



► Trailed field sprayer  
**Primus**





**Plant protection today**



Today more and more farmers are optimising the intensity in crop production in order to work according to crop rotation and the prevailing weather, thereby saving resources. Together with the high yield expectations for all crops, this requires a reliable, user-friendly and precise application technology for plant protection and for liquid fertilising.

A successful plant protection management is one of the most important conditions for a good harvest. Innovative and efficient field sprayers support the professional crop production specialist in the uncompromising daily challenge of reducing costs and increasing yields while simultaneously protecting the environment.



When it comes to plant protection, the farmer is monitored by the public and inspected by the authorities. Public opinion on the subject of protection of the environment can be positively influenced by managing plant protection responsibly. The technology should not only be reliable, but also straightforward to operate. Simple and environmentally-friendly operation of the field sprayer is also vital.

With its large capacity and outstanding quality in all the assemblies the Primus trailed field sprayer from LEMKEN addresses, in particular, the market grain company's need for an excellent combination of professional plant protection with greater area capacity and maximum efficiency. This is achieved through a conscious concentration on the necessary functions required for spraying, and the thereby reduced variety of versions. The spreading of liquid fertilizer and mixtures of plant protection agents and liquid fertilizer is part of the LEMKEN Primus performance spectrum.

# Practical and economic



The Primus from LEMKEN now has a new and attractive appearance. A grey frame and a blue tank give the LEMKEN classic a facelift.

With its practical equipment options the Primus trailed field sprayer complies in the majority of cases with regard to the requirements for professional and efficient plant protection.

The heart of the Primus is the smooth inner and outer easy-to-clean tank which is made of GRP and has a volume of 2,400 to 4,400 litres and a separate external clean water tank.

Stable boom with Z-profile struts in working widths ranging from 15 to 33 metres and diverse folding variants, along with partial width variants allow it to be used in all agricultural

conditions. The lines and partial width valves are housed and protected in the boom frame.

The boom transport height can easily be adjusted using an innovative transport stowage system which in turn means it can be adapted to different tyres and wheel sizes. This guarantees an ideal boom centre-of-gravity location.

# Range of models at a glance

## ▶ Primus 25

- GRP tank 2,400 litre actual volume
- 250 litre external clean water tank
- 1 x 250 litre piston diaphragm pump
- Boom 15 to 30 metres



## ▶ Primus 35

- GRP tank 3,300 litre actual volume
- 250 litre external clean water tank
- 2 x 160 litre piston diaphragm pumps
- Boom 15 to 30 metres



## ▶ Primus 45

- GRP tank 4,400 litre actual volume
- 250 litre external clean water tank
- 2 x 250 litre piston diaphragm pumps
- Boom 15 to 33 metres



# Comfort and reliable function



## Absolutely leakproof

When the Primus tank is closed it is absolutely leakproof but a breather allows air to enter and leave as the tank volume changes.

- This increases the useful capacity of the tank and liquid cannot escape when the brakes are applied.
- The main tank can be filled via the suction connection without opening the cover, as the air can escape upwards out of the tank.

## Tank as smooth as a mirror and easy to clean

The LEMKEN Primus tank consists of a highly tear-resistant and dimensionally stable glass fibre reinforced plastic (GRP). It is easily accessible via a wide ladder.

- Extremely smooth inner surfaces reduce the deposition of spray agents and enable the interior to be cleaned quickly and easily
- The shape and location of the tank favours optimum weight distribution in all filling states.





### ▶ Low amounts of residue

A unique feature of the LEMKEN Primus is the bypass collector which collects all the liquid from the return lines and then feeds it back into the tank from above, via a single line.

- The number of hoses and supply lines and therefore also the number of required tank connections are reduced to a minimum.
- Technical residue is thereby reduced considerably.



### ▶ Efficient agitator

A powerful agitator inside the tank intensively mixes the spray agent and prevents the deposit of any residue. The bypass collector line is connected directly to the agitator line installed in a longitudinal direction in the bottom of the tank.

- This system enables the entire pump capacity to be concentrated on the agitator.
- The powerful hydraulic return agitator has a foam-reducing effect and guarantees a homogeneous spray agent throughout the spraying process.



### ▶ Powerful induction hopper

The large-volume induction hopper of the Primus can be filled quickly with pesticides by simply folding it down.

- The hopper rinse, without fog effect, and a powerful agitator nozzle ensure that the spraying agents are dissolved thoroughly and flushed in free of residue.
- An effective canister rinse is also integrated.
- The controls are clearly arranged and are easy to understand.
- The connection for external cleaning (option) is located on the induction hopper.



