

*Proven technology with large capacity*

# MASTER plus



1000 / 1200 / 1500 / 1800





# Proven technology with large capacity MASTER plus

1000 / 1200 / 1500 / 1800

## Simple, robust and easy to use

All key functions on the MASTER plus are unsurpassed. The integrated Quick Hitch, the well-arranged MANIFOLD fluid system and the versatile boom range are some of the key features making handling a pleasure and spraying efficient.

The large range of high quality features makes the MASTER plus a perfect choice for the demands of the modern farmers.

## Concept

Demands for simple and reliable solutions, serviceability and capacity are universal worldwide. The MASTER plus is designed so that the weight is close to the tractor, and the centre of gravity is low. The pump is mounted on the rear frame of the chassis, providing easy service access, and the PTO is not widely angled when the sprayer is lifted up.







### TurboFiller

TurboFiller is a high capacity induction hopper which makes the filling of chemicals fast and easy.

The unique TurboDeflector creates a powerful liquid circulation in the hopper and mixes all types of chemicals quickly and safely.

The cleaning of containers and the TurboFiller itself is managed by a rotating nozzle.

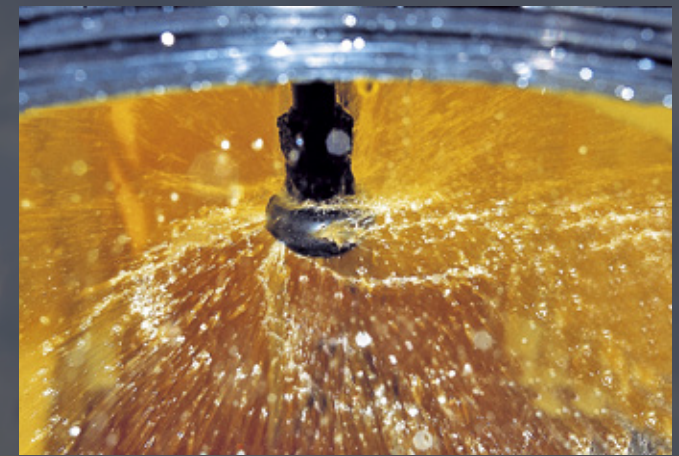
A multifunctional 3-valve operating unit and a cleaning pipe make the chemical filling easy and efficient.



### HC 8600 and HC 9600

"Touch the future" with integrated electronics. The HC 8600 and HC 9600 controllers provide growers with a powerful, full featured precision farming tool. AutoSectionControl, guidance and data logging are standard features of the ISOBUS terminals.

The MASTER plus is also available as ISOBUS version, than the sprayer can be controlled by an existing ISOBUS Terminal.



### DilutionKit

DilutionKit gives the possibility to flush and rinse the boom and tank or the boom alone without leaving the driver's seat. All return lines and agitation will be flushed when spraying out the diluted liquid from the main tank.

## SPECIFICATIONS

- › **Tank size:** 1000 / 1200 / 1500 and 1800 l
- › **Controller:** HC 5500, HC 6500, HC 8600 or HC 9600
- › **TurboFiller:** High capacity, easy to operate
- › **Liquid system:** Simple to operate with many features
- › **Chassis:** High tensile steel chassis
- › **PRO booms:** Compact, vertically folded booms from 12 to 28 m
- › **TWIN STREAM:** Air assistant 12 and 15 m

- › Easy of operate
- › Proven application system
- › Self-cleaning filter
- › Quick hitch
- › Drift reduced HARDI nozzles



# Manifold system

## Easy to operate

All primary functions of operation are built into a centrally located manifold system. The colour-coded valves and icons are easy to understand.

The MANIFOLD valves operate all the fluid system functions on the sprayer; easily reached and logically incorporated into the MASTER design.

