



4100

Intelligent capacity
ALPHA evo



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ALPHA evo – Ergonomics, Visibility and Optimization

Longer spraying days and nights and higher spraying speeds place heavier demands on comfort and easy operation.

HARDI releases the newly improved self-propelled sprayer ALPHA 4100 with ambitious specifications in terms of performance, reliability and driving comfort.

ALPHA evo features a great weight balance between front and rear and has a low total weight giving an optimal weight/capacity ratio and great performance even under wet field conditions. The ground clearance, standard at either 61" or 67", provides flexible configurations for all crops sizes and types of farming.

EcoDrive

The EcoDrive management system with Tier 4 final 245HP engine, gives more power and flexibility, less noise and more than 30% reduction of fuel consumption, especially in road transport.



HARDI SprayCenter

All functions are fully controlled from the cab and underline the level of optimization the operator can gain from this machine and control all spray and hydraulic functions directly from the cab with the right hand located SprayCenter.

With fully integrated functions such as automatic steering system and AutoSectionControl, the HC 9600 is featuring an integration of all electronic functions such as AutoHeight and AutoSectionControl and other intelligent features.

Furthermore, a high segment GPS technology is available as an option.



Visibility – Best in the market “3-pillar design”

Developed with the “3-pillar concept”, this cab gives the operator an optimized view in all directions.

With more than 320° unobstructed view, operator keeps perfect control without dead angles.

Driver safety and comfort

The cab filtration meets the requirement of the norm EN-15695, category 4, to protect the driver against dusts, aerosols and vapors. A powerful climate control will automatically regulate the temperature according to your setting through 8 air outlets distributed up and down.



Engine Deutz Stage IV / Tier 4 Final

Water-cooled 6-cylinder inline engines with turbo-charging, charge air cooling and cooled external exhaust gas recirculation. Two-stage turbocharging for the highest performance requirements. Engine and exhaust aftertreatment (EAT) are optimized for highest total system efficiency and thus ensure minimized fuel and total operating costs. The powerful DEUTZ Common Rail (DCR®) injection system and the electronic engine control (EMR 4) with intelligent link to the drive management (EcoDrive) ensure optimum engine performance at low fuel consumption.

SPECIFICATIONS

- ▶ **Tank:** 1100 gallons
- ▶ **EcoDrive Engines:** Deutz 6 cylinders TCD 6.1 Stage 4F - 245HP – SCR (selective catalytic reduction) and an active DPF (Diesel Particulate Filter) meeting environmental standards. Transmission with 3 driving modes: Road, Field, Slope
- ▶ **Controller:** HC 9600 12.1” touch screen
- ▶ **TurboFiller:** High capacity, easy to operate
- ▶ **DynamicFluid4 liquid system:** Shorter response time and more precise application in the field
- ▶ **Clearance:** Either 61" or 67"
- ▶ **Track width:** Hydraulic adjustable axle 88" - 126" (HTA)
- ▶ **Booms:** TWIN FORCE boom: 80 ft - 120 ft

- ▶ Hydraulic Track width Adjustment 88"-126" – adjustable on the go
- ▶ FloatRide air suspension – for higher comfort
- ▶ Larger tank - more capacity
- ▶ The EvoCab features industry standards in filtration and superior climate control
- ▶ More engine power, lower weight – high performance in all conditions

EvoCab

Class 4 – Driver safety and comfort

EvoCab optimizes visibility with 3-pillar design

The large spacious EvoCab is specifically developed by HARDI with its “3-pillar design”, which provides a new standard for visibility with more than 320° around the sprayer.

The cab is equipped with a pressurization system, a dust filtering of fresh air, an aerosol and vapor filtering to protect the driver and fulfill the Class 4 requirements.

The climate control system has been tested intensively in order to provide the highest driver comfort in warmest of condition.

Ergonomics

In developing the EvoCab, HARDI's main focus has been the driver ergonomics. All switches which have to be used when

driving are placed as close as possible to the driver.

All primary switch functions have been placed on the SprayCenter on the right armrest and consequently follows the drivers movements.

Secondary switch functions are grouped on the roof just above the operator's head and easily reachable from the driver's seat.

Optimization

With Ergonomics and Visibility – Optimization was the third high focus area when developing EvoCab. Operator environments with Automatic climate control, plenty of space, low sound level and Class 4 filtering have been developed to provide maximum comfort and minimum stress to the operator.

