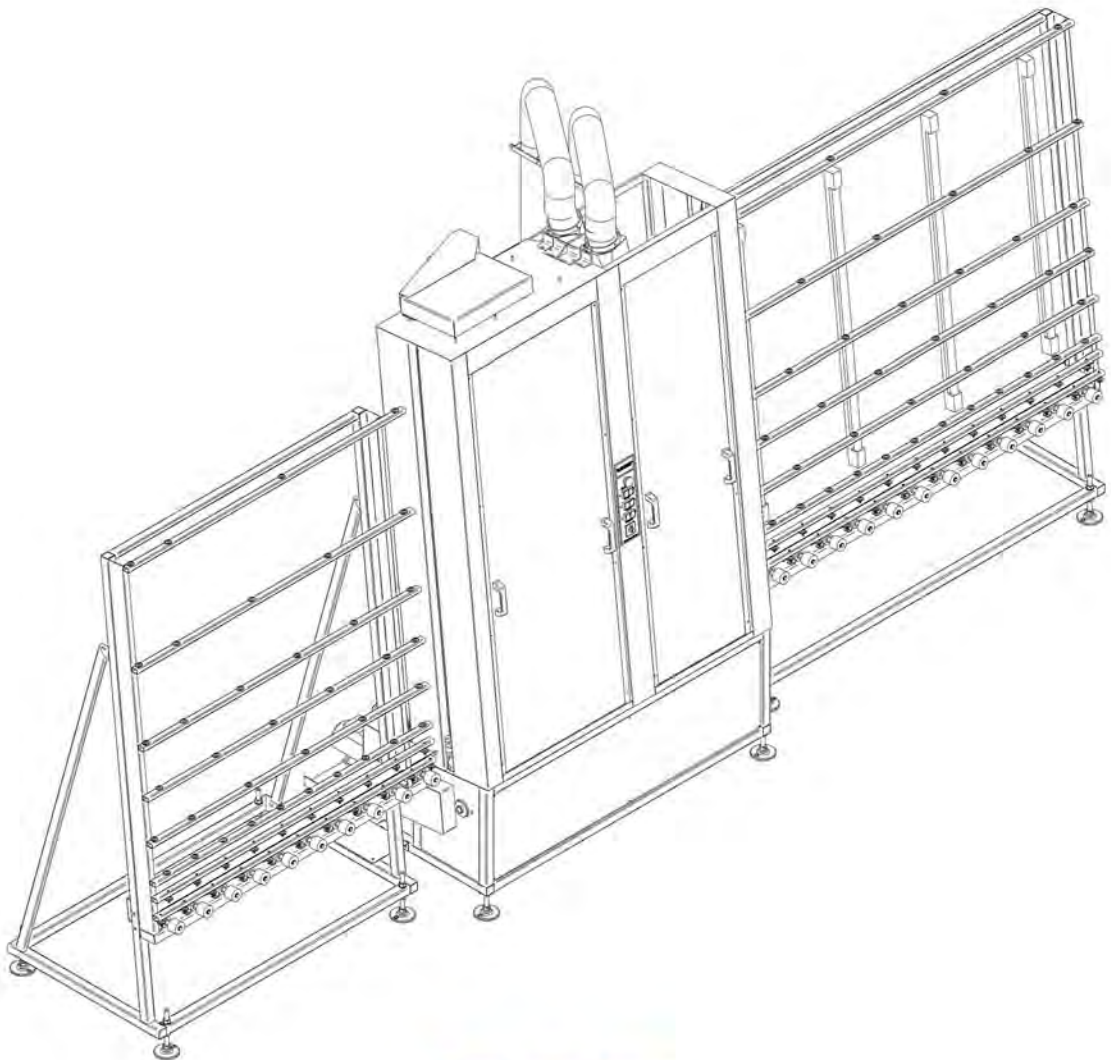




SM70V Vertical Glass Washer

USER MANUAL



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2. General instructions for operating the machine

Read carefully the User's Manual before taking into operation the machine!

The washing machine can be used for washing the glass sheets of the insulated glass structures.

Do not use the machine for other purposes!

Attention:

To avoid electrocution and other injuries:

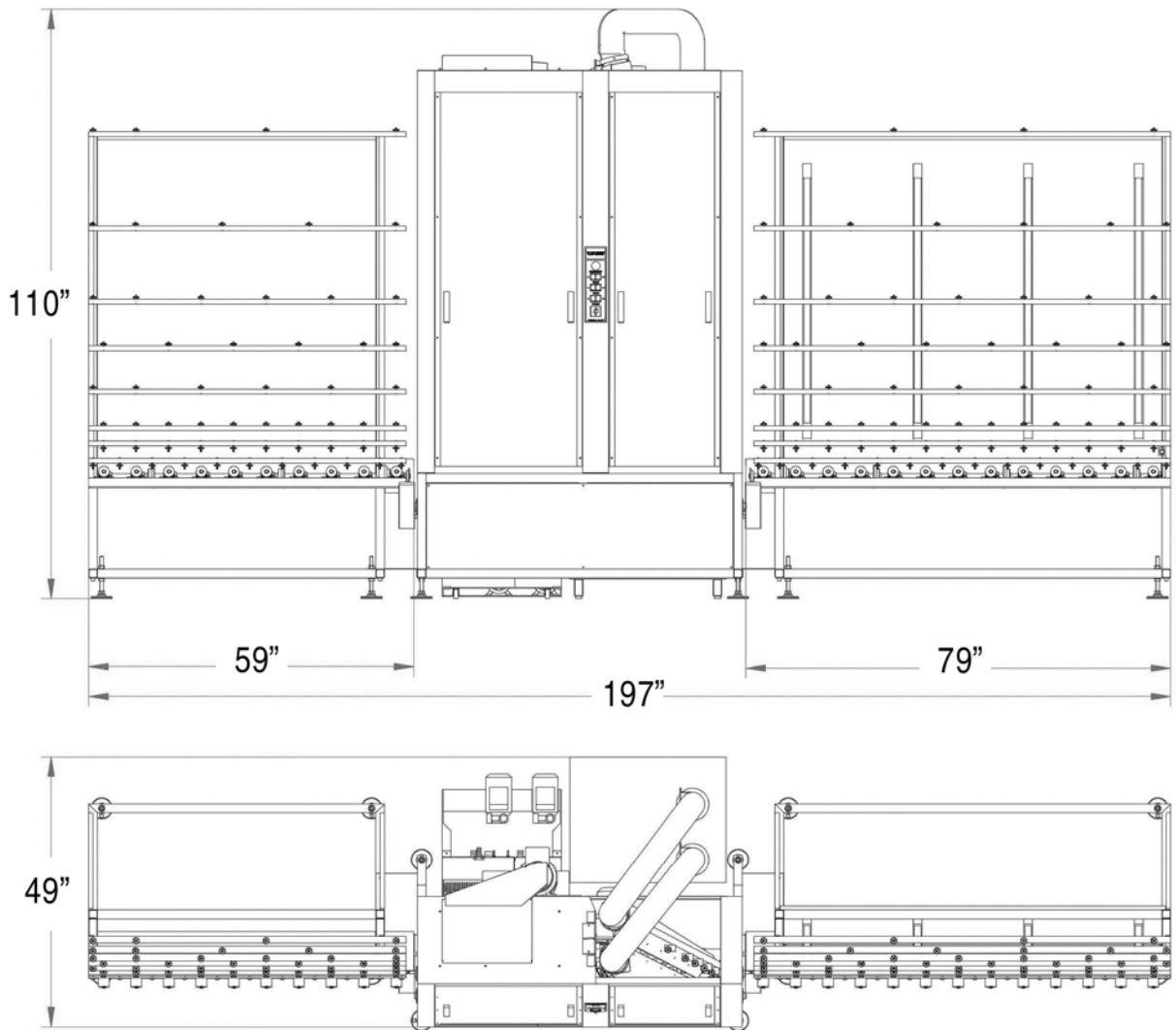
- Do not leave the machine without supervision after starting it!
- Always turn off the machine before changing the mechanical or electrical spare parts!
- During operation only the authorized personnel can be near the machine!
- During work always use the specified protective clothing!

