

HYBRID CULTIVATOR **KORALIN 9**



CONTENTS

Use **4**

| | |
|-----------------------|---|
| Range of applications | 4 |
| Water balance | 6 |

Technology **8**

| | |
|--------------------|----|
| Equipment overview | 8 |
| Highlights | 10 |
| Technical data | 14 |
| Options | 16 |
| Model comparison | 18 |

Service **20**



ULTRA-SHALLOW AND ULTRA-PROTECTIVE

Agriculture is subject to continuous change and needs to adapt to new challenges all the time. The extensive drought experienced in recent years has affected soils, and water is becoming a more and more precious resource as a result. That's why it is even more important to find new alternatives and solutions for cultivating agricultural land sustainably. The new **LEMKEN Koralin 9 hybrid cultivator** protects the soil against erosion and promotes its ability to retain water. It combines the benefits of a disc harrow and cultivator and is ideal for full-width, ultra-shallow tillage. This protects your soils, and you can look forward to optimal results from your work.

OUR DRIVING
FORCE:
YOUR SUCCESS!

KORALIN 9

THE MULTITASKER

The cultivation of catch crops revitalises soils and can effectively reduce soil erosion induced by water and wind, especially in areas prone to erosion. Shallow, full-width tillage with the **Koralin 9**

reliably undercuts catch crops in spring. As they then stop drawing water from the soil, essential moisture is retained in the soil.



Right after the harvest is the time for preparing a basis from which the next crop can develop optimally. The **Koralin 9** cuts stubble both vertically and horizontally across the full working width to promote rapid microbiological decomposition. At the same time, it incorporates harvest residue at a very shallow depth. This encourages the even emergence of weed seeds and volunteer cereals while also reducing evaporation. As a result, water in the soil is retained for catch crops.



The **Koralin 9** is also ideal for stubble tillage in a second pass. Emerged volunteer cereals and rapeseed are undercut at a shallow depth and distributed evenly in the soil to promote optimal natural decomposition. Trailing harrow tines move the finer roots to the surface. This causes volunteer cereals, rapeseed and weeds to dry out and therefore ensures effective control. The risk of blockage is reduced thanks to the clever combination of cultivation tools operating horizontally and vertically. The leading discs make it easier for the tines to penetrate the soil and therefore reduce traction requirements for the tractor.



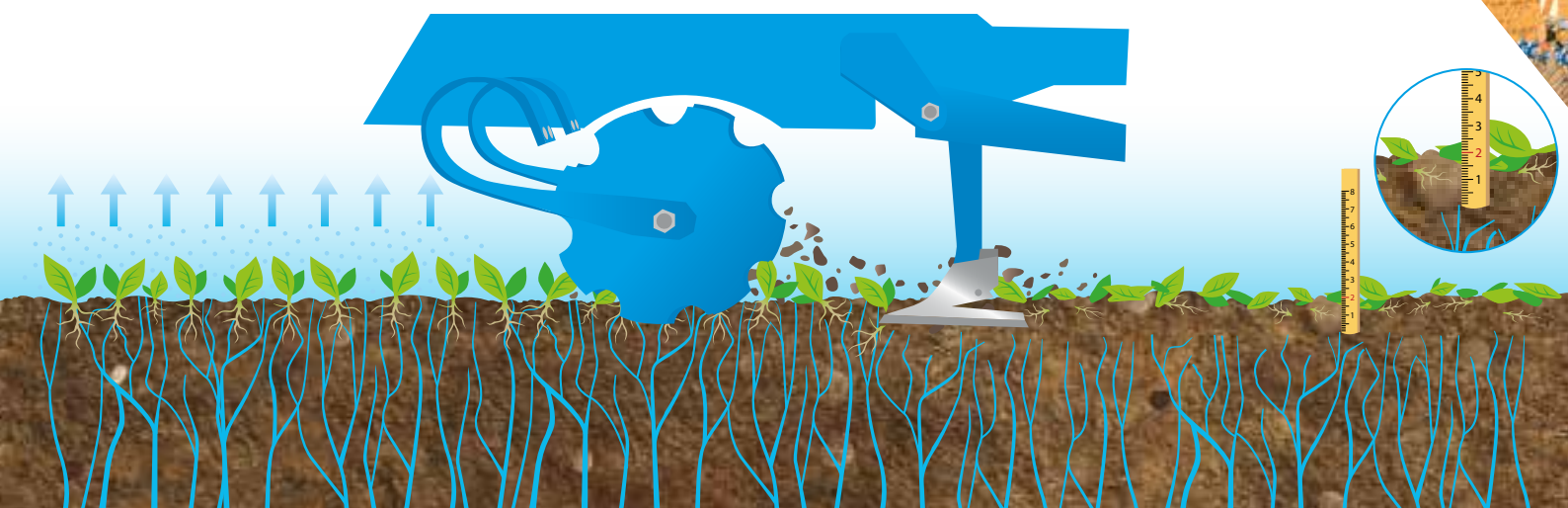
PROTECTS THE WATER BALANCE

Catch crop cultivation

Cultivating catch crops in spring prepares soils for the subsequent main crop.

