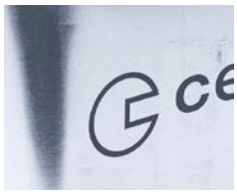


ceetec

Users guide

- - - - -

Ceetec® SP 250

INDHOLDSFORTEGNELSE

1. Introduction

The Ceetec SP 250 is built to treat wood with water and oil based wood protection products. It is suitable for rough, planed and shaped wood. The machine is specially designed for the treatment of wood material with a length of min. 300 mm, a height of max. 10 mm and a width of 250 mm max. These wood materials are often named as shingles

Key factors of the Ceetec SP 250 are easy and safety of operation and maintenance.

The lids are hinged and the machine stops when a lid is opened. When the side panel, housing the controls and lower protection caps are removed, it is easy to access the transmissions.

The machine is on rubber wheels, which is making it easy to move around.

Item numbers in brackets, in the following, refer either to accompanying pictures or to pictures located on the final pages of this manual.

2. Safety Instructions

Important:
The following safety instructions must be adhered to for reasons of personal safety.

All users must be familiar with these user instructions. Read thoroughly before use to know the machine functions entirely.

2.1 Use of machine

The machine is only to be used for treating wood with water and oil based wood protection products. The machine is not intended as washing- or cleaning machine, using chemicals for degreasing, removal of paint etc

Do not use the machine with particular dangerous, unhealthy or flammable liquids.

Do always comply with the instructions given in the supplier directions of the used substances.

Misuse may lead to strangling, unconsciousness, brain damage, fire or explosion followed by combustion etc.

The machine is not constructed to be used in ATEX zone classified areas, and must **NOT** be used in zone classified surroundings.

2.2 Clothing

Avoid loose fitting clothing and loose, dangling hair when operating the machine.

2.3 Personal protective equipment

Use rubber gloves and eye protection when adjusting and cleaning the machine.

The operator that receives treated items from the machine must wear rubber gloves.

Choice of protective equipment should follow the recommendations from the supplier directions of the used paint.

2.4 Fluids

The used fluids – paints or cleaning products – must have a flash point at min. 10° C. above the surrounding temperature. Do not use liquids with a flash point lower than 40° C due to the risk of fire.

Attention:
Use eye protectors and gloves when operating the machine. By accidents the operator is to act according to the supplier directions of the used paint.

It is therefore important that this product information is available and is known and scrutinized!

2.4.1 Water based wood protection

E.g.: 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 produced by Dyrup A/S.

2.4.2 Oil based paint

E.g.: Gori 22 wood primer, Gori 44 wood protection, Gori 88 semi-/full coverage wood protection, Gori wood oil, Gori outdoor wood treatment, Gori 400, Gori 541, all produced by Dyrup A/S.

Fluids with a flash point lower than 40° C may not be used due to the risk of fire.

2.5 Room temperature

When using oil-based products, room temperature must not exceed 29° C, and it must stay minimum 10° C below the flashpoint of the used fluids/paints due to the risk of fire.

Note: Oil based products do not bind optimally when applied at a room temperature exceeding 25° C.

2.6 Ventilation

The machine should only be used in well-ventilated rooms or outdoors if convenient. Moreover attention about ventilation should be paid to the supplier recommendations of the used paints/fluids.

Treated items should be placed for drying in a ventilated place to avoid any obnoxious effects from the solvents.

2.7 Risks during use

Keep hands, etc., away from the machine inlet when the machine is running to avoid the risk of crushing. Likewise hands etc. should be kept away from the outlet, also here is there a risk of crushing.

2.8 Moving the machine

The machine can be moved around on the mounted rubber-wheels or by forklift. Before moving the machine it must be checked that all fluids are drained off.

When moving by forklift: Be aware that the forklift lifts under the contrived lifting marks.

When moving manually: Be aware that all needless gear has been taken out of the machine, and the machine is in god balance. Never try moving the machine manually on hilly ground.

3. Technical data

Type:	SP 250
Dimension:	Height: ca. 1.090 mm Length: ca. 1.700 mm Width: ca. 800 mm
Product number:	9016-20000
Motors, power connection Effect, motor Effect, pump	3x400 V + J - IP class: 54 0.55 kW 0.37 kW
Forward drive speed:	Approx. 16-42 m/min
Pump:	Approx. 20-25 L/min
Weight:	Approx. 200kg
Max. item dimensions:	Width: 250mm x Height: 10mm.
Min. item length:	300mm

4. Preparing the machine for use

4.1 Generally

Place the machine on a flat, firm surface. Lower the four support legs so that the machine stands stable.

The control panel can during transport have been placed under the machine to protect it from impact. The control panel is mounted on the side of the machine before it is taking into use, using 4 screws.

Screw the adapter for the filter bag (item 9011-20519) onto the outlet pipe and hang the filter bag (item 9011-20517) on it. Put the bucket with paint/fluid underneath the filter bag. Remember to stir the fluid. Place the suction and excess pressure hose (items 9011-20587 and 90-20585) in the bucket.

Connect the machine to the power source as prescribed.
The machine is attached to the power station following the local regulations. If it turns out to be necessary changing the plug, the directions from the supplier must be followed. This job is only to be done by a competent electrical specialist.

4.2 Emergency stop

Normally a person on each end operates the machine.
It is possible to operate with only 1 person. If that is the case, insert only max. 10 shingles, before emptying the tray, which is installed at the machines end.

Activating the emergency stops, which are placed by the operator on both ends, can stop the machine.

When an emergency stop is activated the forward drive is stopped.
The pump continues pumping.

After activating the emergency stop, the machine can only be restarted by unlocking the emergency stop and activating the start button again.

NB: Before starting the machine again be sure that the incident has come to an end, and that the reason for activating the emergency stop is known.

4.3 Stop

During normal use the buttons ”Pump and ”Forward drive” put in stop position stops the machine.

When the machine is stopped, in order to be moved, repaired e.g. the main switch on the control panel must be turned to position “0”. (Power is off.)

5. Adjusting the machine

Before any adjustment of the machine, the main switch on the control panel must be in position "O". (The machine is disconnected from all power.)
During the work, the operator must use rubber gloves and eye protection. Check also product sheet / safety data sheets for claims for other protective equipment.

