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770-410-3456 Div. of Express Worldwide, Inc.

Operations Manual

Eagle R2B2 Stretch Wrapper



**READ ALL INSTRUCTIONS CONTAINED IN THIS
MANUAL PRIOR TO MACHINE INSTALLATION!**

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1.1 Installation Notes

To ensure safe operation, please ensure the following;

- Only use batteries with ratings that meet or exceed the power requirements of the machine.
- Battery charging requires 110V/220VAC (+/- 10%) at 50/60Hz (+/- 2%)
- Operating temperature range is 32°F to 104°F (0°C to 40°C)
- Operate the machine on a solid, flat surface.

1.2 Operational Notes

- Read operational manual fully before operating machine.
- Ensure the battery is properly charged prior to operating the machine.
- Do not place objects on the film carriage unit.
- Avoid operating the machine in damp or wet environments.
- Do not stand in between machine and item to be wrapped. (See Fig. 1-1)

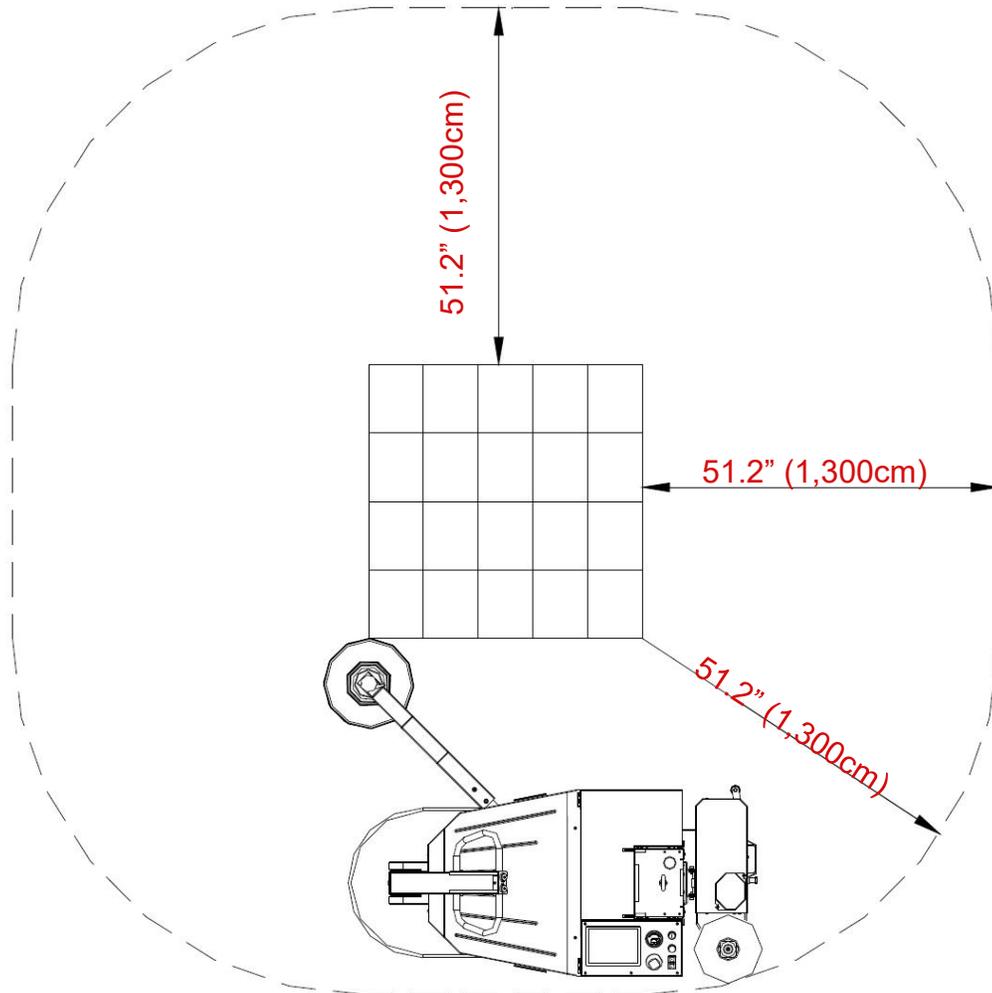
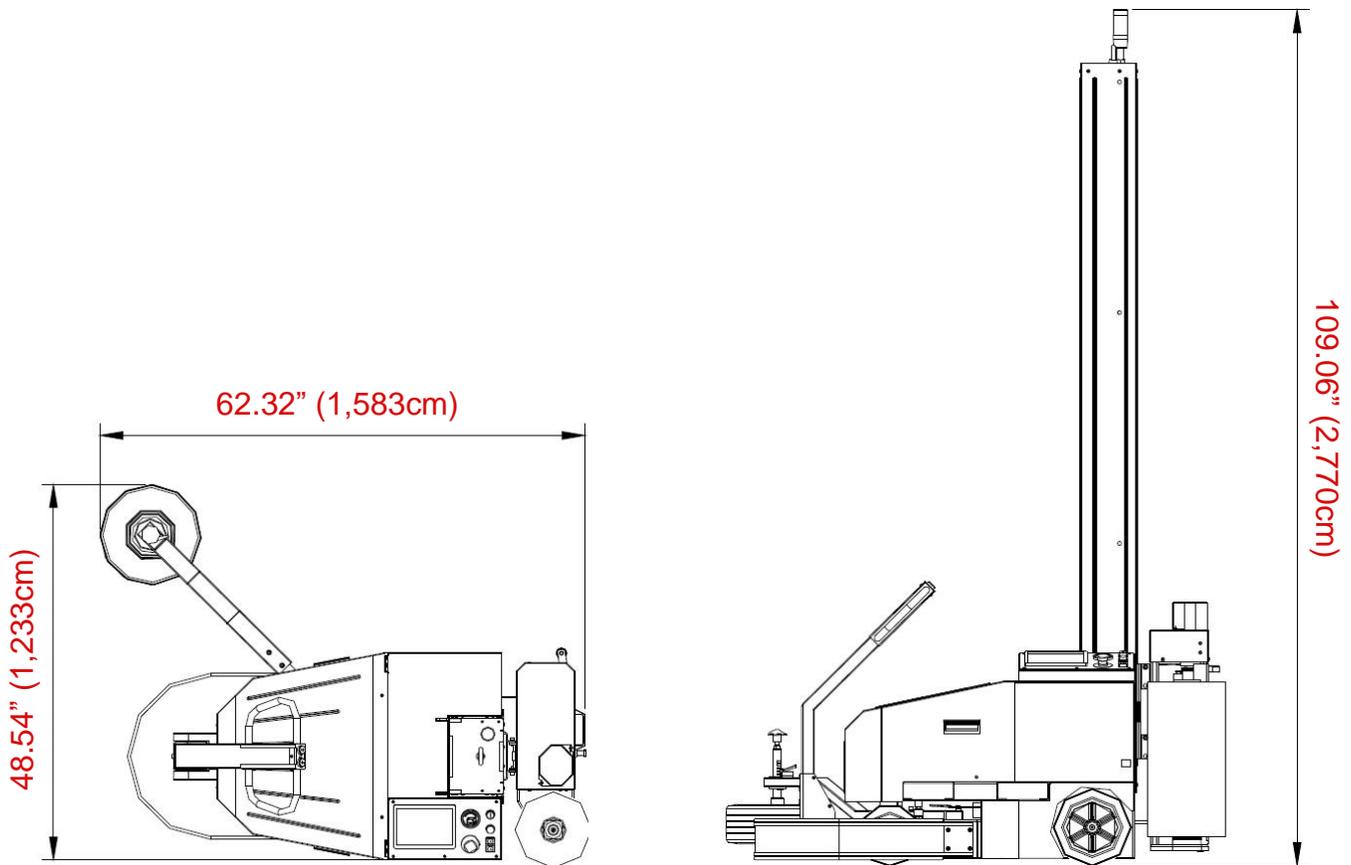


Fig. 1-1

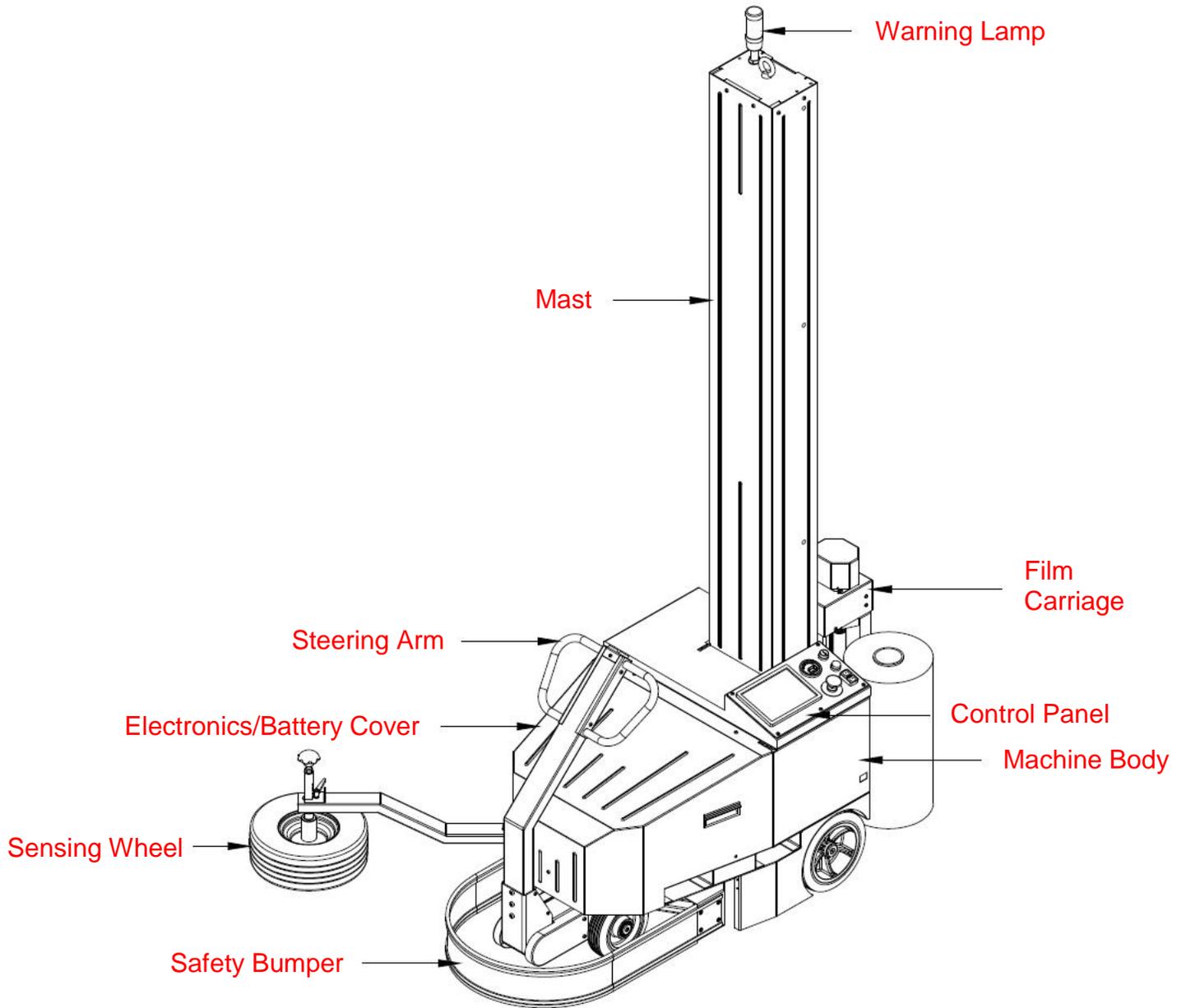
2.1 Specifications Table

Power Supply (for charging)	110VAC/220VAC, 50/60Hz
Speed	3.35mph (5.4kph)
Max. Pallet Size (W x L)	$\infty \times \infty$ (Infinite)
Min. Pallet Size (W x L)	23.6in x 23.6in (600mm x 600mm)
Max. Wrapping Height	94.5in (2,400mm)
Film Stretch	300% and 200%
Film Tension	Adjustable
Carriage Travel Speed	Adjustable
Max. Film Dimension (Dia. x Height)	\varnothing 9.84in x 19.69in (\varnothing 250mm x 500mm)
Machine Dimensions	62.32in x 48.54in x 109.06in (1,583mm x 1,233mm x 2,770mm)
Machine Weight (Net)	903.9lb (410kg)

2.2 Machine Dimensions



2.3 Machine Description

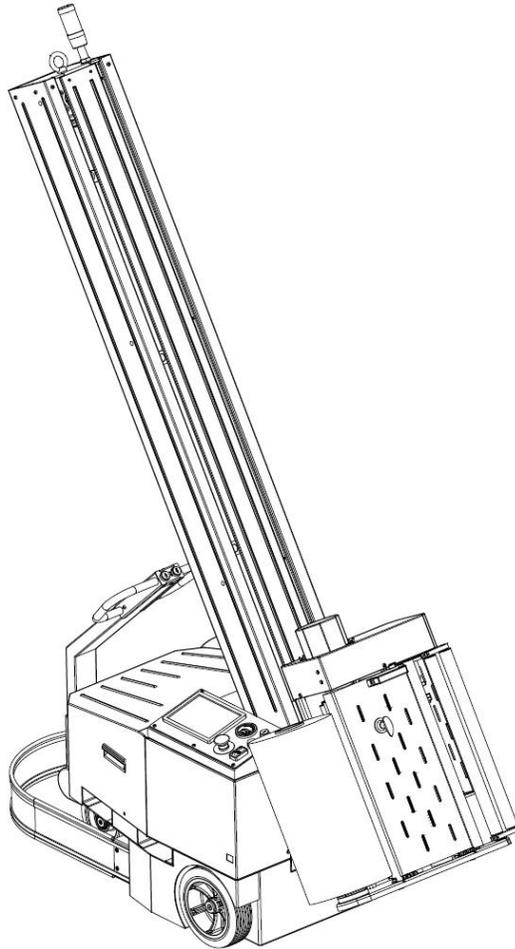


3.1 Initial Setup

Step #1

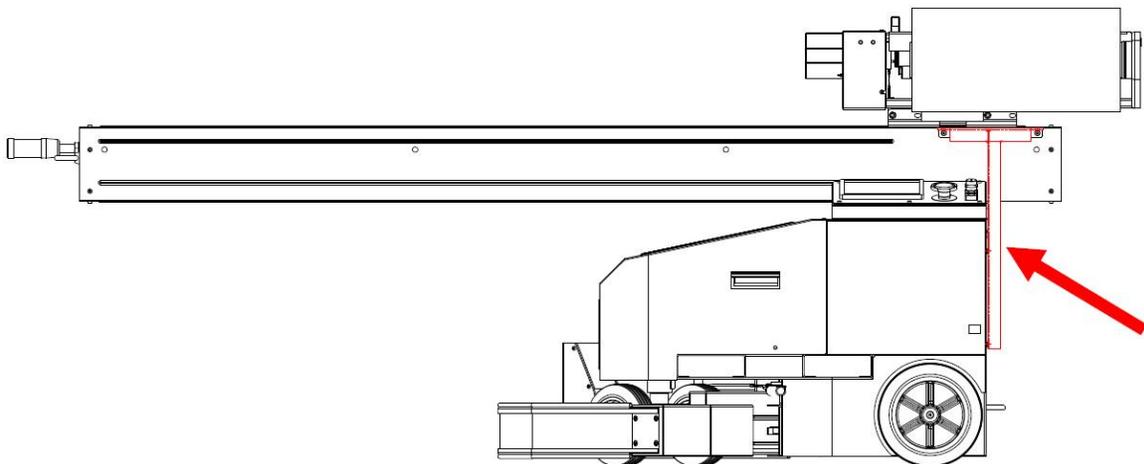
Using the eyelet at the top of the R2B2 mast, attach a chain to assist with placing the mast upright.

