

The Obvious Choice
NAVIGATOR

3000 / 4000 / 5000 / 6000



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The Obvious Choice

NAVIGATOR is synonymous with high quality and design which supports functionality. Properties which secure the value for money and ease of use. In the HARDI trailer family, NAVIGATOR offers features from mid-size to full specification solutions.

The large range of high quality features makes the NAVIGATOR the obvious choice.

Concept

Demands for simple and reliable solutions, serviceability and high capacity are universal world-wide.

The product represents HARDI's experience as sprayer specialist. The proven success for NAVIGATOR sprayers since the introduction has shown the value of this position.



IntelliTrack

IntelliTrack is a high-end steering drawbar concept combining the advantages of an excellently designed chassis with the use of advanced electronics.

The tracking concept is easy to connect and operate, ensuring safe tracking even in difficult field conditions.

IntelliTrack has an integrated safety feature which prevents the cylinders from steering the drawbar when the driving speed is too high for the given track width.

HC 8600 and HC 9600 with AutoSectionControl

"Touch the future" with integrated electronics.

The HC 8600 and HC 9600 controllers provide growers a powerful, full-featured precision farming tool. AutoSectionControl, guidance, data logging and AutoSlant/Auto-Height are integrated in the ISOBUS terminal.

The colour display has an excellent readability, also in sunlight. All primary functions are controlled by the intuitive grip.

DynamicFluid4

DynamicFluid4 secures a precise and fast control of the application rate. All challenges from fast driving speed and acceleration as well as use of GPS controlled section control are handled in the most superior way by DynamicFluid4.

The system also offers features like SoftStart so no pressure peak will overload the fluid system. Another feature is sensor backup, preventing faults on the electronics to stop the spray job.

SPECIFICATIONS

- › **Tank:** 3000 / 4000 / 5000 / 6000 l
- › **Track:** IntelliTrack, high performing and stable drawbar steering
- › **Controller:** HC 5500, HC 6500, HC 8600, HC 9600 or ISOBUS
- › **TurboFiller:** Efficient handling of liquid and powder
- › **Liquid system:** DynamicFluid4 for precise application in all conditions
- › **Axle:** Fixed 1.8 / 2.0 m or adjustable 1.5-2.25 m
- › **Booms:**
 - EAGLE: Simple and strong booms 18 to 30 m
 - DELTA: Compact and high-performing 18 to 24 m
 - DELTA FORCE: For higher speeds and greater performance 24 to 39 m

- › Quality
- › Ease of use
- › Capacity
- › Value for money

Chassis

Designed for high-speed driving

The heavy-duty NAVIGATOR chassis and axles are designed for high-speed driving under the most demanding field and road conditions. The robust NAVIGATOR frame is made of high-tensile steel and is ready to meet the tough demands of the professional farmer.

The concept gives the best compromise between excellent clearance and low centre of gravity.

Low centre of gravity

The entire NAVIGATOR design has the lowest possible centre of gravity without compromising clearance under the sprayer.

Unique design with long drawbar

The long drawbar is one straight line from the coupling point to the axle. Being bolted underneath the frame, it ensures good driving stability and absorbs the up-and-down forces at high-speed driving. The drawbar is available as a fixed or as a steering drawbar and in a low or high-hitch version.



Perfect clearance

The unique design of axle and frame ensures excellent crop clearance, reducing crop damages to the absolute minimum. No brake rods or steering components are lower than the axle.



SmoothRide

The optional SmoothRide suspension system is uncomplicated, reliable and requires little or no service. The suspension provides a better ride of the sprayer, ensuring higher capacity and comfort.

IntelliTrack

This high-end steering drawbar concept offers a tight turning radius. A combination of advanced electronics, proportional valve and two large hydraulic cylinders ensures a safe, accurate tracking with user-friendly operation.

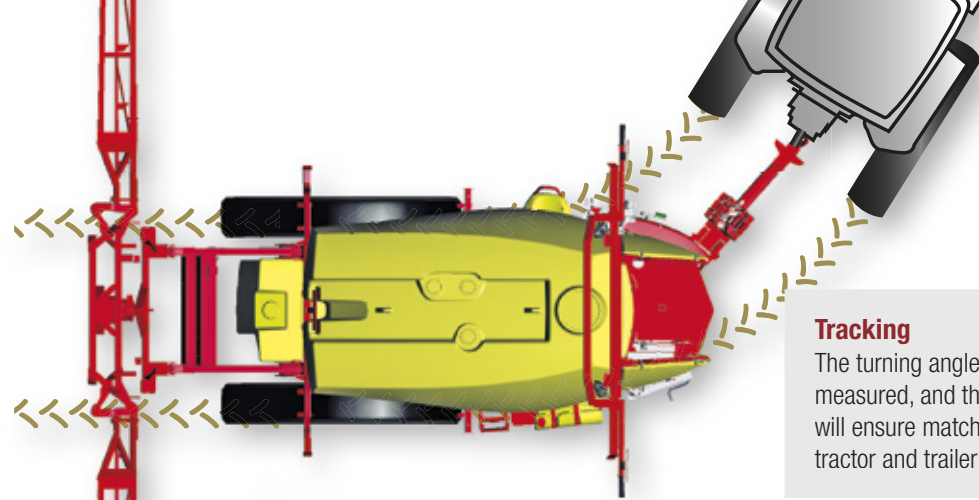
Dynamic Electronic Control (DEC) preventing tilt over

