SHANKS FOR EVERYTHING
TINED SEEDING OPTIONS
Tined seeders tackle sowing with accuracy and simplicity

Kondinin Group last looked at tined seeders, specifically precision tined seeders, almost 10 years go. As with many forms of farm machinery, the range of precision seeding tines and bars has grown dramatically in that time while still using the basic design principle of being able to follow ground contours accurately with a minimum of design fuss. Kondinin Group’s research team has inspected more than a dozen tined seeders in the past month or so to compile this report. Words and photos by Mark Saunders, Ben White and Josh Giumelli.

While disc seeders have come to the fore recently in line with minimum and zero tillage farming practices, the tined seeder remains a must-have for many broadacre farms.

For grain growers, the choice of a precision tined seeder is often based on low maintenance requirements, a lack of complexity in their design and function, moisture seeking ability and good value for money.

They are not without their challenges however, generally having to operate at lower grounds speeds compared to disc machines, being prone to trash blockages in certain conditions and by their nature, disturbing and throwing soil.

Soil throw will influence furrow moisture loss, potential weed seed germination and pre-emergent herbicide efficacy.

From Kondinin Group’s inspections in this report, it is clear there is a wide variety of options available, with several brands now offering narrow transport configurations and coulters at the front of the seeding bar or row unit to cut a slot in the ground to help prevent issues like hair pinning.

Second-hand value may be a consideration as well, taking into account features such as wheel spacings (with the recent trend towards controlled traffic farming) and roading ability (transport width).

Given the advent of newer brands in the market place such as Horsch, Boss, Equalizer and SeedMaster, and an expected working life of 10-15 years, second-hand values are hard to assess as these machines have not been in service long enough to be traded in any great numbers.

Along those lines, dealer representation, service and back up is vital as is the case with most broadacre farm machinery where a lack of spare parts or service at a crucial time of the year can lead to a seeding disaster. Figure 1 shows a typical precision seeder tine design.
Buyer’s guide

Based on Kondinin Group’s observations of in-paddock performance of precision tined seeders, following are a few key points to consider when it comes to tined seeding systems:

**Breakout requirements** – breakout is a key factor governing the selection of a tine, especially under minimum tillage situations. If a tine’s breakout force cannot be set high enough, it will constantly trip or hang back.

While precision tines are designed to counteract the breakout influence, seed placement accuracy will still be adversely affected by tine breakout. Take stock of soil conditions, rocks and planned working depth. Don’t look at anything under 150 kilograms of force and consult with others who have operated under similar conditions.

Consider the option of hydraulic versus mechanical break outs as the hydraulic systems may be better at reducing the break back shock and ‘chattering’ which can lead to issues with frames prematurely wearing and cracking.

**Down force** – similar to breakout force, insufficient down force will see tines fail to penetrate hard soil. In addition, check press wheel packing force is sufficient to create moisture-harvesting troughs and ensure seed-to-soil contact.

**Under-frame clearance** – under-frame clearance is vital to trash flow, especially in high residue situations. Anything above 500mm is a great start. If installing tine modules on an existing frame, this clearance will govern whether they will fit and can be raised high enough for transport. Many brands now include a high clearance function that will lift the entire bar well above a metre off the ground for easier maintenance.

**Row spacing** – once again, if adapting a tine to an existing bar, sufficient distance between rows is crucial. Precision tines are usually quite long and may strike the bar behind them when breaking away. If buying a dedicated tined bar, ask about row width options as some manufacturers may only offer a couple of choices.

**Cost** – precision tines are expensive, with some of the more complex units costing more than $6000 per row. It may pay to look at some of the swing arm designs that achieve contour following with a simplified construction if the budget is tight.

**Cultivating depth** – for subsoil cultivation (for example, moisture seeking), make sure the tine has sufficient working depth.

**Draft requirements** – draft requirements depend on a range of factors, such as working depth, tine shape, points used and soil characteristics. Most manufacturers should be able to provide a ballpark figure of power required per tine, which will be something like three to seven kilowatts per unit.

**Tine shape** – tine shape will influence stubble handling ability and the amount of power required to pull tines through the soil. Most precision tines use edge-on straight slank tines, which are generally better at shedding stubble than curved tines. Tines that lean back slightly tend to lift stubble, helping it roll to one side.

**Banding options** – make sure banding options are covered, especially if side banding. Most manufacturers offer liquid fertiliser or anhydrous ammonia kits. If buying a single tine unit, make sure fertiliser can still be banded and seed can be placed a sufficient distance away in the furrow.

**Tine length** – consider overall tine length if it is to be fitted to an existing bar. Consider length at a breakout position to avoid potential tine-to-secondary-frame clashes.

**Adjustment** – check the range of opener and seeding depth adjustment is adequate. On hydraulic units, breakout force can be adjusted through hydraulic pressure, but spring systems will require individual adjustments, which are more time consuming.

**Hitching** – Floating and fixed hitches can impact seeding accuracy and the A-frame may also help or hinder the seeding bar’s ability to follow the towing tractor.

**Transport width and height** – some of the larger seeding bars with five folding sections can be up to eight metres in width when folded. And similarly, while some brands offer narrow transport widths, this may be at the cost of transport height. Be sure to know the seeding bar’s dimensions when fitted with a particular tine system and its appropriate wheel specification.

**Maintenance** – Tined seeders are known for their low maintenance requirements but that does not necessarily mean they are maintenance free.

Machines running coulters may require extra greasing and ask about the use of pins and bearings, especially in the parallelogram fittings and adjustment. The simple addition of rubber torsion blocks can make a big difference to the working life of a seeding bar.

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**Figure 1. How a precision tine works**

1. Opening tine cultivates deeply to help roots seek out moisture. Some designs use a coulter disc in place of the tine.
2. Fertiliser is banded deeply into the opened furrow. A closer plate may be used to cover the fertiliser with soil tilth, creating a seed bed and preventing seed to fertiliser contact.
3. The seeding tube, (often attached to a tine) places the seed above the fertiliser on top of the seed bed, often to the side of the furrow or both sides (paired row).
4. The press wheel closes the furrow creating seed to soil contact and a small rainfall-harvesting trench. The press wheel is also usually used to regulate the height of the module, moving the parallelogram up or down.
5. The seeding tine or tube is adjusted independently to achieve the desired seed depth.
6. The parallelogram linkage allows the whole unit to follow the ground contour and move up and down, while remaining at the same angle.
7. A hydraulic ram provides down force so the tine bites into the ground, and allows the opener to break away if it encounters an obstacle. Some units may use a spring instead of a ram.
Research being conducted in South Australia on seeding technology is yielding some interesting results which could shape the way grain growers approach sowing and residue management.

Researchers have been working on a bentleg opener system, which has shown promise in terms of minimal soil throw at speed, and high-pressure water jets being used as a coulter, known as the Aqua-Till system.

Aqua-Till uses a high pressure (up to 50,000psi or 3800bar) stream of liquid to cut through crop residues and soil in a similar manner to a coulter. The concept was developed by the South Australian No Till Farmers Association (SANTFA), and SANTFA Research and Development manager Greg Butler, said the Aqua-Till is like a liquid coulter and has applications for minimal soil disturbance, timely sowing and good seed-soil contact in heavy residue.

