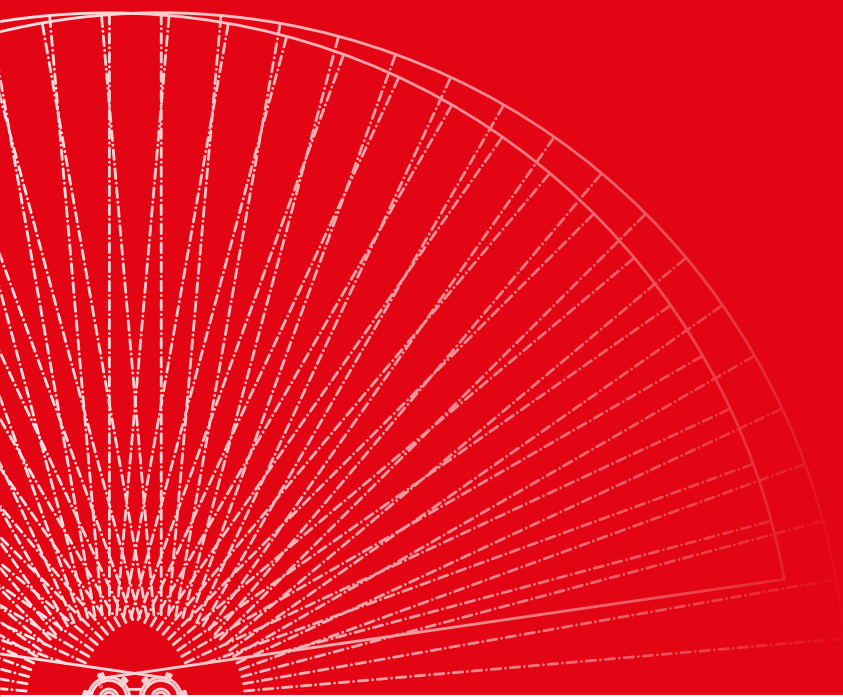




EN

# F8/F10









## **CONTENTS**

F8/F10 .....	2
Construction .....	4
Bredal F8/10 .....	9
Spreading of fertiliser .....	12
Headland spreading .....	13
Spreading tests .....	16
Standard equipment .....	18
Wheel mounting .....	23
Optional accessories .....	26
Spreading principle .....	35
Computerised control/ISOBUS .....	36
F8 technical specifications .....	38
F10 technical specifications .....	38
Equipment overview .....	40
Dimensional sketches .....	41

# THE F8/F10 IS A FERTILISER SPREADER FOR WORKING WIDTHS STARTING AT 24 METRES, AND IT ADEPTLY MANAGES DISCIPLINES FROM WEDGE SPREADING TO SPREADING ON LEFTOVER AREAS.

F8 and F10 are fertiliser spreaders intended for professional use where there are stringent requirements for efficiency and profitability. The spreaders were developed to meet these different requirements for graduated application, spreading along field boundaries, and spreading in wedges and leftover areas.

The standard spreader is computer controlled via ISOBUS with newly-developed software.

F8 is available in a trailed version with a hopper volume of 5,700–7,500 litres whereas F10 is available with hopper volumes of 6,600–11,600 litres.





# CONSTRUCTION

Bredal spreaders have a robust construction and are designed for professional use. Every single component is sturdily constructed to maximise reliability, strength and service life.

## > CONSTRUCTION

F8 and F10 are fitted with ten-hole hubs. The axles are available in different widths to meet track width preferences. The entire spreader structure is designed to withstand the heavy loads that occur in the field.

Bredal always tests modifications and new designs meticulously before sending the products to market because, as experience shows, the machines are exposed to heavy loads under practical conditions. All F8/F10 spreaders are equipped with a heavy-duty undercarriage and very sturdy axle. Both models are available with hydraulic or pneumatic brakes, or without brakes, if preferred.

Minimising daily maintenance is a high priority in the structural design of each spreader.

The belt rollers on which the floor belt rests are made of plastic with a through-going stainless steel axle. The bearings are made of synthetic material and require no maintenance at all. The belt rollers' side members are also made of stainless steel. The most heavily-loaded components around the belt frame and spread unit are also made of stainless steel.

The frame is built of thick sectional steel tubing and is reinforced in all heavily-loaded areas. The hopper is made of 3 mm and 4 mm steel plates and is also reinforced in heavily loaded areas. The spreader's sturdy construction gives it a very long service life.

The vanes on the fertiliser discs are made of stainless steel and coated with a metal carbide wear layer to maximise service life.

## > POWDER COATING

All painted components on Bredal spreaders are sprayed with two layers of powder coating, which gives a resilient surface, good anti-corrosive protection and a beautiful finish.

The spreaders are designed for a maximum service life, which is why high-quality surface treatment is essential.

As a result of BREDAL heavily investing in this process, Bredal now has one of the biggest, most highly modernised powder-coating facilities in Denmark, where spreaders are first cleansed in a shot-blaster with steel balls and then sprayed with two layers of powder coating.

The powder-coating system was specifically developed for harsh environments to provide an anti-corrosive, highly wear-resistant and uniform surface.

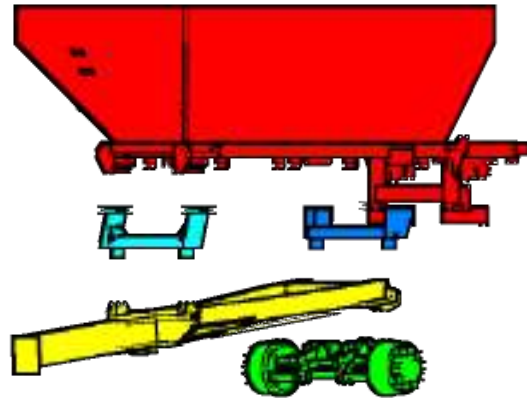
## > MODULAR CONSTRUCTION

As a new feature, Bredal provides a more modular construction of the undercarriage. The structural set-up comprises loose stanchions available in different heights. These are bolted to the undercarriage which is in turn bolted to the axle. This structure makes it possible to order a spreader with a disc height of more than 100 cm, if a spreader taller than the standard model is preferred, for instance.

