COASTAL

COOL AGE

OPERATION MANUAL

WMH-201B TABLE OF CONTENTS

GENERAL DESCRIPTION

Overview:

Your Cool Zone crane consists of two main systems the hardware and the firmware.

The firmware for the operational program is located in U3, firmware for sound files is also stored on U10, U13, U16.

The hardware consists of the crane gantry, the control panel, the coin mechanisms (and/or bill acceptor), payout sensors and Lighting systems.

The gantry consists of a sturdy metal frame, which rides steel rails built into the cabinet and is driven by the front/back motor located in the left side of the gantry structure when you are facing the machine. The up/down and left/right motors are contained in the carriage that rides the gantry's rails.

The control panel consists of either a joystick and drop button, or control buttons, and the digital display. Joystick control is intuitive, and the button-equipped models are clearly labeled. The display shows at various times, accumulated credits, game time remaining, and diagnostic information.

The coin door can support two (coin comparator type) coin mechanisms, and a bill acceptor. The crane harness has wiring provided to install a bill acceptor, and a plate that can be removed to install a bill acceptor.
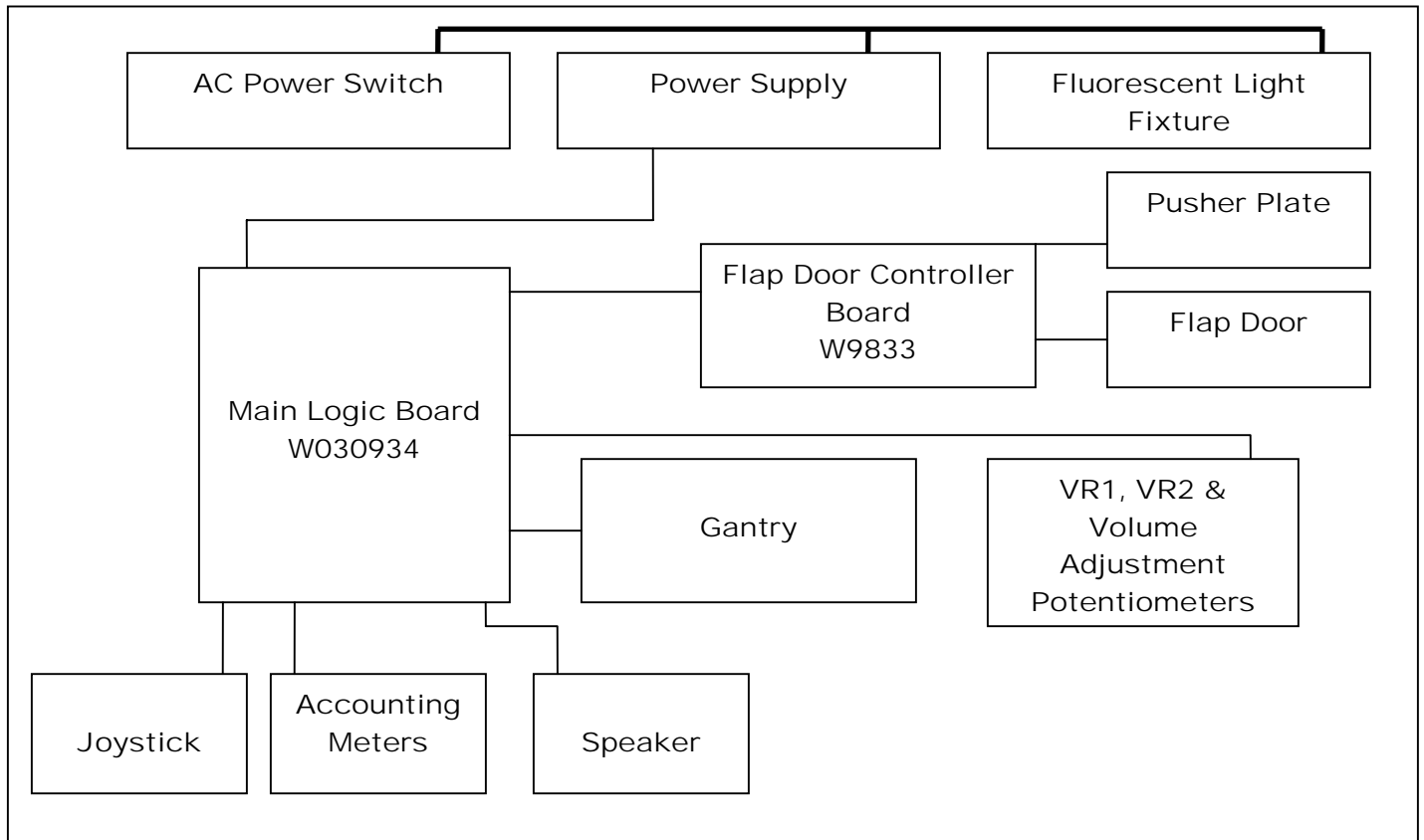
The prize chute is equipped with a photoelectric sensor strip to keep a record of the number of prizes dispensed.

A fluorescent light fixture in the ceiling of the unit provides lighting for the prize floor, and the marquee. Colored rope lights flash in varying patterns down the two front corners drawing the attention of passers by.

Behind the coin door you will find on the left the speaker, a voltmeter, and three adjustment knobs, VR1 VR2 and VOLUME. On the right a brass pendulum senses if the machine is shaken or moved suddenly, causing the main board to give the warning, "***Don't Shake The Machine!***"

These components combine to give you a reliable, sturdy, and fun addition to your enterprise, the Sweet Shoppe.

Block Diagram of Major Components

AC Power Switch	Power Supply	Fluorescent Light Fixture

Pusher Plate

Flap Door Controller Board W9833

Flap Door

Main Logic Board W030934

Gantry

VR1, VR2 & Volume Adjustment Potentiometers

Joystick

Accounting Meters

Speaker

2. Play instructions:

1. Open the coin door, on the top of the coin comparator you will see a black plastic module with a blue sticker on the side held by a retaining spring. You have to insert a sample of the coin/token that you are going to use in the slot of this module. After inserting the coin/ token the comparator will accept this type of coin/token.

2. Once the comparator is set up, insert coins, each coin makes the machine give the voice prompt *"way to go "* and advances the coin 1 meter one increment. After the proper number of credits is reached, the game will enter play mode with the voice prompt *"good luck."* The display will show the credits accumulated.

