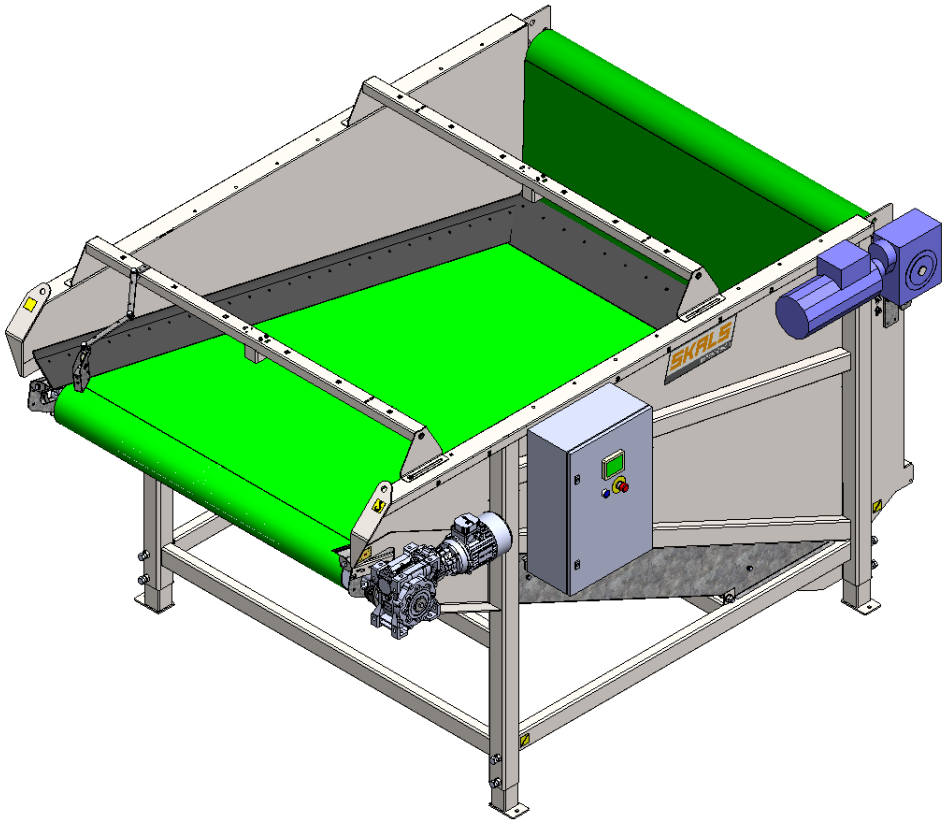
Manual

ABF Evenflow R1



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CE

Contents

1 Introduction

Read this user manual thoroughly before using the machine.

The machine is use for storing and supplying potatoes, onions, carrots and other similar products.

The machine may be operated in a temperature range of -10 to +40 °C.

The information plate and CE label are positioned on the side of the machine, close to the control panel.

2 Safety

Any persons working in the close vicinity of the machine must not wear loose-fitting clothing as this may be hazardous.

2.1 Pictograms

Two types of pictograms are positioned on the machine.

Warnings

HAZARD - ROTATING PARTS.
Avoid touching or coming into contact with the machine's moving parts. This applies to fingers and clothing, since this can lead to mutilation.

CRUSH HAZARD.
Avoid touching or coming into contact with the machine's moving parts. This applies to fingers and clothing, since this can lead to mutilation.

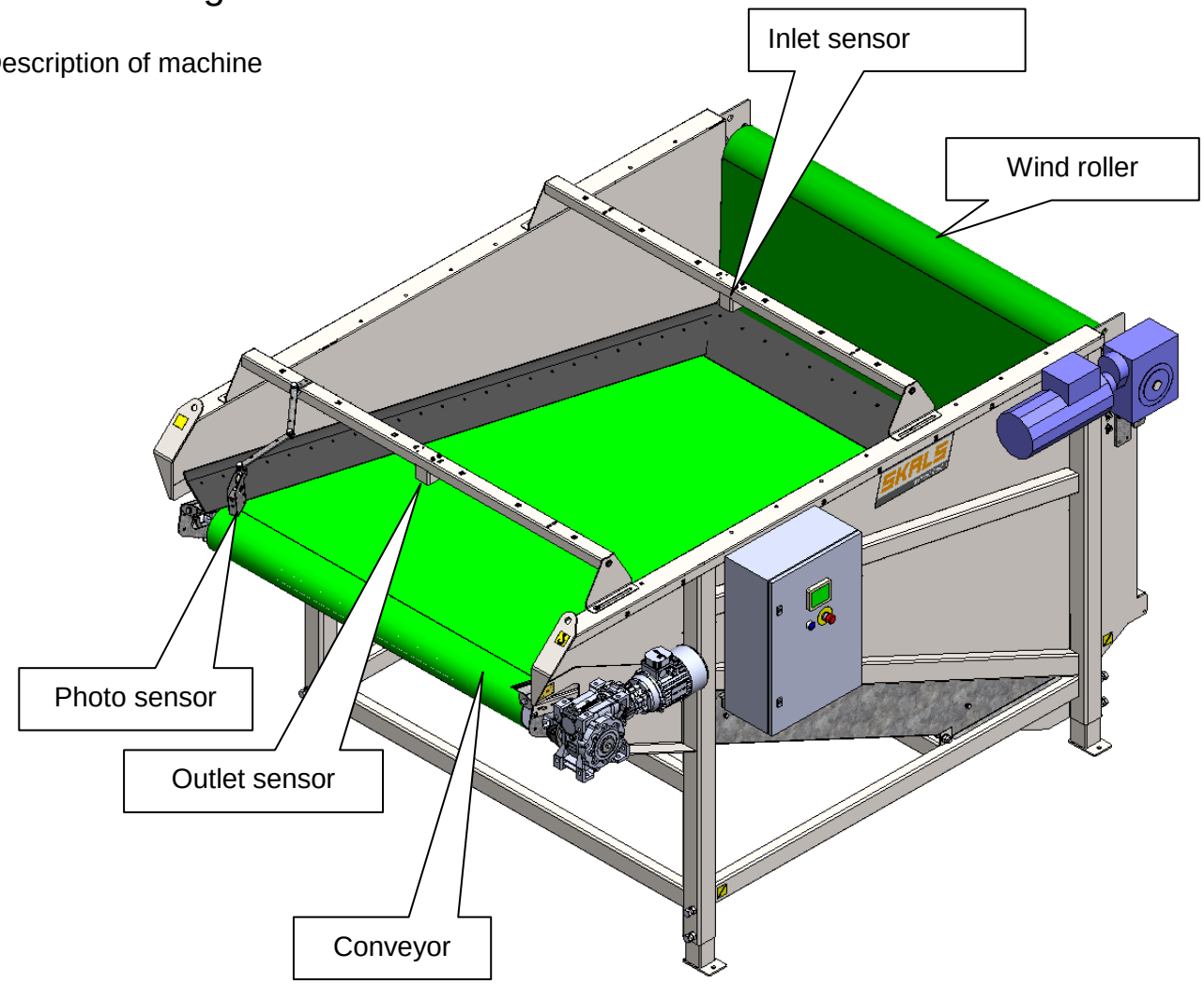
Instructions

HOOK
Describes where the hook must be positioned when the machine is to be lifted by a crane.