The axles are available in different track widths so it is possible to order a spreader with the preferred track width. Axles are in stock for the following track widths: 1950, 2050 and 2150 mm.



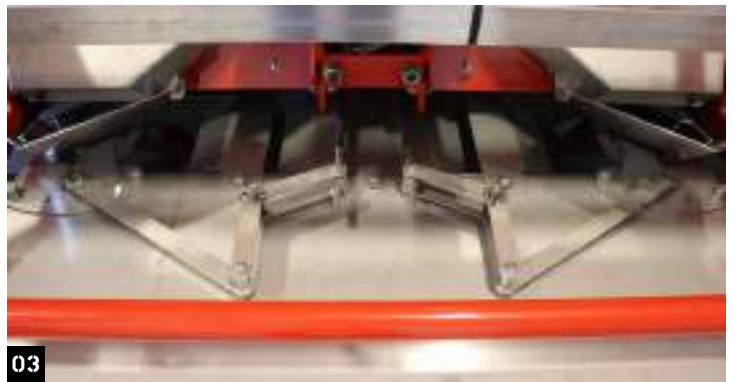
- Hopper
- Stanchion, front
- Stanchion, rear
- Undercarriage
- Axle



01



02



03



04

**1 > CONSTRUCTIONAL DRAWING** showing the structure of the spreader **2 > BELT FRAME** **3 > ELECTRICALLY REGULATED DOWNSHUTES** **4 > F8 SPREADER WITH UNDERCARRIAGE** bolted to the frame



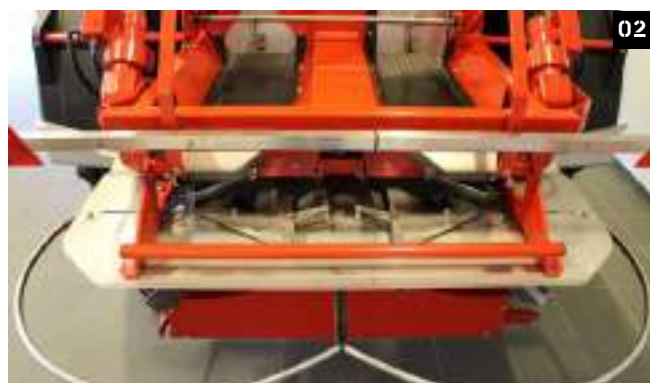




The spreader and all components are sprayed with two layers of powder coating, which gives a resilient surface and a beautiful finish.



01



02



03



04



05



06

1 > BREDAL F8 2 > SPREADING SYSTEM with 2 floor belts, 2 rear doors and 2 independently controlled downshutes 3 > ELECTRICALLY REGULATED DOWNSHUTES 4 > SENSOR 5 > F8S seen from above 6 > SCALE for rear door

# **BREDAL F8/F10**

F8/F10 are available with large diameter wheel mounting which provides high clearance below the spread unit and a disc height of more than one metre. The spreader's modular construction makes it possible to raise this clearance even more wherever this may be required.

F8/F10 is available with different tyre mountings and track widths from 1950 mm and up. As optional accessories, mudguards are available for most types of wheels.

All hydraulic hoses are led towards the tractor on a rotatable bracket with a crossbar for the hoses, which relieves the strain on the hydraulic hoses when the spreader is disconnected from the tractor.

The spreader is constructed with two separately controlled floor belts so it is possible to apply different amounts on the right and left sides.

The downshute position is controlled by two electrical motors and is automatically operated by the spreader's computer. When a working width is selected, the downshutes automatically adjust to this. The downshute position on F8/F10 is individually controlled on the right and left-hand sides, which is used for functions such as headland spreading.

Automatic flow correction is incorporated into the downshute control software so the downshute position automatically adapts to the actual application rate. In practice, this means that the spreading pattern will not change, regardless of whether a small or large volume is being spread.

The downshutes' electrical motors are made of plastic and stainless steel and are well protected by shielding.

All moving parts of the rear door are made of plastic or stainless steel which minimises maintenance in practice.

The spreader controls have an integrated tilt sensor which is used to correct the weighing signal so the correct weight is shown at all times, even when driving in hilly terrain. In addition, the application rate is adapted by means of the tilt sensor so the spreader's application rate is correct, regardless of whether it is driving up or down a hill.

If the spreader is equipped with weight cells, the application rate is constantly monitored and adjusted during operation.

Sensors used for tracking data such as disc rpm, belt speed, etc., have stainless steel housing. To further protect the sensors, they are cast in a plastic housing that is sealed with silicone.

All cables to sensors, weight cells, etc., are routed through a protected flexible conduit to maximise operational reliability.



**F8 AND F10 ARE BREDAL'S  
SPECIALISED FERTILISER  
SPREADERS FOR PROFESSIONAL  
USE WITH CAPACITIES RANGING  
FROM 5.7 M<sup>3</sup> TO 11.6 M<sup>3</sup>.**





# SPREADING OF FERTILISER

F8/F10 spreaders are designed to spread with high precision across wide working widths.

F8/F10 spreaders work according to the quadruple overlap principle where each disc spreads across a double working width. This maximises the probability of achieving good spreading results at all times.

Bredal spreaders are designed so that fertiliser particles are flung from the spreader at a high exit speed. The high speed, combined with a low exit angle (7 degrees), minimises sensitivity to wind in field conditions.

Fertiliser is fed to the centre of each spreading disc without being hit by the vanes, so the fertiliser particles start to accelerate even before the fertiliser makes contact with the vanes. This reduces the risk of damaging the fertiliser during spreading.

The six vanes mounted on each spreading disc ensure that the fertiliser is delivered in small quantities, providing greater reliability in the spreading process.

