

Electronic Problems

Error Codes

The treadmill performs an electronic self-test each time that it is powered up. If a problem is detected during either power-up or operation, an error code appears on the display. Note the code recorded by the owner, then reference the table of error codes.

If you replace a faulty PCB Assembly, return it to the factory and note the error code.

Code	Indication	Recommended Action
E001	Variable speed drive (VSD) microprocessor chip failure	Replace VSD.
E002	VSD microprocessor EPROM/SRAM failure	Replace VSD.
E004	VSD A/D failure	Replace VSD.
E101	Controller PCBA microprocessor failure	Replace controller.
E102	Controller PCBA EPROM failure	Replace controller.
E103	Controller PCBA interrupt failure	Replace controller.
E105	Controller PCBA NVRAM failure	<p>Re-initialize NVRAM:</p> <ol style="list-style-type: none"> 1. Press Stop, Faster, and Slower to enter Service Mode. 2. Press Stop and Cool Down to reinitialize. (For HR ClubTrack Plus, press the NV PROGRAM LOAD TEST key. Proceed to step 4.) 3. Press Clear. 4. Reconfigure controller, pg 4-30 (HR Plus, adjust the contrast after reconfiguring.) <p>If error E105 persists, replace controller.</p>
E106	ClubTrack Plus Controller display RAM failure	Replace controller.
E201	Grade error	<ol style="list-style-type: none"> 1. Enter service mode. 2. Calibrate POT. 3. If error persists, replace POT. 4. If error persists, replace VSD.
E202	Speed error. A software check of redundant speed variables has indicated a disagreement and the microprocessor will shut down the treadmill.	Clear the error by pressing Clear or Power . Attempt to operate the treadmill again. If error persists, replace the VSD board.

continued

Error Codes (continued)

Code	Indication	Recommended Action
E203	<p>Motor overload caused by one of the following:</p> <ol style="list-style-type: none"> 1. Runner heavier than weight/speed envelope. 2. Deck wear 3. Motor lead disconnected or loose 4. Electrical short on the board near the power electronics 5. Power electronic component failure 6. Motor blocked by obstruction 	<ol style="list-style-type: none"> 1. Restrict use to people within the weight/ speed specifications. 2. Check deck wear; replace if necessary. 3. If the motor does not turn, check the motor leads to ensure all leads are connected. One loose or disconnected lead will cause overload. 4. Examine board for shorts. Examine board for blackened components or discoloration. 5. Replace board if damaged. 6. Remove obstruction.
E204	VSD and controller not communicating	Verify cable connections at both ends. Check for bent or broken pins; replace if required. If error persists, replace VSD or controller as necessary.
E205	Software tachometer fault	Clear the error by pressing Clear or Power . Attempt to operate the treadmill again. If error persists, replace VSD board.
E206	Controller or VSD performs inadvertent reset	Verify wire grounding system is intact.
EPHI	VSD ABS voltage is too high. Line voltage is too high. VSD board failure	Refer to EPHI error code flow chart elsewhere in this chapter.
EPLO	VSD ABS voltage is too low. Line voltage is too low. Transformer connection is bad. Transformer failure. VSD board failure.	Refer to EPLO error code flow chart elsewhere in this chapter.

SECTION 4 TROUBLESHOOTING

This Section consists of several tables that isolate most problems that could occur during treadmill operation, and provide a variety of suggestions for onsite repair. The tables include:

1. error codes.
2. mechanical noises.
3. test points on the TMU.
4. fuses.
5. control cable pinouts (for continuity and signal testing).
6. power-up problems.
7. failure to start.
8. speed change problems.
9. elevation problems.
10. walking belt not tracking correctly.
11. belt slippages.
12. bearing and other treadmill noises.

In addition, this Section includes:

- a discussion of the error codes that can appear on the display.
- troubleshooting techniques for bearing problems.
- the information and tests available in Technician Access mode.

ERROR CODES

The treadmill performs an electronic self-test each time that it is powered up. If a problem is detected during either power-up or operation, an error code appears on the display.

WARNING

When PL05 appears on the display, ensure that nobody is on the walking belt when you press the red Reset button. The belt starts moving immediately, and the sudden start and subsequent loss of balance could cause serious personal injury.

PL05 indicates a power interrupt. Ensure that nobody is on the walking belt, then press the red Reset button on the hood.

- The belt will move momentarily, then stop.
- The red Reset light is extinguished.
- You must press **CLEAR** to remove **PL05** from the display and return it to normal.

The treadmill is then ready for use.

If an error code consisting of the letter **E** followed by three numbers appears, such as **E101**, refer to Table 4-2 on page 4-4. If you replace a faulty PCB Assembly, please return it to the factory and note the error code.

TROUBLESHOOTING BEARING PROBLEMS

WARNING

Observe the following precautions when servicing the treadmill:

- *Do not start the walking belt when someone is on the treadmill. The belt starts moving immediately, and the sudden start and subsequent loss of balance could cause serious personal injury.*
- *High voltage is present when the treadmill hood is removed and the treadmill is plugged in.*
- *Do not wear loose clothing around rotating machinery.*
- *Never place your fingers near rotating parts.*

All bearings are sealed and permanently lubricated, so maintenance is not required. The following information is provided to assist in diagnosing and trouble-shooting bearing failures.

Most failures cause clicking or knocking noises that are heard during treadmill operation. Determining the type and the rate of bearing noise can help establish which bearing is at fault. Table 4-3 on page 4-5 is a diagnostic

summary of bearing noises, along with other noises that may indicate problems.

● *Transmission bearings* generally click when they fail.

— The *input shaft assembly* rotates at a constant speed, so the rate of the bearing noise (i.e. the number of clicks per minute) remains constant regardless of the walking belt speed.

— The speed of the *output shaft assembly* varies with the treadmill speed, so the rate of the bearing noise (i.e. the number of clicks per minute) increases or decreases along with the walking belt speed.

• Front and rear *roller assembly bearings* tend to knock when they fail. (There are exceptions, however.) Also, the rate of the bearing noise (number of knocks per minute) varies with treadmill speed, because the roller speeds increase or decrease as belt speed changes.

A stethoscope with an open or tube end, or a piece of hose about two feet long, is useful for isolating bearing problems. (Hold one end of ● hose near the suspected bearing, and the other end near your ear.) Compare several bearings to determine the sound of a faulty one. *Read the warning on page 4-1 first before attempting this!*

TECHNICIAN ACCESS MODE

The treadmill is equipped with a technician (privileged) access mode to aid in troubleshooting the controller (DPU) and display.

- To enter tech access mode, *simultaneously* press and release **STOP BELT**, **FASTER**, and **SLOWER**. **P000**, which indicates that no key is pressed, appears in the SELECT display. (You may remain in tech access mode to perform all tests. It is not necessary to exit and re-enter the mode.)
- To exit tech access mode, *simultaneously* press and release the same three keys.

● Firmware Revision Numbers

To display the firmware revision levels of the DPU and TMU PCB assemblies:

1. Enter the tech access mode.
2. *Simultaneously* press **STOP BELT** and **GRADE UP**. The revision level of the DPU appears in the SELECT display.
3. *Simultaneously* press **STOP BELT** and **GRADE DOWN**. The revision level of the TMU appears in the SELECT display.

Display Tests

To test the displays on the keypad:

1. Enter the tech access mode.
2. *Simultaneously* press **STOP BELT**, **GRADE UP**, and **GRADE DOWN**.
3. The display cycles through one digit at a time in each display, starting from left to right across the panel. Each digit displays the number **8** and the associated decimal point for one second, then turns off as the next one lights up.
4. When this is completed, the LEDs (annunciators) light up individually, starting from the top. The "select" LEDs illuminate first, followed by the "units" LEDs.
5. After the LEDs are tested, all the digits in all three displays simultaneously count up from **0** through **9**. (No decimal points are lit up during this count.)

Key Input Test

To test the keys on the keypad:

1. Enter the tech access mode. **P000**, which indicates that no key is pressed, appears in the SELECT display. (If a key is shorted out, **P555** appears.)
2. Refer to Table 4-1 on page 4-3, then press each key in succession to display the appropriate code in the SELECT display. For example, **P001** appears when you press **START BELT**. **P000** reappears when you release the key.
3. Exit the tech access mode as described on this page.

Table 4-1. Keystroke Input Test Displays

KEY	CODE IN SELECT DISPLAY
No key pressed	P000
START BELT	P001
STOP BELT	P002
FASTER	P003
SLOWER	P004
UP	P005
DOWN	P006
SELECT	P007
UNITS	P008
CLEAR	P009
Shorted key(s)	P555

Table 4-2. Error Codes

DISPLAY	INDICATION	RECOMMENDED ACTION
PL05	Power Interruption	Ensure that no one is on belt, then press Reset.
E001	Treadmill Control Unit (TMU) chip failure	Replace TMU. Return defective PCB to factory. Please note error code on return paperwork.
E002	TMU EPROM failure	
E003	TMU interrupt condition	
E004	TMU A/D failure	
E005	TMU communication failure	
E101	Display Processor Unit (DPU) chip failure	Replace DPU. Return defective PCB to factory. Please note error code on return paperwork.
E102	DPU EPROM failure	
E103	DPU interrupt condition	
E104	Interprocessor communication failure	
E201	Grade feedback is outside of 0-15% grade range.	<ol style="list-style-type: none"> 1) Press FAST/SLOW/STOP simultaneously to enter Tech Access mode. 1) Note the grade value, then recalibrate the grade pot (Section 3). 2) If error persists, replace TMU.
E202	Speed display error. Displayed speed more than ± 2 mph from optical tach output (speed feedback).	<ol style="list-style-type: none"> 1) If belt moves but does not change speed, check fuses on TMU (Table 4-4). 2) Verify proper operation of speed change mechanism (Table 4-9). 3) Check tach voltage at test point TP7 on TMU (TP9 is ground). Slowly rotate transmission output assembly by hand. Voltage should toggle between 0 V and +5 V (+0 V, -1.7 V). If not, replace tach.
E203	Drive motor overheating. Motor drawing excessive current, and thermal overload activated.	<p>Allow motor to cool for 15 minutes, then restart.</p> <ol style="list-style-type: none"> 1) If error message appears <i>immediately</i>, replace TMU. 2) If treadmill starts, then error message appears during operation, replace drive motor. Also see Table 4-3, TP4/TP5.
E204	Microcontrollers on TMU and DPU Assemblies not communicating	<ol style="list-style-type: none"> 1) Verify control cable connections at TMU and DPU. 2) Check for bent or broken pins on control cable plugs. Replace if required. 3) If error message persists, replace TMU or DPU as required.
E205	Tachometer not operational (Voltage output below +3.3 V).	<p>Voltage at TMU test point TP6 should be +5V (+0 V, -1.7 V) [TP9 is ground]. If not:</p> <ol style="list-style-type: none"> 1) Clean tach LED and photocell (Section 3). 2) Replace tachometer assembly (Section 3). 3) Replace TMU.
E206	Noise spike caused TMU micro-controller to reset inadvertently.	<ol style="list-style-type: none"> 1) Verify that drive motor is electrically isolated from headframe. (Use VOM to verify infinite resistance.) If not, replace grounding hardware, located between motor mounting base and headframe mounting. 2) Verify that drive motor is not touching or otherwise grounding against TMU Assembly. 3) If error message persists, replace TMU.

Table 4-3. Troubleshooting Mechanical Component Noises

NOISE	PROBABLE FAULTY COMPONENT	ACTION
Clicking (Constant Speed)	Input shaft assembly transmission bearing	Isolate bearing, then replace input shaft assembly (page 3-9)
Clicking (Rate increases/decreases with walking belt speed)	Output shaft assembly transmission bearing	Isolate bearing, then replace output shaft assembly (page 3-11)
Knocking or thumping (Rate increases/decreases with walking belt speed)	Front or rear roller (pulley) assembly bearings	Isolate and replace roller [pulley] (page 3-20)
High-pitched "singing"	Final drive belt too loose or too tight	Adjust belt tension (page 3-13)
Squealing (like loose automobile fan belt)	Motor belt (V-belt) loose	Adjust belt tension (page 3-26). Replace belt if necessary.
Popping (during grade increase or decrease)	Faulty elevation chain alignment	Adjust alignment of sprockets

Table 4-4. Voltage Test Points on TMU Assembly*

TEST POINT	EXPECTED VOLTAGE	FUNCTION
TP1	+5 V	Power supply voltages
TP2	+12 V	
TP3	+26 V	
TP4	Normal: 0 V	Thermal Overload in drive motor. WARNING: High voltage present on TMU when overload condition occurs.
TP5	Thermal Overload: +110 VAC	
TP6	Between +3.3 V and +5 V	Tachometer HIGH level
TP7	0 V (low) +5 V (high)	Optical tachometer speed feedback
TP8	Normal: 0 V Fault: +5 V	Undervoltage indicator
TP9	Ground	Ground (Return) for TMU Assembly

*All voltages DC unless otherwise indicated.

Table 4-5. Fuses on TMU PCB

FUSE	FUNCTION
F1	Speed change motor
F2, F3*	AC Mains (line) power
F4, F5*	High-speed deceleration circuitry for speed change motor
F6, F7*	Grade change motor

WARNING: High voltage may be present on fuses.

*NOTE: If one fuse of a pair is blown, replace *both* fuses.

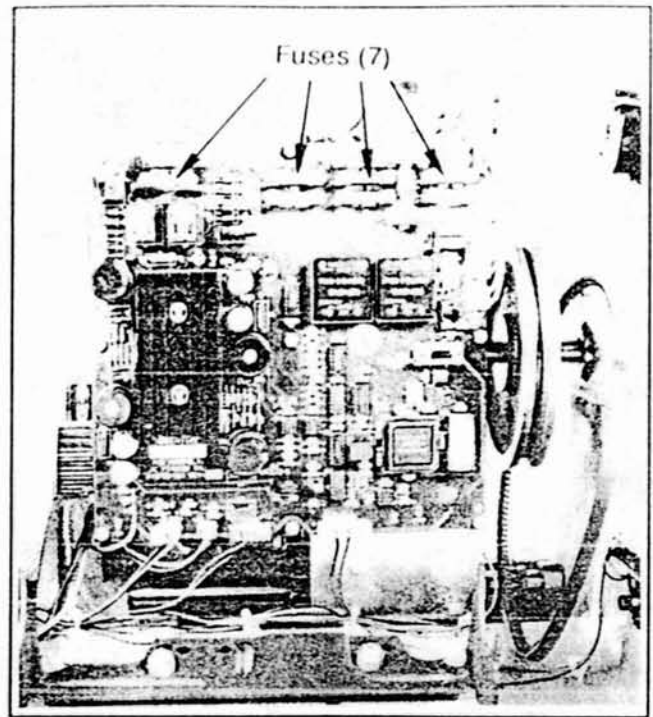


Figure 4-1. Fuses F1-F7 on TMU PCB Assembly

Table 4-6. Signals on Control Cable Pins

PIN NUMBER: TMU (J12)	PIN NUMBER: DPU (J1)	SIGNAL
1	1	T+ (Transmit +)
2	2	T- (Transmit -)
3	3	R+ (Receive +)
4	4	R- (Receive -)
5	5	GND (Ground)
6	6	N/C
7	7	GND (Ground)
8	8	+12 VDC
9	9	+12 VDC

NOTE: J12 is a D-sub connector; J1 is a MASCON connector.

Table 4-7. Treadmill Does Not Power Up (Display or Reset Light Not Visible)

POSSIBLE PROBLEM	ACTION
Treadmill not plugged in	Plug power cord into an appropriate outlet.
Circuit breaker tripped	Contact building maintenance to reset breaker. If breaker trips again: 1) Check voltage at outlet. If necessary, verify that power at outlet and at breaker is rated sufficiently to operate treadmill. 2) Verify that power cord is not caught in rack gear.
Power cord cut	Remove cord from outlet and replace.
Fuse in treadmill blown	Remove power cord and replace fuse (Table 4-4). If fuse blows again, isolate mechanical assembly and ensure that no parts are jammed (e.g. rack gear in grade change assembly.)
Limited Access (magnetic control) switch enabled, but magnet not in place	Put Quinton magnet on Quinton logo, then press POWER twice (OFF, then ON again). If you wish, turn the treadmill OFF and disable the limited access switch on the bottom of the TMU (Operator Manual, page 4-2).
Reset button on hood not reconnected after maintenance. (Light will not be visible.)	Remove hood cover and fasten connector.
Control cable between TMU and DPU disconnected at either Assembly.	Check both PCB Assemblies. Reconnect and tighten screws as required.
Control cable (including connector pins) between TMU and DPU faulty	Check for bent or broken pins. Replace control cable.
TMU failure	Check power supply power at test points (Table 4-3). If power is <i>incorrect</i> , replace TMU Assembly.
DPU failure	Replace DPU Assembly.

Table 4-8. Treadmill Powers Up, but Belt Does Not Move

POSSIBLE PROBLEM	ACTION
Reset button (on hood) lit, and PL05 appears on display.	Ensure nobody is on walking belt, then press Reset button. (Press CLEAR to clear display.)
Error code appears on display	Refer to Table 5-1. Replace PCB or other assembly as required.
Contactor (K1) not operational.	Verify that wires are connected, then check power supply voltages (208 V at K1 terminals 3,5). Replace K1 as required.
Drive motor overheated or not operational.	Check test points TP4/TP5 for thermal overload. (See Table 4-3) Check voltage from K1 to motor (208 V at K1 terminals 3,5 when K1 is activated). Replace motor if required.
Wires to motor disconnected.	Reconnect wires as required.
Motor noise audible, but walking belt not moving.	Replace broken motor belt.

Table 4-9. Treadmill Does Not Change Speed

POSSIBLE PROBLEM	ACTION
Speed change relays on TMU PCBA loose or not operational	Plug in relays or replace with new ones as appropriate
Speed change motor burned out or not operational	1) Verify that motor can rotate (i.e. is not jammed) 2) Test voltage from filter to motor. It should range from 0-90 V (maximum). Replace motor if required.
Wires poorly connected to (or disconnected from) speed change motor terminals	Crimp terminals and reconnect wires as required.
Control cable from TMU to DPU defective or not fully connected	Check for bent or broken pins. Replace or reconnect cable as required.
Fuse F1 on TMU blown	Isolate problem and replace fuse.
Speed change motor brushes worn	Check brushes. Replace as required.
Speed change spindle jammed	Remove and replace spindle assembly (Refer to Input Shaft Removal, Section 3)
Input shaft assembly moveable sheave jammed	Remove and replace input shaft assembly
Output shaft assembly moveable sheave jammed	Remove and replace output shaft assembly

Table 4-10. Treadmill will Not Elevate

POSSIBLE PROBLEM	ACTION
Grade change motor burned out or not operational	Test motor. Replace if required.
Wires poorly connected to (or disconnected from) terminals	Crimp terminals and reconnect wires as required.
Control cable from TMU to DPU defective or not fully connected	Check for bent or broken pins. Replace or reconnect cable as required.
Fuses F6 and F7 on TMU blown	Isolate problem and replace fuses.
Grade change motor brushes worn	Check brushes. Replace as required
Elevation microswitch out of adjustment	Adjust microswitch as required (Section 3)
Rack gear jammed	Check and free gear (Section 3)
Grade pot out of adjustment	Adjust pot (Section 3)
Elevation relays on TMU defective	Replace TMU

Table 4-11. Walking Belt Slipping or Not Tracking

POSSIBLE PROBLEM	ACTION
Walking belt slipping	Adjust belt tension (page 3-23)
Belt not tracking:	
Tracking adjusted incorrectly	Adjust tracking (page 3-24)
Walking belt worn out	Replace belt (page 3-21)
Walking deck (slider bed) worn out	Replace deck (page 3-21)

Table 4-12. Internal Belt Slippages

SYMPTOMS	POSSIBLE PROBLEM	ACTION
1) Squealing sound like automobile fan belt, and 2) Walking belt slows down as user's foot strikes the deck	Motor drive belt (V-belt) slipping	Adjust belt tension (page 3-26)
Walking belt slows as user's foot strikes the deck.	Transmission belt slipping	Check pulley sheaves for grease or oil. Clean as required.

NOTE

Do not force the set collars tightly against the headframe. Verify that the pinion shaft will turn freely when the set collars are in place.

10. Align the grade potentiometer sprocket, then tighten its setscrew.
11. Align the elevation sprocket and grade motor sprocket, then tighten the setscrew on the sprocket.
12. Reassemble the siderails, uprights, and walking belt as described on page 3-21.
13. Reassemble the rack gear as described on page 3-16.
14. Tension the walking belt as described on page 3-23.
15. Calibrate the grade potentiometer as described on page 3-25.
16. Test the treadmill elevation. Verify that:
 - a. it operates over the full range of 0-15%.
 - b. there is no binding when it moves up or down.
 - c. the elevation pot chain is aligned correctly.
 - d. the grade motor chain is also aligned correctly. A "popping" sound in the chain indicates that it is misaligned.
17. Unplug treadmill and replace the hood. *Be sure to reconnect the reset switch.*

Adjusting the Elevation Microswitches

The two elevation microswitches, one on each side of the treadmill, are mounted on brackets attached to the front of the headframe (Figure 3-26). When a roller on the microswitch reaches a detent that is cut into each rack gear, a lever arm travels outward, opening the microswitch and stopping the elevation motor. The microswitches prevent overtravel if the treadmill exceeds its preset electronic grade limits.

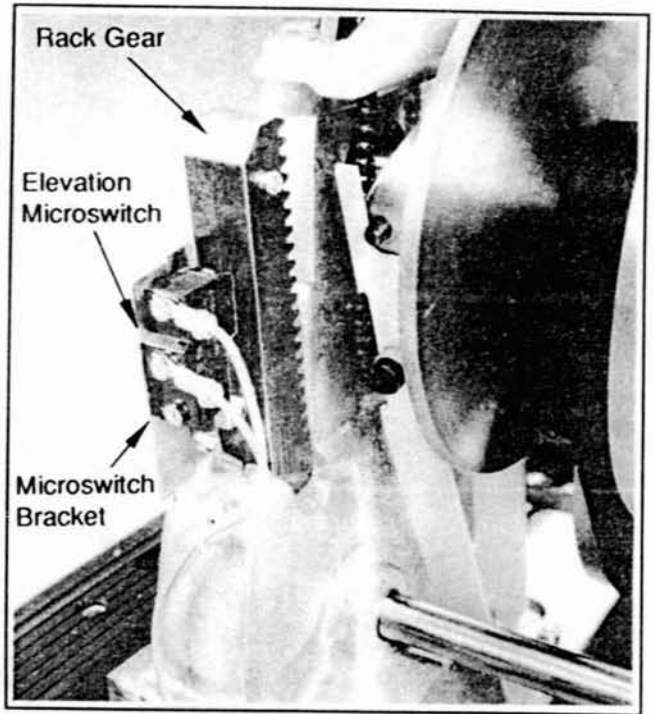


Figure 3-26. Elevation Microswitches

NOTE

Microswitch settings are preset at the factory and normally do not require adjustment.

1. Remove the hood (page 3-1).
2. Loosen, *but do not remove*, the two Phillips screws which secure each snap-action microswitch to the mounting plate (bracket).
3. Pivot the switch on the upper screw both toward and away from the rack gear. You should hear an audible click as the switch opens or closes.
4. Pivot the switch toward the rack gear until it just clicks, then stop and tighten both screws.
5. If required, repeat Steps 2-4 for the other microswitch.
6. Replace the treadmill hood.
7. Operate the treadmill to verify that it reaches the upper and lower elevation limits (15% and 0%).

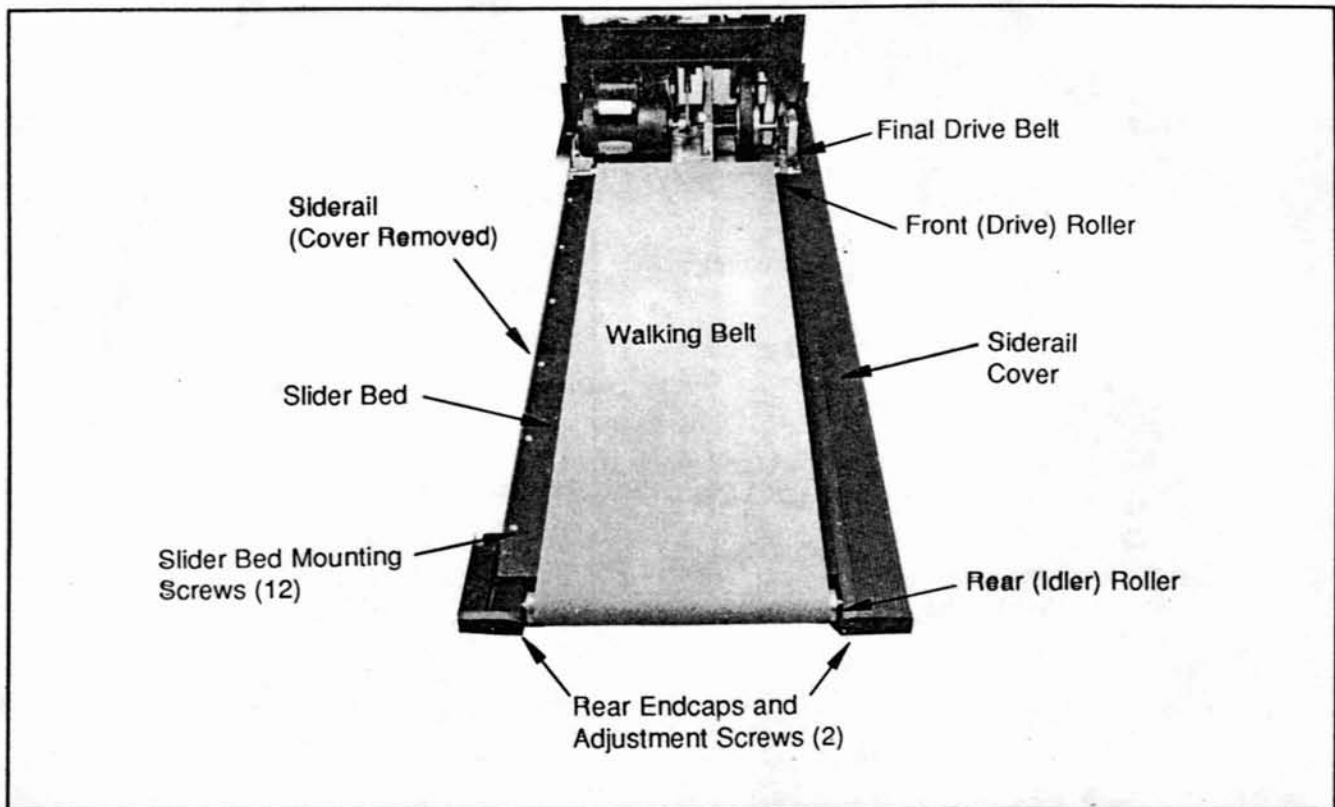


Figure 3-27. Walking Deck Assembly

WALKING DECK ASSEMBLY

Figure 3-27 is an overview of the walking deck assembly.

Removing the Front (Drive) Roller or the Idler (Rear) Roller

1. Remove the hood (page 3-1).

NOTE

When replacing the screws in Step 2, note that the gap between the siderail cover and the head of each screw must be $0.050" \pm 0.010"$, approximately the thickness of a dime. See Figure 3-19 on page 3-12.

2. Remove the two Phillips screws from the siderails. These screws attach the hood to the siderails at the rear of the hood.
3. Remove both end caps, located on either side of the belt at the rear of the walking platform.

4. Grasp the top of the left side rail cover at the rear of the treadmill, then pull it up and away from the treadmill to roll the cover off. Repeat for the right cover. (The covers, which are made of flexible plastic, snap into place.)
6. Remove the four $1/2"$ hex bolts (two on each side) that secure the two front drive roller retainers to the frame siderail. One retainer is on each side of the drive roller assembly (Figure 3-19 on page 3-12.).
7. Slide the drive roller assembly to the left, then remove the timing belt from the right side of the roller.
8. Lift the roller assembly out from under the walking belt.
9. Pull the walking belt towards the rear of the deck, then slide the rear roller assembly out from between the side-rails toward the rear of the treadmill.
10. Replace the rollers and reassemble the treadmill following Steps 1-9 in reverse order.

11. Adjust the walking belt tension following the procedure on page 3-23.
12. Adjust the walking belt tracking using the procedure on page 3-24.

Replacing the Walking Belt

Figure 3-27 on the previous page shows the walking deck assembly.

NOTES

- All orientations are given as if you were walking on the treadmill.
 - A new slider bed is recommended when you install a new walking belt. The slider bed is reversible.
1. Raise the treadmill to its maximum height, then remove the hood as described on page 3-1.
 2. Remove the drive (front) roller and the idler (rear) roller assemblies as described in Steps 2-8 of the previous paragraph.
 3. Remove the 7/16" hex-head nut which fastens the rear of the drive roller cover to the treadmill siderail. It is located under the treadmill (Figure 3-22 on page 3-14).
 4. Remove 12 Phillips screws that secure the treadmill slider bed to the siderails (Figure 3-27).
 5. Lift the slider bed and slip off the belt.

NOTE

When you install a new belt, verify that the closed end of the splice on the walking belt hits the roller *first* as the belt rotates. See Figure 3-28.

6. Install a new belt and reassemble the treadmill following Steps 1-5 in reverse order.
7. Tension the belt following the procedure on page 3-23.
8. Adjust belt tracking following the procedure on page 3-24.

Removing the Slider Bed

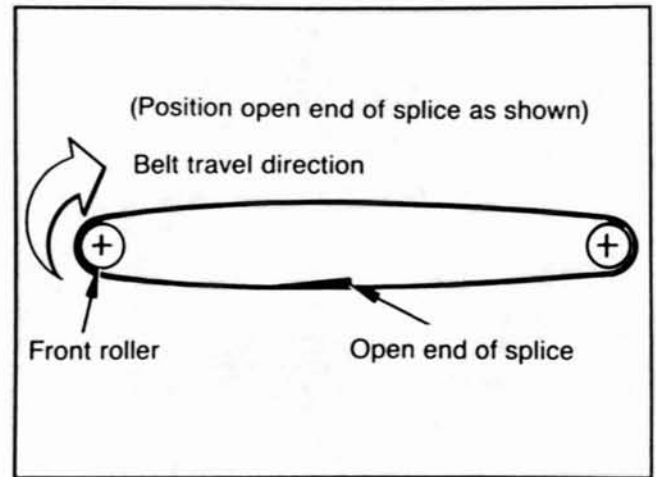


Figure 3-28. Replacing Walking Belt

NOTE

The slider bed is reversible. You can turn it over if one side should wear out.

1. Follow Steps 1-5 in the previous paragraph to remove and replace the slider bed. Refer to the note following Step 6 when replacing the belt.
2. Tension the belt following the procedure on page 3-23.
3. Adjust the belt tracking following the procedure on page 3-24.

CONTROL PANEL AND DPU ASSEMBLY PROCEDURES

The operator control panel includes the treadmill control assembly, the display/keypanel, and the display processor unit (DPU) PCB Assembly.

Removing the Treadmill Control Panel Assembly

1. Turn the treadmill power off and disconnect the power cord from the socket.
2. Use a 5/32" Allen wrench to remove the eight socket screws that fasten the control enclosure to the upright assembly (Figure 3-29).

CAUTION

Ensure that the control panel assembly does not fall from the uprights while performing Steps 3-8.

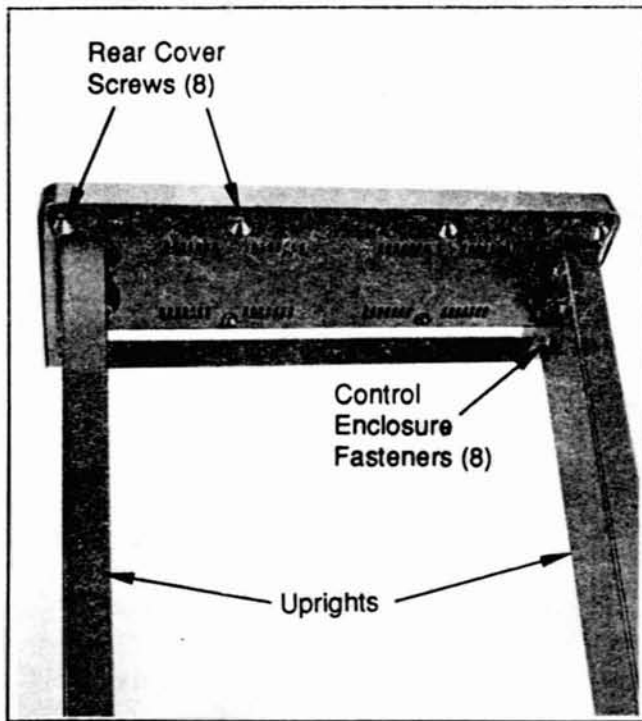


Figure 3-29. Treadmill Control Assembly (Rear View)

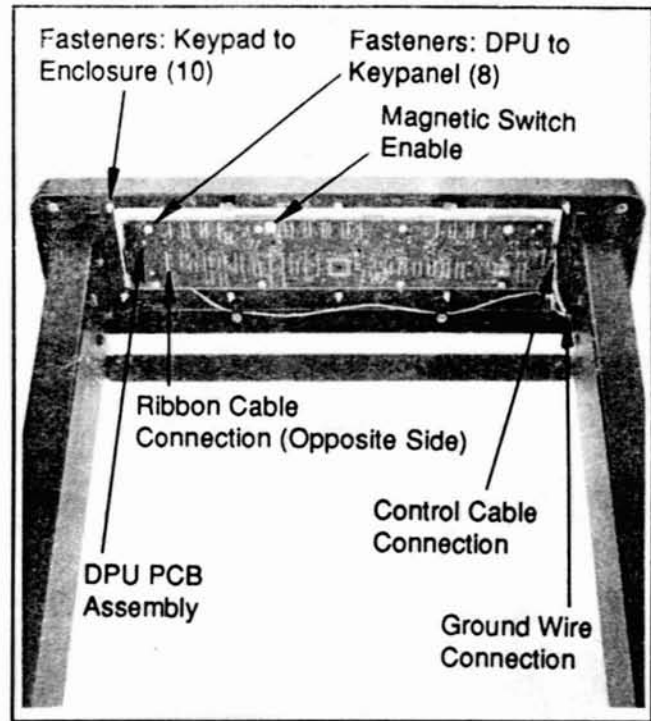


Figure 3-30. Display Processor Unit and Connections

3. Use a 1/8" Allen wrench to remove the eight socket screws that fasten the rear cover of the controller to the assembly (Figure 3-29).
4. Slide the cover down the uprights to expose the DPU.
5. Disconnect the controller cable, located on the left side of the DPU. See Figure 3-30.
6. Remove the hex nut that secures the ground wires to the chassis, then remove the wire.
7. Cut the cable tie that connects the cable to the control panel.
8. Lift the entire control panel assembly clear of the uprights.
9. Reassemble the assembly following Steps 2-8 in reverse order.

Replacing the DPU PCB Assembly

1. If possible, raise the treadmill to maximum height (15% elevation).

2. Turn the treadmill off and disconnect the power cord from the socket.
3. Use a 1/8" Allen wrench to remove the eight screws that secure the DPU enclosure rear cover (Figure 3-29).
4. Slide the rear cover down the uprights.
5. Remove the hex nut that attaches the DPU ground wire, then remove the wire.
6. Unplug the control cable from the DPU.
7. Remove the eight Phillips screws that attach the DPU to the key panel.
8. Lower the DPU, then unplug the ribbon cable connecting it to the key panel.
9. Remove the DPU from the enclosure.
10. Replace the DPU and reassemble following Steps 3-8 in reverse order.

