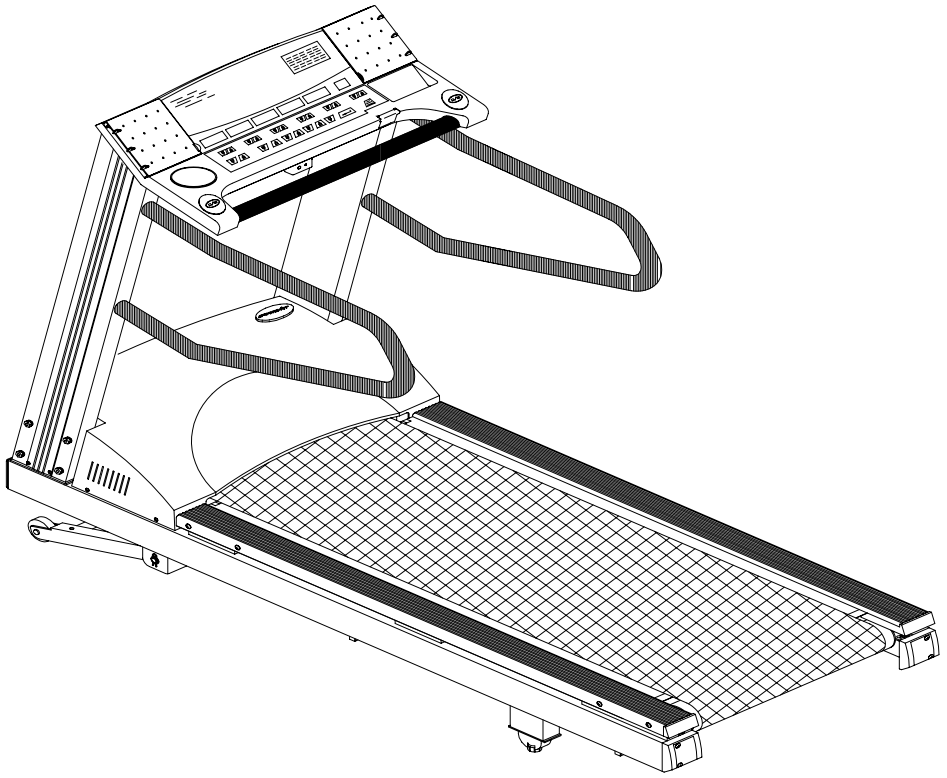
SPORTSART

6200 Treadmill Repair Manual



SPORTS ART INDUSTRIAL CO., LTD.

6200 Treadmill Repair Manual

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6200N Treadmill

1. Treadmill Illustration

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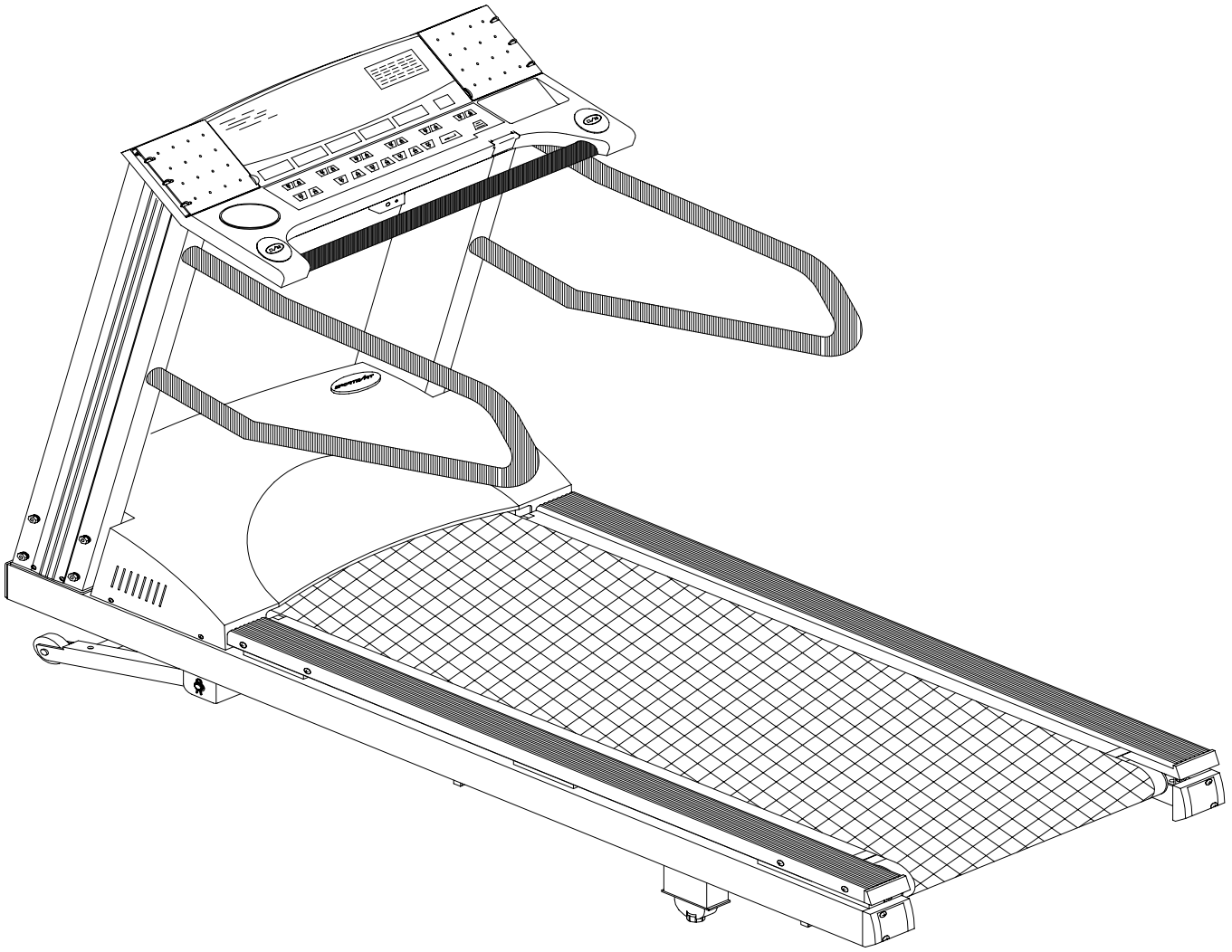
6200N Treadmill Illustration



6200N Treadmill

2. Electronic Component Locations

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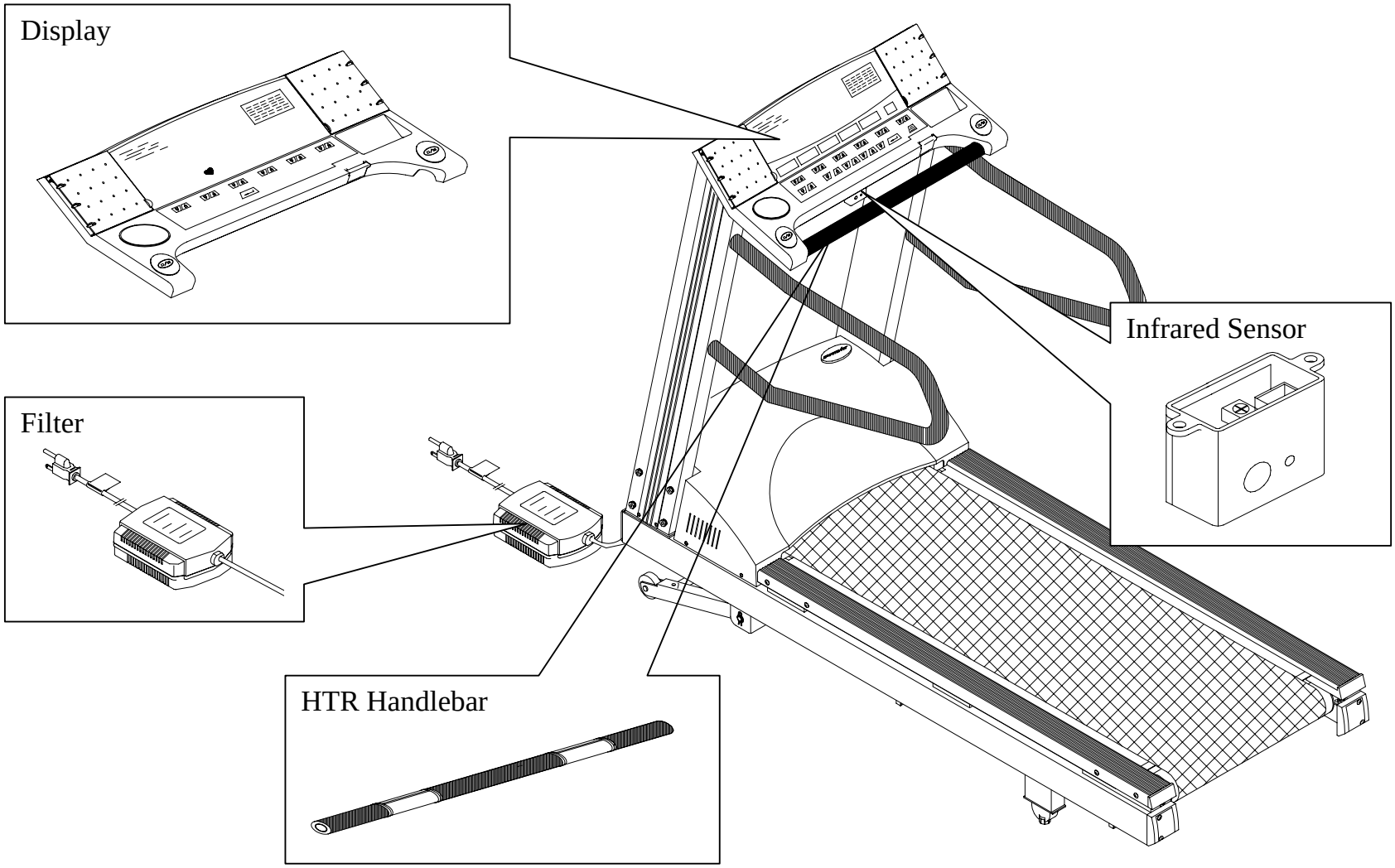
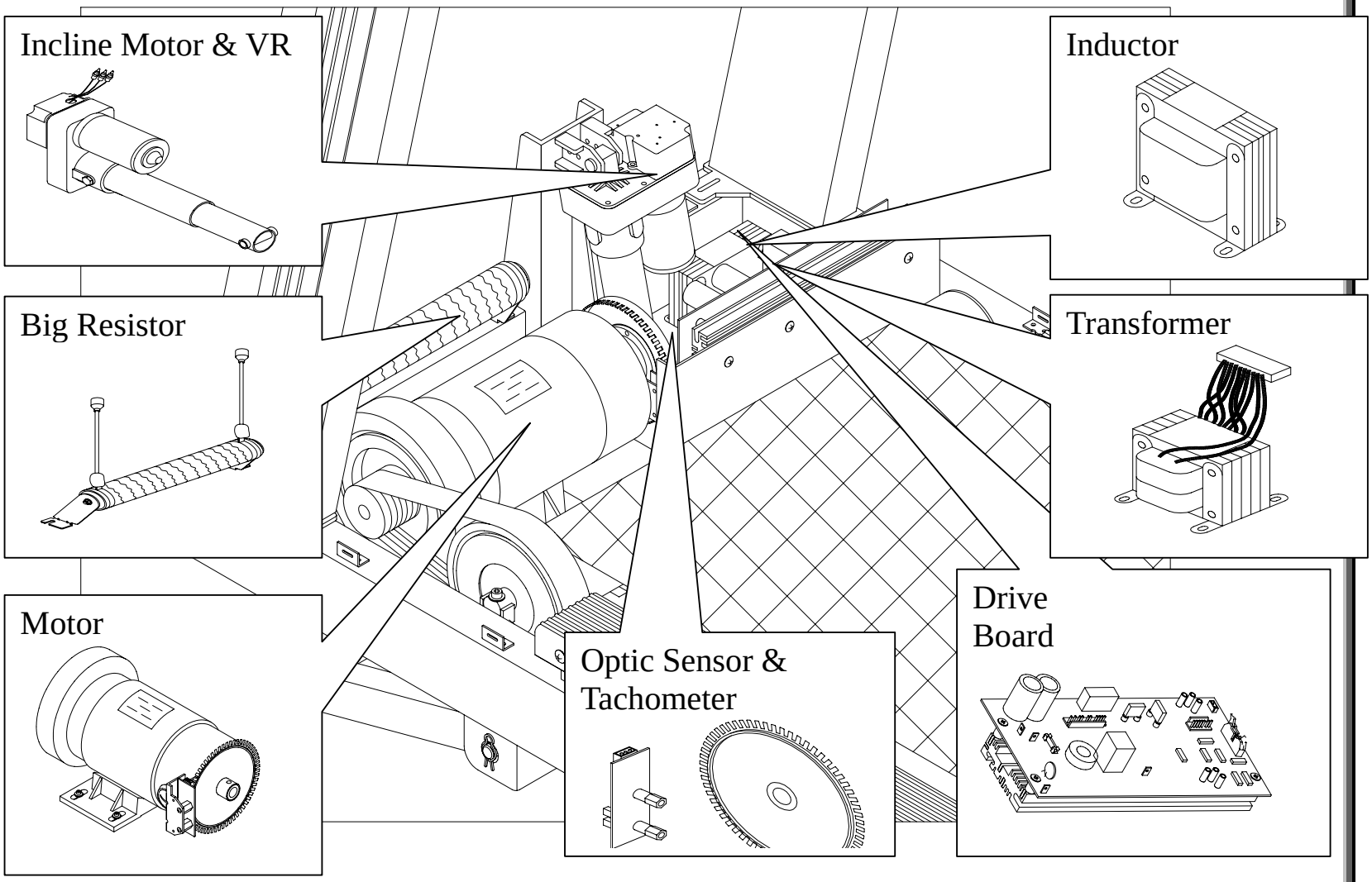
2-1. 6200N Treadmill Component Location Illustration – Upper Part



2-2. 6200N Treadmill Component Location – Lower Part



6200N Treadmill

3. Introduction

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3. Model Introduction

3-1. Introduction

6200N Treadmill is a club unit with microcomputer control. Functions include calorie and distance count, heart rate, time, speed, and incline.

The 6200N Treadmill has a low speed of 0.2 KPH (0.1 MPH) and a high speed of 20.0 KPH (12.0 MPH). In addition to forward motion, the 6200N Treadmill walk belt can also operate in reverse, at speeds from a low of 0.2 KPH (0.1 MPH) to a high of 5.0 KPH (3.0MPH).

The 6200N Treadmill has an infrared sensor that detects whether a user is on the unit. If no one stands on the treadmill, the display enters a wait mode. If the sensor detects a user, the display goes into action.

The 6200N Treadmill has an advanced STOP touch switch. To stop the treadmill belt when in use, lightly touch the STOP touch pad; the unit will stop all action.

The 6200N Treadmill simulates running on various incline surfaces. The highest incline level is 22%, whereas the lowest level is -3% incline.

The 6200N Treadmill offers the use of two heart rate modes, the HTR handlebar and the POLAR strap, both of which allow users to monitor their heart rate as they exercise.

2. Main Functions

2-1.Calorie Window Function

2-1-1. Shows the user calorie expenditure.

2-1-2. In Calorie expenditure countdown mode, at 0, the display “beeps” once.

2-2.Heart Rate Window Function

2-2-1. Shows the heart rate value.

2-2-2. Allows for use of the POLAR heart strap or built-in HTR handlebar.

2-3.Distance Window Function

2-3-1. Shows the distance covered by the user.

2-3-2. In Distance countdown mode, at 0, the display “beeps” once.

2-4.Time Window Function

2-4-1. Shows the length of time exercised.

2-4-2. In Time countdown mode, at 0, the display “beeps” once.

2-5.Speed Window Function

2-5-1. Shows the treadmill walk belt speed.

2-5-2. Treadmill walk belt speed setting ranges from a low speed of 0.2 KPH (0.1MPH) and high speed of 20.0 KPH (12.0MPH).

2-5-3. Treadmill walk belt can operate in forward or reverse directions.

2-6.INCLINE Window Function

2-6-1. Shows incline position.

2-6-2. Incline setting is adjustable.

2-6-3. The highest incline setting is 22%; the lowest incline setting is -3%.

2-7. Infrared Sensor Function

2-7-1. Automatically detects whether a user is on the unit.

2-7-2. If no user is on the unit, the unit goes into “wait” mode; If a user is on the unit, all functions are activated.

2-8. The TOUCH STOP Function

2-8-1. Lightly touch the STOP pad; The treadmill belt immediately stops operating.

2-8-2. A light touch is sufficient to operate the STOP function.

3. Specifications

Specifications Name	Details	Notes
Power	Exterior Power Source: 110V or 220V	
Window Functions	CALORIES，HEARTRATE，DISTANCE TIME，SPEED，INCLINE, etc., Function Windows	
Speed Modes	Forward Motion; Reverse Motion	
Speed Range	Forward Speed 0.2 - 20.0 KPH or 0.1 - 14.0 MPH Reverse Speed 0.2 – 5.0 KPH or 0.1 - 3.0MPH	
Incline	-3% to 22%	
Sensor	Infrared Sensor	
STOP Switch	Touch Stop Switch	
Heart Rate Modes	HTR Handlebar POLAR Transmitter	
KPH/MPH Setting	Display Board Jumper Setting	
CARDIO Function	CARDIO Power Supply Socket	

6200N Treadmill

4. Product Operation

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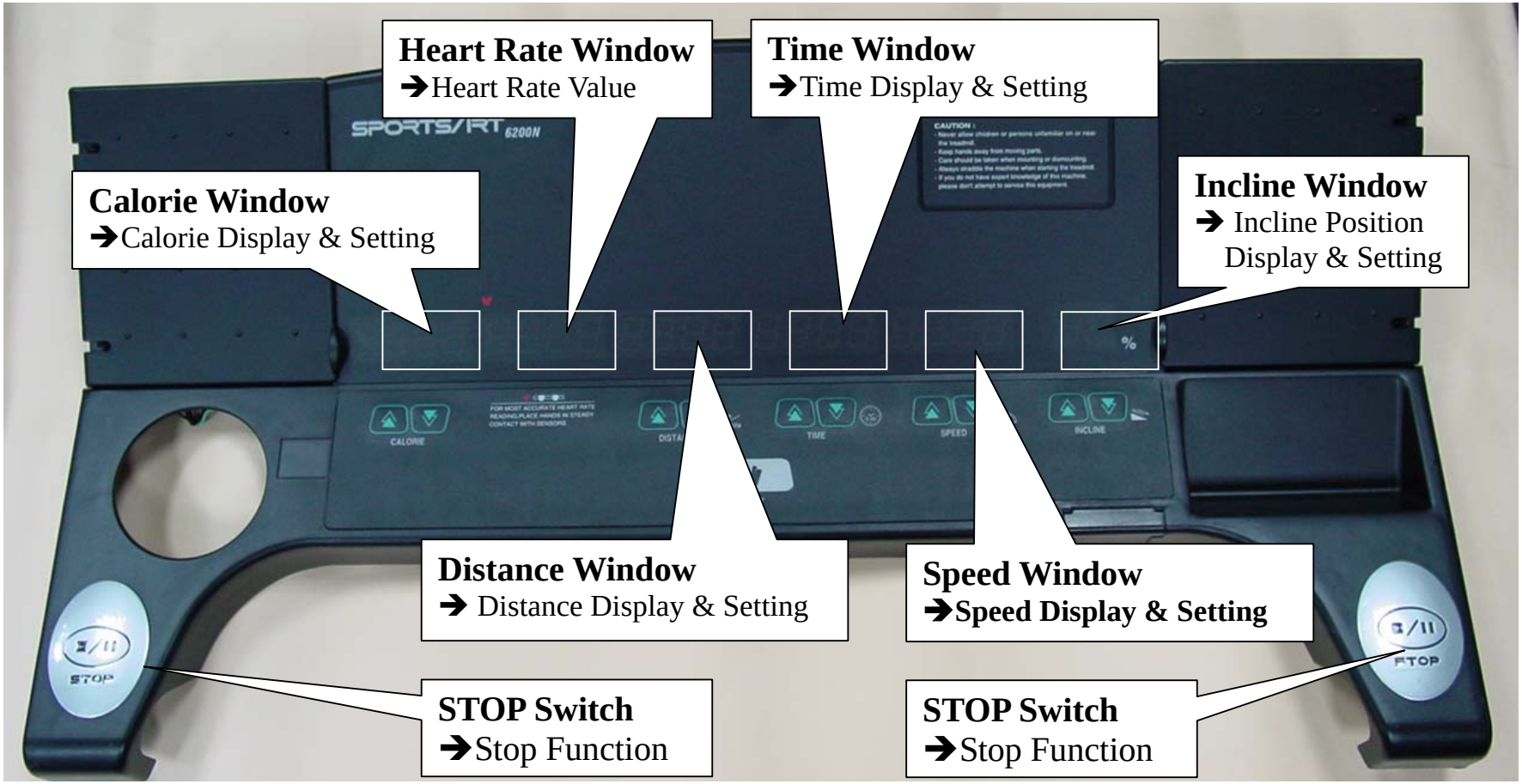
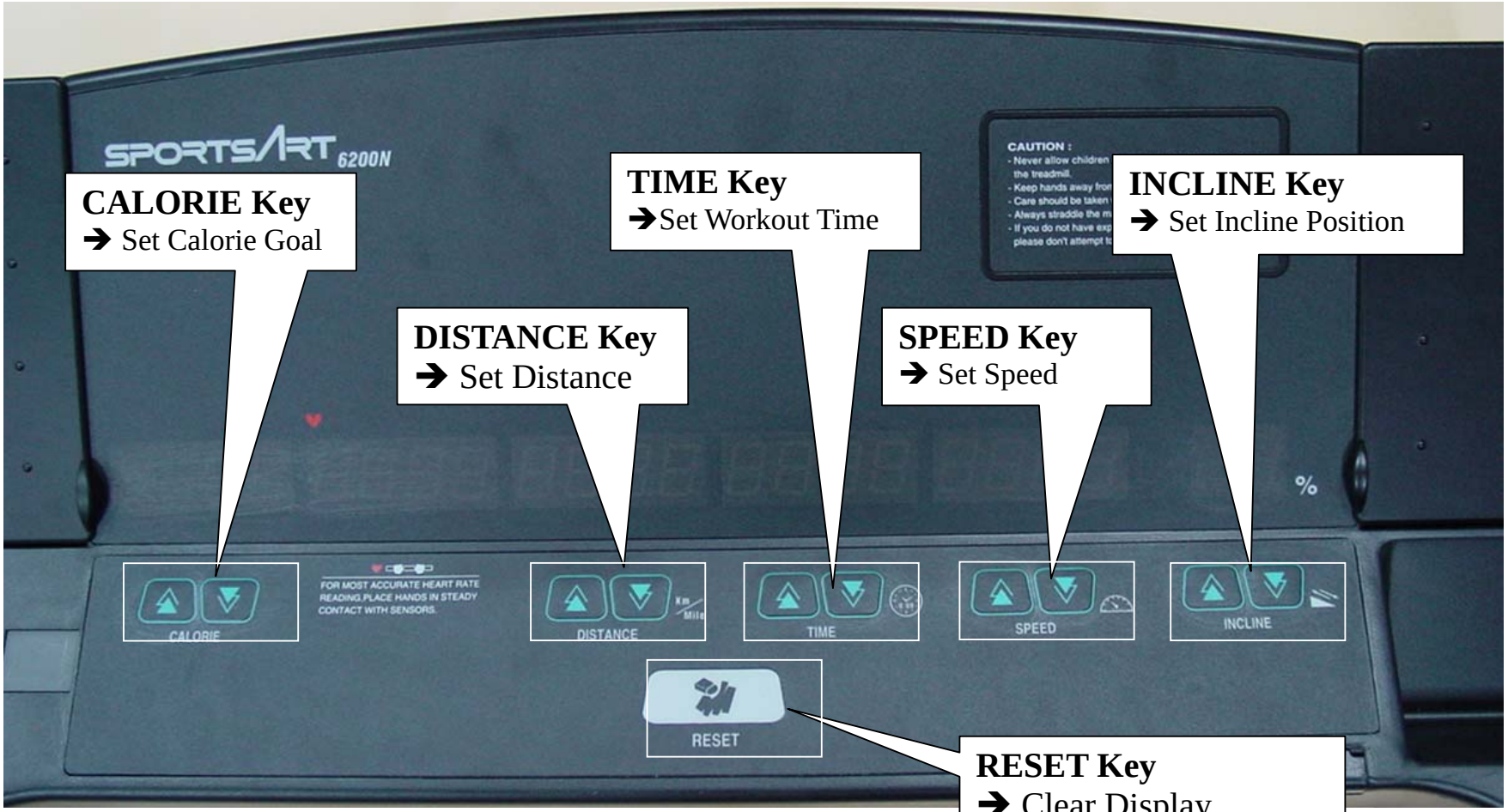
6200N Treadmill Operation

1. Display Windows



4-1-2 Soft Key Locations



2. Display Function Modes

1. CALORIE Window Functions：

   Functions：1. Displays user calorie expenditure value
   2. Set calorie count value

   Explanation：1. Display board CPU calculates calorie expenditure using factors including TIME, SPEED, WEIGHT.
   2. When set to count down calories, the display “beeps” once when the calorie expenditure goal is reached.

   Operation：1. Press SPEED<▲>/<▼> key to set the SPEED value. The calorie window shows the Calorie value.

2. Press the Calorie <▲>/<▼> key to set the Calorie value. The calorie window resets and the display beeps once.

3. HEART RATE window function：

   Function：1. Display the user heart rate.

   Explanation：1. Once the heart rate is detected, the heart rate window shows the heart rate value.
   2. There are two ways to detect heart rate: by use of the POLAR strap or by holding the Heart Touch Rate Bar.

   Operation：1. The user straps on the POLAR heart rate transmitter and exercises within 100 cm of the display. The heart rate window shows the heart rate value.
   2. The user holds the HTR bars, one in each hand. The heart rate value appears on the display.

4. DIST Window

   Function：1. Display the distance covered by the user.
   2. Calorie count reset value.

Explanation：1. The display uses the TIME and SPEED value to calculate the distance.
2. When set to count down distance, the display makes a “beep” sound when the distance value resets.

Operation：1. Press the Speed<▲>/<▼> keys to set the Speed value. In operation, the display shows the distance covered.
2. Press the Dist<▲>/<▼> keys to set the distance countdown value. When the distance window resets, the display makes a “beep” sound.

1. TIME Window

Function：1. Shows the length of time the user has exercised on the treadmill.
2. Set the time count reset value.

Explanation：1. The display automatically calculates the length of time in use.
2. In Time countdown mode, the display makes a “beep” sound when the value resets.

Operation：1. Press the Speed<▲>/<▼> key to set the Speed value. In operation, the Time window shows the length of the exercise time.
2. Press the Dist<▲>/<▼> key to set the Distance countdown value. The display makes a “beep” sound when the Distance value resets.

2. SPEED Window

Function：1. Sets the treadmill speed.
2. Sets the direction of the treadmill walk belt.

Explanation：1. If the SPEED window shows a positive number, like “1.0” or “6.0”, the treadmill walk belt rotates for use in a forward (not backward) direction.
2. In forward rotation, the speed range is 0.2-20.0 KPH or 0.1-12.0 MPH.

3. If the SPEED window shows a negative number, like “-1.0” or “–6.0”, the treadmill operates for use in a reverse (backward) direction.
4. In reverse, the speed range is -0.2 to -5.0 KPH, or -0.1 to -3.0 MPH.
5. Press the SPEED<▲>/<▼> key to set the SPEED value.
6. In reverse, the highest incline is 3%.

Operation：1. To change from forward to reverse operation,

(1) press the SPEED<▲> key until the SPEED window shows 0.2 KPH (or 0.1 MPH).
The treadmill walk belt moves slowly.

(2) Continually press the SPEED<▲> key until the SPEED window shows 20.0 KPH (or 12.0 MPH).
The treadmill operates at high speed.

(3) Continually press the SPEED<▼> key until the SPEED window shows 0.2 KPH (or 0.1 MPH).
The treadmill slows until the slowest forward speed is reached.

2. Reverse Operation

(1) Simultaneously press Calories <▼>+Distance<▼> keys twice. The display makes a “beep” sound; the SPEED window shows “-0.0” to indicate reverse mode.

(2) Press the SPEED<▲> key until the SPEED window shows “-0.2” KPH (or -0.1 MPH).
The treadmill belt moves in reverse at low speed.

(3) Press SPEED<▲> until the SPEED window shows “-5.0” KPH (or -3.0 MPH).
The treadmill belt operates in reverse at a higher speed.

(4) Press the SPEED<▼> key until the SPEED window shows “-5.0” KPH (or -3.0 MPH).
The treadmill walk belt slows.

(5) Continuously press the INCLINE<▲> key. The INCLINE rises to the 3% position.

6. INCLINE Window

Function：1. Shows the present treadmill incline position.

2. Sets the treadmill incline position.

Explanation：1. The display automatically calculates the unit incline position.

2. Press the incline key to set the incline position.

3. Incline position ranges from -3% to 22%.

Operation：1. Press the INCLINE<▲> key until the INCLINE window shows 22%.

The unit incline rises to the highest position.

2. Press the INCLINE<▼> key until the INCLINE window shows 0%.

The unit incline falls to the level position.

3. Press the INCLINE<▼> key until the INCLINE window shows -3%.

The incline falls to the lowest (a negative) position.

7. RESET Key

Function：1. Resets all display functions.

2. Clears all display windows to the 0 value, except for incline.

Explanation：1. Press the RESET key; the windows erase to 0, except for incline.

2. All display functions stop operating and reset.

Operation：1. Press the <RESET> key. The display makes a “beep” sound once.

Various windows flash. Display values clear to 0 (except for incline).

8. The Infrared Sensor Function

Function：1. Inspects whether anyone is standing on the treadmill before starting the display.

Explanation：1. If the infrared sensor switch is set to “0”, the infrared sensor does not operate.
The display operates normally.
2. If the infrared sensor switch is set to “1”, the infrared sensor is activated.
3. When the infrared sensor is activated, if no one is standing on the treadmill , the display windows show “----” and the unit does not operate.
4. When the infrared sensor is activated and someone is on the treadmill, the display windows show “0000” and all functions operate.

Operation：1. With the infrared sensor switch set to the “off” position,
(1) Set the infrared sensor switch to “0”. Stand on or off the treadmill, the display shows 0.
2. With the infrared sensor set to the “on” position,
(1) Set the infrared sensor switch to “1”. Don’t stand on the treadmill. The treadmill Display shows “----”. Press any key. The treadmill doesn’t operate.
(2) Stand on the treadmill. The display windows show “0000”. Press any key. The treadmill operates normally.

6. STOP Switch

Function：1. Stops all treadmill operation.

Explanation：1. When the display left or right STOP switch is hit, the drive and incline motor functions immediately stop.
2. The SPEED window shows 0. The INCLINE window shows the incline position at the time the unit stopped operating.

Various window values stop counting. Values remain on the screen and do not show 0.

Operation：1. Press SPEED<▲> key. The treadmill belt starts moving. Calorie, Distance, and Time windows start counting.

2. Tap the display STOP switch. The motor stops turning. The SPEED window shows 0.0. Window values remain.

6200N Treadmill

5. Unit Block Diagrams

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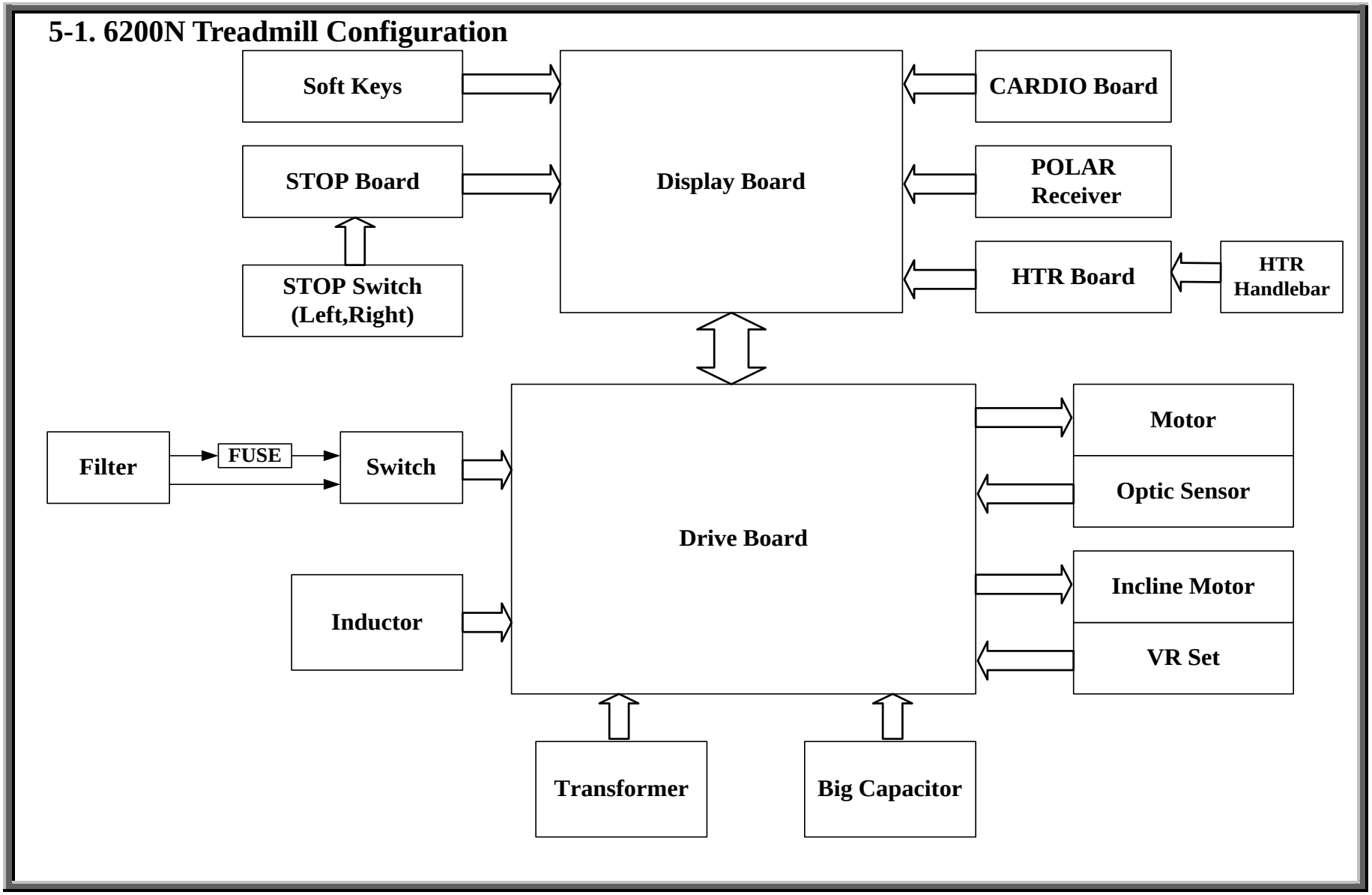
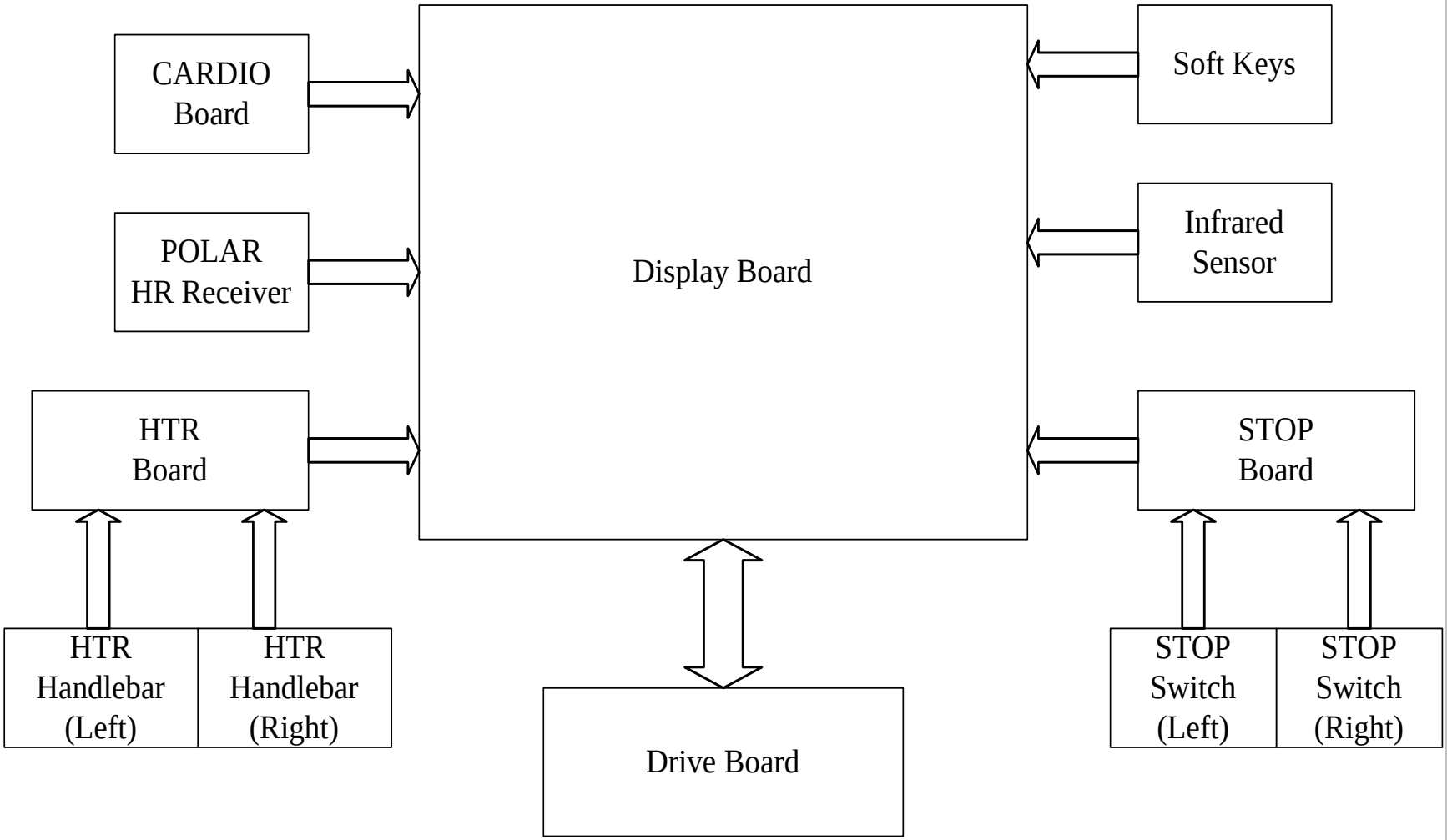
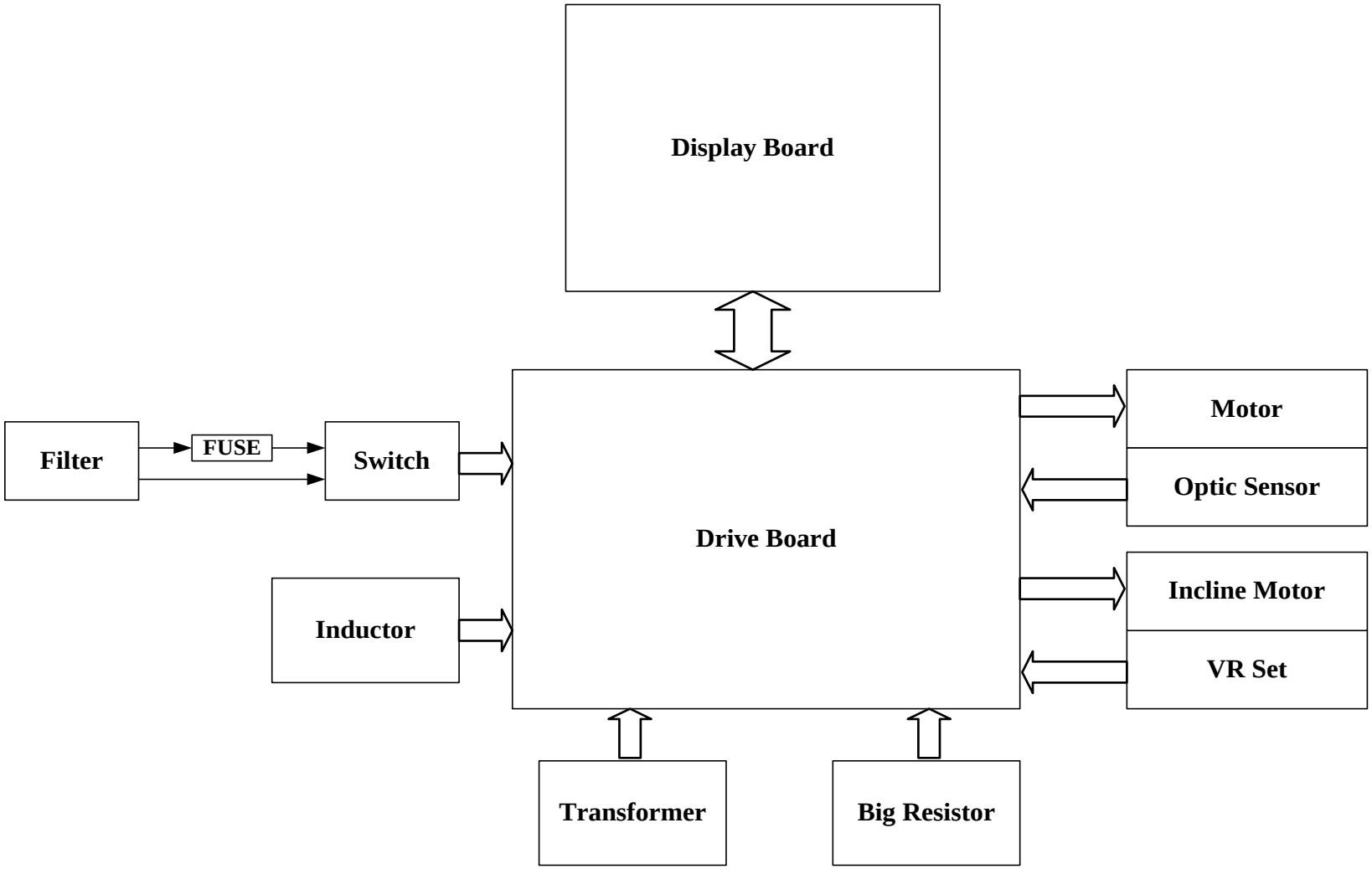
5-1. 6200N Treadmill Configuration