5.1 Overall

Open the lid on the machine.
Set the nozzles, back pressure roller and brushes to the outer position. Feed the item into the machine.
NB: The machines forward drive can not be activated, as long as the lid is open.

5.2 Back pressure roller

The back pressure rollers prevent the lower horizontal brushes lifting thin items, likewise they ensure that the item is lead forward in the machine, and not ”drifting” on the forward drive rollers. Adjust the rollers by loosening the wing screws and moving them towards the item. When the machine is empty of items, the back pressure rollers and the forward drive rollers shall be just above each other, but with out touching.

5.3 Feeding with items

As previously described the machine is specially designed for the treatment of the wedge-shaped shingles with the previous mentioned maximum and minimum dimensions. The items are always brought into the machine with the thin end first. If this is not respected, there is a risk that the backpressure rollers will prevent the items to run through the machine. This will lead to an accumulation of items in the machine, with the risk of operation stop.

5.4 Nozzles

Place the nozzles (item 9011-20645) approx. 20 mm from the item. Advantageously the nozzles can be placed, so they will point forward. This means that the item also gets treated at the end.

5.5 Brushes and screen/shield

Rotating brushes apply fluids evenly and brush off excess fluid.

The brushes are identical and made from organic horsehair.
The brushes are mounted and removed by screwing off a single star handle.

The brushes can be set tightly or loosely against the item, depending on treatment and the shape of the item.

Adjust the horizontal brushes by putting the included pole into the square pipe on the brushes module.

The screen will stop spray coming from the brushes and dripping on to the finished surface. It must therefore always be in placed before starting the machine.
Adjust the screens so that there is approx. 10 mm gap between the item and the front edge.

5.6 Forward drive

The forward drive propels the item through the machine. The backpressure rollers ensures that the item don't "drift" on the 4 forward drive rollers. The pressure on the backpressure rollers is spring-loaded. The height on these rollers can be adjusted by loosen the star handle and moove the backpressure roller and the frame up or down.

5.7 Test run and flow rate

1. Pull the item out.

Close the lid.

Check that the bucket containing wood protection is underneath the outlet pipe, and that the suction and excess pressure hose are placed in the bucket. Close the lid on forward drive and brushes.

Position the main switch on the control panel to "I" (power is connected). Activate the button "PUMP" and the pumps will begin to pump. Spraying may occur.

Ensure that all valves (pos. 9011-20593) are closed. Adjust the nozzles to the desired position. Adjust the fluid amount using the nozzle valves.

Be aware of not to apply to much wood treatment, as this can lead to dripping finished items and/or "runners" on the items.

Always open the upper nozzle first. The machine can treat 1 or 2 sides of the item at the same time. Only open fluid nozzles for those sides that are to be treated.

2. Activate the "FORWARD DRIVE" button and adjust the forward drive to the desired speed. The flow rate can be varied steplessly, and be regulated by turning the spindle using the handle.

Turning clockwise: Slower speed
Turning anti-clockwise: Faster speed

3. Activate the button "Børster/Brushes" and adjust the brush pressure as previously described.

Feed the item into the inlet and check that the forward drive is running evenly.
If forward drive is not running evenly, adjust the back pressure roller.
The item can stop moving if it hits nozzles or brushes. In that case they should be re-adjusted.

Test drive with the same item 2-3 times. This ensures that the brushes get wetted. Then make a test drive with a new item. If the result is fine, production can start. The items should be controlled regularly, to ensure a satisfying result.

5.8 Opening the lid

NOTE: THAT THE PUMPS CAN BE ACTIVATED EVEN WHEN THE LID IS OPEN.

Attention: The lid on the forward drive and brushes is hinged and can be opened. The lid is connected to a switch that stops the forward drive, if the lid is open. The pump however, is not connected to this switch and will therefore not stop when the lid is opened.

To start the forward drive the lid must be closed. If the lid is opened while the machine is activated the forward drive stops immediately. To restart the machine the lid must be closed and a new start command must be given on the start button.

6. Cleaning

6.1 After use of water based products

After daily use or when changing colour, it is **important** that the machine is thoroughly cleaned.

Due to safety it is important that signs and handles are kept clean and free of paint.

NB: Rubber gloves and eye protection must be used during the cleaning of the machine. Please follow the directions from the supplier of the cleaning products.

6.1.1 All loose parts

Wash down the brush screens, brushes, backpressure rollers, and guide with water, preferably hot water.

It is recommended a more thorough cleaning of loose parts before re-use or when changing colours.
The procedures for cleaning these parts are described below:

First clean the loose parts are described above.
Soak the parts in a mixture of 50% cleaning solution and 50% water.
It is important that the brushes are always stacked on "hub" of the brush to prevent the hairs being bent out of shape.

Rinse the parts thoroughly in water before re-use.

6.1.2 The machine

Take the suction pipe out of the bucket of wood protection.

Start the pump. Open the nozzle valves (remember to always open the upper nozzles first). Remove the end plugs from the nozzles and the last of the fluid will be pumped into the machine and return to the bucket. Close the nozzle valves after approx. 2 min.

The nozzle system is empty when air is pushed out of the excess pressure valve (seen as air bubbles in the bucket).

Remount the end plugs onto the nozzle tubes. Replace the bucket with one bucket of 10 l. (approximately 2,5 gal.) of clean water and one empty bucket.

Place the suction tube into the bucket of water and the excess pressure hose into the empty bucket underneath the drain.

Start the pump and open the nozzle valves (remember to always open the upper nozzles first).

Close the nozzle valves when clean water starts coming out of the nozzles.

Rinse the machine with clean water and a brush, if necessary.

Finally, clean the filter bag, suction filter and excess pressure valve.

6.2 After use of oil based products

After daily use or when changing colour, it is important that the machine is thoroughly cleaned.

Due to safety it is important that signs and handles are kept clean and free of paint.

NB: Rubber gloves and eye protection must be used during the cleaning of the machine. Please follow the directions from the supplier of the cleaning products.

6.2.1 All loose parts

Wash down the brush screens, brushes, backpressure rollers and guide in water, preferably hot water, if necessary, cleaning solution.

