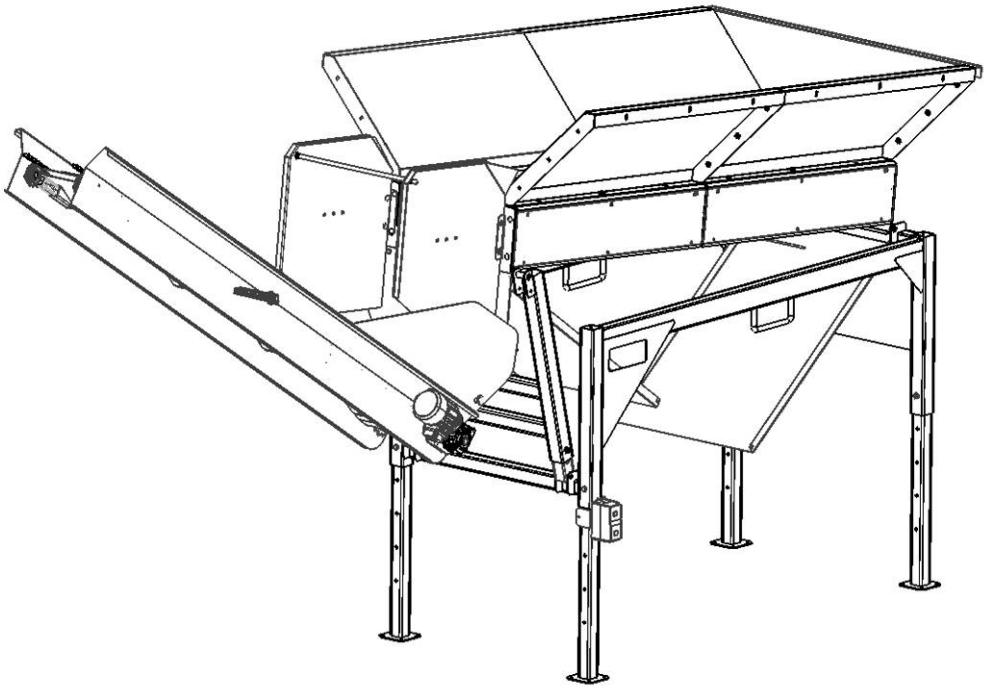
Roller

EVO 2

Manual
Spare Parts Book



SERIAL NUMBER _____

YEAR OF MANUFACTURE _____

TABLE OF CONTENTS

1. Basic information and responsibilities

1.1. Introduction

This manual is intended for a professional user. Normal general knowledge and skills are required of an operator of the machine. For example, the buyer of the tractor-powered machine is expected to be able to use the power take-off (PTO) shaft transmission of the tractor.

The operator of the machine must carefully read the manual before installing the machine and beginning to work. Before getting started, you should also familiarize yourself with the machine controls and the emergency stop mechanism. More information about our company's products can be found on our website at www.palax.fi.

NB! Always keep the manual in the immediate vicinity of the machine.

1.2. EU Declaration of Conformity

Directive 2006/42/EC

Manufacturer:	TP Silva Oy www.palax.fi Lahdentie 9 61400 Ylistaro Finland +358 6 474 5100
Technical file officer:	Timo Jussila
Product:	Debris drum and extension conveyor, An optional accessory for TP-Silva firewood processors.
Powered by:	Electric motor / tractor PTO
Models:	Roller

Serial number of the machine: _____

We hereby certify that the machine meets the requirements of the Government Decree 12.6.2008/400 on safety of machinery through which the Machine Directive 2006/42/EC has been put into effect, and that during the manufacturing process, the following harmonized standards have been applied:

SFS-EN 12100-1+A1, SFS-EN 12100-2

TP Silva Oy
01.01.2023

Seppo Koiranen

Seppo Koiranen
Chief Executive Officer

1.3. Purpose of the machine

A debris drum and an extension conveyor are optional accessories for TP-Silva firewood processors. Using the machine for any other purpose or connecting it to any other machine is prohibited.

1.4. Warning signs

 **Lifting point for forklift**	 **The danger zone around the conveyor is 5 meters**	 **Disconnect the machine from the power source before servicing**

1.5. Safety instructions

General regulations and restrictions

- The machine is only intended for cleaning firewood in combination with the TP Silva firewood processor.
- The danger zone around the debris drum and the conveyor is 5 meters surrounding the sides and the rear.
- Never remove any safety devices from the machine.

Operator

- Every person operating the machine must thoroughly study the entire user manual.
- Always use eye guards and hearing protection.
- Always wear protective shoes.
- Always wear work gloves.
- Do not wear loose-fitting clothing.

Before use

- Set up both the debris drum and the conveyor before starting up the machine.
- Make sure that all other people stay outside the operating range.
- Only operate the debris drum on a sufficiently firm and level surface.
- Only operate the drum in an adequately lit space.
- Always check to ensure that all the covers are intact and properly fastened.
- Always check to ensure that any electrical cables are intact.
- Always ensure that the hydraulic hoses and components are intact.
- Before starting to work, make sure that the drum stands firmly in position.

During operation

- Keep the working space clean and clear of foreign objects.
- Always stop the machine and disconnect the power supply cable before servicing.
- Caution! Stay away from moving parts.

1.6. Operator's responsibilities

- The drum is only to be used for cleaning firewood and as an optional accessory for the TP-Silva firewood processor.
- **All the safety devices of the drum are necessary** to ensure a sufficient level of safety.
- It is the **responsibility of the operator** of the drum to ensure before starting work that all the safety devices are in perfect order and the drum has been serviced in a suitable manner.
- The operator is responsible for ensuring that no one else is subjected to any danger.
- Modifying the construction of the drum is prohibited.
- Remember that as the operator you are responsible for any injuries caused if the safety has been removed from the drum.

1.7. Operating Conditions

- Always place the drum on as level a surface as possible.
- Only operate the drum in an adequately lit space.
- The most suitable temperature range for operation is approximately -20 to +30 degrees Celsius. Otherwise, the weather conditions do not place any limitations on the drum's functionality.
- Make sure that no other people, especially children, are present inside the range of operation.

1.8. Warranty conditions

The warranty period runs for 12 months from the date of purchase.

The warranty covers

- Parts which have been damaged during normal operation of the machine due to any defects in material or workmanship.
- Reasonable costs of repairing the defect, as agreed between the seller or buyer and the manufacturer.
- Any defective parts will be replaced by new parts.

The warranty does not cover

- Defects due to normal wear, faulty operation or negligent maintenance.
- Defects in a product on which the buyer has made or has commissioned changes thus that it can no longer be regarded as equivalent to the original product.
- Any other costs or financial requirements resulting from the above measures.
- Any indirect costs and/or travel expenses incurred from making repairs under the guarantee.
- During the warranty period, the warranty of the replaced parts expires at the same time as the warranty period of the product.
- Consult your dealer about matters related to the warranty.

2. Setting up the unit for operation

The machine is delivered partly assembled for transportation reasons. The portions that the user has to assemble may differ from the sections mentioned in the user manual.

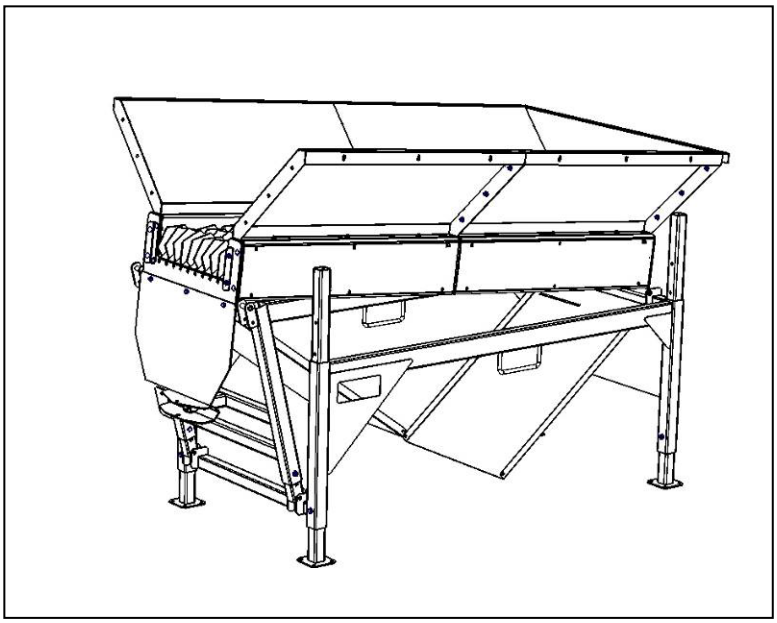


Figure 1

2.1. Assembling the sides

If the machine is delivered with the sides removed, then begin the assembly by attaching the sides. It is necessary to have two people in the assembly process for the work to be done safely.

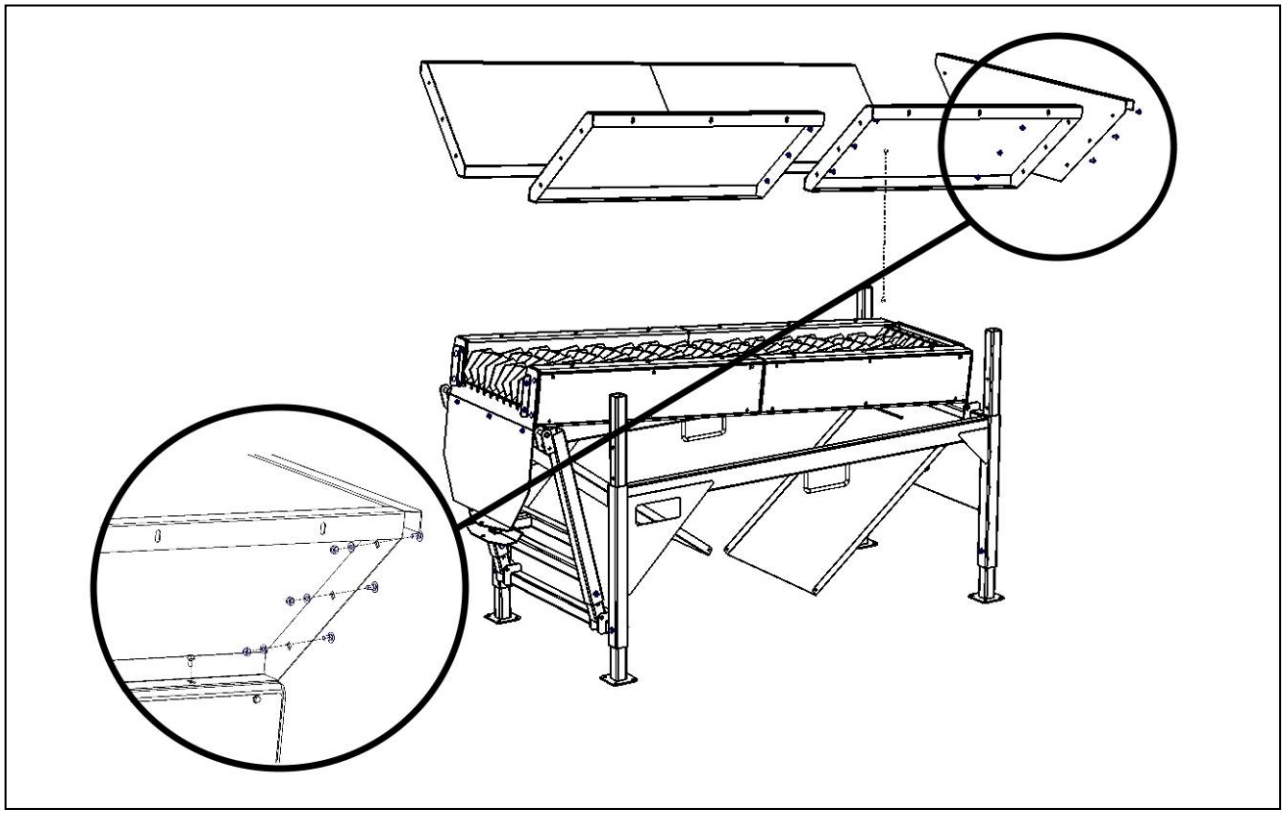


Figure 2

1. The assembly begins by attaching the rearmost side sheets to the frame M8x16 with hexagonal screws. Once all the sides are in place, tighten the screws.
2. Affix the gable sheet to the side sheets with M10x20 lock-shaped screws.
3. Attach the outer side sheet on the conveyor side to both the chassis and the rearmost side sheets. Mounting screws for the frame are M8x16, and M10x20 for the side sheets.
4. The side sheets are placed visually in line with the machine body and centrally relative to the sifter.
5. Once the sides are facing the desired direction, tighten the screws.

