Semi-Auto Low Profile Stretch Wrap Machine

User Manual

Model no. 412409
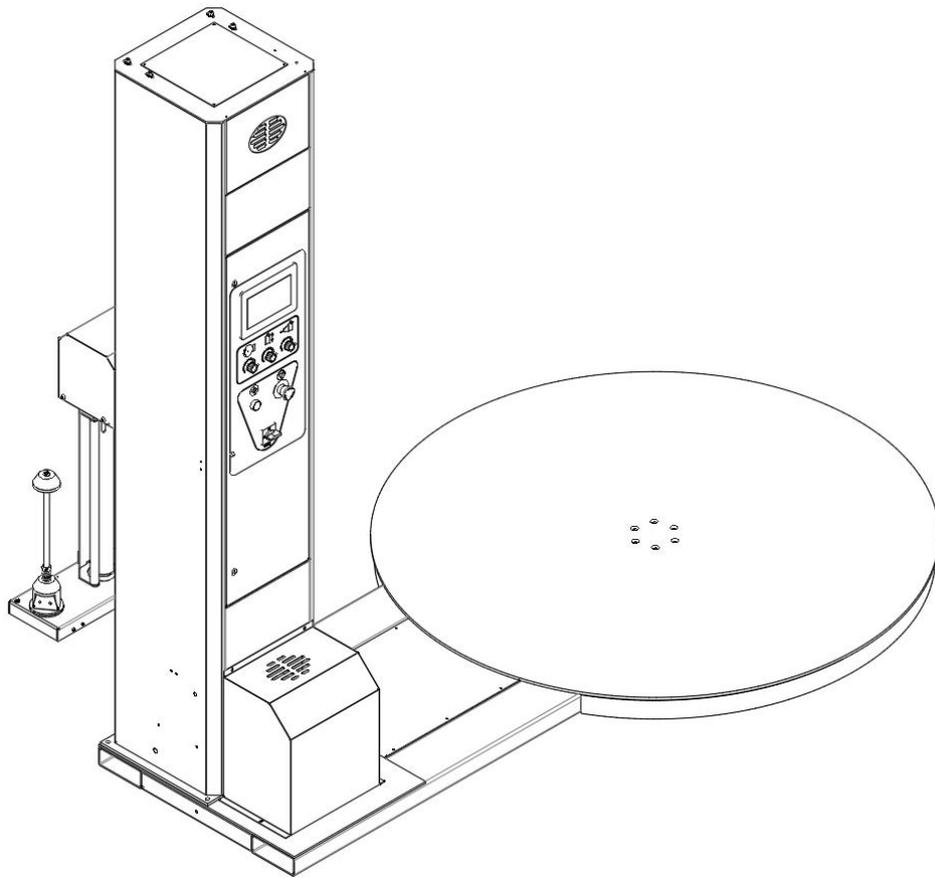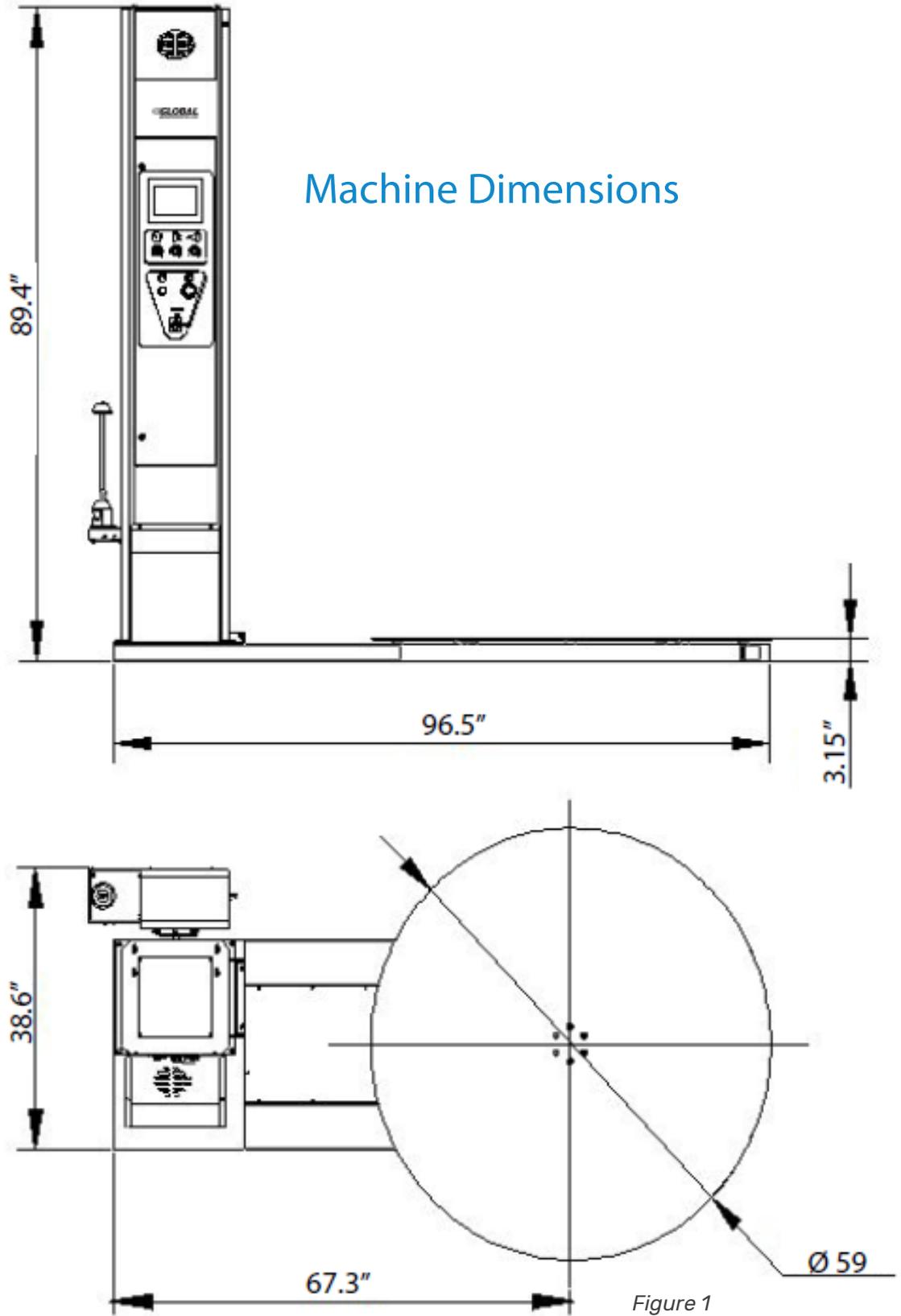
SCAN ME

Machine Dimensions

89.4"

96.5"

3.15"

38.6"

67.3"

Ø 59

Figure 1

Table of Contents

Contents

1. System Specifications

Machine Dimensions
(See Figure 1)

Table 1

Length	96.5"
Width	59"
Height	89.4"
Turntable Diameter	59"
Turntable Height from Floor	3.15"
Wrapping Height	83"
Operation Space	97" x 60" x 90"
Maximum Load Size	52" x 52" x 82"

Electrical Specifications
• 110 VAC, 60 Hz, Single-phase, 9.1AMP
• Turntable motor: 550W
• Lift motor: 200W
• Pre-stretch Motor: 200W

Turntable System
• 13 RPM turntable maximum speed
• 4,400 lbs. turntable maximum load capacity
• 1-10 round/minute
• Clockwise rotating turntable direction

Film Delivery System
• Infinite / Manual Stretch Adjustment
• 10" Diameter Roll Capacity
• 3" inner film roll diameter
• 20" Roll Width Capacity

System Sp

Machine Features
• Programmable logic controller (PLC) user interface
• 6 modes: that's 5 automatic modes + 1 manual mode.
• The film carriage adopts close loop self-adjusting technology, to ensure each package is evenly wrapped.
• Allowable package weight (22 lbs – 4400 lbs)
• SAFETY: The machine has an emergency stop button & sensor underneath the film carriage. Once an object is detected underneath the moving film carriage, the machine will stop.

⚠ CAUTION!

When servicing drive and controllers, there may be exposed components with housings or protrusions at or above the line potential. Extreme care should be taken to protect against shock.

The user is responsible for conforming to all applicable code requirements with respect to grounding requirements. Do NOT use extension cords to operate the equipment

Disconnect AC input power when the machine is not in use and before checking components, performing maintenance, cleaning up, and. Do NOT connect or disconnect wires and connectors while power is applied to the circuit.

Always plug into a grounded outlet with the rated voltage.

110 V

STOP WARNING!