Treadmill Control Unit Disassembly

You may either remove or the DPU PCB Assembly or leave it in place prior to removing the keypanel

1. Remove the DPU following the procedure in the previous paragraph.
2. Remove the ten hex nuts that secure the keyboard to the control panel enclosure.
3. Lift the keyboard off of the enclosure.

Replacing the Controller (DPU-to-TMU) Cable

1. Remove the hood (page 3-1).
2. Remove the control panel assembly as described on page 3-21.
3. Cut any cable ties that fasten the controller cable to the wire harness.
4. Remove the Phillips screw which fastens the cable ground wire to the left side of the headframe, near the rack gear. See Figure 3-15 on page 3-8.
5. Pull the cable up through the left upright to remove it.
6. Install a new cable following Steps 1-5 in reverse order.

WALKING BELT ADJUSTMENT PROCEDURES

Walking Belt Tension

Adjust the walking belt tension:

- whenever the belt slips or moves unsteadily during operation.
- after installing a new walking belt.
- each time you remove or replace the walking belt.
- whenever specified in the procedures in this Section.

Two adjustment methods are specified. Method 1 is preferred, but two belt tension calipers (Quinton p/n 030113-001) are required.

NOTE

Both adjustment screws must be completely slack before starting this procedure.

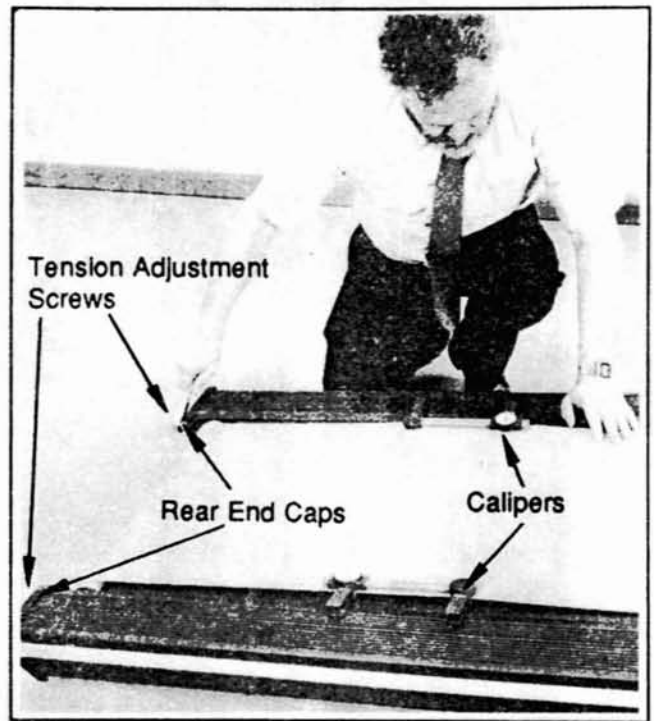


Figure 3-31. Adjusting Walking Belt Tension

Method 1 (Calipers available)

1. Thread both tension adjustment screws in until most of the slack is removed from the belt (Figure 3-31).

NOTE

Do not stretch the walking belt at this point.

2. Position one caliper on each side of the belt, approximately 18" from the rear roller assembly.
3. Grasp the belt with one caliper clamp.
4. Pull the slack between the clamps out of the belt with your fingers, then grasp the belt with the second clamp.
5. Repeat Steps 3 and 4 on the other side of the belt using the other caliper.
6. Zero out the dials of both calipers.
7. Alternately tighten each tension adjustment screw in 0.1% increments until both sides read 0.4%. *Ensure that the pointer reads exactly on the line increment of the dial for each setting.*

CAUTION

Do not overtighten the adjustment screws. Overtightening may damage the walking belt and roller assemblies.

8. Remove both gauges.
9. Adjust the walking belt tracking following the procedure on this page.

Method 2 (Calipers not available)

CAUTION

Both adjustment screws must be completely slack before starting this procedure.

Use this method only if two belt adjustment calipers are not available. However, an accurate measuring device is required.

1. Thread both tension adjustment screws in until most of the slack is removed from the belt. Figure 3-31 on page 3-23 shows where the screws are located.

NOTE

Do not stretch the walking belt at this point.

2. Place two pieces of masking tape or two light pencil marks on the right edge of the belt exactly 50.000" apart.
3. Repeat Step 2 on the left edge of the belt.
4. Alternately turn the left and right adjustment screws one-half turn each time until the distance between the tape (or pencil marks) is 50.203" \pm 0.016" on both sides.

CAUTION

Do not overtighten the adjustment screws. Overtightening may damage the walking belt and roller assemblies.

5. Remove the tape, if used in Step 2.
6. Adjust the walking belt tracking using the procedure in the following paragraph.

Walking Belt Tracking

Perform this procedure:

- whenever the belt moves to one side or the other.
- after installing a new walking belt.
- each time you remove or replace the walking belt.
- each time you adjust the walking belt tension.
- whenever specified in the procedures in this Section.

Stay off the belt when adjusting the tracking.

1. Tension the walking belt using either Method 1 or Method 2 in the previous paragraph.

WARNING

Do not start the treadmill when someone is on the walking belt. The belt starts moving immediately, and the sudden start and subsequent loss of balance could cause serious personal injury.

2. Start the treadmill and let it run for at least one minute at minimum speed and grade.
3. Make the following adjustment to the *right adjustment screw only*:
 - a. If the belt moves to the *right*, turn the screw 1/4 turn *clockwise*.
 - b. If the belt moves to the *left*, turn the screw 1/4 turn *counterclockwise*.

Figure 3-31 shows the location of the adjustment screws.

4. After making an initial adjustment, run the treadmill for at least one minute to observe how the belt tracks. Adjustments to belt tracking take some time to become apparent.
5. Repeat Steps 3 and 4 as required.

CAUTION

Do not overtighten the adjustment screw. Overtightening may damage the walking belt and assemblies.

Quinton®
ClubTrack™ 3.0
TREADMILL

**Service Manual and
Schematics Package**

PN 000335 (CT3.0)
PN 000333 (CT3.0+)

000335-831 (Rev New)
Text 033325-001 (Rev New)

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SECTION 1. INTRODUCTION

SCOPE

This manual contains the theory of operation, troubleshooting information, maintenance procedures, and the drawing package for the Quinton® ClubTrack™ 3.0 (Quinton part number 000335) and the Clubtrack™3.0 Plus (p/n 000333) treadmills. It is intended for *Quinton-trained service personnel*.

NOTES

Do *not* use this Manual to service the following treadmills:

- Q50 (Quinton part number 000259)
- Q55 (p/n 000208)
- Q55XT (p/n 000264)
- Q65 (p/n 000307)

Refer to Quinton Service Manual p/n 000298-830 for information and schematics on the above treadmills.

Also, use Quinton Service Manual p/n 000313-830 to service ClubTrack 3.0 p/n 000313.

The Manual is divided into five sections:

- Section 1 includes a product description, a list of accessories and options, the specifications, and the power requirements for the various treadmills.
- Section 2 is a detailed theory of operation for the electronic and mechanical components of the treadmills. This section is primarily intended for reference and training.
- Section 3 is the troubleshooting and maintenance guide for the treadmills. It includes the assembly/disassembly, adjustment, and calibration procedures.
- Section 4 is a detailed troubleshooting guide in table format. It includes:

- error codes.
- test points.
- speed, grade, power-up, and belt problems.
- noise analysis.
- Section 5 is the drawing package. It includes the assembly drawings, parts lists, and schematics.

DESCRIPTION

The treadmills are available in a number of models, differing in maximum speed and power requirements. The specifications and power options are described in Tables 1-1 and 1-2 on the following pages.

Each treadmill includes a controller and display, so no external controller is required. The treadmill *cannot* be controlled by another device.

ACCESSORIES AND OPTIONS

An Operator Manual and a Service Manual are shipped with each treadmill.

Side handrail assemblies are available. To order any item, or for more information on any of Quinton's line of medical and fitness products, contact your sales representative or call the Quinton Customer Service Department toll-free at 1-800-426-0327.

SPECIFICATIONS

Table 1-1 lists the performance specifications, physical characteristics, and environmental requirements for the treadmill. Table 1-2 details the single-phase power options for each model.

INSTALLATION AND CHECKOUT

The complete receiving, installation, and checkout instructions are included with each treadmill. Refer to them when setting up the treadmill.

Table 1-1. Specifications

PERFORMANCE	
Maximum Rated Load	320 lb (145 kg)
Belt Speed Range (Continuously Adjustable)	1.2 - 12 mph (1.9 - 19.2 km/hr)
Grade Range	0 - 15%
PHYSICAL	
Walking Area (Nominal)	20 x 60 in. (51 x 152 cm)
Floor Space Required	31 x 87 in. (79 x 221 cm)
Walking Surface Height	5.9 in. (15 cm)
Handrail Height above Floor	43.6 in. (110.7 cm)
Treadmill Weight	450 lb. (205 kg)
Shipping Weight	650 lb. (295 kg)
Power Cord Length	10 feet (3 m)
ENVIRONMENTAL	
Operating Temperature	50° - 122° F (10° - 40° C)
Storage and Shipping Temperature	-13° - 165° F (-25° - 75° C)
Humidity (Non-condensing)	3 - 95%

Table 1-2. Power Options and Requirements

Model	Part Number	Voltage (VAC)	Frequency (Hz)	Full-load Current (Amps)	Minimum Branch Circuit Current (Amps)
ClubTrack 3.0*	335-001	220	60	16	20
	335-002	220	50	16	20
	335-003	200	60	16	20
	335-004	200	50	16	20

*NOTE: ClubTrack 3.0 Plus models (p/n 333-001, -002, -003, and -004) have the same power requirements and options.

SECTION 2 THEORY OF OPERATION

This Section, which is primarily intended for reference and advanced training, describes the mechanical and electronic theory of operation of the treadmills. It is divided into three subsections:

- an overview of treadmill operation.
- the mechanical theory of operation, including the motors, gearing, etc.
- the electronic theory of operation, including a functional description of:
 - the Display Processing Unit PCB Assembly (DPU), located in the Display Panel and
 - the Treadmill Control Unit PCB Assembly (TMU), located under the hood.

OPERATIONAL OVERVIEW

The treadmill includes the following primary assemblies:

- Three motors under the hood:
 - drive motor, which drives the walking belt.
 - speed change motor, which changes the belt speed.
 - grade motor, which changes the treadmill grade.
- input and output shafts, belts, pulleys, and rack and pinion set, which transfer mechanical energy from the motors to operate the walking belt and change the grade.
- speed change motor assembly.
- tachometer assembly.
- grade potentiometer.
- drive motor mercury relay, or contactor.
- the treadmill unit PCB assembly, or TMU, located under the treadmill hood.
- the display processing unit PCB Assembly, or DPU, located in the display panel.

Figure 2-1 on the following page is a detailed block diagram of the treadmill. The two PCB Assemblies are indicated by dashed lines.

MECHANICAL THEORY OF OPERATION

Motors

Figure 2-2 on page 2-3, which shows the treadmill with the hood removed, illustrates the layout of the operational components described below.

Drive Motor

The drive motor is a continuous duty, single phase with internal overload protection. It provides the force to turn the treadmill drive pulley and move the walking belt. An arrangement of shafts, belts, and pulleys allows a movable sheave on the input shaft to change the output shaft's rate of rotation, which varies the speed of the walking belt.

Speed Change Motor Assembly

The speed change motor assembly consists of a reversible, variable speed DC gear motor linked by a chain and sprockets to the speed change spindle assembly. The motor moves the speed change spindle assembly and movable sheave laterally along the input shaft to change the speed of the walking belt. A tachometer linked to the output shaft monitors the speed of the walking belt.

The speed change motor cannot be operated unless the drive motor is on.

Grade Motor

The grade motor is a right-angle DC gear motor. The motor shaft is linked to a pinion shaft by a chain and sprockets. The chain turns a sprocket on the pinion shaft to raise and lower the headframe of the treadmill on two parallel rack gears. A grade potentiometer linked to the pinion shaft by sprockets and a chain monitors elevation.

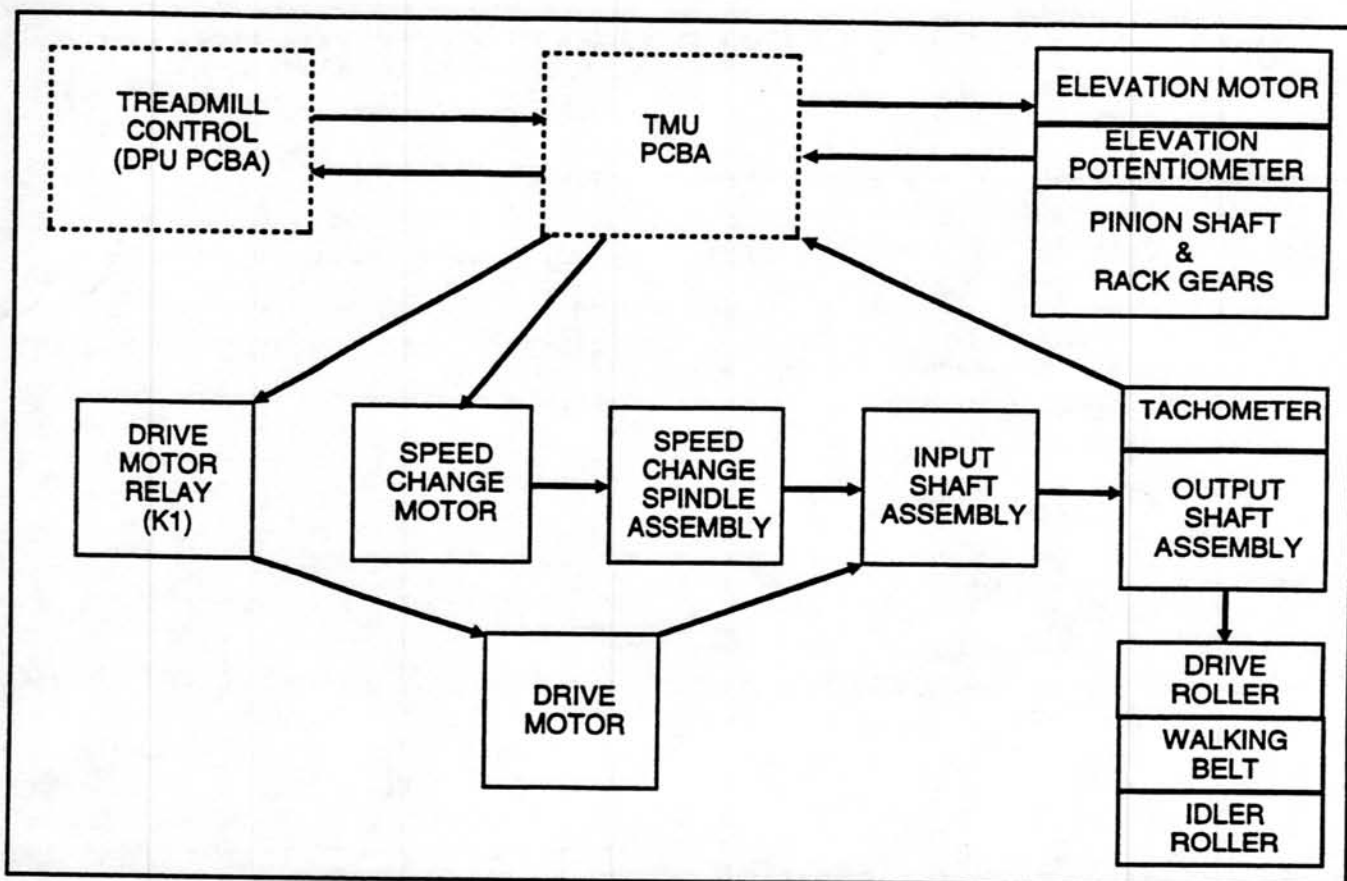


Figure 2-1. Functional Block Diagram (Mechanical)

Shafts, Belts, and Pulleys

An input shaft assembly, output shaft assembly, belts, and pulleys function as the transmission. Figure 2-2 illustrates this arrangement.

Input Shaft Assembly

The input shaft includes a machined V-belt pulley, the fixed and movable sheaves that comprise the input pulley, and the speed change spindle assembly. A V-belt links the drive motor output shaft with the input shaft, which turns at a constant speed.

The speed change spindle assembly consists of a fork, a speed change spindle, and a yoke. As the speed change motor turns the spindle, the fork moves laterally on the input shaft, controlling the movable sheave. The speed change spindle assembly positions the movable sheave on the input shaft.

Output Shaft

The output shaft includes a spring, the movable and fixed sheaves that comprise the output pulley, and a timing pulley. The output shaft turns at a variable speed that depends on the pitch diameters of the input and output pulleys.

Variable Speed Belt

A variable speed belt links the input and the output shaft assemblies. The four sheaves are angled, so the variable-speed belt is forced in or out between pairs of sheaves, and therefore increases or decreases pitch diameter.

Spring tension against the movable sheave on the output shaft forces the belt outward, increasing the pitch diameter of the output pulley. When the speed change fork moves the movable sheave on the input shaft inward, the pitch diameter of the input pulley increases, causing a simultaneous decrease in the pitch diameter of the output pulley, which increases the speed of the walking belt.

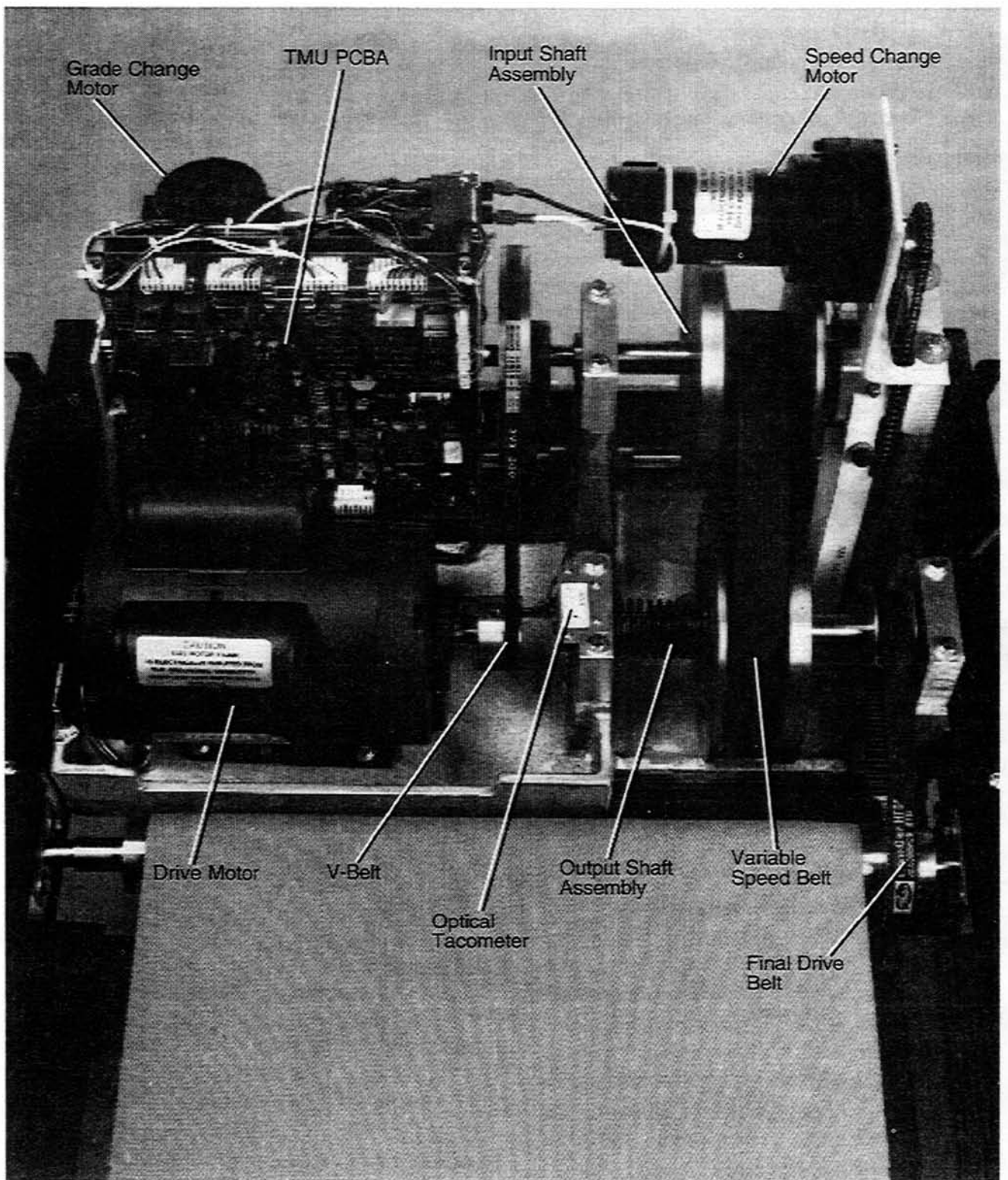


Figure 2-2. Treadmill (Hood and Uprights Removed)

Treadmill Drive and Idler Pulleys

The timing pulley on the output shaft drives the treadmill drive pulley. The drive pulley drives the walking belt and the treadmill idler pulley.

Pinion Shaft and Rack Gears

The pinion shaft and rack gears allow the entire treadmill to tilt for grade changes. The pinion shaft has machined teeth at both ends to move a parallel pair of rack gears up and down. Factory-set electronic limits establish the 0-15% grade range, and microswitches prevent upward or downward overtravel beyond these limits.

ELECTRONIC THEORY OF OPERATION

The treadmill electronics consists of two PCB Assemblies, as indicated in Figure 2-1:

1. The Display Processing Unit PCB Assembly is located in the Display Panel. It is called the *DPU*.
2. The Treadmill Unit PCBA is located under the treadmill hood. It is referred to as the *TMU*.

The DPU:

- displays speed in mph or km/hr.
- displays grade in per cent (%).
- displays elapsed time, elapsed distance (miles or km), or pace (mph or km/hr).
- displays diagnostic information for the treadmill if an error condition occurs.
- displays cumulative time of use and distance operated, when selected by the service representative.
- performs an electronic self-test when the treadmill is powered up.
- enables a special access mode for manufacturing and service testing.
- includes the circuitry for the magnetic access switch on the key panel.

The TMU has the following functions:

- starts and stops the walking belt.
- increases and decreases belt speed.
- increases and decreases grade.

The TMU operations are enabled via software commands from the DPU to the TMU.

NOTE

When components and pinouts are specified, the component type and number are given first, followed by a hyphen and the pin number. If several pins are referenced, they are separated by commas. For example, "J1-3" refers to "Jack 1, pin 3", and "P7-4,13" refers to "Plug 7, pins 4 and 13".

DPU OPERATION

Introduction

Schematic drawing 019027-201 at the end of this Manual shows the electronic layout of the Display Processor Unit (DPU). The design is based on a single chip microcontroller, U9.

- U9 communicates with the TMU via a built-in serial communications port that connects to J1.
- U9 uses external ROM device U10 for program storage.

A single programmable and display interface device (U12) polls the key panel switches, sending an interrupt to the microcontroller if a switch is depressed. All switches are then polled and debounced in software.

NOTE

Microcontroller U9, external ROM U10, and interface device U12 share a common data bus.

U12 also decodes the seven-segment display data for each display module. Each module is strobed at a 200 Hz rate. Outputs SL0 through SL3 provides the code for which module is being strobed. U13 drives the display LED segments, while U1 and U2 decode the strobe data.

A +5 V monitor circuit (U8) resets the microcontroller in the event of power failure. If a reset occurs, counter U17 times out, causing the displays to be blanked.

There are two common power supplies on the DPU:

- +12 V, which is used for the displays. It is routed from the TMU to the DPU.

- +5 V, which is used for everything else. VR1, a linear regulator, generates the +5V supply.

Input and Output Signals

Switch Inputs

The user presses the appropriate switch on the control panel to enter these signals:

- **START BELT**
- **STOP BELT**
- **CLEAR** (erases the previous user data)
- **SELECT** (User chooses **TIME**, **DISTANCE**, **PACE**, or **SCAN** on the display)
- **FASTER**
- **SLOWER**
- **UP**
- **DOWN**
- **UNITS:** English (mi, mph, lb) or metric (km, km/hr, kg)

Treadmill Inputs

The TMU sends the following to the DPU in the Control Panel:

- **Receive Data** (serial data, 2400 baud, differentially driven)
- **Power** (+12 V regulated, 3 A maximum)

Display Outputs

This data can appear at the controller LED outputs:

- Speed
- Grade
- Time, distance, or pace (user selectable)
- Self-test data
- Error codes and service information.

In addition, the service representative can display:

- Total hours of treadmill use
- Total treadmill mileage

Interface Signals

Table 2-1 on page 2-7 describes the signal on each pin of connector J1 on the DPU, which is cabled to J12 on the TMU.

TMU THEORY OF OPERATION

Schematic drawing 030650-201 at the end of this Manual shows the electronic layout of the Treadmill Unit (TMU). Like the DPU, the design of the TMU is based on a single-chip microcontroller.

Power Distribution

(Refer to schematic drawing 030650-201, Sheet 1, at the end of this Manual, and to Figure 2-3 on the following page.) All onboard electronics are powered by three common voltage sources:

- +26 VDC @1 Amp max load
- +12 VDC @2 Amp max load
- + 5 VDC @1 Amp max load

Isolation transformer T1, which is fused at 0.5 Amp, steps down 230 VAC to 25 VAC. After full-wave rectification, the 25 VAC is filtered by capacitors C6 and C29 to generate approximately +35 VDC. Two switchmode power supplies transform +35 VDC to +26 VDC and +12 VDC.

- +26 VDC is generated with a regulator control device, flyback diode CR13, filter elements L1, C22, and C23, and other devices, including:
 - Q1, which serves as a crowbar to shut down the supply in the event of an overvoltage condition.
 - C16 and C1, which allow a gradual soft start to prevent inductor saturation and limit the average short circuit current.
 - R9 and C14, which set the switching frequency of approximately 100 kHz.
 - other resistors and capacitors that are used for network timing, feedback, and compensation.

Figure 2-3. TMU Power Generation and Distribution

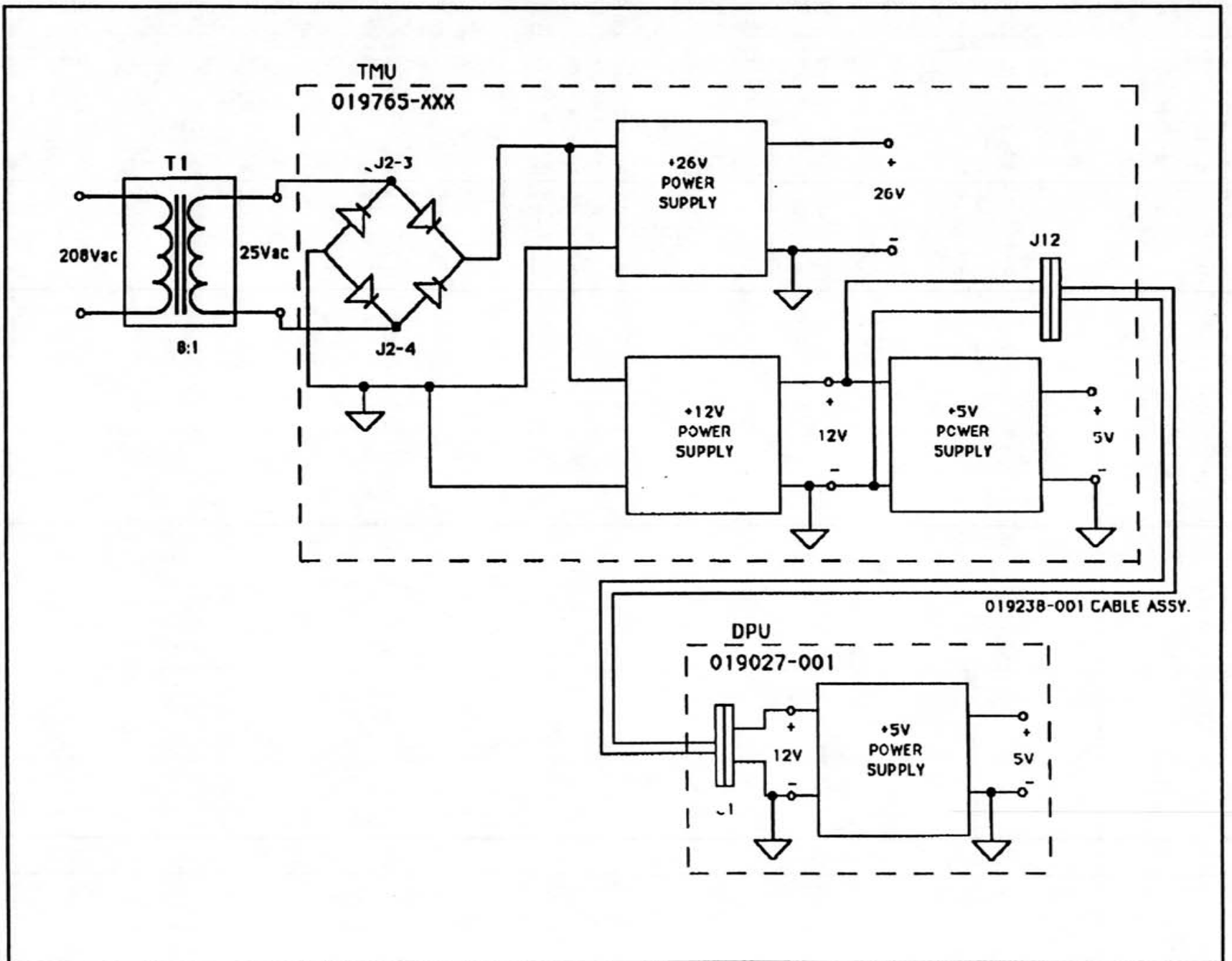


Table 2-1. Treadmill Interface Signals

J1 on DPU and J12 on TMU	SIGNAL NAME	DESCRIPTION/FUNCTION
1	tdh	Transmit data from controller to treadmill. Differentially driven. 2400 baud.
2	tdl	
3	rdh	Receive data from treadmill to controller. Differentially driven. 2400 baud.
4	rdl	
5	N/C	No connection
6	run	Hardwired run command
7	ground	System ground
8,9	power	Regulated 12 volts (3 Amps max)

Table 2-2. TMU Microprocessor (U15) Signal Outputs

SIGNAL NAME	FUNCTION	STATE
start	Controls the drive motor	Active state HIGH (+5 V)
sp run	pwm signal to speed change driver	Active state HIGH (+5 V)
sp dir	Controls speed change direction	HIGH indicates positive speed change
hs op	Controls high speed deceleration relay	Active state LOW (0 V)
direction	Controls grade direction	Low signal causes grade to increase
change	Controls grade change	Active state LOW (0 V)

- +12 VDC is generated in the same way as the +26 VDC, with changes to the resistor feedback network.
- +5 VDC is generated by a linear regulator off the +12 VDC supply.

Microcontroller

(Refer to schematic drawing 019765-201, Sheet 2.) The microcontroller (U15) sends and receives commands to and from the DPU concerning:

- treadmill speed
- treadmill grade
- error conditions
- start/stop status.

U15 sends treadmill status messages and any error conditions that might be detected back to the DPU for display. The microcontrollers (U15 on the TMU, U9 on the DPU) communicate via serial ports J12 (on the TMU) and J1 (on the DPU), using the RS-422 data transmission protocol. The treadmill will shut down if this communication link is broken: when TMU microcontroller U15 fails to detect a data transmission, it sends a shutdown signal to all mechanical devices on the treadmill.

TMU microcontroller support devices include:

- 256 bytes of onboard RAM memory.
- Differential line receiver U17, located between U15 and J12, which amplifies both transmitted and received signals.

- EPROM memory device U18, which stores the firmware.
- Oscillator Y1, the heartbeat of the microcontroller. The 16.38 MHz crystal oscillator output is divided by external ripple counter U12 to provide 4 msec interrupts.

A power supply monitor chip (U16) continually checks the status of the +5 V supply and resets U15 if the monitor detects a fault condition.

- If a power fault occurs, flip-flop U14-8 is set, which turns on the treadmill RESET indicator through buffer U5.
- If a drive motor thermal overload occurs, an internal switch in the motor connected to J5-3,4 opens, activating optical coupler U6. This sets flip-flop U14-6, which also turns on the RESET indicator via U5.

Table 2-2 on page 2-7 lists the microcontroller outputs, while grade and speed inputs to the microcontroller are discussed on the next page.

Microprocessor Verification of Optical Tachometer Operation

Microcontroller U15 uses serial input data from J8, the tachometer input, to determine treadmill belt speed. The event counter in U15 counts positive transitions from J8, while peak detector U11B/CR18 and comparator U10A analyze the upper threshold voltage of this signal to verify that the optical tach is functioning correctly. If the light intensity in the optical interrupter circuit is not sufficient, an error signal is sent to U15 that:

1. shuts down mechanical operation of the treadmill.
2. generates the appropriate error code for display on the Controller.

NOTE

Dirt accumulating in the slot between the photoemitter and the phototransistor may block some of the light and cause an error message.

GRADE MOTOR OPERATION

(Refer to schematic drawing 019765-201, Sheet 1.) Microcontroller U15 sends grade change and direction signals to the grade motor, and receives grade feedback via connector J10. U15 reads the analog signal from the tap of the grade potentiometer, then performs an analog-to-digital conversion to determine the current grade. (The level of the 0- to +5-volt signal is proportional to the grade.) When the voltage reaches the appropriate level, U15 switches the grade motor off.

The grade motor is controlled by K3 and K4, two solid-state relays that half-wave rectify the AC line voltage. (Each relay is a single SCR with an isolated driver.) 208-230 VAC is routed via J3 through 2 Amp fuses F6 and F7. The voltage leaves the TMU via J4-7,8, enters isolation transformer T2 where it is stepped down to half-wave rectified 115 VAC, then returns on J4-5,6.

- K3 drives the treadmill grade *down*.
- K4 drive the grade *up*.

The treadmill grade *decreases* if relay K3 is activated. Current flows:

1. through the SCR within the relay during the negative half-cycle of the AC waveform,
2. through the down limit switch SW2 via J6, then
3. back to the grade motor via J4-2,4, lowering the treadmill.

Limit switch SW2 protects against negative overtravel by cutting off current to the grade motor if the grade pot malfunctions.

Positive grade change occurs in the same way when relay K4 is activated, and limit switch SW1 protects against positive overtravel.

U7, U8, and U9 (Sheet 2) are the interface between the U15 and K3/K4: they process the microcontroller grade change and direction commands. U8 serves both as a discriminator and a relay driver. The change command enables the drivers.

SPEED CHANGE OPERATION

There are two modes of speed change: normal speed change and high speed deceleration. The position of relay K1, which is controlled by the "hs op" output from microcontroller U15, determines the mode.

Normal Mode

Speed change is in normal mode when relay K1 is in its normal position. The normal speed change circuitry consists of an H-Bridge (U1), flyback diodes CR7 through CR10, sense resistor R2, an overcurrent comparator, and the logic interface from the microcontroller.