It is recommended a more thorough cleaning of loose parts before re-use or when changing colours.
The procedures for cleaning these parts are described below:

First clean the loose parts are described above.
Soak the parts in a mixture of 50% cleaning solution and 50% water.
It is important that the brushes are always stacked on "hub" of the brush to prevent the hairs being bent out of shape.

Rinse the parts thoroughly in water before re-use.

6.2.2 The machine

Take the suction pipe out of the bucket of wood protection.

Start the pump. Open the nozzle valves (remember to always open the upper nozzles first). Remove the end plugs from the nozzles and the last of the fluid will be pumped into the machine and return to the bucket. Close the nozzle valves after approx. 2 min.

The nozzle system is empty when air is pushed out of the excess pressure valve (seen as air bubbles in the bucket).

Remount the end plugs onto the nozzle tubes. Replace the bucket with 1 bucket of cleaning solution.

Never use cellulose thinner, toluene or strong solvents for cleaning, as they may dissolve the paint and plastic parts.

Place the suction tube into the bucket.

Start the pump and open the nozzle valves

Close the nozzle valves when they are clean.

Rinse the machine with the inbuilt washing hose and a brush, if necessary.

Repeat the treatment if necessary.

The cleaning solution can be re-used several times. Remember to rinse with clean cleaning solution afterwards.

Dry the exterior of the machine with a damp cloth – dampened with cleaning solution.

Empty the machine of cleaning solution.

Finally clean the filter bag, suction filter and excess pressure valve, the same way you did it with the loose parts.

Where water based products are to be used following cleaning, the machine must be rinsed through with water.

6.3 Thorough cleaning of the machine before re-use or colour shift.

First clean the machine as described in section 6.1 or 6.2

Replace the buckets with a bucket of cleaning solution. The suction tube and the excess pressure hose are placed in the bucket. Start the pump. With the build-in washing hose and if necessary a brush, wash the machine.

NOTE: The machine has to be rinsed with cleaning solution in 5-10 min. before it will work.

If necessesary, repeat the treatment. The used cleaning fluid can be re-used several times.
Dry the exterior of the machine with a damp cloth – dampened with cleaning solution.
Empty the machine of cleaning solution, and rinse it with water.

NOTE: The machine has to be clean from all cleaning solution, otherwise it will dissolve the paint on the machine.
Finally clean the filter bag, suction filter and excess pressure valve, the same way you did it with the loose parts.

7. Maintenance

Switch the main switch to "0" and unplug before commencing maintenance work.

Removing the side panel and/or the lower protective caps easily accesses all adjustable mechanical parts.

Do NOT start the machine before all safety guards are put back into place.

7.1 V-belts, chains and toothed belts

Tighten the v-belts and chains after approx. 14 days of use.
All grease nipples must be regularly greased with a grease gun.

The v-belts and toothed belts are supplied with tighten rollers and must be checked at least once a year or after 1700 hours of operation.

7.2 Forward drive toothed belt (pos. 9011-20526)

Loosen the screws on the motor plate and tighten until the belt is taut.

7.3 Chain to horizontal brushes (pos. 9016-20101)

Tighten by loosening the screw and changing position of sprocket wheel (pos. 9011-20559)

7.4 Resetting the brush arms

If the brush axle (pos. 9011-20510) has moved its setting or if the turn plate is leaking, it must be tightened. The turn plate is bolted with 3 self-locking nuts. These must be tightened. If the turn plate is still leaking after the executive of the above, replace the O-ring (pos. 9011-20591)

7.5 Pumps (Pos. 9011-20720)

There are two types of electric pumps, (Mono) or Ceetec membrane pumps. The oil in the gear motor of each type of pump must be changed for the first time after 700 hours, and then after every 8000 hours.

8. Replacing spare parts

Switch the main switch to "0" and unplug before replacing any parts.

Removing the side panel, shield on the rear and/or the removing the lower protection cap can easily access all replaceable parts.

When the adjustments are done, assembling is done in reverse order. Do NOT start the machine before all safety guards are put back into place.

Motor v-belt – intermediate shaft I (pos. 9011-20575)
Loosen the motor (pos. 9011-20563) and move it.

Chain for intermediate shaft I - horizontal brushes (pos. 9016-20101)
First loosen the tighten roll (pos. 9011-20559) then the chain can be removed.

Forward drive toothed belt (pos. 9011-20526)
Loosen the motor plate and remove the v-belt.

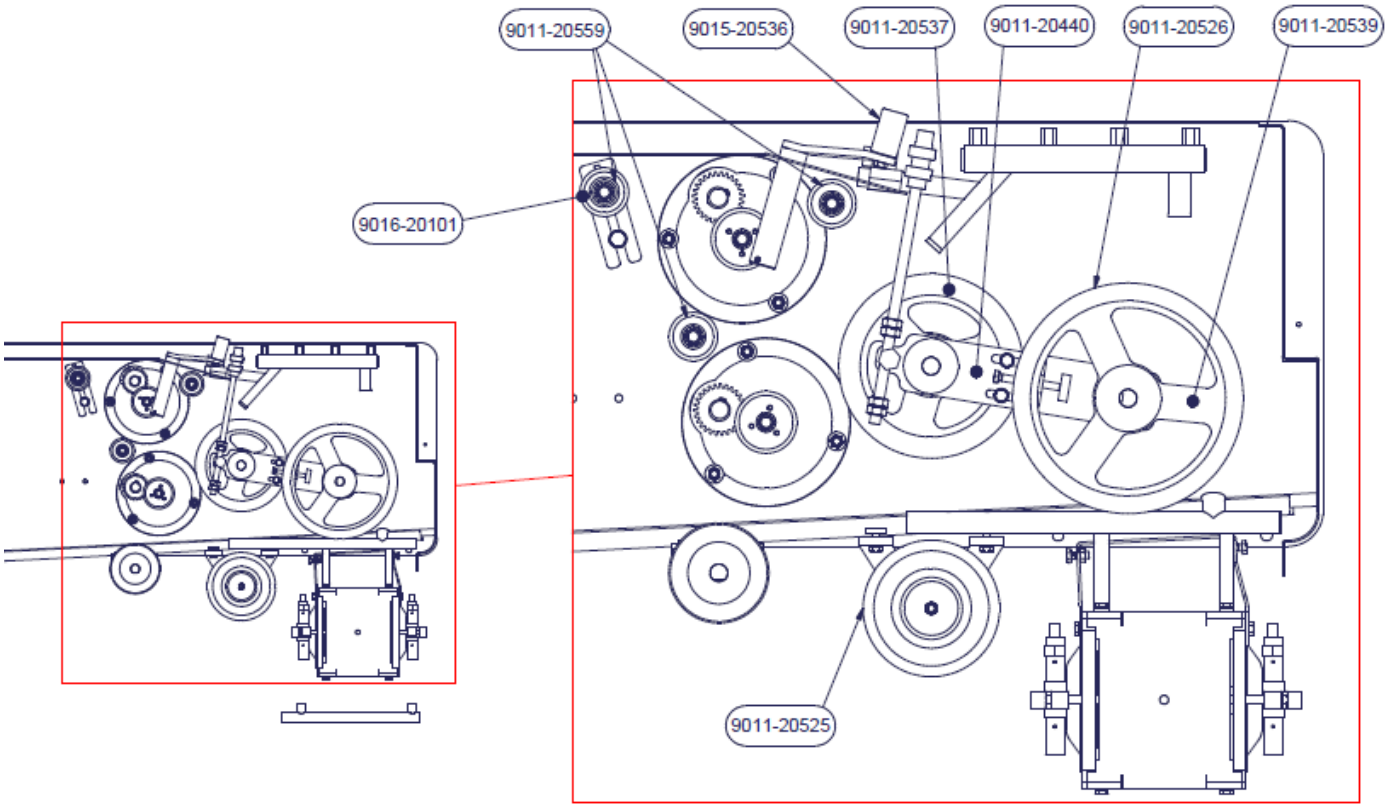
Replacement of the pumps diaphragms
The bottom threaded hose couplings are loosened.
The bolts (item D) are loosened.
The straps (item G) as well as the pump caps (pos.9011-20721) are dismantled.
The bolts (item E) are loosened and the diaphragms can now be replaced.
When dismantling its important to seal the screws (item E) (Teflon tape can be used) and to make sure that the diaphragms and caps are placed in the recess (the middle)