Loose clothing must NOT be worn while the machine is in operation. Stay clear of moving parts while the machine is running.

ecification

2. System Set-up

Machine Placement

Place the Semi-automatic Stretch Wrap Machine close to an area where you will be wrapping your pallet loads. Refer to figure 2 t o insure the machine meets the minimum clearance space requirements. Make sure that there is sufficient room to load/unload the machine and that you do not stretch the wiring cable. Remember, you will need to provide electrical service to a 110 VAC, 9.1-AMP outlet.
(See Figure 2)

Floor Weight Bearing Tolerance

The floor must be able to bear the weight of the machine, the weight of the maximum load, plus a safety factor. The floor must also be able to tolerate the stress of the machine operation. If the truck will operate on the same weight bearing area, add the weight of the trucks to the weight bearing stress tolerance requirement.
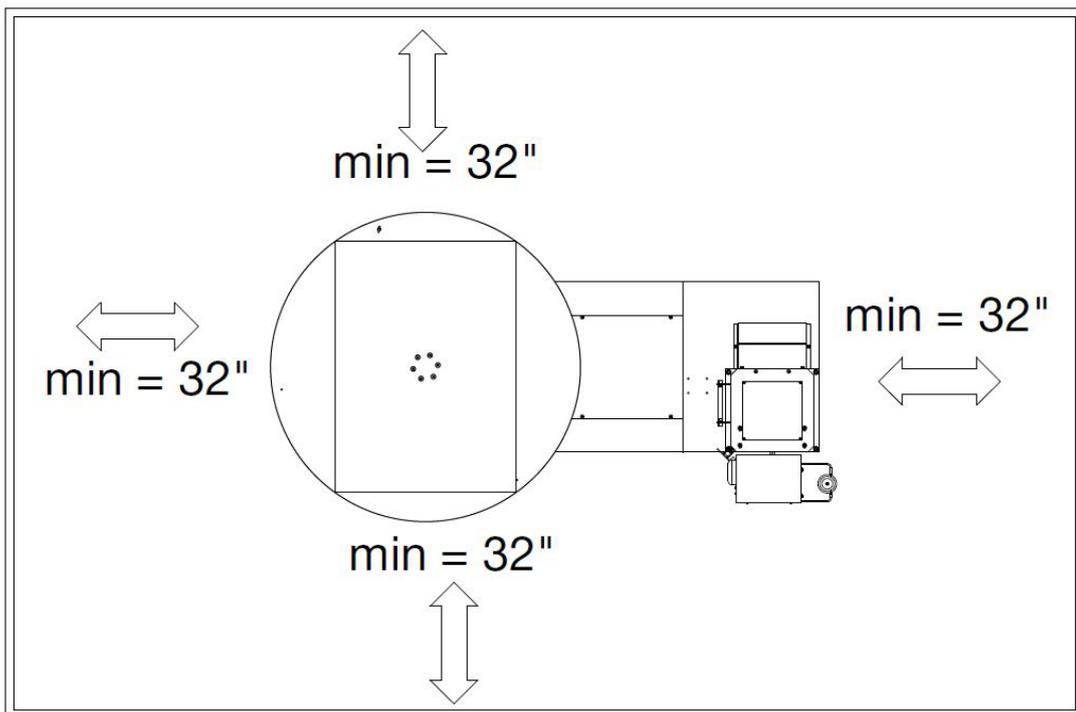

Figure 2

System

2.1 Machine Set-up

1. Place the crated machine close to the designated wrap area. Remove all shipping fasteners holding the machine to the pallet. The machine may be crated with the tower tilted down and the motor cover front carriage roller removed for shipping purpose.

2. Place forks of the forklift through the tubes provided at the rear base of the module, remove the machine from the crate and place it at the designated wrap area.

3. Check all internal connections to ensure there is no loose/disconnected electrical wiring,

4. Connect the motor wiring and sensor leads according to the corresponding wire numbers.

5. If the OPTIONAL ramp (Model no. 412410) is purchased: select a ramp position illustrated below. The ramp can be positioned anywhere in a 180 rotation around the front of the turntable. There should be a ¼" gap between the turntable and the ramp. The ramp should be fully supported by the floor. (See Figure 3)
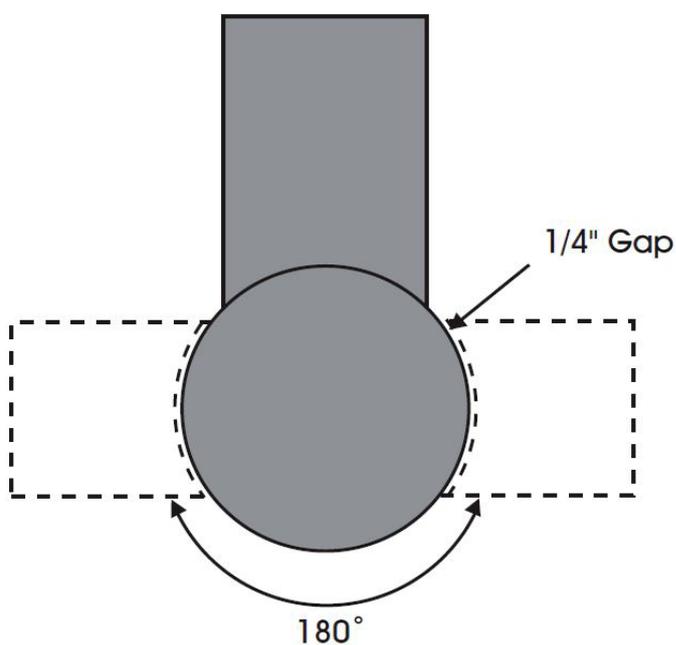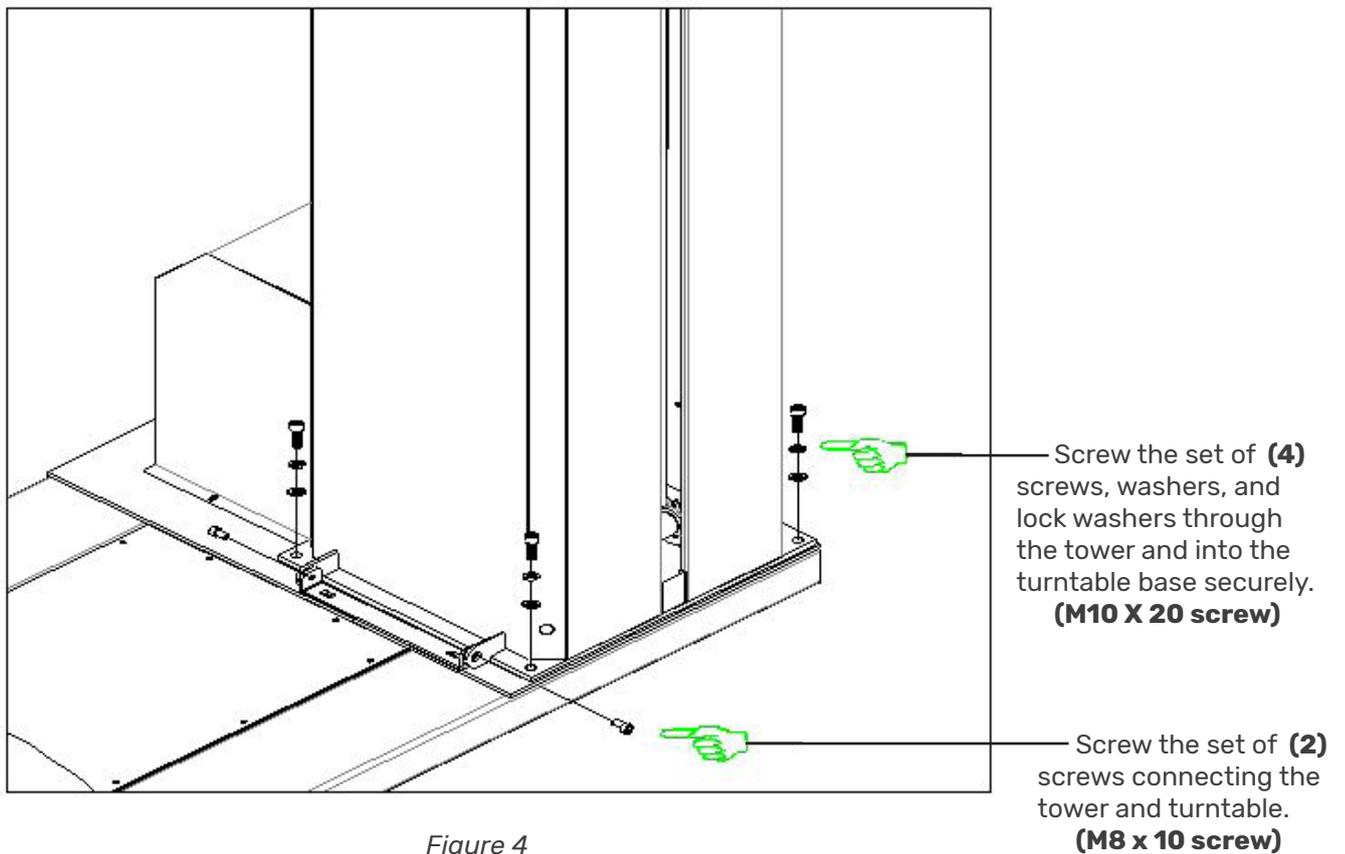

1/4" Gap

180°

Figure 3

Set-up

2.2 Installation

NOTE: Installation requires two people.