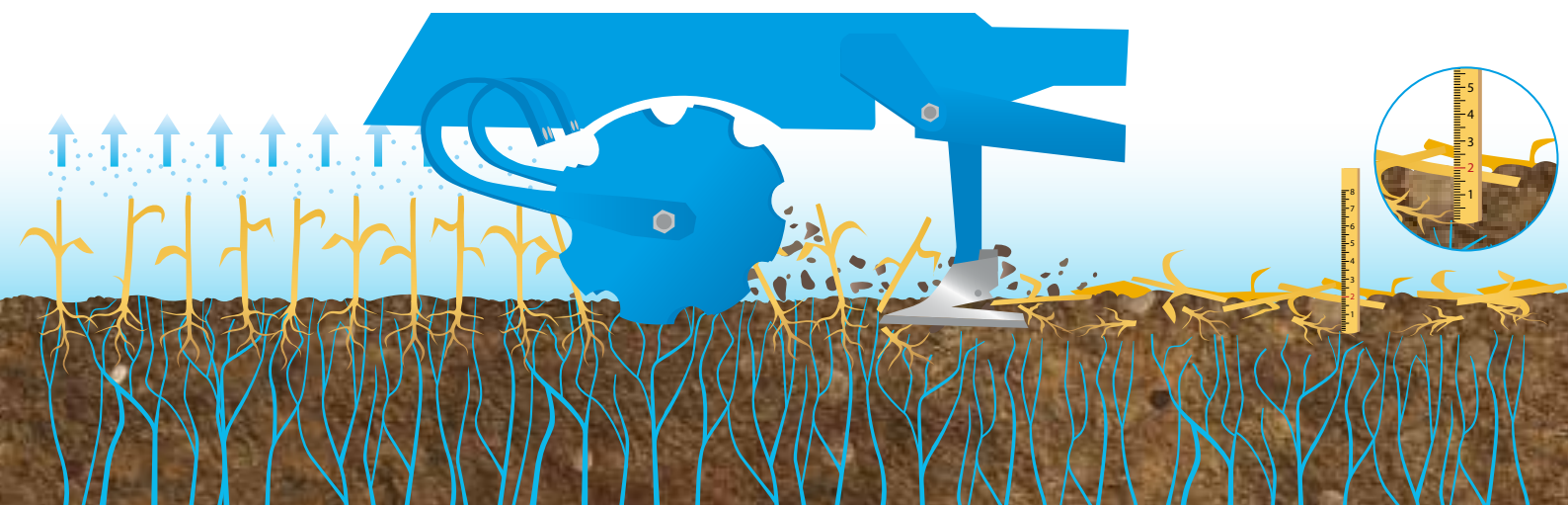
However, catch crops drain a lot of water from the soil and therefore need to be destroyed across the entire field.

The shallow tillage achieved with the **Koralin 9** ensures that water capillaries are retained and moisture in the soil is therefore protected.



First stubble tillage

After the grain harvest, soil loses a lot of water via straw stubble. The **Koralin 9** undercuts stubble at a shallow depth and creates ideal conditions for the emergence of volunteer cereals. Straw stubble no longer draws water from the soil and instead forms a straw cover across the field that protects the soil against erosion.



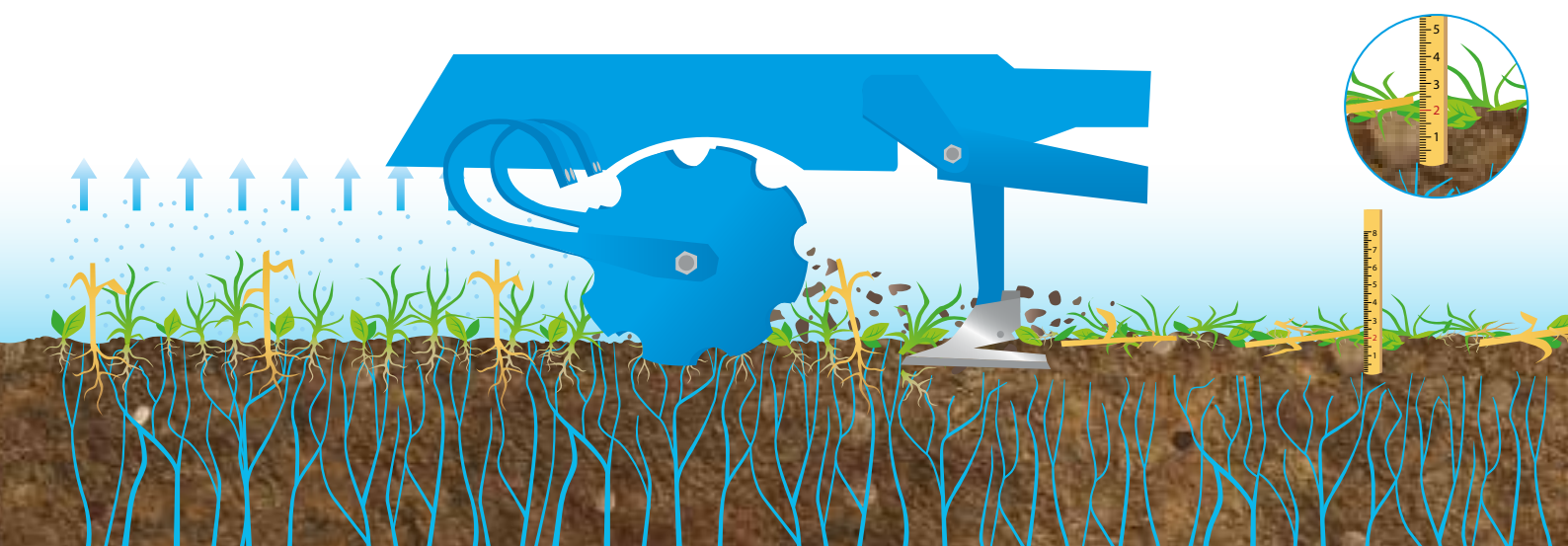
Highly versatile use

The **Koralin 9** offers a wide range of applications and works particularly gentle on the material thanks to its combination of discs and tines.



Second stubble tillage

The **Koralin 9** continues to support the water balance in the soil during the second stubble tillage pass. Emerged volunteer cereals and weeds die off reliably after tillage, and water capillaries are cut off close to the surface to prevent capillary rise.