5-2. Display Board Wire Connections



5-3. Drive Board Wire Connections



6200N Treadmill

6. Basic Connections

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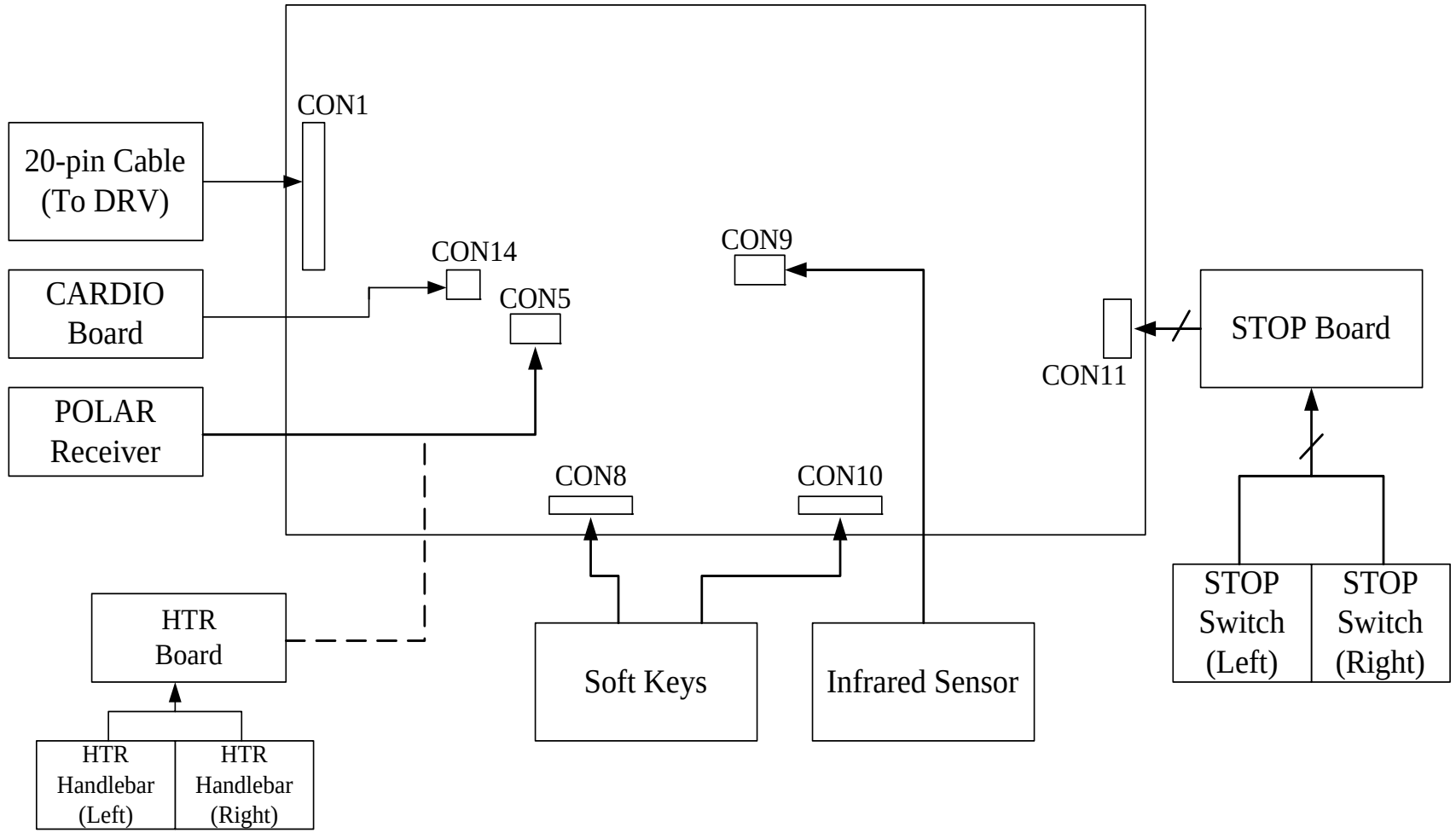
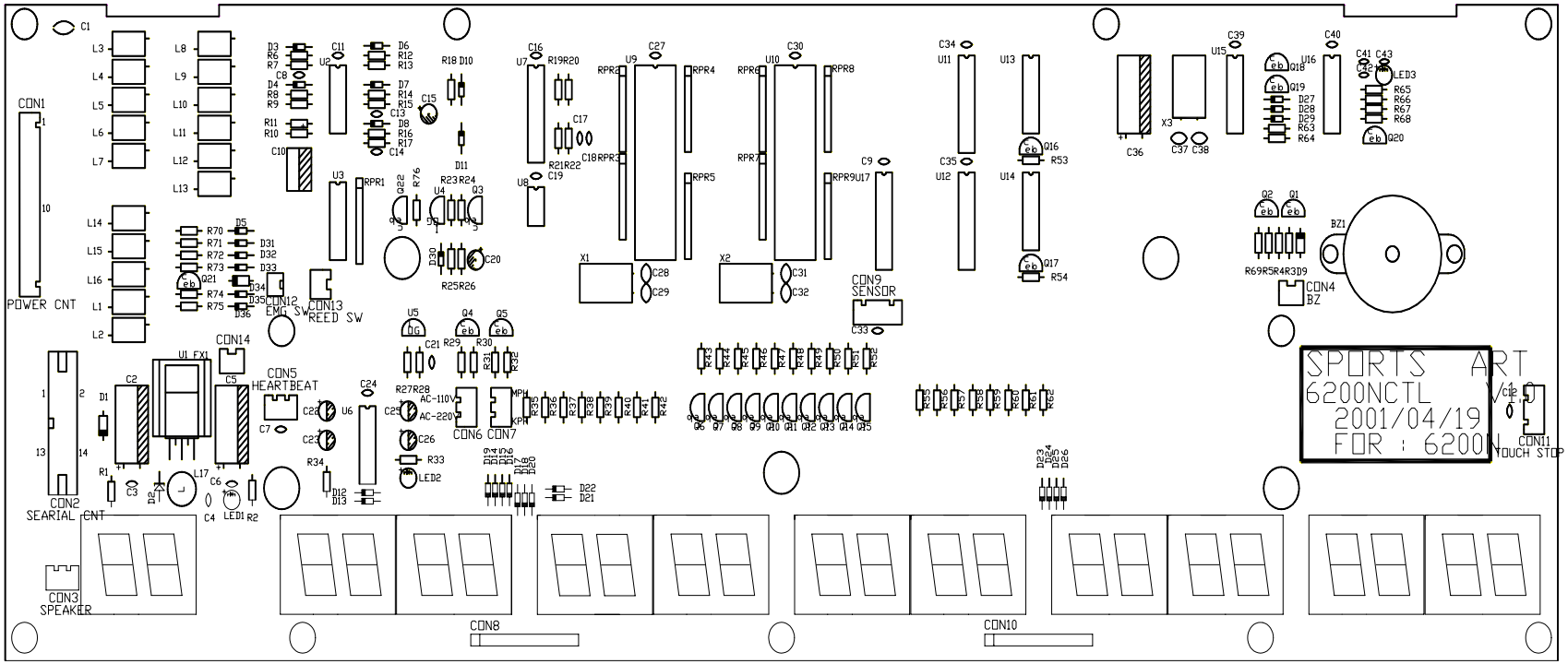
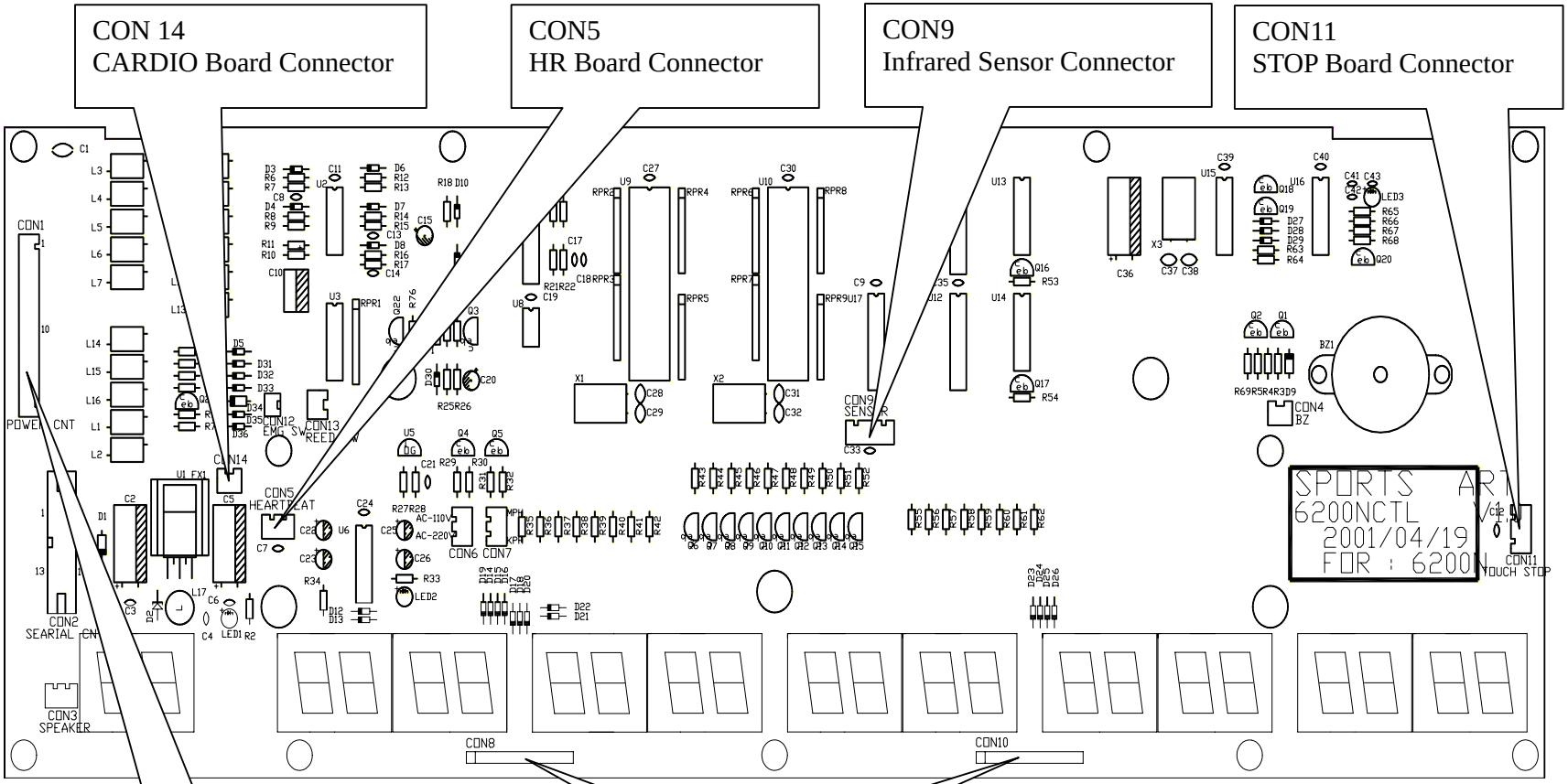
6-1-1. 6200N Display Board Wire Connections



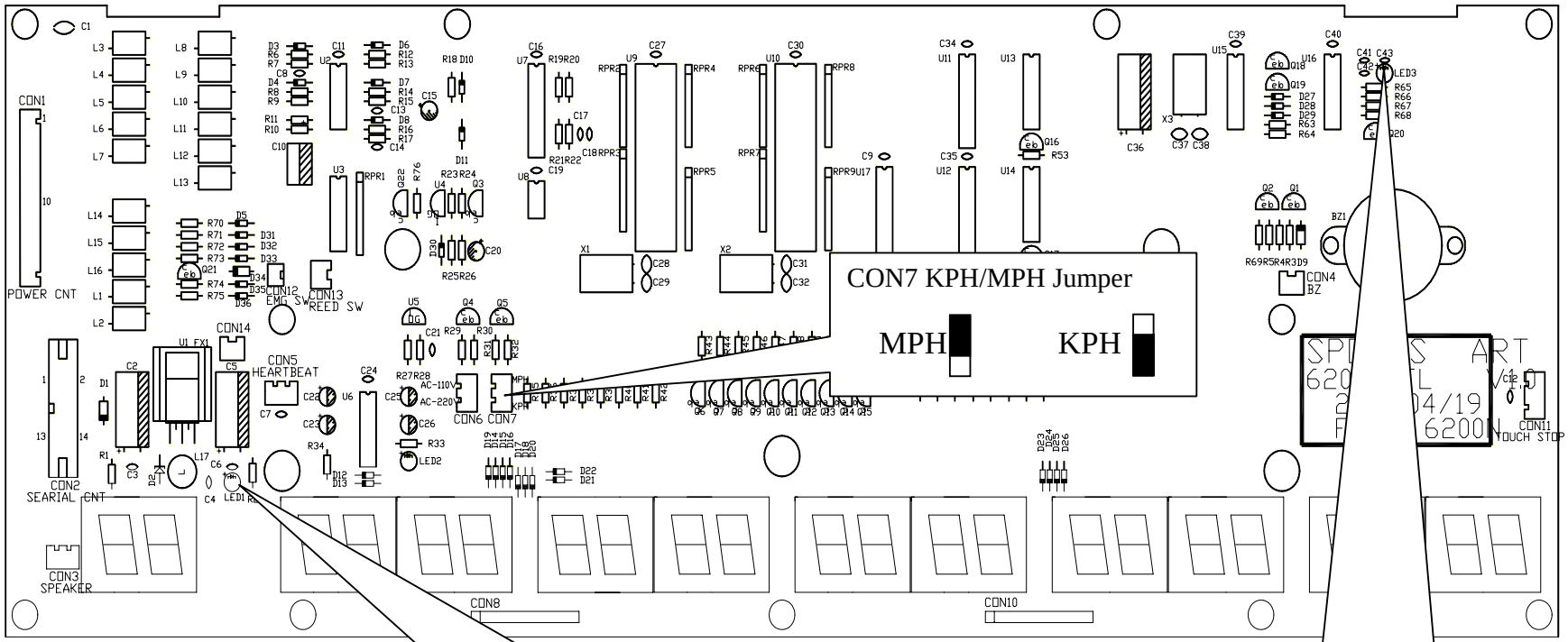
6-1-2. 6200 Display Board PCB Component Locations



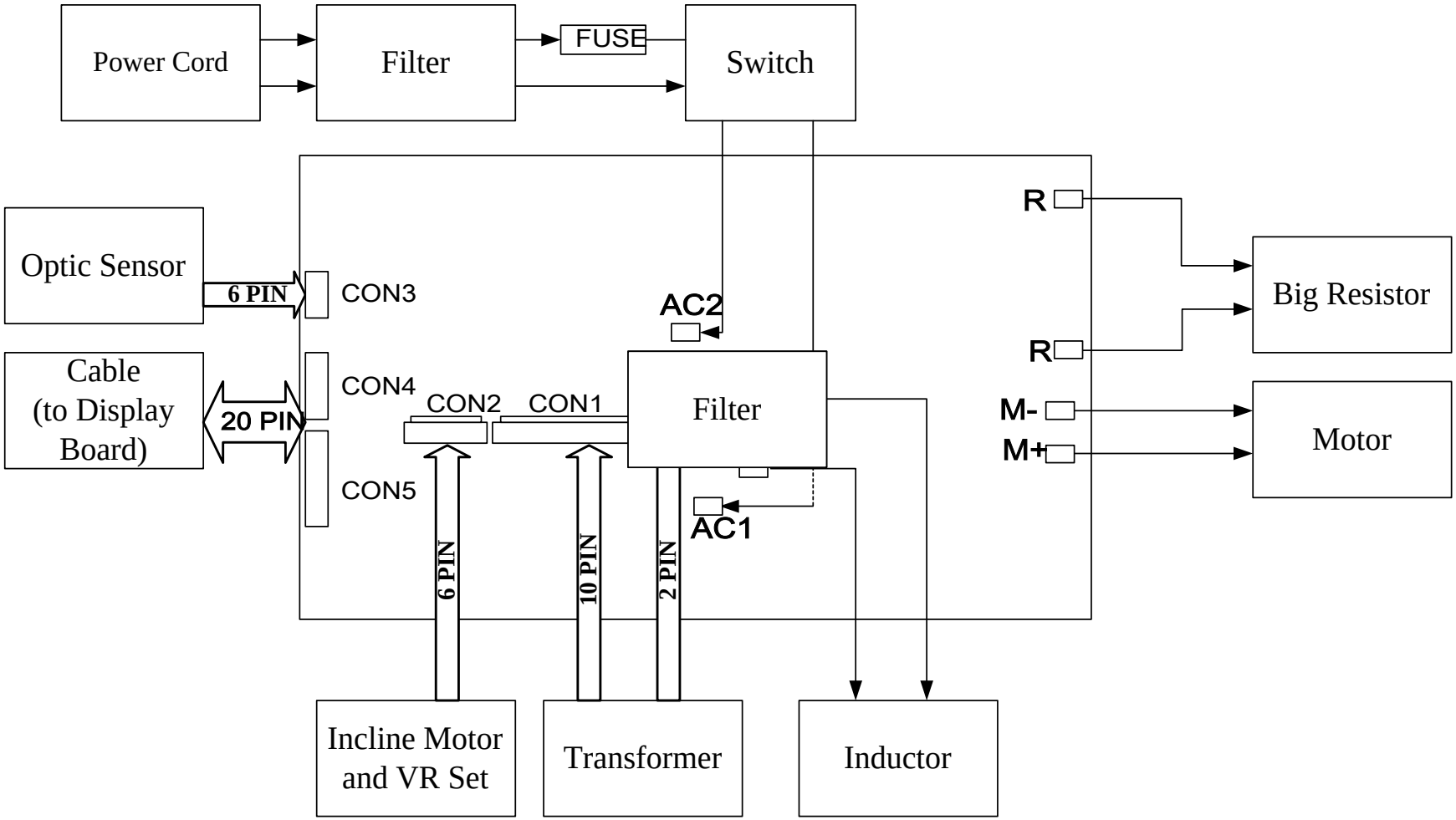
6-1-3. 6200 Display Board Connectors



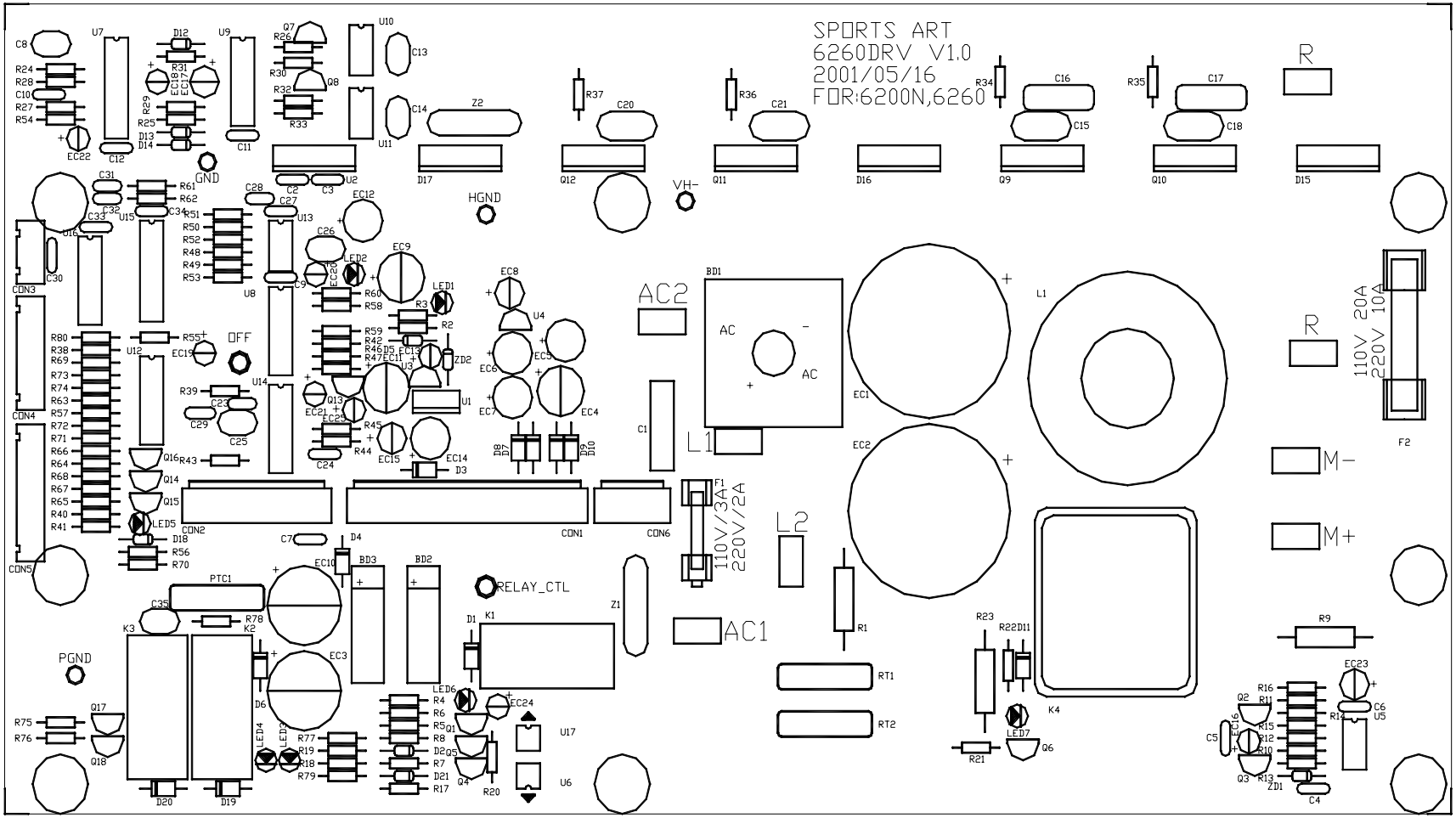
6-1-4. 6200N Display Board LED Location and Explanation



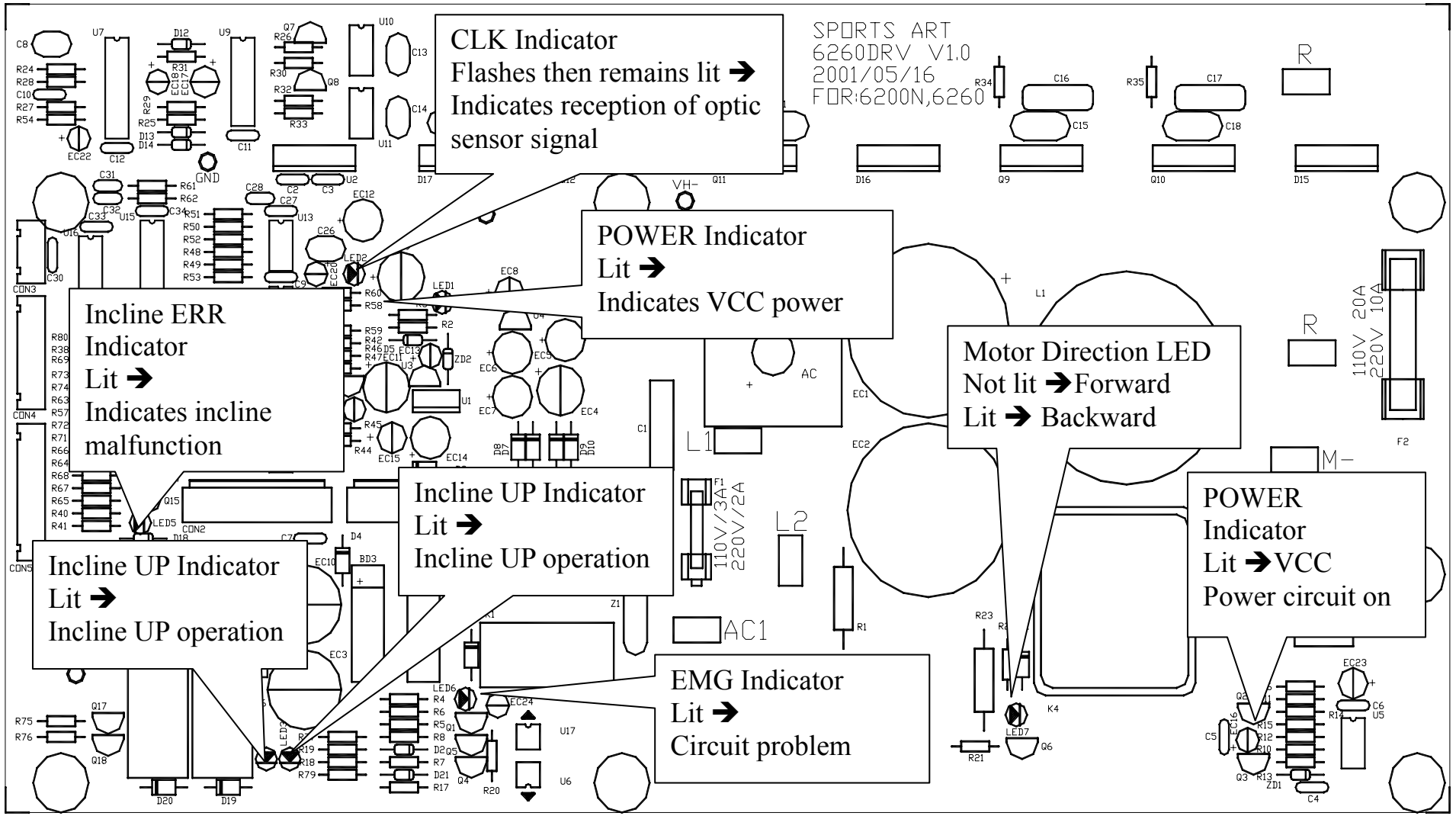
6-2-1. 6200 Drive Board Wire Connections



6-2-1. 6200 Drive Board PCB Component Locations



6-2-3. 6200 Drive Board LED Indicator Locations



6200N Treadmill

7. Error Messages / Troubleshooting

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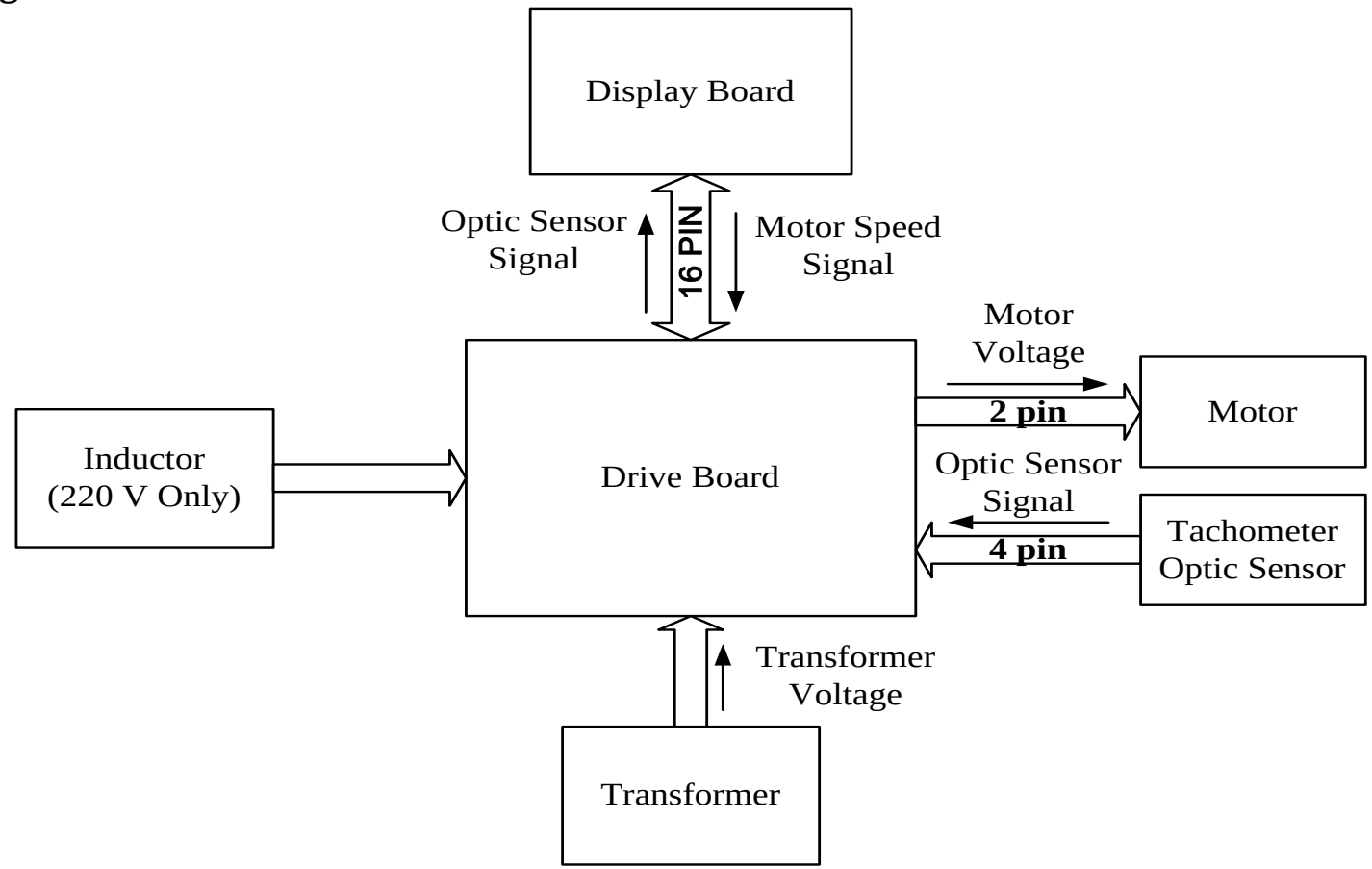
6200/6200N/6260 Error Message：ERR 1

1. Definition： Display board CPU did not receive the optic sensor signal.

2. Configuration



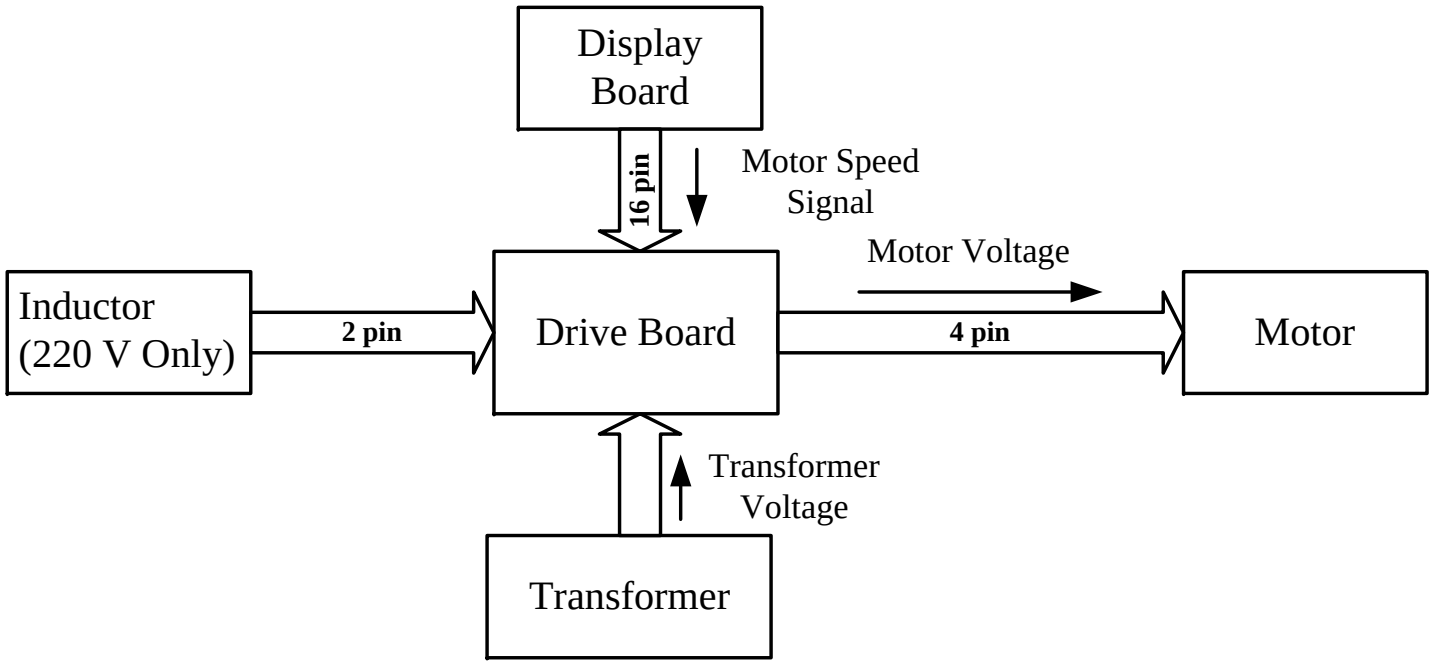
3. Cause of ERR1

1. The motor doesn't turn; ERR1 appears.

1-1. Explanation

The drive board did not sent voltage to the motor, so the motor didn't operate.
And the display board didn't receive the optic sensor signal.

