

# INSTRUCTION MANUAL

Grading machine Type SK603/604



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## 1.0 Purpose and scope of operations

Grader type SK603/604 is designed to sort, by size, potatoes, onions and other similar products. Normal operational working temperature: -15°C to + 40°C.

## 2.0 Installation

It is imperative that the grader stands upright and absolutely level, supported evenly on all four legs. This will ensure a steady and vibration free operation (fig. 1).

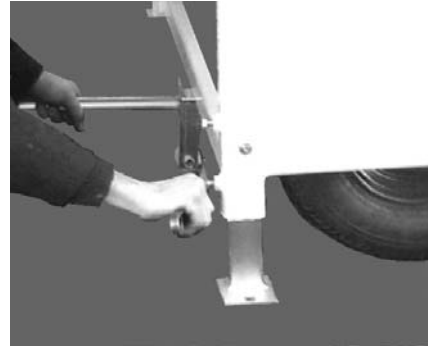


Fig. 1

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

Connect the electricity supply in accordance with local regulations. Connect the electricity supply through a motor protection relay which corresponds to the size of the motor.

Check roller table direction flow, if fitted. If the direction of flow has to be altered, switch 2 phases in the power supply.

An oversize outlet (only SK604 model) may be fitted for either left or right flow (fig. 2).

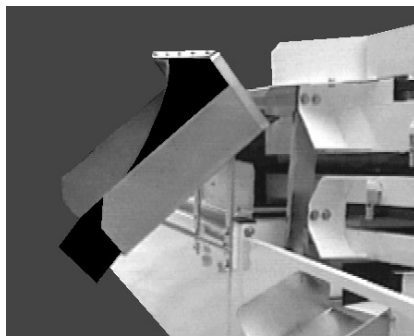


Fig. 2

An undersize outlet may also be fitted for either left or right flow (fig. 3).

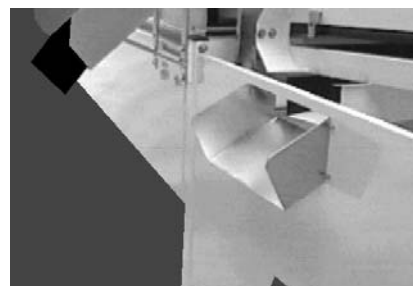


Fig. 3

## 2.1 Installation of accessories

Follow instructions for the installation of accessories.

Grader type SK603 can be converted to the same specification as SK604 by the addition of an extra riddle and an oversize outlet (Fig. 4).



Fig. 4

Adjust the in-feed height after installation of the riddle (fig. 5).

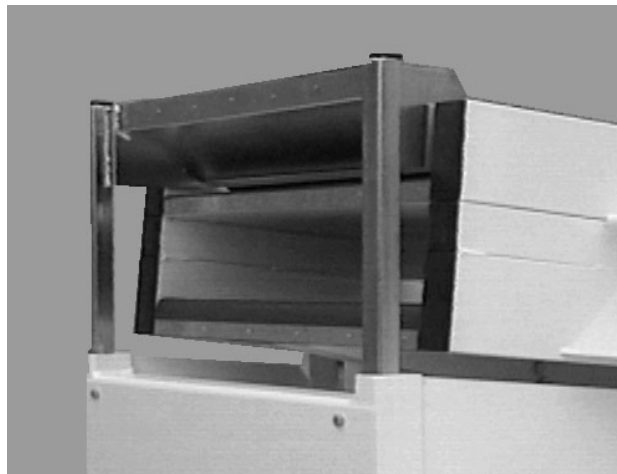


Fig. 5

## 3.0 Roller table and conveyor

The sorter roller table and conveyor are independent of the sorter itself. For instructions about these, see the enclosed instruction manual.

## 4.0 Operation

Check that the sorter is correctly placed in relation to other machines in the production sequence.

The speed of the riddle is regulated by turning the handle (fig. 6).



Fig. 6

The replacement of each riddle is carried out by loosening the four clasp locks on the sides. This is done by pressing down on the catch in the centre and lifting the handle upwards and outwards. Replace the riddle and press the locks into place again (fig. 7).

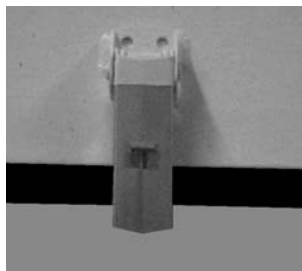


Fig. 7

The grader is provided with wheels so it can be moved freely. To achieve this, lift the grader at the outlet end with the lever supplied. The adjustable legs can be loosened and the positioning bolt removed. Push the legs up and secure. The grader is now ready to be transported.

