USER MANUAL – PAINTING MACHINE IP Touch 250 Combi

Manual version 01. Applies from 07/09/2015.

Ceetec IP Touch 250 x 250 Combi

Manufactured by:

Ceetec A/S
7, Industrivej
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Email: info@ceetec.dk

1 Table of Contents

2 General Terms of Use

The machine may only be used for the purposes described herein. If the machine is used for any other purpose or is subjected to design alterations, Ceetec may no longer be held responsible for the safety of the machine and the warranty will lapse.

The machine may not be set up in environments that are classified as potentially explosive.

Installation, service, maintenance and repairs may only be carried out by trained personnel who are familiar with the machine and who have read this User Manual thoroughly. Disconnect the power and make sure that it cannot be reconnected. Disconnect the compressed air hose at the quick coupling.

Do not bypass or dismantle any of the shields and covers. If any of the above guidelines is neglected, the consequences shall be entirely at the machine user's risk as Ceetec shall disclaim any responsibility for safety and the machine warranty shall lapse.

Only use original spare parts.

3 Safety Instructions

THE OPERATOR IS RESPONSIBLE FOR ENSURING HIS/HER OWN SAFETY AND THE SAFETY OF OTHERS!

ROTATING PARTS! MAKE SURE ALL SHIELDS ARE CLOSED WHILE THE MACHINE IS IN OPERATION!

3.1 Special Training Requirements

The user is presumed to have general knowledge of special-purpose machinery.

The user of the machine must be familiar with the User Manual and read it thoroughly in order to have knowledge of the machine's functions before the machine is put into operation.

Every operator is also required to receive special instruction in the use of the machine.

3.2 Limitations in Use

The machine may only be used for applying wood protection/paint on woodware. Do not use the machine as a washing and cleaning machine.

Liquids
Use liquids (paint or cleaning agents) with a flash point of at least 10°C above the ambient temperature. Do not use liquids with a flash point lower than 40° C because of the potential fire hazard.

In case of accidents involving liquids/paint:
Wear gloves and goggles when using the machine. In case of accidents, follow the precautions given in the product data sheets of the used substances.

It is therefore important that you have reviewed and are familiar with this product information and that it is close at hand!

Water-based wood protection
For example: Tintex Tinova VX, Ready V40, produced by Akzo Nobel. Gori 11, Gori 356, Gori 410, Gori 411, Gori 413, Gori 417, Gori 892, Gori 894, all of which produced by Dyrup A/S

Oil-based paint
For example: Gori 22 wood primer, Gori 44 wood protection, Gori 88 half / all-covering wood protection, Gori wood oil, Gori for wood terraces, Gori 400, Gori 541, all of which produced by Dyrup A/S.

Do not use liquids with a flash point lower than 40° C because of the potential fire hazard.

Room Temperature
Where oil-based products are used, the room temperature may not exceed 29°C and must be at least 10°C below the flash point of the used liquid/paint because of the potential fire hazard.
Note: Oil-based products have less than optimal adhesion to the workpiece if they are applied at a room temperature higher than 25° C.

3.3 Ventilation

The machine may only be used in well-ventilated rooms and possibly outdoors. For instructions about necessary ventilation, otherwise refer to the supplier's instructions for the paints that are used.

To avoid any discomfort from the solvents, place the treated workpieces to dry in a well-ventilated place.

3.4 Personal Protective Equipment

Wear the required safety / personal protective equipment. We recommend wearing gloves, safety goggles and safety shoes.

We recommend wearing respiratory protection if there are any hazardous substances during processing. See the product data sheet provided by the paint/lacquer supplier and follow the instructions there.

3.5 Clothing

The operator must wear suitable work clothing. Sleeves must close at the wrist so as not to get entangled in moving/rotating parts.

3.6 Cleaning, Service and Maintenance

Do not do any cleaning, service or maintenance work on the machine while it is in operation. When performing any service and maintenance tasks, make sure that the installation is:

- Free of any workpieces (empty)
- Idle (the emergency stop has been activated)
- Disconnected from the mains (pull out the plug)
- The compressed air hose has been disconnected at the quick coupling.

3.7 Shielding

Do not bypass or dismantle safety shields and equipment.

Hinged safety tunnel on machine exit. Safety stop on machine entrance.

Safety tunnel

Safety stop

3.8 Special Terms

- All screens, grates, covers, safety shields and safety switches must function satisfactorily and be kept in place and in order.
- Always keep the machine, the work surfaces and the working area clean and tidy.
- Always do any work with machine from its operator places.
- Do not touch and do not try to move workpieces while the machine is in operation.
- If it is necessary to inspect parts of the machine that are not protected by photoelectric guards and/or safety screens, first switch off the machine (emergency stop device) and disconnect the mains power.
- If there has been an operational disturbances, make sure that the machine is idle before trying to rectify the fault.
- Always follow the supplier's instructions regarding the wood protection/paint.

4 General Information:

4.1 Manufacturer

Ceetec A/S
7, Industrivej
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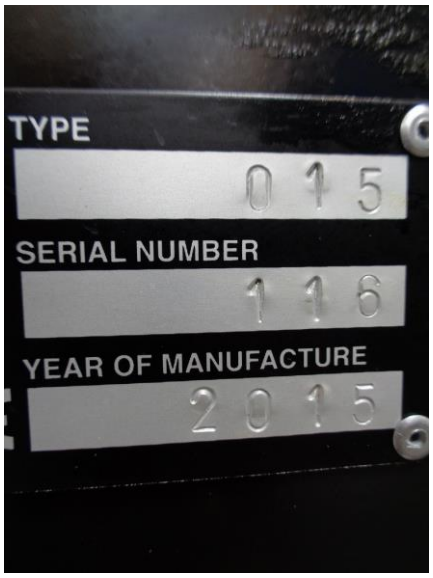
Email: info@ceetec.dk

4.2 Machine Details

Machine type:	Painting machine
Type designation:	IP 250 Touch
Machine no.	053

The type is engraved on a sign fitted externally to the machine. The displayed sign is only indicative.



4.3 Capacity

Max. workpiece dimensions	Width 250 mm x height 100 mm
Min. workpiece length	1,000 mm
Capacity:	Not relevant (Operator-dependent)

4.4 Technical Data

Forward feed speed	Approx. 30 to 60 metres/min (depending on the parameter setup of the frequency converter)
Pump capacity	Approx. 20 to 80 l/min (depending on pump type)
Motor connection	3x380V IP class 54
Forward feed output	0.75 kW 50 HZ

Output, brushes	2 x 0.37 kW 50 HZ
Output, pump	0.37 kW 50 HZ (only for power-operated pumps)
External length	2,569 mm. Shielding at outlet 860 mm. Brush-off 580 mm
External width	1,178 mm
External width	1,536 mm

4.5 Weight

Tare weight: Approx. 1,050 kg

4.6 Noise Conditions

Noise level: The painting machine does not generate noise above the permissible limit of 80 dB (A). Use of hearing protection is therefore not required.

5 Description of the Machine

Ceetec IP 250 Touch is designed for treating wood with wood protection products (water and oil-based). The machine can be used for untreated, planed and continuously shaped wood.

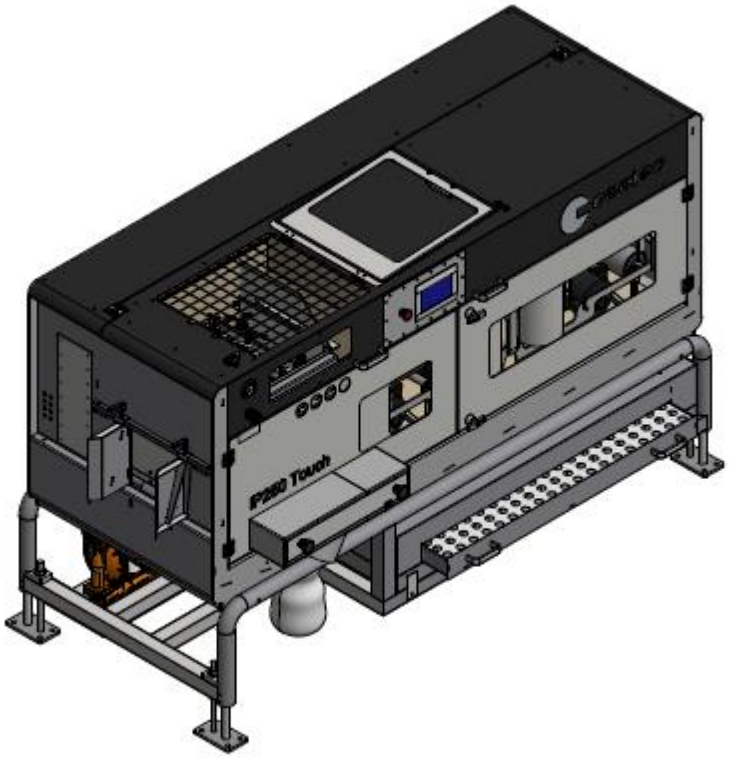
The workpiece is guided by driving rollers past a set of nozzles that apply an excess dose of wood protection/paint onto the workpiece. Rotating brushes subsequently ensure that the wood protection is distributed and worked into the workpiece.
The forward feed and brush speed have stepless adjustment, and the amount of wood protection/paint can also be adjusted by opening/closing the nozzles.

The machine's cover and the removable side plate are equipped with safety switches which cause the machine to stop if the (covers) is/are opened. Note that the pump will continue to operate even if these switches are disconnected.

Dismantling the removable side plate secures easy access to the machine's working area for cleaning and other purposes.

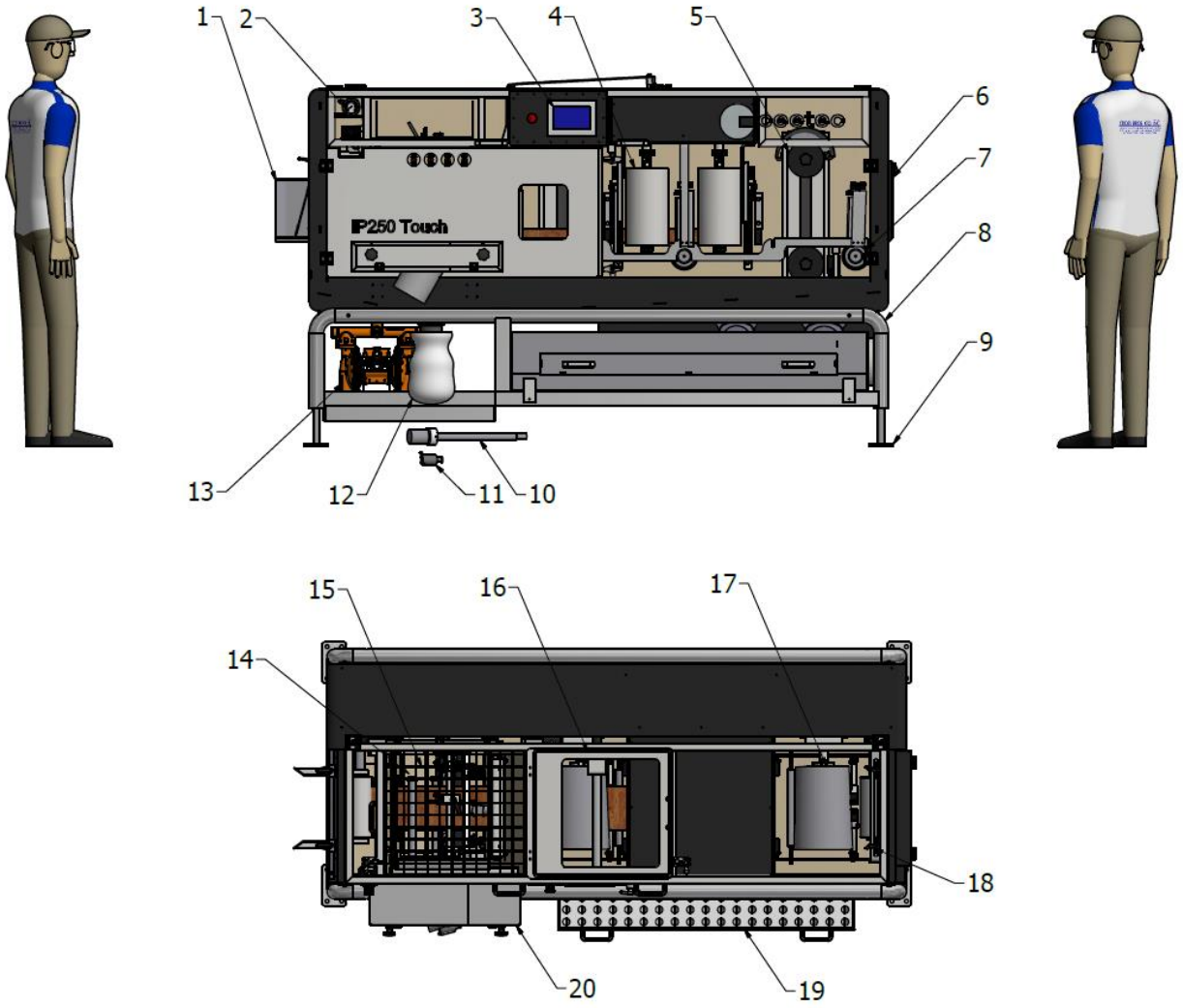
Dismantling the side plate where the guide is fitted, the fixed cover plate and the lowermost protection shield provides easy access to the transmissions for the purpose of cleaning, maintenance and repairs.

The painting machine has adjustable feet. When the machine is set up, both feet should be adjusted so that the machine is flush in both directions. The machine can possibly be fixed to the floor.



The machine can be delivered with optional equipment, e.g. roller conveyor, larger paint container and short piece holder for short workpieces. (The displayed picture is without outlet shield and brush-off.)

