



■ **High quality and advanced technique**

MERCURY/ARROW
VINE



**The most extensive
range of sprayers for
protecting vine**



Model	Capacity	Treatment System	Pump	Deflectors or Booms
ARROW	1000	Pneumatic or Hydro-pneumatic	Diaphragm	DUO B10 (manual) B20, B30 (man. or hydrau.) B40 (hydraulic)
ARROW	1500			
MERCURY	2000			
MERCURY	2300			
MERCURY	3000			
MERCURY	3500			



Wide range of tank capacities

HARDI's trailed vineyard sprayers are available with tank sizes from 1000 to 3500 litre.

Wide range of air kits

You can choose from a large variety of HARDI's fans and turbines in order to adapt the sprayer to your specific crop and work conditions.

Wide range of deflectors and booms

The DUO deflectors are available for all ARROW and MERCURY sprayers with axial fan. To obtain an optimum treatment of your crop, there are 4 types of booms with more than 20 combinations of air spouts to choose from.

Better application performance and efficiency

The quality and the volume of the generated air flow improve the over-all performance of the machines. You can treat at a higher forward speed and still obtain first-class penetration and efficiency of the application.

Reliable and simple

The design of the HARDI sprayers will meet your demands: A robust machine that is easy to use.

High safety standards

With the operators' safety in mind, all areas that are exposed to chemical products have been placed at the rear part of the machine.

Minimised off-target application

Drift and re-circulation of the air are kept to a minimum, thanks to the design of the air kits and nozzle placement.



Compact, trailed sprayer with a large series of features



Wide range of machines to choose from to suit every grower's particular needs

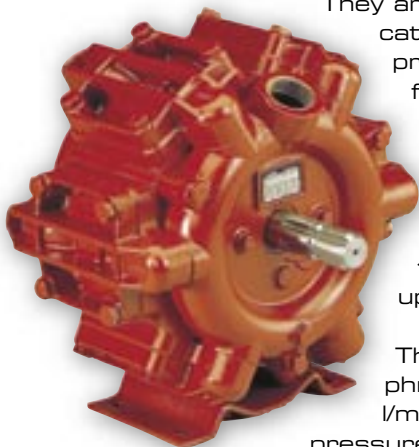
High quality components for your next sprayer

HARDI diaphragm pumps, the heart of the sprayer

They are designed for the application of plant protection products and can be used for distribution of liquid fertilizer as well.

Model 363 features 6 diaphragms. Volumes range from 140 to 195 l/min and pressure up to 20 bar.

The 321 pump has 2 diaphragms. Output is 70 l/min and the maximum pressure is 25 bar.



For further protection against corrosion, the manufacturing process of 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 jack wheel, wheel scrapers and a non-slip footstep that can be folded up when not used.

Features

- 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

The chassis is made of special UPN steel profiles providing robust durability and resistance to vibrations. The design and construction prevent accumulation of dirt and thereby prevent corrosion.

Axle

There is a wide range of fixed and adjustable axles available for the trailed HARDI sprayers. Together with the many wheel types, they place the HARDI sprayers amongst the most versatile machines in the market. The sprayer can be adapted to suit the terrain to the maximum by means of adjusting the wheel distance. Further, the axles can be moved forwards or backwards in order to change the centre of gravity of the sprayer and thereby increase maximum stability of the sprayer.



Drawbars

Four types of drawbars are available: With Ring hitch, with Fork hitch or a Articulated drawbar (stand and or Heavy Duty version). All drawbars are adjustable in length.