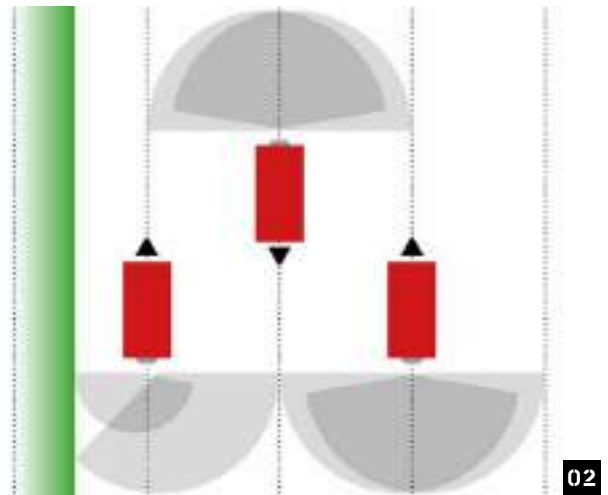
The large diameter of the spread discs ensures that the fertiliser particles accelerate to a very high speed before leaving the spreading disc. At a speed of 1000 rpm, the fertiliser particles accelerate up to 250 km/h, which considerably reduces sensitivity to wind.

## > H DISCS

Bredal also offers specialised spreading discs for spreading fertilisers such as granular urea, potash and ammonium sulphate across working widths from 24 to 36 metres.



01



02

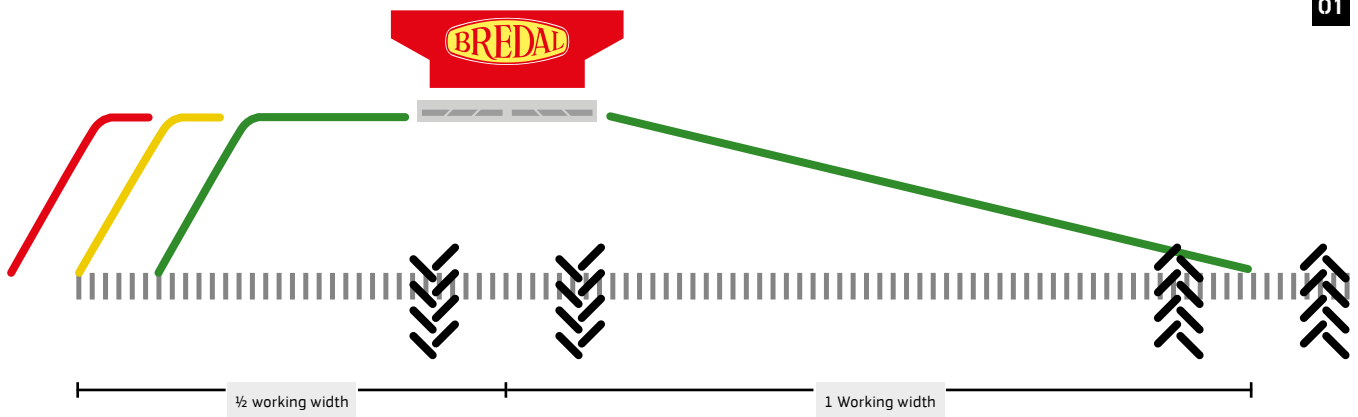


03



# HEADLAND SPREADING

01



02



Bredal's headland spreading system works by changing the rpm speed of only one disc, to reduce the working width towards a field boundary. The disc spreading into the field continues to run at high speed, thereby ensuring double overlap into the field.

The Bredal headland spreading system sharply delimits the spreading towards the boundary, while maintaining the spreading pattern on the side facing the field. The headland gear is easy to operate.

When headland spreading is connected, the downshute position changes automatically to achieve the best possible spreading result.

On hydraulic spread units, headland spreading is possible on both sides, and this is operated via ISOBUS computerised control.

03



04









# **SPREADING TESTS**

## **> TESTED SPREADERS**

All Bredal spreaders are tested using countless types of fertiliser at Bredal's ultra-modern testing centre. The spreading tests are full scale, which means complete spreading. This makes the tests as realistic as possible. Many tests are performed every day in a very realistic setting. The test results are based on weight-cell technology, i.e. on the amounts actually dispensed (collected in trays), not theoretical calculations.

## **> BREDAL SPREADING PRINCIPLE**

Bredal spreaders operate according to the quadruple overlap system. This means that both discs cover a double working width, i.e. when spreading with a working width of 24 metres, the left disc covers 24 metres on the left-hand side and 24 metres on the right. This enables four-portion spreading to ensure high precision and minimises the risk of spreading errors.

Bredal spreaders are designed to spread fertiliser particles at a high exit speed. The high speed, combined with a very low exit angle (7 degrees), minimises sensitivity to wind in conditions in practice.

## **> BREDAL TEST KIT**

The Bredal Test Kit is used to perform practical spreading tests to optimise spreading patterns. The Bredal Test Kit contains plastic collector trays (with dividers), a calibrated cylinder with holder, a funnel, a crushing strength tester and a sieve shaker.

## **> SETTING**

The advisable settings for ideal spreading of the various types of fertiliser can be downloaded from Bredal's website.



**1 > SIEVE SHAKER** to check grain size **2 > CALIBRATION KIT** **3 > GRADUATED CYLINDER** **4 > BREDAL TEST KIT** Test kit includes collector trays (with dividers), graduated cylinder, funnel, crushing strength tester and sieve shaker **5 > SPREADING TEST IN THE FIELD** using a Bredal Test Kit (collector trays laid out)

## STANDARD EQUIPMENT

### HEAVY-DUTY STAINLESS STEEL HOPPER SCREEN >

When spreading fertiliser, it is necessary to have a screen inside the hopper to prevent lumps of fertiliser falling down and blocking the opening to the rear door.



### < CROSSBAR FOR HYDRAULIC HOSES

All hydraulic hoses are led towards the tractor on a rotatable bracket which also holds a crossbar for the hydraulic hoses. This relieves the strain on the tractor's hydraulic connections when the spreader is connected, and it is also used for hanging the hydraulic hoses when the spreader is disconnected.

All hydraulic hoses on spreaders with multiple hydraulic functions are colour coded, and a functional overview is mounted on the spreader.



### LADDER >

A ladder is attached to the front of the hopper on all spreaders to make it possible to access the hopper.





