



ARROW



- **A New Generation of Vineyard and Orchard Sprayers**

## 3 Different Fan Configurations

A new standard for value and performance.  
We dare you to compare!



*ARROW 270 with 16" centrifugal fan SPV*

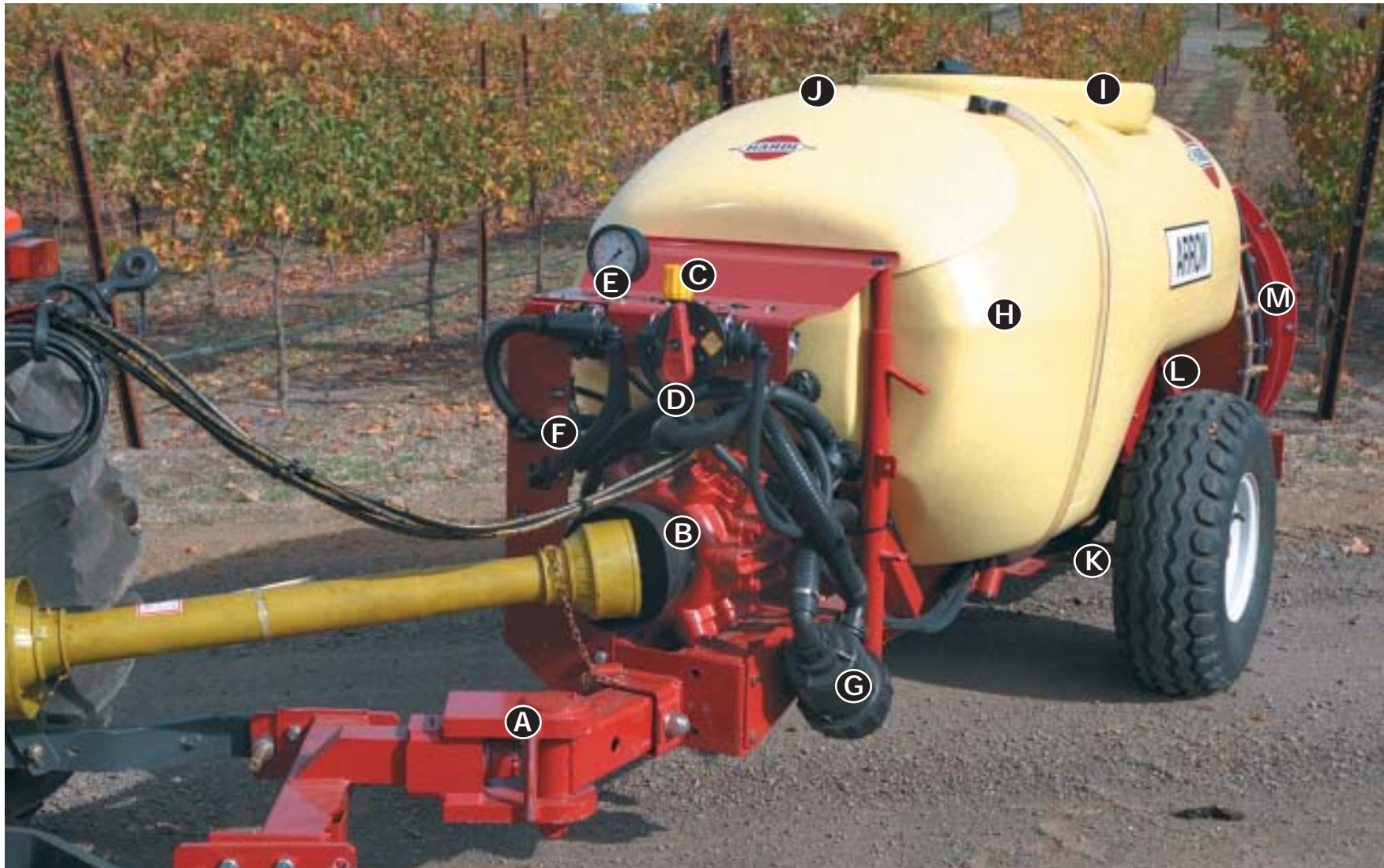


ARROW

*ARROW 270 with 22" centrifugal fan & 2-row grape boom*



*ARROW 270 with 30" Super Flow axial fan*



- A. Adjustable swivel or turnable hitch.
- B. HARDI® heavy duty self-priming pump.
- C. Pressure regulator.
- D. Adjustable agitation and mixing.
- E. Large 4" glycerin filled gauge.
- F. Hydraulic spray controls.
- G. Easy access filters.
- H. 270 gallon compact polyethylene tank.

- I. 4 gallon clean water tank.
- J. Remote tank drain.
- K. Adjustable axles.
- L. 1-speed gearbox
- M. 3 different fan configurations:
  - 30" Variable pitch axial fan
  - 16" Centrifugal fan SPV with 10 spouts
  - 22" Centrifugal fan with 2-row grape boom

# ARROW

## Fluid system

The HARDI® fluid system is designed for safe, simple and precise everyday use. The simple design has eliminated the need for any belts or chains, minimizing the risk for a mechanical breakdown.

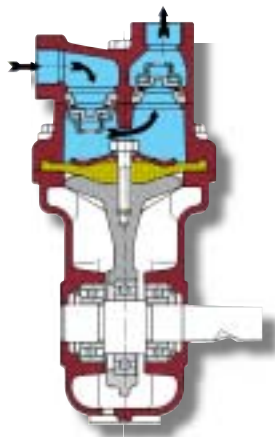
## Pump



The HARDI® diaphragm pumps are designed for the application of crop protection products and liquid fertilizer. The ARROW is standard equipped with the HARDI® 363 HEAVY DUTY PUMP. The 363 HD is specially designed for the abrasive chemicals used in orchard and vineyards. HARDI® offers a 5 year prorated warranty on all pumps.

### The HARDI® diaphragm pumps are:

- Self priming
- Able to run dry with out damage
- Easy to service
- Grease lubricated (dry crank case)
- Mounted with chemical resistant diaphragms and valves.
- Positive displacement feature provides a high level of accuracy.
- Drain hole allows chemical to drain out in case of diaphragm failure.



## Pressure regulator.

The pressure regulator is centrally located for easy calibration and allows for simple change of application rates. Furthermore, it provides the operator with excellent droplet size control. The 4" pressure gauge is easy to read from the ground or the tractor.