⚠ CAUTION

Be careful when standing on the turntable during the installation, as it may turn when rotational force is applied.

1. Raise the tower upright safely with two people.
2. Tighten the screw between the tower and the turntable base. (See Figure 4)
3. Screw the film carriage into the post. (See Figure 5)
4. Connect to the power supply and perform a ground test before using the machine.

Screw the set of **(4)** screws, washers, and lock washers through the tower and into the turntable base securely. **(M10 X 20 screw)**

Screw the set of **(2)** screws connecting the tower and turntable. **(M8 x 10 screw)**

Figure 4

Mount the film carriage onto the post by fastening a set of **(2)** screws.
(M8 x 20 screw)

Figure 5

3. Control Panel Buttons

Touch screen

M1

M2

POWER

Emergency

Start button

OFF
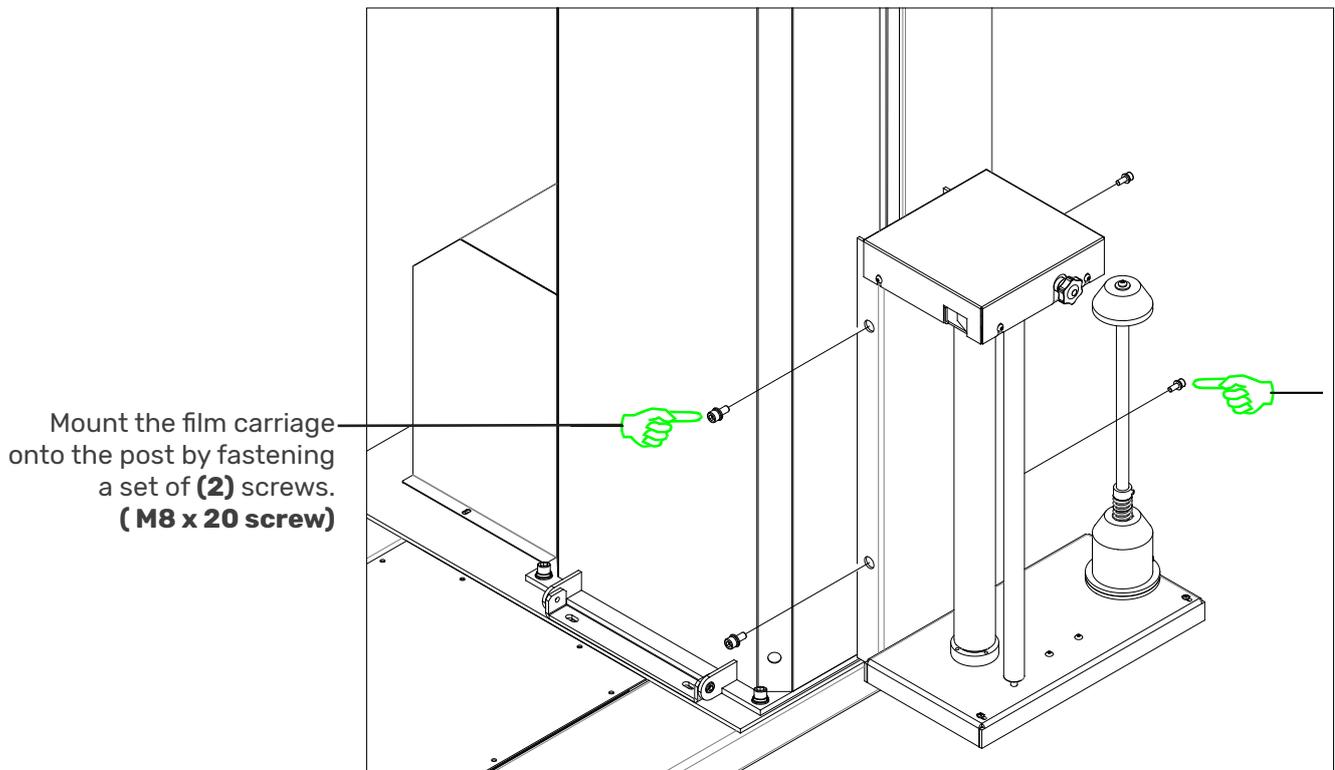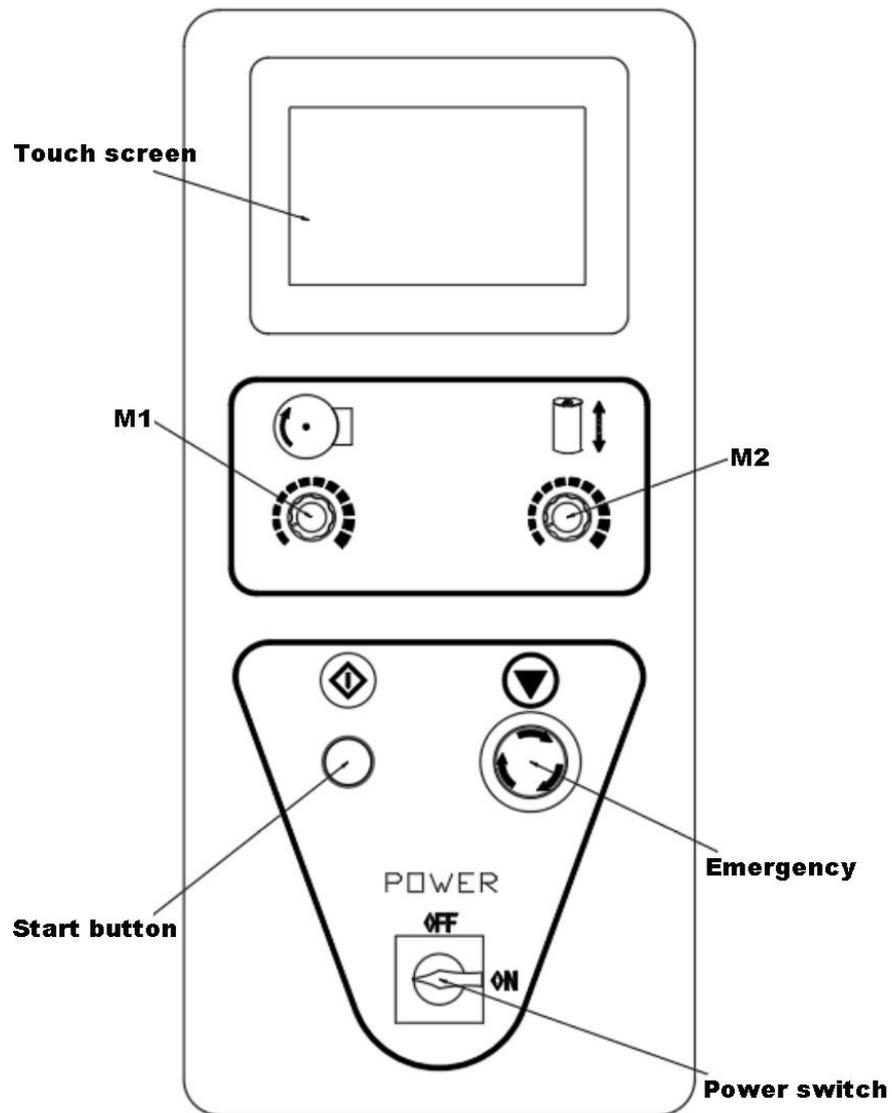
ON

Power switch

Figure 6

Control Pa

Speed Controlled by M1, M2 Knob

• M1: Control the speed of the turntable motor. The speed range 1~ 10 rpm.
• M2: Control the lifting motor speed.

Start Button has three functions
• The start of the automatic mode starts
• Resume after emergency stop
• Use/cancel the central reinforcement

Emergnecy Stop Button
Press the emergency stop button to stop the machine immediately. Press the button when any emergency occurred during the packaging process. Turn the emergency stop button clockwise to reset the emergency stop button.

