

Seed Hawk SH 12 Cart, SH 21 Cart and SH 12 Onboard

Model	Tank 1 (litres)	Tank 2 (litres)	Tank 3 (litres)	Fans	Transport width	Working width	Spools valves
SH 12 Cart	3,800	5,800	n/a	1	3-4m	n/a	2
SH 21 Cart	10,500	3,500	7,000	2	3-4m	n/a	2
SH 12 On Board	3,800	5,800	3,000	1	6-7.6m	6-19.5m	4

Rear lights are standard
Dual fan option requires an additional spool

Transport width is more with dual wheels



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VÄDERSTAD

Seed Hawk



The dawn of a new era in seeding technology

Lower crop prices, higher fuel and labour costs and more unpredictable weather patterns are driving farmers to find more reliable but cost effective establishment techniques.

Airseeders and commodity carts have been used by large scale farmers for many years now. The technology up until today has been for wide, high output

cultivator bar type machines with limited seeding precision.

Vaderstad and Seed Hawk have developed a new concept of airseeder which gives unrivalled accuracy of seed and fertiliser placement even on the widest of implements. This new generation of airseeder consists of a frame that is fixed at one height for work and transport.

Each hydraulic trip shank has its own gauge wheel which controls the depth of a fertiliser knife and an offset seed knife, all mounted on the same arm. This design permits the machine to carry large volumes of product either on board, tow between or tow behind without effecting seeding depth.



Pressurised tanks

Powder coated, pressurised tanks are used, resulting in high carrying capacities in the air distribution system. Pressure tubes are carefully placed to ensure zero pressure drop across the meters. This means very accurate metering of even the small and light products. Blow-by is eliminated. An agitator bar allows smooth, uniform metering of light, fluffy products that might otherwise bridge. The pressurised tanks also allow a wide range of products and application rates to be delivered through the distribution system.



Seed Hawk SH 12 Cart

The SH 12 cart has two tanks, 3,800 litres and 5,800 litres. Metering is ground driven with a single fan. Good access to

the meters and drives, a wide platform, large flotation tyres and a strong frame are all features of the Seed Hawk cart.



Seed Hawk SH 21 Cart

The SH 21 cart has three tanks with a capacity of 10,500 litres, 3,500 litres and 7,000 litres. The SH 21 can be used in either the tow between or tow behind

position. Two fans ensure that plenty of air is delivered to transport product to even the widest of seeder bars.

Valves and controls

Half width shut-offs are used for narrow strips at the ends of the field, saving fertiliser and seed. Due to minimal double fertilising, there is less lodging, higher yields and easier harvesting.

The diverter valve below each meter is activated by a single lever, which controls a single rod. Changing the valve position will direct the product to either the upper or lower air lines. This allows mixing and matching of products with the seed or not.

Simple and accurate product splitting into the 60mm lines is done below the meter, eliminating the need for a large primary header.



Rollers

Various rollers are offered that are easy to change for very accurate metering of a wide range of seeds, fertilisers, inoculants and other granular agricultural products with varying densities, sizes and shapes. All rollers are made of long lasting polyurethane for gentle handling of the seed. Product shut off at the meters allows the rollers to be changed even when the tank is full of product.



The air plenum below the meters offers clean, straight through air flow for low air resistance, thus minimising horsepower requirement. The straight through design also minimises damage to the seeds as they are carried from the meter to the seeding tool. Stainless steel is used to fabricate and fasten the meters and air plenums resulting in corrosion free operation.

Rate checks and meter clean-outs are easily performed using the plastic calibration tray and pail.



Seed Hawk SH 12 On-Board

The unique concept of the Seed Hawk semi mounted tank allows the seeder to be short and manoeuvrable and reduces the distance that the seed and fertiliser have to be blown.

The hydraulic floating openers give unrivalled depth control precision without the need for complicated flexing frames.