## Remote hydraulic spray controls

The ARROW is equipped with 2 hydraulic valves for left and right on/off. This allows the sprayer to be controlled using the tractors hydraulic outlet. This simple and reliable solution eliminates the need for cables, chemical filled hoses or wires in the cab.

*Note: Requires 2 double acting hydraulic tractor outlets.*



## Agitation

The HARDI® engineered tank design combined with the unique dual stage agitation provides the operator with the most flexible and reliable tank mixing system on the market.

HARDI® dual stage agitation gives the operator the choice of slow moving agitation for foaming chemicals or aggressive fast moving agitation for hard to mix chemicals like most powders.

The large ball valve on the front of the sprayer controls the mixing of the chemical in the filter basket and the dual stage agitation.



*The filtration system is a two-stage process.*

The first filter is the oversized suction filter. The primary role of the suction filter is to protect the pump from damage. The suction filter has a built-in automatic shut off valve, allowing the operator to clean and service the filter with a full tank.

The second filter is the pressure filter. The pressure filters provide a clean flow of liquid to the nozzles.

Both filters can be serviced and cleaned without the use of any tools. The built-in clean water tank provides easy in-field maintenance of all filters.



### *Nozzles*

The nozzle is the most critical part of any sprayer. The ARROW is therefore standard equipped with color coded ceramic hollow cone nozzles on all fan models. This ensures easy calibration and accurate application rates. On axial fans, the nozzles are mounted on single nozzle holders with integrated non-drip valves. Within minutes the operator can change application rate when needed and the non-drip valves ensure that no spraying is done while turning at the end of the row.