Layout drawing



1. Inlet
2. Pressure gauge for nozzle pressure
3. Touch screen
4. Vertical brushes
5. Horizontal brushes
6. Outlet
7. Forward feed roller
8. Frame
9. Adjustable feet
10. Suction filter
11. Pressure relief valve
12. Filter bag
13. Pump
14. Nozzle pipe
15. Discharge filter
16. Cover
17. Screen
18. Side guide setup
19. Suction box
20. Suction box

5.1 Installation

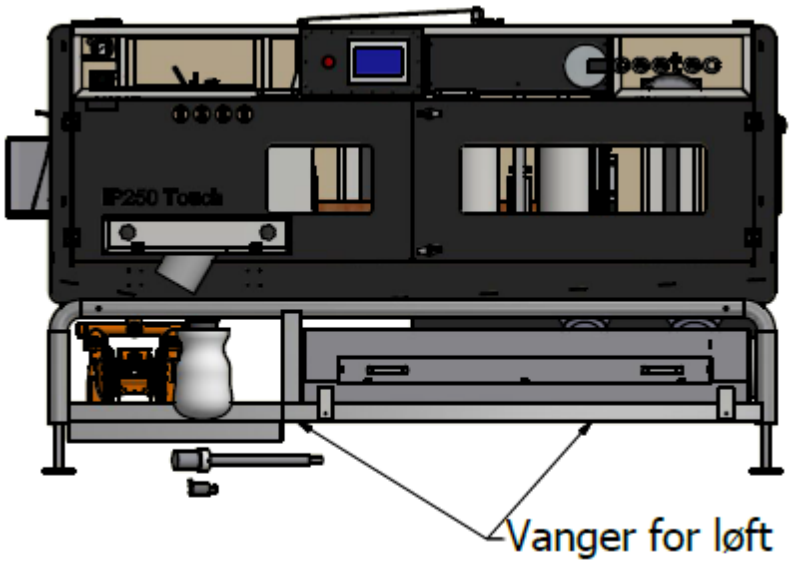
The mechanical installation must be completed before the electric one can begin.

Make sure that the installed screens have been fitted and are in place and in good working order. If the screens are not in place and in good working order, there may be a risk of personal injuries in connection with moving/rotating parts.

5.2 Lifting and Handling

Lift the machine with a forklift truck. The points of application on the frame's side members are indicated with forklift symbols. Do not lift the machine by grabbing hold of the motor, guide, shafts, etc.

Always make sure that the unit/machine is balanced during lifting. The forks of the forklift truck must be long enough to secure a grip to both the foremost and rearmost side member. Never stand or walk underneath the machine while it is being lifted.



5.3 Transporting/Moving the Machine

Secure the machine against overturning and protect it against the weather during/in connection with transportation.

Empty the machine of any liquids/paint before moving it.

Seek to ensure that the machine is balanced well when moving it manually. Never move the machine manually on a sloping foundation.

5.4 Setup

Always set up the machine on an even, flush and firm foundation.

5.5 Space Requirements

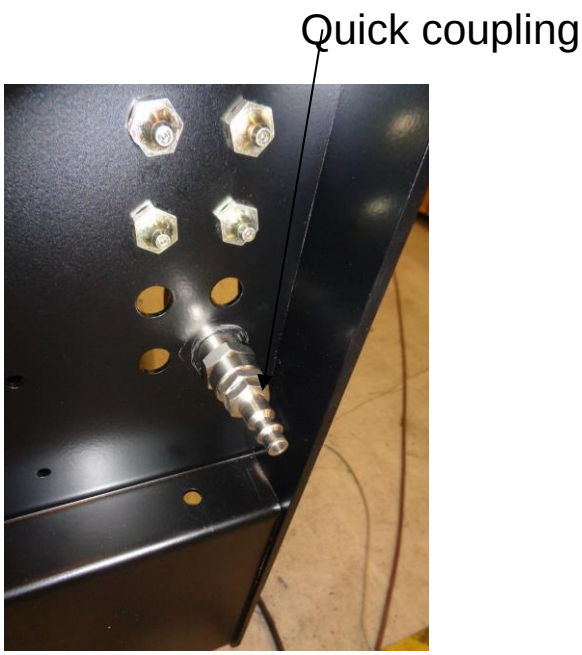
Ensure sufficient room around the machine during cleaning, repairs and maintenance. Make sure that there is plenty of space behind the machine to ensure that the operator is not squeezed by workpieces coming out of the machine.

5.6 Connection to Power Supply

The machine must be connected to mains power by a certified electrician in accordance with the applicable national regulations.

5.7 Connection to Compressed Air

The machine is equipped with a quick coupling for compressed air. The compressed air must be dry and clean, with a pressure of 8 to 10 bar.



5.8 Dismantling/Disposal

The machine must be disconnected from the mains by a certified electrician in accordance with the applicable national regulations.
Dismantle and dispose of in accordance with the national environmental regulations applicable at any time.

6 Extra Equipment

6.1 Brush-Off Unit

The machine is equipped with a unit for brushing off of workpieces before they are painted. The unit is fitted at the machine's inlet.

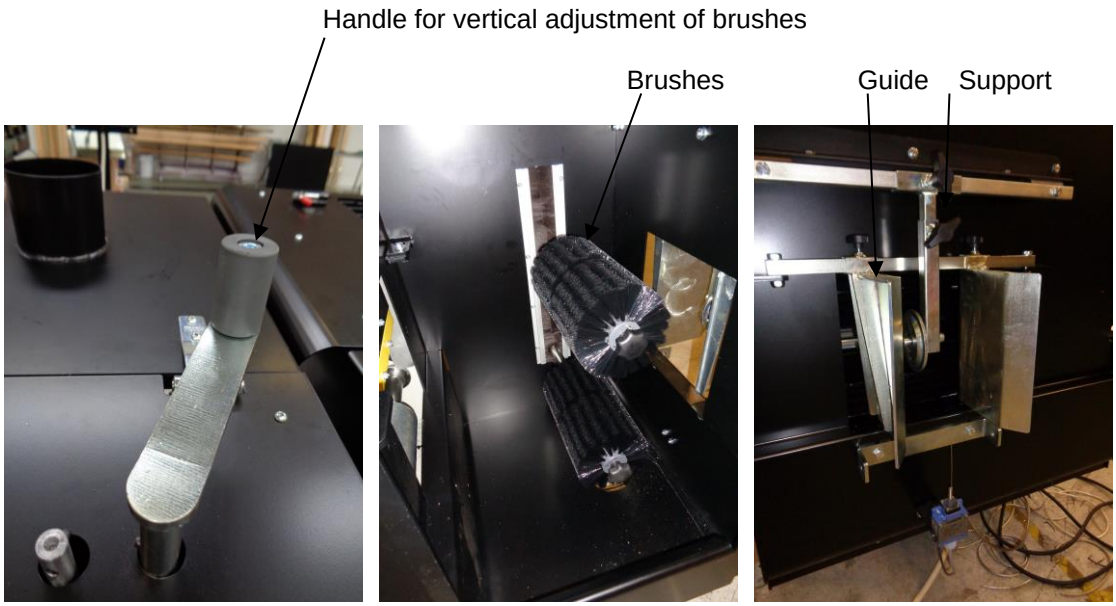
6.2 Connection

The unit has connecting pipes for ventilation at the top and bottom, see the photo under Section 6.1.

6.3 Setup

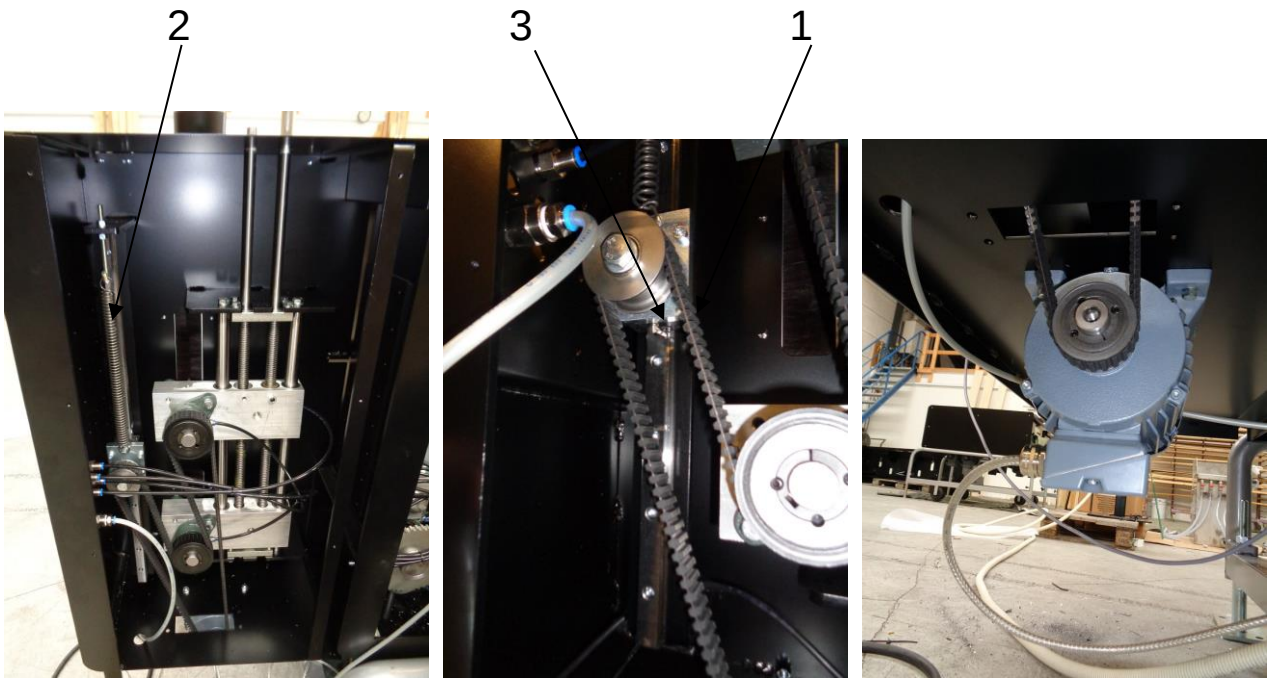
A handle for adjustment of horizontal brushes is fitted to the top of the unit.

There is a guide and a fixed support next to the inlet.



7 Maintenance

7.1 Toothed Belts



The belt (1) pulling the machine's horizontal brushes is tightened by a spring system (2), which eliminates the need for belt tensioning. However, we recommend that the belt be checked for wear/cracks at regular intervals and be replaced, wherever necessary. We also recommend that the ball carriage (3) of this tensioning function be greased at least once every three months or after 500 operating hours.

7.2 Lubrication

As a main rule, inspect and lubricate the machine at least 12 times per year or after approx. 100 operating hours.
Part of the machine's moving parts are equipped with externally placed grease nipples that facilitate regular maintenance by the operator.

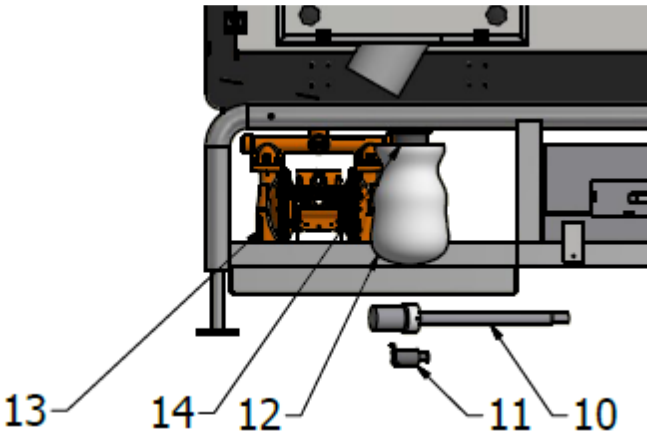
We recommend a multi-purpose grease with good water resistance such as, for example, FINA LICAL EP 2, or a corresponding product. There is freedom of choice regarding grease brands, but do not mix synthetic with mineral grease. Using obsolete lubricants can result in fire, corrosion or inadequate maintenance of the unit, which would result in reduced service life.

8 Machine Preparation

Place the machine on a flush, firm surface. It is possible to fine-adjust the height by ± 40 mm. There is also an option to bolt the machine to the floor.

Connect the machine to the mains.

Mount the filter bag adapter (14) to the discharge pipe and then the filter bag (12). Place the bucket with wood protection under the filter bag and the suction (11) and pressure relief hose (11) into the bucket. Note that machines with special pumps (for example, pneumatic diaphragm pumps) are not equipped with a pressure relief valve.



Operation

8.1 Ordinary Operational Disturbances

In case of an operational disturbance, make sure that the machine is idle before trying to rectify the fault.

- Check the setup. If no faults are found, send for service personnel or contact Ceetec.

During normal operation, the machine is operated with one operator at each end. One operator who pushes wooden workpieces into the machine and another operator who receives the workpieces after they have been painted/treated by the machine.

The painting machine's controls are placed at the side of the machine, next to the inlet. The main switch is placed on the control panel.

The temperature may never exceed the paint product's flash point minus 10°C.

We recommend that the painting machine be used in a ventilated room or outdoors. For instructions about necessary ventilation, otherwise refer to the supplier's instructions for the paint.

Avoid sticking your arms, etc. into the machine's inlet while the machine is in operation as there is a crush hazard.

8.2 Operation

Start-up/Shut-down – normal operation:
To power up / down the machine during normal operation, turn the buttons "PUMP", "FORWARD FEED" and "BRUSHES" to pos. "1" and "pos" 0, respectively. Use these button for normal power-up / shut-down in case of, e.g. breaks, paint changes, etc. Note that to power down the pump function of machines with air-operated diaphragm pumps, you need to cut the supply of air to the pump.

Adjustment of forward feed speed:
The speed at which the workpieces are fed into the machine can be adjusted using the knob "FORWARD FEED".

Adjustment of brush speed:
The speed of rotation of the brushes can be adjusted with the knob "BRUSHES".

Shut-down:
To shut down the machine for the purpose of repairs, maintenance, relocation and dismantling, place the main switch on the control panel to pos "0" (cuts power).

9 Normal Operation

9.1 Emergency Stop

The machine is equipped with an emergency stop device fitted to the middle of its front.

If the emergency stop device has been activated, the machine can only be restarted by repeated activation of the start button.

Note: Before powering the machine up again, make sure that the incident has been fully eliminated and the reason for the activation of the emergency stop device is known.

