



TRAILED

# AEON

# PRODUCT GUIDE

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# Concept

## Welcome to the Product guide



Welcome the new HARDI AEON. With a covered, protected design and wheel steering for higher driving stability, the AEON, with a wide range of tank sizes from 4200 to 7000 l, will be your working companion for the future. With axle and drawbar suspensions, you will experience unparalleled driver comfort. The intelligent fluid system will give you the highest level of user-friendliness, while the SmartCom platform will connect you with our MyHARDI telemetry platform.

### Presenting the latest in sprayer innovation

The all-new HARDI AEON is a high-tech sprayer guided by the principles of lean farming – to do more with less. We have used the latest technology and the newest automation solutions to improve farmers' productivity while reducing waste. The AEON sets a new benchmark for increasing food production in the face of growing environmental and climatic concerns.

Our starting point is always the farmer. The AEON is designed with user-friendliness and safety in mind. It is built to last, but without compromising on design. It is a dazzling machine with a sleek and dynamic outline that conceals a newly developed chassis and a unique tank design for maximum stability.

The AEON offers perfect tracking, full suspension and a fully remote-operated spraying system. Combine this with swift, fluid regulation, pressurised boom circulation and an exceptional boom management system. The result is outstanding boom stability, spraying precision and drift control – which translate into savings for the farmer.

In the quest to put the right dose in the right place at the right time, we are driven by data, and the AEON offers cutting-edge connectivity for field mapping and remote diagnostics. With an AEON, you are prepared for the future!

Enjoy!

## Design

### 1. SmartCom

- Prepared for the future
- Full ISOBUS for easy connection
- Quick and easy diagnostics

### 2. TechZone

- Protective cover that swing upwards to provide the operator with a covered space
- Illuminated with LED lights for safer working conditions
- Every component is easy to reach, maintain and service.

### 3. Design with side covers

- No sharp edges, and everything is covered and sealed



## Design

### 1. WorkZone

- Intuitive operation
- The left WorkZone controls all sprayer functions safely
- Comfortable, large and secure
- FluidBox groups main sprayer functions on one screen
- TurboFiller with integrated work table

### 2. Tank

- The tank is easy to clean with a flat surface, supported by a chassis shape

### 3. ComfortTrack and hydraulic suspension

- Good small turning radius of only 6.3 m
- Steering with folded boom, in intensive row crops as vegetables
- Wide tire range also with bigger radius – heavy duty 10 hole rim
- Moveable mudguards follow the steering axle
- Always suspension – hydraulic on centre of axle, mechanical leaf spring on drawbar – more comfort – higher driving stability



## Perfect weight distribution

Strong chassis only low hitch-ball coupling – more weight on the tractor. Design all covered – better exterior cleaning demands EU road homologation. Low centre of gravity – driving stability on the road and in the field – High stability on slopes. Even weight balance on the left and right sides – connected rinse tank on both sides. Excellent Width / Length ratio – long chassis for longer booms with wheel steer for exact steering



### Excellent tank design

With the AEON, we have outdone ourselves in the search for maximum driving stability. We have set out to refine the tanks' shape to prevent sloshing liquid from disturbing the machine's balance while on the move. The result is a main tank with a wedge-shaped front. The novel design also guarantees complete tank emptying, even in hilly terrain.



Perfect weight distribution is achieved with dual RinseTank's fitted on both sides of the sprayer towards its front to keep weight on the drawbar. Transferring weight to the tractor achieves better traction towards the end of spraying – also in hilly conditions.

Add to this the sprayer's excellent width-to-length ratio, and longer booms will never be a problem. The AEON offers fantastic boom stability, even at high speed.

With its perfectly placed low centre of gravity and strong chassis, the AEON will stand every test of durability.





# Chassis



## Chassis

### CUSTOMER BENEFITS:

- **Full suspension for operator comfort and safety even at high speed**
- **Axle suspension for absorption of movements during transport and fieldwork**
- **Integrated frame and axle design reduce obstacle impact for increased protection**
- **Suspended ParaLift provides boom protection with consistent damping**
- **AutoTerrain boom management optimises height for improved performance**



### Full suspension

Sprayers often operate in rough terrains and conditions – and the AEON is the epitome of toughness. It is standard supplied with full suspension for protection of all mechanical components and for incomparable operator comfort and safety, even at high speed. A completely new addition is hydraulic suspension of the axle centre to ensure steady boom movements.

### Axle suspension

- Cutting-edge suspension for full absorption of movements during transport and fieldwork
- Integrated frame and axle design for reduction and deflection of obstacle impact
- A single, strong hydraulic cylinder or large coil spring secures perfect suspension, also on slopes
- Reliable and easy to service

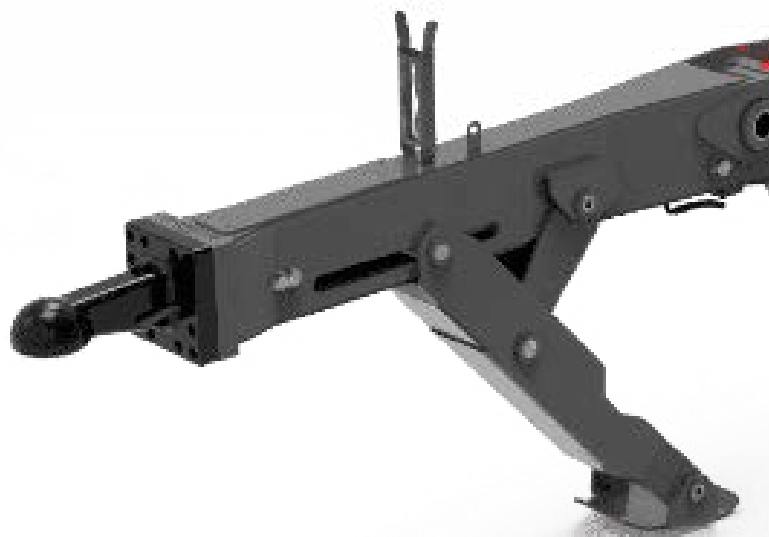
### Suspended ParaLift

- Protection of the boom during transport and fieldwork
- Push-type cylinder position for perfect damping
- Consistent damping regardless of boom height
- ActiveSlant or AutoTerrain boom management optimises height at all times

## Drawbar jack & suspension

### CUSTOMER BENEFITS:

- **AEON's patented vertical lift and a hydraulic jack make operation efficient and easy**
- **Polyurethane PUR suspension provides a smoother ride and improved durability**
- **BolDED couplers with K 80 standard ensure a secure and reliable connection**
- **Robust design can handle loads up to 4t, making it ideal for heavy-duty agricultural tasks**



**AEON provides innovative and efficient solutions for modern agriculture needs with features such as a patented vertical lift, hydraulic jack, and strong drawbar suspension.**

The AEON product line features several innovative design elements, including a patented vertical lift and a hydraulic jack with an integrated cylinder in the drawbar. These features allow for efficient and easy operation, making it simple for operators to lift and transport the sprayer to and from the field. Additionally, AEON's use of Polyurethane PUR suspension provides a smoother ride and improved durability for all their products. The couplers are bolDED on, with the K 80 standard, ensuring a secure and reliable connection between the sprayer and the tractor. With these advanced features, AEON provides a dependable and efficient solution for modern agriculture needs.

### **Drawbar suspension**

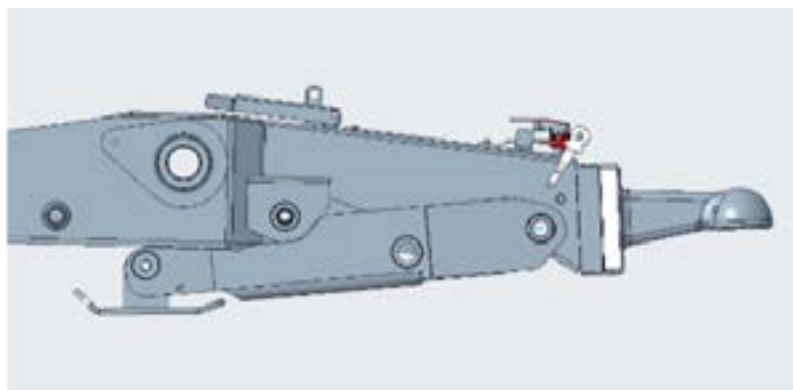
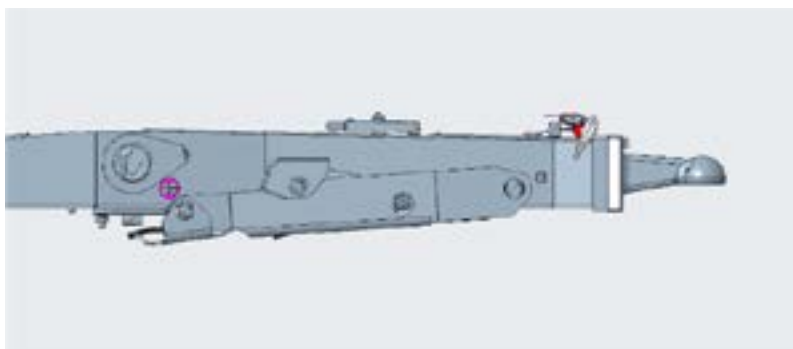
The AEON product line offers several design features that enhance the efficiency and safety of agricultural operations. One of these is the patented vertical hydraulic jack that lifts the drawbar and is fully integrated into the drawbar during transport. This innovative feature makes coupling easy and efficient while minimizing any transfer of trailer movements to the tractor. Additionally, the robust design can handle loads of up to 4 t, making it ideal for heavy-duty agricultural tasks.



## Short drawbar option

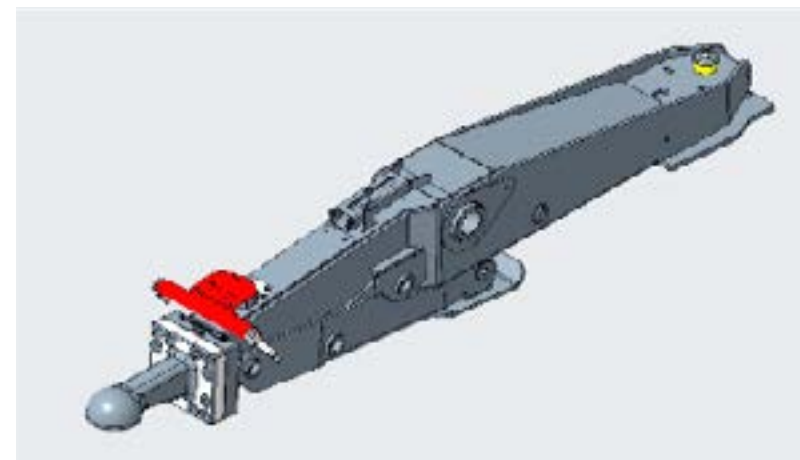
### CUSTOMER BENEFITS:

- **Improved manoeuvrability and agility in the field with the 50 cm shorter drawbar**
- **Easier transportation and storage with the reduced overall length of the sprayer**
- **Complete coverage of the field with no missed areas when reaching the tramline**
- **Increased spraying efficiency with the innovative design feature**
- **Practical and efficient solutions for modern agriculture needs provided by AEON**



### Shorter drawbar

The AEON product line includes a 50 cm shorter drawbar as a standard sprayer feature with a 24 m boom width. This design feature allows for greater manoeuvrability and agility in the field, making it easier for operators to navigate obstacles and tight spaces. Additionally, the shorter drawbar reduces the overall length of the sprayer, making it easier to transport and store when not in use. With this innovative design feature, AEON provides a practical and efficient solution for modern agriculture needs.



### Complete coverage

The shorter drawbar ensures complete coverage of the field when reaching the tramline. With this feature, the sprayer will complete its spraying pattern in the headland, providing no missed areas and improving the efficiency of the spraying operation.

## Axle suspension

### CUSTOMER BENEFITS:

- **AEON offers high comfort with coil spring suspension**
- **Hydraulic suspension option for added comfort**
- **The cutting-edge suspension absorbs movements for a smooth ride**
- **Integrated frame and axle reduce impact and make servicing easy**
- **A single strong cylinder ensures perfect suspension on slopes**



**AEON features a cutting-edge suspension system, providing maximum driving comfort and absorption of movements during transport and fieldwork.**

### **Cutting-edge suspension system**

The AEON offers the highest driving comfort for agricultural operations with its coil spring suspension, available in 4200, 5200, and 6000-litre models. Customers can opt for the hydraulic suspension with nitrogen damping for even more comfort. This cutting-edge suspension system provides complete absorption of movements during transport and fieldwork, ensuring a smooth ride for both the operator and the equipment. With these advanced suspension features, AEON delivers a practical and efficient solution for modern agriculture needs.

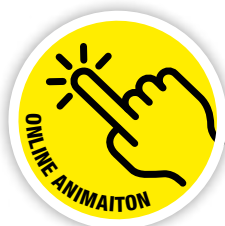
### **Dependable and efficient suspension**

The AEON features an integrated frame and axle design, which provides enhanced protection for the sprayer components by reducing and deflecting the impact of obstacles in the field. This design

feature ensures the durability and longevity of the sprayer, making it a reliable choice for modern agriculture needs. Additionally, the integrated design makes servicing the sprayer easier, ensuring that maintenance can be performed quickly and efficiently to minimize downtime. With these advanced design features, AEON provides a dependable and efficient solution for agricultural operations.

### **Perfect suspension, with one cylinder**

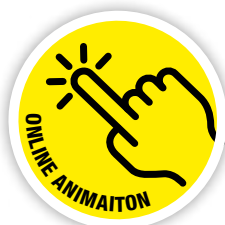
The AEON features design elements that enhance the efficiency and safety of agricultural operations. One of these is a single, strong cylinder that secures perfect suspension, even on slopes. This ensures a smooth and stable ride, even in rough terrains. The mudguard's design also allows maximum travel, improving the suspension system's ability to absorb movements during transport and fieldwork.



## ParaLift

### CUSTOMER BENEFITS:

- **Enhanced boom protection during transport and fieldwork**
- **Smooth and stable ride for efficient and precise spraying operations**
- **Longer and slimmer ParaLift for improved agility and manoeuvrability in the field**
- **Greater flexibility and precision with an increased lift range of 230 cm (0-270 cm).**
- **AutoTerrain boom management system for consistent and accurate application throughout the field**



The ParaLift system protects the boom and ensures smooth and stable spraying. AEON 40 cm long, slim ParaLift and a vast lift range for greater flexibility.

#### **Suspended for maximum protection**

The ParaLift features an advanced suspension system that suspends the boom for maximum protection during transport and fieldwork. This design feature provides enhanced protection for the boom components, reducing the risk of damage from rough terrain and obstacles in the field.

#### **Smooth and stable boom**

The ParaLift has a push-type cylinder position, ensuring perfect damping and a smooth and stable boom. This design element provides consistent damping, regardless of the boom height, which is crucial for efficient and precise spraying operations.

#### **Longer than COMMANDER**

The AEON boasts a longer ParaLift than its predecessor, with an additional 40cm length compared to the COMMANDER. The ParaLift

maintains the same stiffness despite the increased length, allowing for efficient and precise spraying operations. Moreover, the new ParaLift is designed to be slimmer, improving the sprayer's agility and manoeuvrability in the field.

#### **Vast lift range**

The ParaLifts' lift range of 230 cm from 40 to 270 cm allows for greater flexibility and precision in the spraying process. With this increased lift range, the sprayer can easily navigate various field terrains and crop heights while maintaining optimal spraying distance. The sprayer's AutoTerrain boom management system automatically adjusts the boom height to optimize spraying height, ensuring consistent and accurate application throughout the field.

There are various versions of the ParaLift, which depend on the boom.

## ComfortTrack

### CUSTOMER BENEFITS:

- **More efficient and precise spraying tasks with increased track width and improved steering radius**
- **Enhanced precision in intensive row crop fields with ComfortTrack**
- **Reduced time and effort required for spraying jobs with improved steering radius**
- **The hydraulic suspension system provides a smooth ride for the operator and equipment**
- **Better weight distribution and stability with larger track width**



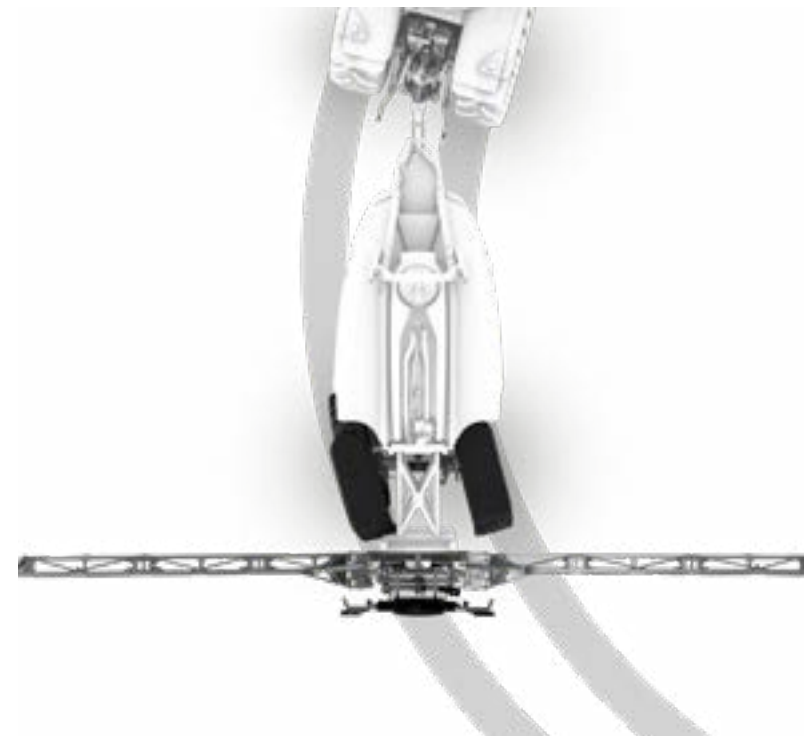
The increased track width in modern sprayers has significantly improved the steering radius, leading to more efficient and precise spraying tasks.

#### **Incredible steering radius**

The steering radius has significantly improved with the increased track width in modern sprayers. The larger track width allows for better weight distribution and stability, resulting in more efficient and precise steering. The improved steering radius enables farmers to work more effectively in the field, reducing the time and effort required for spraying tasks.

#### **Enhanced precision**

Steering with the folded boom in intensive row crops, such as vegetables, can be challenging due to the limited space available.



However, ComfortTrack further enhances the precision and efficiency of operations in intensive row crop fields.

#### **Ensuring a smooth ride**

ComfortTrack comes equipped with hydraulic suspension as standard, with the hydraulic system located at the centre of the axle. This advanced suspension system provides complete absorption of movements during transport and fieldwork, ensuring a smooth ride for the operator and the equipment.

### **Incredibly small turning radius**

The sprayer's compact design and combination of ComfortTrack and full suspension offer several benefits, including a large steering angle of 27° and a small turning radius of only 6.3 m. These advanced features ensure perfect boom positioning, even when turning on the headland, making it easier for operators to manoeuvre the sprayer in tight spaces and improve overall efficiency during spraying tasks.