IntelliTrack has an integrated safety feature which prevents the cylinders from steering the drawbar when the driving speed is too high for the given turning radius.

The controller will constantly monitor the forward speed and steering angle width to make sure that the tracking is not used when it is not safe. If the tractor driver attempts a 90° turn at e.g. 15 km/h, the IntelliTrack system automatically computes the data and straightens up the drawbar. These settings are user defined.

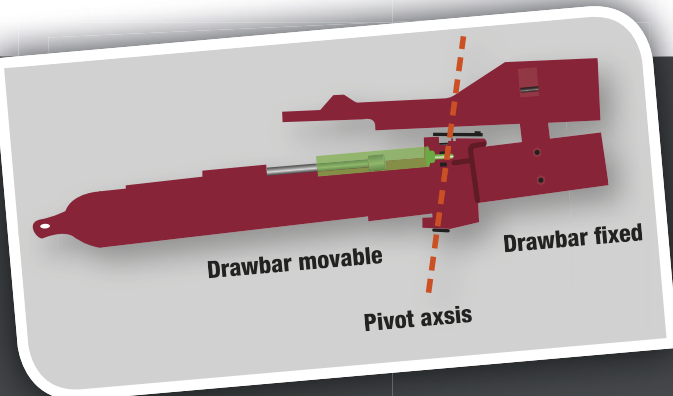
When the IntelliTrack has been calibrated, the operator only needs to attach 2 small chains to the tractor, before he can start spraying. Together with the brackets, the two connection chains build a trapeze which tolerates slack forced or drawbar torsion.

For a better stability when turning, the pivot point between trailer and drawbar is angled. This feature helps you minimizing the turning radius down to 6.0 m on the NAVIGATOR 3000 and 4000 and 8.5 m on 5000 and 6000.