#### **WINDOWS >**

There is a window in the front of the hopper which makes it possible to monitor the hopper contents.



#### **< BELT DRIVE**

Each belt is powered by an oil motor via a gear. The oil motor's rpm are regulated via a proportional valve.



#### **STAINLESS STEEL REAR DOORS >**

The rear doors are made of stainless steel, with nylon guidance runners to maximise service life and minimise maintenance.



## **STANDARD EQUIPMENT**

### **PTO >**

All spreaders come with a wide-angle 6z PTO shaft.  
Alternatively, 8z, 20z and 21z PTOs are available.



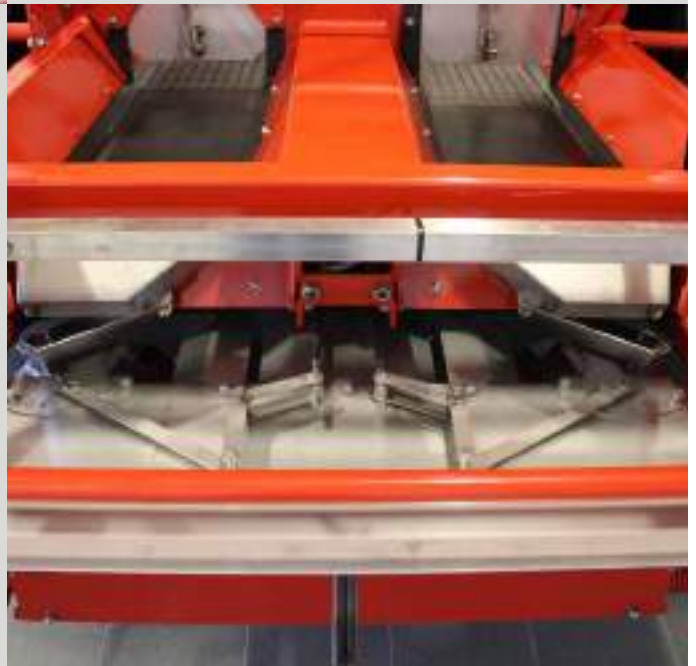
### **< LED LIGHTS**

Bredal spreaders are equipped with LED lights and side marker lamps. The light boom is made of stainless steel.



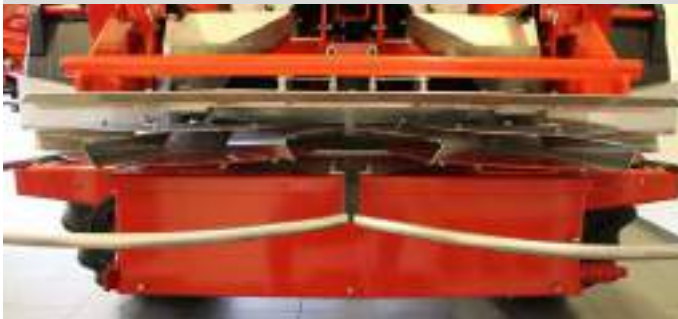
### **DOWNSHUTES AND APPLICATION BELTS >**

Electrically controlled downshutes with flow correction that automatically adjusts to the selected working width. The spreader is equipped with two floor belts, enabling the right and left-sided application rates to be independently controlled.



### **SPRING LOADED TENSIONER >**

Spring loaded V-belt tensioning ensures that these are correctly tensioned at all times.



### **< SPREAD UNIT**

F8 and F10 come with a SPC4500-2 belt transmission, spreading discs for working widths from 12 to 36 metres and a headland gear for working widths from 24 to 36 metres. (Hydraulically operated spread units are available as an optional accessory.)



### **JACKS >**

F8 and F10 come with a mechanical jack (a dual-action hydraulic jack is an optional accessory).





## STANDARD EQUIPMENT

### COVER OVER SPREAD DISCS >

Covering for the rear section of the belt and downshute.



### < ISOBUS COMPUTERISED CONTROL

F8/F10 are available only with ISOBUS computerised control

### < TILT SENSOR

The control system has an integrated tilt sensor which provides uniform application when driving in hilly terrain.



### AXLE AND BRAKES >

Bredal's F8 and F10 are equipped with a sturdy 10-tonne BPW axle with hydraulic brakes. Pneumatic brakes are also available.



## > WHEEL MOUNTING

Many different wheel mountings are available for a Bredal spreader, as the spreaders are used for a many different tasks under different conditions.

The main purpose of this is to protect the field from pressure damage. This is primarily done by having a large bearing surface. The bearing surface can be enlarged by using a wheel with a bigger diameter and wider tread profile. It is also important to use a tread pattern that best suits the operating conditions.

Bredal provides tyres in many different sizes from different manufacturers. This makes it possible for Bredal to almost always be able to deliver the preferred wheel mount.











## OPTIONAL ACCESSORIES

### **CALIBRATION KIT >**

The calibration kit determines the fertiliser's bulk density simply and precisely. To ensure that the spreader's application rate is correct, it is important to know the correct bulk density of the fertiliser being spread.



### **< STEERING AXLE**

To avoid crop damage during late application of fertiliser, Bredal provides a steering axle, so the spreader follows in the tractor's tracks.

A steering axle continuously corrects itself to follow in the tractor's tracks, thus causing less damage when turning in the headland.

### **HYDRAULICALLY OPERATED HEADLAND GEAR >**

Hydraulic operation of the headland gear is available for easy changeover between headland and field spreading on the SPC4500-2 spread unit from the tractor cab.





#### **WEIGHT CELLS >**

Weight cells keep the application rate under complete control at all times. F8/F10 automatically adjust the application rate by means of weight cells during operation.



#### **< 540-1000/1000-540 GEARING**

540-1000 or 1000-540 reduction gearing for tractors which have a PTO with only 540 or 1000 rpm. The gear is also available with the ratio 670-1000 rpm.

#### **H DISCS KIT >**

Specially designed fertiliser equipment for spreading fertilisers such as granular urea, potash and ammonium sulphate across working widths of 24-36 metres.





