

# Maximum Productivity RUBCON 9000

### Don't compromise on the most important piece of farm machinery

The RUBICON establishes a new class in self-propelled sprayers, designed to meet the productivity demands of large scale North American farmers.

The seamless integration of capacity and ease of operation delivers acre eating performance to conquer everyday spraying tasks with ease and ahead of time.

## RUBICON delivers beyond expectation with:

- 2,200 gal / 9000 L payload
- Front mounted 120 ft to 160 ft booms
- Unrivalled visibility from a high 11 ft vantage
- Road speed 35 mph (max)
- Spray speed 20mph (max)
- 380HP Cummins @ 2,100RPM
- Low noise level
- Ride exceptionally comfortable
- Excellent boom stability
- And much, much more

### **Maximum Productivity**

HARD

The RUBICON 9000 will take productivity and ease of operation to a whole new level.

RUBICON 9000

Increased tank capacity will not only improve productivity, but will improve the timeliness of applications.

Capacity keeps you spraying for longer, by reducing travelling and filling down time. When timing is everything – don't waste time filling.

Capacity	GPA	Acre/Tank
2,200	13	185
2,200	16	150
2,200	18.5	130
2,200	21	114
2,200	24	100
2,200	26	92





MAXIMUM PRODUCTIVITY Featuring the HARDI AluForce 120ft to 160 ft Aluminum Boom



ADVANCED ENGINE TECHNOLOGY RUBICON is powered by Cummins® 8.9L QSL 9, Tier 4F Engine 380 HP



HYDRAULIC TRACK ADJUST The RUBICON axle track width can be adjusted, on-the-run, from 118" to 157". The integrated air-ride suspension provides superior ride and performance.



SUPERIOR CAB DESIGN Large spacious cab featuring a premium leather seat with cooling/heating features. New standards for visibility allow the entire boom to be seen with uninterrupted forward vision.

### **SPECIFICATIONS**

- Tank: 2,200 gal / 9,000 litres
- Engine: Cummins 380 HP-Tier 4 Final
- **Transmission:** 4WD hydrostatic
- Controller: HC9600 / ISO-BUS
- · Chem transfer: 16 gal ChemFiller Induction
- Rinse Tank: Aluminum 165 gal

- Pump: ACE 650 Hydraulic drive Centrifugal w/ Oasis wet seal technology
- Fuel Tank: 317 gal
- Clearance: 72 inches
- Maximum Height: 14ft
- Hydraulic Track width: 118" to 157"
- Boom: Aluminum Bi-Fold 120 ft to 160 ft

- ▶ High capacity 2,200 gal (9000 l)
- Unrivalled visibility from a 11 ft high vantage point
- Ride extremely comfortable
- Excellent boom stability

# Over 2,400 Acres Per Day Better application at higher spraying speeds

By increasing the boom width you improve the work rate, which is what matters most when timing is all important.

A 150 ft boom width represents a 25% increase in work rate over a comparable 120 ft boom.

RUBICON with a 150 ft boom at 20mph can deliver a work rate of 309 acres per hour, or 2,781 acres per day.

Keeping the nozzles at the correct height above the target, across the full width of the boom in all operating conditions, present little effort for RUBICON, but is vitally important for good application and performance.

The boom suspension, auto height and stability control systems allow you to lower the boom while protecting it from ground contact.

Lowering the boom reduces spray drift and delivers better application, which gives peace of mind, especially at higher spraying speeds.

BOOM Length	МРН	Acres/Hr
120 ft	20	247
150 ft	20	309
160 ft	20	330

Figures above are based on an application rate of 10 gpa with a .85 effectiveness factor.



### **Powered For Efficiency**

RUBICON has the power and torque to effortlessly carry 2,200 gallons and 150ft boomz in the field.

ARD

Utilizing the most technologically advanced, fuel efficient Cummins<sup>®</sup> 8.9L QSL 9 Tier 4 Final engine to generate 380 hp (276 kW) for the ultimate performance, reliability and productivity.

The lean, clean engine is the best available to power the 4WD hydrostatic transmission from Danfoss.

# **High Clearance with Comfort**

**High Clearance with Comfort and Stability are central to RUBICON's productivity** The new Rubicon 9000 provides a high 72" clearance in a clean and unobstructed under-body. This high clearance with its stream-lined design prevents damage to tall crops when performing late season application.