The wide selection of ceramic nozzles gives the operator excellent control over application rates and droplet sizing, ensuring maximum coverage with a minimum of drift.

## Superior tank design.



The remote operated tank drain valve ensures safe and easy tank emptying.

Large sump for complete emptying



HARDI® uses polyethylene for tank manufacturing. Polyethylene offers a number of key advantages compared with other tank materials. Polyethylene is extremely strong and flexible ensuring that the tanks can withstand any kind of vibration. The use of polyethylene gives HARDI® the capabilities to design tanks that are very compact, narrow, and molded in specific shapes to optimize overall design and performance. The tanks are designed to rest on the frame in their full length. They are held in place by the front sub-frame and fan assembly, eliminating the need for tank straps.

All HARDI® tanks are made of seamless UV protected polyethylene.

They are specifically designed to resist abrasive chemicals and liquid fertilizers used in agriculture all over the world.

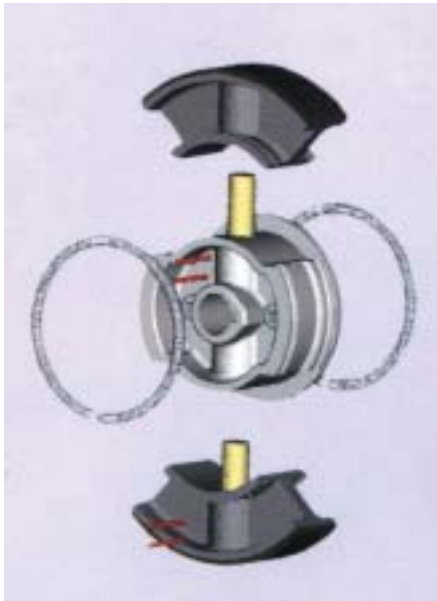
All tanks are puncture resistant, and designed with large deep sumps for optimal pump priming, cleaning, agitation, and complete emptying on slopes and side hills. **They carry a 10 year limited warranty!**

- Very narrow tank design for row spacing from 7'
- Good stability - Striking tank design with excellent weight distribution.
- Compact – the compact tank design allows more liquid to be carried in the field.
- Minimal tree damage - Rounded front to minimize tree damage.
- Good agitation – The design optimizes agitation in order to keep a uniform mixture.
- Easy to empty – A large deep centrally positioned sump empties the tank completely, even on slopes up to 15° inclination.
- Clean water tank – An integrated 4 gallon clean water tank is located next to the main tank lid.
- Self-supported – No straps or fittings used for attachment.
- Easy drain – 2" remote operated tank drain valve for quick and safe emptying of the tank solution.
- Easy fill – off center tank lid for easy filling and mixing.



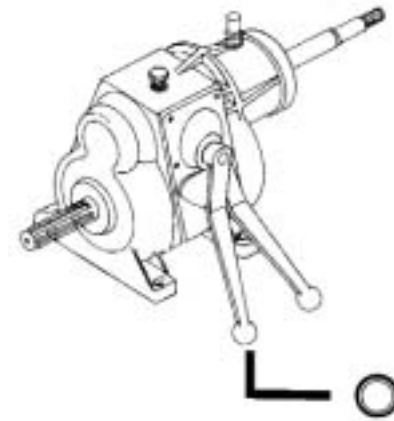
### Patented centrifugal fan clutch

The fans are engaged via an over-running centrifugal clutch in order to provide smooth fan acceleration. The clutch helps protect the tractor, the drive lines, the pump and gearbox from the extreme torque peaks created when the sprayer is engaged very abruptly.



### Gear Box

The ARROW is equipped with a heavy duty 1-speed gearbox with neutral position as standard. The gearbox has remote oil filling for easy maintenance.



## SPV

The ARROW SPV sprayer is designed for use in vineyard, berry bush and small trees up to 12' (3.5m) tall with row spacing from 8' to 14' (2.4m-4.3m).