## OPTIONAL ACCESSORIES

### **PAINTED STAINLESS STEEL HOPPER >**

To optimise anti-corrosion protection, the K-series hopper is available in a painted stainless-steel model.



### **< MUDGUARDS**

Plastic mudguards are available to protect the spread unit and spreading discs from wheel splashing.

### **LATE APPLICATION EQUIPMENT >**

For spreading fertiliser late in the season, an impact plate is provided to lift fertiliser outflow, making it possible to spread in higher crops



#### **MANUAL COVER >**

A cover which can be manually rolled up is available to protect hopper contents during road transport and spreading.



#### **< HOPPER EXTENSION**

For additional spatial capacity, two hopper extensions are available: 23 cm and 50 cm (only available for F10).

#### **HYDRAULICALLY OPERATED HOPPER EXTENSION >**

Convenient operation of the cover from the driver's seat when filling the spreader.



## OPTIONAL ACCESSORIES

### PNEUMATIC BRAKES >

Pneumatic brakes are available, instead of the standard hydraulic brakes.  
(It is also possible to combine hydraulic brakes and pneumatic brakes.)



### < HYDRAULIC SPREAD UNIT

A hydraulically operated spread unit makes it possible to individually adjust the rpms on each disc. This makes it possible to select headland spreading for the right or left side. Headland spreading is activated via the ISOBUS computerised controls.

The spread unit is driven via two oil outlets on the tractor and requires an oil volume of 130 l/min.

If the tractor does not have the requisite oil capacity, an alternative PTO-driven hybrid power unit is available.



### BREDAL HITCHES >

Instead of the standard ring hitch, Bredal also has a ball hitch, available in both high and low versions. The ball hitch is made of cast steel and the ball cup fits an 80-mm ball.





