

*Intelligent capacity*  
**ALPHA** evo

3500 / 4100 / 5100



# Intelligent capacity **ALPHA** evo

3500 / 4100 / 5100



## **ALPHA evo – Ergonomics, Visibility and Optimization**

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

HARDI has rejuvenated the ALPHA self-propelled sprayer family with ambitious specifications that deliver even better performance, reliability and driving comfort, and an increased main tank capacity of up to 5100 l.

ALPHA achieves a fine balance between front and rear loading around a low total weight, to achieve an optimal weight/capacity ratio and high performance even under wet field conditions.

High ground clearance from 120 to 165 cm makes ALPHA more versatile – from low-growing plantings to tall crops such as sweet corn and sunflowers.

## **EcoDrive**

The new EcoDrive management system with its new Deutz Tier 4 final / Stage IV, 245 hp diesel engine provides more power flexibility with less noise and better than 30% reduction in fuel consumption, especially during 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 as automatic steering system and AutoSectionControl, the HC 9600 is featuring an integration of all electronic functions as AutoHeight and AutoSectionControl and other intelligent features.

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



### Visibility – Best at 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 new cab filtration fulfill 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 distributes up and down.



### Engine Deutz Stage IV / Tier 4 final

Water-cooled 6-cylinder inline engine with turbocharging, charge air cooling and cooled external exhaust gas recirculation. Two-stage turbocharging meets the highest performance requirements.

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.

Engine and exhaust aftertreatment (EAT) are optimised for the highest total system efficiency with minimised fuel and total operating costs.

## SPECIFICATIONS

- › **Tank:** 3500 / 4100 / 5100 l
- › **EcoDrive Engine:**  
Deutz 6 cylinder TCD 6.1 Stage IV 180 kW (245 hp)  
SCR (selective catalytic reduction) and active DPF (Diesel Particulate Filter) meeting European environmental standards.  
Transmission with 3 driving modes: Road, Field and Slope
- › **Track width:** Manual adjustable axle 182-365 cm
- › **Clearance:** 120 / 150 / 165 cm
- › **Controller:** HC 9600 12.1” touch screen
- › **DynamicFluid4 liquid system:**  
Shorter response time and more precise application in the field
- › **TurboFiller:** High capacity, easy to operate
- › **Booms:** PARAGON AL boom: 24–42.5 m  
TWIN FORCE boom: 18–30.5 m

- › High clearance and extra-wide track
- › Larger tank – more capacity
- › FloatRide airbag suspension – smoother handling
- › Low weight and high engine power, for performance in all conditions

# EvoCab

## Class 4 – Driver safety and comfort

### EvoCab optimizes visibility with 3-pillar design

The spacious new EvoCab was specifically developed by HARDI with a “3-pillar design”, to set a new standard in visibility with more than 320° views around the sprayer.

The cabin is equipped with a pressurisation system, dust filtering of fresh air, plus aerosol and vapor filtering – all to protect the driver and meet Class 4 cabin requirements.

The new climate control system has been intensively tested in a climate chamber in order to ensure driver comfort even in the hottest weather.

### Ergonomics

By developing the new EvoCab, HARDI's main focus has been on 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 new SprayCenter, which moves with the seat and consequently the driver.

Secondary switch functions are grouped on the roof just above the operator's head and are easy to reach from the driver's seat.

### Optimization

Along with Visibility and Ergonomics, Optimization was a constant focus in the development of the EvoCab. Automatic climate control, space, sound level and Class 4 filtering have all been optimised to ensure maximum comfort and minimum stress for the driver – even on long, hot spraying days.

### HARDI SprayCenter

The driver can operate all spray and hydraulic functions directly from the ALPHA cab, using the SprayCenter located by the right-hand arm rest. The HC 9600 12.1” touch screen controller features integration of all electronic functions including AutoTrack, AutoHeight, AutoSectionControl and other intelligent features such as AutoFill, AutoWash, AutoAgitation, etc.

All functions are fully controlled from the cab and underline the high level of optimization operators can expect from this machine.

