

makes a difference



### **NO WEEDS STAND A CHANCE**

Mobile, environmentally friendly, effective: weed removal with hot water

# THE KÄRCHER HOT WATER METHOD

With Kärcher weed removers and a hot water high-pressure cleaner, you can get rid of unwanted growth without using herbicides. Just with hot water. And therefore without harming the environment and surfaces.





## BECAUSE YOU WANT TO ELIMINATE WEEDS PERMANENTLY

### What are weeds?

Unlike cultivated and ornamental plants, weeds are plants that grow naturally without any human intervention.

### Why remove weeds?

There are lots of good reasons to remove weeds. In farming, you remove weeds to protect crops. In towns and cities, to keep public spaces clean and tidy and to prevent damage to roads, open spaces and buildings. Many weeds can spread extremely quickly and/or cause severe damage with their roots. They also have a negative impact on the desired aesthetics.











### It can also be done without herbicides

To protect people and the environment, the use of herbicides for weed control is strictly regulated or prohibited, particularly in public areas. With our hot water method, you have an environmentally friendly and extremely effective alternative. The hot water destroys the weeds by penetrating right to the root and denaturing the plant proteins with the abrupt increase in temperature, whereby the weed is permanently damaged and killed off.

#### The hotter, the better

Hot water achieves optimal penetration right down to the roots of the plant. The water temperature is decisive here: just below the steam threshold is ideal. Kärcher HDS machines provide hot water at consistently high temperatures of up to 98°C – ideal for weed removal with hot water. And they are extremely energy-efficient thanks to a highly effective burner.

### No danger, no damage

In contrast to mechanical methods, with hot water there is no risk of damaging or destroying surfaces. The low working pressure (below 1 bar) guarantees gentle treatment and is therefore suitable for any surface. There is also no risk of fire as with flaming.

### Universal system solution

With the Kärcher system, you benefit from the solution expertise of the world leader in cleaning technology, so you will enjoy the very best quality – not only in hot water weed removal, but in all areas of professional cleaning, both inside and outside. All from a single source.

### More flexible than any weed

With a hot water high-pressure cleaner and WR 10, WR 20, WR 50 or WR 100 weed removers, you can eliminate weeds practically everywhere, including in hardto-reach places where other methods cannot be used. And with the HDS trailers, you can eliminate weeds using hot water totally independently of a power supply and water connection.

### We are always happy to help

With our extensive global Kärcher sales and service network, we are never far away and are always on hand to provide you with prompt assistance. We are also happy to advise you on site.

## OVERVIEW OF TREATMENT METHODS

	Thermal methods		
	Hot water machines	Hot foam machines	Hot steam machines
	Up to 98°C Kill the parts of plants above ground and the roots below with hot water.	> 100°C Steam machine with additional foam output. The foam is used for insula- tion purposes and is intended to prevent the steam from cooling too quickly.	> 100°C Kill the parts of plants above ground. However, heat transfer from steam is not as effective as that from hot water. Roots are not effectively attacked.
Environmental impact	Low	Moderate	Low
Effect	Plants and roots are weakened and destroyed, including the seeds.	Plants are weakened and destroyed. Limited penetration.	Plants are weakened and destroyed. Limited penetration.
Noise exposure for users	Low	Low	Moderate
Special features	Can be used on all surfaces, including critical and hard-to-reach areas.	Can be used on all surfaces, includ- ing critical and hard-to-reach areas.	Can be used on all surfaces, including critical and hard-to- reach areas.
Sustainability/effectiveness	High	High	Moderate
Application frequency	Up to 4 applications in the first year, decreasing the following year.	Up to 4 applications in the first year, decreasing the following year.	4-6 applications.
Overall assessment	****	**	***



### Before

Strong growth with grass, moss and dandelions between the cobblestones.



After application of hot water

One week after being treated with hot water, the weeds have died and the grass has already largely been worn away by the weather.

		Mechanical methods	Chemical methods
Hot air machines	Flame devices	Mechanical weed brush	Spray method
> 350°C Kill weeds with intense heat from hot air.	> 400°C The plants are heated by burning gas, causing them to die and in some cases burn.	Weed brushes and strimmers remove the plants from the roots.	Herbicide is applied to the leaves using a spray unit.
Moderate	High	Low	Very high
Surface growth is destroyed. Limited penetration.	Surface growth is burned. Limited penetration.	The parts of plants above ground are removed using a steel brush.	Herbicide weakens and destroys the cell structure of the plant down to the roots.
Moderate	High	Moderate	Low
Ineffective in moist conditions.	Cannot be used in extremely dry con- ditions, ineffective in moist conditions.	Standard in public areas; achieves desired clean, smart look in towns and cities as the weeds are removed directly.	Generally prohibited, may be used on paved and compacted areas only with special authorisation, certificate of expertise required.
Low	Low	Moderate	High
Application must be repeated about every 4 weeks.	Application must be repeated about every 4 weeks.	Application must be repeated about every 4 weeks.	Up to 4 applications in the first year.
**	**	***	**



### Before

Dandelions growing at the base of a concrete wall.