Do not lift the mast during this step!



Step #2

Remove the side brackets (x2).



3.1 Initial Setup

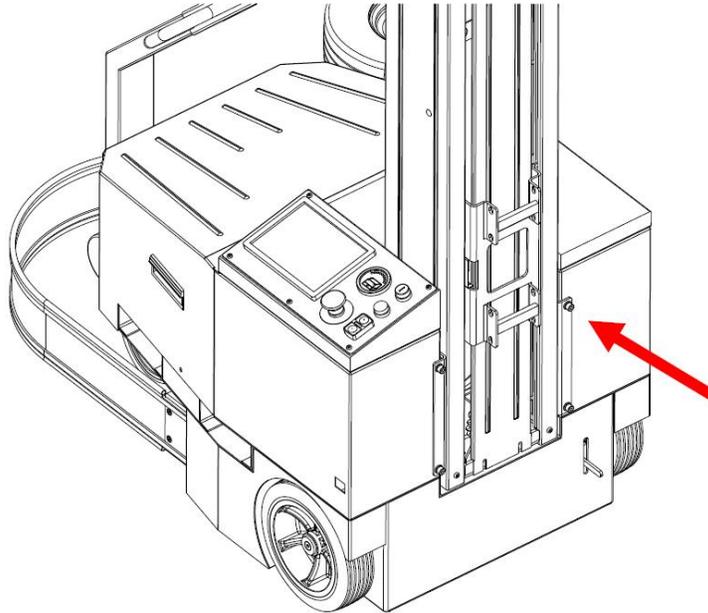
Step #3

Raise the mast.

Step #4

Secure the mast using four M8 screws.

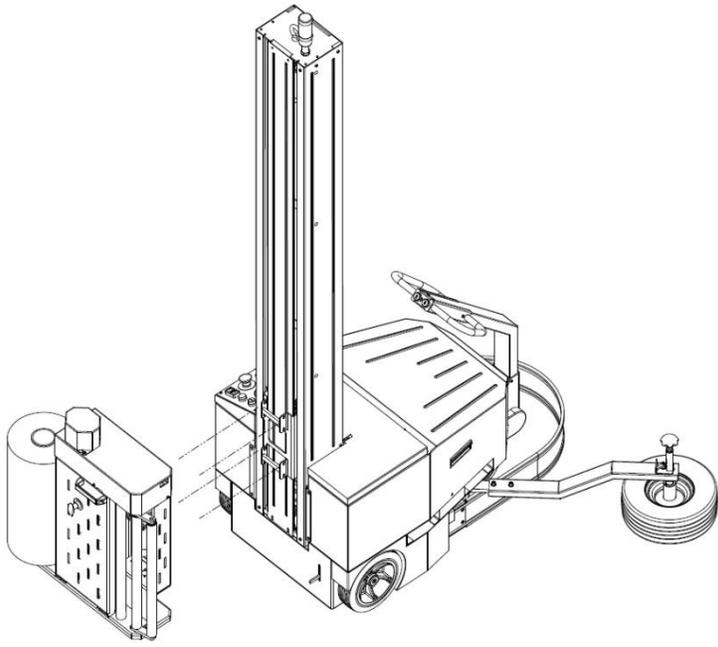
Note: It is recommended that a thread locking compound such as Loctite be used on the mast screws.



Step #5

Install and affix the carriage to the mast.

Note: It is recommended that a thread locking compound such as Loctite be used on the carriage screws.



3.1 Initial Setup

Step #6

Connect the carriage wire cables (x2) after securing the carriage to the mast.



Step #7

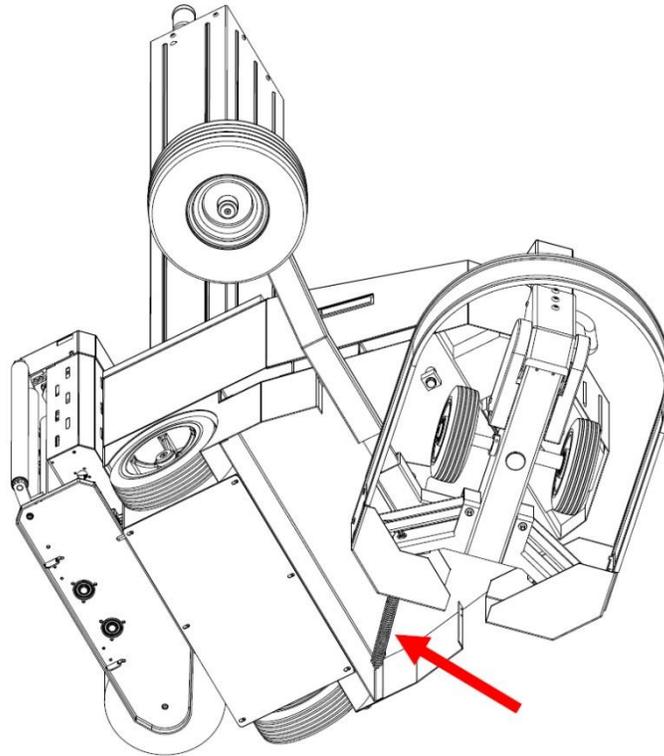
Once machine setup is complete, open the cabinet cover and connect the battery cable.



3.1 Initial Setup

Step #8

Move the steering arm to the right side and install the tension spring.



Step #9

The R2B2 equipment setup is now complete.

Before running the machine for the first time, the batteries must be charged a minimum of 8 hours.



3.1 Initial Setup Notes

Tower Installation

Ensure all six screws are properly installed and secured to the bottom of the tower.

Control Wires & Connections

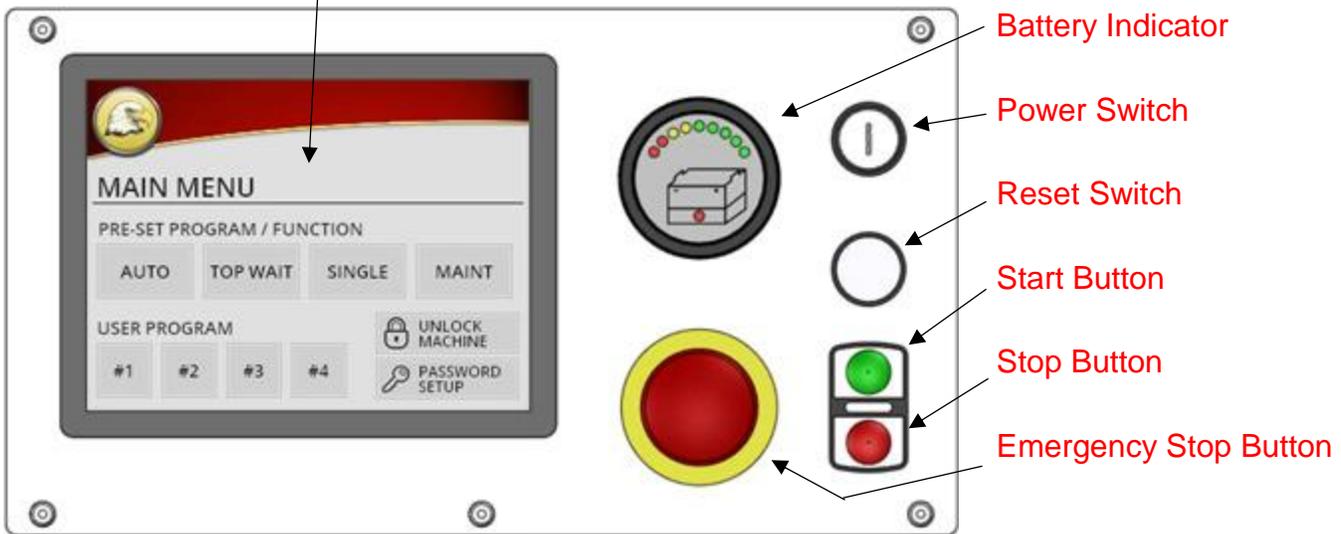
Be sure the control wiring cables to the carriage unit are securely attached. Also be sure to verify the battery connector is properly connected and within the cabinet cover.

Steering Arm & Sensing Arm Wheel

Verify the position of the steering arm tension spring and that it moves smoothly while turning the control arm.

3.2 Control Panel

HMI Touch Screen Control



* WARNING *

Failure to operate this equipment in a safe and responsible manner can result in property damage and/or severe personal injury.

Prior to operating this equipment, operators must read the operation manual in full.

By pressing ACCEPT operators are accepting full responsibility for any loss associated with the use and/or misuse of this equipment and accepting full liability for any such losses.

In addition, by pressing ACCEPT the user acknowledges that he or she has read the operation manual for this equipment in full and agrees to abide by all safety precautions and procedures listed within.

ACCEPT

DECLINE

POWER CYCLE REQUIRED

*The machine will only run
if you accept the terms
and agreements*

Warning – Operator Agreement

When first powered up, the machine will display the following warning and operator agreement.

The operator must agree to the terms and conditions prior to operating the machine.

Declined Operator Agreement

If the operator fails to agree to the terms and conditions, this screen will be displayed.

This screen can only be cleared by power cycling the machine and agreeing to the terms and conditions displayed.

3.3 HMI Screens



Main Menu

The operator can select between pre-programmed modes; Auto, Single Wrap, or Top Wait from this screen.

The maintenance screen is accessible from this screen.



Program Screen

(Pre-Programmed Modes)

The main program settings for a selected mode will be displayed.

The operator can set carriage speeds, machine speed and photo eye height delay.

Additional parameters can be set by pressing the "MORE" button.



Program Parameters

(Pre-Programmed Modes)

The operator can set the number of times the machine will wrap the top and bottom of the load. Additionally, the operator can set the number of up/down cycles that will be performed.

To return to the program screen, press the "BACK" button.



Single Wrap

The machine will begin at the bottom of the load and will stop wrapping once the top of the load has been reached.

By pressing “MORE”, the operator can change the number of top wraps, bottoms wraps and up/down cycles.



Top Wait Program

The machine will begin at the bottom of the load and will pause operation once the top of the load has been reached. When ready, the operator continues operation by pressing start.

By pressing “MORE”, the operator can change the number of top wraps, bottoms wraps and up/down cycles.



User Programs

Users can program up to four custom program settings. The custom user programs can be accessed by pressing one of the four User Program buttons from the Main Screen.

In order to change the settings of a specific User Program, the operator will need to log in by pressing the “LOGIN” button. Once logged in, the fields will be editable. If login fails or the operator is not logged in, the screen will beep twice to indicate field selection is denied.

Note: Factory default password is 1234

The top and bottom wraps and up/down settings can be changed by pressing the “MORE” button.



Top Wait Program

The machine will begin at the bottom of the load and will pause operation once the top of the load has been reached. When ready, the operator continues operation by pressing start.



Maintenance Mode

Maintenance Mode offers the operator the ability to see the status of the machine inputs and outputs.

The film carriage can be manually jogged up and down from this screen.



Machine Locked for Service

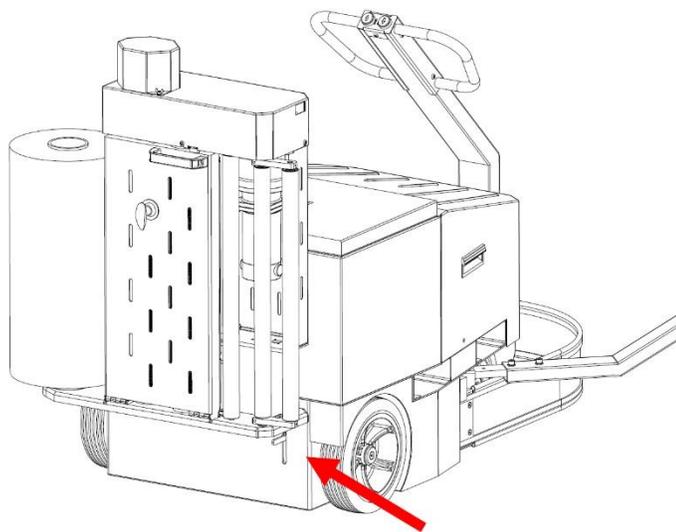
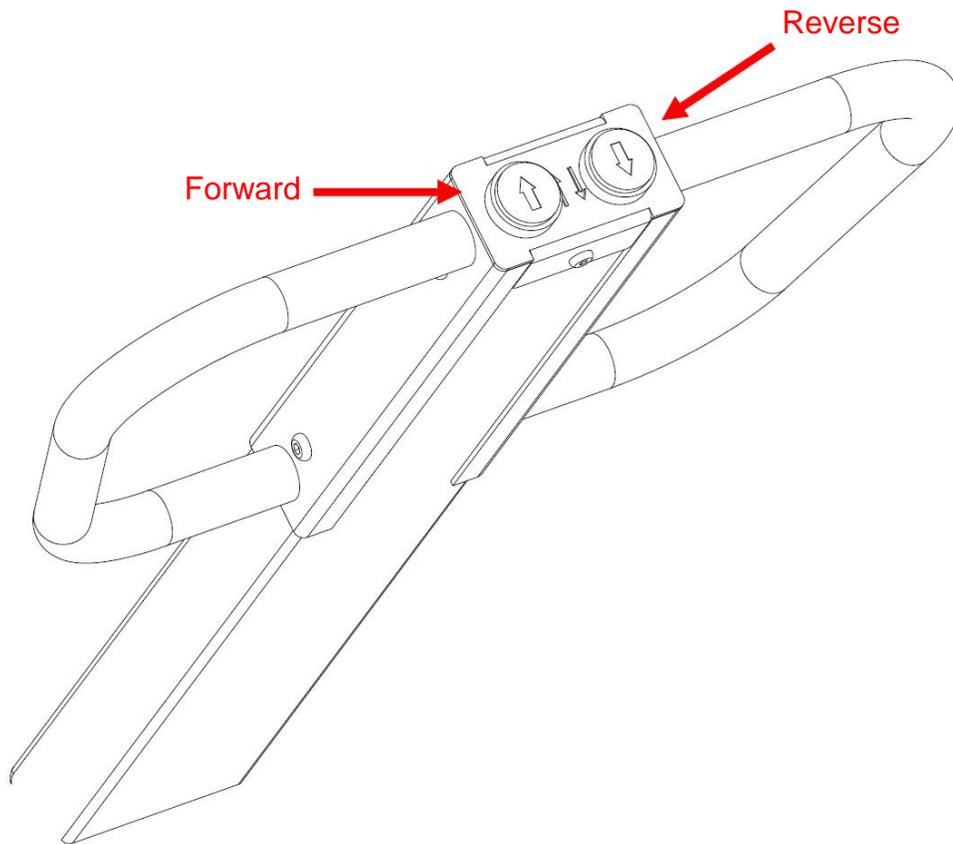
If the machine requires service, this screen will be displayed.

