. The only snag is that the on/off valve is located behind the boom pendulum, so you can only reach it by standing on tiptoes.



Robust and not too heavy at 3700 kg when empty, the UX 3200 is compactly built for this end of the market.



412 ha
Amazone UX 3200
– **dlz recommends** –
Minimum Application (MA):
approx. 805 ha/year

$$MA = \frac{FC}{IR - (VC + LA + TK)}$$

$$MA = \frac{6843 \text{ €/year}}{14 - (0.90 + 2.0 + 2.6) / \text{ha}} = 805 \text{ ha}$$

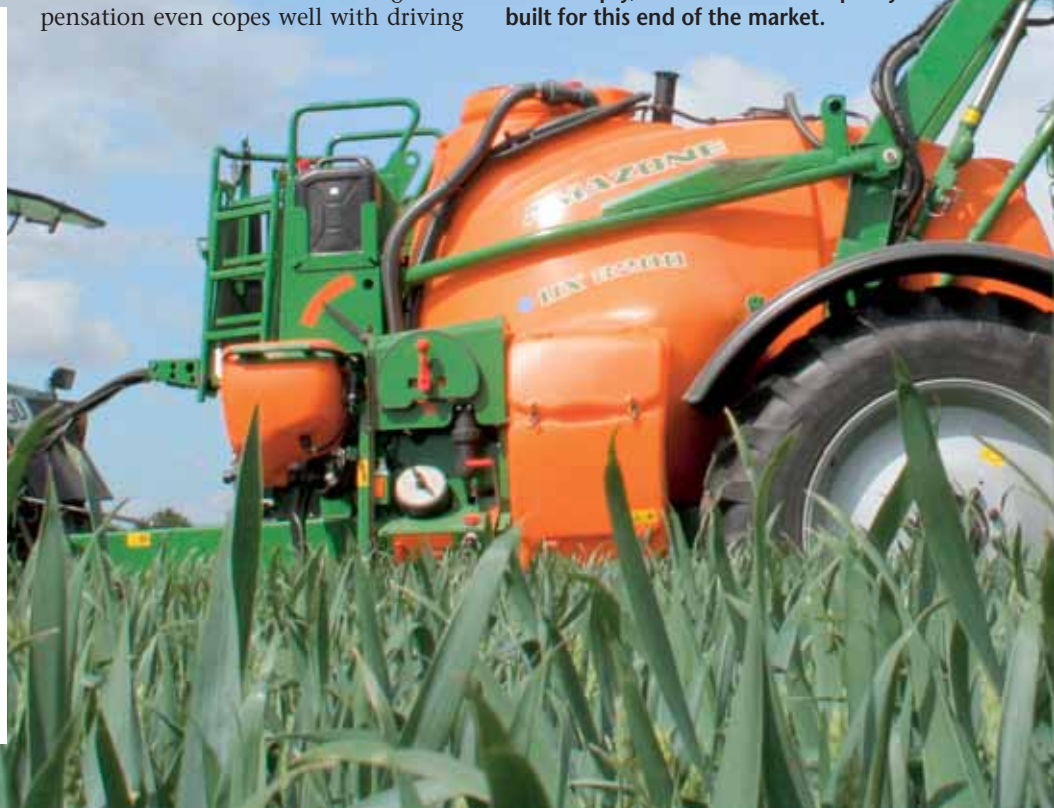
FC: Fixed costs per year: (6843 €)
(14 % per year of purchase price of approx. 48 880 €)

VC: Variable costs per hectare for trailed sprayer:
0.90/ha

IR: Contractor charge rate: 14 €/ha
(average output: 7.0 ha/h)

LA: Basic wage for work: 2 €/ha
(at 14 €/h and output at 7.0 ha/h)

TK: 130-HP tractor: € 2.60/ha
(costs 18 €/h var. costs)



Distance Control Does It!

Distance control, another optional extra, provides a great deal of relief for the driver and is an important factor for ensuring optimal control of the boom. Two ultrasound sensors on the boom sections together with two inclination sensors automatically control the height and inclination of the boom.

If the system is properly calibrated, the controls work impeccably. The distance from the target surface is kept satisfactorily exact both longitudinally and transversally, even at 10 km/h on varying, slightly sloping land. Even an experienced driver could not work more precisely.

When used for a whole day the reduction in operator strain is enormous.