"With the liquid travelling at a speed of Mach 3, it is also able to cut through wet residue surprisingly well," Butler said.

At the heart of the Aqua-Till is a FLOW triple-piston, ultra high-pressure pump which feeds liquid through stainless steel lines (solid and flexible) to a nozzle sitting above the ground.

The current row unit design includes a durable nylon ‘ski’ which acts a bit like the foot of a sowing machine, to help keep residue in place during a pass of the ultra high-pressure liquid.

Butler said water application rates can vary significantly depending on the residue to be cut, the row spacing and the ground speed however rates can range between 80–300 litres per hectare depending on application.

Recent independent evaluation conducted under laboratory conditions by the Agricultural Machinery R&D Centre at the University of South Australia showed that a nominal 150L/ha volume of water could sustain straw stem cutting capacities of up to 12.5t/ha, 19t/ha and 35t/ha at 300mm, 500mm and 1000 mm row spacing, respectively.

“We have trialled the system on 380mm row spacings with a ground speed of 11km/h in residues of 9–10t/ha and that required about 160L/ha of water,” Butler said.

The system has been run by a power take off shaft however Butler said future plans include an independent power source such as a dedicated diesel engine.

He said the system is capable of ‘cutting’ to a considerable depth into the soil but it comes down to a questions of horsepower and water rate.

“Other considerations moving forward are insulation from ground vibrations for the high-pressure supply lines.”

**BENTLEG OPENER**

The bentleg opener is a tined seeder development originating from the South African, farmer developed, ‘RT blade’. The Australian evaluation and development work to date has been funded by the University of South Australia, the South Australian Grains Industry Trust (SAGIT) and the Grains Research and Development Corporation (GRDC).

The latest research has been headed by James Barr, a research engineer with the Agricultural Machinery Research and Design Centre, School of Engineering, University of South Australia.

Barr said the bentleg opener is aimed at providing the minimal soil disturbance and sowing speed of a disc with the simplicity of design of a tine.

Results to date with the bentleg opener have been promising using two double-chute seeding system design concepts – a centre banding design with a trailing closer plate, and side banding design with winged attachment. Figure 2 shows the basic bentleg opener designs.

Barr said the bentleg opener research to date has shown that sowing speed could be increased by as much as 50 per cent by using the opener.

“The bentleg seeding system design has been optimised in a virtual soil bin using the discrete element method, an engineering simulation technique now being used for soil-tool simulations throughout a number of GRDC funded projects. Findings have been validated in the field, highlighting the bentleg seeding system ability to sow wheat accurately at speeds up to 12km/h,” Barr said.

The bentleg design offsets the shank portion of the opener away from the centre
of the furrow where the upheaval of soil is greatest. The shank is connected to the loosening foot via a side leg portion. The result is a much-reduced soil throw, while still loosening large furrows.

Barr said additionally, the bentleg concept is now proven, but needs further development to operate effectively in a wider range of field situations.

“The challenge now is moving the design from a research prototype into a field practical solution that works well over a large depth range, and can cope with residue and soil conditions.”

Further work on the bentleg seeding system will see researchers looking at larger-scale testing to develop a robust design and commercialise the product.

Acknowledgements:
Flow International Corporation, GRDC, SAGIT, SANTFA, University of South Australia.

More details:
www.aquatill.com

Figure 2. The basic designs behind the bentleg opener

Image courtesy James Barr, University of South Australia
New models

The range of seeding bars and tined systems for grain growers is vast and adding to the decision-making process is the availability of dozens of aftermarket points and openers. Two of the more recent additions to the market are from Knuckeys of Winchelsea in Victoria and the SeedMaster which is made in Saskatchewan, Canada.

**Knuckeys Accu Sow**

Knuckeys of Winchelsea in Victoria has recently built its first hydraulic tined seeding bar, called the Accu Sow. Warwick Knuckey said the bar was a client-driven project that wasn’t able to be sourced on the current market.

The bar is available in widths of up to 12m and has a transport width of 3.4m for its compact models and 4.5m for the 12m machines. Row widths can be customised from 200mm to 360mm and the parallelogram tine has been designed to handle heavy trash loads.

To increase the trash flow, each opener assembly’s primary ripping tine is mounted in front of the RHS it is bolted to. This dramatically increases the distance between the ripping and seeding tine which is on a parallelogram linkage, eliminating pinch points and allowing the trash to flow more freely.

The ripping tine and the front of the parallelogram are attached to plate steel as one unit which is bolted to the 100mm x 100mm x 6mm RHS frame.

Knuckey said the increased distance also allows the primary tine to break out to its full travel, completely independent of the seeding tine, resulting in better seed placement and less wear to parallelogram pivot points when working in harsher country where the front tine breaks out more frequently.

“We have designed the Accu Sow for maximum trash flow ability, precision seed placement and long working life in the toughest of conditions, whilst allowing the purchaser flexibility in meeting their individual seeding requirements,” Knuckey said.

Wheel centres can be set on 2m or 3m and the tines are set in three main ranks with two intermediate ranks in the centre of the seeding bar.

Knuckey said the tine break out force is 300kg through an accumulator system and the primary tine depth can be mechanically adjusted through 200mm of vertical travel. Additional break out is provided for the seeding tine with an EPDM rubber dampening system.

The seeding system can be single or double shoot with the several options for both the ripping points and seed tube depending on the requirements of the owner for their particular conditions.

A 460mm diameter press wheel is used for better wear qualities with less rotations along with mud clearing capabilities. The press wheel determines the seed depth with the seed tube’s height adjustment via a cam with a series of holes at 5mm increments. Down force is adjustable from 34kg-80kg and the press wheel is available in several pneumatic and semi-pneumatic profiles.

A maintenance-free hub of the press wheel has a sealed bearing and the parallelogram linkage uses pins and triple-sealed bearings rather than bushing for increased life.

The seeding parallelogram has a respectable 530mm up and down travel to ensure the seeding accuracy in undulating ground and raised bed gutters.

The entire frame (a bridge design) is fitted with large flotation tyres can be hydraulically lifted, to a height of 1300mm which makes moving around and under the paddock is a high 650-800mm.

The bar also has a floating hitch for increased contour following and the front wheels can be hydraulically adjusted out to 3m on the 2m centre machines for increased stability on road.

**Prices:** Start at $195,800

**Contact:** www.knuckeys.com.au

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**SEEDMASTER**

SeedMaster bars are made in Canada and cover working widths of 12.2m (40’) to 30m (100’). The bars are either three section or five section, folding inward and the transport dimensions for the 12.2m (40’) model is 6m wide and 4.7m tall.

Seeding tines are in three ranks and row widths can be 10 inch, 12 inch, 14 inch or 15 inch with the ability to customise to metric spacings if required.

The tine design features a hydraulic break out via a long ram with adjustable packing force and adjustment for depth and press wheel requires a nut to be loosened and moved with a supplied adjustment tool, eliminating need for pins.