NB: A set of diaphragms consists of 2 black and 1 yellow diaphragms. The yellow diaphragm must be turned towards the pumps middle.

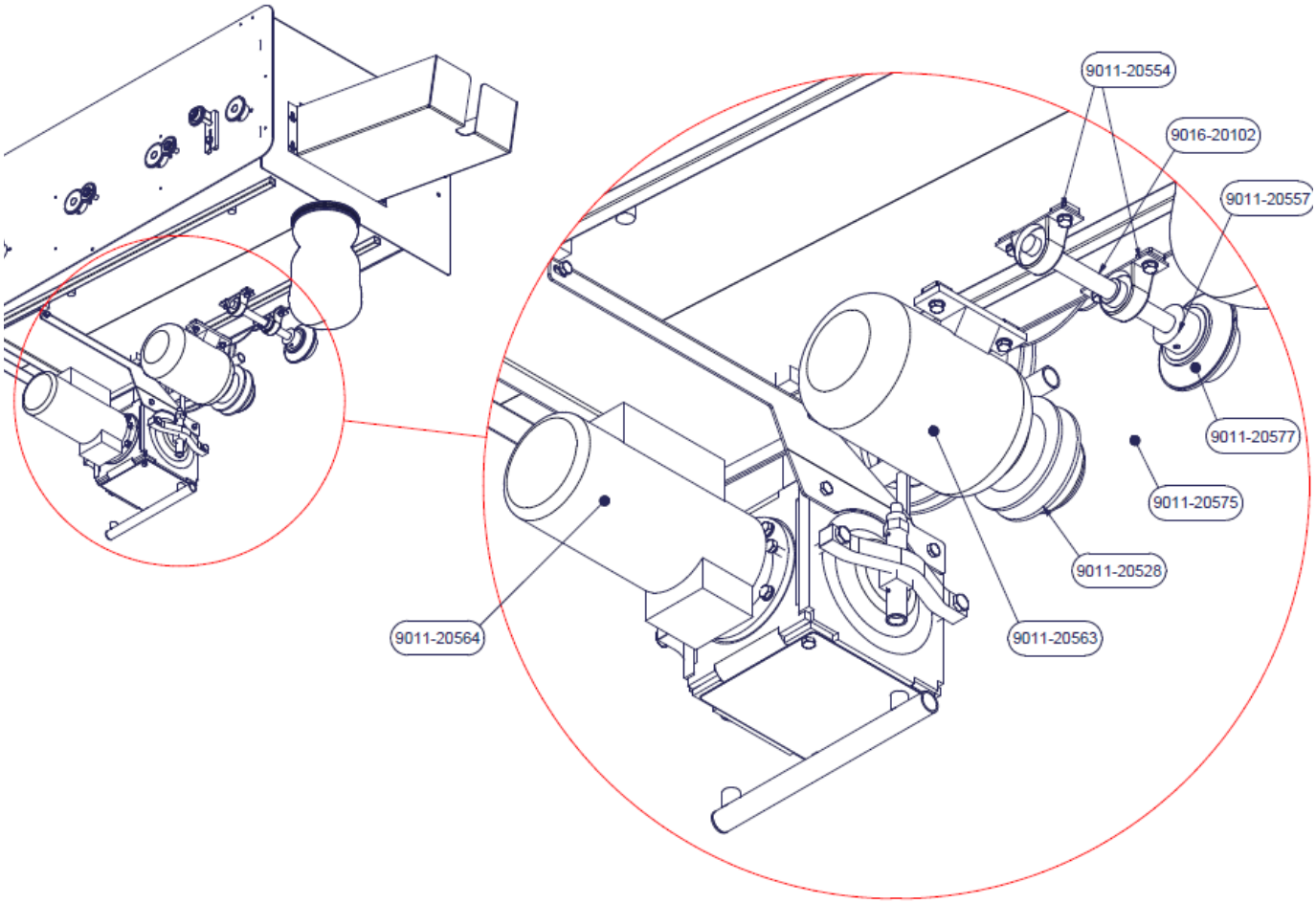
9. Trouble shooting

Fault	Possible cause	Action
A. Pumps/forward drive/brushes will not start.	The machine is not connected to the power source.	Connect the power.
	The main switch is turned off.	Switch the main switch to position ”I”
	There has been a thermal cut-out.	Check the frequency converter in the electrics cabinet.
B. Forward drive roller and brushes are not rotating.	The power supply to the motor for the forward drive is interrupted.	See ”A”
	The V-belts/toothed belts are too loose or damaged.	Tighten/replace the belt (-s)
	A belt is broken.	Replace the belts or chains.
	The forward drive roller, V-belt/pulley is not fastened to the axel.	Fasten the pulley.
C. No, or too little, liquid is coming out of the nozzles.	The power supply to the motor for the pumps is interrupted.	See ”A”
	The nozzle valves are shut.	Open the nozzle valves.
	Grime in the suction filter.	Unscrew the filter strainer and clean. If necessary, blow clean pressurised air through it.
	The nozzles are blocked.	Remove and clean the flow nozzles and end plugs. Clean the nozzle hoses. Check all the hoses for dirt. Ensure that the hose couplings are tightened and sealed so that the pump does not suck in "false" air.
	The springs in the excess pressure valve may be too loose.	Open all the nozzle valves. Take the excess pressure valve out of the bucket. If lots of fluid comes out, the spring needs tightening (lengthening).
D. The motor for the pumps cuts out.	The motor is overloaded because the excess pressure valve is blocked	Clean the excess pressure valve and hoses. When assembling the excess pressure valve, the grey gauge block must face in towards the valve. Wait approx. 10 minutes and then reset the pump motor.
E. The motor for forward drive/brushes cuts out.	The motor is overloaded because the backpressure roller and/or brushes are too tightly adjusted up to the item.	Adjust the setting. Wait approx. 10 minutes and then reset the forward drive motor.