STRAP HERE
Describes where the machine shall be secured during transport.

3 In general

Description of machine



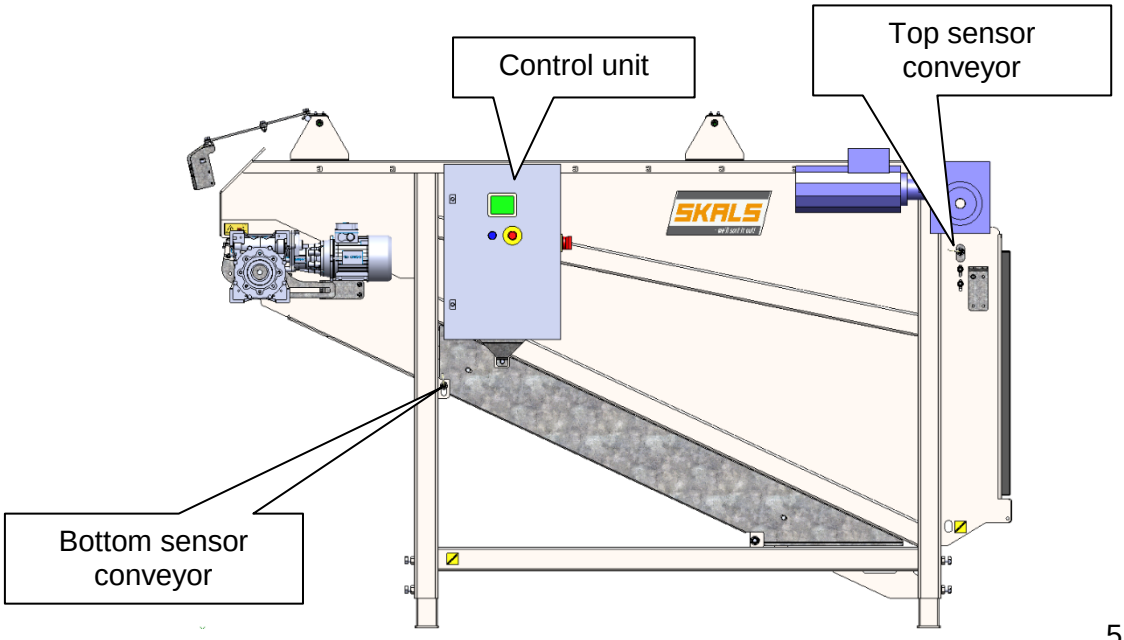
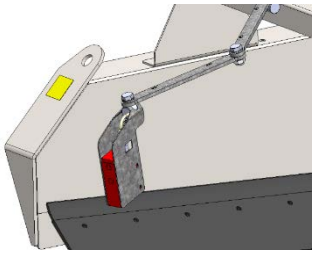


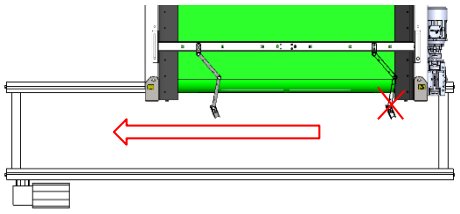
Photo sensor

The photo sensor is there to stop the conveyor if the amount of product in front of the conveyor piles up and needs to be reduced.

There is a level-adjustment screw in front of the sensor.

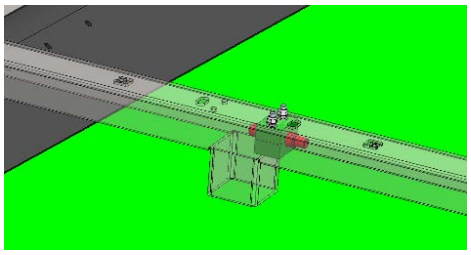


If a conveyor is positioned at a right angle at the end of the machine, the photo sensor must be positioned in the side where there is the greatest amount of product.



Inlet and outlet sensors

The inlet sensor measures the product level and sends a signal to raise/lower the conveyor, to keep the falling height on a constant low level.

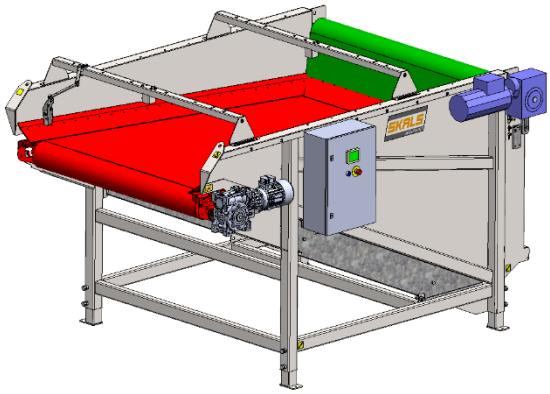


The outlet sensor measures the product level in the outlet and sends a signal to regulate the speed of the conveyor to ensure there is an even flow of products out of the machine.

Conveyor

The conveyor is suspended in the front end in an open hemisphere.

This open hemisphere ensures that the conveyor can easily be removed from the machine for servicing or repair.

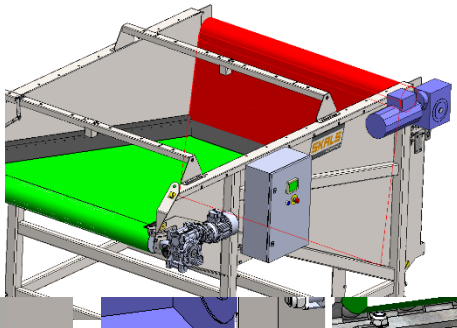


Wind roller

The wind roller lowers/raises the conveyor.

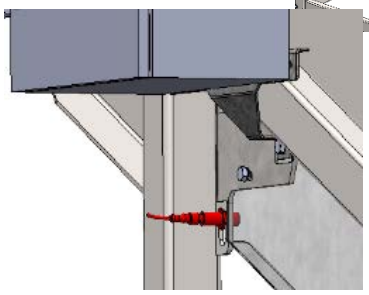
It is controlled by the level that the inlet sensor is set to.

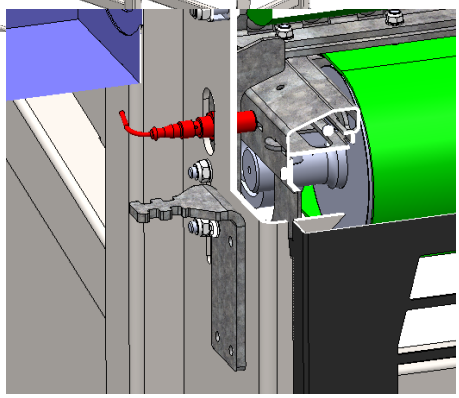
The wind roller is stopped by the conveyor's top and bottom sensors.



Top and bottom sensors

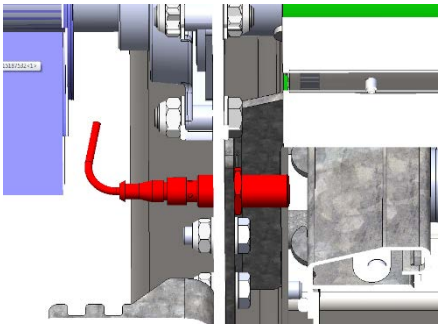
The top sensor is activated when the conveyor has reached the top and stops the wind roller motor.