HIGHLIGHTS

KORALIN 9

Wide range of trailing tools
for use in all conditions

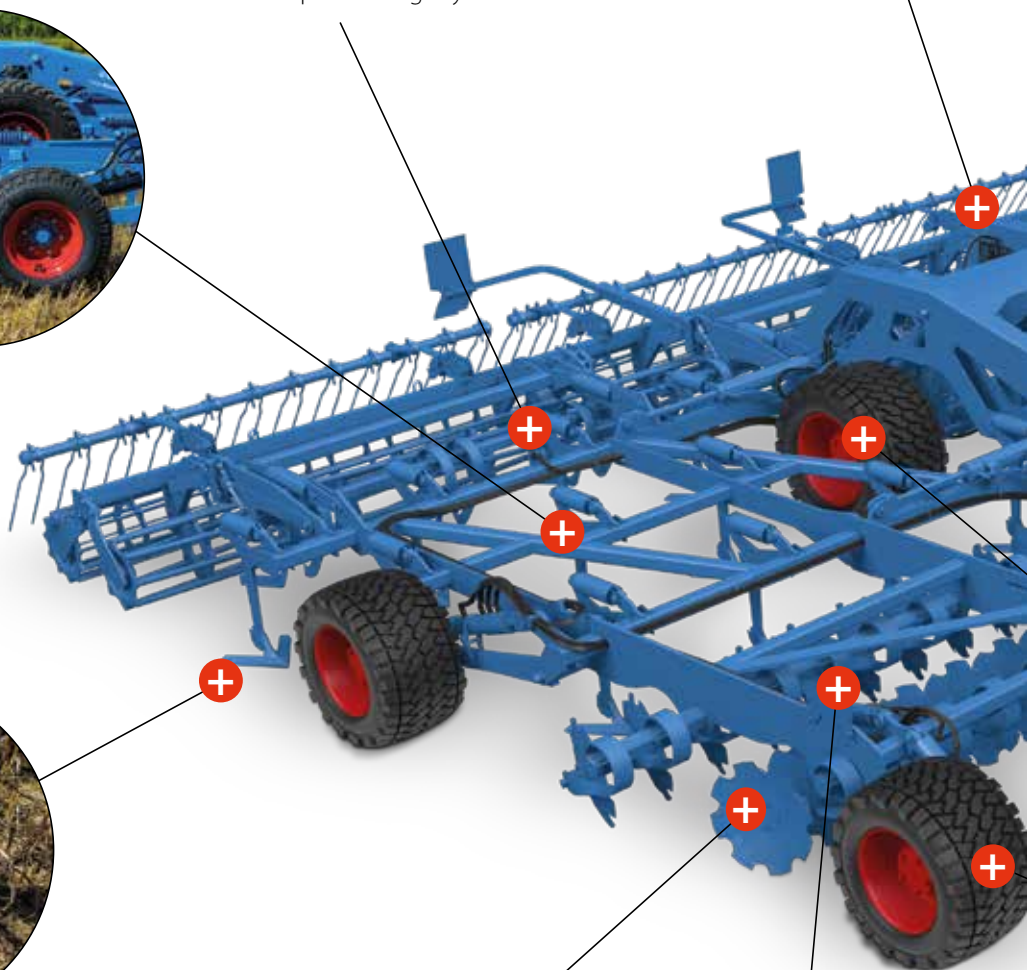
Horizontally working tine section

for shallow undercutting of organic matter



15-mm wide stalk

with automatic overload protection and quick-change system



DeltaCut shares

with optional carbide coating for a reliably long service life and good penetration into the soil



Vertically operating disc units

to create a rough soil profile and prevent panning for the trailing **DeltaCut** shares



