Driving impression: Simba SLD 600 cultivator

Action up top and down below

Due to debut at the LAMMA show in mid-January, the SLD is Simba's latest cultivator for those farmers wanting to move heavy land at depth, yet at the same time still needing more surface tilling action than is possible with the company's Solo

The Simba Solo is a well proven tillage tool and was one of the main players when large arable businesses first moved to min-till. **Its big discs are able to lift plenty of soil and mix it with surface trash, while the deep working tines take care of plough pans and other compaction concerns.**

With soil structure improving, Simba says the next stage in the min-till progression is to work shallower, which was the reason behind introducing the SL range four years ago. But this addition to the range hasn't been the tool for everyone, especially growers on heavy land where the SL's tines have struggled to reach beyond 250mm – to address the compaction problems that have been so prevalent over the past couple of wet seasons. As a result, these growers have had to either stick with the Solo, perform a separate subsoiling pass or look at other manufacturers' product offerings.

So entering Simba's min-till arena for 2011 is the Solo and SL lovechild, the SLD. Its two gangs of 610mm discs on Pro-Active springs hail from the SL700, while the hydraulic auto-reset Pro-Lift tines are taken from the Solo along with a revised version of its frame. A full size DD ring packer mounts on the rear and, for those farmers that want additional clod crushing ability, there's a rear drawbar option that enables a second press to be towed behind.

Simba thinking is that, for any farmer who needs to rotationally subsoil or just move heavy ground to stop it going sad, the SLD can do this as well as surface cultivate in a single pass thanks to its closer spaced discs.

Tractor-wise, the more hp you can throw at the SLD the better, because its operating speed needs to be 10km/hr or more to get the discs spinning fast enough to give the requisite mixing action in that all-important

Slotting neatly in between the Solo and SL is the new Simba SLD. Deep working tines take care of any pans, while close-spaced discs churn up the top.

top layer. As a rough guide, the smaller 4.6m model and its seven tines require 300hp and upwards, whereas the wider nine-leg 6.0m version seen here demands in excess of 400hp. In time the line-up will grow to incorporate 4.2m and 5.4m versions and, if more tractor hp eventually comes on the market, then the frame could be stretched even wider to slightly beyond 6.0m.

Last season the 6m prototype SLD was busy working UK fields. It was largely based on a Solo 600 chassis, had ten tines, and each of its cultivating modules was bolted into place. Setting up follows the familiar Simba rule of thumb: tweak the frame to run level using the drawbar on the front, and adjust the rear packer to fix the working depth. Its Cat V drawbar hitch can be replaced with a Cat IV or even a ball and spoon type set-up, with the latter growing in popularity.

On-road transport width is 3m. Overall height of the folded 6.0m model will be 3.975m.

This 6m SLD prototype is based on a Solo 600 frame and was working in the UK all last season. Cultivation layout is discs, tines, discs with a rear packer, with the option to pull a second press.

The test machine had twin hydraulic rams on the front, though production SLD cultivators will have just the one. Simba says that experience with twin-track crawlers shows the tractor can twitch left to right in work, a sideways jostling that could prompt fatigue cracks to develop on the rams as the machine ages. With the aim of selling a cultivator and not wanting to be called back for warranty work, Simba overcomes the problem by relying on just the one ram, this then permitting sideways movement and, at the same time, reducing stress levels.

Other areas with extra metal are the ram pivots and bushes, beefed up to deal with the large stones that can be found in Estonia and other countries where the SLD is expected to sell well.

Shuffling back along the SLD, the first cultivation elements are the 610mm scalloped discs. These are arranged at 250mm spacing and mounted on a leaf spring for stone protection. The rear gang is offset so that overall disc spacing is just 125mm, and as on the Xpress, DTX and SL, the disc angle can be adjusted from zero to 25°. Simba suggests starting with the discs running straight and then angling them until you reach the ideal level of mixing. The angle of each of the four disc sections is set on a winder, and a scale leaves little excuse for errors.

Designed for plenty of up-front muscle, the 6m SLD needs a minimum of 400hp. Here it's towed by a 543hp Quadtrac.

