

PALLET STRETCH WRAPPING MACHINE

MODEL: EXP-301

OPERATION MANUAL



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1. GENERAL

- 1.1 Notice of installment 2**
- 1.2 Notice of operation 2**

2. SPECIFICATION

- 2.1 Spec. table 3**
- 2.2 Machine dimension 4**
- 2.3 Machine description. 5**

3. OPERATION DESCRIPTION

- 3.1 Installment 6**
- 3.2 Operation of control panel 7**
- 3.3 Operation description 8**

4. ELECTRIC

- 4.1 Electric capacity 13**
- 4.2 Electric diagram 14**

5. TROUBLE SHOOTING

- 5.1 General adjustment 19**
- 5.2 Running and self test 23**
- 5.3 Trouble shooting 25**

6. PARTS LIST

- 6.1 Seat 26**
- 6.2 Tower 29**
- 6.3 Elevator 32**

1. GENERAL

1.1 Notice of installment

To make sure of a safe and correct operation, please check the below items before installing the machine:

- 1) Power source capacity must be larger than the machine need.
- 2) A shorter ground wire is better.
- 3) Machine standard power is 110V/220V (-15% - +10%).
- 4) Machine standard power Hertz is 50/60 Hz. ($\pm 2\%$)
- 5) Machine is good between temperatures 0°C - 45°C .
- 6) Any thing/substance around the machine should not produce loud noise and vibration.

1.2 Notice of operation

To have good protection for the operator, please make sure of the following conditions:

- 1) Before operating, please read the machine manual carefully.
- 2) Make sure no good have been put on the power cable.
- 3) Make sure no goods been have put on the upper tape head unit.
- 4) Don't allow damp parts or water to touch the electric parts.
- 5) Do not stand on or go across the machine during operation.
- 6) Avoid film winded into the turntable.

2. SPECIFICATION

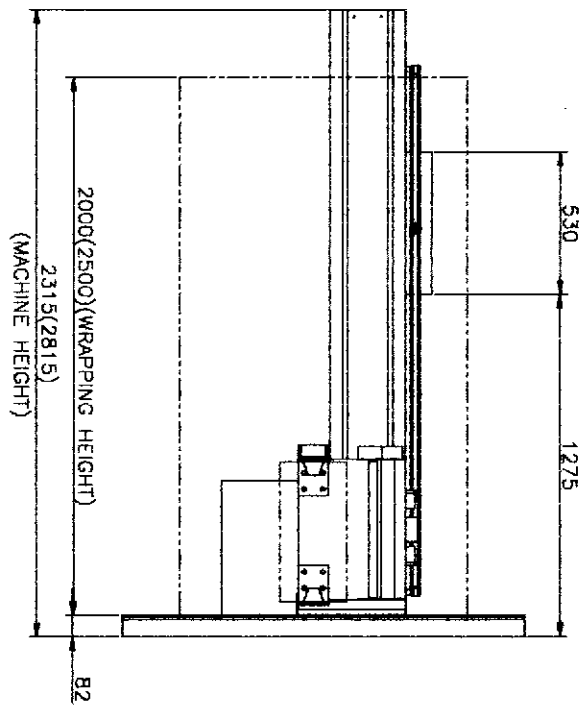
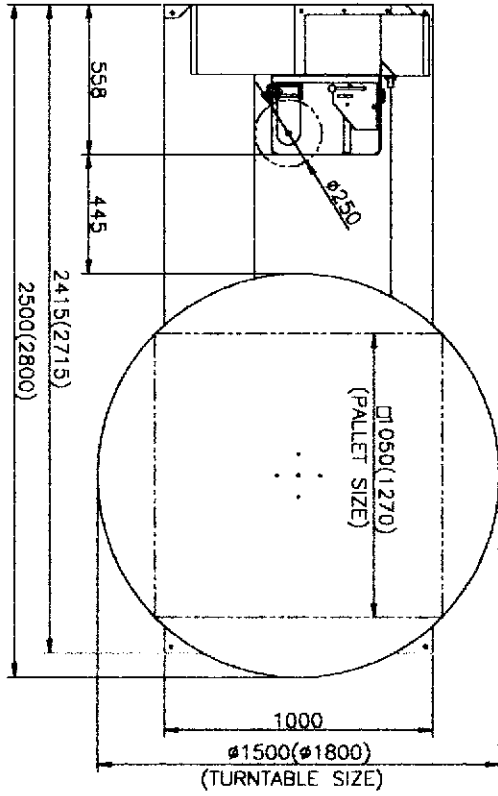
2.1 Spec. table

model	EXP-301	
Turntable speed	0-10 RPM	
Turntable dia.	1500mm	
Tower height	2100mm	
Max. wrapping height	2000mm	
Max. wrapping size	1050x1050mm	
Max. loading weight	1500Kgs	
Film stretch (%)	Infinite/manual adjust	
Film tension	Adjustable	
Elevator unit speed	Adjustable	
Max. film spec.	§ 250x500mm	
Turntable height	82mm	
Ramp (slope) spec.	1165x1000mm	
Machine size	2500x1500x2315mm	
Machine net weight	400Kgs	

Standard option:

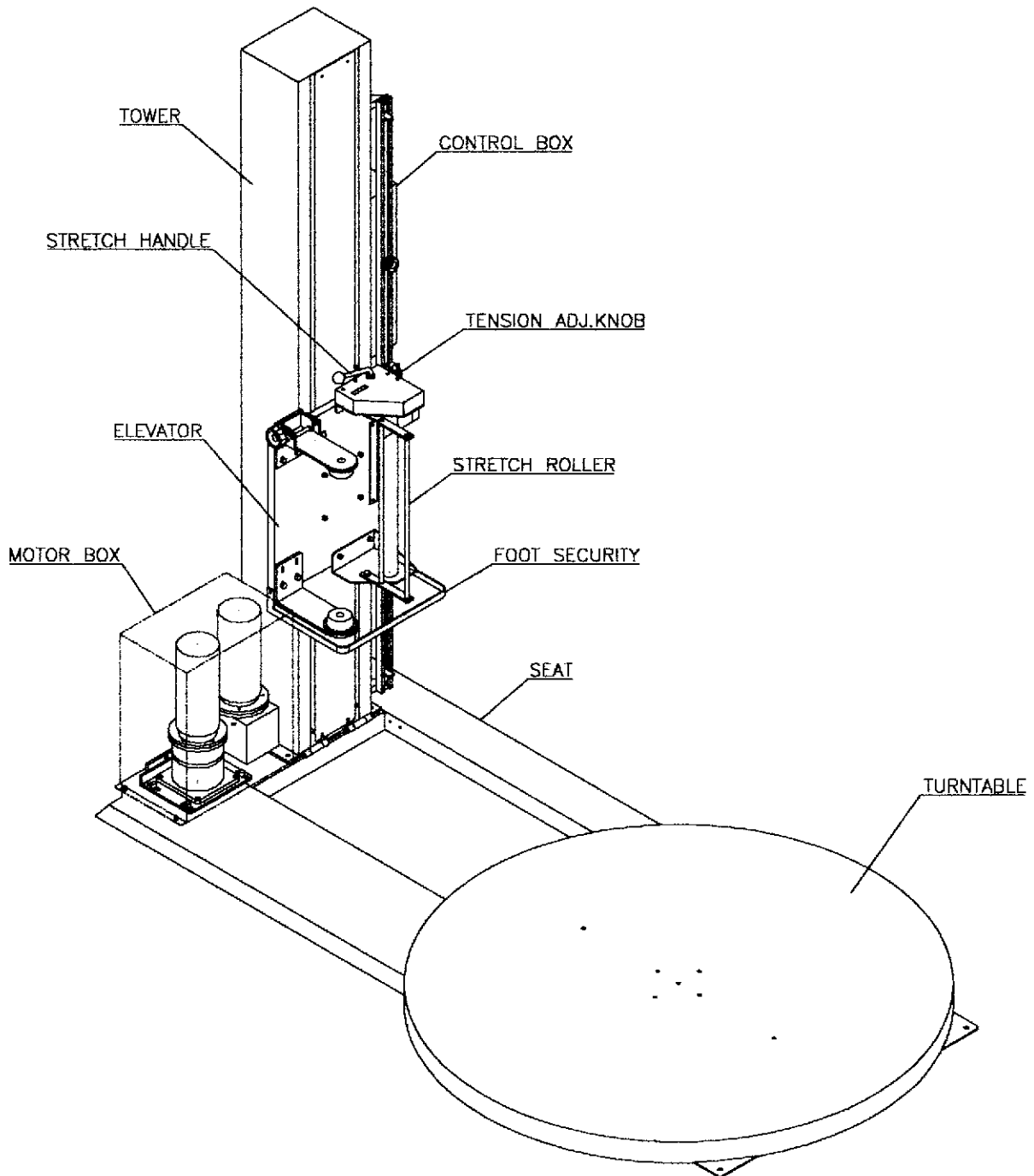
- *Height photo sensor.
- *1.8 meters dia. turntable.
- *2.5 meters wrapping height
- *2000 Kgw loading