### **Flexible operation with automatic or manual operation**

This sprayer offers flexible operation with both automatic and manual options. It also has a reverse gear with automatic re-centring, ensuring smooth and efficient operation. Furthermore, the steering is possible with the boom in transport position, making it easy to navigate through narrow roads or tight spaces.

### **Effective spraying regardless of speed**

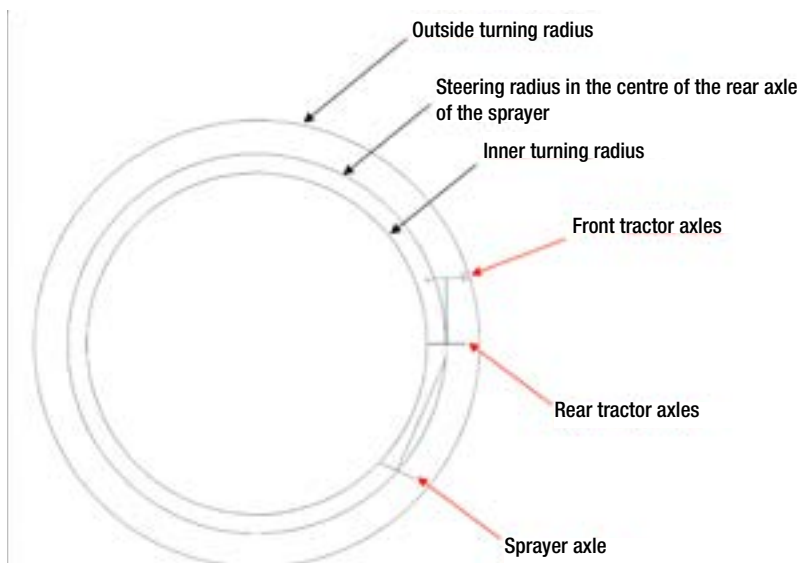
Modern sprayers are designed to provide efficient and effective spraying operations, regardless of the tractor speed. This means the equipment is designed to work optimally at a wide range of speeds, providing consistent and uniform coverage over the field. Farmers can expect the same level of quality regardless of whether they are operating the tractor at a slow or fast speed, ensuring that they can achieve their spraying tasks efficiently and effectively.



# Axle track width and turning radius

## CUSTOMER BENEFITS:

- 2 axle housing 170 to 200 cm and 200 to 230 cm
- The limitation is electrical – end stops only for safety
- Turning radius measured in the center of the axle is minimum 6.3 m



End stop length	Steering angle inside wheel (°)	steering radius in the center of the rear axle of the sprayer (meter)
Without End Stop	28	6,3
c15 : With End Stop length 15	25	6,8
c25 : With End Stop length 25	24	7
c30 : With End Stop length 30	22	7,5
c40 : With End Stop length 40	20	8,2
c50 : With End Stop length 50	18	9

Tires	Diameter mm	170		175		180		190		200		210		220		230	
		radius	inner space	radius	inner space	radius	inner space	radius	inner space	radius	inner space	radius	inner space	radius	inner space	radius	inner space
340/85R48	1808	7,5	136	7,5	141	7,0	146	6,3	156	6,3	166	6,3	176	6,3	186	6,3	196
380/90 R50	1947	7,5	132	7,5	137	7,0	142	6,3	152	6,3	162	6,3	172	6,3	182	6,3	192
420/80 R46	1960	8,2	128	8,2	133	7,5	138	7,0	148	6,3	158	6,3	168	6,3	178	6,3	188
480/80 R46	1933					9,0	132	7,5	142	7,0	152	6,3	162	6,3	172	6,3	182
520/85 R46	2059					9,0	128	7,5	138	7,0	148	6,3	158	6,3	168	6,3	178
580/85 R42 (min. track width 200 cm)	2040									7,0	142	6,8	152	6,3	162	6,3	172
650/65 R42 (min. track width 200 cm)	1920									7,5	135	7,0	145	6,3	155	6,3	165



## Wheels – tires and rims

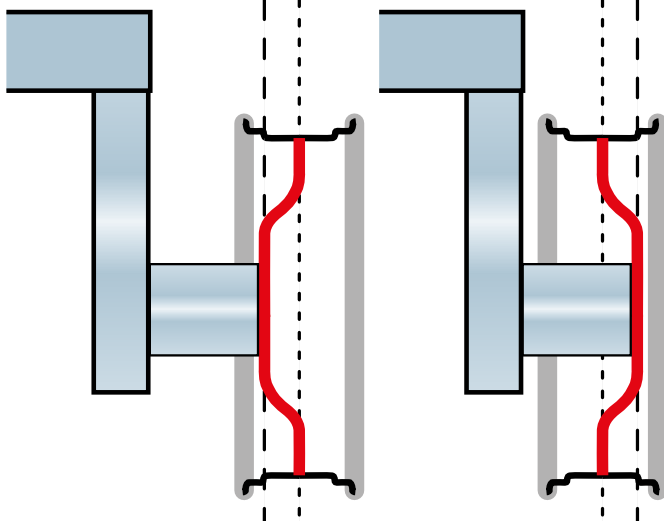
- 10 cm rim off-set
- 10 hole rims



Standard rim offset

– 100 mm

+ 100 mm



Tires	Diameter mm	Width unloaded mm	Load Index	Axle load 40 km/h kg / bar pressure	Brand	Model
340/85 R48	1808	343	164 D	5475 / 4.0	Alliance	VF AGRIFLEX 354+
380/90 R50	1947	385	175 D	7550 / 4.4	Michelin	VF Spraybib
420/80 R46	1960	420	162 A8	4750 / 3.2	Alliance	385
480/80 R46	1933	480	164 A8	5000 / 1.6	Michelin	TL Yieldbib
520/85 R46	2059	515	164 A8	5000 / 1.6	Michelin	AGRIBIB 2
580/85 R42	2040	580	183 A8	8750 / 2.8	Michelin	VF CEREXBIB 2 CFO+
650/65 R42	1920	671	174 D	6020 / 1.4	Michelin	VF AXIOBIB 2

## Mudguards

### CUSTOMER BENEFITS:

- **Mudguards are fixed or steered based on needs**
- **Integrated design for optimal performance**
- **Pivoting mudguards keep nozzles clean**
- **Increased efficiency in various field conditions**
- **Prevents clogging for smooth operation**



**Customizable mudguards improve sprayer performance while pivoting mudguards keep nozzles clean for efficient operation.**

### **Fixed or steered mudguards**

The sprayer's mudguards can be fixed or steered depending on the specific requirements of the farming operation. Additionally, the sprayer's design allows the mudguards to follow the steering rather than the suspension, ensuring optimal performance in various field conditions. This integrated design allows for more precise and efficient spraying tasks regardless of terrain or speed.

### **Keeping nozzles clean**

The pivoting mudguards in modern sprayers have a unique design that rotates with the wheels to keep the nozzles clean. This feature prevents mud and debris from clogging the nozzles, ensuring the sprayer operates efficiently.

Pivoting mudguards is standard on CENTURA line.

### **Mudguards extension**

As optional extended mudguards could be ordered. Recommended for 650 or wider tires. The mudguards are then 70 cm wide.



## Main tank

### CUSTOMER BENEFITS:

- **Improved stability and weight distribution for better efficiency**
- **Even weight distribution reduces wear and tear on sprayer components**
- **Injector agitation ensures even mixing and application**
- **Optimal surface flatness results in better stability and weight distribution**
- **Low centre of gravity**
- **Efficient and complete agitation with up to 27 Venturi nozzles**
- **Easy to clean**
- **Uniform weight distribution**
- **Deep sump**

The chassis supports the tank for even weight distribution, and injector agitation ensures efficient liquid mixing and application.

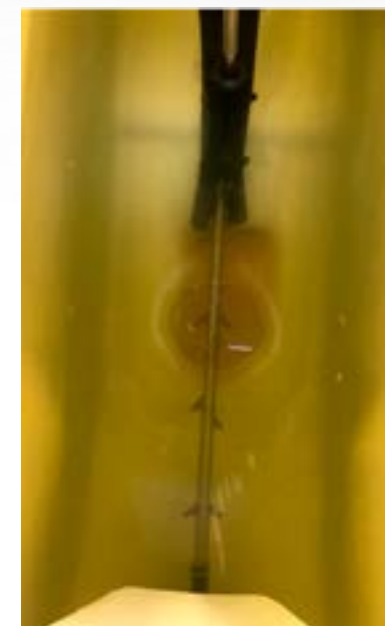
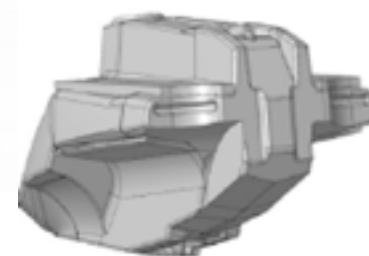
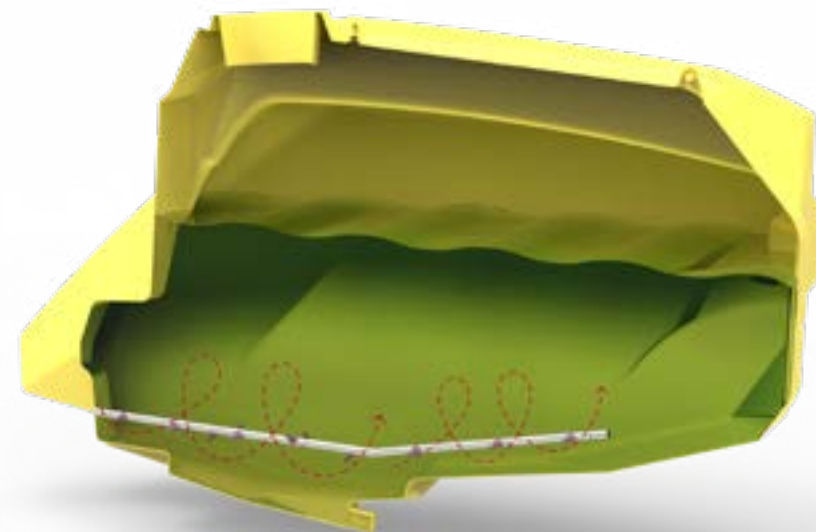
### Excellent parting line

The sprayers come in four sizes: 4200, 5200, 6000, and 7000 litres. Each size is designed to meet specific requirements of the farming operation. Additionally, the sprayers have an excellent parting line, resulting in a very flat surface. The flat surface ensures optimal stability and weight distribution, improving overall efficiency.

### Supported by the chassis

Moreover, the chassis supports the tank, ensuring that the weight of the tank is evenly distributed, reducing wear and tear on the sprayer's components. The sprayers also come equipped with injector agitation, ensuring the liquid is evenly mixed and applied. This feature is crucial to ensure that the sprayer operates efficiently and effectively, yielding better crops.

Tank Size	4200	5200	6000	7000
Nominal	4200 l	5200 l	6000 l	7000 l
Gross	4590 l	5520 l	6630 l	7605 l



## AEON 6000 I

### CUSTOMER BENEFITS:

- **Upgrading to higher capacity is cost-effective**



### AEON's higher 6000 I tank saves time and money

#### Higher spray capacity

One of the new AEON models boasts a higher 6000-litre tank, ensuring that more crops can be covered in one go, saving time and money. The longer hoses to the tank also allow for more flexibility and easier filling. Additionally, the sprayer comes with a new transport bracket, making it easier to move and transport the equipment between fields.

#### More capacity

The higher 6000 I tank comes with some added benefits. The best part is that it is built on the same platform as the 4200 and 5200 I tanks, making it easy for farmers already familiar with the equipment to operate and maintain. This ensures that farmers can easily upgrade to a higher-capacity tank without having to relearn the operation of the sprayer, making it a cost-effective solution for their farming needs.

## AEON 7000 I

### CUSTOMER BENEFITS:

- **Cover more ground and spray more efficiently with a longer and higher main tank**
- **Two 350-litre rinse tanks for more cleaning options**
- **Drawbar in two lengths and PUR suspension provide versatility and stability**
- **Same modules as smaller tanks for easy upgrading and maintenance**



**AEON 7000 I sprayer has a longer, higher main tank with a new sump design. New features include 2 x 350 l RinseTank.**

### **Longer and higher main tank**

The all-new AEON 7000 I features a new main tank that is longer and higher, with a new sump design, enabling farmers to cover more ground and spray more efficiently. The sprayer now includes two 350-litre RinseTank, providing farmers with more options for cleaning and maintaining the equipment.

### **More options for farmers**

The sprayer can be equipped with two different drawbars in two lengths, providing flexibility and versatility for various farming

operations. The PUR suspension ensures a smooth and stable ride, reducing wear and tear on the sprayer's components. Moreover, the longer chassis provides better weight distribution and stability, improving overall performance and efficiency.

The new sprayer model shares the same modules as the 4200, 5200, and 6000-litre tanks. It has a clean water tank, side shield, Turbo Filler, fluid system, axle, front belt, mudguards, and ParaLift.

## Side covers and safety equipment

### CUSTOMER BENEFITS:

- **Safe and comfortable design with no sharp edges or exposed components**
- **Dust and chemical residue-free handles, contacts, and controller**
- **Equipment longevity and customer safety are prioritized through meticulous attention to detail**



**The equipment is safe with no sharp edges and sealed for comfort.  
No chemical residue at contacts ensures safety and longevity.**

The design of our equipment ensures that there are no sharp edges, and everything is covered and sealed, providing a safe and comfortable experience for our customers. We take pride in our attention to detail, which is why we ensure that there are no dust and

chemical residuals at handles, contacts, and the controller, keeping our customers safe from harmful chemicals and maintaining the longevity of our equipment.



# Fluid system

## TechZone – Fluid system

### CUSTOMER BENEFITS:

- Quick maintenance for increased productivity
- Protected components for a longer lifespan
- LED lights for safer and more efficient operation
- Easy component access for hassle-free servicing
- Minimized downtime for cost and time savings



The sprayer equipment is designed to reduce downtime, increase productivity, and minimize the risk of damage.

#### Reduced downtime and increased productivity

The sprayer's right side provides easy access to the isolated spray circuit, large-dimension filters, and a second pump. This design allows quick and convenient maintenance, reducing downtime and increasing productivity. Farmers can easily access and maintain these important components, ensuring the sprayer operates efficiently and effectively.

#### Reducing the risk of damage

The equipment features a covered TechZone, ensuring that all sensitive components are protected from dust and debris, reducing the risk of damage and prolonging the machine's lifespan. Moreover, the TechZone is illuminated with energy-efficient LED lights,

providing optimal visibility in low-light conditions and allowing for safer and more efficient operation. This feature also enables farmers to work during early morning or late evening hours when poor lighting conditions increase the machine's usability and versatility.

The ease of maintenance and serviceability is crucial to our equipment design. We ensure every component is easily accessible and easy to maintain, reducing downtime and improving overall equipment efficiency. Our customers can rest assured that in the event of any maintenance or servicing needs, they can quickly and efficiently address them without experiencing any inconvenience. This design approach helps minimize equipment downtime and saves our customers valuable time and money.



## HARDI diaphragm pump

### CUSTOMER BENEFITS:

- Robust, self-priming pump for dependable performance
- Open crankcase design for less upkeep and chemical damage prevention
- It can run dry without damage, and no liquid cooling is required
- Mounted on the drawbar for easy maintenance
- Chemicals are separated from moving parts for safe liquid transfer

## The liquid system is driven by the robust grease-lubricated HARDI diaphragm pump

### Self-priming

The pump is self-priming and will, in all start-up conditions, be able to prime the filling and spraying system.

### Open crankcase

The unique HARDI pump has an open crankcase. This ensures that the crankcase will not hold any chemicals, thereby avoiding fast destruction of the bearings and the crankshaft in case of an unlikely diaphragm failure.

### Able to run dry without damage

The HARDI pump can run completely dry without any damage at all. No liquid for cooling is needed.

### Easy service pump

The pump is mounted on the drawbar and is easily accessible for service.

### No contact between chemicals and moving mechanical parts

All moving parts are completely separated from the liquid running through the pump.

### Hydraulic pump drive

The AEON with DELTA FORCE boom can be ordered with hydraulic pump drive for 540 rpm pumps. The tractor hydraulic valve needs to be set to priority. the required oil flow is 36 l/min.



### Pumps available for the AEON

Pump	r/min	Stroke	Capacity at 0 bar
464	540	10.0 mm	280 l/min
464H	540	12.0 mm	334 l/min
464	1000	5.5 mm	293 l/min
464H	1000	6.5 mm	349 l/min
FlexCapacity			598 l/min



FlexCapacity pump is mounted in the TechZone

## EasyClean filter

### CUSTOMER BENEFITS:

- Large surface, high debris capacity for sustained performance
- External gauge prevents unnecessary cleaning, saving time and money
- Automatic shut-off valve prevents spills during maintenance
- Upright position, ground-level access for convenient maintenance
- Dirt trap and vacuum gauge improve system performance



The HARDI EasyClean suction filter has a large filter surface and can hold a high capacity of debris. It comes with an external gauge that constantly monitors the filter's condition. This helps ensure the filter is only cleaned when necessary, avoiding unnecessary maintenance.



### Description of elements

1. Filter housing
2. Inlet of spray liquid
3. Filter element
4. Lid (one-hand operation)
5. Dirt trap flaps
6. Vacuum gauge line for monitoring flow
7. Automatic ON/OFF valve
8. Outlet for liquid
9. Drain
10. Emergency operation
11. Clips securing the filter insert



### When opening the lid, the main valve is automatically turned OFF

The automatic shut-off valve ensures the safe operation of the sprayer without any risk of a spill.

### Very high capacity

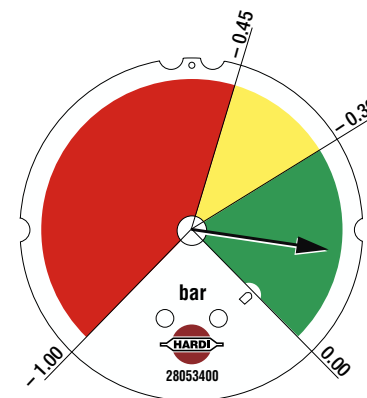
The filter has a large screen surface, ensuring a sustained high capacity.

### The filter is fitted in an upright position

The filter is fitted in such a position that it can be serviced from the ground without any risk of a spill.

### The dirt trap inside the filter screen ensures that impurities are removed from the system

Two flaps inside the filter ensure that impurities will be removed when the screen is pulled out.



### The condition of the filter can be monitored on a vacuum gauge

The unique vacuum gauge ensures that the filter is cleaned and only when needed.