- The "sp run" output from U15 is a pulse-width modulated signal proportional to the desired speed change motor speed.
- The "sp dir" signal specifies the direction of the speed change motor. A +5V (high) increases the speed, while 0V (low) decreases it.
- R2 senses the instantaneous motor current.

- The comparator output on U11A disables "sp run" and turns U1 off if the instantaneous current detected by R2 exceeds 2 Amps.
- RC network R31-C39, which has an 80 μ sec time constant, filters the comparator output. Should a short circuit occur, the network limits the average current and protects U1.

Speed Deceleration

The high speed deceleration mode directs full-wave rectified 110 VAC to the speed change motor. Normally, relay K2 is on when the drive motor is on. However, when the treadmill is in high speed deceleration mode, K1 switches. When the belt speed reaches 2.4 mph, microcontroller U15 turns the drive motor off and switches K2 *before* turning off K1. K2 shorts the speed change motor leads across R1 when the drive motor is not running. Therefore, all the energy that was stored in the speed change motor is routed through K2 and dissipated by R1, a 560 Ω , 5 Watt power resistor.

SECTION 3 ASSEMBLY, DISASSEMBLY, AND REPLACEMENT PROCEDURES

INTRODUCTION

This section contains the following maintenance procedures:

- repair, replacement, disassembly and reassembly
- mechanical adjustment and alignment
- calibration
- post-maintenance test

Since the treadmill control unit (TMU) and display processor controller unit (DPU in the ClubTrack) or master control unit (MCU in the ClubTrack Plus) PCB Assemblies are field-replaceable modules, no procedures are included for component-level repair.

WARNING

Observe the following precautions when servicing the treadmill:

- *Do not start the walking belt when someone is on the treadmill. The belt starts moving immediately, and the sudden start and subsequent loss of balance could cause serious personal injury.*
- *Do not wear loose clothing around rotating machinery.*
- *High voltage is present when the treadmill hood is removed and treadmill is plugged in. Unplug the power cord every time you remove the hood to prevent high voltage electrical shock.*

NOTE

All instructions are oriented as if you were exercising on the treadmill.

HOOD AND POWER INPUT ASSEMBLIES

Removing Treadmill Hood

1. If possible, elevate the treadmill to its maximum height.
2. Unplug the treadmill from its power source.
3. Use a 5/32" Allen wrench to remove the two buttonhead screws at the lower front of the treadmill hood cover. These fasten the hood cover to the frame.
4. Use a Phillips screwdriver to remove the two #8 Phillips-head screws located near the bottom of the ClubTrack 3.0 decal.
5. Grasp the hood cover at the top and bottom center, then lift and pull back to remove. See Figure 3-1 on page 3-2.
6. Disconnect the reset switch connector inside of the hood (Figure 3-2).
7. Use a Phillips screwdriver to remove the two screws that fasten the front of the hood to the siderails. The screws are inside the hood at the front of the treadmill.
8. Gently tap the hood 1/2" towards the rear until the rear screws are disengaged from the key slots.
9. Spread the sides of the hood slightly apart to clear the uprights, then tilt the front of the hood up, slide it back, and lift it off the treadmill. See Figure 3-3.
10. To replace the hood, follow steps 3-9 in reverse order. Take care not to damage the reset switch wiring.

Replacing the Power Cord

1. Remove the hood as described above.
2. Verify that you have removed the power cord from the outlet.



Figure 3-1. Removing Treadmill Hood Cover

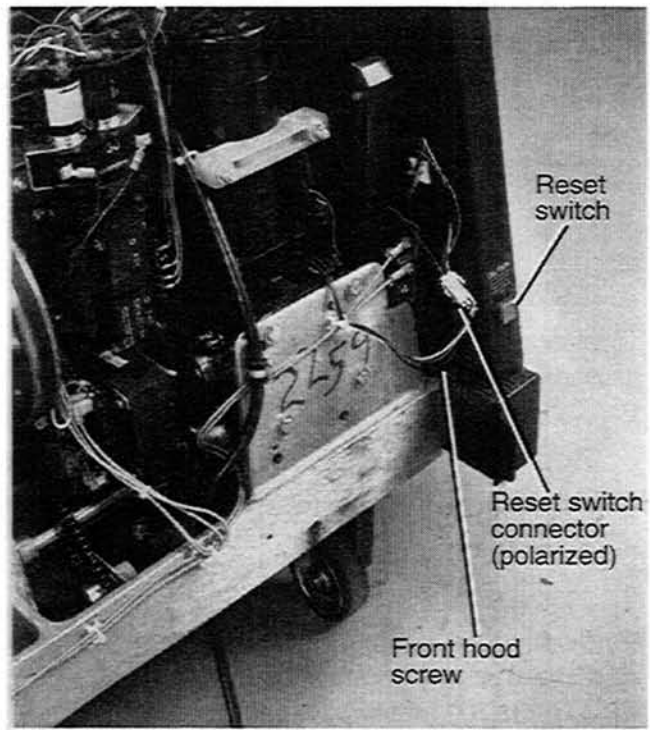


Figure 3-2. Reset Switch and Connector

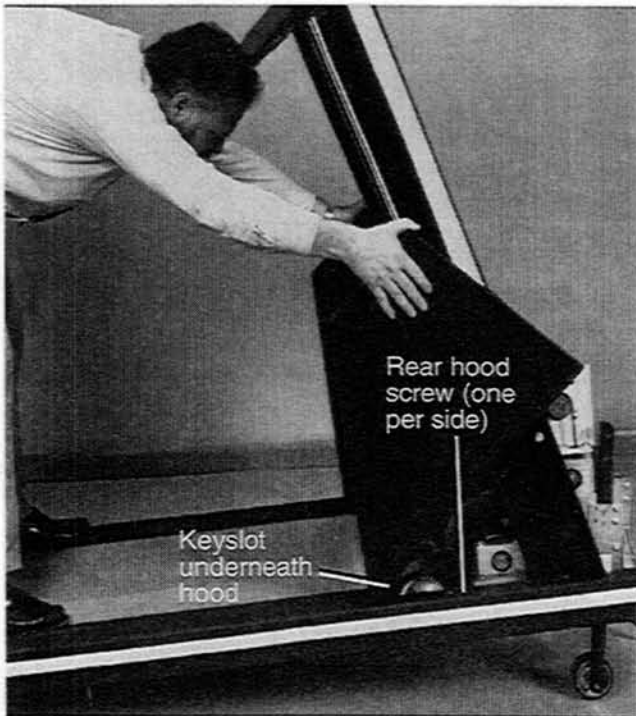


Figure 3-3. Hood Removal

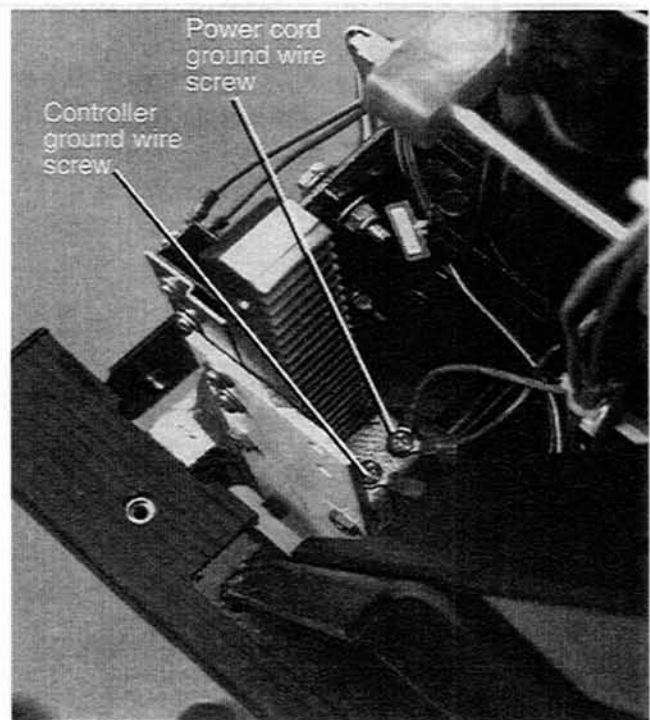


Figure 3-4. Ground Connections to Frame

3. Remove the Phillips screw which attaches the power cord ground wire to the headframe. It is located on the left side of the headframe, near the rack gear. See Figure 3-4 on the following page.
4. Remove the screws which attach the power leads to mercury relay K1. Note the wire colors and connection points (Figure 3-6).
5. Cut the cable ties which secure the power cord leads to the wire harness.
6. Remove the screw which attaches the cable clamp to the headframe.
7. Use strain relief pliers to remove the strain relief, which is located at the bottom of the treadmill headframe.
8. Attach the new power cord following Steps 2-7 in reverse order. Refer to drawing 030650 for the wiring diagram. Be sure to:
 - a. install a strain relief and clamp
 - b. tie-wrap the power cord and wire harness as you found them.
9. Replace the hood assembly as described on page 3-1.

Replacing the Reset Switch

NOTE

The walking belt and speed change motor are *not* operational if the reset switch is disconnected. However, both the DPU Assembly and the elevation motor continue to operate.

1. Remove the hood and disconnect the reset switch connector (page 3-1).
2. Push the red reset switch out from inside of the hood. It fits tightly, so you may need to rock it up and down to loosen it.
3. Push the new switch straight into the hole until it is firmly seated.
4. Replace the hood assembly (page 3-1). Be sure to reconnect the reset switch.

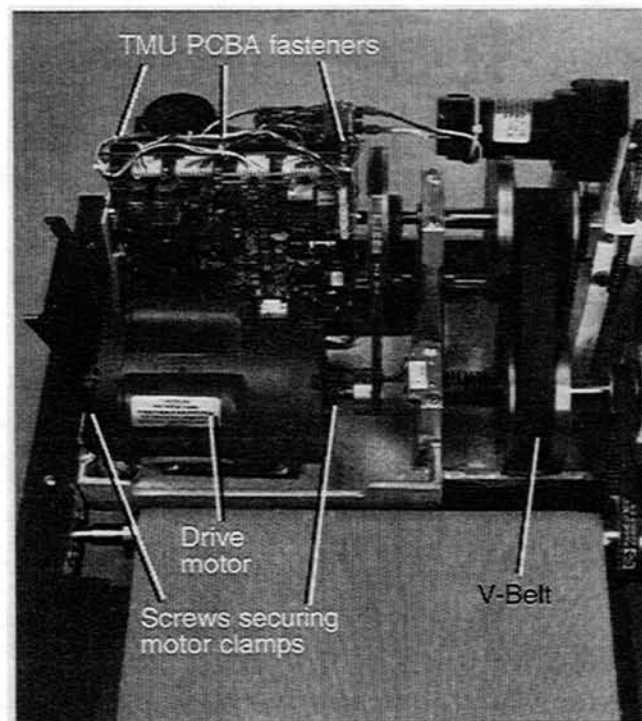


Figure 3-5. Drive Motor

MOTOR ASSEMBLIES

Grade motor removal and replacement is described under elevation system maintenance (page 3-14).

Drive Motor

Replace the drive motor when:

- The internal overload protector fails.
 - The motor start switch (centrifugal switch) fails.
 - The motor burns out.
1. Remove the treadmill hood (page 3-1).
 2. Remove the cable ties that secure the motor wires.
 3. Disconnect the wires from mercury relay K1. Figure 3-5 shows the drive motor, while Figure 3-6 on page 3-4 shows the relay.
 4. Unplug the following wires:
 - a. the motor connection to the TMU PCB Assembly.
 - b. the motor connection from the transformer at the quick-disconnect (if applicable).

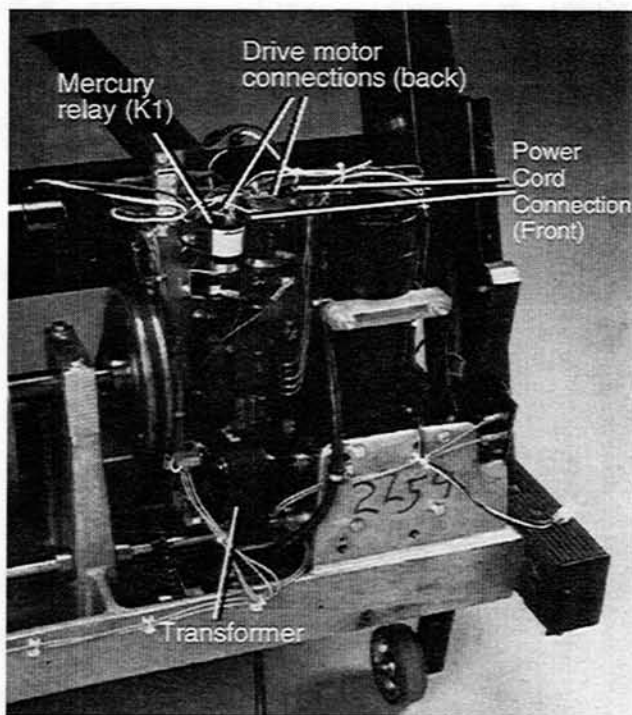


Figure 3-6. Drive Motor (Mercury) Relay (K1)

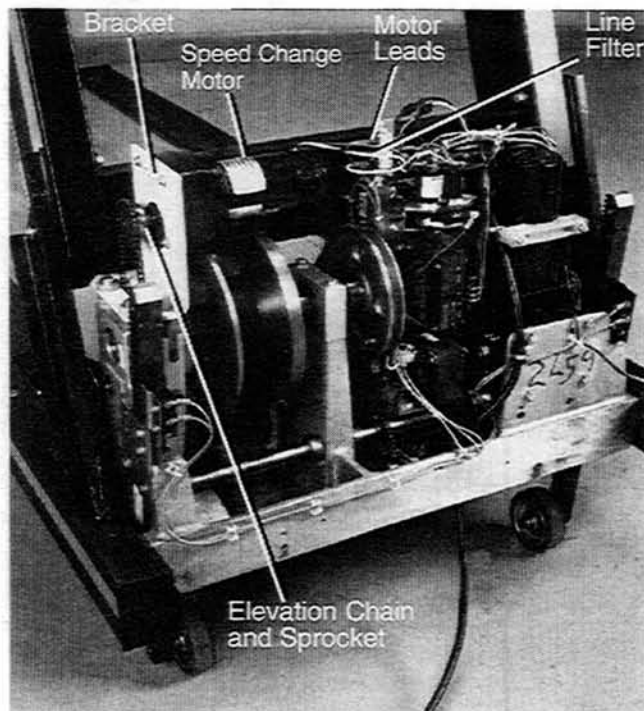


Figure 3-7. Speed Change Motor

5. Remove one clamp on each side of the drive motor. These two clamps secure it to the motor base plate.
6. Slip the V-belt off the motor pulley, then lift the drive motor off the base plate.
7. Install a new drive motor following Steps 5-6 in reverse order.

CAUTION

To avoid damage to the TMU Assembly, be sure to tighten the clamps that secure the drive motor to the motor base.

8. Check the V-belt tension per Quinton drawing 030650, Note 12. If required, adjust the tension following the procedure on page 3-26 of this Manual.
9. Attach the electrical connectors and reassemble the treadmill following Steps 2-4 in reverse order. The wires are color-coded.
10. Replace the hood cover. *Be sure to reconnect the reset switch.*

Drive Motor (Mercury) Relay K1 Replacement

1. Remove the treadmill hood as described on page 3-1.
2. Note the color and arrangement of wires to the mercury relay. See Figure 3-6.
3. Remove the wires to the relay:
 - a. Two wires to motor.
 - b. Two wires to power cord.
 - c. Two wires to connector P11.
 - d. Three wires to connector P3.
4. Replace with a new relay, then reconnect the color-coded wires you removed in Step 3. Drawing 030650 indicates the connection point reference.
5. Replace the hood and cover. *Be sure to reconnect the reset switch.*
6. Restore power and test the treadmill.

Speed Change Motor

Replace the speed change motor if the gears break or if the motor burns out.

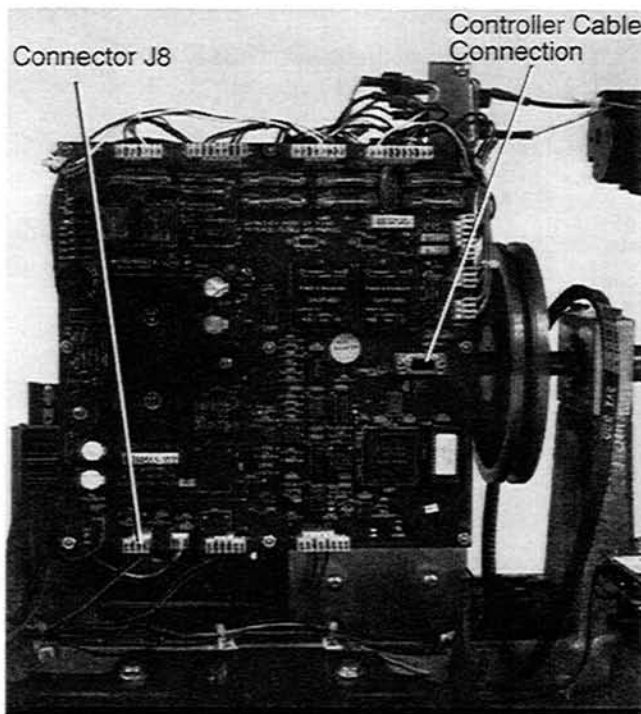


Figure 3-8. TMU PCB Assembly

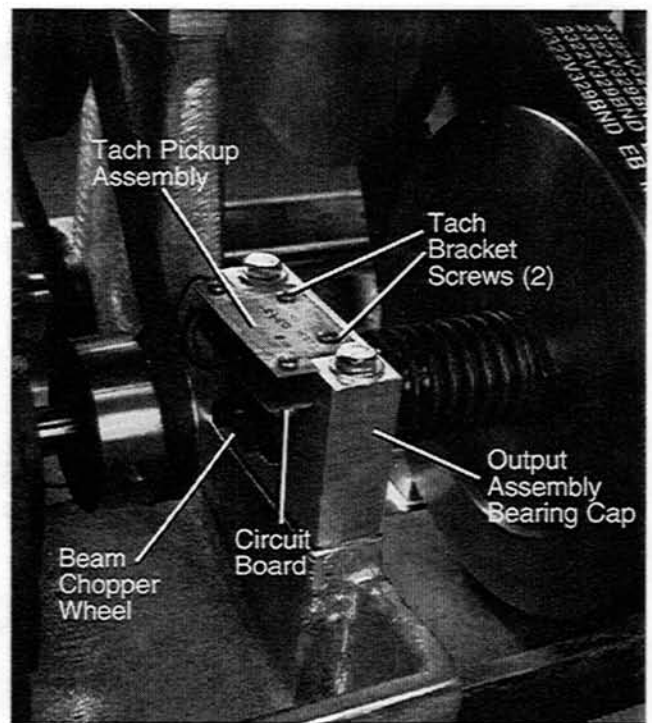


Figure 3-9. Tachometer Optical Sensor

1. Remove the treadmill hood as described above.
2. Unplug the quick disconnects from the line filter (Figure 3-7).
3. Loosen the four screws and washers that hold the speed change motor to the bracket (Figure 3-14 on page 3-8).
4. Slip the chain off the sprocket, then remove the sprocket from the motor.
5. Remove the four screws you loosened in Step 3, then remove the speed change motor.
6. Replace with a new speed change motor, following Steps 3-5 in reverse order.
7. Attach the electrical connectors and reassemble the treadmill following Steps 2-4 in reverse order. The wires are color-coded.

NOTE

Be sure to take the slack out of the motor chain when you replace it.

8. Replace the hood cover. *Be sure to reconnect the reset switch.*

9. Restore power to the treadmill and test the speed limits.

TACHOMETER ASSEMBLY

Optical Sensor Replacement

1. Remove the treadmill hood as described on page 3-1.
2. Remove cable ties to connector J8 at the lower left corner of the TMU, then unplug this connector. See Figure 3-8.

CAUTION

To prevent damage to the beam chopper, lift the tachometer bracket straight up to remove it. Verify that the tachometer optical sensor is securely mounted before operating the treadmill.

3. Remove two screws on the top of the tachometer optical sensor bracket, then lift the bracket straight up. See Figure 3-9.
4. Remove and save the two screws and spacers that hold the small circuit

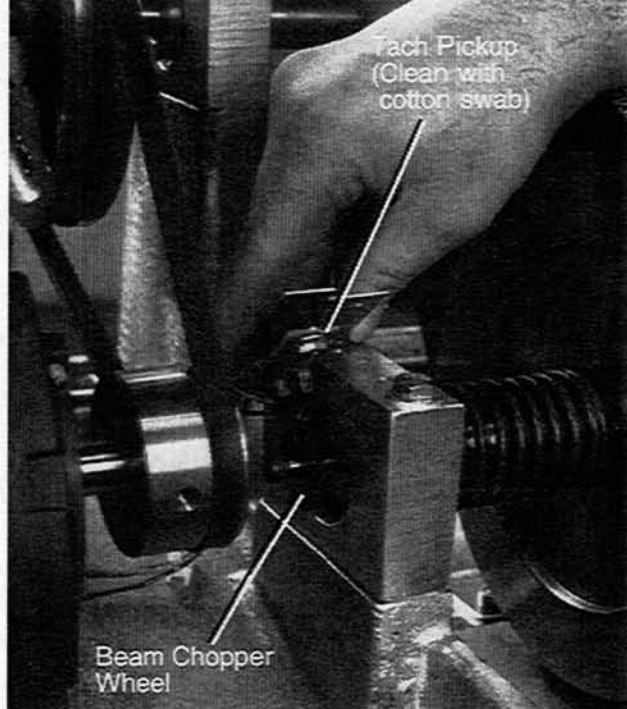


Figure 3-10. Cleaning the Optical Sensor

board in place on the bracket, then remove and discard the old board.

5. Install a new small circuit board using the screws and spacers from Step 4.
6. Reinstall the tach bracket onto the top of the bearing cap.
7. Align the tachometer beam chopper per the procedure on page 3-6.
8. Reconnect plug P8.
9. Tie down the wire harness with cable ties.

Cleaning the Optical Sensor and LED

Dust or dirt on the surface of the sensor and LED may cause the tach to fail because it will not be able to detect light passing through notches in the chopper wheel. This will cause the (undetected) feedback speed to differ from the value displayed on the control panel, which in turn will cause the TMU to generate error code **E202** on the display. To clean the sensor assembly, follow these steps:

1. Remove the optical sensor following Steps 1-3 of the "Optical Sensor Replacement" paragraph on page 3-5.
2. Moisten a cotton swab with alcohol, then gently rub it between the sensor and the LED to remove any dirt (Figure 3-10).
3. Allow the alcohol to dry.
4. Replace the optical sensor, then align the beam chopper as described on this page.
5. Replace the hood cover.
6. Power up the treadmill, and increase belt speed to 5 mph. If error code **E202** appears on the display again, refer to Table 4-1 in Section 4.

Beam Chopper Replacement

1. Remove the hood as described on page 3-1.
2. Remove the two screws that hold the tachometer optical sensor in place, then move the sensor out of the way. See Figure 3-9 on page 3-5.
3. Remove the beam chopper. Use a 1/8" Allen wrench to remove the bolt and the chopper wheel from the end of the output shaft.
4. Replace with a new beam chopper.
5. Replace the tachometer optical sensor on the bearing cap.
6. Align the beam chopper wheel per the procedure in the following paragraph.

Beam Chopper Wheel Alignment

1. Unplug the treadmill, then remove the hood as described on page 3-1.
2. Center the beam chopper wheel by sliding it along shaft with a screwdriver and checking its relationship to the tachometer LED.
3. Move the beam chopper until it is in the exact center of the gap.

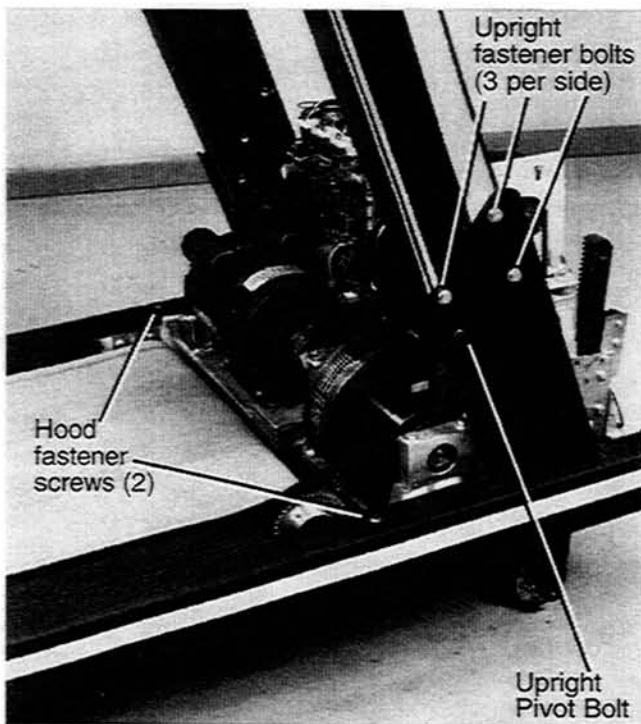


Figure 3-11. Upright Pivot Bolt and Fastening Bolts

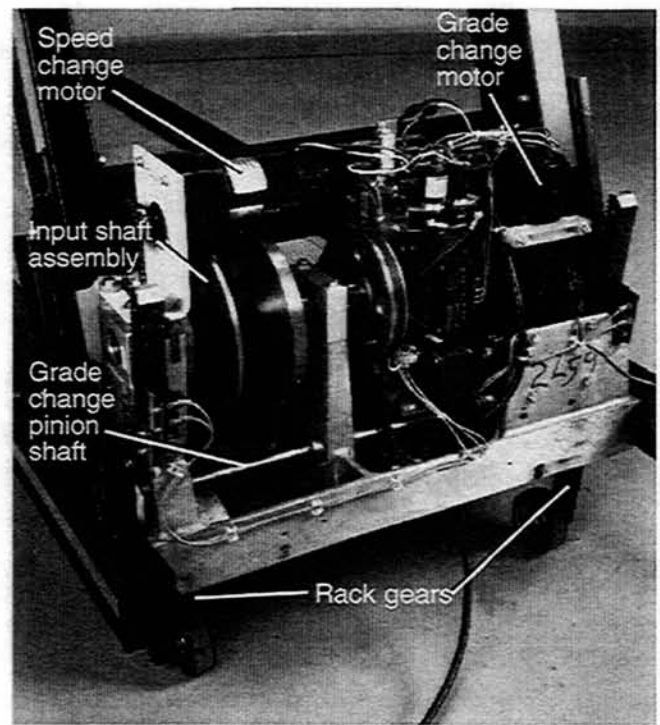


Figure 3-12. Input Shaft Assembly

REPLACING THE TREADMILL PCB ASSEMBLY (TMU PCBA)

NOTES

- Place a clean sheet of cardboard or a clean rag on the treadmill deck before starting this procedure.
 - To change fuses, refer to Table 4-4 on page 4-5.
1. Remove the hood (page 3-1).
 2. Remove one clamp from each side of the drive motor that secure it to the motor base plate (Figure 3-5 on page 3-3).
 3. Slip the V-belt off the motor pulley, then lift the drive motor off the base plate and set it down on the walking deck.
 4. Remove the six 1/2" hex-head fasteners that attach the cross brace to the uprights, then remove the cross brace.

WARNING

To prevent the uprights from falling on the deck in Step 4, support them

with your hand when removing the final fasteners.

4. Remove the six 5/16" hex-head fasteners (three per side) that allow the control panel assembly uprights to pivot down on the treadmill deck, then carefully lower them onto the deck (Figure 3-11.)
5. Unplug all electrical connectors to the TMU PCB Assembly (Figure 3-8).
6. Remove the nine hex nuts that attach the TMU to the mounting bracket, then remove the TMU.
7. Replace with a new TMU assembly and attach all electrical connectors.

NOTE

No calibration is required after TMU installation.

8. Reassemble the treadmill following Steps 2-7 in reverse order.
9. Replace the hood cover. *Be sure to reconnect the reset switch.*

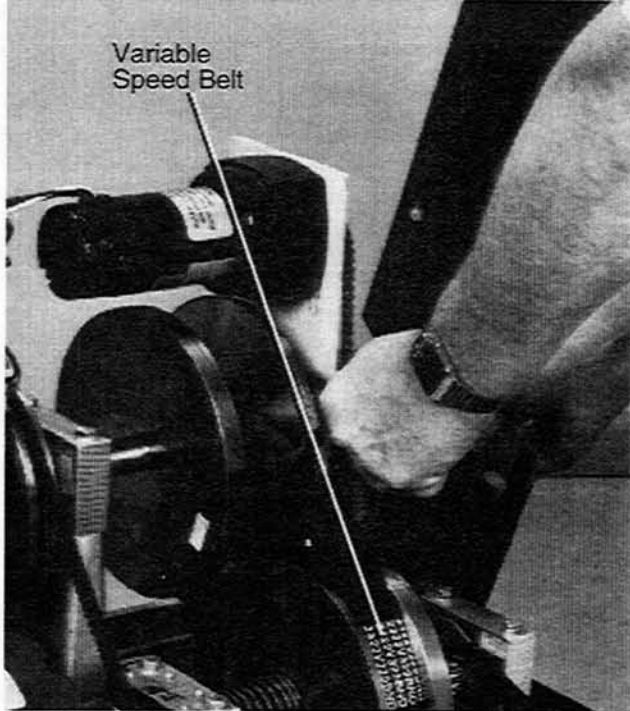


Figure 3-13. Loosening Variable Speed Belt

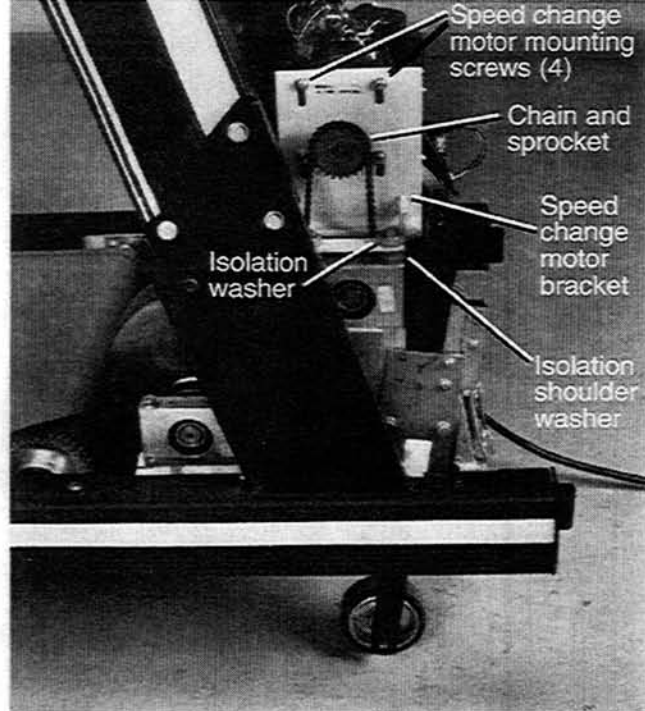


Figure 3-14. Speed Change Motor Mounting

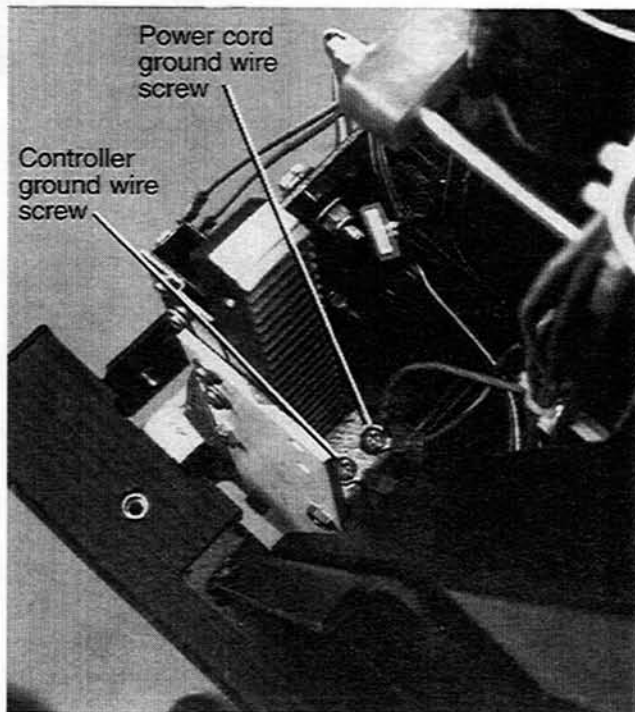


Figure 3-15. Upright Ground Wire Connection

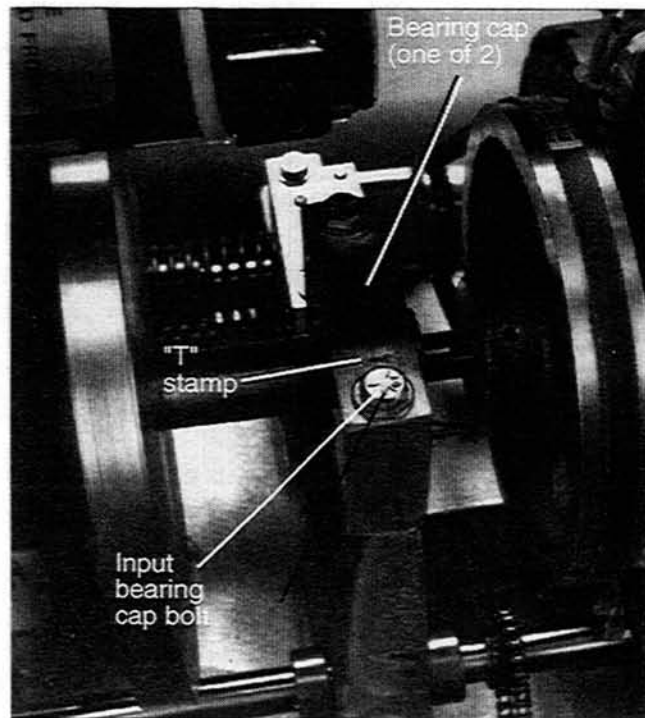


Figure 3-16. "T" Stamp Shows Bearing Cap Orientation

INPUT SHAFT ASSEMBLY PROCEDURES

Input Shaft Assembly and Speed Change Assembly Removal

NOTE

Special adhesives and a ratchet wrench with a long extension are required to remove and install a new assembly. Read all removal and replacement instructions before continuing.

1. Remove the treadmill hood as described on page 3-1. Figure 3-12 on page 3-7 shows the input shaft assembly.

CAUTION

Be careful not to damage the bearings and caps on the input shaft. If the shaft is scarred or if the movable sheave is frozen on the input shaft, the entire shaft assembly must be replaced.

WARNING

To prevent the uprights from falling on the deck, support them with your hand when removing the final fasteners in Step 2.

2. Remove the six 5/16" hex-head fasteners (three per side) that allow the control panel assembly uprights to pivot down on the treadmill deck, then carefully lower them onto the deck (Figure 3-11).
3. Place a rope or flexible belt around the variable speed belt, then pull straight up to loosen belt. See Figure 3-13.
4. Remove the V-belt from the machined input shaft pulley.
5. Unplug the quick disconnects from the two speed change motor leads. See Figure 3-7 on page 3-4.
6. Loosen, *but do not remove*, the four screws that hold the speed change motor to the bracket (Figure 3-14).
7. Slacken the chain and disconnect the master link, then remove the chain from the sprocket.