2-1. Configuration

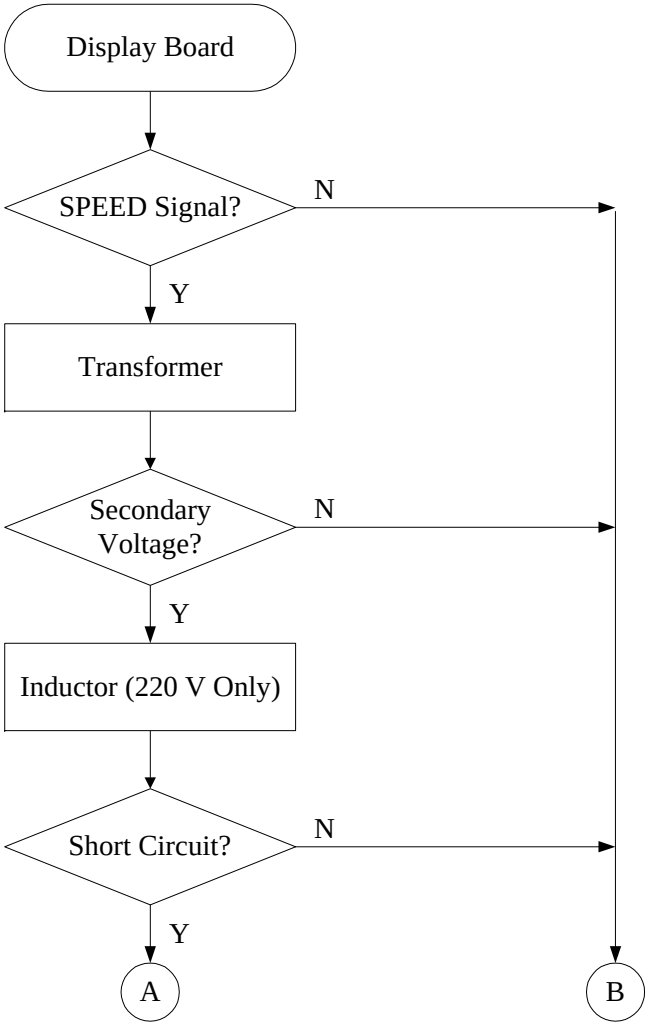


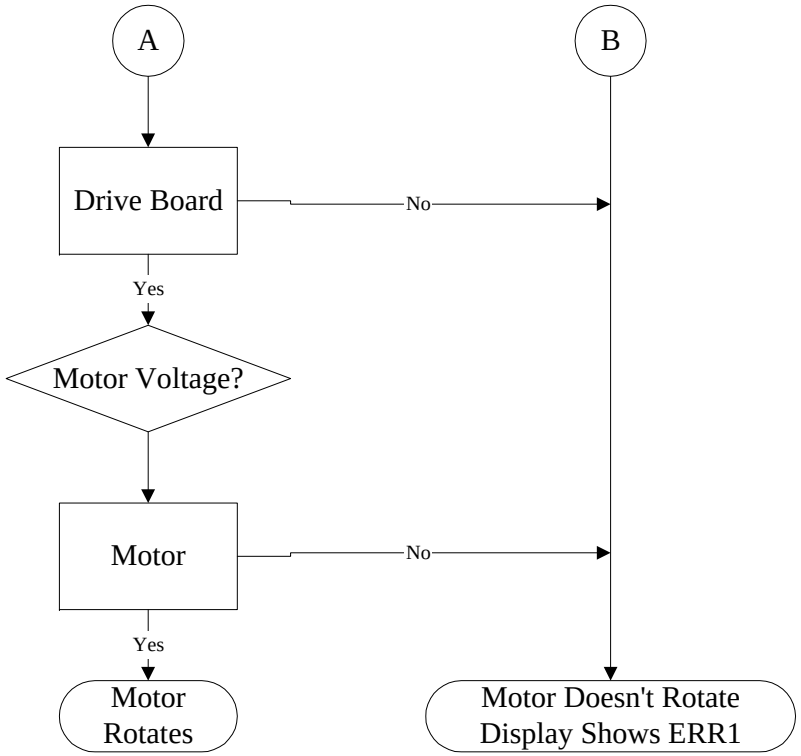
1-3. Operation

(1) Explanation

Order	Part	Circumstance of Malfunction
1	Display	1. Press SPEED key; The display SPEED window shows “0.0”. 2. Display board CPU sends the motor signal to the drive board to control motor speed.
2	Inductor (220V)	1. 220V models only. 2. Sends the drive board AC rectified VH voltage to the motor drive circuit.
3	Transformer	1. Provides all power necessary to the motor drive circuit.
4	16-pin Cable	The display board signal travels this cable to the drive board.
5	Drive Board	After processing the motor signal, the drive board sends power to the motor, making the motor operate.
6	Motor	According to the voltage provided, the motor operates, which, in turn, drives the treadmill walk belt.

(1) Action Flow Chart




A
B
Drive Board
No
Yes
Motor Voltage?
Motor
No
Yes
Motor
Rotates
Motor Doesn't Rotate
Display Shows ERR1

1-4. Error Simulation

Order	Operation
1	Don’t turn on power. Remove the M+ and M- wires.
2	Turn on power. Press SPEED<▲> or <▼> keys. The display shows “0.1” MPH or “0.2” KPH.
3	The motor doesn’t operate.
4	The display immediately shows “ERR:1”.

1-5. Circumstance of Malfunction

(1) Press SPEED<▲> or <▼> keys. The walk belt doesn’t move. The display shows “ERR:1”.

1-6. Troubleshooting

Order	Part	Troubleshooting
1	Display Board	1. Press down firmly on the program IC. 2. Inspect whether the 16-pin cable is connected securely.
2	16-pin Cable	1. Test by replacing the cable with a good one.
3	Inductor	1. Reconnect the inductor wires. 2. Inspect whether the inductor has a short.
4	Transformer	1. Inspect the transformer wire connections. 2. Test the transformer voltage.

5	Drive Board	1. Inspect wire connections to the drive board, including transformer and inductor. 2. Put multimeter probes separately on drive board M+ and M- terminals. Press SPEED key. Inspect whether there is voltage. 3. If not, the drive board is bad or the signal from the display to the drive board is in question.
6	Motor	1. If the drive board puts out voltage, and the motor doesn't operate, then the motor is bad. 2. Inspect whether the motor has a broken circuit: disconnect motor M+ and M- wires from the drive board; put probes on the motor M+ and M- wires. 3. Inspect the motor wire connections. 4. Inspect the motor brushes.

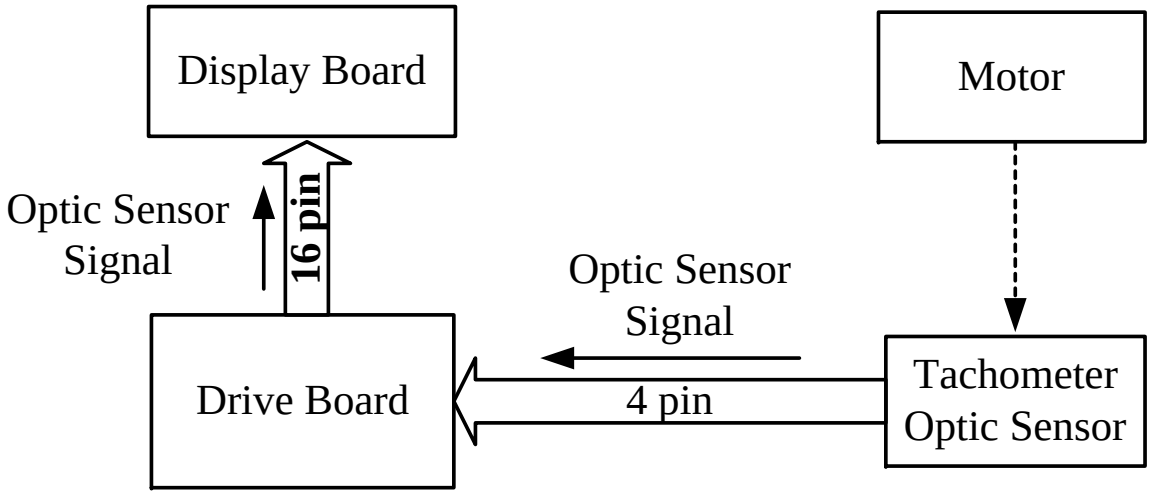
3. Cause of ERR1

2. Motor operates; ERR1 appears.

2-1. Explanation

After the motor operates, the optic sensor signal is not transmitted to the display board CPU. ERR1 appears.

2-1. Configuration

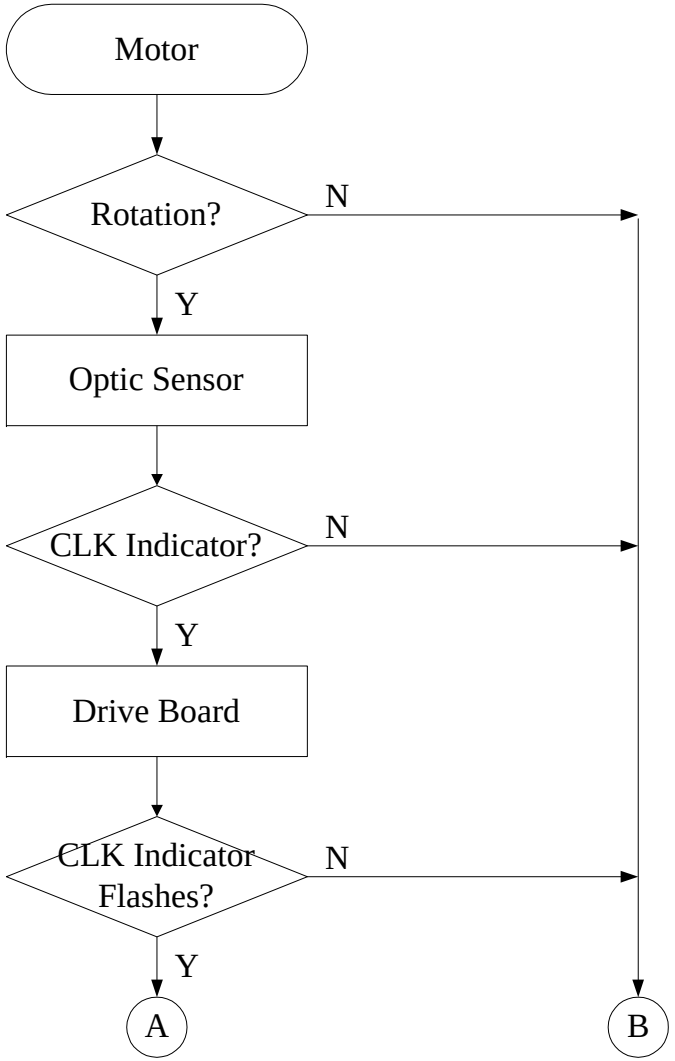


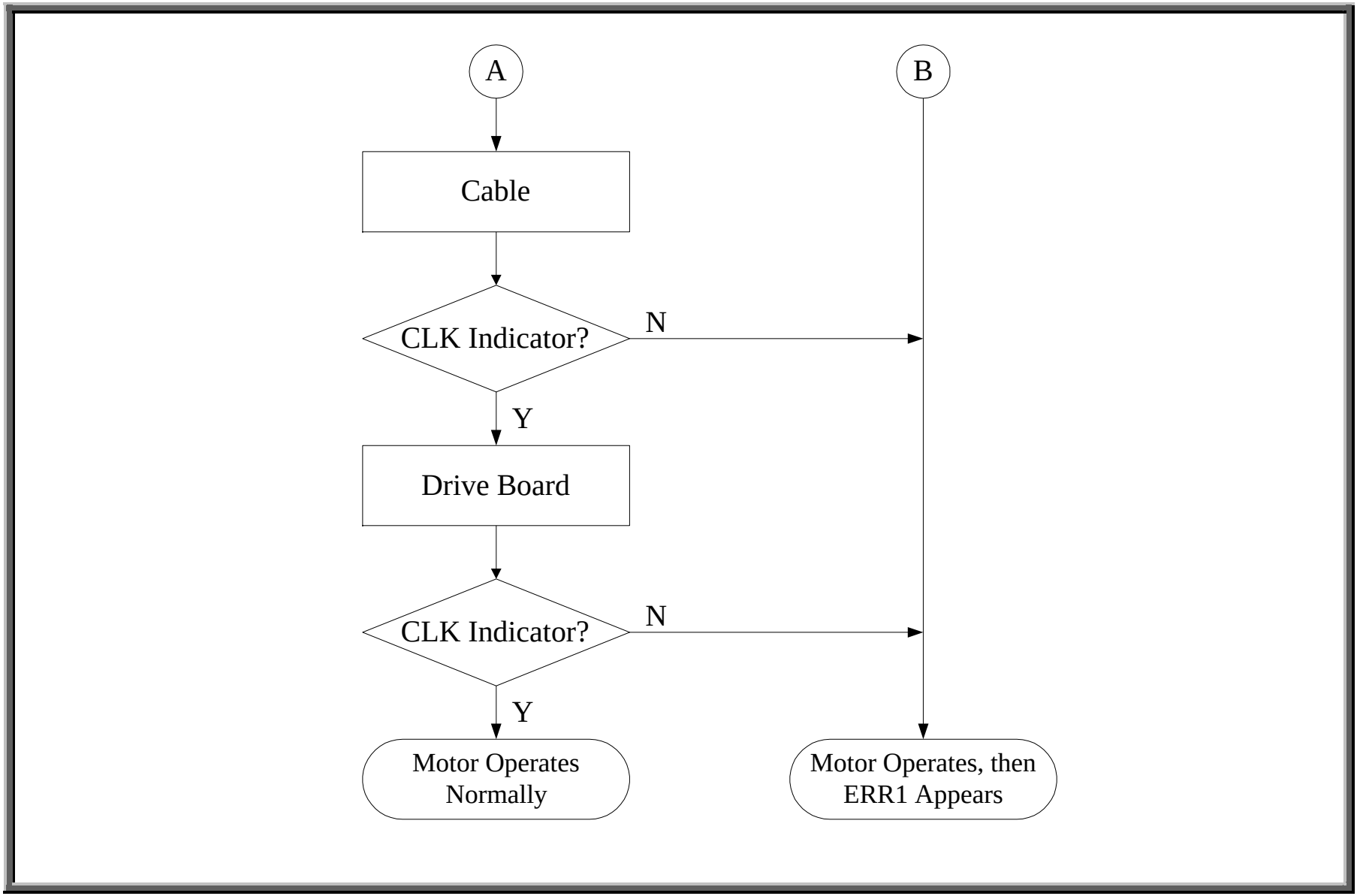
2-3. Operation

(1) Explanation

Order	Part	Troubleshooting
1	Motor	1. After pressing the SPEED key, the motor operates.
2	Tachometer Optic Sensor	1. The motor movement makes the tachometer rotate. 2. The optic sensor detects the tachometer speed.
3	4-pin Cable	1. The optic sensor signal travels the 4-pin cable to the display board.
4	Drive Board	1. After the optic sensor signal is processed, the drive board CLK indicator lights. 2. The drive board emits the optic sensor signal to the display board.
5	16-pin Cable	The optic sensor signal travels from the drive board to the display board.
6	Display Board	1. The CPU reads the optic sensor signal. If there is an optic sensor signal, the CPU emits the motor speed signal. 2. If the CPU doesn't detect the optic sensor signal, the display shows "ERR1" and stops sending the motor speed signal to the drive board.

(2) Action Flow Chart




A
B
Cable
CLK Indicator?
N
Y
Drive Board
CLK Indicator?
N
Y
Motor Operates Normally
Motor Operates, then ERR1 Appears

2-4. Error Simulation

Order	Operation
1	Don’t turn on power. Remove the optic sensor wire connections.
2	Turn on power. Press SPEED<▲> or <▼> keys. The display board shows “0.1” MPH or “0.2” KPH.
3	Motor speeds uncontrolled.
4	Drive board CLK indicator doesn’t light.
5	The display board immediately shows “ERR:1”. The motor stops rotating.

2-5. Circumstance of Error

(1) Press SPEED<▲> or <▼> keys. The motor speeds up uncontrolled. The display shows “ERR:1”.

(2) Press the SPEED<▲> or <▼> keys. The motor operates. The display shows “ERR1:1”.

2-6. Troubleshooting

Order	Part	Troubleshooting
1	Motor	1. Press the SPEED key and inspect whether the motor operates.
2	Tachometer Optic Sensor	1. Inspect whether the tachometer is fastened securely and rotating in the middle of the optic sensor. 2. Inspect whether the tachometer teeth are broken or bent. 3. Inspect whether the optic sensor has been hit or damaged. 4. Inspect whether the optic sensor signal reaches the drive board: When the tachometer wheel rotates, the drive board CLK indicator flashes or remains lit.

3	Optic Sensor Wire (4-pin)	1. Perform a continuity test on the optic sensor wire to detect whether it is broken. 2. Test optic sensor by replacing it with an optic sensor that has worked properly on another treadmill.
4	Drive Board	1. Inspect whether the CLK indicator flashes or remains lit when the motor rotates. 2. Inspect the 16-pin cable. Inspect whether the optic sensor wire is connected securely. 3. Or replace the drive board.
5	Cable	1. To test the cable, replace it with a good one.
6	Display Board	1. Inspect the cable connections. 2. Press down on the display board motor IC. 3. Or replace the display board.

4. Test Configuration

4-1. Transformer Test

4-4-1. Figure 1: Drive Board Transformer Test

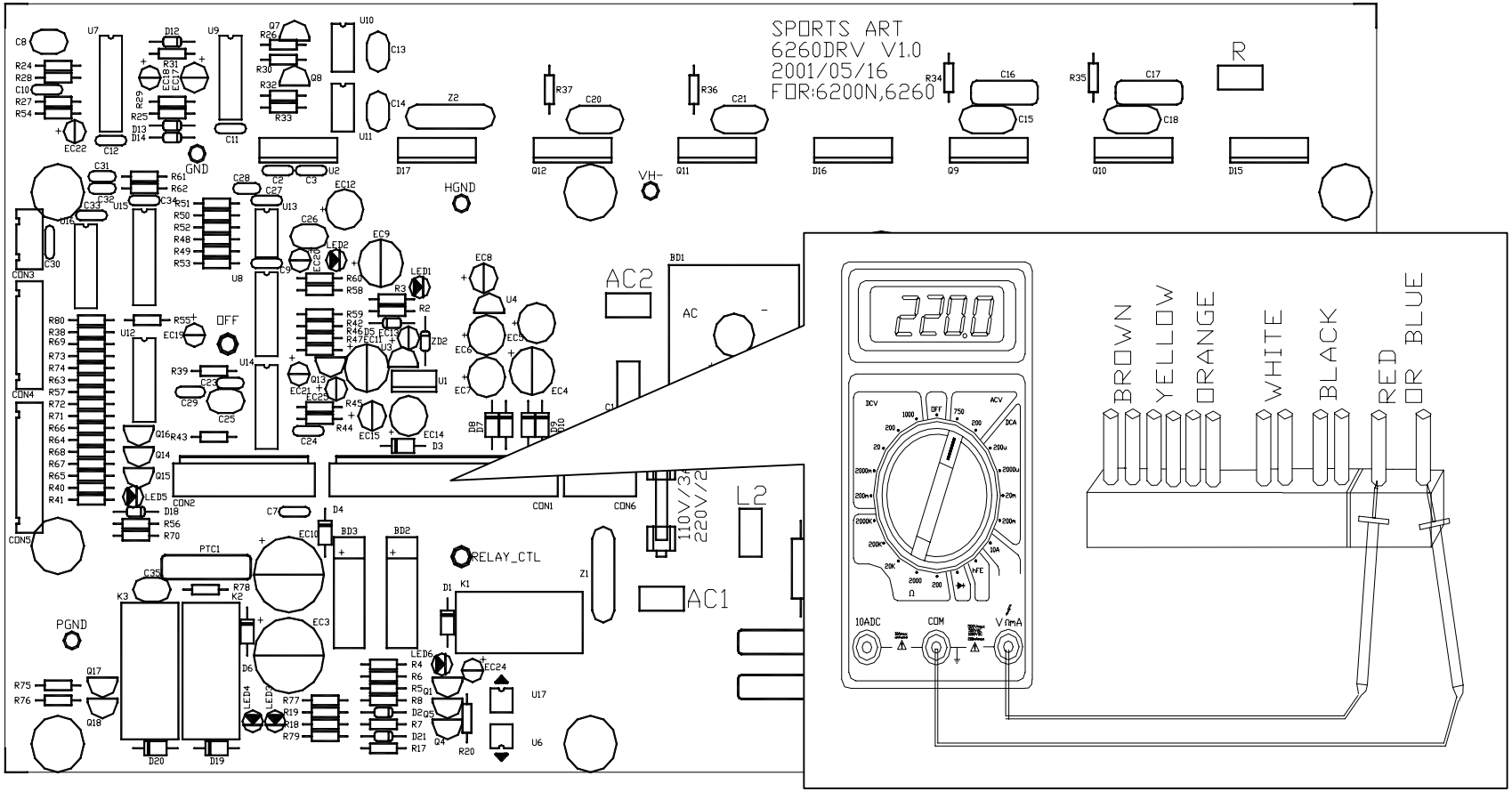


Figure 2. Red to Red Wire (or Blue to Blue Wire)

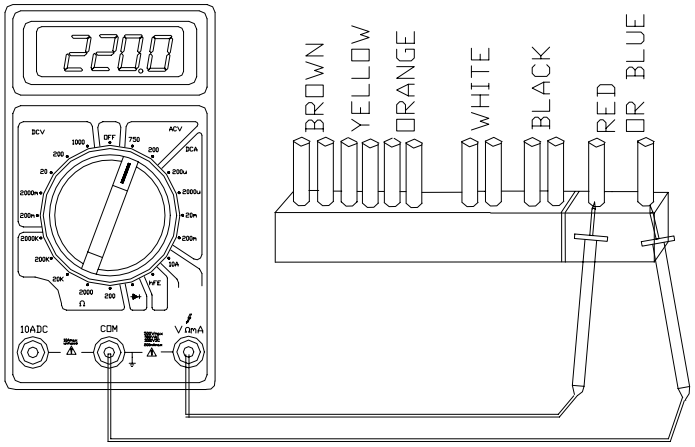


Figure 3. Black to Black Wire

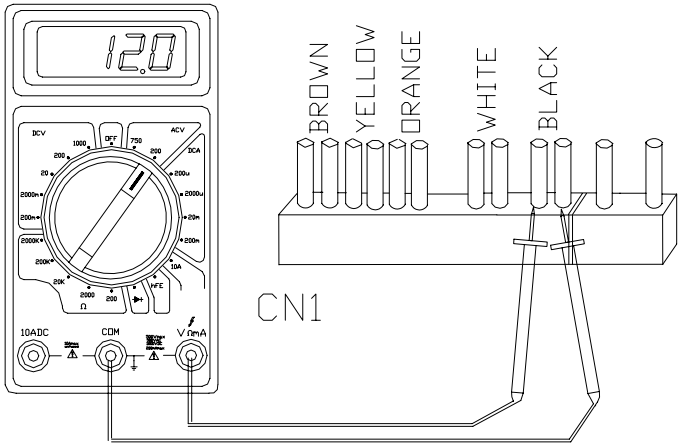


Figure 4. White to White Wire

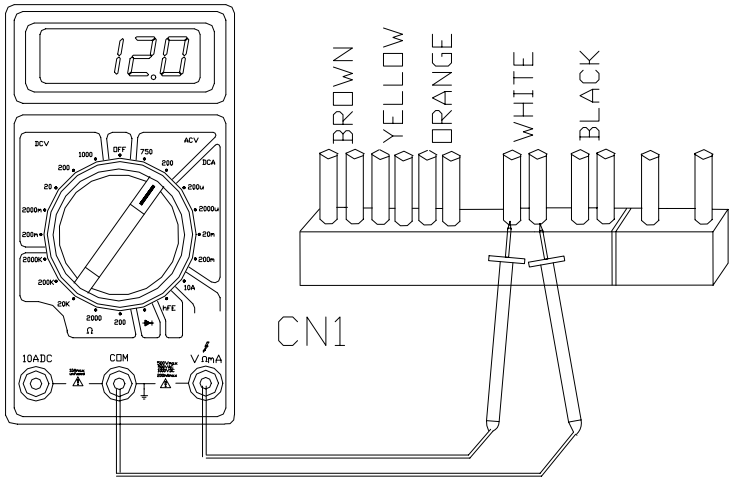
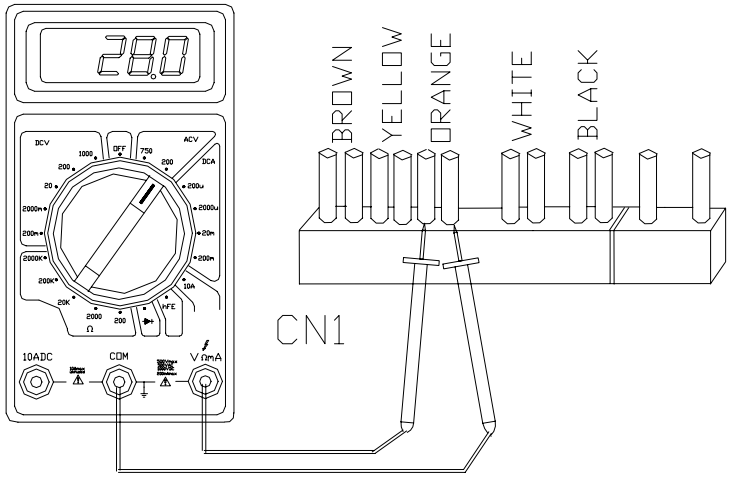


Figure 5. Orange to Orange Wire

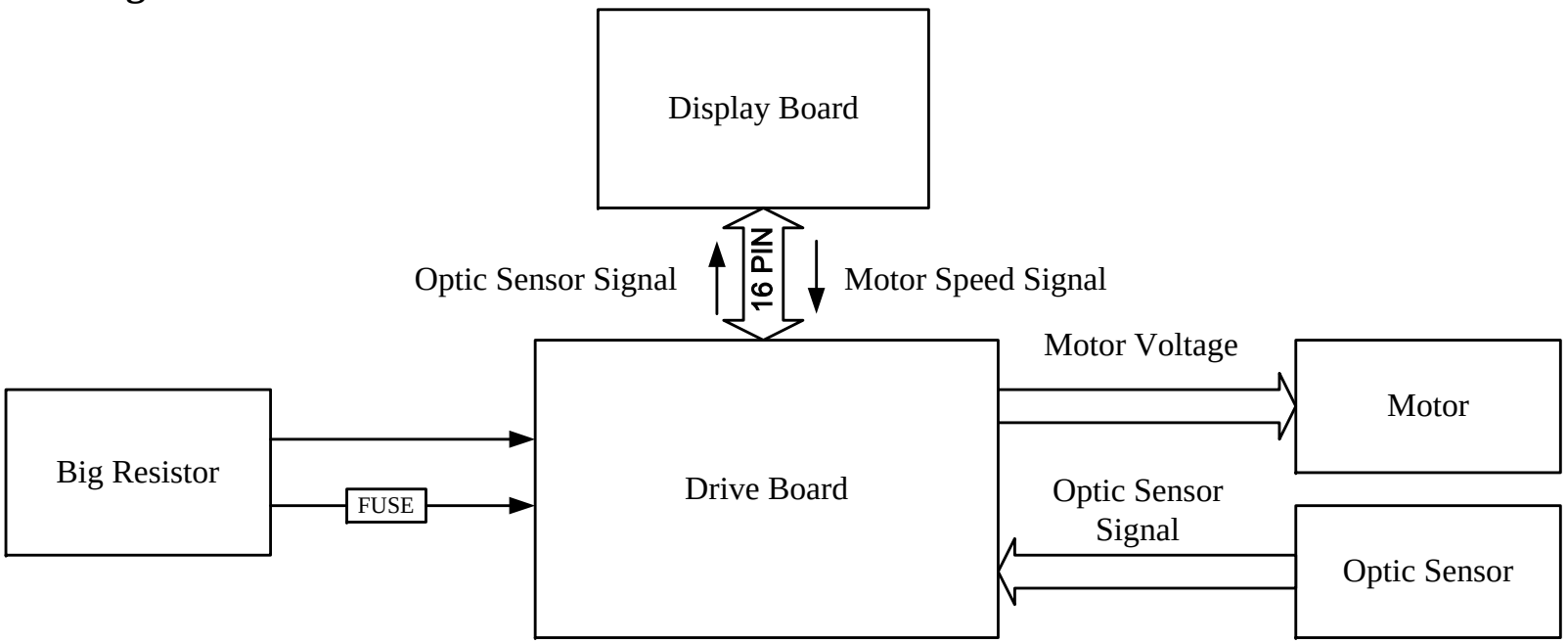


6200/6200N/6260 Error Message：ERR 3

1. Definition

1. The SPEED setting and the actual speed differ too much. ERR3 appears.

2. Configuration



3. Cause of ERR3

1. Unit resistance function doesn't operate; display shows ERR3.

1-1. Explanation

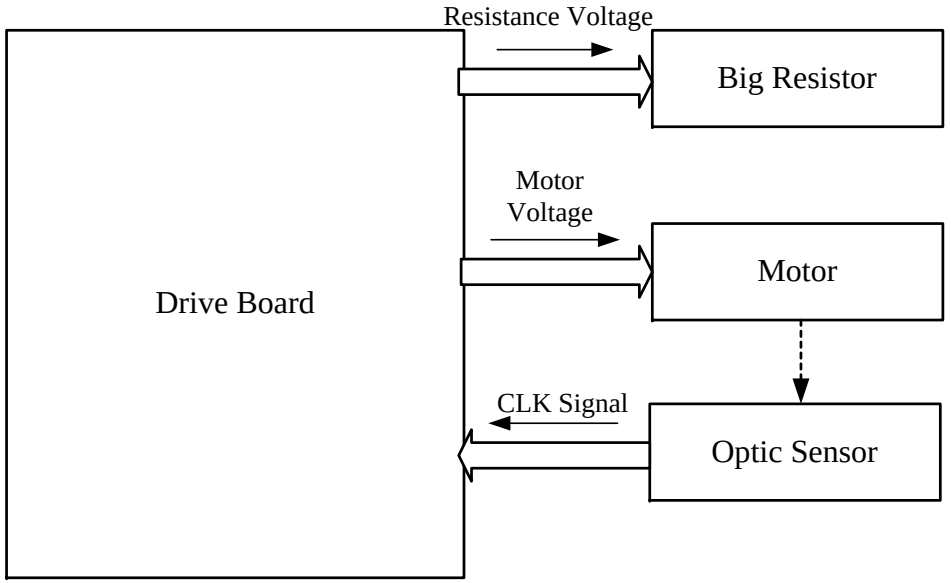
(1) When the treadmill incline is up to the 7% position or more, centrifugal force acts on the walk belt, making it move faster than the speed setting.

(2) When the drive board detects a faster optic sensor speed, resistance is produced to decrease the walk belt speed.

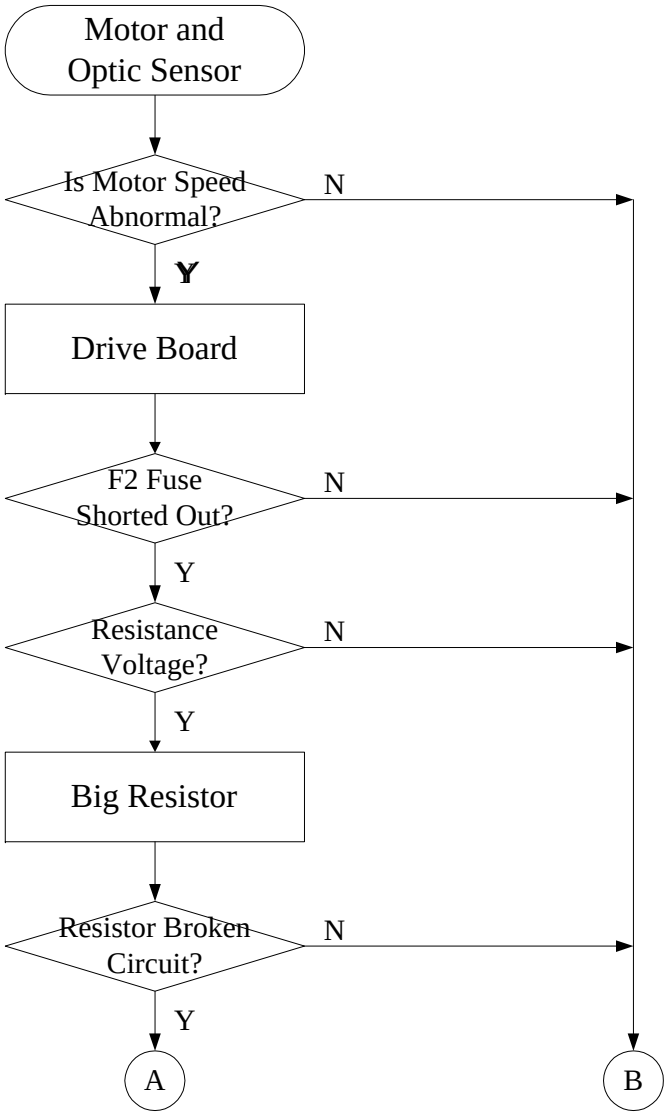
(3) If the resistor produces no effect, the treadmill walk belt speeds up. The display shows

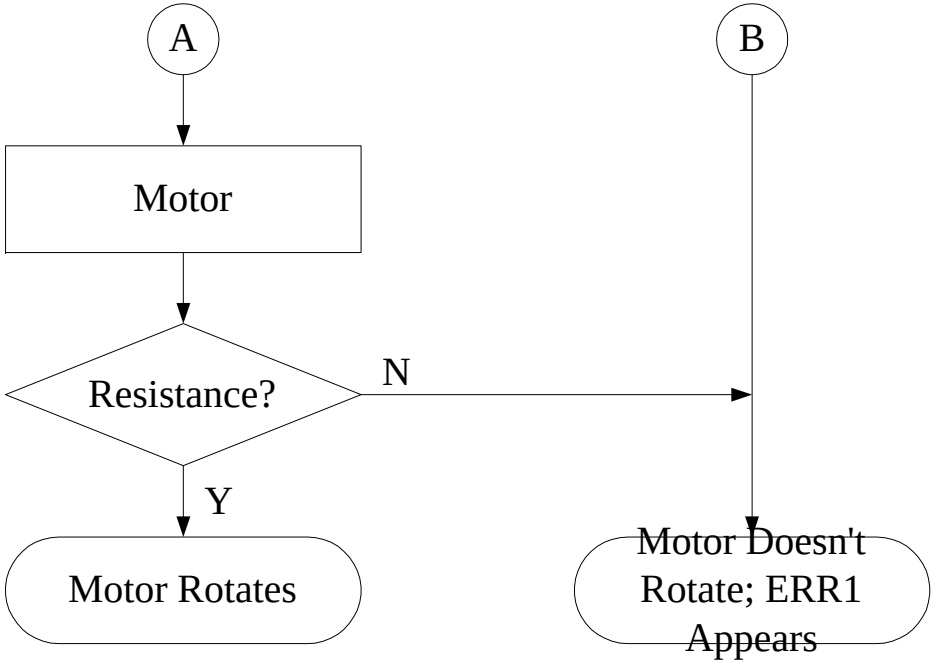
ERR3.

2-1. Configuration



2-3. Cause of ERR3




A
B
Motor
Resistance?
N
Y
Motor Rotates
Motor Doesn't Rotate; ERR1 Appears

1-3. Operation

Order	Part	Troubleshooting
1	Optic Sensor	1. Detects motor speed. 2. Sends motor speed information to the drive board.
2	Drive Board	1. The drive board reads the optic sensor signal. If the motor becomes fast abnormally, the drive board resistance circuit operates. 2. The motor creates resistance, making the treadmill belt maintain a steady speed, with no way to drag the belt.
3	Big Resistor	1. The drive board resistance circuit operates through the big resistor, causing the motor to create resistance.
4	Motor	When the drive board resistance circuit operates, the belt maintains a steady speed even if one pulls it. When the drive board resistance circuit is not operating, the treadmill belt can be pulled faster. The display will show ERR3.