The bottom sensor is activated when the conveyor reaches the bottom and sends a signal to the control unit to stop the machines in front of this machine.

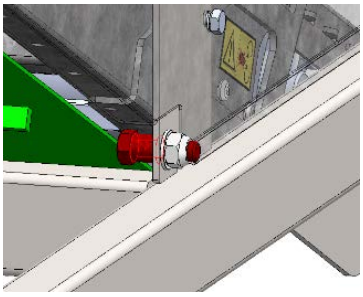
The sensors must be fitted with a distance of max. 8 mm to the conveyor to ensure they activate.

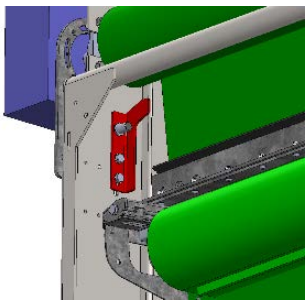


Mechanical stop

It is important that the sensors are adjusted to ensure that the conveyor does not touch the top and bottom mechanical stops.

These stops are only fitted as an extra safety measure should the control unit fail.





4 Operation

Before commissioning the machine, check to ensure it has not been damaged during transport. Any defects must be reported to the dealer immediately.

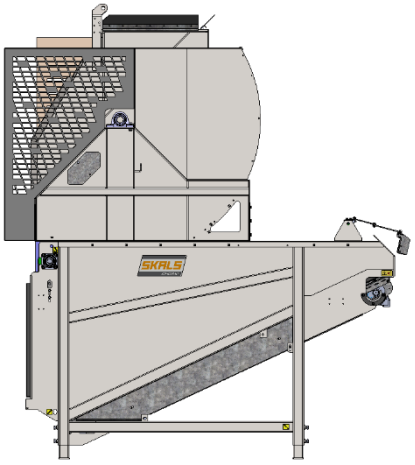
4.1 Setting up

To ensure correct operation, the machine must be placed on a stable and level surface.

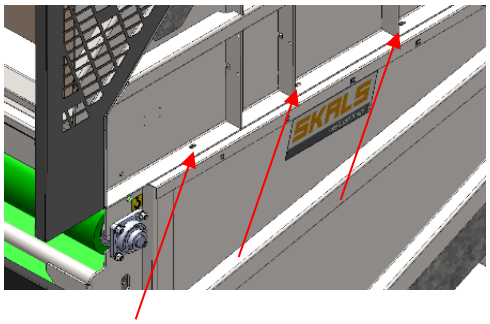
The photo sensor is the only device that shall be adjusted and set.

Special set-up

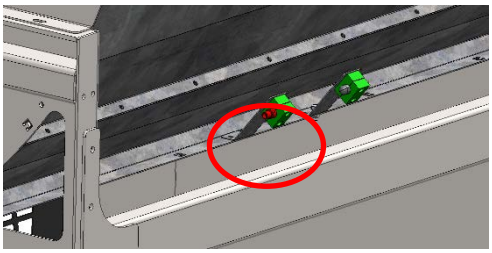
If an ABF 1825 is to be positioned in combination with a KCS box turner, they must be positioned as shown in the image.



Fit three M10 bolts in each side between the two machines.



The inlet sensor, which normally is positioned in the cross bar, must instead be positioned in the box turner, as shown in the image.



4.2 Electrical connection

The electrical connection must comply with applicable national regulations.

Three-Phase 400 V - N + PE

5 Control unit

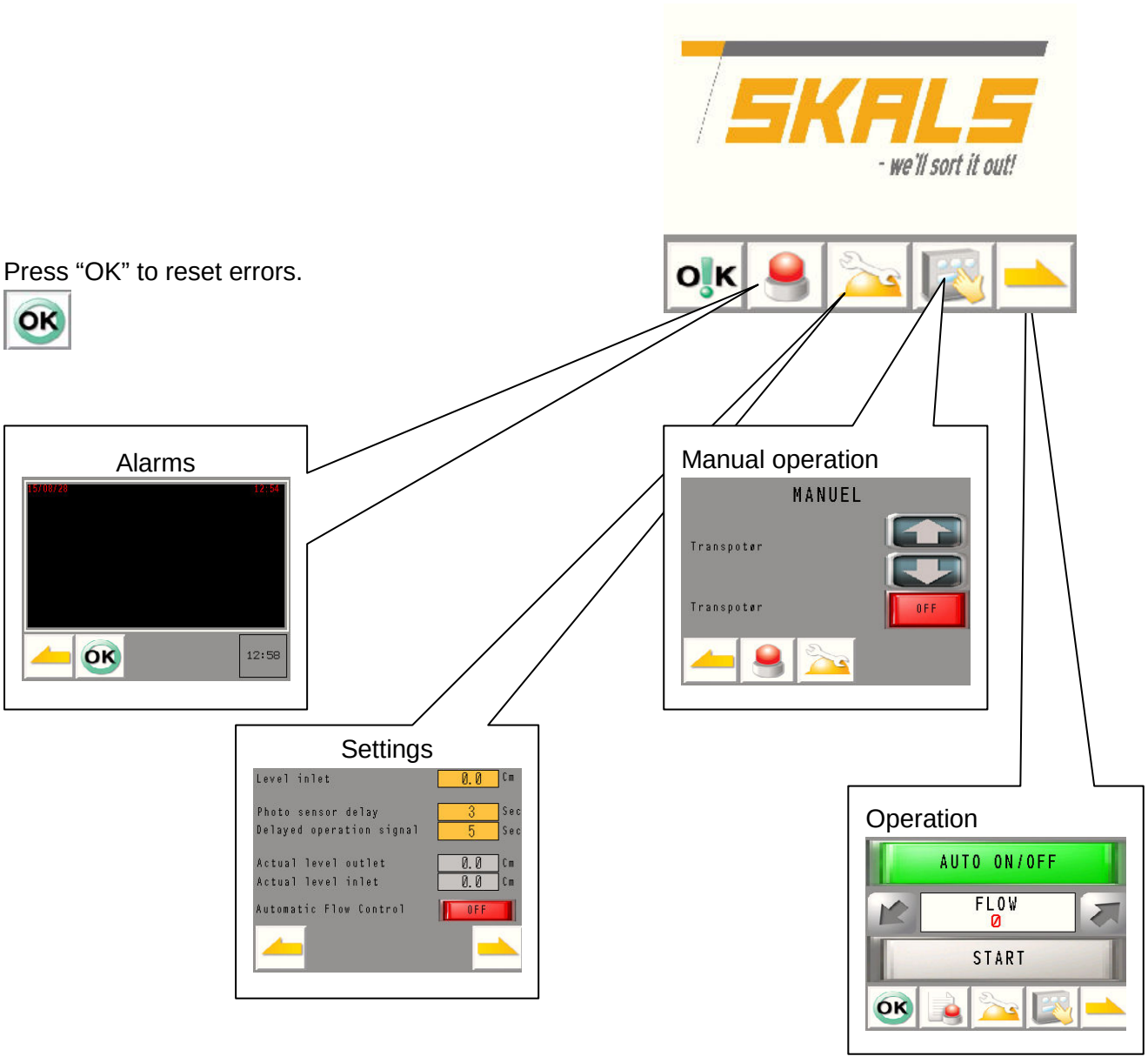
5.1 In general

All operations and settings are carried out via the operating panel. All errors are also displayed here.