The strong chassis and seeder bar means that the seeder can carry large volumes of product, minimising down-time stopping to refill. High frame clearance, large out-front castor wheels and very large rear wheels or duals keeps draught and sinkage to a minimum even in light soils or wet conditions.



Easy operation

Seeding is an easy task with the SH 12 On Board. The open frame design provides good visibility and access to all parts of the machine. The wide catwalk on the tanks allows the operator to safely inspect and fill the large capacity tanks. Durable castor wheel assemblies on the front of the seeder and flotation tyres on the back keep all of the sections of the seeder stable even at high speeds, when cornering and on side sloping fields.



Row Spacing 'cm'	Width 'm'	Seed Rows	Wing Style	Front Wheels	Folded Width 'm'
25.4 (10")	6.10 (20')	24	A	DF	6.40 (21')
	6.60 (21' 8")	26	A	DF	6.40 (21')
	7.00 (23')	28	B	DF	5.11 (16' 9")
	7.62 (25')	30	B	DF	5.11 (16' 9")
	8.00 (26' 4")	32	B	DF	5.11 (16' 9")
	8.63 (28' 4")	34	B	DF	5.11 (16' 9")
	9.14 (30')	36	C	DF	6.17 (20' 3")
	9.65 (31' 8")	38	C	DF	6.17 (20' 3")
	10.16 (33' 4")	40	C	DF	6.17 (20' 3")
	10.67 (35')	42	C	DF	6.17 (20' 3")
	11.18 (36' 8")	44	C	DF	6.17 (20' 3")
	11.68 (38' 4")	46	C	DF	6.17 (20' 3")
	12.19 (40')	48	C	DF	6.17 (20' 3")
	12.70 (41' 8")	50	C	DF	6.17 (20' 3")
	13.20 (43' 4")	52	D	DF	6.27 (20' 7")
	13.72 (45')	54	D	DF	6.27 (20' 7")
	14.22 (46' 8")	56	D	DF	6.27 (20' 7")
	14.73 (48' 4")	58	D	DF	6.27 (20' 7")
	15.24 (50')	60	E	DF	6.27 (20' 7")
15.75 (51' 8")	62	E	DF	6.27 (20' 7")	
16.26 (53' 4")	64	E	DF	7.64 (25' 1")	
16.76 (55')	66	E	DF	7.64 (25' 1")	
17.27 (56' 8")	68	E	DF	7.64 (25' 1")	
17.78 (58' 4")	70	E	DF	7.64 (25' 1")	
18.29 (60')	72	E	DF	7.64 (25' 1")	
18.80 (61' 8")	74	E	DF	7.64 (25' 1")	
19.30 (63' 4")	76	E	DF	7.64 (25' 1")	
30.5 (12")	6.10 (20')	20	A	DF	6.10 (20')
	6.71 (22')	22	A	DF	6.71 (22')
	7.32 (24')	24	B	DF	5.11 (16' 9")
	7.92 (26')	26	B	DF	5.11 (16' 9")
	8.53 (28')	28	B	DF	5.11 (16' 9")
	9.14 (30')	30	C	DF	6.17 (20' 3")
	9.75 (32')	32	C	DF	6.17 (20' 3")
	10.36 (34')	34	C	DF	6.17 (20' 3")
	10.97 (36')	36	C	DF	6.17 (20' 3")
	11.58 (38')	38	C	DF	6.17 (20' 3")
	12.19 (40')	40	C	DF	6.17 (20' 3")
	12.80 (42')	42	C	DF	6.17 (20' 3")
	13.41 (44')	44	C	DF	6.17 (20' 3")
	13.41 (44')	44	D	DF	6.27 (20' 7")
	14.02 (46')	46	D	DF	6.27 (20' 7")
	14.63 (48')	48	D	DF	6.27 (20' 7")
	15.24 (50')	50	E	DF	6.27 (20' 7")
	15.85 (52')	52	E	DF	6.27 (20' 7")
	16.46 (54')	54	E	DF	7.64 (25' 1")
	17.07 (56')	56	E	DF	7.64 (25' 1")
	17.68 (58')	58	E	DF	7.64 (25' 1")
18.29 (60')	60	E	DF	7.64 (25' 1")	
18.90 (62')	62	E	DF	7.64 (25' 1")	
19.51 (64')	64	E	DF	7.64 (25' 1")	



Stainless steel manifolds with rubber lids are easy to inspect.