### Three driving modes: Comfort/Normal/Power

Operators can also choose from three driving modes – Comfort, Normal, or Power – in order to adapt ALPHA's transmission response to the driving conditions.



# Height a width without the weight

— plus large capacity

## Up to 360 cm width and 165 cm clearance

Track width options from 180 to 360 cm make ALPHA adaptable to pre-existing tramlines – including wide spacings on high-yield farms.

Clearance is another vital feature for protecting valuable plants and ALPHA's widest track option provides stability for the chassis to be up to 165 cm above the soil – allowing it to clear of canola, sweet corn and other tall crops with ease.

Add tank options to 5100 l at less than 12,000 kg empty, and ALPHA delivers flexibility and productivity without excessive compaction on soft, rich soils.



## Comfortable seat

The high-spec ALPHA seat provides a superior level of comfort for long hours spent in the field.

The seat is fully adjustable so it can be moulded to any operator. It is also fully suspended which, along with ALPHA's airbag suspension, ensures a smooth, comfortable ride even on rough terrain.



## Co-driver seat and lunchbox

A jump seat is provided to the left of the driver, for a co-driver or trainer.

Underneath is a handy food storage box.



## New FloatRide suspension

The revised ALPHA now features FloatRide airbag suspension on front and rear axles. This triple airbag system delivers even better boom stability and helps maintain ALPHA's balance over sloping ground.

By allowing individual wheel deflections of up to 185mm, FloatRide optimises ride and comfort at high spraying speeds. The system also helps to maintain a constant crop clearance, regardless of the tank contents.

# 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 offers growers a powerful, full-featured precision farming tool with 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 as standard with 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 so the cab roof can be opened with moving the GPS receiver – so important settings are not lost.

### 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 dosage 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

## AutoFill

- › Time saving so other tasks can be done
- › Automatic safety OFF sensor prevents overfilling
- › Agitation is automatically reduced for maximum fill effect
- › Capacity: 600 to 800 l/min

## TurboFiller

- › Handles large quantities of powders and liquids
- › High capacity is a result of high vacuum combined with forced rotation of the liquid by the TurboDeflector in the bottom of the hopper

## AutoAgitation

- › Maximizes agitation without foaming
- › Minimizes tank residues when spraying is finished
- › Automatic tank contents readout on the HC 9600 display

## Set dosage

- › 2 fixed application rates can be programmed
- › Quick change in l/ha steps
- › Usage of external dose rates possible

## PrimeFlow

- › No untreated areas at spraying start
- › Allows flushing of boom lines without spraying
- › Pressure system for safe and reliable work
- › Individual section width can be programmed from 1 to 12 nozzles

## Spraying – AutoHeight

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

## AutoSteering

- › Automatic steering can be ordered as an option

## AutoSectionControl

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

## AutoWash

- › Only one program choice is needed as the rest is automatic
- › Operator and tractor cabin are not contaminated
- › Time is saved as process is controlled from cabin
- › Effective so pesticide cross-contamination is avoided

Finishing

Preparation

Spraying

# Liquid system

## **HARDI 464 Pump: 464/10, 280 l/mn / 464/12, 334 l/mn**

To meet the requirements of bigger sprayers and improve durability, we have introduced the HARDI 464 pump. A reduction in pressure drop has been avoided by improving the flow in the diaphragm tops. We have integrated lifting hooks to make servicing easier and moved both greasing points to the front to make lubrication of the front and the rear of the pump easier. The cast conrod support ring has also been redesigned for improved mechanical life. The most visible change is the new covers, designed to protect the pump by stopping mud and water from getting into the system.

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



### **AutoWash**

- ▶ Only program choice needed as the rest is automatic
- ▶ Operator and tractor cabin are not contaminated
- ▶ Time is saved as process is controlled from cabin
- ▶ Effective so pesticide cross-contamination is avoided
- ▶ Residuals negligible at the end of the spray task

### **TurboFiller**

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

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

A multifunctional 3-valve operating unit and a cleaning pipe make 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 concept developed to obtain shorter response times and thereby more precise application in the field.