And we drove 2 km/h faster on average.

The system even maintains control when a change of direction is made on the slope. After shutting off the spray nozzles the boom is moved to a higher position, and the inclination of the land is also taken into account. Operators who have become accustomed to distance control will certainly not want to work without it.

However, the control reaches its limits in irregular, tyre-tracked or pitted ground, and in strong winds. Control then started to become uneven, so we switched to manual control in those circumstances.

The height guides on the right and left should prevent unintentional contact between the boom sections and the ground. We don't think that the plastic rods are strong enough, however.

Compact Boom Fold

During transit, the L boom rests in brackets on the side.

Once folded, the boom sections rest on the parallelogram, cushioned

by nitrogen shock absorbers. These absorb massive shocks, to the extent that it is not absolutely necessary to have the optional extra of axle suspension on the UX -above all, when larger tyres with reasonable shock absorption of their own are being used, e.g. 18.4 R46. The segments fold in and out quickly (32 / 25 sec.) and reliably. On a slope, the two sides don't necessarily fold simultaneously.

It is possible to spray at up to 6 km/h with one side folded up. The locking mechanism firmly secures the system for road-travel. Two clamps hydraulically secure the folded sections into place.



There is a lot to the Amatron+ and it is certainly reliable. However, menu navigation can be complicated at times, and the text should be larger.

New L-booms:

The inner sections (1) are stiffened three-dimensionally. The outer segments (2) consist of edged profiles, plus bracing. The fact that the compact construction necessitates an extra folding point is not a problem at 24 m.



For experienced drivers the joystick facilitates operation.

There is a sticker for the windscreen, but the buttons are not labelled.

Also, we missed the feedback feature on the Amatron+ display.





At 615 cm long, the UX 3200 is 55 cm shorter than the UX 4200 and UX 5200. That makes it nice and agile.

Irritating and wearing rattling on poor field tracks is therefore eliminated.

Two pumps are standard

The UX comes with two pumps as a standard feature. The 250 l/min pump is utilised when spraying; the 180 l/min unit operates the main agitator and assists filling the tank. We could find no fault with this equipment – both agitators do a first-rate job. The agitation intensity can be adjusted with two valves and can be set to zero for rinsing the machine with clean water. Then, both circuits are sent entirely to the suction side of the pumps – a very practical feature. Unfortunately there is no automatic adjustment of agitation intensity to the fill level in the container. That means the intensity must be set manually. The pumps are driven from the bottom up, through the drawbar, which means that the pumps are easily accessible. The ground clearance is a consistent 72 cm (with 18.4 R46 tyres).

Amatron+: many functions...

The central controller of the extensively equipped UX is the Amatron+ computer. Incidentally, this terminal can also control Amazone drills and fertiliser spreaders. Those who do not want to use steering and boom automation with the UX can still manage with the more affordable Amaspray+ controller. We liked the wealth of information on the Amatron+ display very much. Current fill level, position of booms and steering etc. provide a good overview. In addition to that there are 20 pre-set memory options for individual jobs. Partial width operation is also controlled by the computer.



Firm suspension, four way damping. But: cleaning kit (1) and tap for the pressure recirculation system (2) are hard to reach when the booms are folded in.



Using ultrasound sensors (1), distance control guides the boom automatically. Operator strain is therefore much reduced and a higher forward speed achieved. A must for the UX.



The stable parallelogram controls the spray boom well, so up to 11 km/h is possible on decent ground.

The numbers and text on the black and white display are quite small, however. That makes it more difficult to gather information when things get hectic. Also, the functions respond to the buttons with a slight delay – a typical phenomenon of BUS-based systems.

...but not yet perfect

The Amatron+ has a wide range of functions. Given the limited number of buttons, many jobs – such as folding booms,

Technical Data

Dimensions / weight

| | |
|--|-----------------|
| Working width | 24 m |
| Transport width (24 m L boom) | 2.55 m |
| Pump delivery rate (diaphragm) | 250 + 180 l/min |
| Track width | 1.50 - 2.25 m |
| Empty weight approx. (machine as tested) | 3700 kg |