The liability of the manufacturer should be deemed to be void in the following cases:

- in cases of not using the machine according to its original purposes,
- in cases of wrong installation (or when the machine is not installed by the authorized person),
- in cases of faulty feeding,
- in cases of neglected maintenance of the machine,
- in cases of not permitted modifications or changes on the machine,
- in cases of not using the machine according to the instructions.

Use only original manufactured components for servicing. Breaking this rule may lead to fault, the guarantee should be deemed to be void, and all repair costs will be charged to the owner of the machine!!

3. Technical details



Technical details	Type	
	SM70V Washer	
Voltage	230	V AC
Frequency	3/60	Hz
Total power	8	HP (6 kw)
Length	197	Inches (5000 mm)
Width	49	Inches (1250 mm)
Height	110	Inches (2800 mm)
Weight	1550	Lbs. (700 kg)
Washing speed	14.7	ft/min. (4.5 m/min.)

The electrical parts of the machine are designed according to the MSZ 63/4-85 standard.

4. Shipping, packing

Shipping-storing should always be made in vertical position!

Each shipping is made on pallets, each part is packed separately, which protects them from the mechanical and environmental injuries. Each unit is fixed on pallets.

The units:

- in- and outlet conveyor,
- washing machine.

Recommended moving equipments:

- forklift
- manual hydraulic forklift

When using forklift you should take care of the stability of the machine.

After removing the packing check the integrity of the machine and the fix connections of the machine.

In case of defects or incomplection a report should be made – with pictures, if possible – accurately mentioning the problems!

5. Installation

Before installing the machine check the workfield:

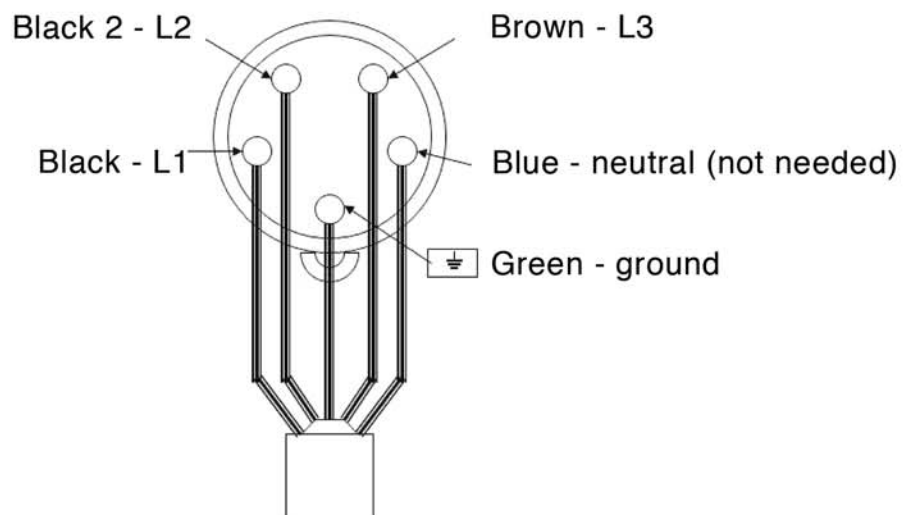
- the technological connection points (water, drainage, proper electrical connections etc.)
- solid, horizontal, dustproof place according to the size and weight of the machine
- verifying the size of the place needed for placing and maintaining the machine (height, free space etc.)
- check the integrity of the electrical cables, connections etc.

After checking the integrity of the machine also check the horizontal position of the glass forwarding conveyor. After adjusting has been made, the machines parts should be fixed to each other and to the ground.

Connect the machine to the water, air and electrical network, fill the tanks with water, connect the grounding cables.

IMPORTANT!

Before connecting the machine to the electrical network, check the voltage of the socket, the right connection of the "zero" point and the grounding with the matching plug!



If needed you can adjust the correct direction by changing two phases!

Electrical connection:

1. Connect the machine to the network.
2. Turn the main switch to position 1. After this the machine gets under voltage and the lights of the outlet conveyor turn on.
3. The direction of rotation of the rollers might not be proper.
4. In case of wrong direction two phases should be changed in the socket!
5. After this other electrical adjustments are not needed.

Attention:

When changing the phases take care to your safety. Any electrical work should be made by a technician!

Check the tightness of the chain. After a quick start check the right direction of rotation:

- The glass transporting conveyor
- The brushes
- The pumps
- The ventilator

During constant operation you should check:

- The working of the water nozzles
- The sealing of the water blocks
- The position of the drying nozzles

During tests you can adjust the optimum position of the nozzles by putting glass sheets of different sizes in the machine!

6. Set up, start

Before starting the machine you should check the followings:

- The integrity of the electrical connections,
- The sealing of the water, drainage and connections,
- The fillness of the water tanks,
- The state of the air filter,
- The cleanness of the work place,
- The safety switch.

If you find everything in order you can start the machine with the main switch and each function with the control buttons.

7. Instructions for use

Personal requirement:

The machine can be operated only by persons who were authorized by the owner of the machine and who suit the general work conditions, who were trained from the present User's Manual and proved to be competent to operate the machine.

**The operator should use the specified protective clothes during work!
Protective clothes: protective dress, gloves, glasses!**

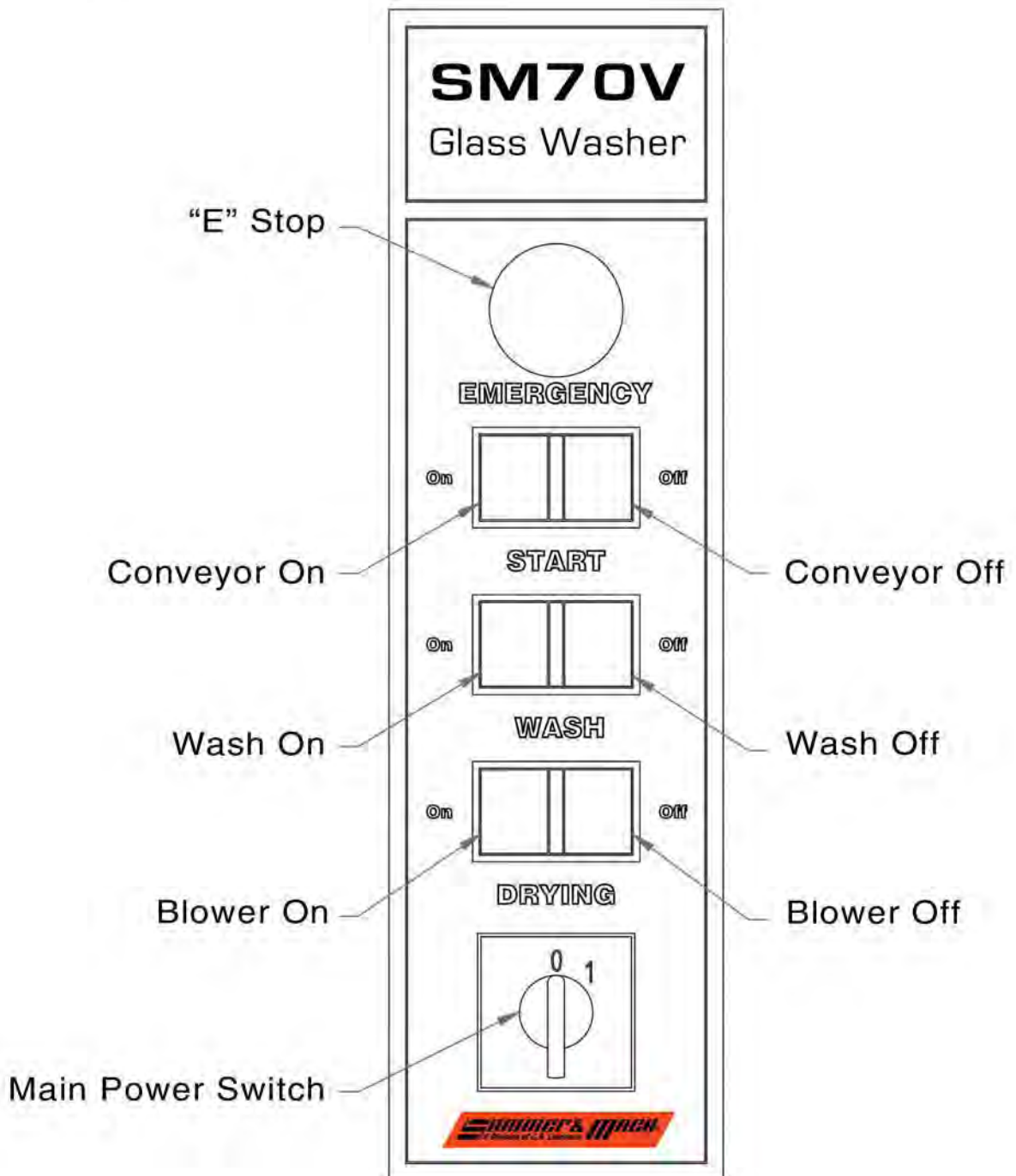
Opening the electrical box or touching the moving, rotating parts of the machine during work is strictly forbidden!