After application of hot water After one week, the dandelion heads are noticeably drooping. No more weeds will grow here for the time being.

### INUNDATED WITH WEEDS? NOT WITH HOT WATER.

The principle of thermal weed control is based on a fundamental biochemical rule: most proteins denature from a temperature of roughly 42°C.



This means that the proteins change, break up and can no longer fulfil their functions. The necessary heat can be generated and applied in a number of ways: directly as a flame or indirectly via thermal radiation, as hot water or steam. Hot water is the only chemical-free method that also reaches the roots.

Even if the roots are not completely destroyed straightaway, the weed is further weakened with each hot water application. If you apply hot water regularly from the beginning, regrowth is hampered and the required application frequency will decrease considerably even in the second year. As a rule of thumb, three to four treatments are sufficient in a year.



### Tip: Apply at the right time

The best time to remove weeds is in the afternoon. The amount of water stored by plants varies depending on the time of day. It is also best to start with the first hot water application shortly after the weeds have sprouted in spring. As plants get older, they become more resistant to hot water.

### Tip: Distance between nozzle bar and surface

The optimal distance between the nozzle bar of the Kärcher weed remover and the surface is between 5 and 15 centimetres. You can work comfortably within this range without the weed remover touching the ground. It also means that the loss of water temperature as the water travels to the surface is minimal.

# EFFECTIVE AND E SAFE AND CONVE

Our decades of experience and expertise in the development and production of high-pressure technology with high-quality, durable components are now available to you in our systems for mobile hot water weed removal.



### WR 10: spot on

With our compact WR 10, you can hit the exact spot even in confined spaces. This weed remover is lightweight, so it is perfect for extended use and can deliver an area performance of 80 to 150 m<sup>2</sup>/h with ease.

### WR 20: small areas, very precise

Sometimes space is so confined that only smaller tools will do. With the WR 20, you have just that tool to hand. And with a compact working width of 20 centimetres, you can treat up to 150 m<sup>2</sup> per hour.

### WR 50: medium areas, comfortable

The WR 50 weed remover has a removable, height-adjustable chassis with large rollers. This means you can work without getting tired, even during continuous use. And with a working width of 50 centimetres, you can treat up to 350 m<sup>2</sup> per hour.

Technical data		
Max. inlet temperature: 100°C	Max. inlet temperature: 100°C	Max. inlet temperature: 100°C
Inflow rate: 5.8–8.3 l/min	Inflow rate: 5.8–8.3 l/min	Inflow rate: 8.3-16.7 I/min
Weight: 0.3 kg	Weight: 0.3 kg	Weight: 2.1 kg
Order no. 2.114-016.0	Order no. 2.114-014.0	Order no. 2.114-013.0

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### WR 100: ideal for large areas

Eliminate up to 500 m<sup>2</sup> of unwanted weeds per hour with the WR 100. With a working width of 1 metre, the WR 100 is ideal for use in areas where machine work with an implement carrier is not possible.

### WR 100 Adv: large areas, by machine

With a working width of 1 metre, the front bar, which can be operated directly from the cab, is perfect for large areas. With side nozzles, a side pre-sweep function and splash guard, you can remove weeds from the entire area – right up to the curb.

Σ	Technical data	
	Max. inlet temperature: 100°C	Max. inlet temperature: 100°C
	Inflow rate: 8.3-16.7 I/min	Inflow rate: 16-18 l/min
	Weight: 1.2 kg	Weight: 64 kg
	Order no. 2.114-015.0	Order no. 2.200-009.0: MIC 35, MIC 42
		Order no. 2.200-010.0: MIC 50, MIC 70
		Order no. 2.200-011.0: MC 130

# ELIMINATE WEEDS SYSTEMATICALLY

Weed removal using hot water is effective and environmentally friendly. When using this method, it is important to make sure that all the components used are fully compatible with each other. For weed removal using our new weed removers, you can use many of the Kärcher HDS machines. The Kärcher system guarantees optimal effectiveness and efficiency – always.







### THE BENEFIT FOR YOU: THE KÄRCHER SYSTEM

- Kärcher HDS hot water high-pressure cleaners can generate the water temperatures required for weed removal close to the steam threshold.
- Our patented burner technology guarantees consistently stable temperatures of up to 98°C.
- The optimised water flow of the weed removers ensures optimal penetration.
- The compact design and low weight of the weed removers makes your work easier. You can work for longer without needing a break.
- You have a powerful, professional system that you can use for other tasks, such as cleaning and watering.

### OUTSTANDING MOBILITY AND RELIABILITY ON THE ROAD

Our HDS trailers are ideal for weed removal. One reason for this is the large water tank that allows their independent use. Simply configure the "weed option" attachment kit, which minimises temperature fluctuations, and you are ready to go.