1-4. Error Message Simulation

Order	Operation
1	Don’t turn on the power. Remove the resistor R wire connections from the drive board.
2	Turn on the power. Press INCLINE<▲> key until 15% appears in the incline window. The incline rises to the 15% position.
3	Press the SPEED key; the motor rotates.
4	Pull the treadmill walk belt with your feet as you walk.
5	The display immediately shows ERR3.

1-5. Circumstance of Malfunction

(1) Press SPEED<▲> key; After the motor rotates, pull the treadmill belt with your feet. There's no resistance. "ERR3" appears on the display.

1-6. Troubleshooting

Order	Part	Troubleshooting
1	Big Resistor	1. Inspect whether the big resistor has a broken circuit: 220V models, 5 Ohms; 110V models, 1.5 Ohms. 2. Inspect whether the big resistor produces voltage.
2	Drive Board	1. Inspect the F2 fuse. 220V models, 5A; 110V models, 10A. 2. Inspect the drive board R, R terminal connections. 3. Inspect whether the big resistor produces voltage.

3. Cause of ERR3

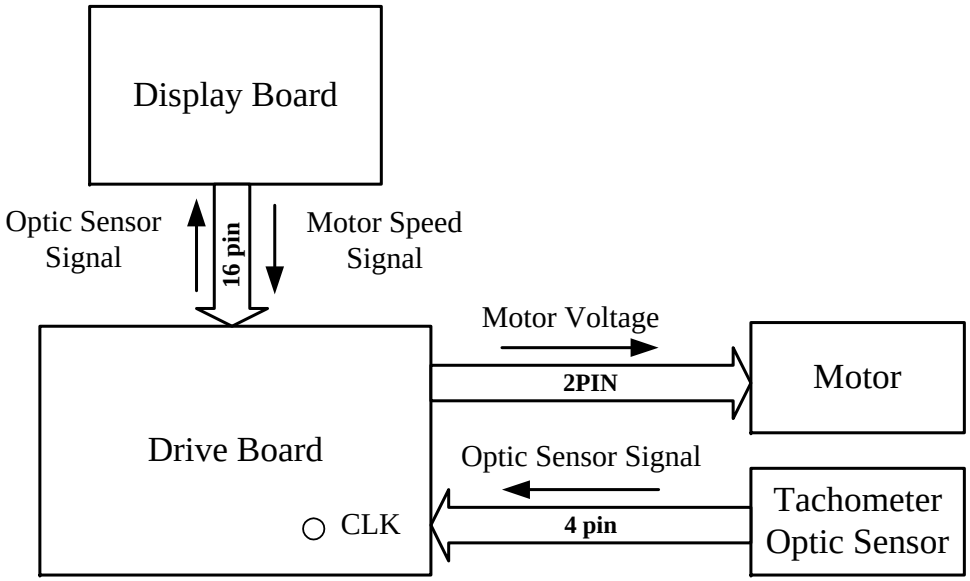
2. ERR3 appears after the motor starts operating or in mid-use.

2-1. Explanation

(1) After the motor operates, the optic sensor signal is sent to the display board. The display CPU reads the motor signal.

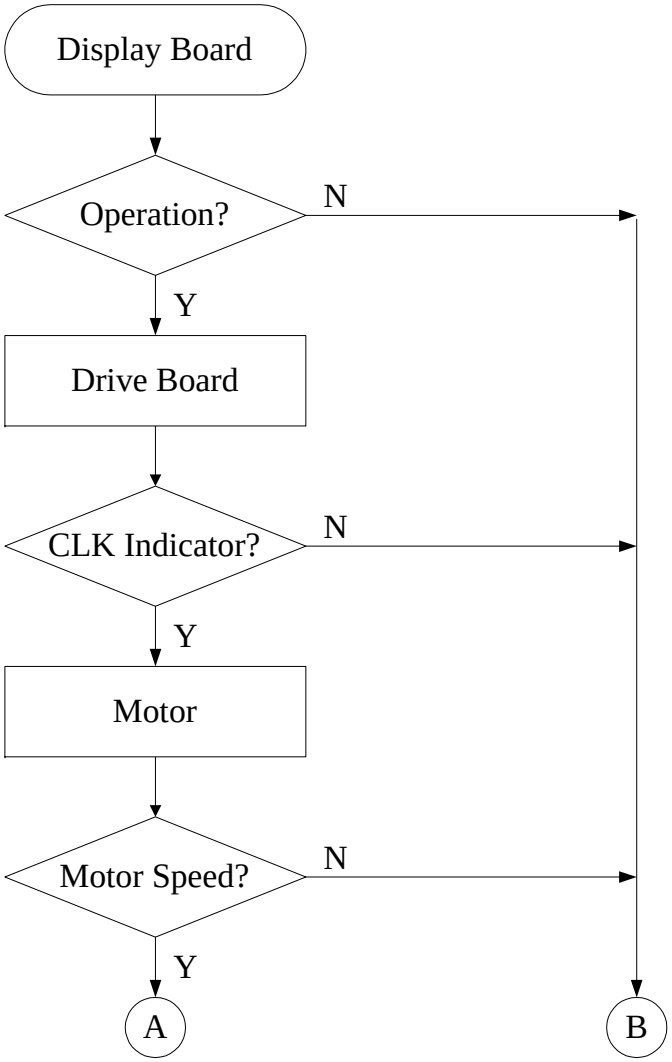
(2) If the optic sensor signal and the SPEED setting differ too much, ERR3 appears on the display.

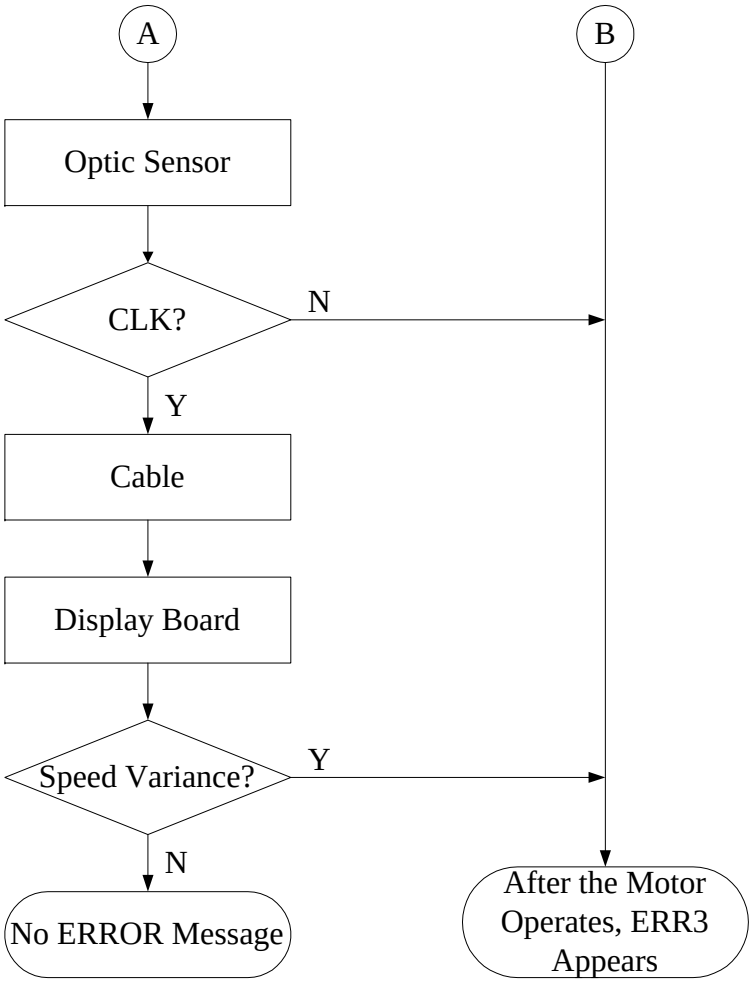
2-2. Configuration



2-3. Action Flow Chart

(1) Flow Chart




A
B
Optic Sensor
CLK?
N
Y
Cable
Display Board
Speed Variance?
Y
N
No ERROR Message
After the Motor Operates, ERR3 Appears

(2) Operation

Order	Part	Troubleshooting
1	Display Board	1. Sends the motor speed signal to the drive board.
2	Drive Board	1. Converts the display board's motor speed signal into voltage, thus controlling motor speed. 2. The drive board adjusts the output voltage to the motor after receiving the optic sensor signal.
3	Motor	1. The motor operates according to the voltage from the drive board: the higher the voltage, the faster the motor runs.
4	Optic Sensor	1. When the tachometer rotates, the optic sensor notes the movement and sends its signal to the drive board.
5	Optic Sensor Wire	1. The optic sensor signal travels to the drive board.
6	Drive Board	1. After the optic sensor signal is processed, the drive board CLK indicator lights. 2. The drive board adjusts its output of power to the motor according to the optic sensor signal.
7	16-pin Cable	1. The optic sensor signal travels the 16-pin cable to the display board.
6	Display Board	1. If the CPU detects that the optic sensor signal and the SPEED setting differ too much, "ERR3" appears on the display.

2-4. Error Simulation

Order	Operation
1	Turn on power. Press the SPEED<▲> key. The display shows "0.1" MPH or "0.2" KPH.
2	Use your feet to pull the treadmill belt faster.
3	The drive board CLK indicator flashes or remains lit.
4	The display shows "ERR3"; the motor stops operating.

2-5.Circumstance of Malfunction

(1) Press the SPEED<▲> key. Don't stand on the treadmill. The display immediately shows "ERR3".

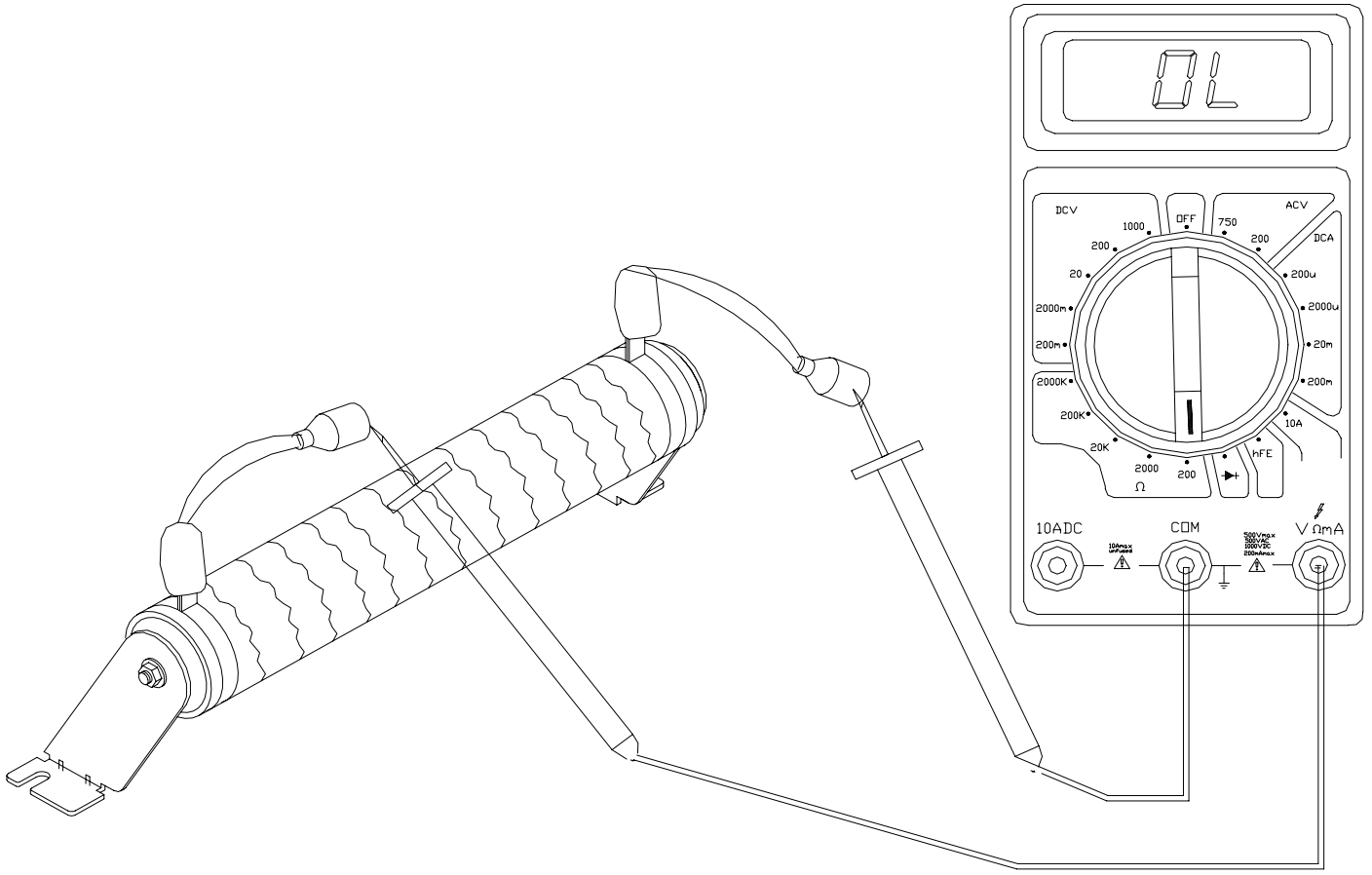
(2) Press the SPEED<▲> key. The treadmill walk belt moves, and "ERR3" immediately appears.

2-6. Troubleshooting

Order	Part	Troubleshooting
1	Display Board	1. Press down on the motor program IC. 2. Inspect the 16-pin cable and its connections. 3. Replace the motor program with a more recent edition.
2	Tachometer Optic Sensor	1. Inspect whether the tachometer is fastened securely and rotating in the middle of the optic sensor. 2. Inspect whether the optic sensor teeth are in tact. 3. Test by replacing with a good optic sensor.
3	Motor	1. Inspect the motor or replace it with one that is good.
4	Drive Board	1. Inspect the 16-pin cable and connections. Inspect the optic sensor wire. 2. Test by replacing with a good drive board.

4-1. Big Resistor Test

4-1-1. Test Configuration

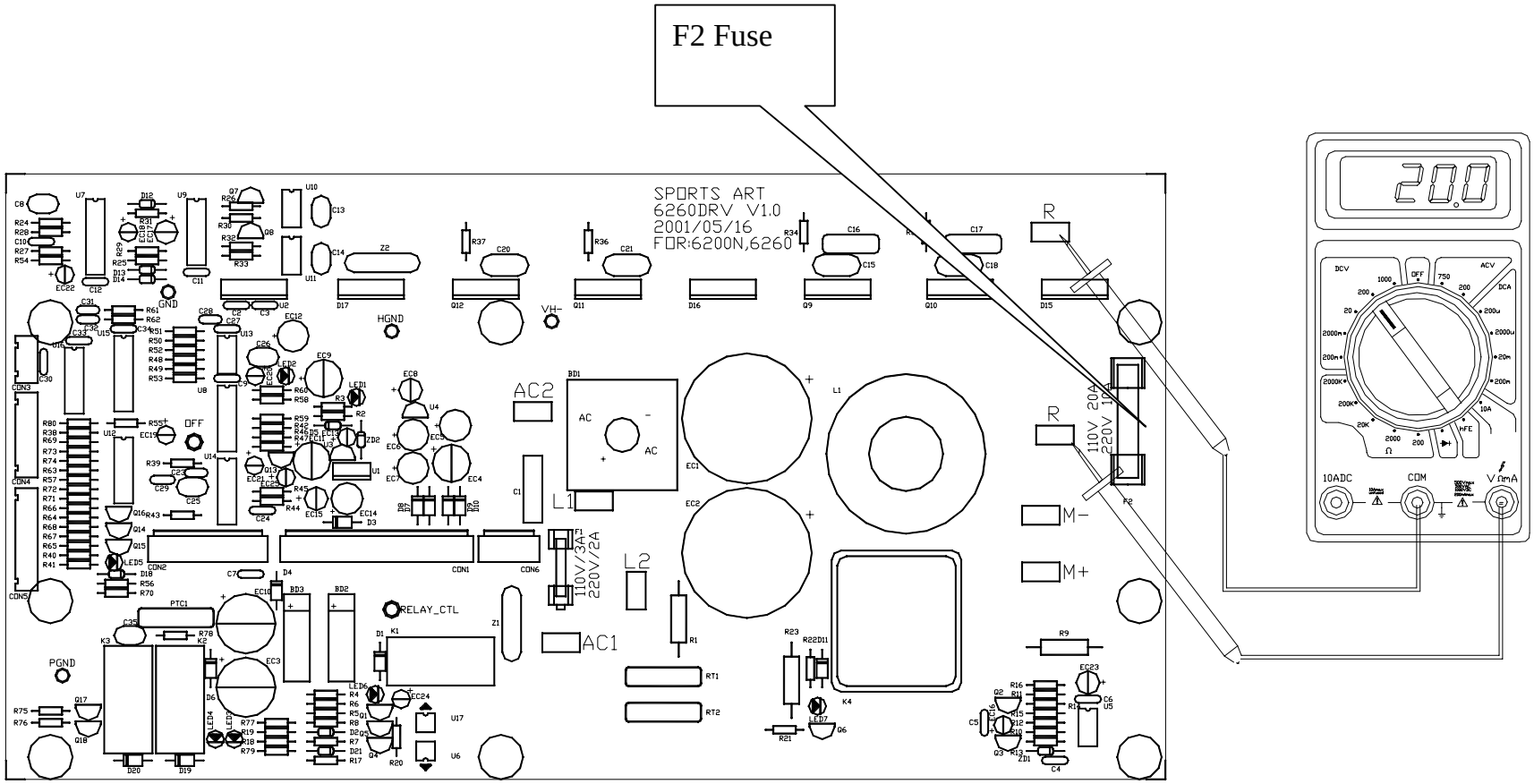


4-1-2. Test Procedure

(1) Remove the big resistor. Don’t connect its wires to the drive board.
(2) Put multimeter to the 200 Ohm setting. Place proves as shown.
(3) If there’s no reading or an OL reading, the large resistor has a broken circuit.

4-2. Drive Board Resistance Test

4-2-1. Test Configuration



4-2-2. Test Procedure

(1) Don’t remove drive board wire connections.

(2) Put multimeter to the DC 200 Volt setting. Place the probes as shown on the drive board R and R terminals.

(3) Turn on the power. Press the SPEED UP key so the walk belt rotates.

(4) If the multimeter shows voltage, then the drive board resistance is operating.

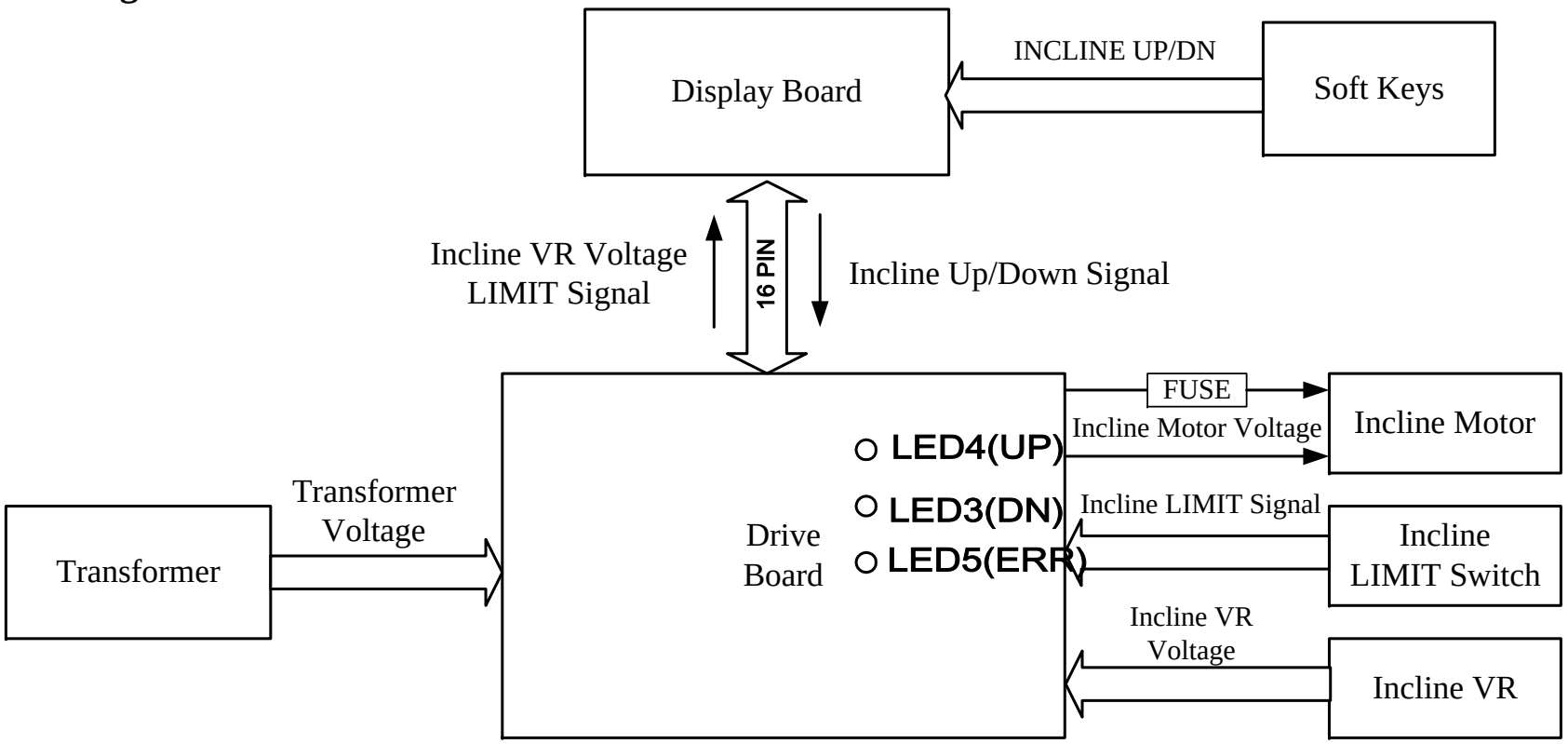
(5) If the multimeter has no reaction whatsoever, the drive board has no resistance.

6200/6200N/6260 Error Message：ERR 6

1. Definition

During incline action, the display board CPU cannot read the VR value, so ERR6 appears.

2. Configuration



3. Cause of ERR6

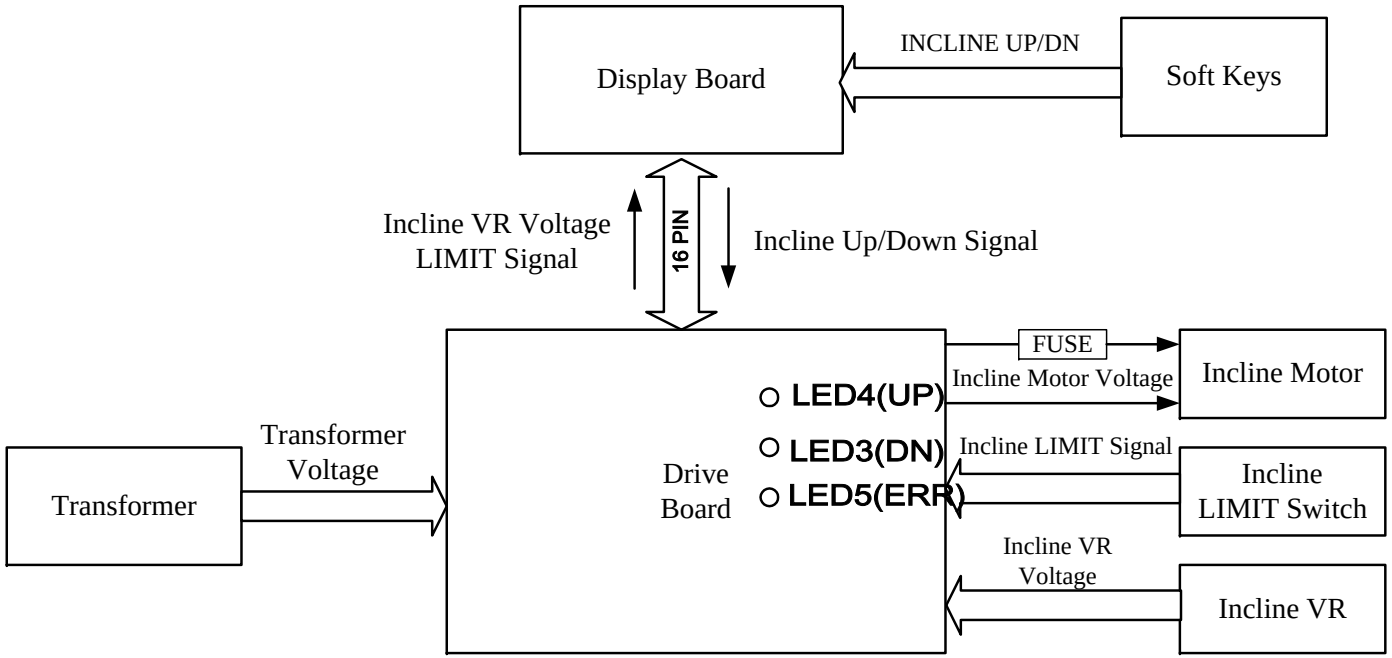
3-1. Press the incline UP or DOWN key. The incline doesn't operate. ERR6 appears on the display.

3-1-1. Explanation

(1) Press the incline UP or DOWN key. The drive board UP or DN indicator lights. The incline operates, moving the VR, which changes the VR value.

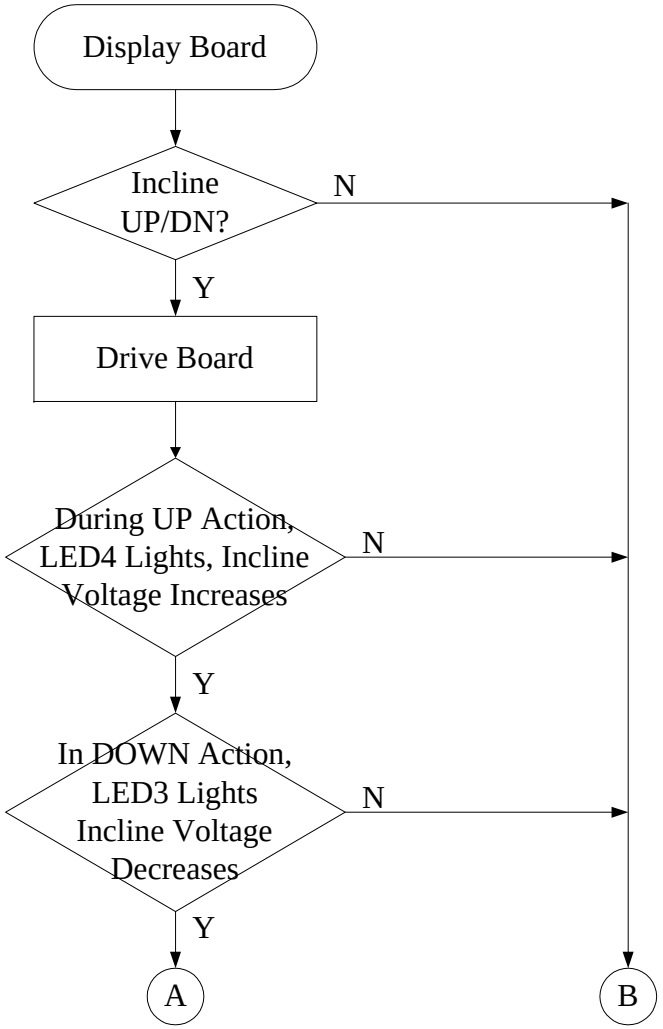
(2) The display board CPU reads the incline VR value. If there is no VR value change, to the CPU, the incline is not operating when it should be. ERR6 appears on the display.

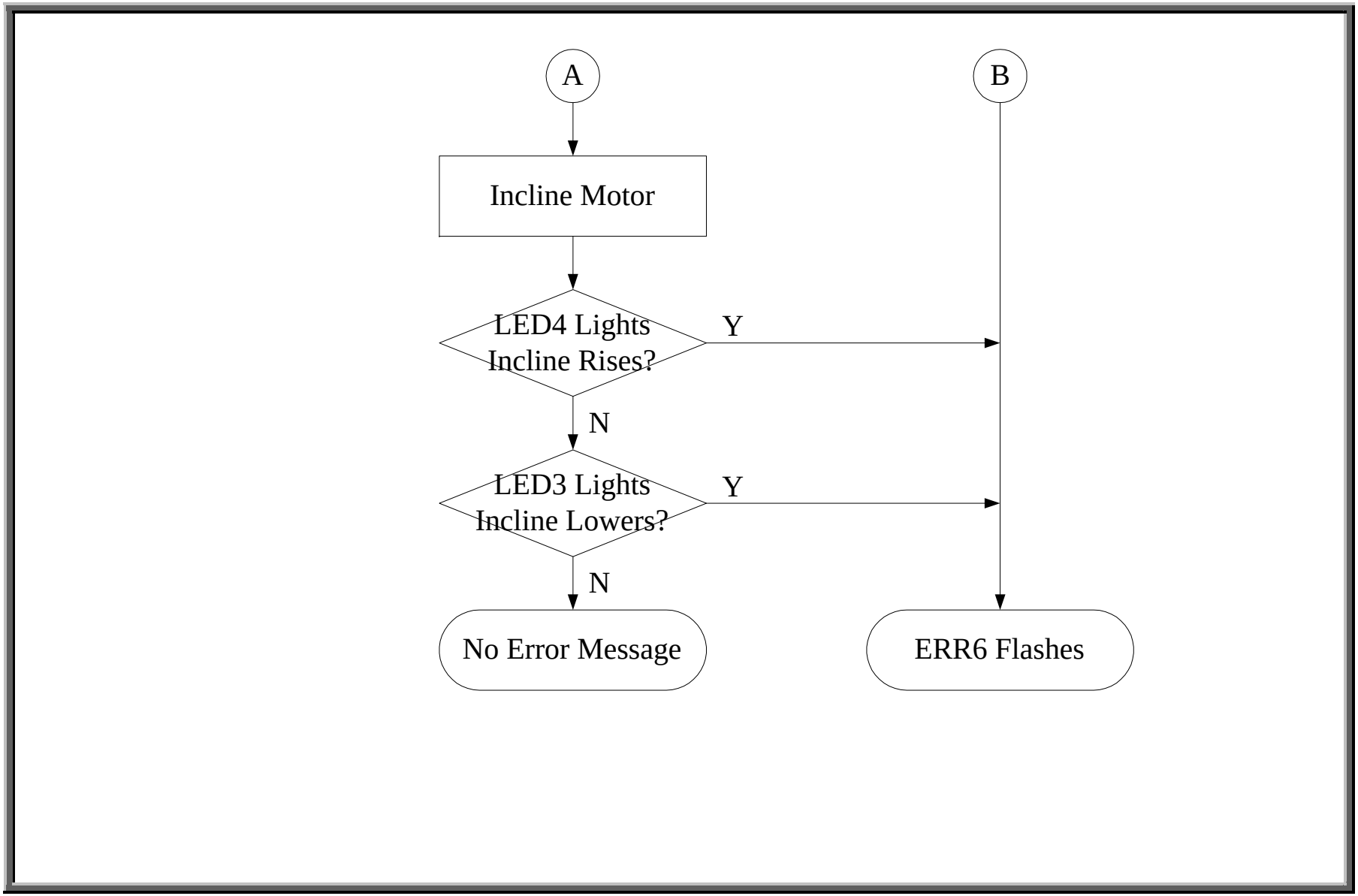
3-1-2. Configuration



3-1-3. Action Flow Chart

(1)




A
B
Incline Motor
LED4 Lights
Incline Rises?
Y
N
LED3 Lights
Incline Lowers?
Y
N
No Error Message
ERR6 Flashes

(2) Operation

Order	Part	Operation
1	Display	1. Press INCL<▲> or INCL<▼> keys. Incline window shows incline value. 2. The CPU sends the UP/DOWN signal to the drive board.
2	16-pin Cable	1. The incline signal travels the 16-pin cable from the display board to the drive board.
3	Transformer	1. The transformer supplies the drive board incline circuit all power needed for incline operation.
4	Drive Board (ERR Indicator)	1. Press the INCL<▲> key. The drive board UP indicator lights. Press the INCL<▼> key. The drive board DN indicator lights. 2. LED4(UP) indicator lights. The drive board emits positive voltage to make the incline motor raise the unit. 3. LED3(DN) indicator lights. The drive board emits negative voltage to make the incline motor lower the unit. 4. LED5(ERR) LED lights to indicate that the incline has exceeded the range or malfunctioned.
5	Incline Motor	1. When the drive board UP LED lights, the incline motor is in upward operation. 2. When the drive board DN LED lights, the incline motor is in downward operation.

3-1-4. Error Simulation

Order	Operation
1	Don’t turn on the power. Remove the incline fuse.
2	Turn on the power. Press the INCLINE<▲> or INCLINE<▼> key.
3	Drive board Up or DN indicator lights.
4	Incline doesn’t operate.
5	Display shows ERR6.

3-1-5. Circumstance of Malfunction

(1) Press INCLINE<▲> key; The incline doesn’t rise. ERR6 flashes on the display.

(2) Press the INCLINE<▼> key; The incline doesn’t lower . ERR6 flashes on the display.

(3) Press INCLINE<▲> or <▼> keys. The incline makes an odd sound. ERR6 flashes on the display.

(4) Press INCLINE<▲> or <▼> keys. The incline fuse blows. ERR6 flashes on the display.

3-1-6. Troubleshooting

Item	Part	Troubleshooting
1	Display Board	1. Press incline <▲> key. The drive board UP LED lights. 2. Press incline <▼> key. The drive board DN LED lights. 3. If not as above, press down on the display board CPU or inspect the cable and connections.
2	16-pin Cable	1. Inspect whether the 16-PIN cable is connected well. 2. Test by replacing the cable with a good one.
3	Transformer	1. Test whether the transformer orange wires have AC 27 V.
4	Drive Board (ERR LED Lit)	Inspect whether the drive board ERR LED is lit. 1. Press incline UP or DOWN key again, making the incline motor return to its position. 2. If ERR6 still appears, recalibrate the incline set.
5	Drive Board (ERR LED Not Lit)	1. Press the INCL<▲>/<▼> key. Inspect whether the drive board UP/DN LED is lit. 2. When the drive board UP or DN LED is lit, inspect the incline motor terminals for output voltage.
6	Incline Fuse	1. Inspect the incline fuse and replace if necessary.
7	Incline Motor	1. Inspect whether the incline motor is stuck. 2. Inspect whether the incline gears are cracked. 3. Test whether the incline motor has a broken circuit. 4. Recalibrate the incline set and VR.

3. Causes of ERR6

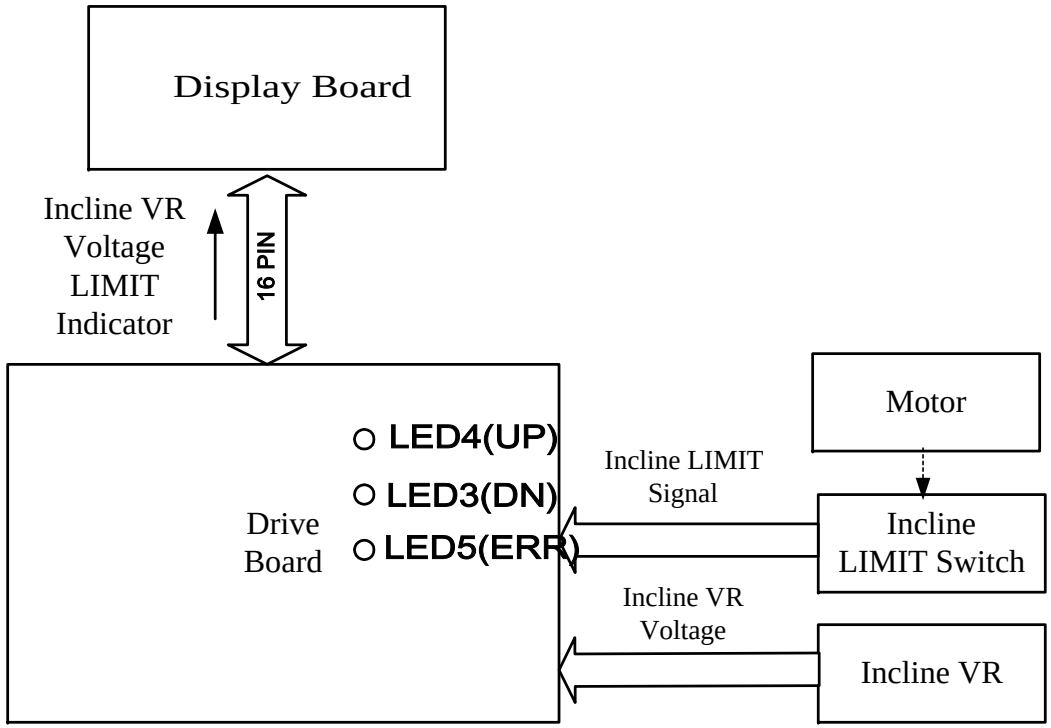
3-2. Press incline UP or DOWN keys. Incline operates. ERR6 appears.

