

Simba Solo cultivators:

Many variations on the Solo theme

Chat about minimal tillage and both 'Simba' and 'Solo' are almost certain to figure in the conversation – and particularly so when talk turns to practicing the technique on more challenging dirt. The original Solo has subsequently developed into a number of different and far more versatile variants. James de Havilland charts the Solo's history

To save on time flicking through back issues, let's come clean: profi has looked at buying a second-hand Solo cultivator before. Check out our March 2004 issue. But then the Simba Solo saga is one of continual change, to the extent that much has happened over the past years to this one-pass tillage train since our initial assessment. In the interim the Solo ST shallow-tine model variants have been introduced, these 150 to 250mm working depth machines arriving in 2005. Most importantly, in 330 ST form the Solo entry hp point drops down to a relatively modest 170-190hp, which compares with the 200-220hp required to extract maximum potential from a 'conventional' Solo with Pro-Lift subsoiling legs. As a result, the Solo ST has gone on to become widely popular, with pre-owned examples now

Pivot drawbar laterally to check for wear in bushes. Moderate movement is fine, but have new pins and bushes on hand. Drawbar eye is a wear item. Check bolts are tight.



Solo 300 Pro-Lift



Year: 2002. Price: £16,000.

Condition: Ready for work.

Comment: New discs and leg wings. Bolt-on tool bar.

Road lighting kit in place.

legs can be set to work to a less demanding 250mm if desired, this reducing the overall power required to pull the cultivator.

It is critical to deal with any Solo Pro-Lift and ST confusion right from the outset. Although the leg design is the only major difference between the two variants, it nonetheless has a huge impact on which machine makes the best used buy. Simba originally sold and still describes the Solo as

being capable of three cultivating jobs in the one field pass – mixing, subsoiling and consolidating – and it is for the second role of subsoiling that the Solo tends to be most associated with. The ST design is also capable of a degree of soil loosening, albeit only down to 250mm, but the fact that it requires significantly less hp effectively slots the ST into a completely different class and increases its all-round appeal to a much broader audience. It could mean, for example, not having to upgrade the farm's main tractor.

appearing in sufficient numbers within the UK to make an ST a viable used choice. Before studying how the Solo has evolved, it is worth taking a sideways glance at the continued soil conditioning value of the 'standard' Pro-Lift leg Solo. First introduced back in '99, the Pro-Lift leg remains a relatively low draft design. What's more, it need not be operated at full subsoiling depth of 350mm; the

WEARING PARTS

Description	Part Number(s)	Price
Pro-Lift point	P09148	£15.71
Pro-Lift low wing	P09060	£16.45
Pro-Lift high wing	P10392	£17.95
Pro-Lift wide wing	P10411	£19.85
Pro-Lift wear shin	P10391	£16.75
Pro-Lift tine (Solo)	P11464	£218.30
Wear heel for tine	P11181	£8.70
Conversion from Pro-Lift to ST tine format		
Solo 300		£7,845
Solo 450		£13,335
Solo 600		£17,775

Solo 380 ST



Year: 2005. Price: £24,500.

Condition: Ready for work.

Comment: Sought after used model. Lower hp requirement than Pro-Lift spec machines.

Solo 600 ST



Year: 2005. Price: £34,500.

Condition: Ready for work.

Comment: Rare tyre packer, DD packer same price. Pay £4,000 less for Pro-Lift version.

A little bit of history

Simba debuted the first Solo 450 and 600 models in 1999. These are both folding wing units with 4.50 and 6.00m working widths, respectively.

From the front, the early Solos are fitted with Series 2 type discs ahead of V-form subsoil legs with hydraulic reset. Then behind the legs comes a set of Series 3 discs, with a DD press at the rear. This is known as the 'R' type Solo.

The alternative configuration, and what many would describe as the classic Solo set-up, is termed a mid-roller machine. In this case the DD rings are installed in front of the second set of discs, allowing a rear drawbar to be fitted for pulling a separate DD or other trailed press. Mid-roller pressing of the ground ahead of the second set of discs enhances the mixing effect of the machine and is particularly recommended on heavier soils.