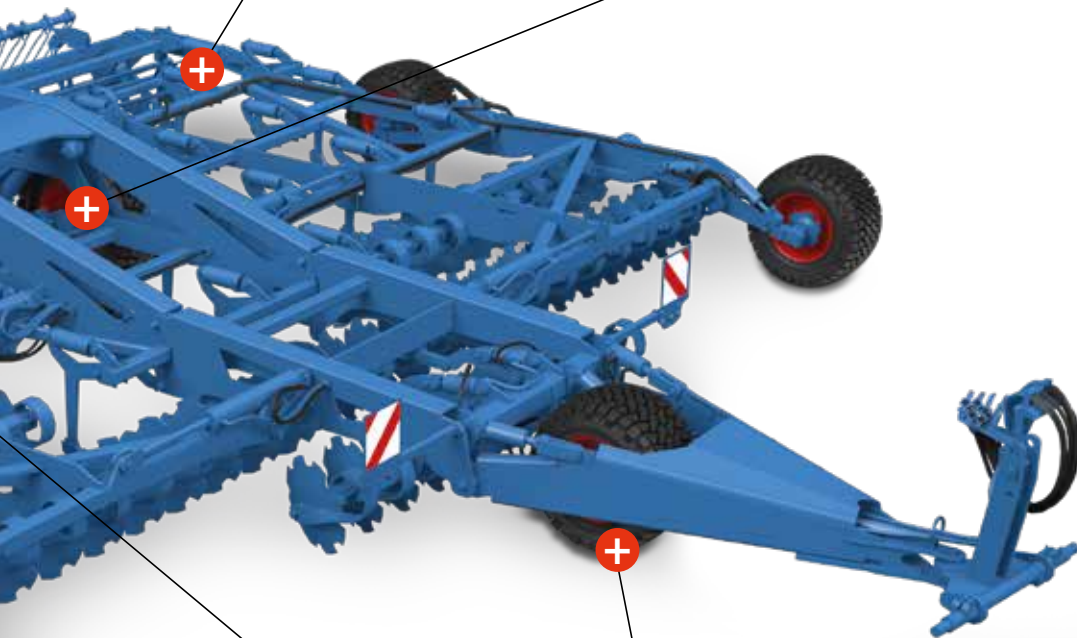
Easily readable working depth display

conveniently adjustable from the tractor seat



Levelling harrow
to ensure optimal
levelling

Integrated chassis
with loosening tools
behind the chassis



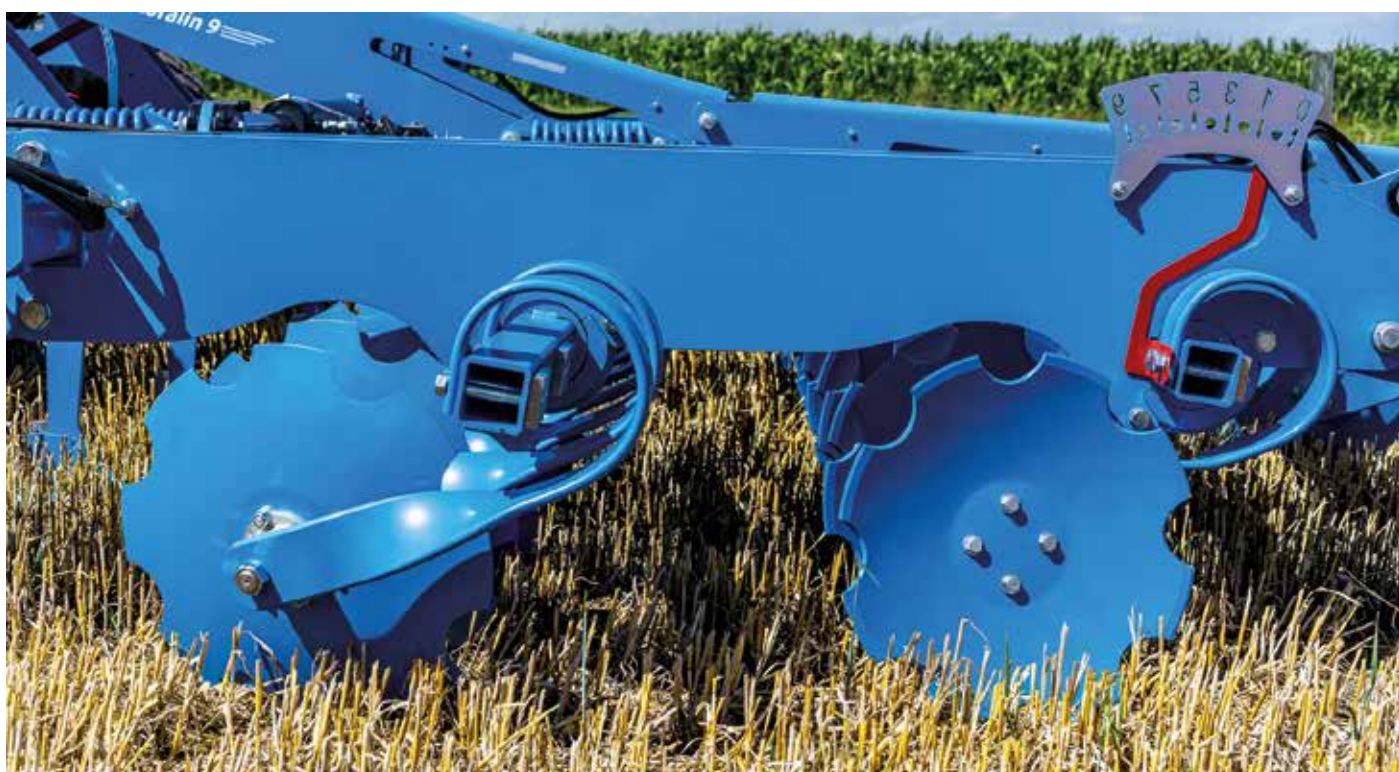
Support and transport wheels
to support reliable, precise depth
control even on slopes

DISC UNIT

OPTIMAL PREPARATION

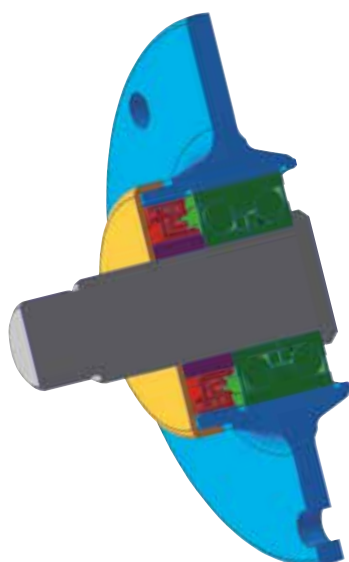
The dual-row concave disc sections have proven their worth in thousands of field uses of the Heliodor compact disc harrow. The leading disc sections, which operate vertically, cut organic matter and the soil to ensure that the **DeltaCut**

shares behind reliably penetrate the soil even in hard and dry conditions. With a diameter of 510 mm they produce a rough subsoil profile, which helps prevent pans from developing due to the share action.



Leaf springs to guide the discs

Each disc is individually attached to the frame via leaf springs for precise depth control. Unlike commonly used rubber buffers, leaf springs guarantee that the discs have significantly higher track stability during operation. What's more, they also act as automatic overload protection.



Maintenance-free disc bearing

The high-quality angular ball bearings (green) guarantee the discs always function flawlessly.

The bearings are fully encapsulated so that no dirt can penetrate. An additional labyrinth seal (red) locks the bearing in from the outside. The lockable sturdy steel cover (yellow) prevents coiled-up wire or twine from destroying the seal.

TINES SECTION

ULTRA-SHALLOW ACTION

The interaction between the disc and tine sections creates a perfect symbiosis. The horizontally operating tines cut rhizomatous weeds and emerging plants at a shallow depth and loosen the soil at a very low intensity. Together with the

resulting disruption of capillary action, this ensures that the water balance is protected in the long term. Thanks to the stable lateral control of the tines, this result is achieved across the full working width even on slopes.



The **Koralin 9** only tills the topmost soil layer. It reliably undercuts the roots of weeds, catch crops and volunteer cereals at this level.