Comfort is important to the operator who has to spend long hours behind the wheel. RUBICON's large tires and triple support airbag suspension combination is the key to its superb ride and driver comfort, which is paramount to keeping fatigue at bay.

### **OverRide Suspension**

OverRide Suspension is designed for heavy duty applications, for greater load carrying capacity and for incredibly smooth running.

The suspension is fully independent, is integrated into each wheel console, and moves in and out with the wheel track width.

The front leading arm and rear trailing arm suspension components with triple convoluted low pressure air springs

allows each wheel to address the ground conditions undisturbed by the other three.

This type of suspension allows for the highest ratio of sprung to unsprung weight on a vehicle keeping in contact with the ground regardless of the nature of the terrain the RUBICON is travelling over. Maintaining excellent ground contact also improves the handling and traction.

Heavy duty shocks absorb impulses from the suspension to improve the performance and ride.



### **OverRide Suspension features**

- Superior ride and handling
- Gives better traction
- Moves with wheel track adjustment
- More stable boom
- Reduces fatigue
- Better shock absorption

- Reduces vibration transfer
- Less pitch generated during braking and acceleration
- Ride level sensing to maintain the suspensions optimum ride height

### **RUBICON**

# Incredible ride and driving performance boosts productivity

### **Weight Distribution**

The under chassis distance is a tall 72" clearance.

The engine & transmission is at the rear, with the main, rinse and fuel tanks centrally located and boom at the front.

Everything is located to optimize the distribution of weight between the front and rear axles. With all tanks full and with a 160ft boom open the weight distribution is:

- Front 48.7%
- Rear 51.3%

### Track width adjustment

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The RUBICON axle track width can be infinitely adjusted, on-the-run, from 118" to 157" providing the ultimate flexibility for different applications and improved productivity.

- On road transport and spraying
- To suit varying field conditions
- Set up for control traffic farming
- To match row crop row spacing • To match the track width of other machinery
- The OverRide suspension is integrated into each wheel console and moves in and out with the wheel track width. Externally accessed PUKS are easily adjusted to take up play that may develop over time through changing the axle track.



Weight	RA 150 ft			
Total weight (empty), lbs	34,546			
Total weight (full – fuel, main & rinse) lbs	58,200			
Axle load front, lbs - boom open %	48.7%			
Axle load rear. lbs – boom open %	51.3%			



RUBICON 4WD hydrostatic transmission is the latest intelligent self-propelled sprayer drive management system from Danfoss, which delivers highest level of performance with reduced fuel consumption, and high operator comfort

A Danfoss 250 cc variable displacement axial piston pump minimizes control and charge pump losses to maximize available engine power. In addition the Danfoss H1 bent axis axial piston wheel motors are variable displacement and offer significant overall efficiency gains.

- Enhancing performance
- Improving fuel economy
- Providing power savings

The Danfoss H1 intelligent electronics is integrated on the Cummins "CAN" communication platform to ensure engine power is optimized to the wheel motor torque delivering precision and consistent smooth performance.

The micro-controller is preprogrammed with 4 different operator selectable modes to vary the drive behaviour to meet the application requirement. The controller provides "watch dog" capability and real time fault monitoring.

The micro-controller measures the speed at each wheel motor 86 times per revolution to optimize drive torque and to minimize slippage. In 'field mode' the system manages the pump displacement and individual wheel motor output relative to the conditions, gradients, transmission operating pressure, and fuel efficiency.

# Steering

### **Powerful steering**

The RUBICON has a powerful load sensing hydraulic steering system which controls two large phasing cylinders, and is ideally suited to challenging operating conditions. The steering is precise, smooth and quiet with no vibration which makes spraying easy, safe and reduces operator fatigue.