The obvious downside of the mid-roller variant is that it demands an additional 50hp+ to lug along the extra trailed press, and this tends to be a major factor in the decision-making process. On later Solo 300/330/380 models there is the potential upside in that the two configurations - 'R' and mid-roller - can be swapped around

according to conditions and available horsepower, although the reality is that not too many users will bother. After all, it takes two people a couple of hours to complete the change - minimum.

A tyre roller option, in place of those DD rolls, was also offered, but it remains a limited specification choice. Tyres have advantages, particularly in the wet, and can be fitted with cable scrapers to lower the draft in poor going. Bottom line is that tyres may be worth considering on soil types that are less liable to throw up clods.

Moving on a year in build terms, Solo 300 arrived in 2000/2001 (see profi int 09/01), confusingly providing a 3.30m rather than 3.00m work width. This year also marked

the debut of the Pro-Lift subsoiling legs, along with their choice of three different wing widths. Theory here is that because the leg width is fixed, the wing angle and wing width can be altered to produce the best shatter with the least draft according to the type of soil being worked: Aggressive and broad wings in sand/silt/loam soils; the opposite on dry clays.

... to the extent that the ST leg itself is compromised as well as the quality of work.



ST tine point deterioration needs to be watched closely.

The broad shoulders beside the fixing pin protect the pin, so make sure they have not worn away...





Disc scrapers last well and can be adjusted to accommodate wear. Where blockages are a problem near the axle support pillar...



... it is possible to fit a pillar-mounted replacement. This design was fitted to all units from '05 and on.

For 2002, the Solo 300 chassis was altered to accommodate a bolted flange tool bar. This mod makes it possible to swap the entire bolt-on tool bar on these models for the design that now takes shallow-working ST tines. Other detail changes on bolted tool bar models include rubber mountings for the coulter covers; these were standard on the Solo 300/330 but remained as options on the 450 and 600. Speed-Lube was also introduced as an option to save on greasing time and has since become a very popular choice. Even given the considerable cost, it's not difficult to understand the auto lube appeal. On the Solo 450 and trailed double press, for example, there are up to 76 grease points that need daily attention, a chore that can take up to an hour to complete. In 2003, further changes were implemented, while '04 brought a name change for the Solo 300 to 330 to better reflect its 3.30m working width. Throughout the preceding years, from the Solo's launch in 1999 right up until 2005/'06, Simba tinkered with chassis design and that of the various mounting points to overcome the problem of stress fracturing. As a consequence it's quite common to come across machines with weld repairs and retrofitted plates. Ordinarily, this would set off alarm bells for a used machinery buyer, whereas on a Solo the

advice is not to be put off. All models are tough, well built and capable of withstanding a fair amount of abuse. What they don't like, though, is to be dragged through the heaviest soils with heaps too much power up front. Granted, the Solo needs power, but not to excess. Arguably the most significant development year for the Solo was 2005. The shallower-work ST tine not only opened up a wider market for the Solo but also saw the introduction of the Solo 380 ST unit, which went on to become the best-selling Solo and is today the most sought



Rear drawbar allows Solo mid-roll machines to trail a separate press. Hydraulic rear couplers are fitted to all Solo 300/330/380 models.



It is possible to convert a standard 300/330/380 to 'R' specification. Chassis bracket is required as part of the conversion.

after used buy. Based around the chassis of the Solo 330, this 3.80m model was marketed as an ideal match for tractors of about 250hp, and it is arguably this quite modest hp requirement, in relation to the working width, that goes a long way to explaining the 380 ST popularity.

Switching attention to the larger models, the early 450 and 600 could leave a poorer finish, with a trough sometimes forming in between the rear disc gangs. This was then exaggerated if the travel speed was slow; conversely, a faster forward speed

would create a ridge between the gangs. Although adjusting the working speed and disc angle could overcome the trait, users suggest that the 'right' speed and settings for the job did not always match the 'right' settings for max productivity. Simba's solution arrived in 2005 when the spacing between the front and rear disc sets was matched at 250mm. This design change largely resolved the issue, but disc settings remain important when looking to achieve the most even finish.

