



THE STORY OF ORKEL:

# OUR AGRICULTURAL COMPACTORS





# ORKEL'S HUMBLE BEGINNINGS

## **ORKEL IS STANDING THE TEST OF TIME.**

Starting as a humble shop for friends and relatives back in 1949, Orkel began its journey as a family-run business in the midwest of Norway. Over 70 years later, Orkel has evolved into what is best described as a global trailblazer for agricultural and industrial compaction technology. Led by CEO Erlend Johan Gjønnnes, grandson of Orkel's founder Johan Gjønnnes, Orkel is delivering cutting-edge technology to more than 60 countries across six continents.

### **About us**

Orkel is a pioneer in creating machines and solutions for better conservation and handling of agricultural and industrial materials. Our core values are what defines us, and our commitment to them is strong at every level of our company: Reliability, inclusivity, and innovation!

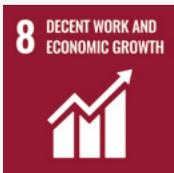


The Orkel compactor technology contributes to ensuring sustainable food production systems by emphasizing agricultural productivity, which results in resilient agricultural practices that increase overall productivity and production within the global agricultural sector.



Choosing Orkel's waste baling technology over landfill generation contributes to reduce poor health and illnesses among nearby communities as a result of pollution and contamination in air, water, and soil, together with hazardous chemicals.

# CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY



The Orkel compactor technology contributes to achieve higher levels of economic productivity through technological upgrading and innovation in the agricultural sector, a high-value added and labor-intensive sector.

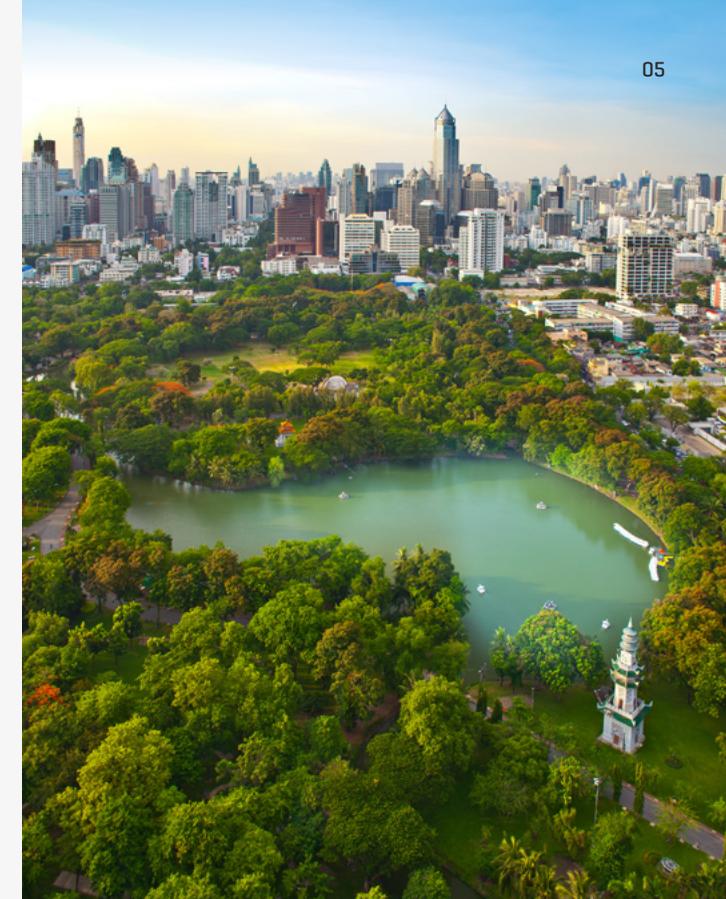


Storing agricultural bulk material as Orkel high-density bales limits oxygen degradation, which contributes to reducing global food losses along production and supply chains with emphasis on post-harvest losses.

Photo: Nobre Nutrição



The Orkel compactor technology is developed for baling high-calorific value waste materials such as RDF and SRF, which contributes to increase the rate of improvement in energy efficiency and waste treatment processes



Choosing Orkel's waste baling technology when developing future waste management strategies contributes to reduce the adverse per capita environment impact of cities by paying special attention to air quality and municipal waste management.