NEVER USE THE EMERGENCY STOP DEVICES AS A REGULAR STOP FUNCTION

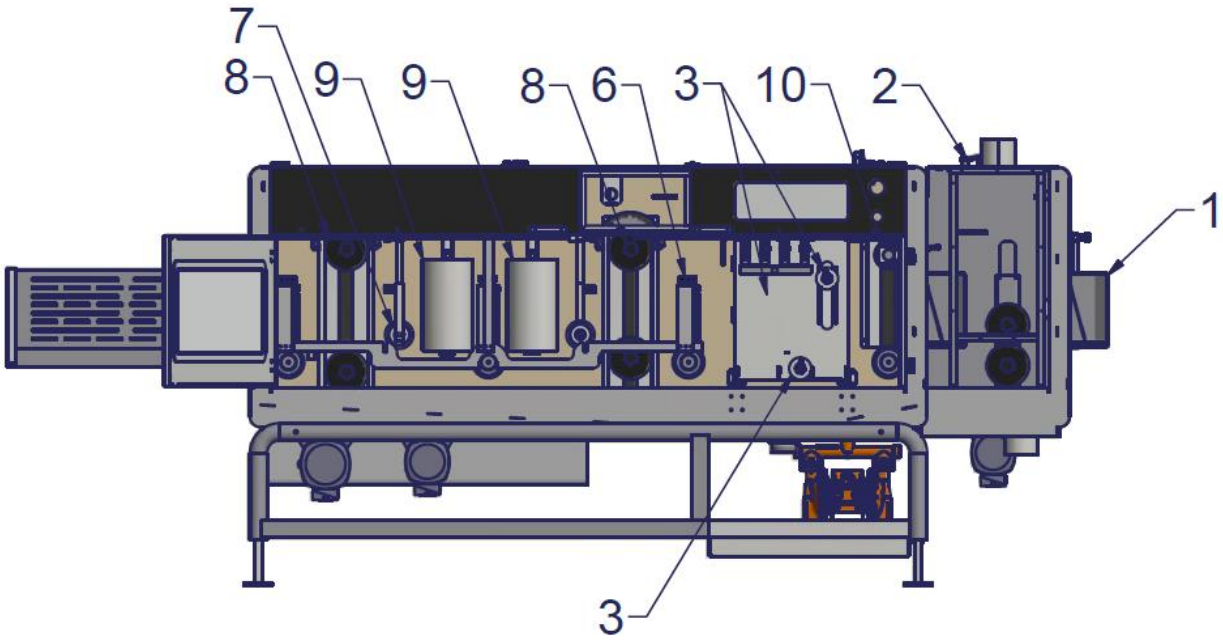
9.2 Setup and Trial Run

Conduct an individual setup and trial run of the machine prior to putting the machine into continuous operation.

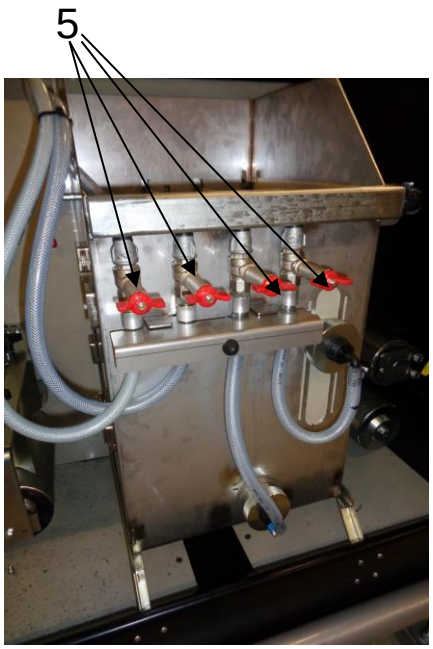
Set up the machine, as follows:

1. Disconnect the mains supply
2. Prepare the machine as earlier described.
3. Open the cover at the top and the covers on the front side to gain access to the working area of the machine
4. Open the cover on the front side of the brush-off unit (extra equipment)
5. Insert the desired workpiece into the machine so that it rests on the forward feed rollers. If necessary, lift the upper pressure roller via the control panel
6. Set the forward feed guide (1) so that there is approx. 10 mm of air on both sides of the workpiece.
7. If the machine is equipped with a brush-off unit, lower the unit.
    a. When you turn clockwise: The brush is raised (= less pressure on the top brushes and more pressure on the bottom brushes, respectively)
    b. When you turn counter-clockwise: The brush is raised (= more pressure on the top brushes and less pressure on the bottom brushes, respectively)
8. Lower the upper pressure roller (10) over the workpiece via the control panel. Push the upper pressure roller against the workpiece and then turn 8 additional mm to press the workpiece.
9. Set the four nozzle pipes (3) on each side of the workpiece at a suitable distance from the workpiece. The distance from the workpiece depends on the viscosity of the wood protection and the desired result on the ready workpiece.
10. Set the four midmost guides (6) so that there is approx. 10 mm of air on both sides of the workpiece. These guide the workpiece through the machine.
11. Set the 2 upper pressure wheels (7) so that there is approx. 10 mm of air between the wheel and the workpiece. The upper pressure wheels are supposed to prevent the lowermost horizontal brushes from "lifting" up thin workpieces (up to 20 mm).
12. Set the brush pressure of the horizontal brushes (8) from the control panel.
13. Set the brush pressure of the vertical brushes by turning the two spindles (9). Use the same handle as for setting the horizontal brushes, again via the control panel.

NOTE: Brush pressure depends on the shape and size of the workpiece, the sort of wood, type of paint and desired treatment and should therefore be set individually from one workpiece to another.



14. Connect to the mains.
15. Start the pump. To start an electric pump, turn the knob "PUMP" to pos. "1". To start an air-operated pump, connect to a source of air and possibly adjust. Such adjustments are made with a regulator (11), while pressure is relieved with a pressure gauge (12).
16. Carefully open the main cock (4) to get a measurement for the nozzle box.
17. Carefully open the desired number of cocks (5). Always open the top nozzles first. The machine can treat a workpiece on 1, 2, 3 or 4 sides at the same time. Only open for the sides of the workpiece that will be treated. It is only necessary open the vertical nozzles if the workpiece is more than 20 mm tall or if there is a groove or the like that needs to be treated.
18. Close the covers.
19. Activate the button "Brushes" and adjust brush speed with the knob to your desired speed
20. Activate the button "Forward feed" and adjust the forward feed with the knob to your desired speed
21. Remove the workpiece from the machine's outlet. Note: If the machine has been set up properly, the workpiece will come out by itself! If the workpiece stops, the reason for this can be that the workpiece has bumped against forward feed guides, guides, nozzles or brushes. Adjust these.
22. Test-run the same workpiece two or three times. This ensures that the brushes will be moist.
23. Then test-run an untreated workpiece and make sure that the result is, as desired. The machine is then ready for normal operation. Check the workpieces regularly. If necessary, adjust:
    a. Amount of paint
    b. Forward feed speed
    c. Brush speed
    d. Brush pressure



10 Adjustment/Setup of the Machine

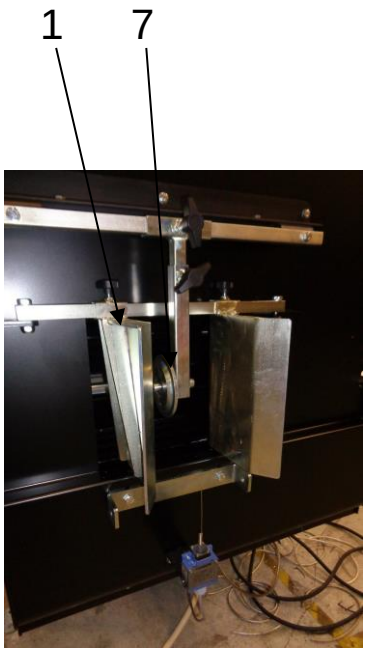
Do not make any adjustments to the machine while it is in operation. When performing adjustments, make sure that the machine is:

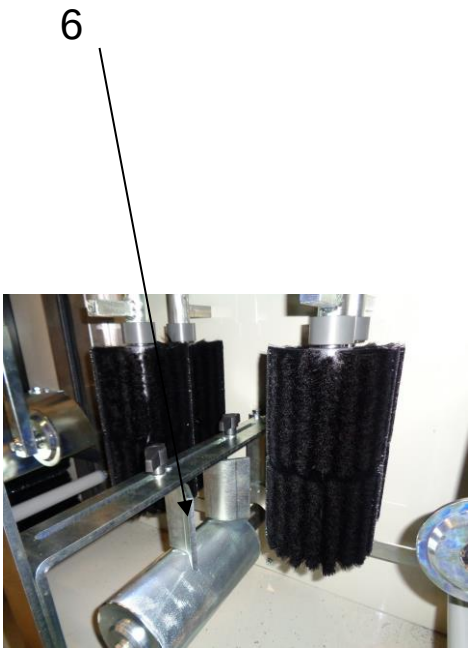
- Free of any workpieces (empty)
- Idle (the emergency stop has been activated)
- Disconnected from the mains

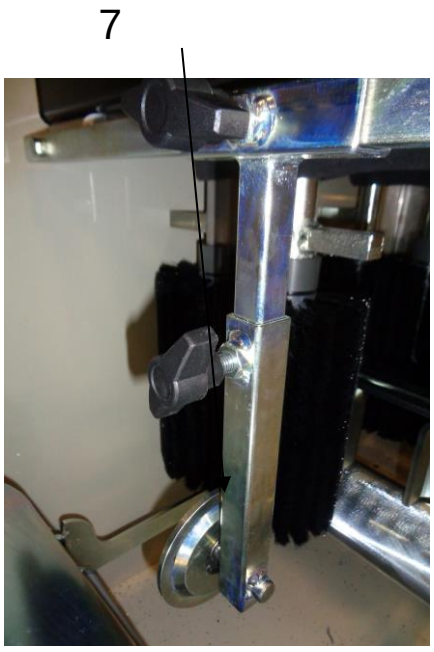
We recommend that you wear rubber gloves as well as safety goggles throughout such work. Also check the product sheet/supplier instructions for requirements for other personal protective equipment.

10.1 Forward Feed Guides, Midmost Guides and Upper Pressure Roller

The forward feed guides (1) and the midmost guides (6) guide the workpiece sideways. Set the guides by loosening the finger screws and moving them in towards the workpiece. There must be 2 to 3 mm of "air" on both sides. The upper pressure rollers (7) are supposed to prevent the bottom horizontal brushes from "lifting" thin workpieces (up to 20 mm). Set the rollers by loosening the finger screws and moving them in towards the workpiece. There must be approx. 5 to 10 mm of "air" on top of the workpiece. Point 6 and 7 are extra equipment for customers with short or thin workpieces.





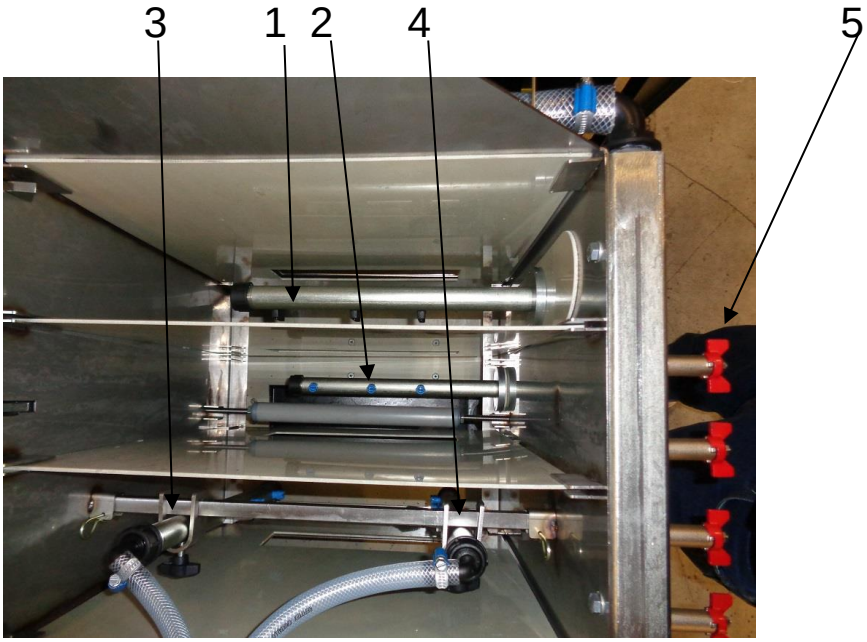


10.2 Nozzles

The painting machine is equipped with four nozzle pipes

1. One at the top
2. One at the bottom
3. One on the rear side
4. One on the front side
5. Ball valves functioning as throttle valves
6. For adjusting nozzle direction of the bottom nozzle pipe
7. For adjusting nozzle direction of the top nozzle pipe

Position the nozzles approx. 50 mm from the workpiece. Adjust the amount of wood protection by opening the cocks' throttle (5).



10.3 Brushes and Screens

The rotating brushes distribute the liquid evenly and brush off surplus liquid/paint.

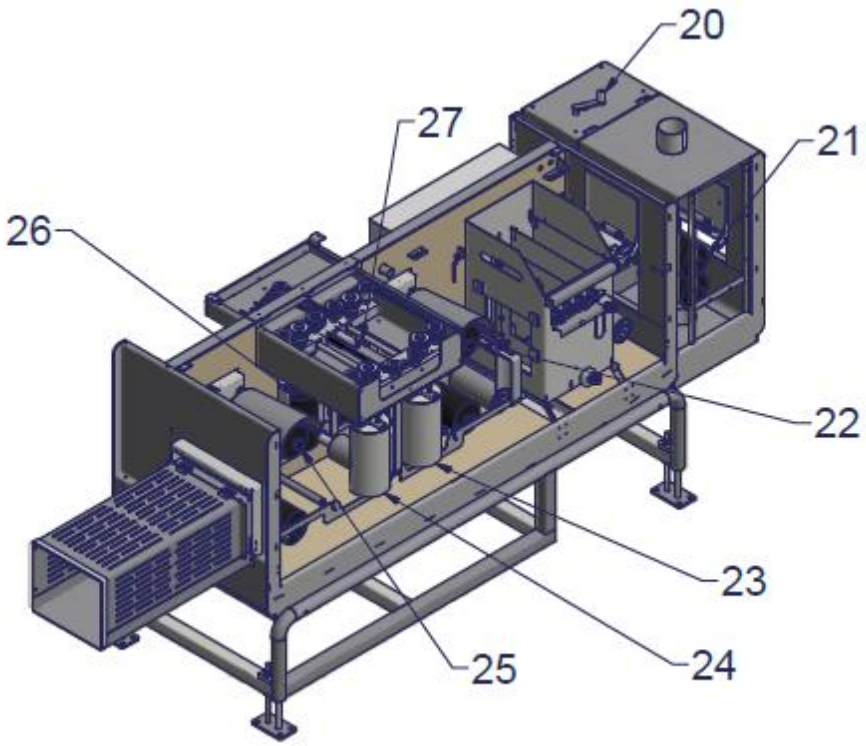
The brushes are manufactured in wear-resistant nylon and are identical. The brushes can easily be removed for cleaning and then fitted back. The setup of the brushes depends on the treatment and profile of the workpiece.