Ring hitch drawbar



Fork hitch drawbar



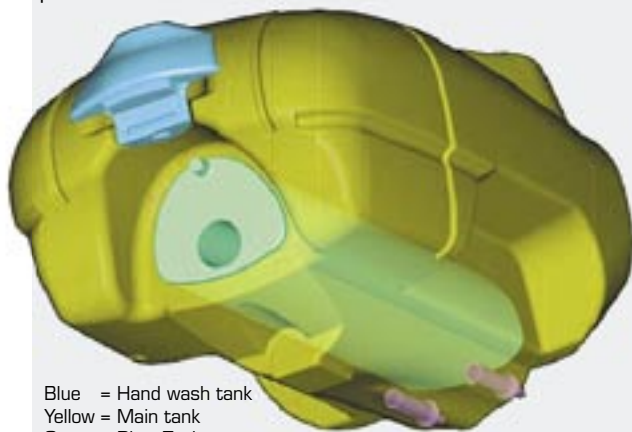
Articulated drawbar



Heavy Duty drawbar

Tank

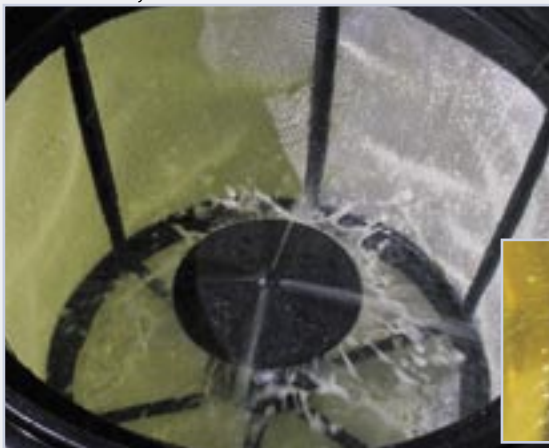
The tanks are made of rotational moulding polyethylene, it has well-known properties such as resistance to shocks and plant protection chemicals. The smooth and



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

rounded design optimises the performance of the agitation system as well as easing the tasks of filling and cleaning.

Powder Mixer system



Features:

- Capacities: from 1000 to 3500 litre
- UV-resistant
- Good stability as the over-all 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 situated at the front, "the safe zone"
- Rinse Tank and Tank Flush Nozzles for inside cleaning and rinsing the entire liquid system. Available only with the "Full" models
- Tank contents indicators situated in the front and on the side of the tank
- Large drain valve in the sump of the tank. Remote actuated from the top of the tank, to avoid worker exposure.
- Venturi agitation with high effect
- Powder mixer placed in the main filling strainer
- MERCURY sprayers have an integrated locker for tools and spares
- Smooth and rounded tank shape without projections (hoses, lids, etc.) to avoid crop damage
- Tank warranty - 5 years under normal working conditions

Tank Flush Nozzle



Air kits

The air kits are our secret to give you first-class application. Designed by aerodynamic specialists, the air kits have better air distribution, a lower noise level and lower power consumption.



The ARROW and MERCURY sprayers can be adapted to all types of plantation systems, thanks to HARDI's full range of air kits.

The fans and turbines are made of steel and aluminium and incorporate a centrifugal clutch (patented) that assures minimum wear to the sprayer and to the tractor.



Ensuring precise control of your application volume

EVC control unit

This unit has electrical remote control of all functions and it is available with 2 or 4 distri-



bution 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.

The "Full" version of the MERCURY F and ARROW sprayers is fitted with colour coded MANIFOLD valves that make the operation of liquid circuit, including the Rinsing Tank and Tank Flush Nozzles, a simple and easy task.

In-Line Filters

HARDI In-Line Filters are fitted to ensure continuous clean spray liquid, and avoid nozzle blockage.



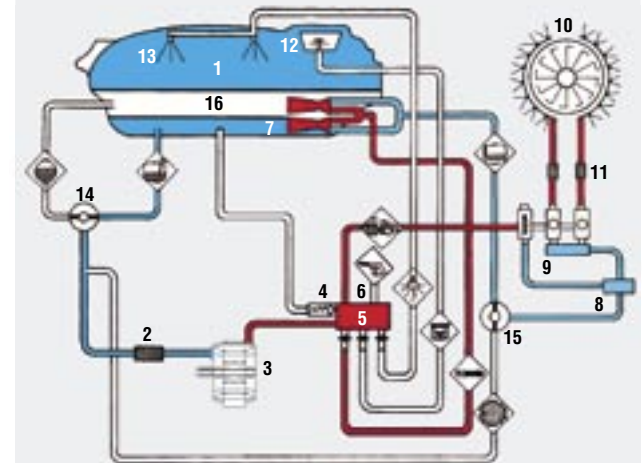
CC/2 control unit

The manual control unit features 2 ON/OFF sections. Each section is activated by a cable control, which is situated in the tractor for easy, safe and smooth operation. The CC/2 includes HARDI-MATIC pressure regulation, pressure equalization device and pressure gauge. The maximum working pressure is 20 bar.