# ORKEL COMPACTOR TECHNOLOGY



## COMPACTION & CONSERVATION

For agricultural customers, Orkel's compactor technology offers the latest in bulk material compaction, conservation, and storage. Years of thorough testing allows Orkel to confidently claim that our compactor technology is compatible with more than 25 different types of agricultural materials.



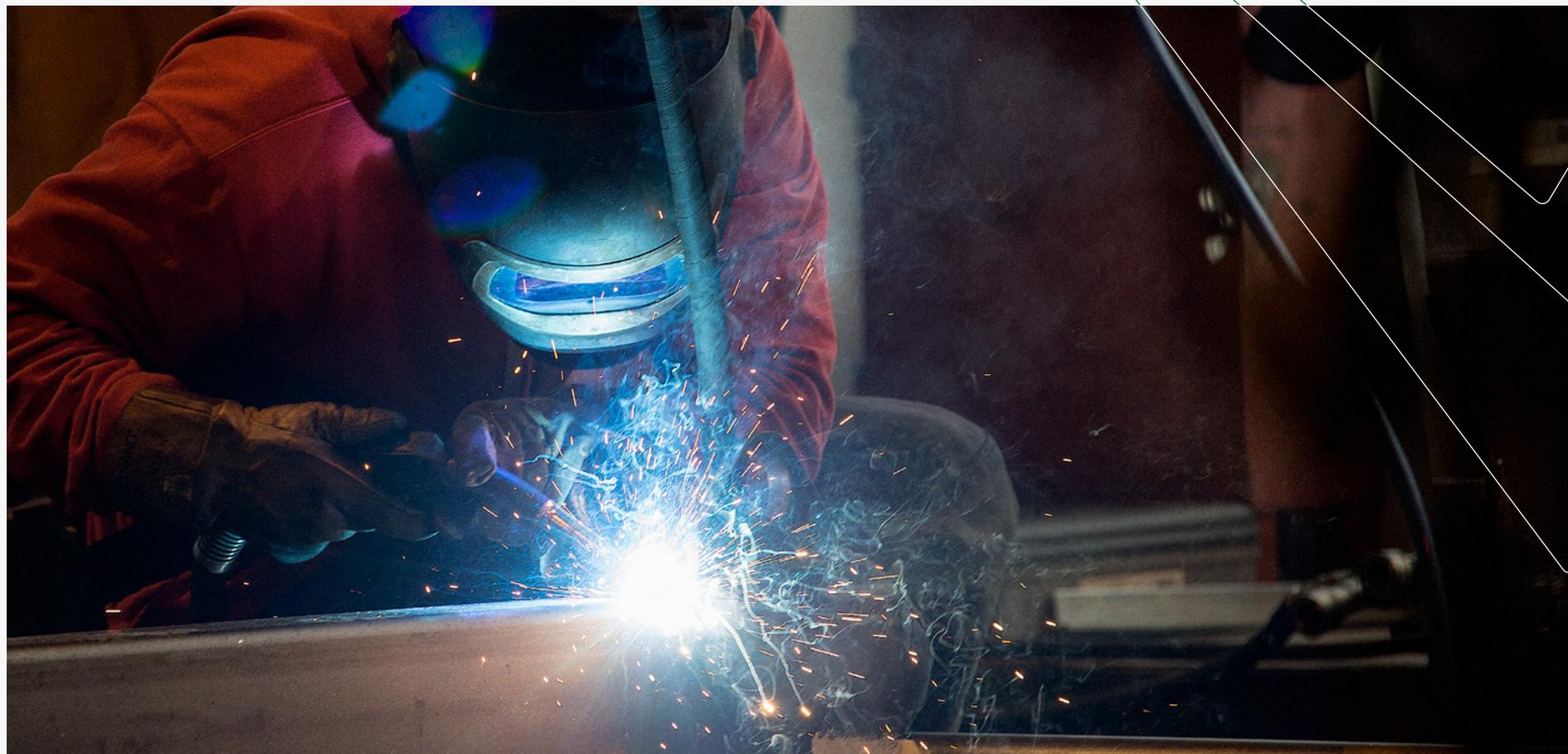


## NORWEGIAN CRAFTSMANSHIP

Orkel's compactors are developed and manufactured at our HQ in Norway. Located in Fannrem, the small town where Orkel's baling journey began, you will find the majority of the Orkel team.