3-2-1. Explanation

(1) Press incline UP or DOWN keys. The incline VR value travels the 16-pin cable to be read by the display board CPU.

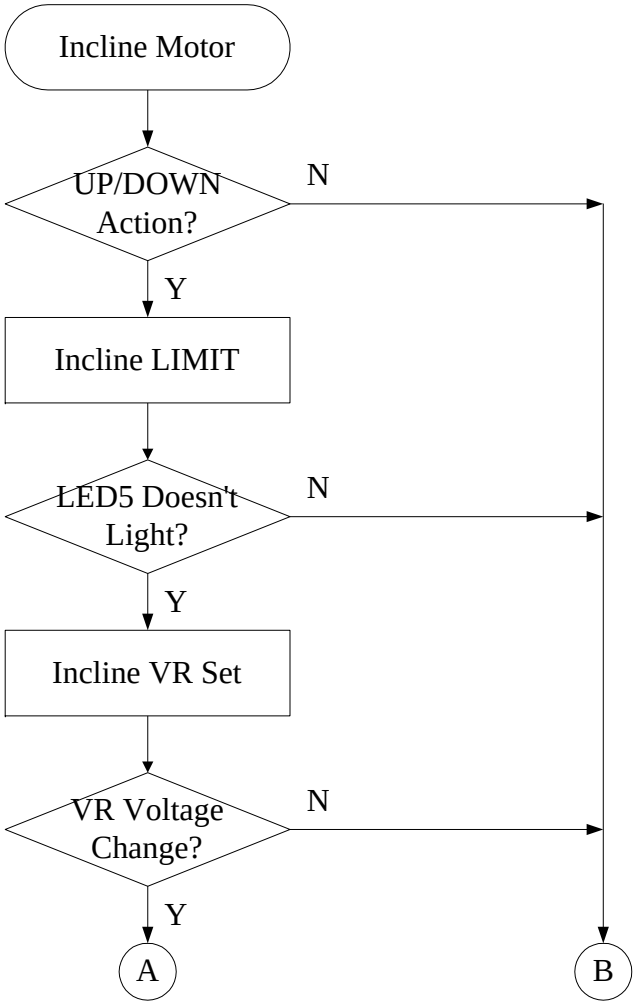
(2) The display board CPU detects that the incline VR value doesn't change. ERR6 flashes on the display.

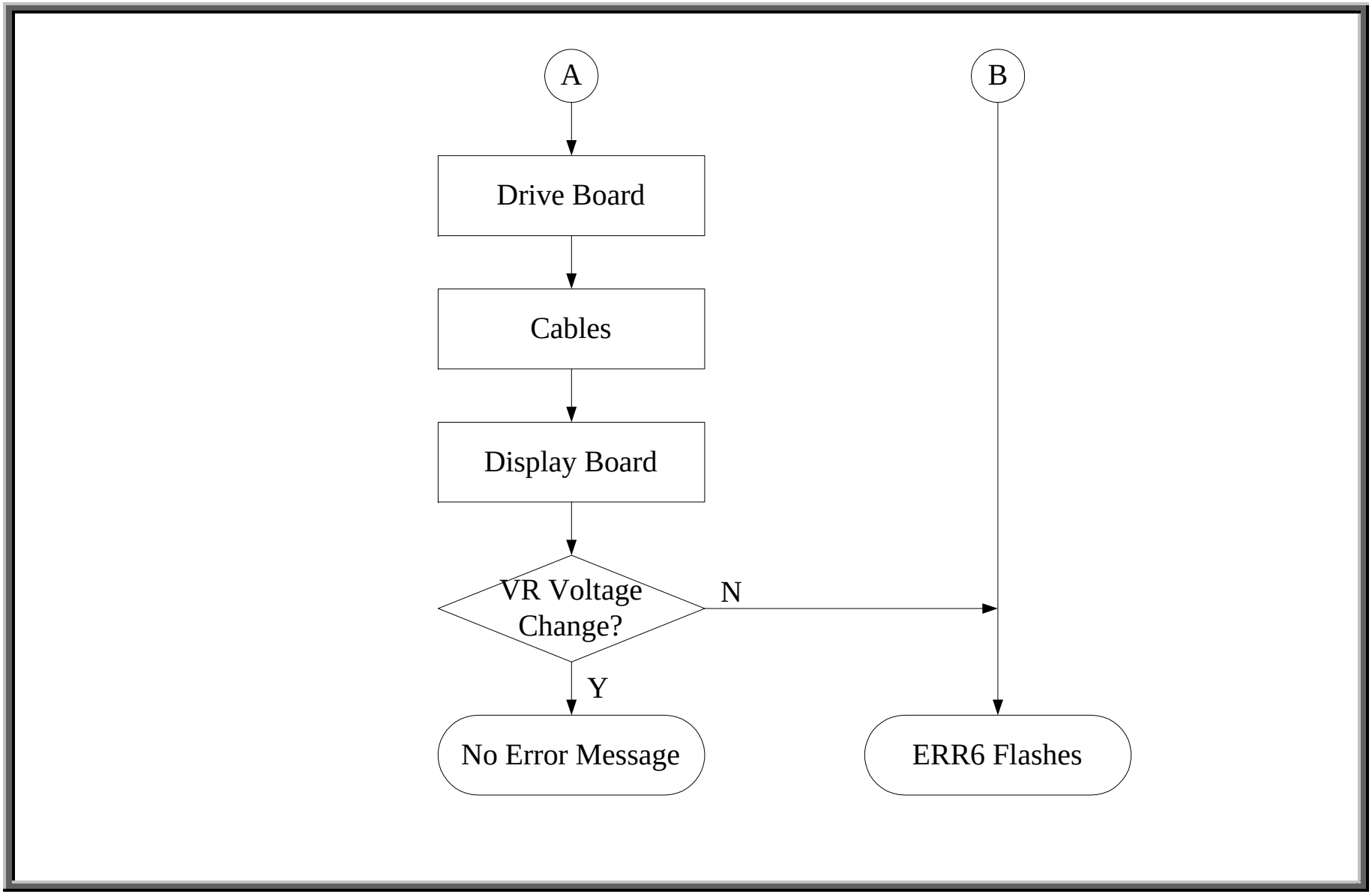
3-2-2. Configuration



3-2-3. Action Flow Chart

(1)




A
B
Drive Board
Cables
Display Board
VR Voltage Change?
N
Y
No Error Message
ERR6 Flashes

(2) Explanation

Order	Part	Operation
1	Motor	1. Drive board UP indicator lights. Drive board emits positive voltage, making the incline motor raise the unit. 2. Drive board DN indicator lights. Drive board emits negative voltage, making the incline motor lower the unit.
2	Incline LIMIT	1. Incline operates properly (-3 to 22%); Drive board LED5 doesn't light. 2. If drive board LED5 lights, the incline has exceeded its range. Recalibrate the incline.
3	Incline VR	1. Incline operation turns the VR gears, making the incline value change. 2. At the 0% incline position, the VR voltage is 1.20V(Green and blue wires) 3. At the 22% incline position, the VR voltage is 3.55V(Green and blue wires)
4	Drive Board	1. The drive board sends the VR value to the display board.
5	16-pin Cable	1. The VR value travels the 16-pin cable from the drive board to the display board.
6	Display Board	1. The CPU reads the VR value. At the -3% position, the VR voltage is 1.20V. At the 22% position, VR voltage is 3.55V. 2. During incline operation, if the VR value doesn't change, ERR6 flashes on the display.

3-2-4. Error Simulation

Order	Operation
1	Remove the incline VR. Don't fasten it to the incline motor.
2	Turn on power. Press the INCLINE<▲> or INCLINE<▼> key.
3	The drive board UP or DN indicator lights.
4	The incline operates UP or DOWN.
5	ERR6 flashes on the display.

3-2-5. Circumstance of Malfunction

(1) Press the INCLINE<▲> key. The incline motor starts operating, then ERR6 flashes on the display.

(2) Press the INCLINE<▼> key. The incline motor starts operating, then ERR6 flashes on the display.

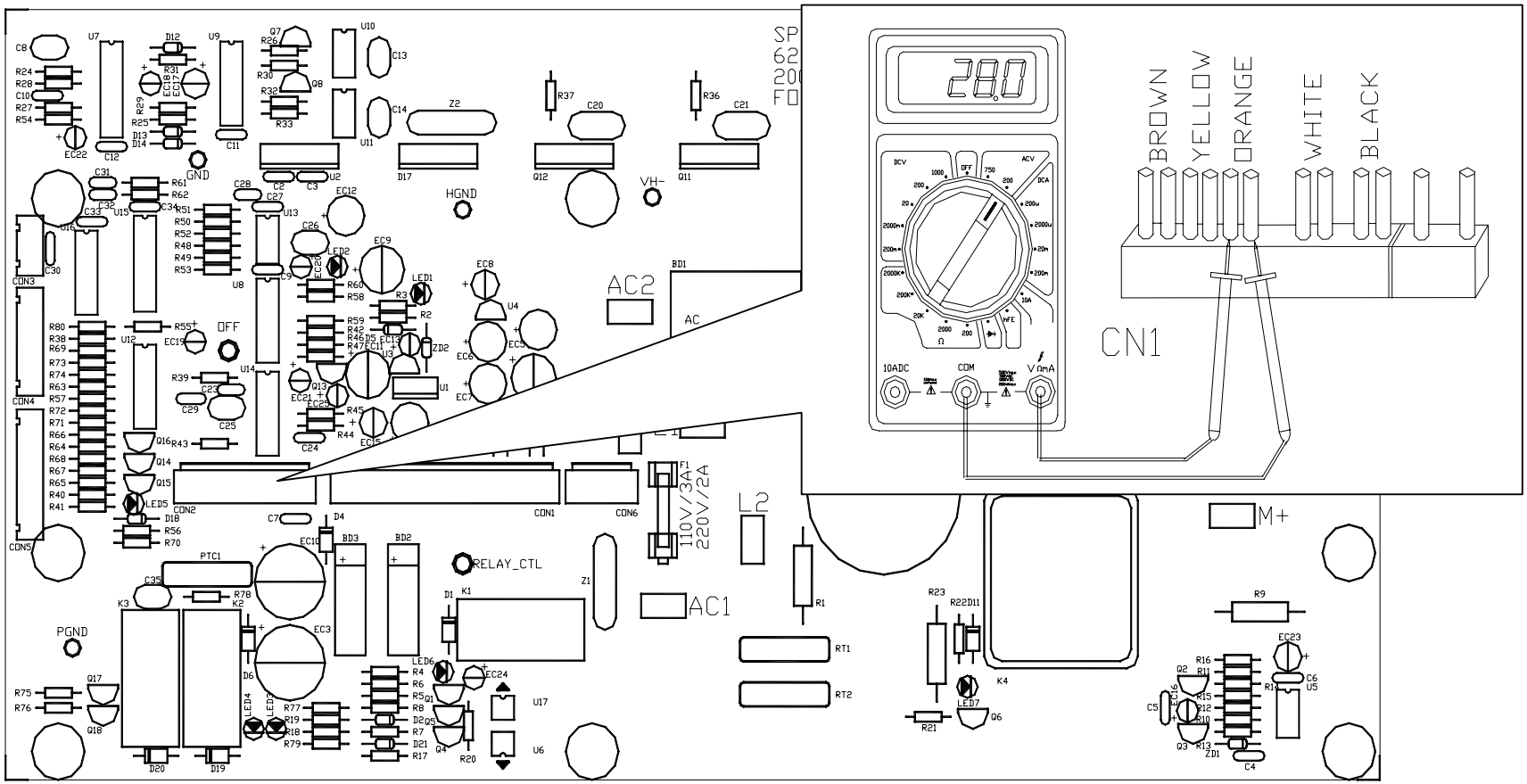
3-2-6. Troubleshooting

Order	Part	Troubleshooting
1	Incline LIMIT	1. During incline operation, inspect whether the drive board LED5 indicator lights. 2. If it is lit, recalibrate the incline set.
2	Incline VR	1. Test the incline VR voltage on the green and blue wires. -3% = 1.20V. 22% = 3.50V. 2. Inspect the VR voltage. During incline operation, VR voltage should vary. 3. When the incline motor is stuck or out of position, recalibrate the incline motor and VR. 4. Inspect whether the incline VR gears are stuck.
3	Drive Board	1. Test the drive board CON2 incline VR (green and blue wires) voltage
4	Cable	1. Inspect the wire connections. 2. Inspect whether the wires are pinched or broken. 3. Replace the cable and retest.
5	Display Board	1. Inspect the cable connections. 2. Inspect whether the U8 IC pins are connected well. 3. Inspect whether the U9 IC pins are connected well.

4. Test Configuration

4-1. Transformer Test

4-1-1. Figure 1: Transformer Secondary test: Orange and Orange Wires



4-1-2. Test Procedure

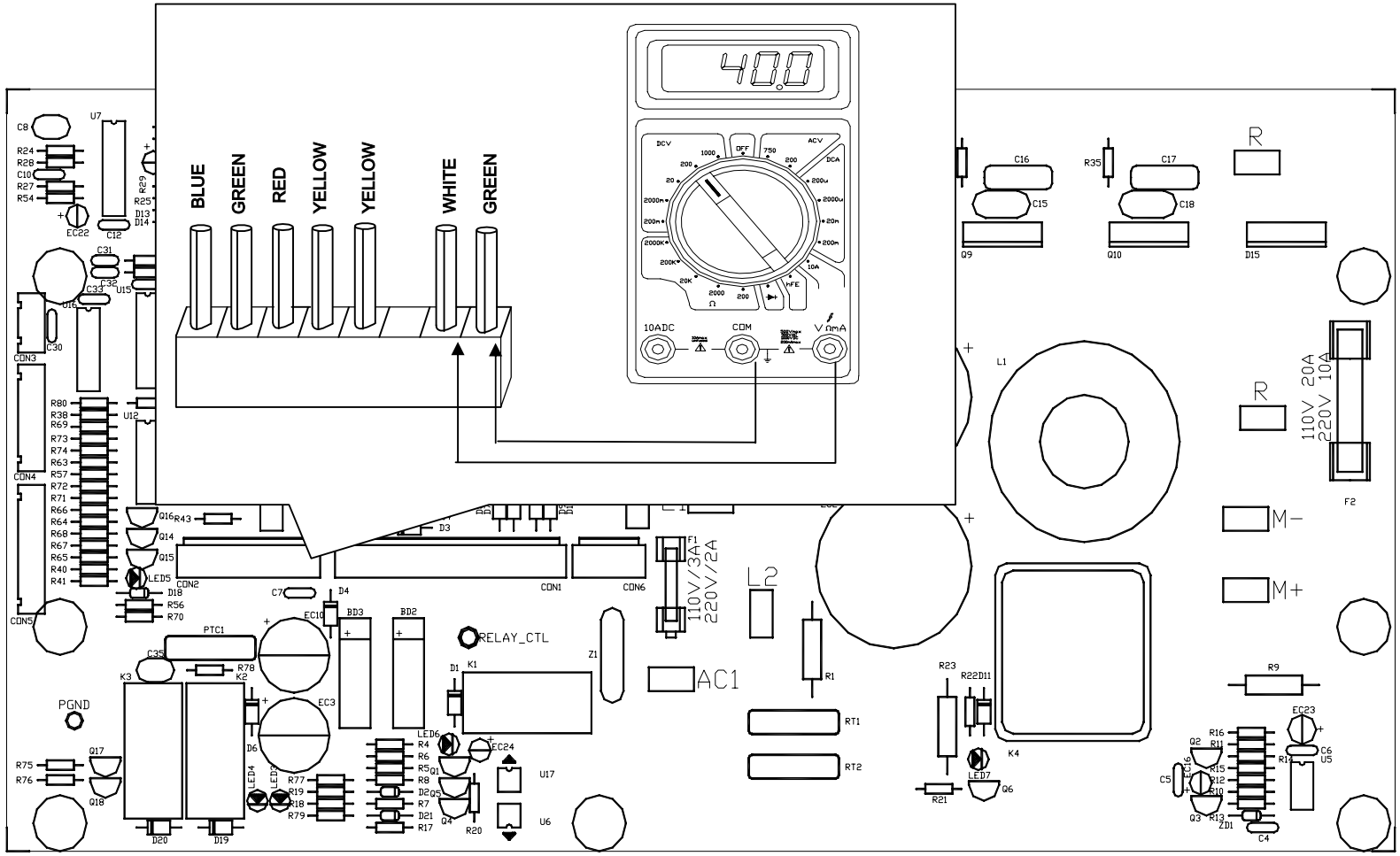
(1) Put the multimeter to the AC 200V setting. Place probes on the drive board CON1 transformer connector orange wires as shown.

(2) Turn on the power. Normal voltage: 26.0-29.0 V.

(3) If there is no voltage, the transformer is bad.

4-2. Drive Board Incline Motor Voltage Test

4-2-1. Test Configuration



4-2-2 Test Procedure

(1) Put the multimeter to the DC 200V setting. Place the red probe on the CON2 WHITE-wire pin. Place the black probe on the CON2 GREEN-wire PIN.

(2) Turn on the power switch. The display lights.

(2) Press the INCL<▲> key. The drive board LED4 indicator lights. The meter shows +35V or more. The incline motor operates, lifting the unit.

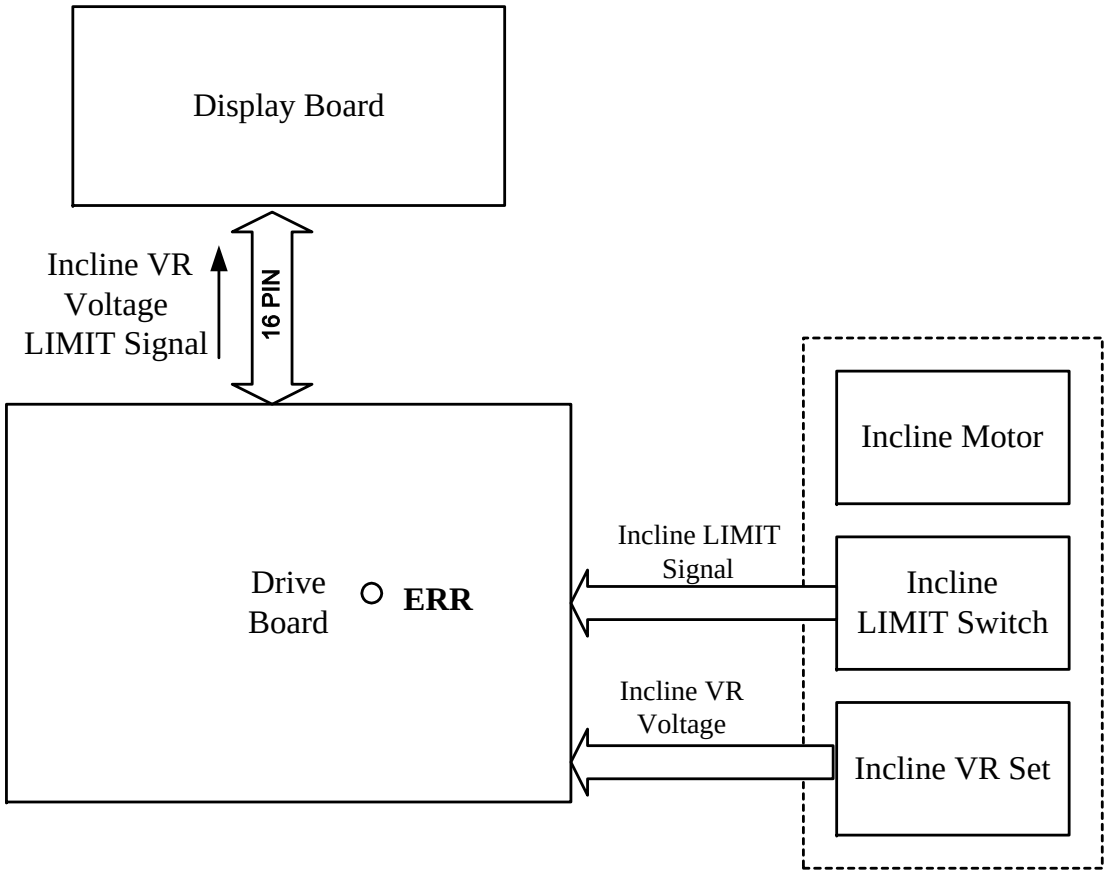
(4) Press the INCL<▼> key. The drive board LED3 indicator lights. The meter shows -35V or more. The incline motor operates, lowering the unit.

(5) If LED3 or LED4 lights, and there is no incline voltage, K2 or K3 are bad.

6200/6200N/6260 Error Message：ERR 7

1. Definition: The display board is not detecting the VR voltage value, or the voltage value has exceeded the range. “ERR7” appears on the display.

2. Configuration



3. Cause of ERR 7

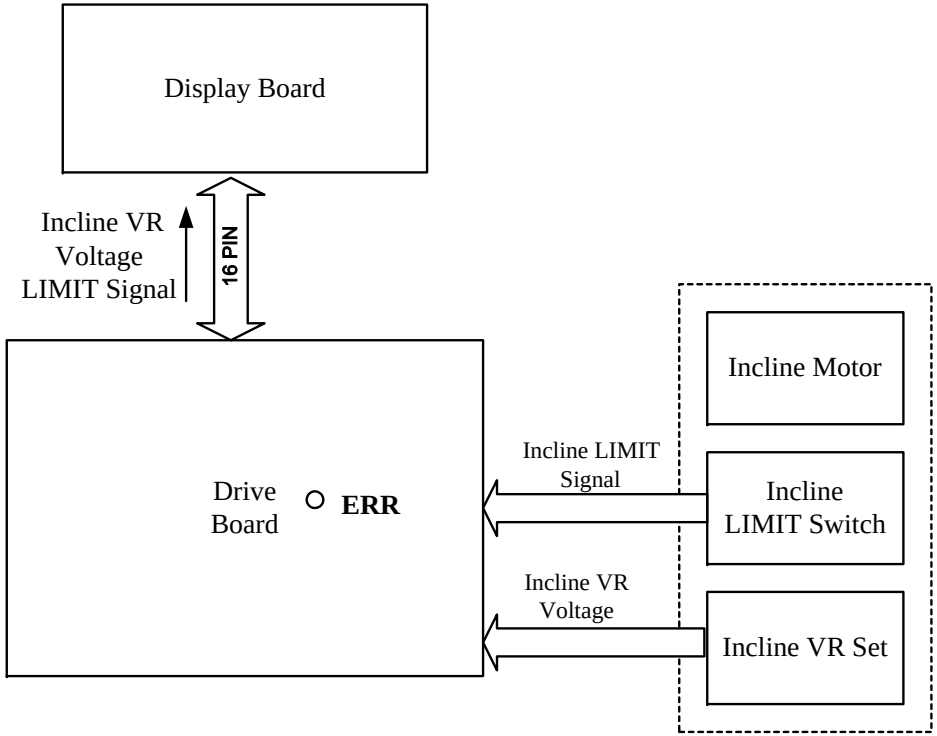
1. Incline VR value exceeds the range. ERR7 appears on the display.

1-1. Explanation

(1) Incline motor isn't operating up or down, making the VR value exceed the range.

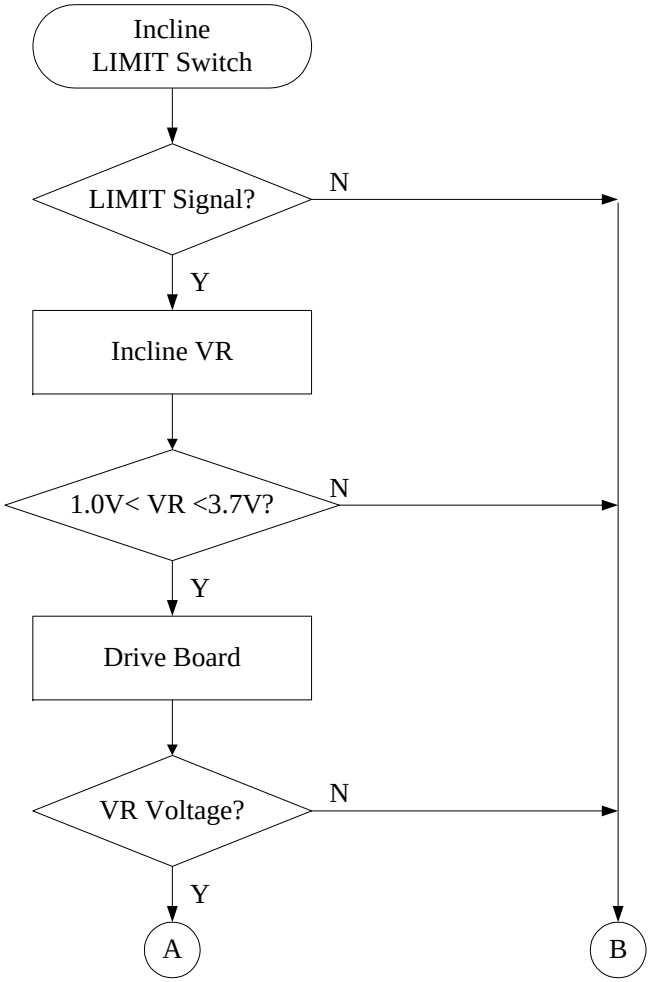
(2) After turning on the unit, the display board detects that the incline VR voltage exceeds the range, so ERR7 appears.

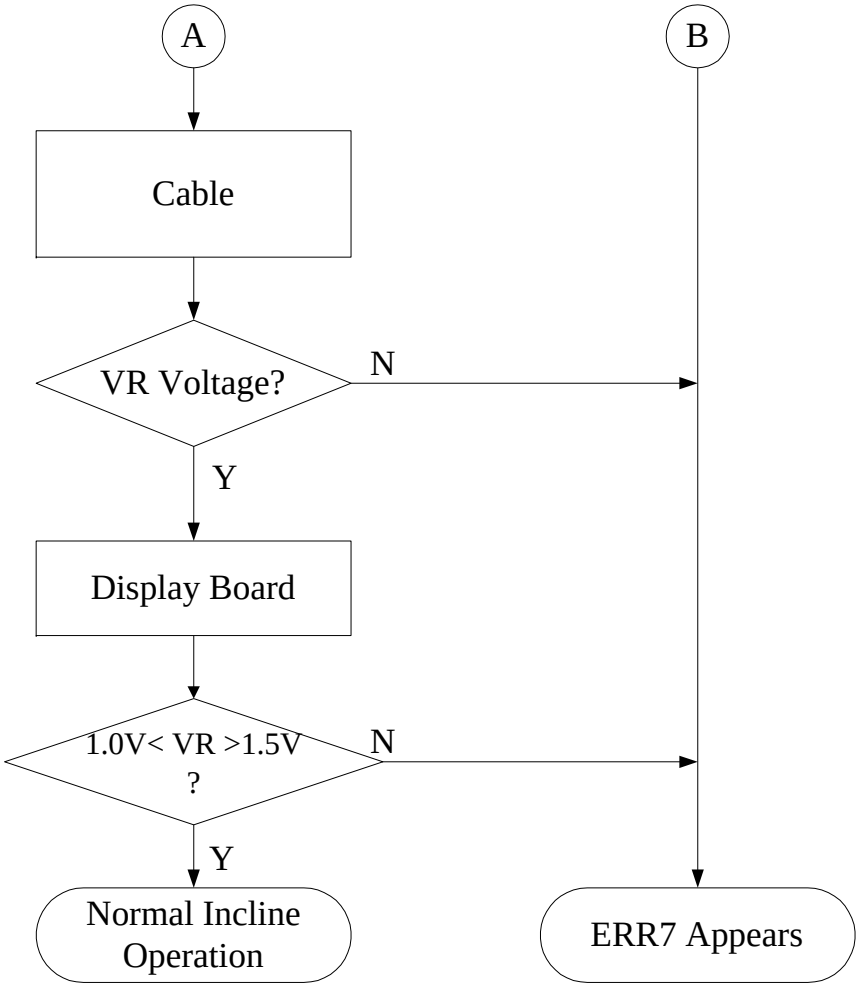
1-2. Configuration



1-3. Action Flow Chart

(1)




A
B
Cable
VR Voltage?
N
Y
Display Board
1.0V< VR >1.5V
?
N
Y
Normal Incline
Operation
ERR7 Appears

(2) Operation

Order	Part	Operation
1	Incline VR	1. Incline VR voltage travels the incline VR wire to the drive board.
2	Drive Board	1. Sends the incline VR voltage to the display board.
3	Display Board	1. CPU detects VR voltage. Normal range: 1.15-3.60V. 2. If the VR voltage exceeds the range, “ERR7” appears on the display.

1-4. Error Simulation

Order	Operation
1	Don’t turn on the power. Short out the drive board blue and green wires.
2	Turn on power.
3	The display immediately shows “ERR7”.

1-5. Malfunction

(1) Turn on the power; the display immediately shows ERR7.

1-6. Troubleshooting

Order	Part	Troubleshooting
1	Incline VR	1. Test whether the incline VR exceeds the range (1.15V-3.65V). 2. If the VR voltage exceeds the range, recalibrate the incline set.

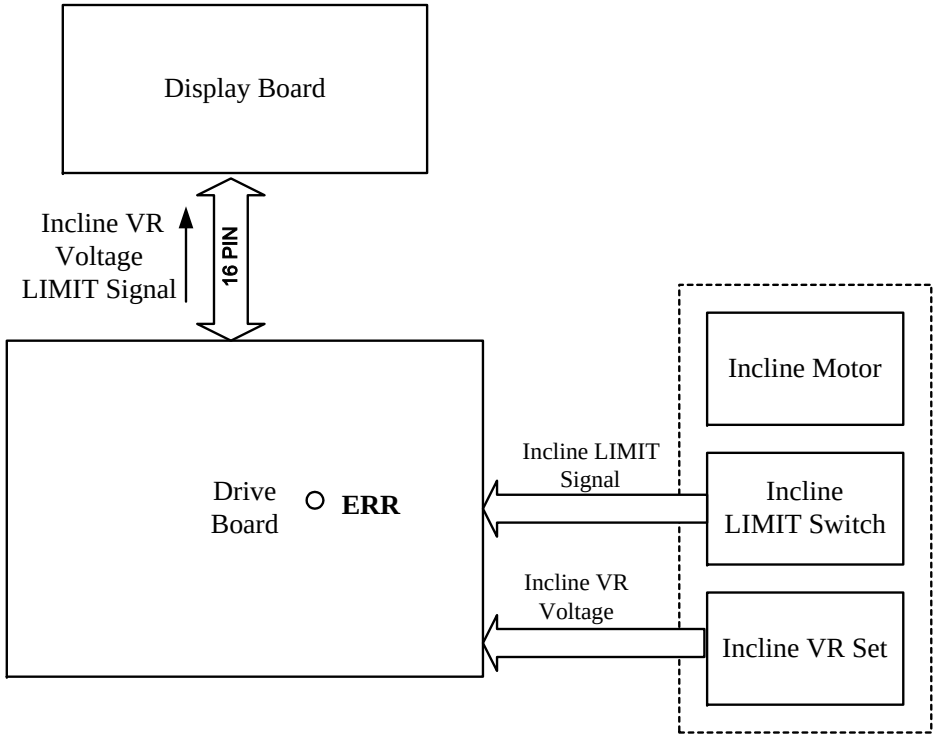
2	Display Board	1. Inspect the display board cable connections. 2. Replace IC ADC 0804.

2 VR Signal Is Disrupted; ERR7 appears on the display.

2-1. Explanation

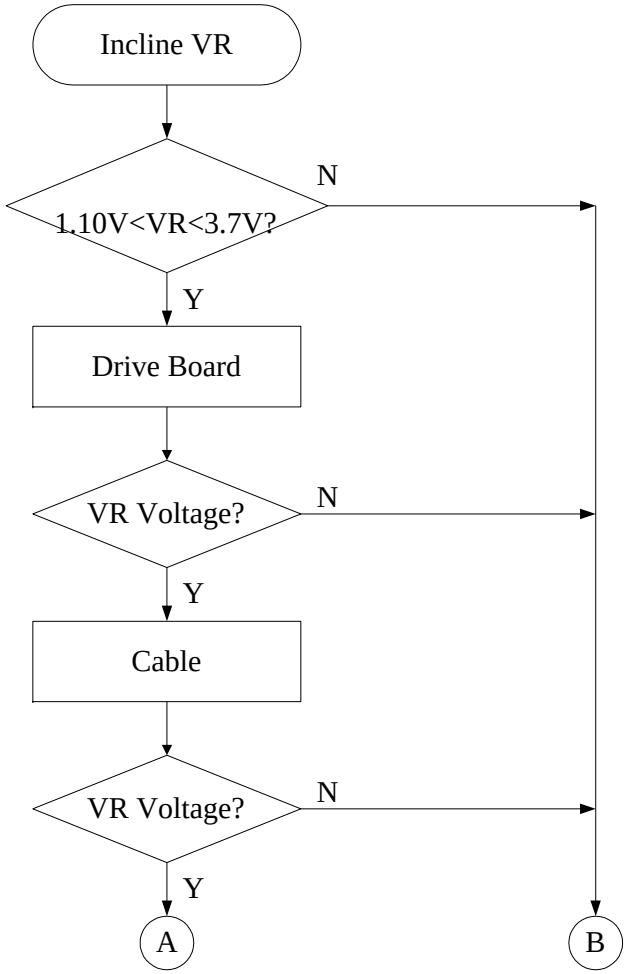
(1) The incline VR signal is disrupted, so the CPU cannot detect the signal. “ERR 7” appears.

2-2. Configuration



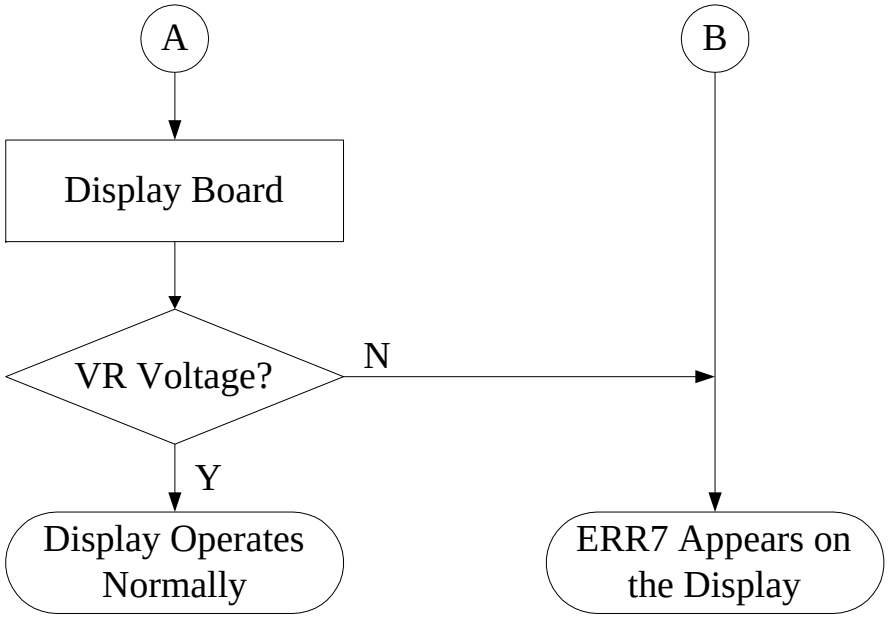
2-3. Action Flow Chart

(1)



2-3. Action Flow Chart

(1)



(2) Operation

Order	Part	Operation
1	Incline VR	1. The incline VR voltage travels the VR cable to the drive board.
2	Drive Board	1. The drive board sends the incline VR voltage to the display board.
3	Cable	1. The VR voltage travels the cable to the display.
4	Display Board	1. The display board reads the incline VR voltage. 2. If the CPU doesn't detect incline VR voltage, the display shows "ERR7".

2-4. Error Simulation

Order	Operation
1	Don't turn on power. Remove the drive board incline wires.
2	Turn on unit power.
3	The display shows "ERR7".

2-5. Troubleshooting

(1) Turn on the power. The display shows ERR7.