Function diagram

1. Main tank
2. Suction filter
3. Pump
4. Safety valve
5. Pressure manifold
6. Valve for spray gun
7. Venturi agitation
8. Return manifold
9. Control unit
10. Spray arcs
11. In-Line Filters
12. Powder mixer
13. Tank Flushing Nozzles
14. Suction valve
15. Return valve
16. Rinse Tank

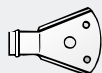


Hydro-pneumatic system

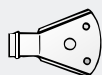
The droplets are formed when the liquid passes through the nozzles. Droplet size: Small to medium. Pressure range: 4 to 25 bar.



Spout with 5 nozzles



Spout with 3 nozzles



Nozzles



1099
Ceramic disc



1299
Ceramic hollow cone nozzle



1553
Syntal hollow cone nozzle



5131
Syntal hollow cone nozzle

Pneumatic system

The droplets are formed when the spray liquid is torn off a shear plate by a very high-speed air stream. Droplet size: Very fine. Pressure range: 1 to 4 bar



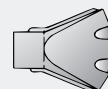
Canon



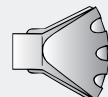
Spout with 2 atomizers



Spout with 3 atomizers

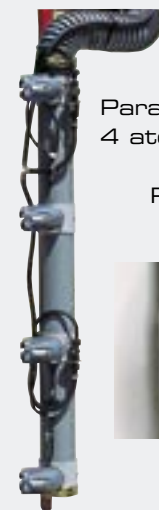


Spout with 4 atomizers



Paraflow

The droplets are formed when the spray liquid is torn off a shear plate by a very high-speed air stream. Droplet size: Very fine. Pressure range: 1 to 4 bar

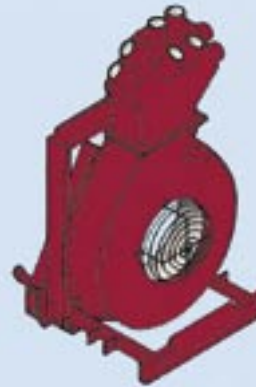
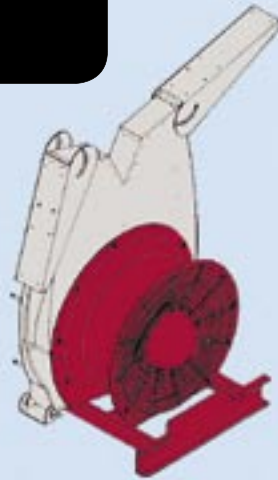


Paraflow tube with 4 atomizers

Paraflow tube with 6 atomizers

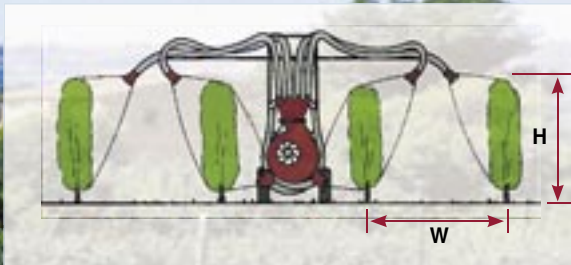


HARDI has a solution for your type of plantation system



Air kit	DUO	P540	P540-D	HF600
Blower type	axial	turbine	turbine	turbine
Air volume, (m ³ /h)	35-85,000	11,000	19,000	27,000
Diameter, (mm), Single/Double sided	750-920 single	540 single	540 double	600 double
Fan material	aluminium	steel	steel	aluminium
Gearbox speeds	1 or 2 + neutral	2 + neutral	1 + neutral	2 + neutral
Power consumption, (kW)	30-66	21	37	22
Adjustable fan blades	♦	♣	♣	♣
Centrifugal clutch	♦	♦	♦	♦
Liquid system	Hydro-pneumatic	Pneu./Hydro-pneu.	Pneu./Hydro-pneu.	Hydro-pneumatic
ARROW	♦	♦	♦	♦
MERCURY	♦	♦	♦	♦
Deflectors / Booms	DSV / DHV	B10-B20	B20-B30-B40	B40

♦ Standard ♣ Not available



Working conditions	DUO ^{DST/DHT}	DUO ^{DSV/DHV}	B10	B20	B30	B40
H Max. height, (m)	4.00	2.10	2.50	2.10	2.10	2.20
W Row width, (m)	2-4	2-4	1.9-3.5	1.9-3.2	1.9-3.2	1.9-3.5
Rows treated	1	1-2	1	2	2-3	2-3
Hydraulic connections	-	-	-	1S+2D	1S+2D	2S+2D
Electro-hyd. controls	-	-	-	-	-	1S+1D

DUO DST/DHT

The DUO deflectors, made of stainless steel, can be fitted to all ARROW and MERCURY sprayers with axial fan. For vine planted in trellis formation. Able to treat one complete row.