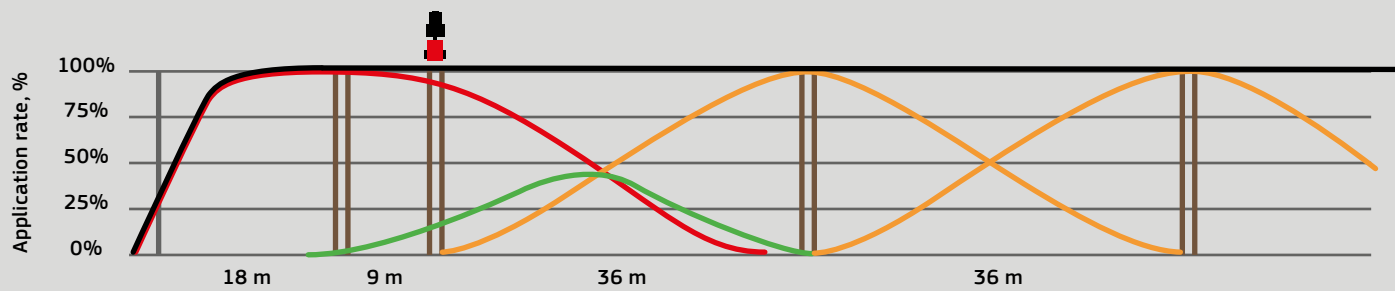
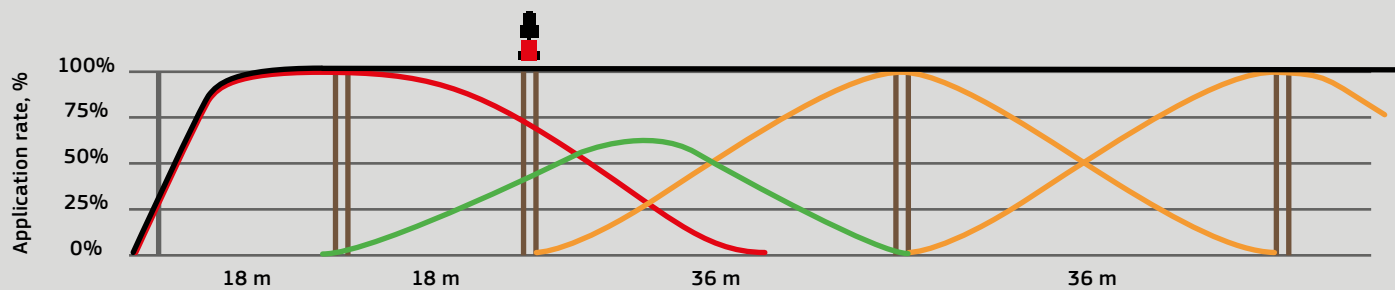
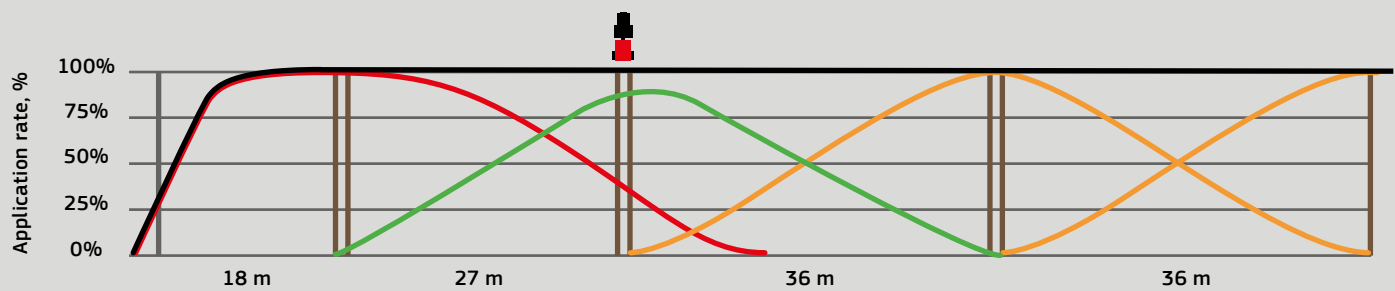
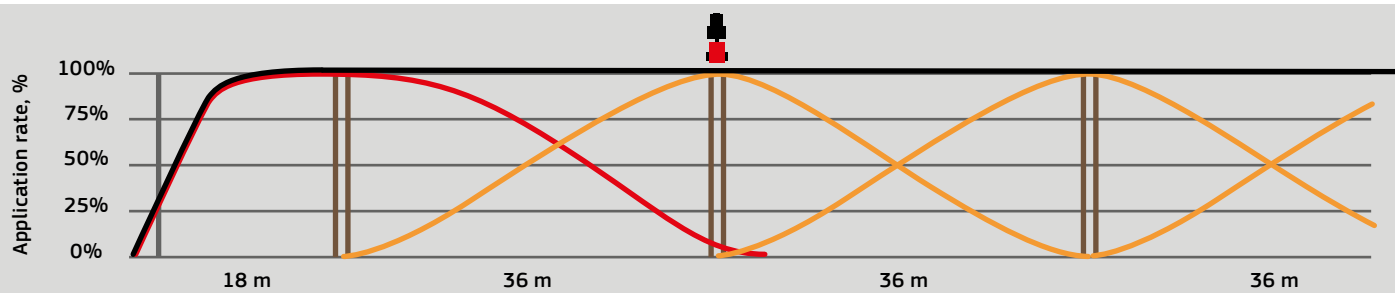
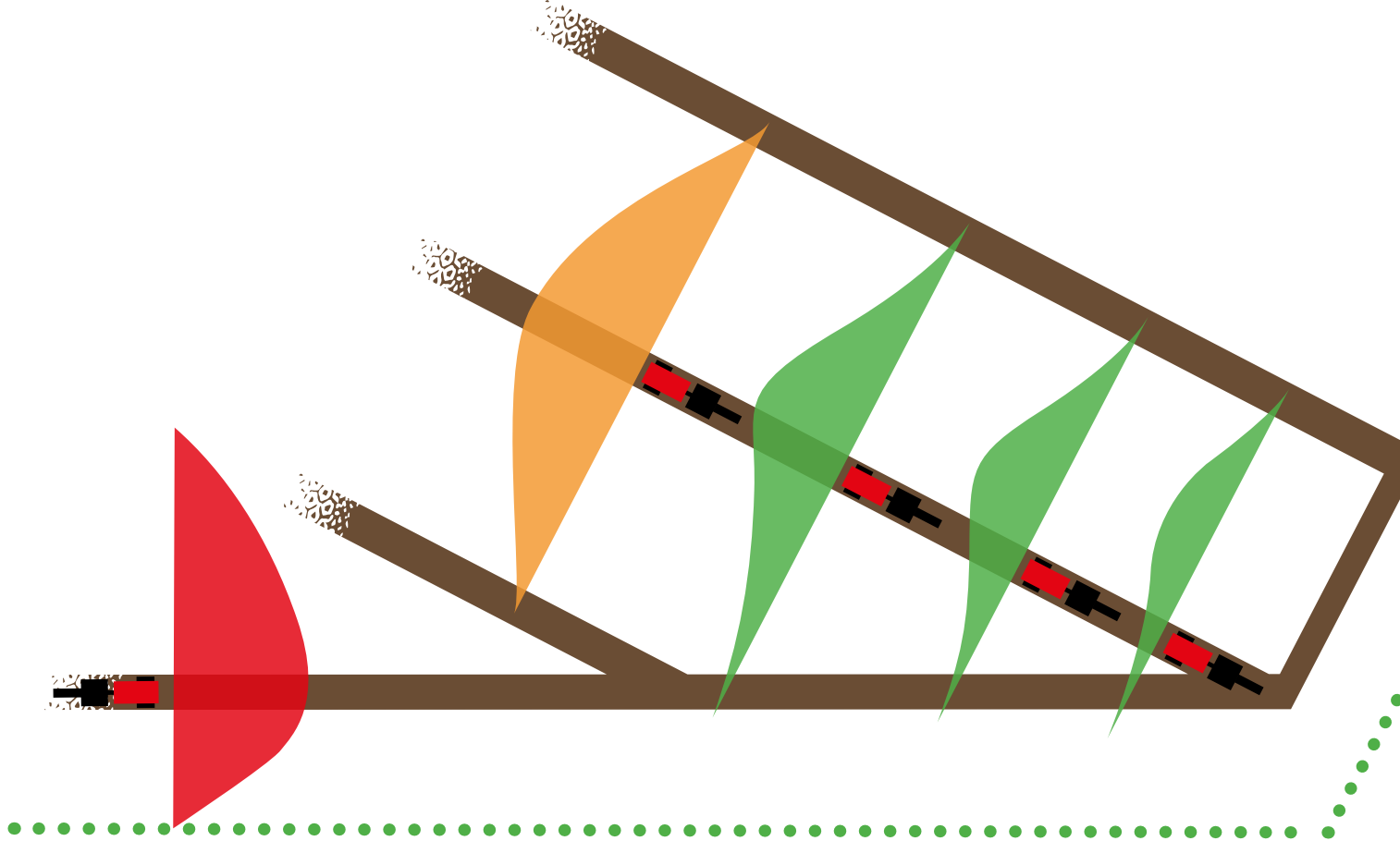




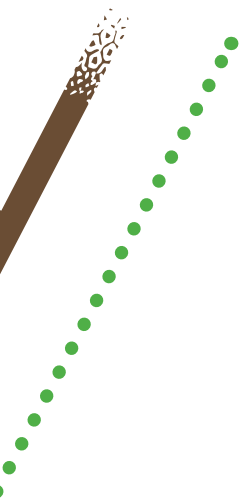








# SPREADING PRINCIPLE



## **36-metre working width in the field shown together with headland spreading.**

An ordinary spreading pattern without any uncovered sections.

## **36-metre working width with a leftover width of 27 metres.**

The centre of the spreading pattern (highlighted in green) is shifted about 3 metres to the right of the wheel tracks and the application volume is reduced.

## **36-metre working width with a leftover width of 18 metres.**

The centre of the spreading pattern (highlighted in green) is shifted about 10 metres to the right of the wheel tracks and the application volume is reduced even more.

## **36-metre working width with a leftover width of 9 metres.**

The centre of the spreading pattern (highlighted in green) is shifted about 12 metres to the right of the wheel tracks and the application volume is substantially reduced.