The brush pressure of the horizontal and vertical brushes can be set on the control panel.

The brush pressure of the horizontal brushes for brush-off is set by turning the spindle (20) with the handle.

a. When you turn clockwise: The brush is raised (= less pressure on the top brushes and more pressure on the bottom brushes, respectively)
b. When you turn counter-clockwise: The brush is raised (= more pressure on the top brushes and less pressure on the bottom brushes, respectively)

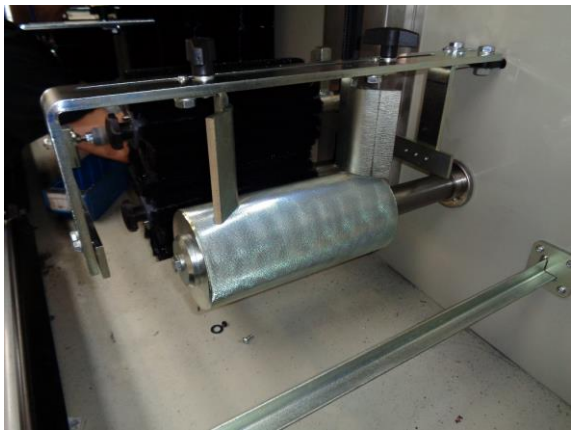
The screens prevent spraying from the brushes as well as dripping onto the treated surface and must therefore always be fitted before the machine is put into operation. Set up the screens so that there is approx. 10 mm of "air" between the workpiece and the front edge.



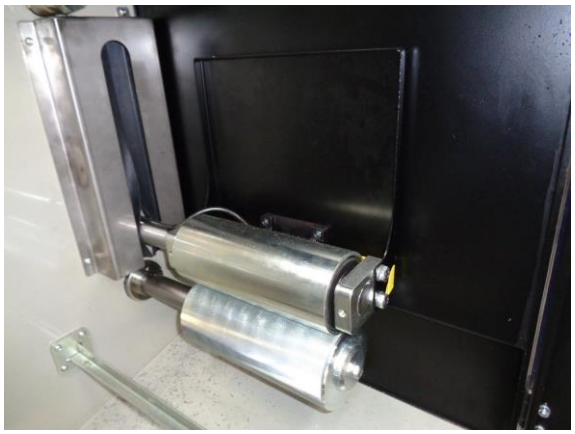
10.4 Forward Feed

The machine is equipped with four forward feed rollers that pull the workpiece through the machine. The counter pressure roller is adjusted from the operating panel.

Forward feed rollers



Counter pressure roller



10.5 Covers and Removable Shielding

Note that the pump can be activated even if the covers are open and the rear plate is dismantled.

The safety shield (30) at the machine's outlet can be opened without tools. The safety shield is monitored with a switch that prevents the forward feed and brushes from running when the shield is open.

There is a cover (31) over the nozzles on top.
This cover can be opened without tools.

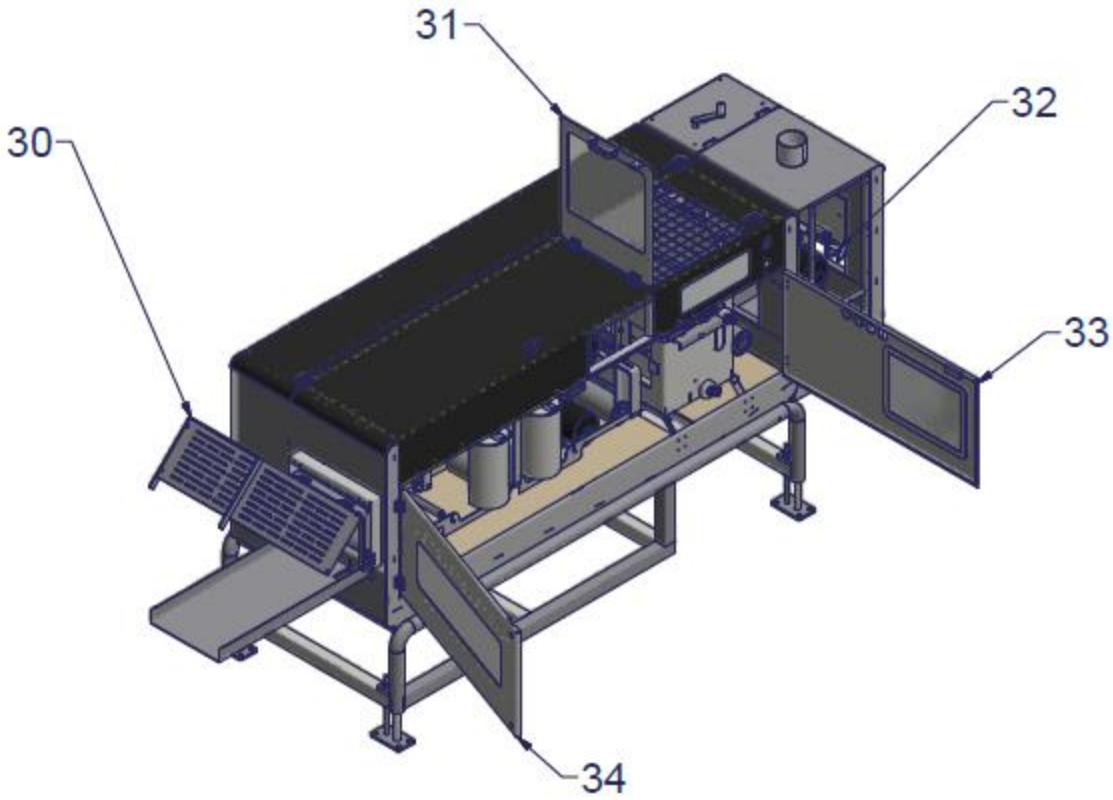
On the front side, there is a cover (32) next to the brush-off unit.
This cover can be opened without tools and is monitored with a switch that prevents the forward feed and brushes from running when the shield is open.

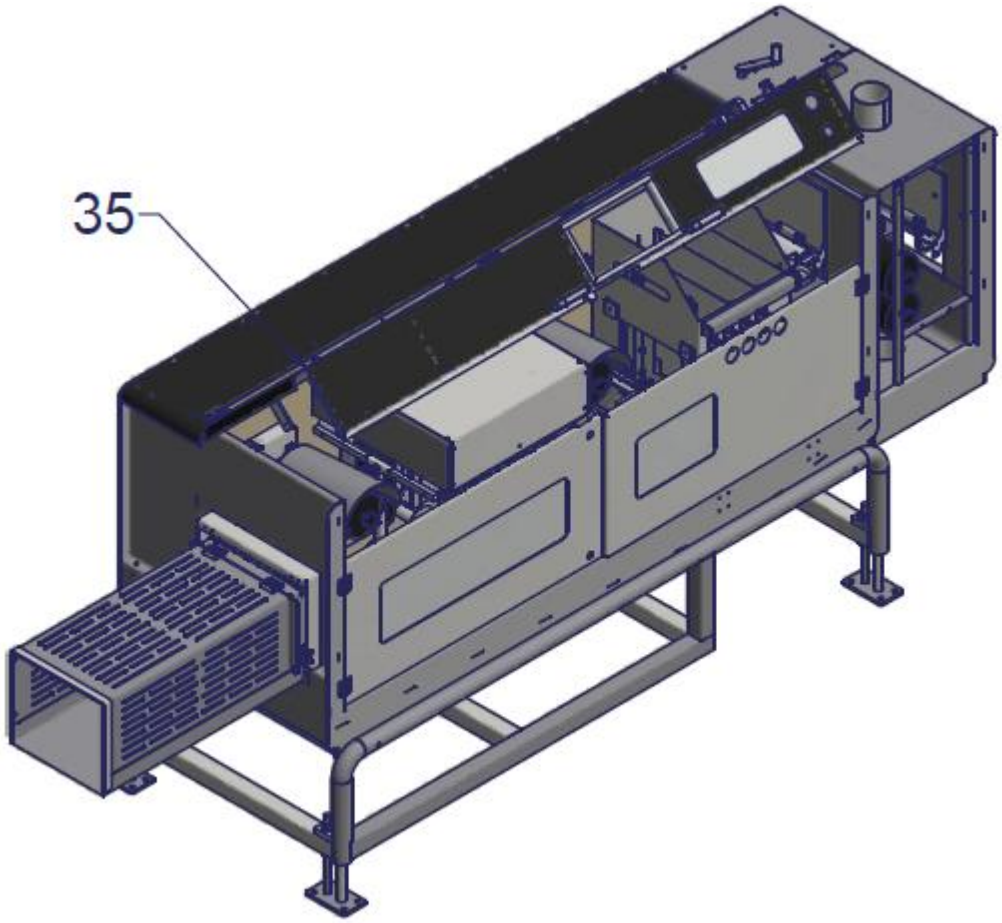
There are two covers (33 + 34) on the front side. They can be opened without tools and are monitored with a switch that prevents the forward feed and brushes from running when the shield is open.

To start the machine's forward feed and the rotation of the brushes, the side plate must be fitted correctly. If the cover is opened while the machine is operation, the machine's forward feed and the rotation of the brushes stop immediately. To restart the machine, fit the plate back correctly and give a new start command using the start button.

Note that the pump can be activated even if the covers are open.

To start the machine's forward feed and the rotation of the brushes, the cover must be closed. If the cover is opened while the machine is operation, the machine's forward feed and the rotation of the brushes stop immediately. To restart the machine, fit the cover back correctly and give a new start command using the start button.





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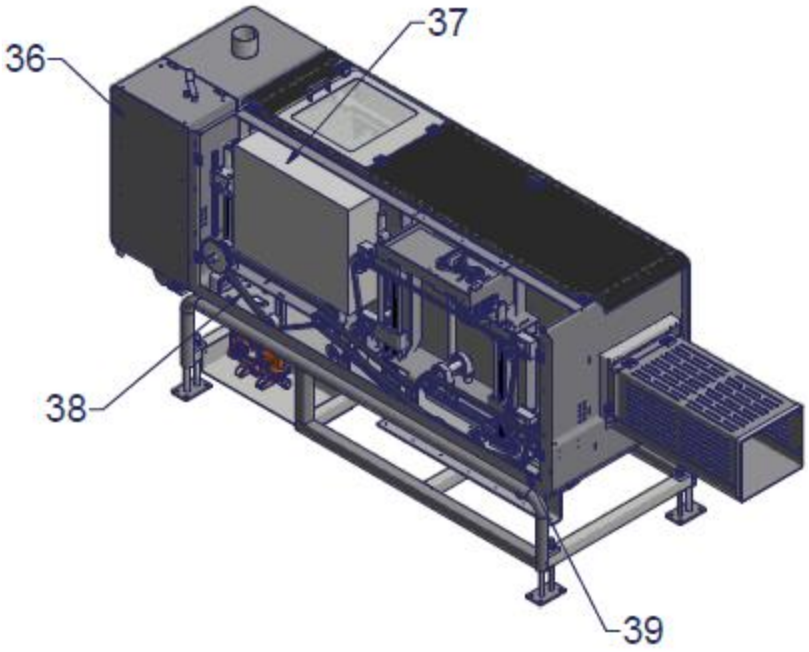
There are removable shields in the following places:

36. Next to the brush-off unit (extra equipment)
37. At the top of the machine's rearmost side
38. On the rear side, to the left when viewed from behind
39. On the rear side, to the right when viewed from behind

Use tools to dismantle these shields.

Always disconnect the machine from the main switch, lock the switches and dismantle the air hose before removing the shields.



11 Cleaning

We recommend wearing rubber gloves and safety goggles throughout the work. Also check the product sheet/supplier instructions from the supplier of the wood protection/paint for requirements for other personal protective equipment.

Always disconnect the machine from the main switch and lock the switches before getting under way with the cleaning.
Note that the compressed air is still under pressure.

It is important to keep all signs and controls clean and free of paint.

It is important to thoroughly clean the machine after the end of a run and when the paint is changed.

11.1 Spare Parts

Dismantle and clean the brush screens, brushes, carrying rollers, if any, guides and other spare parts under running water. Fit back the parts after you finish cleaning them. Dry the brushes before fitting them back. Note that while the brushes are dried, it is important to always stack/place them onto the brush hub (1) so that the hairs (2) do not end up being crooked.

11.2 Machine

The machine can be cleaned with either water or a cleaning agent, depending on the type of paint that has been used.
Remove the suction hose from the bucket with wood protection. Start up the pump, open the nozzle valves (always remember to open the top nozzle first), dismantle the end plugs and pump out the last remains of liquid/paint out of the machine and back into the bucket. Close the nozzle valves after approx. 2 min. Stop the pump.

The nozzle system is empty when air is pushed out of the pressure relief valve (visible when there are air bubbles in the bucket). Fit the end plugs back to the nozzle pipes.

Place the suction hose into a bucket filled with water (use lukewarm water) and the pressure relief hose into an empty bucket that is placed under the discharge. Start up the pump and open the nozzle valves (remember to always open the top nozzle first). Stop the pump once there is clean water coming out of the nozzles.