The turning circle The turning ft 's 59 ft (radius 's 30 ft) (radius 's 30 ft) (radius 's steer mode in two wheel steer mode



### RUBICON is powered by Cummins - the most advanced engine technology to deliver power and reliability when you need it

Cummins engines run quieter, burn leaner and cleaner, and they are the industry leader in providing power to hydrostatic transmissions. The Cummins<sup>®</sup> 8.9L QSL 9 Tier 4 Final engine delivers 380 HP (276 kW) and features:

- Fully Integrated Electronic Controls provides seamless integration of all components to optimize engine performance.
- High-Pressure Common-Rail Fuel Systems. Increases power output and lowering fuel consumption, while reducing noise and engine vibration.
- Fleetguard<sup>®</sup> Fuel Filters featuring nanotechnology-based media, designed to remove 98.7 percent of all particles as small as 4 microns, which is up to 13 times more than most competing filters.
- Cummins VGT<sup>™</sup> Turbocharger has fewer moving parts than competitive turbochargers yet is infinitely adjustable – delivering the exact amount of air to the combustion chamber with the precision of electronic controls.
- Easy service access to all machine components via protective covers and hoods



Easy to Remove Access Panels

# <image>

# Full Engine Access for ease in servicing

Full "Underside Access" to engine, hydraulics & electrical.

MAN ANA

Roof Access



(563) 386-1730

# **Commanding View**

### A better view of the boom from the cab not only contributes to the comfort but to the quality of the productivity

The operator has a commanding view over the boom from the driver's seat which makes spraying easier and safer.

The RUBICON cab is a special workplace and every detail counts: including the synchronized movement of the arm rest console to provide improved ergonomics, to unsurpassed visibility of the boom, clean air and responsible sound and vibration levels.

With superior comfort and the best view in the business, RUBICON makes spraying enjoyable and efficient.

### **All Day Comfort**

Operator comfort enhances productivity and is an essential for long spraying days.

The new Panoramic cab is larger, spacious and uncluttered, with top level ergonomics. Operator all-round visibility from this cab is the industry's best and there are no rear quarter pillars to obstruct the view.

The climate controlled, pressurized cab has active charcoal filtration that delivers high quality air which protects the operator from contaminants while spraying.

The cab provides a quiet and stress-free relaxed environment, which is easy on conversations and mobile phone use.

Tinted safety glass with front and side retractable sun screens filter the light and minimize glare into the cab.

An air-ride fully adjustable heated and cooled leather drivers seat provides exceptional operator comfort for those rough field conditions.

The joystick and SprayCentre are attached to the driver's seat and move in unison with it, for comfortable operation.

A trainers seat is large and comfortable, and can fold out of the way with ease.

The steering column pivots in two places and extends to provide adjustment for the perfect driving position for the operator.

In-cab storage is included in the arm rest console, a drawer under the seat, under the training seat, and a pocket behind the seat for the operator's manual.







### A Special Workplace!

Every detail contributes to the overall benefits and gains.

The leather drivers seat has its own suspension to provide many hours of fatigue-free spraying. It can be adjusted for weight, height, lumbar, back and leg position. It is also heated and cooled for utmost operator comfort.

A full size training seat can fold up and easily stowed out of the way. Both operator and training seats have compact storage facilities built into and under them.

Climate control air conditioning and cab pressurization is delivered through 10 roof and 2 floor mounted, fully adjustable outlets.

Windshield defrost vents ensure you should never have to experience fogged up windows.

The SprayCenter can be adjusted for the operators comfort. Switches for the transmission, axles, fluid and boom functions are logically placed and grouped for easy fingertip operation. They are illuminated for night spraying.

Turning indicators, driving lights, high/ low beam and hazard light selection are all located on the steering column.

A roof console houses the radio, and sound is delivered through four speakers.

An auxiliary 12-volt power socket is standard.







# **Control Center** AgLeader HC9600

The HARDI HC9600 control center can be used to display up to five precision farming functions simultaneously in a range of layouts and user interfaces. No other terminal currently offers this versatility! It is also one of the first to feature a capacitive touch screen. The touch-film is protected beneath the glass pane, making the technology ideal for tough, everyday usage.

The terminal is fitted with an integral Tractor-ECU (TECU) to receive information from the RUBICON which is essential for precision farming applications.



### **HC9600 Features:**

- Up to 5 applications simultaneously
- Latest touch technology
- Customised options
- ISOBUS standardized control and machine settings, reduces downtime and Interface problems as well as calibration processes
- Unrestricted visibility in the cab
- HC9600 is the latest generation ISOBUS terminal unbeatable in terms of flexibility, versatility and user-friendliness.



### **Tank Control**

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The simple to operate electronic ground station control panel functions are duplicated in the cab and are used to sequence the rotary valves for suction, pressure and clean water supply. The correct operating positions are performed automatically and at the touch of a button.

The right side of the RUBICON houses the fluid pumps, control valves and the electronic valve sequencing control panel.