Moving of big glass sheets should be made by more people and using special handling and safety equipment!

The most important is the clean soft water (distilled water) and the clean air filter! Use only CRL/Somaca Low-e detergent (3379046, Gal or 3379048, 55 Gal) in the wash tanks if needed.

In case of a problem, stop the machine according to the instructions and call a technician! Machinery Division Service Technicians, (866) 583-1377.

Using the SM70V Washer



1. After turning the main switch the machine gets under voltage.
2. The lights on the outlet conveyor turn on.
3. We can put the first sheet of glass on the inlet conveyor.
4. By pressing the green button on the START switch the glass enters in the washer.

5. If needed you can stop the conveyor by pressing the red button on the START switch.
6. The brushes can be started or stoped any time during washing with the on/off buttons of the WASH switch.
7. Drying can be controlled with the on /off buttons of the DRYING switch.
8. You can stop the machine in case of malfunction with the EMERGENCY emergency switch.
9. After you finished work, the machine can be stoped with the main switch.

8. Maintenance

The maintenance of the machine is needed to assure the continuous and problem free working of the machine. The first is the daily maintenance made by the operators of the machine.

Maintenance:

- Keep the area of the machine clean
- Cleaning or if necessary, changing the used filters (water, air)
- Oiling the rotating parts of the machine (chain, gear)
- Always watching the operation of the machine
- In case of malfunction notify the technician

Daily checkings before starting the work:

- Check the integrity of the cover of the machine, the cables and electrical connections
- The sealing of the water connections
- Cleaning and checking the water and air filters
- Checking the water tank levels and the cleanness of the water
- Checking the rollers and the conveyors
- Refill water tanks with fresh water

Weekly checking:

- The daily checking
- Checking the interior of the washing machine
- The state of the brushes
- The integrity of the rubbers
- The supporting and forwarding rollers
- Cleaning or changing any plugged water nozzles
- Check and oil the roller driving chains

Monthly checking:

- The weekly checking
- Cleaning the water and the drying block
- After removing the cover check the adjusting of the chains and gears
- Oil the bearings of the ventilator
- Change the air filters

9. Typical errors, possible causes

Error	Causes	Solution
The machine can't be started (the lights are not on)	Not connected to the network. No power. The main fuses burned out.	Connect the machine to the network or check the cables! Check the line power! Change the fuses!
The ventilator doesn't start.	No power. One phase is missing in the intake. The control is not started. The emergency switch got stuck.	Put the machine under voltage! Check the phases. Press the start button! Pull out the emergency button and start the machine!
The water pump doesn't pump the water in the water block	The level of the water is low. The water filters clogged. The nozzles clogged.	Fill the water tank. Clean the water filters! Clean the nozzles!
The washed glass is scratched.	The brushes are not clean. The rubbers are not clean. The rollers of the in-outlet conveyors are not clean. Some of the in-outlet conveyor's rollers are not rotating. The glass is very dirty, oily.	Clean the brushes! Clean the rubbers! Clean the rollers! Change the bad rollers! For cutting the glass use only the proper oil!
The lower part of the glass breaks out.	The glass supporting roller is worn-out. The glass supporting roller is not rotating.	Change the roller! Take the roller out and wash it!
The small glass is not coming out of the washer.	The small glass stopped in the machine.	Check the size of the glass to see if it meets the min. glass size indicated by the manufacturer!
The 1/2" thick glass doesn't get through the machine.	The glass stuck in the nozzles.	Adjust the nozzles according to the size of the glass.
The bottom of the glass is dirty.	The mark of the glass forwarding rollers can be seen on the glass.	Clean the forwarding rollers in the rinsing and drying sections!
The low-e glass is scratched.	The brushes are not clean.	Clean the brushes according to the maintenance instructions!

Error	Causes	Solution
The driving doesn't start.	<p>The START switch is not turned on.</p> <p>The emergency button got stuck.</p> <p>The sensor is dirty.</p> <p>There is a sheet of glass before the sensor.</p> <p>The driving gear failed.</p>	<p>Start the machine with the green ON button!</p> <p>Check the emergency button!</p> <p>Clean the sensor!</p> <p>Take away the glass from the sensor!</p> <p>Change the driving gear!</p>
The washing is not clean enough.	<p>The water in the tank is not clean enough.</p> <p>The water filters are dirty.</p> <p>The air filter is dirty.</p> <p>The rubber erasers are dirty.</p> <p>The rollers of the outlet conveyor are dusty.</p>	<p>Change the water in the tanks!</p> <p>Clean the water filters!</p> <p>Change the air filter!</p> <p>Clean the rubbers!</p> <p>Clean the rollers!</p>
The inlet conveyor is not working.	<p>The chain is weak.</p> <p>The wheel is rotating but the driving is not working.</p>	<p>Check the chain!</p> <p>Adjust the fixing of the wheels!</p>
The outlet conveyor is not working.	<p>The chain is weak.</p> <p>The wheel is rotating but the driving is not working.</p>	<p>Check the chain!</p> <p>Adjust the fixing of the wheels!</p>