Open all covers that can be opened without tools. Close all nozzle valves. Mount a wash-down hose to valve no. 1. Start up the pump and flush the machine by opening valve no. 1. Then dry it off and finally clean the filter bag, suction filter and pressure relief valve.

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12 Maintenance

When performing any service and maintenance tasks, make sure that the machine is:

- Free of any workpieces (empty)
- Idle (the emergency stop has been activated)
- Disconnected from the mains
- Disconnected from the compressed air supply after removing the air hose at the quick coupling

Never touch any parts of the machine while it is in operation

12.1 Regular Maintenance

As a main rule, inspect and lubricate the machine at least 12 times per year or after approx. 100 operating hours.
Part of the machine's moving parts are equipped with externally placed grease nipples that facilitate regular maintenance by the operator.

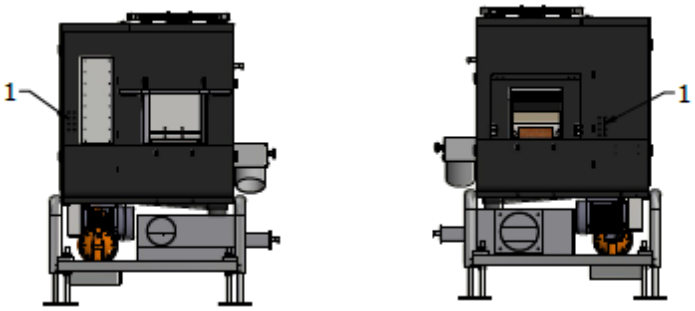
12.2 Bearings

Check and replace the bearings in case of defects. Lubricate the bearings, as specified:

Fill the grease nipples (1) at the machine's ends with grease. Pump each grease nipple 5 times. These grease nipples supply the bearings and other moving components of the:

- Forward feed
- Horizontal brushes

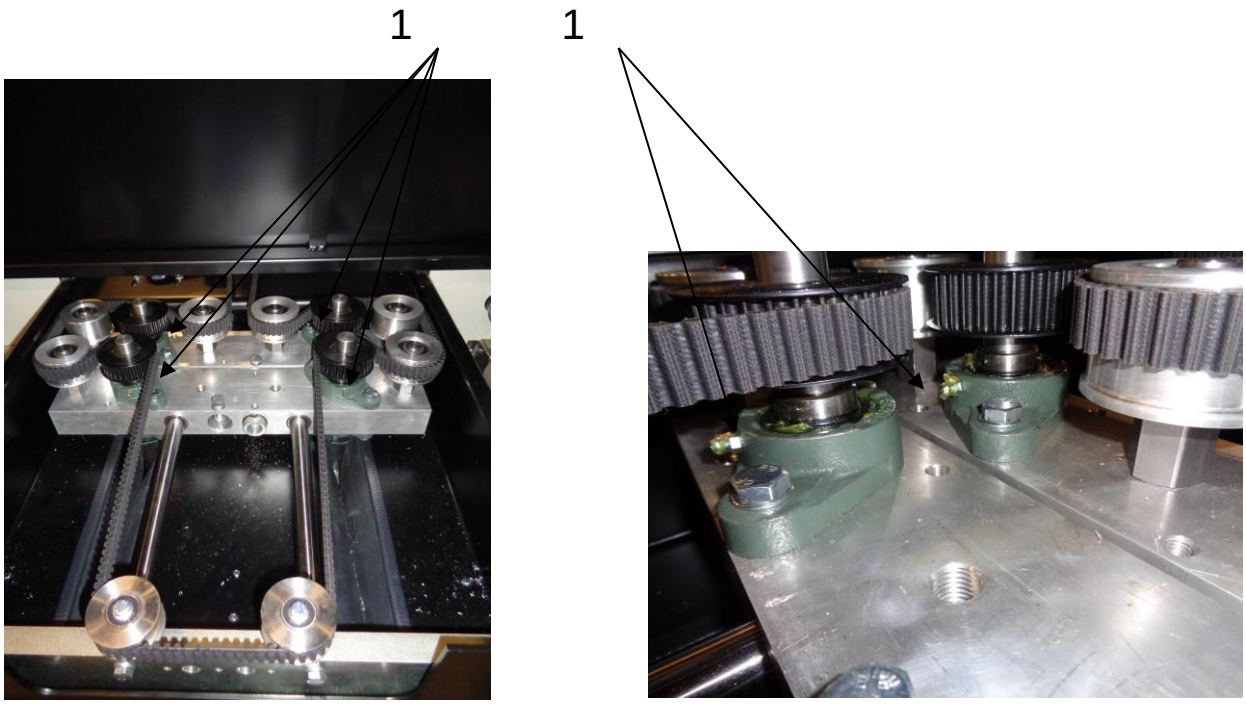
If the machine is equipped with a brush-off unit, there are also grease nipples on the rear side of the brush-off unit.

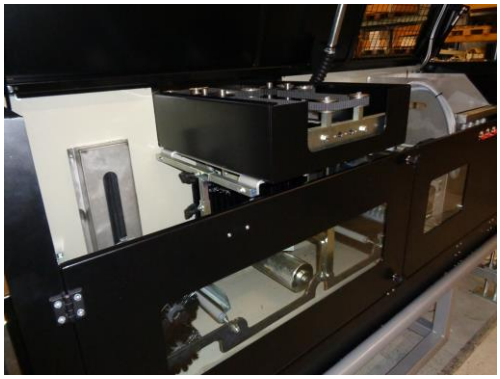


If the machine is equipped with a brush-off unit, there are also grease nipples on the rear side – remove the rearmost cover of the brush-off unit and you will see the grease nipples, as displayed on the illustration.

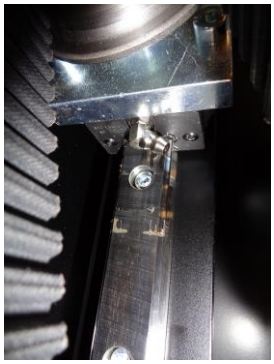
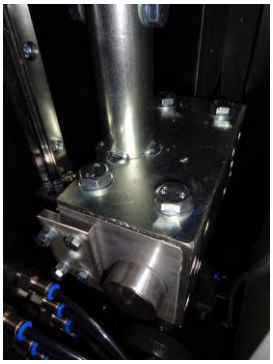
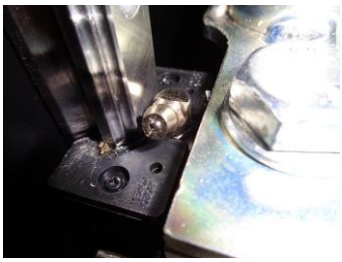
Follow these steps to lubricate the grease nipples of the vertical brushes:

- Dismantle the machine's fixed cover by loosening the installed screws
- Fill the 8 grease nipples (1) on the bearings with grease. Pump each grease nipple 5 times.
- Fit back the machine's fixed cover





There are a total of three grease nipples in the rearmost cover

Grease specifications:

We recommend a multi-purpose grease with good water resistance such as, for example, FINA LICAL EP 2 or a corresponding product. There is freedom of choice regarding grease brands, but do not mix synthetic with mineral grease. Using obsolete lubricants can result in fire, corrosion or inadequate maintenance of the unit, which would result in reduced service life.

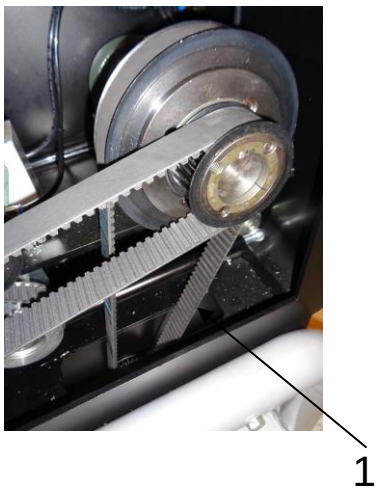
12.3 Toothed Belts

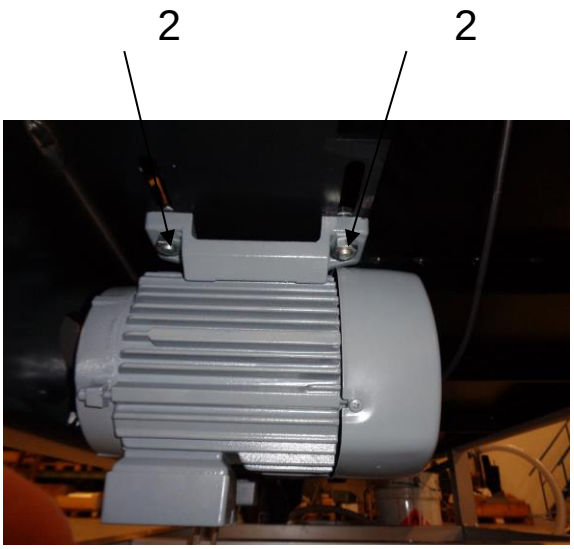
All of the machine's rotating parts are pulled by toothed belts.

All toothed belts are fitted with tension rollers and must be inspected for the first time after approx. 50 hours of operation. Afterwards the belts must be inspected at least once a year or after 1,700 hours of operation.

Toothed Belt for Motor – Forward Feed Roller
Follow these steps to tension the toothed belt (1) of the motor for the forward feed roller:

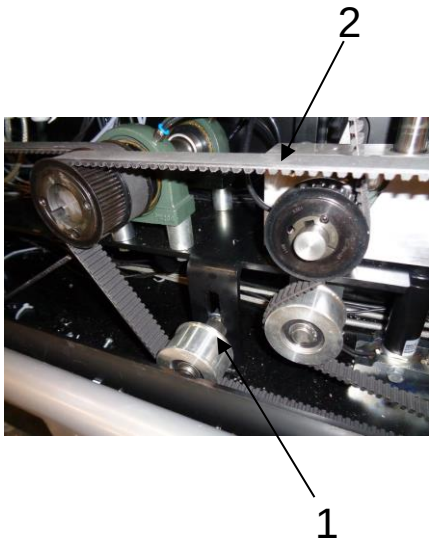
- Dismantle the rear plate of the machine
- Loosen the 4 bolts on the motor (2)
- Shift the motor until the belt (1) is tight enough
- Tighten the 4 bolts on the motor
- Mount the side plate of the machine





Toothed Belt for the Forward Feed
Follow these steps to tension the toothed belt (2) for the forward feed:

- Dismantle the rear plate of the machine
- Loosen the bolt on the tensioning roller (1).
- Move the tensioning roller until the belt (2) is tight enough.
- Tighten the bolt on the tensioning roller.
- Fit the rear plate of the machine.

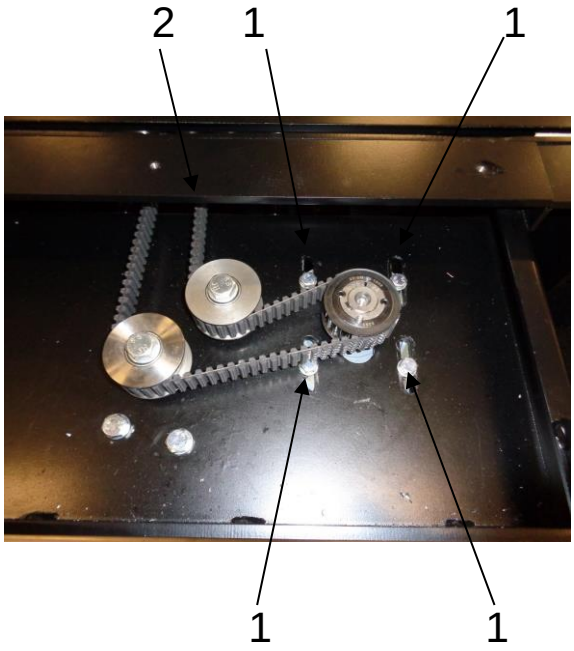


Follow these steps to tighten the toothed belt (3) of the forward feed:

- Dismantle the rear plate of the machine
- Loosen the bolt on the tensioning roller (1).
- Move the tensioning roller until the belt (3) is tight enough.
- Tighten the bolt on the tensioning roller.
- Fit the rear plate of the machine.

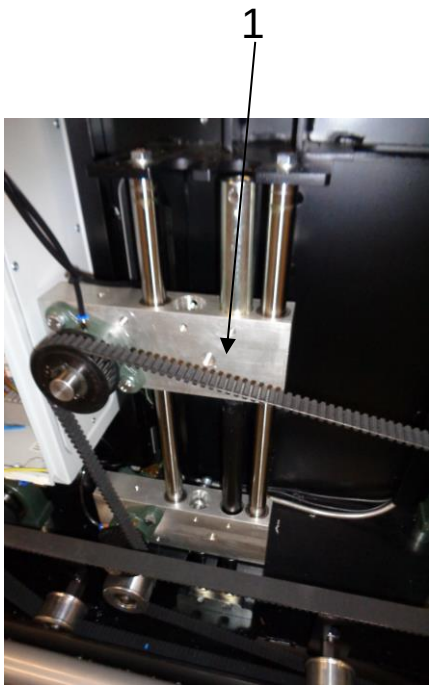
Toothed Belt for Vertical Brushes
Follow these steps to tighten the belt of the vertical brushes:

- Dismantle the rear plate of the machine
- Loosen the 4 bolts on the motor (1).
- Shift the motor until the belt (2) is tight enough.
- Tighten the 4 bolts on the motor (1).
- Fit the rear plate of the machine.



Toothed Belt for Horizontal Brushes

The belt (1) pulling the machine's horizontal brushes is tightened by a spring system (2), which eliminates the need for belt tensioning. However, we recommend that the belt be checked for wear/cracks at regular intervals and be replaced, wherever necessary. We also recommend that the ball carriage (3) of this tensioning function be greased at least once every three months or after 500 operating hours.