The ALPHA's powerful new engine and hydrostatic transmission have enabled new driving patterns with greater speed variations and faster acceleration – factors which, along with GPS controlled section control, create significant challenges for the performance of the sprayer's fluid system.

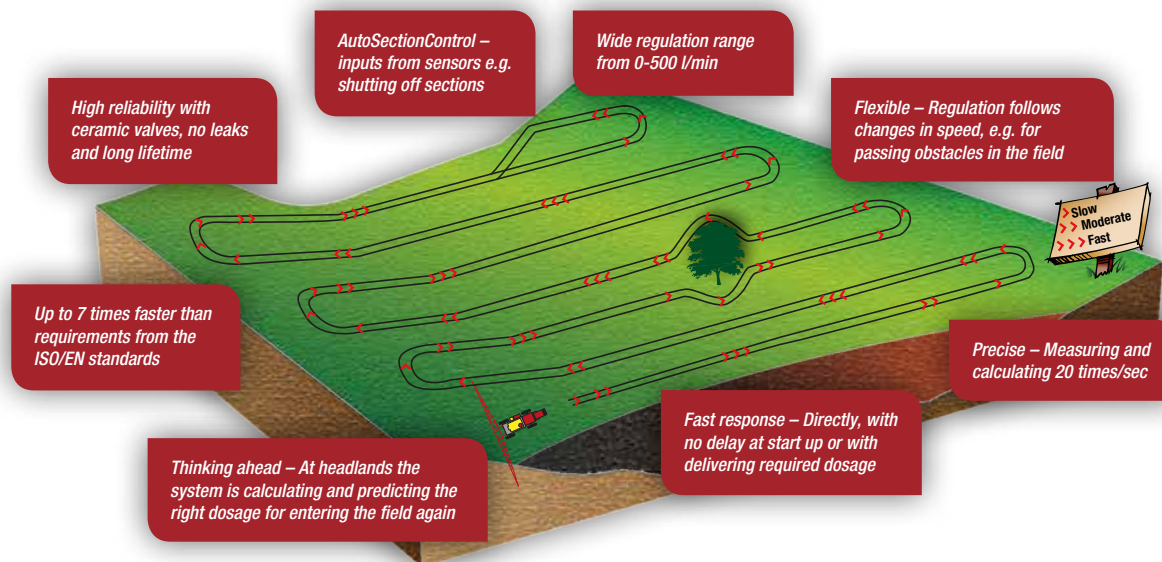
In a traditional system, fluid regulation is based on feedback from what is already 'historical' data. For example if RPM is increased then the flow rate at the nozzle will become too high. When that is next measured the spray computer will regulate the pressure down again, but in the meantime the application rate has been too high.

In comparison, the DynamicFluid4 system will calculate the consequences of the increased RPM and regulate the rate instantly. The proactive property of DynamicFluid4 is based on 4 sensors in the fluid system that measure RPM, regulation valve position,

flow and pressure. Together with new software and a unique new ceramic regulation valve, DynamicFluid4 offers extra precision in the application rate – for the available performance on the market.

### Stability and safety

Each of the four DynamicFluid4 sensors has an individual task, but they will also work as back-up for each other (a 'limp-home' mode) so that fluid regulation will continue in the event of a sensor failure. Regulation can also be managed manually.



### WorkZone

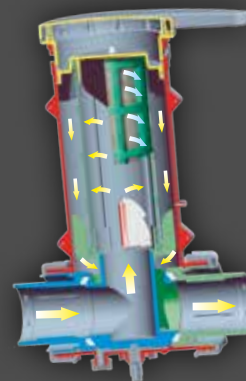
The liquid system can be operated from the cabin or from ground by a controller located next to the TurboFiller.