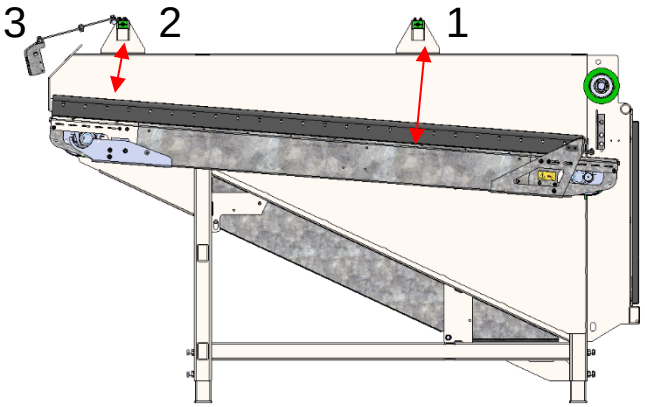
Home screen
The Home screen is shown at start-up.

Select the desired function in the Home screen.

Press “OK” to reset errors.



Settings



There is a sensor (1) in the inlet, which registers the level in the hopper.

The desired level can be set under LEVEL INLET. (Default 35 cm – distance from sensor to products)

When products enter the inlet, the sensor ensures that the conveyor is lowered at suitable intervals, so that the drop height is kept to a minimum.

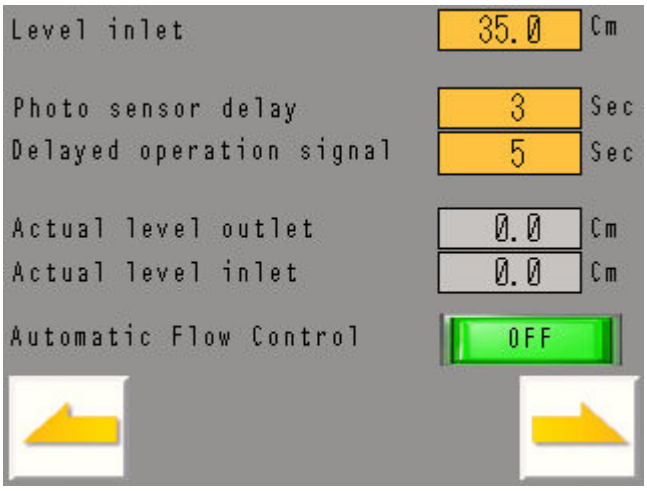


PHOTO SENSOR DELAY is the delay in seconds that is wanted from when the photo sensor (3) registers the receiving machine is full, until Evenflow stops feeding the machine. (Default 3 seconds)

DELAYED OPERATION SIGNAL is a signal that ensures the feeding system for Evenflow does not start/stop too often. (Default 5 seconds).

ACTUAL LEVEL OUTLET is the level measured by the sensor (2). This value is used for calculating the feed belt speed, depending on which setting is chosen under FLOW.

If the AUTOMATIC FLOW CONTROL is OFF, Evenflow will operate at a constant speed in relation to the setting under FLOW.

In other words, the operator can choose between a manual speed setting or an automatic setting, which will ensure uniform flow depending on the filling in the hopper.

Automatic and manual operation settings

AUTO ON/OFF is used when the operation is controlled by an external START Signal.

AUTO ON/OFF must be on and the external start signal must be high to run the machine.

MAN. START is a direct start of the machine.

FLOW is the wanted flow value. When AUTOMATIC FLOW CONTROL is OFF, the FLOW value relates directly the outfeed conveyor speed.

Alarms

Press the ALARM icon  to view the alarms.

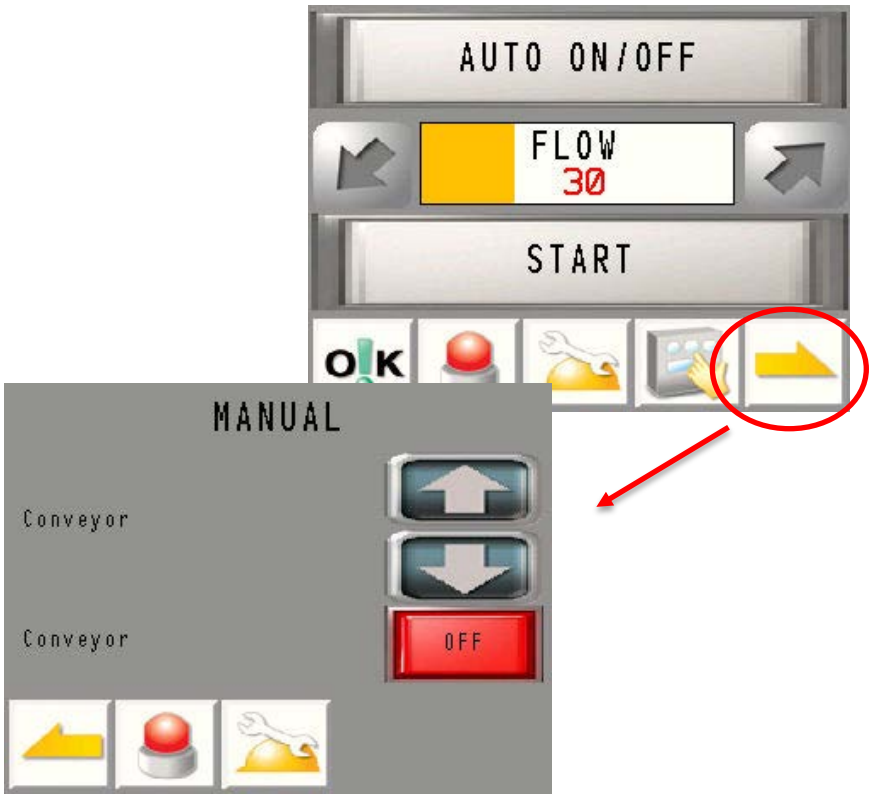
Press “OK”  to reset errors.

Manual operation

Press the RIGHT ARROW icon on the operating screen to view the manual functions.

The feed conveyor can be raised and lowered.

The feed belt can be started and stopped.



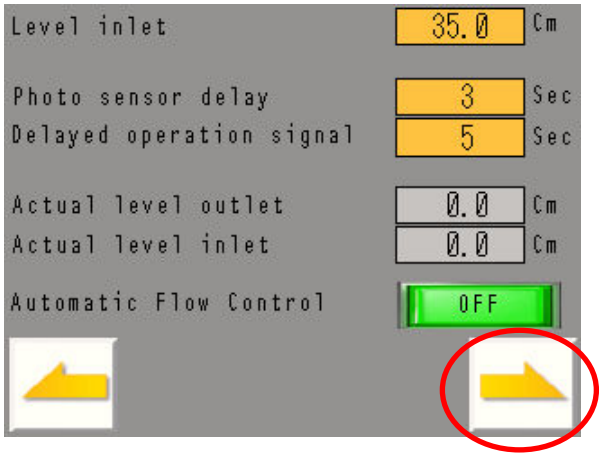
Capacity (related to Automatic Flow Control).