## CycloneFilter

### CUSTOMER BENEFITS:

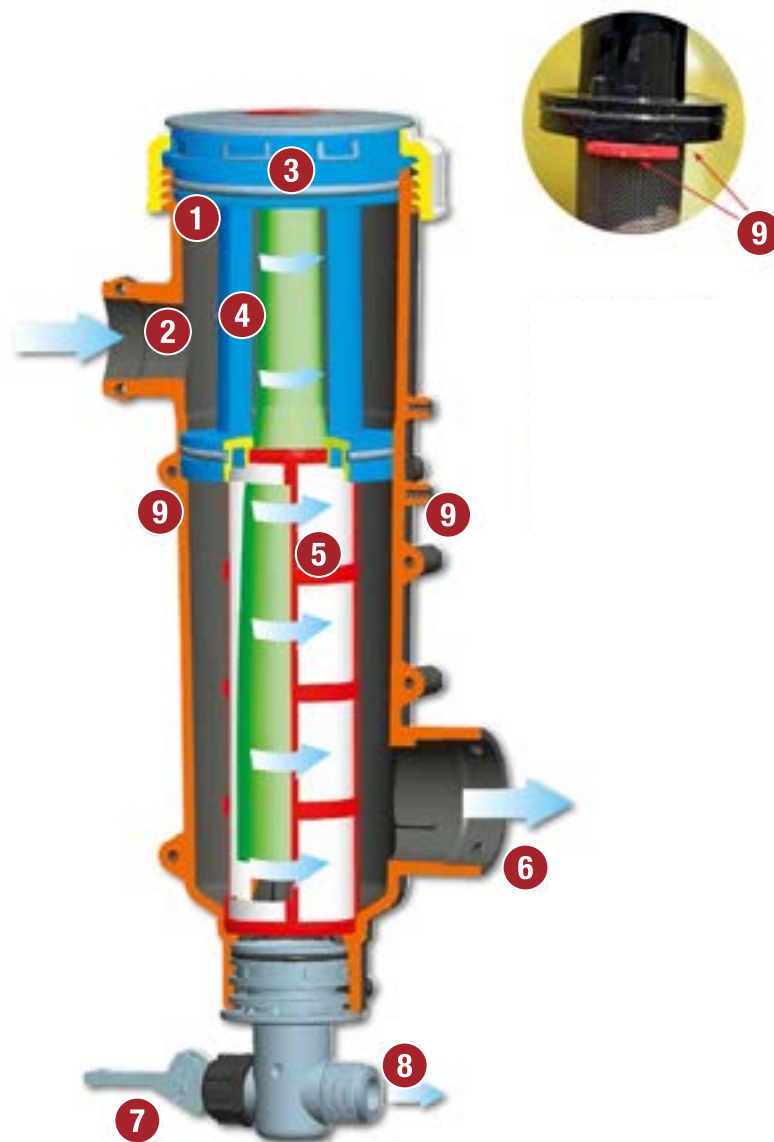
- **Cyclone action increases cleaning capacity, reducing downtime and pressure loss**
- **Unique boost function allows for uninterrupted operation**
- **Cyclone action enhances self-cleaning effectiveness for optimal filter performance**
- **Upright position of the filter prevents spills during an inspection**
- **Self-cleaning solution reduces downtime and increases the efficiency of liquid systems**



The HARDI CycloneFilter is a unique self-cleaning pressure filter that uses a high-speed cyclone for additional cleaning action. The cyclone action increases the cleaning capacity of the filter significantly. This ensures fewer stops and reduced pressure loss in the liquid system. The HARDI CycloneFilter furthermore has a unique boost function that allows the filter to be flushed “on-the-go” when needed.

### Description of elements

1. Filter housing
2. Inlet of spray liquid
3. Lid (one-hand operation)
4. Cyclone chamber
5. Filter element
6. Outlet of spray liquid
7. Boost valve
8. Return line
9. Clips securing the filter insert



### Unique cyclone action dramatically improves the self-cleaning action

The cyclone created inside the filter increases the speed of the liquid against the filter screen, thereby increasing the effectiveness of the self-cleaning action.

### The filter is fitted in an upright position

The filter is fitted in such a position that spill can be avoided when inspecting the filter.



- (•) Self-cleaning OFF  
Used when all the flow from the pump is needed
- (••) Self-cleaning ON
- (•••) Boost  
Used to flush the filter screen

## TurboFiller

### CUSTOMER BENEFITS:

- **High mixing capacity with powerful rotation for efficient mixing**
- **Optimum filling height and easy operation with three valves**
- **Very high vacuum and suction capacity for direct transfer to the tank**
- **Rotating nozzle for cleaning containers and hopper**
- **Standard cleaning lance with 1m hose for flushing and filling**



The HARDI TurboFiller is developed to handle large quantities of powders and liquids. Its high capacity is achieved through a combination of high vacuum and liquid rotation produced by a TurboDeflector inside the hopper.



### High mixing capacity

Liquid at high pressure is being used to create a powerful rotation inside the hopper. The rotational movement effectively mixes powders and liquids as they are drawn into the sprayer. The highest capacity is achieved when the TurboFiller is more than half-filled with water.

### Optimum filling height

A spring-loaded bracket with a transport lock makes it easy to change from field to filling position. The filling position is approx 95 cm from the ground.

### The TurboFiller is easily operated with 3 valves:

- Container rinse
- TurboDeflector with liquid in ON/OFF
- TurboFiller ON/OFF

### Very high vacuum and suction capacity

A large external ejector system creates a powerful vacuum that transfers powders and liquid directly into the tank.

### Rotating nozzle used for cleaning containers and the TurboFiller

The built-in rotating nozzle will clean any chemical container. After use, the same nozzle will clean out the complete hopper.

### Lance for cleaning

A cleaning lance is fitted as standard on the TurboFiller. This trigger valve with 1 m hose can be used for flushing the hopper or filling liquid into a container.

## Remote fluid system – FluidBox 8000

### CUSTOMER BENEFITS:

- Streamlined operations save time and increase efficiency
- Intuitive interfaces reduce training time and improve ease of use
- Simplified processes minimize errors and increase accuracy
- Integrated tools and features provide a comprehensive solution
- Enhanced safety features protect operators and equipment



The FluidBox 8000 provides quick and easy access to essential operations like AutoFill, AutoAgitation, and AutoWash.

#### Direct access to everyday operations

FluidBox 8000 offers direct access to everyday operations on a single screen, reducing complexity and providing an easy-to-use interface. Simplified filling, chemical induction, and calibration enable quick and efficient sprayer preparation.

#### Intuitive colour interface

The equipment's intuitive color interface simplifies farmers' navigation, reducing errors, and increasing productivity. The integrated calculator streamlines chemical preparation for specific fields, sav-

ing time, and reducing risks of under or over-application, ensuring proper crop protection.

#### Emergency stop feature

The equipment is designed with an On/Off and emergency stop feature for maximum safety for all functions. This feature gives farmers control over the equipment and the ability to stop all functions in an emergency. Doing so reduces the risk of accidents, protecting farmers and equipment alike.



## FluidBox 8000 display

- A.** Selector buttons for fluid functions
- B.** Turning selector knob
- C.** Refresh button (not used)
- D.** Back to main screen
- E.** Return to previous menu
- F.** Safe position button



## FluidBox 8000 main screen

### Main screen show following status

- Actual MainTank contents
- Actual RinseTank contents
- Main spraying valve status ON
- Actual PTO revolutions
- Selected Gravity from HARDI UT
- Actual agitation level
- Time

### Functions menu on left side of display

- Safe Position
- Main spraying ON/OFF status
- Service menu

### Functions menu on right side of display

- Fluid functions menu.
- AutoFill menu
- Agitation menu

**7" (17.8 cm) display  
with button operation.**



## FluidBox 8000 fluid function menu

### Fluid functions menu screen show follow

- Blue for suction lines
- Red for pressure lines
- Actual PTO revolutions
- Actual spray pressure
- Actual agitation level
- Actual MainTank contents
- Actual RinseTank contents

### Functions menu on the left side of the display

- Suction from the external tank
- Suction from MainTank
- Suction from RinseTank
- No suction to the pump

### Menu for Agitation level and spray pressure

- Functions menu on the right side of the display
- Liquid to MainTank
- Liquid to TurboFiller/  
PressureEmpty
- Liquid to Rinsing nozzle
- Liquid to the spray boom
- Return button



## FluidBox 8000 AutoFill screen

### AutoFill menu screen

- Actual main tank content
- Set-point for filling
- Diff between the actual main tank and set-point
- Selected volume rate l/ha
- Selected area to spray ha
- Actual pump rpm
- Selected gravity from HARDI UT
- Actual RinseTank content
- Actual agitation level

### Functions menu on the left side of the display

- Enter the set-point for filling
- Enter content to fill in the main tank
- Enter volume rate
- Enter the area to spray
- Enter Agitation menu



## FluidBox 8000 AutoFill screen

### Functions menu on the right side of the display

- AutoFill using external filling device Agitation 0%
- AutoFill using the external filling and TurboFiller Agitation 50%
- Use TurboFillr suction with recirculation to the main tank. Agitation 50%
- Use TurboFiller with suction from RinseTank. Agitation 50%
- Enables spraying function / Auto return to the main screen
- Enter the safe position function



## FluidBox 8000 agitation menu

### Agitation menu screen show

- Actual agitation level
- Actual MainTank level
- Actual RinseTank level

### Functions menu on the left side of the display

- Set agitation level to 100%
- Set agitation level to 75 %
- Set agitation level to 50 %
- Set agitation level to 25 %
- Set agitation level to OFF
- Return button



## FluidBox 8000 service menu

Calibration

Service



## FluidBox 7000

### Main screen show following status

- Actual MainTank contents.
- Actual RinseTank contents.
- Actual PTO revolutions
- Selected Gravity from HARDI UT
- Actual agitation level

### Functions menu on left side of display

- Safe Position
- Main spraying ON/OFF status
- Agitation menu

### Functions menu on right side of display

- Fluid functions menu
- AutoFill menu

### 4.3" color screen

### 4 operational buttons on each side





## DynamicFluid4

### CUSTOMER BENEFITS:

- **Fast and precise volume rate regulation, one of the best regulation systems on market**
- **Improved accuracy with advanced tractor and sprayer technology**
- **DynamicFluid4 system provides a solution to challenges faced in conventional spraying methods**
- **DynamicFluid4 system meets EN/ISO 16119 standard with +/- 10% accuracy in 3.5 seconds**
- **DynamicFluid4 system achieves +/- 0.5% accuracy in 7 seconds**



### Dynamic fluid system based on 4-sensor technology.

#### Fast and precise regulation

With precision and capacity in mind, HARDI challenged the traditional way of regulating volume rate. Traditionally, a sprayer applies and then measures the actual volume rate. When the rate applied and the volume rate does not match the pre-set volume, the computer system will regulate until they match.

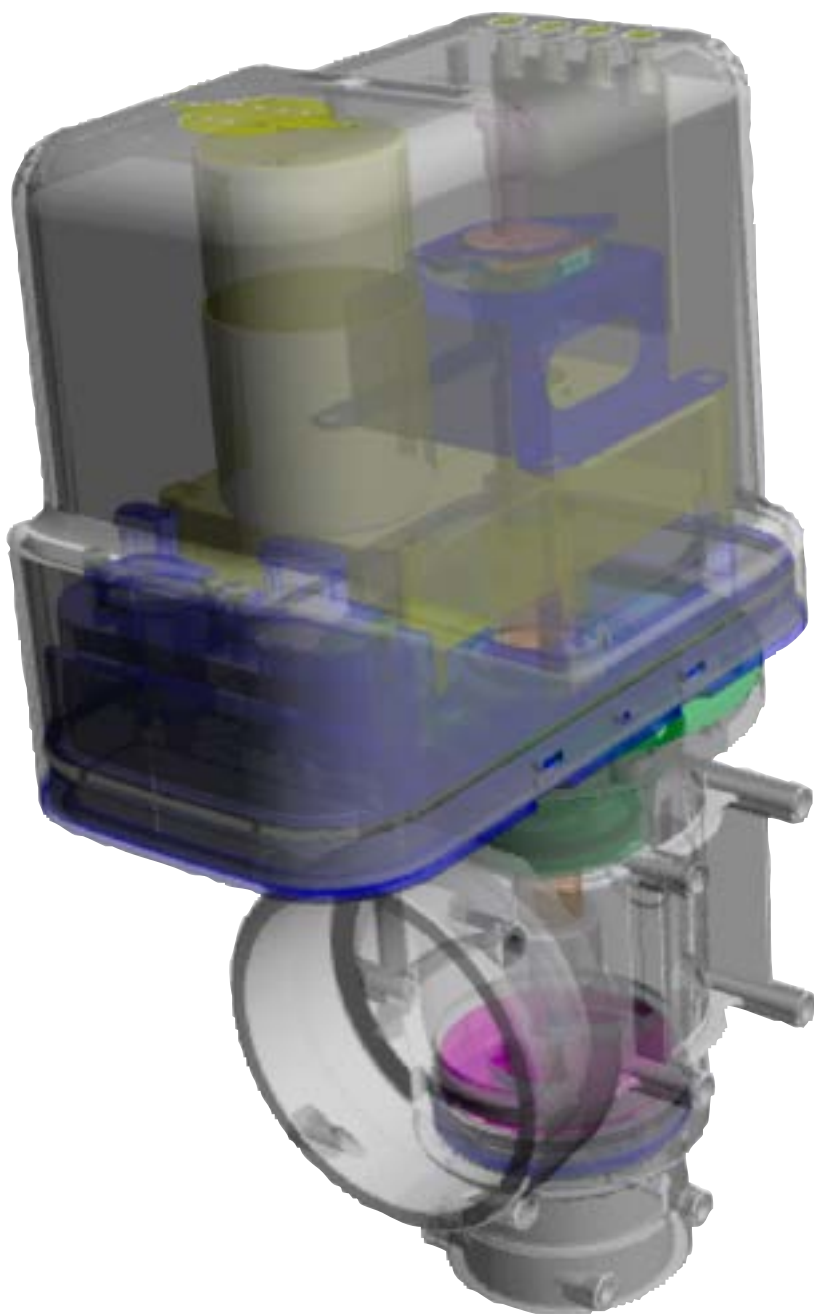
This conventional spray system means that driving speed, boom width, and pump revolutions must stay relatively stable to obtain precise regulation.

With today's modern tractor transmissions, powerful engines, advanced boom suspensions and GPS-controlled spray booms, the conventional way of spraying has changed. These tractor and

sprayer technology improvements have now made liquid regulation the weak part of the application system. Now that the boom and tractor control is optimized by technology, the operator demands more from the application system.

DynamicFluid4 is the solution for these challenges. In this chapter, the technique and the benefits of the system are described.

The fast reaction is proven in different tests – the EN/ISO 16119 standard demands a 10% accuracy by speed or volume rate changes in 7 seconds. The DynamicFluid4 system reaches the +/-10% value after 3.5 seconds, after 7 seconds the accuracy is +/- 0.5%



**Input to the regulation system comes from 6 different sources.**

**Two are outside the fluid system:**

**1. Active boom width.**

The boom is set up with a number of sections and the size of each section.

As boom sections are turned ON/OFF, the active boom size is monitored based on each boom section.

**2. Driving speed.**

Speed input is required to know how fast the sprayer is travelling (GPS input or wheel sensor)

Four sensors are in the fluid system, 4 in DynamicFluid4, refer to these 4 sensors:

**3. Pump rpm.**

A sensor on the pump measures it. PTO speed can vary, affecting the pump

output. Tractor acceleration does not necessarily mean higher revolutions on the PTO and vice versa. Reading pump RPM means that the system knows the pump flow output.

**4. Regulation valve position.**

An angle sensor (Hall sensor) is mounted internally and reads the Rotation in the regulation valve. The sensor is used to know the position of the valve.

**5. Flow meter.**

Measures flow going to the boom.

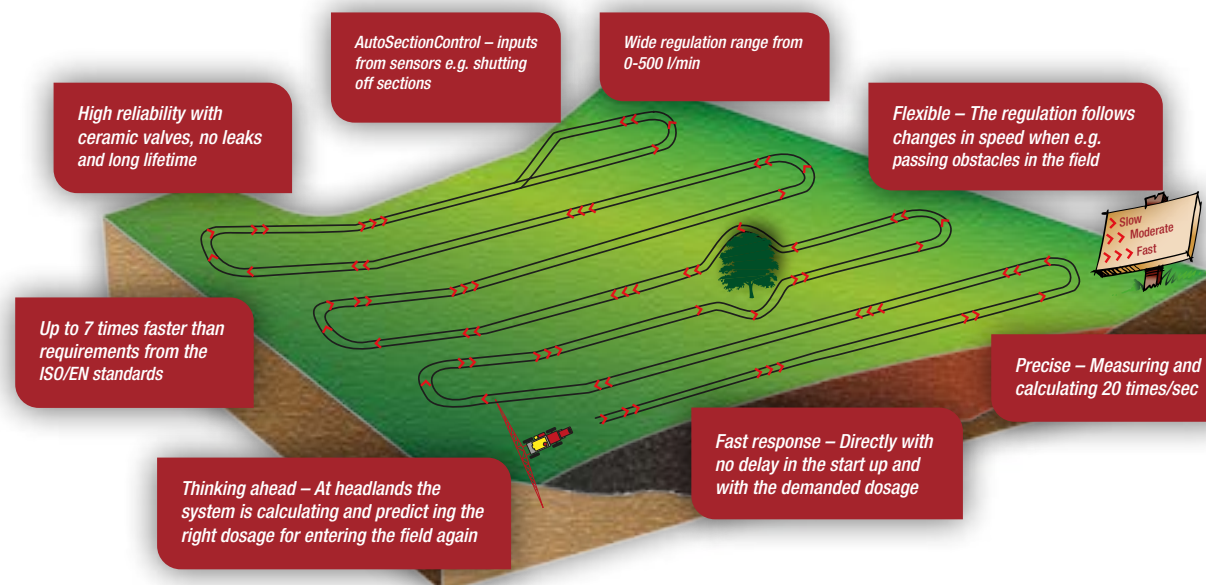
**6. Pressure sensor.**

Measures the pressure in the fluid system at the EFC before going to the boom.

## DynamicFluid4

### CUSTOMER BENEFITS:

- **Capacity is 500 l/min at 1 bar**
- **LED indicator lights for diagnostics Precise-measuring 20 times/second**



### Increase in speed

After completing a headland turn, the sprayer can quickly accelerate from 6-12 km/h within the first 30m. A traditional fluid system adjusts the volume rate after acceleration occurs. This continues as the speed becomes stable, and the conventional fluid system finally catches up with the actual speed. The fluid system always lags on adjustment waiting for a new input. In this example, the whole area has been under-dosed.

With DynamicFluid4 (Patent Pending) and feed forward, the system will react directly to the speed change and not wait until the speed change has developed into an under-dose.

### Stability and safety

More sensors often mean a greater risk of failure, and consequently more downtime. The sensors in DynamicFluid4 each have their task, but they will also work as backups for each other. That means that if one sensor fails, the calculation will continue with signals from the remaining sensors, and the regulation will continue. This goes for pump rpm, flow and pressure sensors.

Two inputs are vital for automatic regulation. If one of the signals driving speed or position of the regulation valve is missing, regulation has to be done manually.

The driver will get a warning on the display if a signal is missing.

### SoftStart

When the tank gets empty at the end of a spray job, the regulation will try to compensate by closing the regulation valve. If the driver forgets to turn down the pressure manually, this will be the set point when starting on the next full tank. The result is a pressure peak in the system, which in some cases could cause damage to the system, potentially resulting in leaks.

DynamicFluid4 has a (customer set) standby pressure which will be the maximum pressure when starting, thereby avoiding having these unintended pressure peaks in the system.

As DynamicFluid4 works with a flow meter and pressure sensor, high accuracy can be obtained even with output rates less than 15 l/min. In contrast to conventional flowmeter-based regulation, pressure sensor and flow meter input ensure the same high accuracy in the entire flow range.