After moving, follow the same procedure to drop the legs into the lower position again.

**N.B.** When the roller table is attached, the grader can be easily moved by one person, as the roller table and grader balance on the wheels.

## 5.0 Lubrication and maintenance

All bearings are lubricated for life and require no further maintenance, although all bearings must be greased with bearing grease after high pressure cleaning.

**Important!!** Do not over grease, as this could damage the oil seals.

Grease type:

Castrol LM NLGI 2.5

Keep the V-belt that drives the crank shaft sufficiently tight at all times. The belt is adjusted by loosening the counter shaft bearing bolts and easing them along the channel until the correct tension has been achieved. Tighten the bolts again, checking that the counter shaft is parallel to the motor.

In order to maintain noiseless operation, regularly check that all nuts, bolts and screws are properly tightened.

## 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.

**Cleaning with a high pressure cleaner requires that the following parts are securely covered:**

Gear motor, relay box and electrical control box.

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 / packaging:

All SK models are shrink wrapped prior to despatch from the factory.

Number of units:

The grader is packed complete as 1 unit.

(with or without roller table)

**Weight - without roller table:**

SK603:250 kg.

SK604:270 kg.

**With roller table:**

SK603                      355 kg.

SK604                      375 kg.

**Dimensions - without roller table:**

SK603

SK604

**Length**

1,950 mm.

2,200 mm.

**Width**

1,100 mm.

1,100 mm.

**Height**

1,610 mm.

1,770 mm.

**Dimensions - with roller table:**

SK603

SK604

3,750 mm.

3,750 mm.

1,100 mm.

1,100 mm.

1,685 mm.

1,770 mm.

## 7.0 Transport and lifting instructions

Should it be necessary to lift the grader, this **must** be carried out by using the nylon straps fitted to the sorter's four legs, as shown in the illustration below (fig. 8).

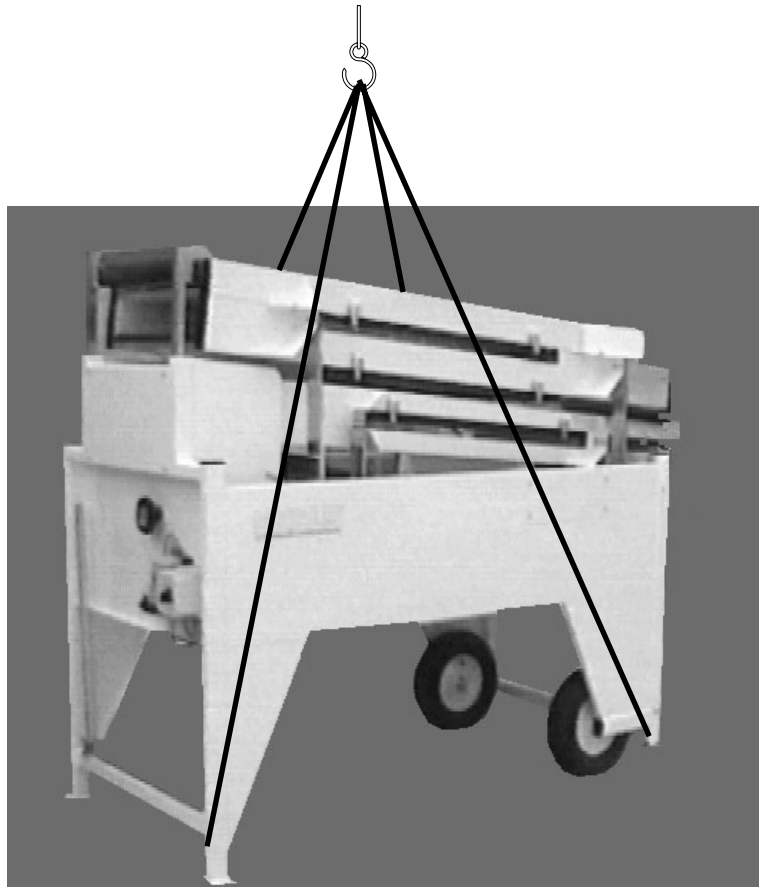


Fig. 8

## 8.0 Spare parts

The next three pages contain a list of spare parts.