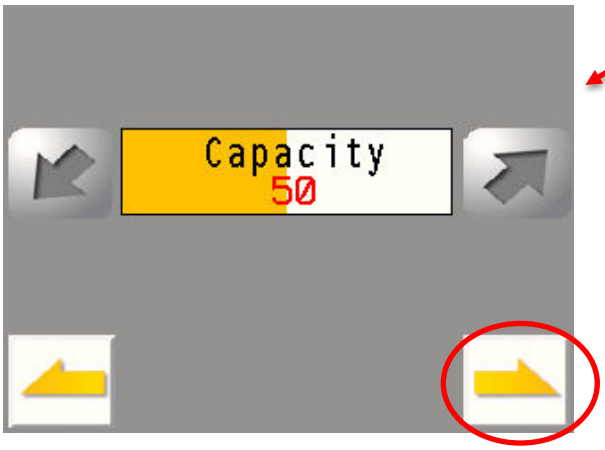
From the SETTINGS menu press ARROW RIGHT for entering settings of the machine capacity.

At minimum setting (0%) the machine works in an interval of approx. 3 – 20 ton/hour with potatoes.

At max. capacity (100%) the machine works in the interval of approx.. 3-40ton/hour.

It is an advantage to set the machine capacity to match the actual needs, since the automatic flow control will be more precise especially at lower settings.





Language

From the settings screen, press the RIGHT ARROW icon to access the language menu. There are four possible languages to choose between.

From this page all parameters can b eset to default by pressing the DEFAULT icon.

6 Service and maintenance

During service and maintenance, ensure power has been disconnected at the main switch and the main switch is locked.

Bearings

All bearings have been lubricated from the factory and require no maintenance.

Gears

The gear that drives the conveyor has been lifetime lubricated with synthetic grease for operating in the standard temperature range (-10 to +40 °C).

The same applies to the gear for the wind roller.

Belt

The machine is fitted with a PVC belt.

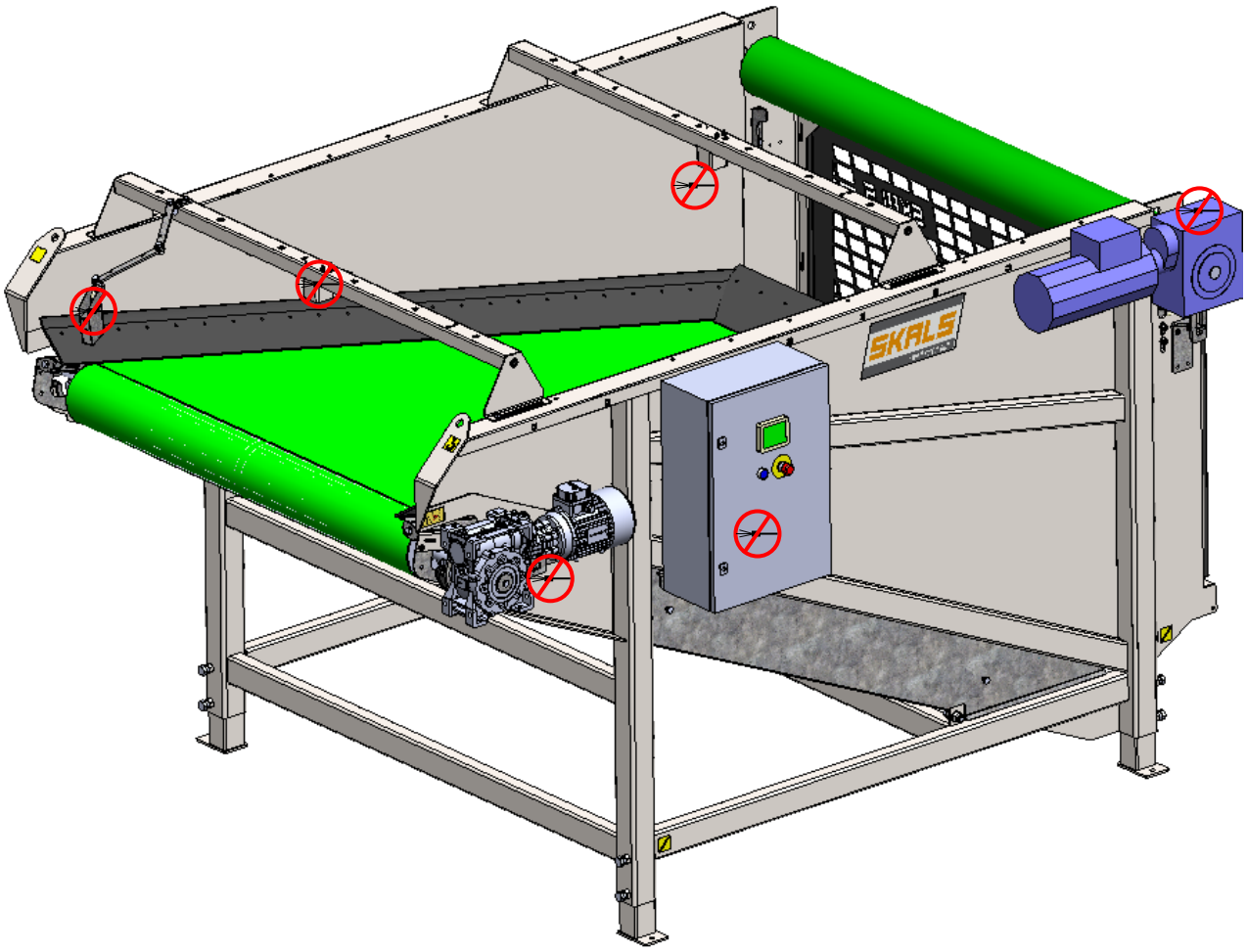
The belt must be checked regularly to ensure it operates in the centre of the conveyor and adjusted if required to ensure a long lifetime.

At all times it is the responsibility of the owner to ensure the belts have been adjusted correctly.

If the belts have not been adjusted correctly, the warranty for the belts is void.