The standard design has a dual knife system to ensure accurate fertiliser and seed placement with seed and fertiliser separated across the sowing trench by 37mm and fertiliser placed 18mm below the seed. The front knife is for fertiliser while the rear knife is for seed.

Single shoot options are also available and the tines can be fitted with liquid tubes or a dual hose rear seed tube.

No greasing is required for the press wheels and the shank assembly is non-geaseable. The bar wheels do require greasing.

Wheel spacings can be 2m or 3m fixed and all wheels are mounted outside of the frame only.

Under frame clearance is about 900mm.

**Price:** $240,000 for the 40’ (12m) bar on 300mm spacings.

**Contact:** www.sunriseag.com.au
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Western Australian company Ausplow’s DBS opener has become synonymous with precision, minimum-tillage seeding, and has an enviable track record, being on the market for around 26 years.

The Deep Blade System has had the odd tweak over the years but still remains basically the same. A quick look at the Ausplow spec sheet will reveal a mind-boggling array of models, but the numbering system is simple. Kondinin Group inspected an Ausplow D260-48N operating in Dumbleyoung, WA, which is a D series, with 260mm tine spacings, 48 tines, and N for narrow transport width. So overall operating width is simply 0.26 x 48 = 12.48m.

The D260 series is available in widths from 6.24m to 18.2m, the D300 series available from 9.6m to 18.3m, and the D381 series from 10.66m to 18.28m. There is also the W325 series available in two models of 21.12m and 24.37m. Required horsepower is about 3.7kW to 6kW per tine.

The bar frame is of a simple box-design for rigidity, which is lifted by a total of eight large in-frame wheels with 385/65R 22.5 tyres. The bar and pull frame are rigidly connected, so levelling of the frame is achieved by adjusting the hitch position. Heavy-duty tension cables connect outer wings back to the drawbar to take up some of the strain. All bars feature a three-rank arrangement, with one rank leading the wheels and two trailing.

The simple folding arrangement sees a transport width 5.86m in the narrow version, or 7.42m for the D260-48E. The larger models (15.34, 16.64 and 18.2m) feature five frame sections instead of three. Transport height for the D260-48E inspected comes in at 5.36m, and underframe clearance is about 600mm during operation.

The heavily-constructed edge-on tine shank has a breakout of 340kg, controlled by a hydraulic ram with cushioned return. A point adaptor fitted to the end of the shank holds the blade-style point in place with a U-shaped pin, which can be removed via a special hook tool. This allows the point to be replaced, or lowered, an operation which takes around an hour on the 12.48m bar inspected. Each point can be lowered twice as the point wears away.

A stainless steel fertiliser tube is attached to the rear of the opener tine with a replaceable steel boot positioned higher than the base of the blade. The seeding tube, slot closer and press wheel are mounted as a unit on parallelogram arms pivoting off the rear of the tine, with the press wheel controlling seeding depth, which is adjustable in 8mm increments. A coil tension spring between the arms adjusts packing pressure and has three settings, with a maximum of 35kg downforce. A mud scraper is mounted at the rear of the press wheel on a curved spring arm. Grease points are confined to the headstock pins and the frame hinge points.

Price: $201,916 for the D300-40 (12m bar with 30mm spacings)

Contact details: Ausplow
Phone 08 9417 8877
www.ausplow.com.au
Boss Agriculture

Boss Agriculture is based in the northern NSW town of Inverell where the business builds a wide range of seeding and tillage equipment.

Bar options for tined row units include 8-36m effective operating widths in flexible or bridge designs folding in single, double or end-tow configurations for transport.

Kondinin Group engineers inspected both Bridge frame and Supa-Flex frame machines.

According to the manufacturer, the Supa-Flex is the most popular of the bar options and is available in 9m, 12m and 18m working widths. Both Bridge and Supa-Flex toolbar fabrication is heavy duty using 100x100x9mm RHS. R1 lug tyres are standard.

With a three-bar design with wheels inside the frame, a 12m Supa-Flex folds to 5.8m wide for transport and 4.7m high. For comparison, an 18m narrow-fold Bridge frame folds to under 6m for transport.

Underframe clearance is 680mm in the working position but the unit lifts to 1.4m for servicing access. Row-unit toolbar attachment is via 200mm diamond clamps.

Of the tine row unit offerings, the TX65 and TX80 are the most popular, with 295kg or 363kg (650lb or 800lb) spring breakout or 181kg-363kg (400-800lb) hydraulic breakout respectively. The hydraulic TX80 has an accumulator or variable breakout with an optional 635kg (1400lb) breakout design. While bars with TX80 hydraulic row units need to be plumbed into the tractor hydraulics, minimal flow is required according to the manufacturer.

Up front, the unit leads with a 508mm (20”) coulter shouldered by a 381mm (15”) rubber clad drum. This coulter can be removed if swapping out the tine for a disc shank. Adjustable coulter scrapers are standard fitment.

Shank construction is 25x50mm with a deeper 25x75mm optionally available.

Standard shank length provides 203mm (8”) seeding depth although for those requiring a moisture seeking option; a 254mm (10”) seeding depth is optionally available. Depth adjustment is in 6mm increments (1/4”).

The TX65 and TX80 are available with a double shoot shank option and both are compatible with the Boss single and double-disc shank which can be swapped out with the tine, effectively providing a machine with both disc and tine opening options.

The total parallelogram vertical travel range is 305mm (12”).

The tine has a Janke-style point adapter allowing for cast spear or profile cut knife points to be used.

Press wheels are available in six different sizes and profiles including 110mm wide solid profile through to pneumatic Gyral-style profile. Press wheel downforce is adjustable from around 20kg up to 100kg. Press wheel scrapers are optional.

Each TX65 or TX80 row unit weighs around 210kg.

From a servicing perspective, the coulter is fitted with a grease nipple requiring greasing at 250 hour intervals, while the press wheel hubs are sealed. There are no other greasing points on the row unit with parallelogram pivot points comprising 1¼”chrome pins in oil impregnated bushes. Frame greasing is simple with well-labelled and easy to access daily grease points on the frame castor king pins and frame section fold pivots on Supa-Flex frames.

Price: 12m Bridge frame, TX65 tines on 300mm $260,000.00 *
12m Supa-Flex, TX80 tines on 375mm $212,190.00 *

* Base machine excludes seeding kit

Contact details: Boss Agriculture
Phone 02 6721 2677
www.bosseng.com.au
Canadian-made Bourgault seeding bars come in a range of configurations from frame-mounted 6m and 8m wide models to three and five section models covering 30’ (9.14m), 40’ (12.2m), 50’ (15.2m), 60’ (18.3m), 66’ (20.3m), 76’ (23.4m), 80’ (24.3m) and 86’ (26.4m) available as tow between and tow behind bars.

Kondinin Group inspected several bars at Bourgault’s distribution centre at Albury, NSW.

The above widths are covered by the 3320 series and a 3420 model is available in 80’ and 100’ working widths but this has a narrow transport width of 5.5m.

