LEMKEN
The Agrovision Company

INTENSIVE CULTIVATOR
KARAT

Modern Stubble Cultivation

The modern stubble cultivator has three main functions – to encourage germination of weed and volunteer seeds; to incorporate straw; and to repair damage to compacted soil.

Weed Control

If a crop is to achieve its maximum yield potential, it needs to be able to grow free from competition from weeds and volunteers. A good cultivator will encourage weed and volunteer seeds to germinate as soon as possible after harvest. They can then be destroyed by chemical or cultural means before the crop is planted. To be efficient at weed control, the cultivator should prepare a seedbed similar to that required by a grass ley - fine soil, with seeds near to the surface, and firmed into the ground to retain moisture. Once germinated, the field can be cultivated again, or sprayed with herbicide to kill the weeds before the crop is planted.

Incorporate Straw

High yielding crops produce a lot of straw which contains valuable nutrients that will benefit crop growth if released into the soil. Straw will decompose most rapidly if kept in the oxygen layer of the soil (top 5cm) where aerobic bacteria are active. Therefore, mixing straw, and other crop residues, into the top 5cm immediately after harvest will encourage nutrient release. Nearer to seeding time, non-decomposed straw should be mixed deeper into the soil, leaving clean soil near the surface for seed germination and root establishment.

Repair Compacted Soil

The third function of a cultivator is to repair damage to compacted soil. Heavy machinery, particularly if used when soil is wet, will compact the soil, restricting root growth and soil drainage. After harvest, it is important to remove compaction from the soil, leaving a structure which encourages good plant growth. There should be a mixture of small and large soil particles, with no compacted layers. This will facilitate the correct balance between water retention and drainage, whilst allowing root development and nutrient availability.

Karat – Technology of a Trendsetter

Mid-mounted axle improves manoeuvrability

The tines of the Karat cultivator are attached to the frame at a line distance of approximately 28 centimetres. Working widths are from 3 to 7 metres. The aim is to achieve an intensive mixing of the soil and straw.

Flexible Use

The cultivation nature of the machine will need to change according to time and place of use. Immediately after harvest, the tines should be fitted with wing shares to allow complete soil movement at a shallow working depth. This will keep weed and volunteer seeds, and straw close to the soil surface. Later passes with the machine, when removal of compaction, and deeper mixing of straw is needed, narrow points without wings are the preferred option. The Karat has been designed to allow quick and simple changing of the points to achieve this.

The concave discs behind the tines mix the straw and the soil once again and efficiently level the surface. The following roller provides the required reconsolidation .

The LEMKEN range of rollers ensures there is an ideal tool for every situation. The LEMKEN Karat cultivator is available in different working widths and equipment versions:

- 3, 3.5 and 4 meter working width, mounted and rigid.
- 4 and 5 metres working width, with transport carriage and hydraulic folding to a transport width below 3 metres.
- 4 and 5 meter working width, mounted and hydraulically folding to a transport width of three meter.
- 4, 5, 6 or 7 meter working width, semi-mounted and hydraulically folding to a transport width of less than 3 meter. The implement is coupled to the tractor lower links.
- All Karat cultivators are available with shear-bolt or auto-reset stone protection.

The axle of the semi-mounted Karat is positioned centrally within the machine. The cultivator is compact, stable and very manoeuvrable.

- The design ensures that there is a positive weight on the tractor, even when the heaviest rear roller in chosen.
- The relatively short distance between the tractor and the transport axle, makes the machine manoeuvrable on headlands.
- When working without roller (option), depth guidance is maintained by the centrally positioned axle.

Cost-effective and safe transport

In the past, choice of rear rollers could be limited by the lift capacity of the tractor. The new transport axle provides a cost-effective solution to this problem. A smaller tractor can be used, even if heavier rear rollers are selected for the cultivator.

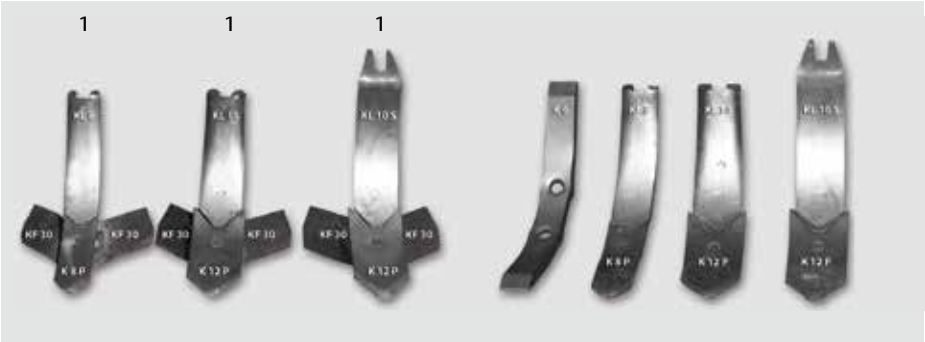
- Compact and agile, safe transport
- Straightforward, cost-effective trailer
- Favourable weight distribution allows the use of heavy trailing rollers to achieve optimum reconsolidation.
- Optional traction enhancement and hydraulic working depth adjustment