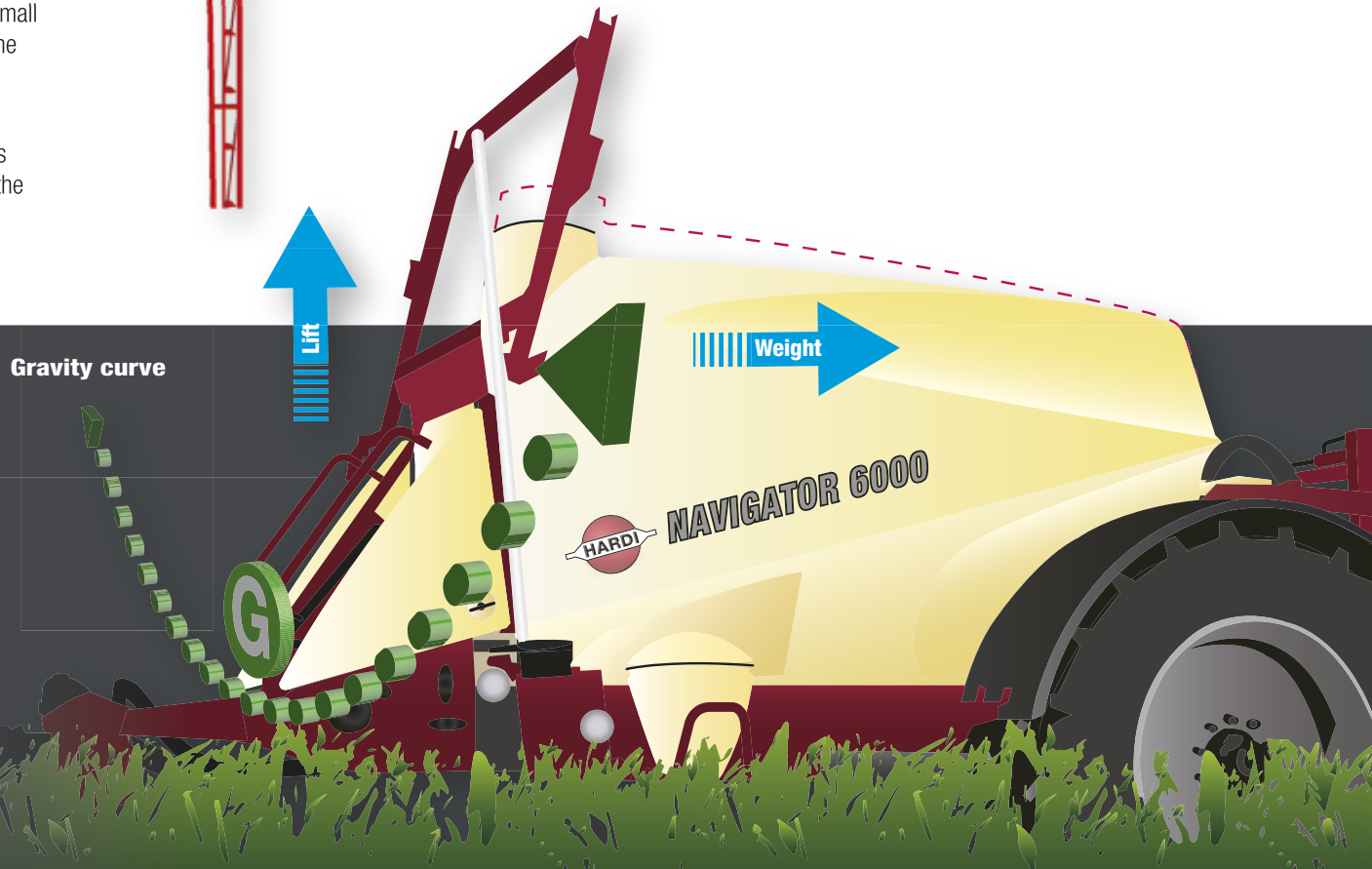
Tracking

The turning angle of the tractor is measured, and the steering computer will ensure matching tracks between tractor and trailer wheels.



Steering geometry

The steering geometry and the angled pivot axis ensure that the centre of gravity of the trailer is following the gravity curve and minimize the risk of tilt over.

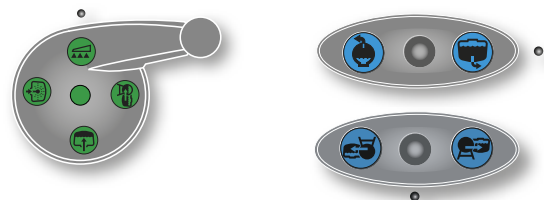


Liquid system

To be able to handle large volumes of liquid with a minimum of pressure loss, the NAVIGATOR has large dimensions in all valves, tubes and filters.

SmartValve

All primary functions needed for filling or cleaning the sprayer are built into two handles located in the centre of the working zone. The logically placed handles with easy-to-read icons make the system very intuitively to operate and greatly reduce the start-up and operation time of the sprayer.



Pump

The NAVIGATOR liquid system is driven by the robust grease-lubricated HARDI diaphragm pump. The diaphragms separate the liquid from the vital parts of the pump such as its bearings and crankshaft, ensuring reliable and durable operation.

HARDI diaphragm pump features:

- Self-priming
- Able to run dry without damage
- Easy to service
- Grease-lubricated crankcase

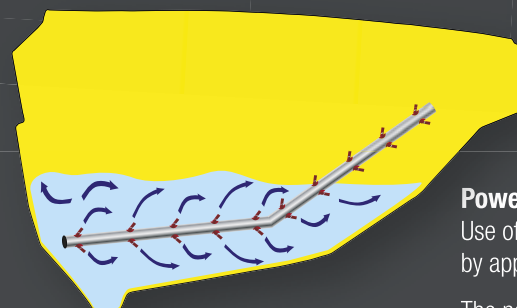


TurboFiller

The HARDI TurboFiller is developed to handle large quantities of powders and liquids. Its high capacity is a result of high vacuum combined with rotation of the liquid forced by the TurboDeflector placed in the bottom of the hopper.

Changing from transport to the 95 cm high filling position is easily made by means of a spring-loaded bracket with automatic transport lock.

A multifunctional 3-valve operating unit and a cleaning pipe make the chemical filling easy and efficient. The cleaning of containers and the TurboFiller itself is managed by a rotating nozzle.



Powerful agitation

Use of Venturi nozzles increases the input for agitation by approx. 4 times.

The nozzles are positioned so there are no blind spots in the tank. The agitation concept has proven to be extremely efficient for both liquid and powder.



DynamicFluid4

The fluid system

Dynamic fluid system based on 4-sensor technology

The fluid system on the NAVIGATOR is a new concept developed to obtain shorter response time and thereby more precise application in the field.