# Operation made easy



## ▶ Teejet 844 E spray computer

The Primus is equipped as standard with the Teejet 844 E computer.

- The compact control box enables the tractor driver to enjoy convenient operation of all the important functions in the tractor cab.
- All the relevant data such as specified quantity, speed, pressure, sprayed area and spread quantity are permanently shown on the display.
- The Teejet 844 E computer regulates the application rate proportional to travel. Even at changing speeds the same quantity of liquid is applied over each square meter of area

## ▶ Operation

The Primus controls on the left-side of the implement are clearly arranged and easily accessible for operation.

- Selection valve (1) for drawing in external liquids or spray agent.
- Selection valve (2) for drawing in spray agent or clean water.
- Distributor valve (3) for washing-in or spraying
- Switching valve (4) for internal cleaning







Comfort-Terminal

LEMKEN CCI-200 Terminal

## ▶ Spraydos

The Spraydos spray computer controls the Primus with circulation line (option). The central, section width and quantity control valves can be electronically operated from the comfort of the driver's seat.

- The operator selects the required application quantity in litres per hectare. The flowmeter is used by the Spraydos computer to regulate the spray rate being spread over each square meter so that it remains constant even when speeds are changing (travel proportional).
- Relevant data, e.g. speed, flow rate, processed area, time or application amount, is recorded and can be retrieved at any time.

## ▶ ISOBUS technology

ISOBUS technology extends the possibilities of the Primus field sprayer. A so-called job computer on the machine and an operating unit (COMFORT Terminal or LEMKEN CCI-200 terminal) in the tractor cab are interconnected via the standardised ISOBUS interface. ISOBUS technology supports numerous functions, e.g.:

- Coupling with satellite receiver for parallel driving systems, partial-area-specific processing and road and field navigation.
- Automatic satellite-supported partial width switching.
- Job processing in conjunction with different field record systems is possible. Data is exchanged via USB stick or

GSM modem. All work can be precisely documented in terms of time and location.

- Easy handling by user-controlled display.
- Reliable operation of the device functions by ergonomically shaped joystick with 3 switch levels.
- Additional devices for displaying or operating different functions can be integrated without difficulty.
- The same terminal can be used for several machines, e.g. field sprayer, seed drill, fertiliser spreader, etc.



# Attaching and driving



## ▶ Variable hitch

The Primus is equipped with a rigid upper hitch. A lower hitch is optionally available.

- The towing ring can be replaced and it enables a variety of different hitches to be connected.
- This means that the Primus hitch height can be easily and quickly adapted to suit any tractor.
- A drawbar extension of 30 cm is optionally available for the upper hitch.



## ▶ Spring-mounted drawbar end pieces

A spring-mounted drawbar for the LEMKEN Primus is optionally available.

- It reduces impacts between sprayer and tractor mainly during transportation. In conjunction with large-volume wheels, the spring-mounted drawbar frequently replaces the considerably more expensive air-sprung axle.
- If the brakes are suddenly applied at a high transport speed and with a filled tank, the frame and drawbar are protected enormously from damage.





▶ **Axles for every track width and optimum convenience**

The Primus field sprayer features an un-sprung rigid axle as standard. Depending on size and version, fixed track widths are possible between 1.50 m and 2.25 m.

- Optionally air-sprung axles are available from a track width of 1.80 m. The load-dependent suspension guarantees maximum driving comfort. Even the air brake is controlled on this axle depending on the load.
- Perfect soil protection and efficient plant protection are guaranteed by the large number of available tyre variants.



▶ **Large ground clearance and a wide selection of tyres**

The smooth underside of the LEMKEN Primus favours work in tall-standing crops.

- Diverse, large tyres and mud guards with adjustable holders enable adjustment to all individual conditions.
- Sufficient ground clearance prevents crop damage.



▶ **Compact and safe en route**

The compact dimensions of the Primus render transportation easier, even on overgrown tracks and in confined areas.

- The spraying boom is folded close to the tank so that even overhanging trees do not constitute an obstacle.
- The boom transport height can be adjusted to different tyre sizes by means of slots at the front and rear. The boom is therefore stowed at the lowest possible centre of gravity for transportation by road, thereby greatly increasing driving stability.



# Boom with 'Z' profile



## Z-profile – torsion optimised and protective

The design of the Z-profile boom ensures optimum torsional capability and protection against damage.

- All supply lines as well as the section width valves (option) are protected in the boom frame.

