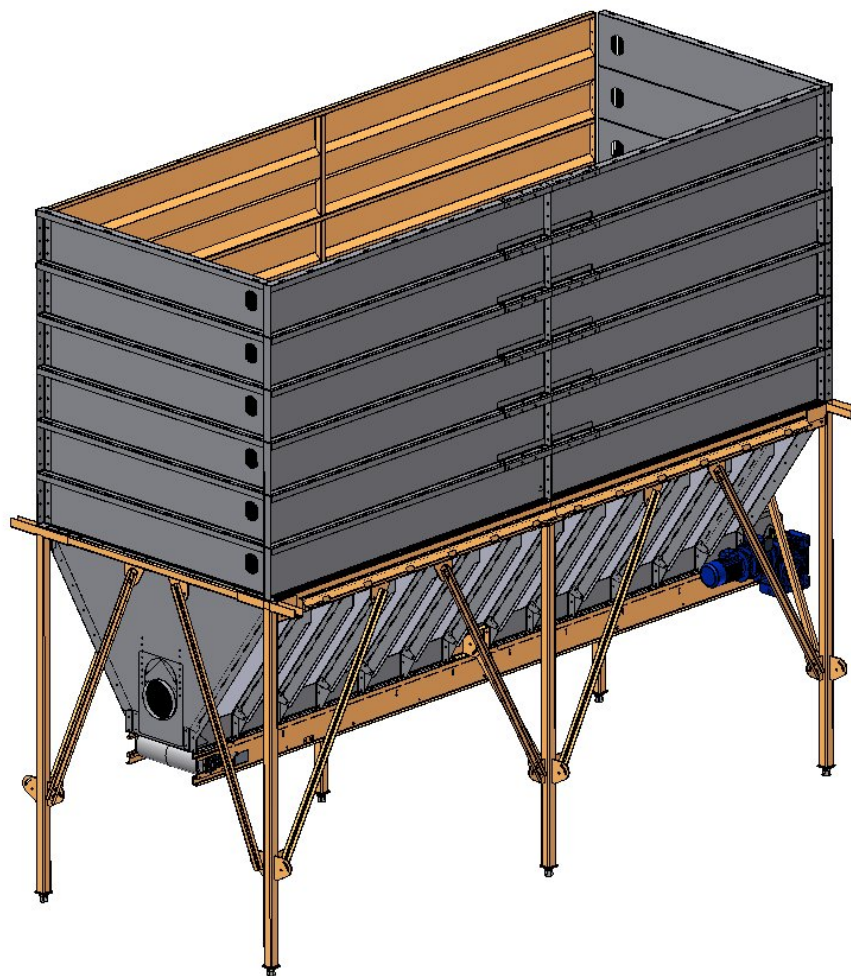


# INSTRUCTION MANUAL

## Hopper type AVN 660



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## 1.0 Purpose and scope of operations

The hopper is designed to be used for storing and dosing potatoes, onions and similar products.

## 2.0 Installation

The hopper must stand upright and absolutely level, supported evenly on all four legs.

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 hopper is supplied with a motor relay, connect the power supply to this.

## 2.1 Installation of accessories

A vertical hopper extension can be supplied as an accessory. The size depends on the extra volume required. The side sections of the extension are bolted to the rim of the hopper.

## 3.0 Operation

When the hopper has been correctly placed in relation to other machines in the production sequence, start the machine by activating the motor relay.

The conveyor is supplied with a variable speed regulator, 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.**

## 4.0 Pictograms

Danger! Keep hands away from outlet. Keep a safe distance.

## 5.0 Lubrication and maintenance

All bearings, cylinder motors and cylinders are lubricated for life and require no further maintenance.

The worm drive type NMRV150 for the main conveyor is lubricated for life with IP TELIUM VSF, a synthetic grease suitable for a normal temperature range of -15°C to + 40°C.

### Recommended oils:

IP	Telium VSF
Shell	Tivela oil SC320
Agib	Blasia S320
Mobil	Glygoyle 30

Change oil after 5,000 production hours.