For help with unlocking a machine, please contact Berran Industrial Group, Inc. at;

Phone: +1 (330) 253-5800
 Fax: +1 (330) 253-5805
 Email: sales@berran.com

3.4 Manual Controls

Located on the control arm are buttons for manually driving the machine forward and reverse.



Note:

In order to use the manual controls, the motor clutch brake must be in the "Lock" position.

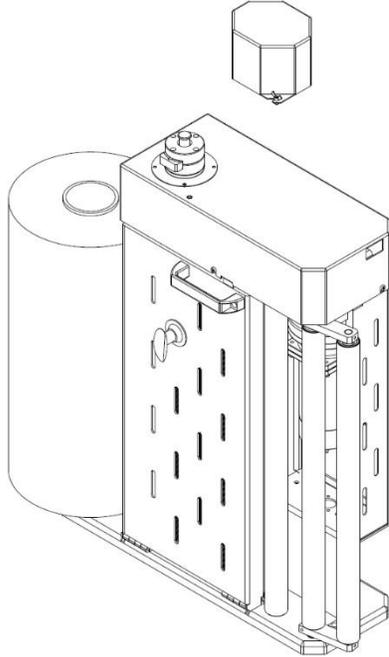
In the event of a fully-discharged battery, the machine can be moved by moving the motor clutch brake lever to the unlocked position.

3.5 Film Carriage

Changing Pre-Stretch Ratio

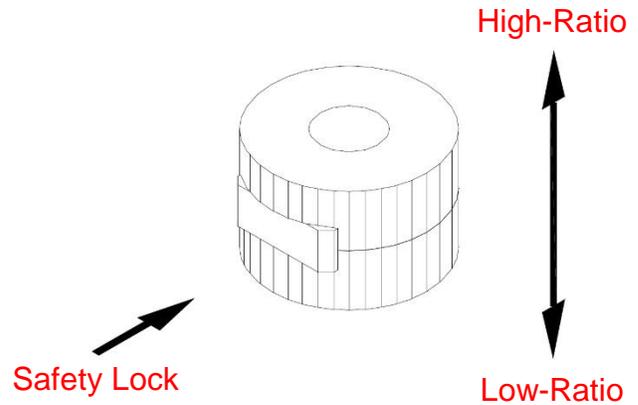
Step #1

Turn off power and remove cover.



Step #2

While pressing the safety lock inner, adjust the pre-stretch percentage ratio by moving the handle up (High-Ratio) or down (Low-Ratio).



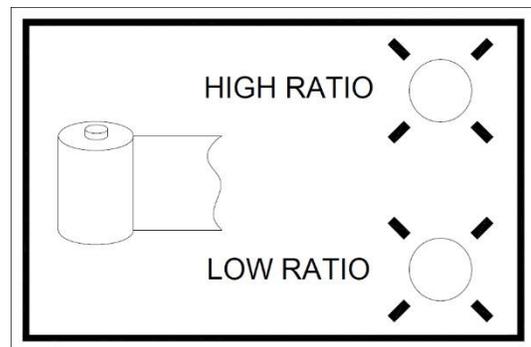
Step #3

Before replacing cover, verify that the safety lock is engaged. The safety line will be visible when the safety lock is in position.

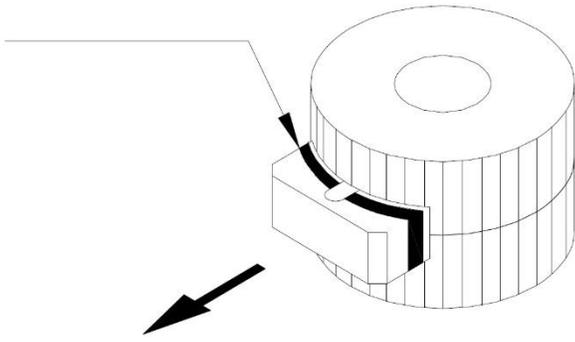
Safety
Line

Step #4

Verify Pre-Stretch Ratio setting.



Safety Lock

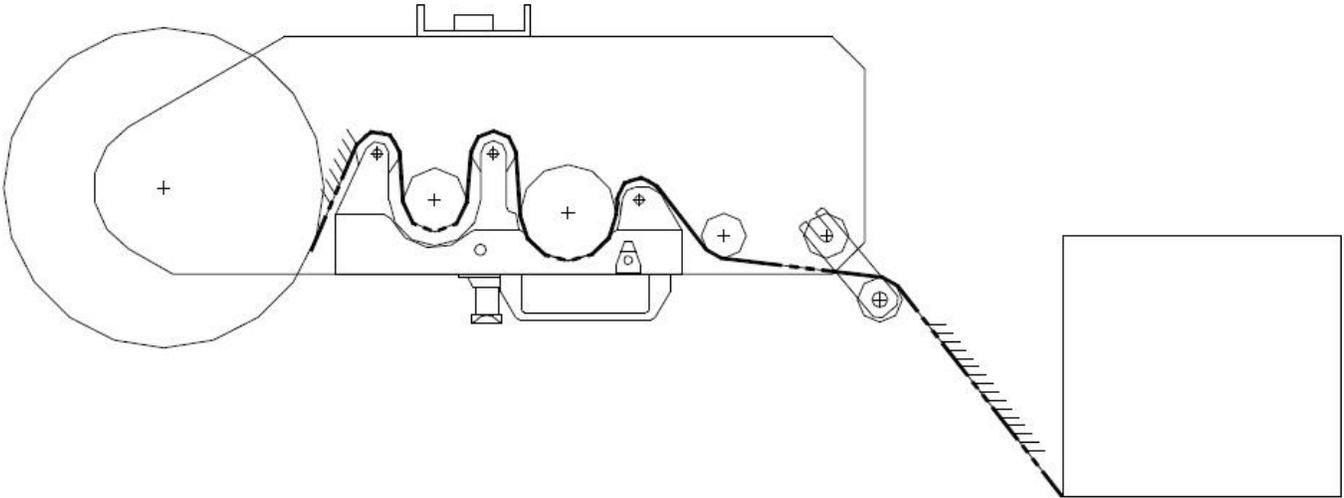


3.5 Film Carriage

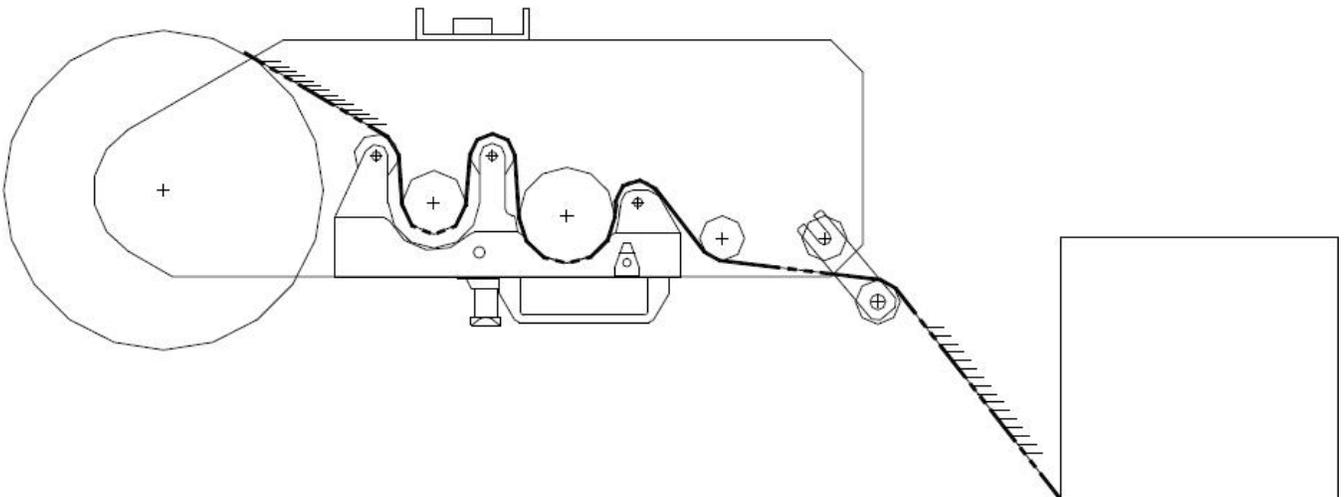
Film Threading

Note: Before threading, take note of which side the film is tacky.

Inside of film is tacky



Outside of film is tacky



4.1 Power Consumption

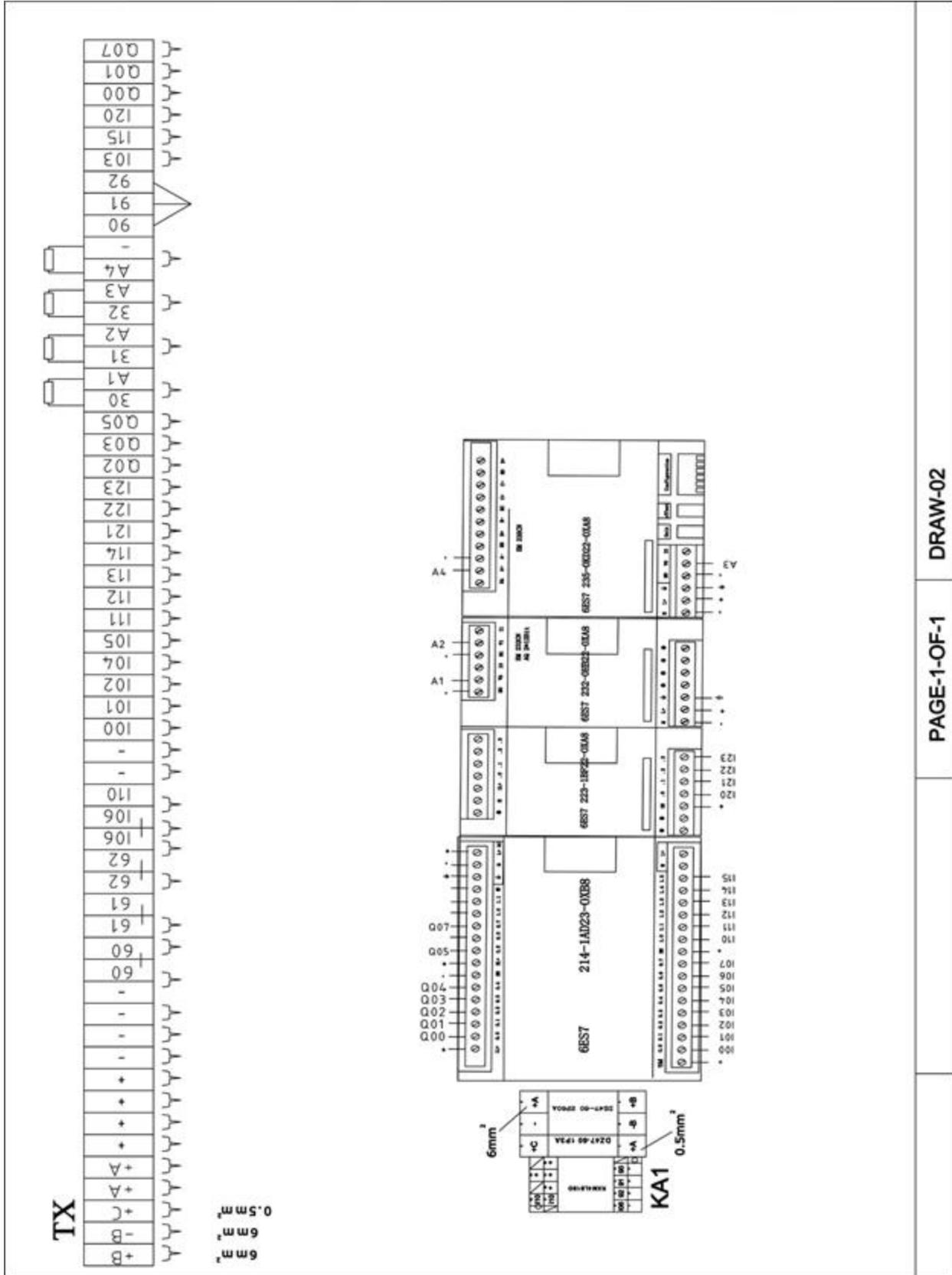
Operational Power Consumption

Pre-Stretch Motor	280w / 24VDC
Drive Motor	500w / 24VDC
Film Carriage	340w / 24VDC
IP	54

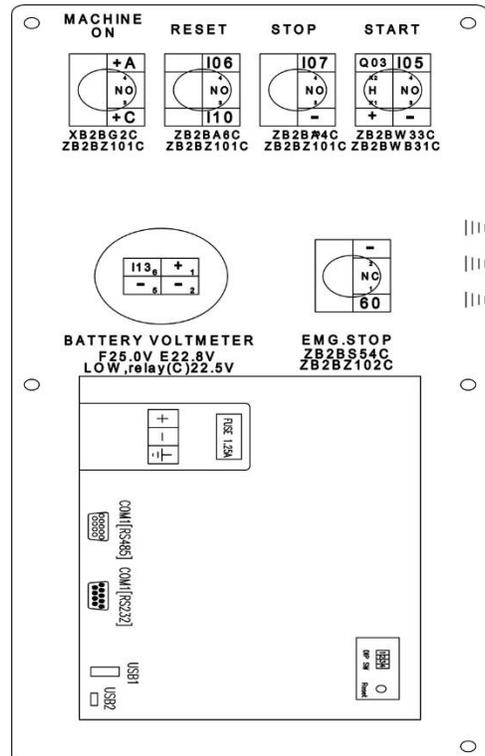
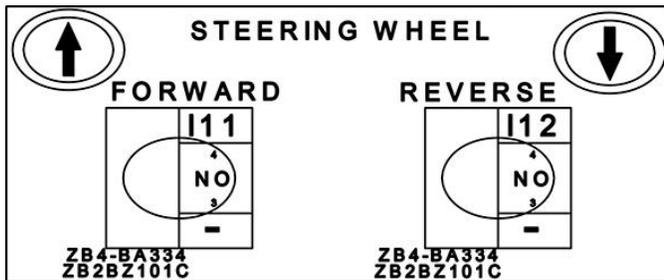
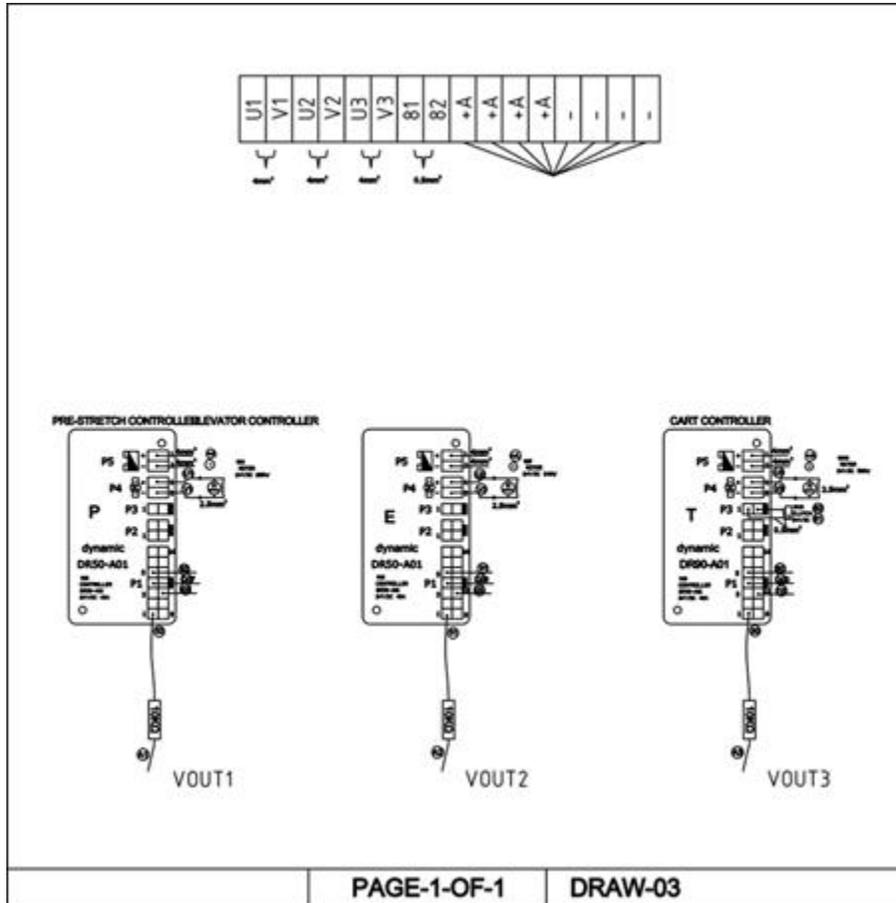
Charging Power Requirements

