

**Manual seeder
for small seeded crops
SMK-1, SMK-2, SMK-3, SMK-4, SMK-5
(VPS 27/1-10/4)**

Technical specification and operating manual

Introduction

SMK-1, SMK-2, SMK-3, SMK-4 and SMK-5 (VPS 27/1-10/4)

seeders are manufactured according to Technical Conditions of Ukraine 30952138-001-2004.

It is used for row sowing of small seeded vegetable crops in greenhouses and open ground.

Technical data

The seeder is a welding construction of a stamped steel profile. Its height is 120 mm, the length is 130 mm and the width is 80 mm.

Seeder arrangement

The seeder consists of sowing device body where the seeds sowing section with a limiting brush, a shaft with the sowing hub and driving wheels are bolted. To provide the reliable seeder work and accuracy of sowing the seeder has got a flip-out ejector of seeds.

Sowing hub of the seeder has caves which are made with the given distance. The seeder set includes one sowing hub forced on a shaft. Also you can purchase a hub workpiece for other crops. Holes for other crops should be made in the hub according to the instructions given in this Manual.

Operating principle

Operating principle of the seeder is based on a rotation of sowing device hub. Seeds come into the calibrated caves of the hub. Brush limiter leaves just one seed in each cave of the hub. Then this seed is thrown down into the furrow by means of a flip-out ejector of original design. Sowing density depends on the cave pitch of the sowing hub.

Preparing for the work

To set up necessary sowing rate one need to place a proper sowing hub on the axle. Adjust the position of a sowing brush limiter according to necessary seeds amount. Check and correct (if it is necessary) the sowing rate by means of the seeder rolling with seeds along the plane surface.

ATTENTION!!! For the normal work of the seeder do not clutch the section fixing bolt at the body of the seeder.

Sowing

Before the sowing mark the row. The sowing is made into well prepared soil with the distance between rows set up according to technology of a definite crops sowing. After the sowing soil must be rolled up, mulched if it is necessary and watered. The seeder must be cleaned from soil and seeds after use.

Modification

The following models are produced serially:

- seeder for small seeded crops SMK-1 (one-row);
- seeder for small seeded crops SMK-2 (two-row) with adjustable distance between rows from 6 to 24 cm;
- seeder for small seeded crops SMK-3 (three-row) with adjustable distance between rows from 6 to 12 cm;
- seeder for small seeded crops SMK-4 (four-row) with adjustable distance between rows from 6 to 8 cm;
- seeder for small seeded crops SMK-5 (five-row) with the 6 cm distance between rows.

To adjust more precision seeds sowing depth use the **SMK seeder bracket** (fig. 3) which may be purchased separately.

To increase the seeder bin capacity install the plastic bottle using the **SMK seeder bin cover** with a hole for the bottle (fig. 2).



Fig. 2. SMK seeder bin cover

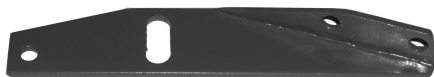
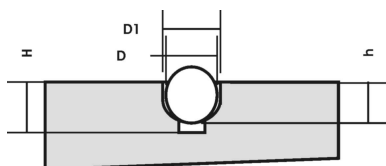


Fig. 1. SMK seeder section

Fig. 3. SMK seeder bracket

Instruction

for holes drilling in the sowing hubs for SMK-2 –5 seeders



To provide precise and quality sowing of seeds it is very important to drill the holes in the hubs correctly. For this purpose it is necessary to make a correct profile of the hole and define distance between holes on the hub correctly.

Holes are drilled by the drill sharpened in the shape of a hemisphere. The drill diameter is chosen according to the formula: $D1=1.1 \dots 1.2D$, where D is an average seeds diameter; $D1$ is diameter of the drill. The depth of drilling must conform the rule: $h=0,7 \dots 0,9D$ and must not be more than the depth of a flip-out ejector chase H . To sow seeds of carrot it is enough to bore up a chase by three-edged hacksaw file making a trapezium shape like it is shown on the figure.

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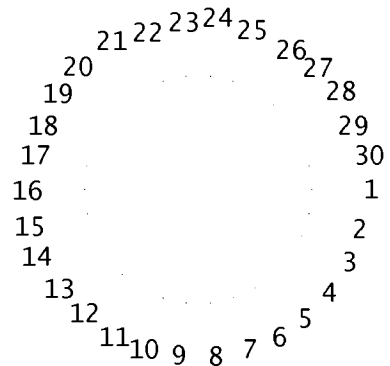
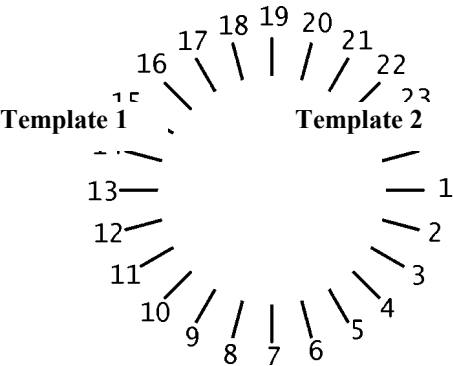


Choosing the distance between holes on the hub

To make a right choice of the distance between holes on the hub you need to define the distance between seeds in a row you are going to sow with. Or you should decide how many seeds you want to get per 1 meter in the row. It is easy to do using the table and the templates. For example, if you'd like to have the 8 cm distance between seeds in the row or 13 seeds per one meter you need to put the hub by the butt end to the template 1 and make the marks opposite the numbers 1, 5, 9, 13, 17, 21 and then drill 6 holes in the hub according to the marks.

Quantity of seeds per running meter, pcs	Distance between seeds in the row, cm	Quantity of holes in the hub	Angle between holes	Template type	The number of marks on the template
2	47	1	360		drill 1 hole
4	24	2	180		drill 2 holes opposite using any template
6	15	3	120	1	1,9,17
8	12	4	90	1	1,7,13,19
11	9	5	72	2	1,7,13,19,25
13	8	6	60	1	1,5,9,13,17,21
15	7	7	51,4	2	1,5,9,14,18,22,26
17	6	8	45	1	1,4,7,10,13,16,19,22

21	5	10	36	2	1,4,7,10,13,16,19,22,25,28,
25	4	12	30	1	1,3,5,7,9,11,13,15,17,19,21,23
32	3	15	24	2	1,3,5,7,9,11,13,15,17,19,21,23,25,27,29
51	2	24	15	1	drill holes according to all marks on the template



Maintenance service and storage rules

Seeder maintenance includes cleaning its working tools and wheels from the sticking dirt. Once a month take the split out of the wheel axle, take the wheel off, clean the axle and nave from the old lubricant and cover it by a new layer of any motor-car, tractor or domestic hard technical lubricant.

Preparing for storage includes performing maintenance operations and covering working parts by technical lubricant. Keep the implement in- or outdoor preventing moisture access.