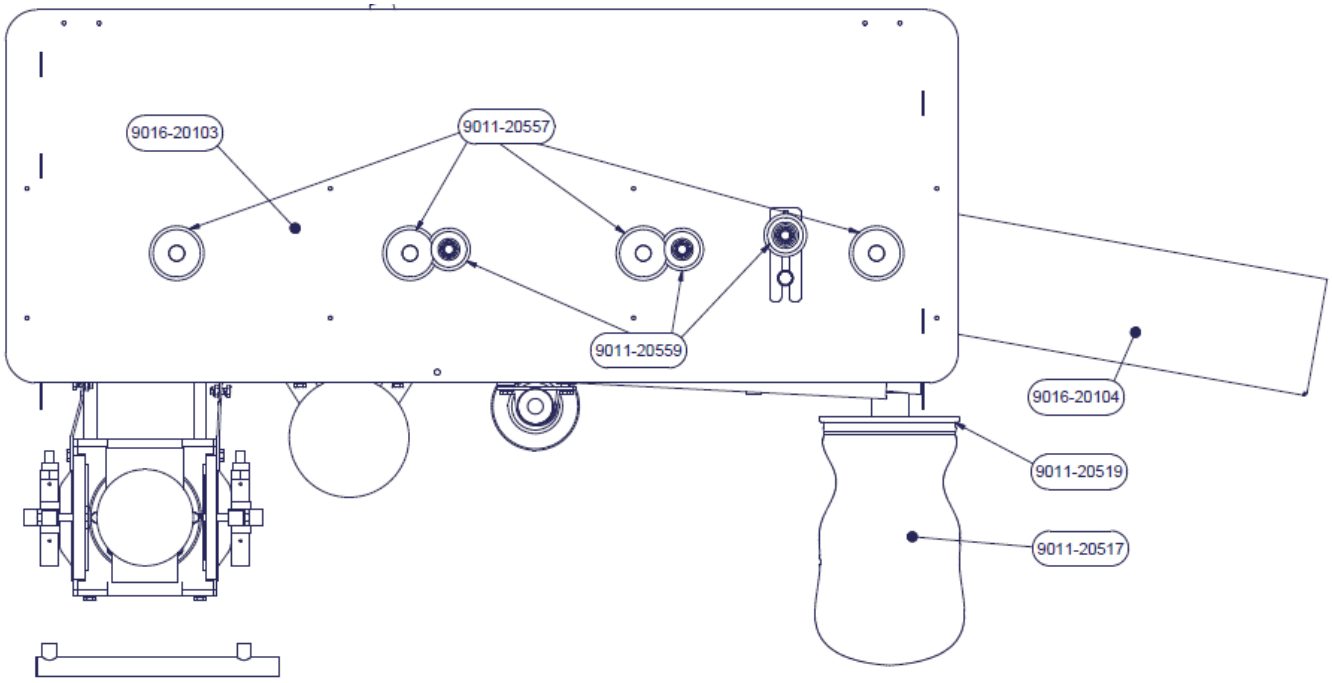
10. Spare part list



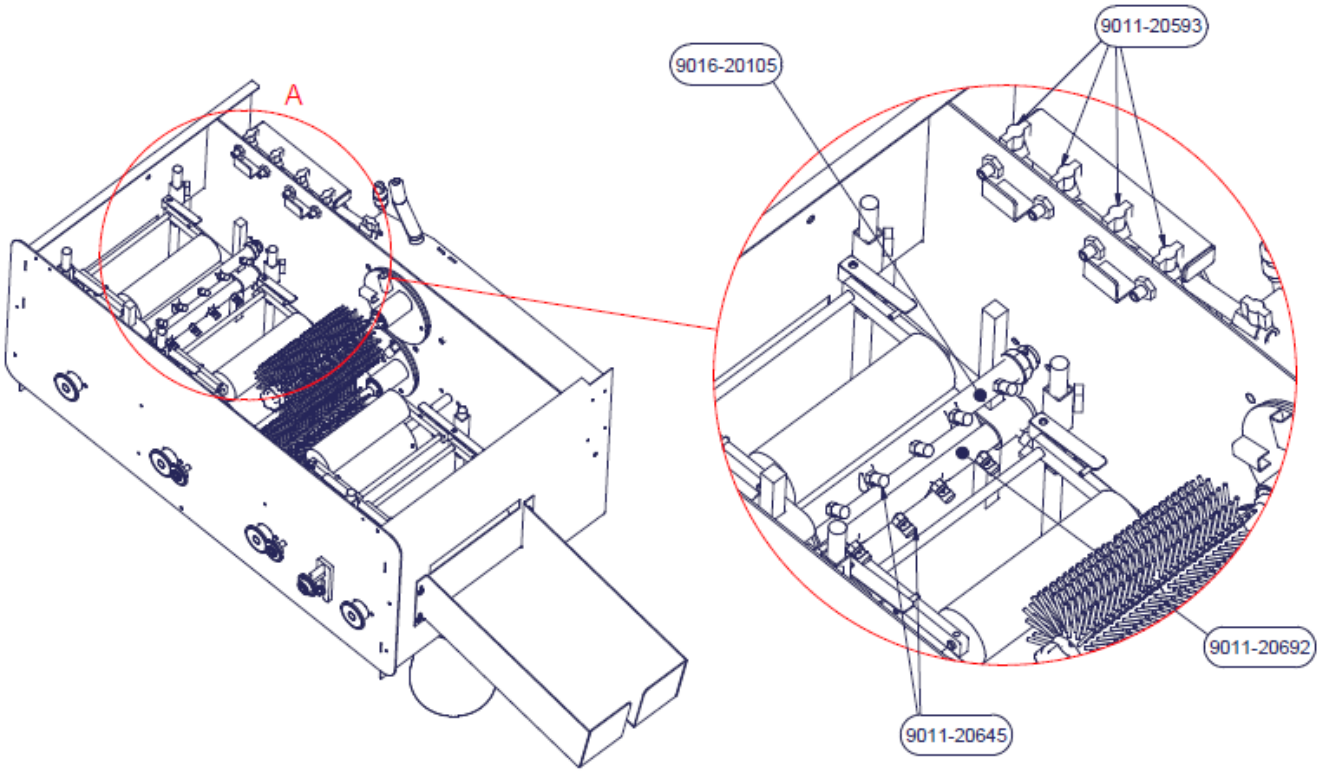
Item number	Pcs. per machine	Description
9016-20101	1	Chain for brushes
9011-20559	6	Sprocket wheel 15 T with 2 bearings
9015-20536	1	Handle for backpressure roller
9011-20537	1	V-belt pulley A210 speed-changer contra disc
9011-20440	1	Arm for speed-changer
9011-20526	1	V-belt feed
9011-20539	1	V-belt feed
9011-20525	1	V-belt- speed-changer



Item number	Pcs. per machine	Description
9011-20554	2	Support bearing for middel axe
9016-20102	1	Countershaft for SP250
9011-20557	5	Sprocket wheel 20 T countershaft I