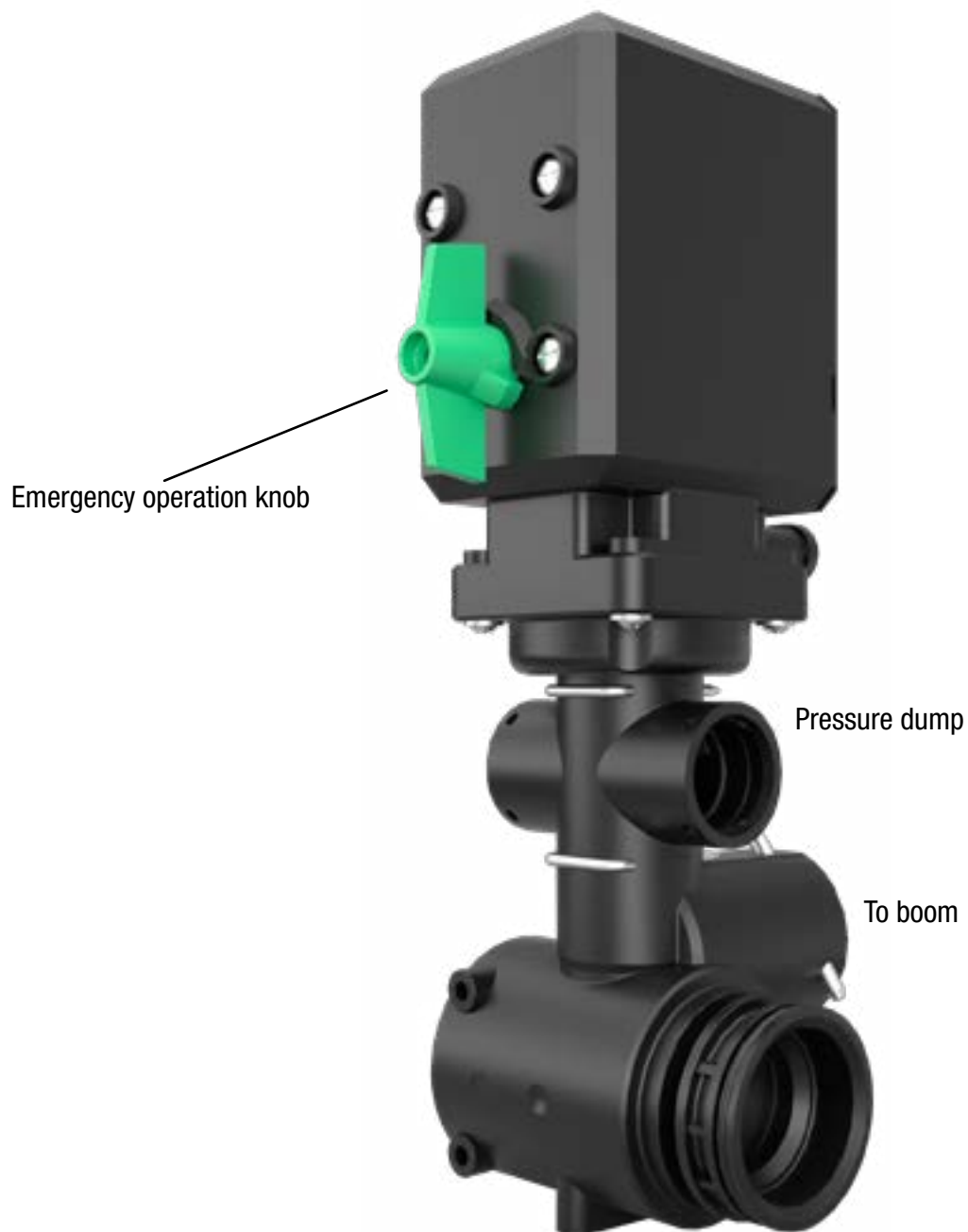
## EFC boom section valves

### CUSTOMER BENEFITS:

- **Instant shut-off at the nozzles for precise application**
- **No need for adjustment, resulting in a faster nozzle OFF**
- **Increased flow capacity for high application rates and larger boom widths**
- **Choice of 9 or 13 sections to suit different boom models and applications**



The ElectricFastControl (EFC) is a modular system with a positive drive motor valve for each section and a single pressure dump valve, when all sections are switched to OFF.



The section valves incorporate a pressure dump. When the section is switched to OFF, the pressure in the line to the nozzles is relieved.

This results in instant shut-off at the nozzles. The EFC does not need any form of adjustment, e.g. pressure equalisation.

**Faster nozzle OFF, even with very small capacity nozzles**

Incorporated pressure dump ensures instant nozzle closure.

**Increased flow capacity**

The manifold has a larger diameter, making it capable of handling high application rates and accommodating larger boom widths.

**Boom sections (not for PrimeFlow, ActiveAir, AutoSelectDuo)**

The EFC operating unit is available with 9 or 13 sections.

The number of sections offered per boom model is shown in the boom survey.



# Controllers, Solutions & Electronics

## AutoWash

### CUSTOMER BENEFITS:

- **Automatic flush/rinse with up to six rinse circles for maximum cleaning effect**
- **Three easy field programs for operator convenience and fast cleaning with minimum pump rpms of 480**
- **Eliminates leftover plant production products for safe refilling and reduced contamination risks**
- **It saves manual cleaning time and increases efficiency**
- **Improves productivity with fast and efficient cleaning**



### What is AutoWash?

It is a series of automatic flush/rinse programmes. The VT part of the ISOBUS terminal manages the operation to obtain maximum cleaning effect from rinse water. Up to six rinse circles reduce the residual concentration to a very low level so that after refilling for the next spray job, there is no risk of leftover plant production products.

### What field programmes are possible?

Three programmes take the guesswork out of cleaning. These are fast and easy for the operator. He sets the pump rpms to a minimum of 480 and chooses a rinsing programme.

### 1. BoomFlush

Rinses the spray lines, which takes about one minute. This is used when there is an interruption in the spray job, e.g. rain.

### 2. FastFlush

This quick, basic wash takes about two minutes — used for planned stops where the same pesticide is sprayed the next day in the same crop.

### 3. MultiRinse

The extended wash takes about 15 minutes. Used if there is a slight change in pesticide or crop or the next spraying task is in a compatible pesticide/crop combination.

The cleaning process is done in the field, so the residues do not end up in the farm yard.

The operator remains in the tractor cab, thus avoiding contamination from the sprayer and treated crop.

The operation is simple, as the operator does not need an in-depth understanding of the sprayer. He only needs to choose a suitable programme.

It saves time, e.g. no need to wear protective clothing every time the valves need to be operated.

Other procedures may be required or cannot be done in the field.

If a cleaning agent must be used, we recommend doing a FastFlush, adding the cleaning agent, and cleaning the sprayer after the recommended waiting time by spraying out and running a MultiRinse.

The TurboFiller must be manually cleaned, and this is best done after filling chemicals in the sprayer.

When to use BoomFlush, FastFlush and MultiRinse

If the pesticide label does not state otherwise, the following are recommendations as to when to use BoomFlush, FastFlush and MultiRinse.

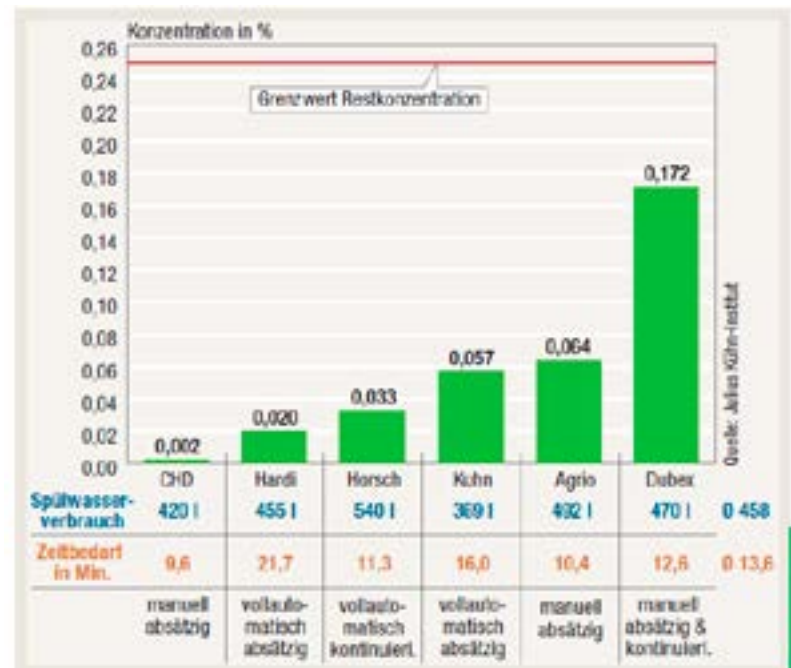
	Interruption Stop spraying due to wind, rain, heat etc.	Planned stop Same pesticide and crop next day	Slight change In pesticide or crop Compatible pesticide crop	Conflict Dangerous pesticide Crop combination
Pesticide	Same pesticide morning and evening	Same pesticide today and tomorrow	Different pesticides	Incompatible pesticides
Crop	Same crop	Same crop	Similar crops	Different crops
Examples	E.g. Brand X morning and evening	E.g. Brand X today and tomorrow	E.g. Fungicide in wheat followed by insecticide in barley	E.g. Herbicide in wheat then spray in sugar beet
No cleaning	No crop damage Boom might drip Sedimentation	No crop damage Boom might drip Sedimentation	Little crop damage	Severe crop damage
BoomFlush	Safe	Probably ok	Little crop damage	Severe crop damage
FastFlush	Not possible Main tank not empty	Safe	Probably ok	Crop damage
MultiRinse	Not possible Main tank not empty	Safe but overkill	Safe	Probably ok except when chemical binding occurs
SoakWash (FastFlush & MultiRinse)	Not possible Main tank not empty	Safe but overkill	Safe but overkill	Safe

	BoomFlush	FastFlush	MultiRinse
Liquid system	Partially	Completely	Completely
Boom lines	Yes	Yes	Yes
Main tank	No	Yes	Yes
ChemFiller	No	No	No
Rinse action steps		1	6
Residual concentration	< 20%	< 50%	< 2%
Rinse water used		100 l	460 l
Time (24 m boom, ISO F110-03)	2 min.	8 min.	25 min.
Action	From cabin	From cabin	From cabin

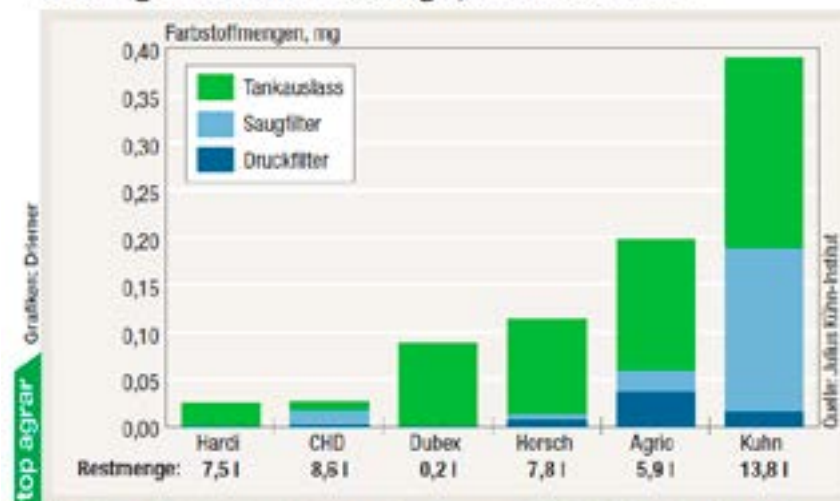
Time and values can vary depending on nozzle size.



- Demand for the sprayer was the highest specification level on cleaning/rinsing and electronic, also circulation was a must, tank size should be between 4000 and 6000 l, and it should be a 27 m boom
- The cleaning test was done in 2 ways following the 2 existing ISO methods 22368-1 (Cleaning of the complete sprayer including refill) and 16236 (drain able volume)
- The HARDI i-sprayers have the best result for automatic cleaning.
- The drain able volume is excellent as there is only a tiny residue with a low residue concentration
- The HARDI i-sprayers do a reliable and excellent cleaning – the operator gets maximum security in the cleaning job. And we know that it is always the same result as all AutoWash procedures are the same.



### Übersicht 3: Je weniger Restflüssigkeit und je niedriger die Mittelmenge, desto besser.



Wichtig für Punkteinträge: Ablassbare Restmenge (Drainable Volume) und Mittelmenge.

## AutoAgitation/ TankGauge

### CUSTOMER BENEFITS:

- AutoAgitation ensures maximum agitation and minimizes liquid residues
- Different programs can be selected to optimize agitation
- Manual override is available from FluidBox
- TankGauge measures tank contents and provides an automatic readout
- Low tank contents warning can be set up with TankGauge

### What is AutoAgitation?

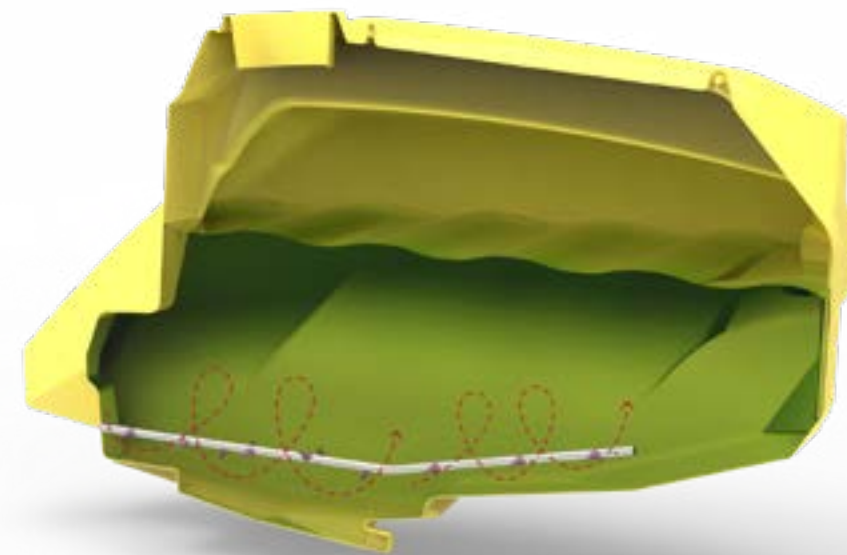
AutoAgitation is a system that includes an electrically operated flow valve and a sensor for monitoring the tank's contents. The system is controlled by SmartCom software, which manages the agitation flow.

### How does it work?

AutoAgitation is a fully automatic system that ensures maximum agitation when the tank is full. As the tank empties, the computer regulates the flow to prevent foam and minimize liquid residues. Different programs can be selected to optimize agitation, and a manual override is available from FluidBox. AutoAgitation is a standard feature of both AutoFill and AutoWash.

### TankGauge

TankGauge is an electronic sensor for measuring tank contents, and it is a standard feature on AEON SmartCom sprayers. The system measures the filling level, and an automatic on-screen readout of the tank contents is possible. Additionally, a warning for low tank contents can be set up.



## AutoFill

### CUSTOMER BENEFITS:

- AutoFill eases tank filling with SmartValves, AutoAgitation, and a safety sensor
- ISOBUS terminal reads tank contents, set fill volume from the cabin
- Saves time: go to work area, connect hose, start job via FluidBox
- SmartValve closes to prevent overfilling and spillage
- Increases productivity by saving time for other tasks



Time-saving so other tasks can be done.

### What is AutoFill?

This is a system to ease the tank filling process for the operator. Motorised SmartValves, AutoAgitation and a tank safety sensor are the main components.

### How does it work?

1. Actual tank contents are read on the ISOBUS terminal
2. The operator sets the fill volume from the tractor cabin
3. The operator goes to the work area, connects the hose and starts the job via the FluidBox
4. The SmartValve closes when the fill volume is reached

## PrimeFlow

### CUSTOMER BENEFITS:

- PrimeFlow is a pressure-based system for liquid circulation before spraying
- It prevents sedimentation and allows flushing of boom lines without spraying on the ground
- Electric stepper motors replace traditional control units for nozzle control
- Nozzles per boom section can be freely configured and reprogrammed
- Viton seals are used for plant protection and high-pressure cleaning equipment



### What is PrimeFlow?

It is a pressure-based system for liquid circulation to the nozzles before the spraying starts. It prevents sedimentation and permits flushing the boom lines without spraying them onto the ground.

### What makes it work?

The traditional control unit is eschewed in favour of a new approach. Instead of relying on spring-loaded non-drip valves at each nozzle, electric stepper motors take over the control unit function. The SMCU, or Stepper Motor Control Unit, manages two or three nozzle bodies.

The motors are a proven component of the automotive industry. They are fast with positive action and low power consumption.

Nozzles per boom section can be freely configured, which complies with the farm practice. If needed, the sections can be reprogrammed at a later stage.

The controls are at the nozzle, which is ideal for the most effective use of RinseTank water when cleaning the sprayer in the field.

This is a much simpler and less vulnerable system than a vacuum-based one. Leaks on a vacuum system are challenging to locate, and the slightest leak will cause problems.

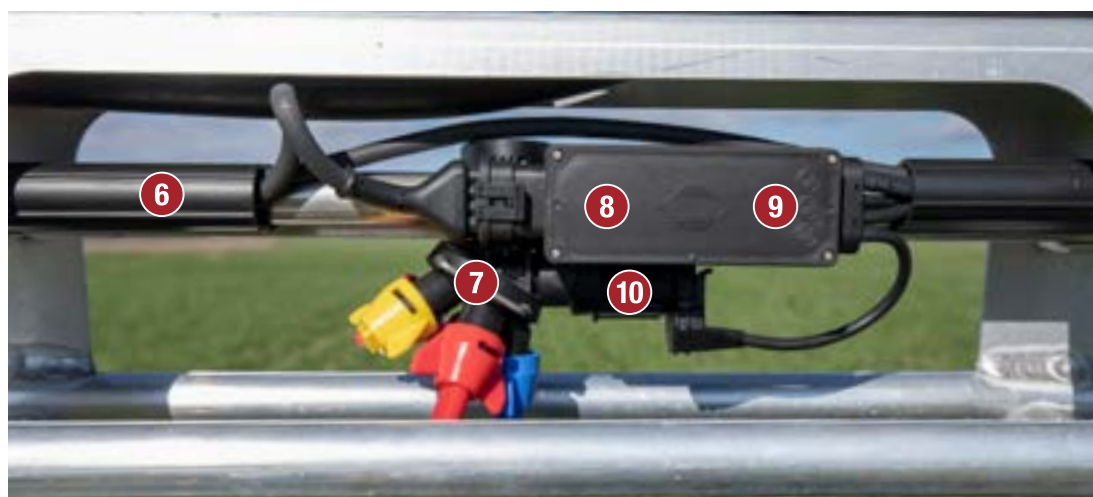
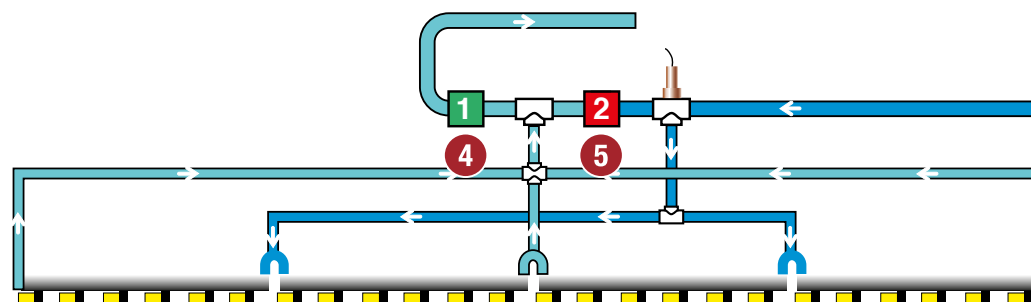
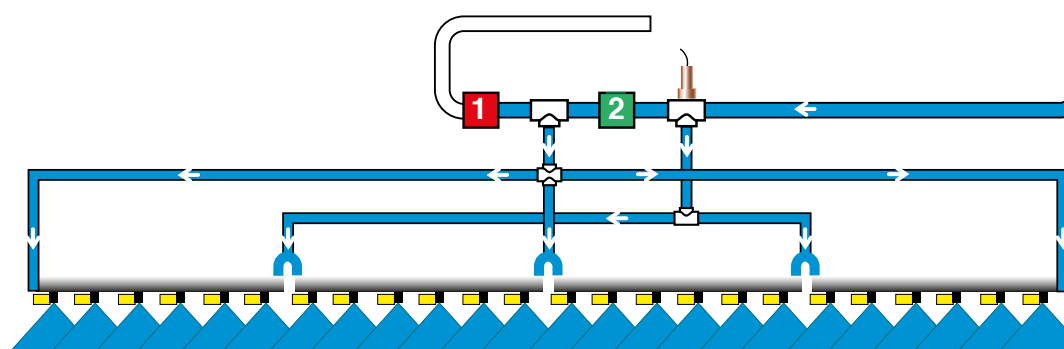
A status diode is located at every module box, and standard spring-loaded non-drip valves can substitute the motors.