F8/F10 is designed with two floor belts with separately controlled application rates, enabling the volume to be adapted continuously when spreading in a field wedge. As the tractor drives forward into the wedge, the volume is gradually reduced on the side towards the wedge to ensure a correct application rate. The same procedure is used for driving in an uncovered field section. The application rate facing the leftover section is reduced so the correct volume is spread at all times, neither too little or too much.

The picture on the left shows how the spreading pattern gradually changes as the spreader moves forward into a wedge in the field and the volume is reduced (highlighted in green).

The spreading pattern principle at different leftover widths between the headland and wheel tracks in the field is shown below. As the leftover width lessens, the application rate is reduced on the side in question so the total volume spread in the field always corresponds to the value entered.

ISOBUS section control is used to adjust the quantity being spread. The section control program is installed in most ISOBUS terminals and is required to enable the spreader to adjust the quantity while spreading in wedges and leftover widths. One of the benefits of using the software installed in the terminal is that it can be used not only for the fertiliser spreader, but also for the sprayer, planter, etc., which is the basic concept of the ISOBUS system.

Every year, Bredal conducts many spreading tests using the different types of fertiliser available on the market. The settings for the different types of fertiliser can be downloaded from our website to make it possible to always use the optimised setting for each individual type of fertiliser.

We verify and optimise the settings on an ongoing basis and we give high priority to continuously furthering the development and improvement of headland spreading, etc., where, as a new feature, it is possible to use different downshute settings on the right and left sides. Another new feature is the automatic reduction of the application rate on the headland side when the headland gear is activated, notably to optimise the spreading pattern for headland spreading.

# COMPUTERISED CONTROL/ISOBUS



## > ISOBUS

The ISOBUS solution was jointly developed with TeeJet and, as always, high priority was given to ensuring a simple user interface to ease the entering of daily settings. F8/F10 are solely developed as ISOBUS solutions.

## > SECTION CONTROL (UP TO 12 SECTIONS)

For section control Bredal uses the same software as a field sprayer and this software is installed in most ISOBUS terminals. This means that the same procedure is used regardless of whether the sprayer or spreader is being operated.

## > MÜLLER TRACK GUIDE III

If the tractor is not equipped with an ISOBUS terminal, Bredal provides a colour touchscreen from Müller, along with a complete installation set, including a GPS aerial, and the requisite software. The Müller terminal can also be used along with other ISOBUS-controlled implements, of course, and includes a tracking program.





The Bredal controls for F8/F10 are developed solely for ISOBUS. High priority has been given to designing a user interface that is simple to operate and includes all the required functions at the same time.

The software was developed in collaboration with TeeJet, which has long-standing experience of developing solutions for the agricultural sector and has been Bredal's supplier for more than 25 years.

The latest F8/F10 models have several new functions not previously available from Bredal. The most important are spreading in wedges and leftover sections, as well as automatic application activation/deactivation when turning in the headland.

Other useful functions are also built in, however, such as a tilt sensor which adjusts the application rate when driving in hilly terrain to ensure highly uniform application at all times. The tilt sensor is also used to adjust the weighing signal so the correct weight is shown at all times, even when driving in hilly terrain.

The downshute position adjusts automatically when a working width is entered. Not only that, the setting continually adjusts during operation to the volume being spread to ensure the best possible spreading pattern at all times, no matter if the forward speed is fast or slow. Both the downshute setting for spreading in the field and the headland can easily be changed if the spreading pattern needs to be optimised.

All functions are monitored during spreader operation and the various data are viewable by the driver at all times.

These are just some of the functions available on Bredal's newly developed F8 and F10 fertiliser spreaders, and which each in its own way helps optimise the distribution of fertiliser in the field.



## F8

### > F8 TECHNICAL SPECIFICATIONS

Capacity:	5.70 m <sup>3</sup>
with hopper extension:	7.50 m <sup>3</sup>
Net weight:	3200 kg
Overall length:	6600 mm
Standard spread unit:	SPC4500-2

Hopper length:	3916 mm
Hopper width:	2000 mm
Loading height, min.:	2475 mm
Loading height, max.:	2975 mm
Minimum width, outside wheels:	2250 mm
Maximum width, outside wheels:	2800 mm
Biggest possible wheel diameter:	ø2100 mm



## F10

### > F10 TECHNICAL SPECIFICATIONS

Capacity:	6.60 m <sup>3</sup>
with hopper extension, 23 cm	8.60 m <sup>3</sup>
with hopper extension, 50 cm	11.60 m <sup>3</sup>
Net weight:	3800 kg
Overall length:	6600 mm
Standard spread unit:	SPC4500-2

Hopper length:	4016 mm
Hopper width:	2200 mm
Loading height, min.:	2385 mm
Loading height, max.:	3155 mm
Minimum width, outside wheels:	2250 mm
Maximum width, outside wheels:	2800 mm
Biggest possible wheel diameter:	ø2100 mm