Ground drive with good access to the gearboxes and sprockets enables seed rate adjustment and calibration to be done simply and quickly.



The in cab control box and visible pressure gauge allows the operator to adjust shank pressure on the go.

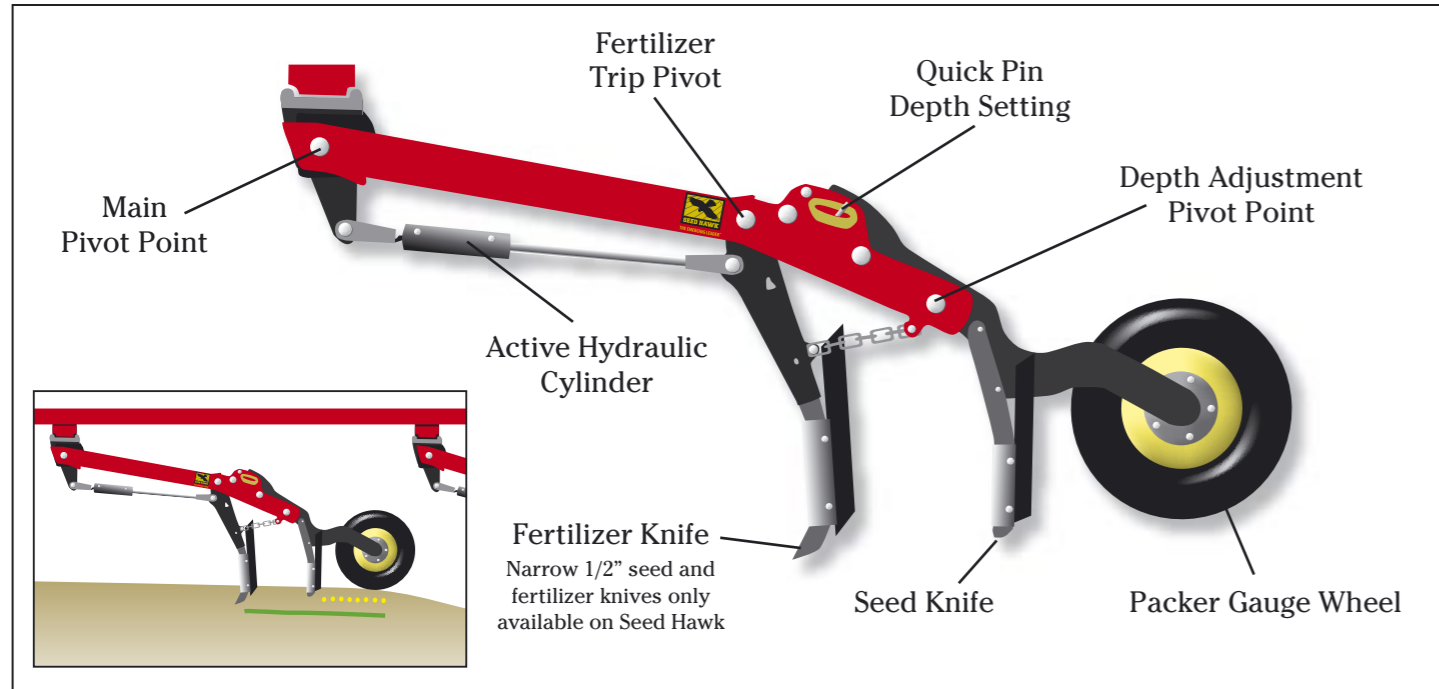
Better emergence on more ground more quickly....