DUO DSV/DHV

The DUO deflectors, made of stainless steel, can be fitted to all ARROW and MERCURY sprayers with axial fan. For vine planted in head pruned or trellis formation. Able to treat two complete rows.



B10

Multi-tube system fitted to a fixed upright. Can be used together with both pneumatic and hydro-pneumatic spouts.



B20

Telescopic boom with break-away. Ideal for vine planted in bench terraces. Available in a manual and a hydraulic version. The hydraulic version, B20H, has hydraulic height adjustment and hydraulic fold/unfold.



B30

Telescopic boom with break-away. Available in a manual and a hydraulic version. The hydraulic version, B30H, features hydraulic height adjustment and hydraulic fold/unfold.



B40

Reinforced boom with suspension and individual hydraulic inclination of left and right boom side. Ideal for treatments in vineyards situated in hilly terrain. Hydraulic folding and unfolding of the booms. Hydraulic height adjustment is optional.



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 sprayer that is properly calibrated



Precision and good spraying practice are key factors for 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

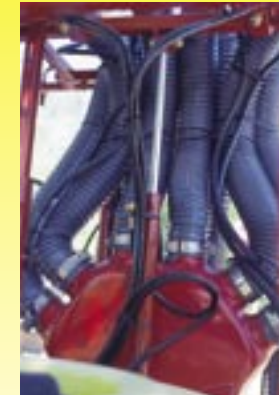


Optional extras

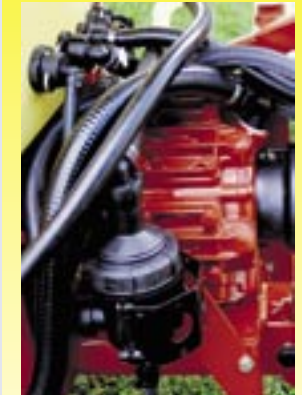


HARDI MONITOR 1500
Informs you of the actual application volume. Easy manual adjustment of working pressure.

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 values you have preset.



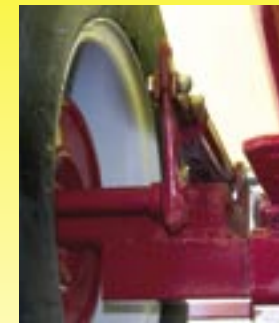
Hydraulic lift for B20 and B30



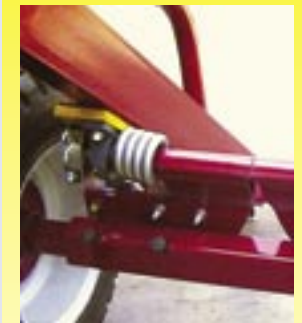
Self-Cleaning filter



HARDI CONTROLLER 5500
Spray computer for automatic control of the application volume. The big screen with 4 line read-out gives you all the information you need all the time. Easy to use. Includes UCR (Unit Canopy Row), which gives you the opportunity to apply the spray liquid in function of the volume of the vegetation to be treated.