Orkel's experienced team of engineers work tirelessly to further develop our reliable machinery according to customer requirements and market trends. Offering outstanding quality, minimal downtime, low maintenance requirements and a life expectancy of over 500,000 bales, our compactors are market leaders.

Working closely with the R&D department, our diligent production staff assemble Orkel compactors with great precision, ensuring that every machine is in top condition before being shipped out into the world.



# HIGH-DENSITY BALES

Photo: Nobre Nutrição

## INTRODUCING ORKEL HIGH-DENSITY BALES

Unlike traditional balers, an Orkel compactor provides the customer a high-density compaction concept, enabling improved forage quality and practical benefits to your production.

For storage of wet organic animal feed and other crops, oxygen is the enemy. In cases of poor conservation, oxygen enters the bulk material and initiates degradation of forage and loss of nutritional value, greatly affecting overall profitability.

By storing your material as Orkel High-Density Bales, you greatly limit oxygen supply to your bulk material, ensuring that your high-quality material will persevere during prolonged storage, maintaining the initial resource of your product.





## THE BENEFITS OF HIGH-DENSITY BALES

In addition to improved forage quality, Orkel High-Density Bales offer further benefits:



### Improved storage

Orkel High-Density Bales may be stored for a longer period, allowing you a greater range of storage locations.



### Improved forage handling

High-Density Bales = Reduced forage volume. Bales simplify the logistics and allow for cost-effective transport, while limiting potential feed loss.



### Efficient stacking

Once baling your bulk material into Orkel High-Density Bales, your material is densified into sturdy, easy-to-stack unit packages. The bale density allows you to stack six to seven bales, saving significant storage space.



### Improved waste handling

The inner wide film and the outer wrapping film consist of identical types of plastic film, simplifying recycling and waste handling after the bale is opened and the material is fed.

## THE HIGH-DENSITY BALING PROCESS



### 1. Feeding

Your material is fed into the feed hopper of the compactor, which transports the material safely up the elevator and into the bale chamber using a proven conveyor system.

### 2. Compaction

The material is compacted to maximum density based on hybrid chamber technology. The Orkel technology avoids spillage of material to ensure minimal loss of resources.

### 3. Inner wrapping

After successful compaction, a wide film is wrapped around the bale to maintain shape and density before the bale exits the chamber towards the wrapping station.

### 4. Outer wrapping

The compacted material is transported to - and safely placed on - the wrapping table, where it is tightly wrapped in plastic film into a compact, sturdy bale, ready for transport once it securely rolls off the table.



## BULK MATERIALS

Storing bulk material is essentially the core of Orkel's business, which is why we emphasize bulk material expertise and know-how. With an established Materials Department, we are continuously seeking out new baleable materials while also elaborating on our existing bulk material record.

Our current baling experience include several agricultural materials, such as

- Alfalfa (Lucerne)
- Bagasse
- CCM (Corn Cob Mix)
- Compost
- Cotton Seed
- Crimped Grain
- Elephant Grass
- Energy Crops
- Grape Marc
- Hemp
- Maize (Corn)
- Manure
- Oats
- Rhodes Grass
- Sorghum
- Soybeans
- Sugar Beet Pulp
- TMR (Total Mixed Ration)



### Maize

Maize silage is an energy-rich forage alternative, ideal for farmers wanting to increase milk yield. By finely chopping the material, you ensure that your cattle consume more and increase the milk yield additionally. Today, maize bales for animal feed are used in more than 40 countries and is the preferred forage by many.