9011-20577	1	Sprocket wheel 36 T on countershaft I
9011-20575	1	Chain to engine / countershaft I
9011-20528	1	Speed-changer
9011-20563	1	Engine for forward drive (Inform if cULus approved model is wanted)
9011-20564	1	Pump engine (Inform if cULus approved model is wanted)

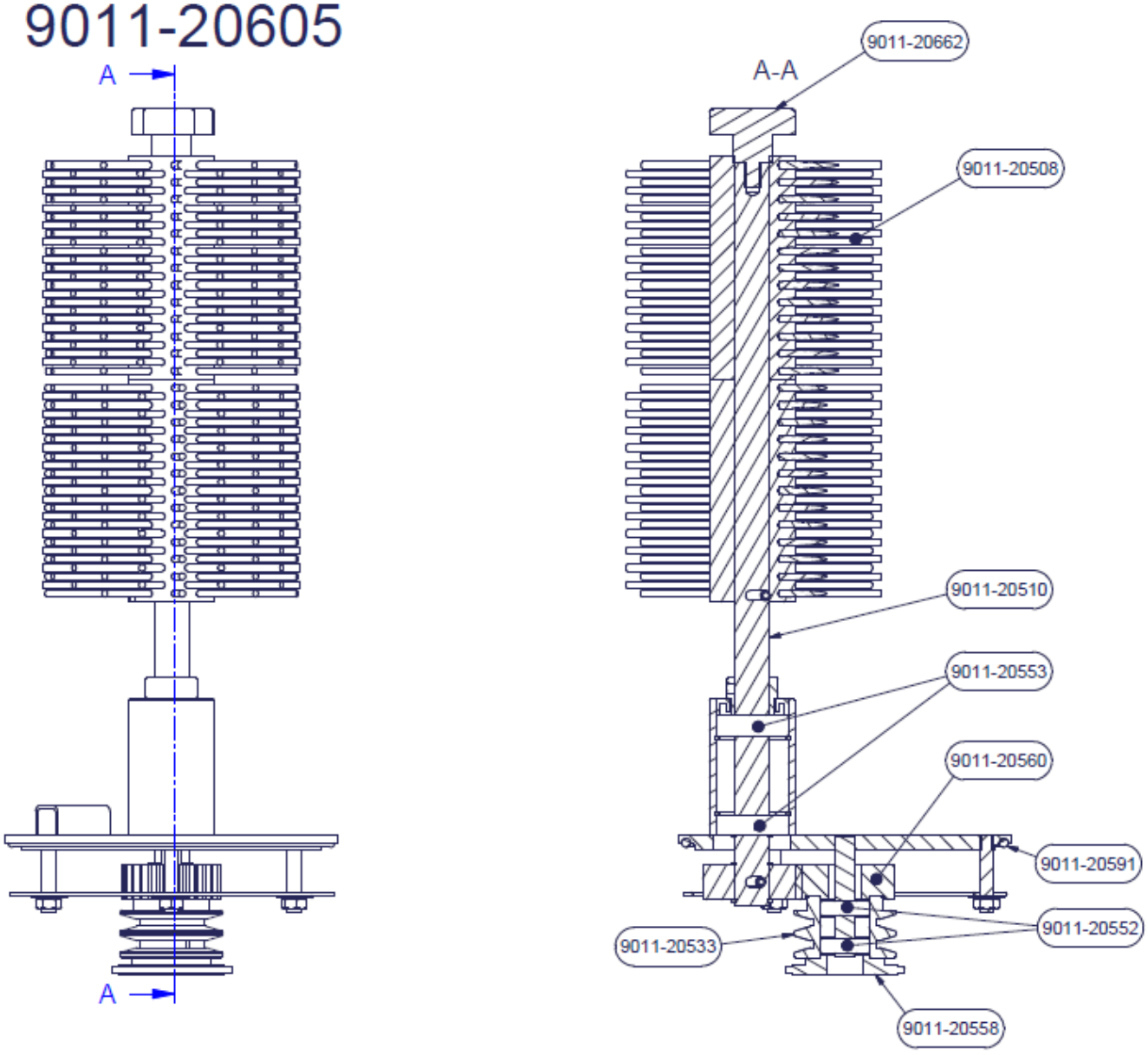


Item number	Pcs. per machine	Description
9016-20103	1	Chain for forward drive
9011-20557	5	Sprocket wheel 20 T countershaft I
9011-20559	6	Sprocket wheel 15 T with 2 bearings
9016-20104	1	Tray for painted shingels
9011-20519	1	Adapterhead for filter
9011-20517	1	Filter bag 600 um (standard)

