

**Farmers' Strategies  
From Coast to Coast**

# **STRATEGIC TILLAGE**

THE RIGHT MACHINES FOR  
YOUR AGRONOMIC TARGETS





## About LEMKEN

LEMKEN is an award-winning company with a historic past and a strong future. Viktor and Nicola Lemken are the sixth and seventh generation of the family to lead the company, which started out as a blacksmith shop in 1780. Long before the first tractors arrived on the scene LEMKEN was building ploughs that made farmers more productive and was the first company ever to patent a reversible plough design in 1925.

Founder, Wilhemus Lemken, would be proud that the company he founded now occupies a state-of-the-art facility in Alpen, Germany with 1,300 employees worldwide. We're proud of our reputation for innovation and quality. We support it with creative design, advanced engineering and modern production techniques that employ the latest in computer-assisted technology, robotic welding, automated steel forming and tempering systems.

LEMKEN provides farmers around the world with innovative, one-pass tillage equipment that meets their strategic tillage needs and provides them with sound agronomic benefits and increased efficiency.

LEMKEN truly is the Agrovision Company. We invest heavily in research, development, and manufacturing technology. We believe in responsible, sustainable growth for our company and our customers, which means a strong focus on service, and a commitment to never let our customers down.

## LEMKEN in Canada

Eleven years ago, LEMKEN and our Canadian distributors brought its innovative, one-pass tillage machines to Canada. Since then, we have developed an extensive dealer network which stocks original LEMKEN parts. LEMKEN dealers receive intensive, ongoing product training so they can provide outstanding service and technical support to their customers.

LEMKEN also has two fully-stocked parts warehouses in Canada to ensure that its Canadian customers, dealers and distributors always have fast, easy access to parts and service. LEMKEN has listened to Canadian farmers from coast to coast. We have developed new products and adapted our product range to meet their strategic tillage needs.





## The Strategic Use of Tillage

At LEMKEN we pride ourselves on our knowledge of the science and evolution of tillage. Since plough maker Wilhemus Lemken founded the company over 230 years ago, we have seen the agronomic practice of tillage move from conventional, primary tillage in the 1940's and 1950's, to zero and minimal tillage in the 1970's. We know that today, farmers have many reasons to strategically incorporate tillage into their farm management as they deal with problems they would never have thought of fifty years ago.

Farmers around the world are partnering with experts who offer a variety of tools to help them plan, grow, harvest, and market their crops and remain globally competitive. LEMKEN is proud to offer innovative tillage machines with specific agronomic uses to suit the individual needs of farmers in any soil type, conditions and farming system. We don't believe that using a plough, disc, or cultivator because that is an established agronomic practice, or part of the accepted "culture" of farming is the most effective and efficient way to look at tillage. We encourage farmers to critically assess the agronomic needs of their farm and use the right tools to do the job. We know that will often include the strategic use of tillage based on what each farmer wants to achieve.

Strategic tillage may target compaction, smooth out ruts in the field, break up pastures, or reclaim land around sloughs. Strategic tillage can mechanically kill weeds, disrupt disease and pest cycles, deal with herbicide

resistant weeds, or encourage weed seeds to germinate before a pre-season herbicide application to make it more effective. Other strategic tillage practices improve soil structure and water infiltration, or incorporate organic matter – such as crop residue or livestock manure – into the soil to make the best use of the nutrients it contains.

Whatever the need or desired outcome, LEMKEN can provide farmers with the strategic tillage machine they need to do the job effectively and efficiently in a single pass.