### 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.

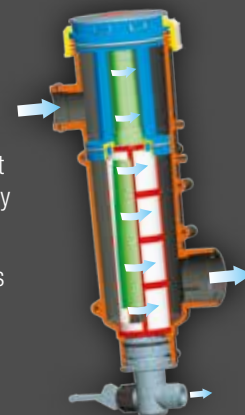
This ensures that the filter is cleaned when needed and only when needed. Cleaning is as simple as turning the filter lid 90°. This will close a main tank valve in the bottom of the filter and open the filter for inspection.



### CycloneFilter

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

The CycloneFilter also features a unique boost function which allows it to be flushed through as required as required.



# Steering

**Easy operation and manoeuvrability**

A foot pedal activates 4-wheel steering functions quickly and simply.

In headlands, the four steering wheels permit a very tight turning radius for 100% protection of the crop.

Realignment of the rear wheels is automatic, and a lock is activated for road travel.

**Ground clearance**

The ground clearance on a standard machine is 120 cm.

Higher ground clearance is available as an option, giving ALPHA a total clearance of 165 cm with standard tyres.

**Airbag suspension**

ALPHA now provides full airbag suspension on front and rear axles, for a smoother boom ride and less tiring operation.



**ALPHA EVO 3500 / 4100 / 5100**

Track width with manual adjustable axle

Tyres	AXLE SIZE, CM				Max speed possible
	Axle S	Axle M	Axle L	Axle XL	
300/95 R52 option	182-205	201-237	225-276	266-317	40 km/h
340/85 R48 option	182-205	201-237	225-276	266-317	40 km/h
380/90 R46 standard	182-205	201-237	225-276	266-317	40 km/h
420/80 R46 option	182-205	201-237	225-276	266-317	40 km/h
460/85 R38 option	191-214	210-246	234-285	275-326	40 km/h
480/80 R42 option	191-214	210-246	234-285	275-326	40 km/h
520/85 R38 option	197-220	216-252	240-291	281-332	40 km/h

All track widths are measured with standard offset and clearance 1.20 m.

**3 types of steering**

With permanent 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



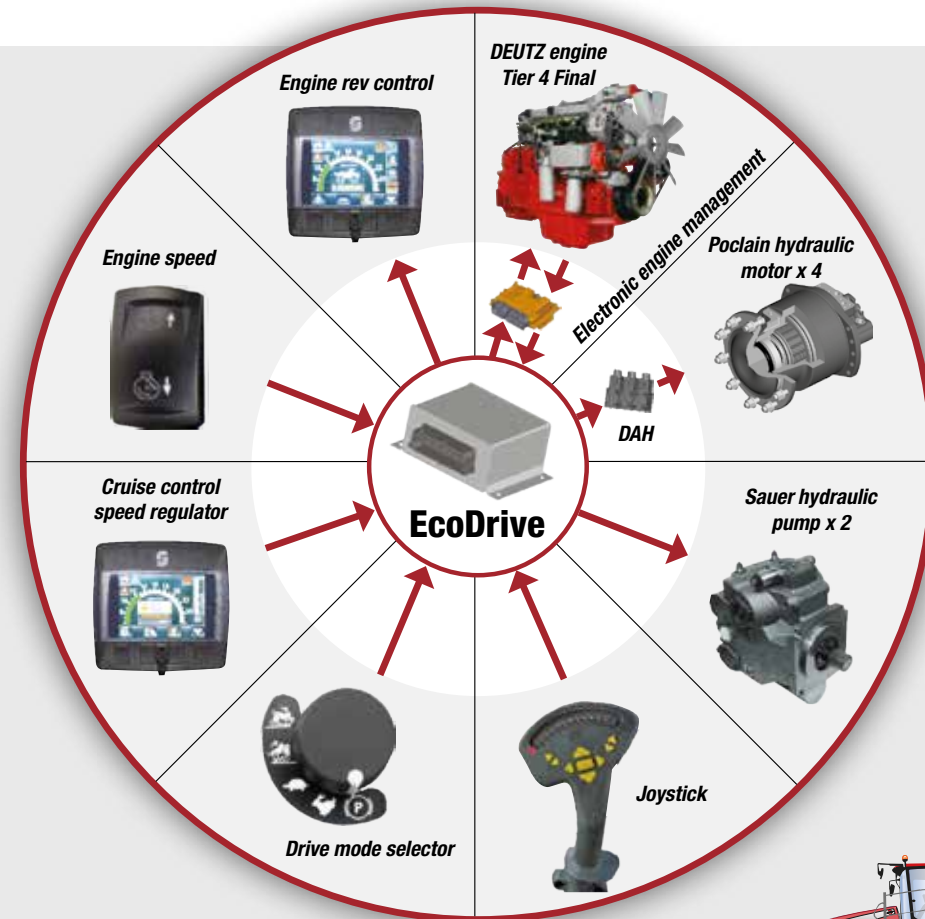
Crab steering – in difficult conditions and manoeuvring