Ground Control Work Zone

The fluid systems efficient design minimizes the volume remaining once the tank is emptied, which makes rinsing and decontaminating fast and efficient.

The fluid is driven by an 180 gpm ACE Centrifugal wet seal run dry centrifugal spray pump which is controlled by a hydraulic Pulse Width Modulation (PWM) valve to adjust the output. A 3 inch hydraulically operated rotary valve controls the suction source from the main tank or the rinse tank or an external supply.

On the pressure side a similar 2 inch hydraulically operated rotary valve controls the supply to the boom recirculation system & nozzles, to the chemical filler, to the main tank or for pressure empty.

A dedicated hydraulic driven 18 gpm diaphragm pump with electric rotary control valve is used exclusively for clean water supply for the main tank, rinse nozzles, priming Ace pump or hand gun. TANK CONTROL

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### Designed to make loading safe, quick and easy, the combined mixing and transfer station is hydraulically lowered into position for refilling

The filling station is a robust stainless steel construction and includes the Chemical Hopper, Direct Chemical Suction connection, Fast Fill connection, optional Multi-Stage Fast Fill Pump and Hand Gun.

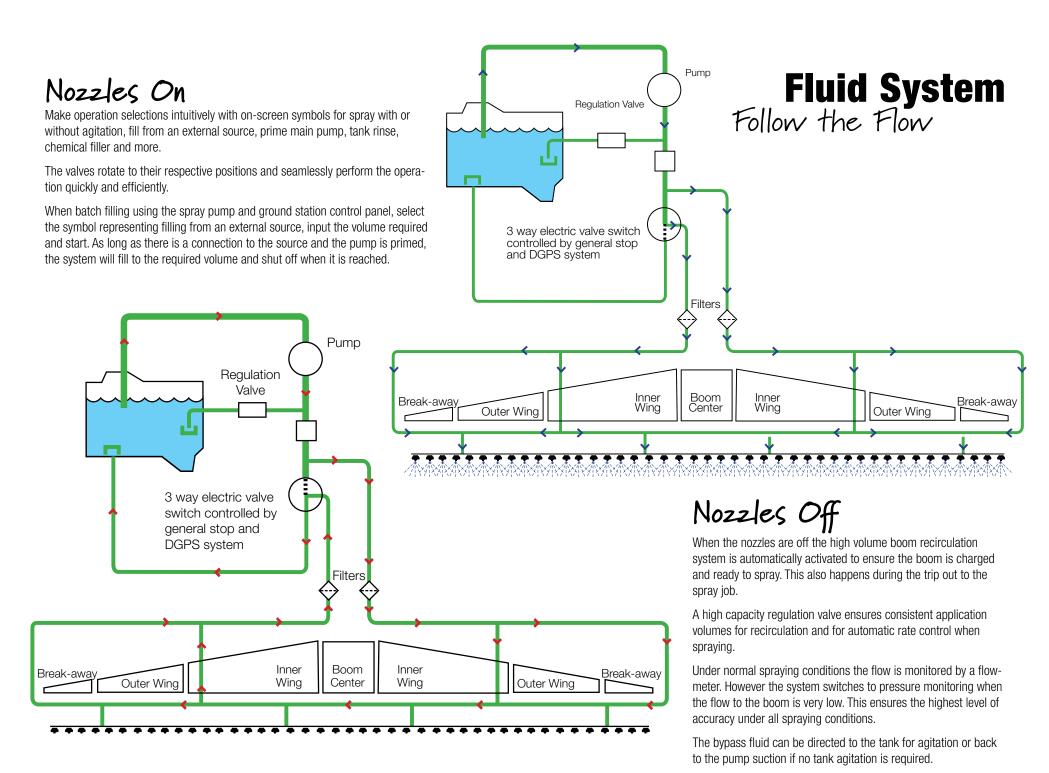
For safe connection and working the 16 gal hopper is 28 inches above the ground when lowered into position. When folded away the entire work station is tucked out of the way under the right hand side panel.

Chemical can be drawn directly into the RUBICON or mixed through the hopper and transferred.

Batch mixes can be pumped directly into the tank or the system can be programmed through the electronic valve sequencing control panel for suction of a given volume.







# **BOOM Management**



### Boom Center

RUBICON redefines boom stability: A revolutionary boom suspension system allows independent stiffness control settings on the springs and rams fixed to either side of the center frame.