2.2. Attachment of conveyor

The machine is delivered with the conveyor detached. Attaching the conveyor does not require any electrical work and the installation can be done without an electrician.
The conveyor is heavy and should be installed using, for example, forklifts mounted on the front loader of the tractor. If the lifting device is not available, you can install it on top of an A-frame.

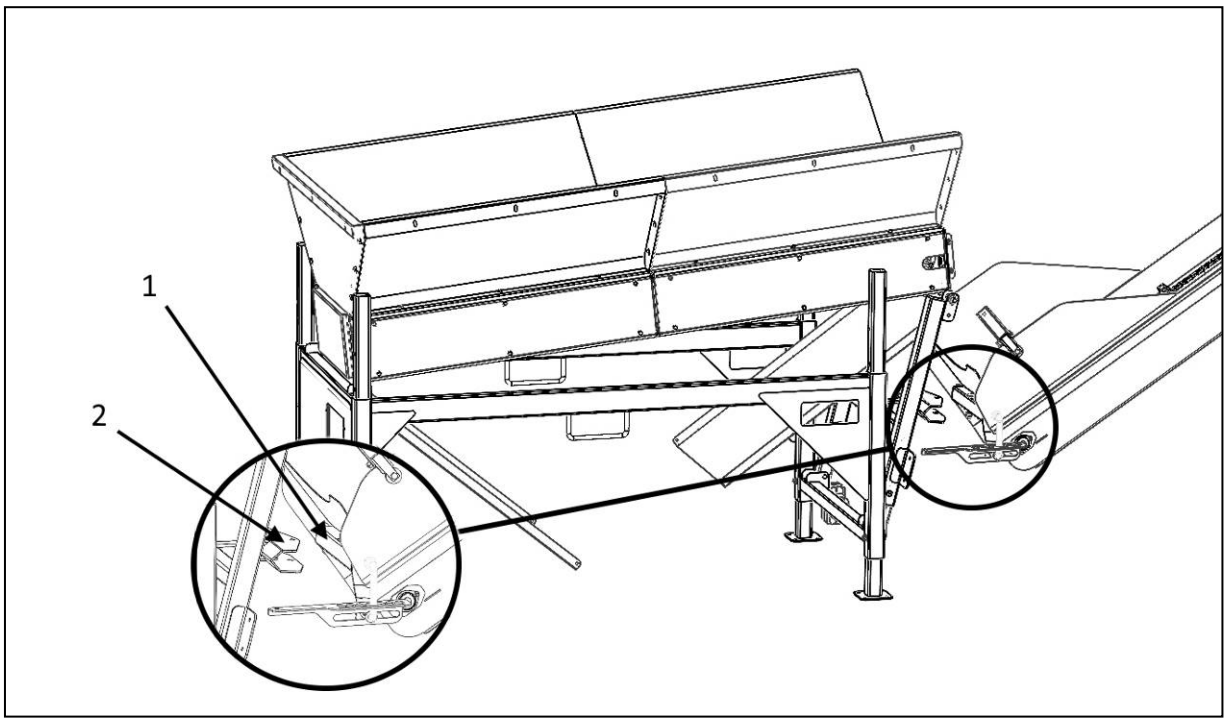


Figure 3

1. Slide the conveyor swing bar (Part 1, Figure 3) into the opening (Part 2, Figure 3)
2. Lock the conveyor in place by placing the locking screw M16x100 through the opening and swing bar underneath (Figure 4)
3. Tighten the nut above.

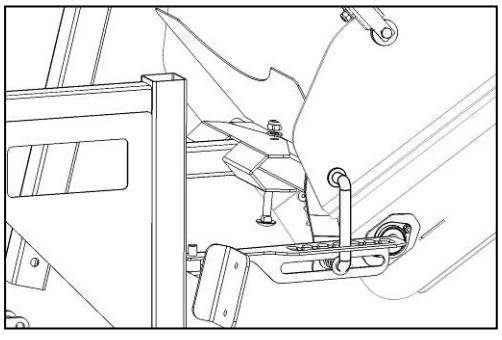


Figure 4

4. Attach the winch (Part 1, Figure 5) to its chassis with two M10x30 hexagonal bolts. Tighten these components carefully.

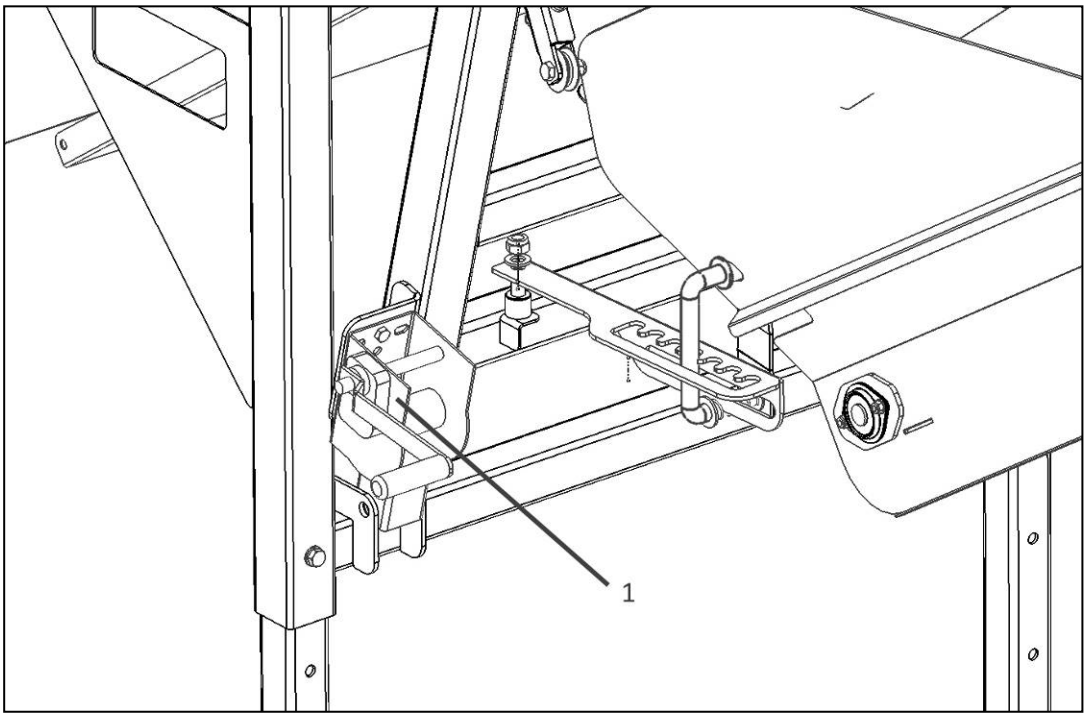


Figure 5

5. Remove the winch wire from the winch (Part 1) from behind the corner block (Part 2) above and from the back of the conveyor-folding wheel (Part 3) through the tube to the other side of the conveyor (Figure 6)

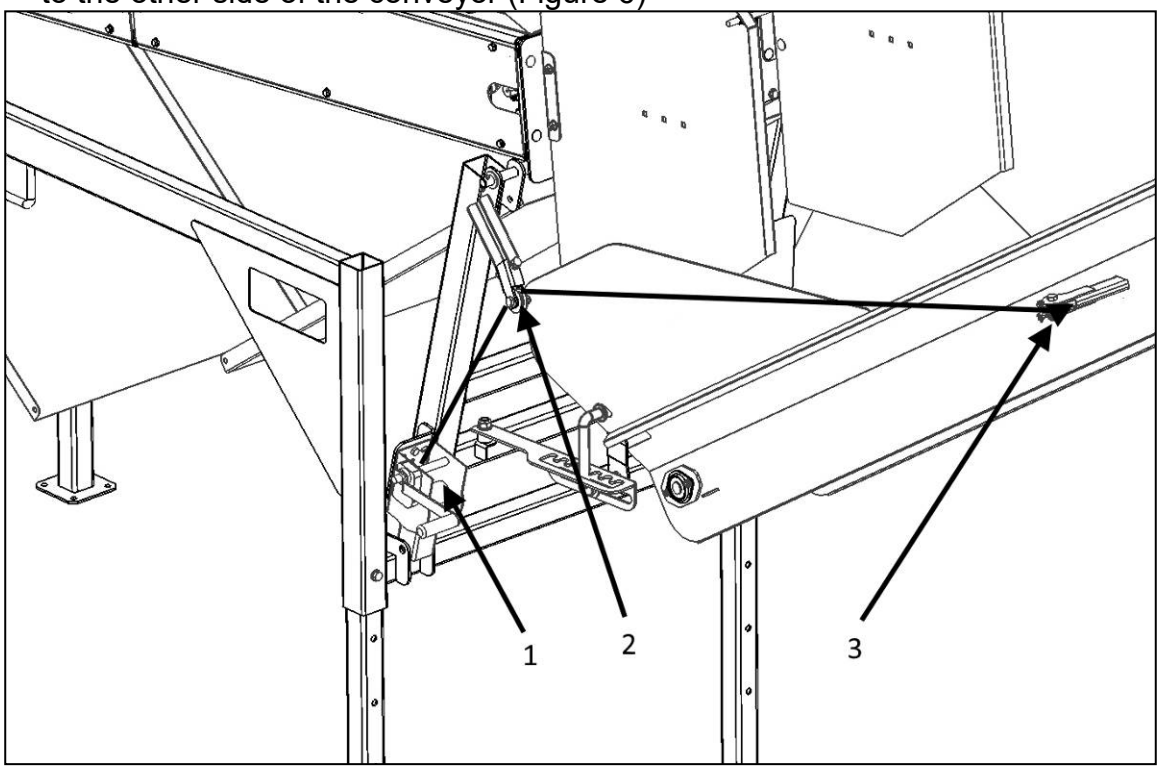


Figure 6

6. Take the wire rope on one side of the conveyor through the corner block (Part 1) and fasten the wire rope link with a screw to the lug on the beam (Part 2, Figure 7).