The ARROW SPV is equipped with a 16" (400mm) centrifugal fan with 10 equally sized spouts. The air flow is evenly distributed through the air hoses providing a uniform conical air flow.

The spouts are fully flexible and individually adjustable, allowing air and spray to be directed precisely to the target area. This provides a better and more uniform coverage with a minimum of loss to the surrounding environment.





10 ceramic color-coded hollow cone nozzles are standard. The nozzle holders have a built in non-drip diaphragm check valve. Each nozzle can be turned off individually by exchanging the nozzle with a plug.

The nozzles will create small or large droplets depending on the fluid pressure and are suitable for application rates from 20-350 GPA (200-3,200 L/HA).

For accurate calibration, HARDI® calibration equipment and HARDI® water sensitive paper (893211 - 50 pcs.) is available.



# ARROW

## 2-Row Grape Boom



The ARROW 2-row grape boom sprayer is designed for use in vineyard and berry bush for the application of crop protection pesticides in most trellis systems with 7' - 12' (2.0m-3.5m) rows.



## 2-Row Grape Boom

The ARROW 2-row grape boom is equipped with a 22" (540mm) centrifugal fan. It is equipped with 8 fully adjustable SPV-style spouts (each with 3 color coded ceramic hollow cone nozzles), and 8 equally sized air hoses. This allows for a precise and uniform spray coverage with a minimum of loss to the surrounding environment. The system is very flexible, covering application rates from 20-350 GPA (200-3,200 L/HA). The air and spray can, because of the adjustable air spouts, be directed towards any part of the canopy, making this the most precise application system on the market.



# ARROW

## 2-Row Grape Boom

For ultra-low volumes, optional pneumatic spouts can replace the standard SPV-style spouts. The pneumatic system uses low liquid pressure and high air speed to atomize the spray liquid. A ceramic metering disc is located in the feed hose to each pneumatic spout. Each feed hose also has a built in non-drip diaphragm check valve. The pneumatic nozzles produce "Very Fine" to "Fine" droplets ensuring good coverage even at ultra low volumes. Pneumatic nozzle spouts are suitable for application rates from 10-50 GPA (100-500 L/HA).



## 2-Row Grape Boom

The 2-row grape boom is designed to give you greater capacity, more flexibility, and better reliability than any other system on the market.

The standard boom has manual boom height adjustment and manual wing fold. With a few infield adjustments the boom can be adapted to most trellis systems in 7'- 12' (2.0m-3.5m) rows. The boom is equipped with two break-away sections, thereby minimizing the risk of a break-down, in case of an accidental encounter with trees or fence poles, etc.

The boom can be quipped with an optional 3-cylinder hydraulic kit, which requires 3 double acting hydraulic tractor outlets. This will provide hydraulic boom height adjustment and individual hydraulic left/right boom wing fold.



# ARROW

### *Super Flow Axial Fan*

The HARDI® SUPER FLOW fans are designed in collaboration between HARDI® engineers and leading aerodynamic research specialists. HARDI® has used the latest high tech engineering tools and computer simulations to design and test this new generation of fans. Because of the extensive research HARDI® has developed the most efficient fan ever offered on a sprayer. The fan will move more air with less power than any other fan on the market. The uniformity of the air distribution is equally important, and the fan is therefore designed with a smooth fiberglass fan housing with as few restrictions of the air flow as possible.