Power Source	110/220VAC 50/60Hz (Single Phase)
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4.2 Electrical Diagrams



4.2 Electrical Diagrams



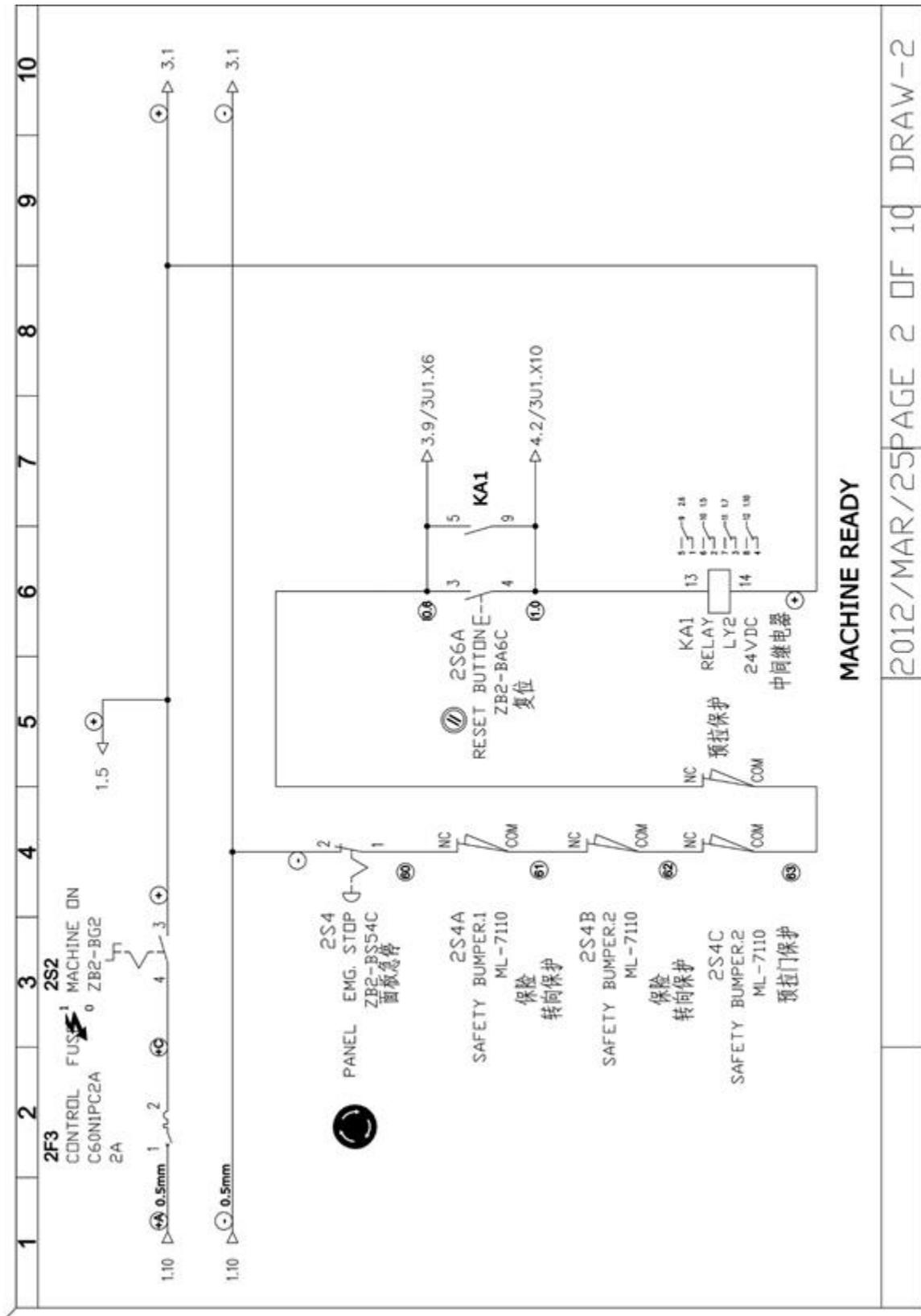
4.3 Electrical Parts List

Part Number	Description	Qty
73029700	Touch Screen MT6070iH	1
73029700-03	Touch Screen Transmission Cable	1
7150LD11	Battery Display Meter	1
7155BC20	Emergency Stop Button	1
7158BZ12	Knob Contactor	1
7150BW33	Knob (Green)	1
7150BW61	Knob Contactor	1
7150LD01	LED Light	1
7158BE11	Knob Contactor	1
7155BA80	Knob (Red)	1
7158BZ11	Knob Contactor	1
7155BA60	Knob (Blue)	1
7158BE11	Knob Contactor	1
7160BD20	Switch	1
7158BE11	Switch Contactor	1
73002003	PLC (Vigor)	1
73002103	PLC Extended Module VB-2DA	1
73002104	PLC Extended Module VB-3A	1
71682401	Alarm	1
7055TC16	Terminal	1
71000001	Plastic Cover	4
72571004	Non-Fused Breaker (C60N2PC50A)	1
72570201	Non-Fused Breaker (C60N1PC2A)	1
7270R302	Relay (DC24V)	1
7270BE03	Relay Seat	1
72710001	Fixed Lever	2
7270R301	Relay (DC24V)	1
7270B301	Relay Seat	1
72710001	Fixed Lever	2
70560601	Terminal	1

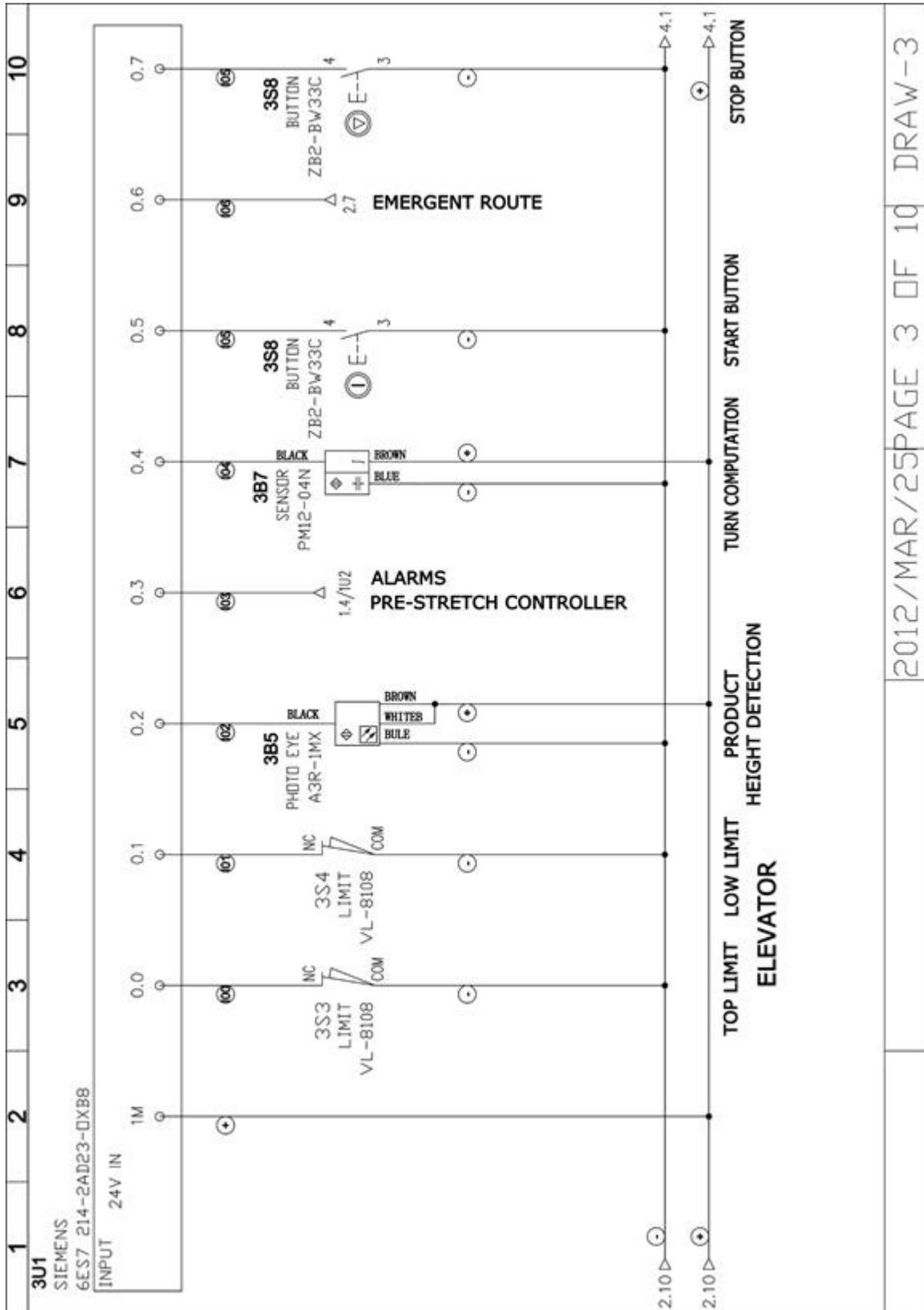
4.3 Electrical Parts List (Continued from previous page)

Part Number	Description	Qty
7570DR01	DC Motor Controller	2
7570DR02	DC Motor Controller	1
7075S501	Battery Charger Housing	4
7075S502	Battery Charger Connector	8
PB400400	Safety Switch Key	1
7365P002	Safety Switch	1
7350AZ03	Limit Switch	1
7155BA06	Button	2
7158BZ01	Contacto	2
KA02001510	Battery	2