Power Switch
• OFF, power off the machine
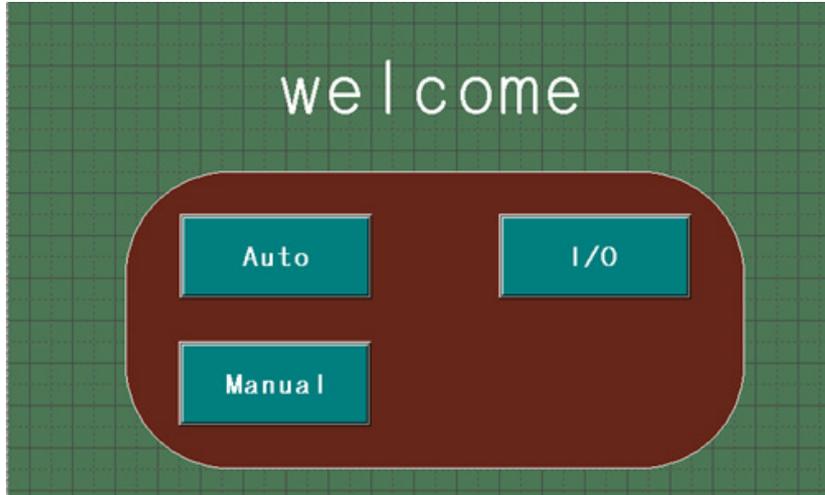• ON, power on the machine

nel Buttons

4. Operator Controls

Figure 7 Main menu display

4.1 Manual

Press the manual Interface button in the main menu to display the manual operation.
(See Figure 8)

Carriage up / Carriage down
Manually operate the carriage to move up or down. When this function is pushed, the button will turn green. To pause the operation, simply push the button again. This button may be used in conjunction with the Turntable start button.

Turntable start
The Turntable Start button allows you to manually operate the turntable. When this button is pushed, the button will turn green. Pushing the button again will stop the turntable. The button may be used in conjunction with the Carriage up/down button.

Reset
Push the Reset button to reset the system operation. The turntable will return to its home position and the carriage will lower to the initial position.
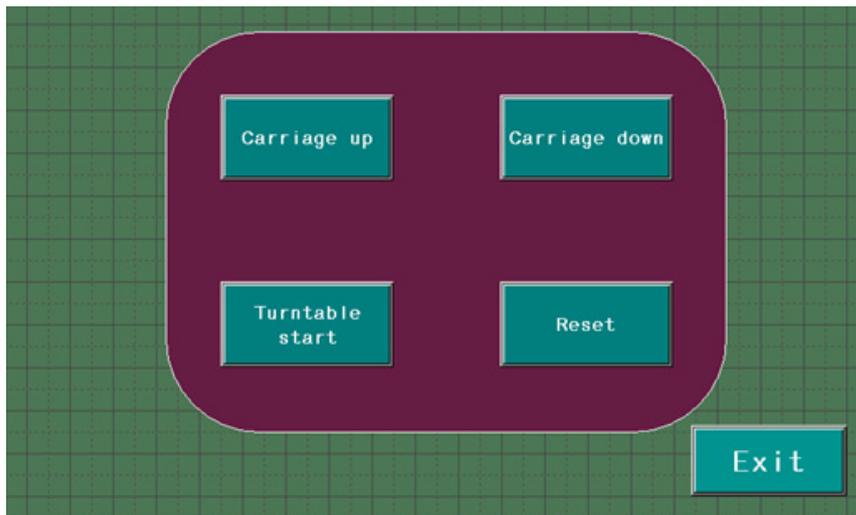
Operator Contro

Figure 8 Manual display

4.2 Auto

Press the AUTO button in the main menu to set parameters through the interface shown in figure 9   .

The parameters can be set according to the following packaging requirements: Bottoms Laps, Top Laps, Lifting Time, Strengthening Laps, and electric eye delay. Press the white box to set each parameter through the pop-up numerical keyboard followed by pressing the Enter button.

Once the parameters are set, click the "Save" button on the screen to store the parameters for the assigned group number. A total of five sets of parameters can be stored. To use any of the saved parameters, select the group number. (See Figure 9)

NOTE: The parameters and function settings cannot be changed when the machine is running.
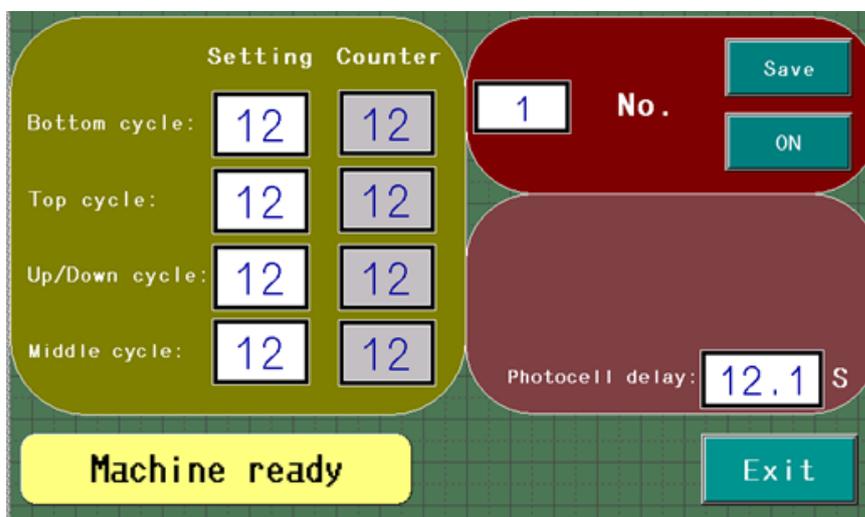

Figure 9 Auto display

4.3 Input & Output (I/O)

You can check the status of all the sensors and switches on the I/O interface shown in Figure 10. This display can be used for routine maintenance on the machine. (See Figure 10)

To return to the main menu, press the EXIT button.
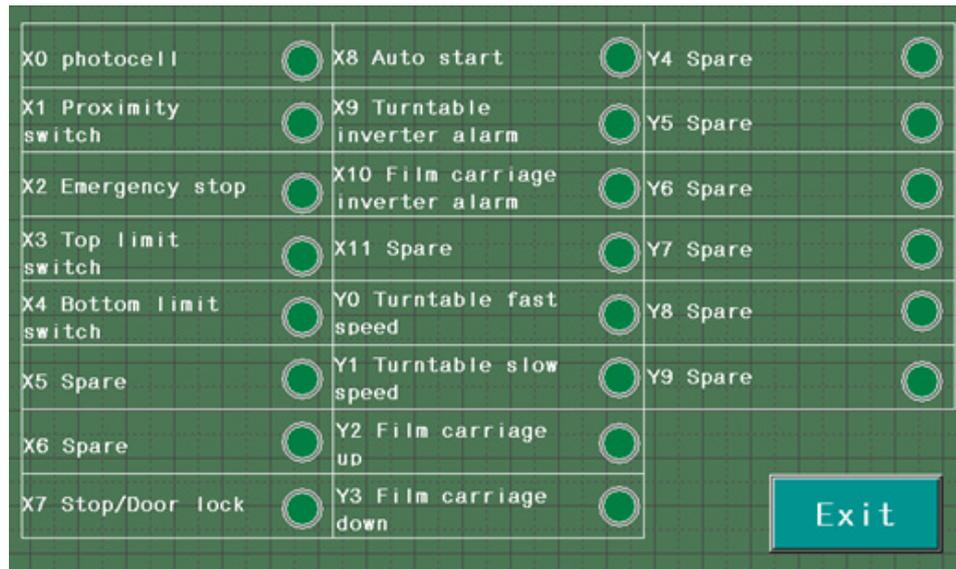
Figure 10 I/O display

4.4 Film Loading

⚠ CAUTION!
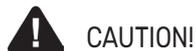
Be sure EMERGENCY STOP is pushed in before threading the film and pulled out when the film is threaded.

1. Load the film roll in the film carriage. (See Figure 11)
2. Follow the film feed diagram and thread the film all the way through the rollers. (See Figure 12)
3. Attach the film securely to the pallet. Tying the end of the film in a knot often helps secure the film to the pallet.
4. Turn the emergency stop switch clockwise and turn the power on.