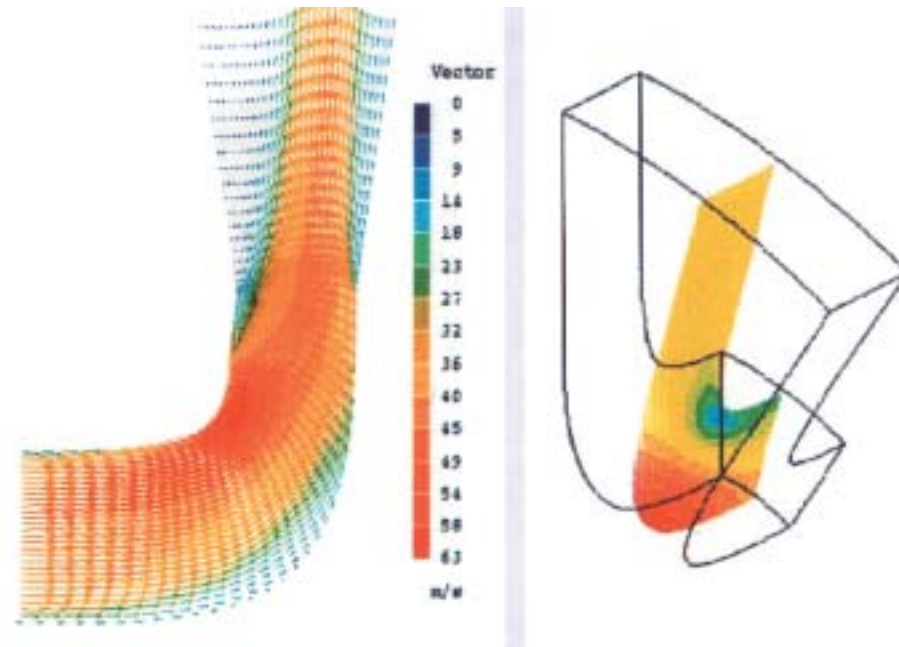
The fan blades and hub are made of aluminum making the fan lightweight, strong and durable. The pitch of the blades can be altered to match most crops or tractor sizes.





### Fan housing design

The geometry of the fan housing, air inlet and air outlet, has been designed with the use of the latest computer simulation techniques in order to get maximum performance and even air distribution.



Suitable for use in vineyard, berry bush and small trees up to 20' (6m) tall with row spacing from 8' - 18' (2.4m-5.5m).  
Application rates from 30-350 GPA (275-3,200 L/HA)

### Nozzle accessibility

The 14 durable nozzle holders are located outside the airstream to improve fan performance and to minimize air turbulence. It enables easy access for service and adjustments, and prevents material build-up on the nozzle holders.



### Air flow setting

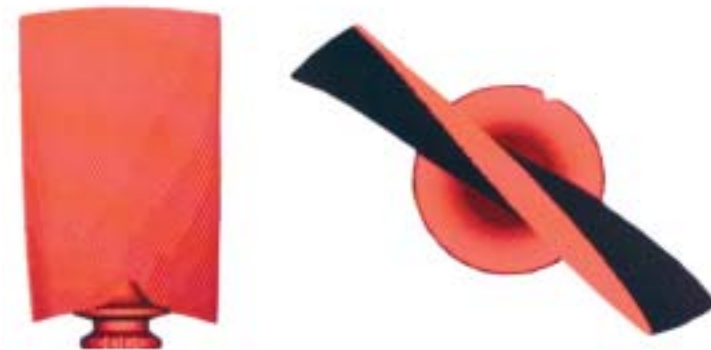


The HARDI® SUPER FLOW fan offers more flexibility than any other fan on the market.

There are two different ways to adjust the air flow on ARROW sprayers:

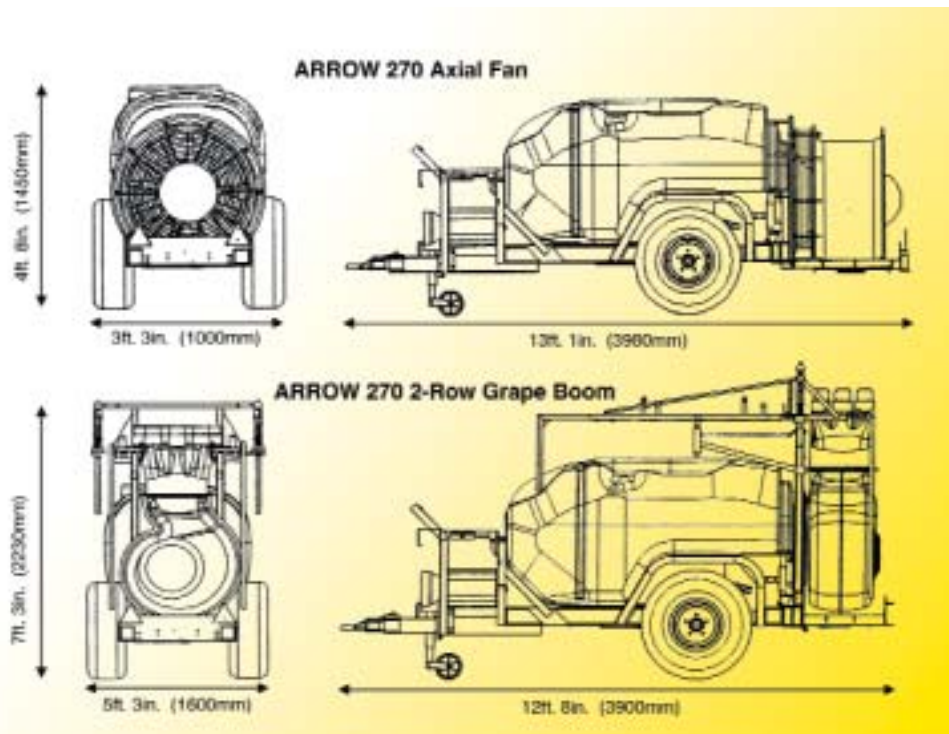
- **Open air slot.**  
(hi/medium/low)
- **Adjust the angle of the fan blades.**  
(hi/medium/low)

This provides the operator with 9 different fan settings, without switching the fan itself.



The many different settings ensure the sprayer can be matched to most crops and tractor sizes.

## Dimensions



## Minimum tractor requirements

- Arrow 270 SPV: 40 HP
- Arrow 270 2-Row Grape Boom: 50 HP
- Arrow 270 Axial Fan: 50 HP

## Options

With optional equipment the ARROW can be better adapted for certain specific needs.

### Turnable hitch



For a narrow turning radius.

## Weights

### ARROW 270 Axial Fan:

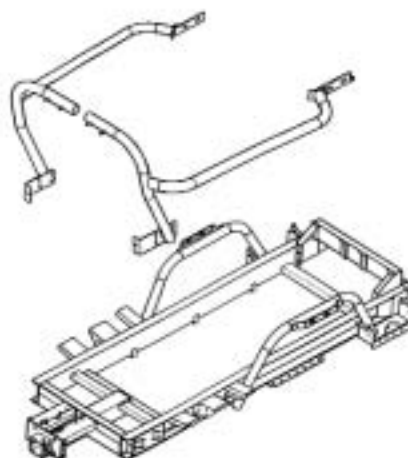
### ARROW 270 SPV/ 2-Row Grape Boom:

	<i>Empty</i>	<i>Full</i>
ARROW 270 Axial Fan:	1477 lbs. (670 kg)	4719 lbs. (2140 kg)
ARROW 270 SPV/ 2-Row Grape Boom:	1614 lbs. (730 kg)	4855 lbs. (2200 kg)

*Note: approximate weights*

## Chassis

The chassis is a simple steel assembly with front pump support. The chassis is made of tensile steel channels providing robust durability, resistant to vibration and weather. The inner U-channel is used also for routing hoses and cables, etc.



### HM1500 Monitor



The Arrow is prepared for use with the HM1500 monitor. It monitors and displays information about application rate, flow rate and speed, etc. (English and Spanish)

# HARDI® - A global specialist in crop protection

HARDI INTERNATIONAL AS 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 and 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 analyzed utilizing state of the art engineering software. The 5 development centers throughout the world work closely together in order to meet local demands and profit globally from our local presence. All developments go through a thorough 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 optimization 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 maintain 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

The North American distribution centers are large facilities with state of the art training rooms located in Davenport, IA, Fresno, CA and London, ON. All centers maintain an experienced staff, working together with our international network in order to support a vast network of first class company trained dealers.



Davenport, Iowa



London, Ontario



Fresno, California



Hegebeasrup, Denmark



Mørre Åstov, Denmark

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