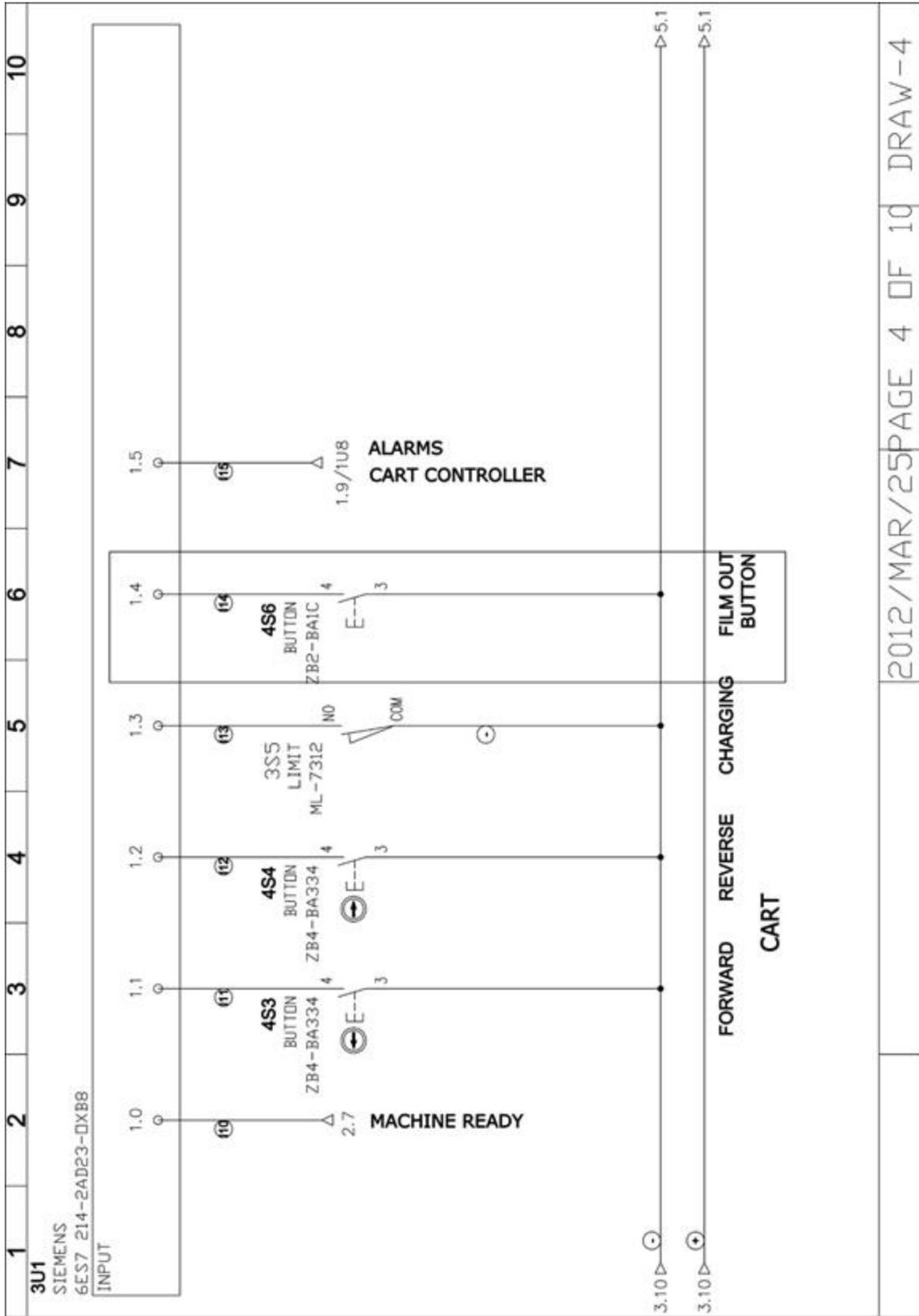
4.4 Electrical Schematics



4.4 Electrical Schematics

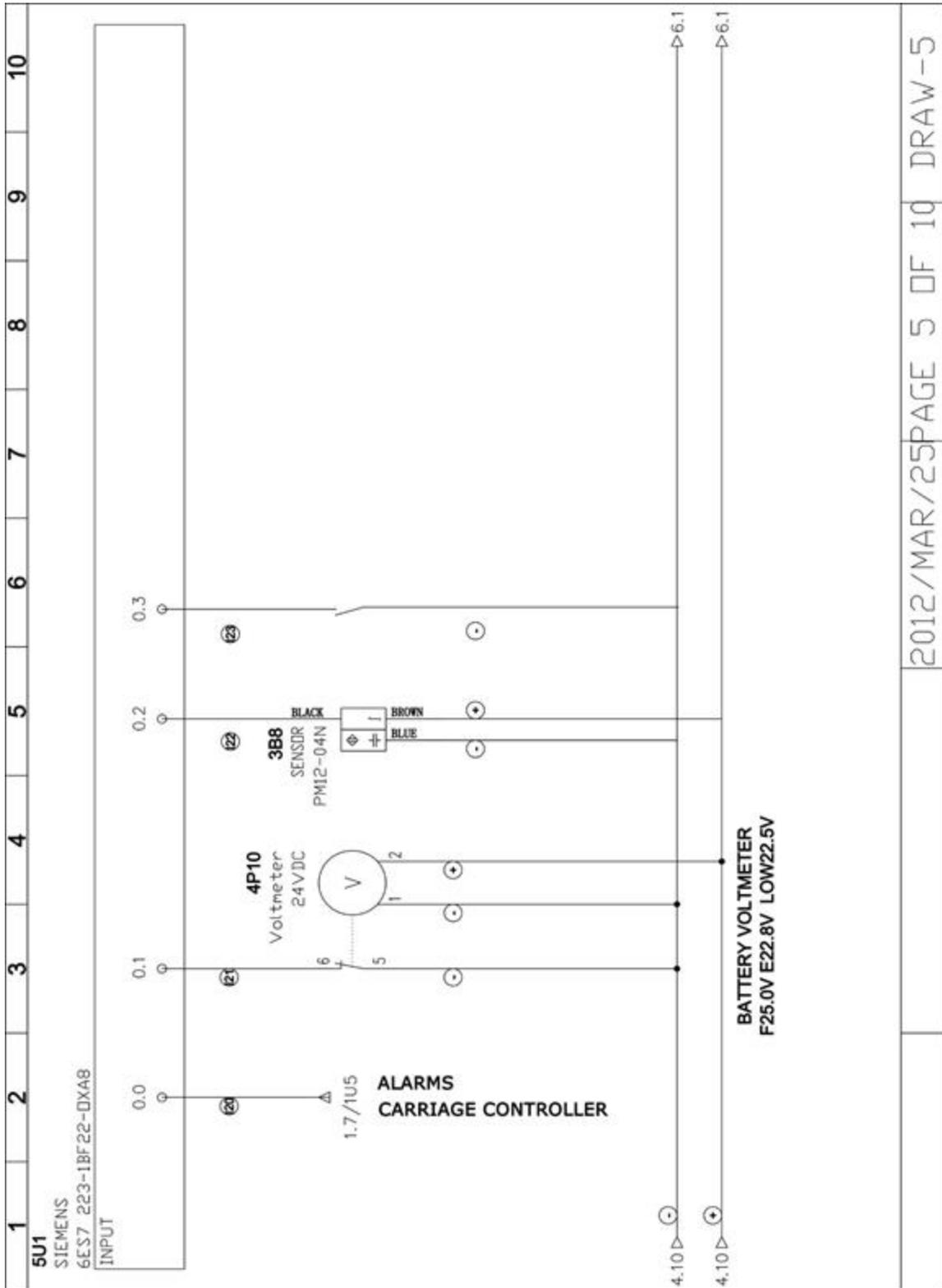


4.4 Electrical Schematics

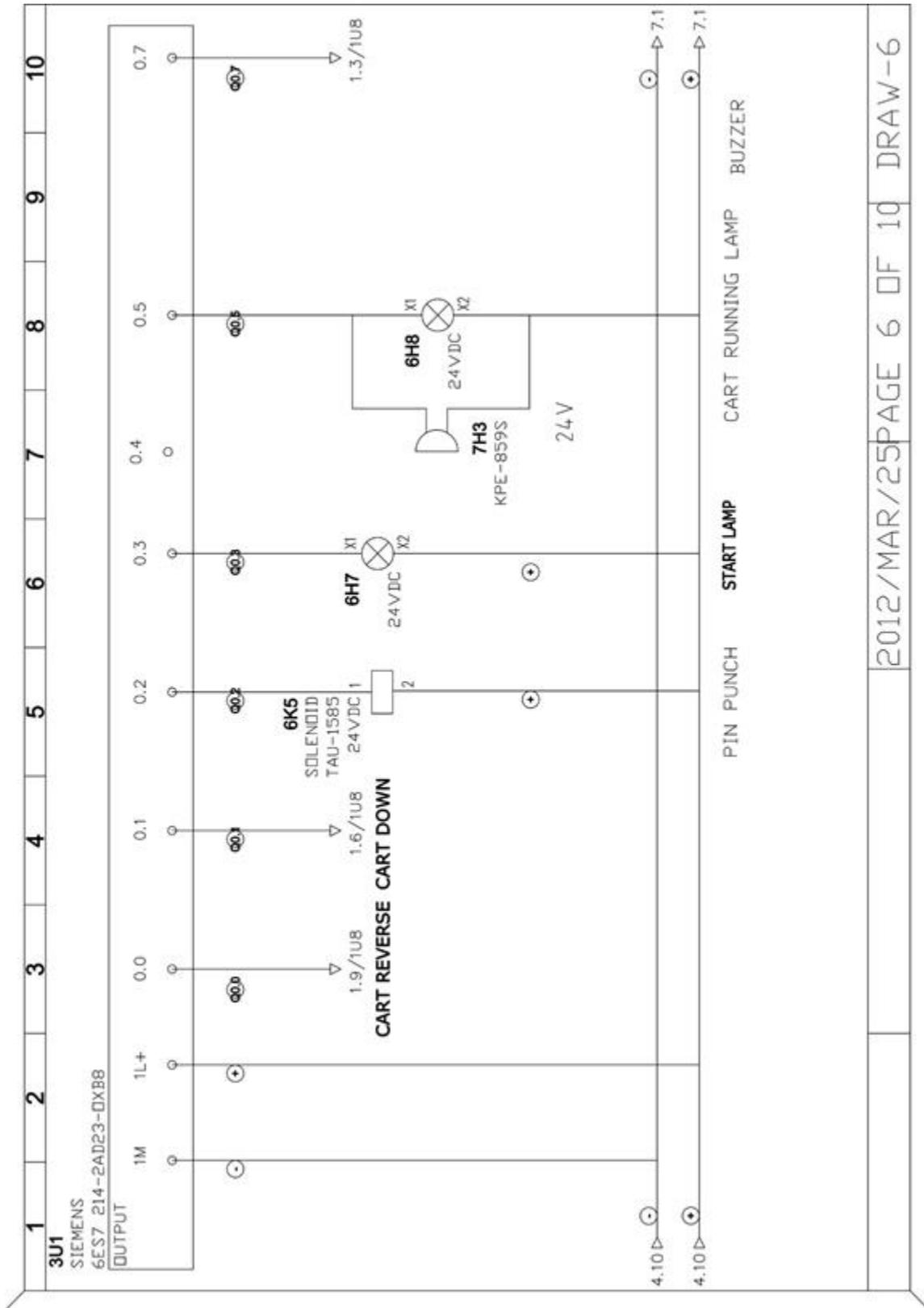


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4.4 Electrical Schematics

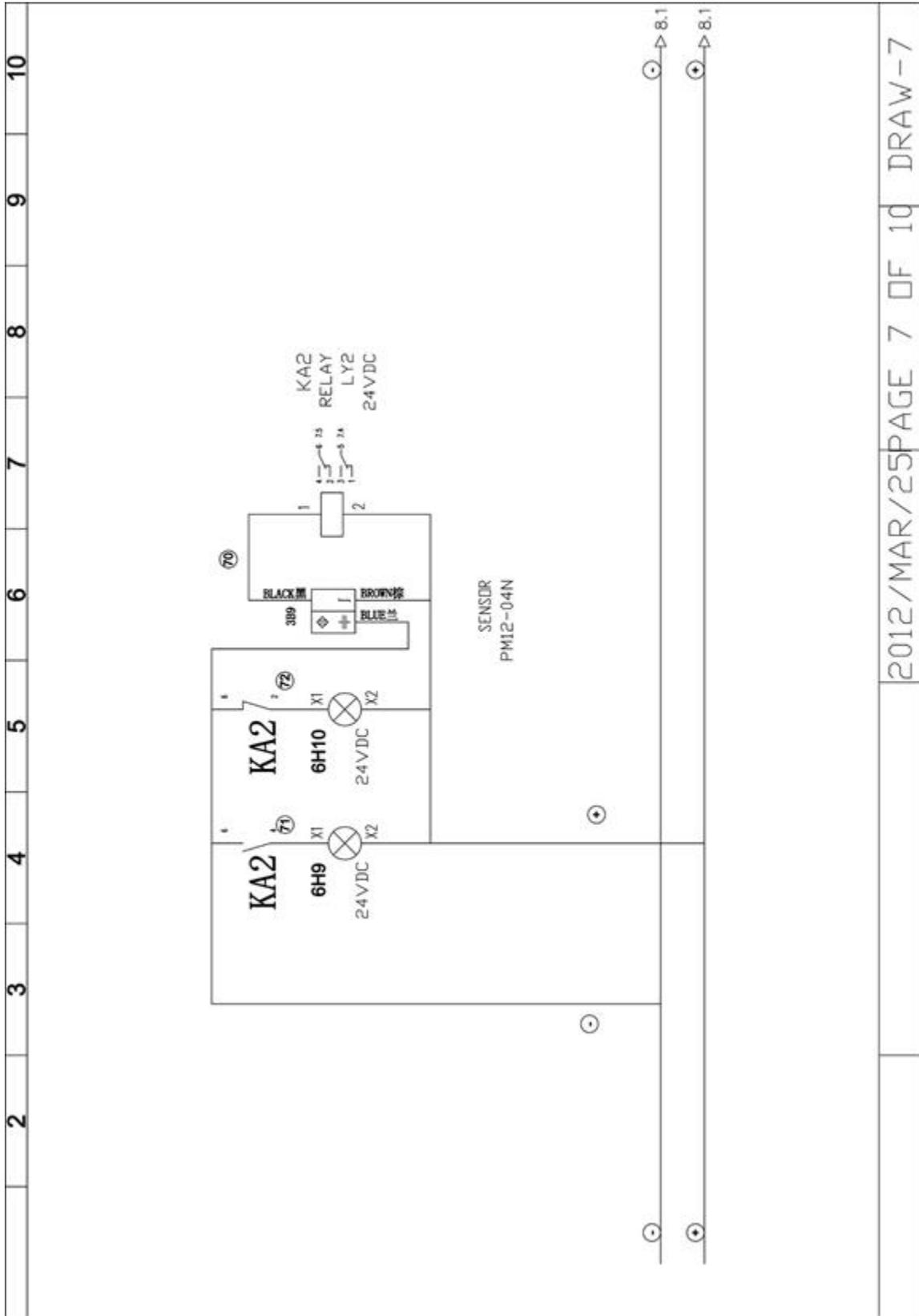


4.4 Electrical Schematics



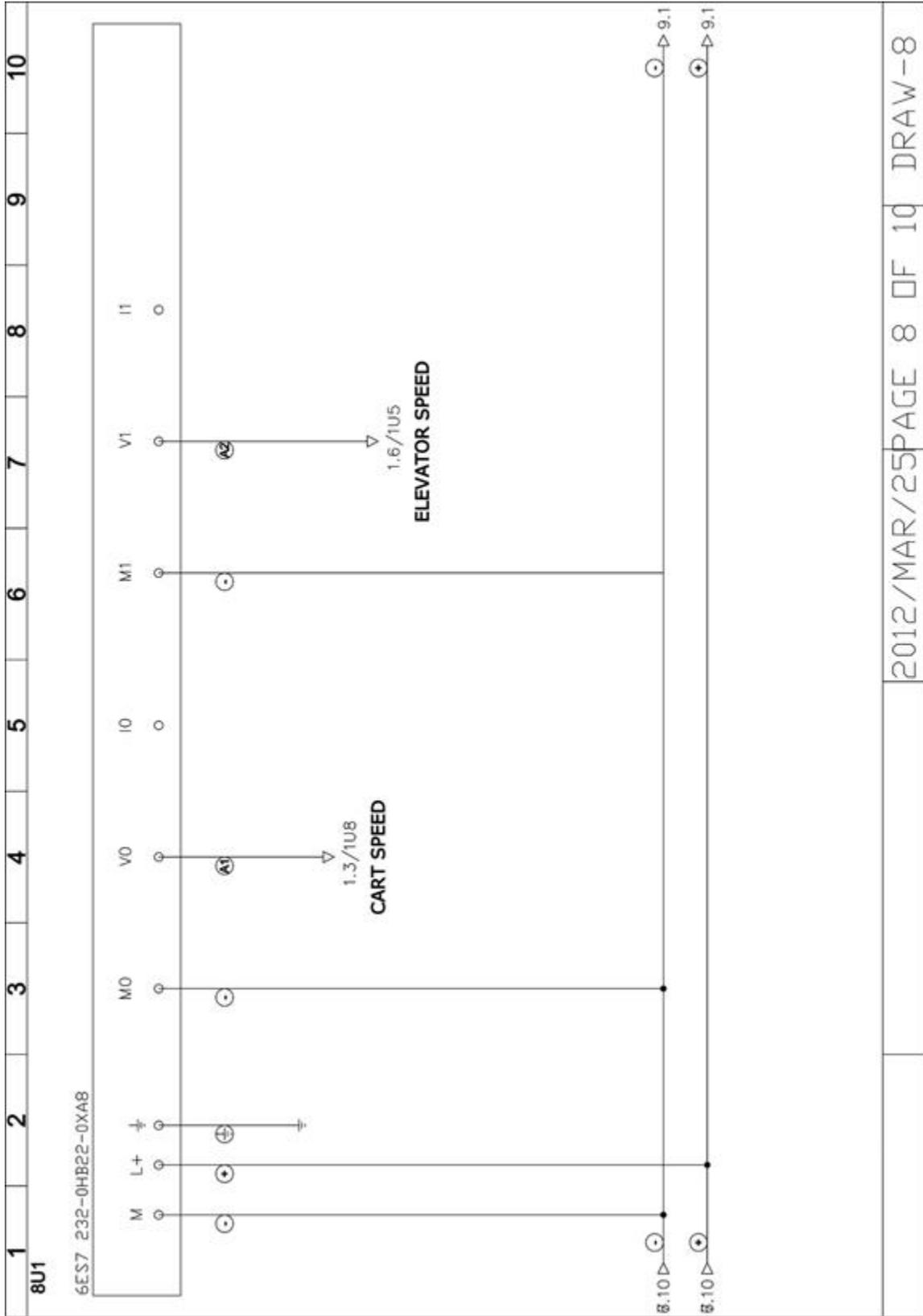
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4.4 Electrical Schematics