Hydraulic brakes



Wheel suspension

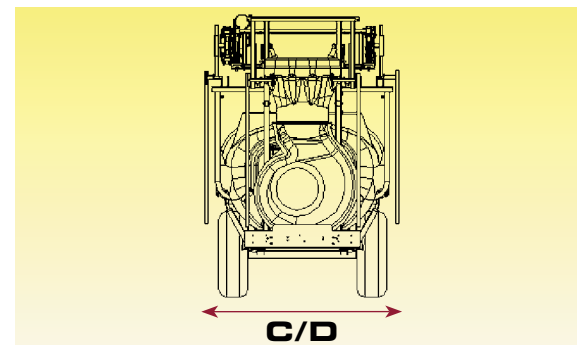
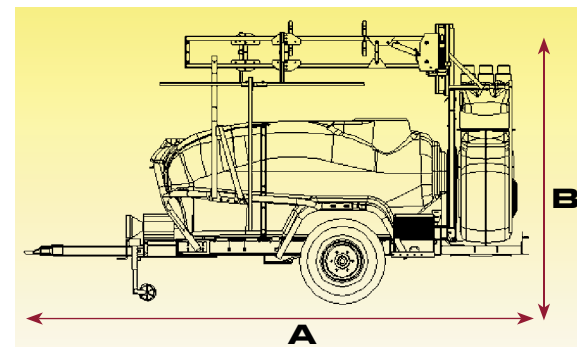


Electro-hydraulic control for B40

Technical specifications

Model	ARROW 1000	ARROW 1500	MERCURY 2000/2300	MERCURY 3000/3500	
Measures (mm) and Weights (kg)					
DUO	Weight	590	650	880	1120
	A	3620	3870	4340	4520
	B	2170	2220	2050	2170
	C	*1000	1200	1450	1650
	D	1000	1200	1450	1650
B10	Weight	570	630	860	1100
	A	3300	3550	4020	4190
	B	2150	2150	2500	2620
	C	*1000	1200	1450	1650
	D	1500	1500	1500	1650
B20	Weight	730	790	1020	1260
	A	3350	3600	4070	4240
	B	2300	2350	2540	2660
	C	1000	1200	1450	1650
	D	1400	1400	1450	1650
B30	Weight	740	810	1030	1270
	A	3350	3600	4070	4240
	B	2300	2350	2540	2660
	C	*1000	1200	1450	1650
	D	1400	1400	1450	1650
B40	Weight	920	980	1210	1450
	A	3720	3970	4440	4600
	B	2600	2650	2880	2900
	C	*1000	1200	1450	1650
	D	2100	2100	2100	2100

A = Total length. B = Total height. C = Total tank width. D = Total transport width
 * = Standard wheel width total 1200 mm, on special request 1000 mm.



Pump characteristics

Model/stroke, (mm)	321	363/7	363/10
Number of diaphragms	2	6	6
Maximum revolutions, (r/min)	540	540	540
Maximum pressure, (bar)	20	20	15
Volume, (l/min)	70	140	194
Power consumption, (kW)	3,0	5,4	6,2
Lubrication	grease	grease	grease



HARDI – A global specialist in crop protection

HARDI INTERNATIONAL A/S is an international group whose basic idea is to satisfy the user requirements for quality products ensuring efficient and responsible application of crop protection products.

With production and development at 5 locations throughout the world and a worldwide distribution and service network, we maintain our global dominance through continuous research and development and constant focus on quality end user needs.

MISSION

To promote efficient and responsible plant care in order to support quality plant growth and food production



HARDI product development

Throughout the development of new HARDI sprayers, all items are structurally analysed utilising state of the art engineering software. The 5 development centres throughout the world work closely together in order to meet local demands and profit globally from our local presence. All developments undergo a tough internal testing both on test tracks and actual in-field conditions.

HARDI innovation

With our focus on research and development we have registered a large amount of significant patents. Being the trend-setter in the industry, we continue our dedicated research in application technology.



HARDI quality

Investments in our state of the art production facilities are continuous, ensuring the ongoing optimisation of production processes. HARDI produces 90% of all components in order to ensure quality and optimal performance.



HARDI service and support

A key point in our distribution and sales support is a thorough and detailed training of dealer and service staff. We hold a large number of training courses on our premises. We use the latest technology in the distribution of information like PC and Internet technologies. Because of our size and global presence with local distribution, spare parts and information can be provided anywhere in the world.

Internationalisation

HARDI products are sold throughout the world in more than 100 countries. We have factories in Denmark, France, Spain, Australia and North America. Further we have sales subsidiaries in England, Sweden, Norway, Germany and Canada. All these countries are handled by a net of highly educated and committed dealers. Thanks to this global presence with local distribution, you can obtain information and spare parts from HARDI anywhere in the world.

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HIA-MARKETING
GB-893811-01-2004



HejeTaastrup, Denmark



Nørre Alslev, Denmark



Spain



France



USA



Australia



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