Price of test machine*

| | |
|--|----------|
| Amazone UX 3200 (with Amatron+ computer, 24 m L-boom, compressed air, 2 pumps) | 47 800 € |
| Distance control boom automation | 2400 € |
| Axle steering (steering axle plus Trailtron, requires oil circulation and profi-fold boom folding) | 5750 € |
| Pressure recirculation system | 1650 € |
| Multifunction joystick | 500 € |
| Amaclick switch box | 390 € |
| Other extras (oil circulation, 18.4R46, etc) | 8180 € |

Total list price **66 670 €***

| | |
|--|--------------------------|
| Approx market price we calculated: | |
| Test machine (full equipment) | approx. 48 880 €* |
| UX 3200 with Amaspray, standard hydr., without steering, 24 m L-boom | from 35 000 €* |
| UX 3200 special (only 1 pump) | from 32 000 €* |

* in €, plus VAT

switching partial widths or activating distance control – are distributed over three menu levels. That means you have to keep scrolling. Those who want to steer manually must also press the shift button on the back of the terminal. That takes time. Entering numeric values with the keypad at the bottom right is also rather time-consuming. As always, Amazone is guarded regarding the compatibility of the ISO bus terminal. On the one hand, the Amatron+ is ISO-Bus ready and a job computer is mounted on the UX. On the other hand, connection to the ISO terminal of John Deere, for example, is not yet allowed. The UX is thus still a detached ISO bus island.

Joystick for regular operators

In order to push the right buttons on the Amatron+ for the main on/off and other functions, you have to keep looking at the computer. Anyone who regularly wants to isolate individual sections with a single button can mount a so-called Amaclick switch box underneath the Amatron computer. We think that is a useful extra (290 €). The next step up is to use joystick operation (370 €). Each function can be controlled with it. This multifunction stick is the solution for full time operators, who can get to know all the functions by heart over time, since there is no labelling on the buttons. You would have to use stickers here. We also missed the feedback of the Amatron+, for example when changing levels with the flip switch on the joystick. Conclusion: it is certainly not easy to find a place for all the numerous functions of a UX. The Amatron+ is not a bad start, but

| dlz test overview | |
|--|-------|
| Criterion | Score |
| Boom (24 m Super L) | |
| Stability, transport | ++ |
| Stability, in work | ++ |
| Self-levelling, on level ground | + |
| Self-levelling, on slope | + |
| Height guides (plastic) | ○ |
| Fold in/out speed | + |
| Distance control function | ++ |
| Operation | |
| Amatron+ functions/operation | + / ○ |
| Instruments | + |
| Agitator | + |
| Reliability of electronics | + |
| Chassis / frame | |
| Stability | ++ |
| Function on road | + |
| Function in field | + |
| Track-following precision | ++ |
| Wash set, water tank | ○ |
| Pump | |
| Delivery rate | ++ |
| Reliability | + |
| Position on chassis | + |
| Maintenance / other | |
| Pump maintenance | + |
| Accessibility of filters | ++ |
| Electronic part width shut-off | + |
| Function of agitator | ++ |
| Function of induction hopper | + |
| Properties of emergency operation of electronics/valves/hydraulics | ○ |

++ = very good, + = good, ○ = average,
- = bad, -- = very bad;

skipping through the menus takes time. In the medium term, a touch-screen monitor or a colour display would give better legibility.

Instruments and filters suited us

The regulating valves, clearly arranged at the front on the left-hand side of the instrument panel, are simple to operate. Control is easy with a little practice, although it would be better if the valves were to click into each position more easily. When filling with fresh water, the amount that can run back into the suction hose before the non-return valve shuts is a little too great. The drain cock at the bottom of the container should be more secure against unintentional opening. The suction and pressure filters are ideally arranged within reach in the instrument area. When the auxiliary agitator is active, the inner side of the pressure filter is also continuously automatically rinsed. The suction filter can be taken out at any time, even when the tank is full. It is necessary, however, to pull the insert out with your fingers.

3600 l tank+ 320 l clear water

The curvy spray tank looks really good. Even though there are no anti-sloshing baffles included, the load remains in place even with a half-full tank. The 320 l clear water tank is integrated neatly on the outside on the right-hand side. The arrangement does have a disadvantage, in that the driver can only observe with great difficulty whether the wheels of the UX are running cleanly in the tractor tracks. That is particularly bothersome on a slope.



Fotos: Pfänder

Powerful induction hopper, logically manageable. Unfortunately, the lid does not function as a place to put the measuring jug down on.