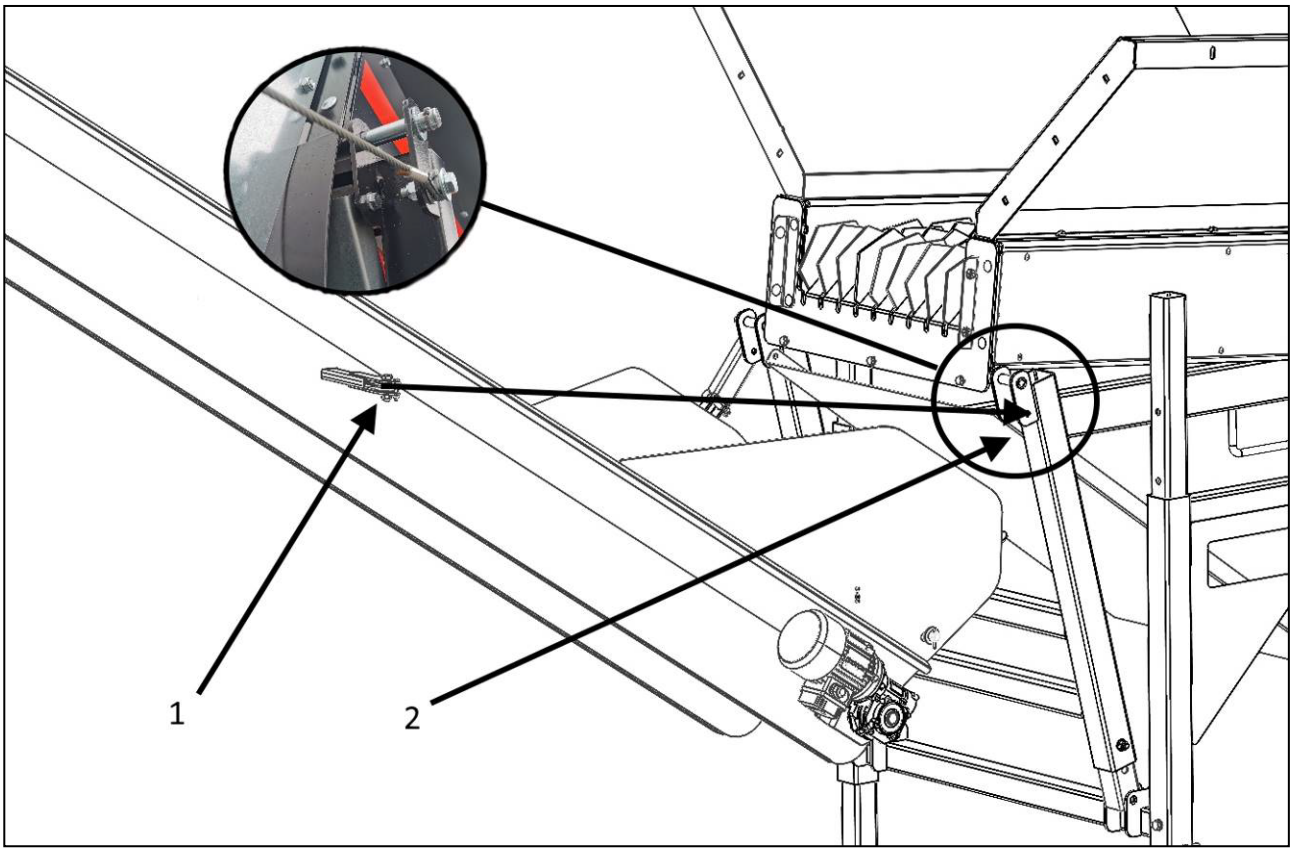


Figure 7

7. Attach the electric motor starter housing of the conveyor (Part 1) to the roller support foot (Part 2). It is good to tighten the starter in place only when the roller is set to the operating height (Figure 8).

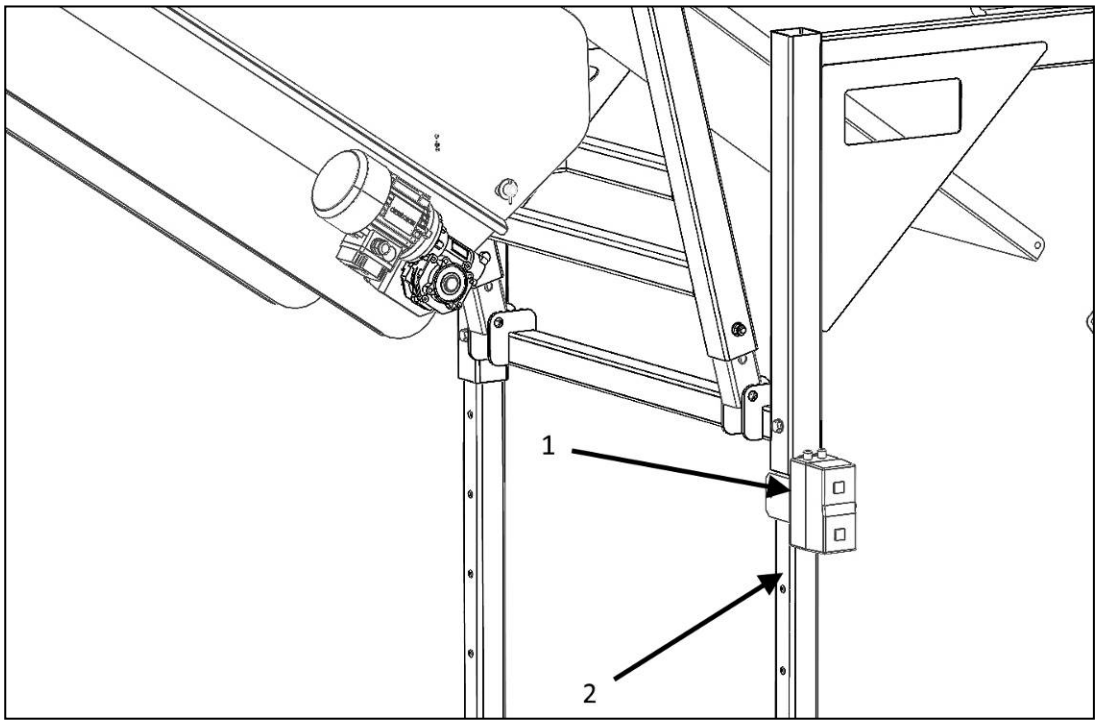


Figure 8

2.3. Attachment of timber guides

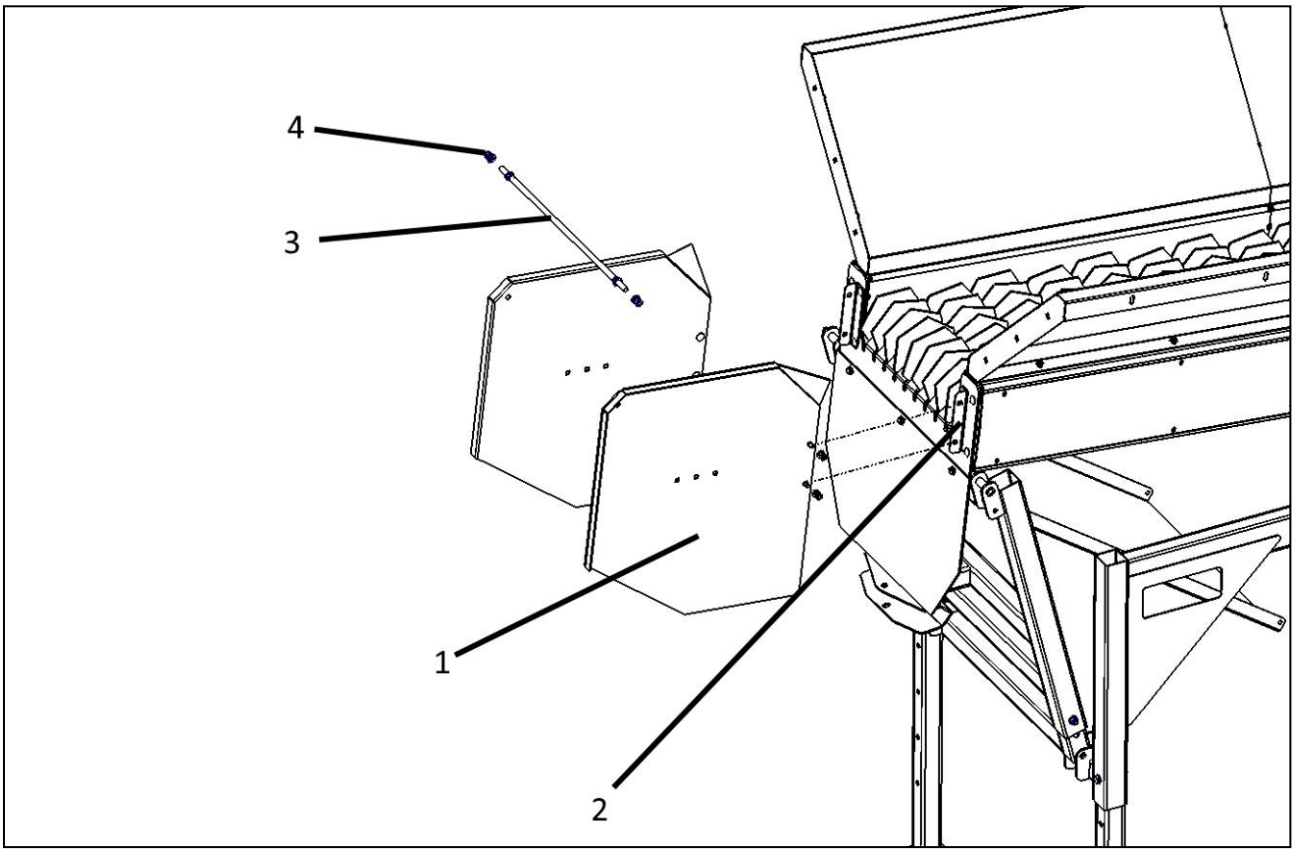


Figure 9

1. Attach the timber guides (part 1) to the frame brackets (Part 2) with M10x20 bolts.
2. Attach the support rod (part 3) to the holes in the timber guides. Attachment with M12 nyloc nut (Part 4).
3. Adjust the timber guides so that the parts are approximately 640 mm apart. Tighten the screws carefully.

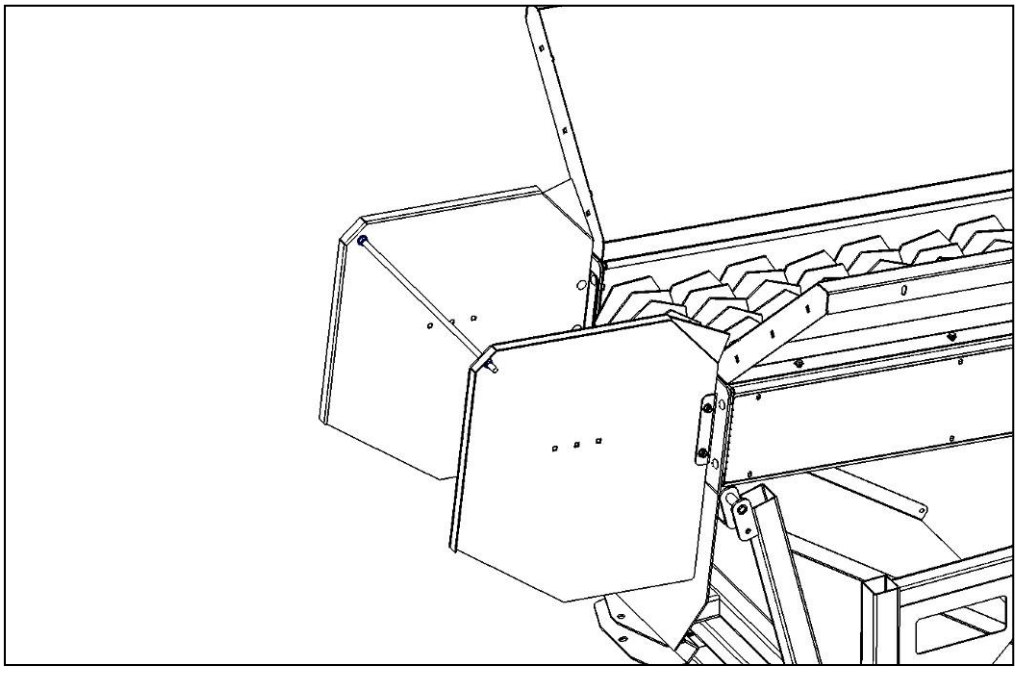


Figure 10

2.4. Hydraulic conveyor

- The mechanical installation of the hydraulic conveyor is carried out at the same time as this version of the electric motor.
- The electric motor equipment space in the conveyor has a hydraulic motor, the hoses of which are connected to the roller service valve.
- The roller is supplied with the hydraulic motor connected to the sifter. The hydraulic motor of the conveyor is connected to the valve tank line and the conveyor engine tank hose is connected to the return line to the tractor. Tools are not necessary for this connection.
- Parts of the service valve:

1. Speed control
2. Roller start/cancellation
3. Pressure line from tractor/aggregate
4. Sift engine connection
5. Sift engine connection
6. Quick connector to the tractor return line

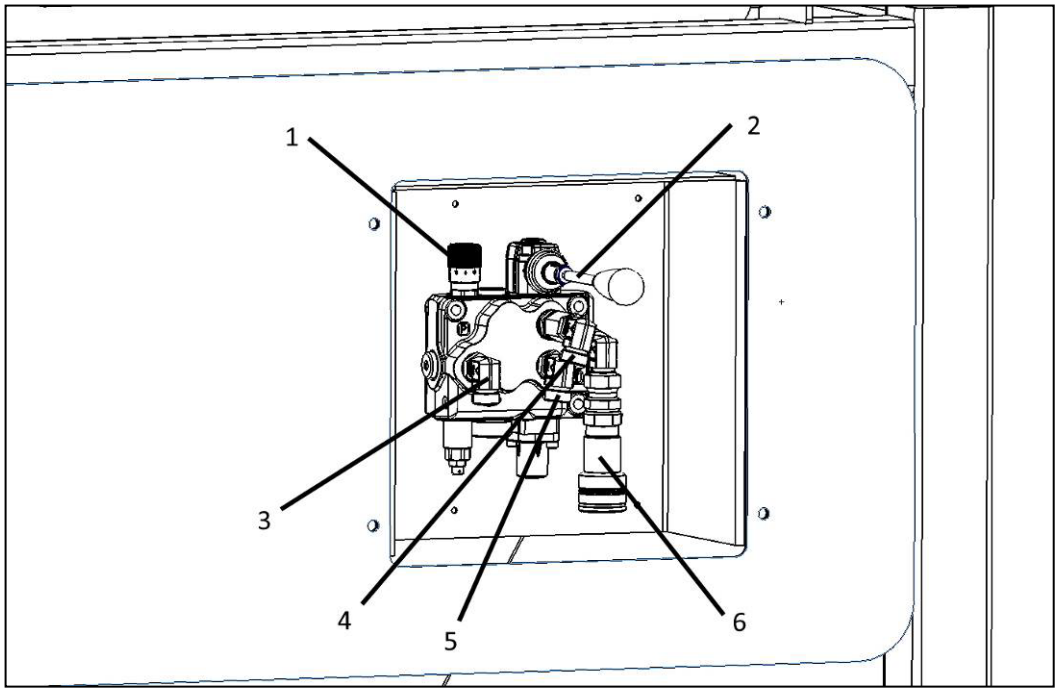


Figure 11

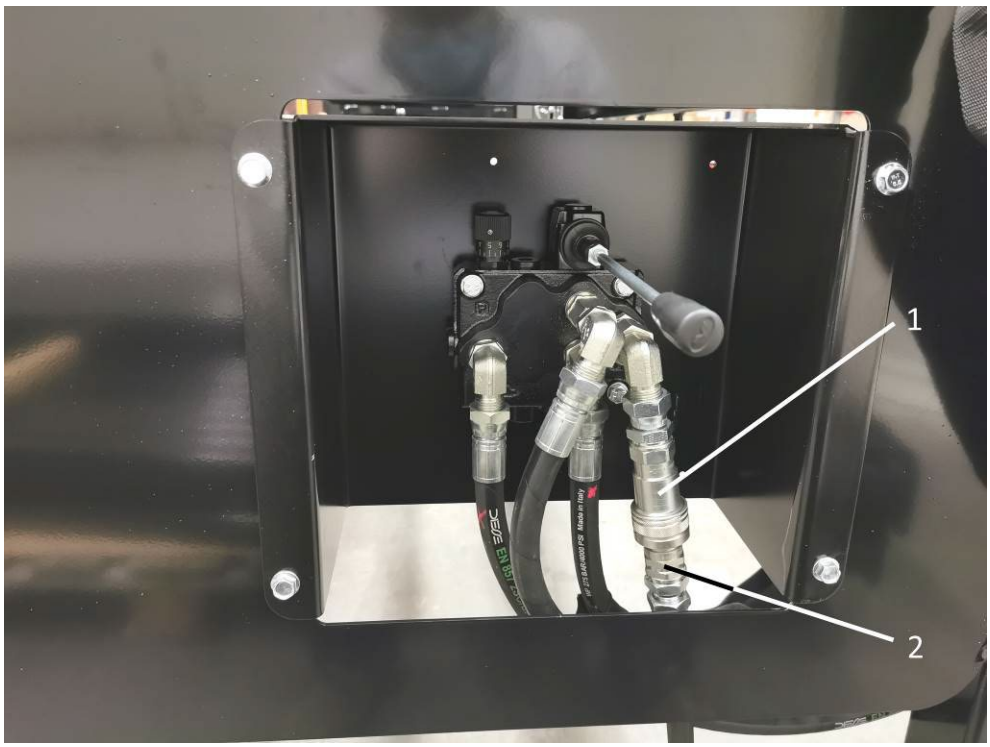


Figure 12

Coupling of conveyor hydraulics:

1. Remove the hose to the tractor return connector (Part 2) from the quick connector (Part 1)
2. Connect the conveyor motor pressure hose to the valve's quick connector (Part 1)
3. Connect the conveyor engine tank hose using quick connectors to the hose leading to the tractor return connection (Part 2)

3. Roller adjustments

3.1. Adjustment of the timber feed-through rate

- The timber feed-through rate can be adjusted by adjusting the angle of the roller angle (Figure 13).
- The rotation speed of the drum and the downstream conveyor can be adjusted in a hydraulic driven machine by adjusting the speed control valve from the service valve.
- When loading with a bucket, it is very important that the roller is filled in small quantities at a time. Loading a large quantity at a time reduces the sifting result and may block the drain conveyor.

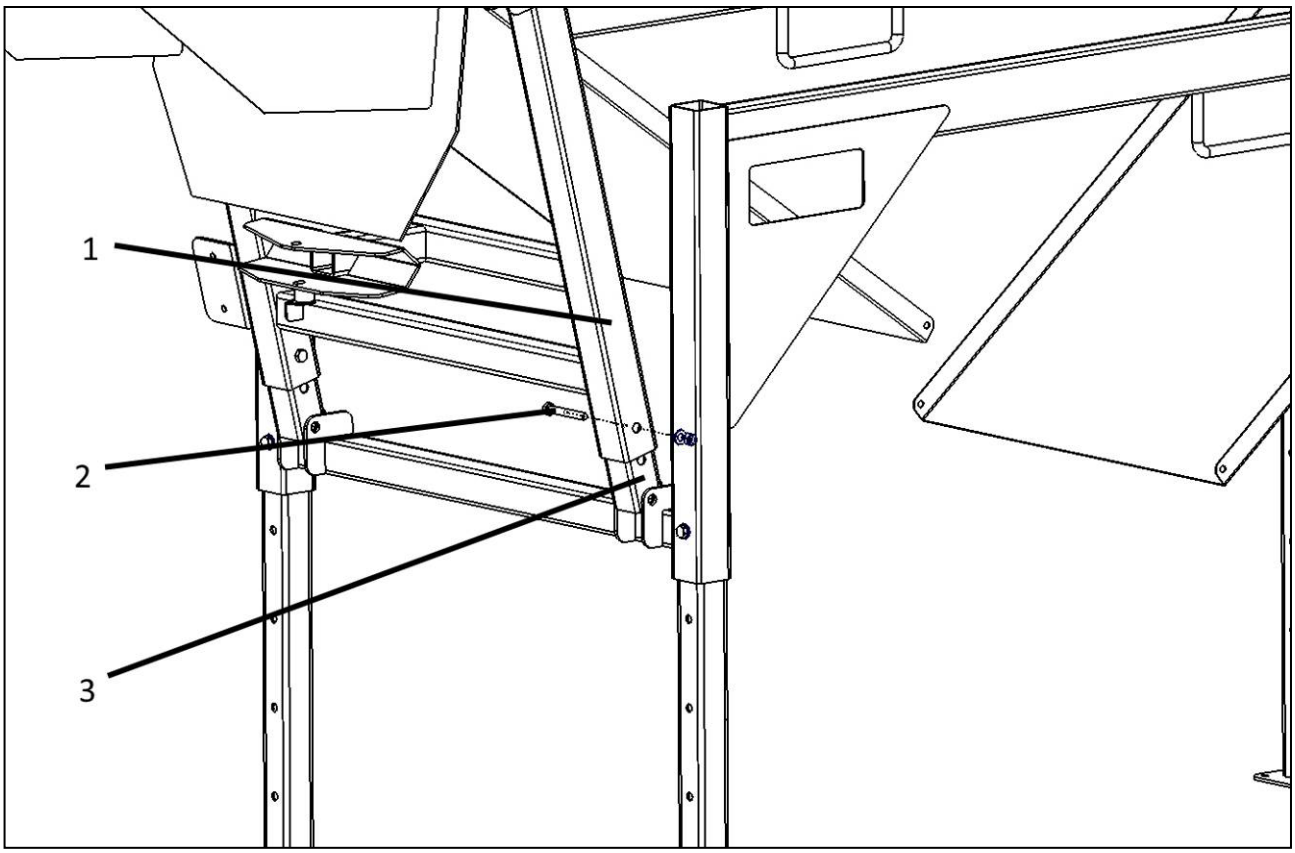


Figure 13

1. Carefully support the sifter on the frame or ground and remove the fastening screws (Part 2)
2. Lift the end of the sifter conveyor to the desired height. Let pipes 1 and 3 slide inside each other.
3. Lock pipes 1 and 3 with a pass bolt (Part 2) and tighten carefully.