- The Z-profile enables corrosion-resistant spray lines to be routed inside the boom structure.

- All parts are connected using continuous bolts with nuts.

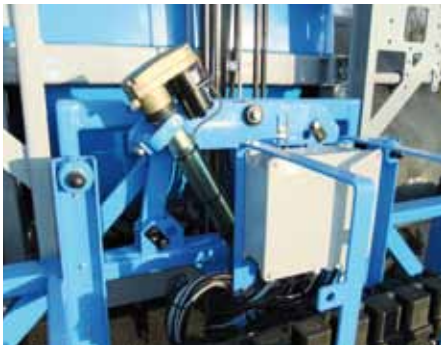
Designation - Working width/symmetrically reduced- Number of section widths - Weight (kg)

Partial width distribution \*

B 27 - 15m - 5 - 670		3/3/3/3/3 m
B 21 - 18/15m - 6 - 720		3/3/3/3/3/3 m
B 27 - 18m - 6 - 705		3/3/3/3/3/3 m
B 21 - 21/15m - 7 - 755		3/3/3/3/3/3/3 m
B 27 - 21m - 7 - 740		3/3/3/3/3/3/3 m
B 27 - 24/18m - 7 - 775		3/4,5/3/3/4,5/3 m
B 30 - 24/20m - 7 - 795		3,5/3,5/3,5/3/3,5/3,5/3,5 m
B 27 - 27/18m - 9 - 810		3/3/3/3/3/3/3/3/3 m

Boom with nozzle distribution and flap positions

\* Other section width distributions are optionally available



### Central pendulum suspension

The boom is attached in the centre with pendulum suspension. It is automatically aligned horizontally, irrespective of the position of the running gear.

- On slopes spring stabilisers support the adjustment of the boom to the gradient.
- They also prevent the boom from plunging inwards on the headland.



### Working on a slope

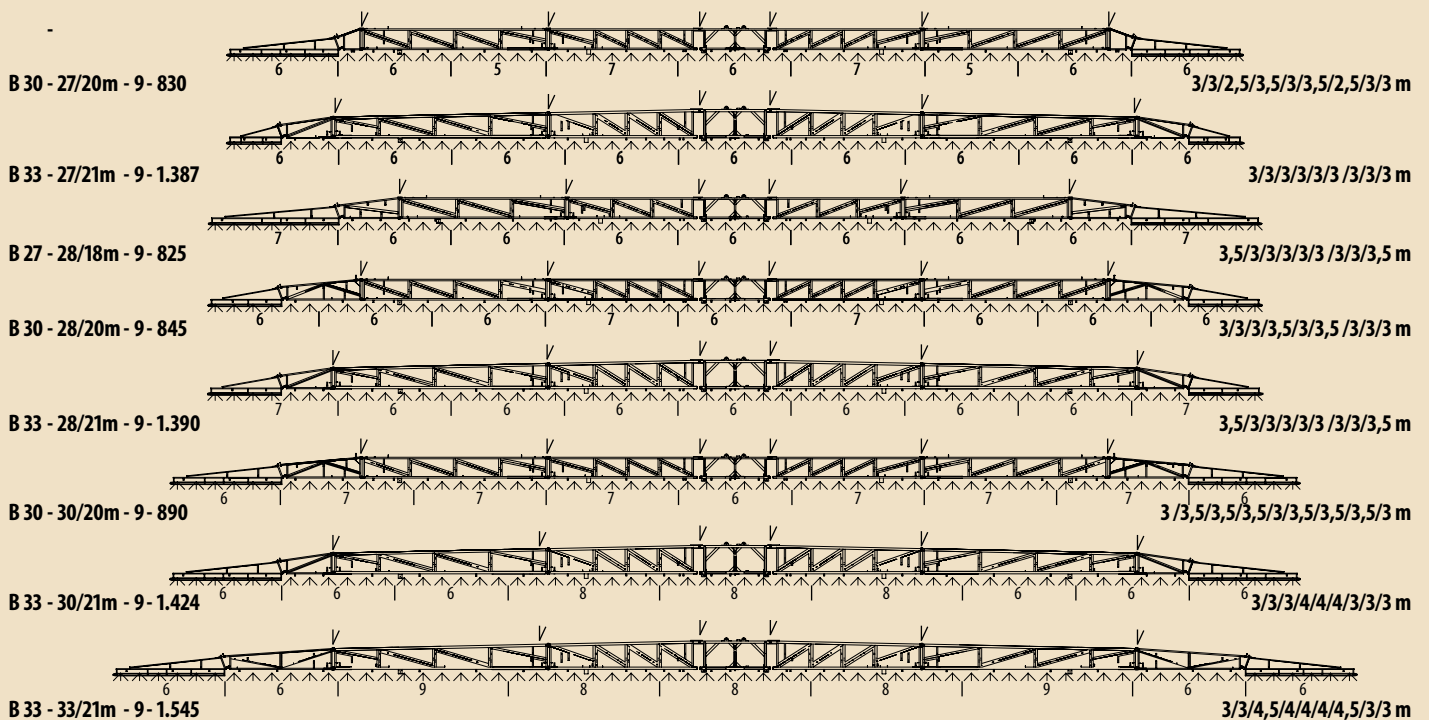
To ensure parallel adjustment to the terrain, each spraying boom features a slope balancer which is actuated from the operator console in the tractor cab. An automatic boom guide is optionally available.