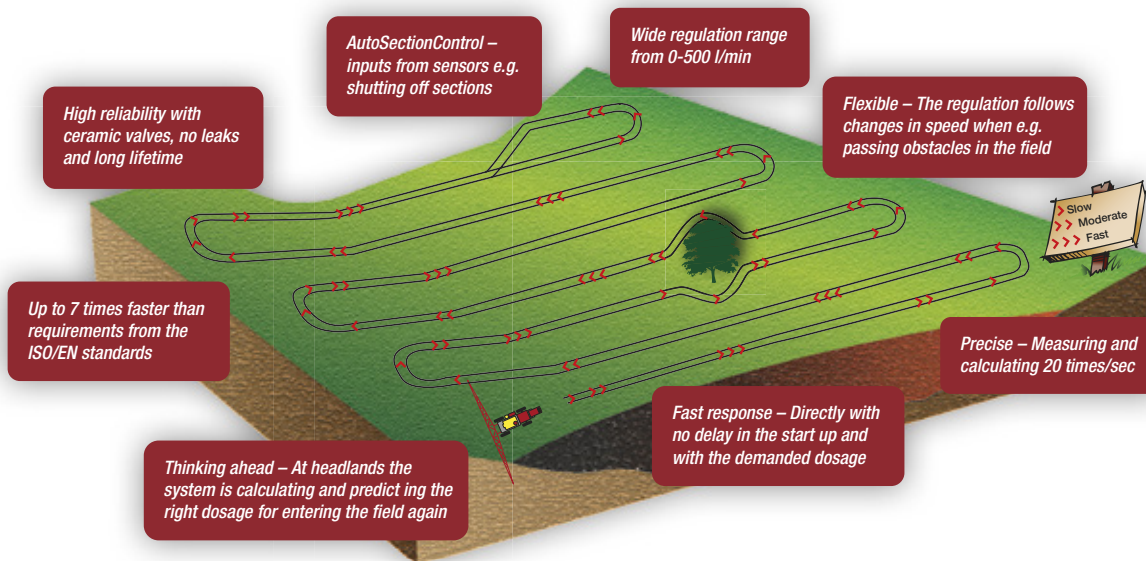
With its 4-sensor technology and no leakage design, DynamicFluid4 results in faster regulation with the highest possible accuracy and works with a fast “feed forward” regulation software to deal with all the challenges in modern spraying.

Also challenges forced by tractors with stepless transmissions, the DynamicFluid4 is programmed to cope with different driving

behaviours and fast speed changes giving the crop the absolute right dosage.

In a traditional fluid system the regulation is made on feedback from what is already “historical” data. For example the RPM is increased, and shortly after the flow will be too high at the nozzle. When that is measured, the spray computer will regulate the pressure down again but in the meanwhile the application rate has been too high.

The DynamicFluid4 system will calculate the consequences of the increased RPM and make the regulation instantly. The DynamicFluid4 property of pro-acting is based on 4 sensors in the fluid system



measuring RPM, position of regulation valves, flow and pressure. Combined with a specific new software and a new, unique ceramic regulation valve, DynamicFluid4 is offering precision in the application rate giving the best performance available on the market.

Stability and safety

The sensors of DynamicFluid4 each have their individual task, but they will also work as back up for each other, and the regulation will continue. Regulation can be done manually.



DilutionKit

The HARDI NAVIGATOR can be equipped with a DilutionKit, allowing the operator to flush the liquid system from the driver's seat.

The operator can flush only the boom or rinse the tank with the flush nozzles. The need of rinse water is reduced due to the optimized liquid system. All return lines and agitation will be flushed when spraying out the diluted liquid from the main tank.

EasyClean filter

The EasyClean filter is a high capacity suction filter. The condition of the filter can be constantly monitored via a SafeSpray vacuum gauge.

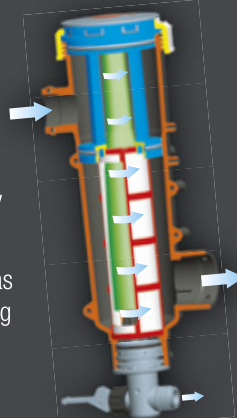
This ensures that the filter is cleaned when needed and only when needed. When cleaning the filter, all you have to do is to twist the lid 90°. This will close a main tank valve in the bottom of the filter and open the filter for inspection.



CycloneFilter

The CycloneFilter at the pressure side is a unique self-cleaning filter with a high-speed cyclone action that increases the cleaning capacity of the filter significantly.

In addition, the CycloneFilter has a unique boost function allowing the filter to be flushed when needed.



Boom management systems

AutoSlant, AutoHeight and AutoTerrain

The HARDI AutoSlant, AutoHeight and AutoTerrain systems will automatically control the boom

This makes the job much easier for the driver, and the result will be a better spray application.

The system is known for the following features:

- ▶ Robust and precise ultrasonic sensors
- ▶ Option to choose between soil, crop or hybrid mode
- ▶ Proportional valve for smooth movements (AutoHeight, AutoTerrain)
- ▶ Slant, tilt and height correction (AutoHeight, AutoTerrain)
- ▶ Slant and height correction (AutoSlant)

AutoTerrain works and reacts on both boom movements and twisting forces on the boom. This allows the system to be proactive and react on the cause more than on the symptom.