3. The joystick is intuitive, moving the crane gantry and carriage in the direction that it is pushed, once the claw is positioned the drop button allows the claw to lower, the drop button is inactive until the joystick has been used to move the gantry or carriage. If the machine is equipped with buttons they are used as follows: **BACK** button moves the gantry backward and the **RIGHT** button moves the carriage to the right for positioning the claw, pushing either button a second time causes the claw to lower or it will lower when game time expires.

4. When the claw reaches the bottom of it's travel the stop down switch is activated and the board closes the claw. VR1 controls the claw strength, a second stage of grabbing power in plush machines (VR2) is not used in the cool zones program.

5. If the machine is violently shaken, a voice prompt will say "Don't Shake the machine!" If the disturbance occurs during game play the claw will automatically release any prize that it is grasping and the flap door will close (if open).

6. If a prize has been won, the optical sensors will be triggered, a voice says *"congratulations"* and the prize meter will register the win. The prize can then be retrieved through the prize door.

WMH-201B series Main PCB Wiring diagram
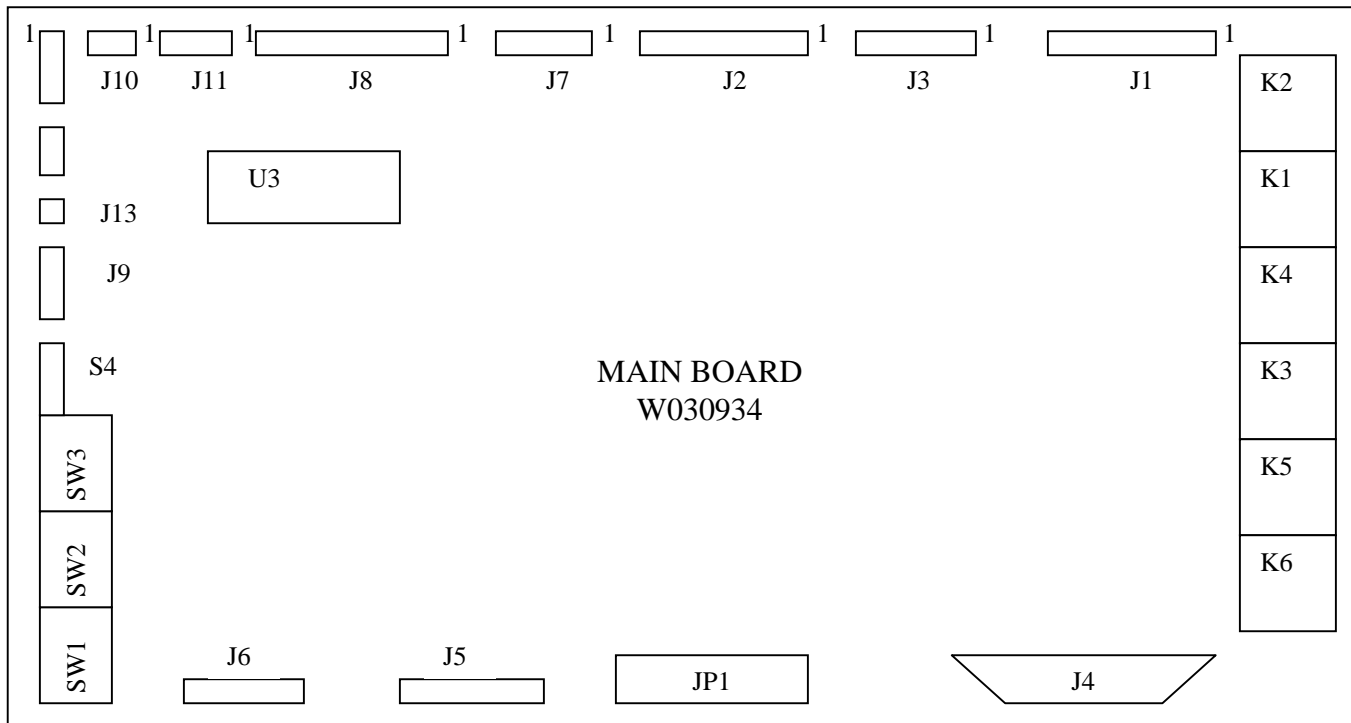
J1	COLOR	CONNECTION
1	Black	Ground
2	Brown	Joystick Front SW (N.O.)
3	Red	Joystick Back SW (N.O.)
4	Orange	Joystick Right SW (N.O.)
5	Yellow	Joystick Left SW (N.O.)
6	Green	Descend SW (N.O.)
7	Blue	Running SW (N.O.)
8	Black	Ground
9	Grey	Descend (*RIGHT*) Button Light
10	White	Running (*FRONT*) Button Light

J3	COLOR	CONNECTION
1	Black	
2	Green	
3	Yellow	
4	Orange	Super Card Connections
5	Red	
6	Brown	
7		
8	Blue	

J2	DIGITAL DISPLAY

J7	COLOR	CONNECTION
1	Rd/Wht	+12 VDC
2	Or/Wht	Coin 1 meter
3	Ye/Grn	Coin 2 Meter
4	Grn/Wht	Prize Meter
5	Blu/Wht	Ticket Meter

J8	COLOR	CONNECTION
1	Brown	Tilt Sw (N.O.)
2	Purple	Pusher Sw (N.O.)
3	Black	Ground
4	Black	Coin Sw. 1 Gnd.
5	Wht/Grn	Coin Sw. 1 Sig.
6	Red	Coin Sw. 1 +12V
7	Red	Coin Sw. 2 +12V
8	Wht/Blu	Coin Sw. 2 Sig.
9	Black	Coin Sw. 2 Gnd.
10	Black	Test Coin Sw Com.
11	Grn/Wht	Test Coin Sw. (N.O.)
12	White	NOT USED
13	Red	NOT USED
14	Red	+12 VDC Pusher Motor
15	Grn/Wht	Bill Acceptor Inhibit
16	Black	Ground
17		Coin Inhibit Output Pos.
18	Green	Coin Inhibit Output Neg.