**EVC operating unit with pressure relief and constant pressure**

**Self-cleaning filter**

**RinseTank**

**Safety locker**

**Quick Hitch**

**Dry level indicator**

**Pressure manifold valve – tank rinsing / extra agitation**

**Pressure manifold valve – spraying / chemical filling**

**15 l Clean Water tank**

**Return manifold valve**

**Suction manifold valve – main tank / RinseTank**

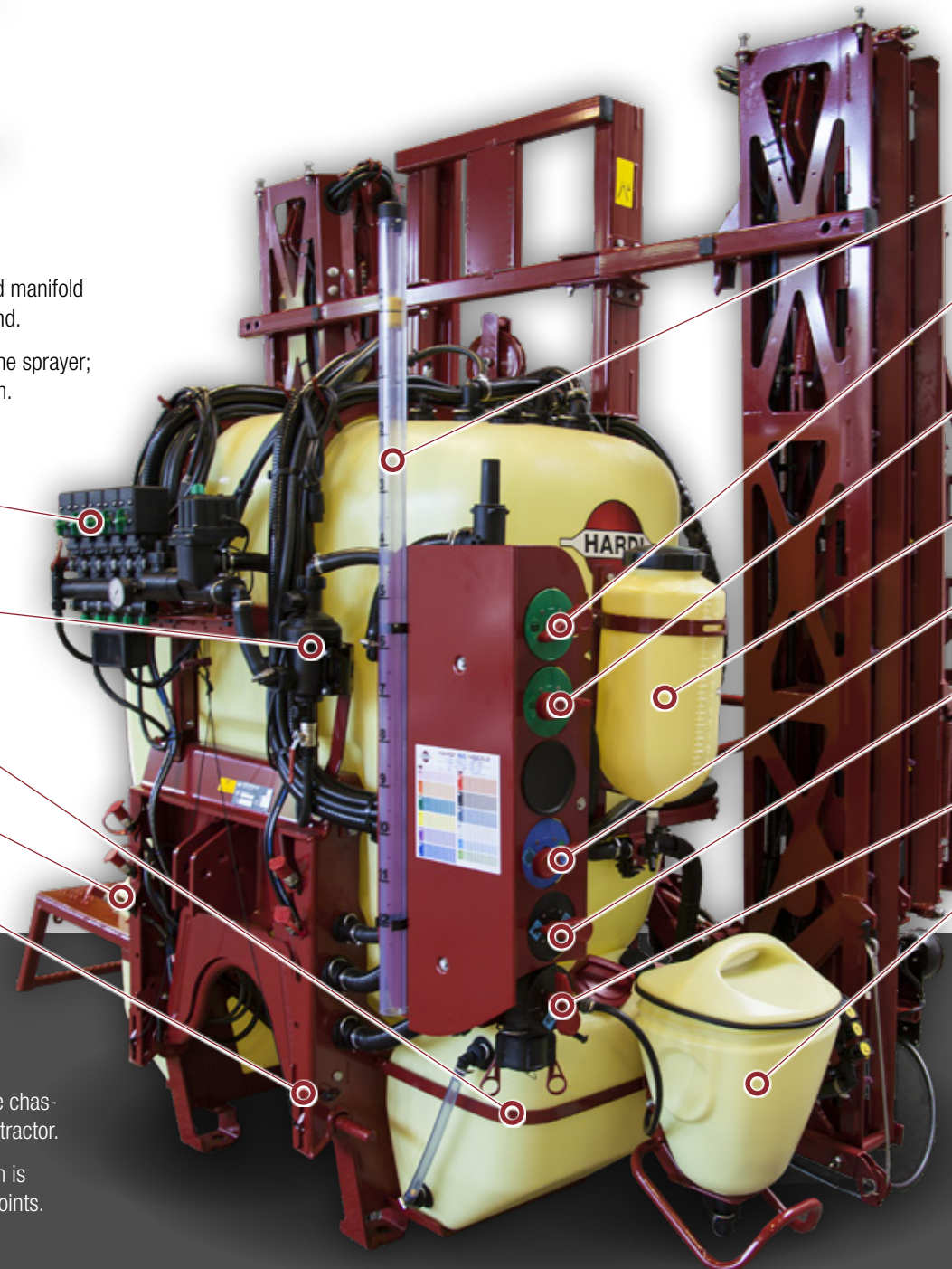
**Filling device**

**TurboFiller**

## Quick Hitch

The Quick Hitch (cat.II) is an integrated part of the chassis and ensures easy and safe attachment to the tractor.

To secure the sprayer attachment, the Quick Hitch is locked by safety hooks at the lower attachment points.