Operator Convenience

Quick and easy exchange of tools

Forward thinking farmers recognise the benefit of using a single cultivator for a range of cultivation duties, whether it is shallow for weed control, or deeper for repair of soil structure.

- The LEMKEN 'Quick-change' system has been designed to offer the option to quickly change the working nature of the tines.
- Without tools, the tine with changeable share foot point and wings, can be removed and replaced with an alternative set.
- The 'Quick-change' system also makes it easier to replace worn parts, as the whole assembly can be removed and put on a work bench for safe and convenient maintenance.



Wing shares for the first, shallow pass – narrow shares for intensive mixing and deep cultivation

LEMKEN cultivator shares feature seven different blade shapes for a wide range of operating conditions and working depths between 5 and 30 cm, as well as new K8H carbide-coated share points for outstanding service life.

- The different share versions are either bolted directly onto the cultivator leg or integrated into the quick change system with interchangeable share foot.
- In the standard version, the share points are hard-faced for a long service life of wearing parts. As an optional extra, the points are also available with extremely hard carbide coating.

Four soldered carbide plates ensure an extremely long service life of share points.

- Optimum balance between carbide and steel wear due to reinforced carrier material.
- The cones and overlap sections at the share points, in front of the attachment screws, protect the screws against wear.

First shallow stubble cultivation across the whole working width

For the first shallow stubble cultivation the Karat cultivator can be equipped with wing shares (image above, 1).

- Approximately 28 centimetres width ensures the whole soil profile is moved at working depths of 5 to 8 centimetres.
- Soil moisture losses are reduced due to broken soil capillaries..
- Point and guideboard (shin) are designed to combine uniform mixing of soil and straw, with minimum power requirement. To reduce service time, points and guideboard are fixed with a single bolt each.

High tripping forces with maintenance-free auto-reset

Karat cultivators fitted with auto-reset tines, provide an intelligent tripping action – the tine lifts high, when encountering an obstacle, before quickly returning to the work position after the obstacle.

- A tripping force of 5.500 N (550 kg) per tine guarantees smooth work even when working deep.
- The addition of a shearbolt ensures the LEMKEN Karat is optimally protected even when a tine is stuck under a rock or root.
- The robust, forged beams and durable pressure springs endure highest constant loads.

Automatic adjustment of the concave discs at any working depth

When the working depth of the Karat cultivator is changed, the rear discs automatically adapt to the new working depth without re-adjustment.

- A parallelogram automatically adjusts the rear discs and rollers as tine depth is changed.
- On folding Karat cultivators each disc and roller section can follow the ground contours independently of the cultivator frame. This ensures consolidation is uniform across the working width.

Hydraulic depth adjustment for Non-Stop work

The semi-mounted Karat cultivator is equipped with a hydraulic depth adjustment as standard. Working depth can be set hydraulically from the tractor seat.

- The mounting of the rear discs ensures that they maintain an optimum depth as tine depth is changed.
- Rear roller and disc sections can pivot independently of each other, and of the frame, to follow ground contours accurately and provide constant depth guidance.

Simple depth adjustment

The working depth of all mounted Karat cultivators can be changed in fine steps without tools from 5 to 30 cm.

- The 3 and 3.5 metre versions are adjusted with pins at the rear of the machine.
- To improve accessibility mounted, folding machines are equipped with an easy to reach depth adjustment at the front left and right of the machine.

Less wheel slip with hydraulic traction assistance

All semi-mounted Karat intensive cultivators are equipped with hydraulic traction assistance as standard.

- An additional hydraulic ram between drawbar and top link coupling point shifts weight to the rear axle of the tractor. Thus the traction of the tractor is increased.
- The hydraulic traction assistance is an intelligent system to optimise the distribution of force, reducing wheel slip and saving fuel.

Optimum reconsolidation even when working deep

When cultivating to 30cm depth, it is important to have enough weight to provide adequate reconsolidation.

- The packer profile roller for the semi-mounted Karat has been especially designed for these conditions. The front roller consolidates the soil at depth. The rear roller presses the soil surface to encourage germination of weeds and volunteers.
- The large diameters of up to 600mm reduce the traction power requirement considerably.