10. Electrical connection drawings

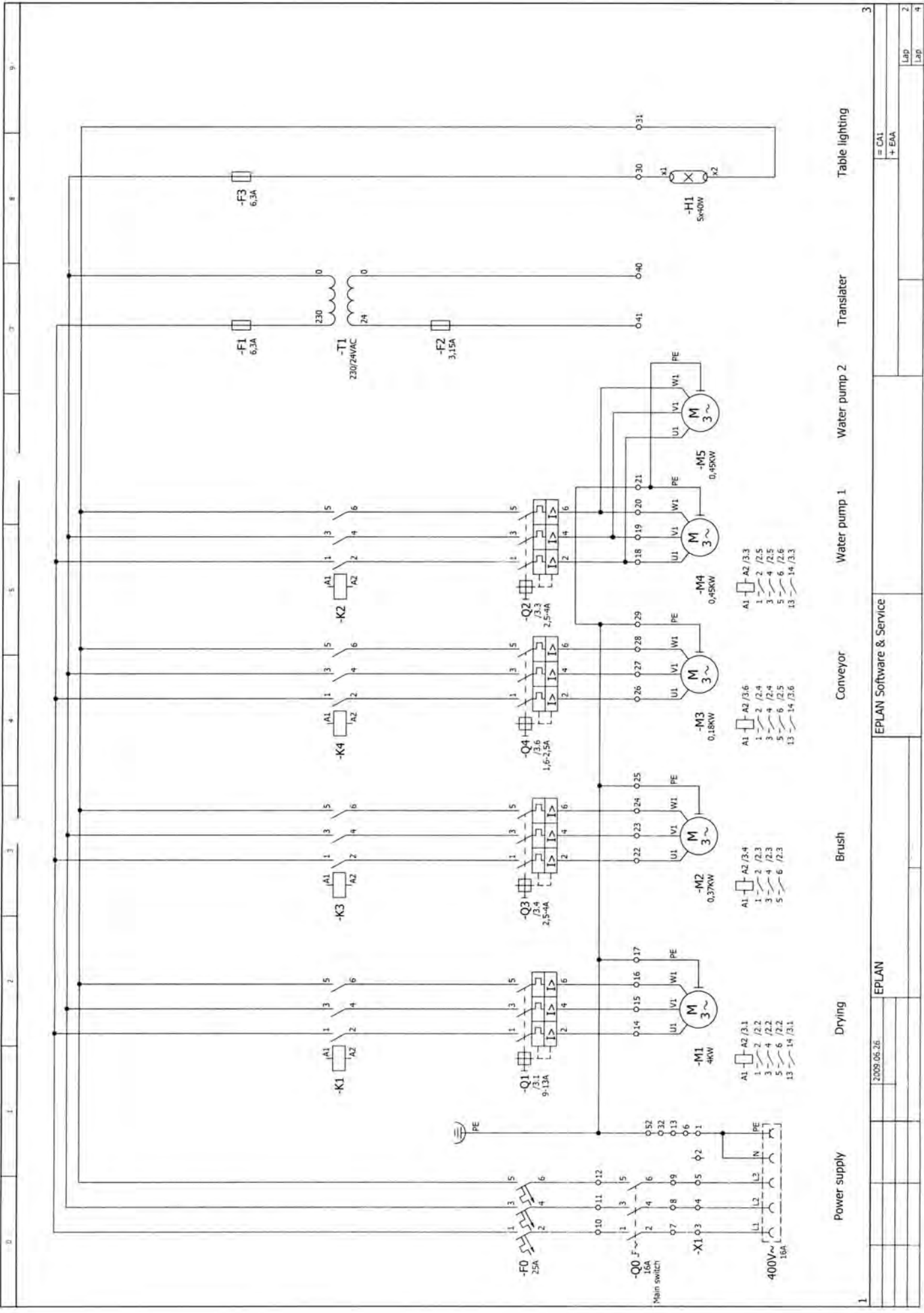
Main circuit

Main circuit II.

Control circuit

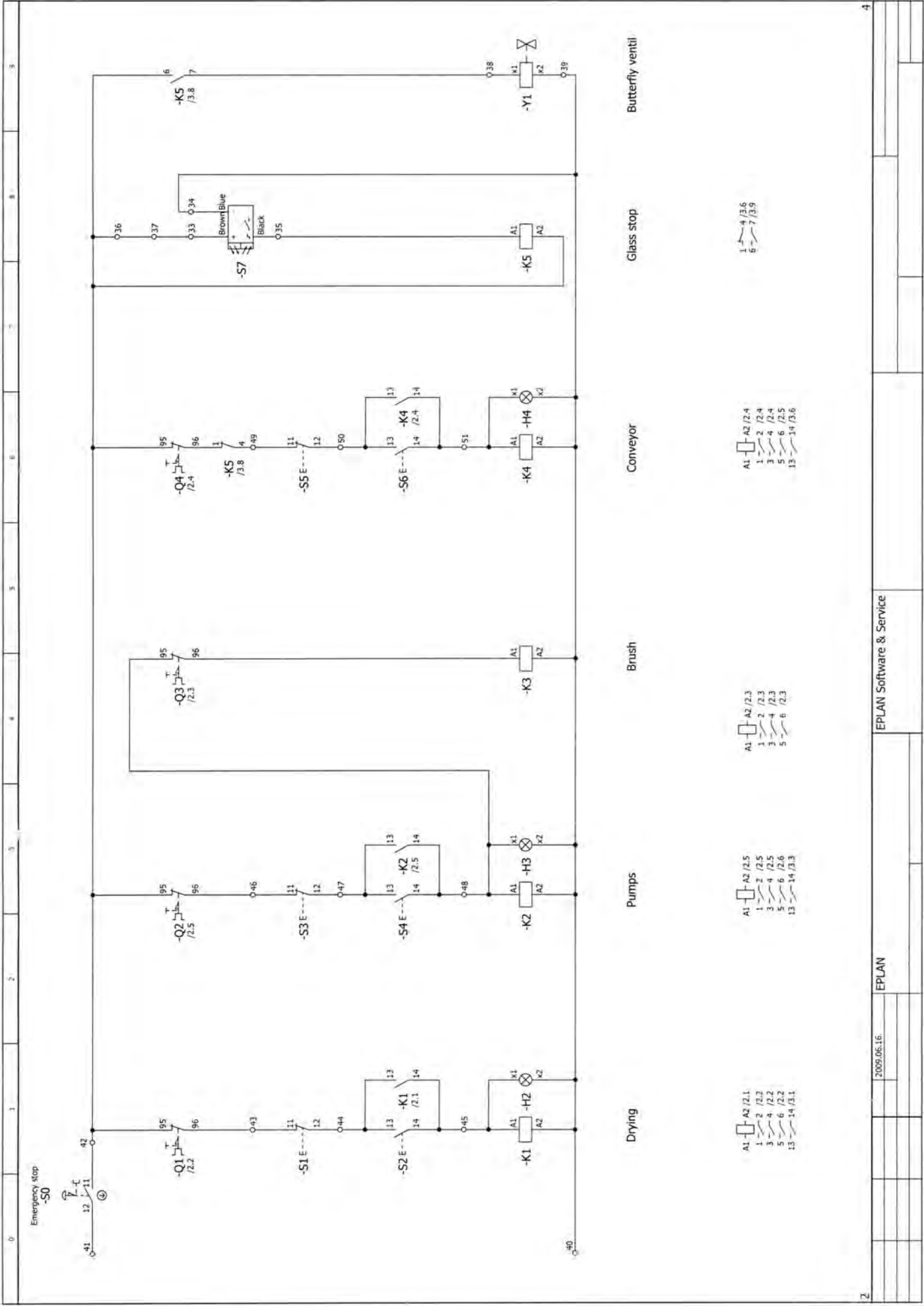
C	1	2	3	4	5	6	7	8	9												
Earth	Power Supply	Main switch Output	Main switch Input	Drying	Pumps	Brush	Conveyor	Earth	Table Lights	Earth	Glass stop	Break line	Butterfly	Ventil	24VAC	Emergency	Drying on-off	Pumps on-off	Conveyor on-off	Earth	
N	L1 L2 L3	L1 L2 L3	L1 L2 L3	U V W	L1 L2 L3	U V W	U V W	U V W	L2 L3	Earth	33 34 35	36 37 38	38 39	40 41	42	43 44	45 46 47	48 49 50	51	52	
1	2 3 4 5	6 7 8 9	10 11 12 13	14 15 16 17	18 19 20 21	22 23 24 25	26 27 28 29	30 31 32	33 34 35	36 37 38	39 40 41	42 43 44 45	46 47 48	49 50 51	52						

-X1



Power supply Drying Brush Conveyor Water pump 1 Water pump 2 Translater Table lighting