# Liquid system

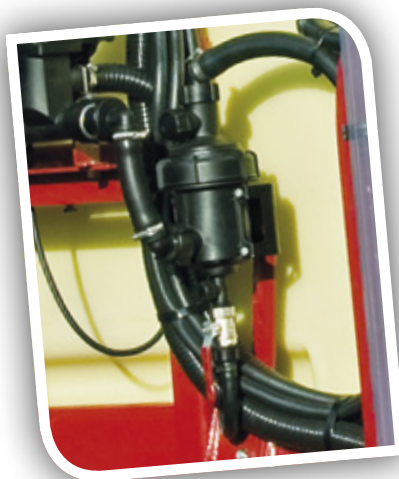
## TurboFiller

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.

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.

## Filter system

The Self-Cleaning Filter is a very important safety feature, which minimizes annoying downtime due to nozzle blockage and filter rinsing. A large and colour-coded suction filter is mounted on the main tank upper surface to allow inspection without spillage of spray liquid – even when the tank is full.



## EVC operating unit

The EVC electric controls feature remote-controlled section valves and pressure regulator. The section valves are fitted with a constant pressure device and a pressure drop line. These are features which allow the operator to shut off individual sections and maintain accurate application rates. All vital parts of the EVC control unit are completely sealed off from the liquid.

## RinseTanks

2 x 80 l RinseTanks are integrated into the sprayer's design to allow safe and efficient cleaning in the field; a very important component of good agricultural practice.

## BoomPrime

Low pressure circulation system allowing the spray liquid to circulate to the nozzles before the actual spraying starts.

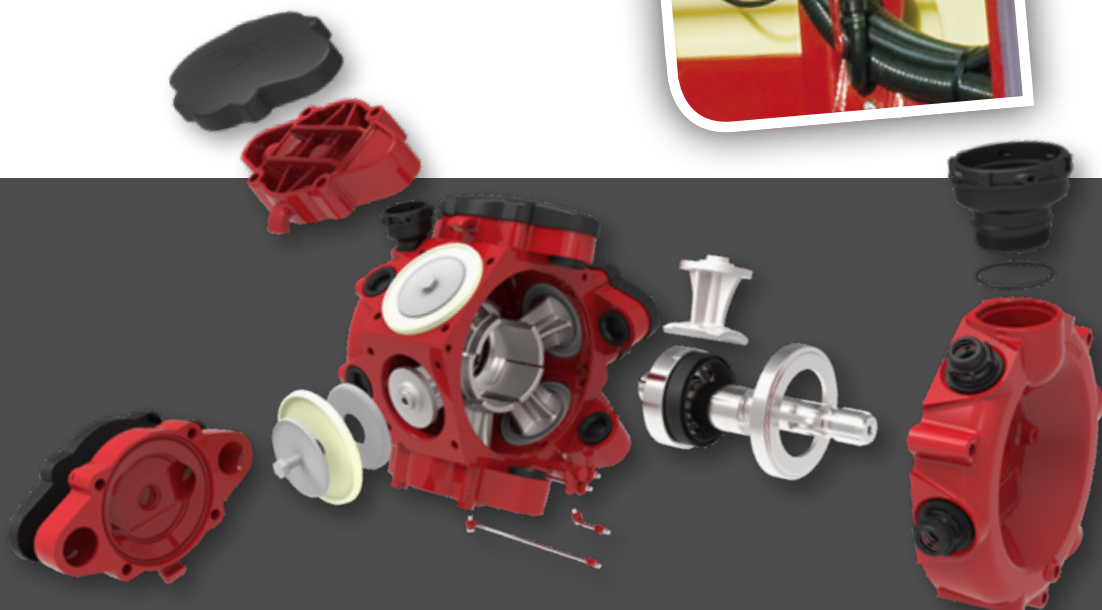


## HARDI diaphragm pumps – the heart of the sprayer

The MASTER 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





# Booms

## PRO booms

The PRO boom is designed and manufactured utilising our knowledge and experience as the world's leading sprayer specialist. The boom offers every conceivable facility to meet different spraying requirements.

The PRO VPZ booms 20 to 28 m have integrated AntiYaw damper on the boom wings. The lattice boom structure ensures a strong and rigid boom; the bases for exact and uniform spray distribution. The nozzles, spray lines and hoses are all well protected within the boom design.

The PRO boom is durable, and reinforced boom hinges ensure a steady boom in spraying position. A spring-loaded break-away section secures the tip of the boom.