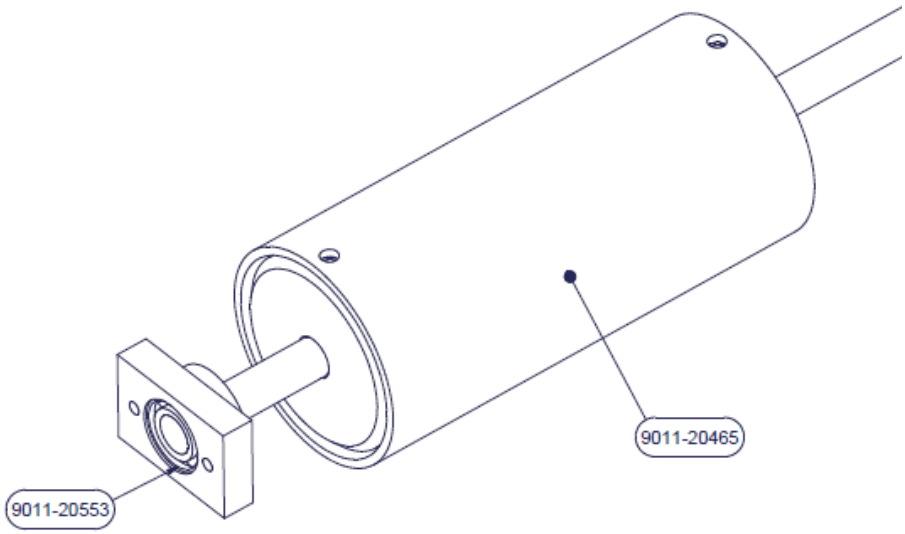


Item number	Pcs. per machine	Description
9016-20105	1	Nozzlepipe, top, complete
9011-20593	4	Nozzle valve
9011-20692	1	Nozzlepipes complete below
9011-20645	9	Nozzle 3 mm, standard

9011-20605

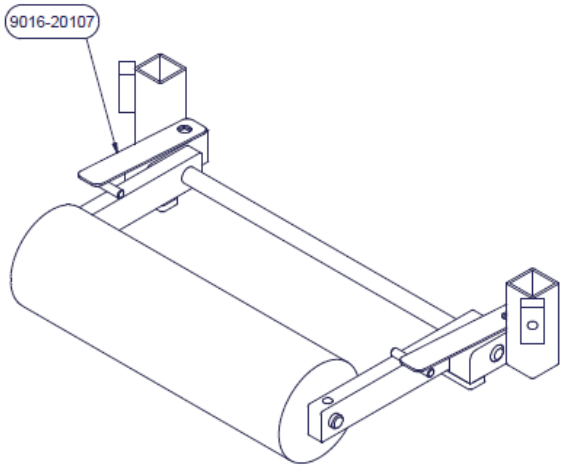


Item number	Pcs. per machine	Description
9011-20605	2	Brushing Device complete upper horizontal (without brushes)
9011-20662	2	Starknob for brushes
9011-20508	4	Horse brush 1/1
9011-20510	2	Brush axle- top horizontal
9011-20553	5	Ball bearing for arrangement
9011-20560	1	Cogwheel with 3 small holes
9011-20591	2	Sealing ring for upper brush
9011-20552	4	Ball bearing
9011-20558	2	Sprocket wheel 20 T for horizontal brushes
9011-20533	1	V-belt pulley S56 double with 6 small holes

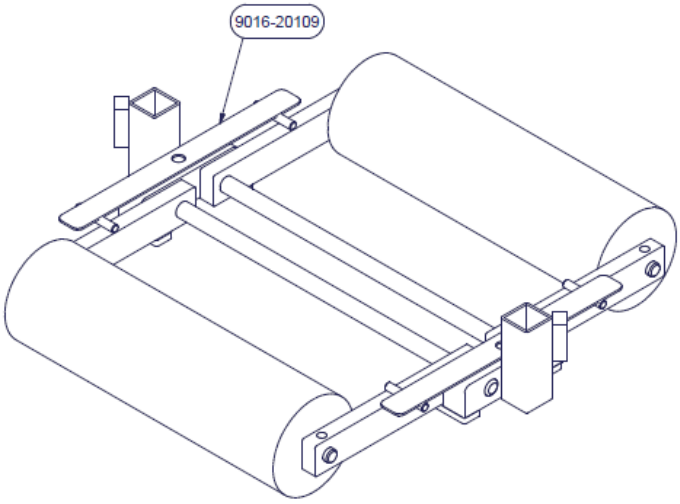


Item number	Pcs. per machine	Description
9011-20553	8	Ball bearing
9011-20465	4	Feed roller

9016-20106

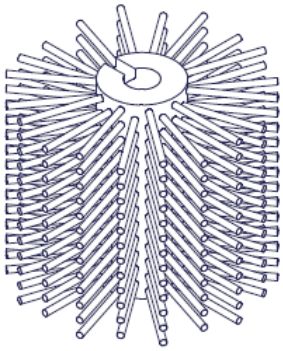


9016-20108

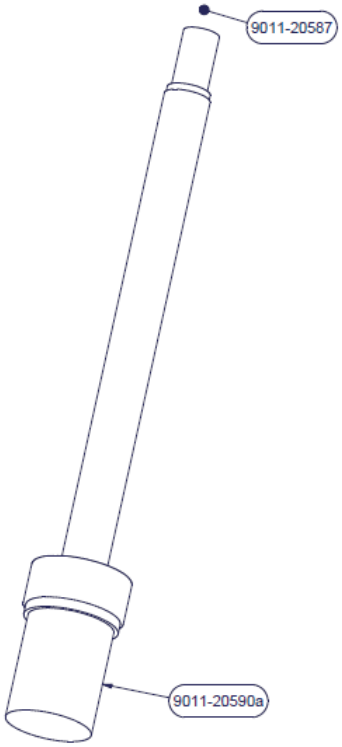


Item number	Pcs. per machine	Description
9016-20106	2	Backpressure roller, single, complete
9016-20107	4	Spring-steel for single backpressure roller
9016-20108	1	Backpressure roller, double, complete
9016-20109	2	Spring-steel for double backpressure roller