DATA SHEET

Simba SLD 600

Machine length	**9.5m**
Transport width	**3.0m**
Machine weight	**11,500kg**
Hydraulic demand	**Four double-acting spools**
Disc size	**610mm scalloped**
Tines	**9 x Pro-Lift legs**
Working depth	**Down to 30cm**
Packer	**700mm DD rings**
Tyre equipment	**700/45 R22.5 Vredestein**
Price	**£77,954**
OSR seeder option	**£7,650**
Rear drawbar option	**£1,350**
Auto greaser option	**£3,526**

The upside of using smaller diameter and closer spaced discs is that they don't have to work as deep to move all the soil. Countering flipside is that forward travel speed is critical in persuading them to spin fast enough for optimum mixing. Fringe little-disc benefits are that smaller clods are created courtesy of the closer disc spacing, and the machine also leaves a more level finish – two aspects of performance on which the large-disc Solo one-pass loosener has traditionally been criticised.

Next in the firing line are the compaction-alleviating Pro-Lift tines, configured in a delta formation. The prototype unit had ten legs with a 600mm spacing, but this meant the lead tine ran close behind the front discs.

To buy some extra space and for a better layout, production SLDs will have a 665mm spacing so that the 4.6m ends up with seven tines and the 6.0m has nine. As an aside, a Solo 600 sports eight legs spaced at 750mm apart and works down to a suggested max working depth of 30cm.

Each of the SLD tines has hydraulic auto-reset for protection. A gauge at the front of the machine shows the hydraulic pressure for the left- and right-wing tines, and these can be pumped up to 90 bar – equal to a tripping force of 1,500kg. Once in work the tines help pull the discs into the soil which, when combined with the machine's 11,500kg all-up weight, should ensure that tilling depth is consistent, even in the toughest ground.

Hydraulic brakes are part of the standard spec, and there's also a pneumatic option. Production machines will use a beam axle.

SLD leg trip pressure can be set up to 90 bar, giving a trip force of nearly 1,500kg. Onboard DD spanners are part of the Simba package.

The disc angle can be set up to 25° using the winder. Simba suggests starting at a flat angle and then working steeper when setting up.

Each of the seven (4.6m) and nine (6.0m) tines on the SLD has hydraulic auto-reset.

For different conditions Simba offers a trio of one-piece wing options for the Pro-Lift tine. Standard is a 250mm wing, which is suitable for most jobs, but, where less soil surface disturbance is required, this 'standard' can be exchanged for the Lo-Lift type – also 250mm wide, with its shallower wing angle also reducing draft. For maximum soil movement there is the wide boy 300mm wing. All wings are held in place by a single bolt.

The machine is carried on chunky Vredestein Flotation Plus 700/45 R22.5 tyres with hydraulic brakes as standard; pneumatic anchors are optional. Like the Solo the prototype SLD had stub axles, whereas production models will gain a full width beam. In work, the transport wheels are lifted clear of the ground.

There are three SLD wing options: 300mm wide, 250mm standard and similar width Lo-Lift wings. The Lo-Lift wings work at a shallower angle for less surface disturbance.

One-piece scrapers are now proven and did a good job on the test field's wet heath land.

The rear gang of discs helps to level things up and provide extra cultivation. Production machines will have their discs moved forward closer up to the axle, and the rear mounted DD packer will also be shifted 0.5m closer to the rear disc gang. Simba adds that there will still be plenty of room between the soil tilling modules, while the overall length of the machine will remain the same at 9.5m.

The final version will have nine instead of ten tines and a single ram on the drawbar.

For our driving impression the prototype SLD was hitched up behind a 543hp Case IH Quadtrac 535 on level heath land. Around 10mm plus of rain the night before had left the soil a bit tacky but not enough to stop progress. Tine depth was set at 25cm, 15cm deeper than the discs, into late autumn stubbles, and the Quad seemed happy enough bowling along at 11km/hr. Up at this travel speed the discs delivered plenty of mixing action, although when we dropped below 10k it was a very different story: stubble and volunteers were still clearly visible on the surface, emphasising the need for speed when working the SLD.

A dig down with the spade showed where the tines had passed through – going any deeper would have just put the tines into stone – and the scrapers did a good job of cleaning soil off the DD rings.

Summary: While this particular SL machine was very much a prototype, it did enough to suggest that the mixture of Solo and SL components should make for a happy marriage of the respective technologies. The faster spinning, closer spaced discs do an effective job of mixing soil and leaving a level finish, whereas the tines should be able to sort any compaction concerns.

Critical, though, is the need to have plenty of horsepower on the front; stint in this area, and you'll be disappointed.

In many respects, Simba's SLD is the new generation Solo for large-scale farmers.

Mervyn Bailey

FURTHER READING

The Solo has featured in several profi cost management articles. We published a practical test on the Solo 300 Pro-Lift in the January 2004 magazine, and the latest buyer's guide to used machines appeared in October 2008.