

SKALS

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INSTRUCTION MANUAL

Vibrating length grader type LS



A/S SKALS MASKINFABRIK
HOVEDGADEN 56
DK-8832 SKALS, DANMARK
Tlf.: +45 87 25 62 00
Fax: +45 86 69 49 99

[E-mail: Skals@skals.dk](mailto:Skals@skals.dk)
<http://www.skals.dk/>

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1.0 General description and scope of operations

This machine is designed for use with carrots only and no other purpose.

The machine consists of a series of corrugated stainless steel pans with adjustable grading gaps between them. The first pan is used to spread and align the crop. The pans are secured to a vibrating frame and mounted on 4 rubber elements. The whole assembly is mounted on a substantial base frame. The graded and waste crop can be collected by conveyors or chutes.

2.0 Installation

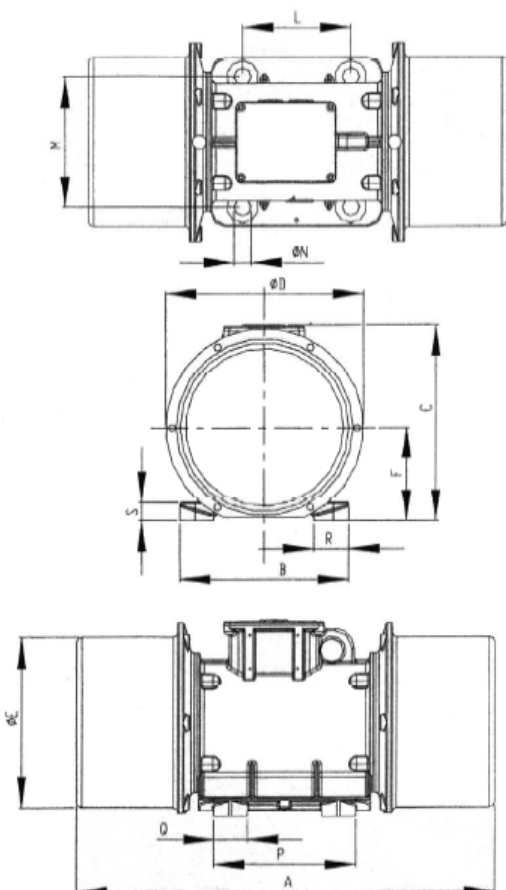
It is imperative that the grading machine stands upright and absolutely level, supported evenly on all four legs. Regulate the height of the machine by adjusting the four legs.

Before commencing operation, it is important to check that all nuts, bolts and screws are properly tightened.

Bolt the foot plates to the concrete floor with expansion bolts.

Connect the electricity supply in accordance with local regulations. Connect the electricity supply to the build on control panel. The control panel are supplied with a time delay relay for starting the vibration motors in 2 steps. The control panel are prepared for a Skals “sequence succession control” for starting a complete line.

Check that the operational flow of the grader is correct. This is indicated by an arrow on the shields on the vibrating motors. Remove one of the vibrating motors shield to check this. If the direction of rotation is wrong, switch 2 phases in the power supply.



Vibration motors:

	MAATVOERING								BEVESTIGINGSMATVOERING								
TYPE	OVERALL DIMENSIONS								FIXING DIMENSIONS								
TYPE	COTES DIMENSIONS								COTES POUR LE FIXAGE								
TYPE	ABMESSUNGEN								ABMESSUNGEN ZUR BEFESTIGUNG								
TYP	(mm)								(mm)								
	RIF.	A	B	C	D	Ø E	F	G	L	M	Ø N	P	Q	R	S	FORI	PC
																HOLES	
KBC1-55-4	1	355	210	236	216	181	101	71	140	170	17	175	35	43	20	4	M20x1,5
KBC1-90-4	1	415	210	236	216	181	101	101	140	170	17	175	35	43	20	4	M20x1,5
KBC2-120-4	1	446	220	260	258	219	122	107	140	170	22	187	45	45	25	4	M20x1,5
KBC2-160-4	1	488	220	260	258	219	122	135	140	170	22	187	45	45	25	4	M20x1,5
KBC3-200-4	1	520	275	310	278	239	132	136	140	170	22	210	55	70	27	4	M20x1,5
KBC5-300-4	2	580	310	344	325	283	157	137	83	229	22	250	62	65	35	6	M20x1,5
KBC5-400-4	2	600	310	374	355	309	172	106	83	229	22	250	62	65	35	6	M25x1,5
KBC8-500-4																6	
KBC8-640-4																6	
KBC11-650-4																6	
KBC11-700-4																6	
KBC11-900-4																6	