The 3320-40 (40’ wide) has a transport width of 5.9m and transport height of 5.1m while the 3320-60 (60’) has a transport width of 7.4m and a transport height of 4.8m. The bars feature a heavy-duty build quality with most of the main frame comprised of 127mm x 127mm RHS.

Bourgault Australia says by far the most popular tine choice for the 3320 series is its PHD or Paralink Hoe Drill which can be set to seeding row widths of 250mm or 300mm or customised to 333mm or 380mm.

Tines are set in three ranks and Bourgault has an option of adding a fourth rank for extra trash clearance.

The Paralink has a long set of parallelogram trailing arms which maintain the attack angle of the opener in the soil as the press wheel moves it up and down, maintaining depth. The trailing arm has a 2:1 contour ratio which means for every 25mm of travel on the press wheel, the seed opener only moves 12mm.

Sowing depth is relatively easy to set by selecting one of 16 indexed holes with a steel pin. Each hole represents 4mm of adjustment.

Bourgault has also introduced what is calls a Quick Depth Adjust where the bar can be raised and lowered thanks to a parallelogram mechanism on the frame’s leading and trailing wheels. This allows the operator to change working depth quickly without having to adjust each opener.

Working depth can be adjusted by means of locking shims, on the mounting rams for the front castor wheels and rear carrier wheels, with each shim worth about 5mm of travel.

Single shoot seeding is factory fitted but double shoot options are available through Bourgault using aftermarket suppliers such as Primary Sales for a range of points and boots.
The hydraulic ram on the paralink provides up to 275kg breakout and the press wheel packing force can be adjusted to 75-80kg from the tractor cabin.

Bourgault also has an optional PackMaster system which runs in conjunction with a Topcon X35 controller. A sensor on the centre frame wheel measures downforce and the PackMaster system will automatically adjust the pressure on each ram across the bar width to maintain an even pressure.

Underframe clearance is 940mm.

Maintenance on the bar involves greasing the press wheel hubs, main frame wheel bearings and associated wheel assemblies such as tie rods and pivot points.

The Paralink unit itself is maintenance-free as it uses chrome pins and Polygon Teflon-lined, composite bushings. The opener is cast and the swing-arm frame is welded steel.

Press wheel options include a fully pneumatic version and three semi-pneumatic variants.

Another relatively new development for Bourgault is the Hydraulic Variable Breakout (HVB) system which has a maximum break out force of up to 470kg. The HVB provides a hydraulic trip mechanism with a short ram housed in a tower above the tine unit. Bourgault says the hydraulic trip removes the extra wear which can be associated with spring break out and rebound. The HVB is available on Bourgault 8910 and 5810 models.

**Price:**
- 3320-40 with QDA on 12” spacings $181,803
- 3320-60 with QDA on 12” spacings $288,000

**Contact details:** Bourgault Australia
Phone 08 9399 9700
www.bourgault.com
Made in South Africa, the Equalizer bar is a relative newcomer to Australia and is handled by AFGRI in Western Australia and Harbergers in the eastern states. Kondinin Group inspected a 60’ (18m) bar near Esperance in WA.

The bar range covers 9m, 12m, 15m, and 18m working widths with row space options of 273mm and 300mm. If buying a 12m bar, there is an option to get the same centre section on the 15m and 18m bars to allow for going wider in the future. The 9m and 12m bars have a centre section with two wings while wider models have a centre section and two wings either side which fold inwards.

Transport width is 6m for the whole range and the 12m bar is 5.9m tall while the 15m and 18m bars are 5m tall.

The bar design looks reasonably well made with three ranks of seeding tines and a row of coulters along the front of the bar. Coulters can be optioned for mechanical or hydraulic downforce and the standard fit coulter is a 560mm diameter, serrated edge disc. The unit inspected was fitted with hydraulic downforce and each coulter has an eight-hour greasing requirement. The operator said in reality in reasonably good operating conditions, the rams were greased about every three days.

Other greasing points can be found on the frame pivot pins and frame wheel hubs. The press wheels are fitted with an SKF AgriHub bearing and the tine mechanism uses bearings and pins. Press wheels can be placed in one of six locating holes to allow some vertical and fore and aft adjustment.

Downforce on the coulters is achieved via hydraulic rams and tine break out force is 500kg.

The tine parallelogram is a reasonably compact unit with a front digging tine and closing tool. The front tine has some break out ability before the whole parallelogram mechanism breaks out. The rear opener is swept to the rear and height adjustment is relatively simple by pulling a spring-mounted ratchet up and positioning the mechanism in one of five slots.

Standard points are a 16mm wide knife point but other options include an aerating point and a 10mm wide point for minimal soil disturbance.

The tine mechanism itself has no lateral movement but the press wheels are able to swing slightly to the left or right. Underframe clearance is 680mm.

Wheels are set on 3m centres and are located within the bar frame and a hydraulic levelling hitch is optional, as are liquid kits which have a 4500 litre capacity on the larger bars.

Price: 12,000V 300 model, 60’ unit on 300mm row spacings $342,870 not including coulters

Contact details: Harbergers
Phone 03 5497 1420
www.harberger.com.au
www.afgri.com.au
Excel Stubble Warrior

The Stubble Warrior seeding bars from Excel come in widths up to 24m and are most commonly fitted with CR600 tine assemblies.

Excel is manufactured under the Great Western Corporation banner which, among others, now incorporates Gyral, AgPoint and Great Western Tillage in its suite of agricultural tillage and planting equipment brands.

The CR600 units are rated at 272kg (600lb) breakout but a 363kg (800lb) option is also available with a longer tine design.

Excel builds the CR600 units and Stubble Warrior frames in Toowoomba, Queensland.

Stubble Warrior frames are available with centre section wheel centres of 2m, 3m and 4m. Because the centre-frame castors are manufactured with an offset, this allows them to be alternated on the right or left resulting in the 2m, 3m and 4m wheel-centre option.

Standard configuration is a three-rank frame with rank spacings of 1800mm front to mid and 1950mm mid to rear on 12m machines while 18m and 24m machines have mid to rear rank spacings of 2070mm to accommodate varied wheel configurations. Frame widths available include 6m, 8m, 9m, 10m, 12m, 18m and 24m with optional no-fold, single-fold, double-fold or end-tow depending on farm layout and transport requirements.

For undulating country, an “Ultaflex” frame option provides front and rear frame flex with a fixed middle beam and a front and rear frame slot allowing an additional 230mm (9”) of additional vertical travel.

Transport width for a 12m machine is 5824mm with a height of 5798mm.

The CR600 units feature a 508mm (20”), 6mm thick leading coulter with rubber coated drums on both sides. Tungsten scrapers for the drum and coulter blade are standard. Unit headstocks are fixed to the bar using a cast shell clamp and 7 x ¾” grade 8 bolts with spring washers.

Total parallelogram movement is 178mm (7”) up and 125mm (5”) down.

Tine depth control is in 12mm (1/2”) increments down to more than 229mm (9”), for situations where chasing moisture at depth. Adjustment is simple with the removal of a pin to raise or lower the shank. Shanks are 25mm wide but milled down towards the point and boot to minimise draft. After milling they are re-heat-treated.