7 Cleaning

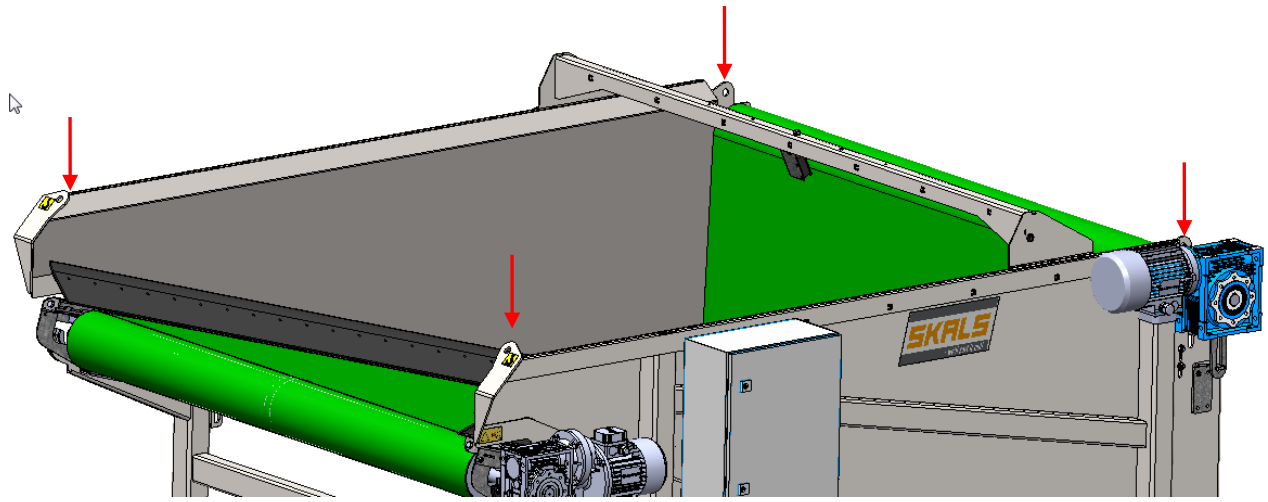
When using a high-pressure cleaner, do not point the jet directly at the following areas:
loose drum, gear motors, control cabinet, electronic control box, load cell, connectors and motors on vibrators.



Good cleaning and maintenance are important for achieving a high degree of reliable operation and low maintenance costs.

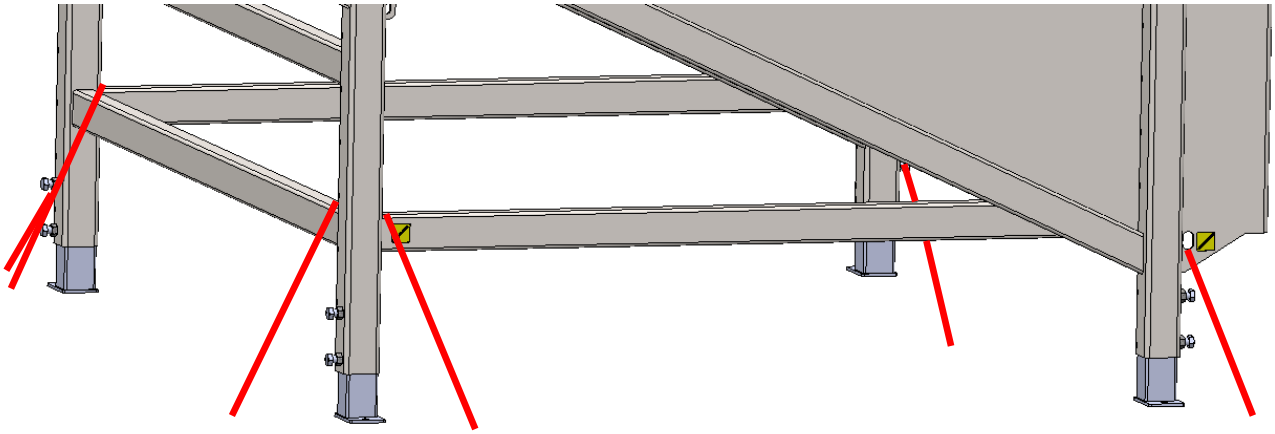
8 Transport

If the machine shall be lifted by crane, this must be done using the integrated lifting points in the top of the machine.



NB: Always stay well clear of suspended loads.

During transport, the machine must be secured to the surface, as shown with the red lines.



9 Troubleshooting

NB: The machine must ALWAYS be switched off at the main switch when work on mechanical parts shall be carried out.

Fault

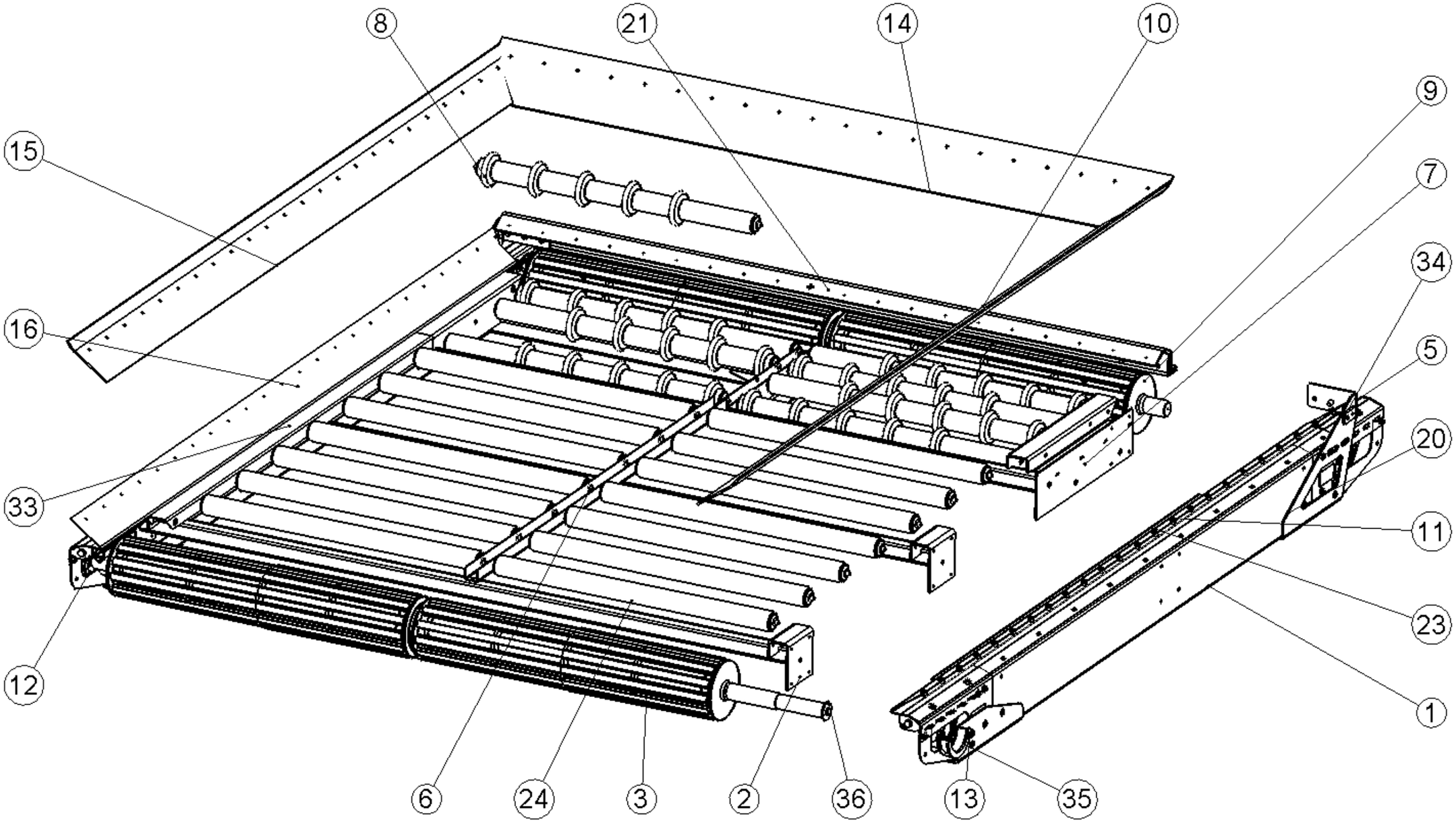
Fault	**Cause**	**Solution**
Emergency Stop Circuit can not be reset	The emergency stop is activated.	Release emergency STOP button and press RESET.