3.2. Height adjustment

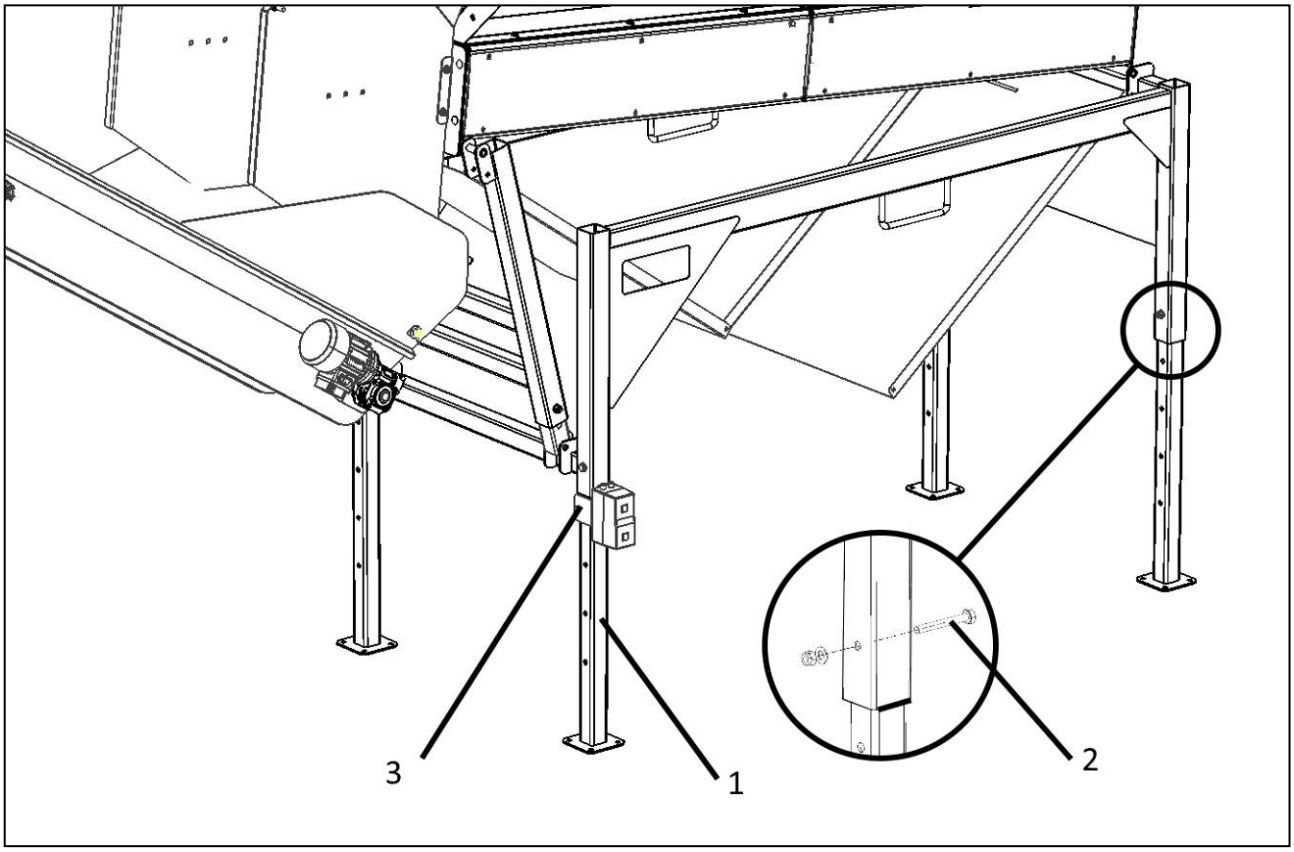


Figure 14

1. Lift the roller slightly off the ground with forklifts or forklift pins connected to the front loader of the tractor.
2. Remove the fastening screws (Part 2) from all legs and lift the roller to the desired height
3. Lift the leg so that you get the fastening screws through the hole in both the chassis and the foot. Tighten carefully. NB! THE FASTENING SCREW MUST NOT BE TIGHTENED SOLELY TO SUPPORT THE FRAME.
4. Lift the conveyor starter case to the right height and tighten it in place.

3.3. Hydraulic Roller Speed Control

- The roller is started by pressing down the valve lever. The valve locks into position.
- The speed is adjusted with control knob 2. The adjustment affects the speed of both the sifter and the conveyor.
- The conveyor speed can be adjusted separately from the valve block installed on the motor of the conveyor.

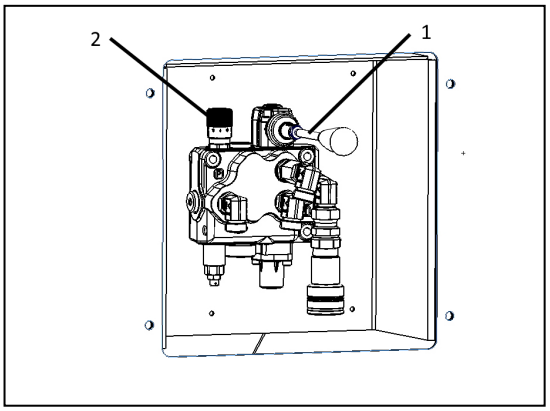


Figure 15

4. Use of the roller

4.1. Hydraulic power

- Connect the roller to the hydraulic gear or tractor with quick connectors
- The maximum pressure of the machine/tractor should be about 180 bar
- The hydraulic output of the machine grid/tractor will be approximately 30 l/min ± 10 l/min

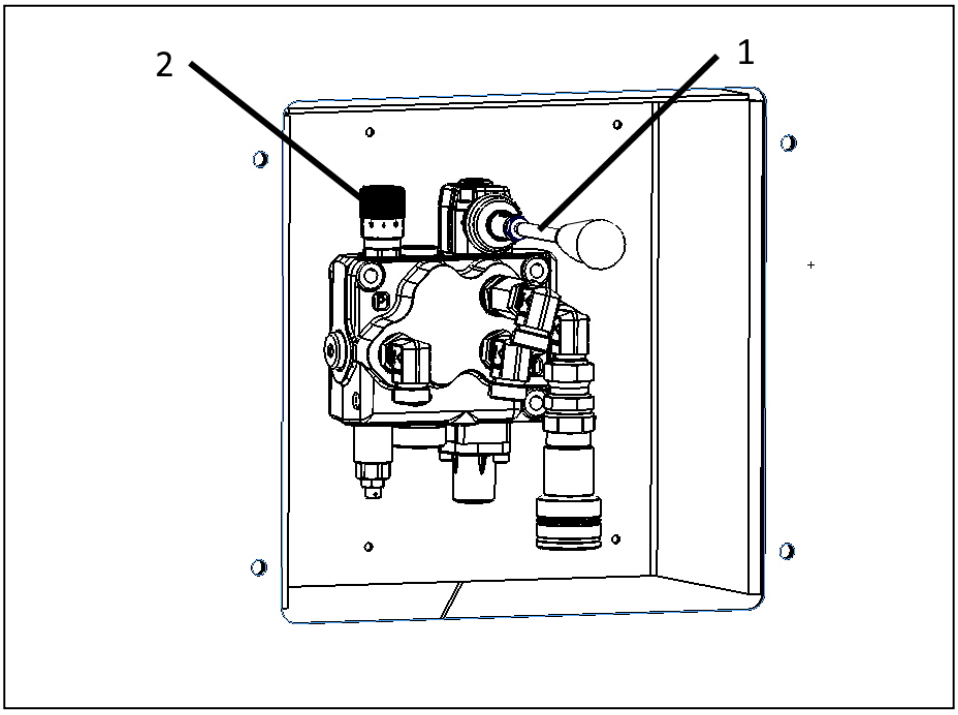


Figure 16

- The roller is started by pressing down the valve lever to lock the lever in its position.
- The roller and the conveyor speed are adjustable by using the adjustment screw (Part 2). The adjustment screw affects the speed of both the sifter and the conveyor. The conveyor speed can be adjusted separately from the valve block installable on the motor of the conveyor
- The roller is stopped by raising the valve lever to the middle position
- If the sifter or conveyor is stuck, the roller can be “canceled” by raising the valve lever to the upper position. NB! Due to the construction of the conveyor, cancellation must not be used for more than 1-2 seconds at a time.

4.2. Electric power

Figure 17

- Check that the direction of rotation of the sifter and the drain conveyor is correct.
- If necessary, change the direction of rotation by turning the step from the phase turner on the plug.
- Start the drain conveyor and sifter before using the roller to load the timber.
- From the starter switch to the right, rotate the cleaner and the conveyor clockwise. Start the roller by pressing the Start button.
- After pressing or canceling the emergency stop switch, the roller must be restarted by pressing the Start button.
- If the sifter stops due to a stuck piece of wood, et al., then the sifter can be reversed by turning the switch to the left. The switch does not lock in the reverse position. NB! Due to the construction of the conveyor, cancellation must not be used for more than 1-2 seconds at a time.
- If the sifter is stuck for a longer time, the heat relay of the trigger may be triggered. Then turn the switch to the 0 position. The thermal relay is automatically offset.
- When loading with a bucket, it is very important that the roller is filled in small quantities at a time. Loading a large quantity at a time reduces the sifting result and may block the drain conveyor

5. Maintenance

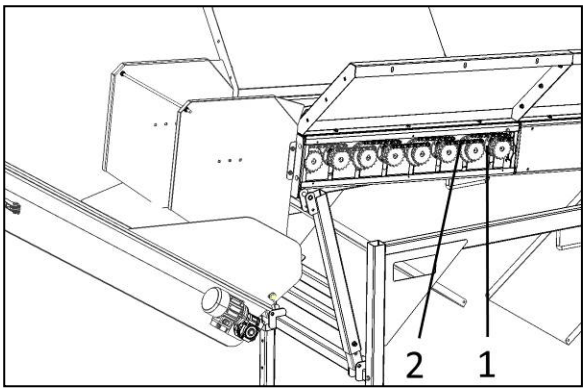


Figure 19

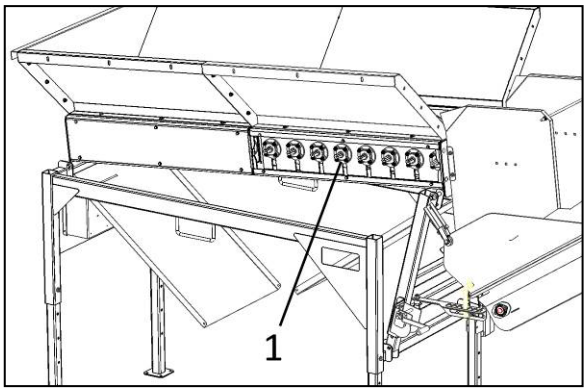


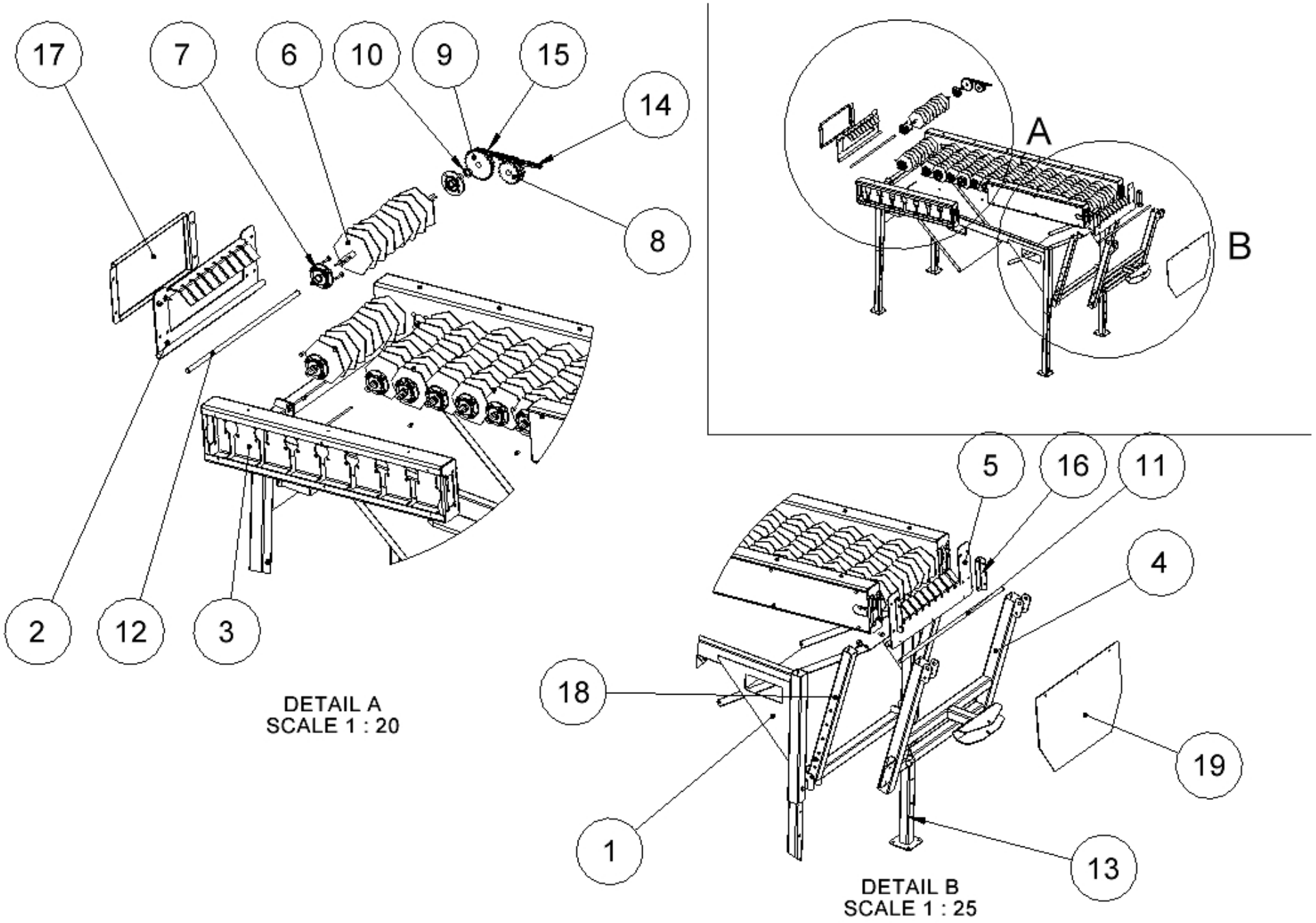
Figure 18

- Lubricate the bearing units of the roller axes (1) every 100 hours of use.
- Lubricate the chains (2) every 100 hours of use with spray lubricant.