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

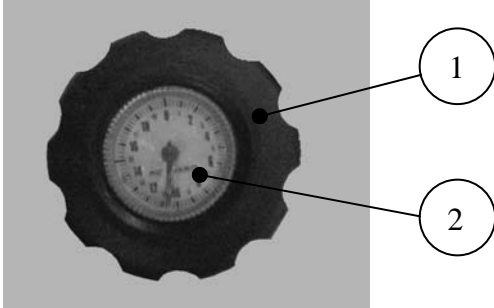


Fig. 9

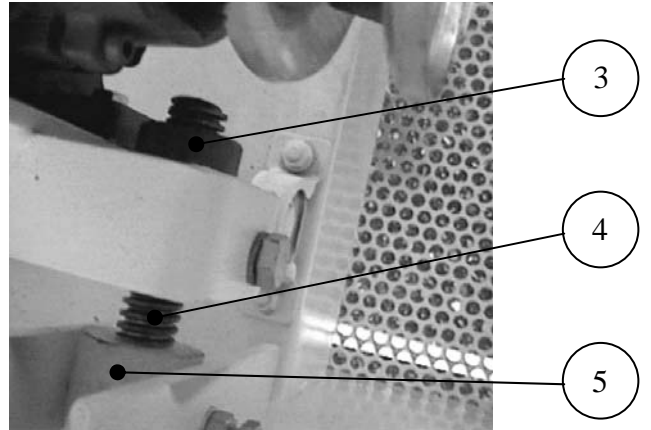


Fig. 10

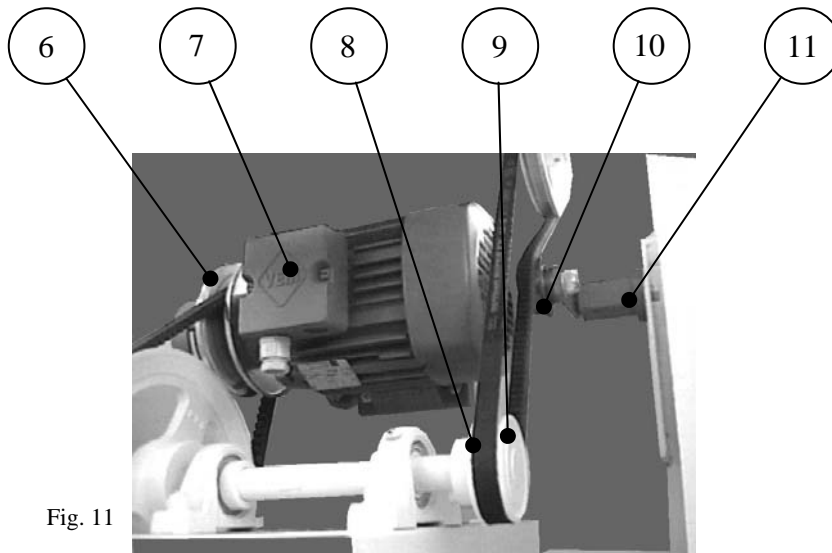