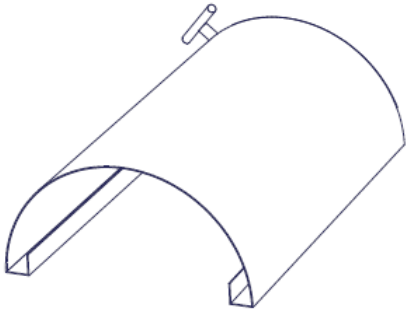
9011-20508

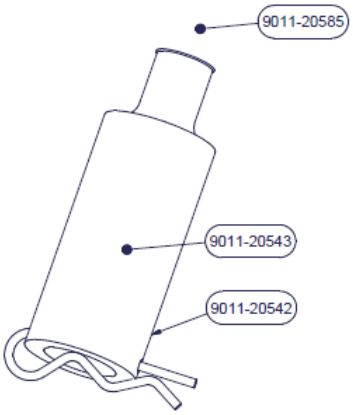


9011-20590



9011-20660

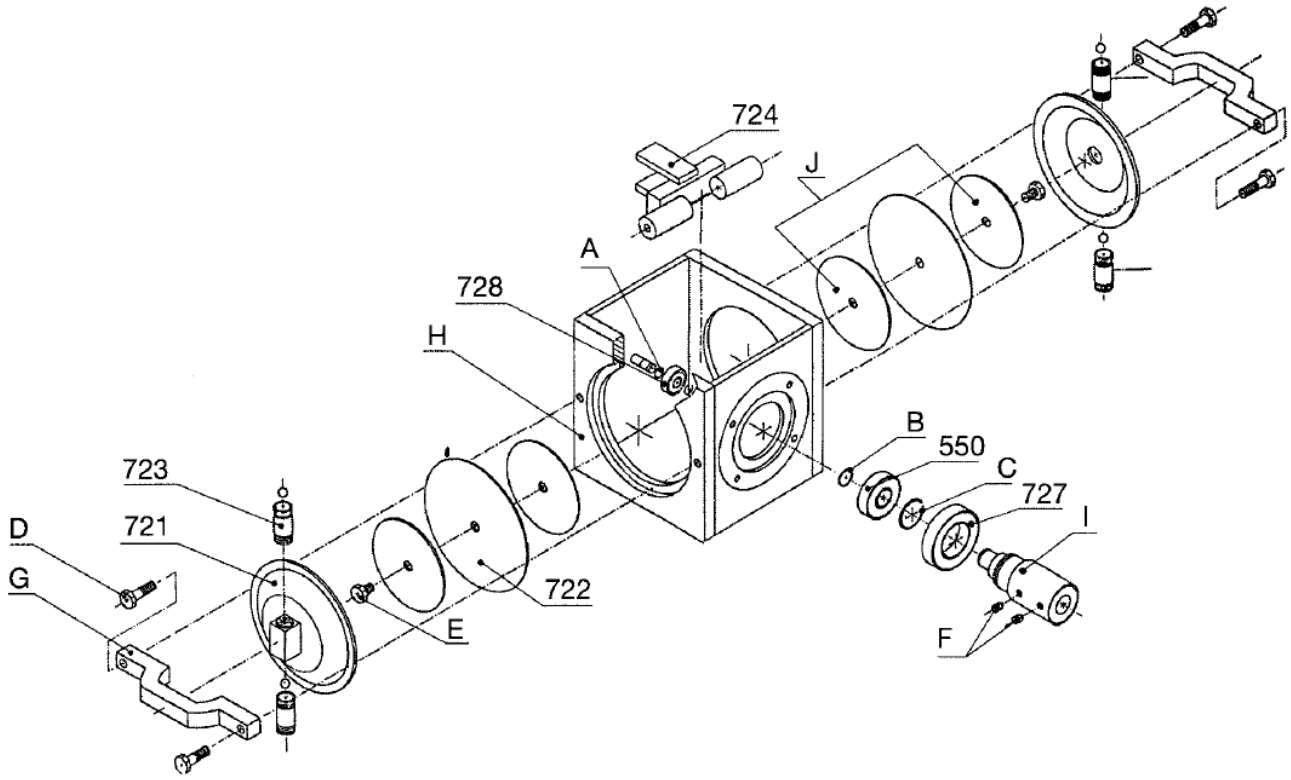




Item number	Pcs. per machine	Description
9011-20508	4	Horse brush 1/1
9011-20660	1	Brushshield
9011-20585	1	Overpressure hose without valvel
9011-20543	1	Spring for pressure control valve
9011-20542	1	Pressure control valve
9011-20590	1	Suction filter complete
9011-20587	1	Suction hose 1" x 2220 mm without filter
9011-20590a	1	Suction filter without pipe and adapter

Number guide to pump:
The last 3 numbers refer to the item numbers on the detail pictures placed in the back of this folder.

E.g. set of diaphragms 722 (order number 9011-20**722** = pos 722)



Item number	Pcs. per machine	Description
9011-20720	1	Mechanical diaphragm pump, complete with engine
9011-20721	2	Pump lid with check valve for membrane pump
9011-20722	2	Diaphragms for pump
9011-20723	4	Check valve Stainless
9011-20724	1	Pump tang/spool with pressure plates
9011-20727	1	Ball bearing 6008
9011-20728	1	Stearing ball bearing 6200
9011-20550	1	Ball bearing for pump

11. Production address

Nr. Aaby Maskinfabrik A/S
Ceetec
Industrivej 7
5580 Nr. Aaby
Denmark

Phone: +45 6442 1473
Fax: +45 6442 1472