J11	COLOR	CONNECTION	
1	Black to Orange	IN 2	JP 3 W9833 Board
2	Brown to Red	IN4	
3	Red to Brown	EO 4	
4			
5	Orange to Black	EO 5	

J10	COLOR	CONNECTION
1	Blue	Prize Sensor Ground
2	Grey	Prize Sensor Signal
3	Brown	Prize Sensor +12VDC

J12	COLOR	CONNECTION
1		
2		
3	RESERVED	OUT
4		GROUND
5		IN
6		GROUND
7		OUT
8		

J6	COLOR	CONNECTION
1	White	Volume Control Pin 1
2	Red	Volume Control Pin 2
3	Black	Volume Control Pin 3
4	Black	Speaker (-)
5	Violet	Speaker (+)

J5	COLOR	CONNECTION
1	Red	Pot. VR1 Signal
2	Orange	Pot. VR1 Common
3	Yellow	Pot. VR2 Signal
4	Green	Pot. VR2 Common
5	Pink	Claw Voltmeter (+)
6	Black	Claw Voltmeter (-)

JP1	COLOR	CONNECTION
1	Black	Ground
2	Black	Ground
3	Black	Ground
4	Yellow	+5 VDC In
5	Yellow	+5 VDC In
6	Red	+12 VDC In
7	Red	+12 VDC In
8	Orange	+24 VDC In
9	Orange	+24 VDC In
10	Violet	+48

J4	COLOR	CONNECTION
1	Brn/Org	Front/Back Motor +
2	Rd/Blk	Left Right Motor -
3	Org/Blk	Up Down Motor -
4	White	Claw Coil
5	Grn/Wht	
6	Blu/Org	Front/back limit sw.
7	Wht/brn	
8	Vio/Yell	Left/Right limit sw.
9	Pink	Claw up limit sw.
10	Black	Claw Down limit sw.
11	Wht/blu	
12	Gry/blk	
13	Wht/grn	+12 VDC output
14	Brown	Front/Back Motor -
15	Red	Left Right Motor +
16	Orange	Up Down Motor +
17	Yellow	Claw Coil
18	Green	
19	Blue	Front/back limit sw. Common
20	Violet	Left/Right limit sw. Common
21	Grey	Claw Up/Dn. Limit sw.'s Common
22	Wht/Vio	
23	Pnk/Rd	
24	Rd/Yel	
25	Yel/Grn	

J13	COLOR	CONNECTION
1	RESERVED	CLOCK
2		GROUND

S4	COLOR	CONNECTION
1		
2		
3		
4		RESERVED
5		
6		
7		
8		

Flap Door Control Board
W9833

JP1	Color	Signal
1	Blk	GND
2	Blk	GND
3	Red	+12VDC
4	Red	+12VDC
5	Orange	+24VDC
6	Orange	+24VDC

1 **JP1**   1 **JP2**   1 **JP3**
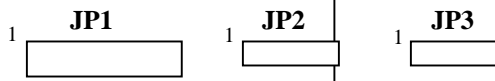
JP2	Color	Signal
1	Black	Door Close sw com.
2	Brown	Door Close sw n.o.
3	Orange	Door Open sw n.o.
4	Black	Pusher sw com.
5	Red	Flap Door Motor -
6	Green	Flap Door Motor +

JP3	Color	Signal
1	Black	Connection
2	Brown	to main
3	Red	PCB J11
4	Orange	

DIP SWITCH SETTINGS

DIP SWITCH 1			1	2	3	4	5	6	7	8
Machine Model Candy or Plush	Candy		ON							
	Plush		OFF							
Claw Release Position	Lower claw then release			ON						
	Release with claw at top			OFF						
Reserved for future development					ON					
Catch in air	Claw closes if "drop" button pressed second time					ON				
	Claw closes when claw reaches bottom					OFF				
Carriage release position	Left side at front of game						ON			
	Left side at rear of game						OFF			
Reserved for future development								OFF		
Demonstration game attraction	Demo on	If machine is idle, a demo game is played at 5 min. intervals the claw does not close							ON	
	Demo off								OFF	
Reserved for future development										OFF

DIP Switch 2		1	2	3	4	5	6	7	8
Reserved for future development		OFF							
Attract Music	On		ON						
	Off		OFF						
Reserved for future development				OFF					
Play until win☼	Yes	☼Optical sensor must be			ON	installed and operational to use play until win			
	No				OFF				
Control Mode	Button					ON			
	Joystick					OFF			
Hold Credit when power is lost	Yes						ON		
	No						OFF		
Access/ Change Program options*	Program Mode							ON	
	Normal Operation							OFF	
Auto Run Test	Test Mode								ON
	Nor5mal Operation								OFF

DIP Switch 3		1	2	3	4	5	6	7	8
Reserved for future development		OFF	OFF						
Coin input 1 credit settings*	6 to 1			ON	ON				
	4 to 1			OFF	ON				
	2 to 1			ON	OFF				
	1 to 1			OFF	OFF				
Coin input 2 credit settings*	4 to 1					ON	ON		
	3 to 1					OFF	ON		
	2 to 1					ON	OFF		
	1 to 1					OFF	OFF		
Select Credit settings with*	PROGRAM OPTIONS	Default is DIP SW as it is more familiar to most operators.						ON	
	DIP SWITCH							OFF	
Reserved for future development									OFF

*Coin inputs can also be programmed with program options.

SETTING CLAW STRENGTH – The claw strength is set with VR2 on this model crane. Candy packaging is highly variable in terms of being caught and held by the claw. Some experimentation may be required to achieve the payout percentages that you desire. The voltage going to the claw is displayed on the meter above VR2. It is also possible to check the strength settings by flipping the switch on the rear of either of the coin comparators to normally closed with the machine off and then restoring power. When the machine is on the display will read CO and the voltmeter will read 0. The switch on the rear of the coin comparator can be returned to normally open at this time. Pushing the joystick Back, C3 is displayed and the meter reads the maximum voltage that is available to the claw. Pushing it to the right C2 is displayed the meter now shows the voltage that VR2 is set to. With a little time and experimenting it should be possible to get the machine right where you want it to be.

Program Options

Setting pole 7 of DIP switch 2 to on before powering the machine up allows you to enter the program options. The following table lists the options that can be changed and what they control. Please note it may be possible to select options that are not listed in the table, doing so could make the machine operate erratically or even damage it. For optimum performance DO NOT modify any values other than those listed below.

When the machine powers up in program options mode the display will initially show flashing zeros. Moving the Joystick to the front or the right will scroll the leftmost 10^s digit, moving it to the back or left scrolls the right 1^s digit.

Display	Program Item	Default setting	Notes
00	Opening display	NA	You are in program mode
03	Coin 1 input # of Coins Required	01	Coins needed for 1 credit
04	Coin 1 input # games/ credit	01	Games awarded for 1 credit
05	Coin 2 input # of Coins Required	01	Coins needed for 1 credit
06	Coin 2 input # games/ credit	01	Games awarded for 1 credit
10	Game Playtime	20	Game time in seconds settings less than 5 will convert to 5 automatically

* Values other than those shown in this table may be selectable from the set up menu; changing values for items not shown may affect machine reliability and operation.