## High boom lift

A long boom lift with a fast reacting cylinder and hydraulic damper allows a boom working height setting from 50 cm to 210 cm.

A hose guiding channel over the boom lift makes the MASTER plus sprayer with VPZ booms even more reliable.

## Precise folding

Due to an overtop folding mechanism of the outer boom element on the 27/28 m version, the sprayer length is equal on the 20 to 28 m version, so the centre of gravity is always close to the tractor. Also the transport height of the 24 and 28 m versions are the same.

## Electro-hydraulic operation

All boom functions on the VPZ booms from 20 to 28 m can be electro-hydraulically operated, from a compact conveniently located control panel. The primary controls, those which are most used in the field, are grouped together for ease of use, such as boom height, independent tilting of either boom section and complete boom slanting. With all other controls conveniently placed to hand, the MASTER plus is easy to operate.

## AntiYaw

The whole range of PRO booms is equipped with an AntiYaw device. The AntiYaw is incorporated into the boom on VP and on the boom centre on VH.

The anti yaw secures optimal spray application and minimizes stress on the sprayer.







### The PRO booms are available in two hydraulic versions

**Y version:** Operated by tractor hydraulic outlets – one single-acting and one double-acting outlet are required (12-18 m).

**Z version:** Operated by direct hydraulics (DH) – one double-acting outlet is required for 7 different operations. The Z version offers several facilities such as reduced folding, single-side folding and individual boom tilt.