- For boom B21 – B30 the slope balancer is controlled electrically, for boom B33 and for automatic boom control (optional) the slope balancer is controlled hydraulically.

- The slope adjustment responds to a shift in the centre of gravity of the boom. Even in this adjusted position the boom retains its full pendulum range.
- The centre of gravity shift is controlled via an electric rocker switch or optionally via a rotary potentiometer or distance control.

Designation - Working width/symmetrically reduced- Number of section widths - Weight (kg)

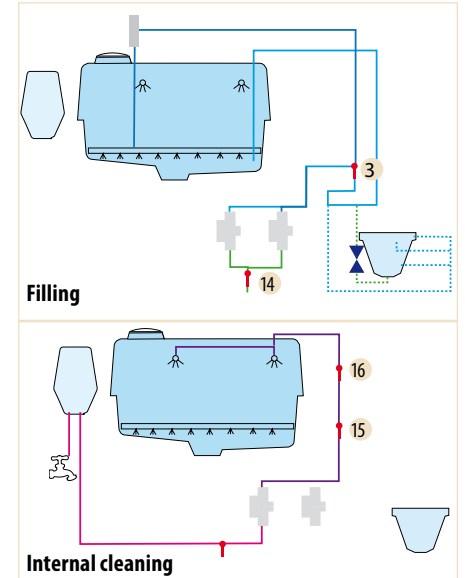
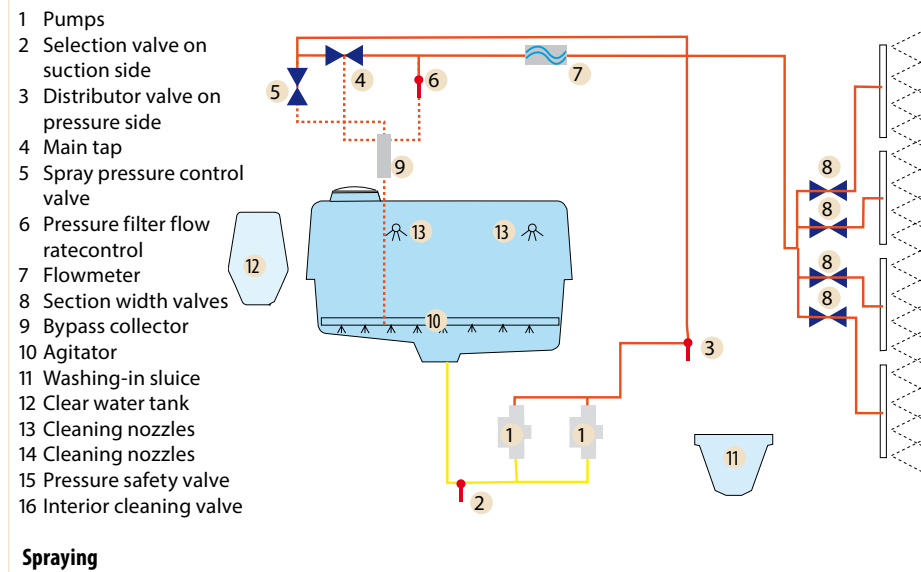
Partial width distribution



Boom with nozzle distribution and flap positions

\* Other section width distributions are optionally available

# From filling to cleaning



## ▶ Spraying line

The optimised liquid route for the Pri-mus trailed field sprayer from LEMKEN guarantees efficient spreading of all plant protection agents.

- Large-size lines also enable larger spreading rates or high travel speeds.
- The quantity control valve has a wide control range. This enables the quantity to be spread to be varied.
- The valves are all ball valves and they ensure that response times are fast and uniform.