The variator 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:**

-249	
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.

Cylinders that are not driven directly by the motor are lubricated for life and require no maintenance.

In the case of a fault, the cylinder must be removed and returned to the factory for repair.

The conveyor must be kept taut and straight by adjusting the tension bolts on the conveyor.

## 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, conveyor cylinders, 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 / packaging:

Number of units:

The machine is packed complete as one unit.

Weight (incl. conveyor): 3200 kg.

Dimensions (incl. conveyor):	<b>Length</b>	<b>Width</b>	<b>Height</b>
	6375 mm.	2500 mm.	5300 mm.

## 7.0 Transport and lifting instructions

Should it be necessary to lift the silo, this **must** be carried out by using nylon straps fitted to the frame, as shown in the illustration below (fig. 1).

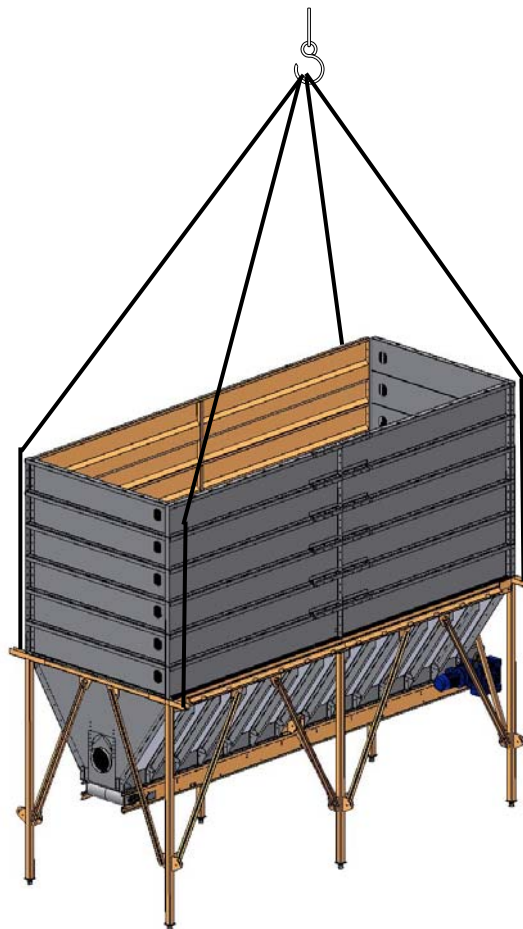
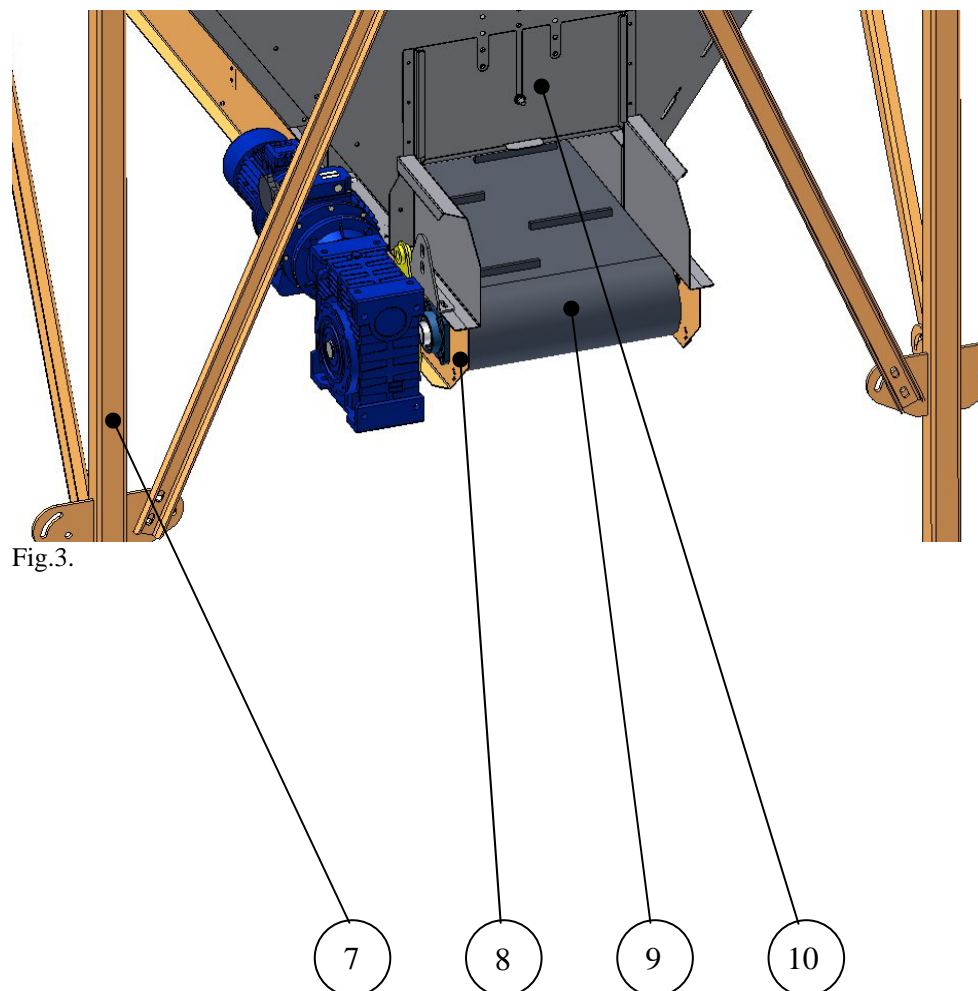
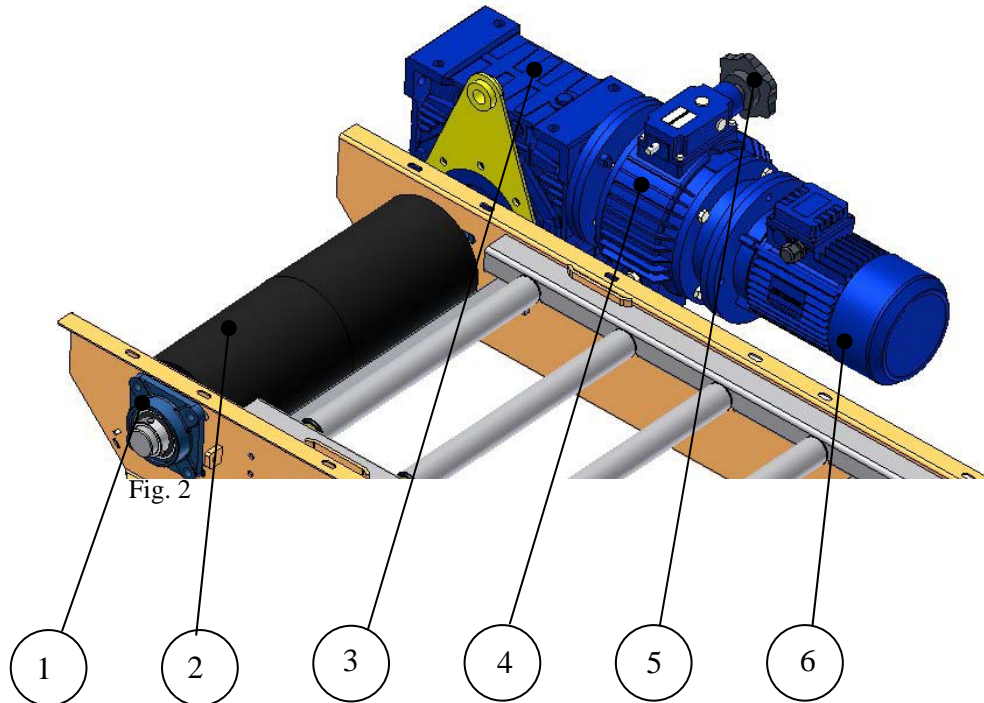


Fig. 1.