The standard points are AgPoint Green Scoop 50mm but the nib can accommodate any point fitting a 16mm adaptor.

The shank can also be removed and replaced with a double-disc opener for planting summer crops or slicing in fertiliser.

The 330mm diameter (13”), press wheels are available in a variety of profiles including a 51mm (2”) hollow flat or optional 1” solid V profile. A press wheel arm swivel option for operators in tighter-turn country is also available. Press wheel scrapers are optional.

There are no grease points on the CR600 units, all bearings are sealed while the 31.75mm (1 ¼”) diameter chrome pins in the parallelogram are pressed into AustLon.
oil impregnated bushes. Hubs for the leading coulter and press wheel are common; heavy duty Holden hubs. The bar has daily grease points on the castor lift arms which are simple to access and well labelled.

The weight of a 12m wide machine on 375mm row spacings is just under 14 tonne.

For operators wanting to place fertiliser in front of the tine with a disc, the VT110 unit is similar to the CR600 but sees the removal of the front coulter and adapts a double disc opener with a gauge wheel on one side. This configuration is more common in areas with heavy black clays, for example the Darling Downs in Queensland or the Liverpool Plains in NSW.

Price:
12m Stubble Warrior, CR600 tines on 300mm (no Ultraflex) $249,150
24m Stubble Warrior, CR600 tines on 375mm (no Ultraflex) $482,790

Contact details: Excel Agriculture
Phone 07 4636 9100
www.excelagr.com.au

To see which model and accessories best suit you, visit us at marshallmultispread.com.au or 1800 651 288.

Order now to secure delivery for the 2019 season
www.roesner.com.au
At first glance the Flexicoil 5500 air drill appears simple compared to some of the more advanced precision tine units on the market. But while the conventional tine units don’t have any individual contour-following ability, the bar is another matter. Castors are mounted along the heavy front bar and control the working depth of the front two ranks of tines. The two rear ranks use the rear-mounted press wheels to control seeding depth independently of the front ranks. With two wings either side of the centre section, the contour-following ability of the 5500 is quite impressive. By rights, this flexibility should also reduce stress on the bar frame.

The 5500 has one more party trick up its sleeve. When folding for transport, the four wing sections flip forward, hinging on the heavy front bar. When pointing vertical, the bar pivots at the front, with both sides folding back along the length of the centre section, supported by the wing castors. This arrangement gives a relatively narrow transport width of 5.4m, irrespective of the working width of the bar, which is available in 18.3m (60’ as pictured), 21.3m (70’), and 24.4m (80’) widths. Also impressive is the transport height, which comes in under 4.1m irrespective of the model.

C-tines can be spaced at 250mm (10”) or 300mm (12”) spacings, although 250mm spacings are not supported on the 24m bar. Two coil-spring options are available with 160kg or 250kg breakout, or hydraulic ram breakout with a maximum trip of 350kg. With the simplicity of the tines, trash-flow through the bar is impressive.

Depth control is a single-point adjustment for the whole bar, and packing pressure is variable by a system which transfers weight from the front of the bar to the rear, varying the packing pressure by up to 30 per cent. A choice of two steel packers (90mm and 115mm wide) and two rubber-tyred packers (75mm, 100mm and 140mm) are available. Twin-tyre front castors are robustly constructed, with two per wing, and two centre castors are mounted on the front bar pivot points. A single-tyre rear castor carries the pull frame for the tow-behind cart. All tyres are 12.5L-15. Castor height is adjustable to fine-tune seeding depth across the bar. There are no tyres inside the frame, which further improves trash flow.

Price: From $282,700 (18.3m, 300mm spacings, 160kg spring tines).

Contact details: Flexicoil Phone 1800 790 811 www.flexicoil.com.au

C-tine with spring breakout.
Built in Ararat, Victoria, Gason manufactures several seeding bars including the Scaritill and Hydratill range, and the Para-Maxx 150. Included in the Scaritill and Hydratill range is the recently released narrow transport bar, the NT8000.

Kondinin Group inspected an NT8000 on a property near Cohuna in Victoria. The unit was fitted with Scaritill tines which have 181kg (400lb) break out force via springs located in a vertical ‘tower’ above the tine mechanism. Hydratill models use hydraulics and are also available on the NT8000.

Scaritill break out can either be 181kg (400lb) or 245kg (540lb) and Hydratill break out force can be varied between 160kg (350lb) and 308kg (680lb).

The NT8000 has a working width of 8m and folds to a transport width of 3.5m and height of 4.5m. This transport envelope requires no pilot when traveling on roads.

Larger model Scaritill and Hydratill seeding bars cover working widths of 12m, 15m and 18m while the Para-Maxx 150 is available in 12m, 15m and 18m working widths.

Scaritill and Hydratill models have transport widths from 4.8m to 7.7m depending on the working width. The units’ frame sections fold in on themselves.

Both Scaritill and Hydratill use the same tine designs including its new parallelogram press wheel. A frame-mounted trailing press wheel with sowing boot is also available, whilst the Para-Maxx is a true parallelogram which employs a drum coulter coupled with a tine and a press wheel.

The tine assembly towers on both Hydratill and Scaritill bars are mounted above the toolbar for maximum trash clearance. Underframe clearance in the working position is 760mm and the main frame wheels are located within the frame. Wheel centres are available on 2m, 3m and 4m.

Gason offers a choice of four tine shanks, all with the same depth adjustment via holes in both the tine shank and cast holder.

The individual tine adjustment allows tines to be positioned lower behind the tractor wheels, for example. Adjustment is in 12mm increments. The tine shank selection includes two knifepoint designs, a spearpoint and a 47 degree double-bolt forged foot. Single and double shoot options are available.

Access around the NT8000 inspected was good and the build quality was heavy duty. A hydraulic hitch is optional.

Weekly greasing is recommended on all grease points which include tines, press wheels, wheel hubs and frame pivots.

Regardless of the choice of Scaritill or Hydratill, the tine jump is approximately 350mm. The Scaritill includes a polyurethane shock pad to minimise recoil loading. The Hydratill has a throttle check valve to perform the same function by restricting the oil flow back into the cylinder.

The main tine pivots use Moly coated hardened steel bushes which includes two stepped primary outer pivot bushes to provide a grease reservoir. The inner hardened bush includes a spiral groove to evenly disperse the grease to the bearing surface.

Individual frame height adjustment is achieved via eye bolts mounted to each depth control cylinder base. Frame depth control on these is via serrated plates mounted on the master cylinder in 4-5mm increments.

A range of press wheel tyre profiles are available. The frame-mounted trailing press wheel arms have some lateral movement to allow for contour following and easier turning. Gason says the 80mm wide press wheel is the most popular for general purpose seeding.

Seeding row widths can be 7”, 10”, and 12” inches on the NT model while the wider bars offer 250mm, 307mm, and 333mm. Para-Maxx bars can have seeding row widths of 333mm, 375mm, 400mm and 500mm.