Ultrasonic sensor

AutoSlant	AutoHeight	AutoTerrain
Boom height	Boom height	Boom height
Hydraulic slant	Hydraulic slant	Hydraulic slant
	Individual tilt of boom wings	Individual tilt of boom wings
		Negative tilt
2 ultrasonic sensors	3 or 5 ultrasonic sensors	3 or 5 ultrasonic sensors
	2 angle sensors on the center	3 angle sensors on the center
	2 temperature controlled proportional valves	3 temperature controlled proportional valves
DELTA V, DELTA Z, DELTA FORCE, EAGLE SPZ, VPZ	DELTA Z, EAGLE SPZ, VPZ	DELTA FORCE



Negative tilt for superb boom stability

DELTA boom

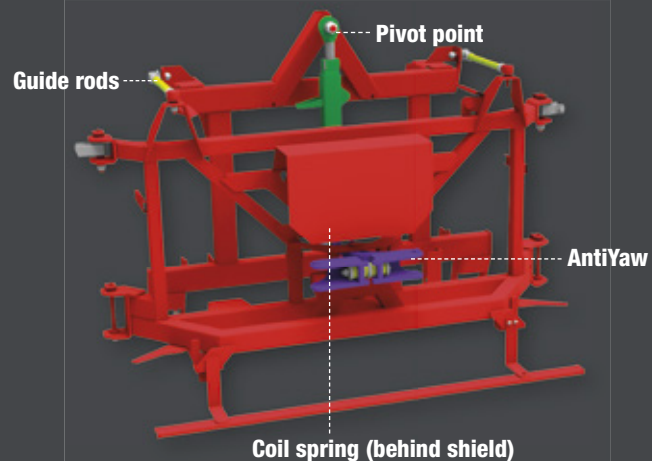


DELTA

The 18-24 m DELTA boom is a compact, high-performing boom. The boom has highly advanced suspension features, which in combination with the three-dimensional boom design ensures accurate application.

The centre section with coil spring pendulum and telescopic dampers absorbs the movements caused by the tractor and the trailer. The hydraulically activated pendulum lock stabilizes the boom whilst folding or unfolding.

An anti-yaw system dampens the forward and backward horizontal movements as well as any horizontal shock load.



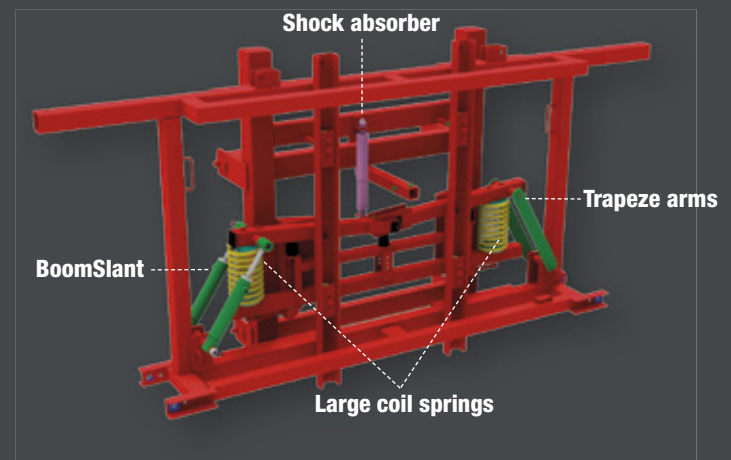
EAGLE boom



EAGLE

The 18-30 m EAGLE boom is designed for heavy-duty use under the most demanding conditions and minimum service. The boom is well-known around the world for its performance under the hardest conditions.

The EAGLE boom is suspended on two large coil springs with shock absorbers. The horizontal movements are controlled by a heavy-duty trapeze system that allows spraying and turning at very high working speeds.



DELTA FORCE boom

Compact in transport – Wide in field

DELTA FORCE is designed to be a large boom.

The selection of features and the layout of the boom structure are targeted to perform at high driving speed and high performance at boom widths of 24-39 m.

The result is a boom with many simple and strong solutions which together give a high-performing and reliable boom with a simple setup, low maintenance and a great design.



25 cm nozzle space

DELTA FORCE boom can be delivered with additional nozzles holders between the standard 50 cm holders, this so called on-center solution allow to work with either 50 cm or 25 cm nozzle spacing.

With smaller nozzle space the boom height can be lower, which reduces the potential spray drift. To work with lower boom height the AutoTerrain boom management is the best condition.

Another advantage is that smaller nozzle have a smaller droplet size which leads to a better coverage.



Carbon-fibre break-away on 39 m

The low weight and the stiffness of carbon-fibre allow a 4 m long break-away compared to the 2,5 m version of the 36 m boom.