Technical data		HDS 13/20 De Tr1	HDS 17/20 De Tr1
Water tank		500	500
Temperature for weed setting	°C	Up to 98	Up to 98
Water volume in weed setting	l/min	8.3	8.3
Max. water volume in high-pressure operation	l/min	21.7	28.3
Max. working pressure	bar/MPa	200/20	200/20
		Order no. 1.524-952.2	Order no. 1.524-952.2



### **BENEFITS AT A GLANCE**

- Can be used independently, without a power or water supply.
- Also available in a stationary skid or cab version.
- Effective weed removal and powerful hot water high-pressure cleaning in a single machine.
- Durable industry technology for daily, heavy-duty use.
- Tried-and-tested Kärcher burner technology with integrated heat exchanger for maximum efficiency.
- The optional two-spray lance operation delivers maximum efficiency and enables full use of the performance capability.

### Equipped for every application

For weed removal using the new weed removers, you can use many of the Kärcher HDS machines. Depending on the machine version, different nozzle inserts are required in order to guarantee optimal water volume flow and therefore consistently high temperatures.

HDS	Nozzle insert order no.
HDS 6/14(-4) C	2.113-070.0
HDS 7/16 C	2.113-041.0
HDS 8/17 C	2.113-071.0
HDS 8/18-4 C	2.113-071.0
HDS 7/12-4 M	2.113-006.0
HDS 8/18-4 M	2.113-071.0
HDS 9/18-4 M	2.113-005.0
HDS 10/20-4 M	2.113-021.0
HDS 12/18-4 S	2.113-010.0
HDS 13/20-4 S	2.113-025.0
HDS 1000 De/Be	2.113-071.0
HDS 13/20 De Tr1	2.113-071.0
HDS 17/20 De Tr1	2.113-071.0
WRS 200	2.113-028.0

# ONE NAME, ONE RANGE, INFINITE POSSIBILITIES

When you hear the name Kärcher, your first thought is probably of powerful high-pressure cleaners. Our renowned high-pressure cleaning technology also forms the basis for our mobile weed removal systems. With the WRS 200 implement, you can put our hot water high-pressure technology to mobile use on many Kärcher municipal vehicles, from the MIC 42 to the MC 130 Plus.





### **OPERATION: SIMPLE. LOGICAL. SAFE.**

A perfect operating concept must be as simple as possible and so logical that operating errors and risks to the operator can be ruled out from the outset. That is why we have separated the operating and maintenance elements on the WRS. On the left-hand side of the machine, you will find everything you need for maintenance and servicing. On the right-hand side, you will find the control elements for the temperature setting and pressure control and the switch for the burner. The operator can always control these functions safely from the roadside or the pavement. In the cab, our sophisticated EASY Operation system eliminates the need for a separate display, so all the necessary information is in the driver's direct field of vision.

### Automatic decalcifying system

Continuous decalcification is the ideal way to protect the burner against calcification. Our PressurePro Machine Protector RM 110 cleaning agent has been proven to extend the service life of the burner. The automatic dosing of the cleaning agent is more precise and reliable. And it saves the operator time.

### Low vehicle centre of gravity

The WRS is connected to the rear of our MIC 42, MIC 50 or MIC 70 implement carrier or to our MC 130 by means of a coupling triangle municipal mounting. The water tank, which has a volume of up to 800 litres, sits on the rear trolley and ensures a low vehicle centre of gravity. That means greater safety and ride comfort for you.

### **Quick operational readiness**

In less than two minutes, the 105 kW burner heats the water to the maximum work temperature of 98°C. Despite this enormous output, the burner works extremely efficiently and very economically. Fuel consumption is just 6 to 8 litres per hour.

### Compact design

The WRS 200 is so compact that it does not add anything to the overall width of the vehicle. The back of the vehicle remains visible in the exterior mirror even when driving around bends. The vehicle's manoeuvrability is not impaired at all and the risk of getting stuck on obstacles is reduced. This means that it can even be used in confined spaces with ease.

# VERSATILITY IS ALWAYS IN SEASON

Weed removal is a seasonal business, so it is good to know that you can use your equipment for lots of other activities, too. The WRS 200 mounted on a Kärcher implement carrier does not need any external power or water supply. This means that you can also use it in remote areas.





### Professional high-pressure cleaning

High-pressure cleaning has many applications in the municipal sector, from washing vehicles and cleaning construction sites to removing graffiti from walls and park benches. With a water pressure of up to 200 bar, water temperature of up to 98°C and an 800-litre water tank, the WRS 200 has the power and stamina for numerous applications.

### Green area maintenance

Flowerbeds, trees and bushes need a lot of water during the warm season. If there is no rain or there has been very little rain for an extended period of time, watering is essential. With the WRS 200 in cold water low-pressure operation, you can give plants that desperately needed water easily and directly using a hand lance.



### Removal of chewing gum

Removing chewing gum from hard surfaces such as tar, paving slabs and cobblestones used to be an arduous, time-consuming and expensive task. With the WRS 200, you can effortlessly remove chewing gum in a matter of seconds. Please contact us for more information:

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