Figure 11
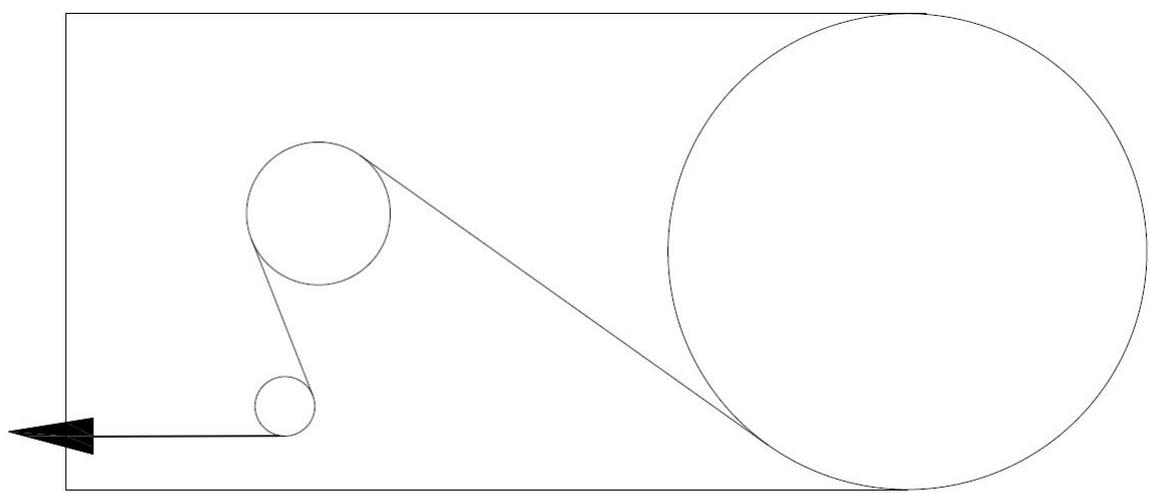
Figure 12

4.5 Machine Operation

Trial run – Normal System Start-up:
1. Place the packaged pallet on the machine turntable.
2. Thread the film as instructed and attach it to the product.
3. Turn the power on.
4. Adjust the sensitivity of the photo switch. The machine is adjusted to the factory setting before delivery.
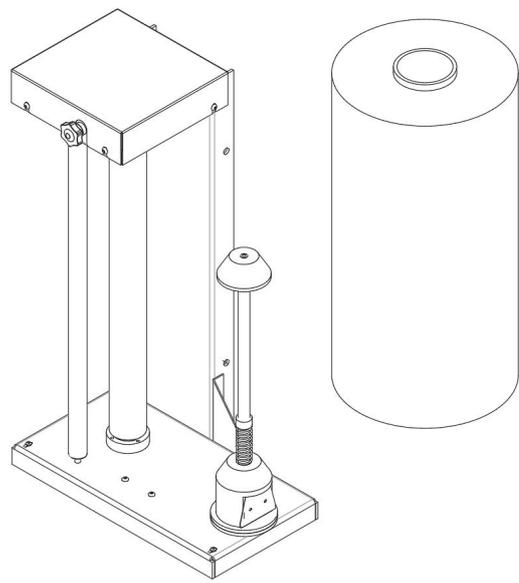5. Select either Manual or Auto mode to achieve the user's packaging requirement.
6. Press the START button to initiate cycle.

NOTE: It is recommendwd to try a trail run to become familiar with the various parameters, adjustments, and speed controls.

Emergency Stop Condition
1. In the event of an emergency, press the STOP button. This cancels the current wrapping cycle and immediately stops the system. Figure 13 will display on the screen.
2. Correct the problem.
3. Turn the STOP button clockwise to reset the stop button and perform the normal system start-up procedure.

NOTE: If the weight of the package exceeds 1,100lbs. , turn the turntable adjustment knob M1 counterclockwise prior to pressing the emergency stop button.
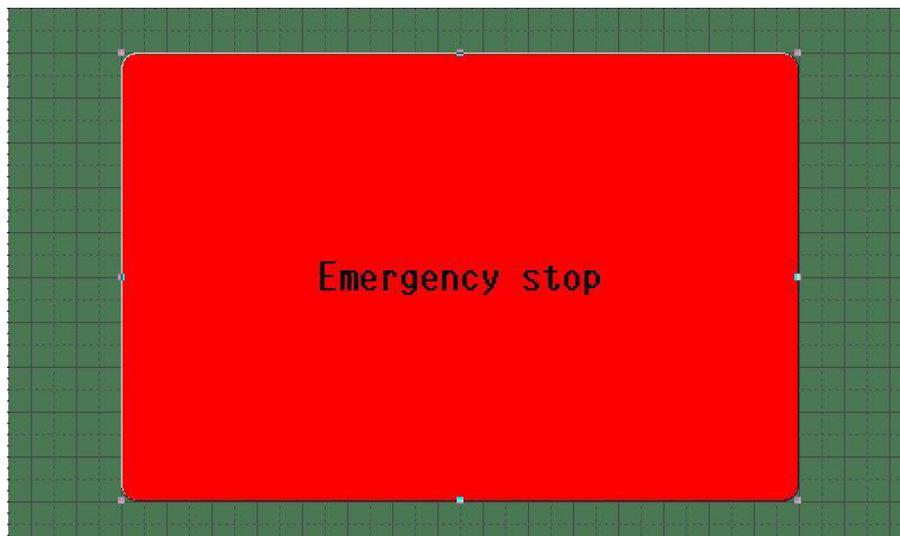
Figure 13

Operation

1. Load the film roll in the film carriage and thread the film according to figure 12.
2. Turn the power on.
3. Adjust the sensitivity of the photo switch. The machine is adjusted to the factory setting before delivery.
4. Adjust the parameter according to the packing requirements.
5. Trial run: Place the packaged pallet, used for a trial run, on the machine turntable. Adjust M1 & M2 speed controlled knobs to the desired speed. Packaging operation can be adjusted by the multiple parameters to achieve the user's packaging requirement. Once the user is familiar with the various parameters and adjustments, the user is ready to operate the machine.

5. Maintenance & Troubleshooting

⚠ CAUTION!

All machine maintenance work must be performed with the power supply disconnected.

1. Keep the machine clean. Use a dry cloth and cleaning agent to clean the machine. Do not use solvent water to clean the machine to prevent rusting.
2. Regularly perform maintenance on the machine every 3 – 6 months; frequency varies with the machine usage. Check for internal dust build up. Check the tightness of the chain and lubricate the chain in routine maintenance inspections.

🛑 WARNING!

Make sure that only qualified personnel perform inspection, troubleshooting and part replacement.

⚠ CAUTION!

Disconnect all power, including external control power that may be present before servicing the frequency drive controllers.

Table 2

OPERATING ISSUES	CAUSES	RECOMMENDATIONS
The machine is not powering on	Main Power is turned off.	Check the power going into the machine. Verify that the switch is turned on.
	Machine not plugged into 110VAC outlet.	Verify the voltage going to the machine matches the power supply labels on the power module.
	Faulty power supply	
	Internal battery not charged.	
	PLC Failure	Replace new PLC
	No display on PLC screen	
	Fuse Burn	Replace the fuse
Turntable does not run.	Pallet overweight	Reduce the pallet weight
	Chain falls off	Check the chain transmission mechanisn (loosen the chassis screws, remove the turntable cover and check wheather the chain and tension are abnormal.
	Loose chain	
	Inverter failure or damage	The output protection of the inverter will flash the fault code on the inverter. Look up the corresponding fault code and troubleshoot method. Replace inverter if damaged.
Film carriage malfunction	Limit switch failure or damage	Overhaul or replace the limit switch
	Photocell failure or damage	Overhaul or replace the photocell
	Loose chain or interference	Overhaul the vertical lifting chain system
	PLC Failure	Replace the PLC
	Carriage Up/Down button is unresponsive	
	Inverter failure or damage	Troubleshoot and replace inverter if damaged
	Motor Failure	Overhaul the lifting motor