Price: Scaritill NT 8000 (400lb) on 250mm row spacings with tines & boots $100,100

Contact details: AF Gason
Phone 03 5352 2151
www.gason.com.au
Gessner builds its Patriot and Landmaster tine assemblies and frames in Toowoomba, Queensland. The Patriot is the most recent development with the Landmaster having been in production for more than a decade.

**Patriot**
The Patriot was first released in 2017 and accommodates row spacings of 250mm, 300mm, 333mm, 375mm, 400mm or 500mm.

Frame sizes offered are standard at 12m, 18m 24m and 36m but custom width builds are available.

Models with 12m frames are three-section, 18m and 24m are five-section while 36m machines are seven-section frames.

Folding options include single fold on 12m machines, 18m and 24m machines are available as a single or double-fold while 36m machines are end-tow as an option.

Transport width of a 12m machine is 6m while transport height is 5m.

Kondinin Group engineers inspected a 36m end-tow Patriot south of Mungindi, NSW.

Frame designs incorporate three 100x100x9mm toolbars with castors at the front and fixed mounts at the rear. End tow units have castor assemblies on the rear also.

Underframe working and service height of the fixed frame unit is 900mm.

Parallelogram tine units have adjustable hydraulic breakout from 136kg to 318kg (300-700lb).

Total vertical travel is 500mm, with 200mm down and 300mm up and seeding depth as standard is 150mm, adjustable in 6mm increments. Tines are 25mm x 50mm spring steel.

Pivot points are chrome pins with oil-impregnated bushes and the row units are fixed to the bar using grade-8 fasteners.

The shank can accommodate a variety of points including profile-cut knife points while seed and product can be delivered via single, dual, paired-row and liquid injection outlet options.

Each Patriot row unit weighs 80kg.

**Landmaster**
Available as standard in 12m, 18m and 24m working widths, the Landmaster can accommodate row unit spacings of 333mm, 375mm and 500mm. Working widths of up to 36m can also be custom ordered. Toolbars are 100mm x100mm x9mm RHS.
Folding options include single and double fold for transport with a 12m Landmaster folding to 6m in width and 5m in height. Leading the tine is a 508mm (20") coulter sandwiched in a 356mm (14") rubber coated drum depth wheels. Parallelogram downforce is simple to adjust and ranges from 20-250kg.

Like the Patriot, tines are 25mm x 50mm with a working depth of 25mm-200mm adjustable in 12mm increments. Press wheels are Manutec and are available in fixed or swivel mount design in a range of profiles. Press wheel scrapers are optional. Pivot points in the parallelogram are chrome pins with oil-impregnated bushes. Tines can be replaced with optional twin-disc opener assemblies.

**Pricing:**

- 12m Patriot single fold with 300mm spacing $198,000
- 12m Landmaster single fold with tines on 333mm $231,000

**Contact details:** Gessner  
Phone 07 4615 0100  
www.gessner.com.au
Horsch Sprinter 18NT

Horsch has a large range of tillage and seeding gear made in Germany and distributed in Australia by Muddy River. Kondinin Group inspected a Sprinter 18NT near Birchip in Victoria for this report. The Sprinter range covers working widths of 12m-24m and features an emphasis on simplicity of design and low maintenance requirements.

The 12NT has a working width of 12m, transport width of 6.12m and transport height of 4.7m while the 18NT has a working width of 18m, transport width of 6.23m and transport height of 4.7m.

Frame design is a centre section and two outer wings which fold inwards.

Build quality is generally very good throughout the bar. The Sprinters have three ranks of tines and a front row of coulters to help with cutting through crop and other residue. Rubber torsion tubes feature heavily on the bar where tines and coulters are attached to the frame which helps minimise transmission of shocks and vibration.

Seeding row width can be 10” (250mm), 12” (300mm) or 15” (375mm) and hydraulic rams control most of the bar’s height adjustment and front coulter pressure, which can be adjusted from 5-120kg of down pressure.

Underframe clearance is 1000mm and trash guards are an option for the tine shanks.

Coulter depth is set by using aluminium locking clips on the hydraulic rams which limit the travel of the ram. The more locking clips, the shallower the coulter depth. Coulters have an oil-filled bearing in the hub which does not require lubrication. Coulter pressure can be monitored via a large gauge at the front of the bar.

Similar locking clips can be used on the hydraulic rams to control the tine lift for driving through headlands.

The tine design is one of the more simple inspected by Kondinin Group for this report. Each tine is at the rear of a long trailing arm which is shaped like a curved ‘L’ with the press wheel and tine opener at the back end of the arm. The arm is a single piece of steel about 100mm x 20mm thick.

Break out is via a hydraulic ram which controls a rocking arm (RHS) which the tine arm is attached to. Break out can be up to 410kg and each tine has some lateral movement thanks to the rubber torsion system.

Depth adjustment requires the use of an L-shaped tool which levers a spring mechanism to allow a choice of eight positions in a laser cut, notched teeth plate.

There are two press wheel options and both use steel rims. A rounded profile tyre can be fitted to the press wheel or there is a V-shaped option. For the 12NT and 18NT, there are four front castor wheels and four rear carrier wheels, located well outside of the seeding frame. The two centre front wheels use a tie rod system to act like a steering axle and are set at 3050mm apart.

The steering system and pivot points for the wheel assemblies take up most of the Sprinter’s lubrication requirements with 50-hour greasing required of pivot bearings, the steering axle and ball and socket couplings.

Price: $319,000 – $370,000 for the 18NT on 300mm row spacings

Contact details: Muddy River
Phone 03 5480 9928
www.muddyriver.com.au
The Horwood Bagshaw brand of seeders is now handled by CNH Industrial after last year’s announcement it had acquired the agricultural equipment manufacturer, based in Mannum, South Australia. CNH Industrial also manages Flexi-Coil seeders.

Brand Leader Steve Mulder (Flexi-Coil & Horwood Bagshaw) said Horwood Bagshaw products will continue to be manufactured in Mannum, South Australia and CNH Industrial continue to work on product research and development.

“Horwood Bagshaw is a well-known brand dating back to the 1800s and we will continue to maintain its presence in Australia,” Mulder said.

Recent developments include a Compact model with transport width of under 4m and larger capacity carts.

The Horwood Bagshaw range covers Air Seeders, available with on board liquid fertiliser and optional small seeds, ScariBars, Precision Seeding System (PSS) and compact models. And includes the well know Horwood Bagshaw Grader Scraper buckets.

The ScariBar can be used for secondary tillage and also as a direct drill or conventional seeder.

The PSS is a parallelogram tine, based on the ScariBar hydraulic tine design, available in working widths from 7m to 19.2m, with a choice of 250mm or 300mm row spacings.

An 18m wide ScariBar with five sections folds to a transport width of 7.2m and transport height of 5.1m. Underframe clearance is 710mm and rated break out force can be from 30kg-216kg for spring tines and up to 300kg for hydraulic tines.