A very advanced, but yet simple centre part controls the movements of the DELTA FORCE boom.

The five pendulum settings allow to adjust the boom performance, either to a pendulum, which follows the sprayer movements, or to follow the level of the terrain.

Forces from yaw movements are absorbed by accumulators. The oil system is active and automatically recharged every time the boom is unfolding. The hydraulic AntiYaw is standard on 32 to 39 m. The smaller versions have a mechanical system with rubber dampers as standard.

With 5 sensors on the boom, the distance to the crop is measured several times per second. 3 gyrosensors measures the angle of the boom, the center part and the chassis. AutoTerrain reacts before the boom gets out of balance and the precise steering, gives you the possibility of higher driving speeds.

For dampening the booms
backward going movements

For dampening the booms
forward going movements

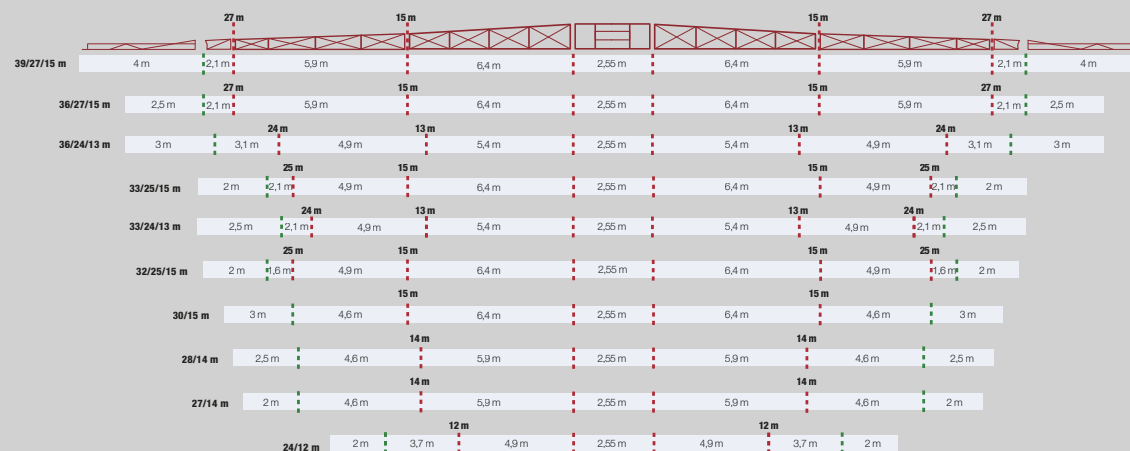
Boom stability

5 steps and variable dampening

Stacking the boom when folding gives the possibility of optimizing the relation between the dimension of the boom elements and the space occupied, when the boom is in transport.

A „stop and lock“ system minimizes the risk of slack between the boom elements. All folding is made with SoftOpen and SoftClose for an easy and fluent folding of the boom sections.

3-fold: 39/27/15 m, 36/27/15 m, 36/24/13 m, 33/25/15 m, 32/25/15 m. **2-fold:** 30/15 m, 28/14 m, 27/14 m.



Controllers

Full control

HC 8600 and HC 9600

The complete integration of all important information on one work screen is a highly demanded criterion for most farmers. The HC 8600 and HC 9600 have multicolour HD touch screens that are very easy to operate while providing an optimal overview for maximum control of the spray job.

Integrated electronics

From the working screen the driver can operate AutoHeight, AutoSectionControl as well as guidance and dosing. The view can be switched between 2D and 3D when guidance is active. The HC 9600 is able to divide the information with split screen for a better overview.

Data management and data transfer

The HC 8600 and HC 9600 have USB ports and WiFi adapter as standard, allowing data to be exchanged. This simplifies application reporting,

providing an easy way to generate detailed application reports for governmental record keeping. Reports provide location, product information, applied totals, field areas, applied maps and field boundaries. The data can be transferred to different farm management software.

The HC 9600 automatically creates an application report in a pdf-format which can be saved, emailed or printed. For this no additional software is required.

Basic information about weather, soil conditions, products, etc. can be added.

Universal Terminal

The HC 8600 and HC 9600 displays are designed to meet the ISO 11783 ISOBUS Universal Terminal standard. So the sprayer could also operate with a HC 6500 terminal.

Feature	HC 9600	HC 8600
Dimension	12.1" (30.7 cm)	8.4" (21.3 cm)
ISOBUS Universal Terminal	●	●
USB ports	2 x USB	1 x USB
AutoSectionControl	●	●
Guidance	●	●
Coverage Mapping	●	●
Data Logging	●	●
Variable Rate Application	●	●
Smart Report™	●	N/A
Boom Height Control	○	○
AutoSteer Control	○	○
OptRx® Crop Sensors	○	N/A
Camera Support	○	○
ISOXML data transfer	●	●

● Standard ○ Optional



ISOBUS terminal

The HARDI NAVIGATOR can be operated with a universal ISOBUS terminal. The customer can order the NAVIGATOR and use the intelligent functions like AutoSectionControl direct from his own ISOBUS terminal if supported.