**In organic farming, we need good tillage strategies. Mechanical weed control is another very important success factor. We have to bury crop residue and cover crops before preparing a uniform seedbed. The SOLITAIR's precise seeding with 5 inch row spacing is much better for weed control than 7.5 inches row spacing offered by the competition. When it came time to choose our tillage and seeding equipment we liked what LEMKEN offered. LEMKEN designs its machinery according to specific applications. My KRISTALL cultivator and SOLITAIR seed drill are superb strategic assets, and LEMKEN is a valuable strategic ally.**

### Rémi Ouellet

*...is the co-owner of Ferme Domaine du Parc and farms 890 acres of cereals, soybeans and vegetables near Sainte-Élisabeth, Que.*

## HELIODOR 9

The mixing action of the HELIODOR incorporates residue evenly into the top two inches of soil, and creates an excellent seedbed. Instead of no-tilling our wheat, now we do one shallow pass with the HELIODOR prior to seeding. The seed to soil contact gives us nice, even emergence and great crops. We also have a RUBIN 9 compact disc which we used to work up a six year old alfalfa field one fall. We planted corn the following spring after just one pass with the HELIODOR, and it looked fantastic.

### Ken Schaus

*...finishes cattle and farms 2400 acres of corn, soy and wheat at Schaus Land and Cattle Co. near Elmwood, Ont.*

Farmers can work more acres per hour with the lightweight HELIODOR 9 compact disc harrow, which is available in working widths up to 52 feet, and can travel up to 12 mph, saving time and fuel. Farmers also have the option to attach a SOLITAIR precision air drill to some HELIODOR 9 models to prepare the seedbed and seed in one pass, cutting seeding time in half.

The HELIODOR 9's 20-inch, concave discs are perfect for shallow spring cultivation in light to medium soils, fall stubble cultivation, preparation for seeding winter cereals, preparing a seedbed in spring on heavy ploughed land, or for reworking areas around sloughs, previously wet areas in a field, or removing sprayer ruts after a wet season.

The intensive disc action of the HELIODOR 9:

- provides superior soil crumbling and mixing to ensure consistent soil density and quality.
- disturbs very little soil while allowing oxygen and water to penetrate for strong root development and healthy plant growth.
- incorporates crop residue and creates a smooth, seed-ready seedbed in one pass.

Working from shallower depths of one to four inches, the HELIODOR 9:

- warms soil surface for faster, earlier germination and frost protection.
- repacks soil with a choice of packing rollers to seal in moisture, prevent erosion and prepare a perfect seedbed.
- paired with the SOLITAIR seeder, provides maximum soil to seed contact, and ensures moisture is accessible to the seed for better emergence and higher yields.
- encourages germination of weeds, and volunteers in fall to be winterkilled.
- requires less horsepower to pull and saves on fuel.





Residue management and perfect seedbed preparation with a single pass are major reasons why a growing number of Canadian farmers have turned to the RUBIN 9 compact disc harrow. The RUBIN 9's 24-inch, serrated discs effortlessly incorporate any type of crop residue or livestock manure. Packing rollers follow the discs and repack the soil to seal in moisture, prevent soil erosion from wind, and create a firm, seed-ready seedbed in any type of soil. One-pass tillage and seedbed preparation saves time, fuel, and manpower.

On the soil surface, the RUBIN 9's intensive disc action:

- breaks up clods of dirt and thoroughly incorporates organic matter into the soil to cycle nutrients faster.
- buries trash reducing the risk of fungal diseases or pests persisting in crop residue.
- combines with two sets of rebound harrows for superior crumbling and mixing of the soil for consistent soil texture.
- mechanically controls weeds on organic farms or manages herbicide resistant weeds in conventional farming systems.
- warms up cold spring soils for faster germination and frost protection.

Beneath the soil, its variable working depths from two to six inches:

- provides consistent soil density allowing plant roots to easily access nutrients and water.
- breaks up hardpan which impedes plant root development.
- helps prevent soil compaction by performing multiple operations in a single pass.

We had fields with foxtail barley that we couldn't control with herbicides and the RUBIN 9 gave us 95 per cent control of the weed problem the first time we used it. We have switched our whole farm from zero-till to Strategic Tillage because we are seeing soil health benefits. The superior mixing action of the RUBIN 9 aerates, mulches residue, and returns organic matter to the soil, and that's giving us more uniform, productive stands, even in problem soil areas, and during wet years.