2.2 Machine dimension



UNIT:MM ():Option

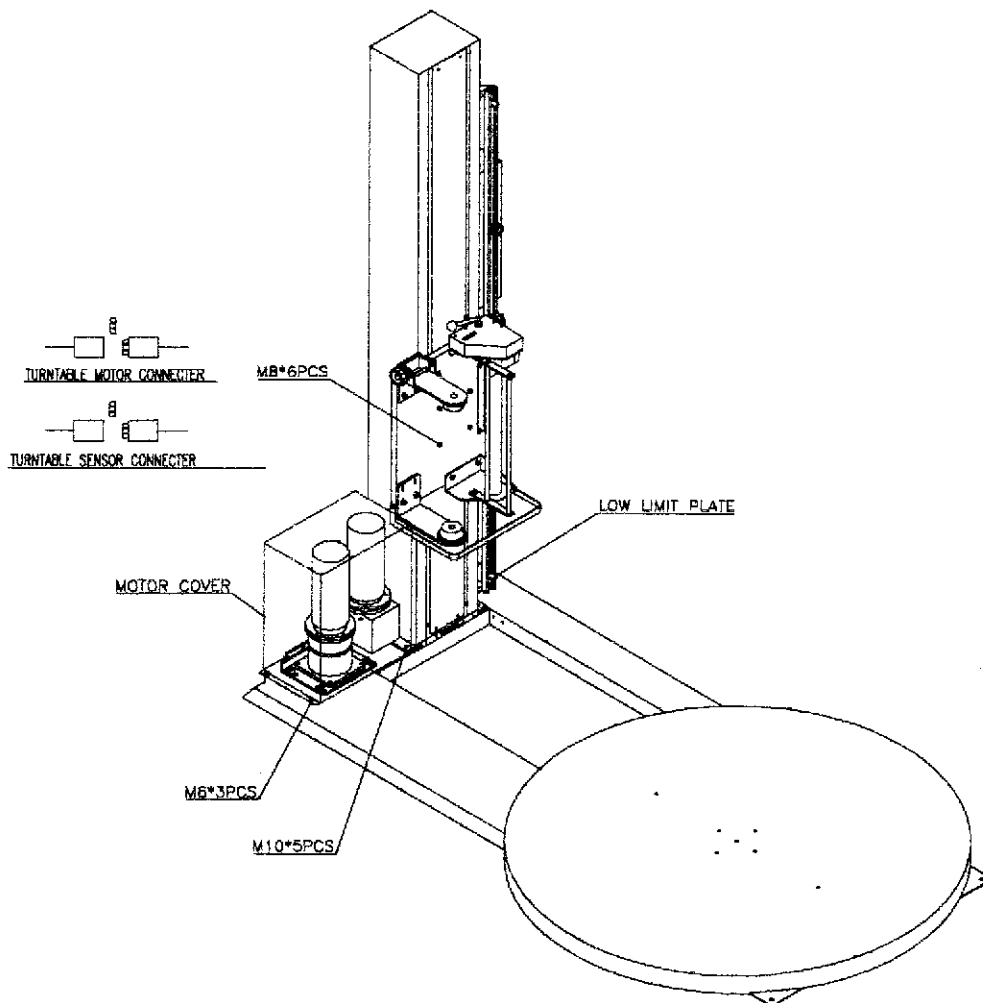
2.3 Machine description



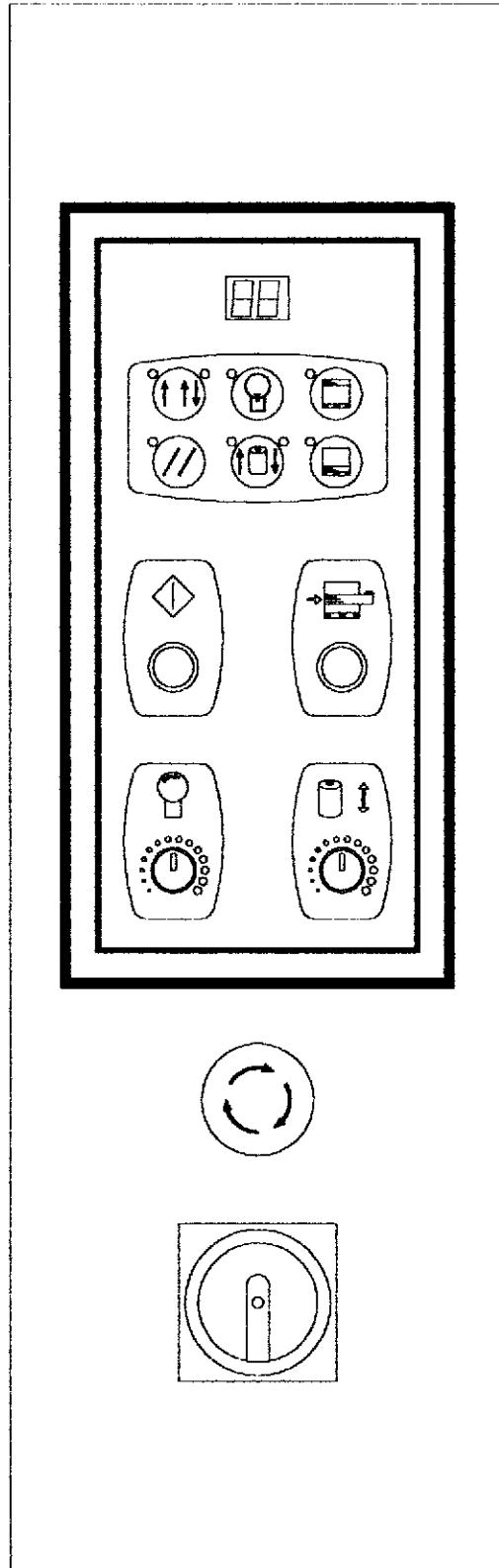
3. OPERATION DESCRIPTION

3.1 Installment

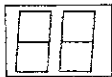
- 1) Apart all the wooden package. Avoid damaging the machine.
- 2) Move the machine to an installment position by fork lift.
- 3) Lift up the tower.
- 4) Fix and tighten the tower by M10 screws.
- 5) Fix and tighten the low limit plate by M6 screws.
- 6) Install the elevator unit on the tower driving seat and fix it by M8 screws.
- 7) Connect the turntable motor and sensor wire.
- 8) Install the motors cover.
- 9) Connect the power cable with the socket by a 110V/220V power.



3.2 OPERATION OF CONTROL PANEL



3.3 Operation description



SCREEN READER

Can show the functions.

E0: Emerge stop. CO: Program continue.

--: Normal. S: Manual operation.

A: Program A(double wrapping)

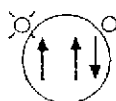
B: Program B(single wrapping only up)

C: Program C(single wrapping only up or down)

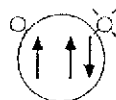


WRAP MODE BUTTON

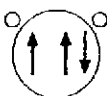
There are 3 wrapping modes available



1. When choosing bottom to top one way wrapping only, the LED lamp on WRAP MODE button's upper left is on. The carriage comes down to the home position as soon as a wrapping cycle is finished at top side.



2. When choosing a bottom to top and top to bottom but still one way wrapping cycles, the LED lamp on WRAP MODE button's upper right is on. After a bottom to top wrapping is completed, the carriage stays on the top. After a new pallet is brought to its position, wrapping will be started from top to bottom, carriage staying at the bottom.



3. If not choosing any WRAP MODE on purpose, both upper left and right lamps are off. The machine carries out a complete wrapping cycle, bottom to top and top to bottom on one pallet.

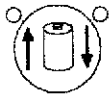


TURNTABLE BUTTON

This is a control button for manual operation.

Pressing this button, the light on. Then press the

"START" button to operate the turntable. Pressing this button again to stop the turntable and the light goes off. During the process of the carriage going up or down, users can operate the turntable by pressing this button.



ELEVATOR BUTTON

This is a control button for manual operation. After this button is pressed, either its left or right lamp is on. If its upper left lamp is on, the carriage will go up after START is pressed. If the upper right lamp is on, the carriage will come down as soon as the "START" button is pressed. To stop in the middle of any elevation or descent, simply press this button again. Both lights would go off. During the process of the turntable spinning, users can operate the carriage by pressing this button.



RESET BUTTON

Press the button, all operation is released and the machine returns to neutral status.



WRAP CNT. (TOP) BUTTON

Press this button to choose the number of top wrapping count from 0 to 9.



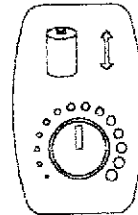
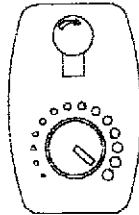
WRAP CNT. (BOTTOM) BUTTON

Press this button to choose the number of bottom wrapping count from 0 to 9.



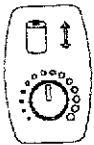
START BUTTON

Press the button to get automatic or manual program running .Except for a special need. Please adjust 2 speed ADJ. knobs for ELEVATOR/TURNTABLE to the following positions:



TURNTABLE SPEED ELEVATOR SPEED

NOTE: When the machine is operating the automatic or manual wrapping program, the lamp will stay on till the wrapping is finished.



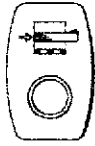
ELEVATOR SPEED ADJ:

Turn the knob clockwise to increase elevator unit goes up and down speed, Turn counterclockwise to decrease the speed. Turning the knob to Min. position can stop the elevator unit from moving.The speed adjust knob is available for both "AUTO" and "MANU" running. If there is no particular requirement, please set the knob on standard position.



TURNTABLE SPEED ADJ:

Turn the knob clockwise to increase the speed of the turntable. Turn counterclockwise to decrease the speed.As the knob turn to Min. position, the turntable will be stopped from turning. The speed adjust is available for both "AUTO" and "MANU" running. If there is no particular requirement, please set the knob on standard position, the turntable speed is 10 RPM.