Adjustment of the centrifugal force;

In the two covers, which can be removed with a screwdriver, are each 2 or 4 counterweights. To reduce the centrifugal force, use an Allen wrench to adjust the centrifugal weights. It is important to ensure that the centrifugal weights are adjusted evenly on both sides.

2.1 Installation of accessories

Follow the appropriate instructions when installing accessories.

3.0 Conveyor

The cross-conveyors are independent of the sorter itself. For instructions referring to these, see enclosed instruction manual.

4.0 Operation

Check that the grader is correctly positioned in relation to other machines in the production sequence.

Do not allow any sharp or heavy objects, such as stones, bricks etc. over the machine as this will cause damage to the grader pans and crop alignment plates.

Do not flood the machine with crop, keep the crop flow as even and constant as possible. For maximum efficiency crop should be kept to single depth.

Care should be taken not to damage the rubber mounting bellows. They should also be kept clear of oil and chemical splashes.

The movable grading pans hang on the vibrating frame and have adjustment slots or holes and are held in place with hand tightened locking handles or hex bolts. Adjust the pans to obtain the wanted length of products for each size.

5.0 Lubrication and maintenance

Motors are lubricated for life and require no further maintenance.

Check that the grader adjustment handles are secure and set correctly.

Check that the cross conveyor belts are running true, see conveyor manual.

To maintain a noiseless operation, regularly check that all nuts, bolts and screws are properly tightened.

5.1 Cleaning the machine

With reference to the Danish Plant Directorate's Order No. 965 of 13 December 1993 (p. 6).

2.3.3. Seed potato growers with contained propagation must clean and disinfect all sorting and ancillary equipment after each new variety. Disinfecting should be carried out using a product approved by The Danish Institute of Plant and Soil Science.

2.3.4. Companies authorised to sort potatoes and who also have the authorisation to propagate potatoes, must clean and disinfect sorting machinery etc. which is under the control of The Danish Plant Directorate before the sorting of own propagation is commenced. Disinfecting should be carried out using a product approved by The Danish Institute of Plant and Soil Science.

2.3.5. Premises and machinery etc. must be cleaned and disinfected each year before 30 June. Disinfecting must be carried out using a product approved by The Danish Institute of Plant and Soil Science.

In other countries, customers must conform to relevant, local food and hygiene regulations.

When cleaning under high pressure it is important to cover up the motor, motor relay and all bearings.

Careful lubrication, maintenance and cleaning are very important in order to run the machine safely and to keep maintenance costs down.

6.0 Packing and transport information

Number of units:
The machine is packed as one complete unit.

Weight Kg. :

1500 kg.

Dimensions in mm:

	Length	Width	Height
LS140*	3100	1700	1760

7.0 Transport and lifting instructions

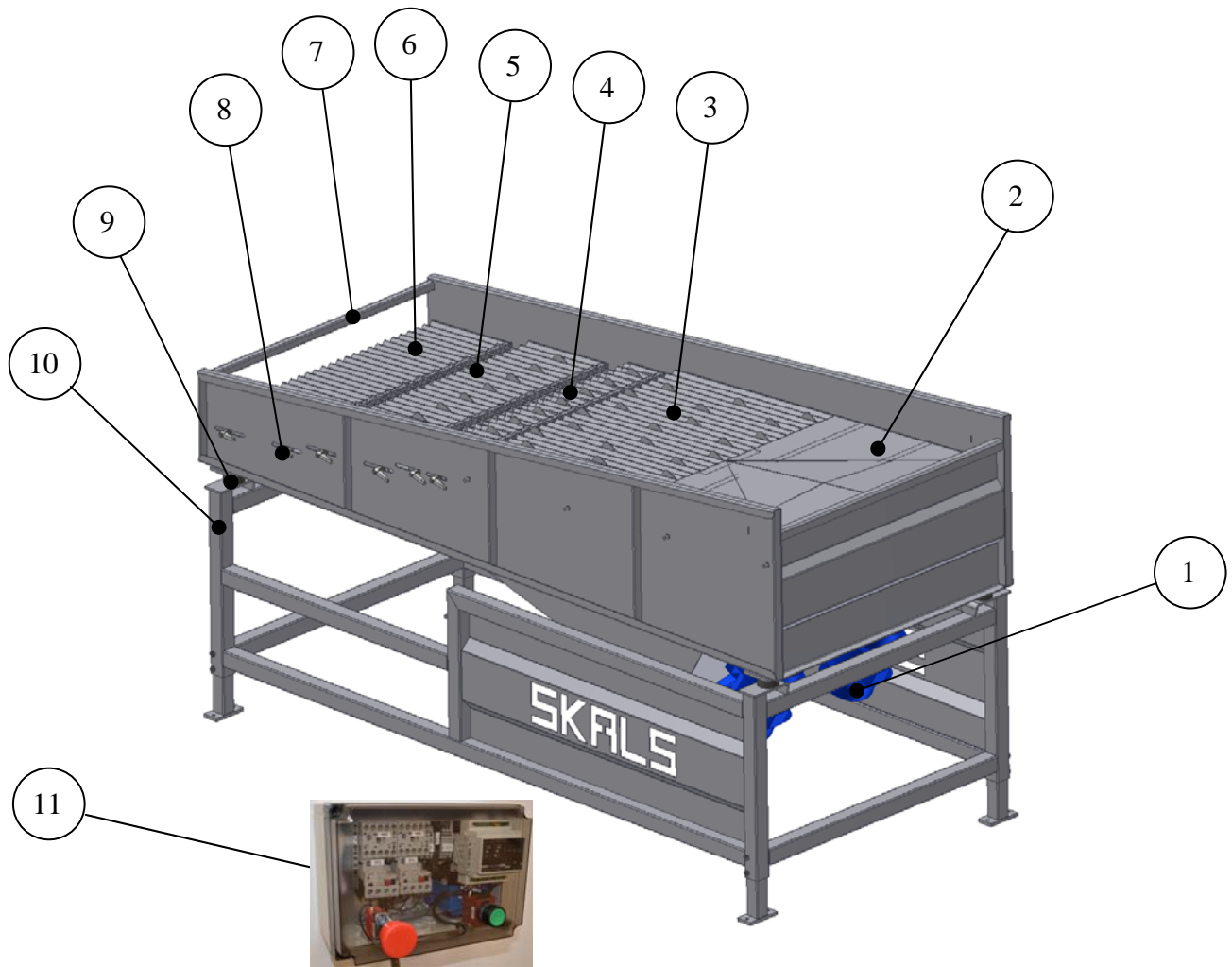


fig. 1

Should it be necessary to lift the length sorter, this must be carried out by attaching nylon straps to all four legs as shown in the illustration above (fig. 1).

8.0 Spare parts

When ordering spares quote the machine type, serial number and, if possible, position number.



Pos. no.	Description
1	Vibrating unit
2	Crop separator pan
3	Grading pan
4	First adjustable grading pan
5	Second adjustable grading pan
6	Third adjustable grading pan
7	Vibrating frame
8	Grading pan locking handle
9	Rubber elements
10	Base frame
11	Control box



9.0 Declaration of conformity with EU.

Manufacturer	
Firm:	A/S Skals Maskinfabrik
Address:	Hovedgaden 56 8832 Skals, Denmark
Telephone:	87 25 62 00

declares herewith, that

Machine:	Length grader
Brand:	LS
Type, serial no., year:	

Is manufactured in accordance with the decisions of the Councils Directives:

- 1 Machinery Safety – Directive 98/37/EC
- 2 Low Voltage Equipment Directive (LVD) 2006/95/EEC
- 3 Electromagnetic Compatibility (EMC) Directive 89/336/EEC and 93/68/EEC as amended.

Title:	Productions Manager
Name:	Søren Lund Madsen
Firm:	A/S Skals Maskinfabrik

Date: _____

Signed:  _____