#### Chris Raupers

*... farms 7,000 acres of grain land at Newdale, Man.*



## RUBIN 12

The LEMKEN RUBIN 12 allows me to work my cornstalks in one pass in the fall. With my previous tillage tool it took two passes and the job was still not as good as with one pass with the LEMKEN. There were less clods and residue to deal with this spring allowing me to do one light seedbed preparation pass and then plant this year's crop. The cost of the RUBIN 12 compared to other tillage tools is reasonable and I am very happy with the performance and cost savings due to the elimination of a pass across the field.

### Luke Weirtzema

*...grows 1400 acres of corn, soybeans and sugar beets near Campbell, Minn.*



The RUBIN 12 compact disc harrow was designed to handle large volumes of crop residue from the highest yielding corn crops in North America. The RUBIN 12's 29-inch, concave discs work deeper to incorporate heavy residue and create a smooth seedbed that's ready to go with a single pass.

The RUBIN 12 can do many of the tough tillage jobs where farmers have traditionally used disc-rippers or disc-chisels, and reduce the amount of passes required in the field. The RUBIN 12's serrated discs are angled to cut deep and break up compacted soils, without bringing subsoil or stones to the surface.

The RUBIN 12's aggressive disc action:

- easily breaks up pastures or unproductive land.
- incorporates organic matter deep to hasten decomposition and nutrient release into the soil.
- intensively mixes soil to ensure excellent soil to organic matter contact for faster, even decomposition.
- alleviates soil compaction for higher crop yields.

Working at depths from three to eight inches, the RUBIN 12:

- warms cold, spring soils for earlier emergence.
- saves fuel, time and manpower with a one-pass operation.
- offers a choice of heavier packing rollers to repack soil for a seed-ready finish.
- provides better seeding efficiency due to consistent, high quality seedbed preparation.



# KARAT & KRISTALL

The KARAT multi-purpose cultivator gives farmers many options to till at different depths depending on the job they need to do. Its strategic uses include light to heavy stubble cultivation, repairing soil structure, controlling weeds and volunteers, and incorporating manure. Farmers can also choose the lighter, KRISTALL compact cultivator which also offers intensive soil mixing and optimal soil preparation.

The KARAT replaces the chisel or mouldboard plough for many fall and spring field operations, which the KARAT can achieve with a single pass to save on fuel and manpower. The KARAT prepares a perfect seedbed, firming and levelling the soil with packing rollers to prevent soil erosion, seal in moisture, and ensure strong root development. Potato growers tell us they have noticed more intense germination, and bigger potato tops resulting in higher yields when they have used the KARAT on their fields.

The agronomic benefits the KARAT cultivator provides include:

- variable working depths from two to 14 inches.
- greater soil to seed contact for earlier and even crop emergence.
- aggressive action which incorporates and thoroughly mixes organic matter into soil to speed up decomposition and release nutrients for crops to use.

We used to do a lot of mouldboard ploughing but with our climate and conditions we struggled with soil erosion. With the KARAT we can work deep, and incorporate straw throughout the soil, and its packing rollers provide a smooth, finished field that prevents erosion from wind and holds the snow better.

In the spring we use the KARAT to prepare the soil for planting potatoes, and for lighter cultivation with other crops. It allows us to do more strategic tillage on our farm than other machines do.

### Dennis MacNevin

...is the Farm Manager at G W & R Visser Farms, which grows 3,000 acres of crops including potatoes, cereals and soybeans at Vernon, P.E.I.



The KARAT offers seven different, quick-change tine shapes that can be changed without tools to save farmers time and effort, and produce superior results with less power requirement in any soil type or situation.

# ZIRKON



It was really frustrating to plough my fields every year because I have heavy clay soils and the machines I was using would bring up lumps, and it often took days, and four or five passes to break the soil up. With the ZIRKON I can do it in one or two passes and get a really fine seedbed so I get faster germination. LEMKEN's technology has saved me a lot of time, and the ZIRKON has become the most important machine on my farm.

