

Special print: Field test | Amazone Cobra 6000-2TX

# traction

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# Shallow is trump

With compliments by:



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**CLEARING** the efficient way -  
Cobra has generously  
overlapping duckfoot points  
that cultivate at full width.

# Shallow is trump

Incorporating stubble at a shallow depth and full width offers many advantages which are appreciated by more and more arable farmers who come to choose a topsoil cultivator. This market is also being conquered by Amazone who have launched the new Cobra spring tine cultivator to offer those advantage. The new addition to the Amazone product range boasts a number of stand-out details.



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## Technical data

### Frame

6m work width, two fold-up wings, 6 tool bars spaced at 50-70cm, 60cm ground clearance, integral running gear with 550/45-22.5 wheels, 4 gauge wheels with 380/55-17 tyres, hydr. depth control

### Tines and tine points

45 ECO leaf-spring tines, 90x13mm, 80cm tine spacing, 13.3cm spacing of cuts, max 13cm working depth, 220mm duckfoot tines, 50mm narrow chisel points

### Rollers and options

Choice of 9 optional rollers + double tines, parallelogram-mounted, harrowing tines; optional knife roller or Crushboard, opt. traction booster

### Dimensions and weights

Transport width/height/length: 2.98/ 3.5/ 8.8-9.7m; 250-400hp power input; 5.95-8.6t kerb weight

### List price (excl. VAT)

approx. €89,900



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1 Our test machine was the 6m Cobra 6000-2TX.

2 The running gear and the leading gauge wheels runs inside the tine field.

3 The generously sized running gear carries the machine through headland turns.

4 Amazone offers brand new tine points for the topsoil cultivator - the ECO leaf-spring tine.

5 The rigid drawbar attaches to the lower links.



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The 45 leaf-spring tines are actually arranged on 8 bars. The bars are spaced at 50-70cm, underbeam clearance is 60cm.

Alexander Brockmann

**T**opsoil cultivators for ultra-shallow work have been climbing the trend charts for a number of years. The established manufacturers of tillage equipment cater to this market by offering the appropriate multi-bar cultivators along with a large choice of optional equipment. Amazone is a newcomer to the spring tine cultivator market who presented the new Cobra series only recently. We had the opportunity to accompany one of the first Cobra units – a 6m Cobra 6000-2TX demonstrator – as it was put through its paces by M&H Agrarlogistik, a contracting business that tested it in the 2022 season. Most of the field work it was tucked into was grain and rapeseed stubble and also some seedbed preparation. At the end of the season it had clocked 600 hectares.

### THE MODEL RANGE

Amazone's first-ever series of Cobra topsoil cultivators lines up two models of two work-

ing widths – 6m and 7m. These widths and the nearly 10m total length definitely call for a separate running gear. In fact, taking care of road travel and headland turns, the TX gear forms an integral part of the machine. Its small wheelbase makes for really tight turns which would not be possible if the gear was running at the rear. The wheels are clad with large 550/45-22.5 tyres. A topsoil cultivator is a versatile machine and as such it should offer a generous inter-row clearance – especially, if the machine is used for incorporating cover crops that are not dead or for rapeseed stubble. Amazone therefore designed both models with 6 tool bars. These are spaced at varying distances from 50cm to 70cm. The underbeam clearance is 60cm according to the brochure.

For road transport, the 7m machine splits into two wings that fold vertically alongside the sturdy central beam. The transport height is then just under 4m, which suggests that it is exactly transport height that is the issue about expanding potential work widths even further.

### CLOSELY SPACED TINES

The number of tines that are attached to the bars varies depending on the model and working width. The 7m version has 53 tines, the 6m demonstrator 45, both versions spacing the cuts at narrow 13.3cm and two adjacent tines at 80cm on the bars. Courtesy of the integral running gear and the gauge wheels (read below), it is possible to distribute the tines on eight bars, which contributes to a generous clearance.