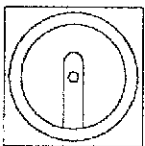
REINFORCE BUTTON

When the package needs to be reinforced it's wrapping partially, whether it's under automatic or manual mode, just press the button continuously, the carriage would stop it's elevation and keep wrapping. When the button is released, the carriage would continue it's original up or down movement.



EMG. STOP

Press the button to get emergency stop. Due to a good security consideration, the turntable will not be stopped instantly as the EMG. stop switch is pressed. As the turntable power is switched OFF, the break will be release too. Turntable will be stopped in 10° ~ 70°. It depend on the weight load.



MAIN POWER

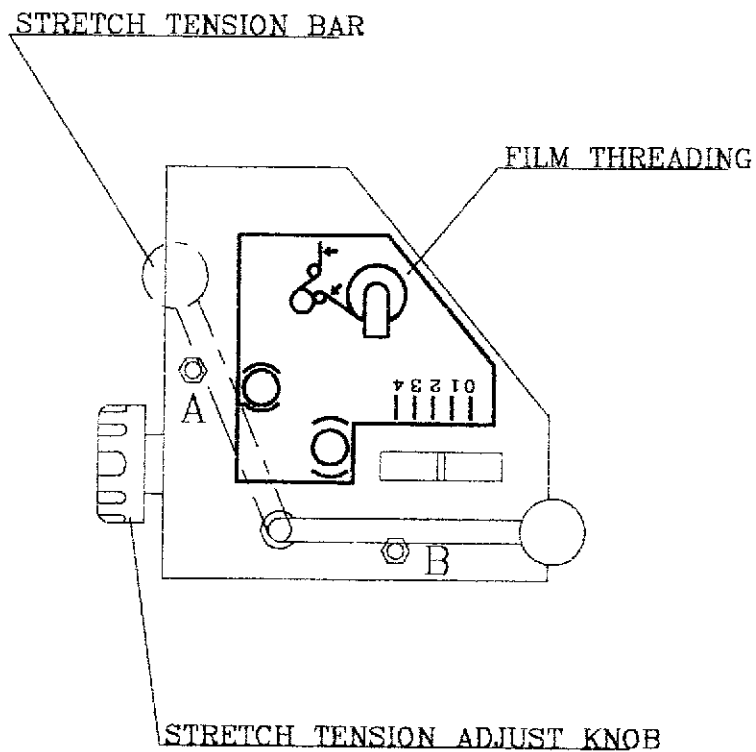
To switch ON and OFF the power.

SECURITY BAR

When this security switch is activated, the machine's 110V/220V main power is cut off. But the DC24V control power is still on. As soon as the factor which activates this security switch is taken off, press START button to continue and complete the rest of wrapping cycle.

ELEVATOR UNIT

- 1) Illustration for film threading.
- 2) Stretch tension bar: Pull the bar to "A" side to get stretch tension. Pull the bar to "B" side to release stretch tension.
- 3) Stretch tension adjust knob: Turn the knob clockwise to increase the tension. Counterclockwise to decrease the tension. Adjust and set the indicate needle on the degree between 2.2 - 2.8 can get the stretch tension is 1 meter Film stretched to be 1.65 meters.



4. ELECTRIC

4.1 Electric capacity

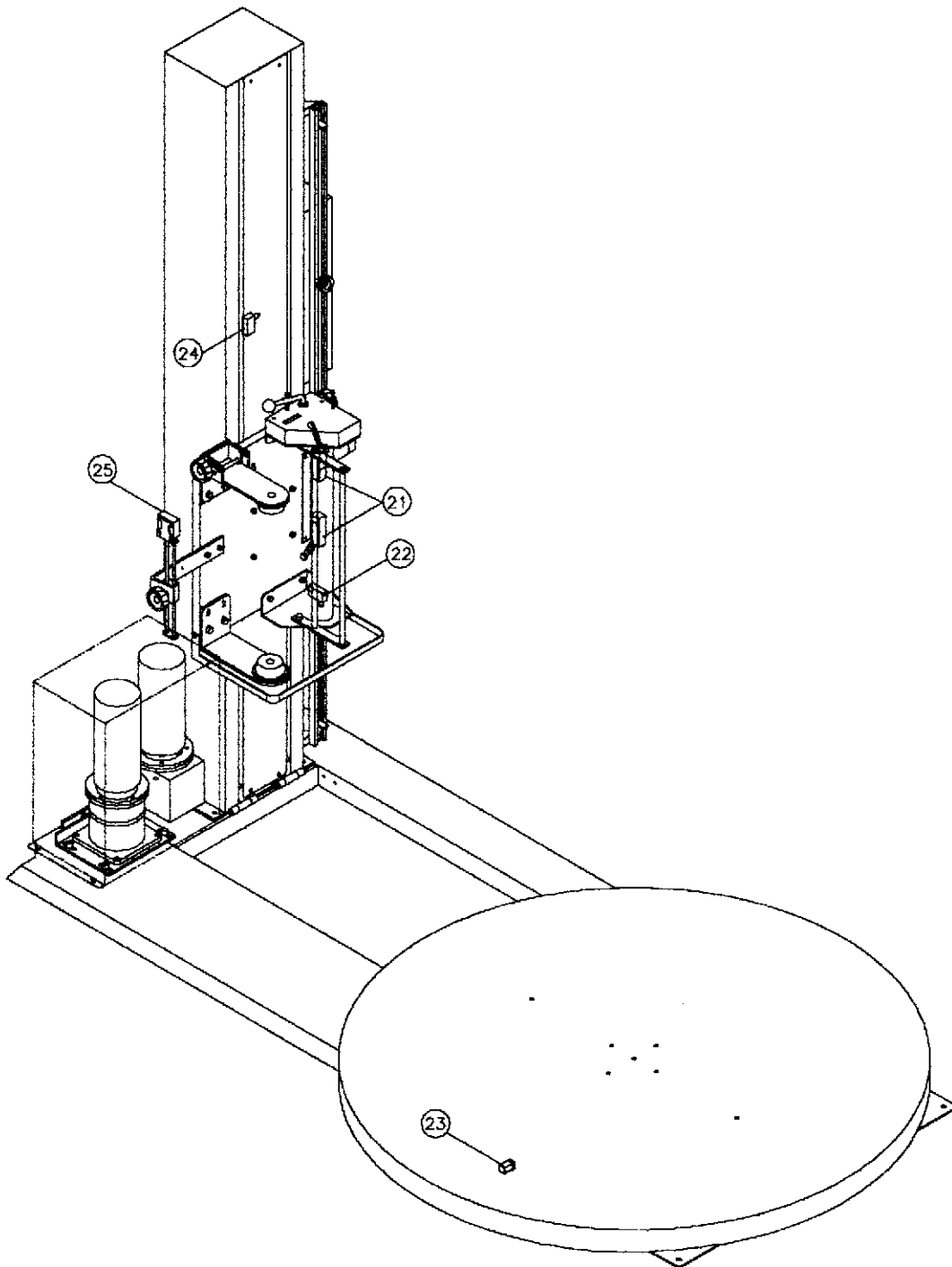
1) Power consumption

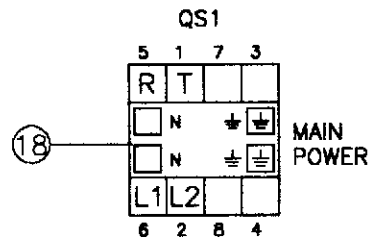
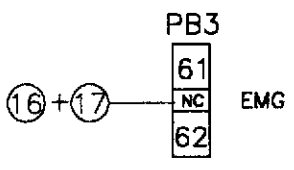
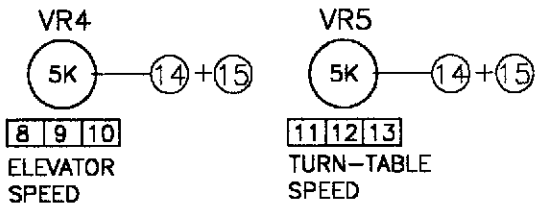
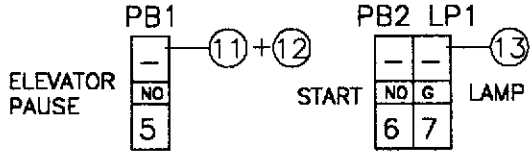
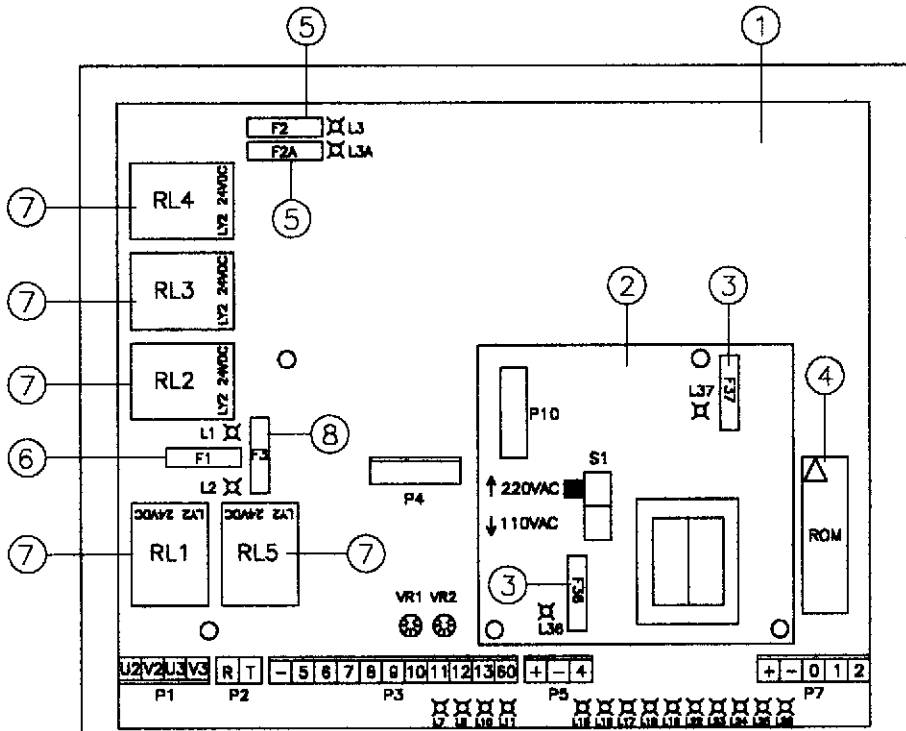
Turntable motor	0.185KVA	
Elevator motor	0.185KVA	
Control & wiring box	0.2KVA	
Machine power use	0.6KVA	
Power socket need	0.8KVA	