# The Engine

TCD 6.1 L6 Stage IV / Tier 4 Final

## Deutz diesel, 6 cylinders

- The ALPHA evo is fitted with Deutz TCD 6.1 L6 160 kW (217 hp) Stage IV / Tier 4 final diesel engine producing 180 kW (245 hp). The engine also features SCR (selective catalytic reduction) and an active DPF (Diesel Particulate Filter) to meet European 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
- Sauer Danfoss hydraulic pump and Polclain motors
- *EcoDrive transmission to reach lowest engine rpm, hydrostatic pump:*
  - 2 pumps 115 cc to reach the speed at lowest engine rpm and brings more torque in fields for faster reaction in wet conditions.
  - As option two versions of Hilly transmission: +50% of torque and +25% of torque



## Hilly Transmission

There is an option to upgrade to a more powerful transmission for extra hilly terrain, with bigger wheel motors at the rear to provide an extra +50% of torque or +25% of torque in normal field mode.

### Climbing

Oil flow to slipping wheels is 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 is timing due to weather conditions

Let's take control. With the HARDI TWIN system, air will help you overcome the wind. By controlling the speed and angle of the TWIN air stream, you can put spray where you want it and cover the whole plant, from top to bottom.

### The ideal high capacity solution

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

Under most conditions the farmer will get at least twice as many hours of safe and efficient spraying with the TWIN system, compared to conventional spraying.

TWIN FORCE booms are available from 18 to 36 m.

### Up to 100% more spray capacity

Timing is everything! During a typical Spring, wind conditions would only allow for 31 days of safe conventional spraying, while using a TWIN Force you would give you at least 45 extra days suitable for spraying. At the same time you can spray faster and, thanks to reduced water consumption, spend less time filling.

Increased spray opportunities, reduced drift, reduced chemical usage, accurate placement and faster spraying speed all increase productivity and economy!

### Save up to 30% on chemicals

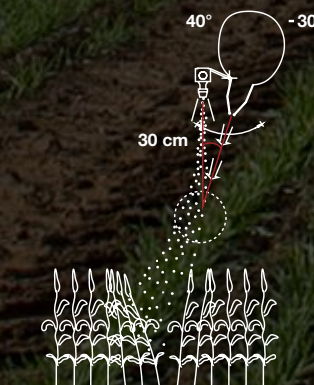
Many trials throughout the years have shown a better chemical efficacy using TWIN. This makes it possible to adjust the chemical dose and, in some markets, we have seen chemical consumption at the farm reduced by up to 30% over a season.



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 2000 m<sup>3</sup>/h/m.

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

This allows for more precise application depending on crop and weather conditions.





#### **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 higher durability and lower weight
- Manual control at power outage
- Easy handling with hydraulic support wheels and AutoHeight sensors

#### **Make money on your spraying budget ...**

Insert your input numbers at [www.hardi-twin.com](http://www.hardi-twin.com), and it will show you just how much money you can make on your spraying budget.

**[www.hardi-twin.com](http://www.hardi-twin.com)**

# Aluminium booms

## HARDI PARAGON AL

HARDI has over 30 years' experience with aluminium booms, and our superior know-how means HARDI PARAGON AL booms are not simply built – they are expertly integrated with the sprayer's centre, fluid system and handling.