The PSS opener has a hydraulic 300kg break-away tine where the working depth of the straight shank is adjusted by removing two bolts and sliding the tine up or down. Parallelogram linkage arms attach to the rear of the tine frame and feature a hinge joint at the rear to allow the seeding components and press wheel to move sideways when cornering.

A straight-shank seeding tine tipped with a spear point is adjustable in a similar manner to the opening tine. The seed tube can be adjusted up or down, independent of the seeding tine, and can places seed in line with the front tine. A press wheel controls depth, and is available in a range of styles and sizes.

Price: $264,000 for a 12m wide ScariBar fitted with PSS tines on 300mm spacings

Contact details: Horwood Bagshaw
www.horwoodbagshaw.com.au

The ScariBar is a well-built seeding bar.
John Deere

John Deere dealers report that few air hoe drills are sold annually, but a refreshed push from the global machinery giant for their 1870 air hoe drills may see them become more prominent in Australia.

According to documentation on the John Deere Australia website, the 1830 air hoe drill is available in a range of sizes up to 19.5m. The 1835 and 1870 air hoe drills are available up to 18.3m and 23.3m respectively.

The largest of these, the 23.3m (76’) 1870, is a five-section bar with row units on 305mm (12”) spacings. The frame features a floating hitch and in-frame flotation wheels with 1422mm of frame depth between toolbars. Transport width is 7m.

Tine breakout is hydraulically adjustable and seeding depth is adjustable in 7mm increments. Leading discs can place fertiliser at up to 150mm depth.

Contact: Your local John Deere dealer www.deere.com.au
Introduced last year, the Morris Quantum air drill is an upgrade of the C2 Contour, with beefed-up frame and redesigned ground-engaging units. The Canadian manufacturer claims an increase in frame strength of 154 per cent over the C2, as well as a slight increase in weight.

Kondinin Group inspected a 12m (40’) unit in a dealer’s yard in Esperance, WA, as well as one of the 21.3m (70’) pre-production models during seeding last year in Newdegate, WA. The Quantum is also available in 15m (50’) and 18m (60’) widths, and a 24m (80’) version is rumoured to be in the works.

The redesigned bar makes use of a proprietary laser notching method, allowing the 100 x 150mm RHS structural members to fit together snugly before welding, creating a stronger bar. Three ranks spaced at 1060mm is standard, but a factory-fit fourth rank is now available as an option. Available row spacings are 250, 300 and 380mm, and frame to ground clearance is 915mm.

Floatation has been improved with the use of large single castors with the 600/50-22.5 tyres fitted as standard across all models. Middle frame castors are on 3m centres. The centre frame section is common across all models, and the first folding wings are common on all models except the 21m, where they are wider. Frame hinge pins have been increased in diameter by 27 per cent and run in hardened steel bushings. Transport width is 5.44m across all models, with a height of 5.13m on all but the 21m bar (5.82m).

Changes to the parallelogram units are designed to improve seed placement, ease trash flow and enable a faster trip action when an obstacle is encountered. The entire unit is slightly shorter front-to-back compared with the C2, and the rear packer arm is made from 50 x 75mm RHS and is smooth along its length to improve trash flow. The headstock U-bolts have been replaced by a bolt-and-wedge arrangement to eliminate opener misalignment when U-bolts are tightened unevenly.

Pivot bolts on previous models have been replaced by chrome-alloy pins running in hard plastic bushes, improving service life over the C2 units, and giving less slop and eliminating greasing. Only the press wheel hubs are fitted with grease nipples. Packing pressure is adjustable from 45kg – 104kg.

The notched cam system as used on the C2 Contour has been carried over to the Quantum, giving seeding depth adjustments in 6mm increments.

The Quantum unit also features a shim under the depth cam which can be removed to give another 25mm depth. The 1:1 opener to packer ratio in the parallelogram linkage sees the opener exactly mimic the travel of the packer wheel over the full 405mm travel of the opener. Maximum opener breakout force is 363kg, and hydraulically controlled by an active system, rather than setting an accumulator pressure on the bar.

Price: $227,987 (12m, 300mm spacing, 110mm Otico press wheels)
$9345 single-shoot Morris air kit
$11,725 fourth rank factory kit

Contact details: McIntosh Distribution
Phone 08 9475 1600
www.mcintoshdistribution.com.au
Kondinin Group inspected a 12m Primary Sales precision seeder bar with tines at 300mm spacings and wheels set to 3m centres. Well-known for their range of tillage and harvest parts, Primary Sales manufactures the precision seeder bar in Western Australia. The bar is also available in an 18m (60’) width, and tines can be set to 250mm spacings if desired.

The level-lift bar features single outer wings which fold vertically for travel, giving a large transport width of 6.85m, and a height of 4.2m (40’) or 6.5m (60’) depending on width. The centre section has six ranks of tines and wing sections have five. The multiple ranks, spaced at 1055mm, coupled with the high frame height should help trash flow through bar. The precision module is based around a convention-style tine with hydraulic ram, with a maximum breakout force of 450kg. The tine is constructed from 16mm heat-treated spring steel placed edge-on, and the knife-point opener is capable of digging to 300mm, with other point styles available. Depth is adjustable in 75mm increments by repositioning the tine bracket which is held on by two bolts. An optional quick adjustment of the tine shank is via pin and lynch pin arrangement.

At the rear of the opener tine is a U-shaped box, which is fitted with rollers, allowing the entire fertiliser tube to slide up and down through it vertically, as well as permitting some sideways movement.

Attached to the fertiliser tube is the seeding tube and press wheel, with the latter providing contour-following ability and controlling seed and fertiliser depth. This unique arrangement is different to other precision tines which typically employ a parallelogram linkage to permit the vertical movement.

The sliding arrangement means only the physical weight of the press wheel, fertiliser and seeding tubes provide down-force for packing, although the unit inspected featured a tension spring add-on to increase down force.

Fertiliser is banded ahead of the seed tube, with a re-opener clearing the way for the seed tube. Seed depth is adjustable in 7.5mm increments from 5 to a maximum of 300mm depth. A 10mm stainless tube is fixed to the rear of the opening time for deep banding of liquid fertiliser.

The 140mm wide press wheel is V-shaped in profile to form a water-harvesting trench and features a spring-loaded hinge in the arm to avoid damage when the tine breaks out. Press wheel options include semi-pneumatic tyres and 80 to 140mm widths.

Price: $269,000 (12m bar with 300mm tine spacing)

Contact details: Primary Sales
Phone 08 9250 3500
www.primarysales.com.au

Tine unit.

Optional pressure down-force kit ($85).

Hydraulic breakaway.

Front-mounted coulters.
Vaderstad Industries manufactures a variety of seeding bars in working widths from 6m to 25m. Made in Canada, Seed Hawk is now owned by Vaderstad AB in Sweden and the Seed Hawks are distributed in Australia through the Claas Harvest Centre network and preferred dealers.

Models greater than 12m in working width have a second wing fold in their design where the outer wing folds in, then that folds in on itself again.

All bars when folded are not greater than four metres in height while the transport width of the 12m and 18m units is 4.8m and the widest models are 8.9m wide for transport.

