

INSTRUCTION MANUAL

Grading machine type SB902/1202/1502



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1.0 Purpose and scope of operations

The grading machine is designed for size sorting of potatoes, onions and similar products.
Normal operational working temperature: -15°C to + 40°C.

2.0 Installation

The conveyor/ elevator must stand firmly on all four legs on a level floor. Adjust the legs so that the machine stands level.

It is essential to check that all bolts, nuts and screws are properly tightened before commencing operation.

Connect the electricity supply in accordance with local regulations. Electricity supply should be connected through a motor protection relay, which corresponds to the size of the motor. If the conveyor/ elevator are supplied with a motor relay, connect the power supply to this.

2.1 Installation of accessories

Follow instructions for the installation of accessories.

The machine can be supplied with cross conveyors. Depending of the setup the products can be delivered to right or left side. It can also be supplied with a cross conveyor across the machine for automatic drive to right and left side when opposite box is full.

The machine can also be supplied with a funnel on end outlet for products falling directly down in a box.

Grading screen produced in steel or rubber can be supplied.

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 machine is correctly placed in relation to other machines in the production sequence.

Fit the grading screen.

Remark that the hooks on the screen are turning up in the products direction. Fit the screen in the machine and connect the hooks to opposite end of screen. Adjust the tightening mechanism on both sides of the machine. During start up, control that the screen are running right in the center of the machine. If necessary adjust the tightening mechanism in one side of the machine.

Remove the grading screen.

Remove the screen by loosen the tightening mechanism in both sides of the machine. Dismount the hooks on the screen and pool the screen out and make a roll underneath the machine.

Adjustment of speed.

The machine is supplied with variable speed regulators, which is regulated by turning the handle with the indicator on the variator. Ratio 5:1

Never turn the handle when the machine is *not* in operation.

Variable speed of screen (fig. 1).

Variable speed of shaking movements of screen (fig. 2).

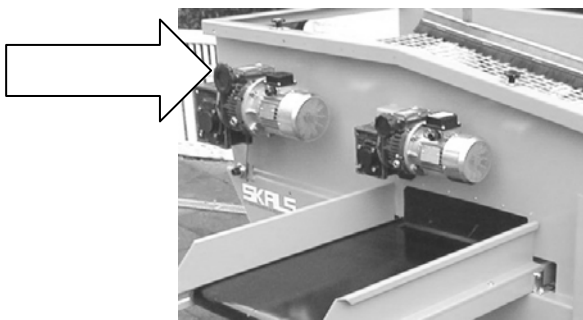


fig. 1.

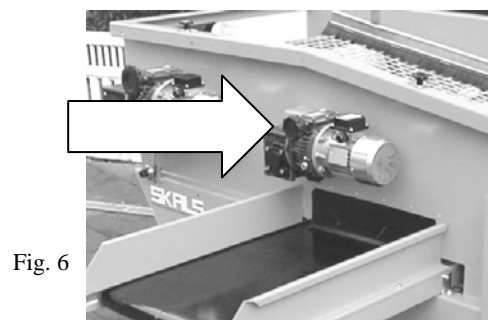


Fig. 6

fig. 2.

5.0 Lubrication and maintenance

All bearings are lubricated for life and require no further maintenance.

The worm drive type NMRV is lubricated for life with IP TELIUM VSF, a synthetic grease suitable for a normal temperature range of -15°C to + 40°C.

	Syntetisk	Mineralsk
IP	Telium VSF	Mellena oil 220
Shell	Tivela oil SC320	Omala oil 220
Agib	Blasia S320	Blasia 220
Mobil	Glygoyle 30	Mobilgear 220
Castrol	Alphasyn PG 320	Alpha 220

Change oil after 5,000 production hours.

Variator

The variators is mounted between the worm drive and the motor. It must always be kept filled with long life oil and should be topped up to the middle of the observation glass.

Change the oil every 8 years.

It is imperative that there is always the correct amount and type of oil in the variator.

Recommended oils:

IP	Transmission V. E.
IP	A.T.F. Dexron Fluid
AGIP	A.T.F. Dexron
BP	Autran DX
Chevron	A.T.F. Dexron
ESSO	A.T.F. Dexron
Fina	A.T.F. Dexron
Mobil	A.T.F. 220
Shell	A.T.F. Dexron
Castrol	TQ Dexron II.

5.1 Cleaning

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 with high pressure equipment, the following parts must be securely covered: Motor, variator, worm gear, and all bearings.

In order to maintain effective production and keep maintenance costs at a minimum, regular lubrication, maintenance and cleaning are very important.

6.0 Packing and transport information

Packing / wrap up:

SB902	:	no wrapping.
SB1202	:	no wrapping.
SB1502	:	no wrapping.

Number of units:

The machine is packed complete as one unit.

Weight:

SB902 :	680 kg
SB1202:	1030 kg
SB1502:	1380 kg

Dimensions:	Length	Width	Height
SB902	1660	1100	1885
SB1202	1660	1400	1885
SB1502	1660	1700	1885

7.0 Transport and lifting instructions

Should it be necessary to lift the machine, this **must** be carried out by using nylon straps fitted to the four legs, as shown in the illustration below (fig. 3).



fig. 3.

8.0 Spareparts

When ordering spares, state machine type, serial no. and, if possible, position no.