Another early issue was that the original disc mounting arrangement on the 450 and 600 saw the front and rear gang sets mounted on divided axles. In certain conditions, and particularly on the Solo 450, this could lead to a disc section stalling and becoming blocked. A dog-drive clutch between these gang sets partially resolves the problem, while a switch to a single axle on the Solo 450 in 2005 sorted the issue. At the same time, the disc scraper next to the axle mounting pillar was changed from a standard to a pillar-mounted design. Available as a retrofit, this mod helps to prevent clogging around the post in sticky going.

There have been other developments, but key points to consider spec-wise are to firstly choose between traditional Pro-Lift or shallow-tine ST machines and, then, between the 'R' and mid-roller configurations; remember that the 'R' places the DD rings behind the rear disc gangs. Both 450 and 600 models may be able to be converted from fixed to 'R' specification (see Simba Solo upgrades table), so consider this if a fixed model is offered at an attractive price.

SOLO UPGRADE KITS

Description	Part Number(s)	Price
Rubber cushion coultter covers (x2)	P11745/P11746	£437 ea
Front gang leaf tine Solo 450/600	P11278	£476
Hydraulic gang angling Solo 450/600	P09993	£1,500
Pro-Lift leg and tines (various) per leg wearing parts	Repair/upgrade	£135
Speed-Lube Solo 300/330/380		£4,164
Speed-Lube Solo 450		£4,833
Speed-Lube Solo 600		£5,840

Prices are a guide only



Simba Speed-Lube system has become increasingly popular on new 450 and 600 models. Auto greasing can save an hour plus in daily maintenance time, and regular lubrication is guaranteed.

What to look for

With used cultivation kit, the temptation is to concentrate on the easily replaced soil-engaging bits. Don't. There are far more important points to cover.

Kicking off with the Solo 300, check the chassis for weld repairs and non-repaired cracking on the tool bars. Simba upgrades were made to beef up original designs around known trouble spots, so look for quality repairs that will typically show up through differences in the paint finish. It is important not to exceed 220hp on the Solo 300/330, particularly when working Pro-Lift models at depth in heavy soils.

Wear and tear areas include the drawbar eye, main pivot and tine arm bushes. A degree of play is acceptable, especially in the harder working left-hand bush, but keep an eye on any slight movement; it should not be allowed to develop into 'free play'.

Similar checks apply to Solo 330 models, but chassis cracks are rare on machines that have not been abused. Still inspect the bolt-on tool carriers as Pro-Lift variants may have needed modifying. The most important point is to ensure that everything runs true, because if the Solo works out of alignment, it increases draft and fuel consumption and can compromise work quality. If the unit crabs, check all settings.

Both Solo 450 and 600 also benefited from a degree of chassis development to beef up known stress areas, so don't be put off by professional repairs. Again, the key is to ensure that everything is squared up and correctly aligned. Remember to check the hydraulics operate properly, looking for chafed hoses, damaged couplers and ram leaks. Ensure the pivot points are free from play.

On all Solo models, inspect for damage to the wheels and tyres; bearings should be

changed if there is any slop. Also check the lighting equipment, where fitted, and that the rear hydraulic connectors are in reasonable shape. Do not overlook the



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OUTLINE DEVELOPMENTS

Simba Solo cultivator

1999: Solo folding 4.5 and 6.0m models are launched at the Royal Show. Horsch Quattro for Germany is built alongside Solo in UK. Auto-reset legs; DD or tyre roller in fixed middle or rear position. 'R' type uses 700mm rear DD rings in place of 600mm standard. Mid DD roller scraper is changed to improve trash clearance; retrofit kit is available.

2000: Ability to change position of discs and rear DD rolls on 'R' reversible versions is added. From May, 'cushioned' frame is available for use in stony ground. Tine trip cylinder port bore is increased to 1/2" for faster response.

2001: Launch of 3.3m Solo 300. Reduced draft Pro-Lift tines are introduced with wing choice to suit different soils and operating depths. Weld-on retrofit wings are available for earlier models. Cast wear shin is fitted to tine legs.