The boom remains stable under the harshest operating conditions.

Field trials were performed with a boom set to only 20 inch height, and speeds of up to 30 mph (turns at up to 20 mph) without having the boom touching the ground!

The wide center frame provides excellent on road visibility.

Spring tension holds the center frame in the middle position while the hydraulic damper absorbs energy from booms movement. A hydraulic actuator operated from the cab exerts more or less pressure on the spring to change the resistance.





# A Star A Star A Star Star

Wide Paralift Enhances Boom Stability The ParaLift is extra wide and provides the basis for unbeatable boom stability. It is anchored to the chassis at 6 ft centers and picks up the boom at 8 ft width. The ParaLift's width and torsional strength greatly exceeds the requirement for the widest booms.

Two large ParaLift plunge cylinders with nitrogen accumulation provide the boom with vertical shock absorption and height control. The boom can be raised from 20 inches to 9 ft above the ground.

An air activated ParaLift locking system secures the boom into position for safe road transport.



# **POMMIER Aluminium Booms** Width Without Weight

# When it comes to wide aluminum boom innovation and design POMMIER is the market leader.

Their accumulated 30 years' experience provides real benefits for farmers considering a lighter, stronger and wider boom option.

The RA bi-fold 120 ft, 132ft, 150 ft, and 160 ft booms are well proven in field performance and reliability, and the weight reduction benefits over steel cannot be underestimated.

Optional AutoHeight control sets a new benchmark in wide boom performance, maintaining a lower boom height which provides better drift control.

With the RA boom wings at half the weight of equivalent steel structures and when combined with POMMIER patented Yaw dampening, load and forces transferred to the center section during spraying are significantly reduced.

POMMIER soft close feature protects the boom when folding.



### **AutoHeight Boom Control**

AutoHeight control provides stress-free boom height control as it maintains the correct nozzle operating height, delivers better application and reduces spray drift.

AutoHeight uses ultrasonic sensors fitted to the boom center and wings to control and maintain a preset height of the entire boom above the ground or crop. The sensors, developed for field conditions, are robust and precise.

The proportional valve control of individual boom wing height corrections are smooth, even and automatic. AutoHeight maintains an operator preselected boom height from the ground or crop.

### It features:

- 5 precision ultrasonic sensors
- Choice of soil, crop or Hybrid mode
- Proportional valve control
- 22 mph operation speed

AutoHeight takes the stress out of having to monitor the boom position in anticipation of frequent terrain changes, and allows more efficient use of crop protection chemicals.





### Recirculation

Essential for priming, rinsing and for looking after the environment. As soon as the tank is recharged the fluid system automatically switches to recirculation, which means the boom is charged so you can go spraying as soon as the boom is unfolded.

The recirculation system also allows you to run clean water through the boom, back to the main tank at the end of the day rather than to spray rinse onto the ground.



### ActivAir

ActivAir is rapid nozzle on/off control system, that utilizes the Rubicon's on-board air supply to instantaneously open and close the non-drip nozzles during spraying.

Air pressure is distributed along the boom through 8mm tubing to electrically activate solenoid valves and then through 4mm tubing to each non-drip valve.

ActivAir's rapid nozzle control is fast and accurate, making it ideal for AutoSection control systems. Plus the spray lines can be divided into 14 sections to ensure minimal overspray when AutoSection control is in operation.

When a solenoid is activated to turn the nozzles on, air pressure opens the non-drip valves and the nozzles start spraying. When the solenoid is deactivated to turn the nozzles off the non-drip valves are held closed under spring tension.

When the nozzles are off the fluid system continuously recirculates the spray mix through the boom tubes at high volume to ensure the boom is primed before spraying starts.

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# **NIGHT Vision**

### Lighting

The under boom lighting kit allows the spraying to go on long after the sun has set.

If the opportunity to spray comes at night, it is so much easier with the RUBICON's extensive lighting package.

The rear access stairway light is activated from cabin roof to show the way along the platform.

The forward facing LED lightbar mounted on the boom center, and sidewards orientated lights will illuminate the route to and around the field to a distance of 500 feet.