Fig. 11

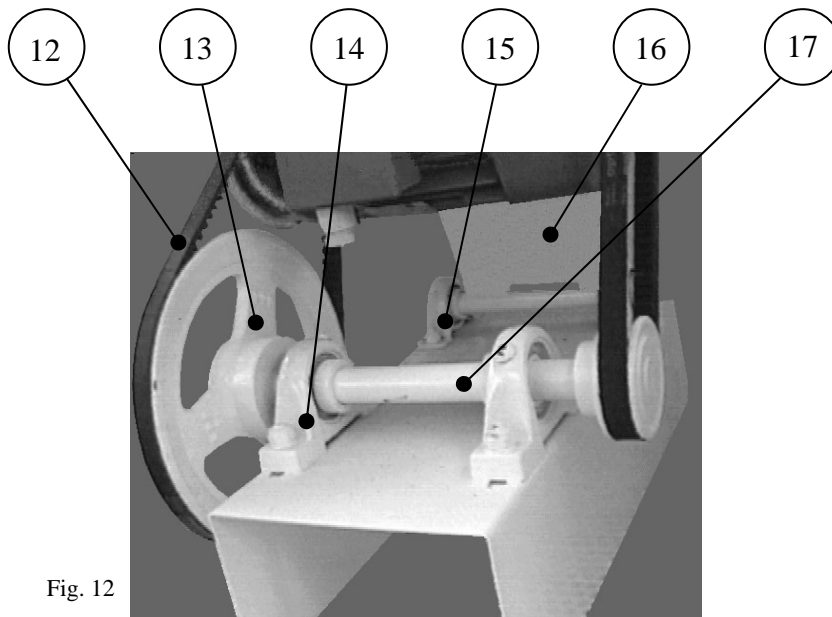


Fig. 12



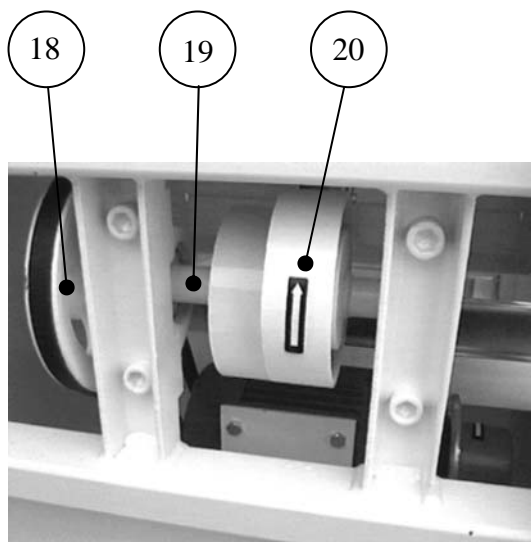


Fig. 13

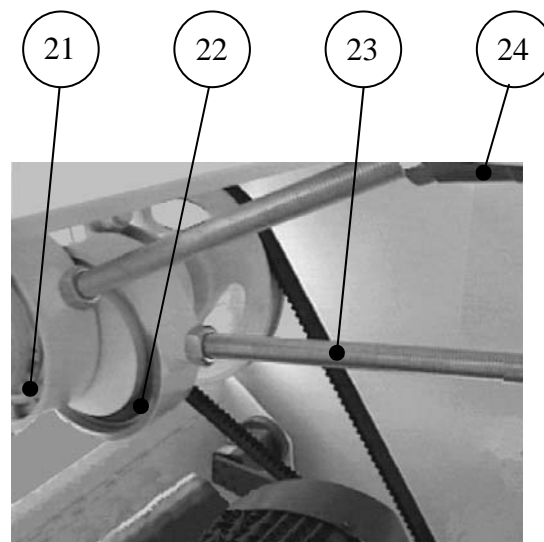


Fig. 14