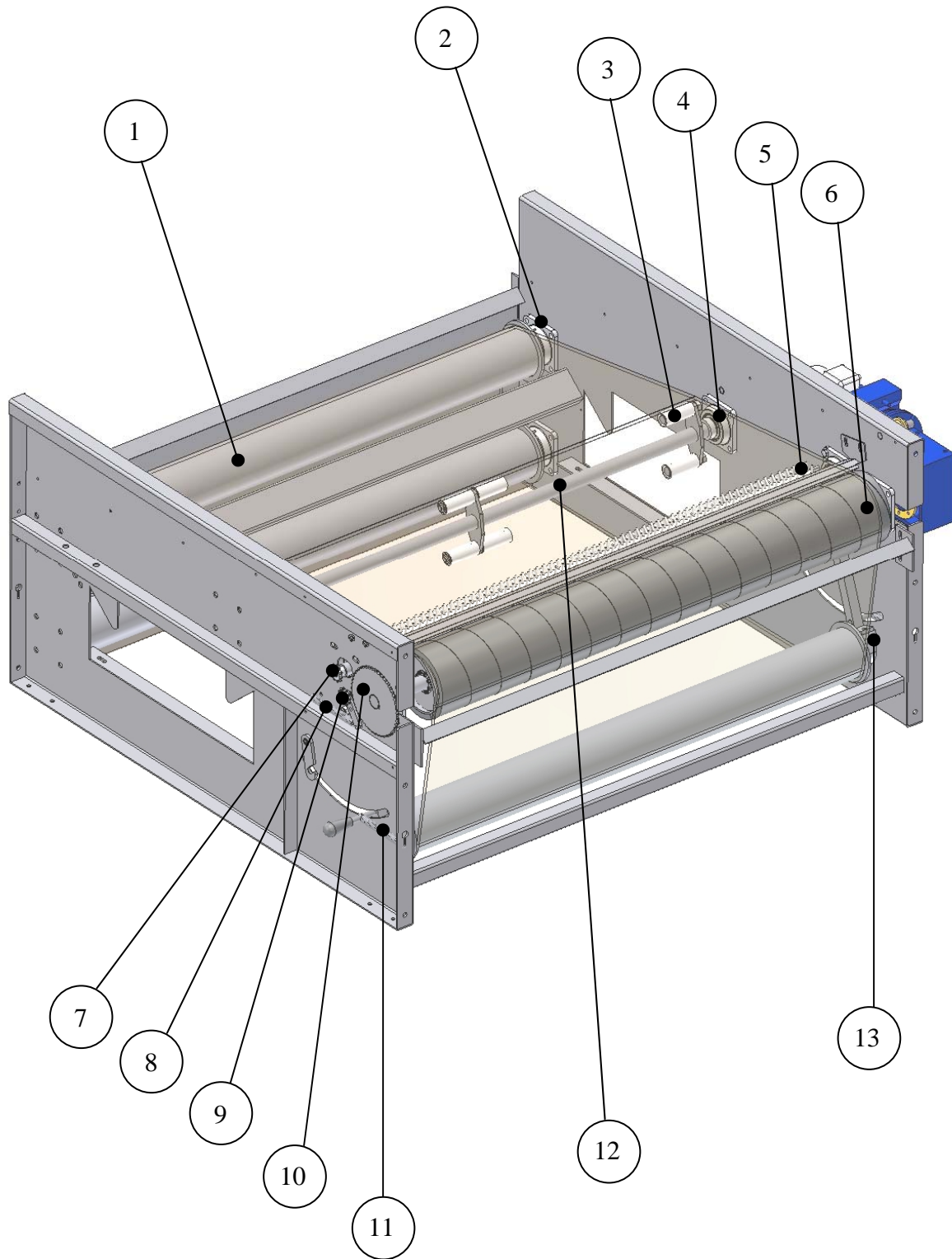


fig. 4.

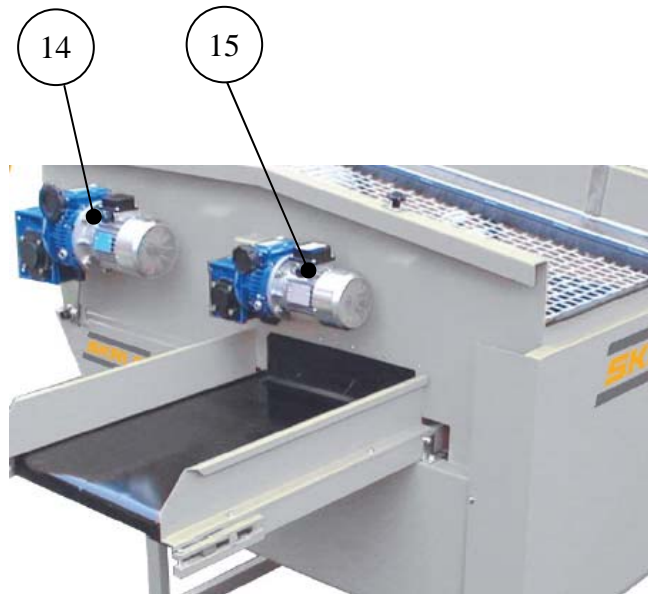


fig. 5.

Page	Fig.	Pos. no.	Description
7	4	1	Steel roller
7	4	2	Bearing
7	4	3	Shaking roller
7	4	4	Bearing
7	4	5	Brushing roller
7	4	6	Driving roller
7	4	7	Sprocket wheel
7	4	8	Spring
7	4	9	Chain adjuster sprocket wheel
7	4	10	Sprocket wheel
7	4	11	Spring
7	4	12	Shaking shaft
7	4	13	Bearing
8	5	14	Drive - motor/variator/gear
8	5	15	Shake - motor/variator/gear



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:	Grading machine
Brand:	SB902/1202/1502
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: _____