Troubleshooting

6. Components & Parts

Turntable
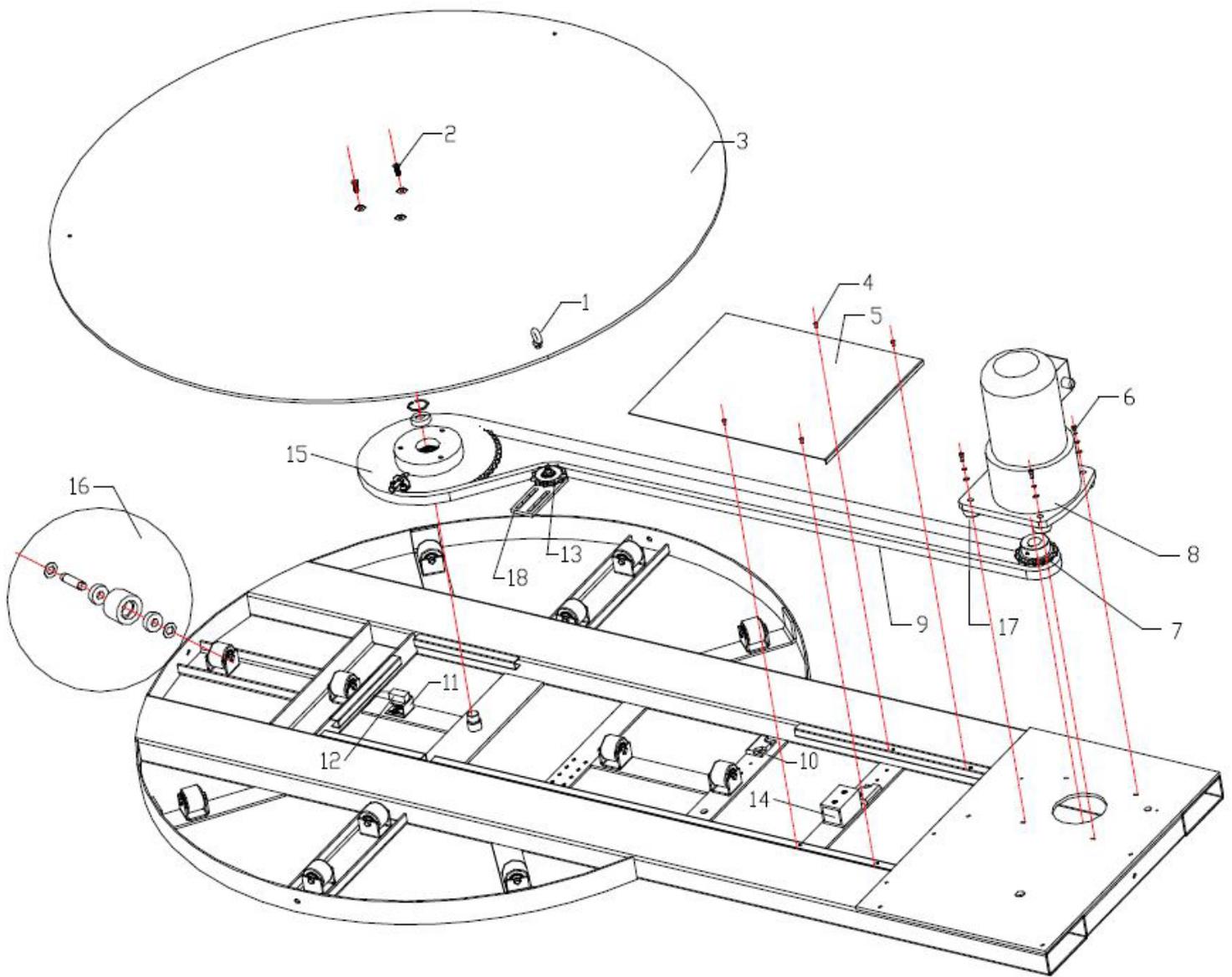
Figure 14

Componen

Table 3

No.	Part no.	Description	Qty.
		Turntable	
1	GB/T825	Hook M10	1
2	GB/T70.3	Hex scew M10x25	3
3	10000000510	Disc	1
4	GB/T70.2	Hex flat cap head screw M5 x 10	4
5	XT4505-0126	Protection cover	1
6	GB/T70.1	Hex screw M10x50	4
7	10000000486G	Motor chain pulley: 12B, 14 teeth	1
8	CV-32-750-30S	Gear motor	1
9	GB/T1243	Chain: 12B, 174 keys	1
10	10000000695	Chain noise reducer	2
11	XT45N-0110	Switch holder	1
12	PL-05PN	Switch	1
13	XT4505-0129-V1	Tension pulley: 12BZ11	1
14	XT4505-0135-V1	Protection cover support block	1
15	10000000693	Center turntable pulley	1
16	10010000617	Turntable roller	12
17	8020-0506	Motor base	4
18	10000000698	Tension pulley bracket	1

ts & Parts

Film Carriage
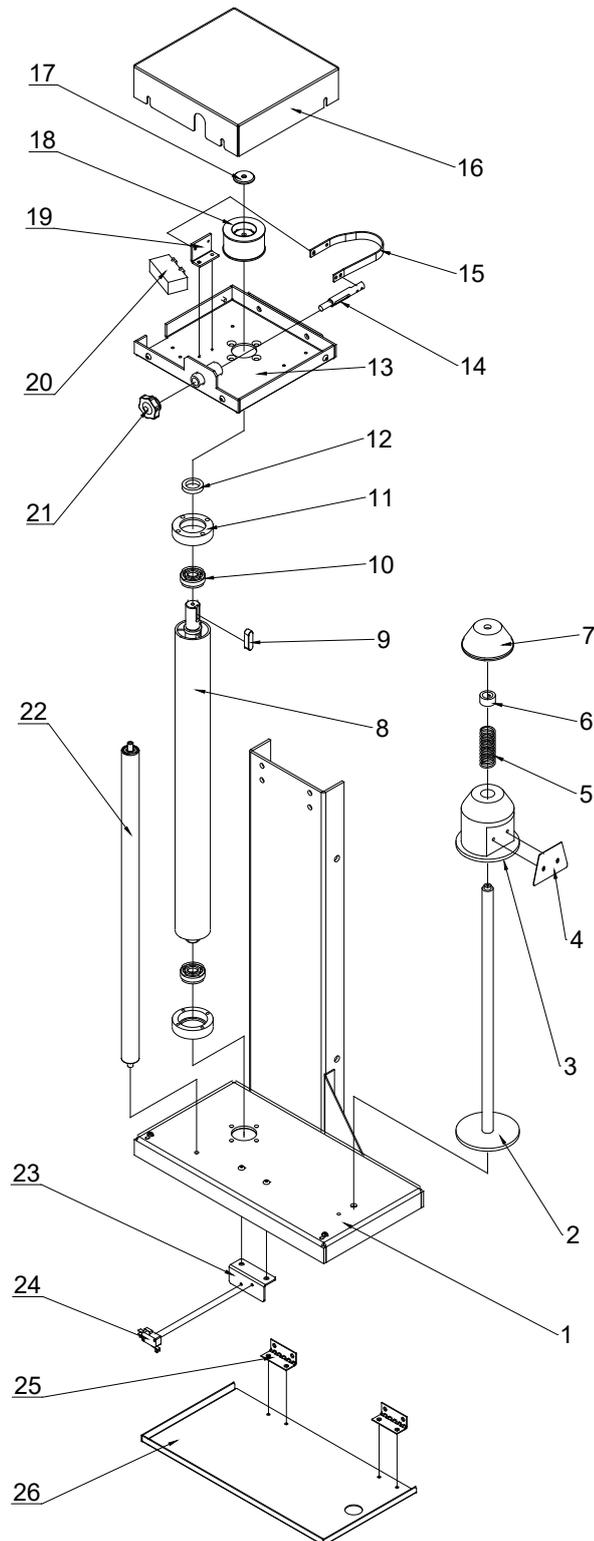
Figure 15

Table 4

Film Carriage			
No.	Part No.	Description	Qty.
1	XT15Z-02-V2	Bottom fixed plate assembly	1
2	XT45M-19	Film roll: welding assembly	1
3	10000000033	Film roll: bottom seat	1
4	10000000035-VI	Spring plate	1
5	10000000030	Spring	1
6	20545000404-V1	Lock ring	1
7	10000000034	Film roll: top seat	1
8	XT45Z-06-V1	Rubber roller unit	1
9	GB/T1096	6*6*25 key	1
10	GB/T276	Bearing 6004	2
11	XT45M-12-V3	Rubber roller bearing seat	2
12	XT4508A-0205	Lock sleeve	1
13	XT45Z-010-V2	Film carriage top plate	1
14	XT45Z-11-V1	Brake shaft	1
15	XT45Z-11-1	Rubber belt 218L*12W*2T mm	1
16	XT45Z-03-V1	Top film carriage cover	1
17	XT45Z-09	Shaft lock ring	1
18	10000000046	Tension friction wheel	1
19	XT45Z-10-V1	Belt holder	1
20	FR-2MX	Photocell	1
21	M8X20	Star knob	1
22	XT45M-14	Guide roller	2
23	XT45Z-16	Swith install plate	1
24	KW3-0Z-2	Microswitch w/ wheel	1
25	QB/T3876	Hinge: 50 x 38	2
26	XT45Z-15-V3	Safety plate	1