2) Power cable 1.25mm²

3) Machine in put AC 110V/220V 1-Phase

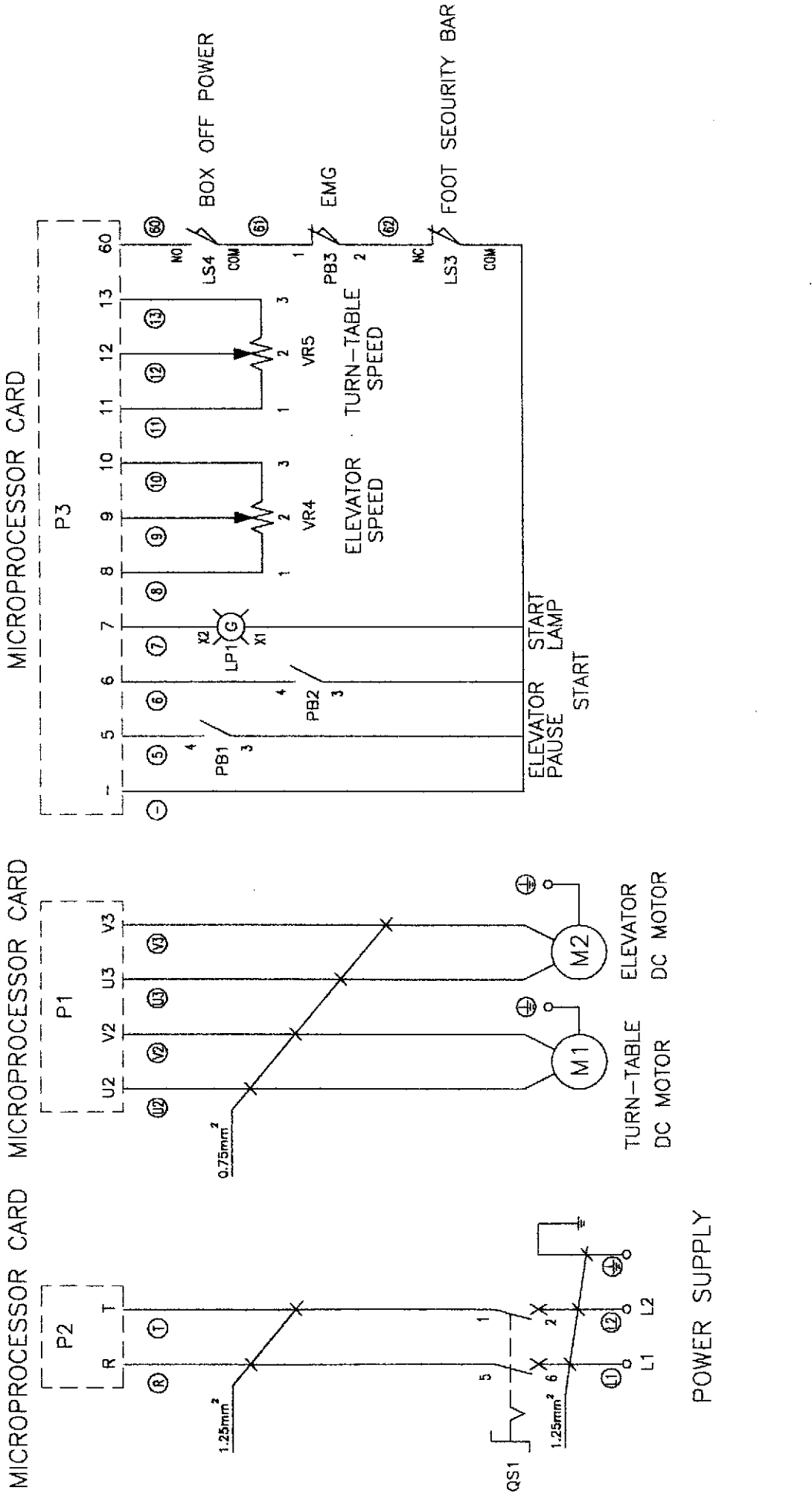
4.2 Electric diagram
Sensor/limit switch location

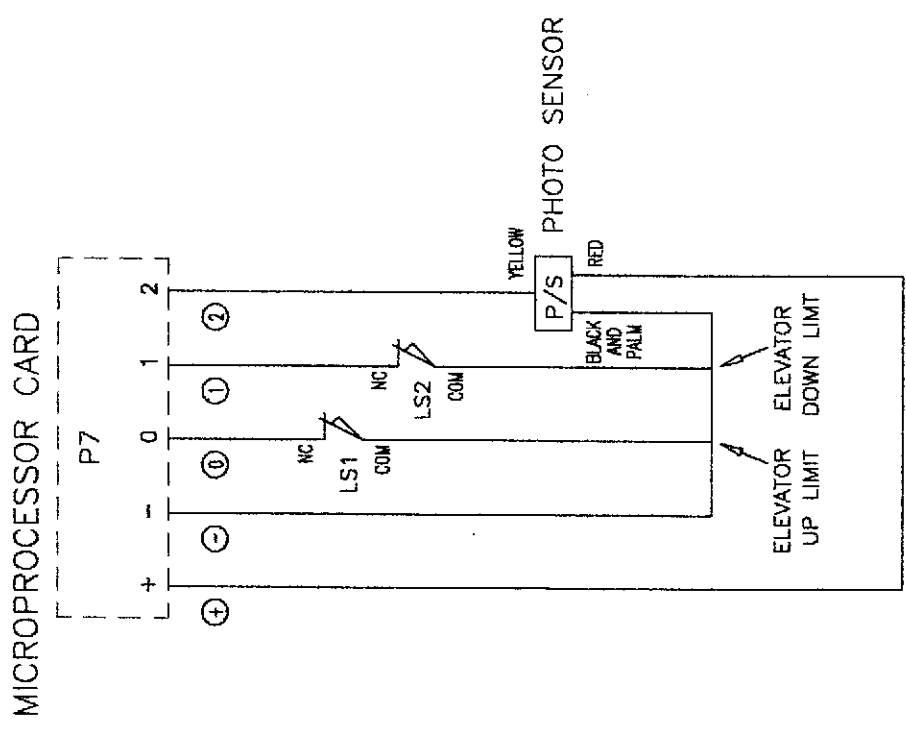
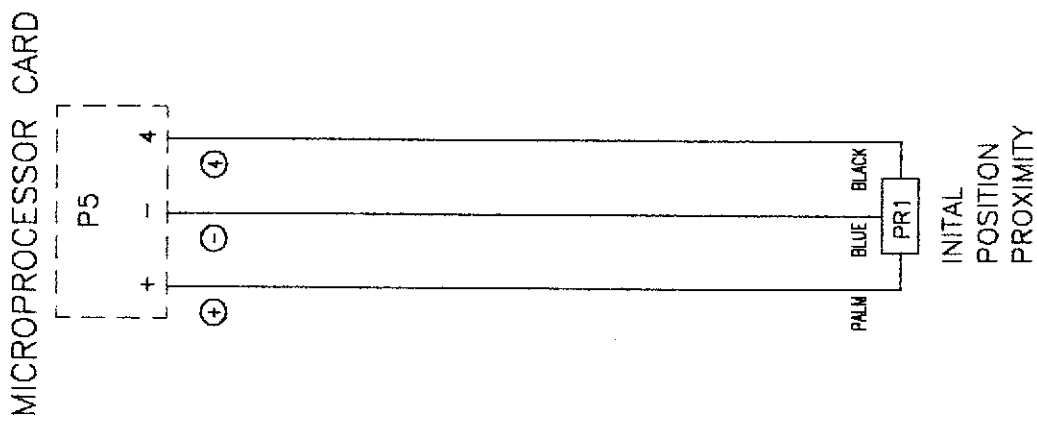
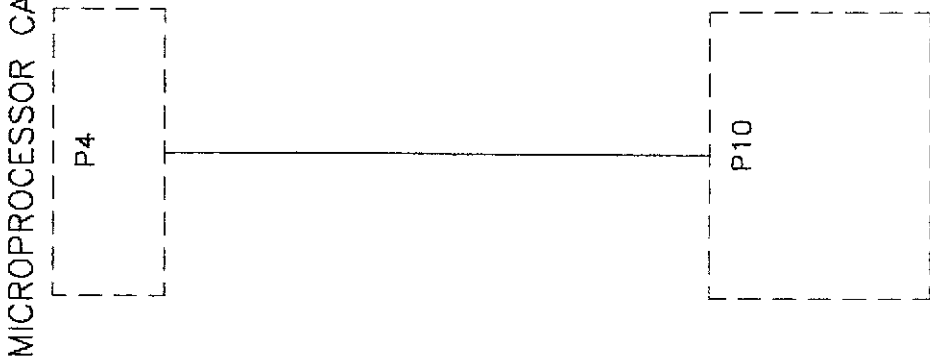