#### **Chad Martin**

*...raises poultry and grows grain in the Okanagan Valley, B.C.*

The ZIRKON rotary power harrow prepares an optimal seedbed in any soil type, and can be adjusted for very shallow cultivation or deep, intensive tillage down to a depth of six inches. The ZIRKON is used by dairy farmers, grain and vegetable growers for many conventional and organic strategic tillage applications. These include levelling a seedbed after ploughing, disrupting weeds, breaking up residue, or preparing to seed winter crops. Reversing the rotation direction of the harrow points prevents rocks from coming to the surface for a smoother field finish.

The ZIRKON comes in two ranges, and offers a number of different tine options. Its quick-change system allows tines to be easily changed with a simple tool so farmers can spend maximum time in their fields.

Farmers can also combine the ZIRKON with the LEMKEN SOLITAIR precision seed drill so they can prepare the soil and seed in one pass to save time and money.

The ZIRKON power harrow provides sound, agronomic benefits thanks to:

- the ability to adjust the machine to provide a soil particle size that ensures optimal seed to soil contact, even for small-seed crops, and encourages vigorous germination.
- an optional levelling bar and choice of rollers which optimize soil mixing and crumbling and repack soil to prevent evaporation and wind erosion.
- creating a perfect seedbed in one pass.
- warming of cold spring soils for quicker germination.
- less weed competition for emerging plants to help ensure healthier, high yielding crops.



## COMPACT SOLITAIR & SOLITAIR

In Canada's short growing season, farmers have a narrow window of opportunity to seed their crops to achieve maximum yields. The COMPACT SOLITAIR is a tillage tool and seed drill combination that helps farmers seed faster and at the right time by doing five jobs in one pass – levelling, tilling, firming the seedbed, fertilizing, and seeding. It provides precise seed placement, consistent seed depth, and accurate seeding rates at high working speed, which is especially important for small-seed crops such as canola or alfalfa.

Farmers can choose to have either the HELIODOR compact disc harrow or the ZIRKON power harrow for the cultivation section of the COMPACT SOLITAIR to suit their particular soil conditions and cultivation needs. Farmers also have the option to choose a stand-alone SOLITAIR precision air seeder and pair it with a number of different LEMKEN tillage machines for greater flexibility to suit their specific tillage and seeding requirements.

The COMPACT SOLITAIR increases efficiency and agronomic benefits by:

- applying seed and fertilizer at the same time using the SOLITAIR's split tank when choosing the HELIODOR tillage component.
- banding fertilizer mid-row to prevent seedling burn and make fertilizer available to seed rows on either side.
- ensuring uniform seeding depth even in uneven ground thanks to the OptiDisc double disc coulter system, which gives even plant emergence, uniform crop maturity and higher yields.
- pressing the soil firmly around the seed and protecting it from wind.
- firming the soil with packing rollers and pushing available moisture towards the seed to aid germination.
- reducing compaction thanks to a one-pass operation for seedbed preparation and seeding.
- working at speeds up to 11 mph to cover more acres in a day.

In our light, sandy soils our COMPACT SOLITAIR gives us consistent seeding depth, and seeding rates. It has given us nice, even emergence all the time on our crops.

It's a versatile, all-in-one, tillage and seeding machine that has allowed us to cut down on our land preparation. We seed wheat right into old potato ground without any problem with the COMPACT SOLITAIR.

### Phillip VanNieuwenhuyzen

*... farms 2,000 acres of potatoes and 4,000 acres of cereals, beans and cover crops at VANCO Farms, Mount Albion, P.E.I.*





I plough a lot in the summer to turn the soil upside down and dry out weed roots, but my heavy clay soil dries out fast, creating lumps that are hard to break up. My JUWEL plough with VARIOPACK has made the job easier and more efficient because as I plough, the packer breaks up lumps and removes air pockets which can settle after seeding and disturb plant roots. I get a solid, smooth seedbed in one pass and have more even plant stands.