HARDI SprayCenter

The driver can perform all spray and hydraulic functions directly from the cab with the right hand located arm rest SprayCenter. The HC 9600 12.1” touch screen controller is featuring an integration of all electronic functions as AutoTrack, AutoHeight, AutoSectionControl and other intelligent features as AutoFill, AutoWash, AutoAgitation etc.

All functions are fully controlled from the cab and underline the level of simplicity, the driver can gain from this machine.

3 driving modes: Comfort/Normal/Power

3 driving modes are available as choices for the driver. This gives the driver the possibility to customize transmission performance.



Hydraulic Track width Adjustment

— from 88" to 126"

Hydraulic Track width Adjustment

The ALPHA evo EcoDrive with FloatRide suspension is equipped with Hydraulic Track width Adjustment. This allows for a track width from 88" to 126" (224cm to 320cm) depending on tire size.

The driver will set his track width from the cab display and will be ready to drive. That will allow changing track width from the road to the field and from cereal crop to row crop or vegetable with an adjustment of 39" (1m) between minimum and maximum.



ALPHA EVO 4100

Track width with adjustable axle

Tire Choices	Axle XL	Max speed possible
320/90 R54 standard	88"-126"	33 mph
380/90 R50 standard	88"-126"	33 mph

All track widths are measured with standard offset & clearance of either 61" or 67"



Comfortable seat

High quality ALPHA evo seat provides you with a high level of comfort when you spend many hours in the field. Fully adjustable, this air suspended seat combined with machine suspension provides you with good comfort even in rough conditions.



Trainer seat and lunch box

is located to the left of the sprayer operator seat.

The lunch box storage area is located under this seat.



New FloatRide suspension

By equipping the ALPHA with the FloatRide suspension, the standard coil spring have been replaced by airbags. This ensures even more boom stability and maintains optimal balance on steep slope. The chassis' height will be maintained whatever tank volume.

By allowing for individual wheel movement, the ALPHA provides a maximum comfort, even at high spraying speeds.

Full control

integrated electronics

HC 9600

All the main spraying functions are operated with the fingertip multifunction joystick in conjunction with the HC 9600 12.1" touch screen spray controller to provide the highest level of performance and application precision.

The HC 9600 controller provides the growers with a powerful, full-featured precision farming tool for guidance, data logging, split-screen for better overview, application report generation, automated steering and more.

ISOBUS compatibility

The HC 9600 offers compatibility with the ISO 11783 (ISOBUS) Virtual Terminal Standard.



GPS

Equipped with optional GPS AutoSectionControl and manual guidance system, ALPHA evo has a GPS receiver placed at the rear of the cab. A special bracket has been designed to open the roof without moving the receiver. This to be able to keep all settings.

One work screen

The complete integration of all important information on one work screen is an important criterion. On the HC 9600 work screen, the driver can operate the AutoSectionControl, AutoHeight, guidance and rate as well as the AutoSteering.



SprayCircle

Documentation

- ▶ USB port for data transfer
 - ▶ Smart report as pdf
- ▶ Real time data-logging
 - ▶ Transfer to farm management software

QuickFill

- ▶ Dual fill ports for primary tank and rinse tank
- ▶ Secure connection to banjo couplers
- ▶ Work zone simplicity
- ▶ Easy access ports

Rinsing

- ▶ 108 gal rinse tank provides enough liquid for both inside and outside cleaning
- ▶ Easy to rinse inside with tank rinsing nozzles
 - ▶ 100% of tank can be “covered” by the rinsing nozzles
- ▶ Minimizes tank residues when spraying is finished

TurboFiller

- ▶ To easily handle large quantities of powders and liquids
- ▶ 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

AutoSectionControl

- ▶ Product savings of 3 % or more are documented
- ▶ Operator fatigue is greatly reduced
 - ▶ Precision shut-off can be individually set up

Agitation

- ▶ Sparge tube tank agitation insures effective mixing
- ▶ Maximizes agitation without foaming
- ▶ Tank design promotes agitation towards the pump

AutoSteering

- ▶ Automatic steering can be ordered as optional

Set dosage

- ▶ 2 fixed application rates can be programmed
- ▶ Quick change in gallons/acre steps
- ▶ Usages of external dose possible

Spraying – AutoHeight

- ▶ With the support from the precise HARDI AutoHeight system, you can choose your active boom height settings on crop or soil height
 - ▶ The height is measured with 3 or 5 ultrasonic sensors