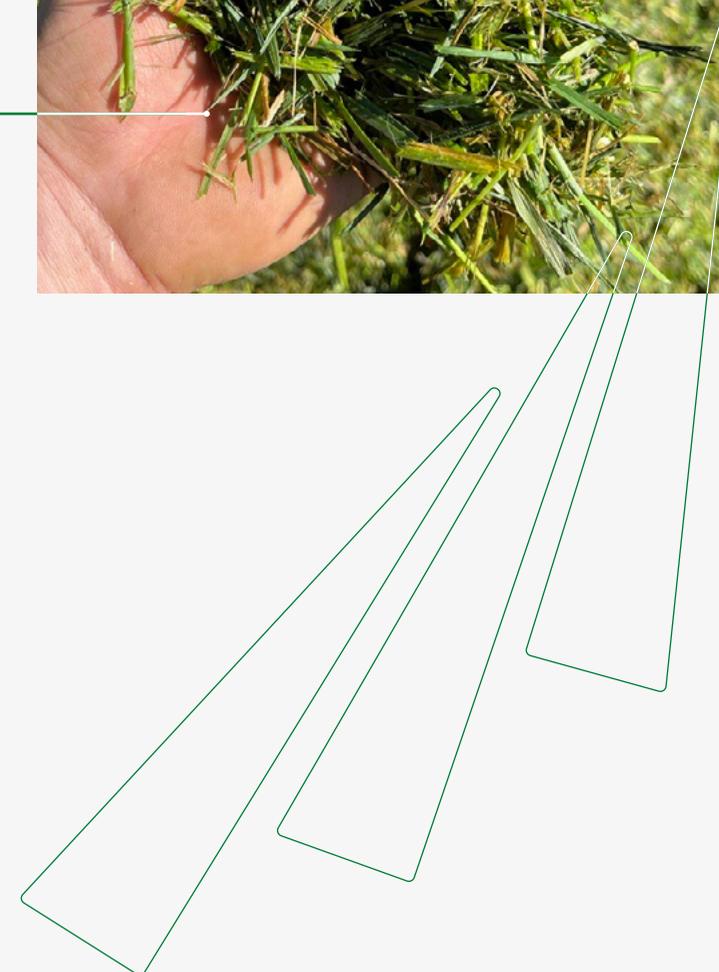
### Chopped Grass

Perhaps the most recognized bulk material for silage use, chopped grass comes in many forms such as alfalfa, sorghum, and rhodes grass. Used worldwide, farmers have perfected the cultivation and harvest of grasses. Often maintaining a higher dry matter content than other forages, grasses are an ideal source to fiber.



### Soybeans

Soybean, an annual legume of the pea family, is naturally high in protein, ideal as forage for beef and dairy cattle. Due to its high oil content, many farmers mix soybean silage with chopped grasses to increase the material's palatability, diluting the protein levels to better match the animals' needs.



**Orkel**

# DENS-X COMPACTOR

A high-capacity,  
high-efficiency compactor  
for the big baling jobs!



115 cm  
bale diameter



400–1400 kg  
per bale



widefilm 1280 mm  
wrapping film 750 mm



compatible with over 25  
different materials

Orkel

# DENS-X COMPACTOR

Take your baling to new heights with the Orkel Dens-X compactor! The Dens-X model has a unique feed hopper solution with supreme capacity, as the patented F25 feed hopper enables easy access and fast unloading from trailers. A tipper flip prevents spillage of your bulk material, and the full width belts provide optimal material flow. Together, the distinctive features of the Orkel Dens-X model create a unique compactor model in terms of baling capacity and reception of material.

In line with other Orkel models, the Dens-X compactor is currently compatible with over 25 different materials and is still expanding to new areas of use.



#### RAPID RIG&WRAP

The F25 feed hopper patent enables a smooth transition from transport to operation within minutes.

#### GENERATION X

The new X-generation of Orkel compactors, including the Dens-X, is designed with innovative features to increase the productivity and management of your baling operation.

#### ORKEL PRECISION

Compatible with our latest smart tech solution, Orkel Precision enables precision farming for every X-generation compactor owner. Implementing the complete package, you have a Production Management Tool, a Bale Traceability Tool, and a Bale Content Tool at your disposal. More information on page 40 – 41.

#### WEIGHING SYSTEM

The X-generation of Orkel compactors include an implemented weighing system, saving your bale data for later analysis and fine-tuning of your baling operation.

#### ORKEL TOUCH CONTROL SYSTEM

The intuitive touch screen allows for easy operation and supervision of the machine. Features such as the wide viewing angle, screen brightness, and screen contrast offer optimal readability even in direct sunlight. Setting the machine to run automatically you are freed from manual labor, enabling you to shift focus to supervision and fine-tuning of the machine to accommodate to your needs.



**Orkel**

# MP2000-X COMPACTOR

A versatile compactor designed for baling a wide variety of bulk material and chopped masses.