**Dan Konzelman**

*...grows 2,000 acres of organic soybeans, corn, spelt and black beans in Lambton County, Ont.*

There are many situations where ploughing is necessary. Organic farmers plough to control weeds; other farmers plough to dry out heavy clay soils for seeding, break up pasture or compacted soils, or incorporate crop residue or manure. Whatever the reason to plough, the JUWEL mounted, reversible plough provides increased efficiency, exceptional durability, ease of operation, superior soil preparation, and field finish.

The JUWEL's hardened steel, DuraMaxx plough bodies can be fitted with optional, slatted mouldboards which crumble the soil and reduce steel to soil contact, for less resistance and horsepower requirement. The LEMKEN Hydromatic Overload Protection system allows plough bodies to move up or move sideways to avoid obstacles, maintain consistent plough depth, and prevent damage.

The optional VARIOPACK roller system can be added to the JUWEL to break up remaining soil clumps and repack the soil. In one pass the JUWEL-VARIOPACK combination leaves a clean, weed-free, firm field surface to prevent erosion over winter, or for smooth, efficient seeding.

The JUWEL:

- can plough up to six furrows.
- is adjustable to different widths, working depths, and working speeds to suit any soil type or conditions.
- is easier to pull thanks to the Optiquick system, which allows the operator to adjust front furrow width, and tractor/plough pull line independently of each other.
- adapts to suit soil conditions and reduces compaction by aligning the tractor to drive either in-furrow or strictly on unploughed land depending on the conditions.



# DIAMANT



Lumpy, uneven dead furrows in fields can cause frustration and add cost for farmers – especially potato growers – because they require more passes with tillage equipment to smooth them out. The highly efficient DIAMANT semi-mounted roll-over plough does not create dead furrows, and delivers high quality ploughing and an unbeatable field finish in any soil type or moisture conditions.

The DIAMANT is an excellent option for conventional and organic farmers who want to break up pastures and manage residue. Ploughing with the DIAMANT can be an effective way to mechanically kill herbicide resistance weeds. The DIAMANT helps reduce soil compaction in the furrow thanks to its OF On-land system, which aligns the tractor to drive either in-furrow or strictly on unploughed land depending on the conditions.

When combined with the optional VARIOPACK roller system, the DIAMANT breaks up remaining soil clumps and repacks the soil, so farmers need fewer passes to create a weed-free, seed-ready seedbed or a firm field surface that prevents soil erosion.

The DIAMANT:

- is adjustable to different widths, working depths, and working speeds to suit any soil type or conditions.
- provides increased wear life and reduced maintenance costs thanks to LEMKEN's hardened steel DuraMaxx plough bodies.
- offers optional slatted mouldboards which crumble soil, reduce steel to soil contact, and allow the plough to pull easier with less horsepower requirement.
- has less damage to plough bodies because LEMKEN's Hydromatic overload protection moves them up or sideways to avoid obstacles and maintain consistent plough depth.
- gives better fuel efficiency thanks to a hydraulic traction increase unit which redistributes the plough's weight to reduce wheel-slip and improve traction.
- provides more clearance between the tractor wheels and the headstock to ensure maximum manoeuvrability on narrow headlands.

My heavy soils compact easily, and a major reason I bought a DIAMANT plough was because it allows me to plough on-land, which has dramatically reduced compaction in the furrow. Its slatted mouldboards break up the soil, and leave a nice, level seedbed in the spring, so I need fewer passes on the field with the cultivator, and have more even, better crops. LEMKEN makes quality products and the DIAMANT is everything I was hoping for.

### Arjan Kremers

*...grows corn, beans, and alfalfa on 550 acres at his dairy farm near Tillsonburg, Ont.*



Our KARAT cultivator increases the soil's capacity to hold moisture because it mixes organic matter into the soil, and leaves enough residue on top to prevent erosion. That's helping crop growth and is giving us a yield bump in our potato crops.

**Jason Webster**

*...is part of a joint venture with cousin Troy Webster, and neighbour Darcy Mulligan farming 3,600 acres in Middelton, P.E.I.*

The KARAT has been a good machine for us because we use it for both fall and spring tillage, and we know it can do a lot more things we haven't used it for yet.