The unique Seed Hawk dual narrow knife with integrated packer wheel places the seed and fertiliser exactly where you want them,

irrespective of contours, ground conditions and surface trash.

The seedbed that the knife creates is ideal for seed

germination, by disturbing the minimum amount of soil and therefore preserving moisture.



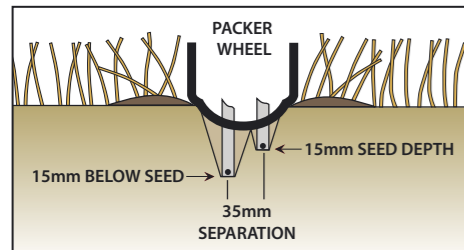
Accurate shallow seeding

Placing the seed close to the surface helps to get the crop off to a good start and boosts yield and grade.

Direct seeding or minimum tillage provides more moisture and so shallow seeding is possible to speed up germination.

The 'furrow effect' places the seed in the optimum position for access to fertiliser and moisture. The seed is always placed on firm undisturbed soil.

The hydraulically controlled 100mm wide packer wheels consolidate and seal the furrows to give good seed to soil contact and to improve capillary action, drawing moisture towards the seed.



Precise fertiliser placement

The dual knife system ensures that the fertiliser is placed close enough to the seed to help with 'pop up', but far enough away to avoid seed damage.

Precise nutrient placement means that the fertiliser is available to the seed throughout the growing season, but is not readily available to the weeds inbetween the seed rows.



Faster soil warming

The dual 12mm narrow knives and 100mm packer wheels create a blackened furrow, the ideal environment for seed establishment.



Simple fixed frame

The individual hydraulic floating knife assembly means that the main frame can be fixed in one position for both work and transport modes. This allows the frame to be very simple and strong in design. It can carry large on board tanks and the seeder bar can be wide without the need for complicated flexing joints to ensure the frame follows the contours.

Simple depth adjustment

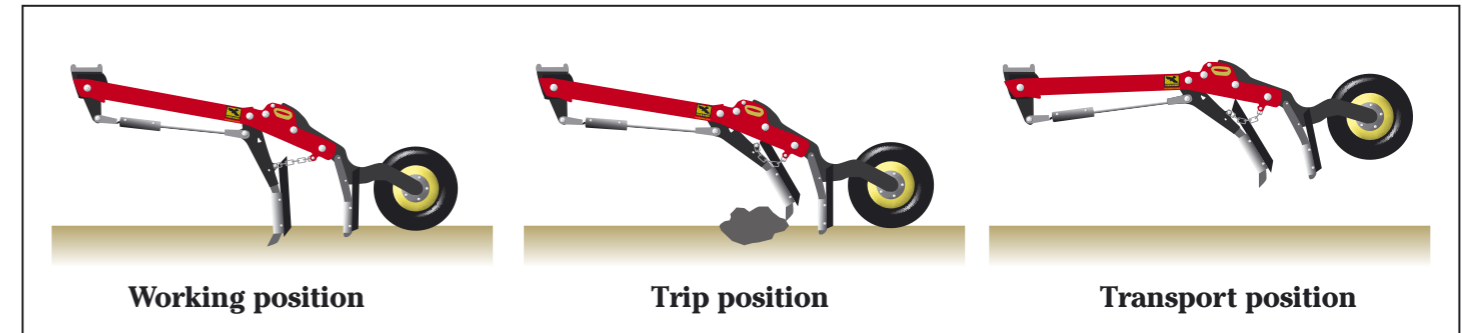
Depth of seeding is easily set by removing the Quick Pin, then rotating the gear bolt which lifts and lowers the packer wheel to the desired depth and then the Quick Pin is reinserted.



Trip mechanism

Each dual seed knife is pulled down into the ground by a hydraulic ram. The hydraulic pressure is easy to adjust and so the operator can set just enough down force for the leg to penetrate into the soil without pulling up large stones and causing unnecessary shock and wear.