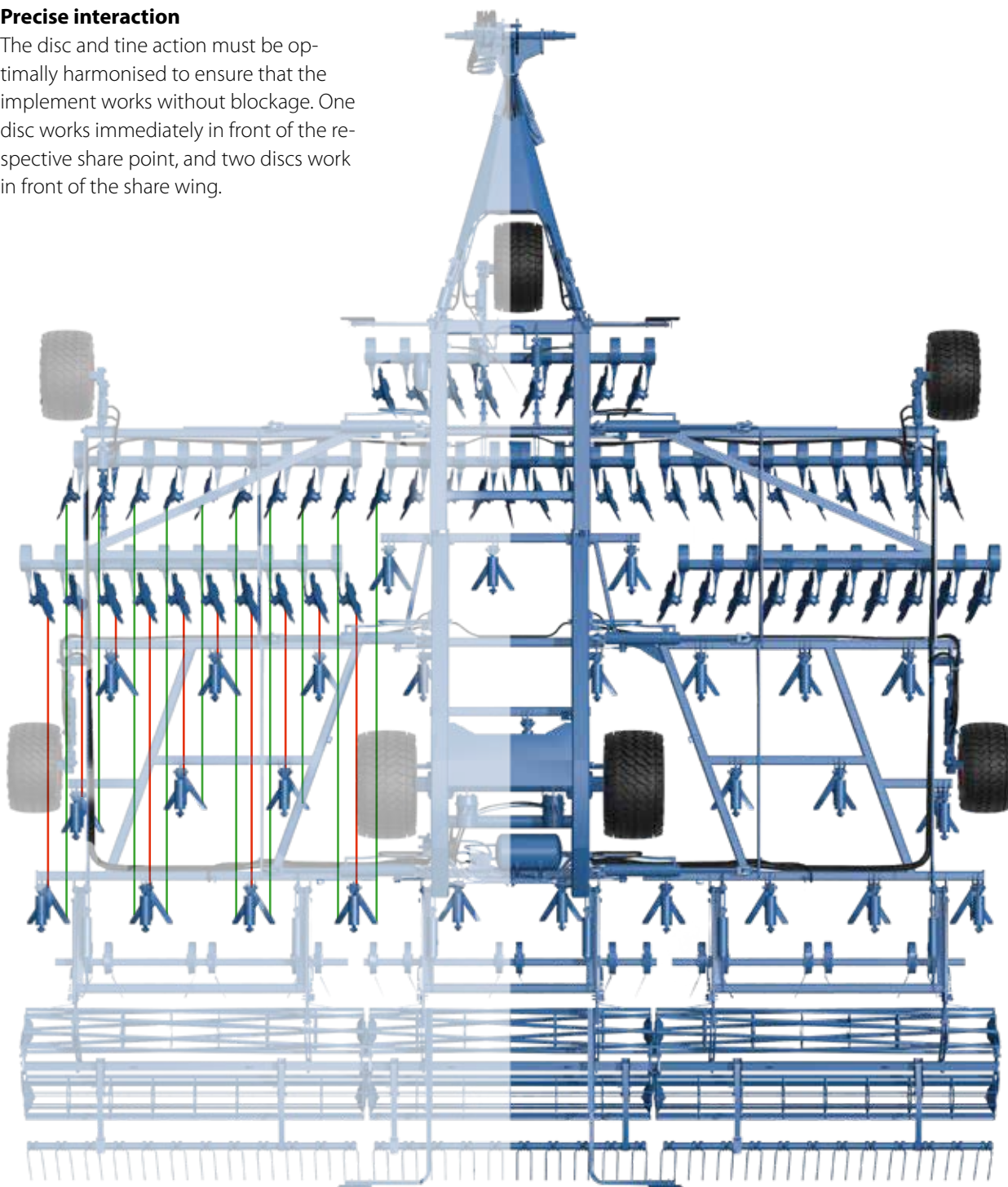
DeltaCut shares

The carbide coating of **DeltaCut** shares delivers a service life that is three times as long thanks to low wear. As the soil is already prepared by the discs, the 38-cm-long shares penetrate the soil easily and work without blockage at a shallow depth.

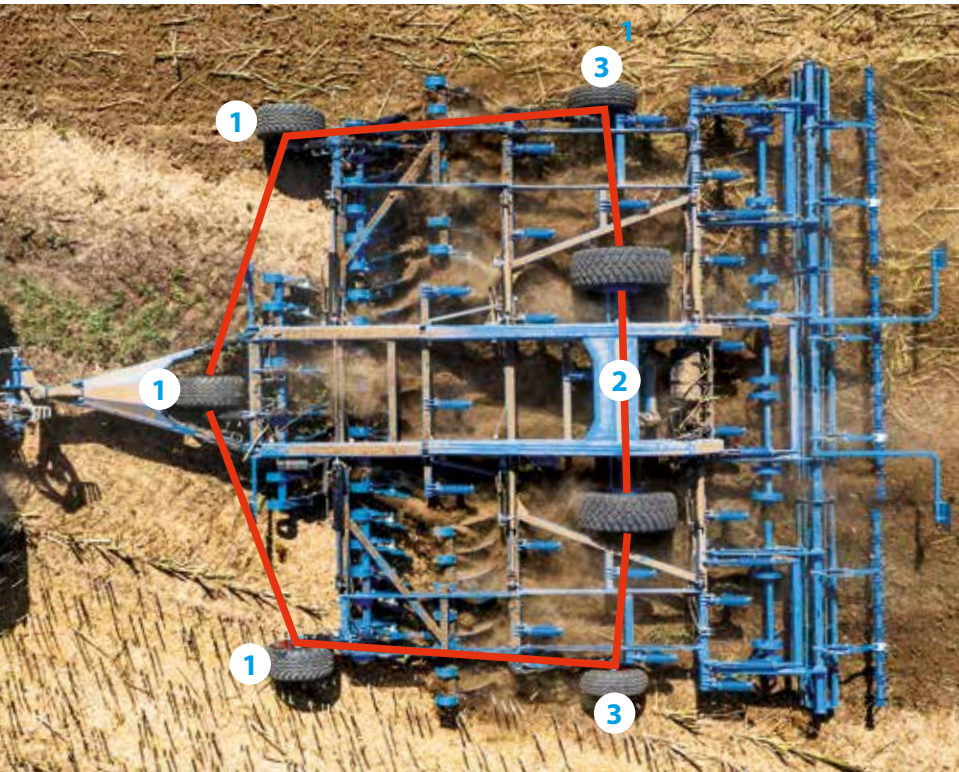
ABSOLUTE PRECISION ACROSS THE FULL WIDTH

Precise interaction

The disc and tine action must be optimally harmonised to ensure that the implement works without blockage. One disc works immediately in front of the respective share point, and two discs work in front of the share wing.