The result is HARDI's unique boom ride which delivers better performance, stability, ride control and target height maintenance every time you spray.



*Engineered profiles  
optimise the strength of each section*



*ALPHA boom light kit is available as an option.*



*HARDI know-how is critical to boom performance and durability*



*Superior height control and boom ride improve accuracy*

# Technical specifications



Tank, l	3500	4100	5100
Pumps, type - l/min	464/10: 280 (540) - 464/12: 334 (540)	464/10: 280 (540) - 464/12: 334 (540)	464/10: 280 (540) - 464/12: 334 (540)
Booms	AL, Twin Force	AL, Twin Force	AL, Twin Force
Engine Deutz 6 cyl. - 245 hp / 180 kW (Stage IV / Tier 4 Final)	Standard	Standard	Standard
Hydrostatic 4-wheel transmission (29 or 40 kph)	EcoDrive Standard	EcoDrive Standard	EcoDrive Standard
FloatRide airbag suspension	Standard	Standard	Standard
Steering	4-wheels steering	4-wheels steering	4-wheels steering
Mechanical track adjustment range, cm	40	40	40
Turning radius 200 cm track width (middle of chassis), cm	462	462	530
Weight (basis machine, empty)*, kg	9.450	9.470	11.600
Weight, front axle, basic machine in transport (empty)*, kg	5490	5490	6.900
Weight, rear axle, basic machine in transport (empty)*, kg	3.960	3.980	4.700
Total length*, m (A)	9,5	9,5	10,23
Total height*, cm (B)	390	390	390
Width with AL boom (24-42.5 m), m (C)	2,55	2,55	2,55
Width with TWIN FORCE (24 to 30 m), m (C)	3,00	3,00	3,00
Width with TWIN FORCE (32 to 36 m) (C)	3,34	3,34	3,34
Track width manual sliding axle** (380/90 R46), m (D)	1.82 – 3.60	1.82 – 3.60	1.82 – 3.60
Wheel base, cm (E)	370	370	430
Clearance (380/90 R46), cm (F)	120 / 150 / 165	120 / 150 / 165	120 / 150 / 165
RinseTank, l	410	410	600
Fuel tank, l	320	320	400
Filling capacity water, l/min	800	800	800
Filling capacity TurboFiller, l/min	120	120	120

\* Dimension and weight are given for ALPHA evo 36 m TWIN FORCE boom - 380/90 R46 tyres and chassis clearance 120 cm

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



Adelaide,  
Australia



Nørre Alslev,  
Denmark



Lleida,  
Spain



Savigny,  
France



Beaurainville,  
France



Davenport,  
USA

# HARDI

## The Sprayer

### HARDI AUSTRALIA PTY LTD

is a subsidiary of HARDI INTERNATIONAL, a world leader in sprayer technology.

The majority of HARDI sprayers and booms sold in Australia and New Zealand are manufactured here. We employ more than 100 engineering, testing, distribution and support staff in 15,000 square metres of modern facilities, located on our 10-hectare site in Adelaide, South Australia.

### Leading the world

For over 60 years, HARDI INTERNATIONAL has single-mindedly dedicated itself to improving the efficiency and precision of sprayed plant protection. Now a world leader in the field, HARDI recognises its role in global food security through the safe and sustainable application of agricultural compounds.

The Australian product development centre works closely with five other HARDI development centres internationally, to share local innovations with the world and to streamline the delivery of global improvements at home.

### Quality assurance

All sprayers leaving the HARDI AUSTRALIA factory are thoroughly tested in our own test facilities. We then provide ongoing support through our extensive service and dealer networks.



### Built to last

Together with the Delta/Magni treatment of nuts, bolts and other items, we finish all our products with comprehensive water and chemical protection.

The high-technology surface treatment involves five processes, including a zinc-phosphate pre-treatment and oven-baked polyester powder coating of all major components.



## HARDI AUSTRALIA P/L

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