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Lap			= CA1 + EAA	2
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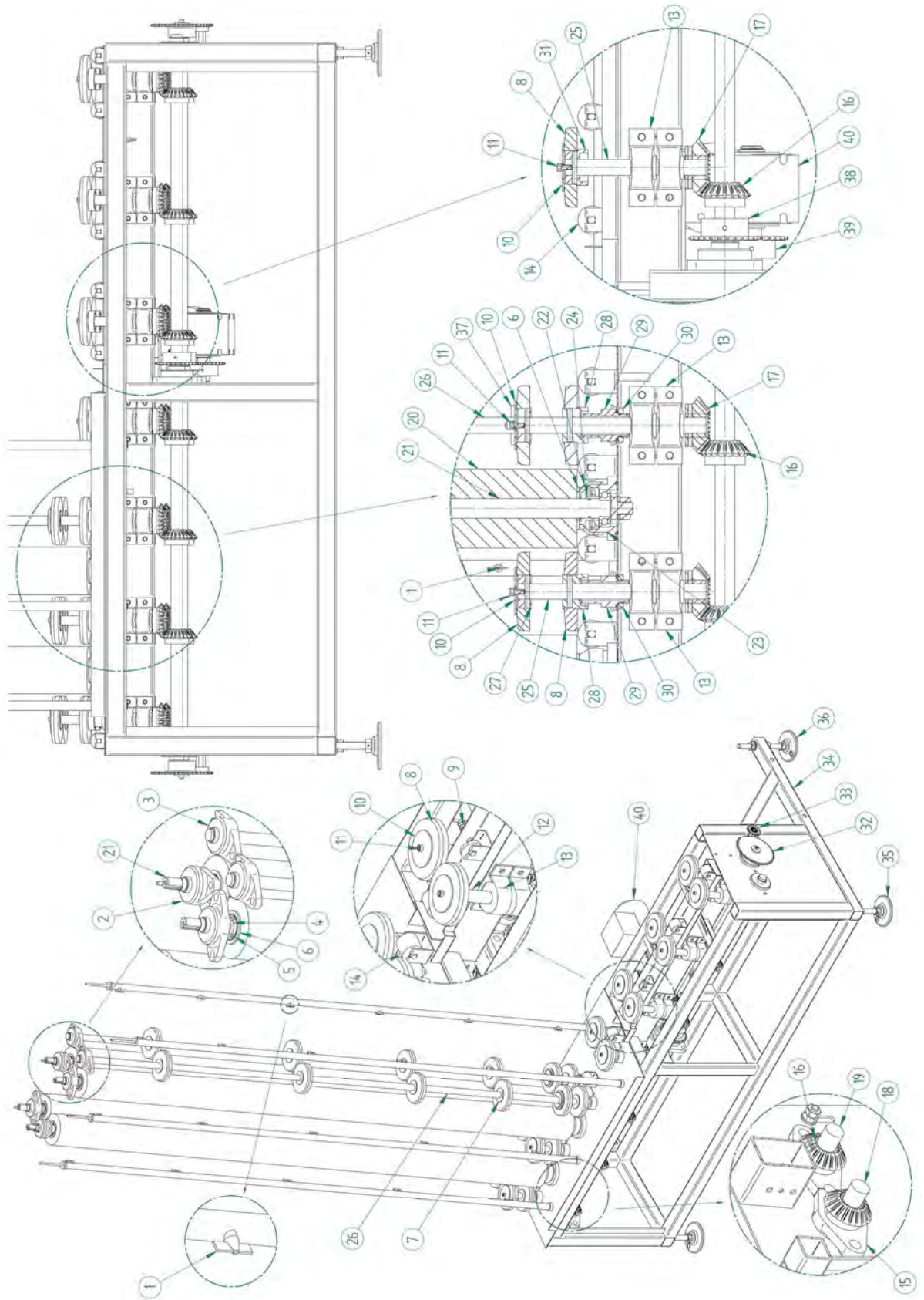


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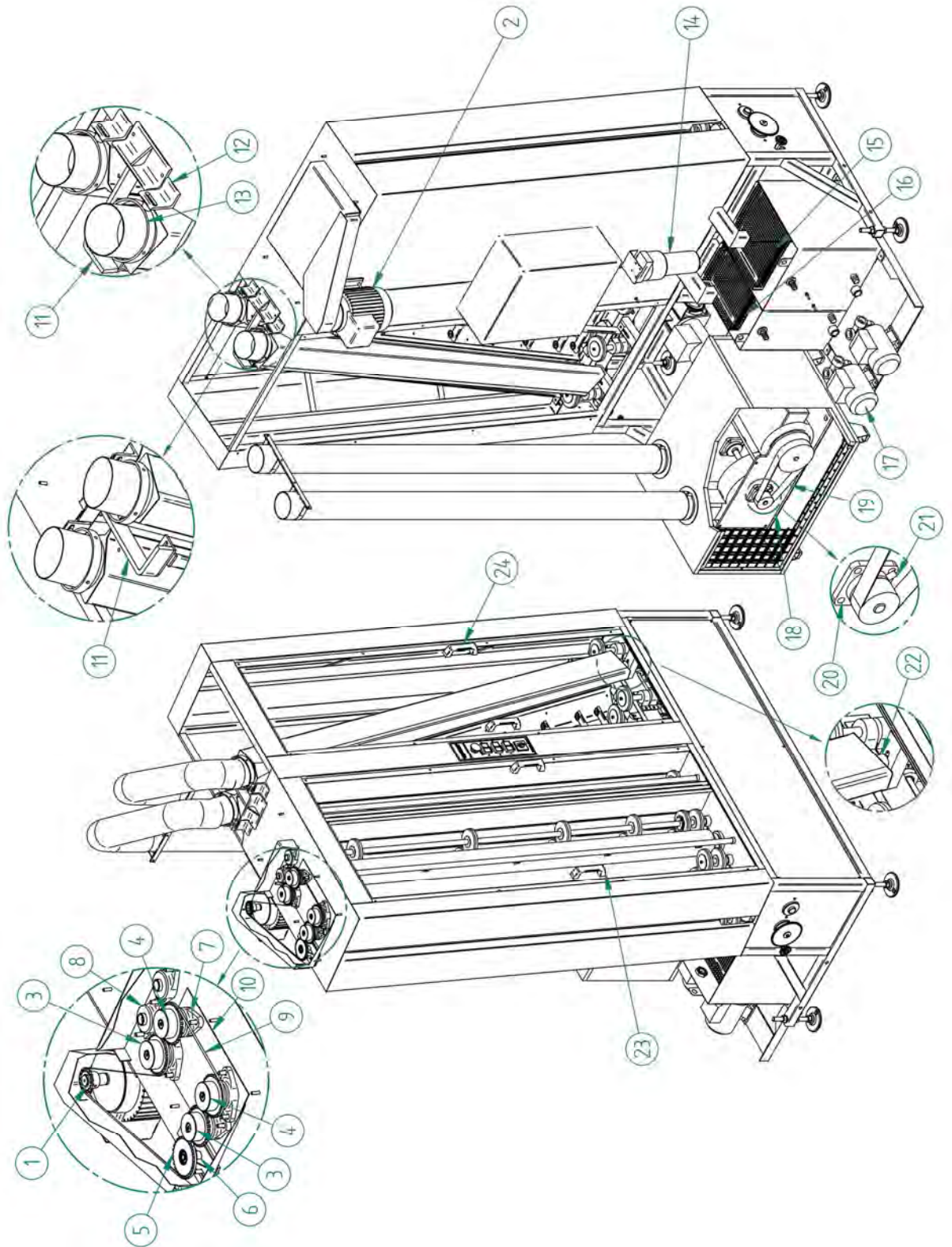
Annex