Good: the instruments can be operated logically and easily. The suction (1) and pressure (2) filters are also easy to reach.



The optional storage boxes are practical. It would be nice if the bottom lid could be used as a surface to put things on.



The pump double-pack (1) at 250 + 180 l/min is standard. Driving it from underneath (2) increases the ground clearance.



The 320 l clear water tank is easy to fill – with a hose connection even on the left. However, it obscures the driver's view of the tyres.

Axle steering: good but expensive

The axle steering option, with Trailtron activation, allows precise and reliable

track-following. It is thus possible to steer with the boom folded in. The maximum steering angle is 20 degrees. With a 180 cm wheel track width and 18.4 R46 tyres, there are no limits.

With a 150 cm track width, 270 mm tyres can turn completely. Otherwise, it could sometimes be necessary to limit the turn depending on tyres and track. It is worth getting the optional drawbar steering, which is an advantage with smaller boom widths. It is available for up to max. 28 m for the UX 3200 and the UX 4200.

What dlz readers are saying about the Amazone UX

So far, we have been using the UX 5200 with 24 m Super L booms on 1100 ha. The dealer is nearby and the cost-effectiveness is good, as is the ability to spray with one side unfolded. We work with quantities of 600 to 1000 l/ha. We really like the precise track-following of the steering axle. But we miss an ALB to control the braking force according to the tank fill level. The boom rides nicely, we haven't had any damage so far, but the folding could be a little quicker. Also, the external collision protection is too short at only 2m. The upward break back of the ends is badly designed. The Amatron+ computer is clear, with its many displays, including fill level. The joystick makes operation easier. The induction hopper and canister circulation work powerfully. The labelling and operation of the instruments could be more logical, however. We have also had a pressure hose blow out twice already. The hitch with the ball head is easy to use. Even though the tank has no anti-sloshing baffles, the load remains secure. The height and narrow width of 2.6 m are good. The spare parts list on the Internet is ideal. For us, it is impractical that the L-boom cannot be reduced to 18 m (according to the brochure) rather than 19 m. The boom unlocking function on the joystick should also have a delayed reaction so as not to risk an operating error when folding

on one side. Despite our criticisms, we would buy the UX 5200 again.

Eugen Schlereth, 97294 Unterpleichfeld



The shape of the tank, the boom folding method and twin-pump system were important reasons for us to get the UX 5200. Between the four of us, we employ the UX over 1800 ha per year. The 24 m Super-L boom is solid. It sits securely and can evade obstacles well. We like the fact that the folded sections still have suspension when in the transport position. The UX is robust, yet flexible. We are happy with the manufacture, even if we have had to replace hoses in the pump area and some bolts came loose on the oil lines. The height guides on the boom sections are not strong enough. With the booms stored near to the tank when transporting, you don't get stuck each time you meet a tree. The machine is no wider than the tractor. Unfortunately, the functions on the Amatron+ don't react to every push of a button. The folding and inclination of the booms therefore need to be controlled directly with the tractor valves. Switching the part widths is quicker and more secure with the extra Amaclick switch box.

Nils-Hinrich Witten, 24229 Schwedeneck

Slim and light - only 3700 kg

Amazone specifications are clearly laid out in the brochure. The UX 3200 does in fact weigh 3700 kg with a 24 m L-boom. Its peers can easily weigh in at 600 kg more here. Boom stability is good. The boom folds together to a slim 254 cm and together with the mudguards, the external width of the machine is 255 cm. The height of 340 cm (with 18.4 R46 tyres) is decent.

The hydraulic stand is handy. However, its position is very hard to tell from the driver's seat and also, the pivoting stand allows the machine to go backwards when parking putting weight on the drawbar pin.

Well built

As is typical for Amazone, the UX is well built. We found no malfunction to complain about. An exception was the Amatron+ computer, which crashed twice. The paint quality impressed us. After one season, the only noticeable rust spots were on isolated bolt connections. We had none of the problems with the pressure hoses that dlz readers reported (see box). Overall, Amazone employs a lot of plastic, such as in the spray lines



The optional axle steering for 5750 € increases mobility without losing stability – superb.

and the nozzle holder mounts. This combination of materials has been around for many years. However, the flexible material does not appear to be a weakness. In addition, numerous stainless steel plates and bolts confirm the high quality of the UX.