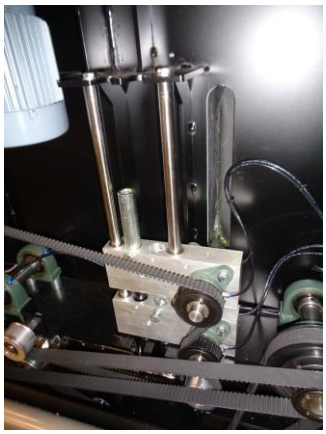


12.4 Lubrication of Guides / Spindles for Brush Arrays

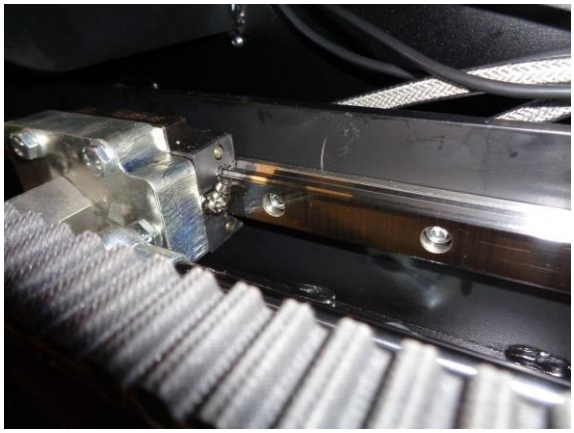
1. Tempered shafts + ball bushings: 4 on horizontal brush arrays and 2 on vertical brush arrays: Lubricate with spray grease once every three months or after 500 operating hours. We recommend the use of a grease spray of the type: NKL Molycote chain grease. Alternatively, lubricate with oil.
2. Spindles: 4 on horizontal brush arrays and 2 on vertical brush arrays: Lubricate with spray grease once every three months or after 500 operating hours. We recommend the use of a grease spray of the type: NKL Molycote chain grease. Alternatively, lubricate with oil.

For vertical brushes

For horizontal brushes



For tensioning of belt to rollers



There is freedom of choice regarding oil brands, but do not mix synthetic with mineral oil. Using obsolete lubricants can result in fire, corrosion or inadequate maintenance of the unit, which would result in reduced service life.

12.5 Motors, Gear and Pump

Motors:	Keep the motors clean and free of dust and paint residue. Remove any grease, oil or similar products that can cause the dust to bond and thereby reduce the cooling effect. Maintain the motor in accordance with the supplier's instructions.
Gear (pump):	(If the machine is delivered with a Ceetec diaphragm pump) Conduct monthly inspections of the oil level of the gear. Maintain the gear in accordance with the supplier's instructions.
Pump:	(If the machine is delivered with a pump other than a Ceetec diaphragm pump) Maintain the pump in accordance with the enclosed sub-supplier's documentation.

12.6 Hoses

Check the hoses for leaks and replace, if necessary.

Troubleshooting

Fault	Possible reason	Remedy
A. Pump/Forward feed/Brushes won't start	The machine is not connected to the mains	Connect to the mains
	The main switch is off	Turn the main switch to pos "I"
	There can be a thermal outage	Inspect the frequency converter in the electric cabinet.
B. The forward feed roller and brushes are not revolving / won't start	The power supply to the forward feed motor has been cut	See under "A"
	The V-belts/toothed belts are too slack or damaged	Tighten/Replace
	The belts are torn	Replace the belts
	The forward feed roller, V-belt / discs are not fastened to the shaft	Fasten the belts
	The emergency stop device is activated and/or the cover is open	Deactivate the emergency stop device and/or close the cover(s)
C. No/too little water comes out of the nozzles	The power supply to the pump motor has been cut	See under "A"
	The nozzle valves are closed	Open the nozzle valves
	Dirt in the suction filter	Unscrew and clean the filter basket Possibly clean it using compressed air
	The nozzles are clogged	Dismantle and clean the flow nozzle and end plug. Clean the nozzle pipes. Check all hoses for dirt. Make sure that the hose couplings are tensioned and tight so that the pump does not accidentally draw outdoor air.
	The spring in the pressure relief valve can be too slack	Open all nozzle valves. Lift the pressure relief valves out of the bucket. Tighten (extend) the spring if a lot of liquid comes out
D. Pump motor cuts out	The motor is suffering from an overload because the pressure relief valve is clogged	Clean the pressure relief valve and hose. When assembling the pressure relief valve, the grey piece must turn in towards the valve. Wait for about 10 min. and then reset the pump motor.

D. Forward feed motor cuts out	The motor is suffering from an overload because the counter pressure roller and/or guide is/are set too tight on to the workpiece	Adjust the setting. Wait for about 10 min. and then reset the forward feed motor
D. Brush motor cuts out	The motor is suffering from an overload because the brushes are sitting too tight on to the workpiece	Adjust the setting. Wait for about 10 min. and then reset the brush motor

13 Replacement of Spare Parts

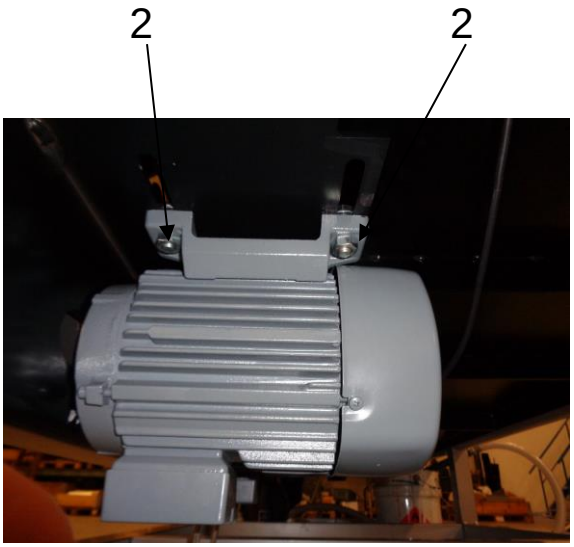
There is easy access to all replaceable parts when the detachable covers are removed and the fixed shields are dismantled.

Once you replace the required spare parts, assemble everything in reverse order. Do NOT START the machine until all safety devices are back in place.

13.1 Toothed Belt for Motor – Forward Feed Roller

Follow these steps to replace the toothed belt of the motor for the forward feed rollers:

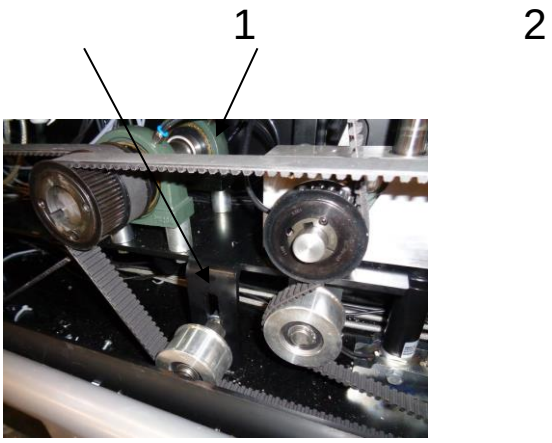
- Loosen the 4 bolts on the motor (2).
- Shift the motor (loosen the belt)
- Remove the old belt (1) and fit back a
- new belt
- Shift the motor (tighten the belt)
- Tighten the 4 bolts on the motor



13.2 Toothed Belt for the Forward Feed

Follow these steps to replace the toothed belt for the forward feed:

- Loosen the bolt on the tensioning roller (1).
- Loosen the tensioning roller until the belt (2) is loose.
- Remove the old belt (2) and fit back a new one
- Tension the tensioning roller (tighten the belt)
- Tighten the bolt on the tensioning roller.



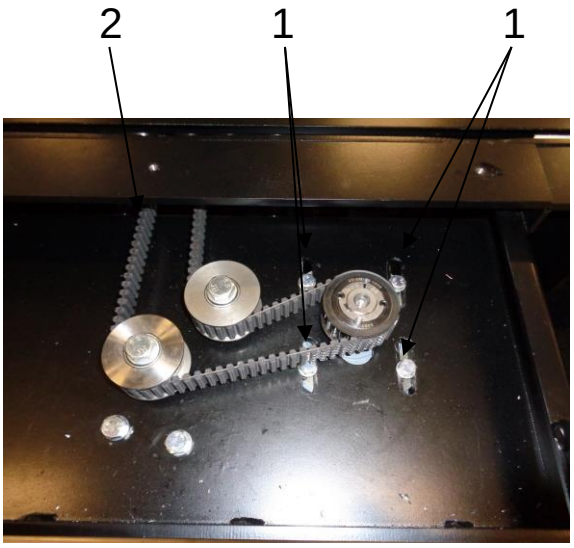
Follow these steps to replace the toothed belt for the forward feed:

- Loosen the bolt on the tensioning roller (1).
- Loosen the tensioning roller until the belt (3) is loose.
- Remove the old belt (3) and fit back a new one
- Tension the tensioning roller (tighten the belt)
- Tighten the bolt on the tensioning roller.

13.3 Toothed Belt for Vertical Brushes

Follow these steps to replace the belt for the vertical brushes:

- Dismantle the fixed rear plate of the machine and tilt the machine's cover up
- Loosen the 4 bolts on the motor (1).
- Shift the motor (loosen the belt) and dismantle the belt (2)
- Mount a new belt
- Shift the motor (tighten the belt)
- Tighten the 4 bolts on the motor (1).
- Mount the machine's fixed cover



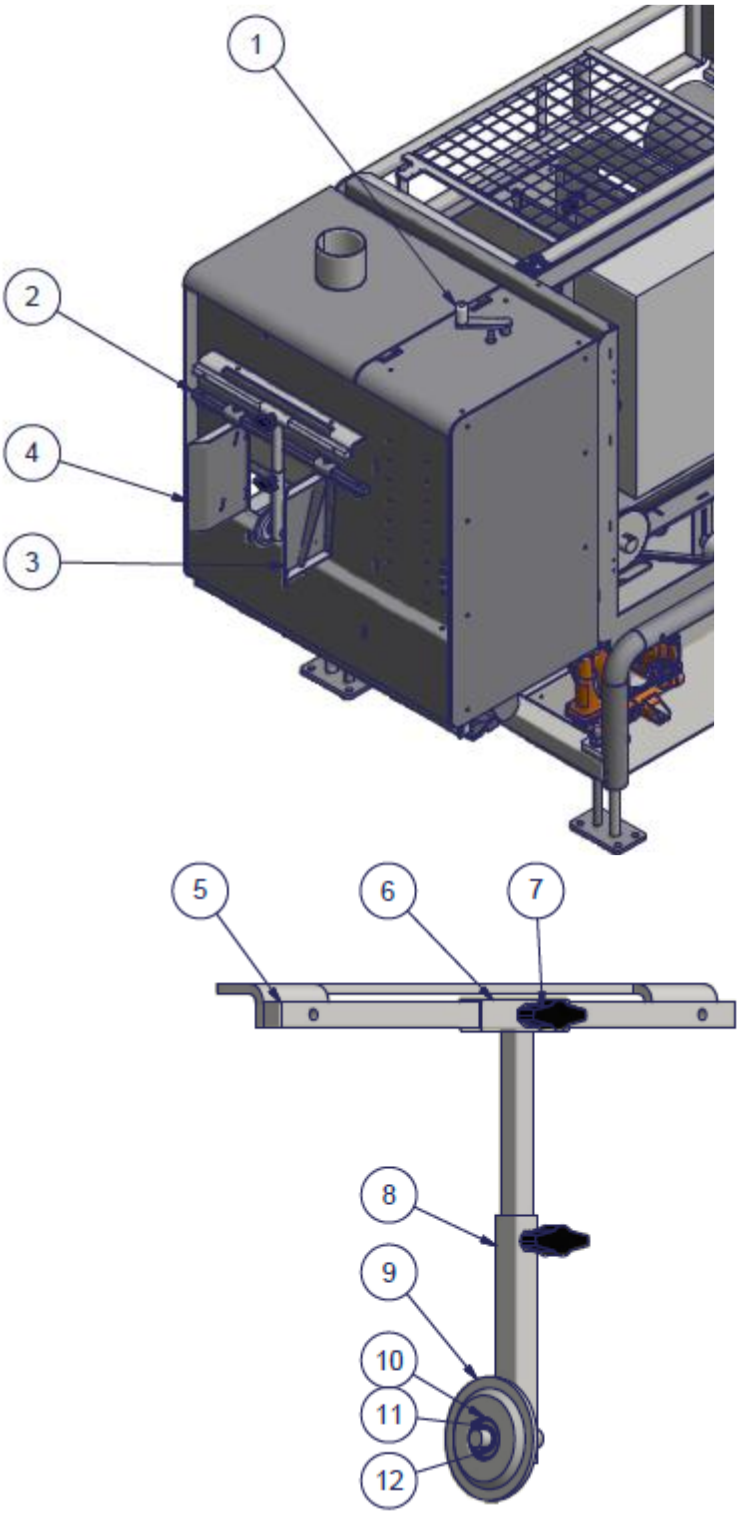
13.4 Toothed Belt for Horizontal Brushes

Follow these steps to replace the belt for the horizontal brushes:

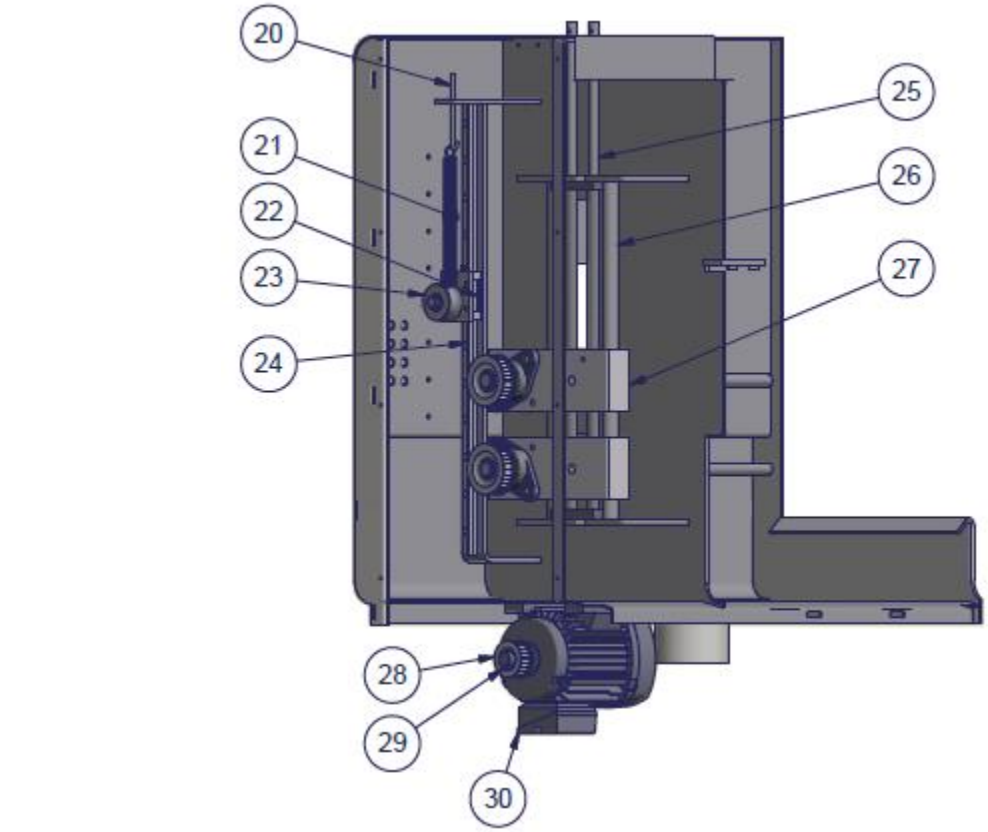
- Dismantle the rear plate of the machine
- Pull the belt (the tensioning of the belt is spring-loaded, and the belt can therefore be pulled without loosening the tensioning rollers or the like)
- Install a new belt and pull it around all belt wheels
- Fit back the machine's rear plate