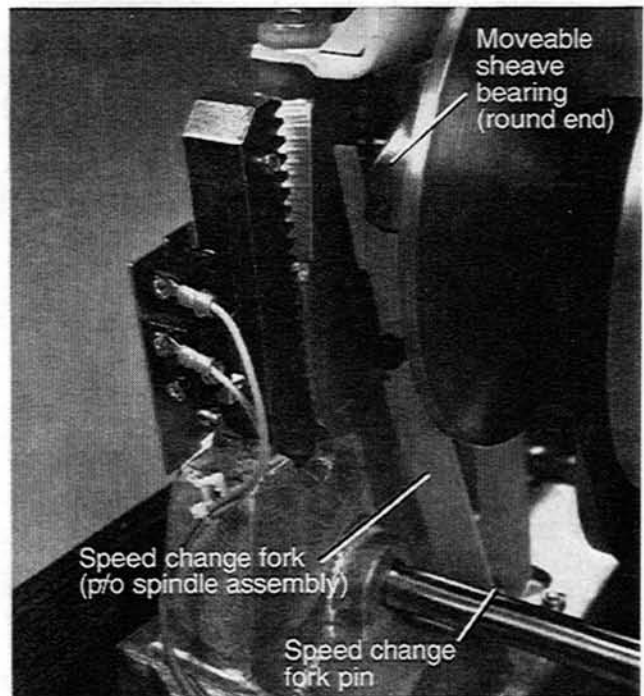


Figure 3-17. Speed Change Mechanism

8. Unplug the control cable from the TMU PCB Assembly (Figure 3-8).
9. Remove the Phillips screw which attaches the controller's ground wire to the headframe (Figure 3-15).
10. Use a 3/16" Allen wrench to remove both upright pivot bolts, then carefully move the upright toward the back of the treadmill until it is out of the way.
11. Use a ratchet wrench with a long extension to remove the four bolts that hold the bearing caps in place (Figure 3-16).
12. Carefully remove the speed change motor and bracket, saving the hardware.
13. Lift the entire input shaft assembly straight up and back towards the deck, then slip the sheave out of the transmission belt.
14. Remove the internal retaining ring that holds the speed change spindle assembly in place. The ring is located in the headframe casting on the right-hand side. Be sure to replace the shims under the ring during reassembly.

15. Pull the spindle assembly to the left until it clears the headframe, then lift it from the headframe (Figure 3-17 on page 3-9).

Input Shaft Assembly Replacement

CAUTION

Read these instructions completely before starting this procedure! Loctite Primer T, Loctite 660, and Loctite RC 680 are required to install a new shaft assembly. The input shaft bearing caps and pulley must be bonded to the shaft assembly before use, and the adhesive requires a minimum cure time of two hours before operating the treadmill.

1. Remove the speed change motor, bracket, and input shaft assembly from the treadmill following the procedure described on page 3-7.
2. Align the speed change fork with the pin on the base of the headframe, then insert the spindle bearing into the bore provided in the headframe (Figure 3-17 on page 3-9.)
3. Pull the transmission belt to the bottom of the transmission output pulley assembly and spread the output assembly sheaves apart to create slack in the belt.

NOTE

Perform the following step only if you are installing a new input shaft assembly. Otherwise, go to Step 5.

4. If you are installing a new shaft assembly, prepare the bearing caps and the input assembly following the gluing procedures in drawing 030650, notes 6 and 14. The dimension for the input pulley location appears on Sheet 3, Zone C-6.
5. Put the end of the input shaft assembly through the slack in the transmission belt, then insert the movable sheave's

bearing cap into the fork on the speed change spindle assembly. The rounded end of the cap faces *pp* (Figure 3-17).

NOTE

Verify that the "T" (top) stamp on each bearing cap faces up. See Figure 3-16 on page 3-8.

6. Reinstall the speed change motor and bracket by reversing Steps 5-9 in the *previous paragraph* ("Input Shaft Assembly and Speed Change Assembly Removal").
7. Insert the mounting bolts through the bearing caps, then complete the assembly per drawing 030650, note 6.
8. Install the V-belt between the motor pulley and transmission pulley. Verify that the alignment is correct, then tighten the setscrews on the input pulley.

CAUTION

Do not test or use the treadmill until the adhesive has cured. See Step 9 and notes 5 and 13 on drawing 030650.

9. If you installed a new assembly, wait two hours for the adhesive to cure before testing the treadmill.
10. Attach the electrical connectors and reassemble the treadmill as required. The wires are color-coded.
11. Check the V-belt tension per Quinton drawing 030650, Note 13. If required, adjust the tension following the procedure on page 3-26 of this Manual.
12. Replace the hood cover. *Be sure to reconnect the reset switch.*
13. After the adhesive has cured (Step 9), replace the hood, restore power to the treadmill, and test the operation of the new input shaft. Verify that the treadmill operates through its full speed range.

OUTPUT SHAFT ASSEMBLY PROCEDURES

Output Shaft Assembly Removal

NOTE

Special adhesives and a ratchet wrench with a long extension are required to remove and replace the assembly. Read all removal and replacement instructions before continuing.

CAUTION

Be careful not to damage the bearings and caps on the output shaft. If the shaft is scarred or if the movable sheave is frozen on the shaft, the entire shaft assembly must be replaced.

1. Remove the treadmill hood as described on page 3-1.
2. Remove the two screws that secure the tachometer optical sensor bracket, then lift the sensor and bracket straight up to remove it from the bearing cap. Lifting it straight up will avoid damage to the beam chopper. See Figure 3-9 on page 3-5.
3. Use a 1/8" Allen wrench to remove the tachometer beam chopper.
4. Use a ratchet wrench with a long extension to remove the four bolts that hold the bearing caps in place.
5. Slip the output shaft assembly out of the variable speed belt and the final drive belt, then remove it (Figure 3-18).

Output Shaft Assembly Replacement

CAUTION

Read these instructions completely before starting this procedure! Loctite Primer T and Loctite RC 680 are required to install a new shaft assembly. The output shaft bearing caps must be bonded to the shaft assembly before use, and the adhesive requires a minimum cure time of two hours before operating the treadmill.

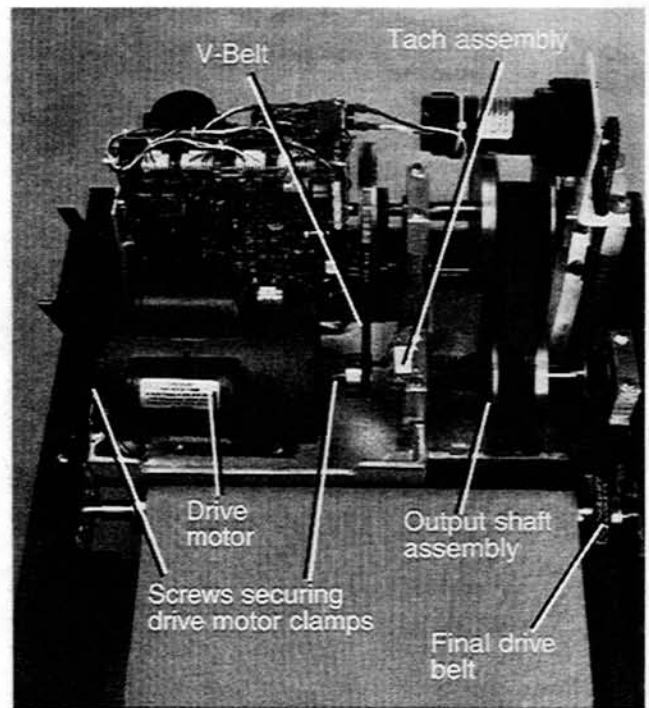


Figure 3-18. Output Shaft Assembly and Belts

1. Remove the output shaft assembly as described in the previous paragraph.

NOTE

- Perform the following step only if you are installing a new output shaft assembly. Otherwise, go to Step 3.
2. If you are installing a new shaft assembly, prepare the bearing caps and the output assembly following the gluing procedures in drawing 030650, note 6.
 3. Slip the output shaft assembly through the variable speed belt. See Figure 3-18.
 4. Slip the final drive belt over the timing sprocket on the shaft assembly.
 5. Spread the pulley sheaves apart slightly to seat the variable speed belt in the sheaves, then install the output shaft by placing the bearing caps on the head frame mounting pads.

NOTE

Be sure that the bearing cap with the threaded holes on top is installed on the left side of the shaft assembly.

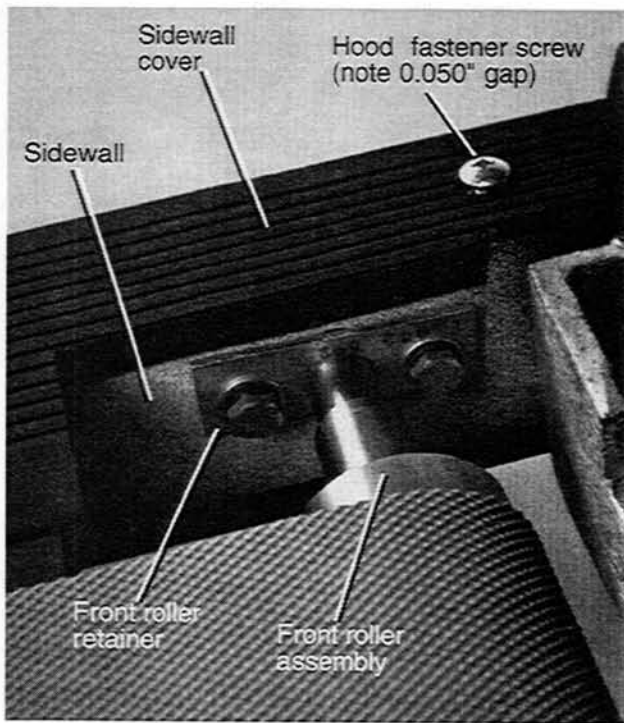


Figure 3-19. Siderail Screw and Drive Pulley Retainer

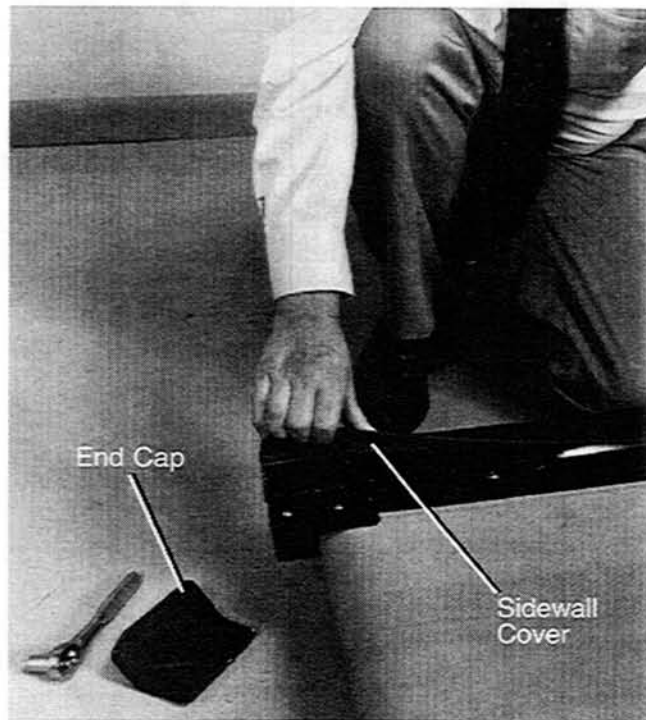


Figure 3-20. End Caps and Siderail Cover

6. Verify that the "T" (top) stamp on each bearing cap faces up, then use a ratchet wrench with a long extension to tighten the bolts. See Figure 3-16 on page 3-8.
7. Install the tachometer beam chopper.
8. Replace the tachometer optical sensor on top of the bearing cap, then verify that the beam chopper is aligned (page 3-6).

CAUTION

Do not test or use the treadmill until the adhesive has cured. See Step 9 and note 5 on drawing 030650.

9. If you installed a new assembly, wait *two hours* for the adhesive to cure before testing the treadmill.
10. After the adhesive has cured, install the hood, restore power to the treadmill and test the operation of the new output shaft. Verify that the treadmill operates through its full speed range.

Replacing the Variable Speed Belt

1. Remove the input shaft assembly as described on page 3-9.
2. Remove the output shaft assembly (page 3-11).
3. Remove the variable speed belt. (Figure 3-18 on page 3-11).
4. Replace the variable speed belt.
5. Replace the output shaft assembly.
6. Replace the input shaft assembly.

Replacing the Final Drive Belt

1. Remove the hood (page 3-1).
2. Remove the bolts which secure the output shaft assembly.
3. Remove the two Phillips screws from the siderails. These screws attach the hood to the siderails at the rear of the hood. See Figure 3-19.

NOTE

When replacing the screws, note that the gap between the siderail cover and the head of each screw must be

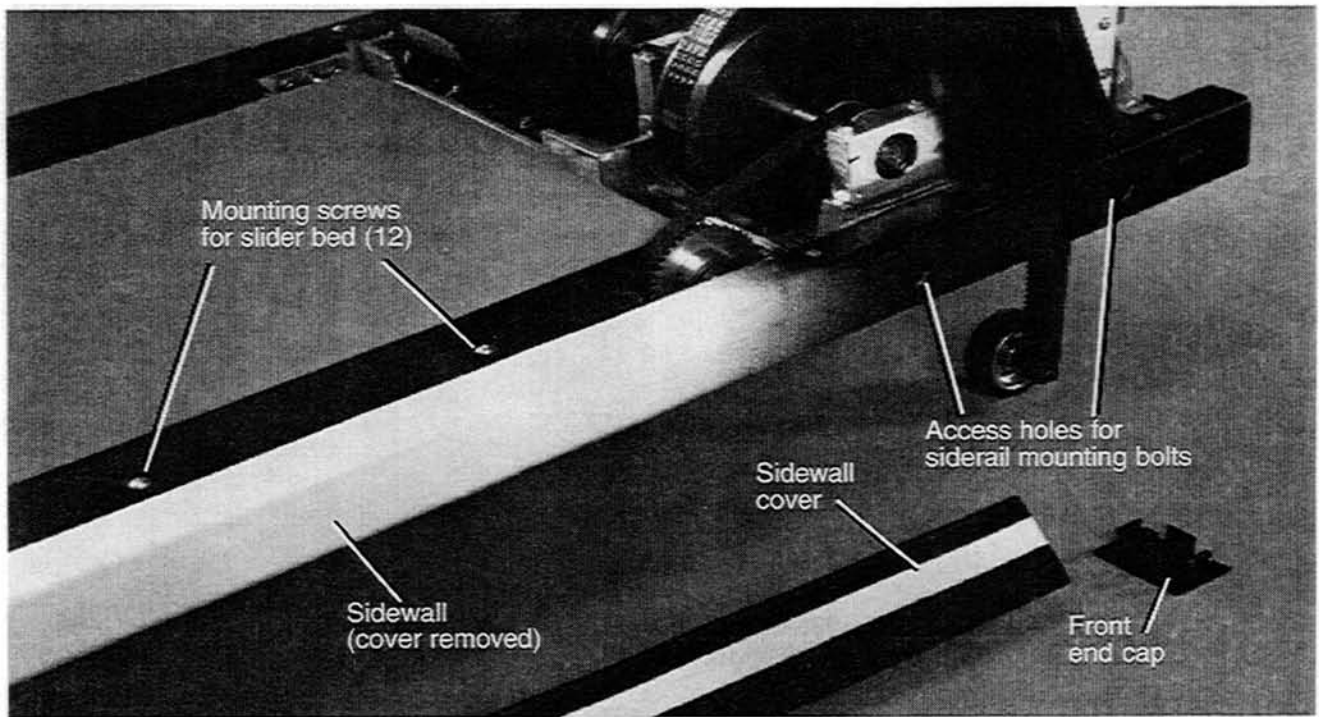


Figure 3-21. Siderail Bolt Access Holes

- 0.050" \pm 0.010" (approximately the thickness of a dime).
4. Use a 1/2" socket wrench to remove both end caps, located on either side of the belt at the rear of the walking platform. See Figure 3-20 on page 3-12.
 5. Grasp the top of the left side rail cover at the rear of the treadmill, then pull it up and away from the treadmill to roll the cover off (Figure 3-20). Repeat for the right cover. (The covers, which are made of flexible plastic, snap into place.)
 6. Remove the four 5/16" hex bolts that secure the two front (drive) roller retainers to the frame. There are two on each side of the drive roller assembly (Figure 3-19 on page 3-12.)
 7. Slide the drive roller assembly to the left, then remove the final drive belt from the right side of the roller.
 8. Slip the final drive belt under the output shaft assembly bearing cap.
 9. Replace with a new belt, then remount the front drive roller assembly and output shaft assembly.
 10. Assemble the treadmill following Steps 1-7 in reverse order. Be sure to read the note below Step 3.
 11. Adjust the walking belt tension following the procedure on page 3-23.
 12. Adjust the walking belt tracking using the procedure on page 3-24.
 13. Check and adjust the final drive belt tension following the procedure in the next paragraph.

Adjusting the Final Drive Belt Tension

Perform this procedure as required after installing a new timing belt, or after removing and replacing the siderails.

1. Remove the hood (page 3-1).
2. If necessary, perform Steps 3-5 in the previous paragraph.

CAUTIONS

Do not perform Step 3 if you have already removed the slider bed.

If the slider bed is still in place, verify that the Phillips screws attaching it to

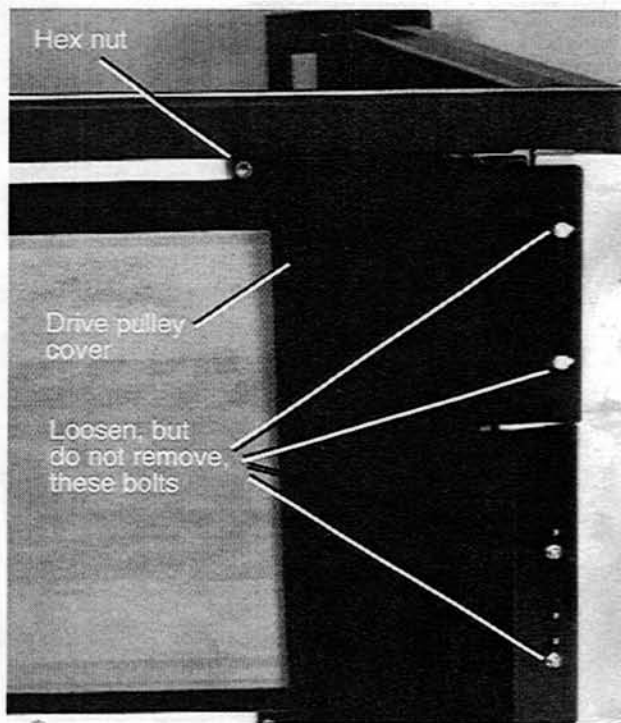


Figure 3-22. Drive Pulley Cover and Bolts

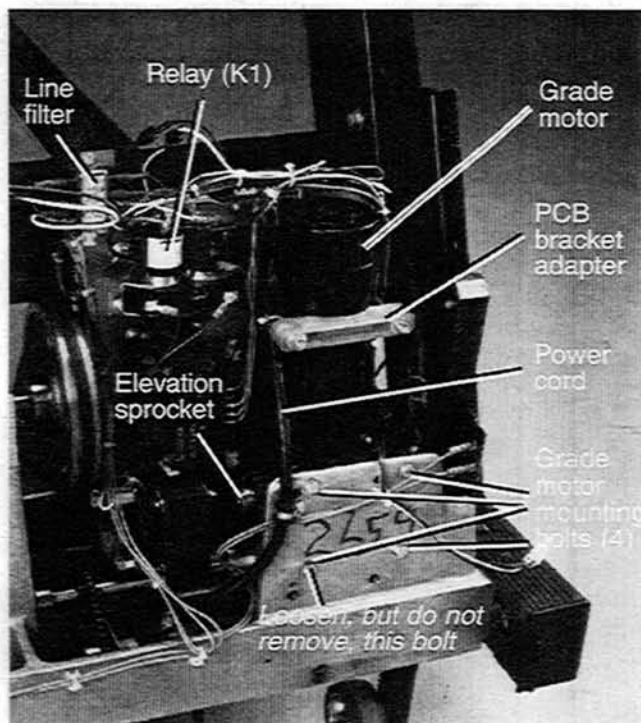


Figure 3-23. Grade Motor and Line Filter

the siderails are tight before loosening the bolts in Step 3. Failure to tighten these screws may cause misalignment in the front roller.

3. Use a 9/16" socket wrench with a 6" extension to loosen the four hex-head bolts which fasten the siderails to the headframe (Figure 3-21 on page 3-13). Access the bolts through holes in the siderail, *but do not remove the bolts.*
4. Loosen, *but do not remove*, the two 7/16" hex-head bolts that fasten the front of the drive roller cover to the treadmill headframe. They are located beneath the treadmill (Figure 3-22).
5. Loosen, but do not remove, the two rear drive motor mount screws that fasten the left side of the cover to the headframe.
6. Set the belt tension so that an 0.11" deflection can be measured at midspan when a 2.00 lb \pm 0.25 lb load is applied perpendicular to the belt at midspan.
 - a. To *loosen* the belt, move the headframe *towards* the deck assembly.

- b. To *tighten* the belt, move the headframe *away from* the deck assembly.

7. Reassemble the treadmill following Steps 1-4 in reverse order.

GRADE CHANGE (ELEVATION) SYSTEM

Grade Motor

NOTE

Place a clean sheet of cardboard or a clean rag on the treadmill deck before starting this procedure.

1. Block the treadmill headframe securely with 6-inch wooden blocks to ensure that the treadmill will not drop when you remove the grade motor or chain.
2. Remove the hood (page 3-1). *However, do not elevate the treadmill.*
3. Remove the cable ties that secure the grade motor wires, then disconnect the wires from the wire harness connectors. See Figure 3-23.
4. Loosen the set screw that secures the grade potentiometer (pot) pinion shaft

sprocket, then verify that the sprocket turns easily on the shaft. This will avoid damage to the pot (Figure 3-24).

5. Remove the fasteners and adapters that attach the PCB mounting bracket to the grade motor.
6. Loosen, *but do not remove*, the lower right-hand screw that attaches the grade motor to the headframe. See Figure 3-23.
7. Remove the remaining three screws that attach the grade motor to the headframe, then remove the motor.
8. Replace with a new grade change motor, following Steps 3-7 in reverse order. The wires are color-coded. Refer to Quinton drawing 030650 for wiring details.

CAUTION

To avoid damaging the TMU PCB Assembly when you replace the drive motor, be sure to tighten the clamps that secure the drive motor to the motor base.

WARNINGS

Do not wear loose clothing around rotating machinery.

High voltage is present when the treadmill is plugged in.

10. Restore power to the treadmill and test the new grade motor. (The grade motor will operate without reconnecting the reset switch. The walking belt, however, is inoperable.)
11. Follow the procedure on page 3-25 to calibrate the grade pot.
12. Test the treadmill elevation. Verify that:
 - a. it operates over the full range of 0-15%.
 - b. there is no binding when it moves up or down.
 - c. the elevation pot chain is aligned correctly.

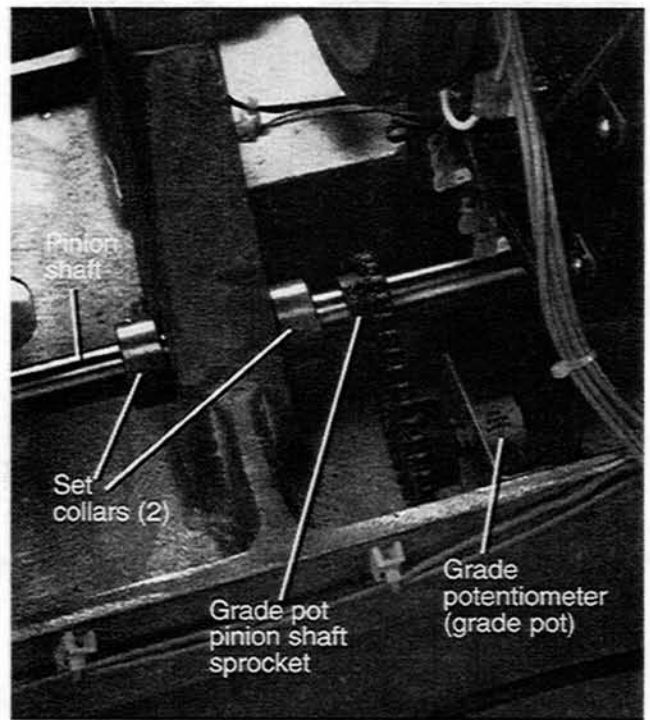


Figure 3-24. Grade Pot and Pinion Shaft

- d. the grade motor chain is also aligned correctly. A “popping” sound in the chain indicates that it is misaligned.
13. Turn the treadmill power off, remove the power cable from the outlet, then reinstall the hood. *Be sure to reconnect the reset switch.*

Grade Potentiometer (Pot) Replacement

WARNING

Do not wear loose clothing around rotating machinery.

High voltage is present when the treadmill is plugged in.

1. Remove the treadmill hood as described on page 3-1.
2. With the hood removed, restore power to the treadmill and turn the grade motor on until the setscrew on the grade pot pinion shaft sprocket is visible. See Figure 3-24.
3. Unplug the treadmill.
4. Release the setscrew.

5. Hand-turn the grade pot until the steel setscrew on the potentiometer sprocket is visible.
6. Release the steel setscrew.
7. Push the whole sprocket-and-chain assembly away from the grade pot.
8. Remove the 1/2-inch brass nut and the cable tie. The pot will come off.
9. Cut the cable ties and disconnect plug P10 from the TMU PCB assembly.
10. Replace with a new potentiometer, then reassemble following Steps 3-9 in reverse order.
11. When the grade pot, wires, and setscrews are in place, calibrate the pot by following the procedure on page 3-25.
8. Simultaneously press **STOP**, **FAST**, and **SLOW** on the control panel to place the treadmill in the technician access mode.
9. Rotate the elevation pot until a positive number appears in the grade display window. (Step 10 will not work until the number is positive.)
10. Decrease grade until rack gears start bouncing on the pinion shaft. Hold the limit switches closed to allow the rack gear to travel beyond its normal limits.
11. Unplug treadmill.
12. Lift rack gears straight out top.

Removing the Rack Gears

1. If the treadmill will change grade, take grade to approximately 12% (6-7°).
2. Lower the front of the headframe on 6-inch wooden blocks to take the weight off the wheels.
3. Unplug the treadmill, then remove the hood (page 3-1).
4. If the rack gear is completely jammed, replace as described on page 3-17.

WARNINGS

Do not wear loose clothing around rotating machinery.

High voltage is present when the power cord is plugged in.

5. Restore power to the treadmill and *decrease* grade until wheels raise about 1/2" off the floor.
6. Remove the two 9-16" hex-head bolts holding the wheels to the rack gears. Note the arrangement of washers used as spacers.
7. Loosen the set screw that secures the grade potentiometer (pot) pinion shaft sprocket, then verify that the sprocket turns easily on the shaft. This will avoid damage to the pot (Figure 3-24).

Reassembling the Rack Gear

1. If the rack gear is completely jammed, remove as described below. Otherwise, remove rack gears as described above.
2. Install new rack gears simultaneously so that they will be parallel.

WARNINGS

Do not wear loose clothing around rotating machinery.

High voltage is present when the treadmill power cord is plugged in.

3. Restore power to the treadmill.
4. Loosen the set screw that secures the grade potentiometer (pot) pinion shaft sprocket, if it is not already loose, then verify that the sprocket turns easily on the shaft. This will avoid damage to the pot. See Figure 3-24 on page 3-15.
5. Decrease the grade until the gears bounce two or three times, then increase the grade. This should cause both rack gears to mesh in exactly the same place.

NOTE

When performing the next step, it may be necessary to turn the grade pot slightly to keep the elevation motor running.

6. Run the rack gears down past the bottom of the headframe. Hold the limit switches closed to allow the rack gear to travel beyond its normal lower limits.

7. Check under the bottom of the headframe to verify that the rack gears are meshing properly. The gears should protrude an equal distance.
 8. Run the rack gears down until there is enough room to replace wheels.
 9. Replace the two bolts that hold the wheels to the rack gears. Be sure to:
 - a. replace washers used as spacers in the correct arrangement.
 - b. torque the bolts tightly to 46 ft-lb \pm 4 ft-lb.
 10. Increase the grade until the wheels touch the floor.
 11. Grease rack gears with wheel bearing grease.
 12. Remove the blocks that support the headframe.
 13. Calibrate the grade potentiometer by following the procedure on page 3-25.
 14. Turn the treadmill power off, remove the cable from the outlet, then reinstall the hood. *Be sure to reconnect the reset switch.*
- b. Carefully lower the upright assembly onto the walking deck.
 - c. Disconnect the controller cable from the TMU (Figure 3-8).
 - d. Disconnect the controller ground wire from the headframe (Figure 3-15 on page 3-8).
 - e. Use a 3/16" Allen wrench to remove both pivot bolts from the two upright assemblies, then remove the assembly.
7. Remove the treadmill walking belt and slider bed as described on page 3-21.

CAUTION

Before loosening the bolts in Step 8, scribe a mark on each siderail at its junction with the headframe, to mark their relative positions (Figure 3-25). Carefully realign these marks when reinstalling the siderail. Failure to do so will cause poor belt tracking.

8. Use a 9/16" socket wrench with a 6" extension to remove the two hex-head bolts securing each siderail to the headframe. Access the bolts through holes in the siderail (Figure 3-21 on page 3-13).

Replacing a Jammed Rack Gear

1. If the rack gear is not completely jammed, follow the instructions in the previous paragraph to replace it.
 2. Unplug treadmill.
 3. Remove the hood (page 3-1).
 4. Securely block the front and rear of the headframe with 6-inch wooden blocks to take the weight off the wheels, then raise the wheels 1/4" to 1/2" off the floor.
 5. Shake each gear lightly at the top to determine which rack gear is jammed. If there is no play in a rack gear, it is jammed.
 6. Remove the upright assembly:
 - a. Unbolt the six hex-head fasteners which allow the treadmill uprights to pivot (Figure 3-11 on page 3-7).
9. Remove the four bolts that hold the rack gear cover plate in place.
 10. Slide the rack gear out sideways.
 11. Inspect the gear on the pinion shaft. If it is damaged, replace *both* the rack gear and the pinion shaft (as described on the following page.)
 12. Bolt the rack gear cover plate back into place.
 13. Reassemble the siderails, upright assembly, and walking belt.
 14. Loosen the set screw that secures the elevation potentiometer (pot) pinion shaft sprocket, if necessary, then verify

NOTE

If you are replacing only one rack gear, it is only necessary to remove the siderail closest to that gear.

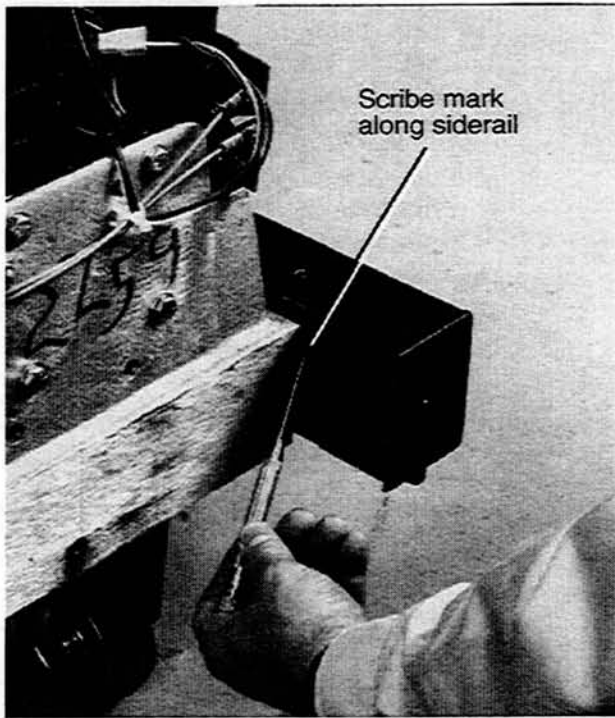


Figure 3-25. Positioning Siderail to Headframe

that the sprocket turns easily on the shaft. This will avoid damage to the pot. See Figure 3-24 on page 3-15.

WARNINGS

Do not wear loose clothing around rotating machinery.

High voltage is present when the power cord is plugged in.

5. Restore power and decrease the grade to run the other rack gear out the top.
6. Reassemble the rack gear as described above.
7. Calibrate the grade potentiometer as described on page 3-25.
8. Test the treadmill elevation. Verify that:
 - a. it operates over the full range of 0-15%.
 - b. there is no binding when it moves up or down.
 - c. the elevation pot chain is aligned correctly.

- d. the grade motor chain is also aligned correctly. A "popping" sound in the chain indicates that it is misaligned.

19. Turn the treadmill off and unplug it.
20. Replace the hood. *Be sure to reconnect the reset switch.*

Replacing the Pinion Shaft

1. Remove the right siderail, then remove the rack gear as described in the previous paragraph, Steps 1-10.

WARNINGS

Do not wear loose clothing around rotating machinery.

High voltage is present when the power cord is plugged in.

2. Restore power to the treadmill, then use the grade motor to turn the shaft until the setscrew on the elevation sprocket is visible (Figure 3-24 on page 3-15.)
3. Loosen, *but do not remove*, the setscrews from:
 - a. the elevation sprocket (Figure 3-23 on page 3-14),
 - b. the grade potentiometer pinion sprocket (Figure 3-24 on page 3-15), and
 - c. the two pinion shaft set collars (Figure 3-24).
4. Unplug the treadmill.
5. Slide the pinion shaft out.
6. While sliding a new pinion shaft in, place the elevation sprocket, the set collars, and the grade potentiometer sprocket on the shaft.
7. Replace the rack gear cover plate you removed in Step 5.
8. *Before performing Step 10, verify that neither end of the pinion shaft touches the rack gear cover plates.*
9. Tighten the setscrews on the set collars.

NOTE

Do not force the set collars tightly against the headframe. Verify that the pinion shaft will turn freely when the set collars are in place.

10. Align the grade potentiometer sprocket, then tighten its setscrew.
11. Align the elevation sprocket and grade motor sprocket, then tighten the setscrew on the sprocket.
12. Reassemble the siderails, uprights, and walking belt as described on page 3-21.
13. Reassemble the rack gear as described on page 3-16.
14. Tension the walking belt as described on page 3-23.
15. Calibrate the grade potentiometer as described on page 3-25.
16. Test the treadmill elevation. Verify that:
 - a. it operates over the full range of 0-15%.
 - b. there is no binding when it moves up or down.
 - c. the elevation pot chain is aligned correctly.
 - d. the grade motor chain is also aligned correctly. A "popping" sound in the chain indicates that it is misaligned.
17. Unplug treadmill and replace the hood.
Be sure to reconnect the reset switch.

Adjusting the Elevation Microswitches

The two elevation microswitches, one on either side of the treadmill, are mounted on brackets attached to the front of the headframe (Figure 3-26). When a roller on the microswitch reaches a detent that is cut into each rack gear, a lever arm travels outward, opening the microswitch and stopping the elevation motor. The microswitches prevent overtravel if the treadmill exceeds its preset electronic grade limits.