ABSOLUTE PRECISION AT DEPTH



Working depth adjustment of the tines

The **DeltaCut** shares are adjusted hydraulically. This requires a double-acting spool valve. The hydraulic cylinders of the front depth control wheels (1), the trailer carriage (2) and side support wheels (3) are connected as a master/slave system. This allows the shares to be adjusted parallel to the ground. The side sections are able to deflect up or down to ensure reliably precise depth control including in uneven terrain. As depth is controlled via the wheels, the implement can additionally be operated without a roller.



Working depth adjustment of the concave discs

The working depth of the discs can be adjusted between 0 and 10 centimetres independently of the working depth of the tines. This is again done via the double-acting spool valve. In the process, the hydraulic cylinder turns the square tube including the leaf springs to adjust the working depth. The easily readable scale makes the adjustment a breeze. The discs can operate at a shallower or deeper level than the tines to improve soil perforation and protect the soil against erosion.

READY TO GO AT ANY TIME

Maintenance-free automatic overload protection

In contrast to spring tines, the **DeltaCut** shares in the **Koralin 9** are extremely stable and work across the full width. The overload protection with coil spring elements without grease nipples reduces maintenance requirements and ensures a long service life. A trigger force of about 250 kg makes for safe and reliable work even in rocky soils.



Air brake system

The **Koralin 9** hybrid cultivator features an air brake system to absorb its axle loads. The rigid BPW axle is equipped with spring brake actuators. The brake is released via a button above the transport wheel on the left-hand side in the direction of travel.





Safe transfer from field to field

Ease of road transport is essential if implements are to be deployed safely and rapidly on fields. With a transport height of 4.0 metres and a transport width of 3.0 metres, depending on the version, the **Koralin 9** is easy to transport and complies with all requirements.

KORALIN 9 TECHNICAL DATA

| Description | | Koralin 9 660 KUA | Koralin 9 840 KUA |
|---------------------------|----|----------------------|----------------------|
| Working width | | 660 cm | 840 cm |
| tractor output | KW | 170 - 243 | 216 - 309 |
| | HP | 231 - 330 | 294 - 420 |
| Discs | | 43 | 55 |
| Disc diameter | | 510 mm | 510 mm |
| Beam spacing – discs | | 90 cm | 90 cm |
| Line spacing – discs | | 15 cm | 15 cm |
| Tines | | 22 | 28 |
| Share width | | 380 mm | 380 mm |
| Beam spacing – tines | | 100 cm | 100 cm |
| Line spacing – tines | | 30 cm | 30 cm |
| Frame height – tines | | 57 cm | 57 cm |
| Transport width | | 3.0 m | 3.0 m |
| Transport height | | 3.4 m | 4.0 m |
| Length with single roller | | 9.1 m | 9.1 m |
| Length with harrow | | 10.1 m | 10.1 m |
| Weight | | 7,029 kg | 8,495 kg |

ULTRA-FLEXIBLE

The work of the **Koralin 9** is by no means done behind the tine section. For reconsolidation and optimal crumbling, you have a choice of three different trailing rollers. The D 400 flat bar roller, FRW 540 flex ring roller and DRF 400/400 double

roller provide excellent soil contact. They promote the capillary rise of water in the soil and ensure that volunteer cereals emerge reliably. Perfect straw distribution and improved soil crumbling is achieved with the

hydraulically adjustable four-row harrow. The **LEMKEN** trailing tools ensure an optimal outcome for each and every application!



Hydraulically adjustable four-row harrow

to lift plant residue and weeds towards the surface, where they'll dry and die off.

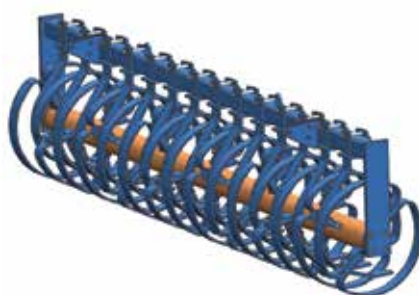
Single-row trailing harrow

for use behind all rollers. This tool creates optimal germination conditions for volunteer cereals and weed seeds.



D400 flat bar roller

for impressively high crumbling intensity, making this tool ideal for use in heavy soils.



FRW 540 flex ring roller

to produce a light soil cover for organic matter.