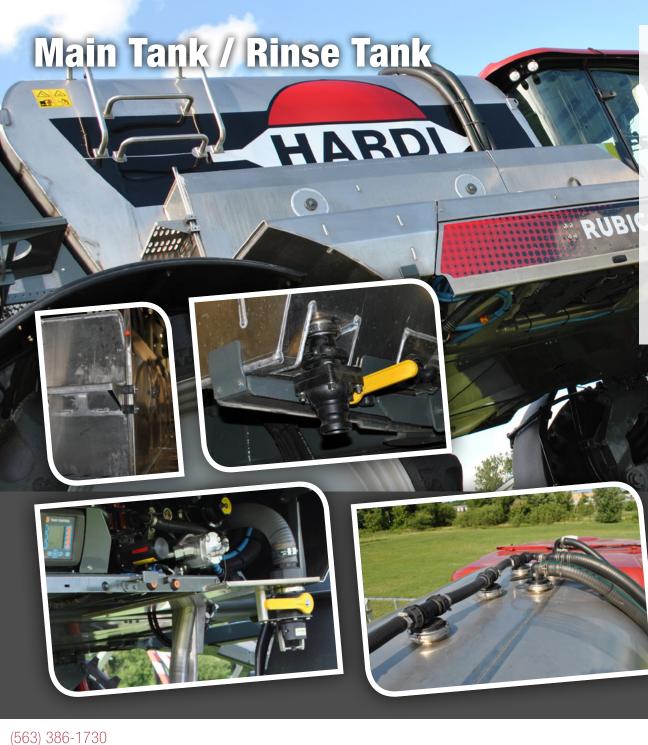
The under-boom blue cast lights provides a clear and non-invasive view to the end of the boom, and for visual conformation of functioning nozzles.

\* Under Boom Lighting - Optional Add On









### 2,200 gallon baffled stainless steel tank is integrated into the RUBICON chassis and is designed for maximum capacity spraying

Baffles not only enhance the integrity of the tank structure but improve the handling and directional stability of the sprayer. Suppressing the magnitudes of fluid slosh by controlling its flow and movement improves braking performance and yaw stability, making spraying comfortable and safe.

Three rotational tank rinse nozzles are fitted standard

and provide consistent tank flushing.

A deep sump running the full length of the tank ensures total draining, easy cleaning and minimal residue.

There is a sturdy ladder on the right hand side of the Main Tank which allows easy access to the lid.

RUBICON's 317 gallon diesel tank provides enough fuel for a whole day or night of spraying.

# **Productivity** 1,850 to 2,470 Acres per day

### 2,200 gallon capacity

Delivers 220 acres per tank @ 10 gpa, represents a 38% increase in sprayed acres compared with alternative 1,600 gal capacity SP's

### 160 ft boom width

Covers 300 acre/hr @ 15 mph or 360 acres/hr at 20 mph, represents a 35% increase in work rate over alternative 120 ft boom widths.

### Front boom

The operator has a commanding view over the boom and can see all of the nozzles from the driver's seat. Makes spraying easier and safer, which not only improves the comfort but to the quality of the productivity.

### **OverRide suspension**

Is fully independent for Incredibly smooth ride. Allows each wheel to address the field conditions undisturbed by the others. Provides superior ride and handling, gives better traction, moves with wheel track adjustment and delivers a more stable boom.

### Tires

The ride and driving comfort is also attributed to the 480/70/R54, reduces rolling resistance and the longer contact area to the ground delivers the ultimate flotation. The narrowness of the tires lessens crop damage.

### Ground clearance

The under chassis clearance is a huge 72".

### **Reduced turbulence**

With a smooth undershielding, 6 ft free flow ground clearance and the narrower 480/70/R54 tires there is less dust and wind drag than with lower wider tired SP's.

### Weight distribution

Balanced – With all tanks full and with a 160 ft boom open the weight distribution is – Front 48.7% and the Rear 51.3%.

### POMMIER

The weight reduction benefits of the RA boom wings at half the weight of equivalent steel structures cannot be underestimated. The patented Yaw dampening system significantly reduces the load and forces transferred to the center during spraying.

### **Track width**

Is infinitely variable with full tank, on-the-run, from 118" to 157" providing for different applications and improved productivity. The OverRide suspension moves in and out with the wheel track width.

### **Engine & Transmission**

380 HP Cummins – the most advanced engine technology delivers the power when you need it and consistent reliability. The 4WD hydrostatic transmission is the latest intelligent drive management system from Danfoss, which delivers highest level of performance with reduced fuel consumption, high operator comfort and 4 wheel braking.