- A nozzle pipe made of V2A steel with 2 mm wall thickness ensures that the nozzle holder has a secure seating.
- A circulation line is optionally available, which - after switching on the nozzles - enables a homogeneous spray agent to be available across the entire working width.

## ▶ Before and after spraying

The high pump capacity guarantees that the filling process is quick, that the spray agent is mixed well and that the device is cleaned thoroughly.

- The tanks are completely filled at maximum 540 rpm within approx. 10 to 15 minutes.
- The two rotating cleaning nozzles inside the tank ensure that the tank is cleaned.
- Fittings, lines, partial width valves and pumps can be cleaned even if a tank is partly filled.





### Pumps

The piston diaphragm pumps are resistant to liquid fertilisers by the use of corrosion-resistant materials.

- As standard, the pump is driven via a 540rpm power take off.
- Hydraulic pump drive is available as an option.



### Filters

The Primus filters are easily accessible.

- Primus 25 and 35 are equipped with one suction filter, Primus 45 has two 50-mesh (meshes per inch) suction filters. A non-return valve integrated in the suction filters enables the filters to be cleaned, even if the main tank is filled, without spray agent escaping.
- The filter in the pressure line is self-cleaning and features an 80-mesh insert which eliminates the need for nozzle prefilters when nozzles greater or equal to bore 025 are used..



### Internal cleaning

The Primus trailed field sprayer is extremely smooth on the inside and therefore ideally equipped for residue-free internal cleaning.

- Two stainless-steel rotational nozzles at the top of the tank are used to clean every part of the tank interior.
- Clever line routing inside guarantees an excellent cleaning performance.
- Internal cleaning can be switched electrically from the tractor cab as an option.



## Intelligent details



### ▶ Indirect level indicator

The indirect level indicator is very easy to read during the filling process and when spraying from the tractor cab.

- Because the level is recorded in the middle of the tank, the indicator hardly ever gives an incorrect reading when the sprayer is at an incline.

- The float guide can be flushed free of residue when the tank interior is cleaned.

- The Tank Control electronic level indicator costs can therefore often be reduced.







### Bumper

To prevent damage to the nozzles and the boom, the Primus is equipped with a bumper.

- The last piece of the boom is enclosed by a hoop guard. If contact is made with the ground or an obstacle, the last piece of the boom moves forwards or backwards by almost 90° and then returns automatically to its original position.



### Electrohydraulic operation

Electrohydraulic operation is available for tractors with too few control units or, e.g. for additional functions such as automatic boom control.

- The tractor requires only one single-acting control unit and a depressurised return line.
- The hydraulic functions are controlled electrically from the control box.



### Spraying with air support

The Air Vac air support system reduces drift and optimises the application in order to reduce spray agent.

- The air outlet from the air bag is adjusted to the liquid outlet from the nozzles in order to generate a permanent vacuum.
- The plant crop is opened slightly and the suction effect draws the atomised spray positively into the crop. The plants are wetted from all sides.



# Technical data

Primus	Main tank		Clean water tank	Hand-wash tank	Weight
	Rated volume	Actual	(Liter)	(Litres)	(kg, without)
25	2.200	2.400	250	18	1.800
35	3.100	3.300	250	18	2.000
45	4.200	4.400	250	18	2.200