To make the complex sprayer operation easier, the proven HARDI JoyStick will be delivered with the NAVIGATOR sprayer.



HC 6500

The HC 6500 is designed only for spraying and has for years proven its easiness in practical use around the world. The colour display and HARDI JoyStick operation, together with a user-friendly menu, will make the NAVIGATOR an even more obvious choice.

There are no compromises in functionality to meet the demand for other implements. The ergonomic optimal design supports the demands given by long working hours and easy operation.

All buttons are placed in a logical way which harmonizes with the corresponding function. As an example, all functions often used during the spray job are placed in the HARDI JoyStick, so these functions can be activated without lifting the arm from the arm rest of the seat. To make it as easy and simple as possible, the connection between sprayer and tractor is made with only one cable.

HC 5500

The HC 5500 is a powerful computer making the spray features easier and safer to use and easily supplies more information when needed. It is the obvious choice where features like IntelliTrack and advanced farming tools are desired. The operator is instantly informed of the operation status and warned if vital parameters like pressure, speed, etc. are incorrect.

It is advanced farming, ready with up to 98 register and connection possibilities to a site-specific application map or a remote sensor. Various optional extras like SprayRover, TankGauge or 12-V printer are available.

The LogicMenu makes it easy to get vital information very quickly; when pressing pre-set keys, the information appears in the large-format area of the screen. They double up as short cut keys for the most used functions. Volume rate can be changed on the go as a percentage or as a volume value.

HC 5500 is equipped with the new SprayBox III, allowing connection of spray management systems like SprayRover 570.



SprayRover 570

The SprayRover 570 is a stand-alone AutoSectionControl which can work in combination with the well-known HC 5500 controller. The 5.7" (14.5 cm) colour touch screen display can be used in 2D or 3D graphic while offering guidance with five different guidance modes.

The HARDI SprayRover 570 is equipped with an antenna, which works with the free of charge EGNOS/WAAS signal, accurate and fine under normal field conditions. An optional higher quality antenna, the RXA-30, is available if running in hilly conditions.

Controller	HC 6500	HC 5500
Number of registers	98+1	98+1
Maximum number of distribution valves	13	9
"GPS", data transfer and print	●	●
Clock (Time/Date/Alarm/Stop watch)	●	●
Alpha-numeric keyboard	●	N/A
Colour display	●	N/A
Help functions	●	N/A
Dilution kit	●	●
Foam marker	●	●