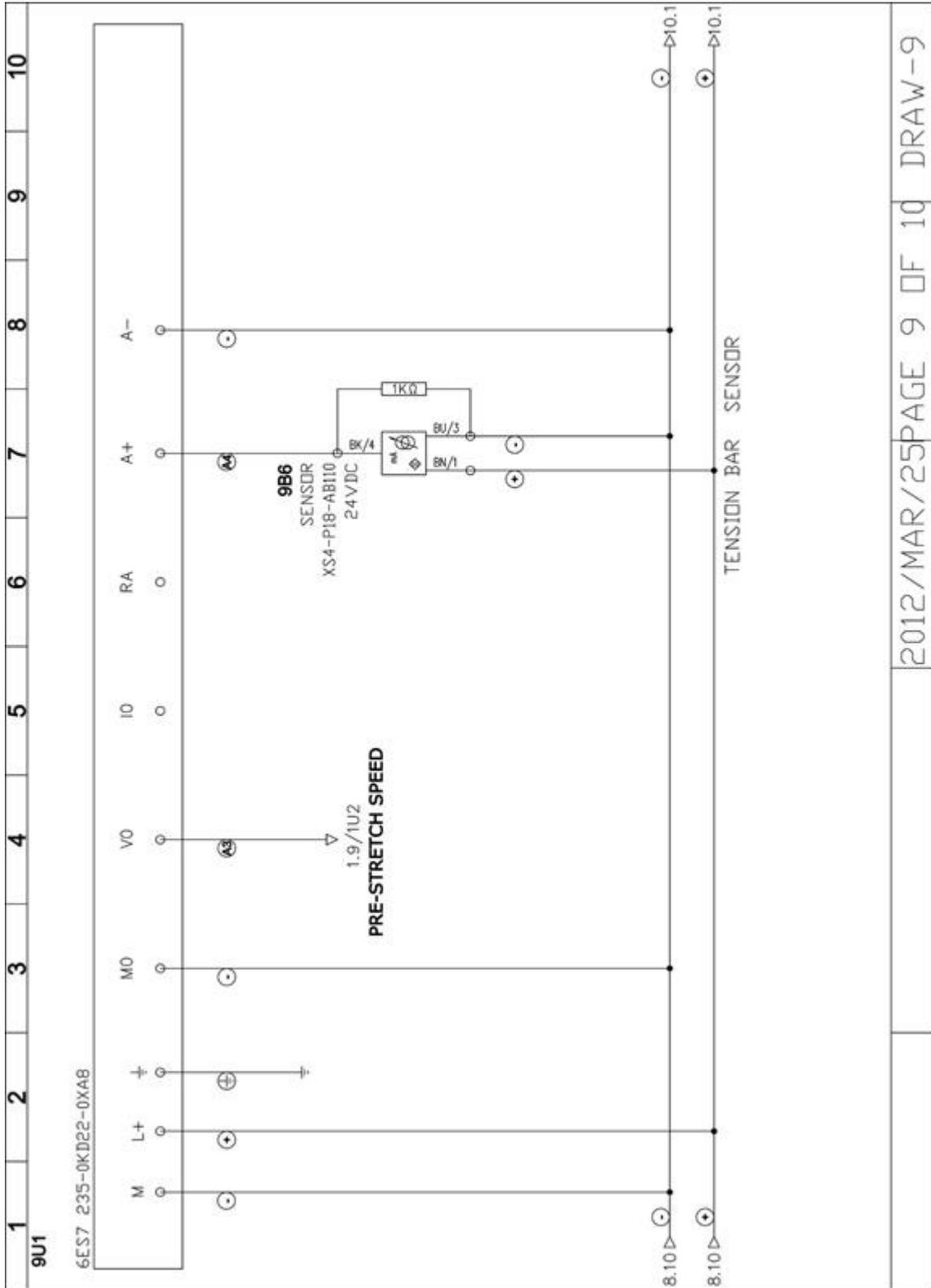
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4.4 Electrical Schematics

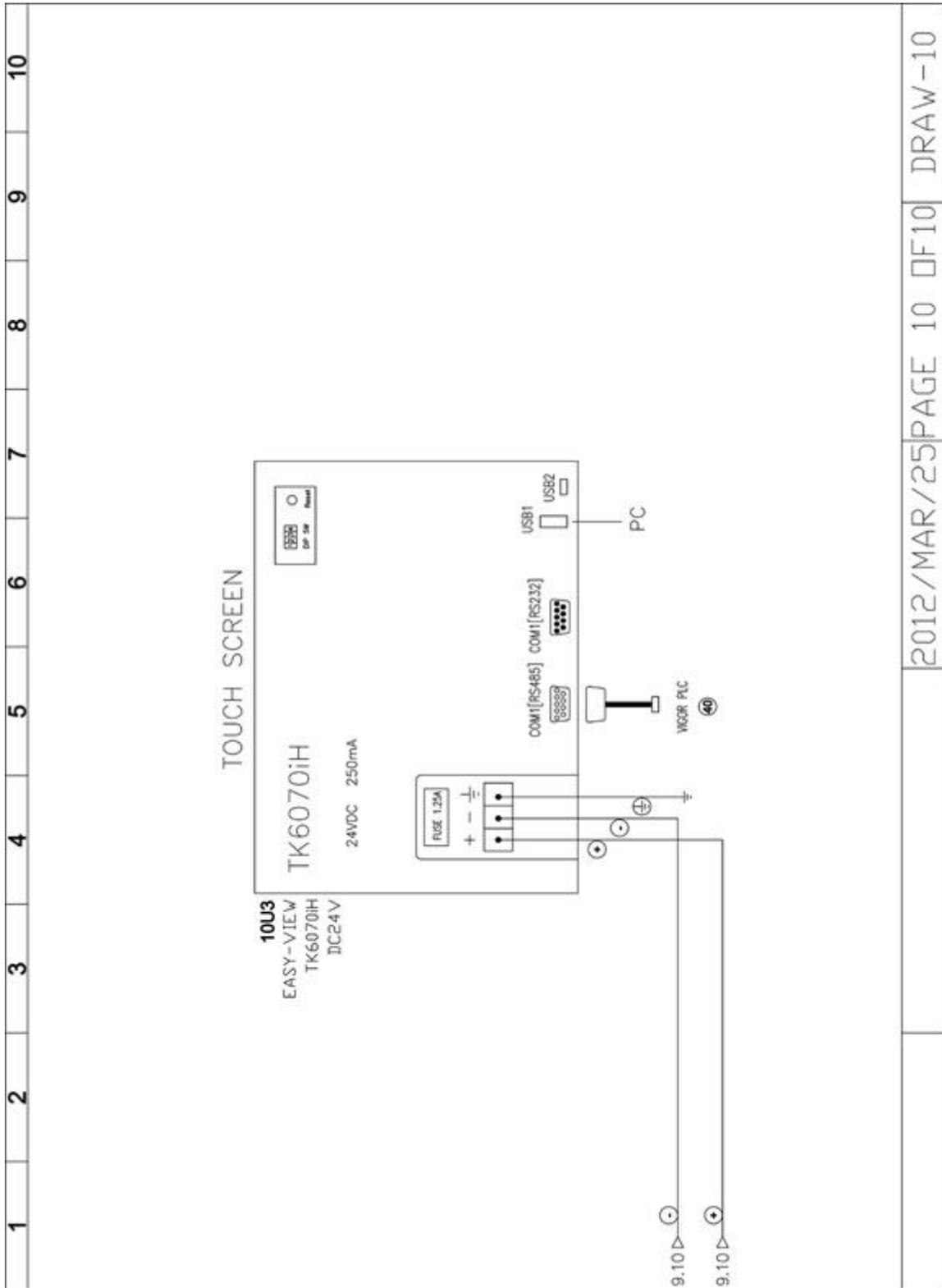


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4.4 Electrical Schematics



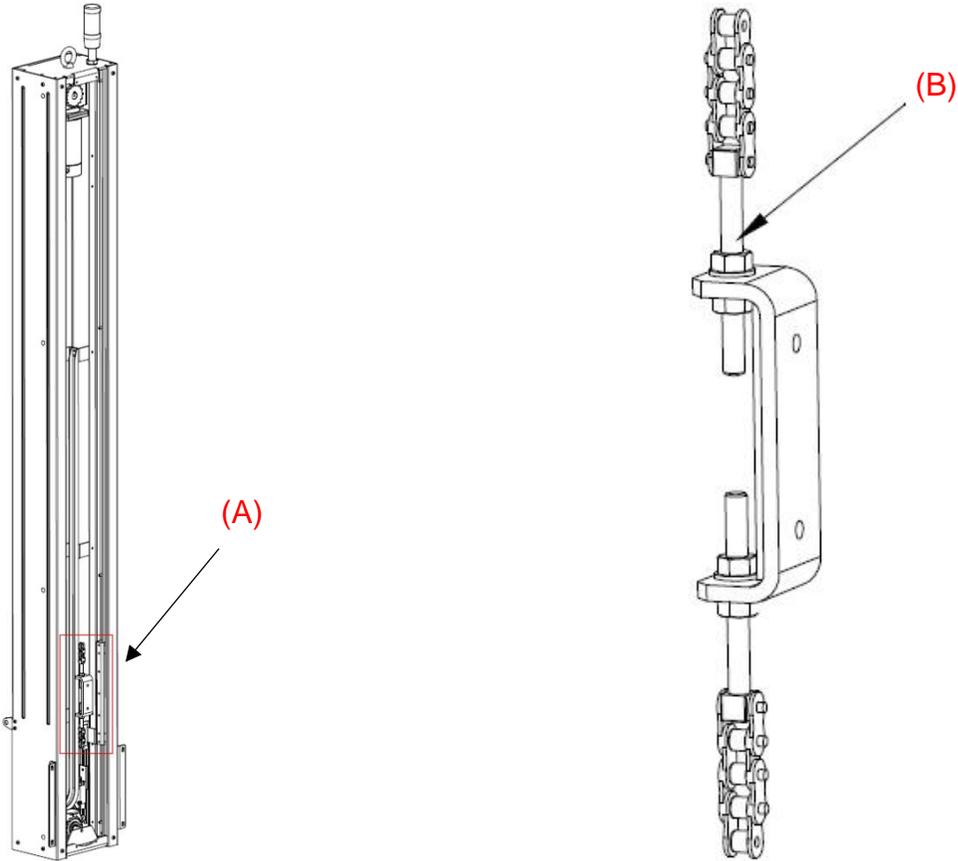
4.4 Electrical Schematics



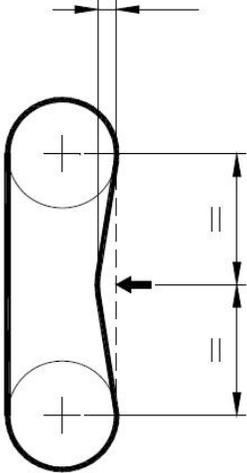
5.1 General Maintenance

Carriage Chain Adjustment

Remove the mast cover (A) and adjust screw (B) to reduce slack in the chain.



0.39~0.59in (10~15mm)

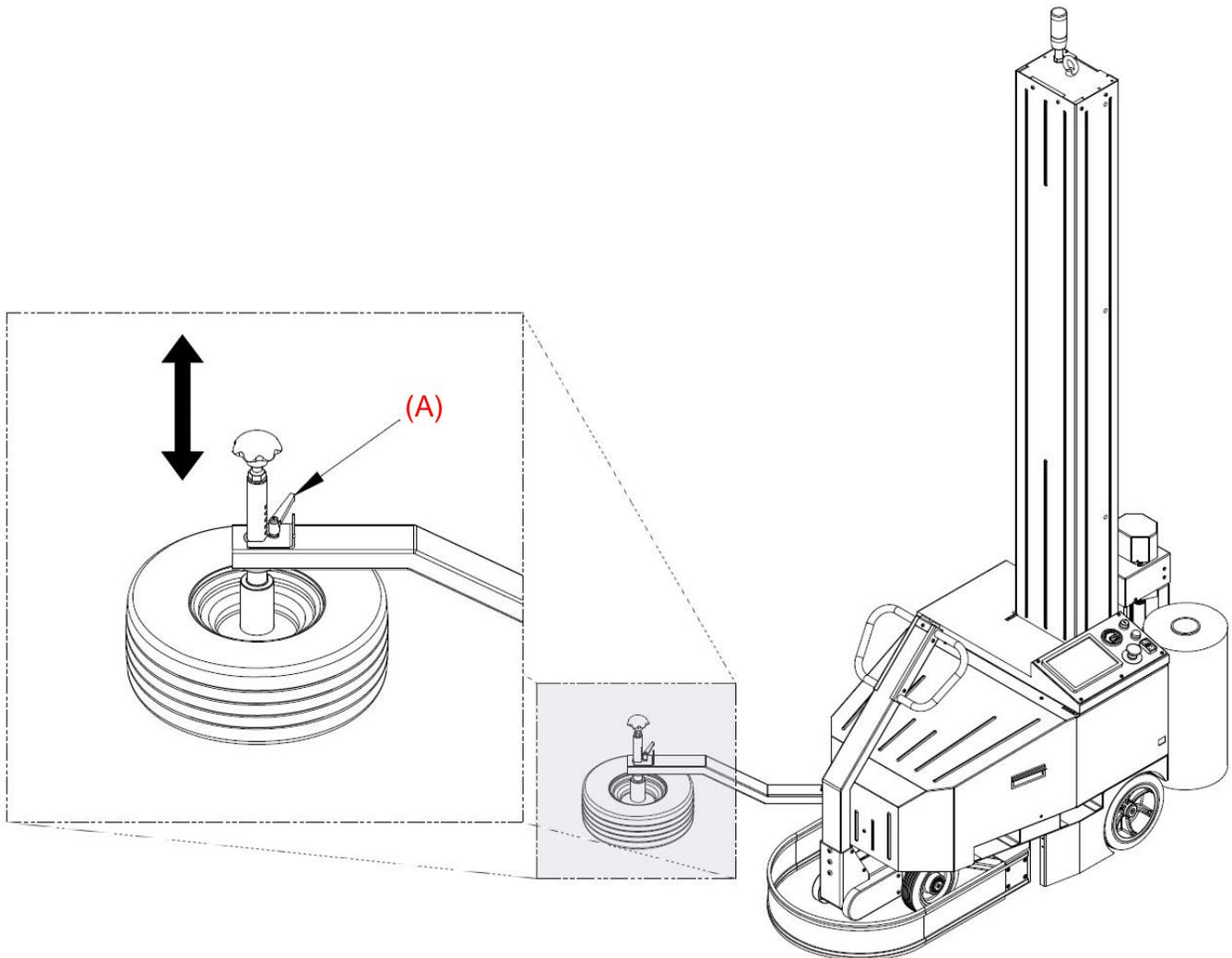


5.1 General Maintenance

Sensing arm wheel adjustment

To move the sensing wheel vertically, loosen knob (A). Once the wheel is at the desired height, tighten knob (A) to secure the wheel in place.