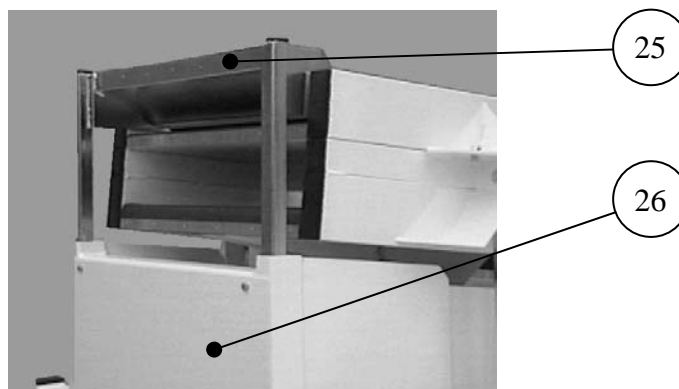


Fig. 15

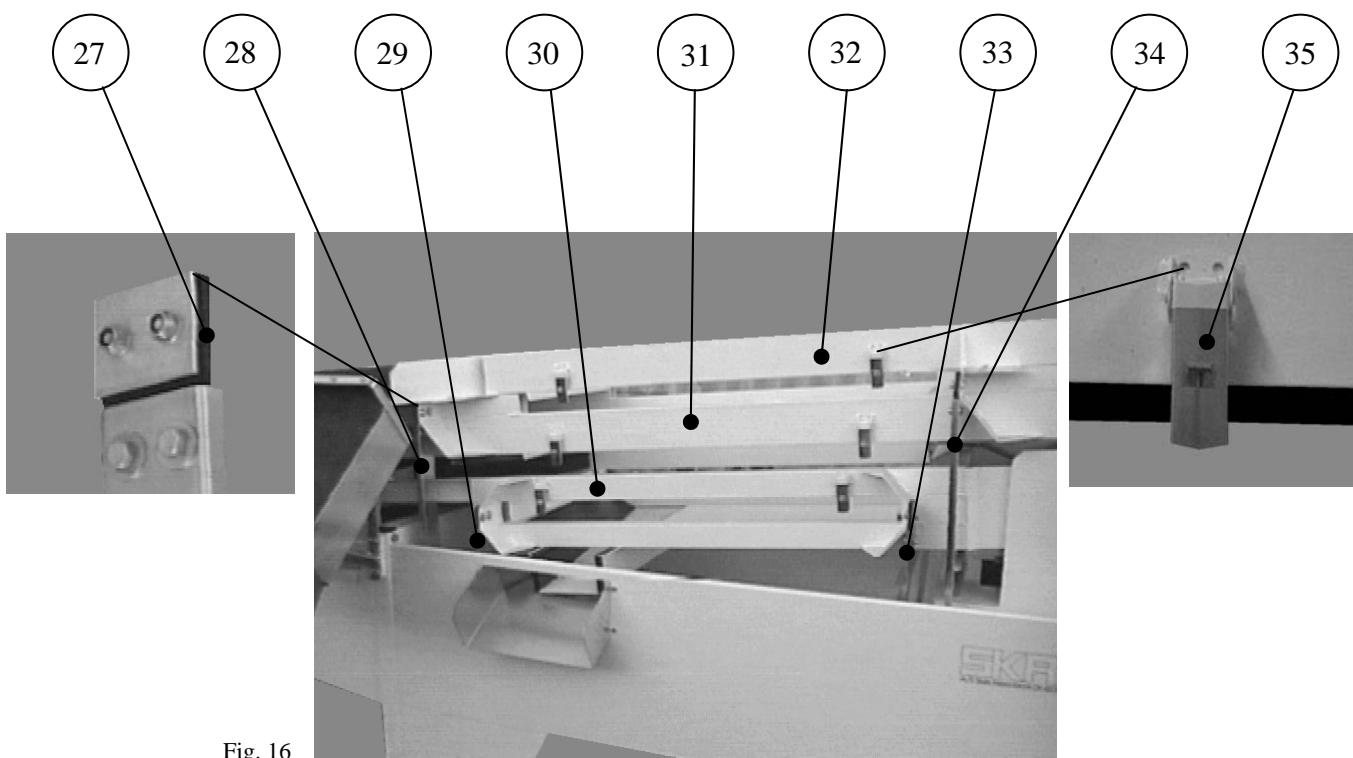


Fig. 16

Fig. 17

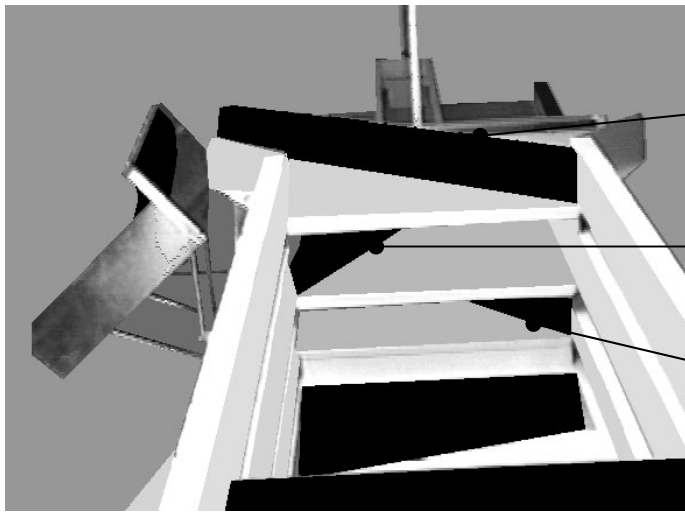
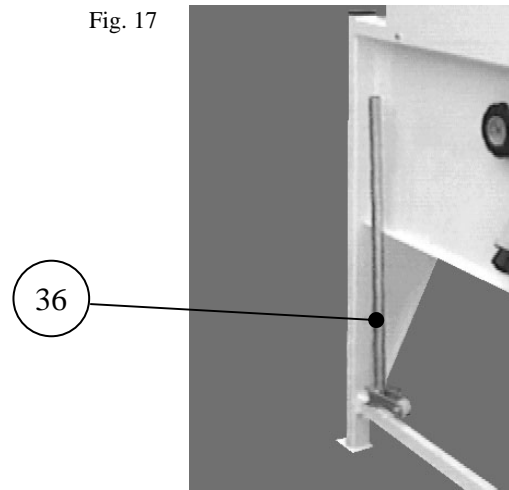