The same hydraulic system is used to lift the knife assemblies up into the transport position.



Good penetration

The 12mm knives require a minimum amount of pressure and draught to pull them down into even the hardest of soils. The hydraulic trip force can be set from 136kg up to 540kg.

Separate knives

Consistent separation of the seed and fertiliser in any conditions is achieved by the use of separate knives on the same arm. The tungsten carbide tip maximises lifetime of the knife.

Trash clearing

The leading fertiliser knife cleans stubble and trash out of the way and ensures that hairpinning cannot occur, where stubble is pushed down the slot with the seed.



Options to suit...

Hydraulic Auger

The Seed Hawk Carts and On-Board tanks can be fitted with an auger which is mounted to an arm on the side of the frame. The well balanced auger swings into position and hydraulic oil is diverted from the fan for the drive. The long support arm allows the auger to be used for filling and emptying of the hopper with ease.

The SH 12 models can take an 8 inch diameter auger, and the SH 21 model uses a 10 inch diameter auger. The plastic moulded hopper is large enough to fit under a truck chute and the under mounted wheel allows it to be easily moved into position.



'Plus' Hopper

The SH 12 On-Board tank can have an additional hopper mounted on the chassis to carry a third commodity. The 3000 litre powder coated, pressurised, Plus tank has its own stainless steel metering unit which can handle a wide range of products and application rates.

When the Plus is fitted the tyres should be upgraded to 28L26.



Castor wheel upgrade

The main frame front wheels can be upgraded to 19L/45-17 to minimise compaction.

Rear wheel steering

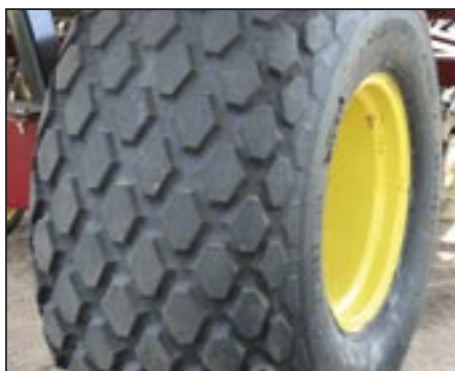
The hydraulic rear wheel steering can be fitted to the SH 12 On-Board bar to improve seeding on steep hillsides and around corners.



Rear wheel options

There are a number of rear tyre size options available for the On-Board models and the carts.

- 11L15 duals to 500/45-22.5
- 500/45-22.5 to 28L26 diamond
- Diamond tread to lug tread
- 28L26 to 30.5L32
- Single 28L26 to dual 28L26



Liquid fertiliser

Any Seed Hawk granular tank can be converted to handle liquid fertiliser. The double powder coating of the inside of the hoppers protect the metal work from corrosion. The conversion includes the twin piston John Blue pump and 2" fill and recirculation plumbing.



Foam filled tyre

The press wheel tyres can be filled with 22 lbs of flexible foam to eliminate flats in corn and sunflower stubble.

Secondary fan

For wide seeder bars the SH 12 can be upgraded with two fans. The SH 21 has two fans as standard.



Rear hitch

A rear hitch can be fitted to the main axle of the On Board and carts for the tow behind option.



Blocked coulter monitor

For peace of mind the Agrtron blockage monitors can easily be inserted into the airlines close to the distribution manifolds to keep a check on each seed row.



Fertiliser knife options

The fertiliser knife can be mounted with either the nitrous ammonia / liquid pipe alone, the granular fertiliser pipe alone or the liquid and granular fertiliser pipe together.

Use nature to help you farm with No-Tillage.

By Bill Crabtree, Crabtree Agricultural Consulting, Western Australia

In dry regions the best farmers in crop production have mostly made the switch to no-tillage. The adoption of no-tillage has improved their water use efficiency significantly, both in the short and the long-term. There are several reasons for these improvements. Tillage brings wet soil to the surface which releases moisture to the atmosphere. With no-tillage the moisture is retained usually under a layer of organic matter

which helps insulate against evaporation and temperature extremes. Tillage also removes organic matter and tillage itself breaks down soil clods. Without surface organic matter or stubble cover the splash of heavy rain drops further breaks down soil clods. The loss of soil integrity means more surface capping which impedes crop establishment and inhibits soil water infiltration to depth, particularly in heavy rainfall events.