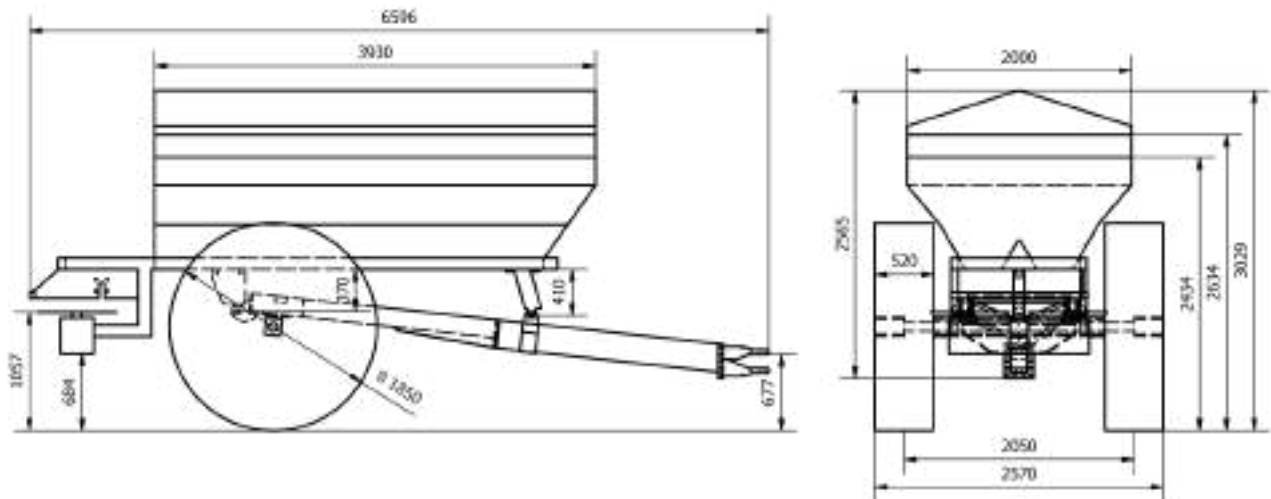
# EQUIPMENT OVERVIEW

## EQUIPMENT

	F8			F10		
	Standard	Optional accessories	Not possible	Standard	Optional accessories	Not possible
fertiliser equipment, 12–36 metres	o			o		
24–36 m spreading discs, type: 'H'		o			o	
Rear doors, stainless steel	o			o		
Brakes, hydraulic	o			o		
Brakes, pneumatic		o			o	
Gear, 1000–540		o			o	
Gear, 540–1000		o			o	
Gear, 670–1000, "eco gear"		o			o	
Mudguards, plastic		o			o	
HPU, PTO-driven hybrid power unit		o			o	
ISOBUS, computerised control	o			o		
Headland gear for headland spreading	o			o		
Hopper, painted stainless steel		o			o	
Hopper extension, 23 cm		o			o	
Hopper extension, 50 cm			o		o	
Power transfer, 6z PTO shaft with wide angle	o			o		
LED light kit in stainless steel light boom	o			o		
Calibration kit		o			o	
Cover, hydraulic, including 23-cm hopper extension		o			o	
Cover, hydraulic, including 50-cm hopper extension			o		o	
Cover over spread discs		o			o	
Cover, roller, manual including gables		o			o	
Late application equipment		o			o	
Screen, stainless steel	o			o		
Spread unit, hydraulic		o			o	
Spread unit, SPC4500-2	o			o		
Ladder	o			o		
Steering axle		o			o	
Jacks, hydraulic		o			o	
Jacks, mechanical	o			o		
Steps inside the hopper	o			o		
Hitch, Bredal 2500 ball hitch	o			o		
Hitch, Bredal 4000 ball hitch	o			o		
Hitch, Bredal 5000 ball hitch	o			o		
Hitch, Bredal 5000 ring hitch with 35/50 mm hole	o			o		
Weight cells		o			o	
Inspection window in front plate	o			o		

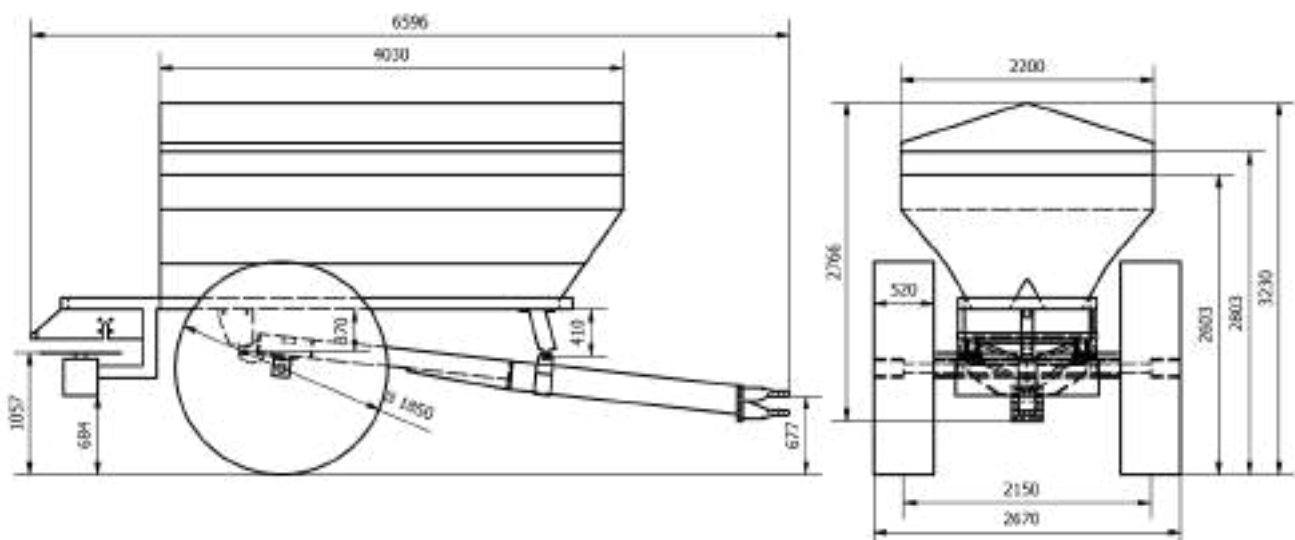
# F8/F10 DIMENSIONAL SKETCHES

## BREDAL F8



Bredal F8 with 520/85 R38 wheel mount.  
The spreader capacity without hopper extension is 5.7 m<sup>3</sup>.

## BREDAL F10



Bredal F10 with 520/85 R38 wheel mount.  
The spreader capacity without hopper extension is 6.6 m<sup>3</sup>.



**F8/F10**  
EN

Throughout a lifetime, Bredal has specialized in the development and manufacture of high-quality lime and fertilizer spreaders for easy operation and a robust construction. In recent years, however, the products also include winter equipment such as sand and salt spreaders.

In the export markets, the interests of the company are taken care of by local importers, who also assist in the sale, service and support of Bredal's products.

Bredal has state-of-the-art production and testing facilities using the latest technologies to ensure that the quality of the products is top notch.

**SIMPLE  
PRECISE  
RELIABLE**