115 cm  
bale diameter



400–1400 kg  
per bale



widefilm 1280 mm  
wrapping film 750 mm



compatible with over 25  
different materials



# MP2000-X COMPACTOR

Providing Orkel customers across the world a reliable and high-performing compaction, the MP2000-X model represents a resource-efficient and user-friendly alternative for conservation and logistics. Applying Orkel high-density technology, this compactor model is currently compatible with over 25 different materials and is still expanding to new areas of use.

We take great pride in offering highly customized machines, tailor-made to cover all needs. The MP2000-X bale diameter is ø115x120 cm, optimized for transportation in trucks and containers.



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Orkel

# MC1000 COMPACTOR

A reliable compactor for customers with a limited need of capacity, ideal for baling maize silage, chopped grasses, forage mixes and more.



100 cm  
bale diameter



300-750 kg  
per bale



widefilm 950 mm  
wrapping film 500 mm



compatible with over 25  
different materials

**Orkel**

# MC1000 COMPACTOR

Like its smaller predecessor MC850, the Orkel MC1000 compactor is an optimal option where reduced capacity and lighter bales are preferred. The MC1000 model makes bales with a diameter of  $\varnothing 100 \times 85$  cm, ranging from 300 kg to 750 kg per bale depending on the type of material and its moisture content. Compared to the MC850 model, baling with the MC1000 model increases the bale volume by 40%, enabling an increased customizable bale weight to fit your production line.



In line with other Orkel models, the MC1000 compactor is currently compatible with over 25 different materials and is still expanding to new areas of use.

Orkel

# MC850 COMPACTOR

A reliable compactor for customers with a limited need of capacity, ideal for baling maize silage, chopped grasses, forage mixes and more.



85 cm  
bale diameter



250–550 kg  
per bale



widefilm 950 mm  
wrapping film 500 mm



25+  
Materials compatible with over 25  
different materials



# MC850 COMPACTOR

Where lower capacity and smaller bales are required, the Orkel MC850 compactor is the optimal option. The MC850 model makes bales with a diameter of ø85x85 cm, ranging from 250 kg to 450 kg per bale depending on the type of material and its moisture content.

The bales' density and limited weight allow for easy shifting and transfer, simplifying the handling and transport of your bulk material.



In line with other Orkel models, the MC850 compactor is currently compatible with over 25 different materials and is still expanding to new areas of use.





# MC850<sup>flex</sup> COMPACTOR

A flexible compactor for customers wanting fewer kilos of forage per bale.



50-85 cm  
bale diameter



100-550 kg  
per bale



widefilm 950 mm  
wrapping film 250/300/350/500 mm



25+  
Materials  
compatible with over 25  
different materials

Orkel

# MC850<sup>flex</sup> COMPACTOR

The MC850 flex model, an evolution of the MC850 model, is characterized by its unique kit which allows the compactor to limit the bales' weight. Through intuitive settings, customers requiring low volumes of feeding may seamlessly regulate their bale size, producing smaller Orkel bales than before.



The weight of a flex bale starts at approximately 100 kg, and may range up to 450 kg, according to customer preference. Compared to the initial MC850 model, the MC850 flex model is equipped with a kit and specialized bale settings, limiting the bale diameter to 50 cm. Furthermore, the compactor's wrapper unit is re-sized to fit a 200 - 300 mm wide wrapping film. Combined, the additional characteristics of the MC850 flex model creates an easy-to-handle compactor unit.

In line with other Orkel models, the MC850 flex compactor is currently compatible with over 25 different materials and is still expanding to new areas of use.



# SUCCESS STORIES FROM AROUND THE GLOBE



**FDC Enterprises, USA**

**Mr. Fred Circle, President & CEO**

“The compactor technology opens new Dens-X revenue generation opportunities that can potentially get rid of waste streams within the local community while also sustaining and creating jobs”



**Cargill, Brazil**

**Mr. Andrés Navarro, Technical Sales Assistant in Cargill**

“Orkel supplied the perfect solution in terms of high density, user-friendliness and productivity. This product offers our customers an excellent option for feed storage and conservation.”



**Kameeldriftvoere, South Africa**

**Mr. Burger Marais, Owner of Kameeldriftvoere**

“Its [the Orkel Dens-X compactor] capacity, with regard to maize silage with about 60% moisture, is between 400 to 600 tons per day, making it the machine with the highest daily silage baling capacity in the world.”