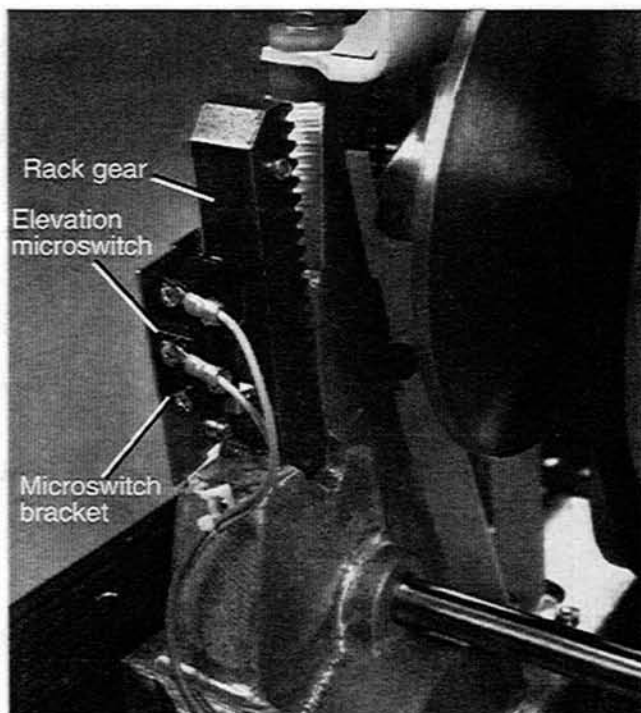


Figure 3-26. Elevation Microswitches

NOTE

Microswitch settings are preset at the factory and normally do not require adjustment.

1. Remove the hood (page 3-1).
2. Loosen, *but do not remove*, the two Phillips screws which secure each snap-action microswitch to the mounting plate (bracket).
3. Pivot the switch on the upper screw both toward and away from the rack gear. You should hear an audible click as the switch opens or closes.
4. Set the switch wheel on a flat part of the rack gear, then pivot the switch toward the rack gear until it just clicks, then stop and tighten both screws.
5. If required, repeat Steps 2-4 for the other microswitch.
6. Replace the treadmill hood.
7. Operate the treadmill to verify that it reaches the upper and lower elevation limits (15% and 0%).

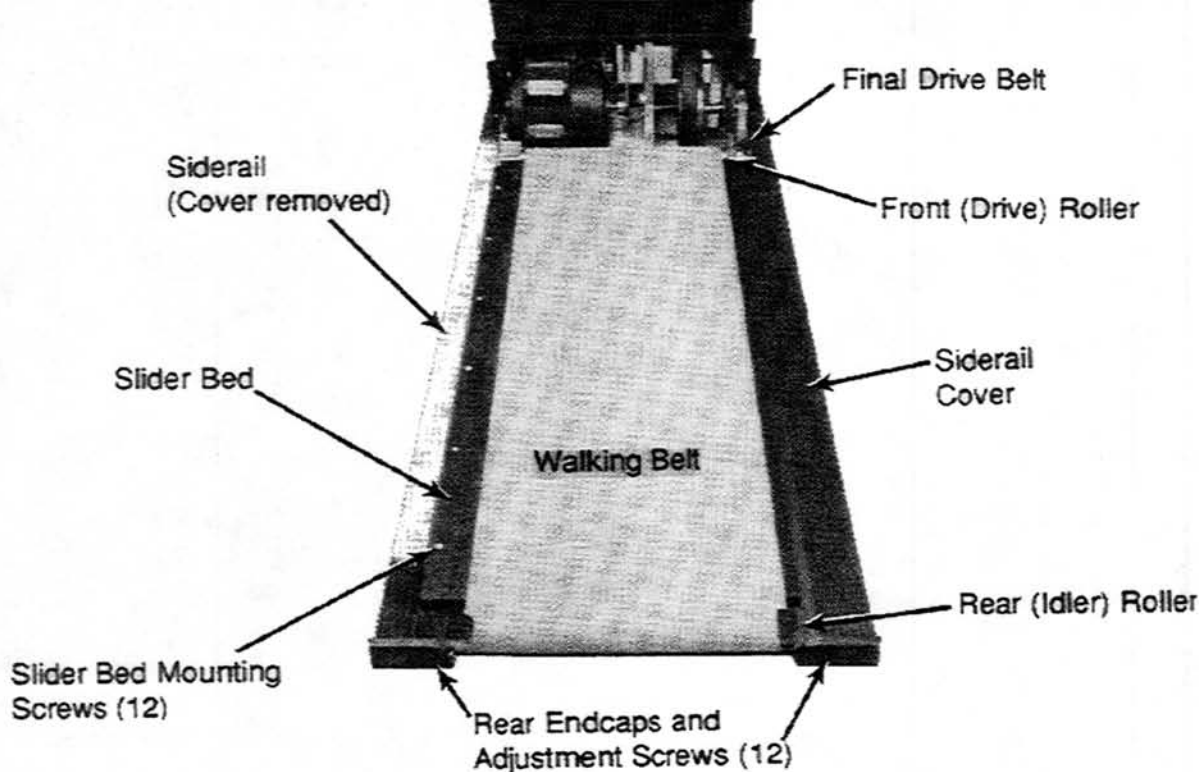


Figure 3-27. Walking Deck Assembly

WALKING DECK ASSEMBLY

Figure 3-27 is an overview of the walking deck assembly.

Removing the Front (Drive) Roller or the Idler (Rear) Roller

1. Remove the hood (page 3-1).

NOTE

When replacing the screws in Step 2, note that the gap between the siderail cover and the head of each screw must be $0.050" \pm 0.010"$, approximately the thickness of a dime. See Figure 3-19 on page 3-12.

2. Remove the two Phillips screws from the siderails. These screws attach the hood to the siderails at the rear of the hood.
3. Remove both end caps, located on either side of the belt at the rear of the walking platform.

4. Grasp the top of the left side rail cover at the rear of the treadmill, then pull it up and away from the treadmill to roll the cover off. Repeat for the right cover. (The covers, which are made of flexible plastic, snap into place.)
6. Remove the four $5/16"$ hex bolts (two on each side) that secure the two front drive roller retainers to the frame siderail. One retainer is on each side of the drive roller assembly (Figure 3-19 on page 3-12.).
7. Slide the drive roller assembly to the left, then remove the timing belt from the right side of the roller.
8. Lift the roller assembly out from under the walking belt.
9. Pull the walking belt towards the rear of the deck, then slide the rear roller assembly out from between the side-rails toward the rear of the treadmill.
10. Replace the rollers and reassemble the treadmill following Steps 1-9 in reverse order.

11. Adjust the walking belt tension following the procedure on page 3-23.
12. Adjust the walking belt tracking using the procedure on page 3-24.

Replacing the Walking Belt

Figure 3-27 on the previous page shows the walking deck assembly.

NOTES

- All orientations are given as if you were walking on the treadmill.
 - A new slider bed is recommended when you install a new walking belt. The slider bed is reversible.
1. Raise the treadmill to its maximum height, then remove the hood as described on page 3-1.
 2. Remove the drive (front) roller and the idler (rear) roller assemblies as described in Steps 2-8 of the previous paragraph.
 3. Remove the two 7/16" hex-head nuts which fastens the rear of the drive roller cover to the treadmill siderails. They are located under the treadmill (Figure 3-22 on page 3-14).
 4. Remove 12 Phillips screws that secure the treadmill slider bed to the siderails (Figure 3-27).
 5. Lift the slider bed and slip off the belt.

NOTE

When you install a new belt, verify that the closed end of the splice on the walking belt hits the roller *first* as the belt rotates. See Figure 3-28.

6. Install a new belt and reassemble the treadmill following Steps 1-5 in reverse order.
7. Tension the belt following the procedure on page 3-23.
8. Adjust belt tracking following the procedure on page 3-24.

Removing the Slider Bed

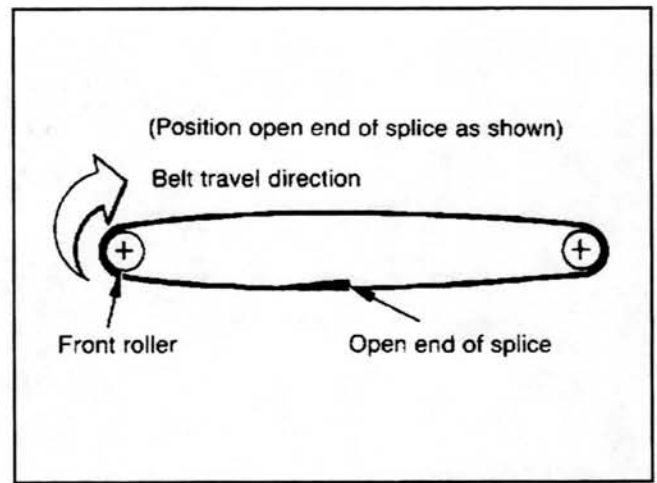


Figure 3-28. Replacing Walking Belt

NOTE

The slider bed is reversible. You can turn it over if one side should wear out.

1. Follow Steps 1-5 in the previous paragraph to remove and replace the slider bed. Refer to the note following Step 6 when replacing the belt.
2. Tension the belt following the procedure on page 3-23.
3. Adjust the belt tracking following the procedure on page 3-24.

CONTROL PANEL AND DPU/MCU ASSEMBLY PROCEDURES

The operator control panel includes the treadmill control assembly, the display/keypanel, and the display processor unit (DPU) or motivational control unit (MCU) PCB Assembly.

Removing the Treadmill Control Panel Assembly

1. Turn the treadmill power off and disconnect the power cord from the socket.
2. Use a 5/32" Allen wrench to remove the eight socket screws that fasten the control enclosure to the upright assembly (Figure 3-29).

CAUTION

Ensure that the control panel assembly does not fall from the uprights while performing Steps 3-8.

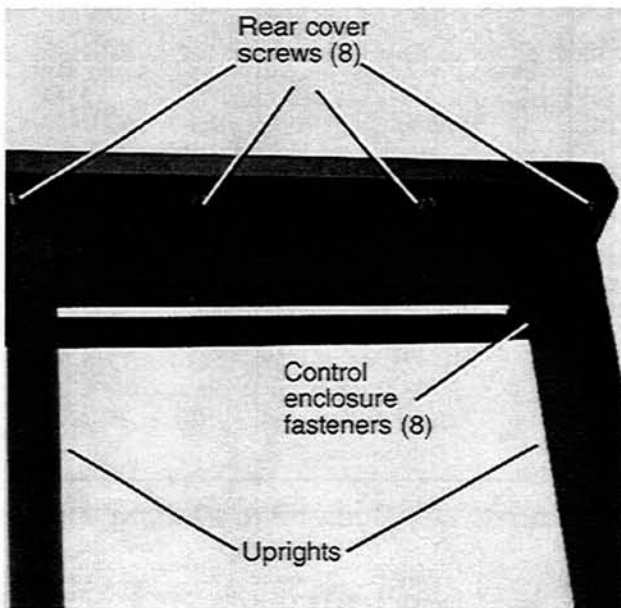


Figure 3-29. Treadmill Control Assembly (Rear View)

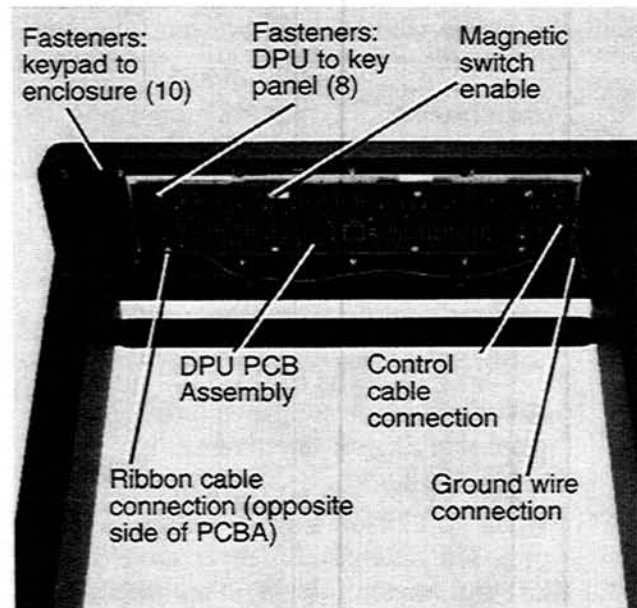


Figure 3-30. Display Processor Unit and Connections

3. Use a 1/8" Allen wrench to remove the eight socket screws that fasten the rear cover of the controller to the assembly (Figure 3-29).
4. Slide the cover down the uprights to expose the DPU.
5. Disconnect the controller cable, located on the left side of the DPU. See Figure 3-30.
6. Remove the hex nut that secures the ground wires to the chassis, then remove the wire.
7. Cut the cable tie that connects the cable to the control panel.
8. Lift the entire control panel assembly clear of the uprights.
9. Reassemble the assembly following Steps 2-8 in reverse order.

Replacing the DPU PCB Assembly

1. If possible, raise the treadmill to maximum height (15% elevation).
2. Turn the treadmill off and disconnect the power cord from the socket.

3. Use a 1/8" Allen wrench to remove the eight screws that secure the DPU enclosure rear cover (Figure 3-29).
4. Slide the rear cover down the uprights.
5. Remove the hex nut that attaches the DPU ground wire, then remove the wire.
6. Unplug the control cable from the DPU.
7. Remove the eight Phillips screws that attach the DPU to the key panel.
8. Lower the DPU, then unplug the ribbon cable connecting it to the key panel.
9. Remove the DPU from the enclosure.
10. Replace the DPU and reassemble following Steps 3-8 in reverse order.

Treadmill Control Unit Disassembly

You may either remove the DPU PCB Assembly or leave it in place prior to removing the keypad.

1. Remove the DPU following the procedure in the previous paragraph.

2. Remove the ten hex nuts that secure the keyboard to the control panel enclosure.
3. Lift the keyboard off of the enclosure.

Replacing the Controller (DPU-to-TMU) Cable

1. Remove the hood (page 3-1).
2. Remove the control panel assembly as described on page 3-21.
3. Cut any cable ties that fasten the controller cable to the wire harness.
4. Remove the Phillips screw which fastens the cable ground wire to the left side of the headframe, near the rack gear. See Figure 3-15 on page 3-8.
5. Pull the cable up through the left upright to remove it.
6. Install a new cable following Steps 1-5 in reverse order.

WALKING BELT ADJUSTMENT PROCEDURES

Walking Belt Tension

Adjust the walking belt tension:

- whenever the belt slips or moves unsteadily during operation.
- after installing a new walking belt.
- each time you remove or replace the walking belt.
- whenever specified in the procedures in this Section.

Two adjustment methods are specified. Method 1 is preferred, but two belt tension calipers (Quinton p/n 030113-001) are required.

NOTE

Both adjustment screws must be completely slack before starting this procedure.

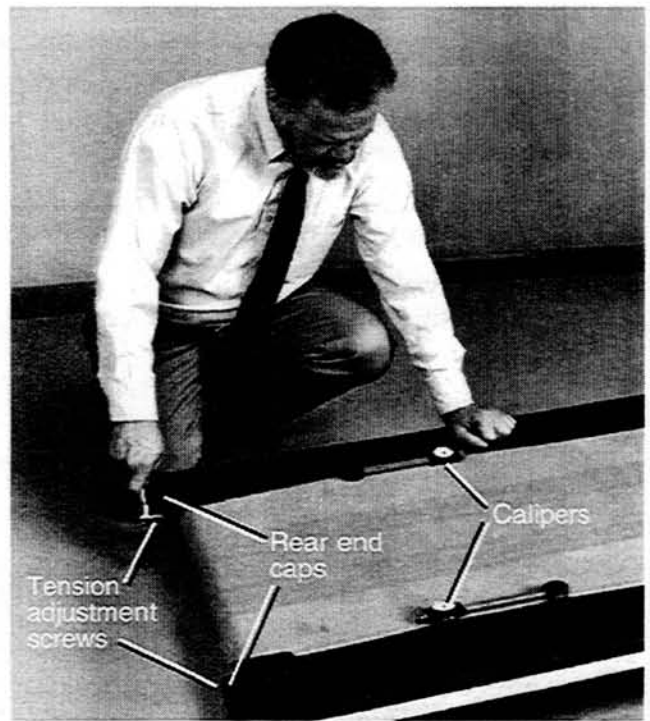


Figure 3-31. Adjusting Walking Belt Tension

Method 1 (Calipers available)

1. Thread both tension adjustment screws in until most of the slack is removed from the belt (Figure 3-31).

NOTE

Do not stretch the walking belt at this point.

2. Position one caliper on each side of the belt, approximately 18" from the rear roller assembly.
3. Grasp the belt with one caliper clamp.
4. Pull the slack between the clamps out of the belt with your fingers, then grasp the belt with the second clamp.
5. Repeat Steps 3 and 4 on the other side of the belt using the other caliper.
6. Zero out the dials of both calipers.
7. Alternately tighten each tension adjustment screw in 0.1% increments until both sides read 0.4%. *Ensure that the pointer reads exactly on the line increment of the dial for each setting.*

CAUTION

Do not overtighten the adjustment screws. Overtightening may damage the walking belt and roller assemblies.

8. Remove both gauges.
9. Adjust the walking belt tracking following the procedure on this page.

Method 2 (Calipers not available)

CAUTION

Both adjustment screws must be completely slack before starting this procedure.

Use this method only if two belt adjustment calipers are not available. However, an accurate measuring device is required.

1. Thread both tension adjustment screws in until most of the slack is removed from the belt. Figure 3-31 on page 3-23 shows where the screws are located.

NOTE

Do not stretch the walking belt at this point.

2. Place two pieces of masking tape or two light pencil marks on the right edge of the belt exactly 50.000" apart.
3. Repeat Step 2 on the left edge of the belt.
4. Alternately turn the left and right adjustment screws one-half turn each time until the distance between the tape (or pencil marks) is 50.203" \pm 0.016" on both sides.

CAUTION

Do not overtighten the adjustment screws. Overtightening may damage the walking belt and roller assemblies.

5. Remove the tape, if used in Step 2.
6. Adjust the walking belt tracking using the procedure in the following paragraph.

Walking Belt Tracking

Perform this procedure:

- whenever the belt moves to one side or the other.
- after installing a new walking belt.
- each time you remove or replace the walking belt.
- each time you adjust the walking belt tension.
- whenever specified in the procedures in this Section.

Stay off the belt when adjusting the tracking.

1. Tension the walking belt using either Method 1 or Method 2 in the previous paragraph.

WARNING

Do not start the treadmill when someone is on the walking belt. The belt starts moving immediately, and the sudden start and subsequent loss of balance could cause serious personal injury.

2. Start the treadmill and let it run for at least one minute at minimum speed and grade.
3. Make the following adjustment to the *right adjustment screw only*:
 - a. If the belt moves to the *right*, turn the screw 1/4 turn *clockwise*.
 - b. If the belt moves to the *left*, turn the screw 1/4 turn *counterclockwise*.

Figure 3-31 shows the location of the adjustment screws.

4. After making an initial adjustment, run the treadmill for at least one minute to observe how the belt tracks. Adjustments to belt tracking take some time to become apparent.
5. Repeat Steps 3 and 4 as required.

CAUTION

Do not overtighten the adjustment screw. Overtightening may damage the walking belt and assemblies.

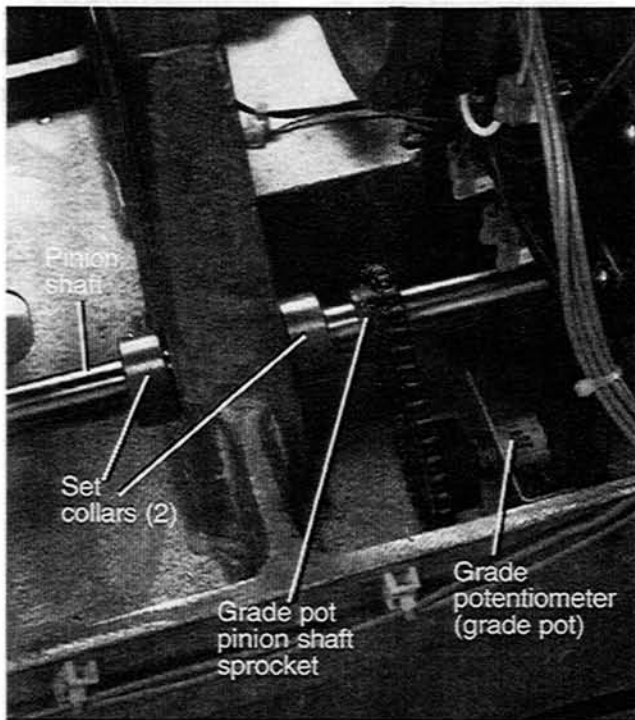


Figure 3-32. Grade Pot

6. Increase the speed to 8 mph, then repeat Steps 3 and 4 as required.
7. Press **STOP BELT** to stop the treadmill, then press **POWER** to turn it off.

CALIBRATION AND ADJUSTMENT PROCEDURES

NOTE

Open-loop mode is available for the ClubTrack Plus. Refer to page 4-3 in Section 4.

Speed and Grade Calibration

The microcontroller-based circuitry in the treadmill is self-calibrating for both speed and grade. No calibration adjustments are required.

Grade Potentiometer (Pot) Calibration

Calibrate the grade pot whenever specified in the procedures in this Section. Figure 3-32 shows the location of the pot.

1. Remove the hood (page 3-1).

WARNINGS

Do not wear loose clothing around rotating machinery.

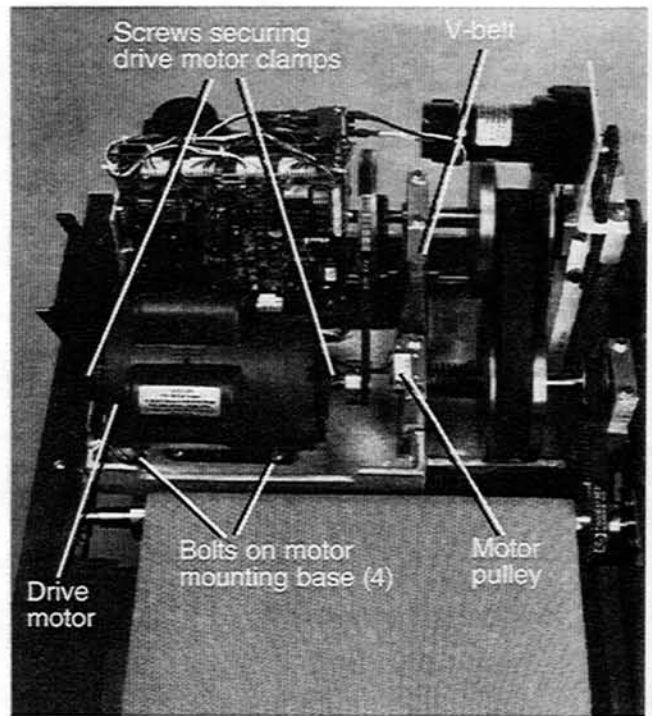


Figure 3-33. V-Belt and Drive Motor

High voltage is present when the power cord is plugged in.

2. Restore power to the treadmill.
3. Lower the elevation until the treadmill is level. Measure from the bottom of the siderail to the floor at both the front and rear of the treadmill. Adjust the grade until both measurements are identical.
4. *Simultaneously* press **STOP BELT**, **FASTER**, and **SLOWER** on the display to enter Technician Access Mode.
5. Loosen the setscrew which secures the grade pot sprocket to the pinion shaft (Figure 3-32).
6. Rotate the sprocket either forward or backward until the elevation display reads **0.0**.
7. Tighten the setscrew you loosened in Step 5 and verify that the display still reads **0.0**.
8. *Simultaneously* press **STOP BELT**, **FASTER**, and **SLOWER** to exit Technician Access Mode and return to operating mode.

9. Verify that the treadmill operates through its full elevation range (0-15%).
10. Turn the treadmill power off, disconnect the power cord, and replace the hood. Be sure to reconnect the reset switch.

V-Belt Adjustment

Perform this adjustment procedure each time you replace or install the V-belt, which connects the drive motor to the input shaft assembly. Figure 3-33 on page 3-25 shows its location.

NOTE

Place a clean sheet of cardboard or a clean rag on the treadmill deck before starting this procedure.

1. Remove the hood (page 3-1).
2. Remove cable ties that secure the drive motor wires.
3. Remove one clamp from either side of the drive motor that secure it to the motor base plate.
4. Slip the V-belt off the motor pulley, then lift the drive motor off the base plate. Set it down carefully on the walking deck.
5. Use a pencil to scribe a mark along the edge of the motor base to the the headframe.
6. Loosen, *but do not remove*, the four 7/16" hex-head bolts which secure the motor mounting base to the headframe location.

NOTE

In the following step, move the base in 1/8" increments.

7. Adjust the belt as follows:
 - a. To *loosen* the belt, move the motor mounting base *towards* the front of the treadmill.
 - b. To *tighten* the belt, move the motor mounting base *away from* the front of the treadmill.

8. Verify that the edge of the motor base is parallel to the mark which was scribed on the headframe in Step 5, then tighten all four bolts. The right side of the base should be closer to the rear of the treadmill than the left side.
8. Place the drive motor on the motor base, then loop the V-belt over the motor pulley and the input shaft pulley.
9. Install the motor clamps, then tighten securely.

CAUTION

Tighten the motor clamps securely when you replace the motor to avoid damage to the TMU Assembly.

10. Check the V-belt tension per Quinton drawing 030650, Note 12.
 - a. If the tension is incorrect, repeat Steps 3-10.
 - b. When the tension is correct, replace the treadmill hood (page 3-1).

Final Drive Belt Adjustment

Refer to page 3-13 for this procedure.

DETERMINING CUMULATIVE USAGE

You can view either the cumulative mileage or the number of hours of operation on the treadmill display.

Distance

To determine the total distance, follow these steps:

1. Power up the treadmill.
2. *Simultaneously* press **STOP** and **SLOWER** on the display panel.
3. Multiply the number that appears in the center (**SELECT**) display by 10 to obtain the total distance in miles.
Miles = Number in SELECT display x 10.
4. Record the mileage and the date for your service records.

5. Press **CLEAR** to clear the display for operation.

Time

To determine the total operational time for the treadmill operation, follow these steps:

1. Power up the treadmill.
2. *Simultaneously* press **STOP** and **FASTER** on the display panel.
3. Multiply the number that appears in the center (**SELECT**) display by 10 to obtain the total number of hours of operation.

Hours = Number in SELECT display x 10.

4. Record the total time for your service records.
5. Press **CLEAR** to clear the display for operation.

NOTE

The cumulative time and distance are stored in the TMU PCBA and cannot be reset. Both values are zero if a new TMU is installed.

ENABLING AND DISABLING THE "LIMITED ACCESS" SWITCH

If the limited access switch on the DPU assembly is set, the treadmill will not operate until the user places the magnetic logo on the Quinton logo on the control panel. The treadmill is shipped with the switch disabled. To enable this magnetic control, follow these steps:

1. Verify that treadmill power is off.
2. Step to the front of the treadmill, then bend down so you can see inside the control panel. You should see a small white switch approximately 3 inches inside one of the ventilation holes (Figure 3-34).
3. Use a small, flat-bladed screwdriver to flip the switch *DOWN*. Do not push hard; it will move into position easily.

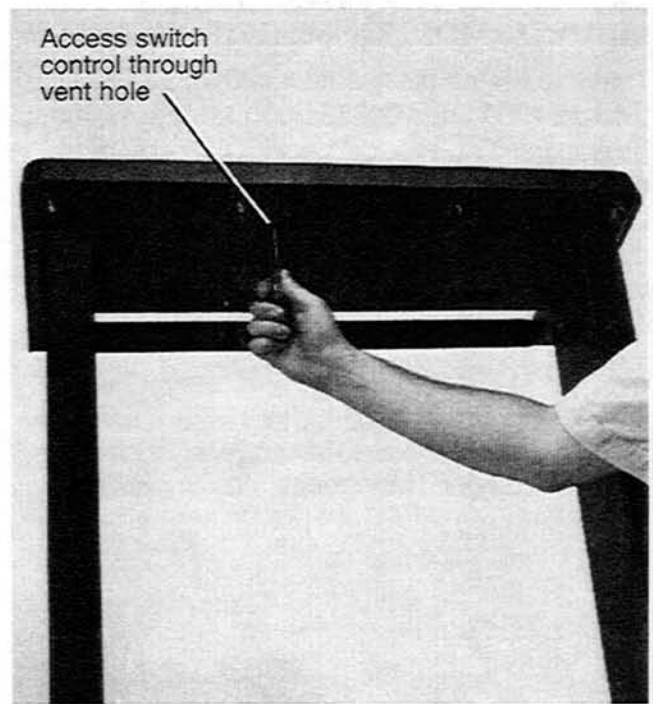


Figure 3-34. Accessing Magnetic Switch Control on DPU

5. The limited access feature is now turned on, and the user must place the Quinton logo on the corresponding logo on the control panel to operate the treadmill.
6. To disable this feature, turn the treadmill off, then use a small screwdriver to flip the switch *UP*. The Quinton Logo magnet is not required when the switch is off.

CLEANING THE TREADMILL SURFACES

Follow these steps to clean the treadmill after servicing or as required:

- Clean the treadmill exterior with a damp sponge. Do not use detergents or cleaning agents.
- Clean the control panel with a mild non-abrasive liquid cleaner, then rinse it with a damp (not wet) cloth.

REPLACING THE COMPRESSION MOUNTS (MODELS -005 THROUGH -008)

Treadmills with part numbers 000333-005 through -008 and 000335-005 through -008 feature the TripleFlex™ deck. The TripleFlex hardware spares kit (p/n 033343-001) includes the rubberized compression mounts that support the walking deck. To replace the mounts, follow these steps:

1. Remove the slider bed as described on page 3-21.
2. Refer to dwg 000335, Revision AA, sheet 9, sections **M-M** and **N-N**, to locate the compression mounts on the inside

of the siderails. On each siderail, there are:

- a. five long mounts (item 73, p/n 032235-001).
 - b. three short mounts (item 74, p/n 032235-002).
3. Unscrew the mounts from each siderail, then replace with new ones from the spares kit. (If Loctite® 242 adhesive is available, apply it to the screw threads on each mount.)
 4. Replace the slider bed as described on page 3-21.

SECTION 4 TROUBLESHOOTING

This Section consists of several tables that isolate most problems that could occur during treadmill operation, and provide a variety of suggestions for onsite repair. The tables include:

1. error codes.
2. mechanical noises.
3. test points on the TMU.
4. fuses.
5. control cable pinouts (for continuity and signal testing).
6. power-up problems.
7. failure to start.
8. speed change problems.
9. elevation problems.
10. walking belt not tracking correctly.
11. belt slippages.
12. bearing and other treadmill noises.

In addition, this Section includes:

- a discussion of the error codes that can appear on the display.
- troubleshooting techniques for bearing problems.
- the information and tests available in Technician Access mode.
- specific information for the ClubTrack 3.0 Plus motivational controller.

ERROR CODES

The treadmill performs an electronic self-test each time that it is powered up. If a problem is detected during either power-up or operation, an error code appears on the display.

WARNING

When PLOS appears on the display, ensure that nobody is on the walking belt when you press the red Reset button. The belt starts moving immediately, and the sudden start and

subsequent loss of balance could cause serious personal injury.

PL05 indicates a power interrupt. Ensure that nobody is on the walking belt, then press the red Reset button on the hood.

- The belt will move momentarily, then stop.
- The red Reset light is extinguished.
- You must press **CLEAR** to remove PL05 from the display and return it to normal.

The treadmill is then ready for use.

If an error code consisting of the letter **E** followed by three numbers appears, such as **E101**, refer to Table 4-2 on page 4-4. If you replace a faulty PCB Assembly, please return it to the factory and note the error code.

TROUBLESHOOTING BEARING PROBLEMS

WARNING

Observe the following precautions when servicing the treadmill:

- *Do not start the walking belt when someone is on the treadmill. The belt starts moving immediately, and the sudden start and subsequent loss of balance could cause serious personal injury.*
- *High voltage is present when the treadmill hood is removed and the treadmill is plugged in.*
- *Do not wear loose clothing around rotating machinery.*
- *Never place your fingers near rotating parts.*

All bearings are sealed and permanently lubricated, so maintenance is not required. The following information is provided to assist in diagnosing and trouble-shooting bearing failures.

Most failures cause clicking or knocking noises that are heard during treadmill operation. Determining the type and the rate of bearing

noise can help establish which bearing is at fault. Table 4-3 on page 4-5 is a diagnostic summary of bearing noises, along with other noises that may indicate problems.

- *Transmission bearings* generally click when they fail.
 - The *input shaft assembly* rotates at a constant speed, so the rate of the bearing noise (i.e. the number of clicks per minute) remains constant regardless of the walking belt speed.
 - The speed of the *output shaft assembly* varies with the treadmill speed, so the rate of the bearing noise (i.e. the number of clicks per minute) increases or decreases along with the walking belt speed.
- Front and rear *roller assembly bearings* tend to knock when they fail. (There are exceptions, however.) Also, the rate of the bearing noise (number of knocks per minute) varies with treadmill speed, because the roller speeds increase or decrease as belt speed changes.

A stethoscope with an open or tube end, or a piece of hose about two feet long, is useful for isolating bearing problems. (Hold one end of the hose near the suspected bearing, and the other end near your ear.) Compare several bearings to determine the sound of a faulty one. *Read the warning on page 4-1 first before attempting this!*

SERVICE ACCESS MODE

The treadmill is equipped with a privileged service access mode to aid in troubleshooting the controller and display.

- To enter service access mode, *simultaneously* press and release **STOP BELT**, **FASTER**, and **SLOWER**. (You may remain in service access mode to perform all tests. It is not necessary to exit and re-enter the mode.)
 - **P000**, which indicates that no key is pressed, appears in the SELECT display.
 - The word **SERVICE** scrolls across the ClubTrack Plus tri-color display.

- To exit service access mode, press and release the same three keys simultaneously.

Firmware Revision Numbers

To display the firmware revision levels of the ClubTrack DPU and ClubTrack Plus MCU PCB assemblies:

1. Enter the service access mode.
2. *Simultaneously* press **STOP BELT** and **GRADE UP**. The firmware revision level of the DPU or MCU appears in the SELECT display.
3. *Simultaneously* press **STOP BELT** and **GRADE DOWN**. The TMU revision level appears in the SELECT display.

Display Tests

To test the displays on the keypanel:

1. Enter the service access mode.
2. *Simultaneously* press **STOP BELT**, **GRADE UP**, and **GRADE DOWN**.
3. The display cycles through one digit at a time in each display, starting from left to right across the panel. Each digit displays the number **8** and the associated decimal point for one second, then turns off as the next one illuminates.
4. When this is completed, the LEDs (annunciators) light up individually, starting from the top. The "select" LEDs illuminate first, followed by the "units" LEDs.
5. After the LEDs are tested, all the digits in all three displays simultaneously count up from **0** through **9**. (No decimal points are illuminated during this count.)

Key Input Test

To test the keys on the keypanel:

1. Enter the service access mode. **P000**, which indicates that no key is pressed, appears in the SELECT display. (If a key is shorted out, **P555** appears.)
2. Refer to Table 4-1 on page 4-4, then press each key in succession to display the appropriate code in the SELECT

display. For example, P001 appears when you press **START BELT**. P000 reappears when you release the key.