Mechanic diagrams

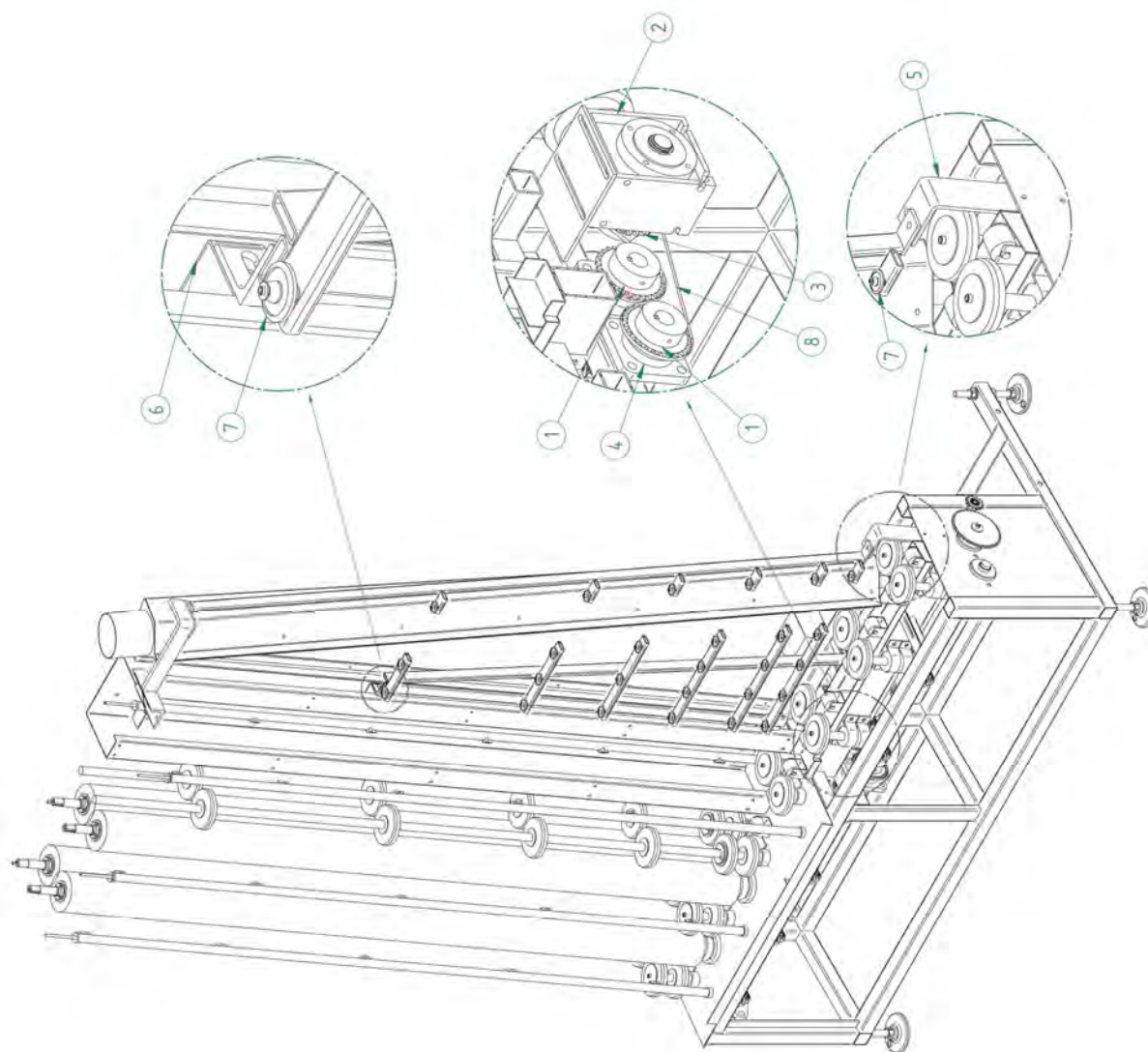
1. SM70V washing machine I.
2. SM70V washing machine II.
3. SM70V washing machine III.
4. Inlet conveyor
5. Outlet conveyor
6. Assembling



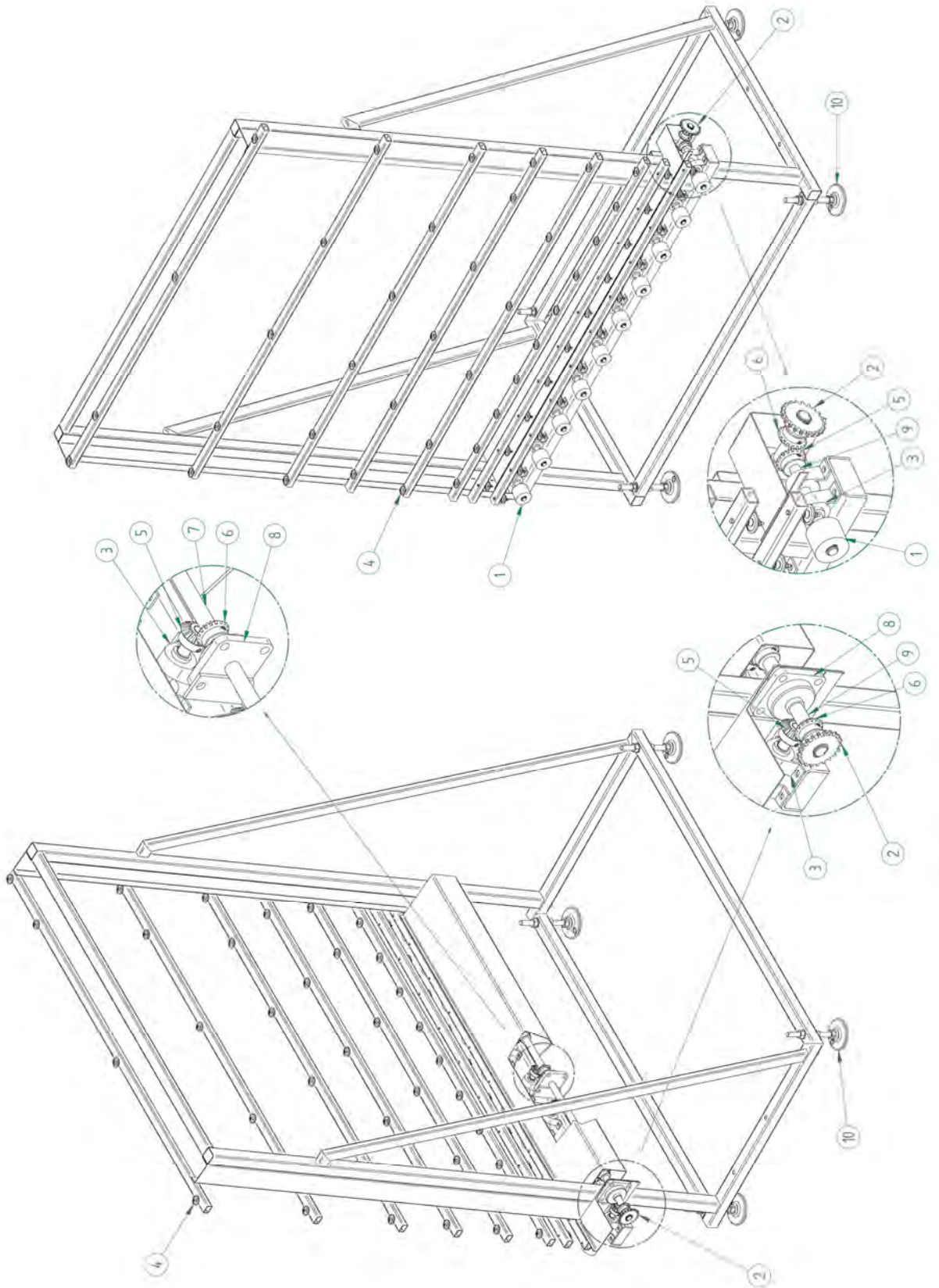
1. SM70V washing machine I.