The sensing wheel should be set at a height that will cause it to roll against the pallet of the load being wrapped.



5.2 Troubleshooting

Carriage does not move upward, corner proximity switch malfunction

Symptom: Machine corner proximity switch counter problem.

Solution: 1) Verify corner proximity switch is functioning properly.
2) Adjust the angle of the proximity switch.

After charging for 8 hours, battery charge does not increase (battery is holding a charge).

Symptom: Battery fails to charge

Solution: Verify proper connection of battery charging unit and battery connectors.

After charging for 8 hours, battery charge indicator reads zero (battery is not holding a charge).

Symptom: Battery fails to charge / Battery does not hold a charge

Solution: Replace batteries

5.3 Alarm Codes

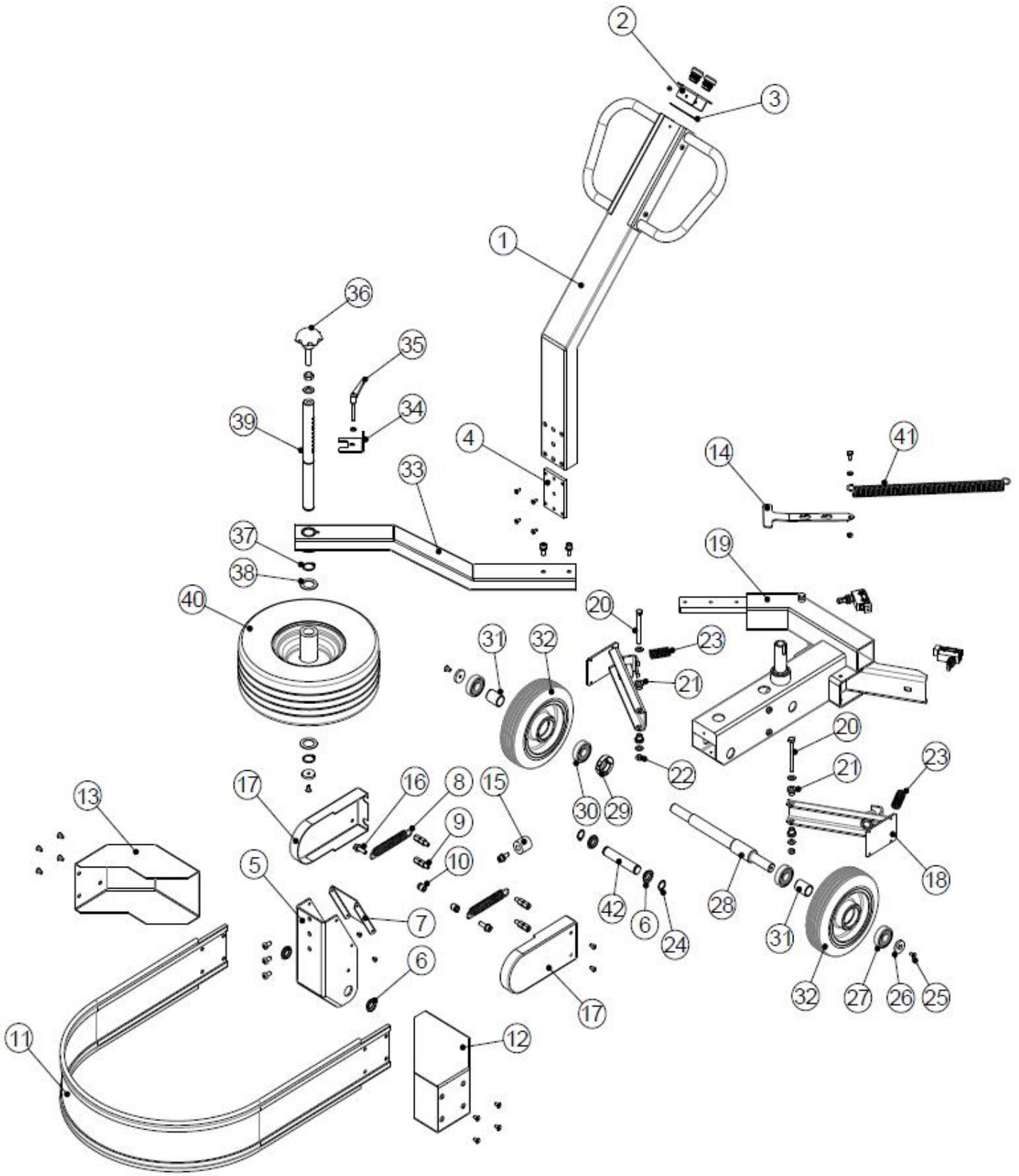
Alarm Code	Trouble	Cause	Solution
M311	Emergency Stop (EMG STOP)	1) E-Stop button is pressed on the control panel. 2) E-Stop button is pressed on the steering arm.	Reset E-Stop
M311	Safety Bumper	Safety switch making contact with an object	Move the object
M312	Not Ready / Press Reset	Machine displaying error message	Review error message and press reset after clearing message.
M313	Charging	Machine is plugged in	Unplug the machine from power source
M316	Film out or broken	Film supply has been exhausted or film broken	Replace with new roll of film or rethread film
M317	Film Carriage Not Down	Carriage must be at the bottom position to start in auto mode	Press Reset then Start
M321	Film Tear Failure	Film attached to pallet	Cut film manually
M322	Low Battery	Battery charge levels have dropped too low	Recharge batteries
M333	Machine motor shorted to battery	1) Short circuit 2) Motor failure	1) Repair/Replace motor wiring 2) Replace motor
M334	Machine motor overload	Machine has run into an object	Move the object
M338	Motor or wiring problem	Forward motor wire is broken or loose	Check the motor wiring between forward motor and controller
M339	Controller or wiring problem	Controller failure	1) Cycle power to machine 2) Replace controller
M340	Machine is in motion and over speed limit	1) Machine was pushed during operation 2) Machine operating on a non-level surface	Cycle power to machine
M341	Machine alarm requires an E-Stop activation	Forward speed controller error detected	Cycle power to machine
M343	Carriage motor shorted to battery	1) Short circuit 2) Motor failure	1) Repair/Replace wiring to carriage 2) Replace motor

5.3 Error Codes (Continued from previous page)

M344	Carriage motor overload	Carriage collision with object	Move the object
M348	Carriage controller or carriage wiring problem	Elevator reducer motor wire broken or loose	Check wire connection between elevator reducer motor and controller
M349	Carriage controller or wiring problem	Controller failure	1) Cycle power to machine 2) Replace controller
M351	Carriage alarm requires an E-Stop activation	Carriage controller has detected an error	Cycle power to machine
M353	Pre-Stretch motor shorted to battery	1) Short circuit 2) Motor failure	1) Repair/Replace motor wiring 2) Replace motor
M354	Pre-Stretch motor overloaded	Roll of film caught on object	Move the object
M358	Pre-Stretch motor or wiring problem	Pre-Stretch motor wire broken or loose	Check wire connection between Pre-Stretch motor and controller
M359	Pre-Stretch controller wiring problem	Controller failure	1) Cycle power to machine 2) Replace controller
M361	Pre-Stretch alarm requires E-Stop activation	Pre-Stretch speed controller failure detected	Cycle power to machine

6.1 Parts List

Control Level Unit



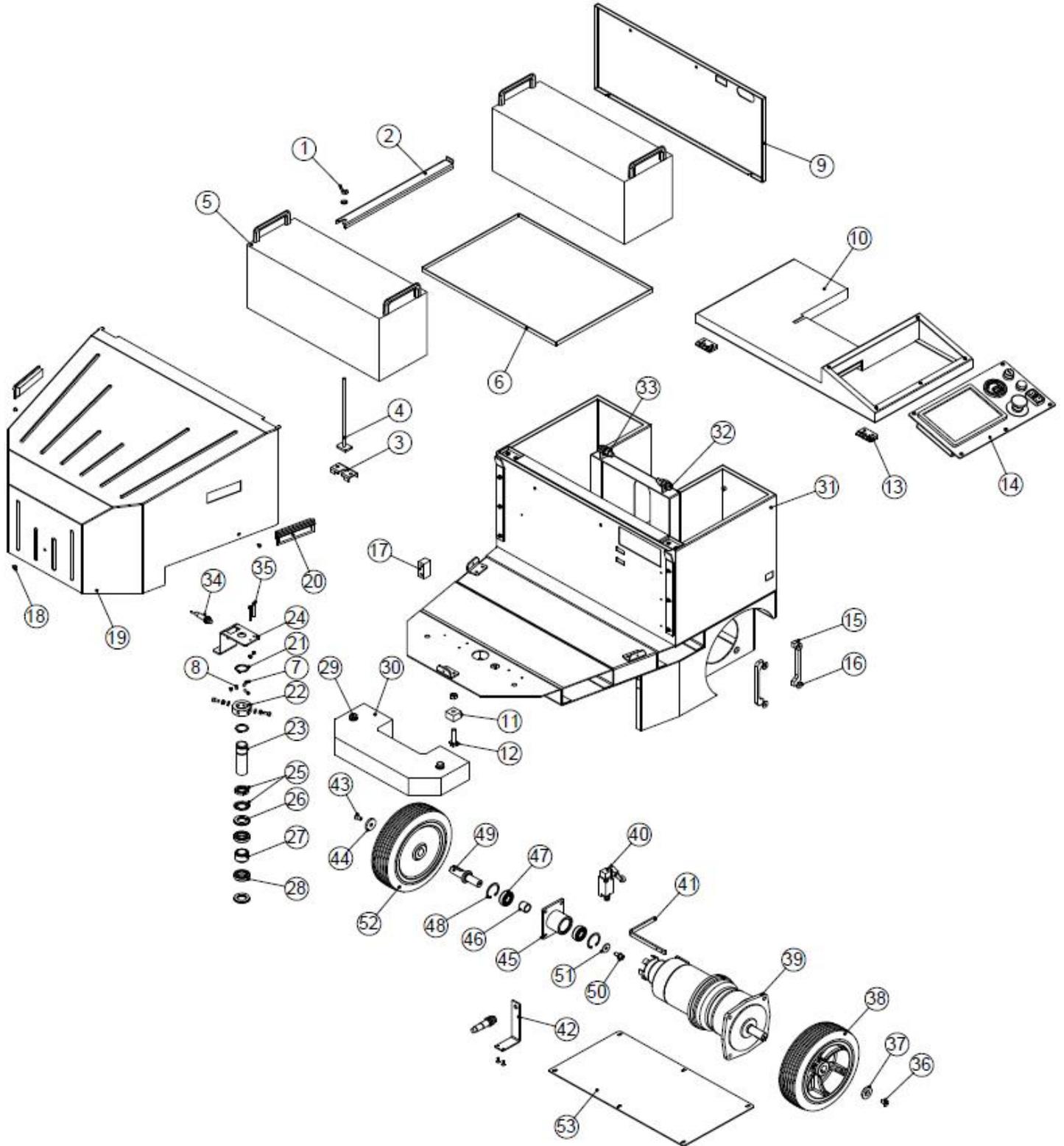
6.1 Parts List

Control Lever Unit

Key #	Part #	Description	Qty
1	KA03076601	Control Lever	1
2	KA11072002A	Cover	1
3	KA11072002A-01	Plate	1
4	KA111333000	Clamping Plate	1
5	KA11071901B	Support Base	1
6	KA03076500	Sleeve	4
7	KA11071901B-01	Cover	1
8	KA04005100	Spring	2
9	KA03037402	Support Column	4
10	KA03037401	Suspending Sleeve	2
11	KA30010800F	Safety Bumper	1
	KA30010800F-03	Rubber Guard Bar	2
12	KA30010800FL-04	Holding Plate (Left)	1
13	KA30010800FR-04	Holding Plate (Right)	1
14	KA11072700	Spring Holding Plate	1
15	KA30012702	Absorbing Collar	1
16	10100825	Hex Bolt (M8x25mm)	2
17	KA11131900	Cover	2
18	KA1107210C	Rotating Arm	2
19	KA11072400C	Lever Base Weldment	1
20	10110870	Hex Bolt (M8x70mm)	2
21	KA11117800	Washer	4
22	10330800	Nut (M8)	2
23	KA0400520A	Spring	1
24	11302000	C-Clip (S-20)	2
25	10140616	Hex Bolt (M16x16mm)	2
26	KA1100370	Washer	2
27	30302040	Bearing (6204ZZ)	2
28	KA03042701	Tire Axle Shaft (Front)	1
29	KA03076400	Fixing Ring	1
30	30302040	Bearing (6204ZZ)	2
31	KA03044400	Collar	2
32	KA04005700	Tire (Front)	2
33	KA11072301	Arm	1
34	KA11072303	Fixed Plate	1
35	KA0400121	Handle (M6x45mm)	1
36	KA04004900	Knob (M12x55mm)	1
37	11302500	C-Clip (S-25)	2
38	KA11072900	Washer	2
39	KA0303760B	Guild Roller Shaft	1
40	KA04005400	Tire (Steel Core)	1
	KA04005500	Tire (Cover)	1
	KA04005600	Tire (Inner Tube)	1
41	KA04005300	Spring	1
42	KA03037501	Shaft	1

6.2 Parts List

Body



6.2 Parts List

Body

Key #	Part #	Description	Qty
1	10310800	Nut (M8)	1
2	KA11073100	Battery Hold-Down Strip	1
3	KA11073200	Holding Seat	1
4	KA03037900	Screw	1
5	KA02001500	Battery (Acid Type)	2
	KA02001510	Battery (Gel Type)	2
6	KA11072800	Plate	1
7	PA202101	Spring	3
8	91400806	Ball	3
9	KA110751003	Wiring Plate	1
10	KA11073401C	Body Top Cover	1
11	KA30012702-01	Buffer Block	1
12	10111045	Screw (M10x45mm)	1
13	PD400520A	Hinge	1
14	KA11075800C	Control Panel	1
15	KA1127200	Bracket	2
16	10141030	Countersink Screw (M10x30mm)	4
17	KA30010900A	Buffer Block	1
18	10170510	Screw (M5)	3
19	KA11076001D	Cabinets Cover	1
20	KA11076004	Handle	2
21	11303000	C-Clip (S-30)	1
22	KA03037701	Collar	1
23	KA03037800	Sleeve	1
24	KA11073000	Proximity Switch Seat	1
25	1034AN25	Nut, Bearing (AN25)	1
	1034AN25-01	Bearing Shim (AW25)	1
26	30362542	Bearing (AXK2542)	2
	3036AS04	Shim (AS2542)	4
27	KA03038200A	Collar	1
28	30309050	Bearing (6905ZZ)	2
29	10111065	Screw (M10x65mm)	2
30	KA03038000B	Balancing Block	1
31	KA11074000E	Body Frame	1
32	10111245	Screw (M12x40mm)	2
33	10331200	Nut (M12)	2
34	7355N105	Proximity Sensor (PM12-04N)	1
35	10100540	Screw (M5x40mm)	2
36	10140820	Screw (M8x20mm)	1
37	KA1102310	Washer	1
38	KA04005800	Tire (Rear)	1
39	KA33001610	Motor	1
40	7355N105R	Limit Switch	1