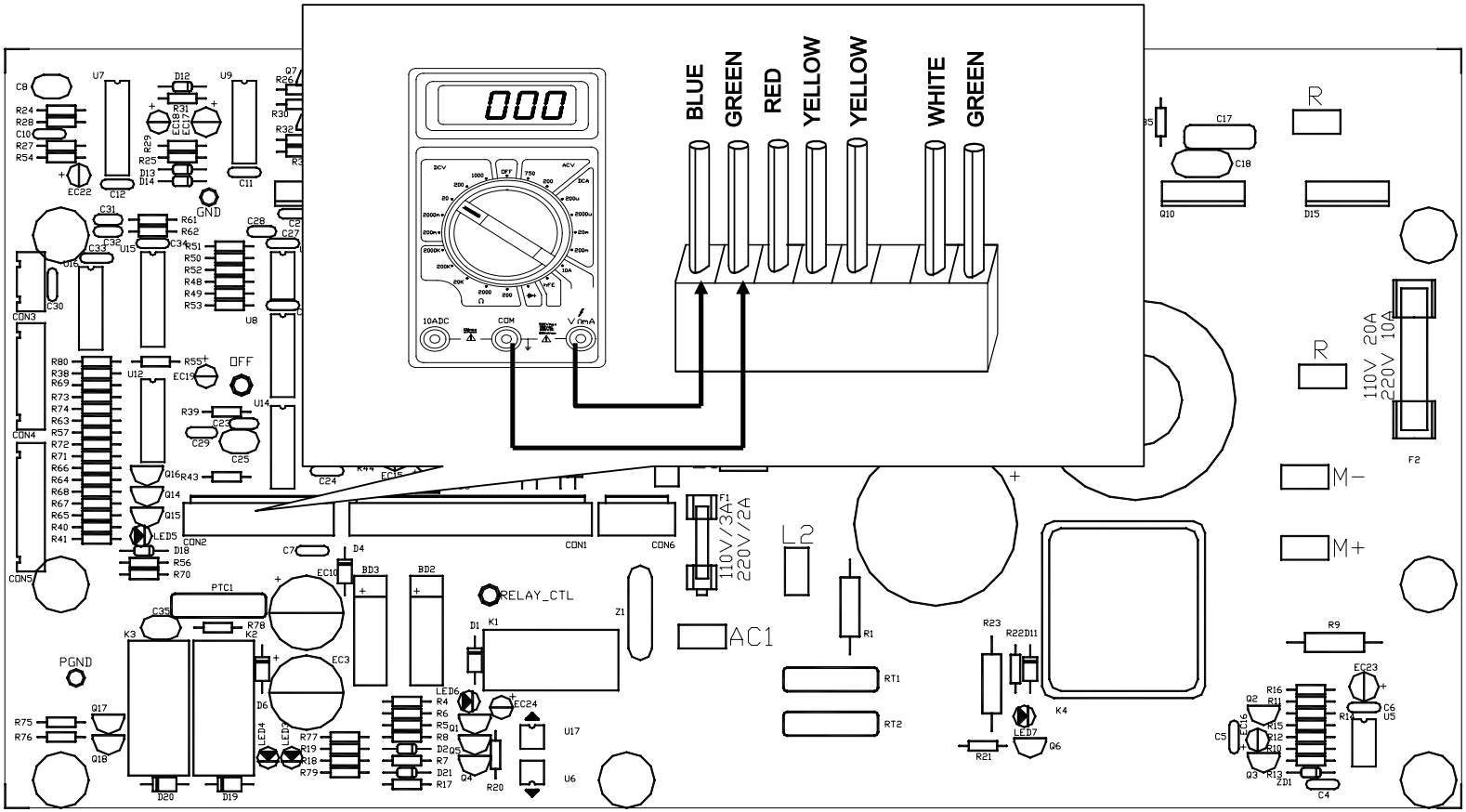
2-6. Troubleshooting

Order	Part	Troubleshooting
1	Incline VR	1. Reconnect VR wires. 2. Inspect whether the incline wires are broken or disconnected.
2	Drive Board	1. Inspect the incline wire and 16-pin cable connections. 2. Test whether the VR voltage varies at the incline wire terminal.
3	Cable	1. Inspect the wire connections. 2. Inspect whether wires are broken or crimped. 3. Replace the wires and test again.
4	Display Board	1. Inspect the display board 16-pin connections. 2. Press down on the main IC. 3. Replace IC ADC0804.

4. Test Configuration

4-1. 6200/6200N/6260 Drive Board Incline VR Test

4-1-1. Place multimeter probes as shown.



4-1-2. Test Procedure

2-1. Put the multimeter to the DC 20V setting. Place probes as shown on drive board CON2 blue and green wire connectors.

2-2. Turn on the power. Normal voltage: 1.10V to 3.60. If the voltage exceeds this range, ERR 7 appears on the display.

2-3. Press the INCL<▲> key until the incline window shows 15%. The treadmill incline rises to the highest position. Voltage is 3.60V.

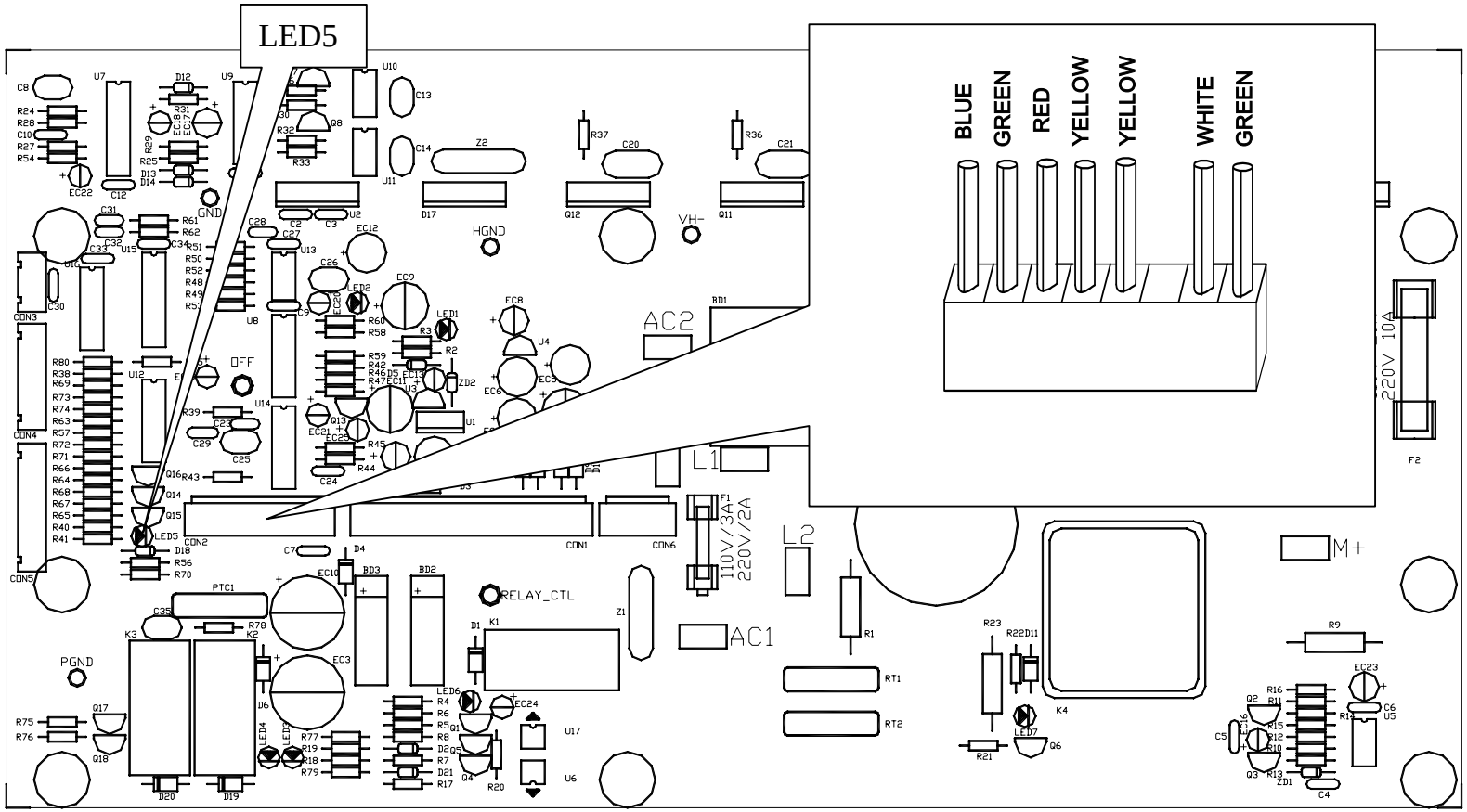
2-4. Press the INCL<▼> key until the incline window shows -3%. The treadmill incline lowers to the lowest position. Voltage is 1.20V.

2-5. If not as above, readjust the incline set.

2-6. If during incline action, the multimeter shows unstable VR voltage, replace the VR.

4-2.6200/6200N/6260 Drive Board Incline LIMIT Test

4-2-1. Test Configuration



4-2-2. Drive Board LIMIT Signal Test

(1) Turn on the power. Remove the incline wire from the drive board CON2 connector. The drive board LED5 indicator lights.

(2) Reconnect the incline wire to the drive board CON2 connection. Short the both yellow incline wires. Drive board LED5 indicator doesn't light.

(3) If as above, the drive board LIMIT signal operation is normal.

(4) If not as above, the drive board LIMIT signal is abnormal.

4-2-3. Incline LIMIT Switch Signal Test

(1) Press the INCL<▲> key until the incline window shows 22%. The incline rises to the 22% position. The drive board LED5 indicator doesn't light.

(2) Press the INCL<▼> key until the incline window shows -3%. The incline lowers to the 0%
position. The drive board LED5 indicator doesn't light.

(3) If in operation from 0-15%, the drive board ERR indicator lights,

(1) recalibrate the incline set;

(2) inspect the incline LIMIT wire and connection;

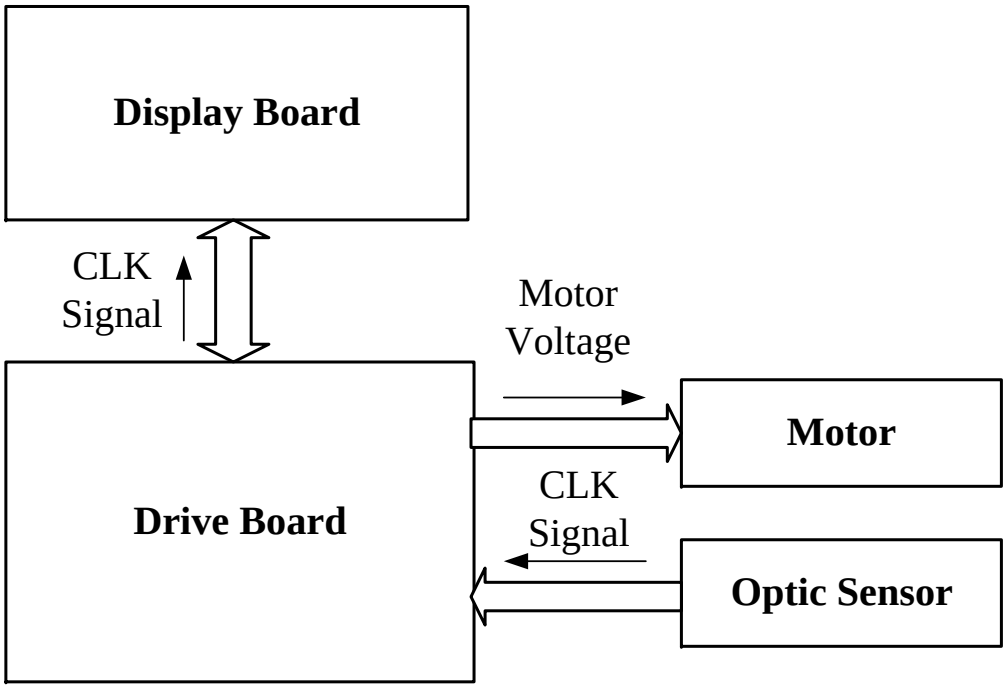
(3) replace the incline VR.

6200/6200N/6260 Error Message：ERR 10

1. Definition

The motor speeds uncontrolled. Display shows ERR 10.

2. Configuration



3. Cause of ERR10

3-1. If the motor speeds uncontrolled, the optic sensor signal speed increased abnormally.

3-2. The display board reads the optic sensor signal. If the optic sensor signal increases abnormally, ERR10 appears on the display.

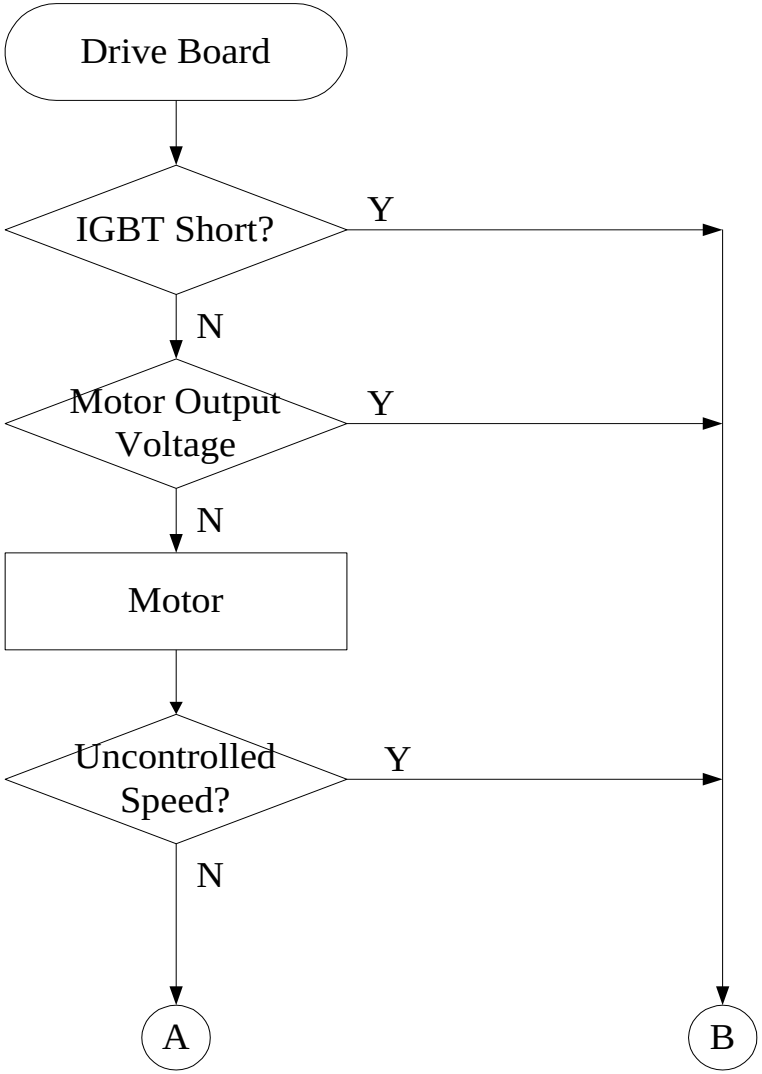
3-3. The cause of uncontrolled motor speed is an IGBT short. The drive board protective feature could not compensate. So as soon as the treadmill is turned on, the motor speeds uncontrolled.

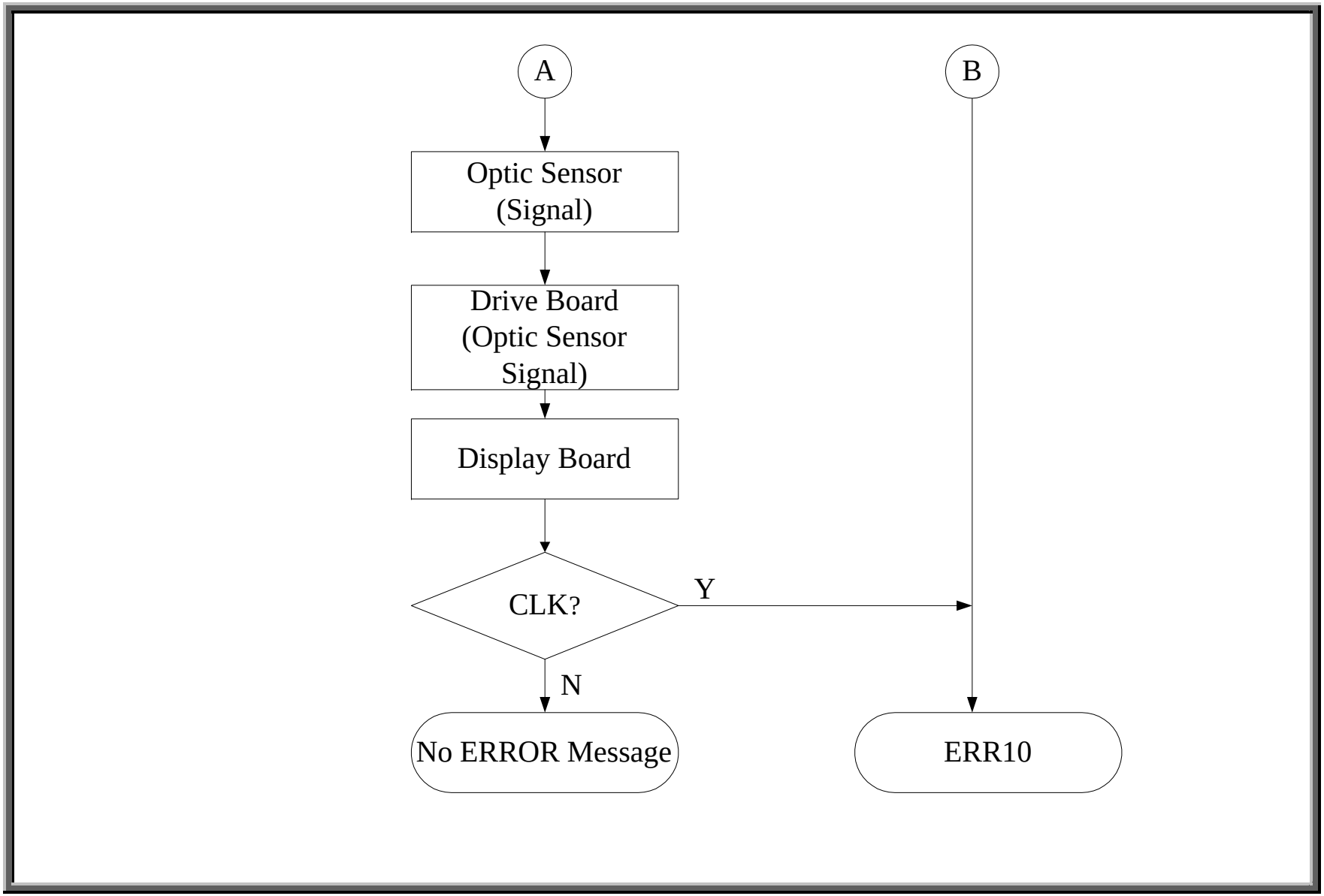
4. Operation

4-1.

Order	Part	Operation
1	Drive Board	1.When the unit is turned on, drive board M+, M- wires are not sending any voltage to the motor. 2. If IGBTs malfunction, the drive board M+, M- wires send voltage to the motor. 3. The drive board automatically tests for IGBT shorts. If IGBT shorts are found, LED6 indicator lights.
2	Motor	1. If the motor doesn't receive voltage from the drive board, it doesn't operate. 2. If, when you start the unit, drive board M+, M- wires send voltage abnormally to the motor, the motor automatically speeds uncontrolled.
3	Optic Sensor	1. The optic sensor detects the motor speed and sends its signal to the drive board.
4	Drive Board	1. The drive board sends the optic sensor signal to the display board.
5	Display Board	1. The CPU reads the optic sensor signal. 2. If the speed signal indicates that the motor is speeding uncontrolled, the display shows ERR10.

4-2. Flow Chart




A
B
Optic Sensor (Signal)
Drive Board (Optic Sensor Signal)
Display Board
CLK?
Y
N
No ERROR Message
ERR10

5. Circumstance of Malfunction

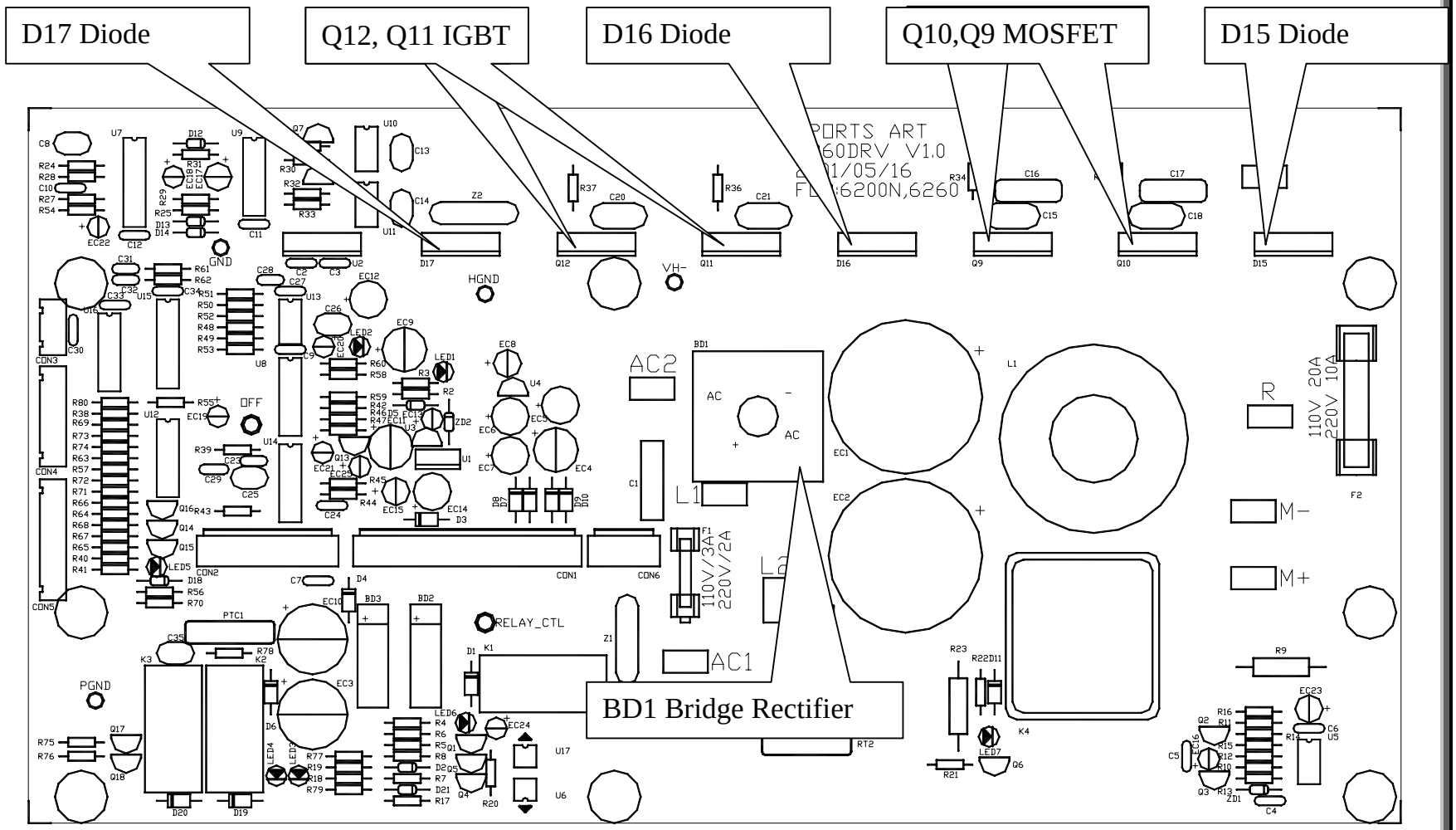
(1) Turn on power. Motor immediately speeds uncontrolled. Display shows “ERR 10”.

6. Troubleshooting

Order	Part	Troubleshooting
1	Drive Board	1. Remove the drive board wire connections. Test the drive board power components Q11, Q12 for shorting. 2. If components have shorted, replace them.

7. Test Configuration

7-1. Power Component



7-2. Test Configuration

Figure 1. Q9, Q10, Q11, Q12 IGBT and MOSFET Test

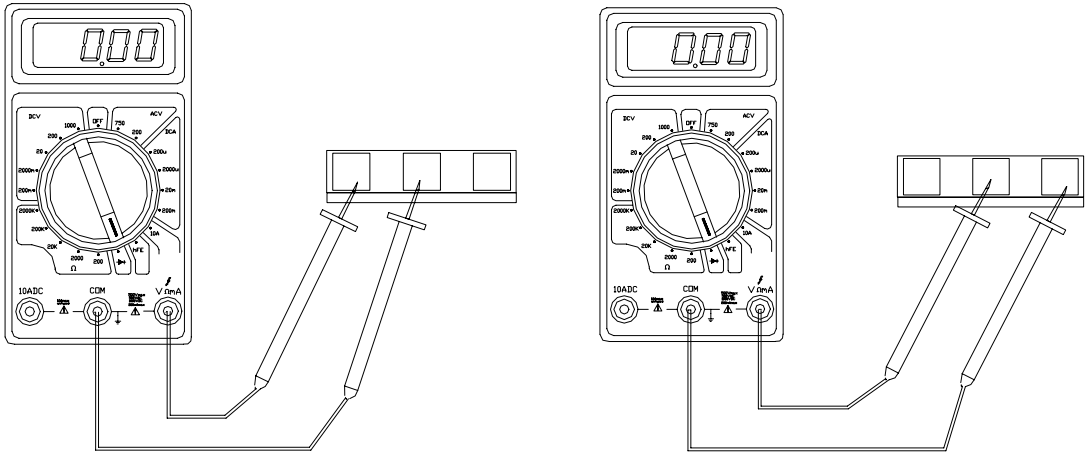
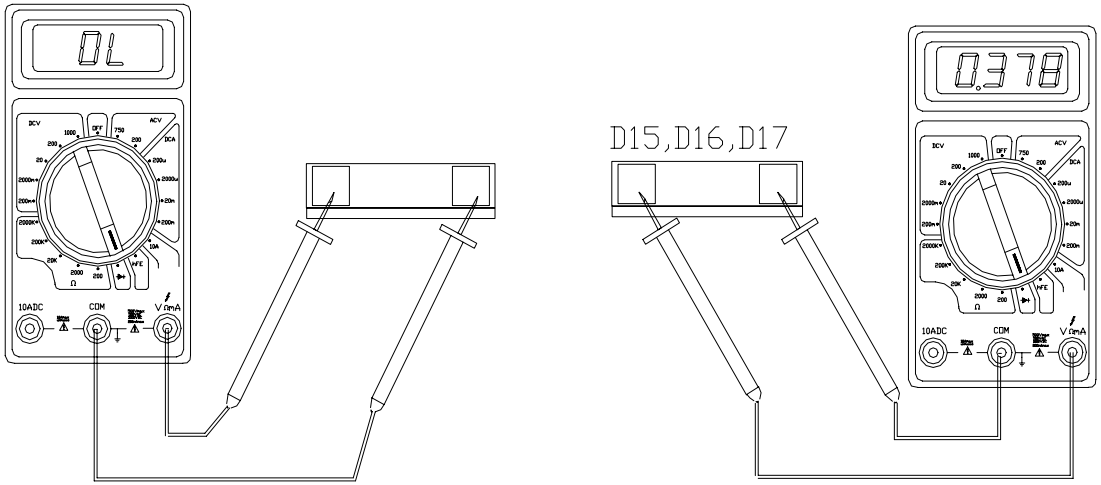


Figure 2. D15, D16, D17 Diode



7-3. Test Procedure

7-3-1. Q9, Q10, Q11, Q12 Testing

(1) Remove all wire connections from the drive board. Do not turn on unit power.

(2) Put multimeter to the diode setting. Place probes separately on component pins as shown in Figure 1.

(3) The reading should not be 0. A reading of 0 indicates a short circuit. Replace component.

7-3-2. D15, D16, D17 Diode Testing

(1) Remove all wire connections from the drive board. Do not turn on unit power.

(2) Put multimeter to the diode setting. Place probes separately on component pins as shown in Figure 2.

(3) Multimeter readings should be as shown in Figure 2.

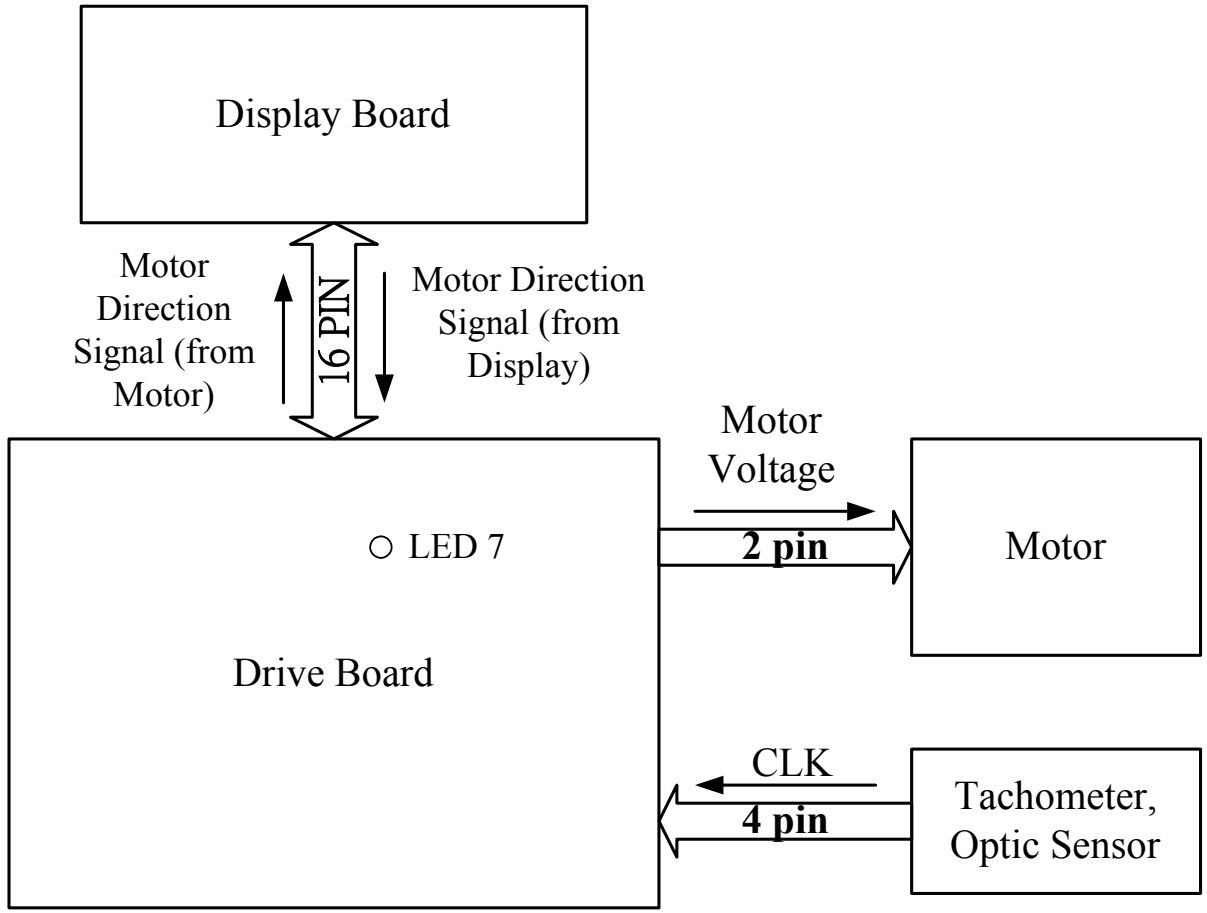
(4) A reading of 0 indicates a short circuit. Replace component.

6200/6200N/6260 Error Message：ERR 11

1. Definition

The display motor setting and the actual motor direction differ, so ERR11 appears.

2. Configuration



3. Cause of ERR11

3-1. The display board emits the motor direction signal to the drive board.

3-2. The optic sensor detects motor direction and sends its signal to the drive board, which, in turn, transmits the optic sensor signal to the display board.

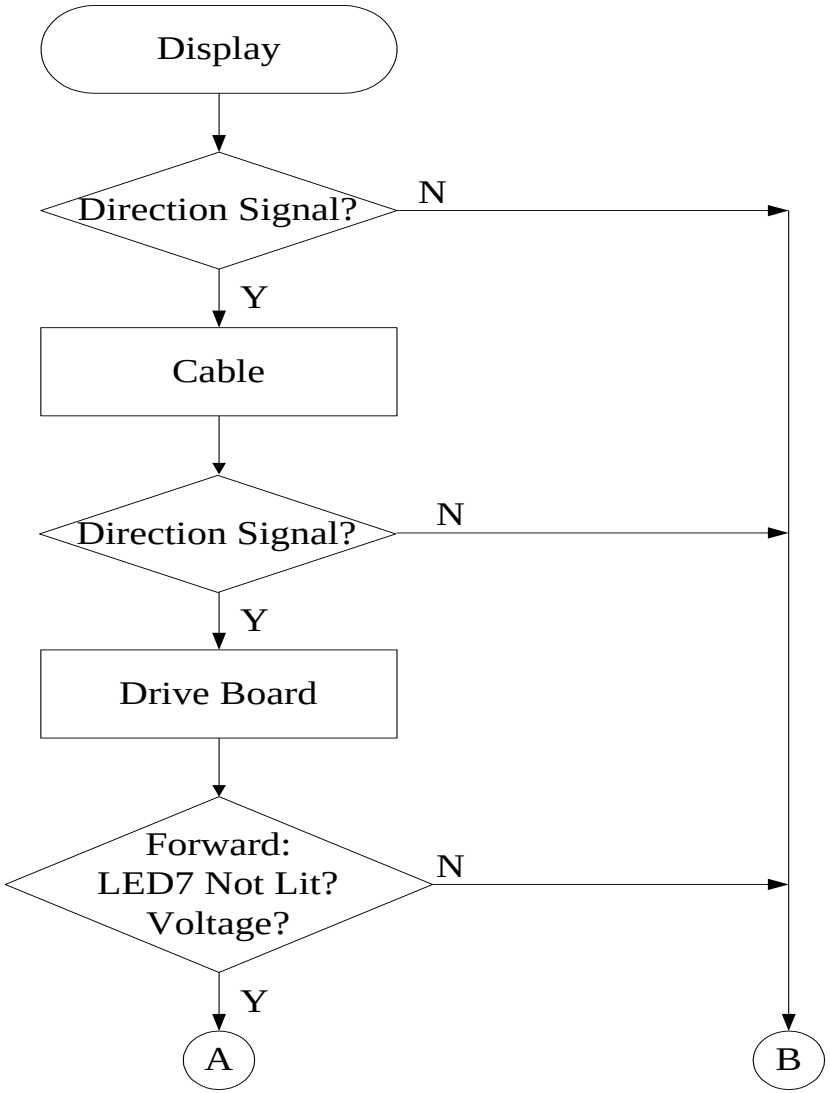
3-3. The display board reads the motor direction signal from the optic sensor. If the direction differs from that which the display board sent, ERR11 appears.

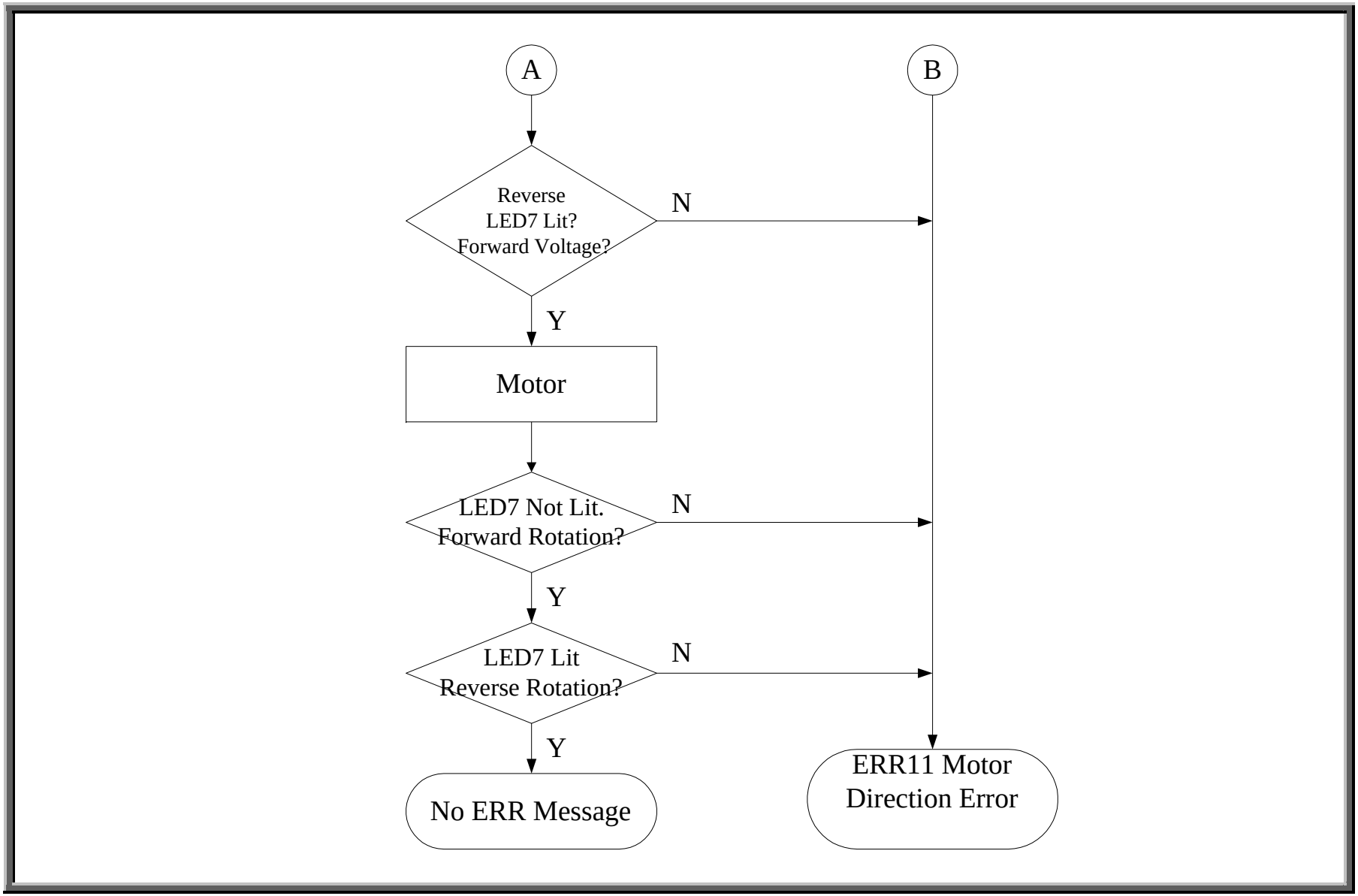
4. Operation

4-1.