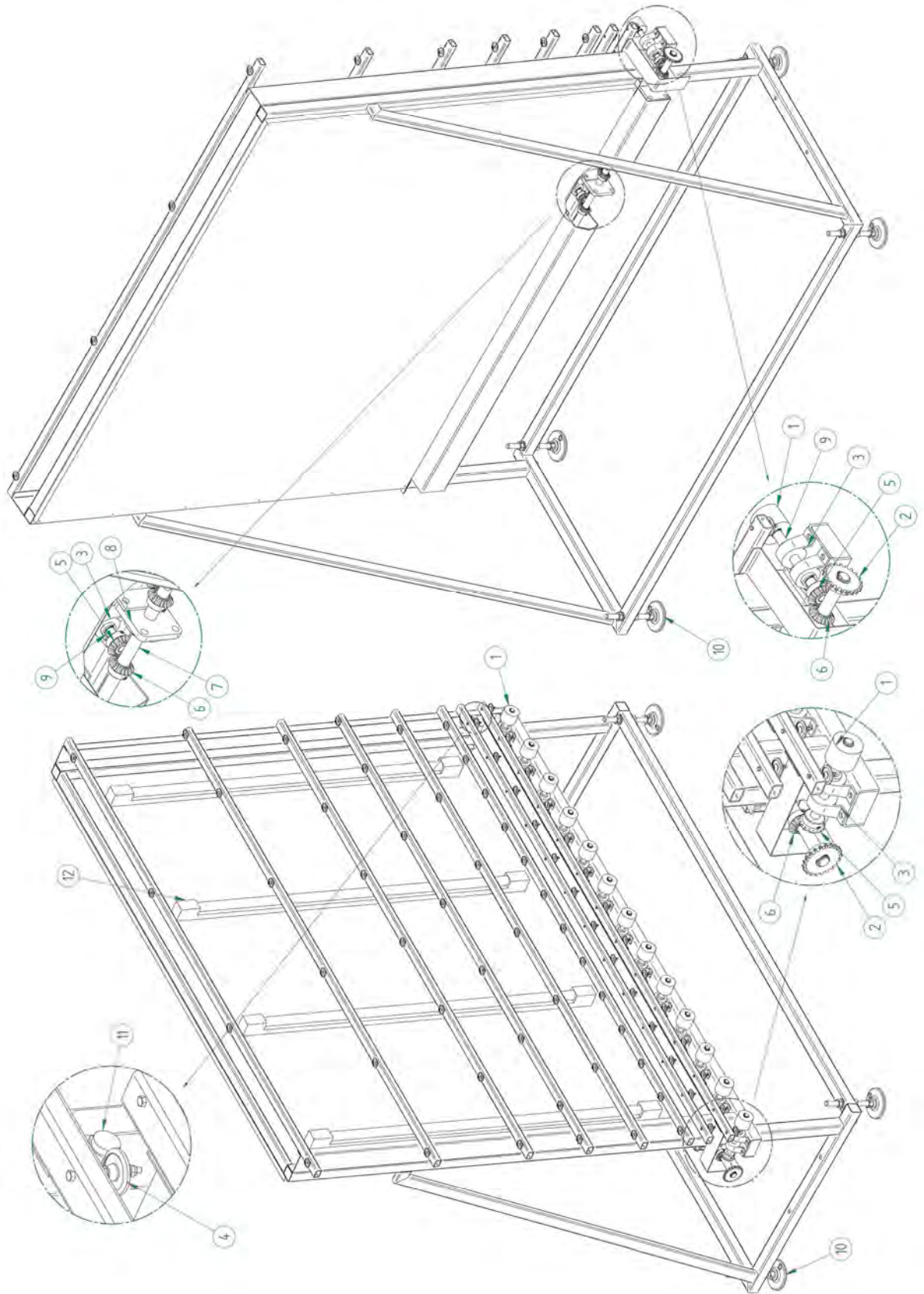
2. SM70V washing machine II.



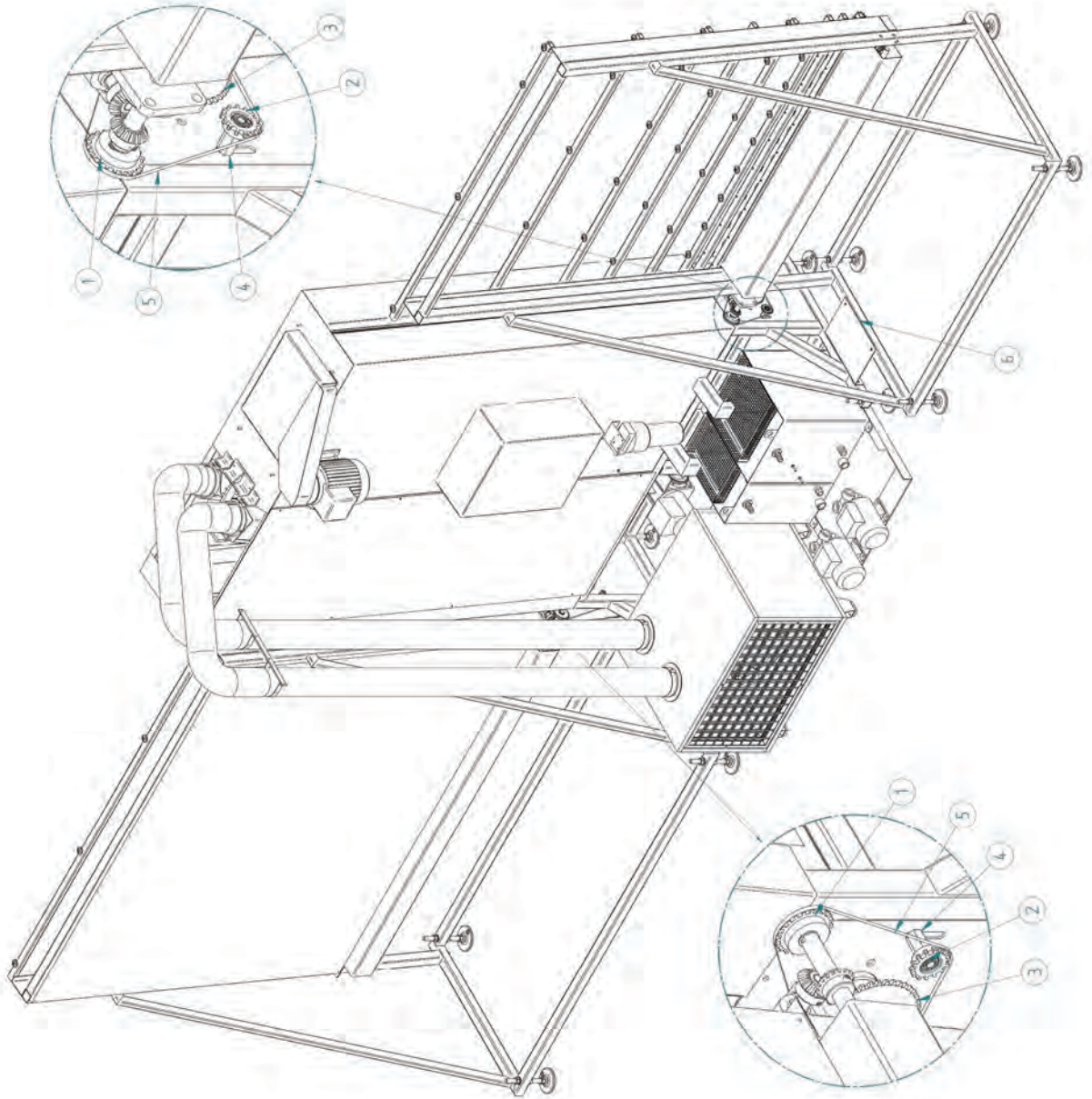
3. SM70V washing machine III.