Tower and Lift

4

5

6

7

8

9

10

11

12

3

2

1

13

14

15

16

17

18

19

20 21 22 23 24

25

26

27

28

29

30

31

32

33

34
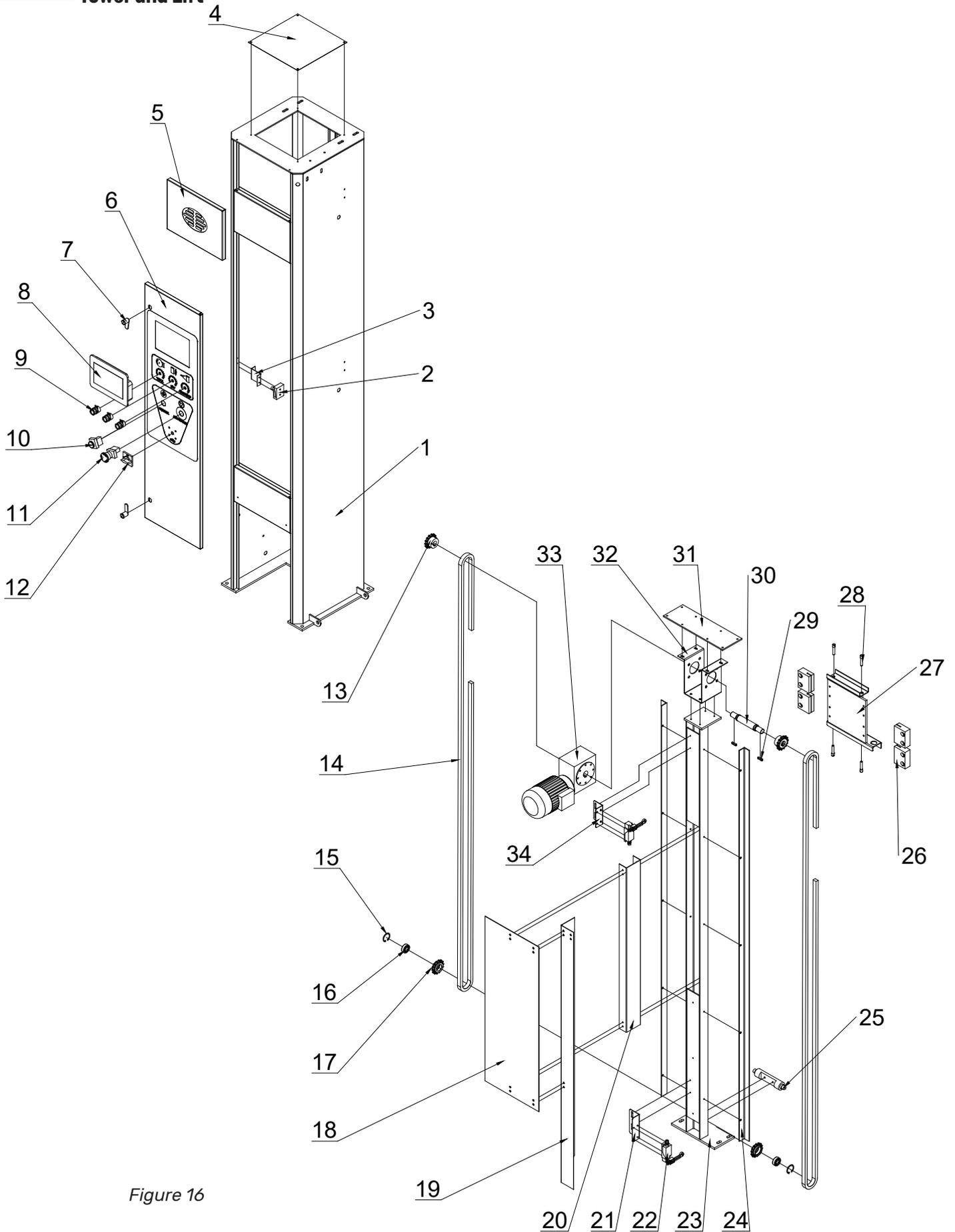
Figure 16

Table 5

No.	Part No.	Description	Qty.
		Tower and Lift Assembly	
1	XT4505-0201-V2	Tower body	1
2	Z15G 1703 15A	Door safety switch	1
3	XT4505-0206	Z type holder	1
4	XT4505-0204	Tower body top cover	1
5	XT4505-0203	Tower body top protection plate	1
6	XT4515-02-002	Door	1
7		Locker	2
8	HMIGXU3500	Touch screen (Schneider)	1
9	RV24YN 20S B502 + MF-A03	Potentiometer + Knob	3
10	HB1-BA31	Start button	1
11	HB2-BS542	Emergency stop switch	1
12	TCS4S295	Power switch	1
13	10000000549	Lifting motor chain wheel: 14 teeth	2
14	08B P12.7	Chain 08B (12.7), 314 joint	2
15	GB/T893.1 D35	Locking ring 35	2
16	GB/T276	Bearing: 6202-zz	2
17	XT4505S-0113	Chain wheel: 08b 14 teeth	2
18	XT4505S-0110-V2	Electrical housing	1
19	XT4505S-0115-V2	L Channel bracket	1
20	XT4505S-0105	Electrical component storage	1
21	XT4505S-01-17-V2	Bottom limit switch seat	1
22	TZ-8108	Limit switch	2
23	XT4505S-010702-V4	Inner tower assembly	1
24	XT4505S-0104	Guide rail	2
25	XT4505S-0103G	Sliding block	4
26	XT4505S-0102-V1	Drive shaft	1
27	XT4505S-0109-V1	Connection board assembly	1
28	XT4505S-0111	Screw	4
29	GB/T1095	Key 6*6*25	2
30	XT4505S-0101	Shaft	1
31	XT4505S-0108	Top lifting board	1
32	XT4505S-010701	Motor seat	1
33	NMRV050	Lifting assembly	1

Electrical Components
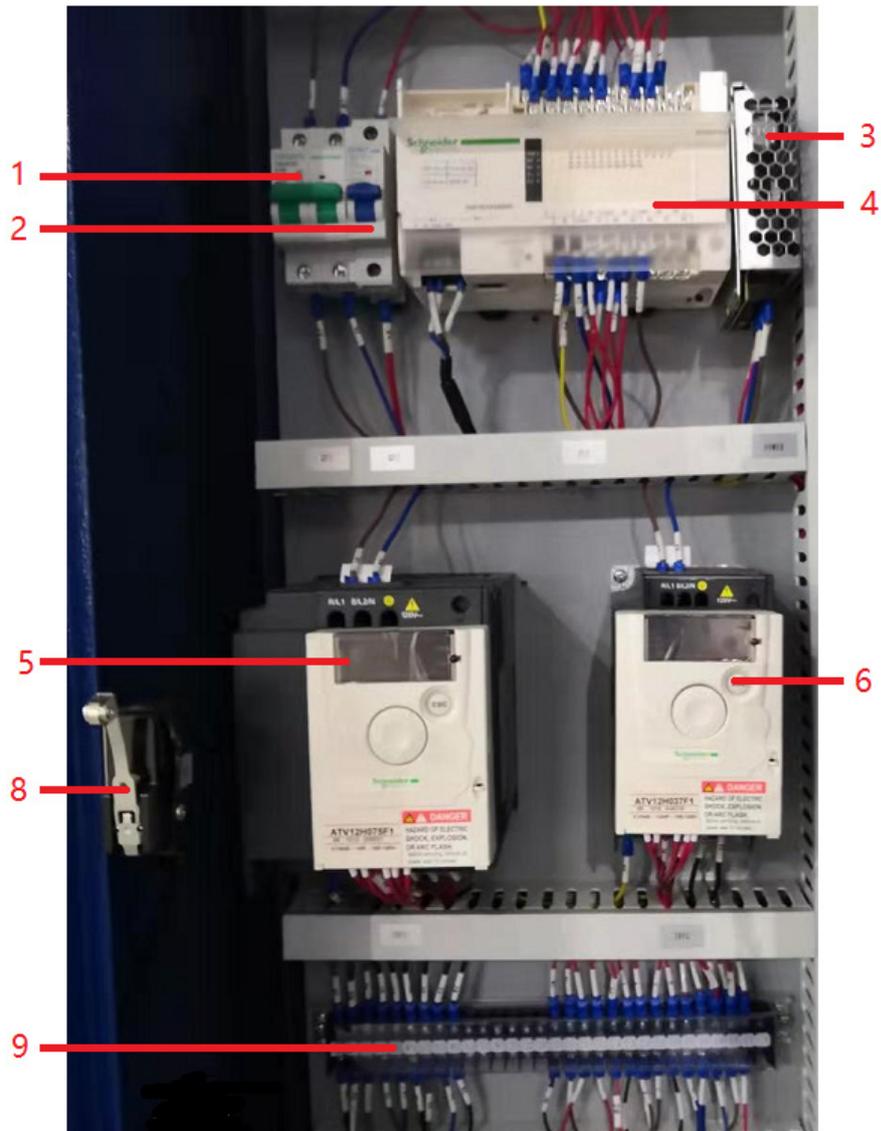
Figure 17

Table 6

**Electrical Floor Components**			
No	**Part no.**	**Description**	**Qty.**
1	RT18-32,2P,16A,Fuse 10X38	Circuit Breaker	2
2	RT18-32,1P,2A,Fuse 10X38	Circuit Breaker	1
3	LRS-50-24	Switch power	1
4	218LDA24DRN	PLC	1
5	ATV12H075M2	Turntable inverter	1
6	ATV12H037M2	Lifting inverter	1
8	Z15G1703	Safety Switch	1
9	30 port	Terminal block	1