10 Spare parts list

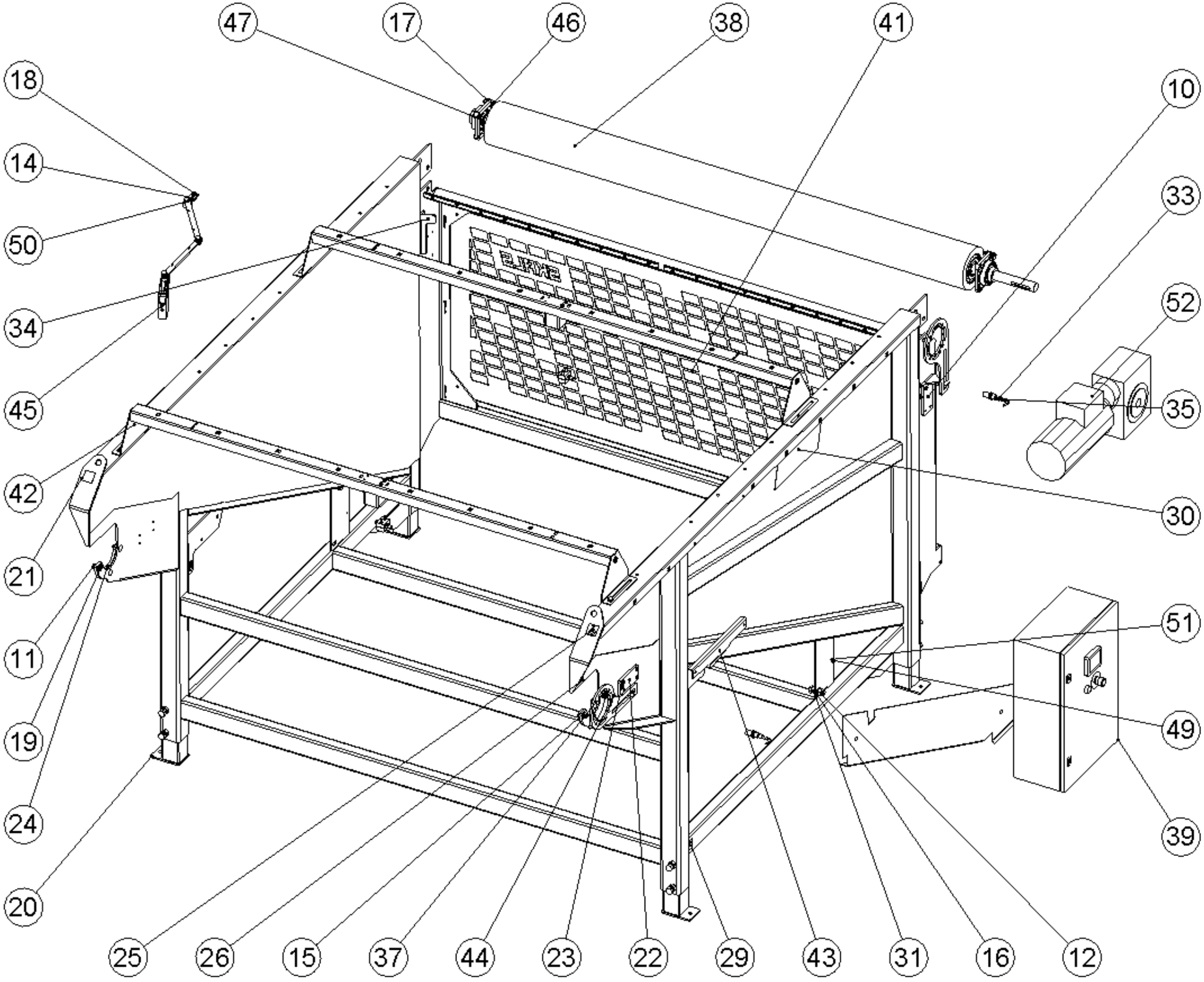
When ordering spare parts, please state machine type, serial number and any product number.

NO.	PART NO.	DESCRIPTION	Description GB
1	16640025	L/B Vange for16 transportør	Beam
2		Tværstiver for trp. svejst	Cross bar
3	35400350-90	Træktr. rib HD m.spor t.styreprofil sv.	Drum
4		PVC bånd med 1 styreprofil	Belt
5	60000727	Samlet transportør ende ø40 h/v	Bearing end
6	20001431	L/B Kanal for styreprofil	u-profile
7	60000780	Tværstiver til TG16 svejst	Cross bar
8	60000785-1800	Transportrulle til TG16 samlet	roller
9	35500250	Løstromle rib HD m.spor t.styreprofil	Drum
10	20002663	Side gummi til evenflow	Rubber
11	20002662	L/B Sideplade til evenflow h/v	Site plate
12	60000781	Ophæng udløbsende t. trp. sv. h/v	Bracket for outlet
13	60000781	Ophæng udløbsende t. trp. sv. h/v	Bracket for outlet
14	20002664	Indløbs gummi til evenflow	Rubber
15	20002663	Side gummi til evenflow	Rubber
16	20002662	L/B Sideplade evenflow	Site plate
17	16761816	Gevindform. skrue M8x16	Screw
18	16761817	Gevindform. skrue M8x12	Screw
19	20002666	L/B Vinkelskinne til indløb	Bracket for indlet
20	20002665	L/B Ophæng indløbsende til trp. h/v	Suspention
21	20002667	L/B Bagplade til indløb	Bracket
22	16890132	Bræddebolte 10x25 kv. 4,6	Bolt
23	20002658	L/B Gulerodsskinne h/v	Rail
24	15573834	TRANSP.RL. STÅL GA Ø50x1,5 834	roller
25	16762636	Gevindformede skrue undersænket M6x16	Screw
26	16930105	Unbraco flangehoved M8x25	Bolt
27	17000062	Låsemøtrik M8	Nut
28	17000064	Låsemøtrik M10	Nut
29	17095066	Skive M8 Facet	Washer
30	Facatskive	Skive M10 Facet	Washer
31	20002665	L/B Ophæng indløbsende til trp.	Suspention for indlet
32	16910316	Stålsætskrue M10x25	Bolt
33	20002658	L/B Gulerodsskinne h/v	Rail
34	20003401	Glidestyr på transportør. ABF	Guide rail
35	60000727	Samlet transportør ende ø40 h/v	Bearing end
36	17095011	SKIVE 10 SPÆNDPLADE RUND 440 F ZV 10X50MM	Washer