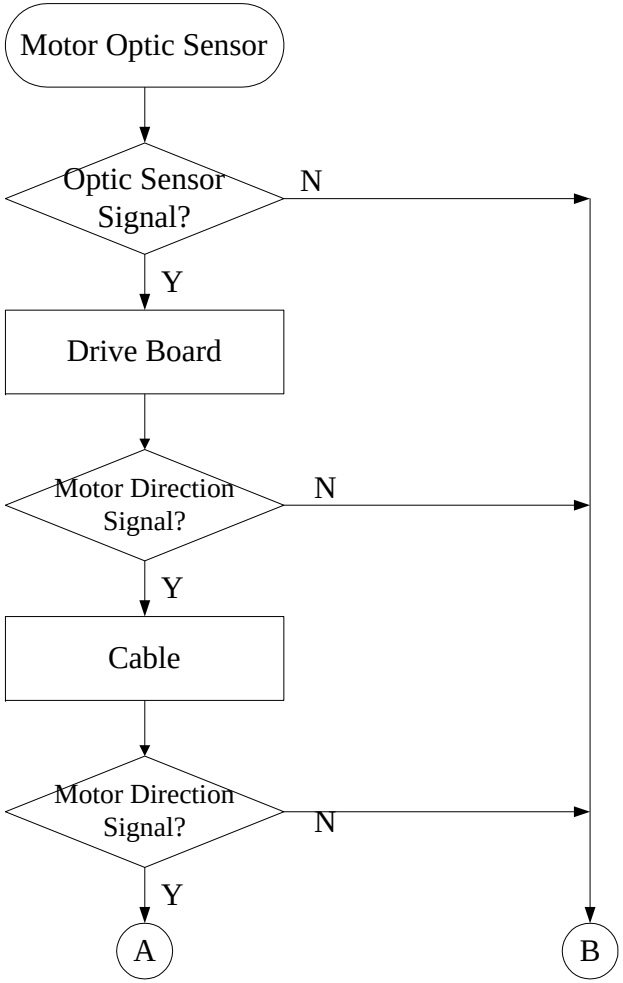
Order	Part	Operation
1	Display Board	1. If the SPEED window shows a positive number, like “2.0”, the display board is emitting a forward direction signal to the drive board. 2. If the SPEED window shows a negative number, like “-1.0”, the display board is emitting a reverse direction signal to the drive board.
2	Cable	1. The direction signal travels the cable from the display board to the drive board.
3	Drive Board	1. LED7 on the drive board does not light when the drive board receives a forward direction signal, and voltage for forward rotation travels the M+, M- wires to the motor. 1. LED7 on the drive board lights when the drive board receives a reverse direction signal from the display board, and voltage for reverse motor rotation travels the M+, M- wires to the motor.
4	Motor	1. When the drive board M+, M- voltage is for forward rotation, the motor rotates in a forward direction. 2. When the drive board M+, M- voltage is for reverse rotation, the motor rotates in a reverse direction.
5	Optic Sensor	1. Optic sensor detects motor rotation and emits its signal.
6	Drive Board	1. After reading the motor direction signal, the drive board transmits the signal to the display board.
7	Display Board	1. The CPU compares the SPEED direction setting and the motor signal from the optic sensor. 2. If the setting differs from the actual motor direction, ERR11 appears.

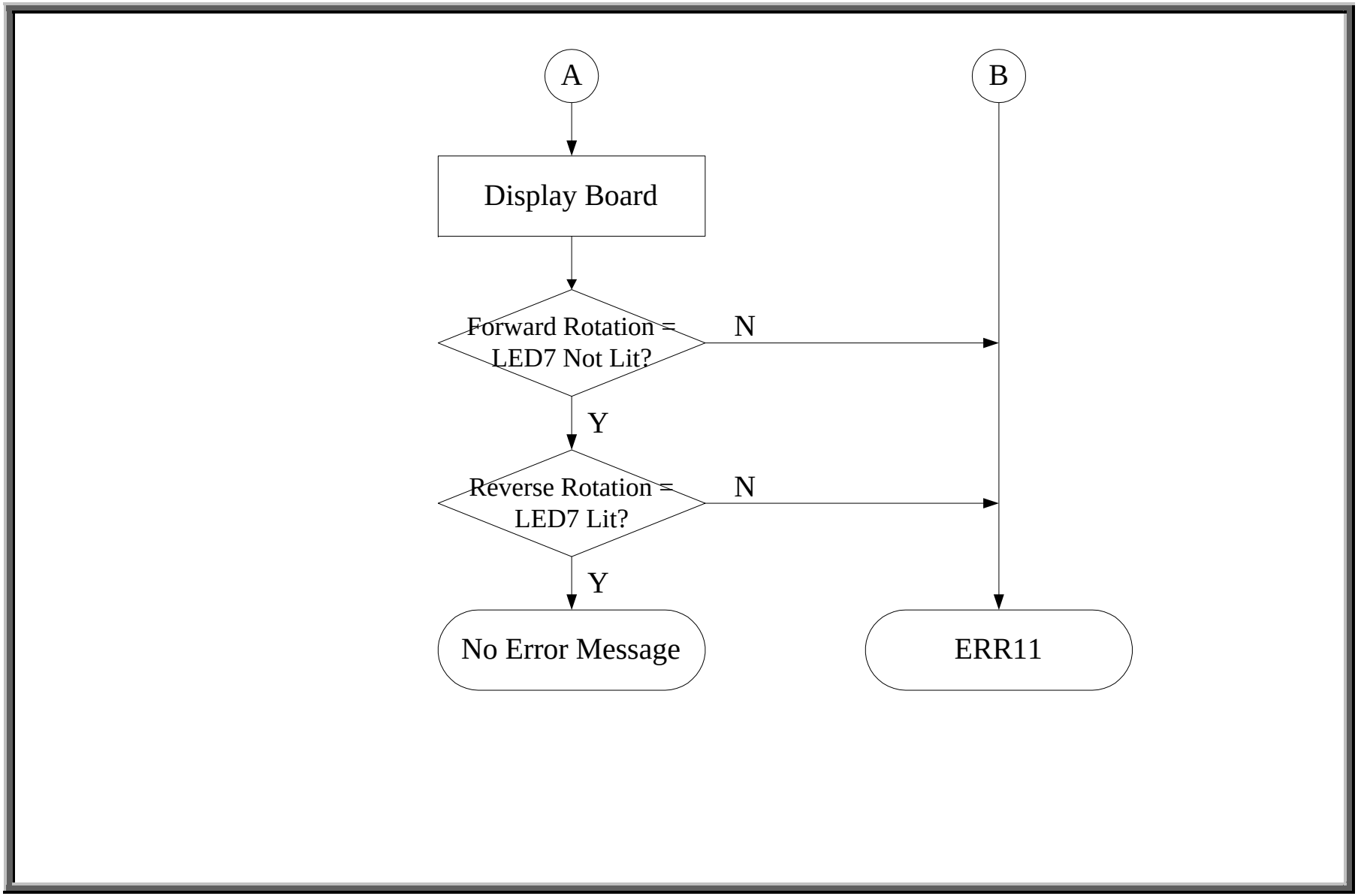
4-2. Flow Chart 1




A
B
Reverse
LED7 Lit?
Forward Voltage?
N
Y
Motor
LED7 Not Lit.
Forward Rotation?
N
Y
LED7 Lit
Reverse Rotation?
N
Y
No ERR Message
ERR11 Motor
Direction Error

4-3. Flow Chart 2




A
B
Display Board
Forward Rotation = LED7 Not Lit?
N
Y
Reverse Rotation = LED7 Lit?
N
Y
No Error Message
ERR11

5. Circumstance of Malfunction

(1) Press SPEED key. Actual motor direction and display setting differ. ERR11 appears.

6. Troubleshooting

6-1. Actual motor direction and display setting differ. ERR11 appears.

Order	Part	Troubleshooting
1	Display Board	1. Inspect motor direction signal. (1) Display SPEED window shows a positive number, like “1.0.” LED7 on the drive board doesn’t light. (2) Display SPEED window shows a negative number, like “-0.0”. LED7 on the drive board lights.
2	Cable	1. Inspect the cable connections. 2. Inspect whether the wires have broken or crimped.
3	Drive Board	1. Inspect whether the motor M+, M- wires are connected properly (not crossed). 2. Inspect that when LED7 is not lit, the M+, M- voltage is positive (forward rotation). 3. Inspect that when LED7 lights, the M+, M- voltage is negative (reverse rotation).
4	Motor	1. When LED7 is not lit, the motor direction is forward. 2. When LED7 is lit, the motor direction is reverse.

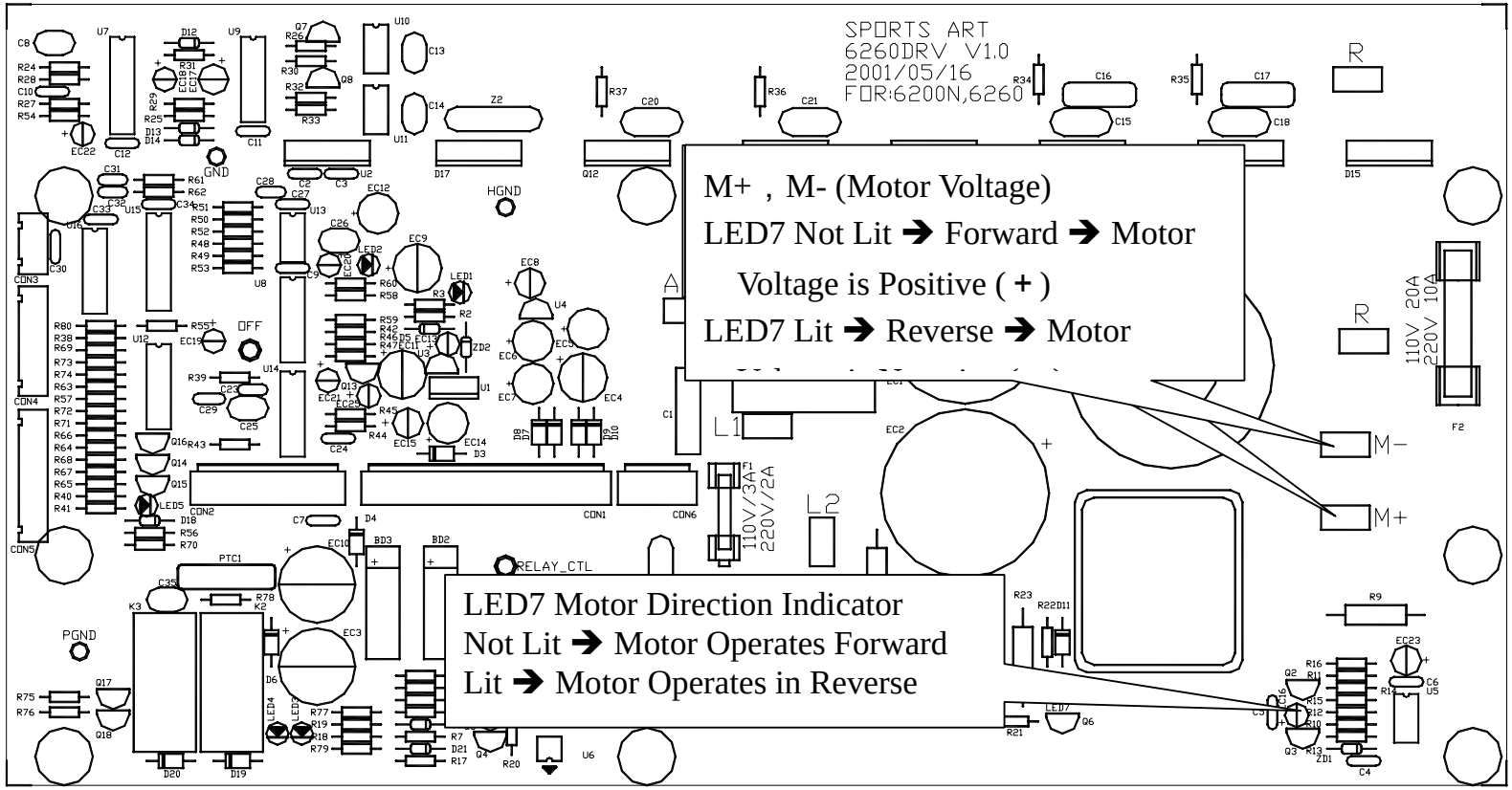
6-2. SPEED window setting and the motor setting are the same, but the display shows ERR11.

Order	Part	Troubleshooting
1	Optic Sensor	1. Inspect whether the tachometer is missing teeth. 2. Replace the optic sensor.
2	Drive Board	2. Inspect whether the drive board U15 IC is normal.
3	Wire	1. Inspect whether the wire connected properly or crimped.
4	Display Board	1. Inspect whether U9 IC pins are contacting properly.

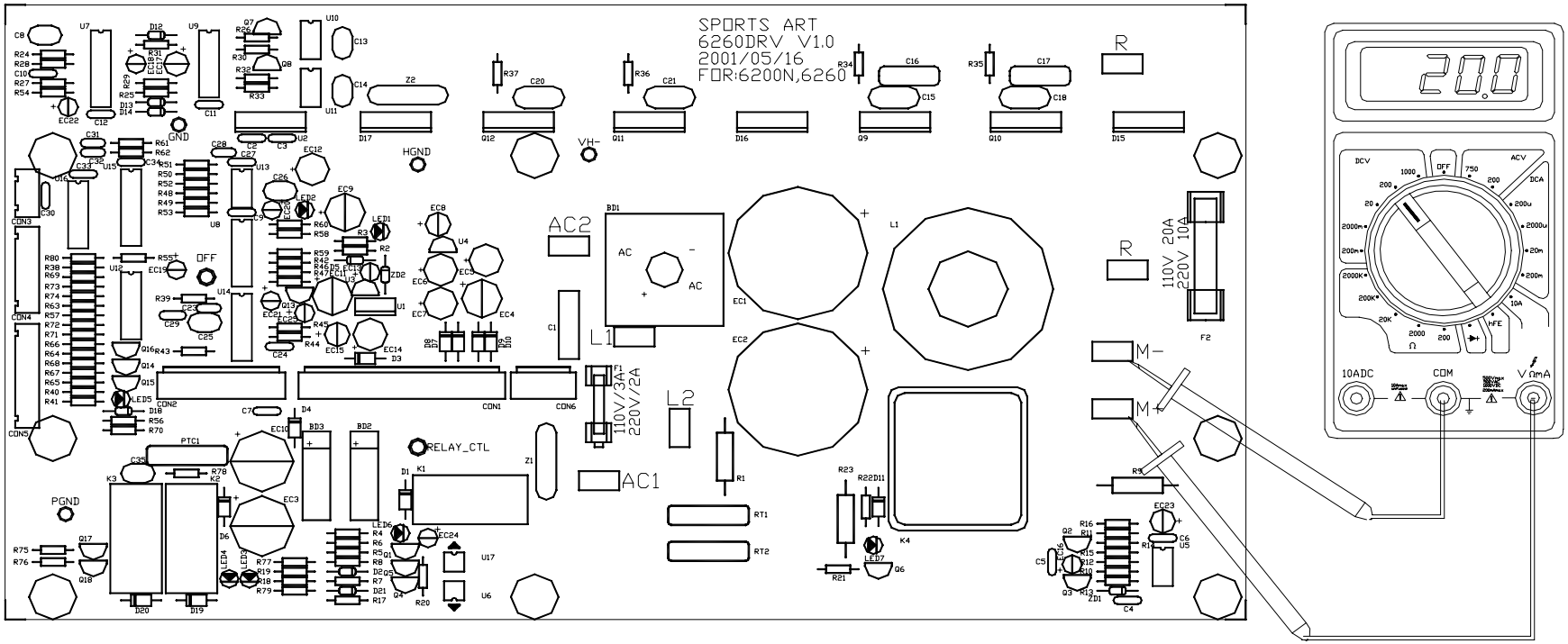
7. Test Configuration

7-1. Drive Board Motor Direction Indicator Test

7-1-1. Drive Board Motor Direction Indicator Location



7-1-2. Drive Board Motor Voltage Test Configuration



7-1-3. Test Procedure

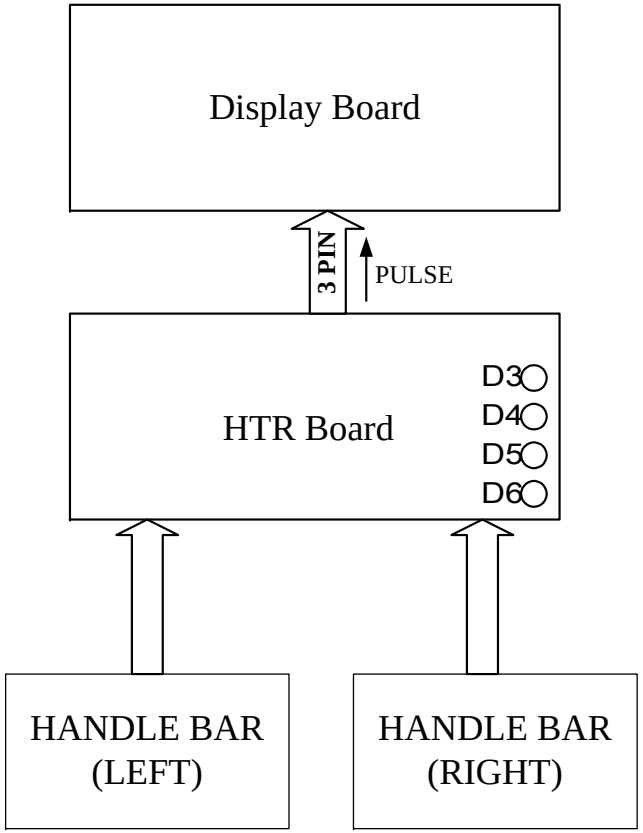
1. Put multimeter to the 220V DC setting. Place probes separately on drive board M+, M- terminals as shown in Figure 1 (red probe on M+; black probe on M-).
2. Press the SPEED<▲> key. The display SPEED window shows “1.0” KPH. The drive board LED7 doesn’t light. The multimeter shows 20V or more. The motor rotates in the forward direction.
3. Press the CAL<▼>+DIST<▼> keys. The SPEED window shows “-0.0”. The drive board LED7 lights. Press the SPEED<▲> key until the SPEED window shows “-1.0” KPH. The multimeter shows “-20” V or more. The motor rotates in the reverse direction.
4. If the drive board LED7 doesn’t light, but the multimeter shows negative voltage, or the drive board LED7 lights, but the multimeter shows positive voltage, the drive board is defective.

6200/6200N/6260 ERROR Message： ERR 12

1. Definition

1. The user is holding the HTR handlebar, but the display doesn't detect the HTR signal.

2. Configuration



3. Cause

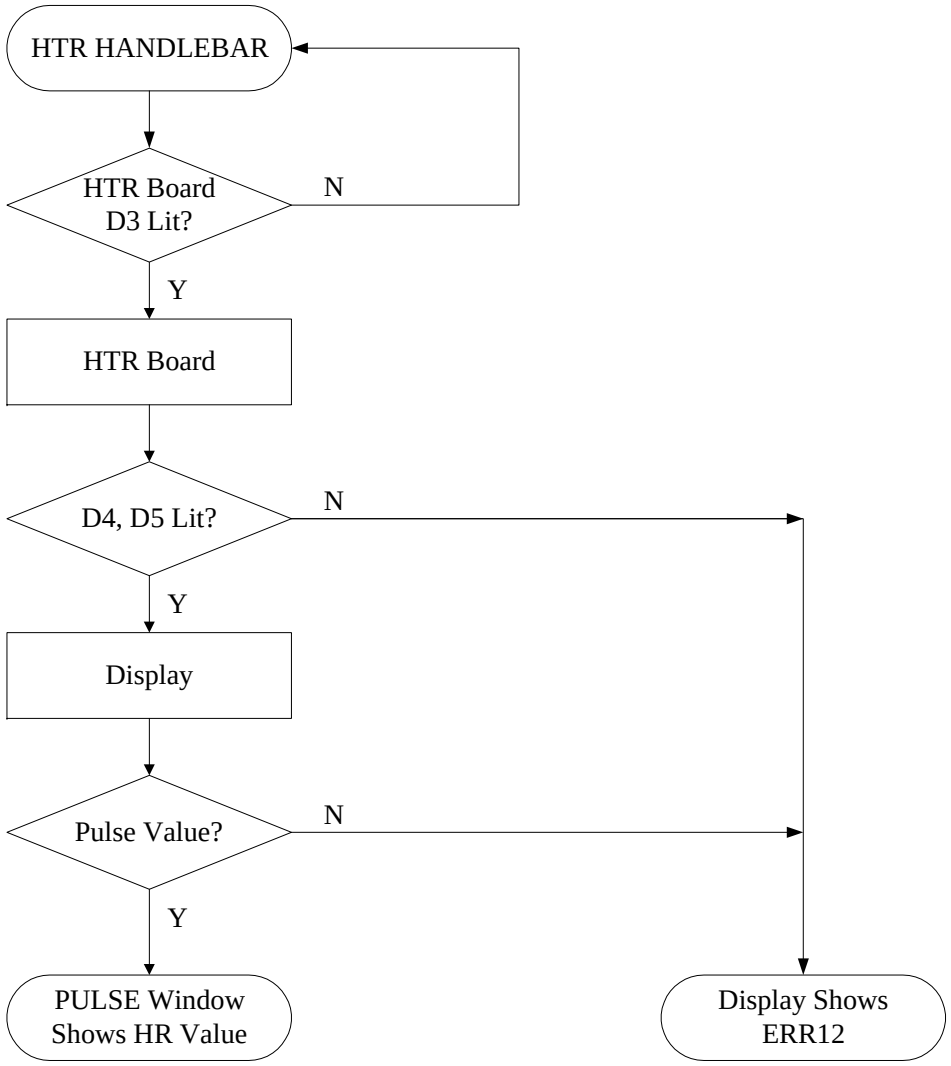
3-1. The HTR board detects the pulse signal and the HTR signal is sent to the display board.
3-2. The display board detects the HTR signal. If there is none at the CPU, ERR 12 appears.

4. Action Flow Chart

4-1. Operation

Order	Part	Operation
1	HTR Handlebar	1. The user holds onto the HTR handlebar. The pulse is transmitted to the HTR board.
2	HTR Board	1. The HTR board detects whether the user is holding the HTR handlebars with both hands. If so, the HTR board D4 indicator lights. 2. If the heart rate signal enters the board, the HTR board D5 indicator flashes. 3. After the heart rate signal is processed, the HTR board D6 indicator flashes.
3	3-PIN Cable	1. The HTR signal travels the three-pin cable from the HTR board to the display board.
4	Display Board	1. The CPU reads the heart rate signal and calculates the heart rate value. 2. The heart rate value appears in the PULSE window. 3. If the CPU detects a heart rate signal but cannot calculate the heart rate value, ERR 12 appears. ERR 12 tells the user to hold onto the HTR handlebar more firmly, without moving.

4-2. Action Flow Chart



5. Error Message Simulation

Order	Operation
1	Press the display <ON> key. The display “beeps” once and lights up. Main window shows “MAN’L”.
2	Put both hands on the HTR handlebar.
3	Move your hands on the HTR handlebar so the heart rate cannot be detected.
4	“ERR 12” appears on the display.

6. Circumstances of Malfunction

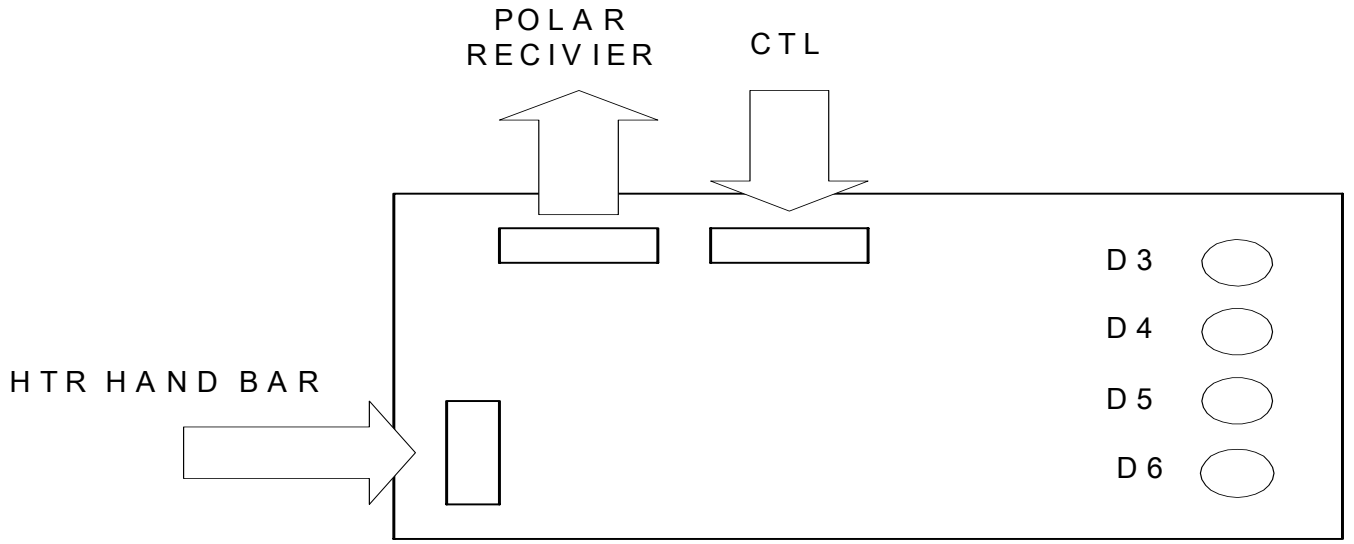
6-1. The user places both hands on the HTR handlebar. The display shows “ERR 12”.

7. Troubleshooting

Order	Part	Troubleshooting
1	Left, Right HTR Handlebar	1. Inspect whether the HTR handlebar wire is shorting or broken. 2. Hold onto the HTR hanblebar. Inspect whether the HTR board D4 indicator lights and remains lit and whether the D5 indicator subsequently flashes. If not, the HTR handlebar and/or wire are bad.
2	HTR Board	1. Hold onto the HTR handlebar. 2. If D4 indicator doesn’t light and D5 indicator doesn’t flash, the HTR handlebar or wire are bad. 3. If D6 doesn’t flash or flashes erratically, the HTR board is bad.
3	3-PIN Cable	1. Inspect the 3-PIN wire connections. 2. Inspect whether the 3-PIN wire has shorted out or broken.
4	Display Board	1. Inspect the 3-PIN wire connections. 2. Inspect whether the U7 IC pins are connected well, or replace the IC.

8. HTR Board Test

8-1.HTR Board Wire Connections and LED Indicators



8-2. Explanation of LED Indicators

LED	Color	Name	Explanation
D3	RED	POLAR HR LED	Flashes to indicate that POLAR heart rate signal is entering the board.
D4	YELLOW	HTR Signal LED	Lights to indicate that the user is holding the HTR handlebar.
D5	GREEN	HTR PULSE LED	Flashes to indicate the HTR heart rate is entering the board.
D6	WHITE	PULSE Output LED	Flashes each time a heart rate signal is emitted.

8-3. Test Procedure

8-3-1. Don’t hold the HTR handlebar. The HTR board signal indicator doesn’t light.

8-3-2. Hold the HTR handlebar with both hands. The HTR board D4 indicator lights.

8-3-3. Then the D5 indicator flashes, indicating that the HTR signal is entering the board.

8-3-4. Next, D6 indicator flashes to indicate that the HTR board is being sent to the display board.

8-3-5. Within ten seconds, the PULSE window shows the heart rate value.

8-3-6. If not as above, refer to troubleshooting.

Malfunction	Cause	Explanation
D3 Not Lit	No heart rate is entering the POLAR receiver.	POLAR transmitter, POLAR receiver, cable
D4 Not Lit	No one is holding the HTR handlebar.	HTR handlebar, HTR board to handlebar cable
D5 Not Lit	No HTR signal is entering the unit.	HTR handlebar, HTR board to handlebar cable
D6 Not Lit	The HTR board didn’t emit the heart rate signal.	HTR board
No HR on Display	The HTR board signal wasn’t sent to the display board.	3-PIN cable, display board

8-4. Circumstance of Malfunction

8-4-1. Place both hands on the HTR handlebar. The HR value doesn’t appear in the display PULSE window.

8-4-2. After turning on the unit, the PULSE window shows a value, while no one is holding the HTR handlebar.

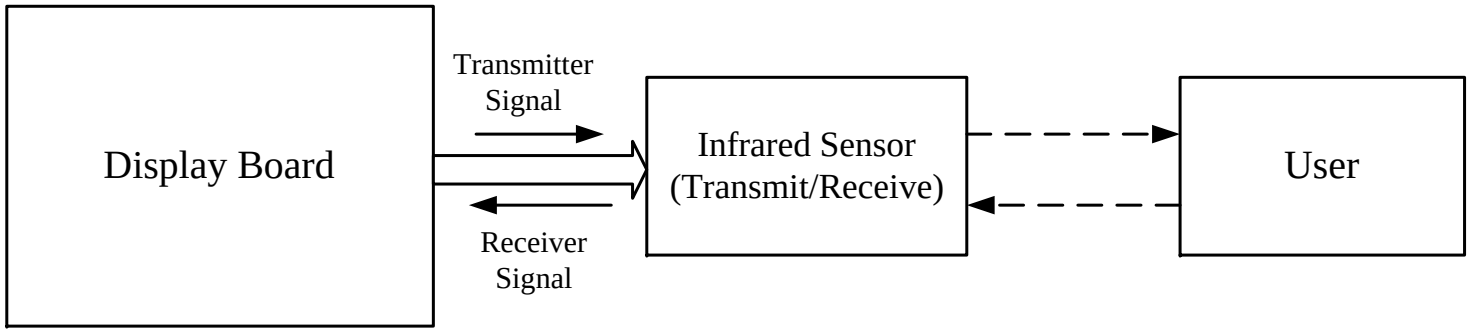
8-4-3. Place both hands on the HTR handlebar. The display PULSE window heart rate value differs too much from the user’s real pulse.

6200/6200N/6260 Error : Infrared Sensor is Not Picking Up a Signal

1. Definition

Display board infrared sensor does not detect the user on the treadmill.

2. Configuration



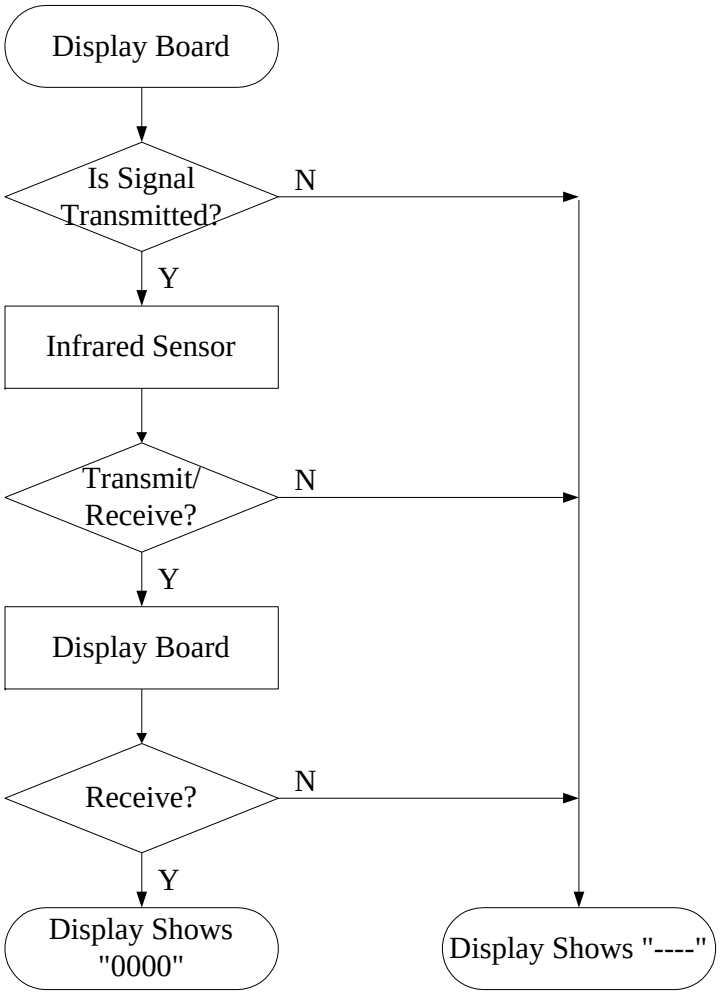
3. Cause

3-1. The infrared sensor transmits the infrared signal.
3-2. When a user is on the treadmill, the sensor detects the signal and transmits it to the display.
3-3. When the display doesn't detect a user, the display shows " ---- ". When a user is detected, the display shows '0000'.

4. Operation

Order	Part	Operation
1	Display Board	1. The infrared signal is sent to the infrared sensor.
2	Infrared Sensor	1. When the infrared sensor switch is set to "0", the infrared sensor function is not activated. 2. When the infrared sensor switch is set to "1", the infrared sensor function is activated. 3. When no one is on the treadmill, the display shows "----". 4. When one stands on the treadmill, the display shows "0000".
3	Display Board	1. The CPU reads the infrared sensor signal. 2. If no signal is received, the display shows "----". If the signal is received, the display shows "0000".

4-2. Flow Chart



5. Circumstance of Malfunction

(1) The user stands on the treadmill, but the display still shows “----”.

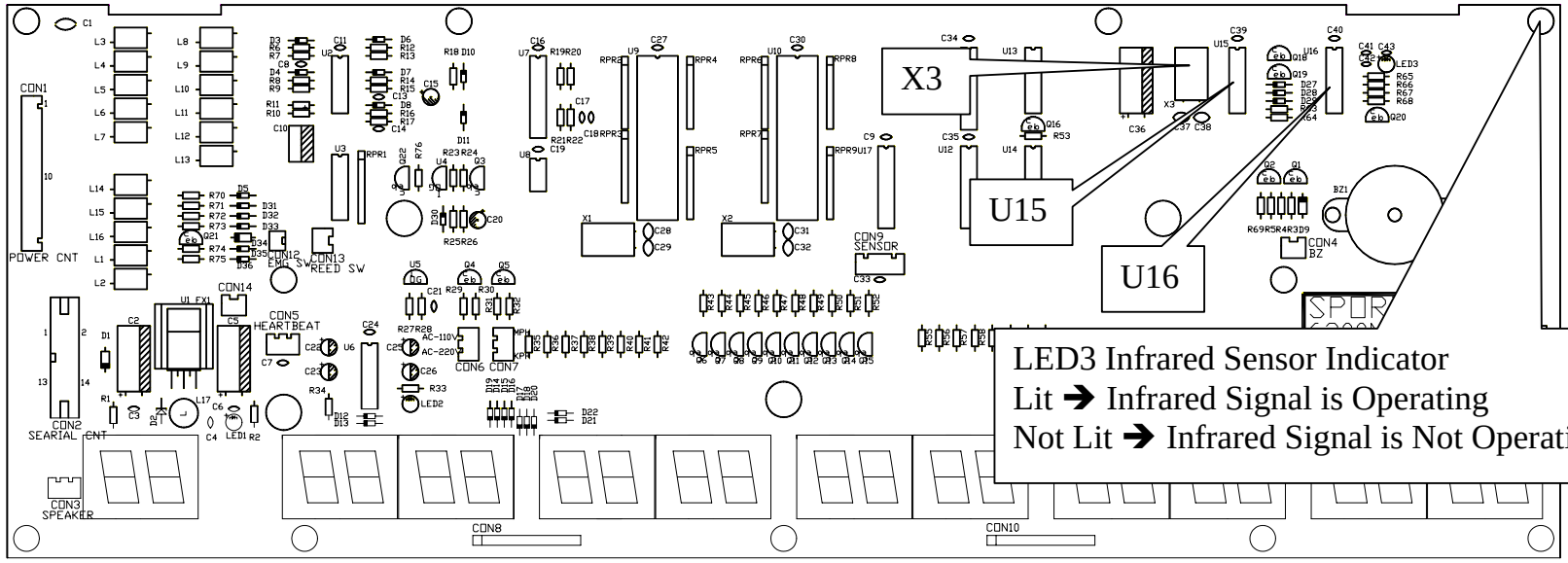
6. Troubleshooting

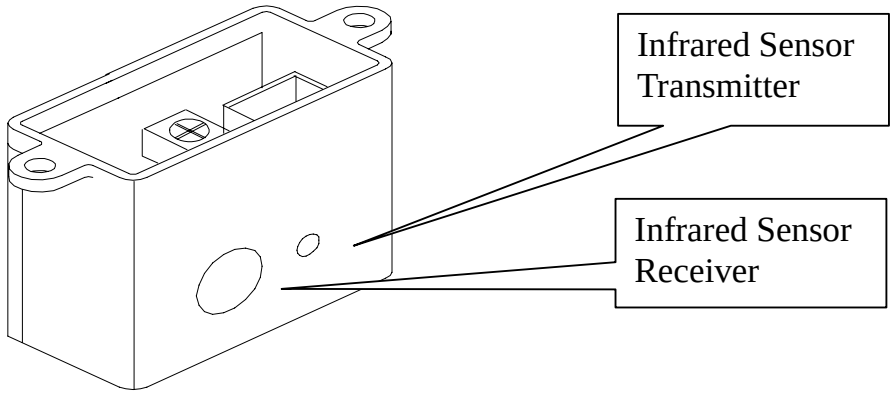
Order	Part	Troubleshooting
1	Display Board	1. Inspect whether the infrared sensor cable is fastened securely. 2. Replace X3 or U15, U16.
2	Infrared Sensor	1. Inspect the infrared sensor on/off switch. 2. Replace the infrared sensor transmitter or receiver.
3	Cable	1. Inspect the cable connections. 2. Test whether the 5-PIN cable is connected properly.