3. Note that the key codes are slightly different for the ClubTrack 3.0 and the ClubTrack 3.0 Plus. The asterisks next to each key in Table 4-1 denote the code that applies to each unit. (If there are no asterisks, the codes are the same for both treadmills.)
4. Exit the service access mode as described on page 4-2.

Tri-color Graphics Display Test (ClubTrack 3.0 Plus only)

To test the color display on the ClubTrack Plus MCU display:

1. Enter the service access mode.
2. *Simultaneously* press **NEXT STAGE**, **GRADE UP**, and **GRADE DOWN** until the test starts.
 - a. First, vertical columns on the tri-color display light red, green, then yellow for one second each. The columns move from left to right until all display LEDs have been tested.
 - b. Then, horizontal columns light red, green, then yellow for one second each. The columns move from top to bottom until all LEDs have been tested.

OPEN-LOOP MODE (CLUBTRACK 3.0 PLUS ONLY)

In open-loop mode, the display will indicate the *instantaneous* treadmill speed or grade, rather than the target speed or grade. The approximate speed and grade range is

- 0.7 to 13.0 mph ± 0.1 mph.
- -2.6% to 15.5% ± 0.1 %.

This mode can be used to verify treadmill speed or grade, or to test the transmission.

To enter open-loop speed mode:

1. Enter the service access mode (page 4-2).

2. *Simultaneously* press **RESUME COURSE**, **FASTER**, and **SLOWER**.
3. Exit the service access mode (page 4-2).
4. Make sure that nobody is standing on the walking belt, then press **START BELT**.
5. Press **FASTER** or **SLOWER** to change speed. It changes only when you hold down either key.
6. To return to normal operation, press **CLEAR** or cycle the power.

To enter open-loop grade mode:

1. Enter the service access mode (page 4-2).
2. *Simultaneously* press **RESUME COURSE**, **UP**, and **DOWN**.
3. Exit the service access mode (page 4-2).
4. Press **UP** or **DOWN** to change grade. It changes only when you hold down either key.
5. To return to normal operation, press **CLEAR** or cycle the power.

NOTE

The ClubTrack Plus can be in both open-loop speed and open-loop grade modes simultaneously.

PROGRAM LOOP MODE (CLUBTRACK 3.0 PLUS ONLY)

Program loop mode, which is primarily intended for factory testing, runs and repeats a selected program indefinitely.

WARNINGS

Block off the treadmill and hang a warning sign on it before using this mode. The treadmill will change speed and/or grade without warning!

You must cycle power to exit Program Loop mode.

To enter program loop mode:

1. Enter the service access mode (page 4-2).
2. *Simultaneously* press **RESUME COURSE** and **START PROGRAM**.

Table 4-1. Keystroke Input Test Displays

KEY	CODE IN SELECT DISPLAY
No key pressed	P000
START BELT	P001
STOP BELT	P002
FASTER	P003
SLOWER	P004
UP	P005
DOWN	P006
SELECT	P007
UNITS	P008
CLEAR*	P009
RESUME COURSE**	P009
CLEAR**	P010
COOL DOWN**	P011
NEXT STAGE**	P012
Shorted key(s)	P555

*ClubTrack only

**ClubTrack Plus only

3. Exit the service access mode (page 4-2).
4. Select or design a program, press **START BELT**, then press **START PROGRAM**.
The program runs automatically and repeats continuously.
5. Press **STOP BELT** to end the program.
6. Press **POWER** twice to cycle power and exit program loop mode.

Table 4-2. Error Codes

DISPLAY	INDICATION	RECOMMENDED ACTION
PLOS	Power Interruption	Ensure that no one is on belt, then press Reset.
E001	Treadmill Control Unit (TMU) chip failure	Replace TMU. Return defective PCB to factory. Please note error code on return paperwork.
E002	TMU EPROM failure	
E003	TMU interrupt condition	
E004	TMU A/D failure	
E005	TMU communication failure	
E101	Chip failure on Display Processor Unit (DPU on the ClubTrack) or Motivational Control Unit (MCU on the ClubTrack Plus)	Replace DPU (ClubTrack) or MCU (ClubTrack Plus). Return defective PCB to factory. Please note error code on return paperwork.
E102	DPU or MCU EPROM failure	
E103	DPU or MCU interrupt condition	
E104	Interprocessor communication failure	
E105	MCU Display Controller NV RAM failure (ClubTrack Plus only)	<ol style="list-style-type: none"> 1) Press FASTER/SLOWER/STOP BELT simultaneously to enter Service Access mode. 2) Press NEXT STAGE/COOL DOWN simultaneously to load and test the NVRAM. 3) Wait approximately 10 seconds. when the top center 7-segment LEDs display a 4-digit alphanumeric number, the NVRAM load is complete. 4) Press FASTER/SLOWER/STOP BELT simultaneously to exit Service Access mode. 5) If error persists, replace MCU. Please note error code on return paperwork.
E106	MCU Display Controller Graphic RAM failure (ClubTrack Plus only)	See error codes E101-E104
E201	Grade feedback is outside of 0-15% grade range.	<ol style="list-style-type: none"> 1) Press FASTER/SLOWER/STOP BELT simultaneously to enter Service Access mode. 2) Note the grade value, then recalibrate the grade pot (Section 3). 3) If error persists, replace TMU.
E202	Speed display error. Displayed speed more than ± 2 mph from optical tach output (speed feedback).	<ol style="list-style-type: none"> 1) If belt moves but does not change speed, check fuses on TMU (Table 4-4). 2) Verify proper operation of speed change mechanism (Table 4-9). 3) Check tach voltage at test point TP7 on TMU (TP9 is ground). Slowly rotate transmission output assembly by hand. Voltage should toggle between 0 V and +5 V (+0 V, -1.7 V). If not, replace tach.
E203	Drive motor overheating. Motor drawing excessive current, and thermal overload activated.	<p>Allow motor to cool for 15 minutes, then restart.</p> <ol style="list-style-type: none"> 1) If error message appears <i>immediately</i>, replace TMU. 2) If treadmill starts, then error message appears during operation, replace drive motor. Also see Table 4-3, TP4/TP5.

(Continued on page 4-6)

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Table 4-2 (Continued). Error Codes

DISPLAY	INDICATION	RECOMMENDED ACTION
E204	Microcontrollers on TMU and DPU (or MCU) Assemblies not communicating	<ol style="list-style-type: none"> 1) Verify control cable connections at TMU and DPU (or MCU). 2) Check for bent or broken pins on control cable plugs. Replace if required. 3) If error message persists, replace TMU or DPU (or MCU) as required.
E205	Tachometer not operational (Voltage output below +3.3 V).	<p>Voltage at TMU test point TP6 should be +5V (+0 V, -1.7 V) [TP9 is ground]. If not:</p> <ol style="list-style-type: none"> 1) Clean tach LED and photocell (Section 3). 2) Replace tachometer assembly (Section 3). 3) Replace TMU.
E206	Noise spike caused TMU micro-controller to reset inadvertently.	<ol style="list-style-type: none"> 1) Verify that drive motor is electrically isolated from headframe. (Use VOM to verify infinite resistance.) If not, replace grounding hardware, located between motor mounting base and headframe mounting. 2) Verify that drive motor is not touching or otherwise grounding against TMU Assembly. 3) If error message persists, replace TMU.

Table 4-3. Troubleshooting Mechanical Component Noises

NOISE	PROBABLE FAULTY COMPONENT	ACTION
Clicking (Constant Speed)	Input shaft assembly transmission bearing	Isolate bearing, then replace input shaft assembly (page 3-9)
Clicking (Rate increases/ decreases with walking belt speed)	Output shaft assembly transmission bearing	Isolate bearing, then replace output shaft assembly (page 3-11)
Knocking or thumping (Rate increases/decreases with walking belt speed)	Front or rear roller (pulley) assembly bearings	Isolate and replace roller [pulley] (page 3-20)
High-pitched "singing"	Final drive belt too loose or too tight	Adjust belt tension (page 3-13)
Squealing (like loose automobile fan belt)	Motor belt (V-belt) loose	Adjust belt tension (page 3-26). Replace belt if necessary.
Popping (during grade increase or decrease)	Faulty elevation chain alignment	Adjust alignment of sprockets

Table 4-4. Voltage Test Points on TMU Assembly*

TEST POINT	EXPECTED VOLTAGE	FUNCTION
TP1	+5 V	Power supply voltages
TP2	+12 V	
TP3	+26 V	
TP4	Normal: 0 V	Thermal Overload in drive motor. WARNING: High voltage present on TMU when overload condition occurs.
TP5	Thermal Overload: +110 VAC	
TP6	Between +3.3 V and +5 V	Tachometer HIGH level
TP7	0 V (low) +5 V (high)	Optical tachometer speed feedback
TP8	Normal: 0 V Fault: +5 V	Undervoltage indicator
TP9	Ground	Ground (Return) for TMU Assembly

*All voltages DC unless otherwise indicated.

Table 4-5. Fuses on TMU PCB Assembly

FUSE	FUNCTION
F1	Speed change motor
F2, F3*	AC Mains (line) power
F4, F5*	High-speed deceleration circuitry for speed change motor
F6, F7*	Grade change motor

WARNING: High voltage may be present on fuses.

*NOTE: If one fuse of a pair is blown, replace both fuses.

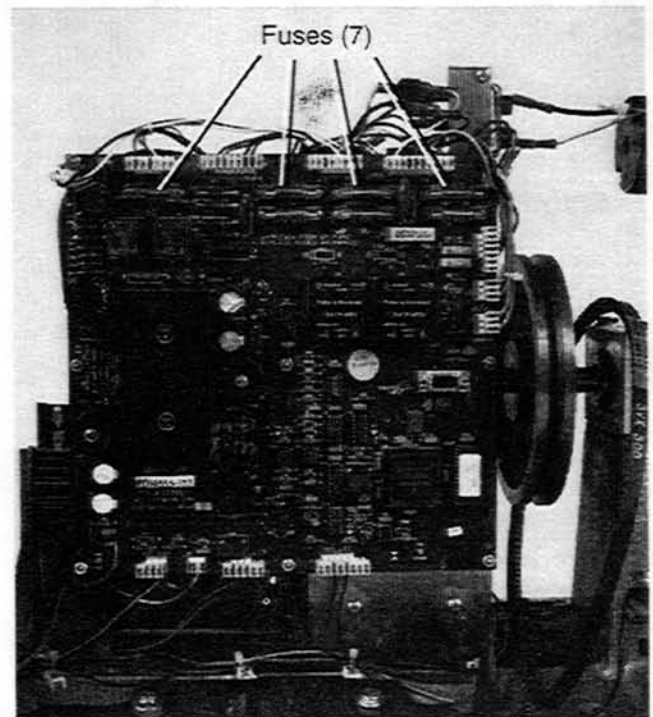


Figure 4-1. Fuses F1-F7 on TMU PCB Assembly

Table 4-6. Signals on Control Cable Pins

PIN NUMBER: TMU (J12)	PIN NUMBER: DPU (J1)	SIGNAL
1	1	T+ (Transmit +)
2	2	T- (Transmit -)
3	3	R+ (Receive +)
4	4	R- (Receive -)
5	5	GND (Ground)
6	6	N/C
7	7	GND (Ground)
8	8	+12 VDC
9	9	+12 VDC

NOTE: J12 is a D-sub connector; J1 is a MASCON connector.

Table 4-7. Treadmill Does Not Power Up (Display or Reset Light Not Visible)

POSSIBLE PROBLEM	ACTION
Treadmill not plugged in	Plug power cord into an appropriate outlet.
Circuit breaker tripped	Contact building maintenance to reset breaker. If breaker trips again: 1) Check voltage at outlet. If necessary, verify that power at outlet and at breaker is rated sufficiently to operate treadmill. 2) Verify that power cord is not caught in rack gear.
Power cord cut	Remove cord from outlet and replace.
Fuse in treadmill blown	Remove power cord and replace fuse (Table 4-4). If fuse blows again, isolate mechanical assembly and ensure that no parts are jammed (e.g. rack gear in grade change assembly.)
Limited Access (magnetic control) switch enabled, but magnet not in place	Put Quinton magnet on Quinton logo, then press POWER twice (OFF, then ON again). If you wish, turn the treadmill OFF and disable the limited access switch on the bottom of the TMU (Operator Manual, page 4-2).
Reset button on hood not reconnected after maintenance. (Light will not be visible.)	Remove hood cover and fasten connector.
Control cable between TMU and DPU disconnected at either Assembly.	Check both PCB Assemblies. Reconnect and tighten screws as required.
Control cable (including connector pins) between TMU and DPU faulty	Check for bent or broken pins. Replace control cable.
TMU failure	Check power supply power at test points (Table 4-3). If power is <i>incorrect</i> , replace TMU Assembly.
DPU failure	Replace DPU Assembly.

Table 4-8. Treadmill Powers Up, but Belt Does Not Move

POSSIBLE PROBLEM	ACTION
Reset button (on hood) lit, and PL05S appears on display.	Ensure nobody is on walking belt, then press Reset button. (Press CLEAR to clear display.)
Error code appears on display	Refer to Table 5-1. Replace PCB or other assembly as required.
Contactors (K1) not operational.	Verify that wires are connected, then check power supply voltages (208 V at K1 terminals 3,5). Replace K1 as required.
Drive motor overheated or not operational.	Check test points TP4/TP5 for thermal overload. (See Table 4-3) Check voltage from K1 to motor (208 V at K1 terminals 3,5 when K1 is activated). Replace motor if required.
Wires to motor disconnected.	Reconnect wires as required.
Motor noise audible, but walking belt not moving.	Replace broken motor belt.

Table 4-9. Treadmill Does Not Change Speed

POSSIBLE PROBLEM	ACTION
Speed change relays on TMU PCBA loose or not operational,	Plug in relays or replace with new ones as appropriate
Speed change motor burned out or not operational	1) Verify that motor can rotate (i.e. is not jammed) 2) Test voltage from filter to motor. It should range from 0-90 V (maximum). Replace motor if required.
Wires poorly connected to (or disconnected from) speed change motor terminals	Crimp terminals and reconnect wires as required.
Control cable from TMU to DPU defective or not fully connected	Check for bent or broken pins. Replace or reconnect cable as required.
Fuse F1 on TMU blown	Isolate problem and replace fuse.
Speed change motor brushes worn	Check brushes. Replace as required.
Speed change spindle jammed	Remove and replace spindle assembly (Refer to Input Shaft Removal, Section 3)
Input shaft assembly moveable sheave jammed	Remove and replace input shaft assembly
Output shaft assembly moveable sheave jammed	Remove and replace output shaft assembly

Table 4-10. Treadmill will Not Elevate

POSSIBLE PROBLEM	ACTION
Grade change motor burned out or not operational	Test motor. Replace if required.
Wires poorly connected to (or disconnected from) terminals	Crimp terminals and reconnect wires as required.
Control cable from TMU to DPU defective or not fully connected	Check for bent or broken pins. Replace or reconnect cable as required.
Fuses F6 and F7 on TMU blown	Isolate problem and replace fuses.
Grade change motor brushes worn	Check brushes. Replace as required
Elevation microswitch out of adjustment	Adjust microswitch as required (Section 3)
Rack gear jammed	Check and free gear (Section 3)
Grade pot out of adjustment	Adjust pot (Section 3)
Elevation relays on TMU defective	Replace TMU

Table 4-11. Walking Belt Slipping or Not Tracking

POSSIBLE PROBLEM	ACTION
Walking belt slipping	Adjust belt tension (page 3-23)
Belt not tracking:	
Tracking adjusted incorrectly	Adjust tracking (page 3-24)
Walking belt worn out	Replace belt (page 3-21)
Walking deck (slider bed) worn out	Replace deck (page 3-21)

Table 4-12. Internal Belt Slippages

SYMPTOMS	POSSIBLE PROBLEM	ACTION
1) Squealing sound like automobile fan belt, and 2) Walking belt slows down as user's foot strikes the deck	Motor drive belt (V-belt) slipping	Adjust belt tension (page 3-26)
Walking belt slows as user's foot strikes the deck.	Transmission belt slipping	Check pulley sheaves for grease or oil. Clean as required.

SECTION 5 PART NUMBERS AND DRAWINGS

Table 5-1 lists the most commonly referenced part numbers for the treadmills, and Table 5-2 on the following page lists the assembly drawings and schematics that are included in this Section. (The drawings appear in numerical order.) Refer to the assembly drawings for a complete list of treadmill parts.

NOTE

Treadmill part numbers 000333-005 through -008 and 000335-005 through -008 include the TripleFlex deck design. Please refer to the appropriate drawing (immediately following this section) for the correct parts list.

Table 5-1. Commonly Referenced Part Numbers

COMPONENT	DESCRIPTION	PART NUMBER
MOTORS	Drive Motor Assembly	30648-001
	Elevation Motor Assembly	19933-001
	Elevation Motor Brushes (Bison Motor)	30259-001*
	Elevation Motor Brushes (Bodine Motor)	30259-002*
	Speed Change Motor Assembly	19130-002
	Speed Change Motor Brushes	30260-001*
TRANSMISSION	Input Shaft Assembly	15273-002
	Output Shaft Assembly	15313-001
	Speed Change Spindle Assembly	18290-001
BELTS	Walking Belt	19019-001
	V-Belt (Drive Motor to Input Shaft Assembly)	15241-001
	Final Drive Belt (Output Shaft Assembly to Front Drive Roller)	12957-002
	Transmission Variable Speed Belt	13062-001
WALKING DECK	Front (Drive) Roller Assembly	19137-002
	Rear (Idler) Roller Assembly	19138-001
	Slider Bed	19017-001
	TripleFlex Hardward Spares Kit	033343-001
ELECTRONIC	TMU PCB Assembly	30556-001
	MCU PCB Assembly (ClubTrack 3.0 Plus)	30441-001
	DPU PCB Assembly (ClubTrack 3.0)	19027-001
	Key Panel (ClubTrack 3.0)	19186-001
	Key Panel (ClubTrack 3.0 Plus)	30546-001
	Control Cable (DPU-to-TMU)	19238-001
	Power Cord	30611-002
	Drive Motor Relay (K1)	14486-001
	Reset Switch	19089-002
	Tachometer Pickup PCBA	13075-001
	Beam Chopper Wheel	06875-001
	Grade Pot Assembly	13089-001

*Not shown in assembly drawing. Available as replacement part only.

Table 5-2. Assembly Drawings

DRAWING NO.	DRAWING TITLE
00333	Clubtrack Plus Final Assembly
00335	Clubtrack Final Assembly
19089	Reset Switch Assembly
13077	Tachometer Pickup Assembly
13089	Grade Pot (Potentiometer) Assembly
30198	Transformer Assembly
14486	Relay, Mercury
30648	Drive Motor Assembly
15273	Input Shaft Assembly
15313	Output Shaft Assembly
18290	Speed Change Spindle Assembly
19027	Control PCB Assembly, DPU
19027-201	Schematic Diagram, DPU
19130	Speed Change Motor Assembly
19137	Drive Pulley Assembly
19138	Rear Pulley Assembly
19186	Control Keyboard Assembly
19248	Control Panel Assembly (Upright Assembly)
19620	Control Panel Assembly
30262	Speed Change Spindle Assembly
30650	Headframe Assembly*
30912	Headframe Assembly*
30556	Treadmill Control PCB Assembly (TMU)
30556-201	Schematic Diagram, TMU
19933	Grade Motor Assembly
30658	Drive Motor Assembly (50 HZ, 230 V)
30659	Drive Motor Assembly (50 HZ, 200 V)

NOTES:

1. Assembly drawings may be in a different order than those listed above.
2. Multiple drawings of the same assembly allow support for different models of the treadmill.

*If the treadmill has *two* transformers, use headframe assembly drawing number 30650.
If the treadmill has *one* transformer, use drawing number 30912.

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NOTES:

1. APPLY ADHESIVE (ITEM 31) TO SCREW THREADS.
2. ASSEMBLY TORQUE 30 ± 5 IN-LB.
3. ASSEMBLE PER PROCEDURE 000335-880
4. WITH THE TREADMILL IN THE ELEVATED POSITION AND BEFORE HOOD INSTALLATION (ITEMS 8 & 9), LOOSEN 2 SCREWS ON THE UNDERSIDE OF THE HEADFRAME (ITEM 1) WHICH HOLD THE SPEED ADJUSTMENT BRACKET. ADJUST THE SPEED ADJUSTMENT BRACKET TOWARDS THE CENTER OF THE TREADMILL AS FAR AS POSSIBLE AND RETIGHTEN THE 2 SCREWS HOLDING IT DOWN.
5. RECORD THE PRODUCTS POWER REQUIREMENTS ON TAG (ITEM 34) PER TABLE I AND ATTACH THE TAG TO THE POWER CORD.
6. ATTACH LABELS AS REQUIRED BY THE TABLE II FOLLOWING THE ACCEPTANCE OF ALL PRODUCTION TESTS AND ASSURANCE PROCEDURES.
7. INSTALL HOLDDOWN SCREWS (ITEM 24) PRIOR TO HOOD WELDMENT (ITEM 8) INSTALLATION. SCREW HEAD MUST HAVE A .060 TO .070 GAP BETWEEN THE SIDE RAIL COVER AND THE SCREW HEAD. AFTER HOOD INSTALLATION THE TWO FORWARD SCREWS MUST BE TIGHTENED.
8. LOCATE PRODUCT IDENT LABEL (ITEM 37 OR ITEM 78) AS SHOWN CENTERED HORIZONTALLY AND FLUSH WITH BOTTOM EDGE OF THE HOOD COVER (ITEM 9).
9. DELETED
10. FILL IN NAMEPLATE INFORMATION PER TABLE I.
11. ALIGN LABEL (ITEM 38) WITH EDGE OF VENT SLOTS AS SHOWN ± .13
12. ADJUST THE TIMING BELT (PART OF ITEM 1) TENSION SO THAT A .11 INCH DEFLECTION CAN BE MEASURED AT MID SPAN WITH A 2.00 ± .50 LB LOAD APPLIED PERPENDICULAR TO THE BELT AT THE MID SPAN LOCATION.
13. SET THE WALKING BELT TENSION TO .4% STRETCH.
14. THE FOLLOWING ITEMS MUST BE PACKAGED IN A SEPARATE BAG (PROVIDED):

(1) OWNERS MANUAL (ITEM 50)	(ITEM 50)	}	18
(1) END CAP, LH (ITEM 15)	(ITEM 15)		
(1) END CAP, RH (ITEM 16)	(ITEM 16)		
(2) SCREW, MACH: PNH PH (ITEM 30)	(ITEM 30)		
(6) WASHER, FLAT (ITEM 20)	(ITEM 20)		
(6) SCREW, CAP, HEX HEAD (ITEM 21)	(ITEM 21)		
(6) WASHER, LOCK, INT., EXT. (ITEM 68)	(ITEM 68)		
(1) KEY ASSEMBLY, MAGNET (ITEM 25)	(ITEM 25)		
(2) SCREW, TRUSS HEAD, PHILLIPS (ITEM 24)	(ITEM 24)		
(2) WASHER, LOCK, INT STAR (ITEM 53)	(ITEM 53)		
(2) SCREW, TRUSS HEAD (ITEM 56)	(ITEM 56)		
15. APPLY ADHESIVE (ITEM 57) TO SCREW THREADS.
16. ITEMS 64 AND 70 WILL BE PACKAGED SEPARATELY FOR INSTALLATION IN THE FIELD.
17. INSTALL SPACER (ITEM 65) BETWEEN SIDERAIL WELDMENT (ITEM 2) AND HEADFRAME ASSY (ITEM 1).
18. THESE ITEMS AVAILABLE AS A SPARE HARDWARE KIT. ORDER PART NO. 032350-001.

-008	MARKET	000333				
-007						
-006						
-005						
-004						
-003						
-002						
-001						
PART NO.				NEXT ASSY NO.	END ITEM NO.	
APPLICATION						

PRODUCTION

REVISIONS			
LTR	ZONE	DESCRIPTION	APPROVED
AD	8B7	AC ADGN: 30546 ADDED FLAGNOTE 10 TO ITEM 35 ACTION CODE: F1, MOD: 5-31-94 ROA: 30606 ADDED -005 THRU -008 CONFIG ADDED ITEMS 71 THRU 78 ADDED VIEW L=L ACTION CODE: H1. MOD: DATE OF RELEASE -	F. RAMIREZ 3/21/92 S. COZAD 3/21/92 K. BAILEY 3/21/92 B. STRATHEN 3/21/92
ADGN NO.	31248	53313	
REVISION LEVEL	AE	AF	

(CONTINUED ON SHEET 2)

10	10	10	10	10	10	10	10	10	20	001164-005	WASHER, FLAT	.313		
2	2	2	2	2	2	2	2	19	010820-366	SCREW, CAP, HEX HEAD	.313-18UNC-2A X 3.0L			
-	-	-	-	10	10	10	10	18	010836-145	SCREW, TRUSS HEAD PH REC.	.250-20UNC-2A X 1.750L			
2	2	2	2	2	2	2	2	17	014639-001	FOOT, RUBBER				
1	1	1	1	1	1	1	1	16	019306-002	CAP, END	RH			
1	1	1	1	1	1	1	1	15	019306-001	CAP, END	LH			
1	1	1	1	1	1	1	1	14	019057-002	CASTING, END CAP, LH				
1	1	1	1	1	1	1	1	13	019058-002	CASTING, END CAP, RH				
1	1	1	1	1	1	1	1	12	019488-001	COVER, SIDE RAIL, MACH, LH				
1	1	1	1	1	1	1	1	11	019489-001	COVER, SIDE RAIL, MACH, RH				
1	1	1	1	1	1	1	1	10	030857-003	CONT. PNL ASSY, AC TREADMILL				
1	1	1	1	1	1	1	1	9	030631-001	WELDMENT, COVER, HOOD, AC				
1	1	1	1	1	1	1	1	8	019758-001	WELDMENT, HOOD, AC				
1	1	1	1	1	1	1	1	7	019138-002	PULLEY ASSY, REAR				
1	1	1	1	1	1	1	1	6	019137-002	PULLEY ASSY, DRIVE				
1	1	1	1	1	1	1	1	5	019019-001	BELT, WALKING				
1	1	1	1	1	1	1	1	4	019017-001	BED, SLIDER				
-	-	-	-	1	1	1	1	3	019026-002	WELDMENT, SIDE RAIL, LH				
-	-	-	-	1	1	1	1	2	019025-003	WELDMENT, SIDE RAIL, RH				
-	-	-	-	1	1	1	1	1	030912-001	HEADFRAME ASSY, TREADMILL	208/230V, 60HZ			
-	-	-	-	-	-	-	-	-	-008	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-007	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-006	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-005	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-004	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-003	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-002	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
-	-	-	-	-	-	-	-	-	-001	MOTIVATIONAL CLUBTRACK, FINAL ASSEMBLY				
										PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION	
										PARTS LIST				
										UNLESS OTHERWISE SPECIFIED	DRAWN F. RAMIREZ 3/21/92	Quinton Instrument Co.		2121 HEBBY AVENUE SEATTLE, WASHINGTON 98121 (206) 223-7373
										ALL DIM ARE IN INCHES	CHKD S. COZAD 3/21/92	TITLE		MOTIVATIONAL CLUBTRACK, (ETL/CSA) FINAL ASSEMBLY
										TOL .XX ± .10	ENGR R. PASIC 3/21/92	SIZE		D
										ANGLE ± ---	EQUAL K. BAILEY 3/21/92	MODEL		000333
										CLASS CODE FINA	LFC B. STRATHEN 3/21/92	DWG NO.		AD
										VALUE CODE TREDML	OTHER	SCALE		1/2
										QUANTITY PER ASSEMBLY		SOURCE		AUTOCAD
										DO NOT SCALE DRAWING PRINTS				
										SHEET 1 OF 9				

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PRODUCTION

TABLE I NAMEPLATE INFORMATION

PART NO.	MODEL NO.	SERIAL NO.	VOLTS	FL AMPS	FREQ	PHASE	CIRCUIT CONDUCTORS
000333-001	CLUBTRACK	333-001-XXX	208/230	16	60HZ	1	2
000333-002	CLUBTRACK	333-002-XXX	230	16	50HZ	1	2
000333-003	CLUBTRACK	333-003-XXX	200	16	60HZ	1	2
000333-004	CLUBTRACK	333-004-XXX	200	16	50HZ	1	2
000333-005	CLUBTRACK	333-005-XXX	208/230	16	60HZ	1	2
000333-006	CLUBTRACK	333-006-XXX	230	16	50HZ	1	2
000333-007	CLUBTRACK	333-007-XXX	200	16	60HZ	1	2
000333-008	CLUBTRACK	333-008-XXX	200	16	50HZ	1	2

TABLE II INDEX OF OPTIONS

DWG NO.	DASH NO.	OPTION TYPE	REQUIRED REGULATORY LABELS
000333	-001, -005	208/230V 60HZ	ITEMS 58, 59, 60, 61, 63
030005	-001	LH SIDE HANDRAIL	
030005	-002	RH SIDE HANDRAIL	
030005	-003	LH & RH SIDE HANDRAIL	
000333	-002, -006	230V 50HZ	ITEMS 58, 60 63
000333	-003, -007	200V 60HZ	ITEMS 58, 60, 63
000333	-004, -008	200V 50HZ	ITEMS 58, 60, 63

(CONTINUE ON SHEET 3)

REV NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
56	010835-192	SCREW, TRUSS HEAD PHILLIPS REC	8-32UNC-2A X .375L
55	DELETED		
54	010827-204	SCREW, MACH, PNH PH	10-32UNF-2A X .500L
53	012029-009	WASHER, LOCK, INTERNAL STAR	.250
52	030108-001	SHIPPING CRATE, CLUBTRACK	
51	000335-350	UNPACKING & INSTL INSTR	
50	000333-B40	CLUBTRACK 3.0 OPR MNL	
49	030912-004	HEADFRAME ASSY, TREADMILL	200V, 50HZ
48	030912-003	HEADFRAME ASSY, TREADMILL	200V, 60HZ
47	030912-002	HEADFRAME ASSY, TREADMILL	230V, 50HZ
46	010011-099	LABEL, ADH-BACKED AL FOIL	RESET SWITCH
45	001172-010	SCREW, SHOULDER, HEX SOCKET HEAD	.313-18UNC-2A X .250L
44	010836-185	SCREW, TRUSS HEAD, PH REC	.250-20UNC-2A X 2.250L
43	011881-006	NUT, LOCK	.250-20UNC-2B
42	010819-225	SCREW, CAP, HEX HEAD	.250-20UNC-2A X .625L
41	010511-009	WASHER, SPLIT LOCK	.250
40	001164-004	WASHER, FLAT	.250
39	015695-004	COVER, DRIVEN PULLEY	
38	030022-001	LABEL, FITNESS LOGO	
37	030021-005	LABEL, CLUBTRACK 3.0 PLUS	
36	010011-104	LABEL, ADH-BACKED AL FOIL	WARNING
35	010011-103	LABEL, ADH-BACKED AL FOIL	NAMEPLATE
34	017041-001	TAG, VOLTAGE	
33	019409-006	WASHER, FLAT, TYPE A, BLACK	.313
32	030632-001	PLATE, ROLLER	
31	015233-001	ADHESIVE	LOCTITE 242
30	010827-205	SCREW, MACH, PNH PH	.250-20UNC-2A X .500L
29	019089-002	SWITCH ASSY, RESET	
28	015689-002	RETAINER, FRONT SHAFT	
27	001164-006	WASHER, FLAT	.375
26	010819-247	SCREW, CAP, HEX HEAD	.375-16UNC-2A X .750L
25	019296-001	KEY ASSY, MAGNETIC	
24	010835-325	SCREW, TRUSS HEAD, PH REC	.250-20UNC-2A X 1.000L
23	010819-246	SCREW, CAP, HEX HEAD	.313-18UNC-2A X .750L
22	010511-010	WASHER, SPLIT, LOCK	.313
21	010819-286	SCREW, CAP, HEX HEAD	.313-18UNC-2A X .875L

DWG NO. 000333
SHEET 2 OF 9

SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	000333	AD
SCALE	1/2	SOURCE	AUTOCAD
		SHEET	2 OF 9

8 7 6 5 4 3 2 1

D

D

C

C

B

A

000333
REV 3
AD

1	1	1	1	-	-	-	78	030021-008	CLUBTRACK 3.0 PLUS LABEL		
2	2	2	2	-	-	-	77	032240-001	SPACER, SOFT DECK		
6	6	6	6	-	-	-	76	032235-002	COMPRESSION MOUNT, DECK		
10	10	10	10	-	-	-	75	032235-001	COMPRESSION MOUNT, DECK		
10	10	10	10	-	-	-	74	010836-105	SCR,TRUSS HD,PH RECESSED	250 - 20 UNC-2AX	
1	1	1	1	-	-	-	73	015695-005	COVER, DRIVEN PULLEY		
1	1	1	1	-	-	-	72	019026-003	WELDMENT, SIDE RAIL, LH		
1	1	1	1	-	-	-	71	019025-004	WELDMENT, SIDE RAIL, RH		
1	1	1	-	1	1	1	70	030910-002	KIT, INSTRUCTION PANEL	INTERNATIONAL	
4	4	4	4	4	4	4	69	001164-013	WASHER, FLAT	#10	
6	6	6	6	6	6	6	68	017775-006	WASHER, LOCK, INT. EXT	.313	
1	1	1	1	1	1	1	67	010511-011	WASHER, SPLIT LOCK	.375	
1	1	1	1	1	1	1	66	010820-167	SCREW, CAP, HEX HEAD	.375-16UNC-2B X 2.00LG	
1	1	1	1	1	1	1	65	030891-001	SPACER, HEAVY WALL	.438 ID. X .750 OD.	
-	-	-	1	-	-	-	64	030910-001	INSTRUCTION PANEL ASSY		
1	1	1	1	1	1	1	63	030870-001	LABEL, TM FCC		
1	1	1	1	1	1	1	62	010011-066	LABEL, ADH-BACKED AL FOIL	EXPLOSION HAZARD	
-	-	-	1	-	-	-	61	016616-001	LABEL, ETL CERTIFICATION		
1	1	1	1	1	1	1	60	016222-001	LABEL, CAUTION	LIGHTNING FLASH	
-	-	-	1	-	-	-	59	010011-067	LABEL, ADH-BACKED AL FOIL	CSA, RISK CLASS 2G	
1	1	1	1	1	1	1	58	010011-065	LABEL, ADH-BACKED AL FOIL	CAUTION	
AR	AR	AR	AR	AR	AR	AR	57	016891-001	ADHESIVE	LOCTITE 222	

ITEM NUMBER	QUANTITY PER ASSEMBLY	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-008					
-007					
-006					
-005					
-004					
-003					
-002					
-001					