Connection Diagram(301A)

EXP-301





TRANSFORMER CARD

INITIAL POSITION PROXIMITY

ELECTRIC PARTS LIST FOR EXP-301

KEY NO	PART NO.	DESCRIPTION	Q'TY
1	75813101	MICROPROCESSOR CARD	1
2	75823101	TRANSFORMER CARD	1
3	72560101	FUSE 1A	2
4	75843101	EPROM	1
5	72561001	FUSE 10A	2
6	72560501	FUSE 5A→1/4HP	1
	72560801	FUSE 8A→1/2HP	1
7	7270R301	RELAY LY2 DC24V	5
8	72560701	FUSE 7A→1/4HP	1
9			
10			
11	7155AA01	BUTTON WHITE	1
12	7158AZ01	BUTTON SEAT CONTACTOR Nox1	1
13	7150AW01	AUTO RUN GREEN LAMP→COVER	1
	7150AW02	→SEAT	1
	7150CE24	→LAMP	1
14	71610002	KNOB RN-99F,ø6.4	2
15	75510002	VARIOUS RESISTOR 5K	2
16	7155BC01	EMG. SWITCH	1
17	7158BZ02	BUTTON SEAT CONTACTOR NCx1	1
18	7170CA02	MAIN POWER SWITCH	1
19			
20			
21	7350TZ04	LIMIT SWITCH TZ-8108	2
22	7350TM01	LIMIT SWITCH TM-1307	1
23	7355N102	PROXIMITY SWITCH PS-05N-3M	1
24	7350TZ02	LIMIT SWITCH TZ-7110	
25	73602M02	PHOTO SENSOR A3R-2MX	1

5. TROUBLE SHOOTING

5.1 General adjustment

- 1) Turntable belt adjust: Please see the illustration 5-1 and then loosen the motor seat fix screw (M10) 4 pcs. Turn the nut (M10) on the seat until get enough tension. Turn and tight the motor seat fix screw 4 pcs again.
- 2) Elevator unit driving chain adjust: Please see the illustration 5-2, and loosen the screw (M12) on the adjust seat. Adjust the chain fixed seat until get enough tension. Tight the screw (M12) again.

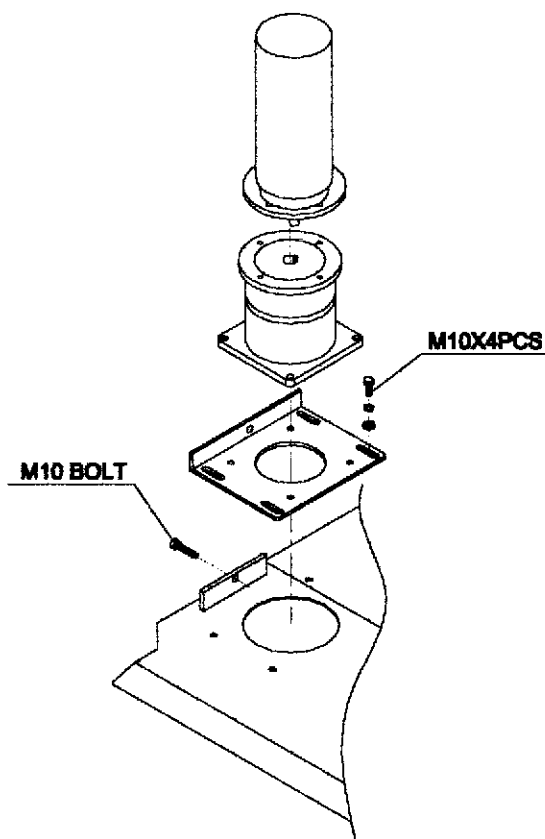


FIG.5-1

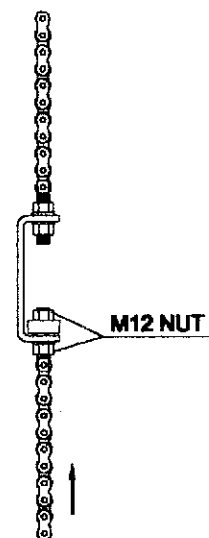
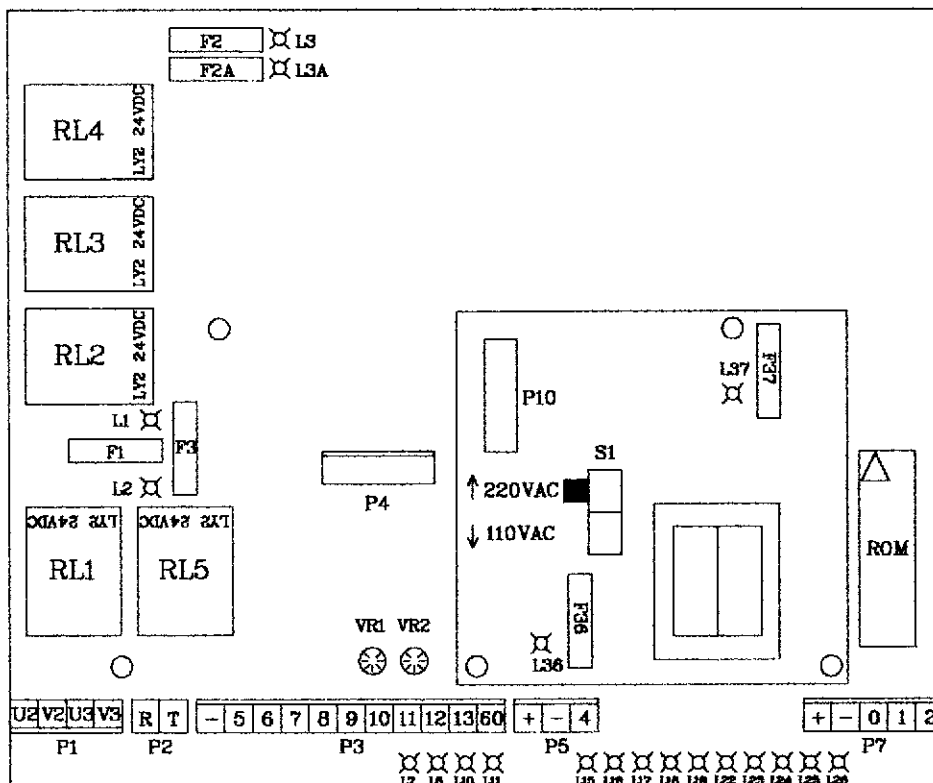


FIG.5-2

*MICROPROCESSOR CARD DESCRIPTION AND INSTALLATION

DESCRIPTION



Connector:

- P1: TURNTABLE/ELEVATOR Relay output.
- P2: Power input.
- P3: Single input(panel).
- P4/P10: Transformer input/output.
- P5: Turntable proximity sensor input.
- P6: Non.
- P7: Elevator sensor/limit switch input.

RELAY:

- RELAY1: For Elevator down.
- RELAY2: For Elevator up.
- RELAY3: For Turntable/Elevator breaker.
- RELAY4: For Power input.

RELAY5:Turnatble rotating.

FUSE:

FUSE1:Elevator motor 5A.

FUSE2:Power input 10A.

FUSE2A:Power input 10A.

FUSE3:Turntable motor 5A.

FUSE6:Transformer input 1A.

FUSE7:Transformer output 1A.

LED:

LED1:Elevator motor fuse(ON mean fuse broken).

LED2:Turntable motor fuse(ON mean fuse broken).

LED3:Power input fuse(ON mean fuse broken).

LED3A:Power input fuse(ON mean fuse broken).

LED7:Start lamp.

LED8:Elevator up.

LED10:Elevator down.

LED11:Turntable rotating.

LED15:Start button.

LED16:Pause button.

LED19:Photo sensor.

LED23:Elevator top limit.

LED24:Elevator bottom limit.

LED25:Emerage stop.

LED26:Turntable proximity sensor.

LED36:Transformer input/output fuse(ON mean fuse broken).

VR1:For elevator setting.

VR2:For turntable setting.

Installation

- * Switch off power.
- * Take off old controller card:
 - (A) Pull 11pcs connector off
 - (B) Take the old controller card apart by loosen 4pcs M3 Screws

- * Install the new controller card:
 - (A) Install the new controller card and fix 4 pcs M3 screws tightly.
 - (B) Check all the connector position on the controller card as following drawins.

- * When the card is installed, please do the following test:
 - (A) Switch power "ON"
 - (B) The screen shows "- -" .
If no please check fuses and connectors again.