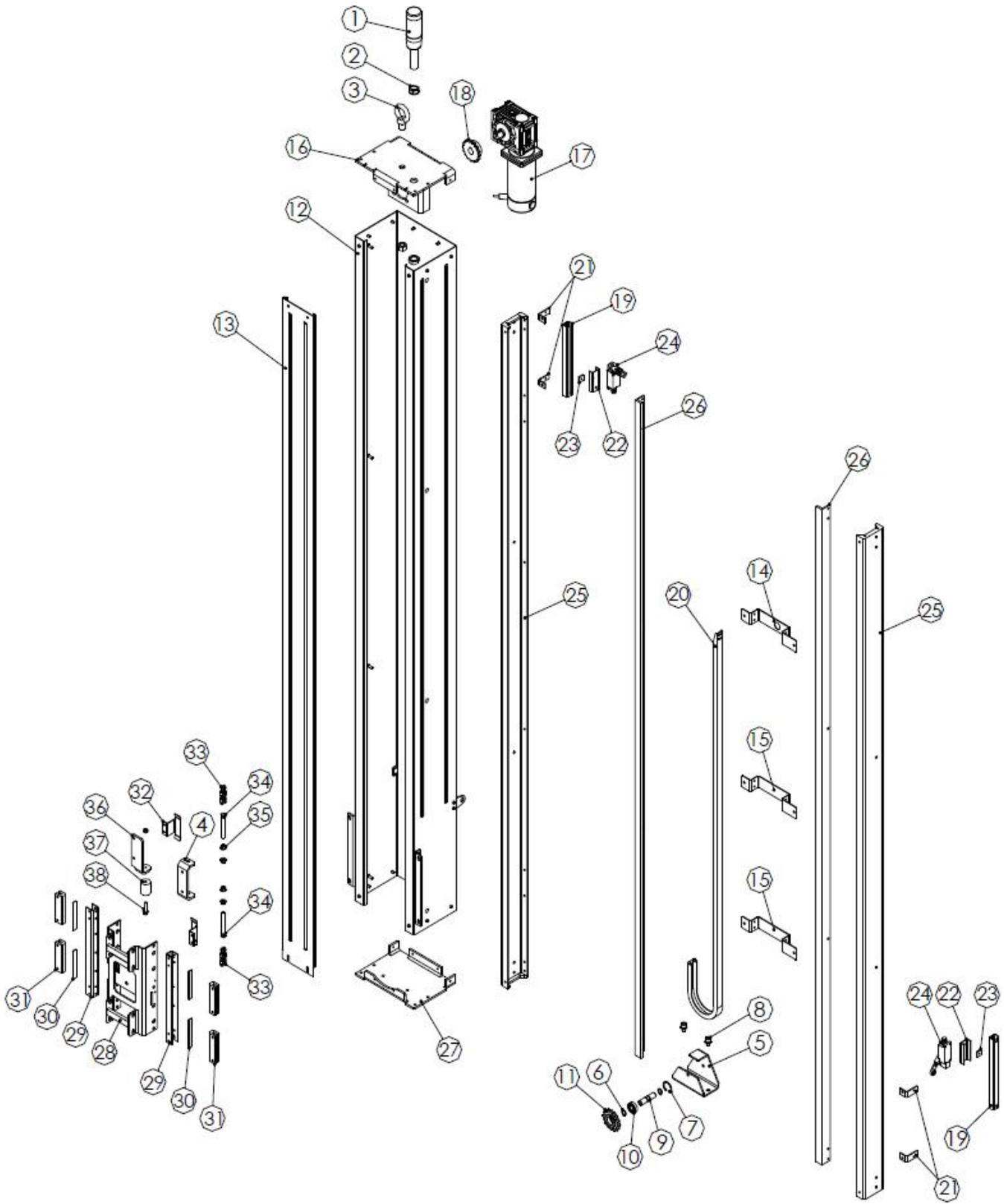
6.2 Parts List (Continued from previous page)

Body

Key #	Part #	Description	Qty
41	KA11072200	Lever	1
42	KA11092100	Bracket	1
43	10140820	Screw (M8x20mm)	1
44	KA1102310	Washer	1
45	KA03038401	Bearing Seat	1
46	KA03038100	Collar	1
47	30300040	Bearing (6004ZZ)	2
48	11314200	C-Clip (R-42)	2
49	KA03038300	Tire Axle Shaft	1
50	10140820	Hex Screw (M8x20mm)	1
51	KA11105200	Washer	1
52	KA04005800	Tire (Rear)	1
53	KA11074100	Motor Cover	1

6.3 Parts List

Mast



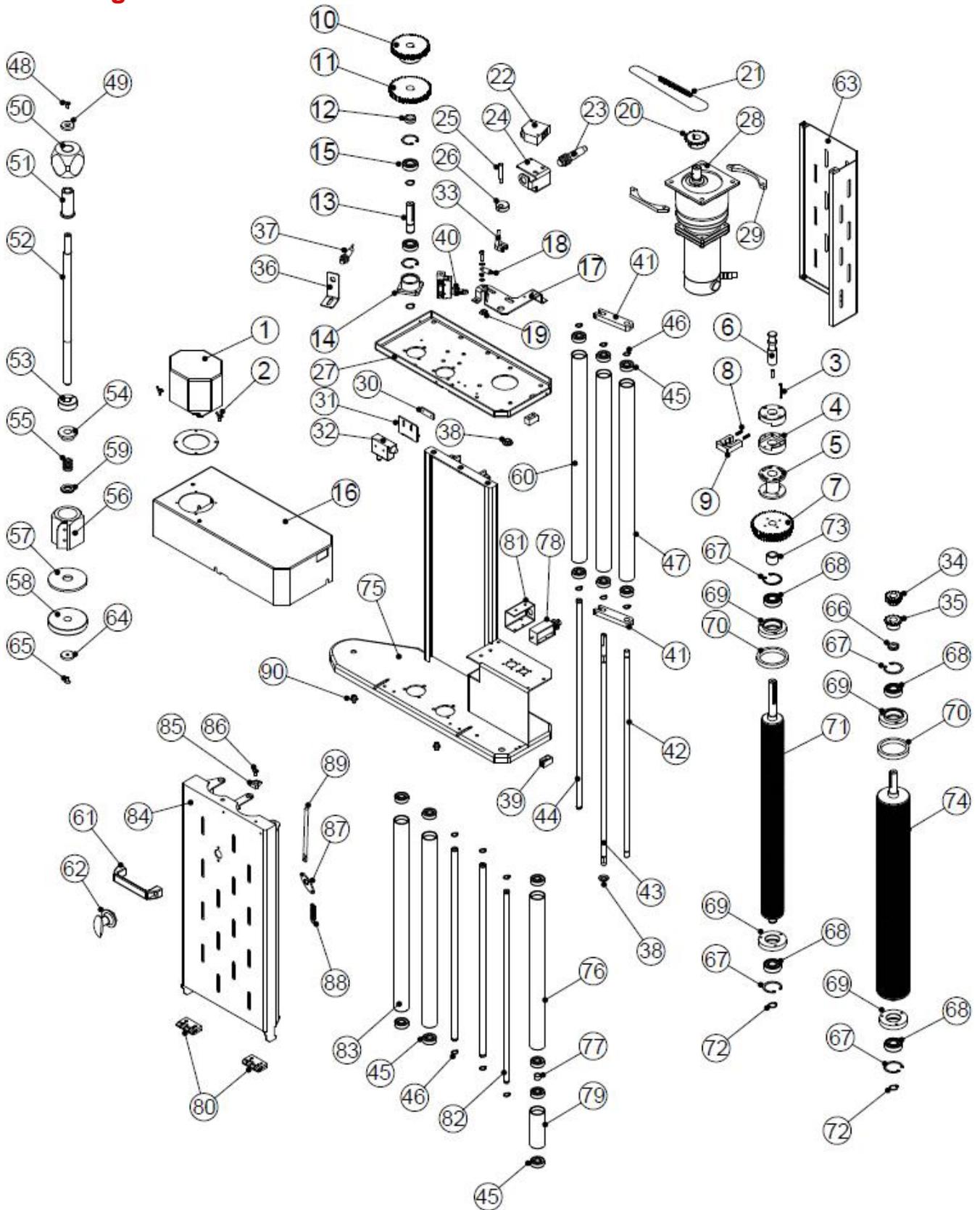
6.3 Parts List

Mast

Key #	Part #	Description	Qty
1	KA0200060T	Warning Light Assembly (Red)	1
	KA0200060T-01	Light Pole & Fixing Tube	1
	KA0200100	Lamp (LC1-EDBS)	1
2	KA0200060T-02	Nut (M22)	2
3	91300002	Suspending Hook	1
4	PD200800	Chain Adjusting Seat	1
5	PJ20070A	Fixing Plate	1
6	11301500	C-Clip (S-15)	2
7	11313200	C-Clip (R-32)	1
8	10250815	Screw (M10x15mm)	2
9	PJ201500	Sprocket Shaft	1
10	30300020	Bearing (6002ZZ)	1
11	KA3100120	Sprocket	1
12	KA11070500E	Tower Frame	1
13	KA11070700B	Tower Cover	1
14	PJ309910	Fixing Seat	1
15	PJ309912	Fixing Seat	2
16	KA11070501B	Tower Top Cover	1
17	KA33001502	Reducer Motor	1
	KA33001502-01	Reducer Motor Shaft	1
18	KA3100110	Sprocket	1
19	KA1109500A	Aluminum Rails	2
20	7067X003	Fixing Plate	1
	7067C063	Slack Wire Cover (CBO-035.1B)	1
21	PJ309911	Rail Bracket	4
22	FG-072	Limit Block	2
23	FG-079	Fixing Plate	2
24	7350TZ04	Limit Switch	2
25	KA11070503	Rail Mount	2
26	KA03075701	Aluminum Rails	2
27	KA11070502B	Tower Bottom	1
28	KA1107090E	Elevator Support	1
29	PJ200402	Slider Block	2
30	FG-068-01	Shim	4
31	FG-068	Slider	4
32	PJ200501	Sensing Plate	2
33	3240S420	Chain (08B)	1
34	PA312501	Chain Adjustment Screw	2
35	10300800	Nut (M8) with Washer	4
36	PD200810	Bracket	1
37	KA30012703	Buffer Block	1
38	10250635	Screw (M6x35mm)	1

6.4 Parts List

Film Carriage



6.4 Parts List

Film Carriage

Key #	Part #	Description	Qty
1	PJ306200	Supporting Cover	1
2	10210512	Wing Nut (M5x12mm)	2
3	10130450	Screw	4
4	PG303200	Handle	2
5	PG302900	Gear Pull Wheel	1
6	PG303100	Position Shaft	1
7	PJ310400	Slip Gear (200% & 250%)	1
	PJ309800	Slip Gear (230% & 300%)	1
	PJ310410	Slip Gear (150% & 250%)	1
8	PG304200	Spring	2
9	PG303000	Safety Button	1
10	PJ310300	Fixed Gear (41T – 250%)	1
	PJ309700	Fixed Gear (42T – 300%)	1
	PJ310310	Fixed Gear (36T – 250%)	1
11	PJ310200	Fixed Gear (44T – 200%)	1
	PJ309400	Fixed Gear (46T – 230%)	1
	PJ310210	Fixed Gear (42T – 150%)	1
12	PJ301201	Isolating Ring	1
13	PJ309601	Fixed Gear Shaft	1
14	PJ309500	Bearing Seat	1
15	30300030	Bearing (6003ZZ)	2
16	PJ3003101C	Top Cover	1
17	PJ301521B	Bracket	1
18	FG-130A	Spring	1
19	FG-147B	Spring Seat	1
20	PA311100	Chain Gear (17T)	1
21	3240S357	Chain	1
22	73602M05	Photo Sensor	1
23	73550003	Analog Switch (XS4-P18)	1
24	KA1102882	Resistance Fixed Seat	1
25	KA0302001	Shaft	1
26	KA0302000	Sensor Cam	1
27	PJ300201C	Carriage Unit Upper Seat	1
28	KA33001700	Reducer Motor	1
29	PJ311400	Plate	1
30	PJ308600	Fix Piece	1
31	PJ301500	Limit Fixed Seat	1
32	7350TZ02	Limit Switch (TZ-7110)	1
33	FG-121A	Arm	1
34	PJ310100	Gear (200% & 250%)	1
	PJ309200	Gear (230% & 300%)	1
	PJ310110	Gear (150% & 250%)	1
35	PJ303100	Chain Wheel (12T)	1

6.4 Parts List (Continued from previous page)

Film Carriage

36	PG304000	Proximity Switch Seat	1
37	7355N105	Proximity Sensor (PM12-04N)	1
38	KA04007700B	Bush	2
39	PB202900	Block	2
40	7350TZ02	Limit Switch (TZ-7110)	1
41	FG-120A	Arm	2
42	PJ30231A-02	Roller Shaft	1
43	KA03076002	Swinging Bar Shaft	1
44	PJ30231A-03	Roller Shaft	1
45	30302010	Bearing (6201ZZ)	14
46	11301200	C-Ring (S-12)	1
47	PJ30230A-04	Roller Tube	2
48	10290612	Screw (M6x12mm)	1
49	KA1100370	Washer	1
50	SBC0007893	Ring (Upper)	1
51	KA03066203	Sleeve	1
52	KA03066200	Film Seat Roller	1
53	PM302900	Adjusting Ring	1
54	PM300600	Ring (Lower)	1
55	PM302410	Spring	1
56	PM30050A-01	Film Fix Seat	1
57	PM30050A-03	Brake Disc	1
58	PJ304100	Friction Seat	1
59	30361730	Bearing (AX1730)	1
60	PJ30230A-05	Roller Tube	1
61	CE400700	Handle Bar	1
62	91280003	Door Knob	1
63	PJ35030C	Side Plate	1
64	KA1100370	Washer	1
65	10290612	Screw (M6x12mm)	1
66	PJ301200	Isolating Ring	1
67	11314200	C-Ring (R-42)	2
68	30302030	Bearing (6203ZZ)	4
69	PJ300700	Bearing Seat	4
70	PJ308000	Protection Ring	2
71	PJ301410	Pre-Stretch Roller	1
72	11301700	C-Ring (S-17)	1
73	PJ309000	Isolating Ring	1
74	PJ301310	Pre-Stretch Roller	1
75	PJ300101E	Elevator Unit Seat	1
76	PJ30230A-02	Roller Tube	1
77	KA03076100	Sleeve	1
78	PG303710	Solenoid (TAU-1358 DC24V)	1
79	PJ30230A-01	Roller Tube	1

6.4 Parts List (Continued from previous page)

Film Carriage

80	PD400520A	Hinge	2
81	FG-3292	Solenoid Bracket	1
82	PJ30231A-01	Roller Shaft	3
83	PJ30230A-03	Roller Tube	2
84	PJ30091B	Safety Door	1
85	PB204300	Security Key	1
86	10290612	Screw (M6x12mm)	1
87	PJ308700	Plate	1
88	PJ352700	Spring	1
89	PJ308800	Door Bolt	1
90	10240610	Screw (M6x10mm)	2