The bars are all set up with three ranks of seeding tines and they can be tow behind or tow between the tractor and seed cart.

Row width options include 250mm, 300mm and 380mm. Twin castor wheels are located outside of the main seeding bar frame on the main centre section except for the smaller 30 Series seeders (6m and 8m working width) which have rear transport wheels mounted inside the frame.

The tine design is a fixed, trailing arm, and as such may struggle with tight turns. The seeding units are quite long and have a front fertiliser tube followed by the seed tube which is offset to the fertiliser by 35mm. Break out force can be up to 680kg. Hydraulic cylinders can apply up to 150kg of downforce and the whole unit pivots at the frame with about 450mm of travel. There are wear pads located just above the fertiliser knife.

Depth adjustment requires the use of a spanner or shifter to turn a lever after a cotter pin and setting pin has been removed from the assembly. Graduations are marked with letters to match depth requirements. The graduations start at ‘minus A’ which is very close to the soil surface while G is 38mm depth.

Greasing required is on each press wheel (100 hours), the main frame’s castor wheel plate (daily) and the wheel hubs on the main frame (100 hours). The unit inspected folded neatly and quite quickly.

Liquid options are available which are typically run down the fertiliser knife arrangement.

General build quality looks excellent. The unit inspected is on its second seeding and there were no signs of wear or cracks in the frame however there was some weeping of hydraulic oil on the tine rams.

A bank of hydraulic pressure gauges at the front, centre of the bar is easily visible and well labelled.

Press wheels are a semi-pneumatic design which rely on the tyre flexing during operation for cleaning. A mud scraper is available as an option.

Price: A 4012 45 series (40’ and 300mm row spacings) is $259,908

Contact details: Claas Harvest Centre www.claasharvestcentre.com
Built at its factory in Dalby, Queensland, Simplicity has recently released the Territory tined seeder using a parallelogram tine design with press wheel depth control in 6mm increments down to 125mm. Breakout is rated at 330kg (700lb) via the hydraulic ram on each row unit. The ram is plumbed into a closed-circuit system incorporating a two-stage hydraulic accumulator system. Breakout can be adjusted by varying the pressure in the accumulators.

Press wheel downforce can be adjusted by shifting the press wheel-parallelogram linkage pin on the individual row unit and can be set to one of three settings; low, medium or high pressure. This pin is relatively easy to access to make adjustments.

Vertical travel is 450mm and the parallelogram is designed to offer some flex for curved seeding operations. To facilitate parallelogram side flex without passing side load to the hydraulic ram, one ram end is mounted in a spherical bearing with a grease nipple requiring an annual application of grease.

Underframe height with the tine in the central working position is 800mm with 530mm clearance between the bottom parallelogram link and the operating ground level. Shank angle from vertical is 12 degrees.

Depth adjustment comes in the form of a press wheel positioning plate which requires the removal of one pin and is simple to operate.

Press wheels run on a fully sealed SKF Agri Hubs while all other pivot points in the parallelogram geometry are non-greasable.

Press wheels are Otico 400mm diameter, 110mm wide semi-pneumatic with no scrapers. According to the manufacturer, the flex in the profile of the press wheel rubber is sufficient to peel mud off and keep the press wheel clean.

Tine headstock is a departure from U-bolts in the form of a fabricated, heavy-duty weldment. Headstock bolts are held in place with wedge locking washers.

Knife points are standard with seeding boot options including single, double and paired row options.

The Territory units are paired with a three-row Simplicity 304 frame with front and rear castors sitting forward and rearward of the bar to provide lift for underframe access which is just shy of 1.5m in the elevated position. Frame rank spacing are at 1170mm.

In a 12m configuration, transport width is between 5.4m and 5.6m depending on press wheel settings. Transport height is just over 6m.

Frame widths of 12m (40’) and 18m (60’) are available with a 24m (80’) unit soon to be released.

Price:
- 12m Territory, 41 tines on 300mm $266,475
- 12m Territory, 49 tines on 250mm $291,555
- 18m Territory, 54 tines on 333mm $376,200

Contact details: Simplicity Australia
Phone 07 4660 6000
www.simplicityaus.com.au
Tim McClelland from Birchip in the Victorian Mallee recently upgraded to a tined seeder and new cart in an effort to make sowing more efficient and accurate.

The Birchip farmer who plants about 6500ha of crop annually and runs sheep said his old seeder was not cutting the mustard when it came to seed placement and emergence.

“The bar was more than 20-years-old and had a working width of 50 feet,” McClelland said.

“So we were looking for a seeding unit that could handle reasonably wet conditions and provide some soil incorporation.”

The McClellands settled on an 18m wide Horsch Sprinter NT with 21,000 litre cart (up from the McClelland’s previous cart capacity of 8000 litres). With the cropping program now completed, McClelland said the seeder performed well.

“One of the best features is the easy maintenance with just 14 grease nipples around the outer frame to do every 50 hours. The press wheels and front coulters all run in oil bath bearings and there is no need to get under the bar.”

He may be looking to upgrade his tractor as the Steiger 450 was right on its limits with the new, larger bar and cart.

“I reckon our fuel use was up one litre per ha and we did have a few hydraulic flow issues early on.”

This year’s cropping included pasture mixes of canola and oats and canola and vetch, lentils, wheat, barley, canola and oats.

McClelland said the seeder was fitted with new Primary Sales Adapt T points which allows 2cm of separation between the seed and granular fertiliser and the average sowing speed was 9-10km/h.

He also mentioned the seeder and cart folds to only be slightly wider than the tractor which makes it much easier for roading.

McClelland said sowing this year had been pretty much ideal with 40-60mm rain in the past month or so, adding to the 60-100mm of stored moisture in the soil profile.

Birchip farmer harnesses Horsch power for new seeding bar and cart
Culcairn, NSW, grain grower Graham Kotzur is contemplating an upgrade of his seeding bar so he decided to run his own on-property demonstration.

Graham hosted several seeders including disc and tined machines in April where each machine sowed about three hectares of canola at a rate of 2.5kg/ha.

Graham’s current bar is a Flexi-Coil 820 which is about as basic as a seeder gets but he is achieving good results, for example averaging four tonnes per hectare with his barley last season.

He bought the Flexi-Coil second-hand about 10 years ago and it has a working width of 12m and a 2500 litre liquid cart attached. The bar is fitted with AgMaster points and boots on 300mm wide row spacings.

Graham said he is still unsure about upgrading but he may look at getting a better seed cart to replace his current 9000 litre, four-bin model.

“With the results I am getting I am not sure I can justify the cost of a new bar at the moment but the cart needs to be upgraded. “If we do look at another bar, the priorities will be trash clearance, seed placement and the ability to incorporate chemicals such as Treflan. Whatever the case, I would like to keep it as simple as possible.

“I understand there may be some soil moisture loss with disturbance at seeding but then we could make that up with water harvesting from the furrows from the tines.”

Graham sows about 1500ha each year on the property Pleasant Valley where he has been continuous cropping for the past 15 years. Crops grown include canola, wheat, barley and faba beans.
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