PRODUCTION

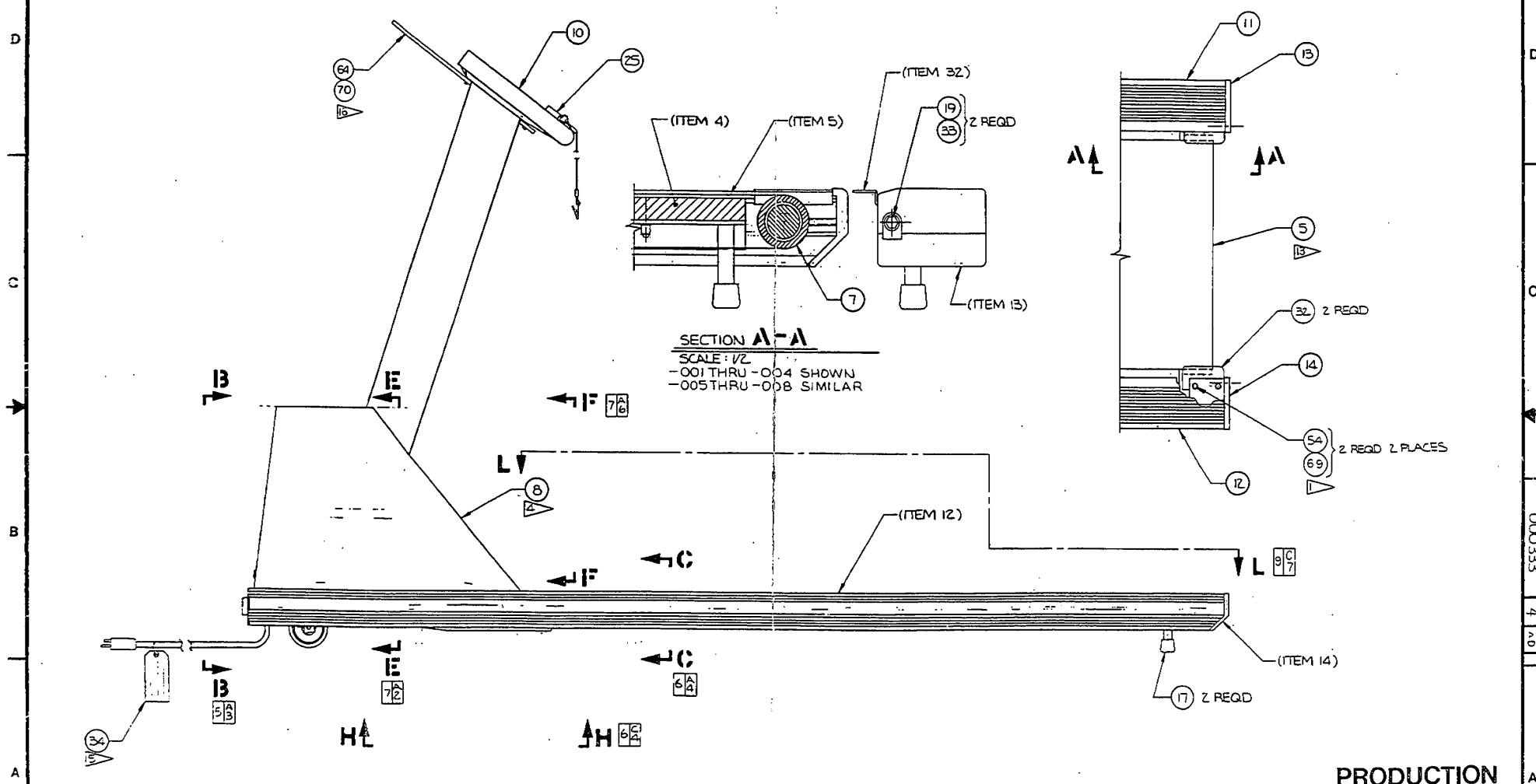
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SIZE	MODEL	DWG. NO.	REV.
D	CLUBTRK	000333	AD
SCALE	SOURCE	AUTOCAD	SHEET 3 OF 9

8 7 6 5 4 3 2 1

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE



PRODUCTION

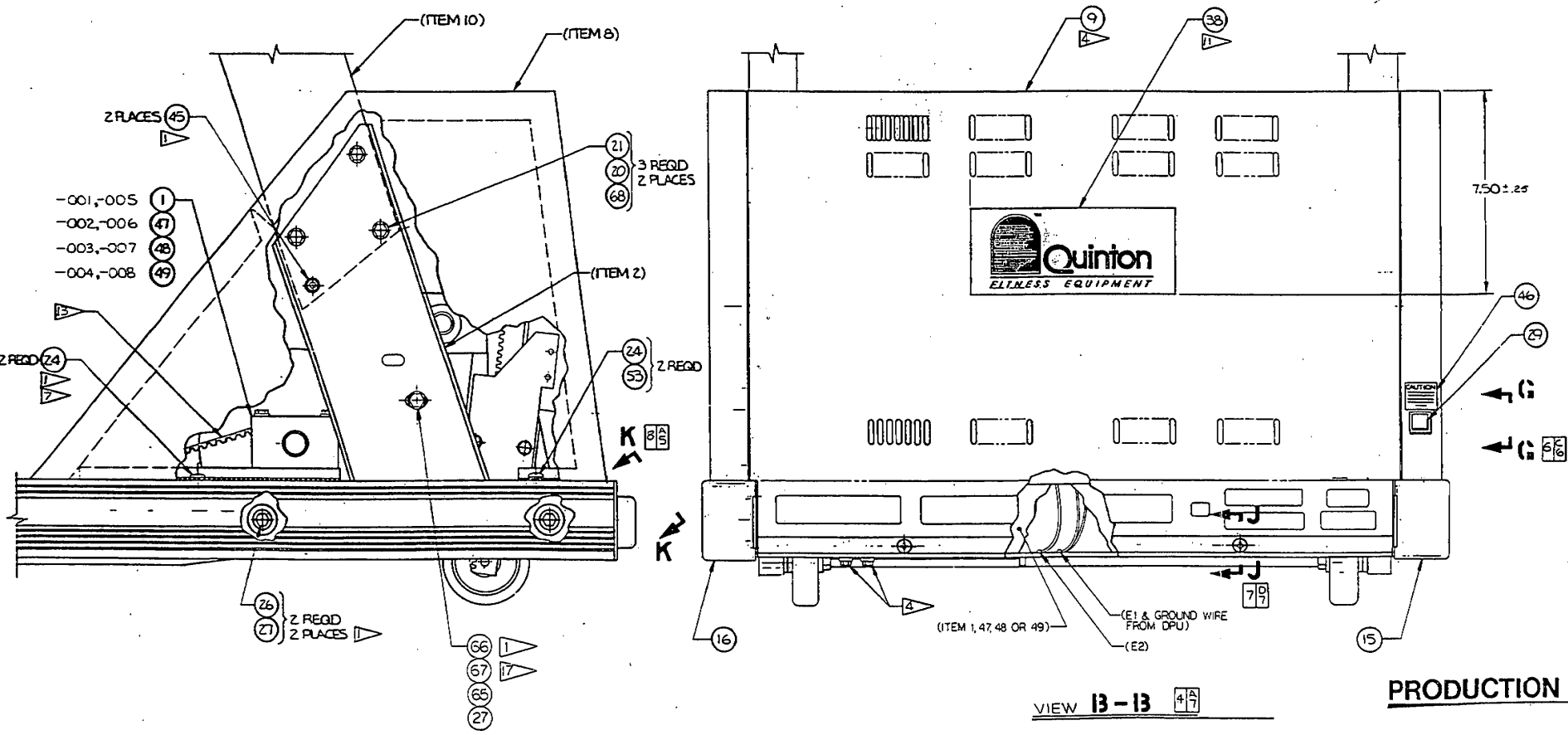
SIZE	MODEL	OWG. NO.	REV.
D	ALL STOCK	000333	AD
SCALE	DIST. CODE	SHEET 4 OF 9	
1/4			

DWG. NO. 000333
 SHEET 4 OF 9

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

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REVISIONS			
LTR.	ZONE	DESCRIPTION	DATE

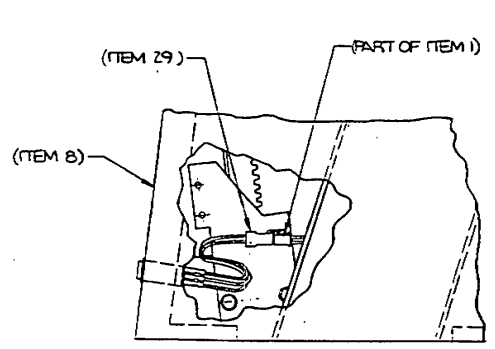


PART NO. 000333
 INT. 5 AD

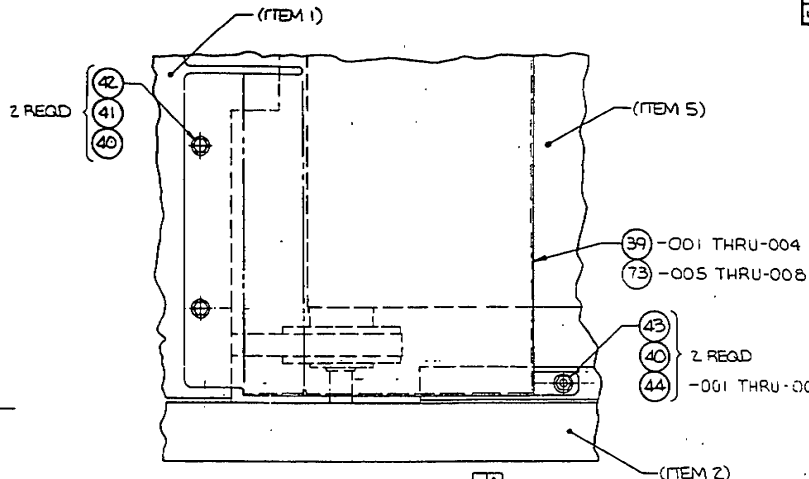
SIZE D	MODEL ELTNESS	QWG. NO. 000333	REV. 4D
SCALE 1/2	QWST. CODE	SHEET 5	OF 9

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

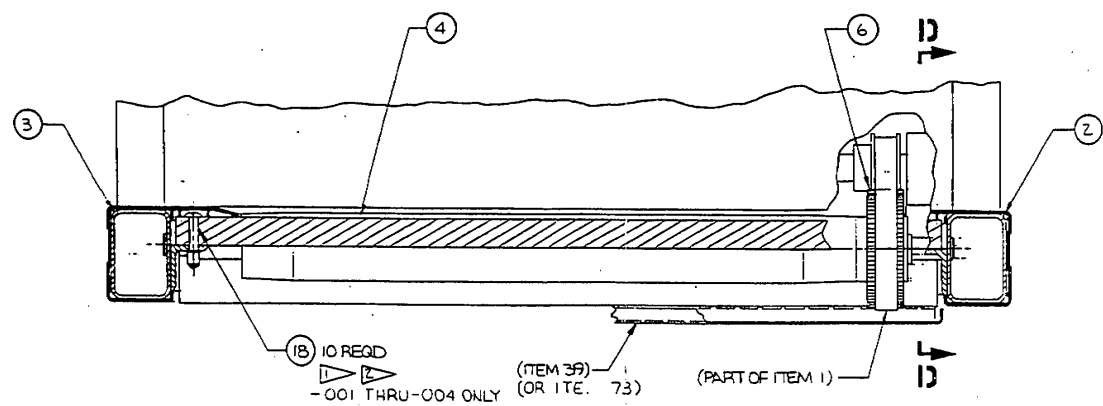
REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE



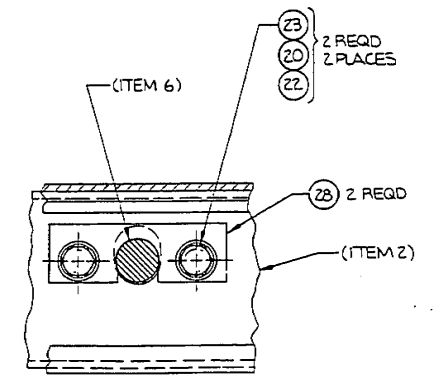
VIEW G-G 5A



VIEW H-H 4A



SECTION C-C 4A
 -001 THRU-004 SHOWN
 -005 THRU-008 SIMILAR AS NOTED



SECTION D-D
 SCALE = 1/1

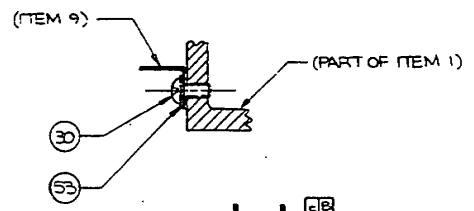
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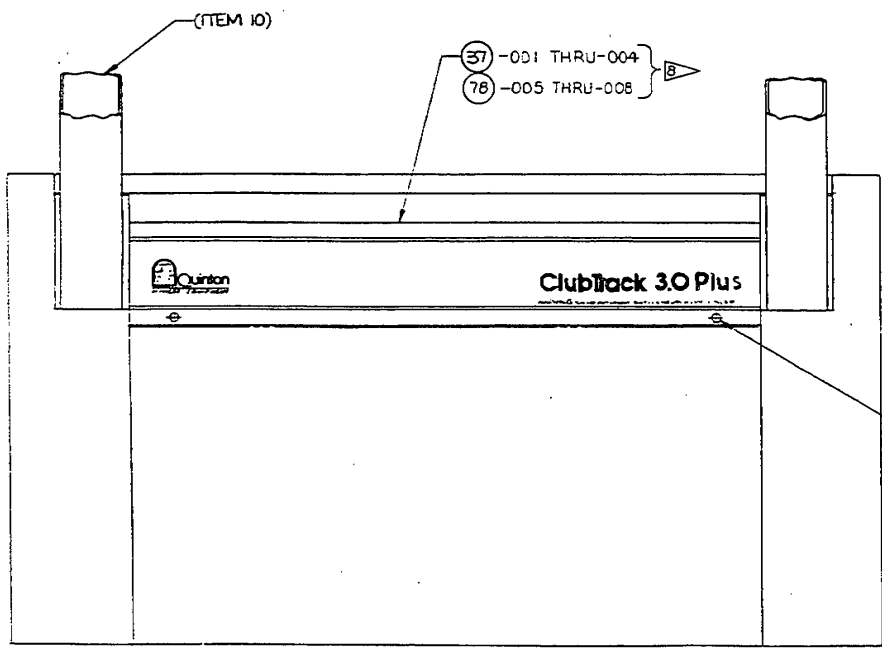
SIZE	MODEL	DWG. NO.	REV.
D	ALLTRACK	000333	AD
SCALE	1/2	DIST. CODE	SHEET 5 OF 9

DWG. NO. 000333
 SHEET 5 OF 9

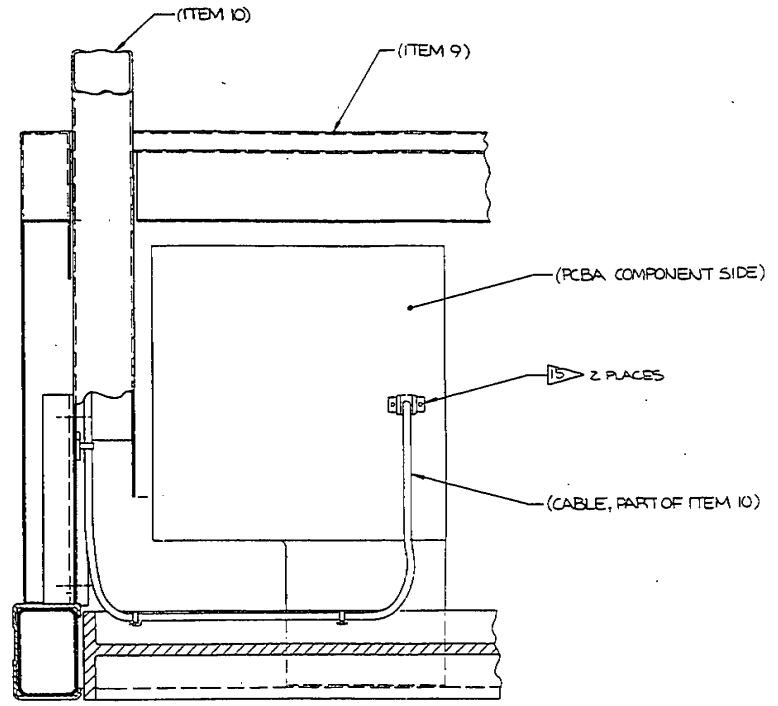
REVISIONS				
LTR	ED/VE	DESCRIPTION	APPROVED	DATE



SECTION J-J 3/2
SCALE = 1/1



VIEW F-F 4/6



SECTION E-E 4/6
DRIVE MOTOR OMITTED FOR CLARITY

PRODUCTION

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SIZE	MODEL	DWG. NO.	REV.
D	CLUBTRACK	000333	AD
SCALE	DIST. CODE	SHEET	OP
1/2		7	7

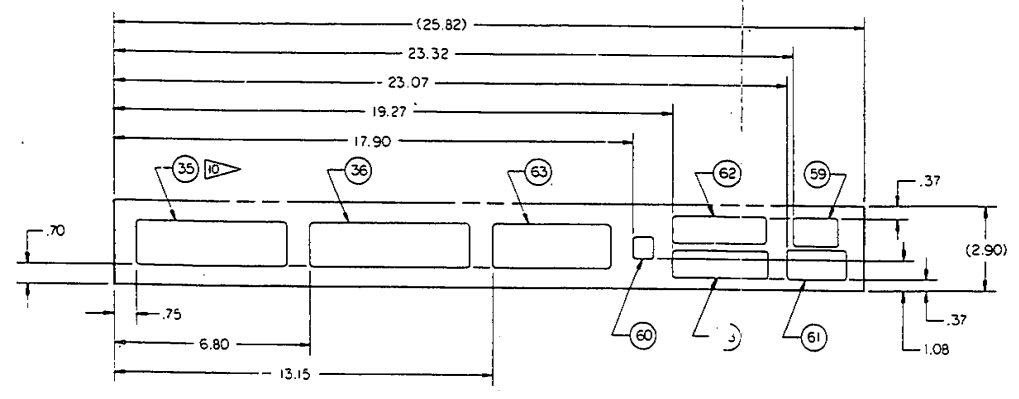
DWG. NO. 000333
SHEET 7 OF 7

8 7 6 5 4 3 2 1

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE

D
C
B
A

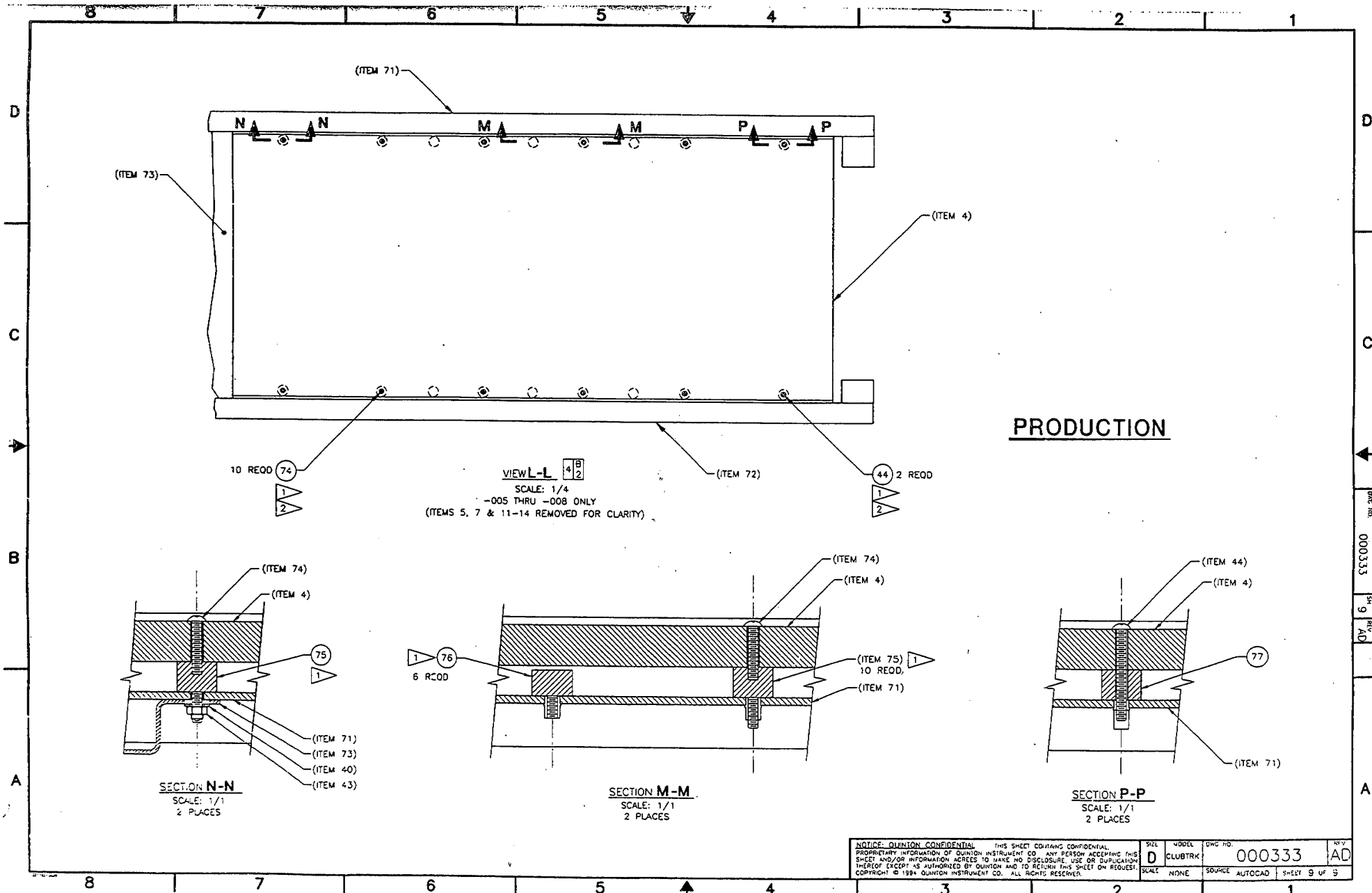


VIEW **K-K** S B

PRODUCTION

DWG. NO. 000333
SHEET 8 OF 9
REV. AD

SIZE D	MODEL CUB33ACK	DWG. NO. 000333	REV. AD
SCALE 1/2	DIST. CODE	SHEET 8 OF 9	



VIEW L-L $\frac{4}{2}$
 SCALE: 1/4
 -005 THRU -008 ONLY
 (ITEMS 5, 7 & 11-14 REMOVED FOR CLARITY)

PRODUCTION

SECTION N-N
 SCALE: 1/1
 2 PLACES

SECTION M-M
 SCALE: 1/1
 2 PLACES

SECTION P-P
 SCALE: 1/1
 2 PLACES

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		D	CLUBTRK	000333	AD
		SCALE	NONE	SOURCE	AUTOCAD
				SHEET	9 OF 9

DWG. NO. 000333
 SHEET 9
 REV. AD

NOTES:

▶ APPLY ADHESIVE (ITEM 31) TO SCREW THREADS.

▶ ASSEMBLY TORQUE 30 ±5 IN.-LB.

▶ ASSEMBLE PER QUINTON WORKMANSHIP STANDARDS AND PROCEDURES.

▶ WITH THE TREADMILL IN THE ELEVATED POSITION AND BEFORE HOOD INSTALLATION (ITEMS 8 & 9), LOOSEN 2 SCREWS ON THE UNDERSIDE OF THE HEADFRAME (ITEM 1) WHICH HOLD THE SPEED ADJUSTMENT BRACKET. ADJUST THE SPEED CHANGE ADJUSTMENT BRACKET TOWARD THE CENTER OF THE TREADMILL AS FAR AS POSSIBLE AND TIGHTEN THE TWO SCREWS HOLDING IT DOWN.

▶ RECORD THE PRODUCTS POWER REQUIREMENTS ON TAG (ITEM 34) PER TABLE I AND ATTACH THE TAG TO THE POWER CORD.

▶ ATTACH LABELS AS REQUIRED BY TABLE II FOLLOWING THE ACCEPTANCE OF ALL PRODUCTION TESTS AND ASSURANCE PROCEDURES.

▶ INSTALL HOLD DOWN SCREWS (ITEM 24) PRIOR TO HOOD WELDMENT (ITEM 8) INSTALLATION. SCREW HEAD MUST HAVE A .060 TO .070 GAP BETWEEN THE SIDE RAIL COVER AND THE SCREW HEAD. AFTER HOOD INSTALLATION THE TWO FORWARD SCREWS MUST BE TIGHTENED.

▶ LOCATE PRODUCT IDENT LABEL (ITEM 37) AS SHOWN CENTERED HORIZONTALLY AND FLUSH WITH BOTTOM EDGE OF THE HOOD COVER (ITEM 9).

▶ PERFORM CALIBRATION AND FINAL ACCEPTANCE.

▶ FILL IN NAMEPLATE INFORMATION PER TABLE I

▶ ALIGN LABEL (ITEM 38) WITH EDGE OF VENT SLOTS AS SHOWN E.13.

▶ ADJUST THE TIMING BELT (PART OF ITEM 1) TENSION SO THAT A .11 INCH DEFLECTION CAN BE MEASURED AT MID SPAN WITH A 2.00 ±.50 LB. LOAD APPLIED PERPENDICULAR TO THE BELT AT THE MID SPAN LOCATION.

▶ SET THE WALKING BELT TENSION TO .4% STRETCH.

▶ THE FOLLOWING ITEMS MUST BE PACKAGED IN A SEPARATE BAG (PROVIDED):

- (1) OWNER'S MANUAL (ITEM 50)
- (1) END CAP, LH (ITEM 15)
- (1) END CAP, RH (ITEM 16)
- (2) SCREW, BUTTON HEAD, SOCKET (ITEM 30)

- (6) WASHER, FLAT (ITEM 20)
- (6) SCREW, CAP, HEX HEAD (ITEM 21)
- (6) WASHER, SPLIT LOCK (ITEM 22)
- (1) KEY ASSEMBLY, MAGNET (ITEM 25)
- (2) SCREW, TRUSS HD, PHILLIPS (ITEM 24)
- (4) WASHER, LOCK, INT STAR (ITEM 53)
- (2) SCREW, TRUSS HD, PHILLIPS (ITEM 56)

▶ APPLY ADHESIVE (ITEM 57) TO SCREW THREADS.

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REVISIONS			
LT#	DATE	DESCRIPTION	APPROVED
A	ADCN: 22376	FLAGNOTE 12 WAS 3.75 ±.62 LB LOAD	T. DUNING
	EFF PT: 7, DISP: NONE		8/24/92
B	ADCN: 22435	ITEM 51 PIN WAS 000313-350	W. J. Graw
	EFF PT: 6, DISP: NONE		9/1/92
C	ADCN: 22610	ADDED ITEM 62	R. M. T.
	TABLE II ADDED ITEM 62 (000355-00, -002, -003 & -004)		9/1/92
	VIEW K-K ADDED ITEM 62		9/1/92
	EFF PT: 3, DISP: REWORK, MOD: 5/14/92		4/1/92
D	ADCN: 23006	NOTE 14 ADDED ITEM 56 PACKAGES	
	EFF PT: 5, DISP: REWORK, MOD: 6/24/92		
E	ADCN: 23417	ADDED ITEM 63	
	TABLE II ADDED ITEM 63 000355-00, -002, -003 & -004		
F	ADCN: 23417	RE-ARRANGED LABELS VIEW K-K	
	EFF PT: 7, DISP: NONE		

(CONTINUED ON SH 2)

ITEM NO.	QTY	DESCRIPTION	UNIT
10	10	001164-005 WASHER, FLAT	E13
2	2	010820-347 SCREW, CAP, HEX HEAD	313-18UNC-2A*3.COOL
10	10	010836-145 SCREW, TRUSS HEAD PHILLIPS REC	150-20UNC-2A*1.75OL
2	2	014639-001 FOOT, RUBBER	
1	1	019306-002 CAP, END	RH
1	1	019306-001 CAP, END	LH
1	1	019057-002 CASTING, END, CAP, LH	
1	1	019058-002 CASTING, END, CAP, RH	
1	1	019488-001 COVER, SIDE RAIL, MACHINED, LH	
1	1	019489-001 COVER, SIDE RAIL, MACHINED, RH	
1	1	019620-004 CONTROL PANEL ASSEMBLY, AC TREADMILL	
1	1	030631-001 WELDMENT, COVER, HOOD, AC	
1	1	019758-001 WELDMENT, HOOD, AC	
1	1	019138-001 PULLEY ASSY, REAR	
1	1	019137-002 PULLEY ASSY, DRIVE	
1	1	019019-001 BELT, WALKING	
1	1	019017-001 BED, SLIDER	
1	1	019026-002 WELDMENT, SIDE RAIL, LH	
1	1	019025-001 WELDMENT, SIDE RAIL, RH	
-	-	030650-001 HEADFRAME ASSY, TREADMILL	Z08/Z30V, 60HZ
-	-	-001 CLUBTRACK, FINAL ASSEMBLY	Z08/Z30V, 60HZ

PREPRODUCTION

-004		
-003	MARKET	000335
-002		
-001		
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION		REFERENCE DESIGNATION
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DRAWN BY: S. COZAD						
CHECKED BY: PRINCE, S. JAWOY						
ENGR. BY: [Signature]						
TITLE: CLUBTRACK (ETL/CSA) FINAL ASSEMBLY						
CLASS CODE FINA						
VALUE CODE TREDML						
QUANTITY PER ASSEMBLY	SCALE	MODEL	DWG. NO.	REV		
	1/2	CLUBTRACK	000335	E		
DO NOT SCALE DRAWING PRINTS						
SCALE 1/2 DIST. CODE SHEET 1 OF 7						

000335

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

TABLE I NAMEPLATE INFORMATION						
PART NO.	MODEL NO.	SERIAL NO.	VOLTS	FLAMPS	FREQ	CIRCUIT CONDUCTORS
000335-001	CLUBTRACK	335-001-XXX	208/230	16	60HZ	2
000335-002	CLUBTRACK	335-002-XXX	208/230	16	50HZ	2
000335-003	CLUBTRACK	335-003-XXX	200	16	60HZ	2
000335-004	CLUBTRACK	335-004-XXX	200	16	50HZ	2

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REVISIONS			
LTN	ZONE	DESCRIPTION	APPROVED DATE

LTN	ZONE	DESCRIPTION	APPROVED DATE
2 7 2 2 56		010835-192 SCREW, TRUSS HEAD PHILLIPS REC	8-32UNC-2A x .375 L
4 4 4 4 55		010511-007 WASHER, LOCK, SPLIT #10	
4 4 4 4 54		010827-204 SCREW, MACH, PAN PHILLIPS	10-32UNC-2A x .500 L
4 4 4 4 53		012029-009 WASHER, LOCK, INTERNAL STAR	.250
1 1 1 1 52		030108-001 SHIPPING CRATE CLUBTRACK	
1 1 1 1 51		000335-350 UNPACKING AND INSTALLATION INSTRUCTION	
1 1 1 1 50		000313-840 CLUBTRACK 3.0 OPERATOR MANUAL	
1 - - - 49		030650-004 HEADFRAME ASSY, TREADMILL	200V, 50HZ
- 1 - - 48		030650-003 HEADFRAME ASSY, TREADMILL	200V, 60HZ
- - 1 - 47		030650-002 HEADFRAME ASSY, TREADMILL	208/230V, 50HZ
- - - -		- 004 CLUBTRACK FINAL ASSEMBLY	200V, 50HZ
- - - -		- 003 CLUBTRACK FINAL ASSEMBLY	200V, 60HZ
- - - -		- 002 CLUBTRACK FINAL ASSEMBLY	208/230V, 50HZ
1 1 1 1 46		010011-099 LABEL, ADHESIVE-BACKED AL FOIL	RESET SWITCH
2 2 2 2 45		001172-010 SCREW, SHOULDER, HEX SOCKET HEAD	.313-18UNC-2A x .250 L
2 2 2 2 44		010836-185 SCREW, TRUSS HEAD PHILLIPS REC	.250-20UNC-2A x 2.250 L
2 2 2 2 43		011881-006 NUT, LOCK	.250-20UNC-2B
2 2 2 2 42		010819-205 SCREW, CAP, HEX HEAD	.250-20UNC-2A x .500 L
2 2 2 2 41		010511-009 WASHER, SPLIT LOCK	.250
4 4 4 4 40		001164-004 WASHER, FLAT	.250
1 1 1 1 39		015695-004 COVER, DRIVEN PULLEY	
1 1 1 1 38		030022-001 LABEL, FITNESS LOGO	
1 1 1 1 37		030021-003 LABEL, CLUBTRACK 3.0	
1 1 1 1 36		010011-104 LABEL, ADHESIVE-BACKED AL FOIL	WARNING
1 1 1 1 35		010011-103 LABEL, ADHESIVE-BACKED AL FOIL	NAMEPLATE
1 1 1 1 34		017041-001 TAG, VOLTAGE	
2 2 2 2 33		019409-006 WASHER, FLAT, TYPE A, BLACK	.313
2 2 2 2 32		020632-001 PLATE, ROLLER	
APR APR APR APR 31		015233-001 ADHESIVE	LOCTITE 242
2 2 2 2 30		010827-205 SCREW, MACH, PAN PHILLIPS	.250-20UNC-2A x .500 L
1 1 1 1 29		019089-002 SWITCH ASSY, RESET	
2 2 2 2 28		015689-002 RETAINER, FRONT SHAFT	
4 4 4 4 27		001164-006 WASHER, FLAT	.375
4 4 4 4 26		010819-327 SCREW, CAP, HEX HEAD	.375-18UNC-2A x 1.000 L
1 1 1 1 25		019296-001 KEY ASSEMBLY, MAGNETIC	
4 4 4 4 24		010835-325 SCREW, TRUSS HEAD PHILLIPS REC	.250-20UNC-2A x 1.000 L
4 4 4 4 23		010819-246 SCREW, CAP, HEX HEAD	.313-18UNC-2A x .750 L
10 10 10 10 22		010511-010 WASHER, SPLIT, LOCK	.313
6 6 6 6 21		010819-286 SCREW, CAP, HEX HEAD	.313-18UNC-2A x .875 L

TABLE II INDEX OF OPTIONS			
DWG NO.	DASH NO.	OPTION TYPE	REQUIRED REGULATORY LABELS
000335	-001	208/230 60HZ	ITEMS 58, 59, 60, 61, 62, 63
030005	-001	LH SIDE HANDRAIL	
030005	-002	RH SIDE HANDRAIL	
030005	-003	LH AND RH SIDE HANDRAIL	
000335	-002	208/230 50HZ	ITEMS 58, 59, 60, 61, 62, 63
000335	-003	200 60HZ	ITEMS 58, 59, 60, 61, 62, 63
000335	-004	200 50HZ	ITEMS 58, 59, 60, 61, 62, 63

LTN	ZONE	DESCRIPTION	REFERENCE DESIGNATION
1 1 1 1 63		030870-001 LABEL, TM FCC	
1 1 1 1 62		010011-066 LABEL, ADHESIVE BACKED AL FOIL	EXPLOSION HAZARD
1 1 1 1 61		016616-001 LABEL, ETL CERTIFICATION	
1 1 1 1 60		016222-001 LABEL, CAUTION	LIGHTNING FLASH
1 1 1 1 59		010011-067 LABEL, ADHESIVE-BACKED AL FOIL	CSA RISK CLASS 2G
1 1 1 1 58		010011-065 LABEL, ADHESIVE-BACKED AL FOIL	CAUTION
APR APR APR APR 57		016891-001 ADHESIVE	LOCTITE 222

