



1.5

FOREST UNIVERSAL CULTIVATOR

KUL cultivator



The **cultivator** is designed for arboretum soil cultivation between rows of tree beds. The width of the cultivator required depends on the width of the tree bed that is to be cultivated. The basic equipment allows for mechanical weeding (sweep blades, three-prong rakes and spring shanks). What is more, there is a possibility of fitting the cultivator with attachments for application of powdery fertilizers and for spraying herbicides. Working with the cultivator as a weeder is based on mechanical weed control (through root cutting) and soil loosening. Depending on applied components various extents of soil loosening and crumbling occur. A built-in steering system allows for a precise drive of operating elements between plant rows. When the attachment for powdery fertilizers spreading is

installed, fertilizers can be applied in soil between plant rows together with weeding. Application of devices, such as three-prong rakes, helps in mixing of fertilizer with soil. The spreader is driven by a paddle wheel through a cluster transmission system in which drive ratio can be adjusted according to the required dose of a fertilizer. Liquid fertilizers attachment allows applying a liquid between rows of plants. During a work ride, sprayers are placed in casing to secure plants from a direct contact with the mixture. The use of proper sprayers and tools (rolling coulters) allows for application of a fertilizer into the soil and the furrow afterwards.

**TECHNICAL PARAMETERS**

Parameter	Cultivator KUL-1700* [KUL-1500 / KUL-1300]
Length	2270 mm
Operating width / own width	1700 / 2100 mm [1500 / 1900 mm] [1300 / 1700 mm]
Height	1300 mm
Weight (without additional equipment)	370 kg [362 / 356]
Operating staff required	1 person (tractor and cultivator operator)
Ground clearance	630 mm
Number of working sections	6 pcs.
Utmost sections span maximum	Approximately 1600 mm [1400/1200]
Minimum span between sections	150 mm
Fertilizer attachment	
- container capacity	Approximately 100 kg
- drive	Feeding wheel
Herbicide attachment	
- container capacity	300 dm <sup>3</sup>
- drive	Tractor PTO – 540 rpm

\*Technical parameters are given for Cultivator type KUL-1700, adapted for working on tree beds of 1700 mm width. The cultivator as well allows working on narrower tree beds when adjustment of the span between sections is made. For arboretums of a different width standard, it is recommended to manufacture a cultivator with an appropriately modified width of the main frame.



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### KUL – EQUIPMENT OPTIONS

#### 1. Fertilizer spreading attachment SRN

Fertilizer spreading attachment is a device mounted on a KUL cultivator. It is designed for spreading granulated mineral fertilizers among rows of plants. Spreading a fertilizer is done together with weeding by the cultivator equipped with sweep blades or three-prong rakes. As a result fertilizer becomes mixed with soil.

The main units of the spreader are:

- container
- stirrer inside the container
- electric drive motor
- seeding mechanisms
- pipes feeding fertilizer to the soil
- working elements of the cultivator intended to mix the fertilizer with soil
- drive wheel
- electronic controller

The spreader is designed for spreading granulated fertilizers, however in individual cases it may be as well used for row sowing of seeds. Spreading of fertilizers takes place from 6 sowing lines as a standard (or after rebuilding the cultivator – from 5). Sections of the sowing shaft that are not actually in use should be locked – this is done by additional plugs that belong to the seeder's equipment.

Depending on the size of granules and the required amount of granulate spread on a given area elements of the sowing shaft should be properly selected and its revolutions should be programmed with the electronic controller. For choosing a proper dose it is necessary to perform a calibration test. To select shaft's elements, tables of seeds included in the original user manual of the spreader may be useful (on the basis of a comparison of the size and weight of seeds and a granulate). Speed impulses are transmitted from the disc wheel assembled to an element on the left side of the cultivator, after connecting with an electric wire to the controller.

SRN attachment should not be used for spreading fertilizers that are susceptible to conglomeration (i.e. use only in conditions preventing from conglomeration, e.g. at appropriate – minimum – sun exposure and humidity).

#### 2. Herbicide spraying attachment OS-H

The sprayer is designed for spraying weed with herbicides among rows of seedlings on a tree nursery bed together with protecting plants from poisoning with the sprayed herbicide.

The spraying attachment may be assembled in two versions:

**for spraying between rows of plants and for spraying into the soil (PEĐRAK type).**

#### 3. Spinning disc head OS-W

The sprayer is designed for spraying weed with herbicides among rows of plants on a tree bed together with protecting plants from poisoning with the sprayed herbicide.

The OS-W attachment thanks to application of spinning disc head causes breakage of the liquid into droplets of a size 100 – 200 micrometers. This assures uniform spraying of the liquid on weeds and reduces the use of sprayed liquid to approximately 50 – 60 litres per hectare. The installation is pressureless and in combination with covers fully protects plants from poisoning.



KUL with SRN attachment



KUL with OS-H attachment



OS-H attachment elements



OS-W attachment elements