Indeed, we observed neither any blockages nor any build-up of straw during our field tests. M&H Agrarlogistik manager Fitim Mehmeti confirmed, too, that there were no hiccups in the field tests.

### VIBRATING TINES

Like the topsoil cultivator itself, its spring tines are new additions to the Amazone product range. Branded as ECO leaf-spring tines, they have nothing in common with the traditional Special tines and Super tines on the min-till cultivators. The ECO leaf-spring tines are not pre-tensioned and as such adapt flexibly to the contours and avoid obstacles. The special design allows them to swing to the rear or sides. Their cross section measures 90mm by 13mm. Thanks to their vibrating and swinging action, these tines produce a fine tilth and also remove soil sticking to roots.

Amazone markets five different tine points now – three duckfoot points and two narrow chisel points. The duckfoot points are 220mm wide and 6mm or 12mm thick, with the thicker models being available as HD versions which are hard-faced by tungsten carbide plates.

The 22cm duckfoot points space the cuts at 13.3cm and overlap 8.7cm, which translates into a generous full-width work. We



Amazone relies on a solid knife roller. The reversible knives are arranged in a V.



The intensity of work of the knife roller is controlled hydraulically so operators can raise it out of work conveniently.



The parallelogram frame ensure consistent ground contact. Excellent.



Mounted on the roller, the levelling paddles adjust automatically in depth when the roller depth changes but can be fine-tuned separately.

checked the cuts and found they were indeed clean and effective.

The two 5cm narrow chisel points are too slim for giving full-width cuts, but are more effective at loosening, mixing and breaking through capped soils and at preparing seed-beds. The 50mm by 6mm narrow chisel point is even reversible, unlike the 50mm by 25mm HD version which has a longer service life.

The maximum depth is 13cm, the shallowest depth is only a few centimetres; we reckon 3cm is realistic.

### CONSISTENT DEPTHS

Maintaining a consistent depth across the full width and length of the machine is important in topsoil work as it guarantees good results. This work is done by the trailing roller at the rear and four gauge wheels up front, the latter not running ahead of the frame but within the same and they are not grouped in pairs on their bars. Clad with 380/55-17 tyres, they are somewhat narrower than the transport wheels.

The work depth is controlled completely hydraulically by adjusting the two leading gauge wheels steplessly and conveniently from the tractor cab, which allows operators to respond immediately to wheelmarks, straw lumps or compacted patches. The new setting is transferred to the rear wheels by a rod so that the depth of all elements is adjusted in parallel to contours. A scale on the front right gauge wheel indicates the depth – albeit not the exact figure but a reference figure. There are no manual options such as turnbuckles, handles, etc. for altering the depth.

Raising the machine on the headland is straightforward and taken care of the lifting rams on the running gear so that the gauge wheels, too, hover over the headland.

Up front, the drawbar makes for good tracking. We raised our Cobra with the tractor linkage, because our demonstrator didn't

have the lift-out ram, yet contractor Fitim Mehmeti says he would opt for the drawbar-mounted unit next time. After all, this is suitable for sequence-controlled headland lift-out/lowering, which means the front end lowers into work first and is then followed by the rear end. At lift-out, the ram on the drawbar pushes the front end up first, before the rams on the running gear follow. The hydraulic drawbar is also available with a traction booster which transfers some of the cultivator weight to the rear axle. Since our 500hp Fendt had the necessary horses under its bonnet, this was actually not necessary on our combination but would certainly be a good option for more lightweight / less powerful tractors.

Amazone claims 250hp is the minimum tractor power and 400hp the maximum for our test machine. In our view, though, the

bigger Cobra 7000-2TX could also do with a 475hp workhorse.

### KNIVES IN V-ARRANGEMENT

The quality of work depends also on the element that runs ahead of the 6-bar tine field. Our test machine had the optional knife roller which admittedly had no effect in stubble fields but a clear effect in rapeseed stubble. Cover crops and grain maize, too, received effective treatment.