The open circuit and short detection feature on each valve can create a warning presented directly on the terminal, facilitating easy diagnostics.

HARDI has replaced all silicone seals designed for Viton seals especially suited for use in a plant protection environment and high-pressure cleaning equipment.

The circulation pressure is lower than the spray pressure, if smaller nozzles are used, the pressure drop is higher.

1. Bypass valve return
2. Bypass valve block
3. Pressure sensor
4. Valve 1 closed
5. Valve 2 open
6. Boom lines
7. PENTALET 5-nozzle holder
8. Stepper Motor Control Unit
9. Status diode
10. Stepper motor ON/OFF



## PrimeFlow AutoNozzleControl

### CUSTOMER BENEFITS:

- AutoNozzleControl is a fully automatic system that opens and closes every nozzle on the boom as necessary
- The system saves 5-10% of product and is compatible with certain GPS receivers
- Spot spraying is easy with the 50 cm section width and prescription maps
- Nozzle coverage percentage can be set between 0 and 100%
- The system requires planning and adjustment for optimal performance



### What is AutoNozzleControl?

AutoNozzleControl is a fully automatic system that opens and closes every nozzle on the boom as necessary. In this case, the section width is 50 cm. The system is based on the PrimeFlow pressure circulation system.

AutoNozzleControl manages the nozzle on/off when driving over a sprayed area, like into a headland or wedge or around obstacles like trees etc.



**How does it work?**

AutoNozzleControl works only on sprayers with SmartCom and PrimeFlow. Connected to a GPS receiver, the system works. When spraying, the Task-controller of the terminal automatically records the area sprayed. In a typical situation where the headland is sprayed first, AutoNozzleControl automatically closes the nozzles if the operator passes over a sprayed area.

A free-of-charge EGNOS or WAAS GPS signal could be good enough for a spray job – as nozzles overlap, an accuracy of 30 cm is acceptable. Of course, more accurate GPS signals can be used and give a better result in slopes, the last nozzle otherwise switches on/off even with minimal overlaps.

The percentage coverage of the section can be set up between 0 and 100% as desired.

Depending on the number of sections, a product saving between 5 and 10% is documented, with more sections, more significant savings can be reached.

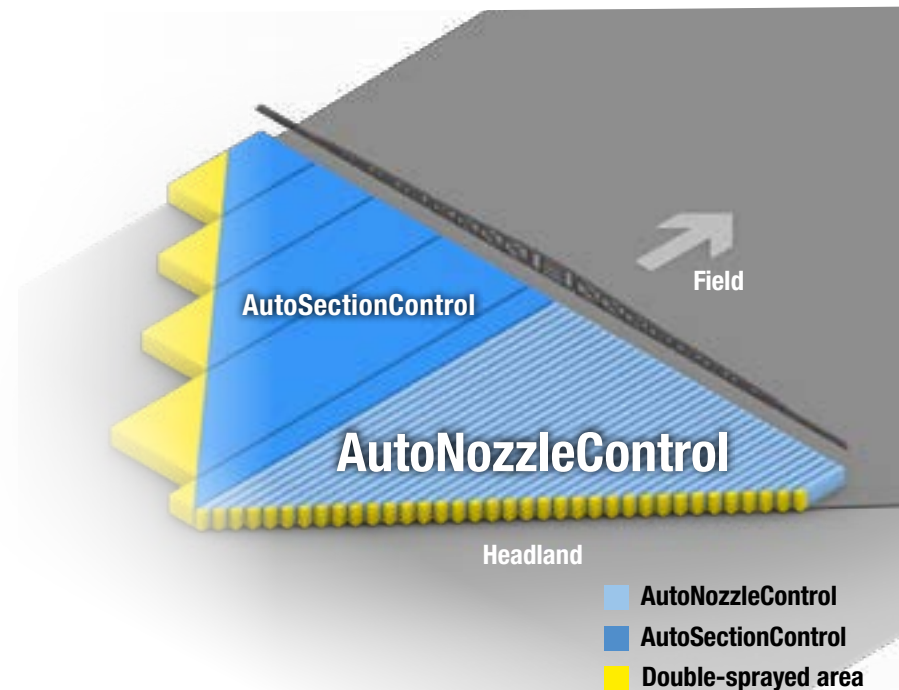
The used ISOBUS terminal must allow enough sections to work with the AutoNozzleControl system. For a 39 m DELTA FORCE boom, 78 sections are required. The ex-factory delivered HC 8700 and HC 9700 can work with PrimeFlow AutoNozzleControl.

**Spot spraying with PrimeFlow AutoNozzleControl**

A prescription map can be easily applied as the section width is only 50 cm. The task is, in that case, planned before, and the sprayer works with an application map.

Necessary with the planning is how large the application areas are. There is a nozzle every 50 cm, but this nozzle works approx. 150 cm wide, which means if only one nozzle is used, there is no overlap from the neighbour nozzles. In that case, the dose needs to be higher to get enough dose to the target.

Also, the feed-forward setting of the DF4 system must be adjusted correctly, as otherwise, the circulation pressure in the PrimeFlow system is too low.



## ActiveAir

### CUSTOMER BENEFITS:

- Improved accuracy and efficiency of chemical application
- Reduced waste of chemicals
- Even the distribution of chemicals across the crop
- Durability and longevity of the equipment
- Flexibility in the spraying process for efficient coverage of fields.



## Sprayer equipment has a pneumatic nozzle system and pressure circulation to ensure accurate chemical distribution.

The sprayer equipment features a pneumatic nozzle on/off system, with solenoid valves on the boom that function as section valves. The pneumatic valve is located on the non-drip position and opens the nozzles using air pressure, which results in automatic closure when the air is turned off. This feature provides farmers with better control over the sprayer's application process, improving the accuracy and efficiency of chemical application and reducing waste.

The sprayer equipment is designed with a pressure circulation system that has the same layout as PrimeFlow. This feature helps to avoid sedimentation in the boom tubes, ensuring that the chemicals are distributed evenly across the crop. The pressure circulation

system allows for constant flow, preventing the buildup of sediments in the boom tubes and ensuring that the sprayer operates efficiently.

The sprayer equipment comes with standard stainless steel tubes and PENTALET nozzle holders, which ensure durability and longevity of the equipment. Additionally, farmers have the option to choose from 9 or 13 sections, depending on their specific needs and field requirements. These options provide flexibility in the spraying process, enabling farmers to cover their fields efficiently and effectively.



## AutoSelectDuo

### CUSTOMER BENEFITS:

- **Increased flexibility and control over spraying operations with automatic nozzle changes**
- **Maintaining optimal droplet size with variable speeds, resulting in efficient and effective spraying**
- **Optimized nozzle changes at headlands and slowdown zones, saving time and allowing for easy reaction to changing conditions**
- **Easy and efficient nozzle changes on the go, reducing time-consuming and inefficient manual changes**
- **Improved productivity and faster work rates due to more efficient and effective spraying operations**

AutoSelectDuo is an innovative solution for farmers and agricultural workers looking for higher flexibility in spraying operations. This new system allows for automatic nozzle changes in response to changing field and weather conditions, all operated from the comfort of the cabin.

### **Maintaining Optimal Droplet Size with Variable Speeds**

With three combinations of two sets of nozzles, the AutoSelectDuo is applicable for speed variations of 8-15 km/h depending on nozzle type and pressure. This allows for a change in application rate at a constant speed and pressure while maintaining optimal droplet size.

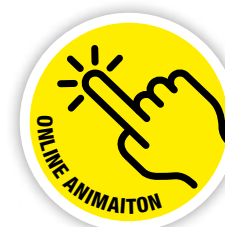
### **Optimized Nozzle Changes for Efficient Spraying**

The system is particularly useful at the headland or other slow-down zones, where two different nozzles can be combined, making it possible to have significant speed changes when spraying. This saves time and allows for an easy reaction if the wind changes on headlands or in buffer zones.

### **Easy and Efficient Nozzle Changes On-The-Go**

The AutoSelectDuo has 2 + 2 nozzles, which allows changing nozzles by rotating the carousel. The system offers three levels of nozzle change on the go – nozzle A, nozzle B, and nozzles A+B. With pressure circulation, there is instant working pressure at each nozzle, no sedimentations, and boom line flush without spraying.

Overall, the AutoSelectDuo provides farmers and agricultural workers more flexibility and control over their spraying operations, allowing quick and easy adjustments in response to changing field and weather conditions. Say goodbye to time-consuming and inefficient manual nozzle changes and hello to faster work rates and increased productivity



## PulseSystem

### CUSTOMER BENEFITS:

- **Spot spraying reduces chemical use and increases efficiency**
- **Curve Control provides even chemical application across all terrains**
- **Variable rate application adjusts the flow rate per section for efficient and effective chemical application**
- **PulseSystem features result in a healthier and more productive crop**



The PulseSystem has several features that provide farmers with a fast, safe, precise application process. With Auto Nozzle Control, the system automatically adjusts the nozzles' flow rate based on the sprayer's speed, ensuring that the chemical application is consistent and accurate. This feature helps to reduce waste and minimize the risk of over or under-applying chemicals, resulting in a healthier and more productive crop. The Spot spraying feature enables farmers to apply chemicals to specific areas rather than the entire field. This targeted approach helps to reduce chemical use and increase efficiency, resulting in cost savings for the farmer.

Curve Control is another feature of the PulseSystem, which adjusts the nozzles' flow rate based on the boom's curvature. This feature ensures that chemicals are applied evenly across the field, regardless of the shape of the terrain. Finally, the Variable rate application feature allows farmers to adjust the flow rate of the nozzles on a per-section basis, ensuring that the chemicals are applied at the correct rate for each field area. This feature helps to reduce waste and increase efficiency, resulting in a healthier and more productive crop.

## Pulse Width Modulation

### CUSTOMER BENEFITS:

- **Alternating nozzle switching improves coverage, reducing waste and increasing efficiency**
- **Fast volume rate changes and quick on/off reaction ensure precise chemical application**
- **Flexibility and control optimize chemical use and improve crop yields**

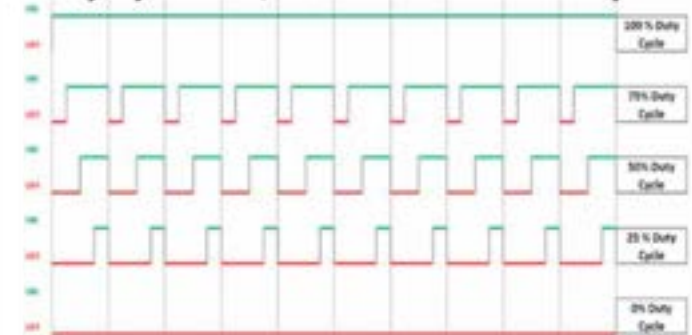
### Enables the regulation of nozzle flow

The switching of solenoid valves on/off enables the regulation of nozzle flow, with different duty cycles across various systems. Alternating nozzle switching is one of these systems, which can provide farmers with better control over the application of chemicals. By alternating the flow of chemicals between the nozzles, the system can ensure more even distribution across the crop, resulting in better coverage and reducing the risk of over or under-application. This feature can help improve the spraying process's efficiency, resulting in a healthier and more productive crop.

### Fast volume rate changes

The ability to make fast volume rate changes and have a quick on/off reaction time is critical for efficient and precise chemical application in agriculture. With the ability to adjust the flow rate per area, farmers can ensure that the correct amount of chemical is applied to their fields, resulting in healthier and more productive crops. Fast on/off reaction time is equally important as it allows for precise control over the spraying process, reducing the risk of over or under-application and minimizing chemical waste. Together, these features provide farmers with the flexibility and control needed to optimize their chemical application and achieve optimal crop yields.

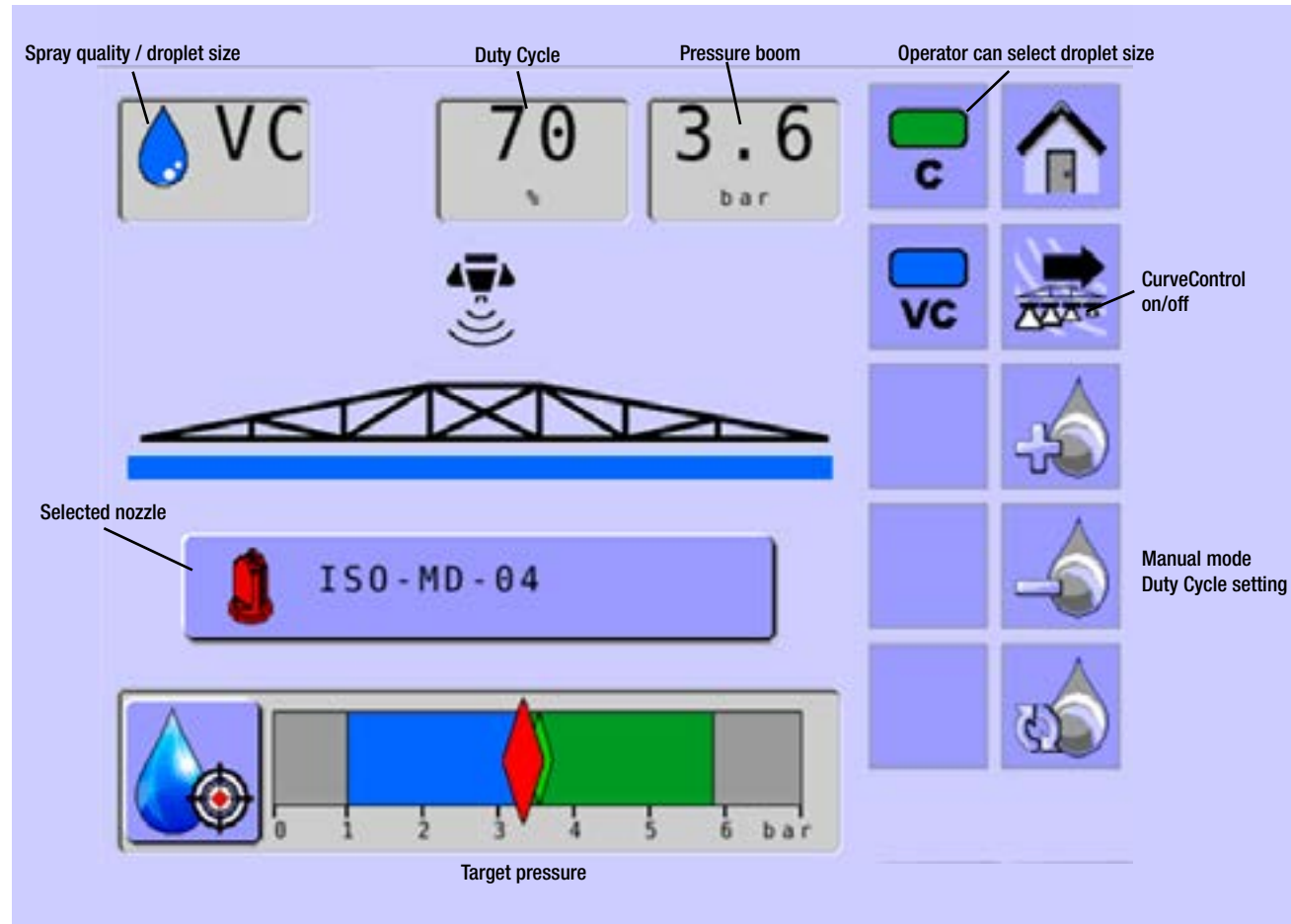
Duty Cycle for 0,5 Sekunden with 20 Hz system



## PulseSystem run screen

The sprayer equipment is designed with two main settings, Auto Mode and Duty Cycle mode, that provide farmers with the flexibility to optimize their chemical application. In Auto Mode, the system functions as a pressure limiter, ensuring the pressure remains constant during spraying. This feature helps to maintain consistent flow rates and ensures that chemicals are applied accurately and efficiently. The system controls the flow rate in Duty Cycle mode by adjusting the solenoid valves' on/off cycle. However, if the Duty Cycle falls outside the 30-100 range, the application rate will be incorrect, resulting in over or under-application. Farmers must ensure the Duty Cycle is within this range to optimize their spraying process and achieve optimal crop yields.