4. Inlet conveyor



5. Outlet conveyor



6. Assembling

7. List of items:

1. SM70V Glass Washer I.

No.	Pc	Name	No. of drawing	Note
1.	32	Water nozzle		
2.	4	Bearing		UCFL 204
3.	2	Bearing		UCFL 204 – cut
4.	4	Claw nut	03.01.05.006.	M 24 x 1,5
5.	4	Retaining washer	03.01.05.009.	
6.	8	Clamp disc	03.01.05.005.	
7.	8	Roller holder	03.17.08.011.	
8.	28	Rubber wheel	03.01.12.015.	
9.	1	Waste pipe	03.17.13.003.	
10.	14	Clamp disc	03.17.08.006.	
11.	14	Screw		M6x12 BKNY
12.	6	Roller axis without socket	03.17.08.002.	
13.	28	Bearing box		ASPP 204
14.	14	Roller rubber	03.01.15.005.	
15.	4	Bearing		UCFL 205 – cut
16.	14	Big cone-wheel		Ø 25
17.	14	Big cone-wheel	03.01.17.002.	Ø 20
18.	1	Bottom driving shaft – 1st	03.17.02.001.	
19.	1	Bottom driving shaft	03.17.02.001.	
20.	4	Brush cylinder		
21.	4	Brush axis	03.17.10.004.	
22.	4	Rubber ring		
23.	4	Brush bearing box - bottom	03.17.10.002.	
24.	4	Rubber ring holder	03.17.10.001.	
25.	6	Roller axis - double	03.17.08.001.	
26.	2	Auxiliary axis		
27.	12	Shaft extension, double, upper	03.17.08.007.	
28.	6	Shaft extension, double, bottom	03.17.08.008.	
29.	8	Socket	03.17.08.005.	
30.	8	Claw nut	03.18.08.004.	M 30 x 1,5
31.	8	Shaft extension, simple	03.17.08.009.	
32.	2	Chain gear	03.17.02.002.	Z=42, 3/8"
33.	2	Chain gear 14	03.17.11.002.	Z=14, 3/8"
34.	1	Bottom case	03.17.03.100.	
35.	2	Threaded foot	03.01.16.000.	
36.	2	Threaded foot - long	04.15.07.100.	
37.	2	Catche	03.17.08.012.	
38.	2	Chain gear	03.17.02.002.	Z=29, 3,8"
39.	1	Chain gear for the motor	03.17.09.002.	Z=29, 3/8"

SM70V Vertical Glass Washing Machine

40.	1	Gear motor NMRW50 100		0,18 kW, 90/11
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2. SM70V Glass Washer II.

No.	Pc.	Name	No. of drawing	Note
1.	2	Chain gear	03.17.02.002.	Z=29, 3/8"
2.	1	Gear motor NMRW50 100		0,18 kW, 90/11
3.	1	Chain gear for the motor	03.17.09.002.	Z=29, 3/8"
4.	2	Bearing		UCF 205
5.	1	Glassfitting holder - bottom	03.17.06.012.	
6.	1	Clampable plate extension		
7.	40	Roller		
8.	1	Chain		

3. SM70V Glass Washer III.

No.	Pc.	Name	No. of drawing	Note
1.	1	Chain gear for the brush drive	03.17.09.003.	Z=15, 3/8"
2.	1	Electromotor M90S-8		0,37 kW, 670rpm
3.	2	Driven chain gear 1st	03.17.10.003.	Z=27, 3/8"
4.	2	Driven chain gear 1st	03.17.10.003.	Z=28, 3/8"
5.	1	Track-tightener wheel	03.17.05.003.	Z=27, 3/8"
6.	1	Track-tightener	03.17.05.000.	
7.	4	Bearing		UCFL 204
8.	2	Bearing		UCFL 204 – cut
9.	1	Chain		
10.	1	Bearing plate - top	03.17.06.021.	
11.	1	Glassfitting holder	03.17.06.025.	
12.	2	Pipe culvert holder	03.17.06.013.	
13.	2	Fixing ring	03.17.12.001.	
14.	1	Water-filter box		AMG 500
15.	1	Strainer	03.17.01.006.	
16.	1	Strainer 2	03.17.01.007.	
17.	2	Pump DAB KPS 36/16M		0,47kW, 2800 1/min
18.	1	Ventilator		4kW
19.	1	Belt transmission		
20.	2	Bearing		UCF 204
21.	2	Lubrication button		
22.	2	Pipe culvert spacer	03.17.12.005.	
23.	1	Removable door	03.17.06.017.	
24.	1	Removable door II.	03.17.06.017.	

4. Inlet conveyor

No.	Pc.	Name	No. of drawing	Note
1.	10	Roller	04.15.03.001.	
2.	1	Chain gear	04.01.04.003.	Z=21, 3/8"
3.	20	Bearing box		ASPP 202

SM70V Vertical Glass Washing Machine

4.	58	Supporting roller		
5.	10	Small cone wheel	04.15.03.003.	Ø 16
6.	10	Small cone wheel	04.01.04.001.	Ø 20
7.	1	Drive shaft	04.15.02.001.	Ø 20
8.	3	Bearing		UCF 204
9.	10	Roller axis	04.15.03.002.	
10.	4	Threaded foot - long	04.15.07.100	

5. Outlet conveyor

No.	Pc.	Name	No. of drawing	Note
1.	13	Roller	04.15.03.001.	
2.	1	Chain gear	04.01.04.003.	Z=21, 3/8"
3.	26	Bearing box		ASPP 202
4.	72	Supporting roller		
5.	13	Small cone wheel	04.15.03.003.	Ø 16
6.	13	Small cone wheel	04.01.04.001.	Ø 20
7.	1	Drive shaft	04.15.02.001.	Ø 20
8.	4	Bearing		UCF 204
9.	13	Roller axis	04.15.03.002.	
10.	4	Threaded foot - long	04.15.07.100.	
11.	1	Sensor		
12.	4	Neon tube		

6. Assembling

No.	Pc.	Name	No. of drawing	Note
1.	2	Chain gear	04.01.04.003.	Z=21, 3/8"
2.	2	Chain gear 14	03.17.11.002.	Z=14, 3/8"
3.	2	Chain gear	03.17.02.002.	Z=42, 3/8"
4.	2	Strainer axis	03.17.11.001.	
5.	2	Chain		
6.	2	Closing plate		



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SM70V Vertical Glass Washer

WARRANTY STATEMENT

SOMMER & MACA Machinery Division of C.R. Laurence Co., Inc. (Seller) warrants products of its manufacture to be free from defects in materials and workmanship in normal use for six months from the date of shipment unless a shorter period is provided elsewhere in this document. Seller's obligation and Buyer's exclusive remedy shall be limited to the repair or replacement at Seller's option, of defective parts within warranty period, provided Buyer gives Seller immediate written notice of such alleged defects, and if requested by Seller, returns the defective parts to Seller's factory for Seller's inspection. The warranties contained herein are in lieu of any other warranty expressed or implied, including any warranty of MERCHANTABILITY OR FITNESS FOR PURPOSE.

In the case of equipment furnished by Seller but not of Seller's manufacturer, Seller's liability to Buyer hereunder. Adjustment at the manufacturer thereof makes to Seller. Seller shall in no event be liable for consequential damages. Warranties hereunder shall not apply to any equipment that shall have been damaged by misuse, neglect, failure to perform maintenance or accident after the shipment thereof by Seller.

In addition thereto, this warranty shall be null and void if:

1. Machine is used in a manner contrary to instruction or after malfunction is noticed.
2. Buyer does not honor terms of payment.
3. Machine is modified or altered without the agreement of Seller.



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