Electrical Diagram

Item height sensor

Turntable count sensor

Lift up limit

Lift down limit

Lift down limit

V+

V-

GK0

GK1

LS1

LS0

LS5

0

1

I7

3

4

COM0 COM1 COM2 I0 I1 I2 I3 I4 I5

TIM218LDA24DRN

SL2

D1 D0 shield COM COM0 COM1 Q0 Q1 Q2 Q3 Q4 Q5 Q6

red D1

white D0

blue D2

green D3

12

13

14

LS1

16

LS0

15

18

GXO-DVP

V-

Turntable run

Turntable slow stop

Lift up

LS5

19

Lift down

COM1

+

-

Touch screen

Diagram 1

Safe switch

Stop

Start

INV1 Alarm

INV2 Alarm

LS3   SW1

28

TA2

7

TA3

8

9

10

I6   I7   I8   I9   I10   I11

Q7   Q8   Q9   COM2

L2

LS1

GK0

S1

LS5

GK1

LS0

Power Supply: AC110V, 60 Hz

Diagram 2

L2

N2

L　N

PLC

AC/DC
Power

24V+　　　−

V1+　　V-

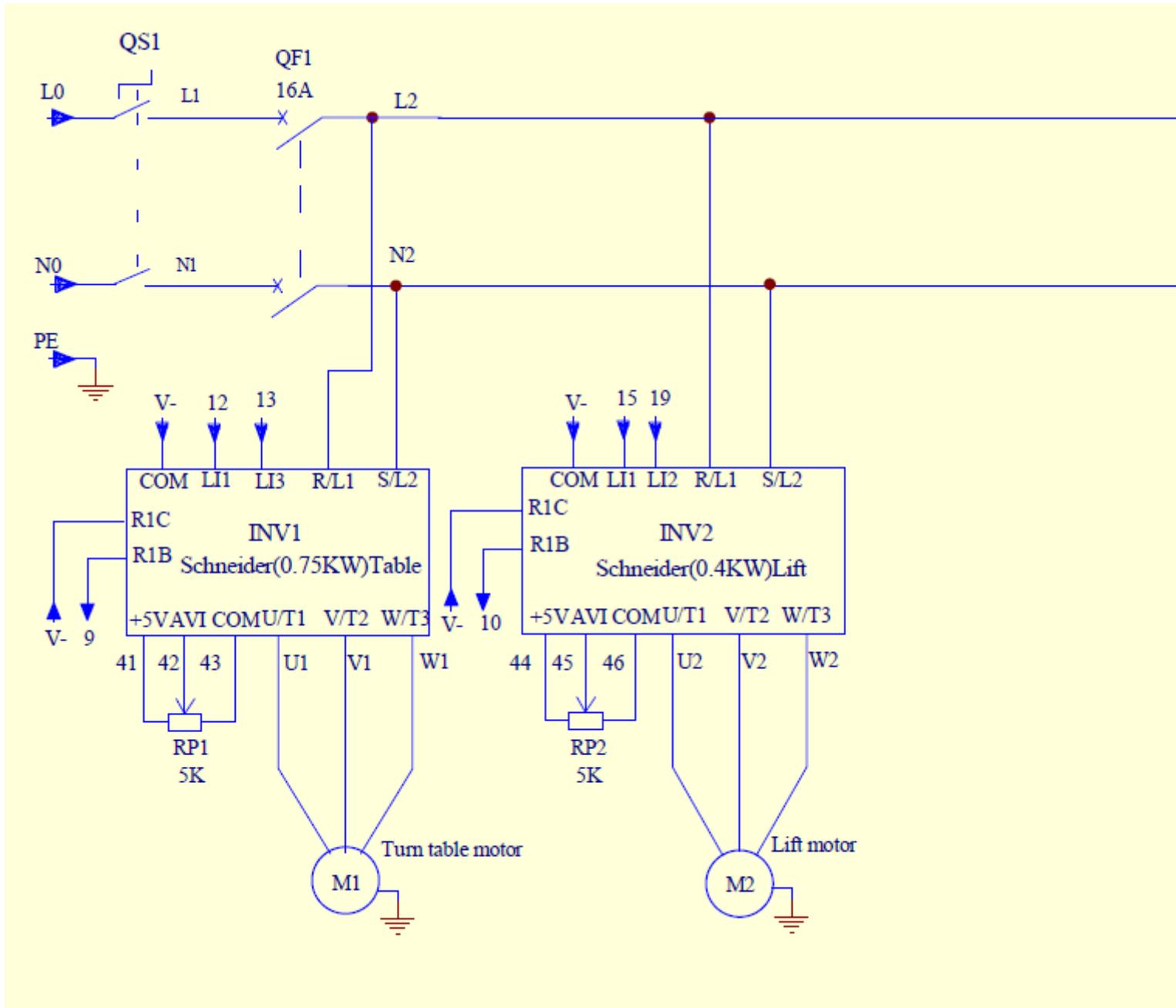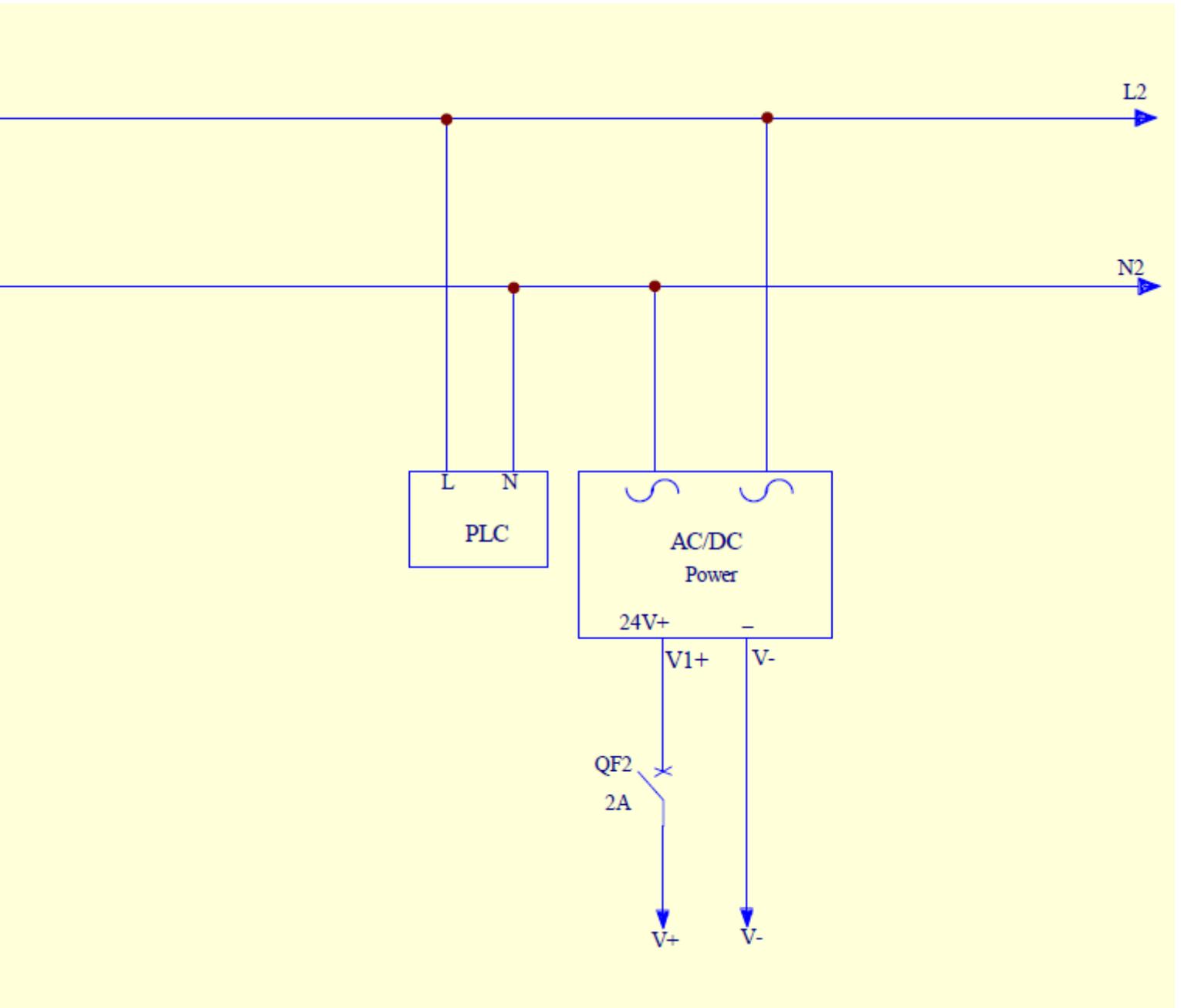QF2

2A

V+　　V-

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70

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