6. Spare parts

Ordering instructions

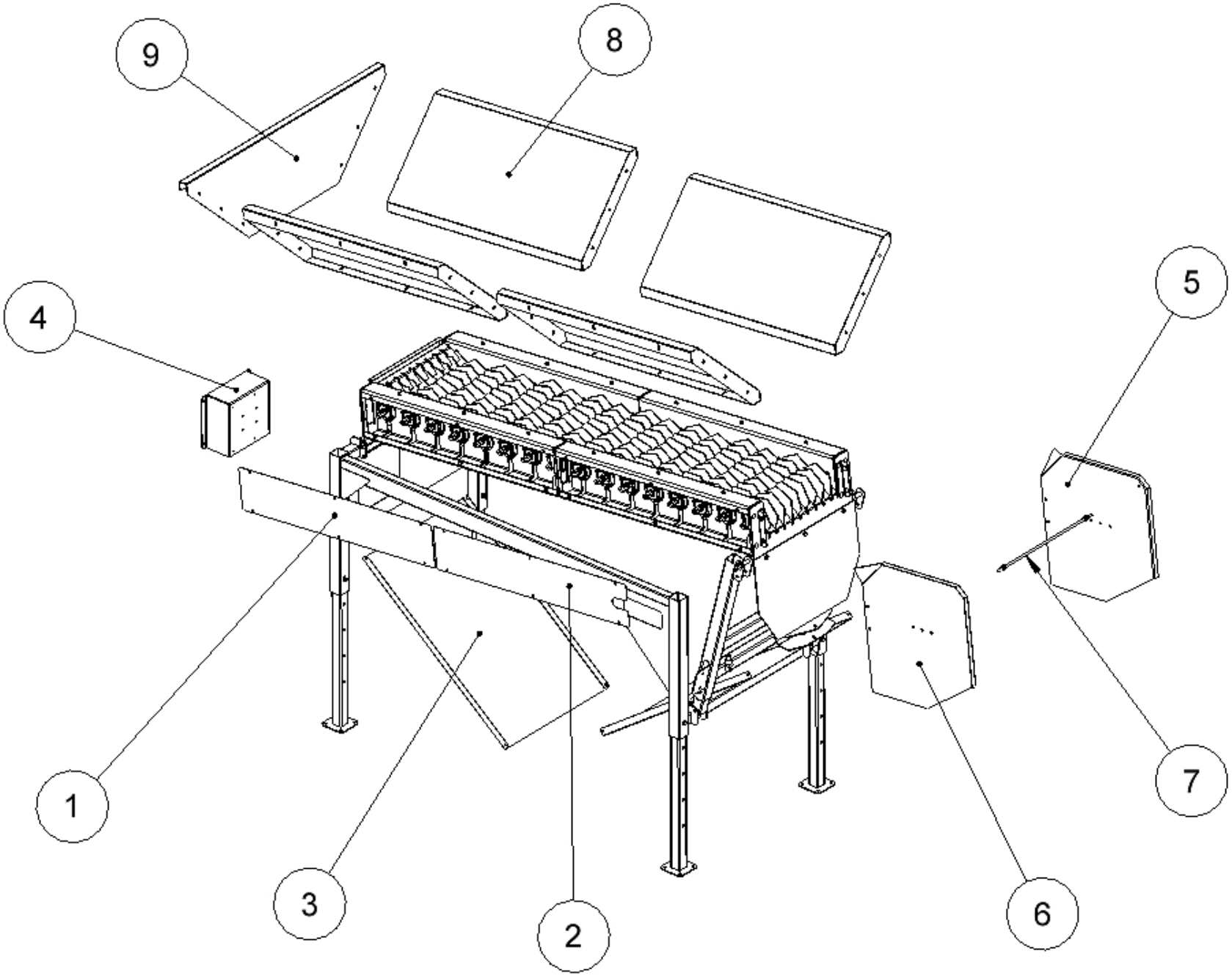
1. Find a picture with the part you want.
2. See the number of the part in the picture.
3. Use the picture number and the part number to see the order number in the list of parts.
4. Always mention the order number, the name of the part, the serial number of the machine and the year of manufacture when ordering.



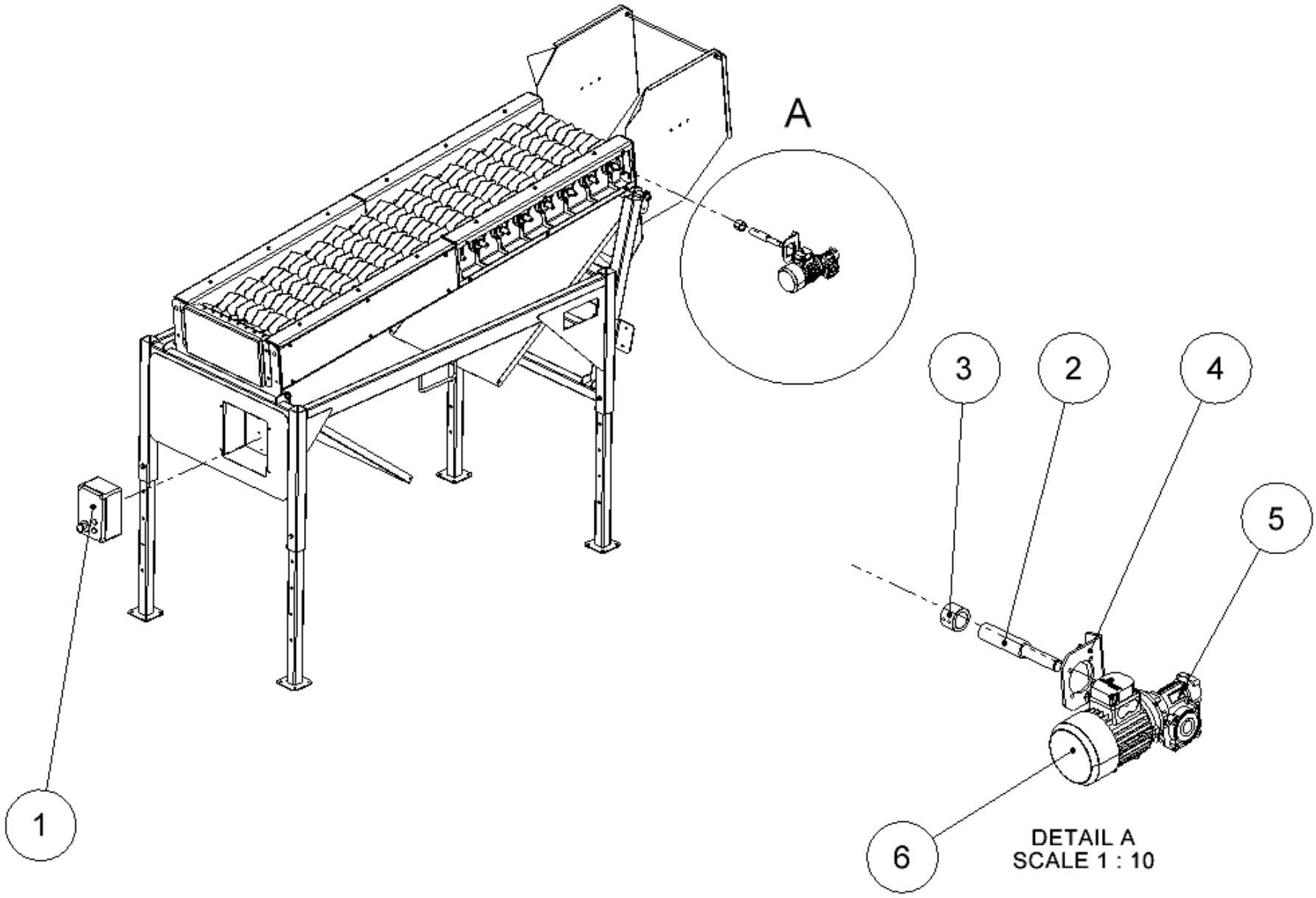
DETAIL A
SCALE 1 : 20

DETAIL B
SCALE 1 : 25

Part	Name	Drawing Number	Qty
1	Chassis	8715000	1
2	Gable, new	8713500	1
3	Side of the frame	8712000	4
4	Lifting frame	8716000	1
5	Gable	8713000	1
6	Roll	8711000	16
7	Bearing	OLUCFC205	32
8	Double sprocket 3/4” z17	K8710060	8
9	Double gear wheel 3/4” Z17/Z23	8714000	8
10	Platform	L8722050	2
11	Axle	8717000	1
12	Axle	8718000	1
13	Leg	8719000	4
14	Chain	OKET35	7
15	Chain	OKET33	7
16	Bracket	L8710060B	2
17	Guard	L8710040	1
18	Hollow section	K8710030	2
19	Bottom sheet	50037005	1


9
8
4
5
1
3
2
6
7

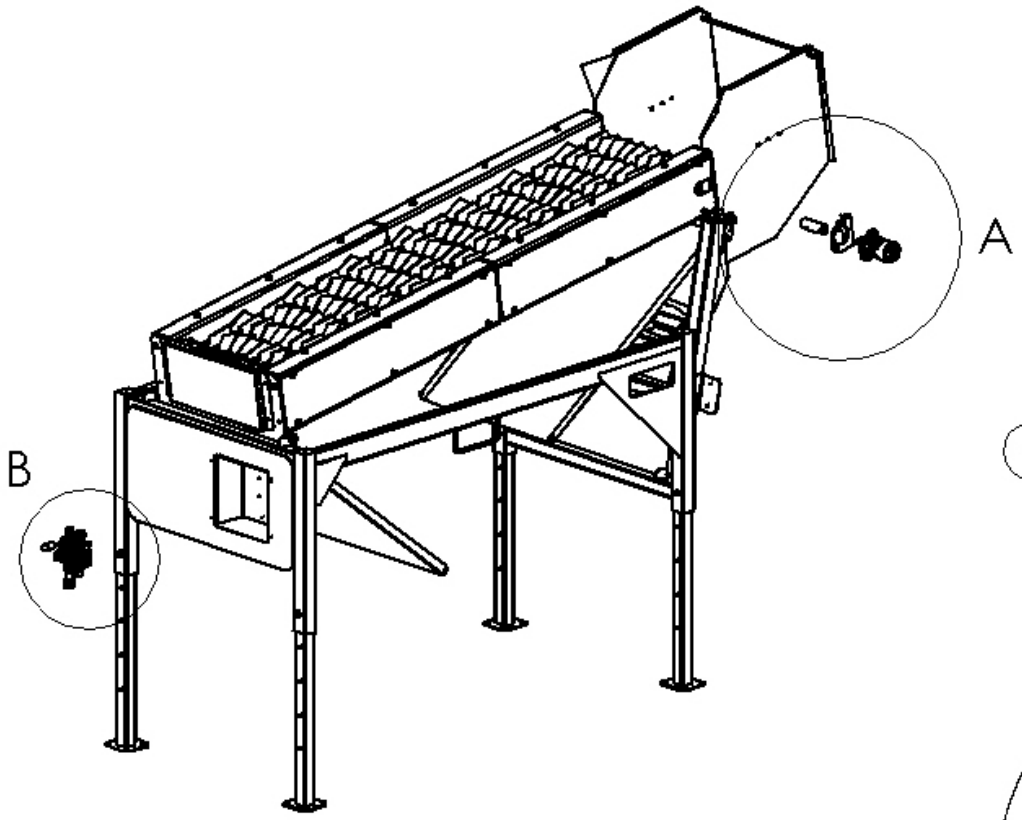
Part	Name	Drawing Number	Qty
1	Guard	L8722030	3
2	Guard	L8722040	1
3	Chip guide	L8710020	2
4	Starter case	L8710010	1
5	Side guide 2	L8710081D	1
6	Side guide 1	L8710082D	1
7	Threaded rod	K8710040	1
8	Sideboard	50052061	4
9	Rear board	50051558	1