## 8.0 Spare parts

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



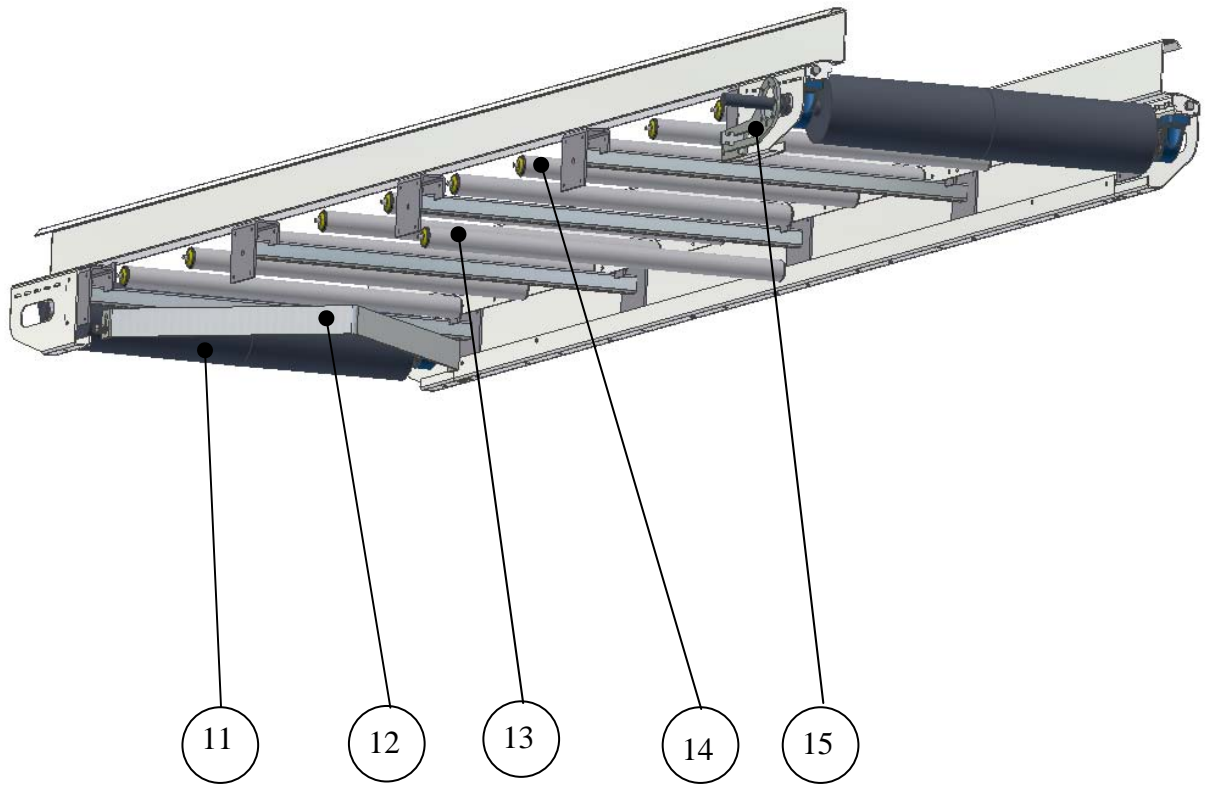


Fig.4.



<b>Page</b>	<b>Fig. no.</b>	<b>Pos. no.</b>	<b>Description</b>
5	2	1	Bearing with bearinghouse
5	2	2	Driveroller
5	2	3	Gear
5	2	4	Variator
5	2	5	Clock
5	2	6	Motor
6	3	7	Frame for silo
6	3	8	Conveyer
6	3	9	Belt
6	3	10	Shutter
7	4	11	Roller
7	4	12	Cleaning bracket
7	4	13	Return roller
7	4	14	Support roller
7	4	15	Bracket for Gear



## 9.0 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>Hopper</b>
<b>Brand:</b>	<b>AVN</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
<b>Name:</b>	Søren Lund Madsen
<b>Firm:</b>	A/S Skals Maskinfabrik

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

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