5.2 RUNNING AND SELF TEST

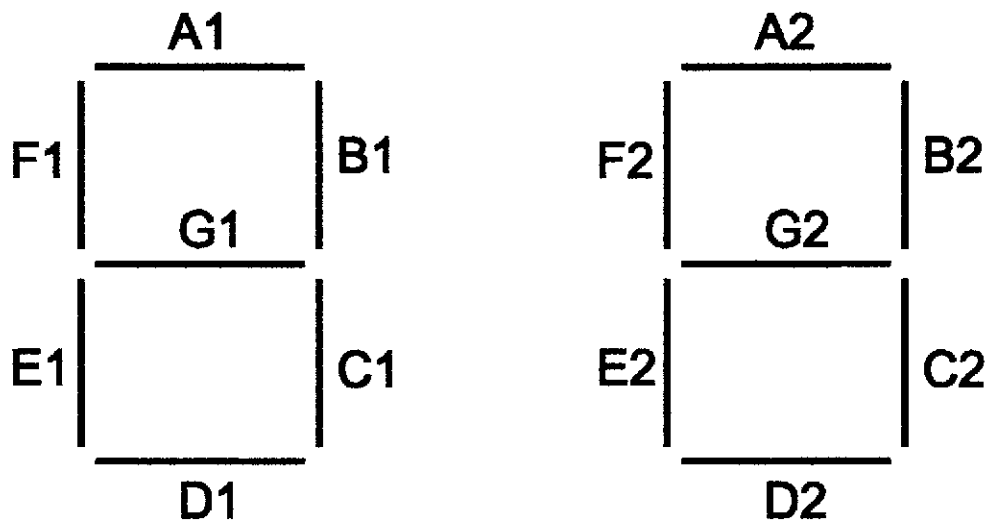
User can check the operation of the machine using the self test by test A or B program. If the self test works properly, the trouble probably lies in the screen. If the self test does not work, contact your dealer or qualified person for assistance.

Running and self test A:

1. Turning the knob of turntable and elevator to Max. Position.
2. Put a pallet on the turntable for testing. The height of the pallet is about 1M.
3. While holding down the turntable and elevator button, turn on the main power. Release the button after the screen shows "EE".
4. The machine will test function when the START button is pressed, it take about two minutes.
5. Screen will show the alarm cord number.
E1: Elevator upper limit switch is breakdown.
E2: Elevator lower limit switch is breakdown.
E3: Turntable proximity sensor is breakdown.
E4: Photo sensor is breakdown.

Running and self test B:

1. Turning the knob of turntable and elevator to Max. Position.
2. Put a pallet on the turntable for testing. The height of the pallet is about 1M.
3. While holding down the WRAP-CNT. TOP and BOTTOM button, turn on the main power. Release the button after the screen shows "99".
4. The limit switches or sensors of the machine are active when user manual or automatic operated. According the screen and the table can get the switches or sensors ON or OFF.



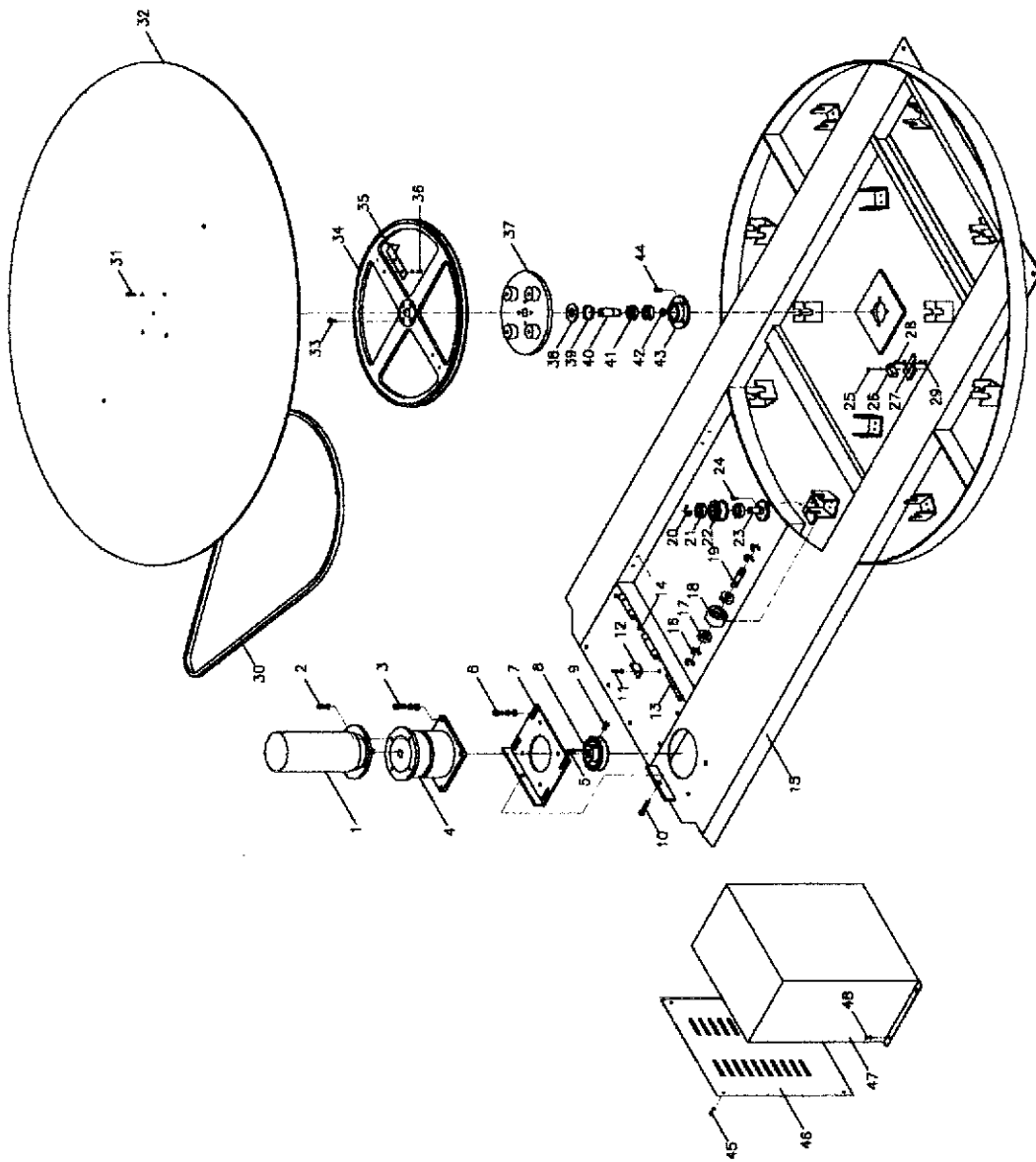
Position	Part no.	Description
A1	7350TM01 7155BC01/7158BZ02 7350TZ02	Security bar EMG. STOP button Control box switch
B1	7350TZ04	Elevator upper limit
C1	7350TZ04	Elevator lower limit
D1	7355N102	Turntable PROX. sensor
E1	7155AA01/7158AZ01	Reinforce button
F1	7150AW01/7150AW02	START button
G1	73602M02(OPTION)	Photo sensor
A2	7150CE24	START lamp
B2	74600106/74600202	Turntable motor
C2	74600107	Elevator motor
D2		
E2		
F2		
G2		

5.3 Trouble shooting

Machine trouble	Cause	Solution
Machine can not work	1.Fuse burn. 2.Screen lamp not ON. 3.Foot security is broken.	1.Change fuse. 2.Check micro-processor board. 3.Release the security s/w.
Turntable can not turn	1.Fuse burn. 2.Microprocessor board broken	1.Change fuse 2.Change microprocessor board
Turntable speed turn slowly and can't adjust.	1.Microprocessor board broken. 2.Carton brush worn out. 3.Turntable belt loosen.	1.Change microprocessor board 2.Change the carton brush. 3.Tighten the belt.
Turntable can not always stopped in same position.	1.Turntable proximity S/W no sense.	1.Check the proximity S/W sense. If it is no problem adjust the sensing plate.
Elevator unit can not move.	1.Fuse burn. 2. Microprocessor board broken.	1.Change fuse. 2.Change microprocessor board
As doing AUTO RUN the elevator unit goes up and over the package height can not stop. (option)	1.Photo sensor get sense from another material except package. 2.Photo sensor get sense from another light source.	1.Move out the Material 2.Avoid the light source.
As doing AUTO RUN but elevator unit can not goes up.	1.Photo sensor broken 2.Photo sensor can not sense a black color package.	1.Change photo sensor. 2.Avoid a black color package or use manual operation.

6. PART LIST

6.1 Seat



PARTS LIST FOR EXP-301

KEY NO	PART NO.	DESCRIPTION	Q'TY
1	74600106	MOTOR VP3310D 1/4HP →1.5M	1
	74600202	MOTOR VP3330D 1/2HP →1.8M & 1.65M	1
2	10110820	SCREW M8X20L & W.	4
3	10111020	SCREW M10x20L & S.W. & W.	4
4	32902002	SPEED REDUCER 1/4HP →1.5M	1
	32904002	SPEED REDUCER 1/2HP →1.8M & 1.65M	1
5	10925200	KEY 5X20L	1
6	10111025	SCREW M10x25L & S.W. & W.	4
7	PB100200	MOTOR ADJUST SEAT →1.5M	1
	PB100210	MOTOR ADJUST SEAT →1.8M & 1.65M	1
8	PA101400	MOTOR PULLEY 4"22 →1.5M	1
	PA101410	MOTOR PULLEY 4"28 →1.8M & 1.65M	1
9	10180001	SCREW 5/16"x16L	2
10	10111070	SCREW M10x70L	1
11	10100612	SCREW M6x12L & W.	1
12	PD100600	MOTOR BOX FIX PLATE	1
13	PD101000	PIN	2
14	11301000	RING STW-10	2
15	PB100100	TURNTABLE SEAT 1.5M	1
	PB10011A	TURNTABLE SEAT 1.8M	1
	PB100120	TURNTABLE SEAT 1.65M	1
16	11301700	RING STW-17	48
17	30302030	BEARING 6203ZZ →1.5M	24
	30302030	BEARING 6203ZZ →1.8M & 1.65M	28
18	PA101000	SUPPORTING PLASTIC WHEEL →1.5M	12
	PA101000	SUPPORTING PLASTIC WHEEL →1.8M & 1.65M	14
19	PA100900	SUPPORTING PLASTIC WHEEL SHAFT →1.5M	12
	PA100900	SUPPORTING PLASTIC WHEEL SHAFT →1.8M	14
	PA100900	SUPPORTING PLASTIC WHEEL SHAFT →1.8M	14
20	11301700	RING STW-17	1
21	30302030	BEARING 6203ZZ	2
22	PA101100	BELT LOCK PULLEY	1
23	PA101200	BELT LOCK PULLEY SHAFT	1
24	10100616	SCREW M6x16L	3
25	10130325	SCREW M3x25L & W.	2
26	7355N102	PROXINITY SWITCH PS-05N-3M	1
27	PA101300	PROXINITY SWITCH FIX SEAT	1