The long-standing idea that we have to create a fine seedbed is actually a myth. Thirty years of successful no-tillage experience in dryland agriculture globally, has shown that water use efficiency can be continually improved. Soil fertility is damaged through creating soil tilth. Soil fertility is a complex combination of physics, chemistry and biology. What a “fine seedbed” does is loosen the surface soil and release nitrogen from the soils organic pool. Loose soil and released nitrogen will give good early growth if adequate moisture is available after seeding. If soil conditions are dry or wet for significant periods after seeding, however, then crop growth will not be optimal. Nature does not plough the soil, except through the activity of earthworms. Nature’s seeds are placed on firm-moist soil with a loose covering of “kicked” soil or fallen organic matter over the seed.

Crops established into “fine seedbeds” may initially look good, but they may not reach the crop’s maximum yield potential. The good early crop growth, which is aided by the tillage that promotes a nitrogen flush, is not sustainable throughout the season and needs nitrogen top-ups. Additionally, the loose surface soil will aid rapid early root growth at the surface with good nutrient exploitation.

But what does it mean for soil structure at depth where the roots need to anchor deeply to ensure optimal crop ripening later in the year?

More tillage means more traffic and therefore deep soil compaction which leads to less roots at depth. Long-term no-tillage means better root growth at depth which enables the plant to find water even during dry spells and provides better crop finishing.

The ability of the Seed Hawk to seed precisely in all conditions makes it a most flexible modern seeder. The machine’s simple, yet robust, design allows it to be a state of the art no-tillage seeder while also being well suited to seeding into cultivated soils.

While most seeders can give reasonable crop emergence in moist soils, the Seed Hawk’s leading edge ensures that it gives excellent emergence even in harsh dry conditions. In marginal moisture conditions this seeder excels.



Versatility and precision are the key to successful cropping

A seeder that is capable of sowing into sometimes hard setting soils, as well as soils ranging from sand to heavy clays, has been a critical part of the success of zero-till cropping on Ambrose and Lisa Doolan’s farm in Coonabarabran, New South Wales, Australia.

The paddocks are commonly grazed and so the soil can become very compacted. As a result, when returned to cropping, the soil can be very difficult to direct drill into. But despite the challenges, the Doolans are ardent advocates of zero till because of the need to cut erosion risk and build soil quality.

The Doolans run 1200 cattle and crop 450 hectares on their 1640 hectare undulating property. Much of the cereal crop is dual purpose and is generally sown during March and April. Three to four crops are usually followed by a pasture phase of lucerne or tropical grasses.

Ambrose initially built a zero-till seeder using the Seed Hawk shanks, then in 2004 bought a complete 12 metre Seed Hawk seeder. The main reason for the decision to buy this machine was it’s ability to handle all of their soil and stubble conditions and to allow timely sowing. “The machine can be easily adjusted to suit different conditions, seeding depth and seed type. The independant row units with their own press wheels place the seed and fertiliser very accurately even on undulating ground. In the very dry conditions that we have experienced over the last few years, preserving moisture with the low disturbance tines and press wheels has proved to be the key to good crop establishment.”



Rotations involving canola, pulses and sometimes crops like fenugreek and linseed are part of the disease control strategy, as well as being profitable in their own right. This year the Doolans have sown dual-purpose barley, winter wheat and oats. “Grazing has been excellent with more than 80 days at 30 dry sheep equivalents / hectare and grain yield is promising.”

A measure of the success of the no-till strategy on the farm has been the improvement in soil quality. Soil samples collected from the farm were found to be some of the best in the district, which was not the case a few years ago.