6. Test

7-1. Infrared Sensor Function Test

7-1-1. Illustration





7-1-2. Test Procedure - Don't Use the Infrared Sensor

(1) Turn on unit power.
(2) Flip the infrared sensor on/off switch to "0", shutting off the infrared sensor function.
(3) The display shows "0000". You can directly operate the treadmill.
(4) If the display shows "----", you cannot operate the treadmill. The infrared sensor 5-pin cable is bad.
(5) Inspect the infrared sensor on/off switch.

7-1-3. Test Procedure - Use the Infrared Sensor Function

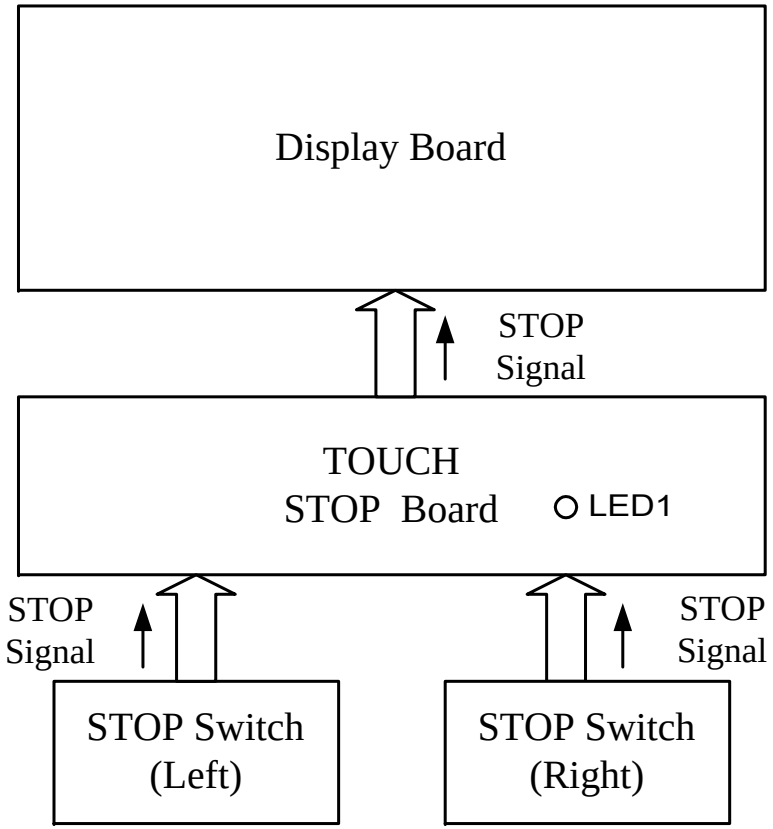
(1) Turn on the unit power.
(2) Flip the infrared sensor on/off switch to "1", activating the infrared sensor function.
(3) Don't stand on the treadmill; The display shows "----". Stand on the treadmill; the display shows "0000".
(4) If not as above, inspect the infrared sensor wire connections.
(5) Replace the infrared sensor transmitter and receiver.
(6) Replace display board X13, U15, U16.

6200/6200N/6260 Error : Unit Doesn't React When STOP Pad is Pressed

1. Definition

    1. Press the STOP switch (left or right); The display shows no reaction whatsoever.
    2. In use, the treadmill stops suddenly, even though no one touched the STOP pad.

2. Configuration



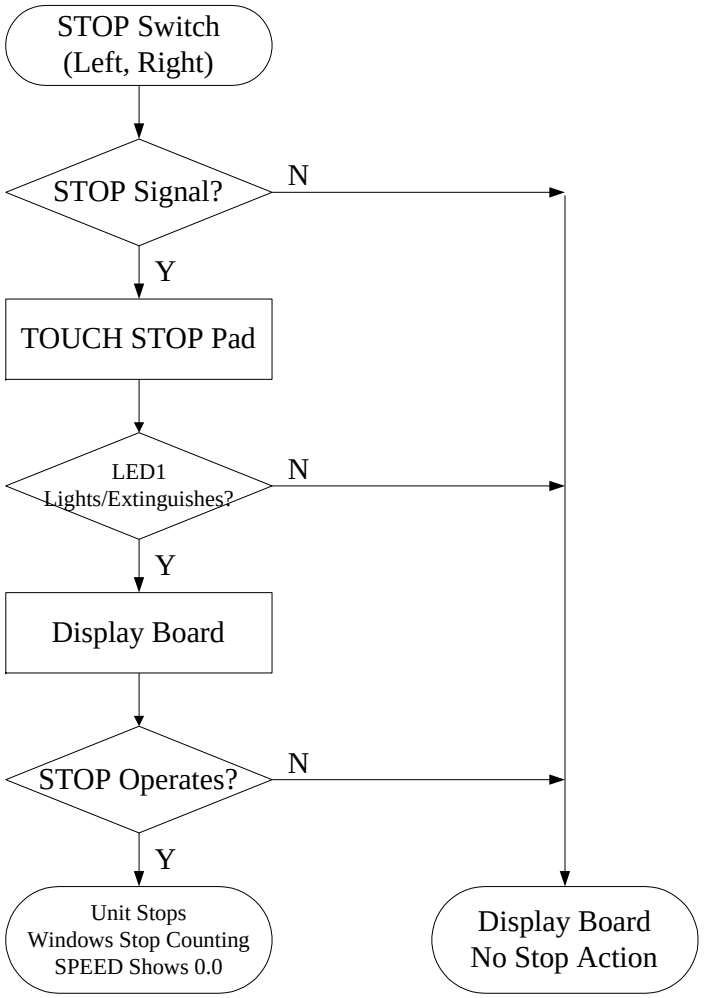
3. Cause

3-1. When the STOP board detects a signal, the TOUCH STOP board LED either lights or extinguishes. The display stops all functions. The SPEED window shows 0.
Other window values remain unchanged.
3-2. If the STOP switch is malfunctioning, there is no reaction when the STOP switch is pressed, or in mid-use the unit shuts off when no one hits the stop pad.

4. Operation

Order	Part	Operation
1	STOP Switch (Left, Right)	1. Inspect whether the STOP switch was activated. 2. Inspect the Touch Stop Board.
2	TOUCH STOP Board	1. If there is a STOP signal, LED1 on the Touch Stop Board lights or extinguishes.
3	Display Board	1. The CPU reads the STOP signal. 2. If there is a stop signal, all functions stop. The motor and incline stop operating. SPEED window shows “0.0”; Various windows remain unchanged. 3. If the CPU doesn’t detect a stop signal, the display shows no reaction whatsoever.

(2) Flow Chart


STOP Switch
(Left, Right)
STOP Signal?
N
Y
TOUCH STOP Pad
LED1
Lights/Extinguishes?
N
Y
Display Board
STOP Operates?
N
Y
Unit Stops
Windows Stop Counting
SPEED Shows 0.0
Display Board
No Stop Action

5. Circumstance of Malfunction

(1) Press the STOP switch. The treadmill motor and incline stop.

(2) In operation, the treadmill stops even though the stop board wasn't hit.

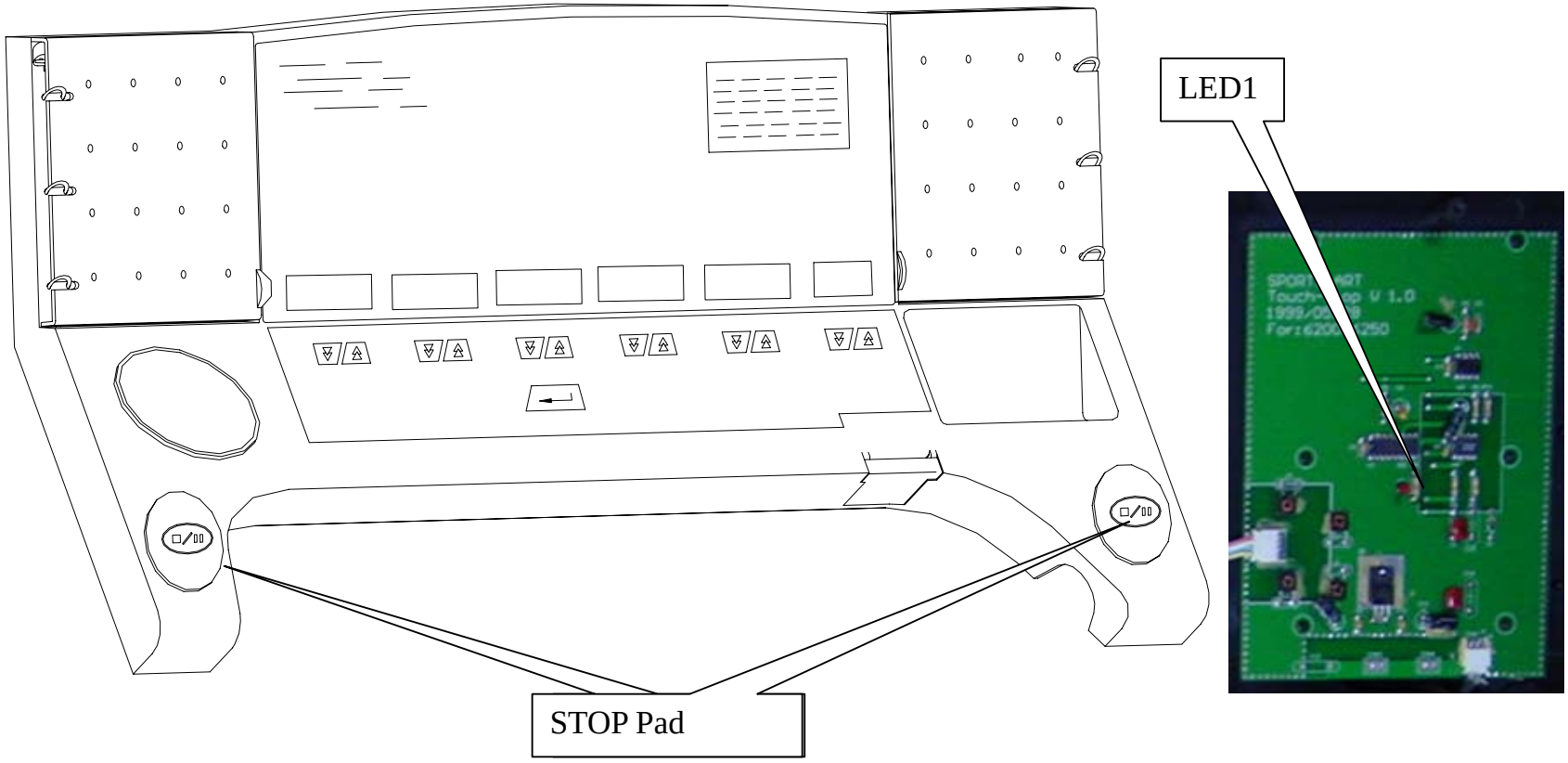
6. Troubleshooting

Order	Part	Troubleshooting
1	STOP Switch Pad	1. Inspect whether the STOP switch wire is connected well. 2. Inspect whether the STOP switch protective membrane is intact. If not, it is susceptible to static interference.
2	TOUCH STOP Board	1. Inspect whether the TOUCH STOP board is connected properly. 2. Press the STOP pad, or touch CON2 connector, LED1 lights or extinguishes. 3. If there is no reaction, the TOUCH STOP board is malfunctioning.
3	Display Board	1. Inspect whether U9 IC pins are connecting properly.

7. Test

7-1. TOUCH STOP Board

7-1-1. Illustration



7-1-2. Test Procedure – Circumstance: The TOUCH STOP Is Not Functioning

(1) Inspect the wire and its connections from the STOP switch to the TOUCH STOP board.
(2) Turn on the unit power.
(3) Press the STOP pad once. The TOUCH STOP board LED1 indicator lights.
(4) If LED1 doesn't light, the TOUCH STOP board is bad.

7-1-3. Test Procedure – Circumstance: In mid-use, the STOP board activates inappropriately.

(1) Inspect whether the STOP switch wires and ground wire are connected appropriately.
(2) Turn on the power.
(3) Press the SPEED<▲> key, making the treadmill belt move. Inspect whether unit automatically stops when no one touches the STOP Pads.
(4) If the unit still stops inappropriately, remove the TOUCH STOP board CON2 connection. If the unit still stops inappropriately, replace the STOP board.

6200N Treadmill

8. Incline Calibration

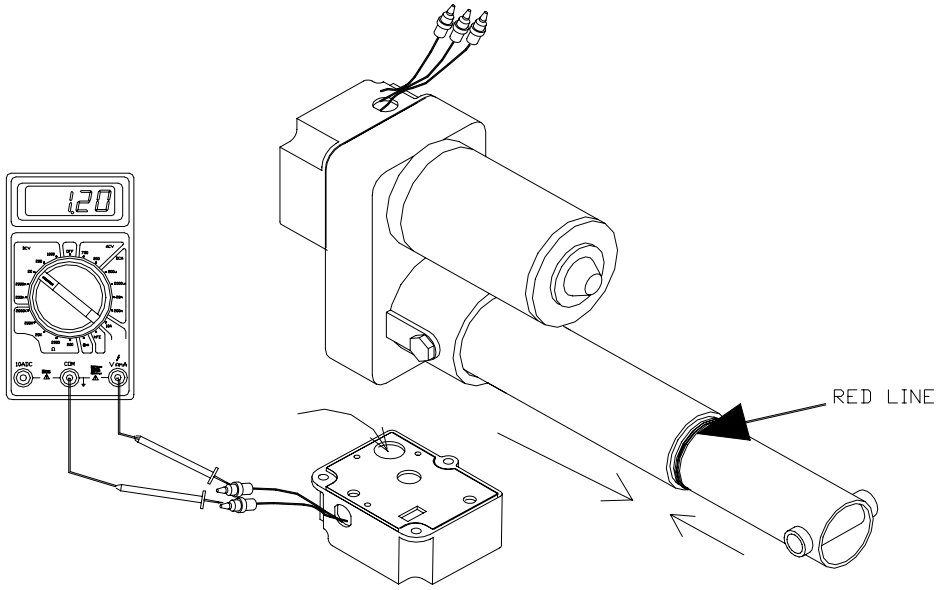
SPORTS ART INDUSTRIAL CO., LTD.

6200/6200N/6260 Incline Set Recalibration Procedure

1. Goal： To recalibrate the incline set, making the incline operate properly.

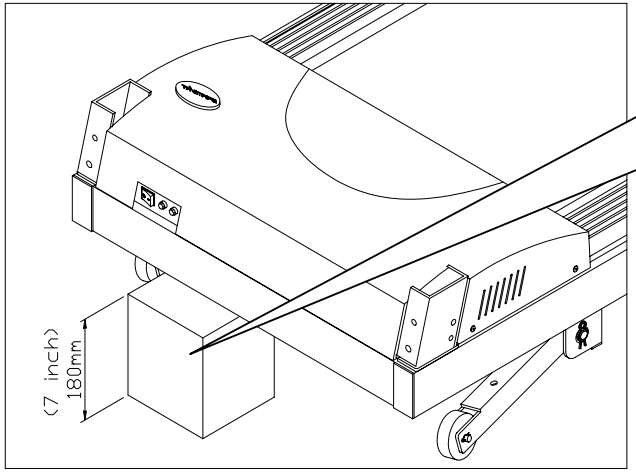
2. Recalibration is needed when the following occur:
   (1) Display shows ERR7;
   (2) Display shows ERR6, and the drive board ERR indicator lights;
   (3) The incline -3% or 22% position exceeds the range.

3. Recalibration method
   (1) Calibrate the incline VR voltage to 1.20V.
   (2) Calibrate the incline to the -3% position, so the end of the thick incline pipe meets the red line on the thinner pipe.



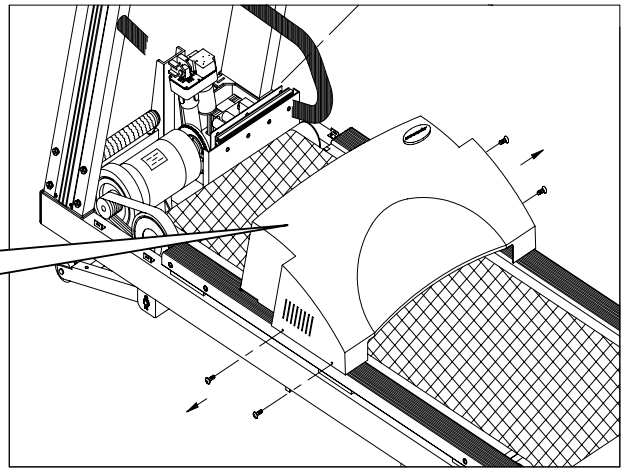
4. Recalibration Procedure

Step 1. Prop up the unit.



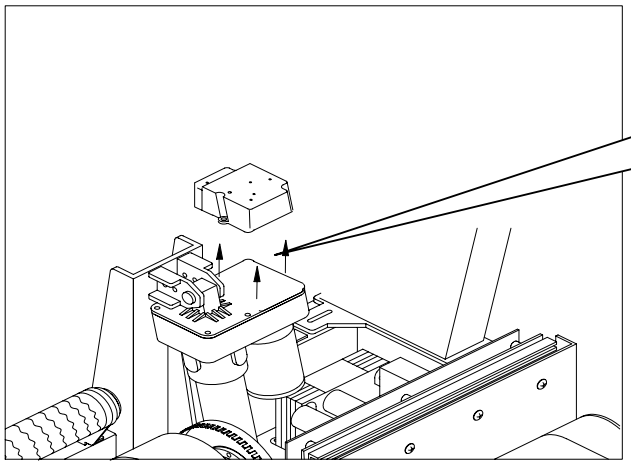
Place a small box (180 mm high) under the treadmill frame, thus taking pressure off the incline motor.

Step 2. Remove the motor cover.



Remove screws, then lift up the motor cover

Step 3. Remove the incline VR.



1. Don't disconnect incline VR wires.
2. Remove the VR box.

Step 4. Adjusting the Incline VR Voltage

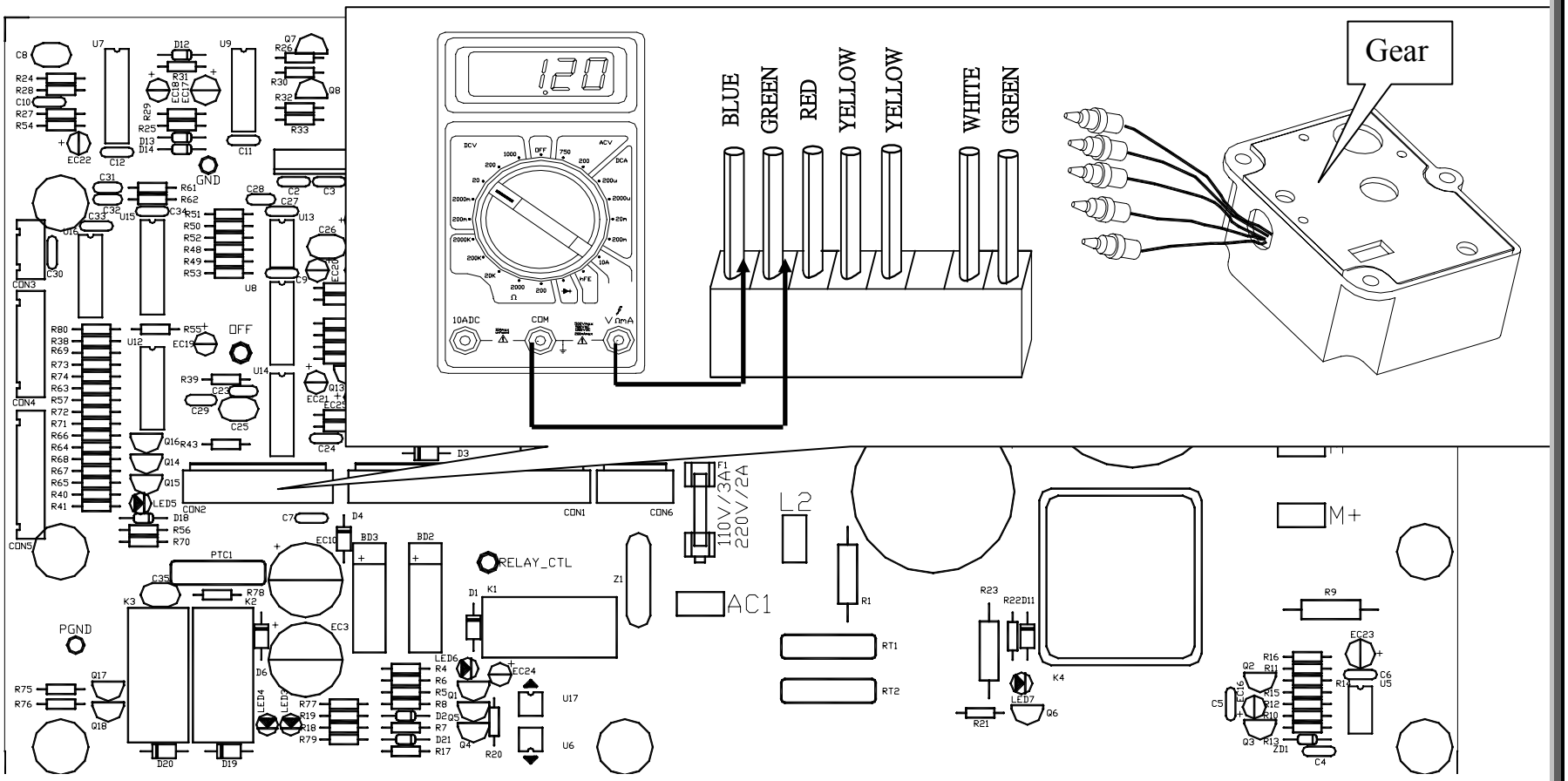
(1) Put the multimeter to the 20V DC setting. Place probes separately on the CON2 blue and green wire connectors.

(2) Turn on unit power.

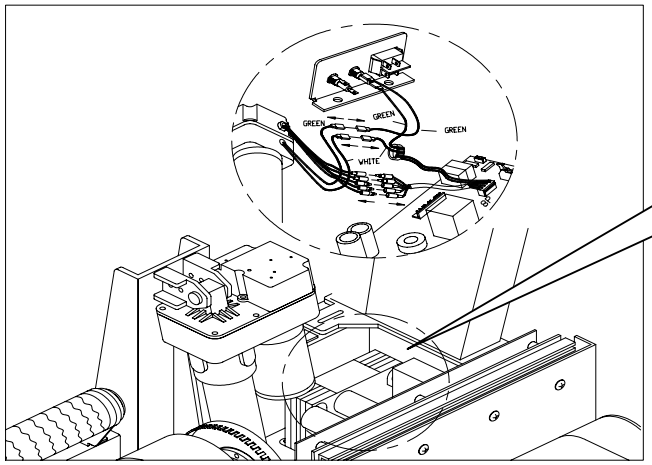
(3) Rotate the VR gear until the multimeter shows a VR voltage of 1.20V DC.

(4) Turn unit power off and then on again. The display INCLINE window shows “-3”.

(5) Put the VR back in place on the incline motor. Turn off unit power.

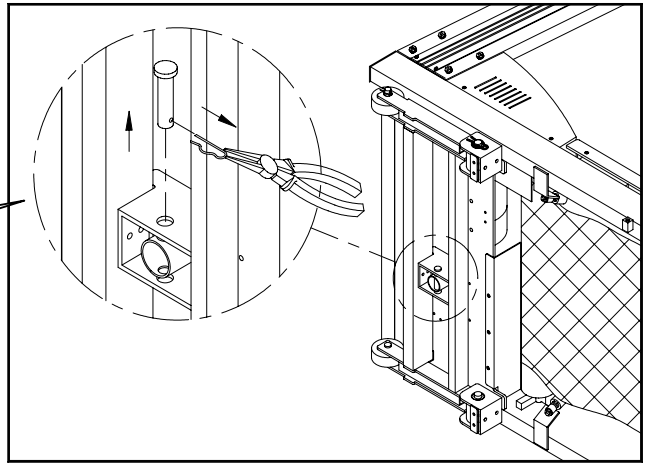


Step 5. Remove the Incline Motor



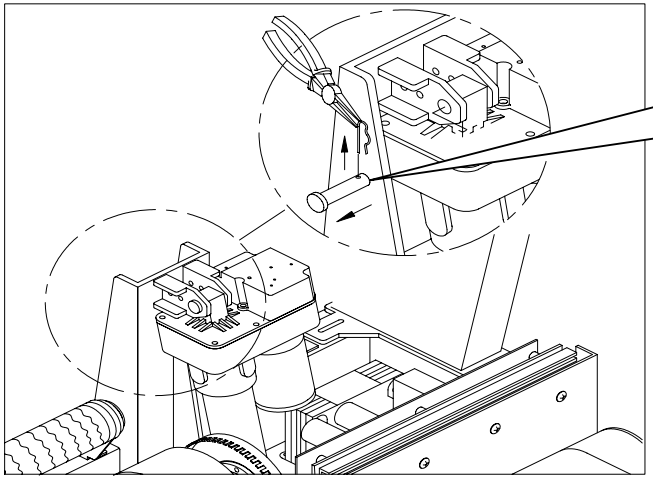
Disconnect Incline Set Wires

Step 6. Remove the Incline/Frame Pin



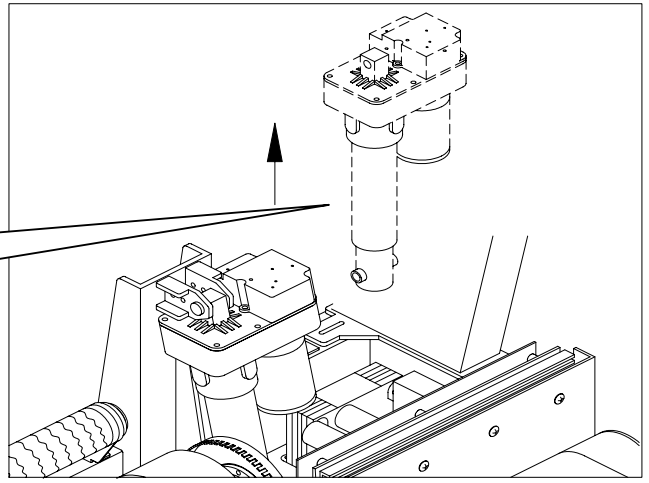
Remove the incline/frame lower pin.

Step 7. Remove the Incline/Frame Pin



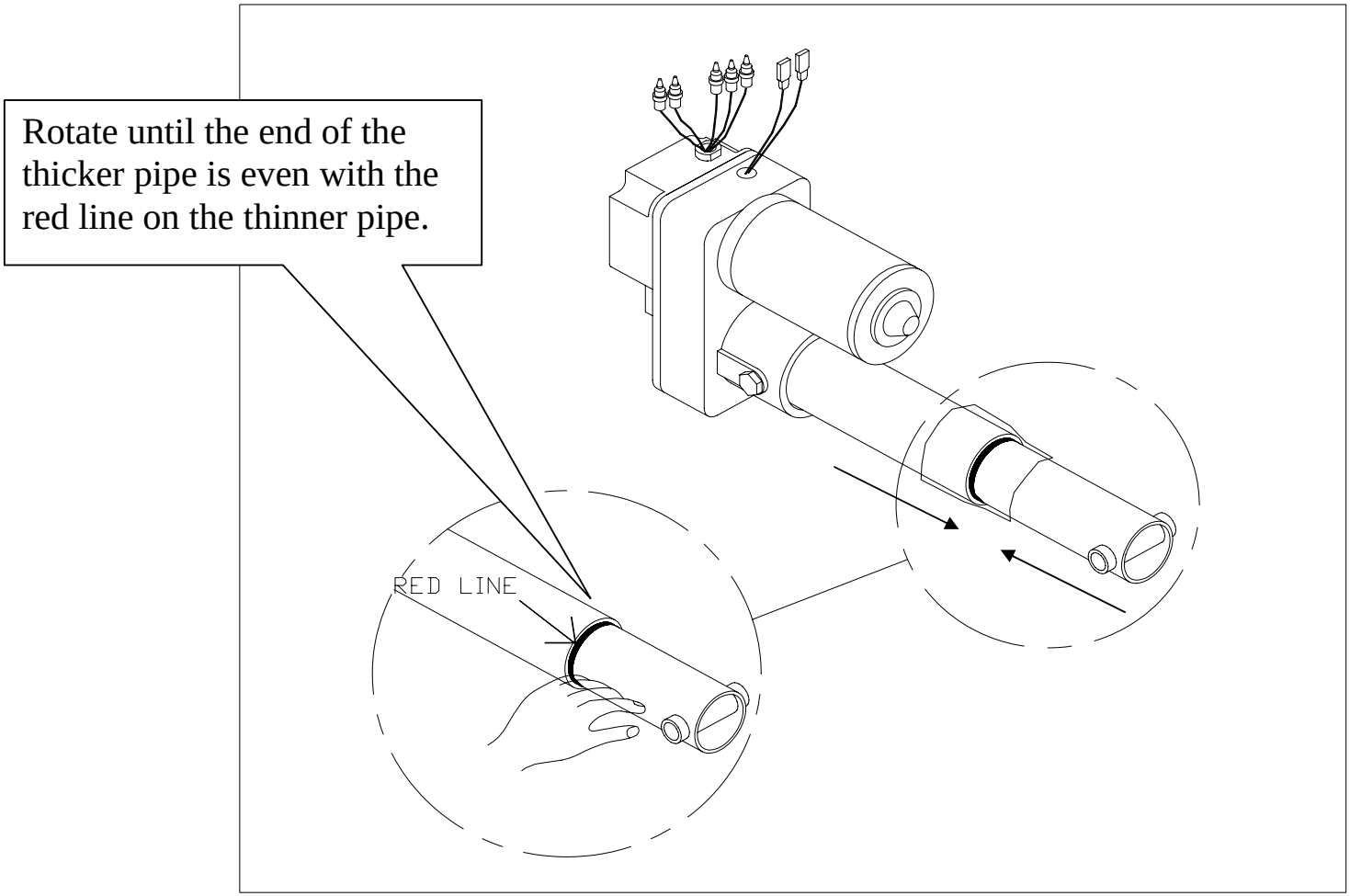
Remove the incline/frame upper pin.

Step 8. Remove the Incline Set

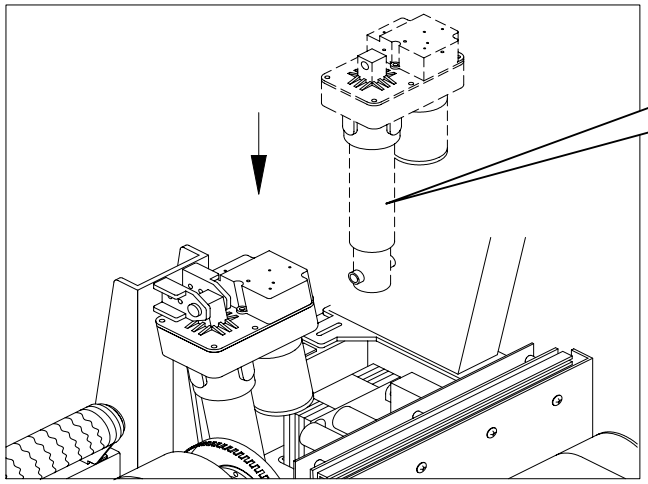


Remove the whole incline set.

Step 9. Adjust the Incline Motor Pipe Position

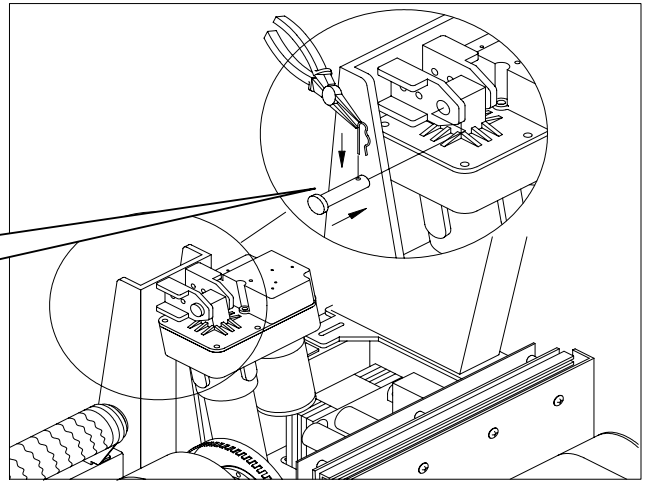


Step 10. Reinstall the Incline Motor



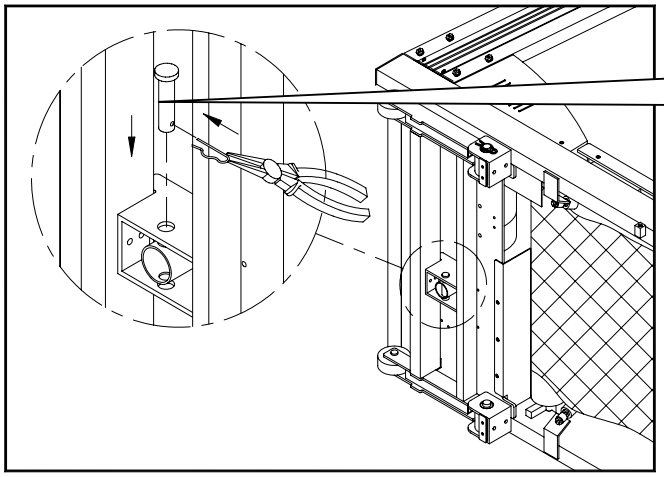
Put the incline motor back in place.

Step 11. Insert the Upper Pin



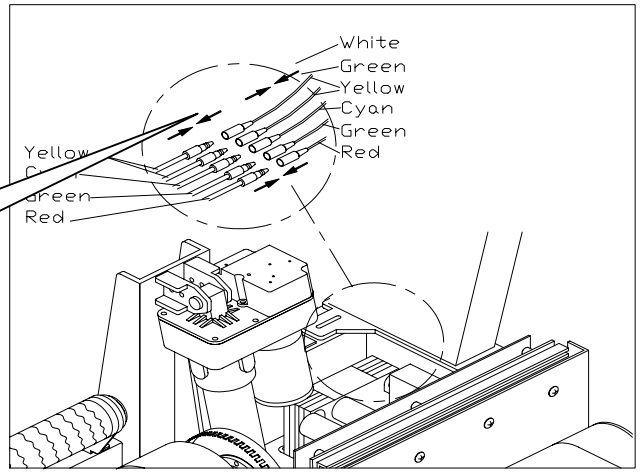
Insert the upper pin and its kotter pin.

Step 12. Insert the Lower Pin



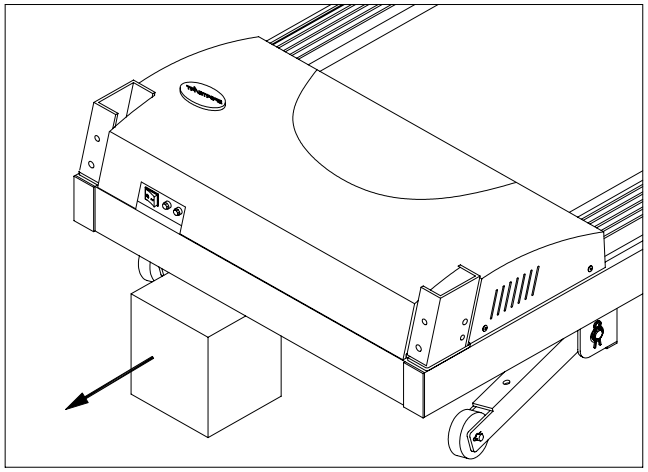
Insert the lower pin and its kotter pin.

Step 13. Reconnect Incline Wires



Connect like-colored wires.

Step 14. Remove the Block



Step 15. Test the Incline Set

(1) Press the INCL<▲> key until the INCL window shows 22%. The incline rises to the 22% position. Drive board LED5 indicator doesn't light.

(2) Press the INCL<▼> key until the INC window shows -3%. The incline lowers to the -3% position. The drive board LED5 doesn't light.

(3) If when the incline operates, drive board LED5 doesn't light, and at the -3% position the end of the thick incline pipe meets the red line on the thin pipe, then recalibration has been successful.

6200N Treadmill

9. No Start – Transformer Test

SPORTS ART INDUSTRIAL CO., LTD.

6200 Drive Board Transformer Voltage Test

1. Test Configuration