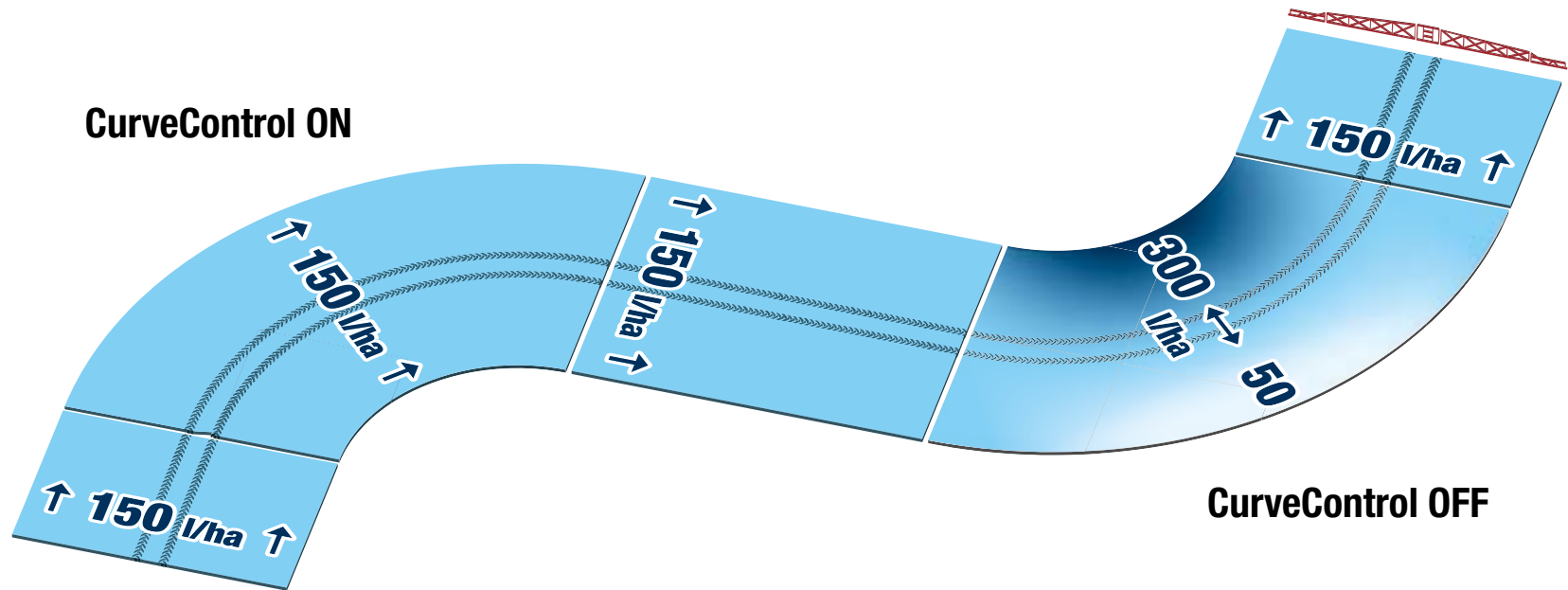
To ensure optimal performance, the sprayer equipment comes equipped with HARDI nozzles, known for their precision and durability. These nozzles are designed to deliver uniform droplet sizes and consistent flow rates, resulting in accurate and efficient chemical application. Additionally, the droplet size can be adjusted to suit the specific chemical being used and the crop's growth stage. This feature helps ensure that the chemicals are delivered precisely where needed, reducing waste and minimizing the risk of damage to non-target areas.



## CurveControl

### CUSTOMER BENEFITS:

- Reduces chemical consumption and environmental impact
- Prevents over and under-dosing for better application accuracy
- It uses pulsation instead of pressure to maintain the correct volume per nozzle
- The Solenoid valve controls flow to nozzles 20 times a second for precise regulation
- Wide flow-rate range with one nozzle size for versatility



## Reduce chemical consumption and environmental impact with CurveControl

Thanks to the CurveControl function, chemicals are saved, and the environmental impact is reduced in fields with many curves or when spraying around windmill towers or remises. A minimum of spray liquid is applied at the inside and full flow, where the boom runs fast at the outer wings. This automatically prevents over and under-dosing.

- It uses pulsation rather than pressure to maintain the correct application volume per nozzle
- The solenoid valve turns the flow to the nozzles on and off, 20 times a second to control their flow
- Wide flow-rate with one nozzle size from 30 to 100% variation

## SmartCom

### CUSTOMER BENEFITS:

- **Faster, more efficient spraying with responsive and accurate liquid regulation**
- **Ultimate steering precision for accurate application and reduced wastage**
- **Minimal downtime with quick and easy SmartCom diagnostics through HARDI ServiceTool**
- **Cutting-edge connectivity with cloud solutions and remote diagnostics for quick problem resolution**
- **ISOBUS-compatible for easy plug-and-play connection to tractors and controllers, with intelligent features available directly from the operator's own ISOBUS terminal**



### **SmartCom – Prepared for the future**

The brain of the AEON is our intelligent SmartCom – an electronic control unit that gives you responsive and accurate liquid regulation, thereby allowing faster spray speeds with higher volume rates. The unit's fast processor also gives you ultimate steering precision.

### **Minimum downtime**

SmartCom provides quick and easy diagnostics with the HARDI ServiceTool. Utilising a SmartLink to connect to the SmartCom, our service staff can update the sprayer, diagnose errors and add features directly through the ServiceTool.

### **Cutting-edge connectivity**

The AEON SmartCom offers you an entirely new level of integration. We have prepared SmartCom for online connections with your

favourite cloud solutions to transfer field maps and data directly to and from your machine. The AEON SmartCom, in connection with our ISOBUS terminal, also readies you for remote diagnostics, allowing us to get you up and running almost instantaneously.

### **Always ISOBUS**

The SmartCom is fully ISOBUS-compatible for easy plug-and-play connection to tractors and controllers across brands and models. As long as it is supported, the operator can use intelligent features such as AutoNozzleControl and ComfortTrack steering directly from their own ISOBUS terminal. The proven HARDI Grip and SetBox are standard equipment to ease complex sprayer operations.

## HARDI ServiceTool

### CUSTOMER BENEFITS:

- **17-digit VIN for international machine identification**
- **ServiceTool flashes SmartCom ECUs and provides field diagnostics**
- **Machine status report shows Diagnostic Trouble Codes**
- **The diagnostic tool can identify specific functions and sensors**
- **Data for SmartCom sprayers are stored automatically in the cloud**



The HARDI ServiceTool has two main functions. First of all, it is used for flashing the SmartCom ECUs, and second is used as a diagnostic tool in the field. The new 17-digit VIN (Vehicle Identification Number) ensures the sprayer is identified as a unique machine.

#### Vehicle Identification Number

With the introduction of SmartCom, a 17-digit VIN is implemented. The sprayers now follow an international system of identification of machines, which is required for all types of service requirements, mainly published in EU directives.

#### Flashing Tool

The flashing tool allows the production team to load the software into the SmartCom network. A PC is connected to a PDU via a specific HARDI SmartLink cable.

All data is stored with the VIN and the specific order. Everybody with access could then later find out the software status of a sprayer, including its history.

#### Diagnostic tool

In the field, trained service technicians can connect a PC to the sprayer and receive a machine status report. This connection is made via the HARDI SmartLink.

The HARDI ServiceTool can be used in different ways, either to get status reports and do fault finding, as a flashing tool to upload a new software solution, or to install a new app.

#### Machine status report

The machine status report is automatically generated when the HARDI ServiceTool is connected to the sprayer. The Diagnostic Trouble Codes (DTC) are directly shown in a table. This table lists all codes and how often these messages have been detected since the last report. The report helps the service staff to get a first overview.



# Booms



## Boom survey

Note: The EN/ISO 16119 sets demands of boom sections; up to a 24 m boom width, a maximum section width of 4.5 m is allowed; over 24 m maximum is 6 m. The marked models are not available in Europe.



### DELTA FORCE 24-39 m

DELTA FORCE is designed to be a large boom. The selection of features and the layout of the boom structure are targeted to perform at high driving speed and high performance at boom widths of 24-39 m. The result is a boom with many simple and robust solutions, giving a high-performing and reliable boom with a simple setup, low maintenance and a great design.

#### DELTA FORCE boom:

- 39/27/15 m – 13 sections
- 36/27/15 m – 9, 13 sections
- 36/24/13 m – 9, 13 sections
- 33/25/15 m – 9, 13 sections
- 33/24/13 m – 9, 13 sections
- 32/25/15 m – 9, 13 sections
- 30/24/13 m – 13 sections
- 30/21/12 m – 9, 13 sections
- 30/15 m – 9, 13 sections
- 28/21/12 m – 9, 13 sections
- 28/14 m – 9, 13 sections
- 27/21/12 m – 9, 13 sections
- 27/14 m – 9, 13 sections
- 24/12 m – 9, 13 section



### TWIN 24-36 m

The TWIN FORCE boom employs the world's best system for spray control. Using an adjustable curtain of air to entrain and direct the spray, TWIN FORCE can reduce drift by an astounding 80%. The result is close to no loss of plant protection products or contamination of adjacent areas.

#### HARDI TWIN FORCE is available in:

- 24/12 m
- 27/14 m
- 28/14 m
- 30/15 m
- 32/17 m
- 33/17 m
- 36/18 m



## TWIN FORCE

### – Boom centre

#### ■ Pendulum

- The Pendulum dampens fast side movements and keeps the boom horizontal.
- A hydraulic dampening cylinder that is fully adjustable dampens the pendulum.

#### ■ Guide rods

- The sensitivity of the pendulum can be adjusted by moving the guide rods. Ensuring a perfect boom ride under all conditions.

#### AntiYaw

- A unique AntiYaw system dampens the forward and backward horizontal movements as well as any horizontal shock load.
- – For dampening the booms backward going movements
- – For dampening the booms forward going movements

The TWIN FORCE centre part enhances boom stability with its intuitive design and effective pendulum control, allowing it to seamlessly track the sprayer's movements and adjust to the contours of the terrain



# DELTA FORCE

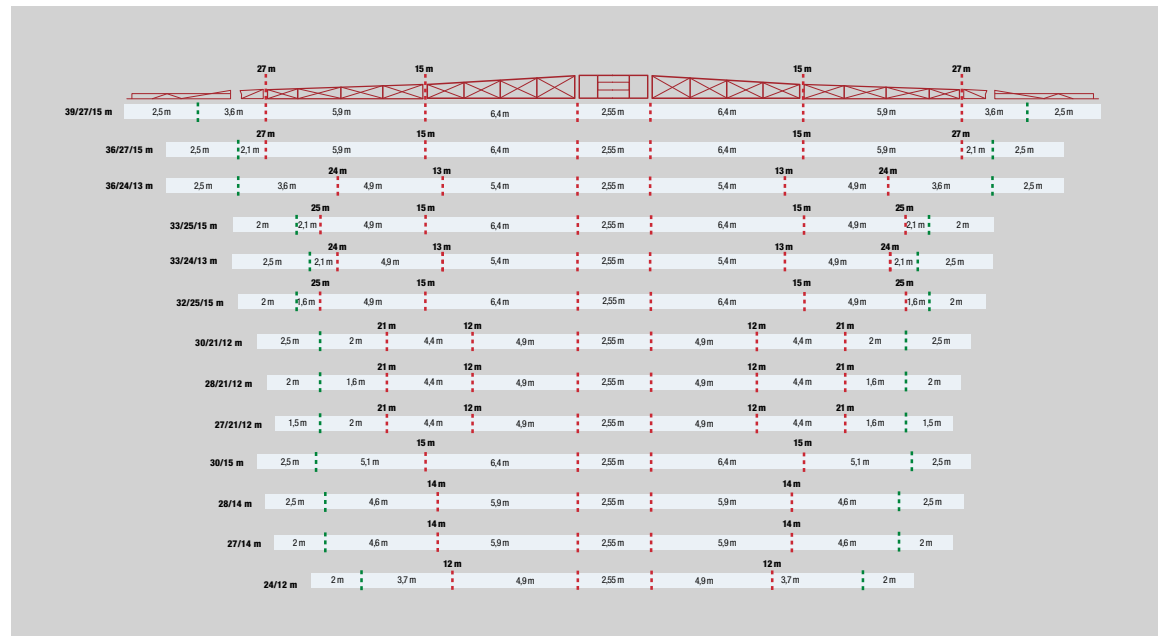
## – Boom sections



**HARDI DELTA FORCE is available in:**

**3-fold:** 39/27/15 m, 36/27/15 m, 36/24/13 m, 33/25/15 m, 33/24/13, 32/25/15 m, 30/21/12 m, 28/21/12 m, 27/21/12 m.

**2-fold:** 30/15 m, 28/14 m, 27/14 m, 24/12 m



## DELTA FORCE – Boom centre



### 1. Five settings for boom behaviour

- Top = mist effect from the pendulum
- Lowest = Terrain following / trapeze like



### 2. Pendulum lock cylinder

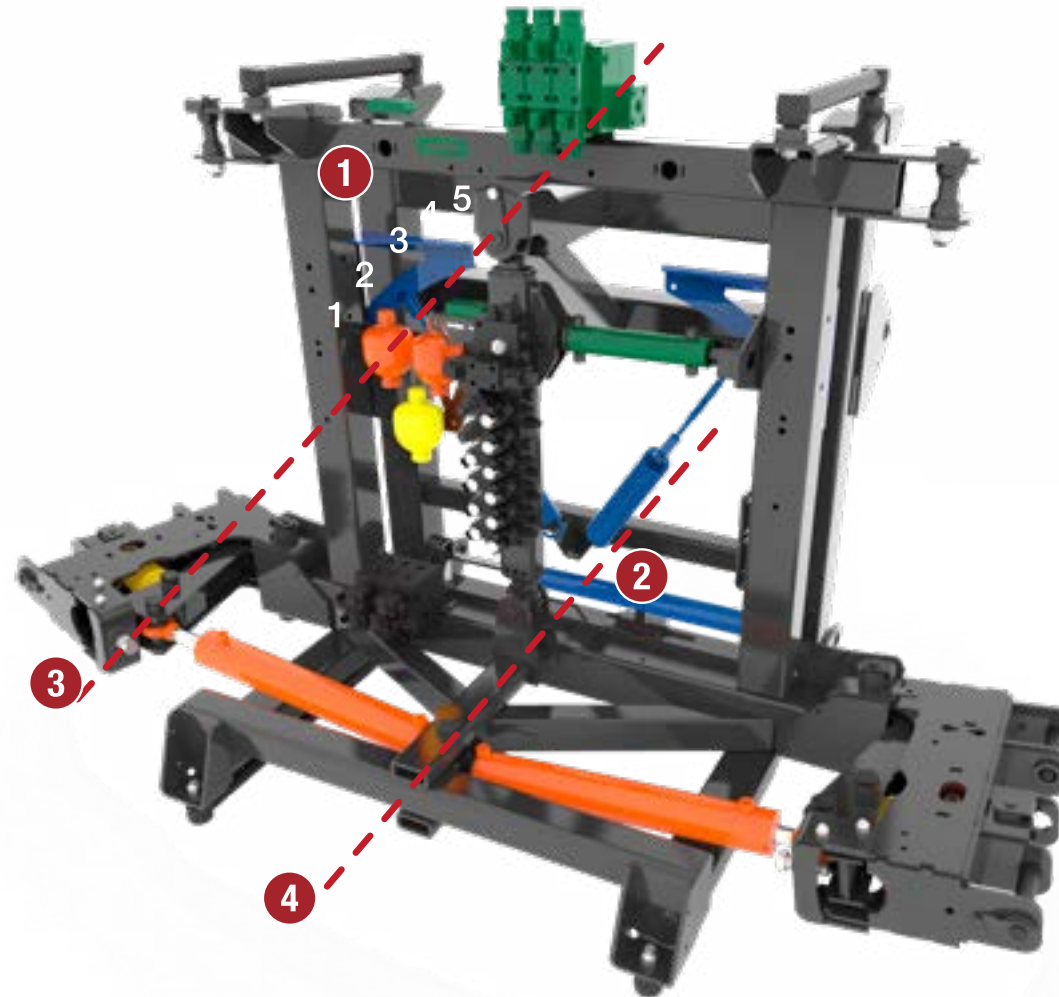
- The pendulum lock cylinder has an adjustable dampening function. This will slow down the speed of the roll movements on the boom.

### 3. Pivot point

### 4. Centre of gravity

Best-in-class boom stability: A very advanced yet simple centre part controls the movements of the DELTA FORCE boom.

The five pendulum settings allow for adjusting the boom performance, either to a pendulum, which follows the sprayer movements or to follow the level of the terrain.



### ■ AntiYaw

- For dampening the booms backward going movements

### ■ AntiYaw

- For dampening the booms forward going movements

### ■ AutoTerrain

- Boom stability

### ■ Manual set-up

- 5 steps and variable dampening

## DELTA FORCE – Boom centre

### CUSTOMER BENEFITS:

- High performance
- Easy setup
- Low maintenance



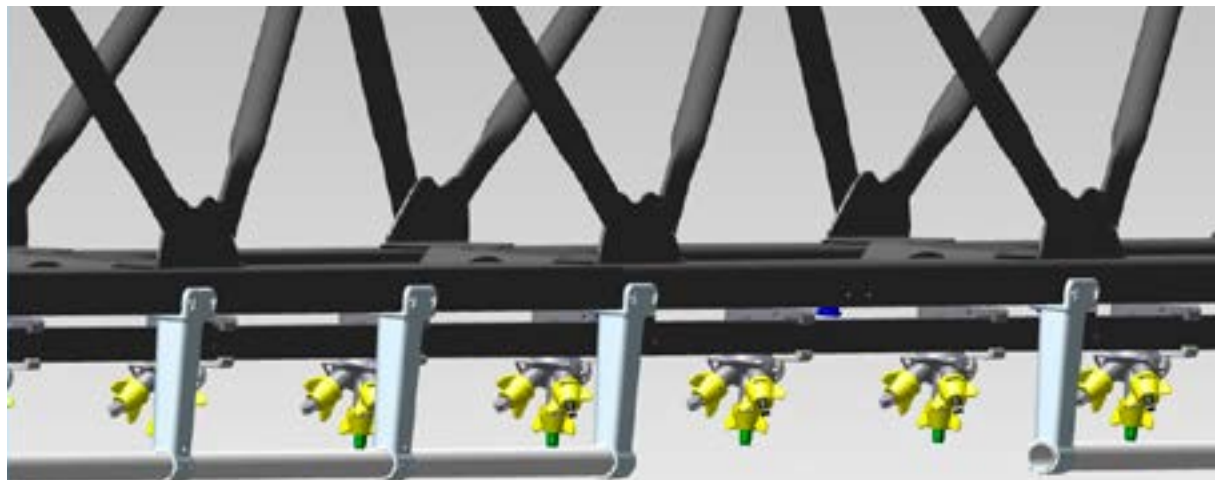
### DELTA FORCE suspension

- Pendulum height
- Link arm geometry

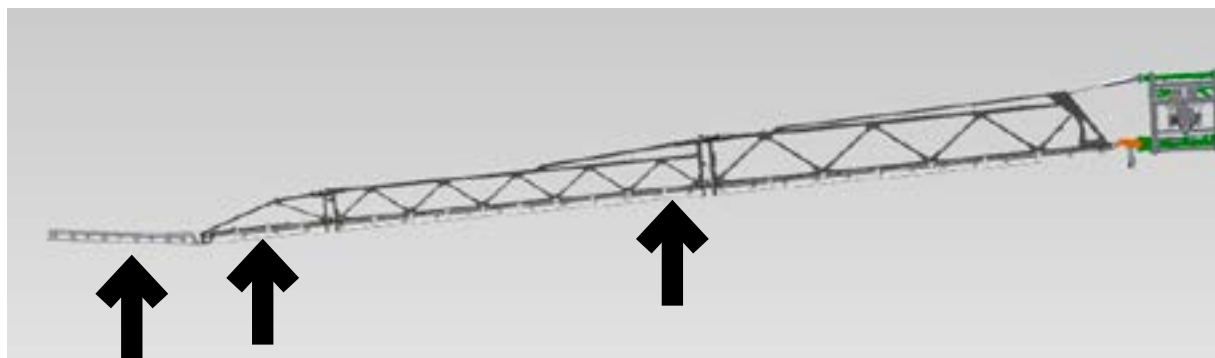
There are only two parameters to adjust when setting up the boom:  
Spring for boom characteristic 1 and dampening of pendulum 2.