The Amazone knife roller splits into two wings and each wing into two sections with individual suspension, bearings and hydraulic depth control. Depth control is conveniently carried out from the cab and alters primarily the intensity of work and the ground pressure. Each of the solid 330mm roller sections has six knives for a nominal cutting length of 172mm.



The 220mm duckfoot points work at full width.

There are six such knives on each roller section and each knife is split into three blades that are arranged in a V (hence not cutting straight in direction of travel). The total number of blades on the 6m Cobra is 72 and all are bolted. Bolted attachment is an advantage when a damaged blade needs replacing or reversing (reversible for long service life). Drawback is that it takes undoing 288 bolts to replace all blades – which is time-consuming of course. The alternative to the knife roller is the Crushboard. This has paddles that adjust hydraulically and level the seedbed and break up clods.

**MANY OPTIONS OF TRAILING PRESSES**

Amazone has a reputation of marketing a large range of optional rollers. The topsoil cultivator Cobra, too, is available with a choice of nine optional rollers.

All stand out for their consistent attachment systems which make swapping rollers very easy and allow operators to use rollers of other cultivators, too. Buyers can even opt for a maintenance-free HD roller bearing for extra longevity for all of these rollers.

**Our summary**

Following the trend to shallow cultivation and spring tine cultivators, Amazone presents the Cobra, which comes in two work widths. Typically Amazone, the quality of build and the product design are excellent, said the tester.

Cobra boasts a high-level standard specification. The model comes with many options that allow farmers to customise the machine to their needs. The solid knife roller is a unique Amazone design and staggers the knives in a V-arrangement. Our interview partner gave the tip of including the drawbar-mounted cylinder in the purchase list.

- full-width work
- high-level standard specification
- many roller options
- parallelogram-mounted trailing press
- ➖ available in only two work widths

As all Cobra rollers mount in a parallelogram frame, they never lose ground contact at any depth, especially not the double rollers. Excellent.

Our test machine had the 600mm double-disc channel steel roller which is suitable for all types of soil. Most trailing rollers can be fitted with one row of rear following tines.

Harrowing tines with leaf springs for overload protection will run ahead of the roller or roller pair. Although tine bars are directly attached to the roller, the operator can adjust the tines separately and also raise them out of work. The outboard tines stop soil from being thrown out of the tine field. The outboard harrowing tines have some kind of runner. A roller is not a must for Cobra. Machines without a roller have a double row of tines that work up plants and roots for drying but don't consolidate the surface nor break up clods. Depth control in this case comes from the transport running gear. The piston rods have clips for depth control. The GreenDrill is now enabled in the Amazone configurator.



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**Market overview topsoil cultivators**

	Amazone Cobra 6000-2TX	Köckerling Allrounder Flatline	Horsch Cruiser 6 XL
Work width	6.00m	6.00m	5.96m
No. of tine bars	6	6	6
Bar spacing	50-70cm	70cm	70cm
Underbeam clearance	60cm	64cm	60cm
Number of tines	45	47	39
Spacing of cuts	13.5cm	13cm	15.3cm
Tines	ECO leaf-spring tines	Elephant tines with double spring	Spring tines, 150kg trip force
max. working depth	13cm	12cm	15cm
Full-width work	yes, 220mm duckfoot point	yes, 200mm or 220mm point	yes, duckfoot point
Leading tools	Knife roller, Crushboard	Knife roller, Levelboard	-
Roller options	9 plus double tines	STS press, tine field	9
Levelling tools	Harrowing tines	-	Discs or harrowing tines
Hydr. depth control	yes, stepless	yes, stepless	yes, stepless
min. no. of da spools	3	3	2
Tractor power	from 250hp to 400hp	from 250hp	from 280hp to 400hp
Weight	5,950-8,600kg	approx. 8,150kg	6,450-8,500kg

Photos: Brockmann