HARDI ISO Nozzles

- ▶ Triplet provides ease of switching between different nozzle types & sizes
- ▶ Universal fit ensures HARDI ISO nozzles work on all sprayer brands
- ▶ Superior precision and durability
- ▶ Large range of nozzles to meet broad crop demands and spray products



Liquid system

HARDI 464 Pump: 464/12, 85 gpm (334 l/mn)

To meet the requirements of bigger sprayers and to improve lifetime, we have introduced the HARDI 464 pump. A reduction in pressure drop has been accomplished by improving the flow in the diaphragm tops. To ease service, we have integrated lifting hooks while moving two greasing points to the front, to ease lubrication of the front and the rear of the pump.

The casted conrod support ring has also been improved providing longer service intervals. The most visible change is the new covers designed to protect the pump from mud and water getting into the system.



HARDI 464 Pump

- ▶ Self-priming pump able to prime the filling and spraying system in all start up conditions
- ▶ No contact between chemical and moving mechanical parts
- ▶ Ability to run dry without damage
- ▶ Stepless pump capacity adjustment from the cab
- ▶ Grease-lubricated crankcase
- ▶ Easy to service

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 36" (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.





DynamicFluid4

The fluid system

Dynamic fluid system based on 4-sensor technology

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

New powerful engine on the ALPHA evo and the responsive hydrostatic transmission provides enhanced capabilities with more variance in the speed and faster acceleration, factors which together with the GPS controlled section control is challenging for the performance of any liquid system.

WorkZone

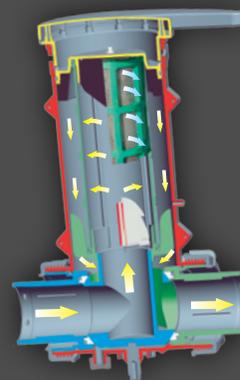
The liquid system can be operated from the cabin or from ground by a controller located next to the TurboFiller.



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.

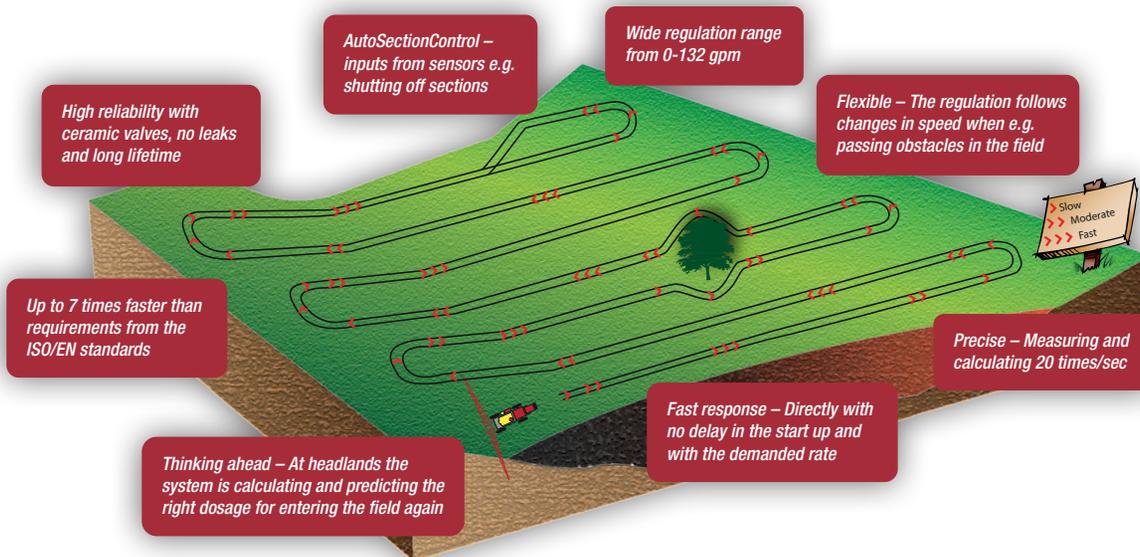
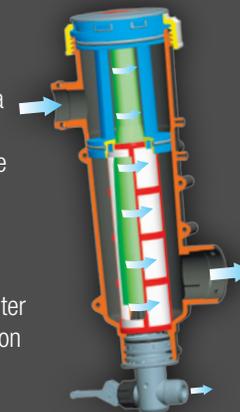
This ensures that the filter is cleaned when needed and only when needed. When cleaning the filter, all you have to do is to twist the lid 90°. This will close a main tank valve in the bottom of the filter and open the filter for inspection.