## DELTA FORCE – Boom wings

The nozzles are protected by an aluminium tube. A significant difference compared to similar systems is that each boom element starts and stops with a steel guard to support and protect the aluminium tube.



Nozzles at the breakaway section are fully protected in the boom structure.

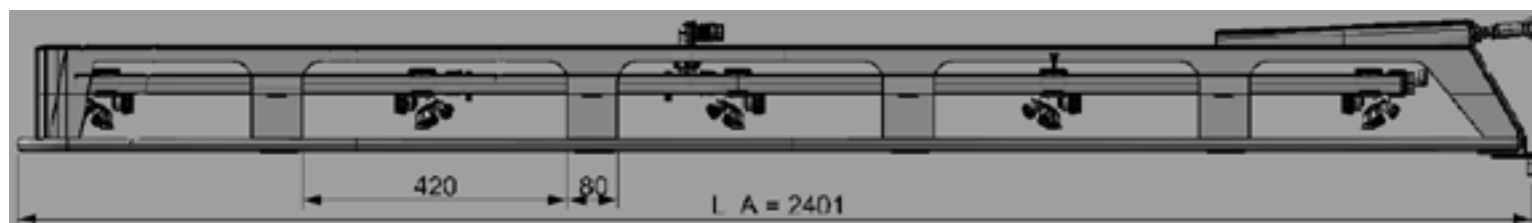


The bracket for nozzle protection is a unique HARDI part. It is strong, but should it break, it will not damage the rest of the boom and is easily replaceable. The breakaway is aluminium and has proved its reliability on other booms.

## DELTA FORCE – 25 cm nozzle space

### CUSTOMER BENEFITS

- **More precise spraying with smaller nozzle spacing**
- **Lower boom height reduces spray drift potential**
- **Improved coverage with smaller droplets**
- **Stainless steel nozzle tubes for durability**
- **On- and off-centre solutions for different transport widths**



### 25 cm nozzle space – 24-36 m

DELTA FORCE boom can be delivered with additional nozzle holders between the standard 50 cm holders. This so-called on-centre solution allows it to work with 50- or 25 cm nozzle spacing.

With smaller nozzle space, the boom height can be lower, which reduces the potential spray drift. The AutoTerrain boom management is the best condition to work with lower boom heights.

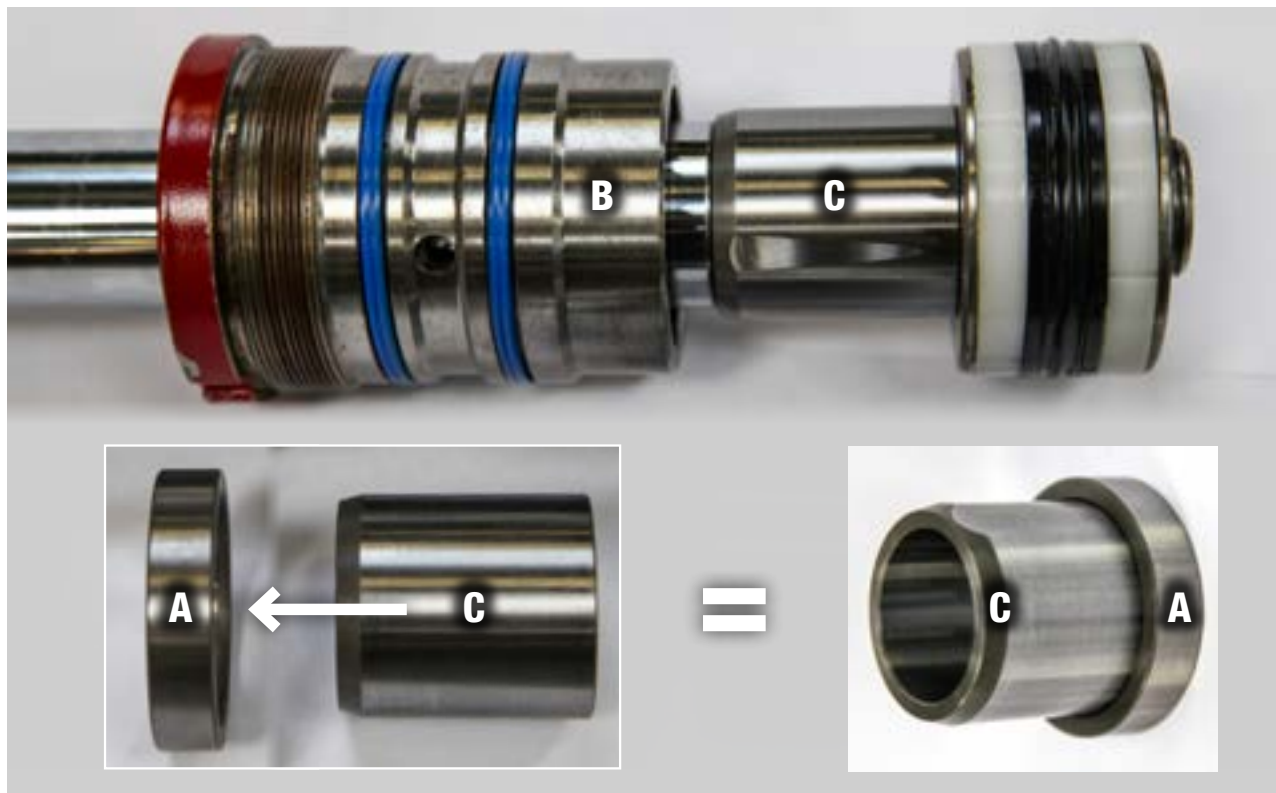
Another advantage is that smaller nozzles have smaller droplets, leading to better coverage.

- **Changed break-away demanded**
- **9 sections 2 fold – 24/ 27 / 28 / 30 m**
- **13 sections 3 fold – 24, 27/ 28/ 30/ 32 / 33 / 36 m**
- **Only with EFC / no PrimeFlow / no ActiveAir / no AutoSelect Duo**
- **Stainless steel nozzle tubes**
- **Recommended nozzles size for drift reduction setting MINIDRIFT or MINIDRIFT DUO 02 or 025**

## DELTA FORCE – Gradual-fold

### CUSTOMER BENEFITS

- Smooth and controlled folding process for the boom, minimizing potential damage and wear
- Reduced risk of accidents or injuries due to slow and gradual folding speed
- Improved overall efficiency and productivity in field operations



### Gradual-fold – progressive folding soft at the start and stop.

On the two outer folds, the geometry of the folding arms is made so that the folding speed is varied during the folding. Higher speed in the folding and slow at the start and stop.

The folding speed at the inner fold is hydraulically restricted just before the boom reaches the transport bracket.

A is a steel ring fixed inside cylinder guide B.

When the boom is folding in, C will pass through A, and the angled groove will restrict the oil passage, reducing the folding speed.



## DELTA FORCE – Steel quality

### CUSTOMER BENEFITS

- DELTA FORCE is made of quality steel for optimal weight and strength
- Plates are made of high-strength Domex® 420 from SSAB
- Domex® 420 is almost double the strength of regular mild steel
- Tubes are made of Steel 52 for dynamic stress
- High Tensile steel ensures unmatched reliability over time



**DELTA FORCE, like other HARDI booms, is produced of quality steel to optimise weight and strength.**

Plates are made in DOMEX® 420 from SSAB (Swedish Steel).

Domex® 420 is characterised by high strength and excellent formability. Regular mild steel is

Domex® 240. So Domex® is almost doubled up on strength.

Tubes are made of Steel 52. Steel 52 is ideal for dynamically stressed constructions. Standard steel in the farmers' workshops will be steel 37.

**HLE**  
**DOMEX®**  
Swedish Quality



### 2nd prize

High Tensile steel: this high-quality steel can resist significant stress and ensures unmatched reliability even after many years.

This riveting technology comes from an industrial truck company, which is good proof of robustness and reliability.

## DELTA FORCE – Boom wings and nozzle holders

### STANDARD FEATURE

- **3-dimensional**
- **Stainless steel boom tubes**
- **TRIPLET nozzle holders**
- **Spring-loaded breakaway**

### OPTIONAL

- **BoomPrime**



### **Over-centre locking mechanism**

Combined with the three-dimensional design, this provides a very rigid boom, ensuring a minimum of boom movements and very accurate application.

### **Breakaway**

A multi-directional spring-loaded breakaway system protects the boom from damage.

Protected nozzle holders

Well-protected TRIPLET nozzle holders are standard.

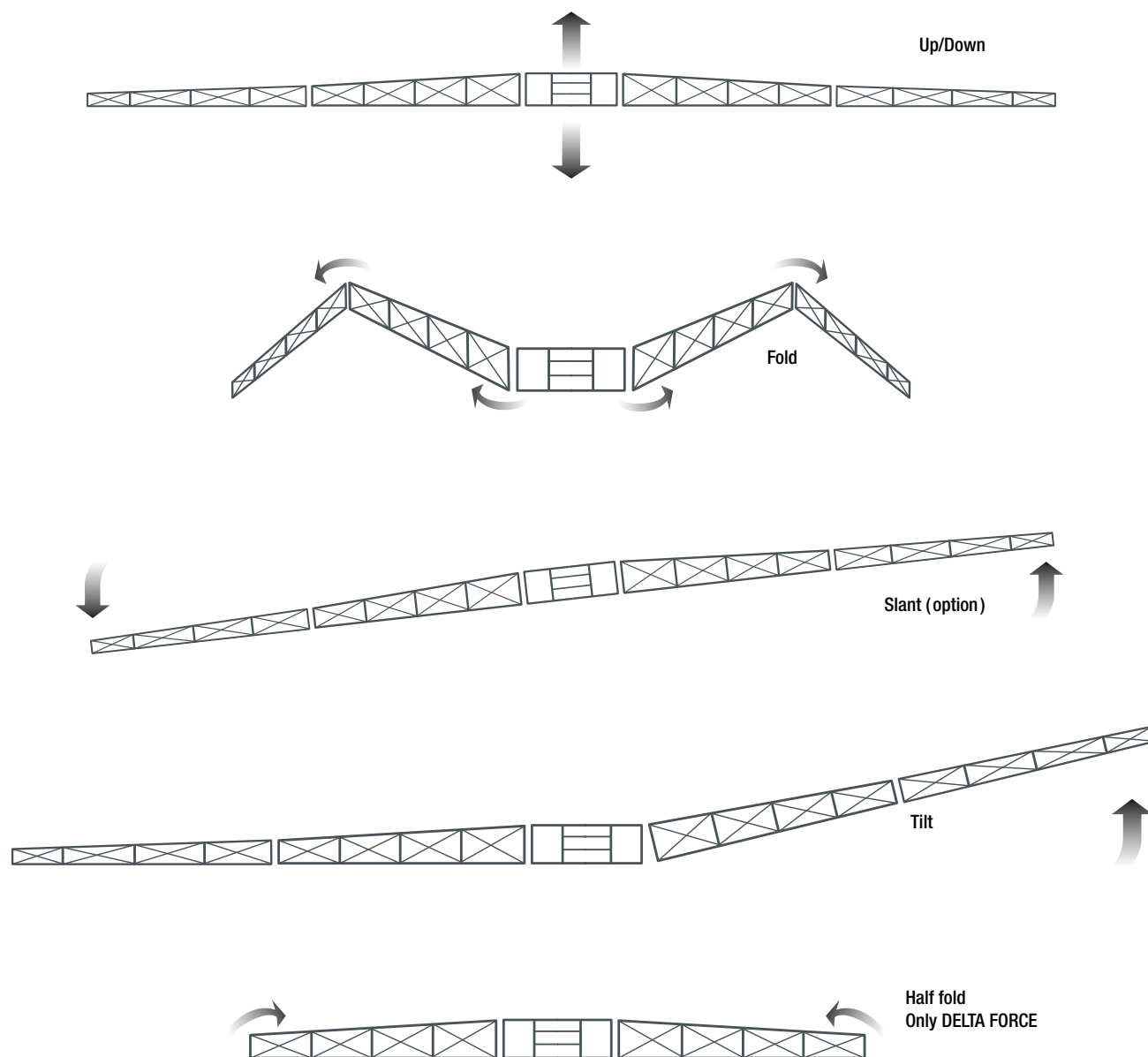
### **Stainless steel boom tubing**

On DELTA FORCE booms, stainless steel boom tubing is standard. This ensures both durability and high flow capacity on the boom.

## Boom hydraulics

Z BOOM REQUIRES:

- 1 double hydraulic outlet
- Operation via SetBox and Grip



## Symmetric partial fold

### BOOM FOLDING:

- **Different partial boom folding is possible**
- **The boom sizes show the partial folding options**
- **Asymmetric folding of the second outer as optional available**

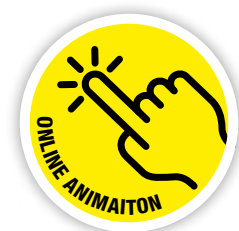
The folding lock is a “stop and lock” system.

This type will minimize the play risk and secure a good and reliable transfer of forces from one boom element to the next.

It is easy to adjust and remove stress in the folding mechanism.



Manual fold controller by the HY – operating box. One button for each step



## Boom management system

### CUSTOMER BENEFITS

- Superior spray precision and productivity
- Automatic control of boom height, slant, tilt, and yaw for reduced drift risk
- Hydraulic yaw dampening and automatic wing levelling for exceptional application precision
- Longer sprayer lifespan and reduced operator fatigue and stress
- Robust and precise ultrasonic sensors with multiple modes and smooth movements for a proactive response



Our boom management systems are all designed to ensure superb boom stability. A stable boom is vital to spray precision and productivity, especially when working with low boom heights at high speeds.

#### Fast and precise applications

Automatic control of height, slant, tilt and yaw optimises the boom position and all but eliminates the risk of hitting the ground. It also reduces the risk of drift to benefit farmers and the environment.

On DELTA FORCE booms, a hydraulic yaw dampening is available (std 32 – 39 m) and is counteracted by hydraulic accumulators, which power up every time the boom unfolds. Each side can be

boom wing automatically levelled independently, giving you the possibility of negative tilt. The result is exceptional application precision, even at fast driving speeds.

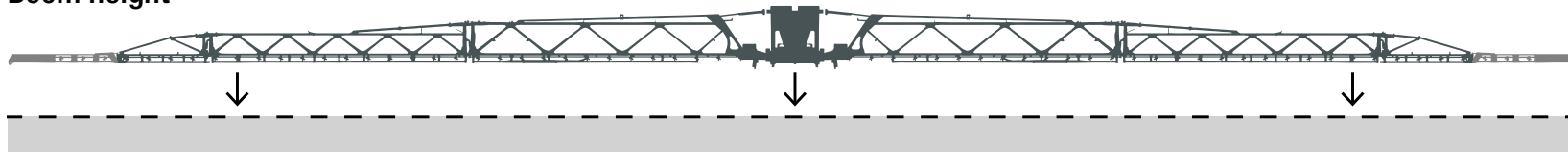
A stable boom reduces wear and tear on the sprayer and its operator. The sprayer will have a longer lifespan, and the operator will experience less fatigue and stress because the automatic systems reduce the need for constantly monitoring the boom.

## ActiveSlant

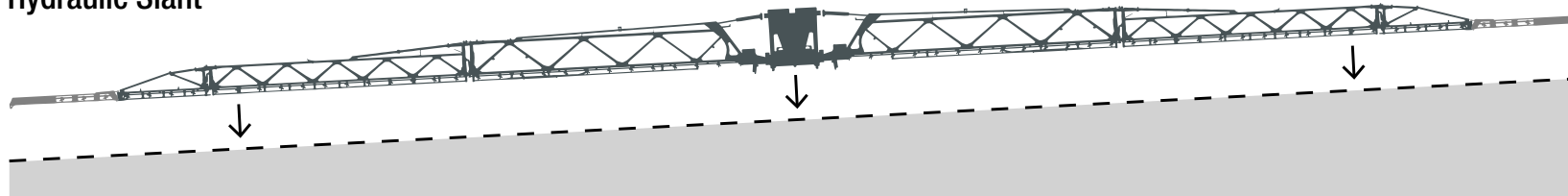
ACTIVESLANT CONTROLS HEIGHT AND SLANT

- **ActiveSlant controls height and slant**
- **2 UC 7 Mag sensors on boom wing**
- **Direct control on sprayer hydraulics**
- **Controlled by ISOBUS terminal operation integrated into HARDI ISOBUS terminals**
- **DELTA FORCE  
24-39 m**
- **TWIN FORCE  
24-36 m**

Boom height



Hydraulic Slant

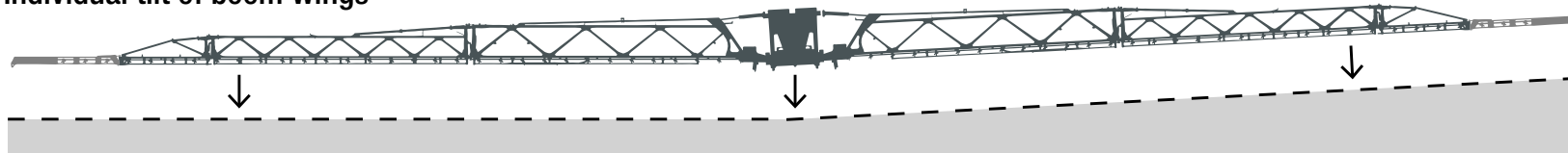


## AutoTerrain

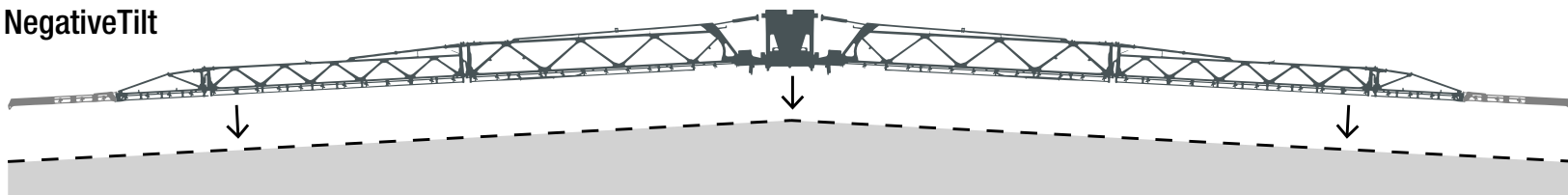
AUTOTERRAIN CONTROLS HEIGHT, TILT AND SLANT FUNCTION

- 5 ultrasonic sensors
- 3 Proportional hydraulic valves
- Controlled by HC 8700, HC 9700, ISOBUS terminal
- DELTA FORCE 24-39 m
- TWIN FORCE 24-36 m

Individual tilt of boom wings



NegativeTilt



### AutoTerrain

This unrivalled boom management system distinguishes itself from others by preventing rather than correcting unintended boom movements. Using ultrasonic sensors on the boom wings and angle sensors at the centre, it monitors the boom's movements continuously, responding to forces acting upon it before it is disturbed. By making smooth adjustments to the boom's slant, tilt and height, AutoTerrain provides accurate contour following and crop clearance – essential for precise spray application.

The AutoTerrain system has been tested under rigorous field conditions, showing excellent performance when spraying with low boom heights at high driving speeds of more than 15 km/h.