S.W:SPRING WASHER

W:WASHER

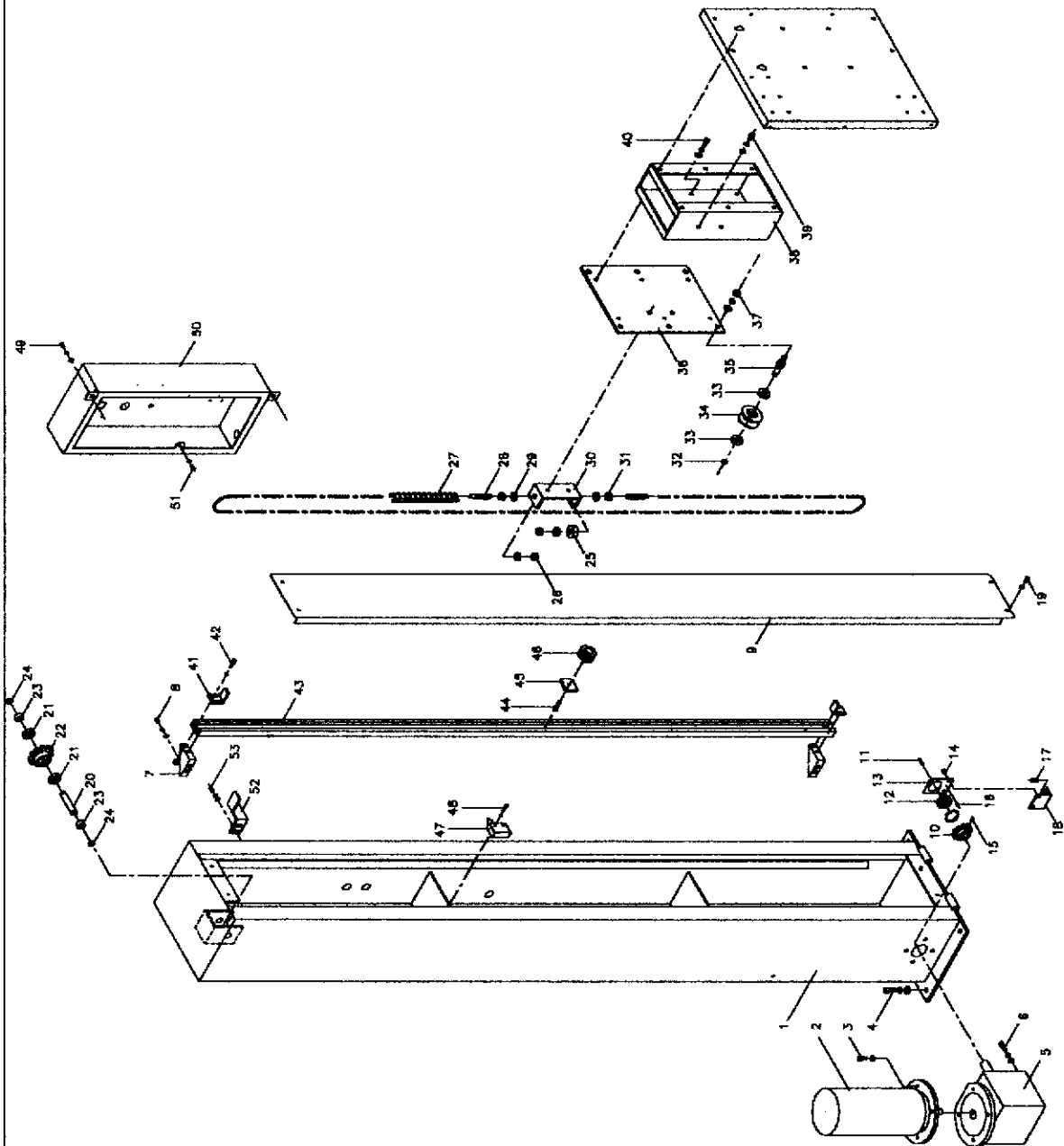
PARTS LIST FOR EXP-301

KEY NO	PART NO.	DESCRIPTION	Q'TY
28	10130420	SCREW M4x20L	2
29	10300500	NUT M5	6
30	2010B172	BELT B-172 →1.5M	1
	2010B183	BELT B-183 →1.8M & 1.65M	1
31	10140825	SCREW M8x25L	4
32	PA100200	TURNTABLE PLATE 1.5M	1
	PA100210	TURNTABLE PLATE 1.8M	1
	PA100240	TURNTABLE PLATE 1.65M	1
33	10100820	SCREW M8x20L	4
34	PA100700	WHEEL 22"	1
35	PA100600	LOCATING PLATE	1
36	10130510	SCREW M5x10L & W.	4
37	PA100800	PULLEY FIXING PLATE	1
38	PD100800	BELT PULLEY SEAT RING	1
39	11314200	RING RTW-42	1
40	PD100700	BELT PULLEY SHAFT	1
41	30300040	BEARING 6004ZZ	2
42	11302000	RING STW-20	1
43	PD100900	BELT PULLEY BEARING SEAT	1
44	10101016	SCREW M10x16L	4
45	10130408	SCREW M4x8L & W.	4
46	PD100500	MOTOR COVER →1.5M	1
	PD10051A	MOTOR COVER →1.8M & 1.65M	1
47	PD100400	TURNTABLE MOTOR BOX 1.5M	1
	PD100410	TURNTABLE MOTOR BOX 1.8M & 1.65M	1
48	10130408	SCREW M4x8L & W.	2

S.W: SPRING WASHER

W: WASHER

6.2 Tower



PARTS LIST FOR EXP-301

KEY NO	PART NO.	DESCRIPTION	Q'TY
1	PD200110	TOWER 2.1M	1
	PD200120	TOWER 2.6M	1
2	74600107	ELEVATOR UNIT MOTOR VP3310D	1
3	10110820	SCREW M8x20L & S.W.	4
4	10101025	SCREW M10x25L & S.W. & W.	5
5	32802004	ELEVATOR UNIT SPEED REDUCER VTM-40	1
6	10100825	SCREW M8x25L & S.W. & W.	4
7	PB250700	CHANNEL SUPPORT	2
8	10100616	SCREW M6x16L & S.W. & W.	4
9	PB20020A	CHAIN WHEEL COVER 2.1M	1
	PB20021A	CHAIN WHEEL COVER 2.6M	1
10	PB200500	UP & DOWN CHAIN WHEEL (LOWER) 11 TEETH	1
11	10130406	SCREW M4x6L & W.	2
12	3030202N	BEARING 6202-2NR	1
13	PD204900	SPEED REDUCER BEARING SEAT	1
14	10100610	SCREW M6x10L & W.	2
15	10180608	SCREW M6x8L	1
16	10720408	PIN ϕ 4X8	1
17	10100812	SCREW M8x12L	2
18	PD205000	BEARING ADJUST SEAT	1
19	10100612	SCREW M6x12L & W.	4
20	PD200300	UPPER CHAIN WHEEL SHAFT	1
21	30300020	BEARING 6002ZZ	2
22	PD200400	UPPER CHAIN WHEEL	1
23	PD201300	RING	2
24	11301500	RING STW-15	2
25	PD205500	ADJUST BAR WASHER	1
26	10331200	NUT M12	1
27	3240S401	CHAIN→2.1M	1
	3240S402	CHAIN→2.6M	1
28	PA312500	ELEVATOR UNIT CHAIN SCREW SHAFT	2
29	10501200	WASHER M12	4
30	PD200800	CHAIN ADJUST SEAT	1
31	10301200	NUT M12	3
32	11301200	RING STW-12	6
33	30300010	BEARING 6001ZZ	8