Details in brief

Here are some more points we noticed when using the UX:

- The drawbar is suspended with three standard plastic buffer blocks.
- We missed an ALB to adjust the force of the standard air brakes to the fill level of the tank.
- The scale indicating the clear water container fill level is mounted on the side and unfortunately cannot be seen from the driver's seat.
- The boom tilt maintained on the outbound journey can be "mirrored" at the push of a button in manual mode. The settings then match straight away for the return journey – a real plus.
- The 15 l canister for the hand wash water is right up at the top. That means you need to fold down the ladder to refill it. Also, a foot or knee button would be ideal – so as not to soil the valve with your gloves.
- The lines and hoses on our machine were positioned flawlessly.
- The climbing ladder cannot be folded down when the tractor is steered to the left. Also, as it stands on the ground, it could get bent if you accidentally drove slightly forwards. You also have to be careful to hook it in properly for transporting.
- Good: There is a holder near the tractor for the hydraulic and pressure hoses. However, it would be better to guide the

lines even higher so that no hose gets in the way, specifically in the area of the Trailtron potentiometer.

- The hose reel for external cleaning is up on top of the turret. That means you can only get to the spray lance when the boom is folded out and lowered..

Our conclusion

The UX 3200, with a 24 m Super-L boom made a good impression on us. The machine construction is compact, not too heavy, yet solid. On the field the high quality bracing and suspension of the Super-L booms allow speeds of up to about 11 km/h on decent ground. The distance control is a benefit, automatically guiding the boom with ultrasound sensors. It lightens the driver's load considerably. The result is greater performance and precision. Manual control is only needed on very uneven ground. The L-boom is flexibly foldable. With the Profi-I model, you can work with it reduced or even folded in on one side. With the Profi-II, the sections on the left and right can also be angled upwards. The paintwork and hose layout are decent. The instruments on the machine are well arranged and easy to operate and the filters are easily accessible. For the 2007 season, instruments that can be operated from the cabin (see Amazone's statement) can be provided for added comfort. The bottleneck on the extensively equipped UX is caused by the operation of the Amatron+ computer. While it displays a lot of information, dividing the menu into five levels is just too laborious. An Amaclick and joystick are helpful here, but are still not ideal. There is still room for improvement.

Amazone puts its case...

...on the lack of dynamic adaptation of agitation intensity: The mechanical agitator that proved itself so well on the UG now comes electronically controlled on the UX. Additionally, we are introducing the comfort package. With this package cleaning and automatic filling can be operated from the Amatron+. The driver does not even need to leave the cabin to clean with fresh water.

...on the criticism of the external cleaning: We mounted the cleaning set on the boom so that it would not get dirty whilst spraying. With a 20 m hose, cleaning on the field is easy.

...on the height guides: These rods have proven themselves over many years. They are flexible, thus do not break and gently cushion the boom.

...on the position of the tap for the pressure recirculation system: As a rule, the pressure recirculation system does not need to be switched off for cleaning.

Otherwise, we can really only criticise some of the less important details. The external cleaning set is in an awkward place, as is the clear water fill level display. With the technology it comes with, and the extensive equipment, e.g. with two pumps, the Amatron+ terminal including digital fill level display, oil circulation etc., the UX is not cheap. The UX 3200, for example, with a 24 m Super-L boom starts at 47 800 € (list price before VAT). Add valuable extras to that such as axle steering at 5750 € and the truly worthwhile distance control (2400 €). In the configuration we tested, the UX 3200 should be offered on the market at about 48 880 € (before VAT). In order to make the UX more attractive to a wider target group, Amazone has started putting together packages with reduced equipment. For example, the UX 3200 with a 24 m L boom and the more simple Amaspray+ computer, standard hydraulics without steering and single nozzle holder for 35 000 € (approx. market price, before VAT). The second pump is also omitted on the UX Special, which then starts at 32 000 €. After one season, it was clear to us: if you are looking for a modern, high-quality trailer sprayer, it is worth taking a closer look at the UX. (gp)

dlz



Sleek, slick and sly: UX!

www.amazone.de/ux

UX trailed sprayers:

A recent publication of RKL evaluated the behaviour of the UX boom over the ISO-Standard test track at the 2006 DLG field days:

- ▶ They rated the degree of horizontal and vertical movement as "very good"
- ▶ Quoting that "the booms ride noticeably smoothly"



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