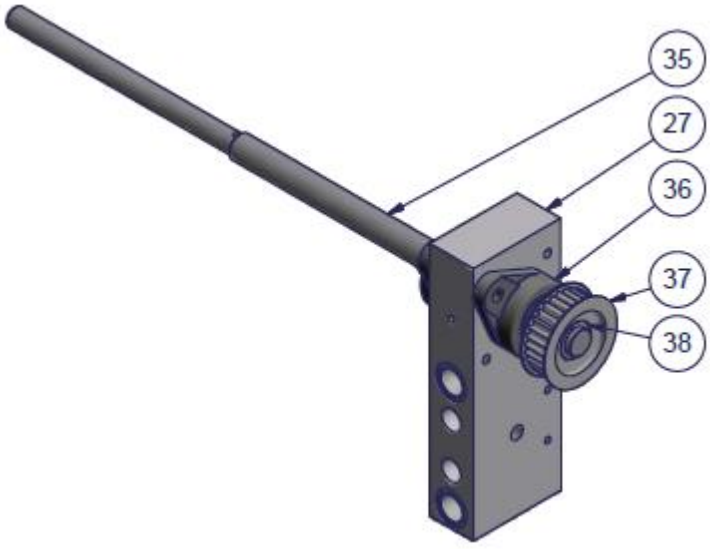
14 Overview of Spare Parts

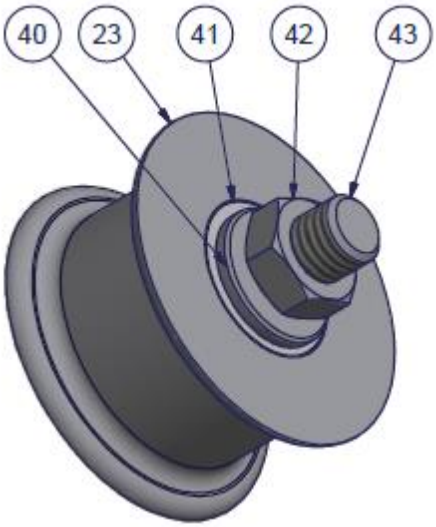
Spare parts, illustrations A



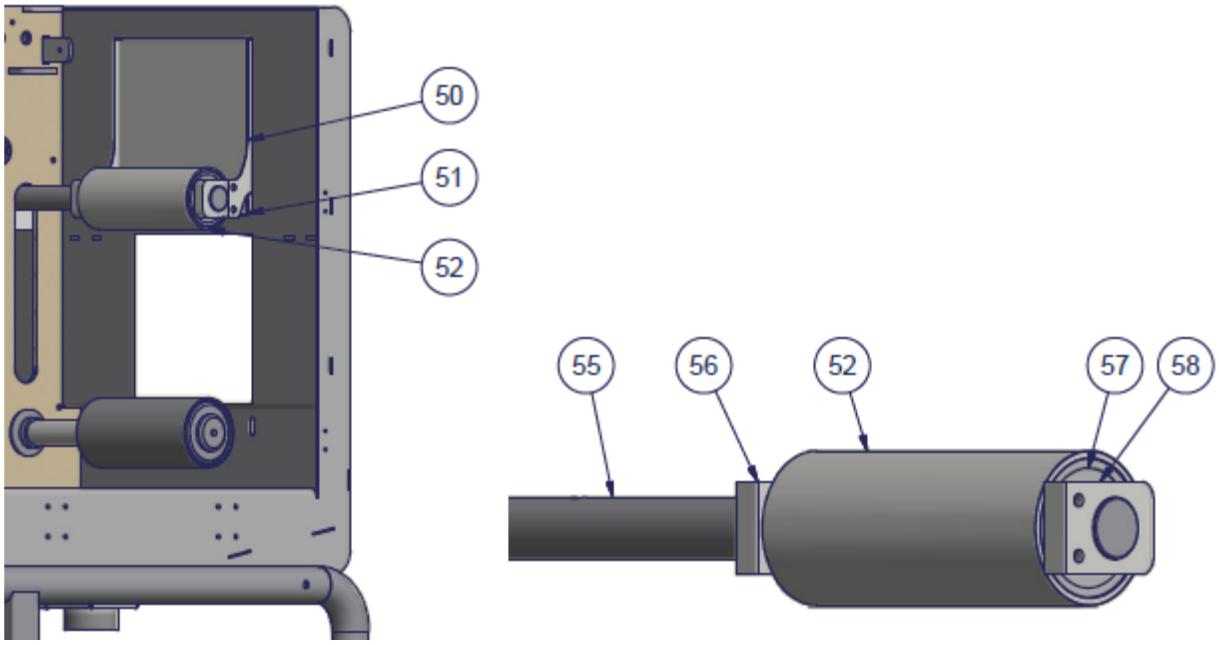
Spare parts, illustrations B



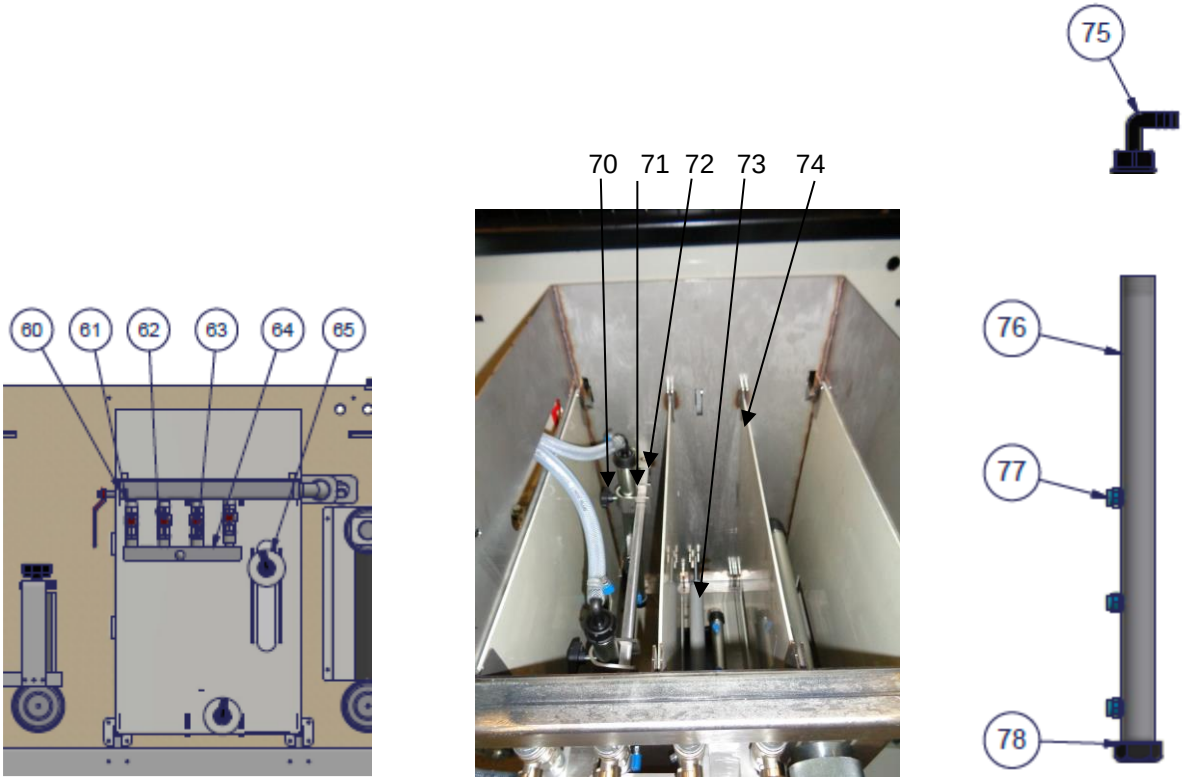




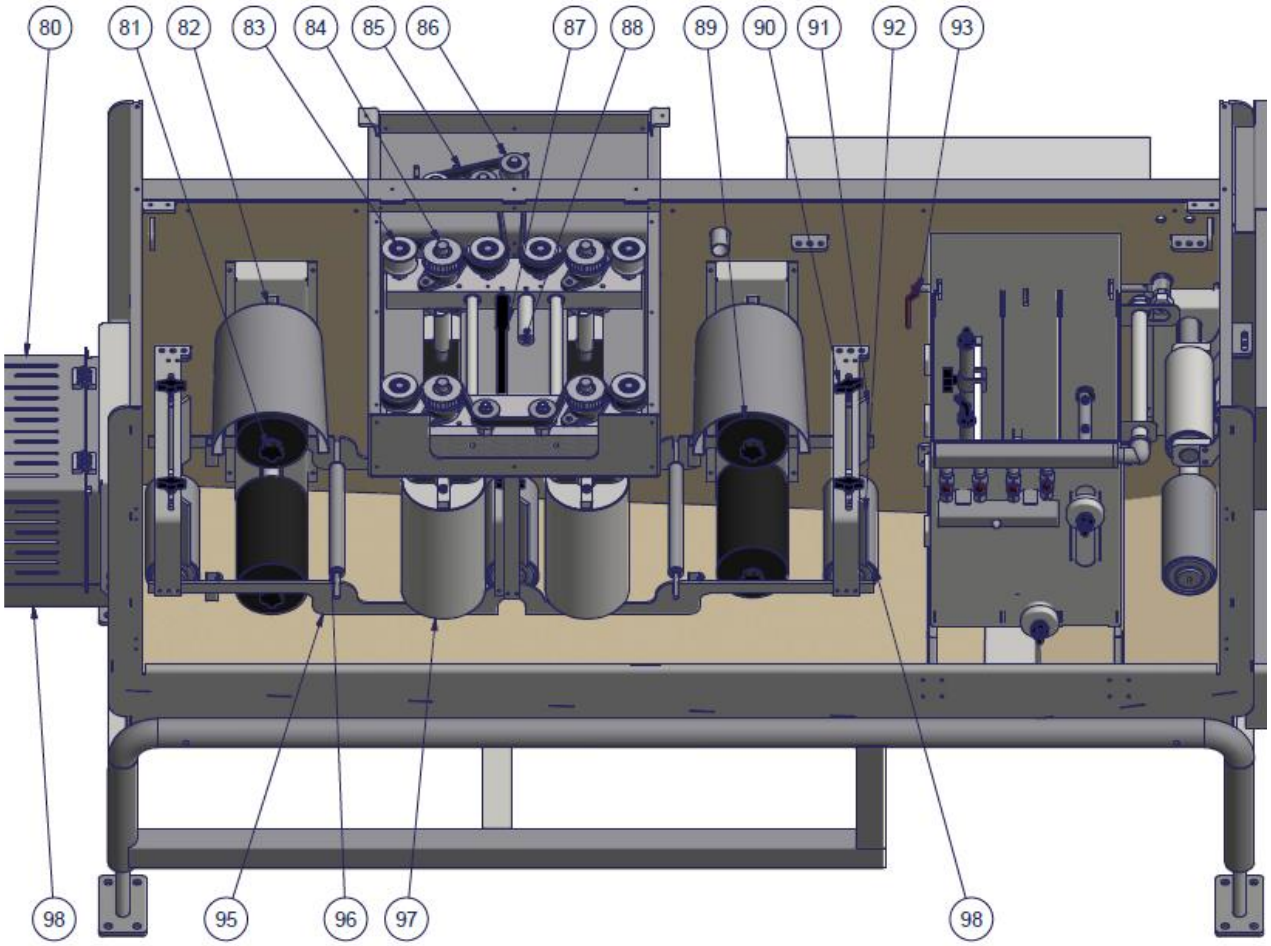
Spare parts, illustrations C

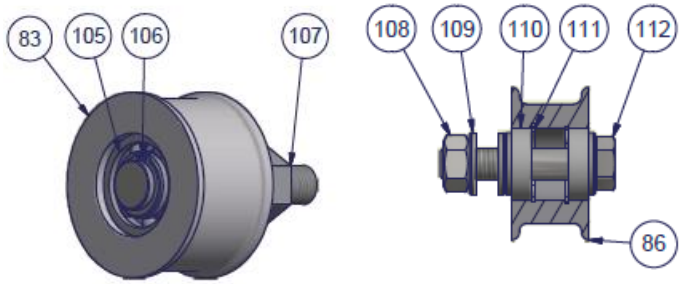


Spare parts, illustrations D

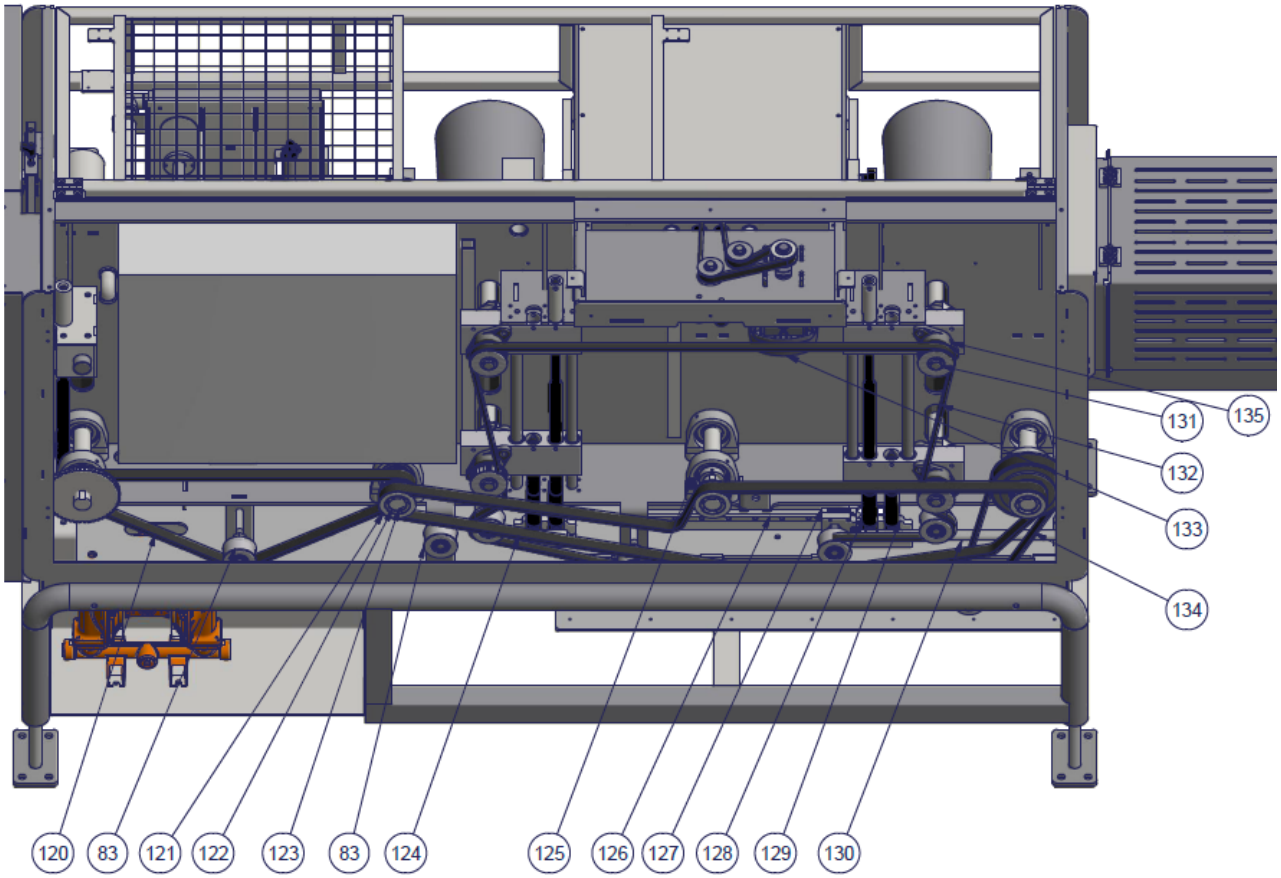


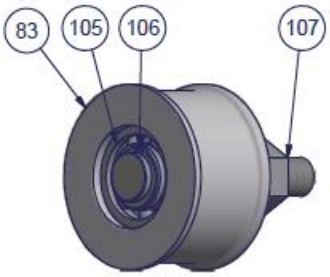
Spare parts, illustrations E

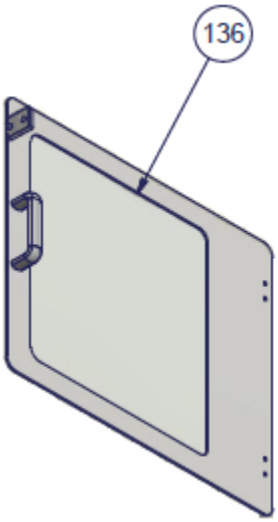




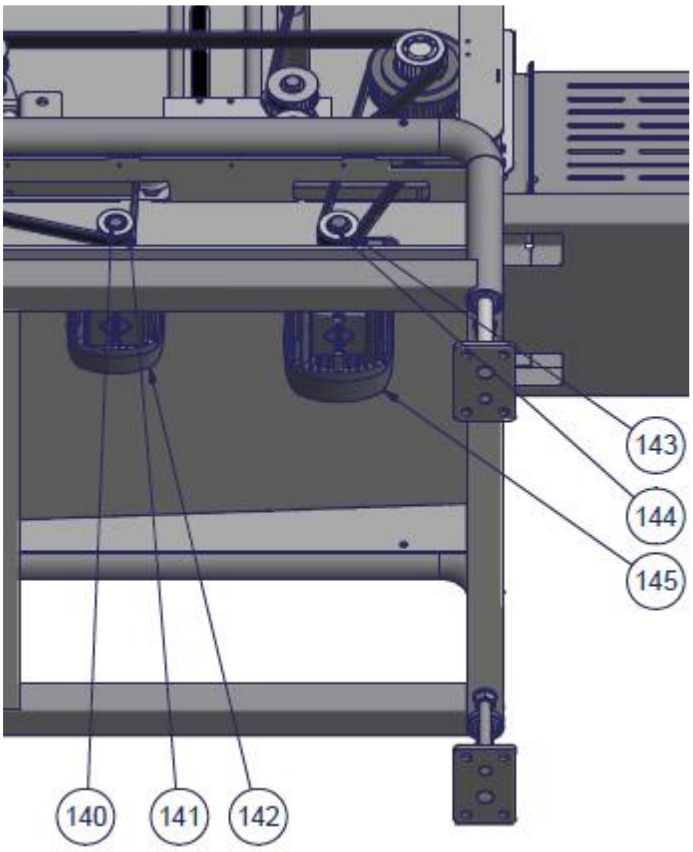
Spare parts, illustrations F







Spare parts, illustrations G



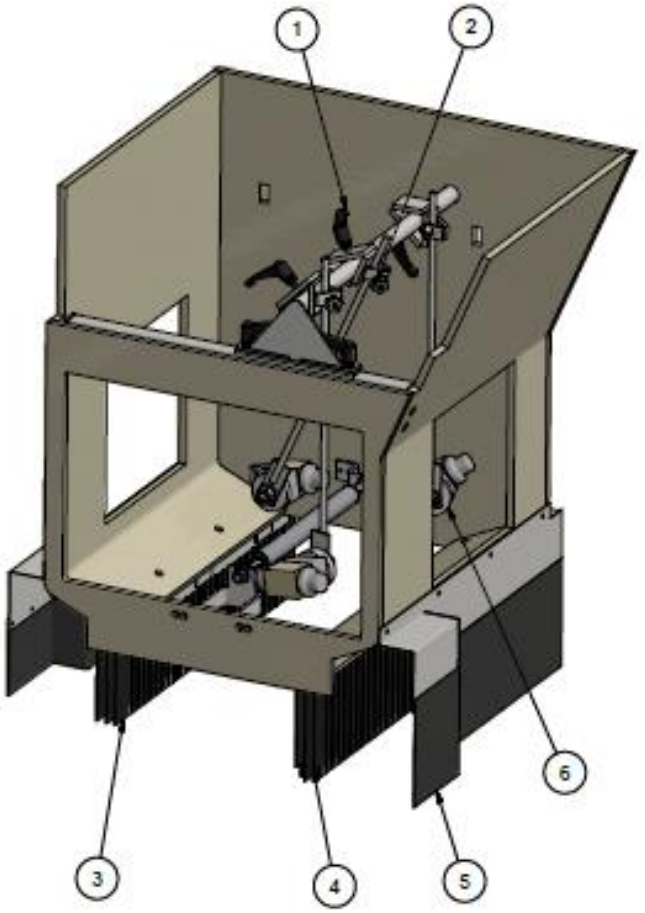
Spare Parts

Pos	Item	Pcs.	Picture	Ceetec no.
1	Handle for brushes	1	A	804635
2	Feed rail guide	2	A	804636
3	Feed guide, right	2	A	804637
4	Feed guide, left	2	A	804638
5	Rail for upper pressure wheel	2	A	804639
6	Adjustment rod, 1 upper pressure wheel top part	3	A	804640
7	M 10 finger screw M10 * 20	3	A	804641
8	Adjustment rod, 2 upper pressure wheel bottom part	3	A	804642
9	Upper pressure wheel	3	A	804643
10	Outermost lock ring. Internal Ø35 din 472	3	A	804644
11	Bearing 6202 2z	3	A	804645
12	Innermost lock ring. External for Ø15 Din 471	3	A	804646
20	Belt tensioner	1	B	804647
21	Spring for tensioning belt	1	B	804648
22	Ball carriage SBG20-FL	1	B	804649
23	Belt tensioner wheel	1	B	804650
24	Guide for belt carriage SBG20 L780	1	B	804651
25	Guide spindle	2	B	804652
26	Guide shaft	2	B	804653
27	Alu block	2	B	804654
28	Toothed belt disc for motor 22-8M-20 for TP	1	B	804655
29	TP bushing 1008-24	1	B	804656
30	Brush-off motor 0.37 kW 750 rpm Build st 90s B3	1	B	804657
31	Toothed belt	1	B	804658
35	Brush shaft	2	B	804659
36	Flange bearing Ø25	4	B	804660
37	Toothed belt disc 30-8M-20 for TP 110825 –Ø25	2	B	804661
38	TP bushing 1108 25	2	B	804662
40	Disc DIN 125 1 BB 13	2	B	804663
41	Bearing for belt tensioner wheel 6001 z	2	B	804664
42	Nut for belt tensioner M12	1	B	804665
43	Bolt for belt tensioning wheel M 12 * 55 EN 24014	1	B	804666
50	Inlet screen	1	C	804667
51	Screen edge at inlet	1	C	804668
52	Upper pressure roller	1	C	804669
55	Upper pressure roller shaft	1	C	804670
56	Safety shield holder	2	C	804671
57	Bearing for upper pressure roller 6308 z	2	C	804672
58	External lock ring Ø40 DIN 471	2	C	804673
60	Pre-chamber	1	D	804674
61	Nipple ½" N--M	4	D	804675
62	½" ball cock N-M	4	D	804676
63	Hose connector	4	D	804677
64	Hose lock	1	D	804678
65	Nozzle pipe setting	2	D	804679
70	Finger screw M10*20	2	D	804641
71	Nozzle pipe holder	2	D	804681
72	Support for vertical nozzle pipe	1	D	804682
73	Support roller	1	D	804683
74	PP dividing plate	4	D	804684
75	Angular plastic connector ¾" for nozzle pipe	4	D	804685

Spare parts

Pos	Item	Pcs.	Picture	Ceetec no.
76	Nozzle pipe	4	D	804686
77	Nozzles 3 mm Flow Coat Nozzles	12	D	9011-70100
78	¾ Plastic sleeve socket Pa for nozzle pipe	4	D	804688
80	Safety tunnel upper part	1	E	804689
81	Finger screw M10*15	6	E	804690
82	Screen	2	E	804691
83	Return wheel	8	E/F	804692
84	Vertical brush shaft	4	E	804693
85	Toothed belt HTD 3280 8M 20 Double-sided	1	E	804694
86	Tensioning wheel	2	E	804695
87	Long actuator for vertical brushes	1	E	804696
88	Short actuator for vertical brushes	1	E	804697
89	Brushes horizontal Ø 160 * 260	4	E	804698
90	Finger screw M10 * 20	6	E	804641
91	Midmost guide, right	6	E	804700
92	Midmost guide, left	6	E	804701
93	Handle for 1” ball cock	1	E	804702
98	Safety tunnel bottom part	1	E	804703
105	Bearing 6004Z	16	E	804704
106	Lock ring ext 20 mm	8	E	804705
107	Shaft	8	E	804706
108	Nut M 12	2	E	804707
109	Disc Ø 13	8	E	804708
110	Bearing 6001 Z	4	E	804709
111	Lock ring int Ø 28	4	E	804710
112	Bolt M 12 *60	2	E	804711
120	Toothed belt HTD 1760 8M 30	1	F	804712
121	Toothed belt disc 30 M8 30 For TP 1615	4	F	804713
122	TP for toothed belt disc 1615 Ø40	4	F	804714
123	Forward feed roller shaft	4	F	804715
124	Toothed belt for forward feed HTD 3280 8M 30	1	F	804716
125	Fixed bearing for forward feed rollers	8	F	804717
126	Rail for guide SBG 20 L 540	1	F	804718
127	Ball guide SBG 20 FL	1	F	804719
128	Long actuator for horizontal brushes	2	F	804696
129	Short actuator for horizontal brushes	2	F	804697
130	Gas shock absorber for keeping forward feed belt tensioned	1	F	804722
131	Toothed belt wheel 30 8M 20 for TP 1108	2	F	804723
132	Toothed belt for horizontal brushes HTD 3600 8M 20 double-sided	1	F	804724
133	Motor for vertical brushes 0.37 kW 750 rpm B14	1	F	804725
134	Short toothed belt for pulling rollers HTD 1120 8M 30	1	F	804726
135	Flange bearing UCFL 205	8	F	804727
136	Glass for cover	1	F	804728
140	Toothed belt disc 24 8M 30 for TP 1108	1	G	804729
141	TP bushing 1108 ø 28	1	G	804730
142	Motor for vertical brushes 0.37 kW 750 rpm B3	1	G	804731
143	Toothed belt disc 24 M8 30 For TP 1108	1	G	804732
144	TP bushing 1108 Ø28	1	G	804733
145	Motor for forward feed 0.75 kW 750 rpm B3	1	G	804734
146	Hose next to cable cover	1	G	804739

15 Combi box



Pos	No.	Ceetec Nr.
1	3	801576
2	3	806480
3	1	90000.01.915.000
4	1	0860190
5	2	0860182
6	3	0701539

16 EC Declaration of Conformity

The EC Declaration of Conformity for the machine herewith is enclosed as an appendix.