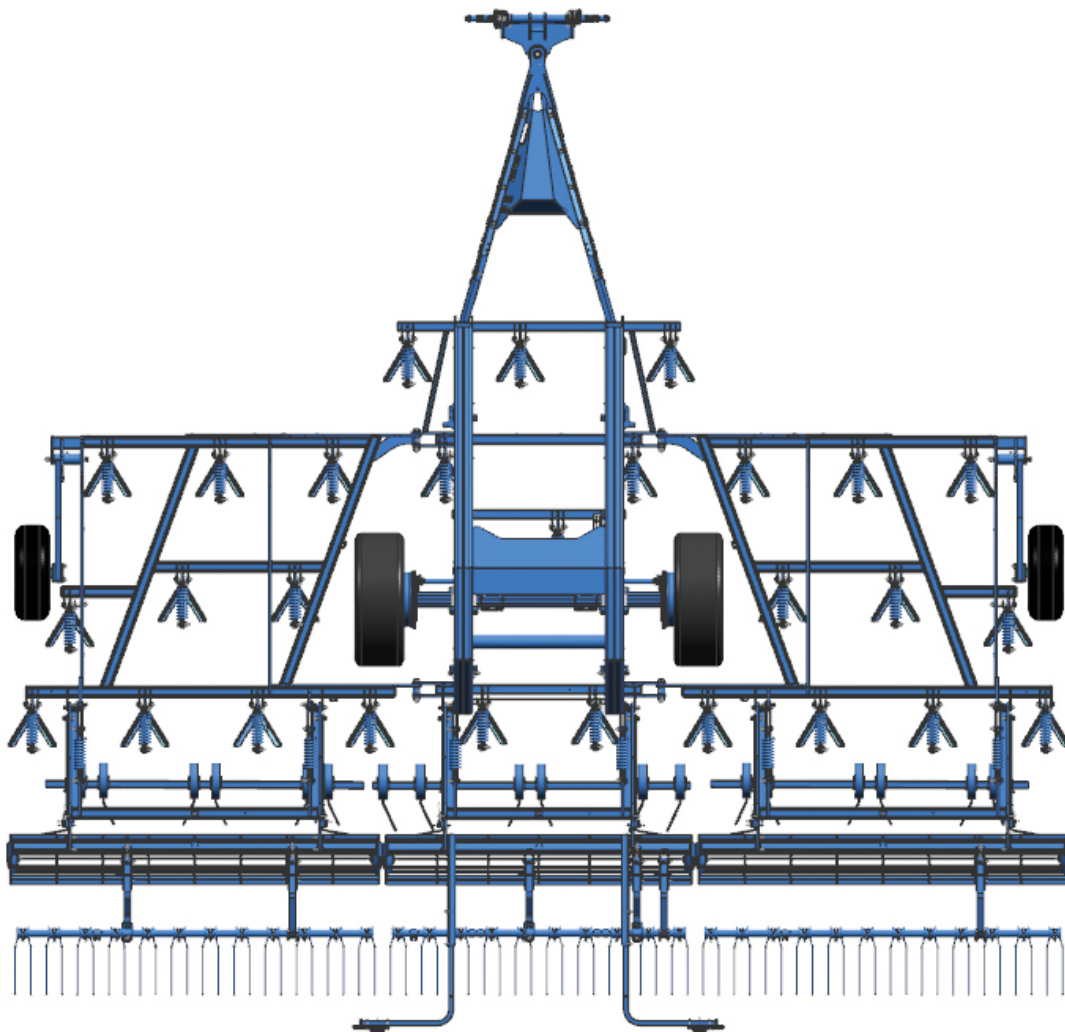
DRF 400/400 double roller

as an all-rounder for any type of crop thanks to its integrated self-levelling system.

ULTRA-FUNCTIONAL

Solo tines

The **Koralin 9** can be used for ultra-shallow tillage even in the basic version without leading discs. The **Koralin 9** with **DeltaCut** shares is perfect for full-width stubble tillage in light to medium soils where there are smaller volumes of organic matter. Rhizomatous weeds, volunteer rapeseed and cereals are effectively undercut and successfully controlled up to a working depth of 12 cm. Capillary action is additionally disrupted to prevent the soil from drying out.



COMPARISON OF COMPACT DISC HARROWS

HYBRID CULTIVATOR

| | COMPACT DISC HARROWS | | | HYBRID CULTIVATOR | | COMPACT CULTIVATOR | |
|------------------------------------|------------------------------------|------------------------------------|--|--|--|----------------------|----------------------|
| | HELIODOR 9 | RUBIN 10 U | RUBIN 12 U | KORALIN 9 | KORALIN 9 | KRISTALL | |
| SELECTION CRITERIA / TOOLS | serrated concave discs 510 mm Ø | serrated concave discs 645 mm Ø | serrated concave discs 736 mm Ø | DeltaCut FG 38 duck-foot share | serrated concave discs 510 mm Ø + DeltaCut FG 38 duck-foot share | TriMix wing share | DuoMix wing share |
| Working depth | | | | | | | |
| - up to 5 cm | + | ++ | o | ++ | ++ | o | o |
| - 5 to 9 cm | ++ | ++ | + | ++ | ++ | ++ | ++ |
| - 9 to 12 cm | + | + | ++ | ++ | ++ | ++ | ++ |
| - 12 to 20 cm | o | o | ++ | o | o | + | + |
| - up to 30 cm | o | o | o | / | / | o | o |
| Cutting across the full width | o (up to 7 cm) + (from 7 cm) | o (up to 7 cm) ++ (from 7 cm) | o (up to 7 cm) + (from 7 cm) ++ (from 10 cm) | ++ | ++ | ++ | ++ |
| Mixing * | + | ++ | ++ | o | ++ | ++ | + |
| Loosening * | + | ++ | ++ | + | ++ | + | + |
| Levelling * | ++ | ++ | ++ | o | + | ++ | ++ |
| Reconsolidating * | + | + | ++ | o | o | + | + |
| Crushing * | + | ++ | ++ | o | ++ | ++ | + |
| Clog-free operation: | | | | | | | |
| - in chopped straw | ++ | ++ | ++ | + | ++ | ++ | ++ |
| - in catch crops | + | ++ | ++ | o | ++ | + | + |
| - in maize straw | o | + | ++ | o | + | + | + |
| - in rapeseed stubble | ++ | + | o | + | ++ | o | + |
| - in weed-infested fields | + | ++ | ++ | o | ++ | o | o |
| Working on: | | | | | | | |
| - ploughed land | ++ | o | + | + | ++ | + | ++ |
| - mulch tillage fields | + | ++ | + | o | ++ | + | ++ |
| - heavy soils | o | + | ++ | + | ++ | + | o |
| - medium soils | + | ++ | ++ | + | ++ | + | ++ |
| - light soils | ++ | + | o | + | ++ | + | + |
| Operating speed | | | | | | | |
| - up to 7 km/h | o | o | o | ++ | ++ | + | + |
| - up to 12 km/h | + | + | ++ | ++ | ++ | ++ | ++ |
| - above 12 km/h | ++ | ++ | ++ | + | + | + | + |
| Penetration in hard soils | o | ++ | ++ | o (standard DeltaCut) + (HM DeltaCut) | o (standard DeltaCut) ++ (HM DeltaCut) | + | + |
| Available tractor output | | | | | | | |
| - 30 to 40 HP/m - 22 to 29 kW/m | ++ | ++ | o | + | + | ++ | ++ |
| - 40 to 50 HP/m - 29 to 37 kW/m | + | ++ | ++ | ++ | ++ | ++ | ++ |
| - above 50 HP/m - above 37 kW/m | - | - | ++ | - | - | + | + |