Technical Data

Description	Tines / pairs of discs + single disc	Line distance (cm)	Beam distance (cm)	Working width (m)	Transport width (m)	Maximum length (double roller) (m)	Weight without roller (approx. kg)	Tractor power kW	Tractor power PS
Mounted, rigid									
Karat 9/300	11/3	27	70	3	3	3,85 [1]	850	77-110	105-150
Karat 9/350	12/3+1	29	70	3,5	3,5 [4]	3,85 [1]	950	90-129	122-175
Karat 9/400	14/4	28	70	4	4 [4]	3,85 [1]	1.050	103-147	140-200
Mounted, rigid, with automatic overload safety device									
Karat 9/300 U	11/3	27	70	3	3	4,15 [1]	1.150	77-110	105-150
Karat 9/350 U	12/3+1	29	70	3,5	3,5 [4]	4,15 [1]	1.315	90-129	122-175
Karat 9/400 U	14/4	28	70	4	4 [4]	4,15 [1]	1.480	103-147	140-200
Mounted, hydraulic folding									
Karat 9/400 K	14/4	28	70	4	3	3,85 [1]	1.665	103-147	140-200
Karat 9/500 K	17/5	29	70	5	3	3,85 [1]	1.855	129-184	175-250
Mounted, hydraulic folding, with automatic overload safety device									
Karat 9/400 KU	14/4	28	70	4	3	4,15 [1]	2.125	103-147	140-200
Karat 9/500 KU	17/5	29	70	5	3	4,15 [1]	2.465	129-184	175-250
Tines with shearbolt overload safety device									
Karat 9/400 KTA	14/4	28	70	4	3	8,35	3.165	103-176	140-240
Karat 9/500 KTA	17/5	29	70	5	3	8,35	3.355	129-221	175-300
Tines with automatic overload safety device and shearbolt device									
Karat 9/400 KUTA	14/4	28	70	4	3	8,35	3.625	103-176	140-240
Karat 9/500 KUTA	17/5	29	70	5	3	8,35	3.965	129-221	175-300
Semi-mounted, hydraulic folding									
Karat 9/400 KA	14/4+1	28	100	4	3	8,7 [2],[3]	3.747	103-176	140-240
Karat 9/500 KA	18/6	28	100	5	3	8,7 [2],[3]	4.157	129-221	175-300
Karat 9/600 KA	21/7	29	100	6	3	8,7 [2],[3]	4.557	154-265	210-360
Karat 9/700 KA	25/8	28	100	7	3	8,7 [2],[3]	5.067	180-309	245-420
Semi-mounted, hydraulic folding, with automatic overload safety device									
Karat 9/400 KUA	14/4+1	28	100	4	3	8,7 [2],[3]	4.167	103-176	140-240
Karat 9/500 KUA	18/6	28	100	5	3	8,7 [2],[3]	4.697	129-221	175-300
Karat 9/600 KUA	21/7	29	100	6	3	8,7 [2],[3]	5.177	154-265	210-360
Karat 9/700 KUA	25/8	28	100	7	3	8,7 [2],[3]	5.567	180-309	245-420

[1] with DRF 400/400

[2] with PPW 600/540

[3] plus 0,5 m with long drawbar

[4] exceeds the allowed road transport width in some countriesr

All statements, measurements and weights given represent standards subject to continuous further development and are therefore not binding. The weights given always refer to standard equipped implements. We reserve the right to change specifications

Service Decides

When you have bought a machine from LEMKEN, the well-known, almost proverbial LEMKEN service starts. 18 customer-oriented factory branches and outdoor storage areas in Germany as well as our own sales companies and importers in more than 50 countries, and a strong dealer network, ensure that machines and spare parts are supplied quickly.

If a part is not in stock, it can be delivered to the customer within 24 hours via the LEMKEN logistics centre which is manned round-the-clock 365 days a year.

Knowledge from the LEMKEN specialist

Well trained customer service technicians are available to farmers, contractors and trade, who are using machinery for the first time, as well as for professional maintenance and repairs. Thanks to regular training courses, LEMKEN customer service is always up to date with the latest LEMKEN technology.

Original spare parts from LEMKEN

LEMKEN wearing parts are designed for a maximum service life. High-quality materials, the latest production methods, and an intensive quality control ensure a long service life. Therefore, all original spare parts bear a unique identification with the registered LEMKEN trademark. Original spare parts can be ordered at any time online on the Internet via the LEMKEN information and ordering system.

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

Your LEMKEN dealer:

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