CycloneFilter

The CycloneFilter is on the pressure side and 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.



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. Together with new software and 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 in DynamicFluid4 each has their individual task, but they will also work as back up for each other and the regulation will always continue. Regulation can also be done manually.

Steering

Ground clearance

The ground clearance on a standard machine is at either 61" or 67" and the track width is hydraulically adjusted from 88" to 126". This track setting provides exceptional stability and enhances boom performance.

Easy operation and maneuverability

A foot pedal activates the 4-wheel steering functions.

Re-alignment of the rear wheels is automatic, and a lock is activated for road travel.

At headlands, the four steering wheels permit a very small turning radius.

High capacity

Two air bags on the front axle and one air bag at the rear axle ensure a high driving performance without operator fatigue.



3 TYPES of STEERING

With full-time 4-wheel drive, the ALPHA evo can be driven in 2 or 4-wheel steering mode.



Front wheel steering – road traffic



4-wheel steering – field mode



Crab steering – in difficult conditions and maneuvering

The Engine

TCD 6.1 L6 Stage IV / Tier 4 Final

Deutz engine, 6 cylinders

- ▶ The ALPHA evo is fitted with a Tier 4 final 245 hp/ Stage IV – SCR (selective catalytic reduction) and an active DPF (Diesel Particulate Filter) meeting the US & Canadian environmental standards
- ▶ Turbo charged common rail, water cooled, 6 cylinders
- ▶ The fan is driven by a visco-coupler which ensures strong cooling and significantly reduces the sound level in the cab
- ▶ Cruise control, economic road mode
- ▶ Danfoss hydraulic pump and Poclair hydraulic motors
- ▶ *EcoDrive transmission to reach lowest engine rpm, hydrostatic pump:*
 - 2 pumps 113 hp to reach the speed at lowest engine rpm and brings more torque in fields for faster reaction in wet conditions.



Transmission

Equipped with a controllable axial piston pump driven by the engine. The pump provides the hydrostatic drive with hydraulic power, allowing the driver to adapt the traveling speed to the conditions of the area and the crop. The hydrostatic transmission EcoDrive is electronically controlled by a Sauer pump and four Poclair dual displacement wheel motors.



Climbing

Oil flow to slipping wheels are restricted. High torque at the rear and low in front.



Descending

Transmission is set to high torque at the front and low at the rear to give maximum descent control.



Forward

Oil flow equal on front and rear.



TWIN boom

World's best application system

3rd generation HARDI TWIN – the ultimate in capacity, weather independence and application technology

The biggest challenge when spraying is timing due to weather conditions

Let's take control. With the HARDI TWIN directed air system, air will help you control the wind. You are in control of the speed and angle of the air, giving you the possibility of covering the whole plant, from top to bottom.

The ideal high capacity solution

Spray drift from conventional sprayer can be so strong that the operator has to stop before having the spray job done. With efficient drift control it is much easier for the operator to be able to spray the entire field.

Under most conditions the farmers get at least twice as many hours for a safe and efficient spray job with the TWIN sprayer compared to conventional spraying.

The TWIN FORCE is available in sizes from 80', 90', 100' & 120'.

Up to 100% more spray capacity

Timing is everything! The results overleaf show that during Spring 2015 the wind conditions for conventional spraying only allowed 31 days of spraying whilst using a TWIN Force you could have gained over 45 extra days suitable for spraying. At the same time you can spray faster and have less filling time with reduced water consumption, due to more accurate placement.

Increased spray opportunities, reduced drift, reduced chemical usage, accurate placement, faster spraying speed, result in improved bottom line for producers!

Save up to 30% on chemicals

Many trials throughout the years have shown a better chemical efficacy using TWIN. Proper placement gives the producer the opportunity to adjust the chemical dose, and in some markets we see up to a 30% reduction in chemicals consumption at the farm through the season to get the desired control.

TWIN ADVANTAGES:

- › Reduced drift
- › Save up to 30% in chemicals
- › Better penetration in the crop
- › Improved spraying economy
- › Lower water consumption
- › Higher capacity
- › More than 30 years' experience in TWIN

- › Negative tilt and AutoTerrain for superb boom stability
- › Hydraulic AntiYaw dampening for precise application
- › New folding system and extensive use of aluminium in the outer wings provides higher durability and lower weight
- › Manual control possible as well standard

Make money on your spraying budget ...

Insert your input numbers at www.hardi-twin.com, and it will show you just how much money you can make on your spraying budget.

www.hardi-twin.com



TWIN FORCE

Two powerful blower units provide air to the left and right boom sides respectively. The large amount of air produced by the double fans allows for faster application speeds even under very difficult weather conditions. Each blower has an output of 63 mph.

The new generation of Twin Force booms in the 120 ft is available with the negative tilt of the boom wings when used in combination with the AutoTerrain boom management.

Twin Force hydraulics allows a fast tilt reaction which is needed to get a good performance in challenging conditions. Tests have shown that the AutoTerrain solution offers the best possible performance and allows higher operating speeds.

The angling of the air curtain together with the spray swath is a distinctive and important feature of the HARDI TWIN.

This allows for a much more precise application regardless of crop and weather conditions.



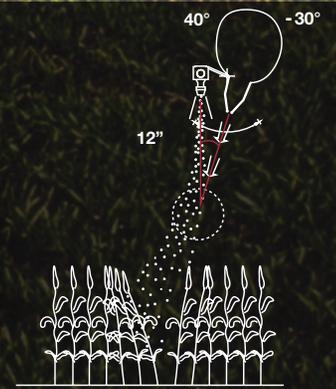
AIR OFF



AIR ON



AIR FLOW CONTROLLED



EvoCab

Comfort - Control - Capability

The cabin is equipped with a pressurization system, a fresh air dust filtering system, an aerosol and vapour filter to protect the driver. To avoid misting caused by humidity in the cab; the ALPHA's air condition system has been oversized to dry a higher volume of air per minute.

The air condition system has been upgraded and tested in a climate room where extreme weather conditions were simulated (temperatures, humidity and irradiating) to cover all driving conditions. This new air condition system can reduce the inside cab temperature from 104°F to 82°F within 5 min. To be able to do this the air fan has been increased by 38%, which results in a very low noise level due to lower fan rpm.

A new steering column brings a triple adjustment to increase operator comfort while driving and has a new display bracket giving the driver full flexibility in positioning the operating screen. A foot rest has been added to the left side of the steering column allowing the driver to easily maintain his position in slope and increase comfort.



Technical specifications



Tank	1100 gallons
Pumps, type - gal/min	464/12: 85gpm (540)
Booms	Twin Force
Engine Deutz 6 cyl. - 245 hp / 180 kW (Stage IV / Tier 4F)	Standard
Hydrostatic 4-wheel transmission (33 mph)	EcoDrive Standard
Pneumatic suspension FloatRide	Standard
Hydrostatic Steering (includes permanent 4, 2 wheel, & 4 wheel)	All
Hydraulic Track Adjustment (HTA) - electronic control 88" to 126"	Standard
Turning radius 80" track width (middle of chassis)	16'
Weight (standard machine, empty)*	21,164 lbs
Weight, front axle, standard machine in transport (empty)*	14,7
Weight, rear axle, standard machine in transport (empty)*	10,665
Total length*, ft A	32'
Total height*, in. B	154"
Width with TWIN FORCE , (100 ft) in. C	118"
Width with TWIN FORCE (120 ft) in. C	118"
Track width HTA axle** (380/90 R50), in. D	88" - 126"
Wheel base, in. E	148"
Clearance (380/90R50 - 380/90R54), in. F	61" / 67"
RinseTank, gal	108
Fuel tank, gal	85
Filling capacity water, gpm	215
Filling capacity TurboFiller, gpm	32

* Dimension and weight are given for ALPHA evo 120 ft TWIN FORCE boom
- 380/90 R54 tires and chassis clearance at either 61" or 67"

** Minimum track width is wider with wider tires (depending on axle type)



Davenport,
USA



Nørre Alslev,
Denmark



Lleida,
Spain



Savigny,
France



Beaurainville,
France



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 North America 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 reserves the right to change the specifications without notice. Illustrations shown may include optional extras and accessories.



HARDI NORTH AMERICA

1500 West 76th Street, Davenport, IA 52806
E-mail: info@hardi-us.com · www.hardi-us.com
Phone: (563) 386-1730 Fax: (563) 386-1280



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