Fig. 18

Fig. 19

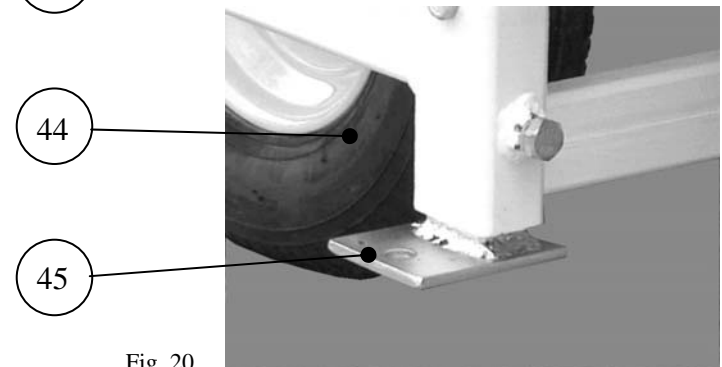
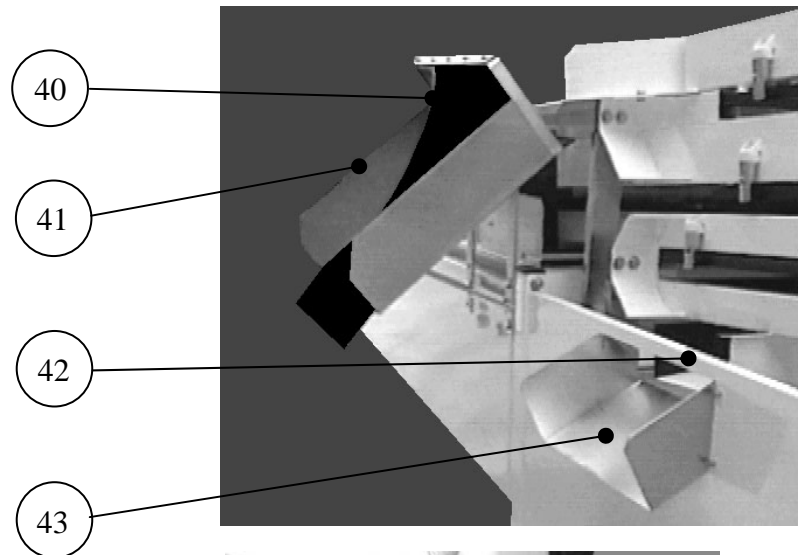


Fig. 20

Page	Fig. no.	Pos. no.	Description
7	9	1	Handle
7	9	2	Clock
7	10	3	Threaded bearing
7	10	4	Threaded spindle
7	10	5	PVC bush
7	11	6	Variator pulley
7	11	7	Motor
7	11	8	V-belt
7	11	9	Small countershaft pulley
7	11	10	Belt tension pulley
7	11	11	Rosta tensioner
7	12	12	V-belt
7	12	13	Large countershaft pulley
7	12	14	Countershaft bearing
7	12	15	Ball bearing
7	12	16	Motor mounting
7	12	17	Countershaft
8	13	18	Crankshaft pulley
8	13	19	Crankshaft
8	13	20	Connecting rod bearing housing
8	14	21	Locking ring
8	14	22	Connecting rod bearing
8	14	23	Connecting rod
8	14	24	Rosta unit
8	15	25	In-feed
8	15	26	Shield
8	16	27	Rubber suspension unit
8	16	28	Rear long support tongue
8	16	29	Rear short support tongue
8	16	30	Lower riddle case
8	16	31	Middle riddle case
8	16	32	Upper riddle case
8	16	33	Front short support tongue
8	16	34	Front long support tongue
8	16	35	Riddle clasp
9	17	36	Lifting lever
9	18	37	Upper guide
9	18	38	Middle guide
9	18	39	Lower guide
9	19	40	Rubber flap
9	19	41	Outlet for large potatoes
9	19	42	Outlet plate
9	19	43	Outlet for small potatoes
9	20	44	Wheel
9	20	45	Adjustable support legend retaining bolt.

## 9.0 Declaration of conformity with EU.



### Declaration of conformity with EU.

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

declares herewith, that

<b>Machine:</b>	<b>Grading machine</b>
Brand:	<b>SK603/SK604</b>
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.

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

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