When turning on headlands, the AutoTerrain system will counter the boom's natural pendulum effect to prevent the inner side from dipping. The result is a level boom throughout the turn.



### NegativeTilt

Negative tilt for superb boom stability allows for downward tilting of the boom by up to  $-4^\circ$ , which is especially useful when spraying a lower level, for instance, on a ridge.

### AntiYaw

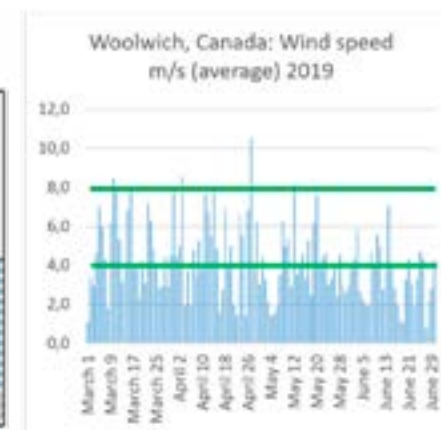
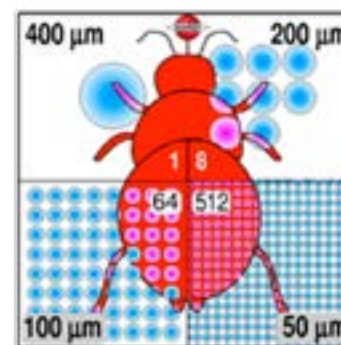
Dampens horizontal movements and shock loads in the boom.

## TWIN benefits

### CUSTOMER BENEFITS

- Ability to spray in unfavourable weather conditions
- Increased flexibility and double the number of spray days
- Minimized risk of crop damage from pests and diseases
- Improved penetration and coverage of chemicals
- Increased efficiency and reduced costs through the use of air assistance

Woolwich, Ontario, Canada Wind data (average 2019)	Days	Spraying days	
		Conventional	TWIN
Wind less than 4 m/s	63	63	63
Wind between 4 to 8 m/s	55	-	55
Wind over 8 m/s	4	-	-
Total for March, April, May, June	122	63	118



**Spraying in windy conditions is made possible with the right equipment, providing farmers with increased flexibility, better planning and healthier crops.**

#### Execute spray jobs even in unfavourable weather

Spraying in windy conditions can be a challenging task for farmers, but with the right equipment, it is possible to plan and execute spray jobs even in unfavourable weather. By using a spray system that can effectively handle windy conditions, farmers can significantly reduce their dependence on weather and double the number of spray days. This increased flexibility allows farmers to better plan their operations, ensuring that crops receive the necessary treatments at the right time. The ability to spray in windy conditions also minimizes the risk of crop damage caused by prolonged exposure to pests and diseases, resulting in healthier and more productive crops. Overall, a spray system capable of handling windy conditions can provide farmers with a significant competitive advantage, helping them achieve optimal crop yields while minimizing risk and environmental impact.

#### Improve the penetration and coverage

Using air assistance for chemical application can bring several benefits to farmers. One of the primary advantages is that it helps to improve the penetration and coverage of the chemicals, resulting in more effective treatment of the crops. This allows farmers to use less water and spray at faster speeds, ultimately increasing their efficiency and reducing costs. Additionally, using air assistance can also increase the capacity of the sprayer, allowing farmers to cover more acres in less time. This can be especially beneficial during peak seasons when time is of the essence. Overall, the use of air assistance in chemical application can help farmers optimize their operations and achieve healthier and more productive crops while also reducing their environmental impact.





### Optimal coverage with TWIN solution

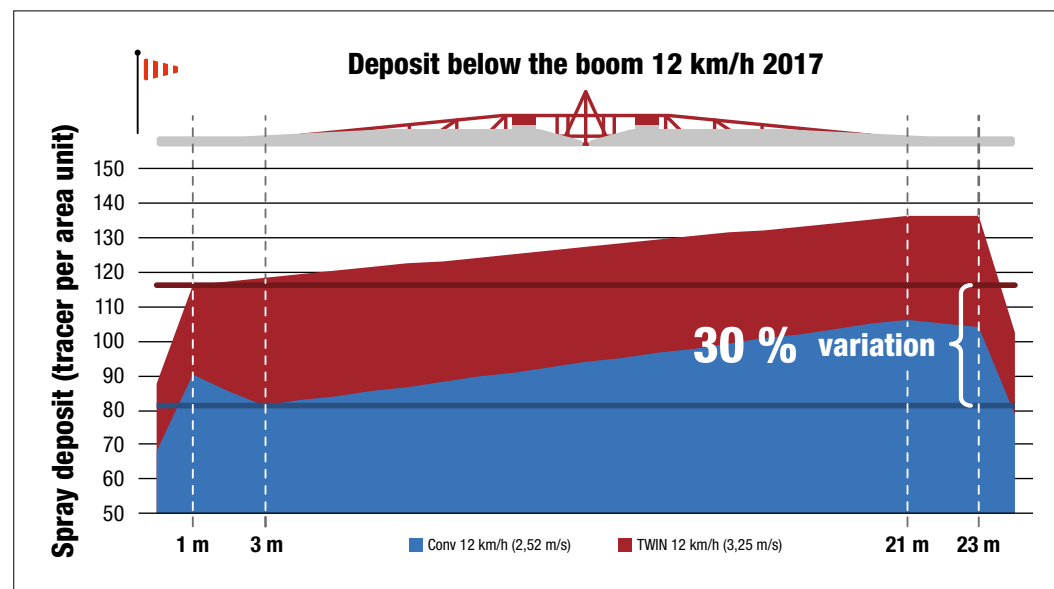
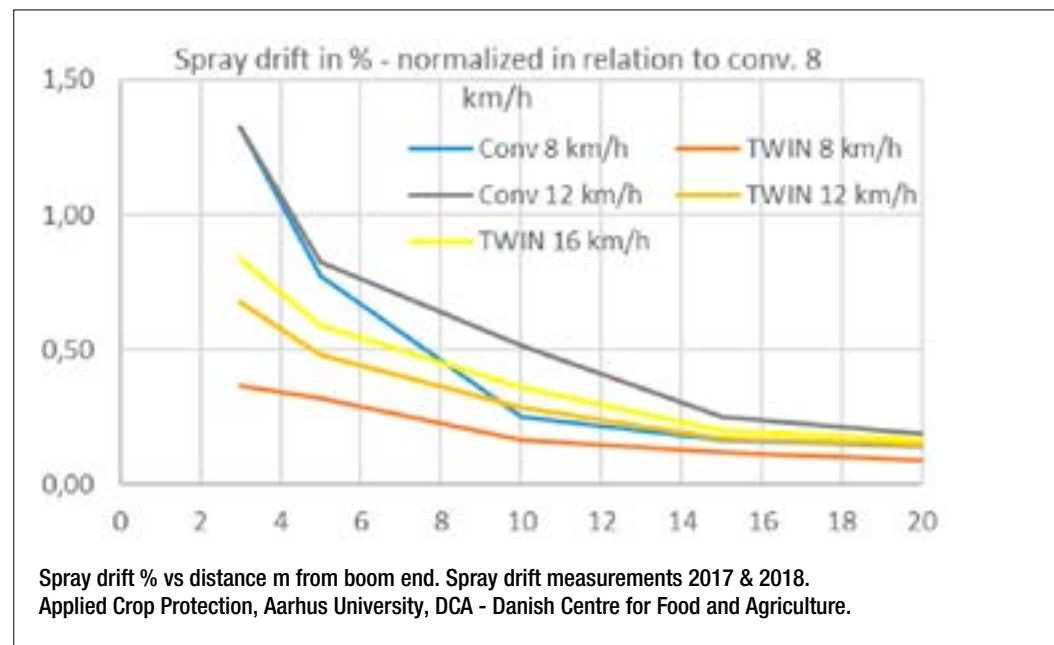
Spraying chemicals can be challenging for farmers, particularly when it comes to reducing drift and maintaining even distribution across the crops. However, farmers can significantly reduce drift and the buffer zone area by using independent sprayer systems. Independent sprayers allow for more precise control over the application of chemicals, ensuring that they are distributed evenly across the crops. This reduces the risk of under or over-application and results in healthier and more productive crops. By minimising drift, farmers can also reduce the risk of contamination in neighbouring areas, protecting the environment and nearby community's health.

### Minimise chemical – maximise crop health

Reducing the number of treatments needed and using minimal or lower rates of chemicals can bring significant benefits to farmers. By carefully managing the application of chemicals, farmers can ensure that they only use what is necessary to achieve effective treatment. This can not only help reduce costs associated with purchasing and applying chemicals but also help minimise the environmental impact of farming operations. In addition, using minimal or lower rates can help reduce the risk of developing chemical resistance, ensuring they remain effective in the long term.

### The Benefits of Planning Spray Days

Farmers can significantly improve their operations and achieve better crop yields by utilising the latest spray equipment technology. One of the primary benefits of modern spray systems is the ability to plan spray days more effectively, reducing the need for frequent treatments and minimising labour costs. With faster and more efficient spray equipment, farmers can complete jobs in less time, ensuring that crops receive the necessary treatments at the right time. This reduces labour costs and provides better crop conditions for the crops, resulting in healthier and more productive yields.





# Options

# Nozzles

## HARDI spray nozzle selection guide

The HARDI ISO nozzle series is the most complete nozzle series on the market. This full range ensures that nozzles of all relevant sizes are available for all spray jobs.

Spray quality and capacity for HARDI ISO 110° FLATFAN nozzles

		Bar							Bar							Bar							Bar																									
		1.5	2.0	2.5	3.0	4.0	5.0			1.5	2.0	2.5	3.0	4.0	5.0			1.5	2.0	2.5	3.0	4.0	5.0			1.5	2.0	2.5	3.0	4.0	5.0			1.5	2.0	2.5	3.0	4.0	5.0									
ISO size/colour	I/min						ISO size/colour	I/min						ISO size/colour	I/min						ISO size/colour	I/min						ISO size/colour	I/min																			
0075-Pink	0.21 0.24 0.27 0.30 0.35 0.39						01-Orange	0.28 0.33 0.37 0.40 0.46 0.52						015-Green	0.42 0.49 0.55 0.60 0.69 0.77						02-Yellow	0.57 0.65 0.73 0.80 0.92 1.03						025-Lilac	0.71 0.82 0.91 1.00 1.15 1.29						015-Green	0.42 0.49 0.55 0.60 0.69 0.77												
01-Orange	0.28 0.33 0.37 0.40 0.46 0.52						015-Green	0.42 0.49 0.55 0.60 0.69 0.77						02-Yellow	0.57 0.65 0.73 0.80 0.92 1.03						025-Lilac	0.71 0.82 0.91 1.00 1.15 1.29						02-Yellow	0.57 0.65 0.73 0.80 0.92 1.03						03-Blue	0.84 0.97 1.08 1.19 1.37 1.53						025-Lilac	0.71 0.82 0.91 1.00 1.15 1.29					
015-Green	0.42 0.49 0.55 0.60 0.69 0.77						02-Yellow	0.57 0.65 0.73 0.80 0.92 1.03						025-Lilac	0.71 0.82 0.91 1.00 1.15 1.29						03-Blue	0.84 0.97 1.08 1.19 1.37 1.53						04-Red	1.12 1.29 1.44 1.58 1.82 2.04						03-Blue	0.85 0.98 1.10 1.20 1.39 1.55												
02-Yellow	0.57 0.65 0.73 0.80 0.92 1.03						03-Blue	0.85 0.98 1.10 1.20 1.39 1.55						04-Red	1.12 1.29 1.44 1.58 1.82 2.04						05-Brown	1.39 1.61 1.80 1.97 2.28 2.55						04-Red	1.13 1.31 1.46 1.60 1.85 2.07						05-Brown	1.41 1.63 1.83 2.00 2.31 2.58												
025-Lilac	0.71 0.82 0.91 1.00 1.15 1.29						04-Red	1.13 1.31 1.46 1.60 1.85 2.07						05-Brown	1.41 1.63 1.83 2.00 2.31 2.58						06-Grey	1.70 1.96 2.19 2.40 2.77 3.10						06-Grey	1.70 1.96 2.19 2.40 2.77 3.10						08-White	2.26 2.61 2.92 3.20 3.70 4.13												
03-Blue	0.85 0.98 1.10 1.20 1.39 1.55						05-Brown	1.41 1.63 1.83 2.00 2.31 2.58						06-Grey	1.70 1.96 2.19 2.40 2.77 3.10						08-White	2.26 2.61 2.92 3.20 3.70 4.13						10-Light blue	2.83 3.27 3.65 4.00 4.62 5.16																			
04-Red	1.13 1.31 1.46 1.60 1.85 2.07						06-Grey	1.70 1.96 2.19 2.40 2.77 3.10						08-White	2.26 2.61 2.92 3.20 3.70 4.13						10-Light blue	2.83 3.27 3.65 4.00 4.62 5.16						15-Light green	4.24 4.90 5.48 6.00 6.93 7.75																			
05-Brown	1.41 1.63 1.83 2.00 2.31 2.58						08-White	2.26 2.61 2.92 3.20 3.70 4.13						10-Light blue	2.83 3.27 3.65 4.00 4.62 5.16						15-Light green	4.24 4.90 5.48 6.00 6.93 7.75																										
06-Grey	1.70 1.96 2.19 2.40 2.77 3.10						10-Light blue	2.83 3.27 3.65 4.00 4.62 5.16						15-Light green	4.24 4.90 5.48 6.00 6.93 7.75																																	



### HARDI ISO F-110 Standard FLATFAN nozzles

All-round FLATFAN nozzle. Recommended for all types of pesticide application where optimum coverage is demanded. This nozzle will give you excellent and uniform liquid distribution at boom heights from 35 to 70 cm (50 cm recommended to take care of uneven terrain or boom movements)



### HARDI ISO LD-110 LOWDRIFT nozzles

LOWDRIFT nozzles are recommended when optimum spraying conditions cannot be achieved (risk of drift) and spraying cannot be postponed. This nozzle will give you excellent and uniform liquid distribution at boom heights from 35 to 70 cm (50 cm recommended to take care of uneven terrain or boom movements)



### HARDI ISO MINIDRIFT Air inclusion nozzles

The HARDI MINIDRIFT nozzles can be used for spraying at sub-optimal weather conditions, when spraying cannot be postponed. The MINIDRIFT nozzle will at low pressures reduce drift to a minimum. This nozzle will give you excellent and uniform liquid distribution at boom heights from 40 to 90 cm.



### HARDI ISO MINIDRIFT DUO Air inclusion nozzles

The HARDI MINIDRIFT DUO nozzle can be used for spraying at sub-optimal weather conditions, when spraying cannot be postponed. The MINIDRIFT DUO nozzle will at low pressures reduce drift to a minimum. The HARDI MINIDRIFT DUO nozzles can be mounted using the 334083 ISO cap.



### HARDI ISO NANODRIFT Air inclusion nozzles

The HARDI NANODRIFT nozzles should be used when high drift reduction is required. The NANODRIFT nozzle will at low pressures reduce drift to a minimum. The droplet spectrum is coarse to very coarse; safe for drift control but without risking poor coverage and deposition on leaves.



### HARDI QUINTASTREAM Liquid fertilizer nozzles

Five (5) streams of liquid are distributed at different angles and flows by each QUINTASTREAM nozzle. Highest flow is from the middle stream and lowest in the outer, overlapping streams.

## Surface treatment

### CUSTOMER BENEFITS

- **Exceptional corrosion protection for long-lasting durability**
- **Chemical-resistant solution for harsh spraying environments**
- **Advanced technology with 13 treatments for enhanced protection**
- **Comprehensive protection with Delta/Magni treatment**
- **Reduced maintenance for increased productivity**



The chassis, the boom and all other steel parts have been pre-treated with Oxsilan, followed by a high-quality powder paint coating.

### Steel treatment

The treatment provides outstanding protection against corrosion from chemicals and harsh weather conditions.

The high-technology surface treatment contains 13 treatments, including an Oxsilan pre-treatment and powder coat painting of all major components.

We supply high-corrosion protection products with the Delta/Magni treatment of nuts, bolts, and other items.



# **HARDI Service**

## HARDI Service

### CUSTOMER BENEFITS

- **Expert service technicians and HARDI Academy courses provide value to customers**
- **Comprehensive user manuals and worldwide spare parts availability make operation easy and reliable**
- **A vast range of fast and slow-moving parts in central stocks ensures reliability**
- **HARDI spare parts are manufactured to exacting standards for confidence and reliability**
- **Choose HARDI for superior customer support and reliable machinery**



At HARDI, we believe that servicing our machinery is not just about fixing a problem – it's about providing value to our customers. That's why our network of service technicians is specially educated to ensure they know to keep our sprayers in top condition. We know that educating our buyers and sprayers about our products is crucial to maximizing their value for the end user, so we established the HARDI Academy in 2004. From 1st level technician to high specialist level, our courses cover various technical and applicational aspects of our sprayers. We take pride in our investment in educating our customers and their customers.

But it doesn't stop there. We also understand the importance of providing comprehensive user manuals with our sprayers to help our customers get the most out of their machines.



Our user manuals cover everything from light service issues to electronic and computing devices. And if you need spare parts, we've got you covered. We know that the availability of spare parts is essential to the reliability of our sprayers, which is why we carry a vast range of fast and slow-moving parts in our central spare parts stocks. And with distributors worldwide, we can get those parts to you quickly – most areas are covered within 24 hours. Plus, all of our spare parts are manufactured to the exact strict tolerances and quality demands of our complete machines so that you can be confident in their reliability. So why settle for anything less than HARDI? Check out our entire spare parts catalogue on our website and experience the difference.



# Technical Specifications

## Technical specifications

Booms	DELTA FORCE 24-39 m	TWIN FORCE 24-30 m	DELTA FORCE 27-39 m	TWIN FORCE 27-36 m
Tank, nominal volume	4200 / 5200 / 6000 l	4200 / 5200 / 6000 l	7000 l	7000 l
Pump type - l/min	464-280 / 464H-334	464-280 / 464H-334	464-280 / 464H-334	464-280 / 464H-334
RinseTank (l)	560	560	710	710
Clean water tank (l)	40	40	40	40
Height (m) * <b>A</b>	3.70	3.80	3.80	3.90
Total length (m) <b>B</b>	8.35	8.35	9.25	9.80
Length draw to axle, (m) <b>C</b>	5.5	5.5	6.30	6.50
Track width (m) <b>D</b>	1.70-2.30	1.70-2.30	1.70-2.30	1.70-2.30
Transport width (m) * <b>E</b>	2.55	3.00	2.55	3.00
Ground clearance axle (m) * <b>F</b>	0.78	0.78	0.78	0.78
Turning radius at 200 cm track width (m)	6.3	6.3	7.2	7.4
Working height (m)	0.43-2.73	0.43-2.73	0.43-2.73	0.43-2.73
Total weight empty (kg)	6100	6400	6820	7630
Total weight full (kg)	11860	12160	13330	13975
Drawbar load empty (kg)	980	1000	1210	1630
Drawbar load full (kg)	2950	3000	3480	3975

\* 5200 – 36 m DELTA FORCE – 520/85 R42 / \* 5200 – 30 m TWIN FORCE – 380/90 R46