S.W: SPRING WASHER

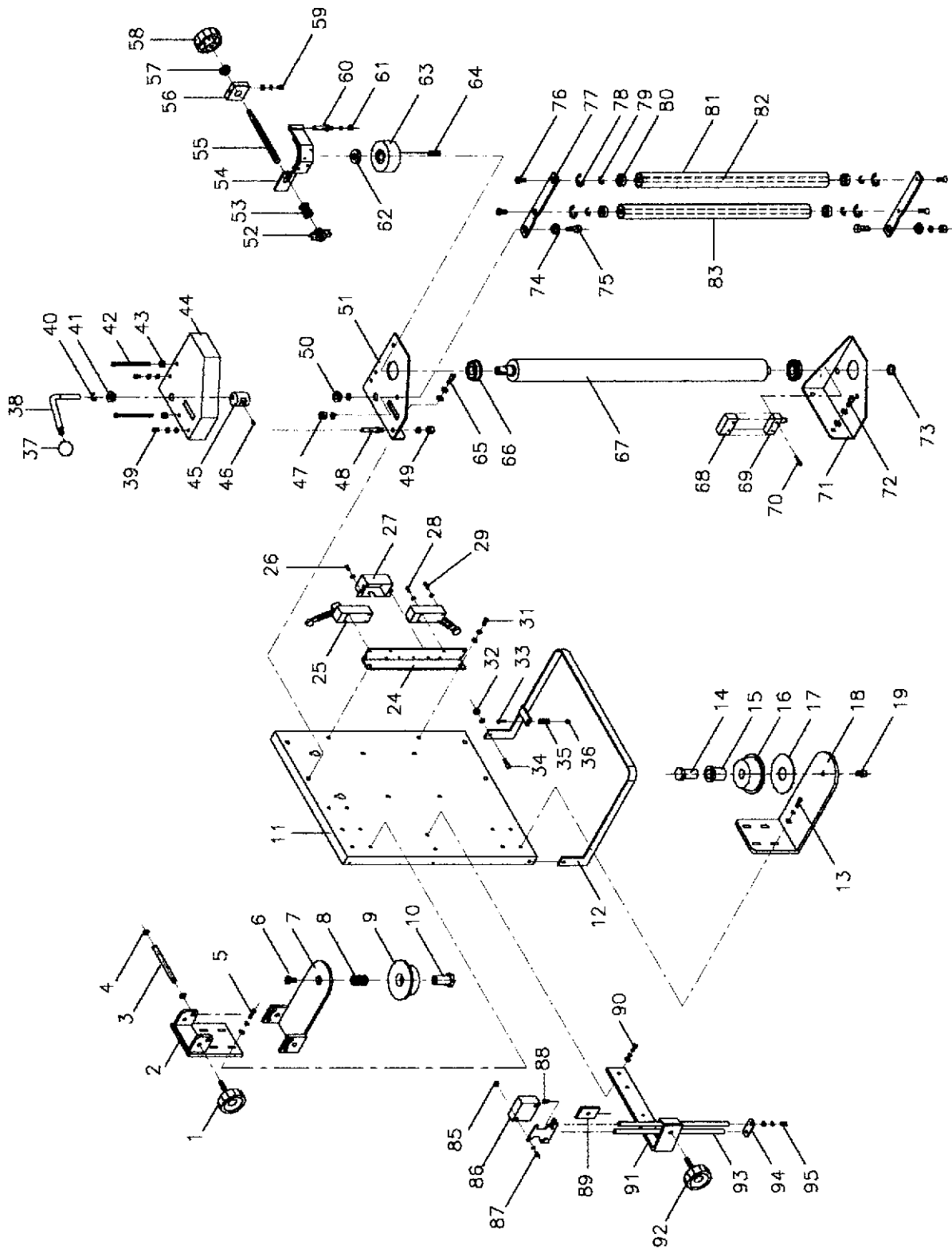
W: WASHER

PARTS LIST FOR EXP-301

KEY NO	PRAT NO.	DESCRIPTION	Q'TY
34	PD200500	UP & DOWN DRIVING WHEEL	4
35	PD200600	UP & DOWN DRIVING WHEEL SHAFT	4
36	PB200300	CHAIN WHEEL SEAT	1
37	10301000	NUT M10 & S.W. & W.	6
38	PB200400	ELEVATOR UNIT SEAT (INNER)	1
39	10100820	SCREW M8x20L & S.W. & W.	2
40	10100816	SCREW M8x16L & S.W. & W.	6
41	PD205900	LIMIT PLATE (OPTION)	2
42	10200616	SCREW M6x16L & S.W & NUT (OPTION)	4
43	PD206000	CHANNEL 2.1M (OPTION)	1
	PD206010	CHANNEL 2.6M (OPTION)	1
44	10100616	SCREW M6x16L (OPTION)	1
45	PD207000	FIX PIECE (OPTION)	1
46	PD207100	HANDEL WHEEL (OPTION)	1
47	7350TZ02	LIMIT SWITCH TZ-7110	1
48	10130430	SCREW M4x30L & W	2
49	10100610	SCREW M6x10L & S.W. & W.	2
50	PD401000	CONTROL BOX	1
51	10100610	SCREW M6x10L & S.W.	1
52	PB200600	SENSING PLATE	2
53	10100616	SCREW M6x16L & S.W. & W.	4

S.W: SPRING WASHER W: WASHER

6.3 Elevator



PARTS LIST FOR EXP-301

KEY NO	PART NO.	DESCRIPTION	Q'TY
1	91250001	HANDLE	1
2	PD204200	FILM FIX SEAT(UPPER)	1
3	PD205300	SHAFT	1
4	11301000	RING STW-10	2
5	10100620	SCREW M6*20L & S.W. & W.	4
6	10141020	SCREW M10*20L	1
7	PD204300	FILM MOVING SHAFT	1
8	PD203700	FILM SEAT SPRING	1
9	PD204400	FILM SEAT(UPPER)	1
10	PD204100	FILM SEAT SHAFT	1
11	PD201210	ELEVATOR UNIT SEAT(OUTER)	1
12	PD204700	PEDAL	1
13	10100620	SCREW M6*20L & S.W. & W.	4
14	PD204100	FILM SEAT SHAFT	1
15	PD203800	FILM SEAT RING	1
16	PD204000	FILM SEAT	1
17	PD203900	RING	1
18	PD201400	FILM FIX SEAT(LOWER)	1
19	10101020	SCREW M10*20L	1
20			
21			
22			
23	10100620	SCREW M6*20L & S.W. & W.	2
24	PD201100	LIMIT SWITCH SEAT	1
25	7350TZ04	LIMIT SWITCH TZ-8108	2
26	10130412	SCREW M4*12L	2
27	PD204500	TERMINAL COVER	1
28	10130416	SCREW M4*16L	4
29	10130412	SCREW M4*12L	4
31	10100612	SCREW M6*12L & S.W. & W.	2
32	10330600	NUT M6	2
33	10130420	SCREW M4*20L	1
34	10100620	SCREW M6*20L	2
35	PA202100	SPRING	1

S.W:SPRING WASHER

W:WASHER

PARTS LIST FOR EXP-301

KEY NO	PART NO.	DESCRIPTION	Q'TY
36	10300400	NUT M4	2
37	91220001	HANDLE	1
38	PD202700	HANDLE	1
39	10100612	SCREW M6*12L & S.W. & W.	2
40	11301000	RING STW-10	1
41	PD201700	RING	1
42	101106A0	SCREW M6*100L	2
43	10300600	NUT M6	4
44	PD20280A	STRETCH SEAT COVER(UPPE)	1
45	PD201600	WHEEL	1
46	10180610	SCREW M6*10L	1
47	10300800	NUT M8 & S.W.	2
48	PD203500	STRETCH SEAT SHAFT	1
49	10300800	NUT M8 & W.	1
50	PD201700	RING	1
51	PD20150A	UPPER STRETCH SEAT	1
52	PD202000	TENSION ADJUST SEAT	1
53	PD203600	STRETCH SPRING	1
54	PD202100	BREAK PLATE	1
55	PD201900	TENSION ADJUST SCREW	1
56	PD201800	GEAR SCREW FIX SEAT	1
57	PD201700	RING	1
58	91250001	HANDLE	1
59	10100612	SCREW M6*12L & S.W. & W.	2
60	PD205100	BREAK PLATE SHAFT	1
61	10300600	NUT M6 & S.W.	2
62	PM300900	BREAK WHEEL FIX SHAFT	1
63	PD20220A	BREAK WHEEL	1
64	10925200	PIN 5*5*20L	1
65	10100820	SCREW M8*20L & S.W. & W.	2
66	3030004N	BEARING 6004ZZ-NR	2
67	PA310800	PRE-STRETCH SHAFT	1
68	7351TM01	WIRE PROTECTOR	1
69	7350TM01	LIMIT SWITCH TM-1307	1
70	10130425	SCREW M4*25L	2

S.W: SPRING WASHER W: WASHER

PARTS LIST FOR EXP-301

KEY NO	PRAT NO.	DESCRIPTION	Q'TY
71	PD20290A	LOWER STRETCH SEAT	1
72	10100820	SCREW M8*20L & S.W. & W.	2
73	11302000	RING STW-20	1
74	PD201700	RING	2
75	PD202400	MOVING SHAFT PIN	2
76	10140820	SCREW M8*20L	4
77	PD20250A	MOVING SHAFT	1
	PD20250B	MOVING SHAFT	1
78	11302200	RING STW-22	4
79	11301200	RING STW-12	4
80	30300000	BEARING 6000ZZ	4
81	PD205600	IDLER ROLLER	1
82	PD205700	IDLER ROLLER SHAFT	2
83	PD205800	IDLER ROLLER	1
85	10300400	NUT M4	2
86	73602M02	PHOTO SENSOR A3R-2MX	1
87	10130412	SCREW M4x12L & W.	2
88	10140612	SCREW M6x12L	2
89	PD203100	FIX PIECE	1
90	10100620	SCREW M6*20L & S.W. & W.	2
91	PD203000	PHOTO SENSOR ADJUST SEAT	1
92	91250001	HANDLER	1
93	PD203200	PHOTO SENSOR ADJUST BAR	2
94	PD203300	CONNECTING PLATE	1
95	10100612	SCREW M6*12L & S.W. & W.	2

S.W: SPRING WASHER W: WASHER