Test Modes

AUTODEMO – Setting pole 8 of DIP sw 2 to on and restoring power to the machine will plsce the machine into autodemo mode. In this mode an operator can watch as the gantry and claw run through their paces to observe any out of the ordinary conditions the machine may experience. Please be aware that the claw does close during autodemo and the machine will dispense prizes do not allow to run unattended.

DISPLAY	ACTION
9	Gantry goes to home position*
2	Gantry Carriage runs to RIGHT limit
3	Gantry Carriage runs to BACK limit
4	Gantry Carriage runs to LEFT limit
5	Gantry Carriage runs to FRONT limit
6	Gantry Centers and Drops Claw,
8	Claw Closes and Lifts

*While at the home position the claw will close momentarily.

SYSTEM CHECKS-

Set all poles of DIP switch 2 to off, set the switch on the rear of the coin comparator to normally closed, and press the test button all while powering the machine on will enter a series of system checks. The display will show "CC" and activating the poles of DIP sw 2 will perform the tests listed in the table.

DIP SW 2	ITEM	Description
1	Display	Both display digits light single segments in step followed by each digit blinking all segments, one's digit first, then ten's digit.
2	DIP switches	Each pole on each DIP switches light a segment of the digital display, with the eighth pole causing all segments of the display to blink. Dip switch 1 is displayed on the right digit and DIP switch 2 on the left digit.
3	NOT USED	NOT USED
4	YM2413	Pressing any button steps through the music files.
5	API8108A	Pressing any button steps through the voice files
6	JFC95101	Pressing any button steps through the music and sound effects files
7	CLEAR RECORD	Digital display shows (**CL**) pressing any button clears the record of values stored on the board to be reset to zero.
8	ENTER VALUES	Digital display shows (**Ld**) flashing, when the flashing stops values on the board are stored in memory.

CLAW STRENGTH

With the unit off set one of the switches on the rear of either coin comparator to normally closed and then power up the unit. The digital display will show (**CO**). The comparator switch can be returned to normally open. Follow the table below to check voltages going to the claw.

| JOYSTICK POSITION	ITEM TESTED	DIGITAL DISPLAY
PUSH BACK	VR1	C1
PUSH RIGHT	VR2	C2
PULL FRONT	CLAW Voltage (MAX)	C3

GANTRY

Presing the "test" button located next to power switch during power up starts the machine in gantry test mode. The display will initially show "A0", moving the joystick in the directions shown in the table will move the gantry as listed. LIMIT SWITCHES ARE NOT ACTIVE IN TEST MODE THE GANTRY CAN BE DAMAGED IF MOTORS ARE RUN PAST THEIR STOP POINTS ONLY QUALIFIED PERSONNEL SHOULD PERFORM THIS TEST.

JOYSTICK POSITION	ACTION	DIGITAL DISPLAY
PULL FRONT	Claw Lowers	**a3**
PUSH BACK	Claw Raises	**a4**
DESCEND BUTTON + JOYSTICK RIGHT	Carriage moves right	**b1**
DESCEND BUTTON + JOYSTICK LEFT	Carriage moves left	**b2**
DESCEND BUTTON + JOYSTICK BACK	Gantry moves back	**b3**
DESCEND BUTTON + JOYSTICK FRONT	Gantry moves forward	**b4**

ERROR CODES

ERROR CODE	EXPLANATION
E1	Gantry error stop up switch
E3	Gantry error stop down switch
E9	Accounting meter error
Eb	Flap door error on closing
En	Flap door error on opening
Ee	Prize sensor error

CLAW CORD WINDING INSTRUCTIONS

CORRECT

TO CLAW

TO CLAW
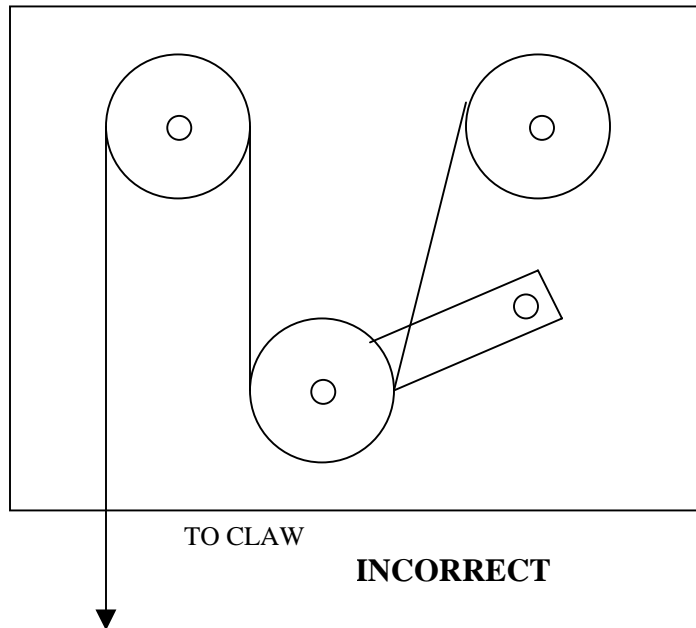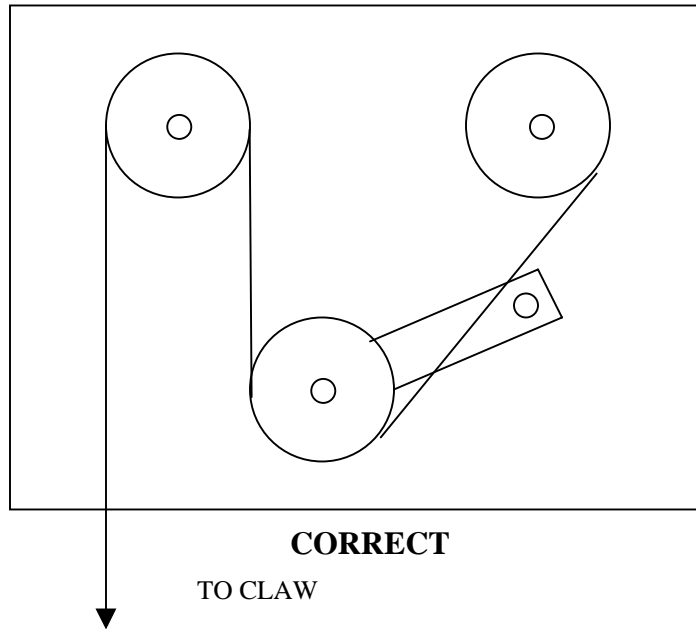
INCORRECT