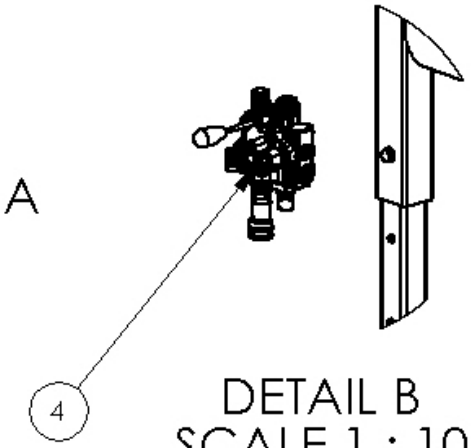


DETAIL A
SCALE 1 : 10

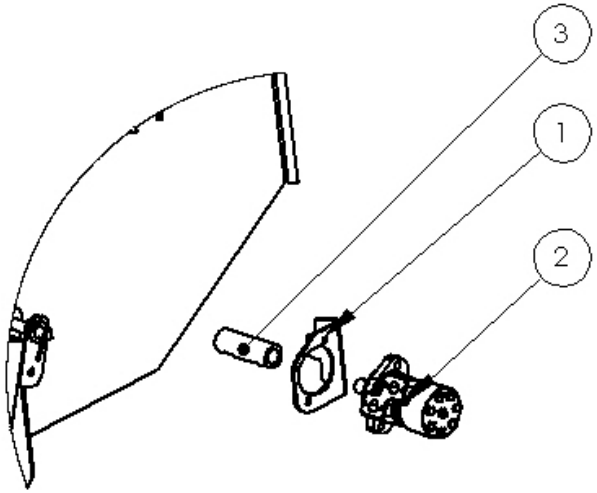
ROLLER SM

Part	Name	Drawing Number	Qty
1	Control center	OE9999	1
2	Adapter shaft	K8722010	1
3	Bushing	K2604030	1
4	Gearbox mount plate	L2601271	1
5	Gearbox SW050	OSW050PA20	1
6	Electric motor 0.55 kW	OE0551500	1



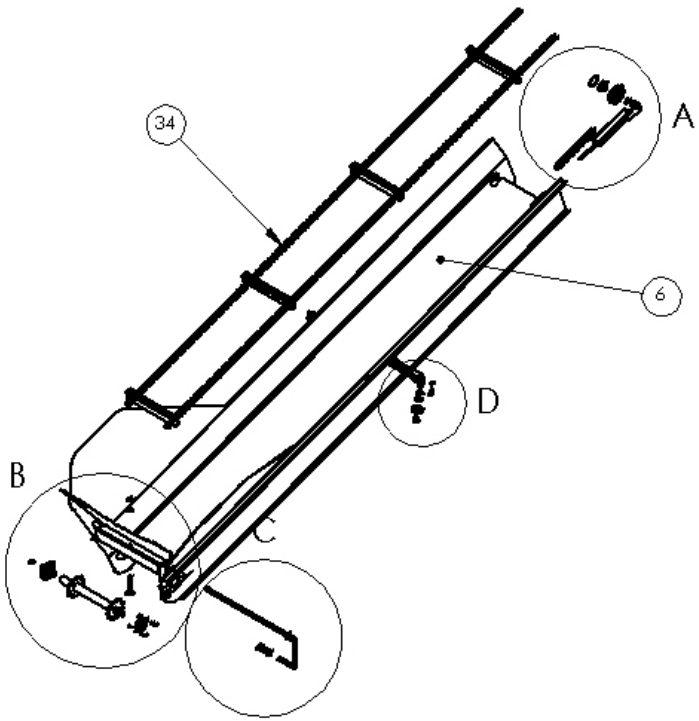


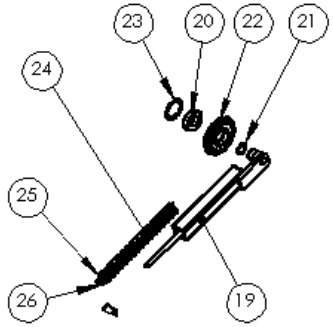
DETAIL B
SCALE 1 : 10



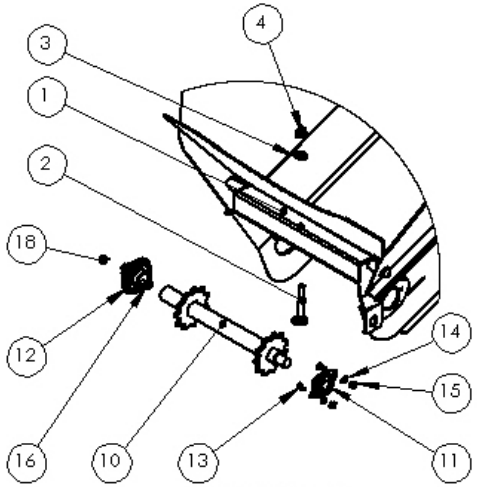
DETAIL A
SCALE 1 : 10

Part	Name	Drawing Number	Qty
1	Motor mount plate	L2601270	1
2	Hydraulic motor WP80	OH7200081	1
3	Motor bushing	K8205302	1
4	Service valve	SDM1051P	1

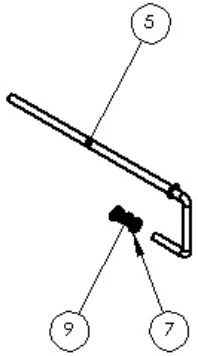




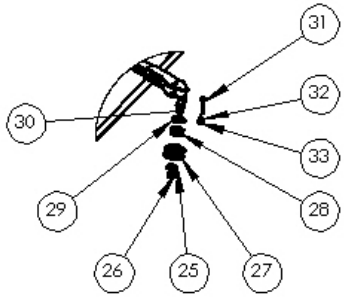
DETAIL A
SCALE 1 : 10



DETAIL B
SCALE 1 : 10

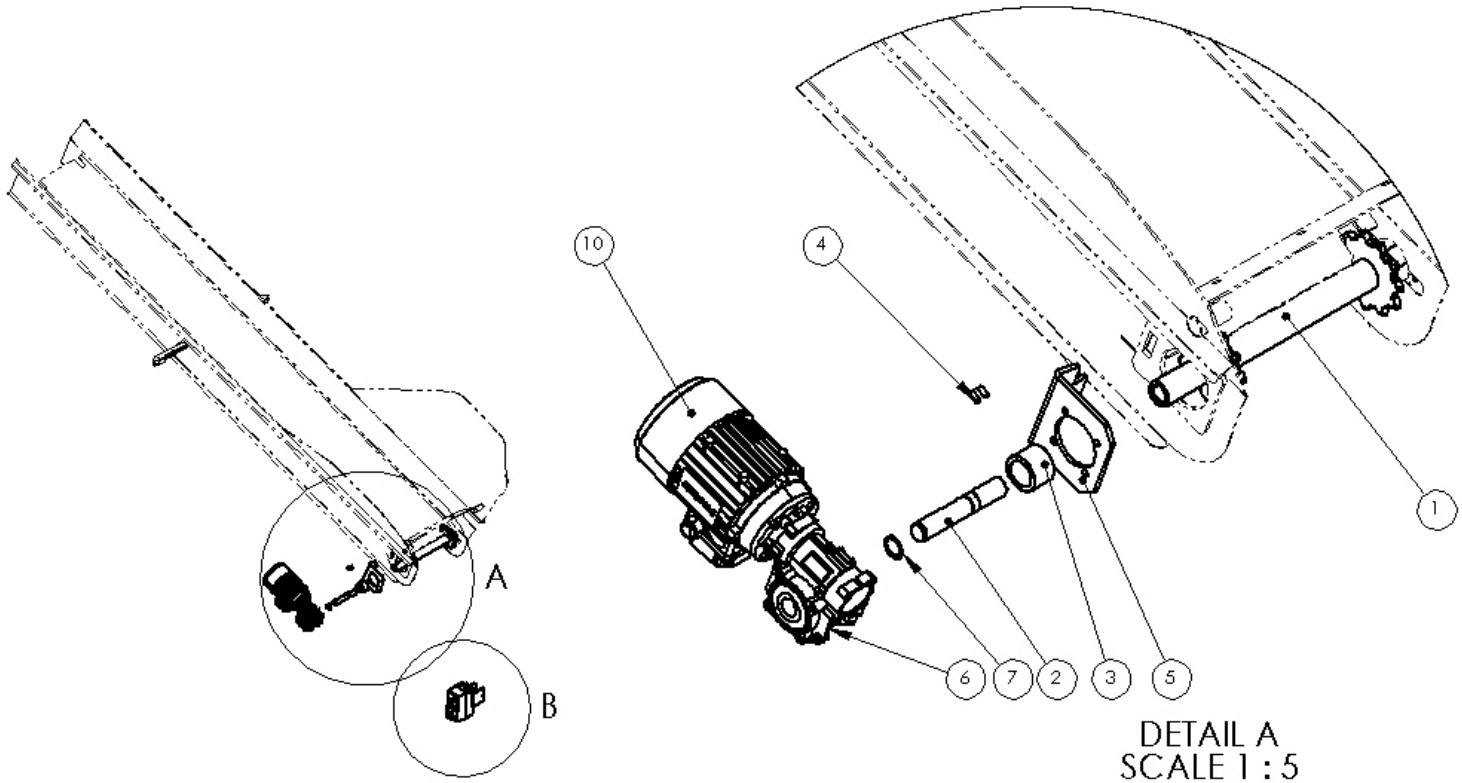


DETAIL C
SCALE 1 : 10

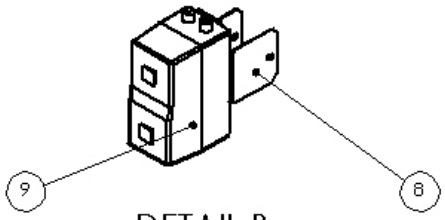


DETAIL D
SCALE 1 : 10

34	Conveyor chain cleaner, perfect Cleaner, extension conveyor	OKCS32W	1
33	Nyloc nut	OMM06C985	2
32	Base plate	OALM06C125	2
31	Hexagonal screw	ORM06040C601	2
30	Hexagonal screw	ORM12045C93	2
29	Lock ring	OSV32DIN472	2
28	Bearing 6201 2RS	OL62012RS	2
27	Roller wheel	K2620010	2
26	Nyloc nut	OMM12C985	4
25	Base plate	ORM12C125A	4
24	Pressure spring, 5.0x30x330 31 thread. Conveyor OJP5030330	50048601	2
23	Lock ring	OSV52DIN472	2
22	Idler	K2606011	2
21	Lock ring	OSV25DIN471	2
20	Bearing 6205 2RS	OL62052RS	2
19	Sheave holder	2603002	2
18	Nyloc nut	OMM10C985	2
17	Base plate	ORM10C125A	2
16	Hexagonal socket head screw	ORM10025DIN7991	2
15	Nyloc nut	OMM08C985	2
14	Base plate	OALM08C125	2
13	Hexagonal socket head screw	ORM08020D7991	2
12	Sheet bearing unit 207	OBPFL7	1
11	Sheet metal bearing	OBPFL5	1
10	Drive shaft	10104003	1
9	Pressure spring, 2.0x25x65	OJP202565	1
8	Cotter pin	OSS04x32C94	1
7	Base plate	OALM20C125	3
6	Conveyor	3815002	1
5	Mounting clip	10114010	1
4	Nyloc nut	OMM16C985	1
3	Base plate	OALM16C125	1
2	Locking screw	ORM16100C603	1
1	Swing bar	3817001	1
Part	Name	Order number	Qty