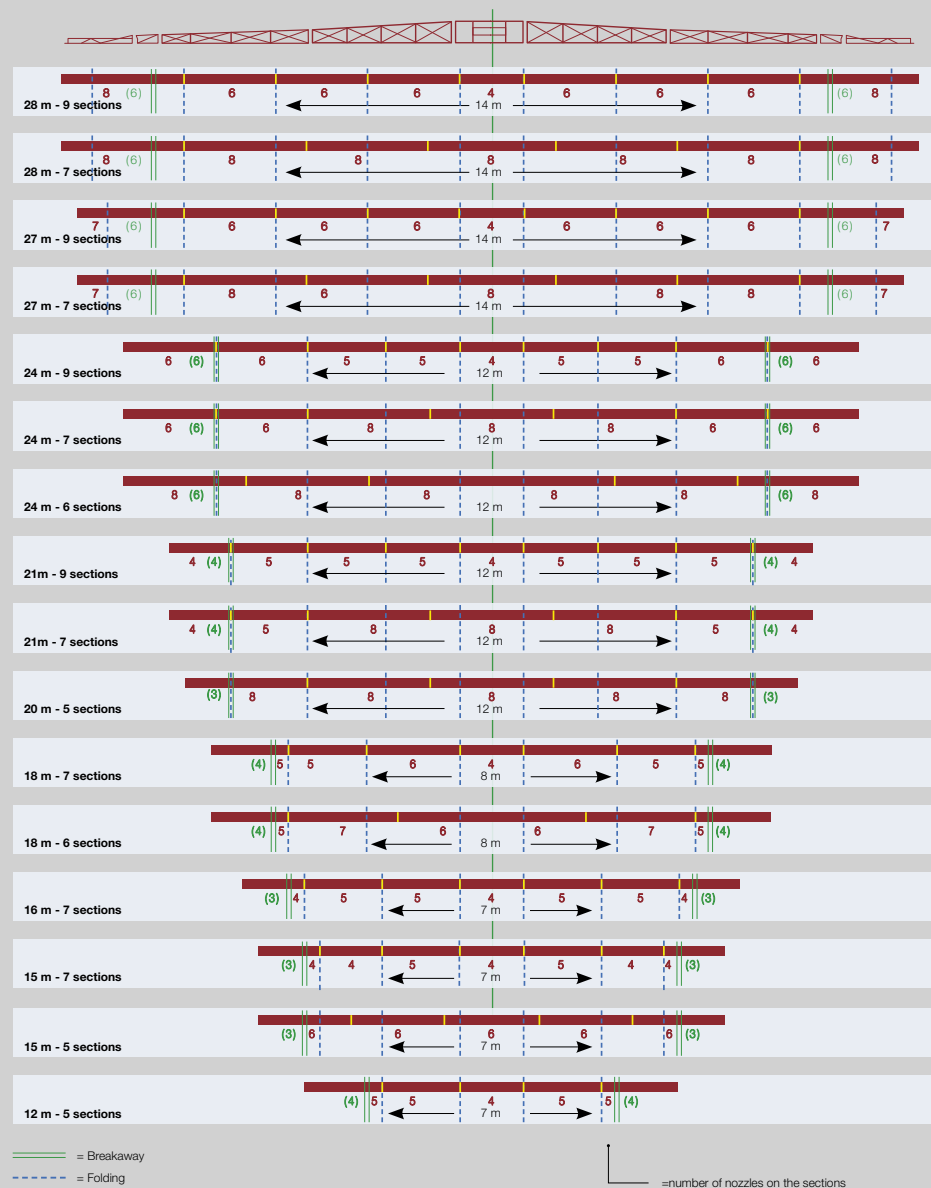
### Slim design

The slim tank design and the compact folded PRO boom ensure optimal weight distribution and tractor stability while spraying and during road transport.

### Boom sections

The vertically folded PRO boom has 2, 3, 4 or 5 segments on each boom wing.

The drawing illustrates how many nozzles each boom section has, and where the boom is folded.







# TWIN STREAM boom

*The most proven spraying system in the world*

## TWIN STREAM

The HARDI TWIN is the most proven spraying system in the world and has shown its reliability. Its unique form of air assistance provides magnificent drift control, the highest fieldwork rate with benefits of notable chemical savings.

## HARDI TWIN user survey results

The work rate of one TWIN sprayer is equivalent to two conventional sprayers.

An average of 16 % pesticide reduction compared to conventional spraying techniques.

The TWIN STREAM is available in 12 and 15 m spray widths. The angling of the air curtain and nozzles – as well as adjustment of the air speed – are important features for minimising drift and optimising coverage.



## 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

## Make money on your spraying budget ...

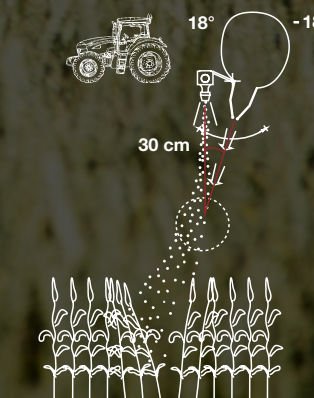
Insert your input numbers at [www.hardi-twin.com](http://www.hardi-twin.com), and it will show you just how much money you can make on your spraying budget.

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

The powerful blower unit is driven by the tractor's hydraulic system. Hydraulic boom slanting is optional, requiring one extra double-acting tractor outlet.

Angling of the spray ranges from  $\pm 18^\circ$ , and the fan blower provides  $1500 \text{ m}^3/\text{h}/\text{m}$  boom width at speeds up to  $27 \text{ m/s}$ .

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.







### Up to 100% more spray capacity

Timing is everything! The results overleaf show that during Spring 2015 the wind conditions for conventional spraying would only allow 31 days of spraying whilst using a TWIN STREAM you would gain over 45 extra days suitable for spraying. At the same time you can spray faster and have less filling time from reduced water consumption.

Increased spray opportunities, reduced drift, reduced chemical usage, accurate placement, faster spraying speed, result in improved economy! HARDI TWIN STREAM

### Save up to 30% on chemicals

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



# FrontTank



## HARDI FrontTank

The HARDI FrontTank is a good solution in order to have extra weight and increase the spray capacity.

On hilly terrain and in slope areas, or on smaller fields, a HARDI FrontTank combination is a perfect solution as a good weight distribution and an excellent maneuverability are given.

For bigger lift mounted sprayers like the HARDI MASTER 1500 and 1800 I, the tractor sometimes needs an extra front weight.

The HARDI FrontTank can be used in different set-ups. Depending on the demands, it is either a nurse tank to bring more water into the field or a second chemical tank.

The tank is made in high impact polyethylene and has a liquid free level indicator on top of the tank, which can be seen from the driver's seat.

## Agitation kit – Optional

The agitation kit takes care that the spray solution in the HARDI FrontTank is mixed well. A 12V driven robust stainless steel centrifugal pump is keeping the mixture homogeneous while the rear tank is emptied.

## TECHNICAL DATA

Tank size (net/gross)	Width	Height	Length	Weight
1200 (1260)	176 cm	84 cm	148 cm	152 kg

*The linkage is made for a category 2 front linkage.*

*The national legislations regarding axle overhang, road safety equipment and front axle load should be considered.*



# Controller

## Electronic solutions

MASTER plus can be delivered with 4 different terminals and can also be chosen as an ISOBUS ready sprayer. To make the complex sprayer operation easier, the HC 6500, HC 8600 and HC 9600 have the proven HARDI GRIP for the operation of all primary spray functions, such as ON/OFF and section switches, and the hydraulic operation can easily and safely take place by means of a joystick.

## HC 5500

The HC 5500 is very simple to use. The volume rate is automatically controlled. Pressing the “up” arrow increases the volume rate ... it is easy, quick and simple. The LogicMenu makes it easy to get vital information very quick; when pressing pre-set keys, the information appears in the large-format area of the screen.

## HC 6500

HC 6500 gives you a colour display and joystick operation. Designed specifically for sprayers, the HC 6500 will make the MASTER plus an even more obvious choice.



## HC 8600 and HC 9600

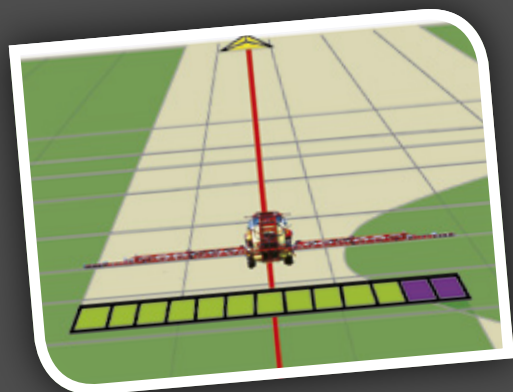
The complete integration of all important information on one work screen is a highly demanded criterion for most farmers. The HC 8600 and HC 9600 have multicolour HD touch screens that are very easy to operate while providing an optimal overview for maximum control of the spray job.

## 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.

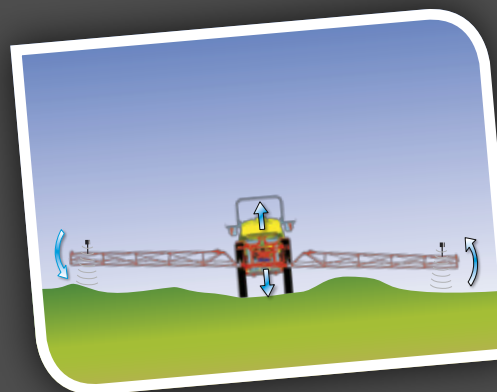
## SprayRover 570

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 touchscreen display has a resolution of 320 x 240 pixel. It can be used in 2D or 3D graphic. The SprayRover 570 offers Guidance with five different guidance modes.



## AutoSectionControl

The automatic GPS based positioning system opens and closes boom sections as the sprayer passes over areas already sprayed. Standard on HC 8600 and HC 9600 terminals.



## AutoSlant

Automatic control of boom height and slant functions of the boom.

AutoSlant is available for the vertically folded VPZ booms from 20 to 28 m. AutoSlant is integrated in the ISOBUS terminal.



# Technical specifications

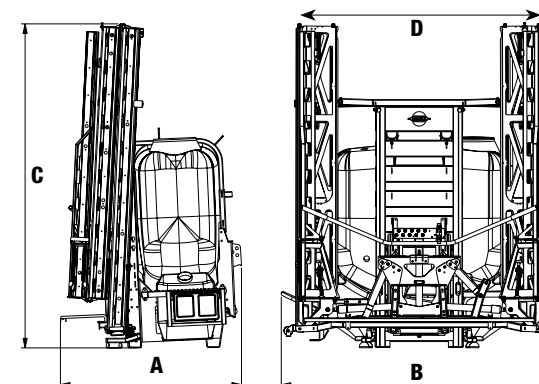
Tank size (net/gross)		1000 (1100)	1200 (1320)	1500 (1600)	1800 (1895)
Pump 1303 (114 l/min)		•	•		
Pump 364 (194 l/min)		•	•	•	•
Pump 464 (280 l/min)				•	•

## Weight, kg

PRO 12 m - 12.5 m		922	955	1077	1089
PRO 15 m - 16 m		979	1012	1134	1146
PRO 18 m		1037	1070	1192	1204
PRO 20 m		1102	1135	1257	1269
PRO 21 m		1107	1140	1262	1274
PRO 24 m		1127	1160	1280	1292
PRO 27 m				1388	1400
PRO 28 m				1402	1414
TWIN STREAM 12 m		933	966		
TWIN STREAM 15 m		1022	1055		

## Measurements, cm

	D	A x B x C	A x B x C	A x B x C	A x B x C
PRO 12 m - 12.5 m	225	153 x 253 x 271	166 x 253 x 271	183 x 253 x 271	183 x 253 x 271
PRO 15 m - 16 m	225	153 x 253 x 271	166 x 253 x 271	183 x 253 x 271	183 x 253 x 271
PRO 18 m	225	153 x 253 x 296	166 x 253 x 296	183 x 253 x 298	183 x 253 x 298
PRO 20 m	220	174 x 253 x 275	187 x 253 x 275	204 x 253 x 275	204 x 253 x 275
PRO 21 m	220	174 x 253 x 275	187 x 253 x 275	204 x 253 x 275	204 x 253 x 275
PRO 24 m	220	174 x 253 x 325	187 x 253 x 325	204 x 253 x 325	204 x 253 x 325
PRO 27 m	220		187 x 253 x 325	204 x 253 x 325	204 x 253 x 325
PRO 28 m	220		187 x 253 x 325	204 x 253 x 325	204 x 253 x 325
TWIN STREAM 12 m	260	190 x 260 x 271	203 x 260 x 271		
TWIN STREAM 15 m	260	190 x 260 x 348	203 x 260 x 348		



A = Total length in cm

B = Maximum transport width in cm

C = Total height in cm

D = Transport width boom in cm

## Optionals



SafetyLocker



Filling device



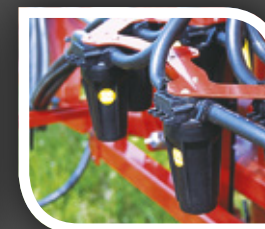
Traffic lights



External CleaningKit



Manouvering wheel kit



InLine Filters

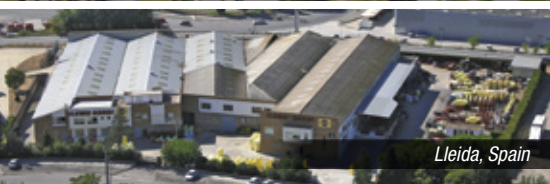


Hydraulic boom slant





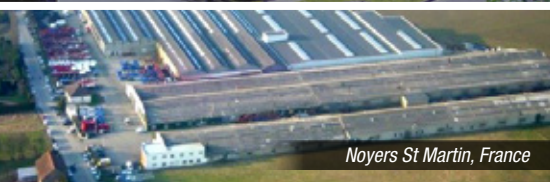
Nørre Alslev, Denmark



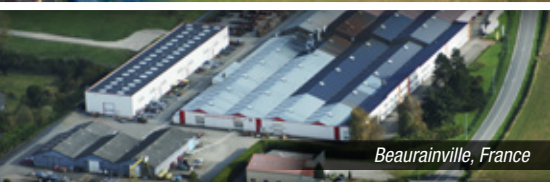
Lleida, Spain



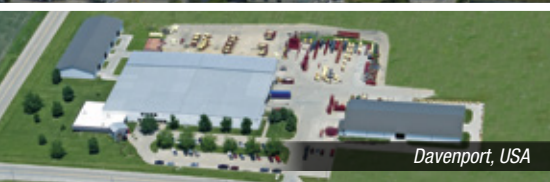
Savigny, France



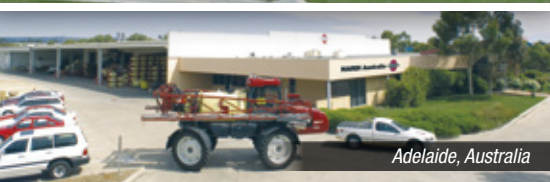
Noyers St Martin, France



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 of 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, Australia, China and EMC – Russia & CIS countries.

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.

Our staff responsible for final testing are accredited to test and document national approvals and standards from: Germany (BBA/JKI), UK (NSTS), China (CCC) and Denmark, where HARDI is approved to inspect sprayers.

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

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#HARDIsprayers