When the display shows (**d**) after power up and display test, the claw cord is wound incorrectly. Press the "test" button while powering up the machine, the display will now show (**a0**). Push the joystick back the display will show (**a4**) and the claw will lower. Lower the claw until all the cord has unwound from the wheel. Turn the machine off, and then power up. The cord should wind correctly. *NOTE: The cranes software will adjust to allow an incorrectly wound cord to continue to function however this will greatly reduce the lifespan of the claw cord.*

COOL AGE CRANE TROUBLE SHOOTING

1. *Upon receipt of your crane all packing materials should be carefully removed. Care should be taken to ensure that ALL ties securing the claw and gantry are removed BEFORE operation is attempted. The unit should be placed on a smooth level surface and the wheel locks engaged to prevent accidental movement or "tilting" during game play.*

2. *This unit is designed FOR INDOOR USE ONLY exposure to the elements **will** cause premature failure.*

3. Any repairs or maintenance that your crane may require should only be carried out by **FULLY QUALIFIED PERSONNEL** failing to do so may result in unnecessary damage to the machine or injury. Contact Coastal Amusements with any concerns that you may have.

> By Phone: (732)-905-6662
>
> By Fax: (732)-905-6815
>
> Via Email: service@coastalamusements.com
>
> Our Mailing address: Coastal Amusements
>
> 1935 Swarthmore Ave.
>
> Lakewood NJ 08701 U.S.A.

4. *Caution should be taken to observe power supply polarity when repairing this machine, damage to components can occur from improper connections. Precautions should be taken when handling integrated circuits (chips) to avoid static discharge; machine should always be powered off before changing any components.*

5. **Coin Comparator will not accept coins/tokens**.- If coins cannot be inserted into slot check slot for debris or damage. Check that a comparison coin has been inserted in the correct slot in the coin comparator. Ensure that coin comparator is compatible with coin/ tokens being used.

6. **Coins/ Tokens are returned after insertion or no credit is given after coin insertion**.

    a. Check that coins/tokens are not malformed or damaged.
    b. Check that wiring harness is correctly connected to coin comparator.
    c. Check that "comparison" coin is of correct type and that it is inserted correctly (not cocked) in slot.
    d. Check that comparator model is compatible with coins/tokens being used

7. **No credit after coin/token insertion-**

    a. Ensure that coin path is clear and aligned from coin comparator to cash box.
    b. Check that J8 is connected properly to main logic board.

8. Crane Claw does not "drop"-

a. Cord is improperly wound. Hold "stop- down" switch located on gantry (Item 28 Gantry & Assembly II), cycle power taking care that hands and fingers are not in a position to be pinched or otherwise injured, the cord should wind correctly.
b. Check that claw cord is not "out of track" if it is, hand wind cord correctly (see cord winding instructions pg. 12 of manual) normal operation should be restored. *Note: Front and Top gantry covers must be unscrewed and removed in order to access claw cord.*
c. Activation of "tilt" due to excess shaking play can cause this error code to appear.

9. If display shows C0 blinking-

a. Coin comparator switch is in wrong (normally closed) position; restoring switch to normally open and cycling power should restore normal operation.
b. Attempts to "fool" the coin comparator can also cause the display to blink **C0.** A shorted or blocked coin comparator can also cause this condition.

10. Gantry does not "home" properly-

a. Cycling power should restore normal operation, If it does not then check back or front depending on home position and left stop switches (Gantry &Assembly I items #23, #22 and #21 respectively).
b. The main logic board has developed a fault.

11. Gantry does not move front or back with joystick operation-

a. Ensure that the front back switches of the joystick are connected and operating properly.
b. Check that J1 is properly connected to main logic board.
c. Check front and back stop switches (Gantry assembly I #'s 22 & 23 respectively) for correct operation and harness connection.
d. Check front/back motor for proper operation and correct connection to harness.
e. Check front/back fuse.
f. Ensure that shaft pinion (Gantry assembly I # 13) is properly positioned.
g. Check that J4 is properly connected to main logic board and that no pins are damaged or missing.
h. Check all connections along gantry harness.

12. Gantry does not move left or right-

a. Ensure that the left right switches of the joystick are connected and operating properly.
b. Check that J1 is properly connected to main logic board.
c. Check that left stop switch is connected and operating properly.
d. Check left/right motor for proper operation and correct connection to harness.
e. Check left/right fuse.
f. Ensure that shaft pinion (Gantry assembly II # 24) is properly positioned.
g. Check that J4 is properly connected to main logic board and that no pins are damaged or missing.
h. Check all connections along gantry harness.

13. Claw does not descend upon pushing "drop" button, only when game times out-

a. Check "drop" button for proper operation and connection to harness.
b. Check that J1 is properly connected to main logic board.

14. Claw does not drop down at all-

a. Check up/down motor for proper operation and correct connection to harness.
b. Check up/ down fuse.
c. Ensure that shaft pinion (Gantry assembly II # 19) is properly positioned.
d. Check that J4 is properly connected to main logic board and that no pins are damaged or missing.

15. Claw does not drop or does not travel a to game floor before stopping-

a. Check for stuck, knotted, or otherwise obstructed claw cord.
b. Check stop up (Gantry assembly II # 29) switch for proper function and connections. * *Stop up switch is normally closed as opposed to the other stop switches.*
c. Ensure that claw cord is of proper length.

16. Claw does not release prizes upon returning to "home" position-

a. Depending on home position check either front or back and left stop switch for proper function and connection. (Gantry &Assembly I items #23, #22 and #21 respectively)
b. Check that J4 is properly connected to main logic board and that no pins are damaged or missing.

17. Claw does not return to up position, gantry moves to "home" position.

a. Check stop down switch for proper operation and connections.

**18. Claw does not return to up position, no gantry movement-**

a. Check up down motor for proper function and connections.
b. Check up/ down fuse.
c. Ensure that shaft pinion (Gantry assembly II # 19) is properly positioned.

19. Claw does not close, gantry returns to home position-

a. Check 48V on power supply.
b. Check claw fuse.
c. Check coil continuity and connections.
d. Ensure VR1 &VR2 are set correctly.