* relative to the surface

++ = very well suitable

+ = well suitable

o = less well suitable

ROW, CULTIVATOR AND KORALIN 9

| INTENSIVE CULTIVATOR | | | | | | | | |
|---------------------------------|------------------------------------|----------------|-----------------|--|---------------------|------------------------|----------------|-----------------|
| KARAT 9 | | | | | KARAT 12 | | | |
| Share point K12 with wing share | Share point K12 without wing share | Share point K8 | Narrow share K6 | DeltaCut KG 35 duck-foot share | K12 with wing share | K12 without wing share | Share point K8 | Narrow share K6 |
| o | o | o | o | + | o | o | o | o |
| ++ | ++ | o | o | ++ | ++ | ++ | o | o |
| ++ | ++ | ++ | + | o | ++ | ++ | ++ | + |
| + | ++ | ++ | ++ | o | + | ++ | ++ | ++ |
| o | + | ++ | ++ | / | o | + | ++ | ++ |
| ++ | o | o | o | ++ | ++ | o | o | o |
| ++ | + | o | o | + | ++ | ++ | + | + |
| ++ | ++ | ++ | ++ | + | ++ | ++ | ++ | ++ |
| ++ | ++ | ++ | ++ | + | ++ | ++ | ++ | ++ |
| + | + | ++ | ++ | + | + | + | ++ | ++ |
| ++ | ++ | ++ | + | o | ++ | ++ | ++ | + |
| ++ | ++ | ++ | ++ | + | ++ | ++ | ++ | ++ |
| + | + | + | + | o | + | + | + | + |
| + | + | + | + | o | + | + | + | + |
| + | o | o | o | + | + | o | o | o |
| o | o | o | o | + | o | o | o | o |
| + | + | + | + | + | ++ | + | + | + |
| ++ | + | + | + | + | ++ | + | + | + |
| + | + | + | + | + | ++ | ++ | ++ | ++ |
| ++ | ++ | ++ | ++ | ++ | ++ | ++ | ++ | ++ |
| ++ | ++ | + | ++ | ++ | ++ | ++ | + | ++ |
| + | ++ | ++ | ++ | ++ | + | ++ | ++ | ++ |
| ++ | + | + | + | ++ | ++ | + | + | + |
| + | o | o | o | + | + | o | o | o |
| + | ++ | ++ | ++ | o (standard DeltaCut) ++ (HM DeltaCut) | + | ++ | ++ | ++ |
| + | + | + | + | + | + | + | + | + |
| + | + | + | + | + | + | + | + | + |
| ++ | ++ | ++ | ++ | + | ++ | ++ | ++ | ++ |

/ = not possible

– = above the approved output

WE'RE HERE FOR YOU

PROVIDING A PROFESSIONAL **ALL-ROUND SERVICE**

On-demand assistance. All around the world. That's **LEMKEN** service. The **LEMKEN** team provides professional advice as well as a speedy supply of machinery and parts via: 18 convenient branches and external warehouses in Germany, our own sales companies and importers in over 50 countries, and of course, a great many well-educated sales advisers and service technicians at specialist agricultural machinery dealers.



FOR HIGH-QUALITY ORIGINAL WEAR PARTS

Our **LEMKEN** original wear parts enable your **LEMKEN** implement to stay as it is: an original. Whichever machine you need a replacement part for, we ensure that the original parts are always available for **LEMKEN** implements. Not only in the short term, but for years to come.




FOR A SPEEDY **SUPPLY OF REPLACEMENT PARTS**

The right parts at the right time in the right place — this is how a reliable replacement parts service should operate. Our professional logistics handling service ensures we can supply a wide range of replacement parts at speed, whenever and wherever they are needed.



ULTRA-SHALLOW, ULTRA-FLEXIBLE, ULTRA-PROTECTIVE





**“Fresh air in the morning.
Always moving forward. The
smell of fresh soil.
Knowing that the field is
tilled as well as it can be.
Regardless of extreme
weather. That is my
moment.”**

Regardless of the location, soil conditions or current crop, it's important to have a strategy in place for stubble and primary soil tillage to achieve optimum results. We have a wide range of implements available for your stubble tillage and mulch seeding preparation needs. Because your soil deserves the best. And so do you!
Our driving force: Your success!

LEMKEN 01/23. 17515058/en. All data, dimensions and weights are subject to ongoing further technical development and are therefore not binding. Weights given are always based on standard features. All information given is subject to change without notice.

LEMKEN GmbH & Co. KG
Weseler Strasse 5
46519 Alpen
Tel. +49 2802 81-0
Fax: +49 2802 81-220
info@lemken.com
www.lemken.com

**FIND OUT MORE
ABOUT OUR PRIVACY
REGULATIONS
WHEN HANDING OVER
MACHINES HERE**



Your specialist LEMKEN dealer: