



ZENIT



■ **Compact and Efficient**



ZENIT



### **Compact and efficient**

Adapts to even the steepest hills and narrowest plantations. The liftmounted ZENIT mistblowers are available from 400 to 1,200 litres.

### **Wide range of air kits**

The HARDI sprayers offer a wide variety of fans and turbines in order to adapt the mistblower to your specific crop and working conditions.

### **Higher application performance and efficiency**

The quality of the air flow and the air volume generated allow higher forward speed without losing efficiency of the applications.

### **Solid and stable**

Chassis and tank design provide a very low centre of gravity allowing for treatments in narrow and steep working conditions.

### **Reliable and simple**

The HARDI mistblowers are designed to be robust and easy to handle. These are the demands of today's farmer.

### **Safety and ergonomics**

With the operator's safety in mind, the working zone is separated from the place where chemicals are handled.

### **Minimising the farmers' operation costs**

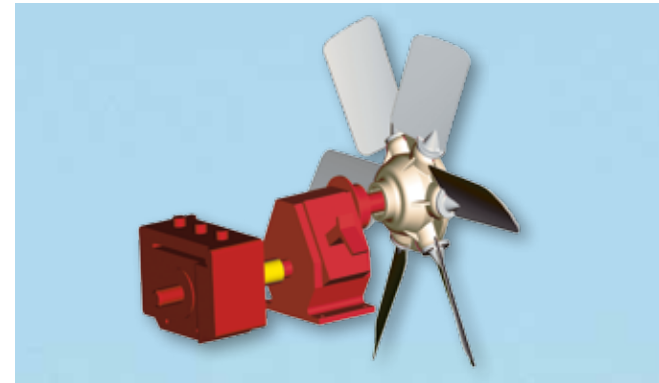
The unique power transfer system and the air kit design secure the maximum air volume with the minimum power consumption.

### **Environmental care**

Drift control is of highest importance when we design our mistblowers, and we aim to minimise the impacts to the environment as much as possible.



*Easy access and adaptation to any type of orchard*



*Minimising the farmers' operation costs*



*Many combinations of turbines and spout systems*

# CANNON



## HARDI Cannon mistblowers

HARDI Cannon mistblowers can be fitted with 3 different air spouts, all depending on the spraying tasks. The M-spout is specially developed for Christmas trees, nurseries and other low, dense crop. For tall and dense trees, such as walnuts or avocados, the T-spout in combination with the double turbine P540-D, is the ideal choice. The L-spout is suitable for medium-sized trees and horticulture.



# Nozzles and spouts

## Spouts for Cannon

ZENIT fitted with a Cannon spout is suitable for spraying in crops where access is limited, e.g. vegetables or nurseries without tramlines, greenhouses, dense plantations, very tall and dense trees, etc. The Cannon mistblowers are hydraulically operated:

Vertical movement: - 10° to + 80° and  
Horizontal movement: 180°

Choose between 3 different spouts in order to adapt the Cannon sprayer to your crop.

**L-Spout:** Suited for medium-sized forests, urban trees and horticulture. Sprays up to 15 m vertically and 20 m horizontally.



**T-Spout:** Specially for walnuts, avocados and other tall trees. Sprays up to 22 m vertically and more than 30 m horizontally.



**M-Spout:** Designed for Christmas trees, berry bushes, nurseries and other low dense crops. Sprays up to 12 m vertically and 20 m horizontally.

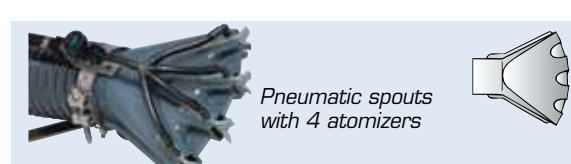
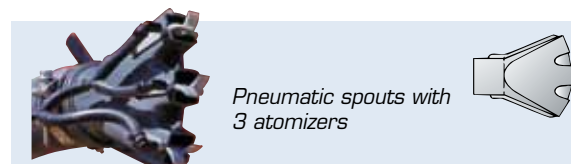
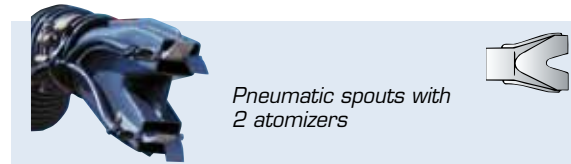
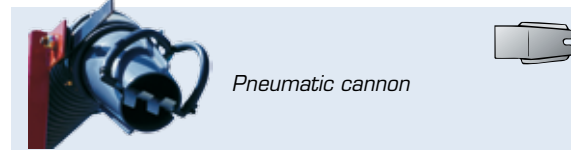
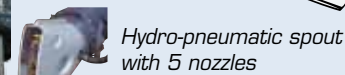
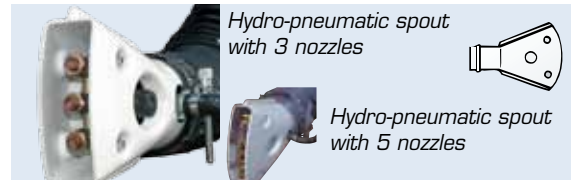


## Spouts for vine

ZENIT can be equipped with hydro-pneumatic or pneumatic spouts.

**Hydro-pneumatic system:** The droplets are formed when the liquid passes through the nozzles (working pressure: 4 to 15 bar).

**Pneumatic system:** The droplets are formed when the spray liquid is torn off by a very high-speed air stream (working pressure: 1 to 4 bar).



## Nozzles and nozzle holders



HARDI mistblowers are fitted with brass nozzle holders and can be closed individually or aimed towards the canopy. All nozzle holders feature a non-drip valve. The ZENIT is fitted with simple nozzle holders as standard. Double nozzle holders are available as optional.



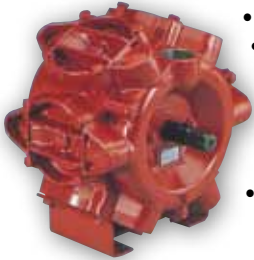
BI-JET nozzle holders are easily fitted to the existing nozzle holders when very high spray volumes are needed.

# High quality components

## HARDI diaphragm pumps, the heart of the sprayer

The diaphragm pumps are designed for the application of plant protection products.

- Self-priming.
  - Able to run dry without damage.
  - Grease-lubricated crankcase.
  - Chemical resistant diaphragms and valves.
  - Able to rotate clockwise or anti-clockwise.
- Easy to service without special tools.

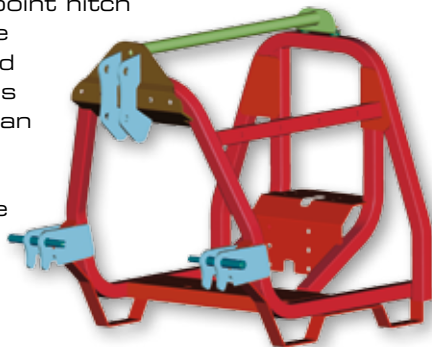


## Frame

Three-dimensional structural chassis which provides robustness and resistance to vibrations. The design and construction prevent chemical sedimentation and accumulation of dirt and thereby prevent corrosion.

For further protection against corrosion, the metallic parts are steel shot blasted, then treated with a synthetic priming coat and finally painted with a 2 component polyurethane paint.

The chassis incorporates a triple position geometry three-point hitch which enables the ZENIT to be fitted to small as well as large tractors. Can optionally be fitted with quick hitch and storage wheels.



## Power transmission

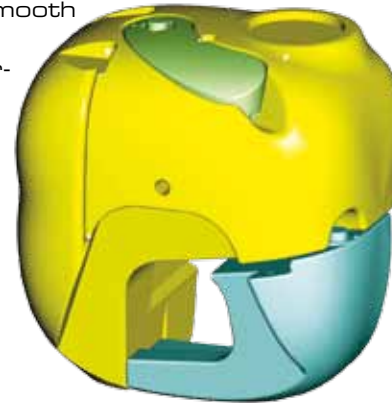
The power transmission from the tractor to the fan or the turbine goes directly through the 2-speed gear box. The air volume generated is among the highest in the market even with a very low power consumption.



The completely protected transmission system meets the strictest safety regulations.

## Tank

The ZENIT tanks are made of knockproof polyethylene and is resistant to plant protection chemicals. The smooth and round design optimises the performance of the agitation system as well as easing the tasks of filling and cleaning, always with the operator's safety in mind.



Green = Hand wash tank  
Yellow = Main tank  
Blue = Rinse tank

## Features

- Capacities: 400, 600, 1,000 and 1,200 litres.
- UV-resistant.
- Good stability as the overall design ensures a low centre of gravity.
- Main tank has an overcapacity of 5%, making filling a safe task.
- A 15 litre hand wash tank is integrated in the main tank (see picture).
- Rinsing tank and nozzle (see picture) for inside flushing and rinsing of the whole liquid system (optional).
- Tank contents indicators situated in the front and on the side of the tank.
- Large drain valve in the sump of the tank: No residues.
- Hydraulic agitation system (see picture).
- Powder mixer and bottle cleaner placed in the main filling strainer (optional).
- Tank warranty - 5 years under normal working conditions.



Agitation



Rinsing nozzle



Clean water tank

# HARDI Liquid Circuit

# ZENIT

## M70 control unit



Easy and effective manual regulation system. The M70/2 control includes main on/off valve, pressure gauge and distribution valve for 2 spray lines. A spray gun can be connected directly to the manifold.

## SV control unit



Solenoid valves operate the SV/2 control. It has two distributors that are remotely controlled. Manual pressure regulation. The SV/2 is made of brass and is fitted with a precision pressure gauge. The HARDI CONTROLLER series 3000 can be fitted as an option.

## EVC control unit



The EVC/2 has electrical remote control of all functions and is available with 2 distribution valves. The pressure regulation valve is made of stainless steel for maximum resistance to aggressive products, and the rest of the vital parts are completely sealed off from the spray liquid. The EVC unit includes pressure equalization device and pressure gauge. Maximum working pressure is 20 bar. Can optionally be fitted with a HARDI CONTROLLER.

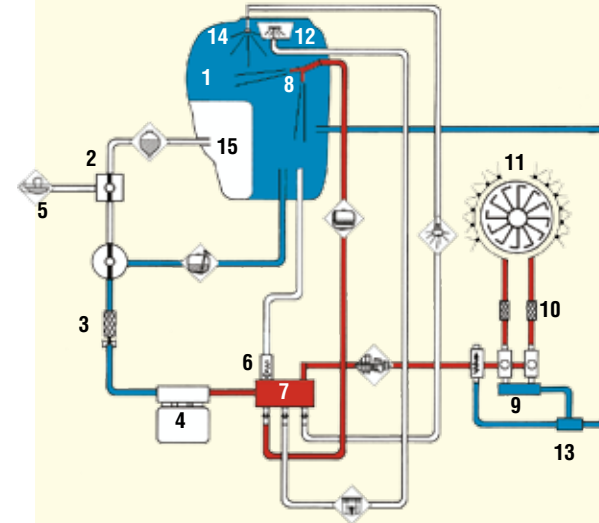
## Filters

Suction filter is fitted as standard. HARDI In-Line pressure filters can be fitted as an option to ensure continuously clean spray-liquid to avoid nozzle blockage.



## Function diagram

- |                                  |                           |
|----------------------------------|---------------------------|
| 1. Main tank                     | 9. Control unit           |
| 2. Filling valve (inter./exter.) | 10. In-Line filters       |
| 3. Suction filter with valve     | 11. Spray arcs            |
| 4. Pump                          | 12. Powder mixer          |
| 5. Inlet for Filling Device      | 13. Return manifold       |
| 6. Safety valve                  | 14. Tank flushing nozzles |
| 7. Pressure manifold             | 15. Rinse tank            |
| 8. Agitation                     |                           |



# Air Kits

HARDI Air Kits are designed by aerodynamic specialists. The Air Kits offer better air distribution, higher air flow, a lower noise level and less power consumption - all together to provide you with a first-class application.

The choice of fans and turbines adapts the ZENIT sprayers perfectly to almost any spray job.

The fan housings are made of high-impact resistant polyethylene or powder coated steel (AA). The fans are made of synthetic material with adjustable fan blades, and the turbines are made of steel. The AB750, AB820, P540 and P540D are all fitted with a centrifugal clutch (patented) that assures minimum wear to the sprayer and to the tractor.



Air kit	AA750	AA820	AB750	AB820	P540	P540D
Blower type	axial	axial	axial	axial	turbine	turbine
Air volume (m <sup>3</sup> /h)	25.000	37.000	28.000	35.000	11.000	19.000
Diameter (mm)	750	820	750	820	540 single	540 double
Gear box speeds	2 + neutral	2 + neutral	2 + neutral	2 + neutral	2 + neutral	2 + neutral
Power consumption (kW)	16	18	18	22	20	35
Liquid system	Hydropneumatic	Hydropneumatic	Hydropneumatic	Hydropneumatic	Pneumatic or hydropneumatic	Pneumatic or hydropneumatic
Deflectors / Booms	V/DT/DV	V/DT/DV	V/DT/DV	V/DT/DV	B11/B22/E20/Cannon	B11/B22/E20 Cannon



Working conditions	AA750 / AA820 / AB750 / AB820			P540 / P540D / CANNON					
	Std. / V	DT	DV	B11	B22	E20	L	T	M
H Max. height, (m)	4.0	5.0	2.1	2.5	2.1	2,1	15*	22*	12*
W Max. row width, (m)	5.0	6.0	4.0	3.5	3.2	3,2	20*	30*	20*
Rows treated	1	1	1 - 2	1	2	2	-	-	-
Hydraulic connections	-	-	-	-	1 S+2D	EI.Hy.	2D	2D	2D

\* For CANNON sprayers, "Max. height" means vertical working distance and "Max. row width" refer to horizontal working distance.

## AA

Steel fan housing with air vanes in the inlet. The AA-fans provide air volumes of between 25,000 and 35,000 m<sup>3</sup>/h.



## AB

Long fan housing with air vanes in the inlet canalising a uniform air stream to the blower. The AB-fans provide air volumes of between 28,000 and 37,000 m<sup>3</sup>/h. Possibility of adding different deflectors to the blower housing: V-deflector or DT for orchards and DV for vine.



## CANNON

The CANNON spout is designed for spraying in crops where access is limited, e.g. vegetables or nurseries without tram lines, greenhouses, dense plantations, very tall and dense trees, etc. The CANNON sprayers are hydraulically operated.



## B11

Fixed upright ideal for narrow rows (row spacing 1,2 - 2,8m). Infinitely vertically variable spout position from 20 to 180 cm above ground.



## B22

Telescopic boom with manual width adjustment. Manual or hydraulic boom fold and height adjustment. The B22 can be fitted with different spout sets to suit the particular needs of each user. Designed to be used in rows from 1,3 to 3,4 m.



## E20

Telescopic boom with hydraulic width adjustment. Hydraulic boom fold and height adjustment. The spouts at the ends of the boom are hydraulically, individually adjustable. Choose from different spout sets. The E20 boom is designed to be used in rows from 1,3 to 3,4 m.



# Specifications

## Calibration

The success of a plant protection treatment depends on three factors:

1. The right choice of plant protection chemical.
2. The right timing of the treatment.
3. The use of a sprayer that is properly calibrated.

Precision and good spraying practice are key factors for the treatment. The time used for adjusting and adapting the sprayer to the desired treatment should be considered as an investment in optimising the spraying technique, in order to:

1. Only use the necessary dose of the plant protection chemical.
2. Minimize the loss to drift.
3. Increase the quality of the crop.
4. Reduce costs.



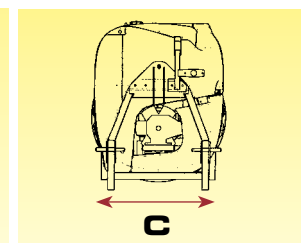
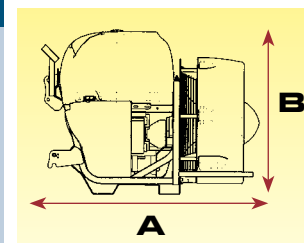
## Technical specifications

Model	ZENIT 400	ZENIT 600	ZENIT 1000	ZENIT 1200	
<b>Measures (mm) and weights (kg)</b>					
<b>AA/AB 750/820</b>	Weight empty	365	375	430	450
	Weight full	785	1005	1480	1710
	A	1660	1660	1850	1850
	B	1275	1350	1640	1770
<b>B11</b>	C	980	1200	1400	1620
	Weight empty	380	390	445	465
	Weight full	800	1020	1495	1725
	A	1660	1660	1850	1850
<b>B22</b>	B	1950	1950	1950	1850
	C	1700	1700	1700	1700
	Weight empty	460	470	625	645
	Weight full	880	1100	1675	1905
<b>E20</b>	A	1660	1660	1850	1850
	B	2500	2500	2500	2500
	C	2200	2200	2200	2200
	Weight empty	470	480	635	655
<b>Cannon</b>	Weight full	890	1110	1685	1915
	A	1660	1660	1850	1850
	B	2500	2500	2500	2500
	C	2200	2200	2200	2200
<b>Cannon</b>	Weight empty	370	380	435	455
	Weight full	790	1010	1485	1715
	A	1500	1500	1690	1690
	B	1925	2000	2290	2350
C	980	1200	1400	1620	



### Pump characteristics

	Diaphragm pumps		
	321/7	321/10	363/7
Number of diaphragms	2	2	6
rpm	540	540	540
Maximum pressure, (bar)	25	20	20
Volume (l/min)	51	73	140
Power consumption (kW)	4.0	3.0	5.4



# HARDI CONTROLLER

## HARDI CONTROLLER 2500



Spray computer for simple and easy automatic control of the application volume. You just concentrate on driving while HC 2500 takes care of your crop, maintaining the application volume constant according to the information you have preset. To be used together with EVC with SprayBox.

## HC 3400



Works as remote control box for the EVC or SV operating units. Informs you of the actual application volume. Includes the advanced ManoeuvreAssistance function. Can work with up to 4 vegetation sensors.

## VEGETATION SENSORS



Sets of 2 or 4 sensors can be added to all computers in the HC 3000 series.

The vegetation sensors automatically activate the ON/OFF valve depending on where the vegetation is.

## HARDI CONTROLLER 3000 series

This new family of spray computers has been specifically designed for mistblowers. The series comprises 3 versions:

### HC 3300

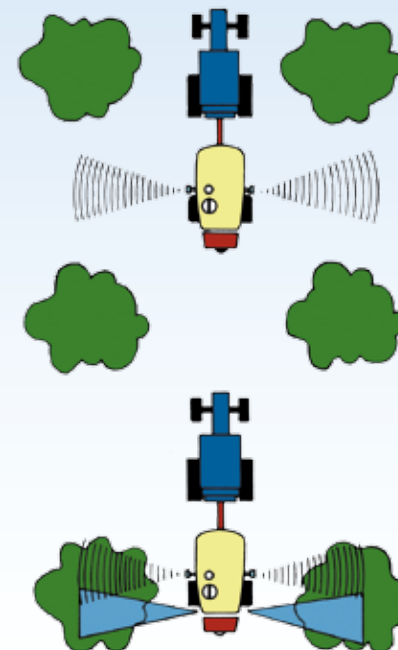


Apart from being the standard control box for electric operating units, the HC 3300 can work with a set of two or four vegetation sensors.

### HC 3500



Automatic adjustment of pressure. The HC 3500 is able to calculate application rate. Tank level indicator. Can be fitted with RPM sensor and temperature sensor. Meters for working hours, volume sprayed, hectares treated and sensor activation. Includes the advanced ManoeuvreAssistance function. Can work with up to 4 vegetation sensors.



# Optional extras



Quick hitch



Container cleaner



V Deflector



Storage wheels



DUO Deflector



Filling device



Hydraulic central lift



Electro valve kit



## HARDI Your Sprayer Specialist

### HARDI INTERNATIONAL A/S

is an international group, whose basic idea is to satisfy the user's requirements for quality products ensuring efficient, punctual and precise application of crop protection products.

Our worldwide distribution and sales network comprise more than 100 countries where we are represented by importers, agents and sales subsidiaries. Our sales subsidiaries are situated in Sweden, Norway, Denmark, the UK, France, Spain, North America, Germany and Australia.

### More than 50 years of spraying

HARDI was founded in 1957. In 2007 the company joined EXEL Industries, which has a group turnover of approx R450 million and employs 2800 people. EXEL Industries is world leader in spraying technology.

EXEL Industries is represented in three major spraying areas: Industry (spray guns and paint application equipment), General Public (hand-operated sprayers for gardening) and Agriculture (field, orchard and vineyard sprayers)



### HARDI INTERNATIONAL A/S

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Illustrations shown may include optional extras and accessories.



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Nørre Alslev, Denmark



Spain



France



USA



Australia