**Toaiar Saggiolato, Italy**

**Mr. Andrea Saggiolato, Part Owner of Società Agricola Toaiar Saggiolato**

“Our Dens-X allows our contracting business to bale using the highest of density, so we are reaching the high-quality silage market where the profitability is much greater, compared to the low- or mid-quality [silage] markets!”



**Shanghai Dairy Group, China**

**Ms. Helen, Deputy GM in Shanghai Dingniu Feed**

“Due to the varying sizes of arable land in Shanghai, the portable [Orkel MP2000-X] compactor has come into play. It creates the flexibility and efficiency we are looking for by transporting forage in bales, eliminating any excessive need for bulk handling, as well as greatly reducing the potential forage loss from secondary fermentation.”



**Punjab Silage Company, India**

**Mr. Sumit Dogra, Partner in Punjab Silage Company**

“There are no machines as sturdy and reliable as the MC850 compactor, and the properties of the final bale exceed our high expectations.”



# ORKEL ASSIST



With the Orkel Assist tools, technical support is never far away. The Orkel team is determined on providing the best service before, during and after delivery of your Orkel compactor.



International service technicians



Instructional videos



Orkel LiveAssist



### From Offer to Operation: Your Personal Orkel Representative

You will receive a sales contact responsible for identifying the compactor model best suited for your needs, while keeping you updated in the production process and machine delivery. After safe arrival, you are handed over to one of Orkel's experienced technicians, who will be responsible for commissioning your machine, ensuring an optimal start to your baling journey.

Orkel understands that your needs may vary over time, which is why our in-house international service technicians are always available. For any queries, such as machine settings, technical assistance, spare parts, or simply baling advice, they will gladly assist you over phone or by email.

### Instructional videos

In addition to your Personal Orkel Rep., we offer a multitude of instructional videos; Explanations on how to set up your compactor, how to operate your machine, and videos offering maintenance advice to keep your machine functioning well over time. In each video a common question is answered, as you are instructed in a step-by-step approach to assure efficient self-help.

### Orkel LiveAssist

For challenging times characterized by travel limitations, Orkel offers a remote service solution; Orkel LiveAssist.

The LiveAssist device is a head worn device which you may use to communicate directly with an Orkel service technician online. As you are wearing the device, the Orkel technician can see your environment through your eyes and in turn efficiently describe the necessary steps to solve a potential issue.

This solution is widely available for Orkel customers, provided through effortless request and shipment.

# ORKEL PRECISION



How can Orkel improve and simplify the daily operations of farmers?

Compatible with our X-generation compactors, the Orkel Precision technology benefits all aspects in the value chain surrounding bulk material stored in High-Density Bales.

Among the numerous benefits are

- Real-time insight and downloadable analyses of your baling sessions
- Material traceability using individual bale labelling and cloud storage
- Digital bale content insight, removing the need to puncture each bale



Orkel Precision consists of three technology packages, depending on the depth of insight you are on the lookout for.

**Basic | Telematics**

“Your Production Management Tool”

With Orkel Telematics you will have a clear and coherent overview of your production details, such as production rate, production history and current machine health. The best part? The information is easily accessible on your phone, tablet, and PC.

**Pro | Bale Manager**

“Your Bale Traceability Tool”

Built on the existing Telematics package, we introduce the BaleID™ system which allows you to trace each round bale produced through your compactor’s lifetime. As each individual round bale is automatically tagged with a physical tag, the correlating data is safely stored in the cloud for you to access. How do you access the individual bale information, you ask? By effortlessly scanning the physical ID tag on the bale using your mobile phone.

**Ultra | Content Intelligence**

“Your Bale Content Tool”

Built on the two previous packages, the Content Intelligence package provides a material analysis of each bale using the built-in NIR-scanner. Just like you would trace each individual bale, you access the bale’s forage details by scanning the physical tag on the bale. But what is the gain of accessing this information? The benefit lies in not having to puncture each bale to make forage tests, which rapidly decreases the bale’s forage quality.

# ACCESSORIES FOR YOUR COMPACTOR



### Agricultural film

High-quality bale film is an essential part of silage conservation. Orkel collaborates with leading film producers to provide you Orkel-branded high-quality film, a film you can trust to ensure minimal nutrition loss through sturdy, secure bale units.