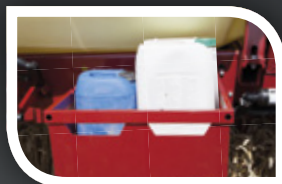
Overview



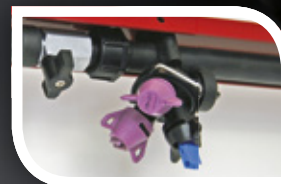
Optionals



In-Line filter



ChemLocker



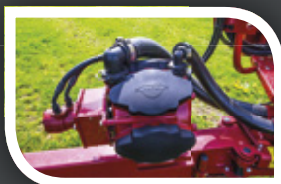
BoomFlush



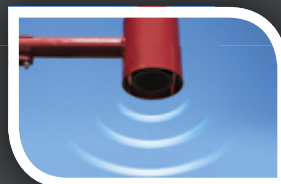
External cleaning kit



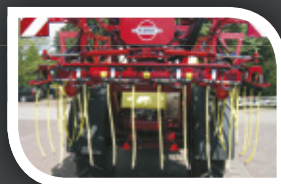
EcoFill coupling



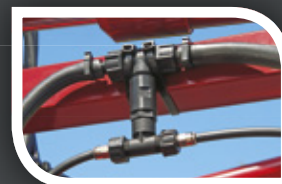
Hydraulic pump drive



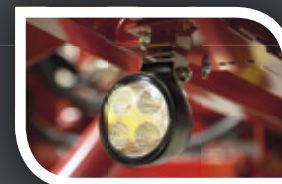
HARDI AutoSlant/AutoHeight



Hoses for liquid fertilizer



BoomPrime



Night spraying light

Technical specifications

Tank, litres	3000	4000	5000	6000
Pumps, type – l/min	364-194 / 464-280 / 464H-334			
Booms, m	DELTA 18-24 m EAGLE 18-30 m	DELTA 18-24 m DELTA FORCE 24/27/28/33/36 m EAGLE 18-30 m	DELTA 24 m DELTA FORCE 24-39 m EAGLE 24-30 m	DELTA 24 m DELTA FORCE 24-39 m EAGLE 24-30 m
RinseTank	500	500	500	500
Total height, m	3.80 (13.6x48)	3.80 (13.6x48)	3.80 (20.8x42)	3.80 (20.8x42)
Total length, m	7.2	7.2	8.00	8.00
Length draw to axel, m	4.80	5.30	6.05	6.05
Turning radius IntelliTrack, m	6.00	6.0	8.5	8.5
Track width, m	1.50-2.25	1.50-2.25	1.80-2.25	1.80-2.25
Width DELTA boom, m	2.55	2.55	2.55	-
Width DELTA FORCE, m	-	2.55	2.55	2.55
Width EAGLE, m	3.00	3.00	3.00	3.00
Width VPZ	2.30	2.30		
Clearance, m	0.8 (340/85R48)	0.8 (340/85R48)	0.81 (520/85R42)	0.81 (520/85R42)
Weight total (empty tank), kg	3300-3600	3400-4700	4950-5850	5000-5900
Suspension	Optional	Optional	Optional	Optional

EAGLE 18-30 m

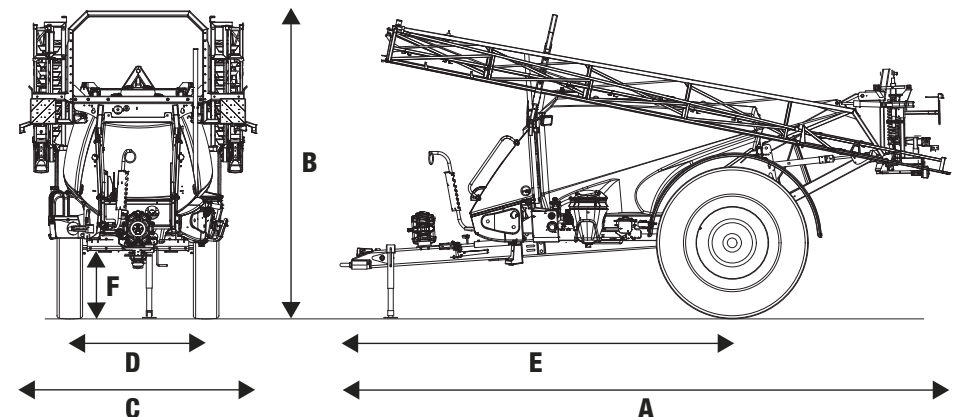
The EAGLE boom offers unequalled performance in rough conditions. The strong and well-proven two-dimensional EAGLE boom is the ideal choice for operators looking for durability and value.

DELTA 18-24 m

The DELTA boom offers excellent performance and dependability. The rugged three-dimensional structure guarantees good durability. The design makes it compact in transport and storage.

DELTA FORCE 24-39 m

DELTA FORCE is designed to be a large boom. The selection of features and the layout of the boom structure is targeted to perform at high driving speed and high performance at boom widths of 24-39 m.





Nørre Alslev,
Denmark



Lleida,
Spain



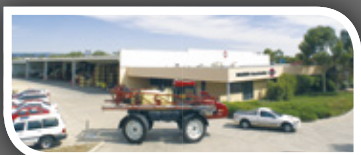
Savigny,
France



Beaurainville,
France



Davenport,
USA



Adelaide,
Australia

HARDI

The Sprayer

HARDI INTERNATIONAL A/S

is an international group whose basic idea is to satisfy the user's requirements for quality products which ensure efficient, punctual and precise application of crop protection products. Our world-wide distribution and sales network comprise more than 100 countries where we are represented by importers, agents and sales subsidiaries. These are situated in Sweden, Norway, Denmark, the UK, France, Spain, North America, Germany and Australia.

Since 1957 HARDI has committed to the ever-increasing demands for efficient and precise plant protection. HARDI is the trendsetter within application of crop protection products. To achieve this position continued developments and innovation are essential. HARDI is committed to the long term future of plant protection.

Testing procedures

Sprayers leaving HARDI INTERNATIONAL A/S are tested according to the strictest quality standards.

The staff of the assembly line is accredited to match the demands from both NSTS (National Sprayer Testing Scheme), UK and JKI (Julius Kühn Institut), Germany. This ensures that the highest quality sprayers are delivered to farmers.



Superb surface treatment

The high-technology surface treatment contains 13 treatments, including a pre-treatment and powder coat painting of all major components.

Together with the Delta/Magni treatment of nuts, bolts and other items, we supply high corrosion protection of our products.



HARDI INTERNATIONAL A/S

Herthadalsevej 10 · 4840 Nørre Alslev · Tlf.: +45 43 58 85 00 · Fax: +45 43 58 85 20
E-mail: hardi@hardi-international.com · www.hardi-international.com



#HARDIsprayers