Conveyor



NO.	PART NO.	DESCRIPTION	Description GB
10	20002654	Beslag for momentarm lang galv.	Bracket for moment arm
11	17000064	Låsemøtrik M10	locknut
12	17000070	Låsemøtrik M16	locknut
13	Låsemøtrik ELFORZ.	Låsemøtrik M12	locknut
14	17000062	Låsemøtrik M8	locknut
15	Facatskive	Skive M10 Facet	Washer
16	17095074	Skive M16 Facat	Washer
17	17095070	Skive M12 Facet	Washer
18	17095066	Skive M8 Facet	Washer
19	16890134	Bræddebolte 10x30 kv. 4,6	Carriage bolt
20	3TR00303	Indstillig ben understel 70x70	Adjustable leg
21	60000775-1825	Stel til even flow svejst	Welded frame
22	20002966	L/B Beslag for momentarm	Bracket for moment arm
23	16761816	Gevindform. skrue M8x16	thread-forming screw
24	20002651	Halvmåne yderste	Half bowl
25	19980006	Label - Krog	Label - hook
26	19980008	FARE roterende dele	Label - rotating parts
27	16910472	Stålsætskrue M16x30	Set screw
28	16910480	Stålsætskrue M16x50	Set screw
29	19980014	Label - stroppes her	Label - attach here
30	19980010	Label Skals logo STR:150x310MM	Label - Skals logo
31	20003408	Rør til stop	Stop
32	20002652	Stop til transportør h/v galv.	Mechanical stop
33	10024523	Induktiv Sensor BES0008L	Induktive sensor BES0008L
34	Mirror20002652	Stop til transportør h/v galv.	mechanical stop
35	10024522	M.D.KABEL CD12M/0B-050-A1-5M	Cable
36	16910318	Stålsætskrue M10x30	Set Screw
37	16910316	Stålsætskrue M10x25	Set Screw
38	60000796-1800	Oprullertromle samlet	Drum
39	60001165	Styring til ABF eventlow	Control cabinet
40	20003405	L/B Sideskærm h/v. ABF	Side guard
41	20003402	L/B Skærm til bagende. ABF	rear guard
42	60000914	Bom til ultralydssensor samlet	Cross bar
43	20002653	L/B Plade til styreskab	Bracket
44	16640018	L/B Momentarm for 90 gear	Moment arm
45	60000549	Komplet samling af fotocelle	Arm for fotosensor
46	16910380	Stålsætskrue M12x40	Set screw
47	15410025	Lejehus NAF207 m. leje	Bearing housing
48	17160010	SKIVE Ø10 Centerfjeder STÅL Z DIN 128	Spring washer DIN 128
49	17160008	SKIVE Ø8 Centerfjeder STÅL Z DIN 128	Spring washer DIN 128
50	16910260	Stålsætskrue M8x25	Set screw
51	M8 ELFZ. STSSKR.	Stålsætskrue M8x12	Set screw
52	15187532	GEARMOTOR NMRV90 1,5kW m. mellemgear	Gearmotor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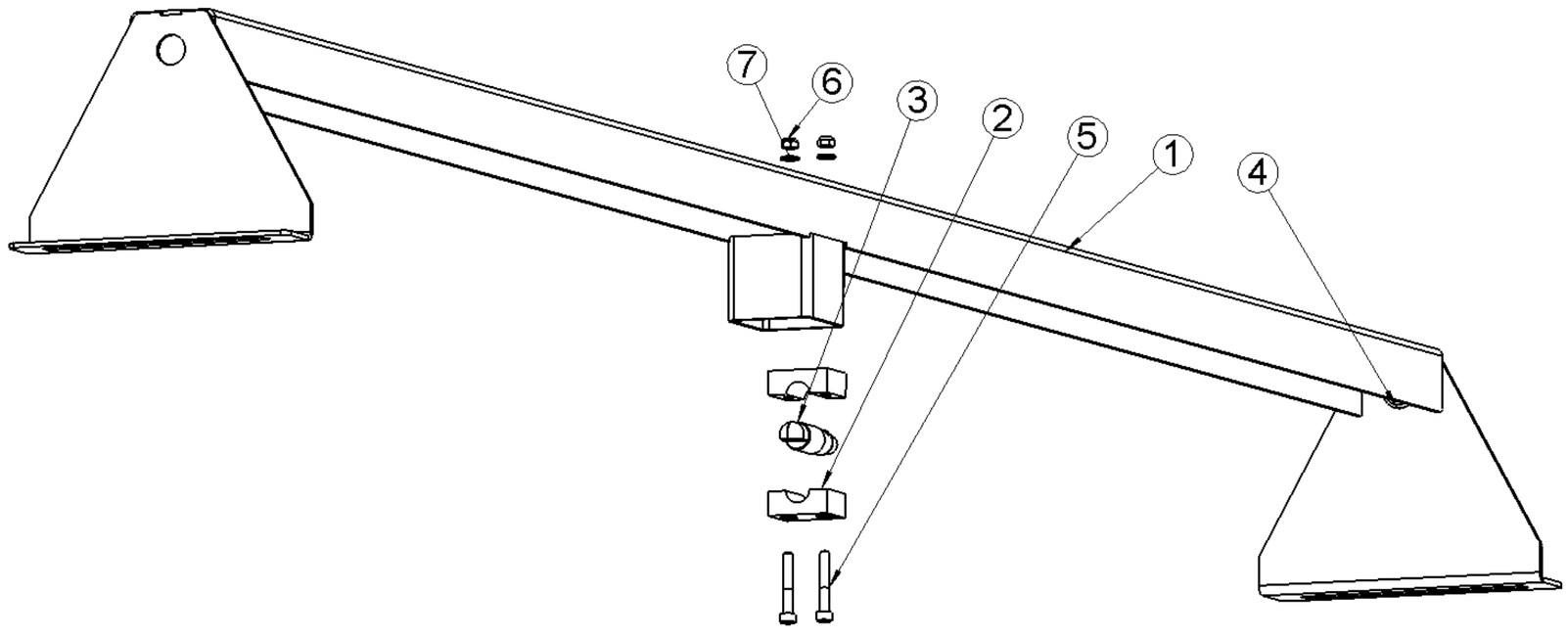

NO.	PART NO.	DESCRIPTION	Description GB
1	60000913	Bom til ultralydssensor svejst	Cross barC5
2	11000373	RØRHOLDER 1 X Ø17,1	Pipe clamp
3	10024300	Ultralydssensor pico+35/WK/I	Ultrasonic Sensor
4	10017507	GUMMIGENNEMFØRING 12X20X24X4	Rubber bushing
5	16926141	Umbrakoskrue M6x40	Allen screw
6	17000058	Låsemøtrik M6	Locknut
7	17095062	Skive M6 Facet	Washer

11 Diagrams

EU Declaration of conformity

Manufacturer	
Company name:	A/S Skals Maskinfabrik
Address:	Hovedgaden 56
	8832 Skals, Denmark
Telephone:	+45 87 25 62 00

hereby declares that

Machine:	**Evenflow**
Brand:	**ABF**
Type, serial no., year:	

Has been manufactured in conformity with the:

1 Machinery Directive 2006/42/EC
2 Low Voltage Directive (LVD) 2006/95/EC
3 Electromagnetic Compatibility (EMC) Directive 89/336/EEC and the amended 93/68/EEC.

Title:	Production Manager
Name:	Søren Lund Madsen
Company:	A/S Skals Maskinfabrik

Date:_____ Signature:_____