We offer different sizes of both wide film and wrapping film, customized to fit your material and your Orkel compactor model. Our latest addition is our recycled alternative, Orkel recycled wrapping film.



### Powerpack electric drive

The Orkel PP550 Powerpack offers an efficient, flexible, and reliable electrically based operation of your Orkel compactor.

This is an advanced power source for your compactor, providing a frequency-controlled RPM which secures your operation at low and high temperatures. The automatic RPM control ensures the correct speed of your compactor during variable operating conditions. The PP550 is optimized to operate the compactor with the lowest possible power consumption, while ensuring high quality baling.



### Bale opening

The Orkel RDS130 Bale Opener provides a smooth round bale opening, reducing manual labor. As the bale is split, the bale film attaches to the Bale Opener grip clogs, separating the bale film from the silage. The bale content drops to the operator's preferred location, simplifying silage feeding and film recycling.

## BALE HANDLING

We provide a variety of equipment for easy and efficient handling of your bales.



BS130 Bale Stacker



DB130 Bale Lifter



BK150 Bale Stacker



DBH130 Hydraulic Bale Lifter

## EXTRAS ON THE MACHINE

### Additive/inoculant spraying system

Allows the operator to add water or additives to the bulk material before baling.

### Bale tipper

Allows the bale to be tipped over on the flat side after dropping from the wrap table.

## TECHNICAL DETAILS

MATERIAL SAMPLE	MC850	MC850 flex	MC1000	MP2000-X	Dens-X	Hi-X	Hi-X evo
Maize [Corn]	•	•	•	•	•	•	•
Chopped grass	•	•	•	•	•	•	•
TMR	•	•	•	•	•	•	•
Manure	•	•	•	•	•	•	•
Waste MSW							•
Waste RDF						•	•
Waste SRF						•	•
20+ other materials	•	•	•	•	•	•	•

### FEED HOPPER

F5	•	•	•				
F10				•		•	
F10 evo							•
F25					•		

### OPERATION

Control system	Conventional	Conventional	Conventional	Touch	Touch	Touch	Touch
Weighing system				Option	Option	Option	Option

### MAX. CAPACITY \*

Bales/h	65	65	65	66	66	55	55
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### POWER

Tractor [min. PTO hp]	90	90	90	120	120	120	120
Powerpack PP550	•	•	•	•	•	•	•

CHAMBER	MC850	MC850 flex	MC1000	MP2000-X	Dens-X	Hi-X	Hi-X evo
Chamber pressure [bar]	240	240	240	280	280	280	280
Bale size [cm]	ø85 x 85	ø50 x 85 - 85 x 85	ø100 x 85	ø115 x 120	ø115 x 120	ø115 x 120	ø115 x 120
Volume [m <sup>3</sup> ]	0,48m <sup>3</sup>	0,17m <sup>3</sup> - 0,48m <sup>3</sup>	0,67m <sup>3</sup>	1,25m <sup>3</sup>	1,25m <sup>3</sup>	1,25m <sup>3</sup>	1,25m <sup>3</sup>
Bale weight [kg]	250-550	100 - 550	300-750	400-1400	400-1400	400-1400	400-1400

### DRAWBAR

Telescopic	•	•	•	•	•	•	•
Flexible					•		

### MEASUREMENTS\*\*

Transport length [mm]	7 860	7 860	7 860	8410	9650	8 740	11470
Transport height [mm]	3 390	3 390	3 390	3880	3900	4 100	4110
Transport width [mm]	2860	2860	2860	2550	2380	2 550	2860
Operation length [mm]	9 170	9 170	9 170	10760	12420	10 770	10880
Operation height [mm]	3 860	3 860	3 860	4030	3900	3 900	4110
Operation width [mm]	2860	2860	2860	3210	4470	3 710	3860

### WEIGHT \*\*\*

Net. weight [kg]	7 120	7 120	7 220	9 500	11 540	9 850	10 160
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\***Capacity:** Depending on type of material

\*\***Measurements:** This may vary with different accessories

\*\*\***Weight:** Will vary with different accessories. Minimum weight is shown

All numbers are approximate

ORKEL'S VISION:

TO BE THE LEADING  
POWER IN BALING TECHNOLOGY  
FOR A **SUSTAINABLE WORLD**



**BALES BETTER**

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