GANTRY ASSEMBLY DRAWINGS I

ITEM #	DESCRIPTION	COASTAL PART #	WU-MAR PART #
1,3,18,20	Front/Back Wheel	PE-WHL-FB-002	S002
2,19	Crane Fixing Plate		P008
4	Right Plate		P015
5	Fixed Bearing		S004
6	Rotating Shaft		S014
7,8	Fixed Shaft		S013
9	Black Cog	PE-GEA-SHT-001	S007
10	Bearing mounting Plate		P007
11	Bearing	PE-BEA-GAN-S001	S001
12	Motor Mounting Bracket		P006
13	Motor Shaft Pinion	PE-SHT-PIN-S016	S016
14	Front/Back Motor	PE-MTR-F/B	SE5475M-21145-30Y
15	Stop Left Switch Bracket		P004
16	Left Cover Plate		P014
21	Stop Left switch		
22	Stop Front switch	PE-SWI-GA-PL	
23	Stop Back switch		
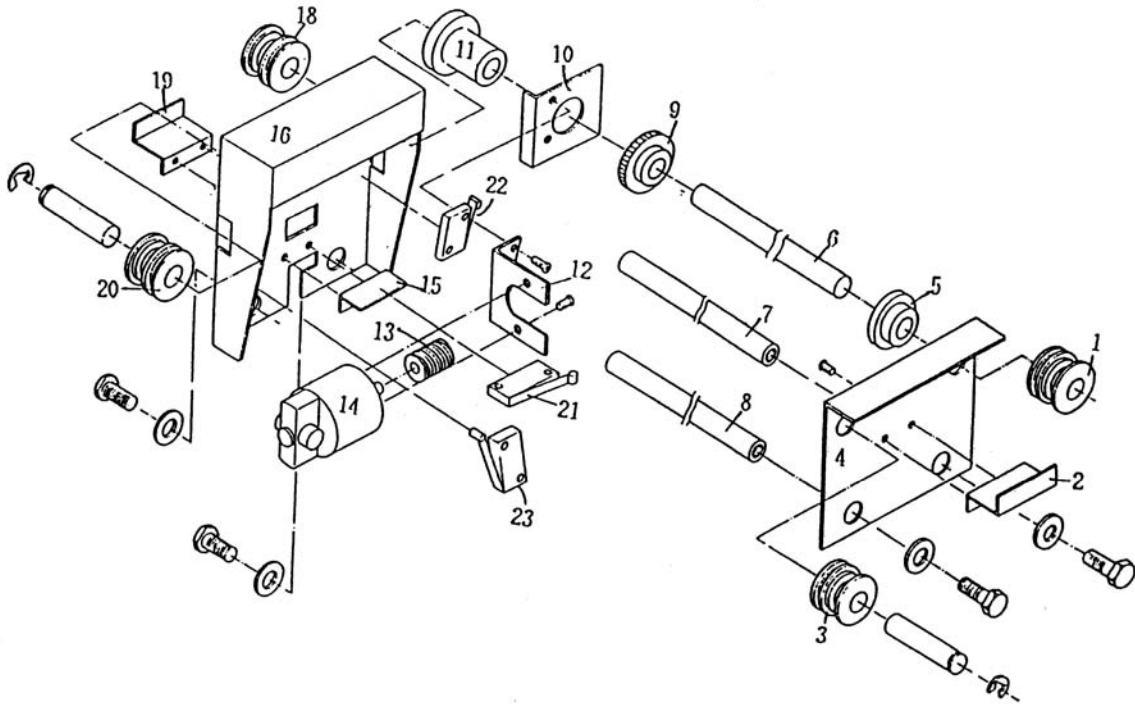
GANTRY ASSEMBLY DRAWINGS II