2002: Bolt-on tool bar joins Solo 300 spec. Coulters gain rubber cushion protection. Solo wins RASE Gold Medal. Solo 450 and 600 have centre leaf tine added to tool bar, hydraulic gang adjustment and greater trash clearance; retrofit kits are offered for existing units.

2003: Phase 2 rubber cushion coulters developed, giving more control on variable soils. Bolt-on kit fits all folding Solo cultivator models.

2004: Solo 330 replaces 300. The 330 is essentially the same, but its model number reflects the 3.30m working width.

2005: ST shallow-tine option is offered for all models. Rear disc spacing changes from 300 to 250mm to match fronts and give a more even and level finish. Solo 380 ST uses lighter 330 chassis and is suitable for 250hp tractors. OSR seeding kits are a popular option, fitted to 50% of new UK sales.

2008: Currently, the Solo range now extends to four ST models – the 330, 380, 450 and 600 – and three of the deeper working Pro-Lift variants – the 330, 450 and 600.

front drawbar towing eye, as this is a wear item that must be replaced when worn. On mid-roller models, make sure the rear drawbar is in sound condition and not damaged.

Moving on to those soil-engaging parts, it is best to compare the tines and legs of both ST and Pro-Lift items with new. A protective leg shin was made available for the Pro-Lift tine from around 2006 and is worth fitting to extend wearing metal life. Incidentally, it is not unusual to find used Solo cultivators with face-hardened wings/tines. This not a problem, although facing beads must be applied properly. Why? Because shoddy hardening can seriously increase the draft of the machine and thus cancel out any potential savings from extending wearing part life. Those operating in abrasive/stony soils should contact Simba or a dealer for advice on how to best mitigate wear.

Disc deterioration needs watching. Worn, shallow disc scallops can lead to the gang stalling in poor conditions and severely compromising productivity. Admittedly, tired discs can continue to do a decent job in light soils, but always budget for new discs when the wear is obvious. Much the same applies to the press rings. DDs tend to last extremely well, but again



On early Solo models, the Pro-Lift leg was standard, with the shallower working ST tine not arriving until 2005. The latter has now become the more popular option, although Pro-Lift can still work well at shallow depths. Pro-Lift remains a sensible choice on the heavier soils.

Solo ST models with shallow tines are increasingly common and are the default choice for lighter soils and shallower working. The 380 ST is the best-selling model in the Solo range.

do not assume they last forever. A simple check is to measure down from the frame to the ring lip; this distance should be no greater than 140 and 90mm for 600 and 700mm DD rings respectively.

Overall condition is important. If the Solo in question appears battered and tired, it may well have been abused. Breathing new life into a tired example is perfectly possible, but such a machine needs to be purchased at the right price to make the project viable.

Summary: There are plenty of Solos on the used market, a possible exception being the sought after Solo 380 ST. Bear in mind that Pro-Lift models now have softer residuals than the ST, which can make those originals a bargain used buy. After all, the Pro-Lift legs do not have to be worked at full depth, and a change of wing design can suit them to all soils.

Expect an entry-level Solo 300 unit to cost around £15,000 ready for work, a later Solo 330 ST starting at £19,000. A Solo 380 ST will be priced from £24,000, folding 450 ST and 600 ST models weighing in at £28,000 and £30,000 respectively. In contrast, the faster depreciating Pro-Lift alternatives sell at £24,000 and £26,500 for a 450 and 600. As for the 'R' models, these tend to carry a marginal premium of £1,000 on a Solo 300/330, climbing to £2,000 extra for 450 and 600 models.

Various upgrade kits enable buyers to pretty much 'build' the Solo they want. Keep an eye on costs, though, as it can be better to hold out for the right example in the first place.

Last up, assess the farm's hp availability to lug the Solo. A 330 ST may have a min recommended requirement of 170hp, but at this level the machine will struggle to deliver max productivity in heavier going. The bottom line is that the buyer needs to match Solo, tractor and soil to come up with the ideal Simba min-till package.