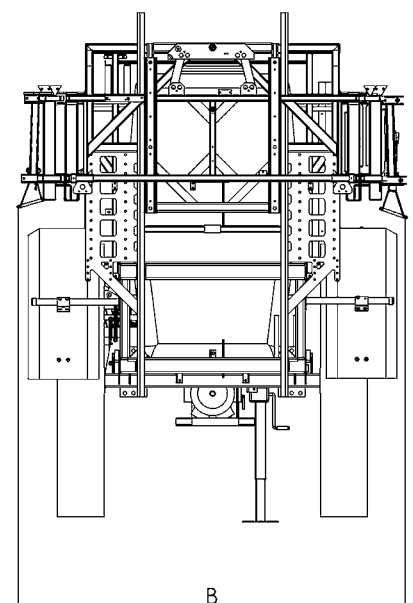
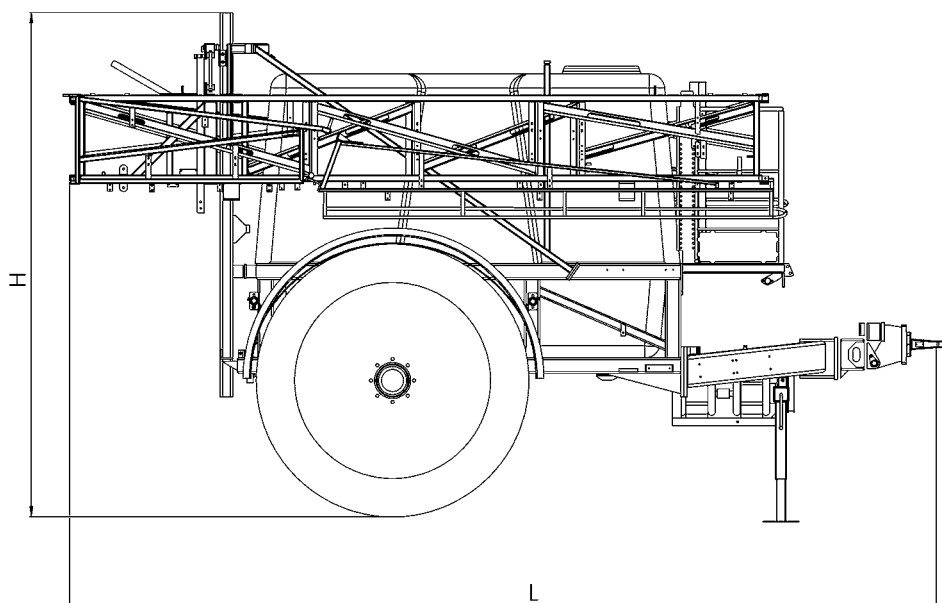
\*figures rounded down

Transport dimensions (mm)							
Primus	with boom	Length (L)		Width (W)		Height (H)	
		Min.	Max.	Min.	Max.	Min.	Max.
25	B21	5.200	5.700	2.600	2.800	3.250	3.600
	B27	5.300	5.800	2.600	2.700	3.250	3.600
	B30*	5.600	6.100	2.600	2.700	3.250	3.600
35	B21	5.200	5.700	2.600	2.800	3.350	3.600
	B27	5.300	5.800	2.600	2.700	3.350	3.600
	B30*	5.600	6.100	2.600	2.700	3.350	3.600
45	B21	5.500	6.000	2.600	2.800	3.350	3.900
	B27	5.700	6.200	2.600	2.700	3.350	3.900
	B30	5.700	6.200	2.600	2.700	3.350	3.900
	B33	5.700	6.200	2.600	2.700	3.350	3.900

\* Only available with upper hitch and drawbar extension

## Basic equipment:

Electronic operation and automatic control with Tee-Jet 844 E computer; piston diaphragm pump 1 x 250 litres for Primus 25, 2 x 160 litres for Primus 35, 2 x 250 litres for Primus 45; tyres 320/90 R 46 for Primus 25 and 35, 340/85 R 48 for Primus 45; dual-line pneumatic brake system; V2A spray line; indirect fluid-level indicator; electrical slope balancer control, as of hydraulic spraying boom B 33; stabiliser for spraying boom; 2 rotating internal container cleaning nozzles made of stainless steel; spring-assisted washing-in sluice; Kamlok suction connection 2"; external clean water tank 1 x 250 litre; roof ladder with platform; rigid drawbar, upper hitch in coupling jaw; replaceable and height-adjustable tow lug, Ø 40 mm; illumination; single nozzle holder.



All specifications, dimensions and weights are subject to continuous technical development and are therefore not binding. The weight specifications always refer to the basic equipment. Subject to change.

# Service decides



## Fast and reliable

When you have bought a machine from LEMKEN, the well-known, almost proverbial LEMKEN service starts. 17 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

As professional crop production specialists, LEMKEN is one of the leading companies in Europe, with over 1,000 employees worldwide, achieving sales revenues of more than EUR 340m. Originally founded in 1780 as a blacksmith's forge, the family company produces high-quality and high-performance farm machinery for soil cultivation, sowing and plant protection at its German headquarters in Alpen and at its two other production sites in Foehren and Meppen. 65 percent of the approximately 15,000 machines per year are exported.



**LEMKEN in Alpen/Germany**



**Mounted ploughs**



**Hybrid ploughs**



**Semi-mounted ploughs**



**Furrow presses**



**Front presses**



**Compact combinations**



**Seedbed combinations**



**Power harrows**



**Compact disc harrows**



**Cultivators**



**Subsoilers**



**Seed drills**



**Drill combinations**



**Mounted field sprayers**



**Trailed field sprayers**

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