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Driving impression: Kongskilde Delta Flex cultivator

Delta force



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The levelling discs can be adjusted independently, a clear scale making it easier to set them evenly. The spring mountings for the discs are all date stamped and guaranteed against breakage for three years.

Before focusing on the Delta Flex, it is perhaps first worth taking a sideways glance at the Vibro Flex 7400. Launched into the UK only a couple of seasons ago, the Vibro Flex 7400 series is essentially a development of the 'lighter' duty Vibro Flex 4000 and 6000 cultivators. The design aim was to enable the original Vibro Flex concept to tackle tougher stubble busting on seriously trafficked, heavier soils. Vibro Flex 7400 cultivators are offered in

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2.5, 3.0, 4.0 and 5.0m mounted and 4.0, 5.0, 6.0 and 7.0m trailed versions, and are suitable for tractors of up to around 200-250hp. Key features include the option of fitting mixing discs up front, followed by a set of vibrating tines, levelling discs and crumble roll or solid packer at the rear for consolidation.

Though better suited to heavier ground than the Vibro Flex 4000 and 6000 models, the 7400 series still doesn't target those working the stiffest land – the type of dirt that prevails in many parts of the UK. And it's here that the new Delta Flex stubble cultivator range steps in. The important headlining difference is that, whereas the Vibro Flex relies on its trademark vibrating tines, the Delta Flex comes with newly developed, winged rigid units,

which are available with either non-stop spring or shearbolt protection. No more than a tine change, then? Not at all. Delta Flex also has a revised frame

Levelling discs and rear packer mount on a separate frame, with the cultivator's working depth set via a pin. Note the fitting of non-stop springs to the tine.



Fitted with rigid tines and a heavy Max Pack rear roll, the Delta Flex stubble cultivator is aimed squarely at those who need to work heavier soils. Trial results on lighter land suggest the Delta Flex is also an effective tool in a less demanding environment, where it becomes an alternative to the existing medium-land Vibro Flex 7400.





Weighing 160kg/m, the 550mm diameter rear packer roll has deep rings, with non-contact scrapers in between. The aim is to prevent soil building up in difficult conditions rather than keep the unit completely clean.

of work with the Delta Flex, and in this particular field he'd found 11km/hr to be the ideal speed for the bulk of the dry area. The field's odd damp patches saw him drop the speed slightly to reduce the risk of clod formation.

Setting up the Delta Flex is reasonably straightforward. Cultivator working depth is tweaked via a simple pin arrangement that determines how far the main frame can drop in relation to the rear packer –

layout for added strength, with the rigid tines spaced at 330mm centres for improved trash clearance. And on top of that, consolidating ability is beefed up, too, by the fitting of a 550mm diameter Max Pack rear roll, which weighs in at 160kg/m and, as with the packer on the Vibro Flex 7400, is used to set cultivation depth. In terms of outline capabilities, both the Vibro Flex and Delta Flex are capable of working down to depths of between 60mm and 250mm and at speeds of 8 to 12km/hr.

According to Kongskilde's Søren Thomsen, much time has gone into developing the new rigid tine points. "They're angled to assist penetration and operate some 4mm below the tine wings, helping to lift the soil ahead of the shallow angle wings. This design reduces draft which, in turn, enables the Delta Flex to be operated at a faster forward speed."

It's this high forward speed that is so critical to the operation of the Delta Flex. The aim is to cause a 'bubbling' of the soil to help incorporate trash and provide ideal conditions for seed germination. In work, the operator needs to maintain a minimum of 8km/hr, but to also bear in mind that, if a higher speed is possible, this should still be set to achieve the optimum balance of productivity, fuel use and cultivation effect.

Hitched up behind a 320hp Challenger MT765B, our 6m Delta Flex was run at travel speeds that varied between 9 and 11km/hr. The land, black fenland silt, was not particularly heavy, but it had been heavily trafficked following the lifting of beet, with some damp patches within an otherwise dry field further adding to observer interest. Challenger driver Mark Grummitt, of Spalding-based contractor Richard Ivatt, had completed some 100ha

DATA SHEET

Delta Flex trailed stubble cultivator

Working width:	6m
Working depth:	60-260mm
Number of tines/discs:	13/12
Options:	Choice of rear roller, shearbolt tine leg
Price:	From £29,000 excl VAT

the same depth control as used on the Vibro Flex. Once in work, the cultivator is then adjusted level via a top-link style



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... was changed so that they now alternate between left and right.

To help produce a more uniform finish, the levelling discs' original one-way position...



Uneven tine wear between front and rear is typical on a three-row design, but this can be reduced by ensuring the cultivator runs level. Kongskilde plans to shrink the tine wing width by around 12mm per side on production cultivators.



Folding up to 2.80m, the widest part of the trailed 6m Delta Flex model in transport is its wheels.

contact scrapers should help. Protruding deep into the recess between the packer rings, these scrapers are designed to prevent soil building up and blocking the roll rather than keep it completely clean.

Other upcoming mods to the tested configuration extend to slightly reducing the width of the wing tines, as the current design tends to move too much soil and results in increased front tine wear.

Potential Output? That's always a tricky one to call on a tillage job that depends so much on the prevailing conditions. The only guide we can give is that the 6m test rig was clocking 40ha in a 14-hour day.

Summary: Kongskilde made its cultivation name in the UK with products such as the Triple K, the original Vibro Flex and Germinator. The Vibro Flex 7400 allowed the company to offer a unit better suited to working heavier stubble, and the new Delta Flex merely progresses this theme. For stiff-ground farmers, Kongskilde now has a genuine single-pass option.

It pays to try and work to the minimum depth necessary to incorporate trash and remove shallow compaction. Go too deep, and the unit will bring up clods.

turnbuckle on the drawbar, a link with the machine's rear transport wheels ensuring that the unit lifts parallel to the ground at the headland.

A couple of guide wheels mount at the front of the Delta Flex, and it's these that prevent the cultivator 'nosing down' when it first enters the ground. In work, the wheels' height is set so they just lightly brush the surface. The levelling discs are adjusted via two pairs of turnbuckles on the support frame. The aim is to set the discs so that they act upon soil brought up by the tines - to level the surface as well as break up clods.

Dry test conditions meant it was difficult to see how well the Max Pack rear roll would cope in the stickiest going, although the non-

DELTA FLEX FAMILY

Model	Hp req	Tines/discs	Weight (kg)*	Working width (m)	Price (£)
Rigid					
DF 2500	90-125	5/4	1,450	2.5	9,557
DF 3000	120-175	7/6	1,650	3	10,646
DF 4000	160-225	9/8	2,100	4	13,343
Hydraulic folding					
DF 4000H	160-225	9/8	2,300	4	18,670
DF 5000H	200-275	11/10	2,800	5	21,844
Hydraulic folding, trailed					
DF 4000HT	160-225	9/8	3,200	4	24,269
DF 5000HT	200-275	11/10	3,700	5	27,406
DF 6000HT	240-325	13/12	4,100	6	30,034
DF 7000HT	280-375	15/14	4,500	7	32,365

H = hydraulic folding
HT = hydraulic folding and trailed

All prices are retail and include auto-reset legs, rear disc levellers and rear crumble roller. * Weight including auto-reset legs + crumbler roller (kg)