### Fluid System

The AIS Circulation system is pressurised by a Run Dry Ace centrifugal pump and an automatic valve sequencing system. The tank fill volume is set, and once reached the fluid valves automatically switch over to agitation and boom priming. The tank content is then agitated and the spray circuit is primed and at standby operating pressure in readiness to start spraying.

### ActivAir shut off

The circulation system primes the boom tubes and the ActivAir section control provides instant nozzle opening at the right pressure – there is no lag and is ideal for ASC.



# **Specifications**





Technical specifications					
Tank, gallons	2,200	Track width	118" to 157"		
Pump, type	HARDI / Ace 650 run-dry centrifugal	Turning circle (ft)	59 ft		
Boom POMMIER	120ft, 132 ft, 150ft, 154ft, 160ft	Weight empty, (150ft)	34,546 lbs		
Control Type	HC9600	Weight full, (150ft)	58,200 with 2,200 gal, diesel + 165 gal rinse		
Section distribution standard	6 to 10 sections	Total length (ft) A	34 ft - 120 ft boom, 40 ft - 160 ft		
Rinse tank	165 gallons	Total height (ft) B	14 ft		
Engine	Cummins® QSL 9 Tier4F 380 HP (276 kW)	Width with boom folded (ft) C	12 ft		
Fuel Tank	317 gallons	Track width, adjustment (ft) D	118" to 157"		
Transmission	Danfoss H1	Wheel base (ft) E	15 ft		
Hydraulic oil	53 gallons	Under axle clearance (ft) F	72"		
Suspension	OverRide Airbag + Hydraulic Koni's	Wheels/Tires	480/70R54 or 380/90R54		
Steering	2 wheel	Brakes	4 wheel dynamic		

# Standard features:

- 2,200 gallon capacity
- 165 gal rinse tank & rinse nozzles
- POMMIER RA 120ft, 132ft, 150ft, 154ft, or 160 ft booms
- 6-10 section boom distribution
- Boom recirculation system
- Boom line filters

- Solenoid end nozzles
- 380HP Cummins engine
- 4WD hydrostatic transmission
- Cruise control
- 2 wheel steer
- 118" to 157" hydraulic track width
- OverRide Air bag suspension

- 72" under axle clearance
- Mudguards
- HC9600 controller with AutoSection Control
- Electronic tank gauge sensor
- Reversing camera
- Ground control

- Dual ladder and platform
- Climate control
- Radio ready: earth cable, speakers and aerial installed
- 180 gpm WetSeal run-dry centrifugal pump
- TurboFiller induction
- Fast fill





Nørre Alslev, Denmark











### HARDI INTERNATIONAL A/S

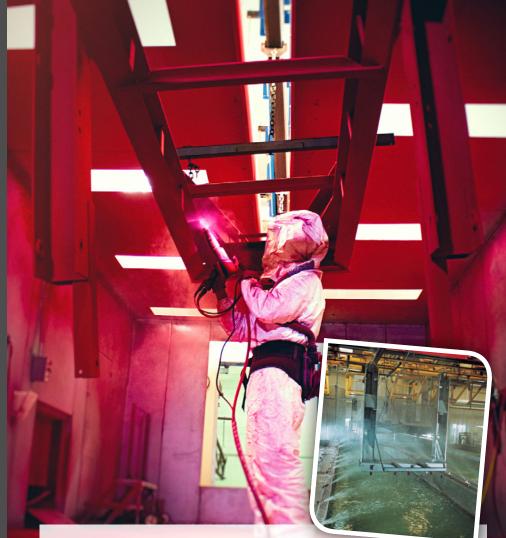
is an international group whose basic idea is to satisfy the user's requirements for quality products which ensure efficient, punctual and precise application of crop protection products. Our world-wide distribution and sales network comprise more than 100 countries where we are represented by importers, agents and sales subsidiaries. These are situated in Sweden, Norway, Denmark, the UK, France, Spain, North America, Germany and Australia.

Since 1957 HARDI has committed to the everincreasing 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 North America are tested according to the strictest quality standards.

The staff of the assembly line is accredited to match the demands from both NSTS (National Sprayer Testing Scheme), UK and JKI (Julius Kühn Institut), Germany. 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 NORTH AMERICA

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