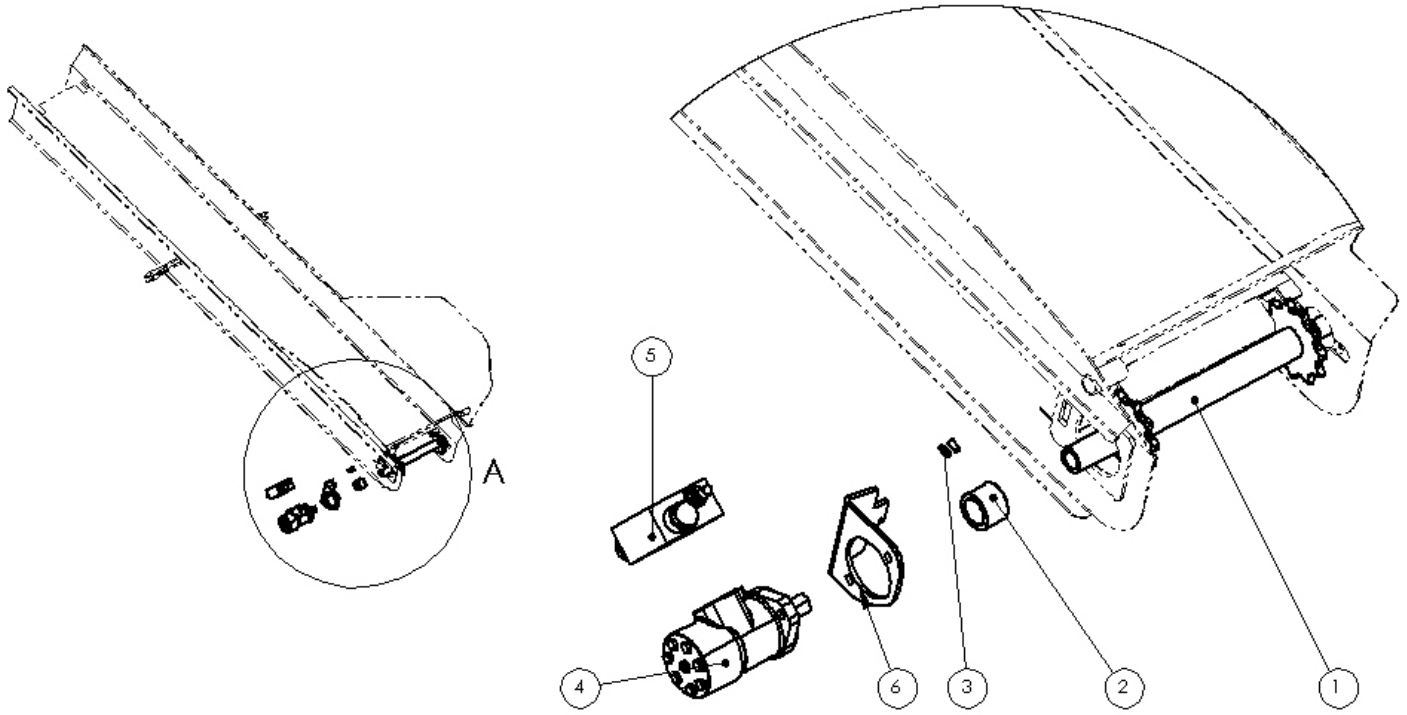


DETAIL A
SCALE 1 : 5



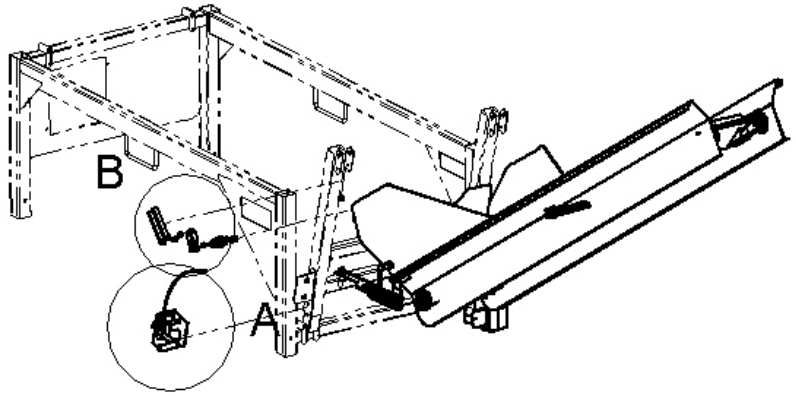
DETAIL B
SCALE 1 : 5

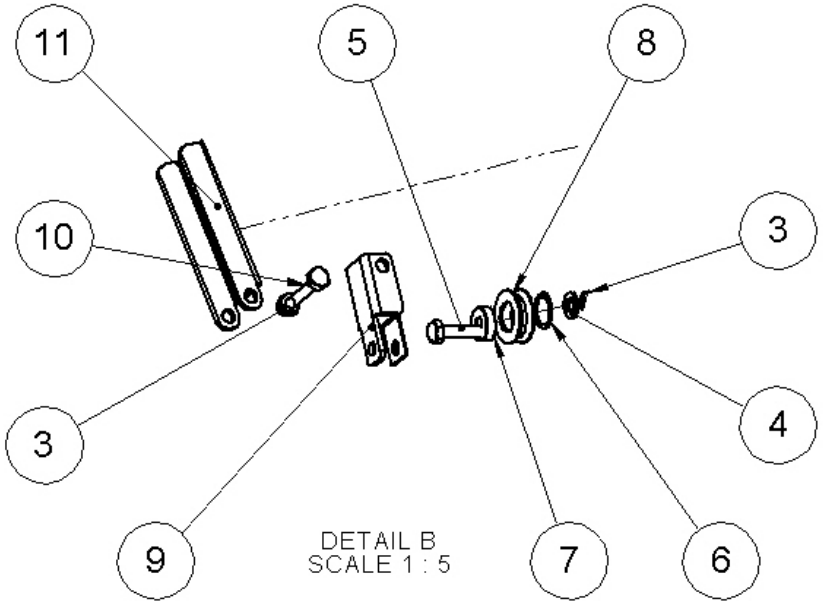
10	Electric motor 0.55 kW	OE0551500	1
9	Starter 0.55 kW	OE614301102	1
8	Starter base plate	L3807010A	1
7	Lock ring	OSV25DIN471	2
6	Gearbox	OSW050T10	1
5	Gearbox mount plate	L2601271	1
4	Grub screw	ORM08016C916	2
3	Bushing	K2604030	1
2	Drive shaft	K3821011	1
1	Drive shaft	10104003	1
Part	Name	Order number	Qty



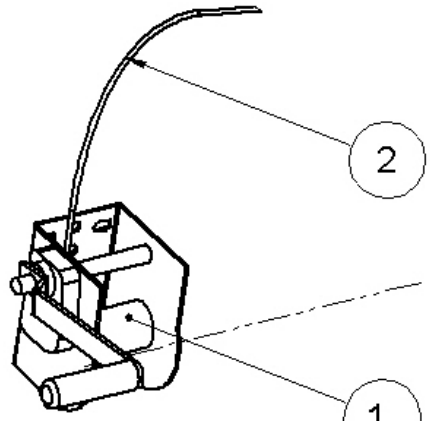
DETAIL A
SCALE 1 : 5

6	Motor mount plate	L2601270A	1
5	Pressure limit vent + current regulator	OHRFPOMPVMP	1
4	Hydraulic motor WP80	OH7200081	1
3	Grub screw	ORM08016C916	2
2	Bushing	K2604030	1
1	Drive shaft	10104003	1
Part	Name	Order number	Qty



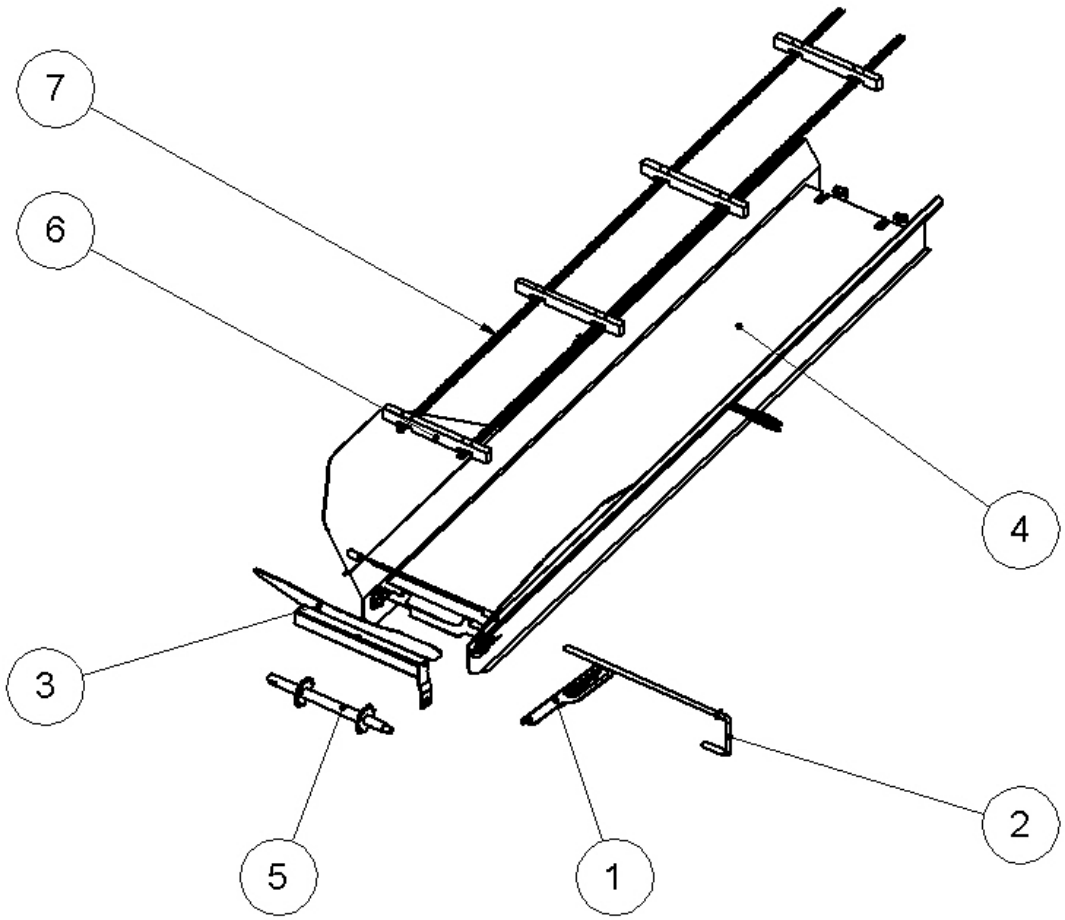


DETAIL B
SCALE 1 : 5



DETAIL A
SCALE 1 : 5

Part	Name	Drawing Number	Qty
1	Winch Goliath 6AF	OYV6AF750	1
2	Wire	OVA6300	1
3	Nyloc nut	OMM12C985	6
4	Base plate	ORM12C125A	6
5	Hexagonal screw	ORM12045C93	3
6	Lock ring	OSV32DIN472	3
7	Bearing 6201 2RS	OL62012RS	3
8	Roller wheel	K2620010	3
9	Chassis	3822002	1
10	Hexagonal screw	ORM12070C933	1
11	Flange	L3812210	1


7
6
4
3
5
1
2

WIDE CONVEYOR

Part	Name	Drawing Number	Qty
1	Locking lever	L3818010	1
2	Mounting clip	50039671	1
3	Swing bar	50039651	1
4	Conveyor	50039639	1
5	Drive shaft	50039664	1
6	Cleat	50039670	7
7	Conveyor chain with lugs	OK70S32VR	2