ITEM #	DESCRIPTION	COASTAL PART #	WU-MAR PART #
1	Carriage Rear Cover		P013
2	Rotating Shaft		S008
3	Rotating Shaft		S009
4,5,21,22	Left/Right Wheel	PE-WHL-L/R-006	S006
6	Claw Cord Wheel	PE-WOW-S003	S003
7,9	Claw Cord Pulley	PE-WHL-GAN-3005	S005
8	Claw Pulley Mounting Arm		P009
10	Steel Motor mounting Plate		P001
11,12	Bearing	PE-BEA-GAN-S001	S001
13	Middle Bearing Bracket		P003
14,15	Black Cog	PE-GEA-SHT-007	S007
16,23	Motor Mounting Bracket		P006
17	Conduit		S015
18	Up/Down Spring		L002
19,24	Motor Shaft Pinion	PE-SHT-PIN-S016	S016
20	Up/Down Motor	PE-MTR-U/D	SE5075M-27095-30Y
25	Left/Right Motor	PE-MTR-L/R	SE5475M-21145-30Y
26	Carriage Front Cover		P012
27	3- Claw Kit (coil included)		
28	Stop Down Switch	PE-SWI-GA-PL	
29	Stop Up Switch	PE-SWI-PC-OP29	
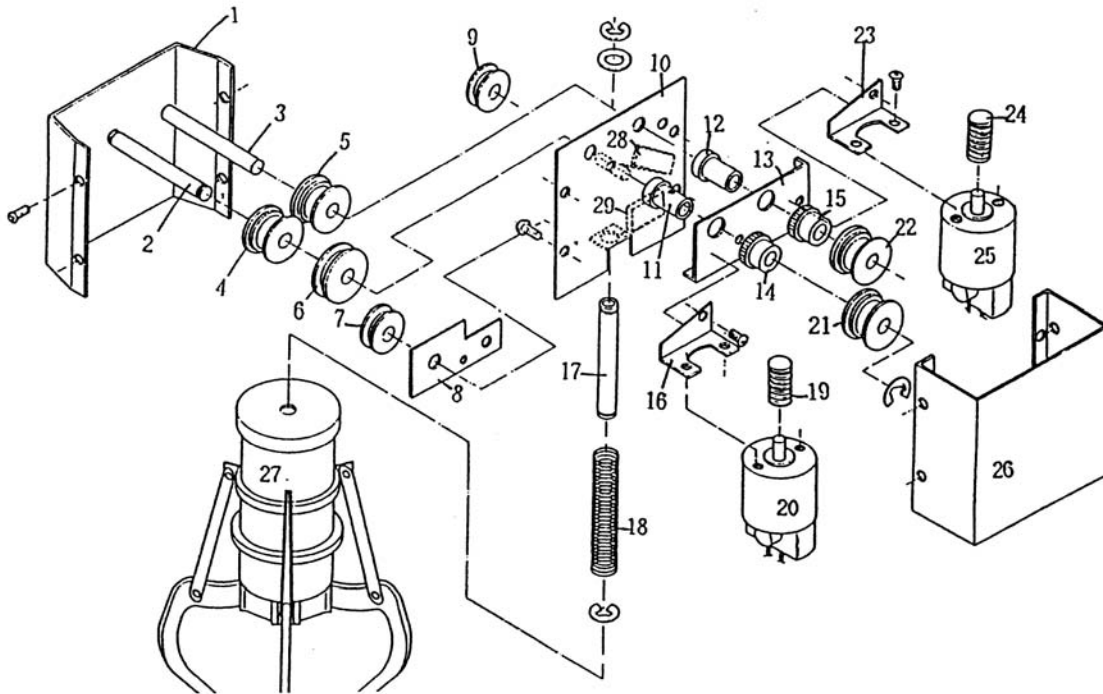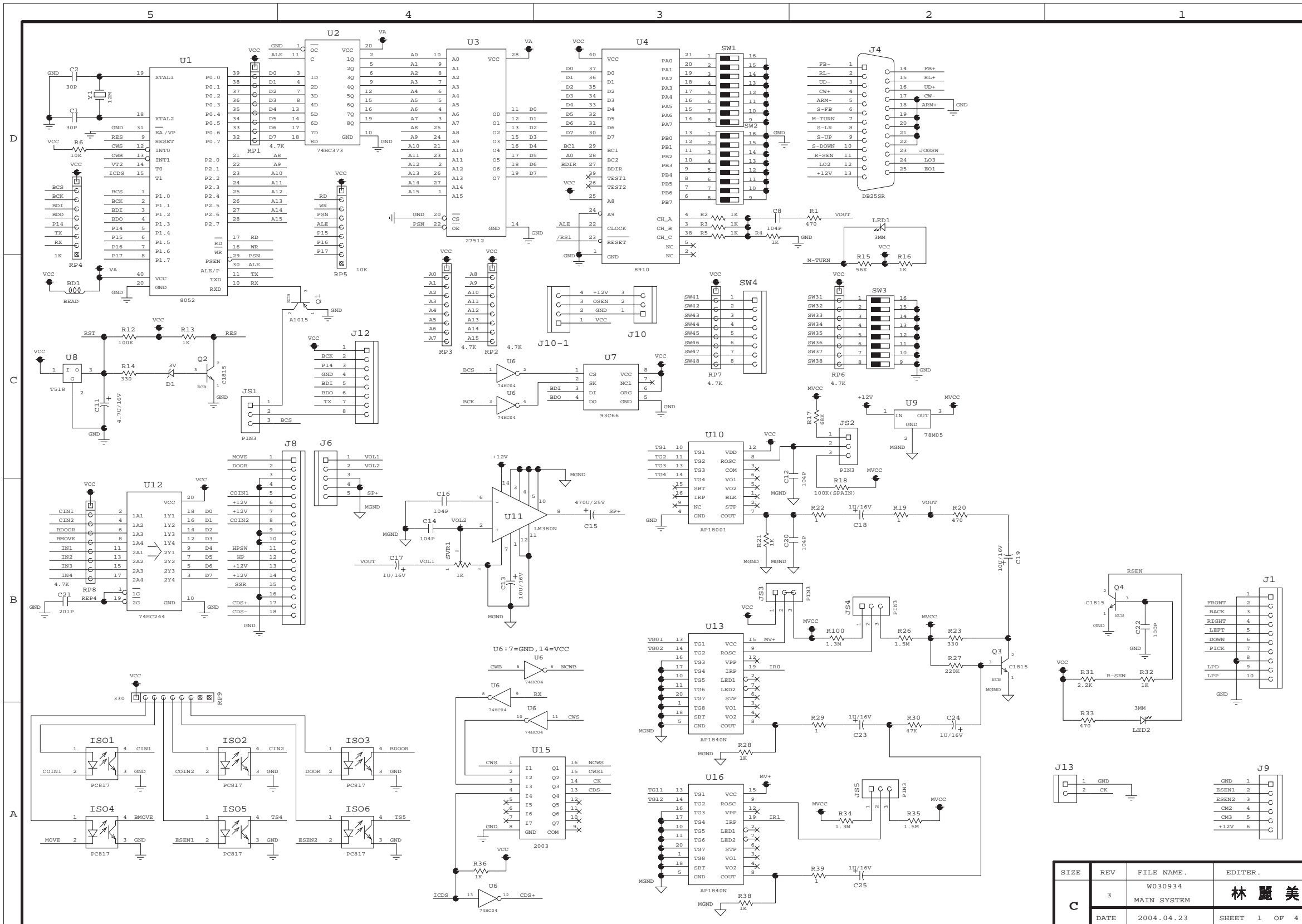
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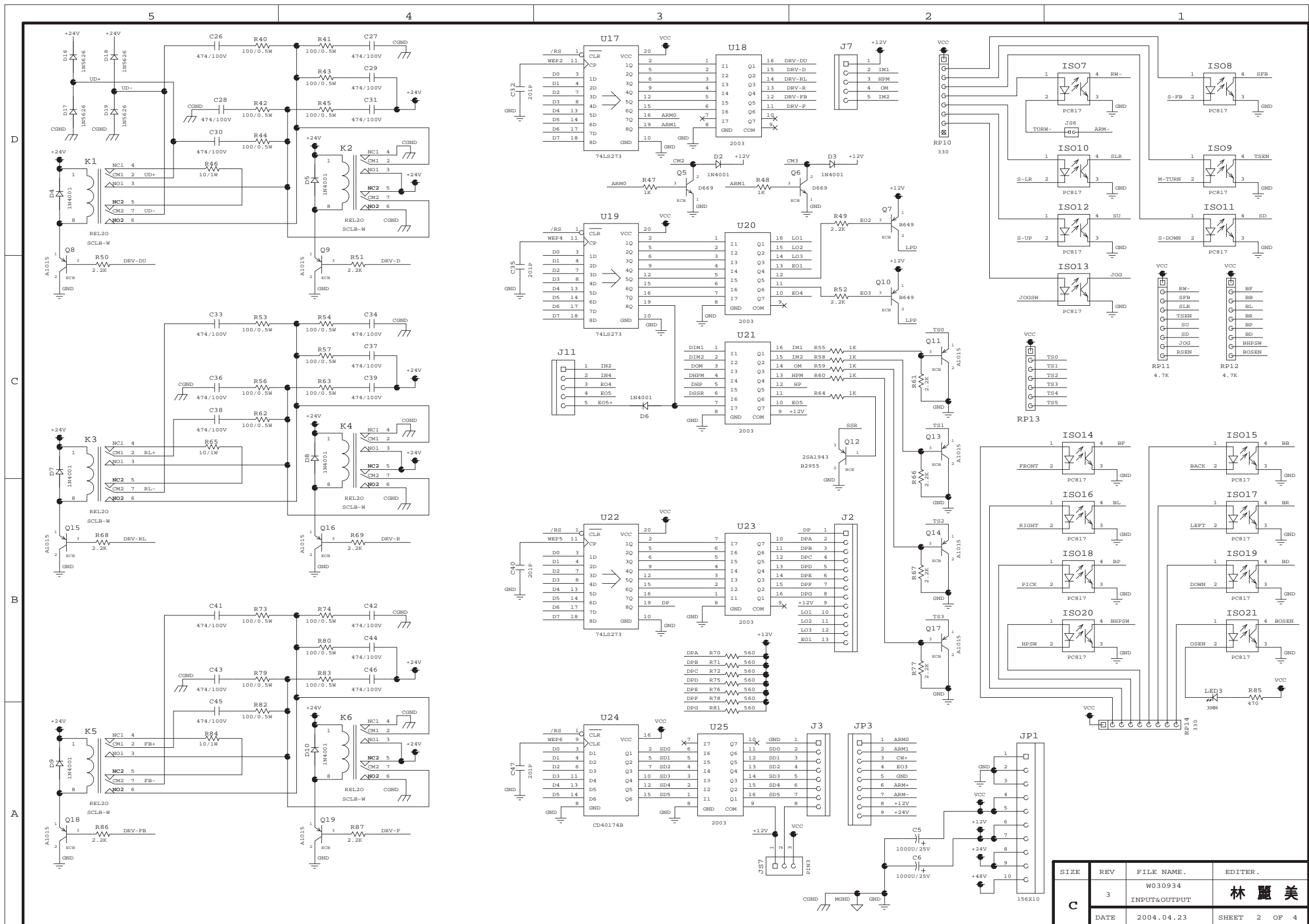
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	DATE	2004.04.23	SHEET 2 OF 4
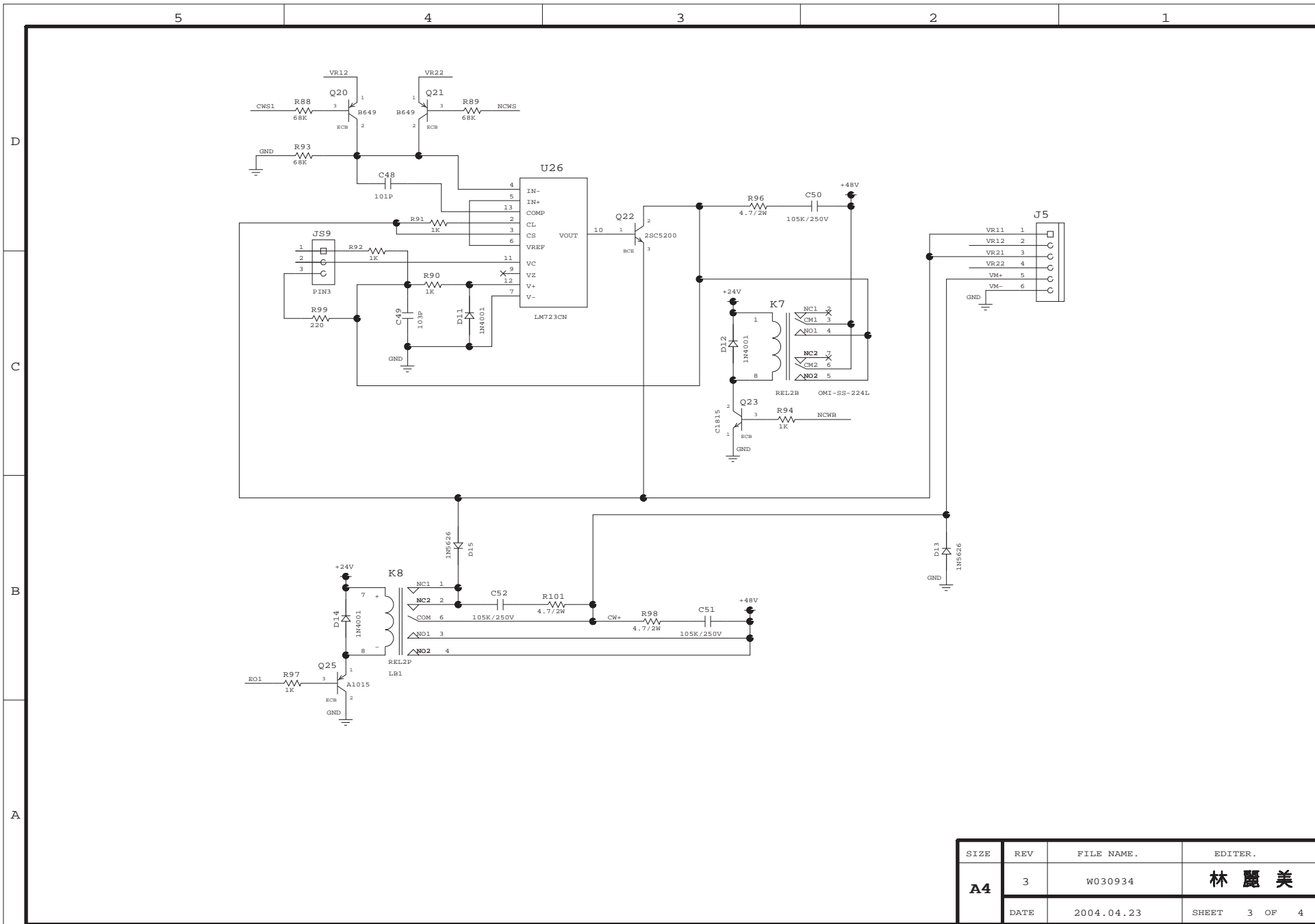
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	DATE	2004.04.23	SHEET 3 OF 4

SIZE	REV	FILE NAME.	EDITER.
A4	3	W030934	林 麗 美
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