LTN	ZONE	DESCRIPTION	REFERENCE DESIGNATION
004			
003			
002			
001			

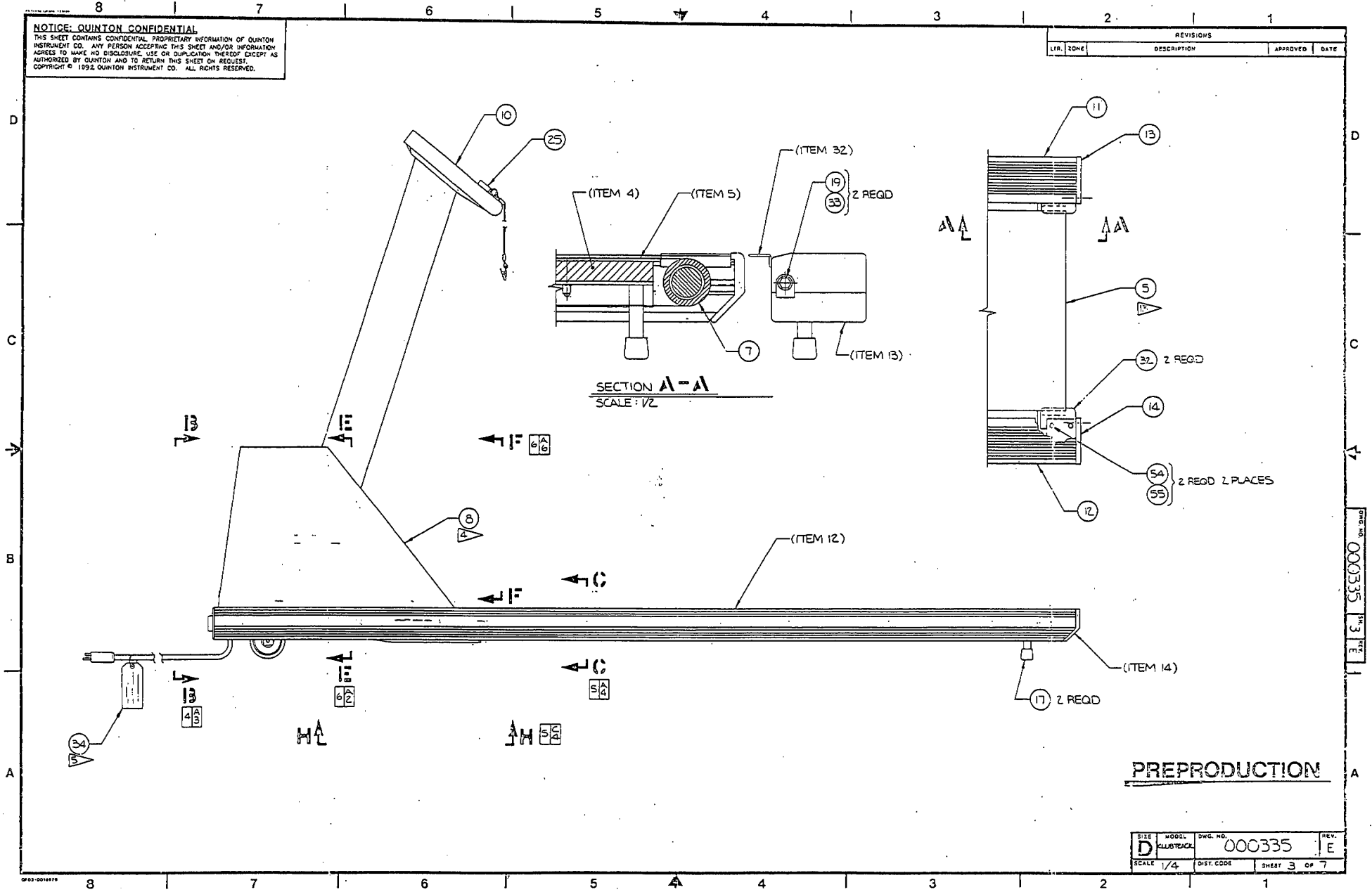
PREPRODUCTION

SIZE: D	MODEL: CLUBTRACK	DWG. NO.: 000335	REV.: E
SCALE: 1/2	DIST. CODE:	SHEET 2 OF 7	

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

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REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE



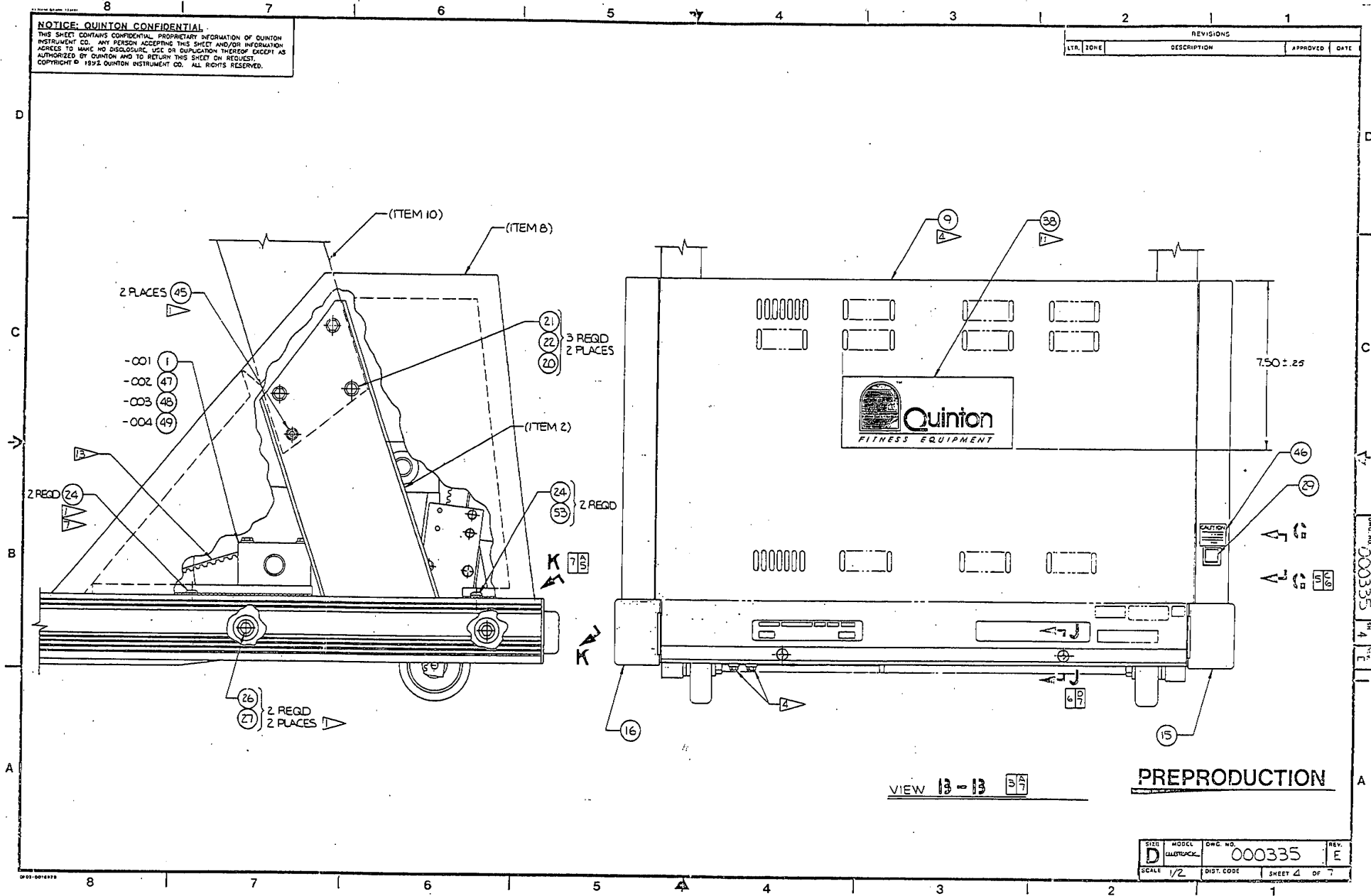
PREPRODUCTION

SIZE D	MODEL ILLUSTRAC.	DWG. NO. 000335	REV. E
SCALE 1/4	DIST. CODE	SHEET 3	OF 7

000335 3 E

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REVISIONS				
STR.	DATE	DESCRIPTION	APPROVED	DATE

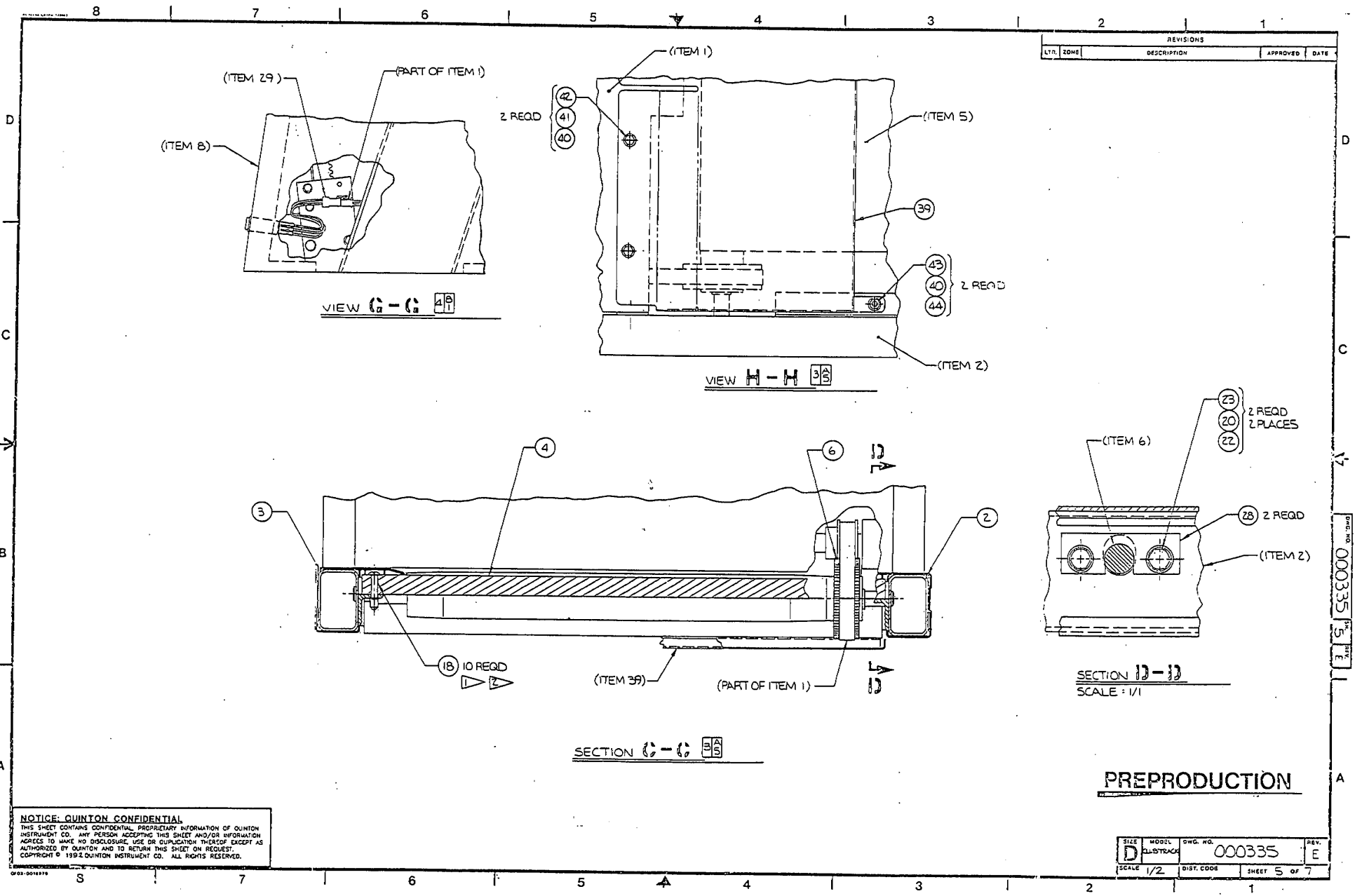


VIEW 13-13

PREPRODUCTION

SIZE D	MODEL QUESTACK	DWG. NO. 000335	REV. E
SCALE 1/2	DIST. CODE	SHEET 4	OF 7

DWG. NO. 000335



REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE

Dwg. No. 000335
 5
 E

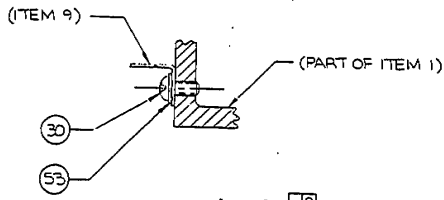
SECTION D-D
SCALE: 1/1

PREPRODUCTION

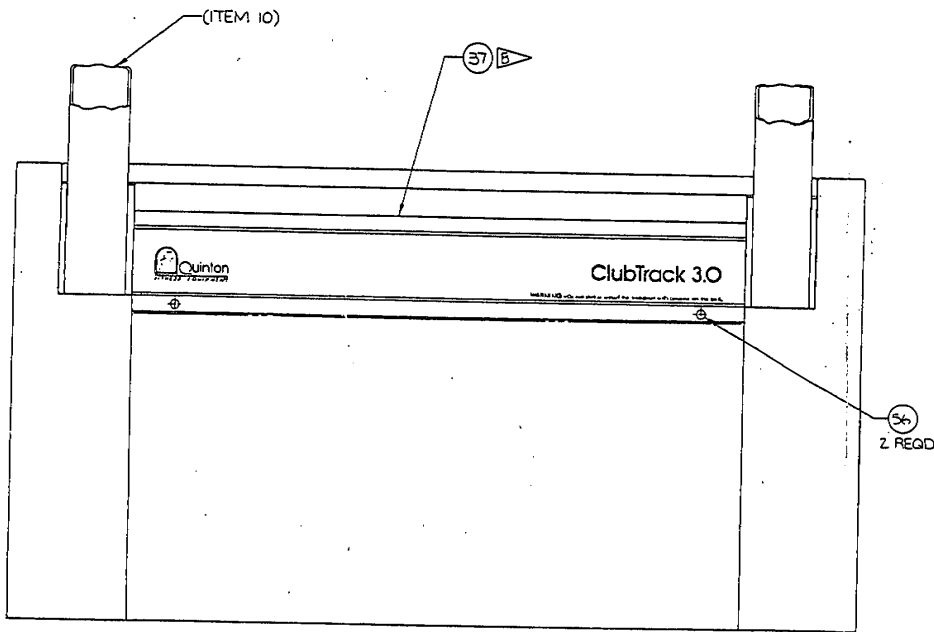
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SIZE D	MODEL ILL-STRUCK	DWG. NO. 000335	REV. E
SCALE 1/2	DIST. CODE	SHEET 5 of 7	

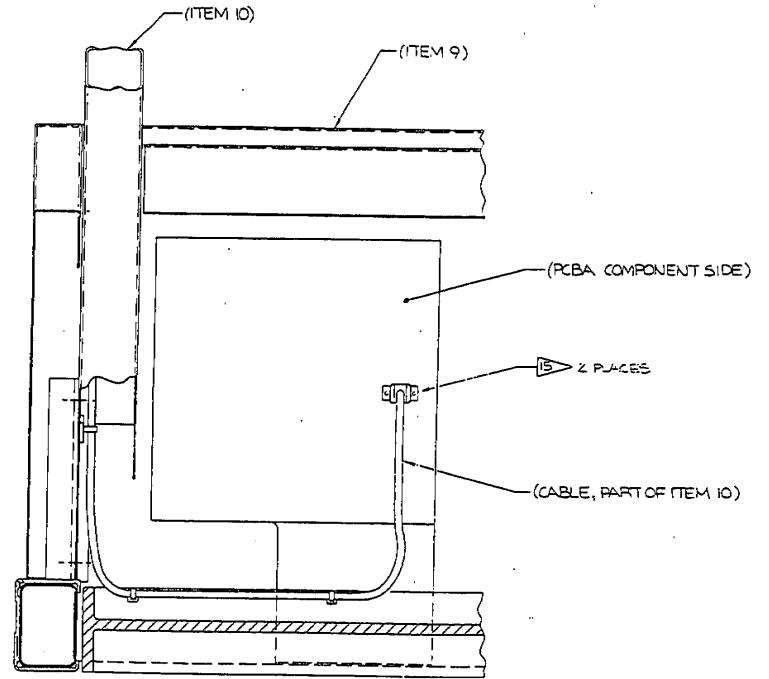
REVISIONS			
LTR. ZONE	DESCRIPTION	APPROVED	DATE



SECTION J - J 4/2
SCALE = 1/1



VIEW I - I 3/2



SECTION I - I 3/2
DRIVE MOTOR OMITTED FOR CLARITY

PREPRODUCTION

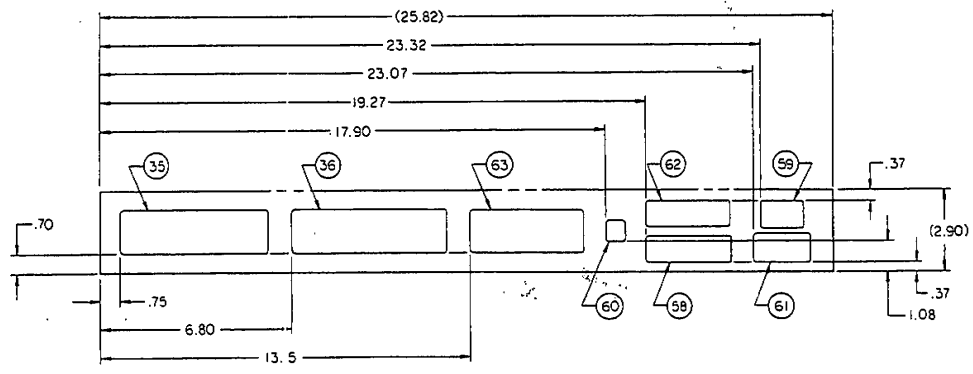
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SIZE D	MODEL CLUBTRACK	DWG. NO. 000335	REV. E
SCALE 1/2	DIST. CODE	SHEET 6	OF 7

DWG. NO. 000335 SHEET 6 OF 7

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE



VIEW **K-K**

4	8
1	3

PREPRODUCTION

DWG. NO. 000335

SIZE D	MODEL CLUBTRACK	DWG. NO. 000335	REV. E
SCALE 1/2	DIST. CODE	SHEET 7	OF 7

D
C
B
A

D
C
B
A

7 6 5 4 3 2 1

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PRODUCTION

NOTES:

1. APPLY ADHESIVE (ITEM 31) TO SCREW THREADS.
2. ASSEMBLY TORQUE 30 ± 5 IN.-LB.
3. ASSEMBLE PER PROCEDURE 000335-880
4. WITH THE TREADMILL IN THE ELEVATED POSITION AND BEFORE HOOD INSTALLATION (ITEMS 8 & 9), LOOSEN 2 SCREWS ON THE UNDERSIDE OF THE HEADFRAME (ITEM 1) WHICH HOLD THE SPEED ADJUSTMENT BRACKET. ADJUST THE SPEED CHANGE ADJUSTMENT BRACKET TOWARD THE CENTER OF THE TREADMILL AS FAR AS POSSIBLE AND TIGHTEN THE TWO SCREWS HOLDING IT DOWN.
5. RECORD THE PRODUCTS POWER REQUIREMENTS ON TAG (ITEM 34) PER TABLE I AND ATTACH THE TAG TO THE POWER CORD.
6. ATTACH LABELS AS REQUIRED BY TABLE II FOLLOWING THE ACCEPTANCE OF ALL PRODUCTION TESTS AND ASSURANCE PROCEDURES.
7. INSTALL HOLD DOWN SCREWS (ITEM 24) PRIOR TO HOOD WELDMENT (ITEM 8) INSTALLATION. SCREW HEAD MUST HAVE A .060 TO .070 GAP BETWEEN THE SIDE RAIL COVER AND THE SCREW HEAD. AFTER HOOD INSTALLATION THE TWO FORWARD SCREWS MUST BE TIGHTENED.
8. LOCATE PRODUCT IDENT LABEL (ITEM 37 OR 76) AS SHOWN CENTERED HORIZONTALLY AND FLUSH WITH BOTTOM EDGE OF THE HOOD COVER (ITEM 9).
9. DELETED
10. FILL IN NAMEPLATE INFORMATION PER TABLE I.
11. ALIGN LABEL (ITEM 38) WITH EDGE OF VENT SLOTS AS SHOWN ± .13.
12. ADJUST THE TIMING BELT (PART OF ITEM 1) TENSION SO THAT A .11 INCH DEFLECTION CAN BE MEASURED AT MID SPAN WITH A 2.00 ± .50 LB LOAD APPLIED PERPENDICULAR TO THE BELT AT THE MID SPAN LOCATION.
13. SET THE WALKING BELT TENSION TO .4% STRETCH.
14. THE FOLLOWING ITEMS MUST BE PACKAGED IN A SEPARATE BAG (PROVIDED):

- | | |
|-----------------------------|-----------|
| (1) OWNERS MANUAL: | (ITEM 50) |
| (1) END CAP, LH: | (ITEM 15) |
| (1) END CAP, RH: | (ITEM 16) |
| (2) SCREW, MACH, PNH PH: | (ITEM 30) |
| (6) WASHER, FLAT: | (ITEM 20) |
| (6) SCREW, CAP, HEX HEAD: | (ITEM 21) |
| (6) WASHER, LOCK, INT, EXT: | (ITEM 68) |
| (1) KEY ASSEMBLY, MAGNET: | (ITEM 25) |
| (2) SCREW, TRUSS HD, PH: | (ITEM 24) |
| (2) WASHER, LOCK, INT STAR: | (ITEM 53) |
| (2) SCREW, TRUSS HD, PH: | (ITEM 56) |

15. APPLY ADHESIVE (ITEM 57) TO SCREW THREADS.
16. INSTALL SPACER (ITEM 60) BETWEEN SIDE RAIL WELDMENT (ITEM 2) AND HEADFRAME ASSEMBLY (ITEM 1).
17. THESE ITEMS AVAILABLE AS A SPARE HARDWARE KIT. ORDER PART NO. 032350-001.

-008	MARKET	000335
-007		
-006		
-005		
-004		
-003		
-002		
-001		
PART NO.	HELT ASSY NO.	END ITEM NO.
APPLICATION		

LTR		ZONE	DESCRIPTION	APPROVED	DATE
AA	2C7	8B7	Y ADCN: 30645 FLAGNOTE 6 WAS 7 ADDED FLAGNOTE 10 TO ITEM 35 ACTION CODE: F1 MODIFIER: 5/31/94 AA RDA: 30608 ADDED -005 THRU -008 CONFIG. ADDED SH 8 AND 9. ADDED ITEM 69 THRU 76. REVISED FLAGNOTE 8 ACTION CODE: H1 MODIFIER: DATE OF RELEASE	POYNEER <i>Paul Poyneer</i>	2/21/94 2/21/94 2/21/94 2/21/94
ADCM NO.		32249			
REVISION LEVEL		AB			

(CONTINUED ON SHEET 2)

1	1	1	1	1	1	1	1	25	019296-001	KEY ASSEMBLY, MAGNETIC	
4	4	4	4	4	4	4	4	24	010835-325	SCREW, TRUSS HD PH RECESSED	.250-20UNC-2A X 1.000L
4	4	4	4	4	4	4	4	23	010819-246	SCREW, CAP, HEX HEAD	.313-18UNC-2A X .750L
4	4	4	4	4	4	4	4	22	010511-010	WASHER, SPLIT, LOCK	.313
6	6	6	6	6	6	6	6	21	010819-286	SCREW, CAP, HEX HEAD	.313-18UNC-2A X .875L
10	10	10	10	10	10	10	10	20	001164-005	WASHER, FLAT	.313
2	2	2	2	2	2	2	2	19	010820-366	SCREW, CAP, HEX HEAD	.313-18UNC-2A X 3.000L
-	-	-	-	10	10	10	10	18	010836-145	SCREW, TRUSS HD PH RECESSED	.250-20UNC-2A X 1.750L
2	2	2	2	2	2	2	2	17	014639-001	FOOT, RUBBER	
1	1	1	1	1	1	1	1	16	019306-002	CAP, END	RH
1	1	1	1	1	1	1	1	15	019306-001	CAP, END	LH
1	1	1	1	1	1	1	1	14	019057-002	CASTING, END CAP, LH	
1	1	1	1	1	1	1	1	13	019058-002	CASTING, END CAP, RH	
1	1	1	1	1	1	1	1	12	019488-001	COVER, SIDE RAIL, MACHINED, LH	
1	1	1	1	1	1	1	1	11	019489-001	COVER, SIDE RAIL, MACHINED, RH	
1	1	1	1	1	1	1	1	10	030857-001	CTRL. PANEL ASSY, AC TREADMILL	
1	1	1	1	1	1	1	1	9	030631-001	WELDMENT, COVER, HOOD, AC	
1	1	1	1	1	1	1	1	8	019758-001	WELDMENT, HOOD, AC	
1	1	1	1	1	1	1	1	7	019138-002	PULLEY ASSEMBLY, REAR	
1	1	1	1	1	1	1	1	6	019137-002	PULLEY ASSEMBLY, DRIVE	
1	1	1	1	1	1	1	1	5	019019-001	BELT, WALKING	
1	1	1	1	1	1	1	1	4	019017-001	BED, SLIDER	
-	-	-	-	1	1	1	1	3	019026-002	WELDMENT, SIDE RAIL, LH	
-	-	-	-	1	1	1	1	2	019025-003	WELDMENT, SIDE RAIL, RH	
-	-	-	-	1	-	-	-	1	030912-001	HEADFRAME ASSY, TREADMILL	208/230V, 60HZ
-	-	-	-	-	-	-	-	-	-004	CLUBTRACK, FINAL ASSEMBLY	200V, 50HZ
-	-	-	-	-	-	-	-	-	-003	CLUBTRACK, FINAL ASSEMBLY	200V, 60HZ
-	-	-	-	-	-	-	-	-	-002	CLUBTRACK, FINAL ASSEMBLY	230V, 50HZ
-	-	-	-	-	-	-	-	-	-001	CLUBTRACK, FINAL ASSEMBLY	208/230V, 60HZ

PART NUMBER		DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
PARTS LIST		UNLESS OTHERWISE SPECIFIED		
DRAWN		S.COZAD	3/18/92	
CHECKED		R.PIERCE-CANNON	3/18/92	
ENGR		B.LOBBBERGT	3/18/92	
QUAL		K.BAILEY	3/18/92	
WFO		B.TRATHEN	3/28/92	
OTHER				
QUANTITY PER ASSEMBLY		FINA		
VALUE CODE		TREDML		
DO NOT SCALE DRAWING PRINTS				

		2121 TERRY AVENUE SEATTLE, WASHINGTON 98121 (206) 223-7373	
CLUBTRACK (ETL/CSA) FINAL ASSEMBLY			
SIZE	MODEL	QWC NO.	REV
D	CLUBTRACK	000335	AA
SCALE	SOURCE	AUTOCAD	SHEET 1 OF 9

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(CONTINUED ON SHEET 3)

TABLE I NAMEPLATE INFORMATION

PART NO.	MODEL NO.	SERIAL NO.	VOLTS	FL AMPS	FREQ.	PHASE	CIRCUIT CONDUCTORS
000335-001	CLUBTRACK	335-001-XXX	208/230	16	60 HZ	1	2
000335-002	CLUBTRACK	335-002-XXX	230	16	50 HZ	1	2
000335-003	CLUBTRACK	335-003-XXX	200	16	60 HZ	1	2
000335-004	CLUBTRACK	335-004-XXX	200	.16	50 HZ	1	2
000335-005	CLUBTRACK	335-005-XXX	208/230	16	60 HZ	1	2
000335-006	CLUBTRACK	335-006-XXX	230	16	50 HZ	1	2
000335-007	CLUBTRACK	335-007-XXX	200	16	60 HZ	1	2
000335-008	CLUBTRACK	335-008-XXX	200	16	50 HZ	1	2

TABLE II INDEX OF OPTIONS

DRAWING NO.	DASH NO.	OPTION TYPE	REQUIRED REGULATORY LABELS
000335	-001	208/230 60 HZ	ITEMS 58, 59, 60, 61, 62, 63
030005	-001	LH SIDE HANDRAIL	
030005	-002	RH SIDE HANDRAIL	
030005	-003	LH AND RH SIDE HANDRAIL	
000335	-002	230 50 HZ	ITEMS 58, 60, 62, 63
000335	-003	200 60 HZ	ITEMS 58, 60, 62, 63
000335	-004	200 50 HZ	ITEMS 58, 60, 62, 63
000335	-005	208/230 60 HZ	ITEMS 58, 59, 60, 61, 62, 63
000335	-006	230 50 HZ	ITEMS 58, 60, 62, 63
000335	-007	200 60 HZ	ITEMS 58, 60, 62, 63
000335	-008	200 50 HZ	ITEMS 58, 60, 62, 63

PRODUCTION

4	4	4	4	4	4	4	4	4	68	001164-013	WASHER, FLAT	#10
6	6	6	6	6	6	6	6	67	017775-006	WASHER, LOCK, INTERNAL, EXTERNAL	.313	
1	1	1	1	1	1	1	1	66	010511-011	WASHER, SPLUT LOCK	.375	
1	1	1	1	1	1	1	1	65	010820-167	SCREW, CAP, HEX HEAD	.375-16UNC-2B X 2.00L	
1	1	1	1	1	1	1	1	64	030891-001	SPACER, HEAVY WALL	.438 I.D. X .750 U.D.	
1	1	1	1	1	1	1	1	63	030870-001	LABEL, TM FCC		
1	1	1	1	1	1	1	1	62	010011-066	LABEL, ADH-BACKED AL FOIL	EXPLOSION HAZARD	
-	-	-	-	-	-	-	-	61	016616-001	LABEL, ETL CERTIFICATION		
1	1	1	1	1	1	1	1	60	016222-001	LABEL, CAUTION	LIGHTNING FLASH	
-	-	-	-	-	-	-	-	59	010011-067	LABEL, ADH-BACKED AL FOIL	CSA, RISK CLASS 2G	
1	1	1	1	1	1	1	1	58	010011-065	LABEL, ADH-BACKED AL FOIL	CAUTION	
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	57	016891-001	ADHESIVE	LOCTITE 222	
2	2	2	2	2	2	2	2	56	010835-192	SCREW, TRUSS HD PH RECESSED	8-32UNC-2A X .375L	
								55		DELETED		
4	4	4	4	4	4	4	4	54	010827-204	SCREW, MACH, PNH PHILLIPS	10-32UNF-2A X .500L	
4	4	4	4	4	4	4	4	53	012029-009	WASHER, LOCK, INTERNAL STAR	.250	
1	1	1	1	1	1	1	1	52	030108-001	SHIPPING CRATE, CLUBTRACK		
1	1	1	1	1	1	1	1	51	000335-350	UNPACKING & INSTALLATION INSTR		
1	1	1	1	1	1	1	1	50	000313-840	CLUBTRACK3.0 OPERATOR MANUAL		
1	-	-	-	-	-	-	-	49	030912-004	HEADFRAME ASSY, TREADMILL	200V, 50HZ	
-	1	-	-	-	-	-	-	48	030912-003	HEADFRAME ASSY, TREADMILL	200V, 60HZ	
-	-	1	-	-	-	-	-	47	030912-002	HEADFRAME ASSY, TREADMILL	230V, 50HZ	
1	1	1	1	1	1	1	1	46	010011-099	LABEL, ADH-BACKED AL FOIL	RESET SWITCH	
2	2	2	2	2	2	2	2	45	001172-010	SCREW, SHOULDER, HEX SOCKET HD	.313-18UNC-2A X .250L	
2	2	2	2	2	2	2	2	44	010836-185	SCREW, TRUSS HD PH RECESSED	.250-20UNC-2A X 2.250L	
2	2	2	2	2	2	2	2	43	011881-006	NUT, LOCK	.250-20UNC-2B	
2	2	2	2	2	2	2	2	42	010819-225	SCREW, CAP, HEX HEAD	.250-20UNC-2A X .625L	
2	2	2	2	2	2	2	2	41	010511-009	WASHER, SPLUT LOCK	.250	
4	4	4	4	4	4	4	4	40	001164-004	WASHER, FLAT	.250	
-	-	-	-	1	1	1	1	39	015695-004	COVER, DRIVEN PULLEY		
1	1	1	1	1	1	1	1	38	030022-001	LABEL, FITNESS LOGO		
-	-	-	-	1	1	1	1	37	030021-003	LABEL, CLUBTRACK 3.0		
1	1	1	1	1	1	1	1	36	010011-104	LABEL, ADH-BACKED, AL FOIL	WARNING	
1	1	1	1	1	1	1	1	35	010011-103	LABEL, ADH-BACKED, AL FOIL	NAMEPLATE	
1	1	1	1	1	1	1	1	34	017041-001	TAG, VOLTAGE		
2	2	2	2	2	2	2	2	33	019409-006	WASHER, FLAT, TYPE A, BLACK	.313	
2	2	2	2	2	2	2	2	32	030632-001	PLATE, ROLLER		
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	31	015233-001	ADHESIVE	LOCTITE 242	
2	2	2	2	2	2	2	2	30	010827-205	SCREW, MACH, PNH PHILLIPS	.250-20UNC-2A X .500L	
1	1	1	1	1	1	1	1	29	019089-002	SWITCH ASSY, RESET		
2	2	2	2	2	2	2	2	28	015689-002	RETAINER, FRONT SHAFT		
5	5	5	5	5	5	5	5	27	001164-006	WASHER, FLAT	.375	
4	4	4	4	4	4	4	4	26	010819-247	SCREW, CAP, HEX HEAD	.375-16UNC-2A X .750L	

ITEM NUMBER	QUANTITY PER ASSEMBLY	PART NUMBER	DESCRIPTION	PARTS LIST	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-008						
-007						
-006						
-005						
-004						
-003						
-002						
-001						

SIZE	MODEL	DWG NO.	REV
D	CLUBTRACK	000335	AA
SCALE	SOURCE	AUTOCAD	SHEET 2 OF 8
1/2			

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PRODUCTION

1	1	1	1	-	-	-	-	76	030021-006	LABEL, TRIPLE FLEX	CLUBTRACK 3.0		
2	2	2	2	-	-	-	-	75	032240-001	SPACER, SOFT DECK			
6	6	6	6	-	-	-	-	74	032235-002	COMPRESSION MOUNT, DECK			
10	10	10	10	-	-	-	-	73	032235-001	COMPRESSION MOUNT, DECK			
10	10	10	10	-	-	-	-	72	010836-105	SCREW, TRUSS HD, PH RECESS	.250-20UNC-2A X 1.25		
1	1	1	1	-	-	-	-	71	015695-005	COVER, DRIVEN PULLEY			
1	1	1	1	-	-	-	-	70	019026-003	WELDMENT, SIDE RAIL, LH			
1	1	1	1	-	-	-	-	69	019025-004	WELDMENT, SIDE RAIL, RH			
-	-	-	-	-	-	-	-	-	-008	CLUBTRACK, FINAL ASSY	200V, 50HZ (FLEX)		
-	-	-	-	-	-	-	-	-	-007	CLUBTRACK, FINAL ASSY	200V, 60HZ (FLEX)		
-	-	-	-	-	-	-	-	-	-006	CLUBTRACK, FINAL ASSY	230V, 50HZ (FLEX)		
-	-	-	-	-	-	-	-	-	-005	CLUBTRACK, FINAL ASSY	208/230V, 60HZ (FLEX)		

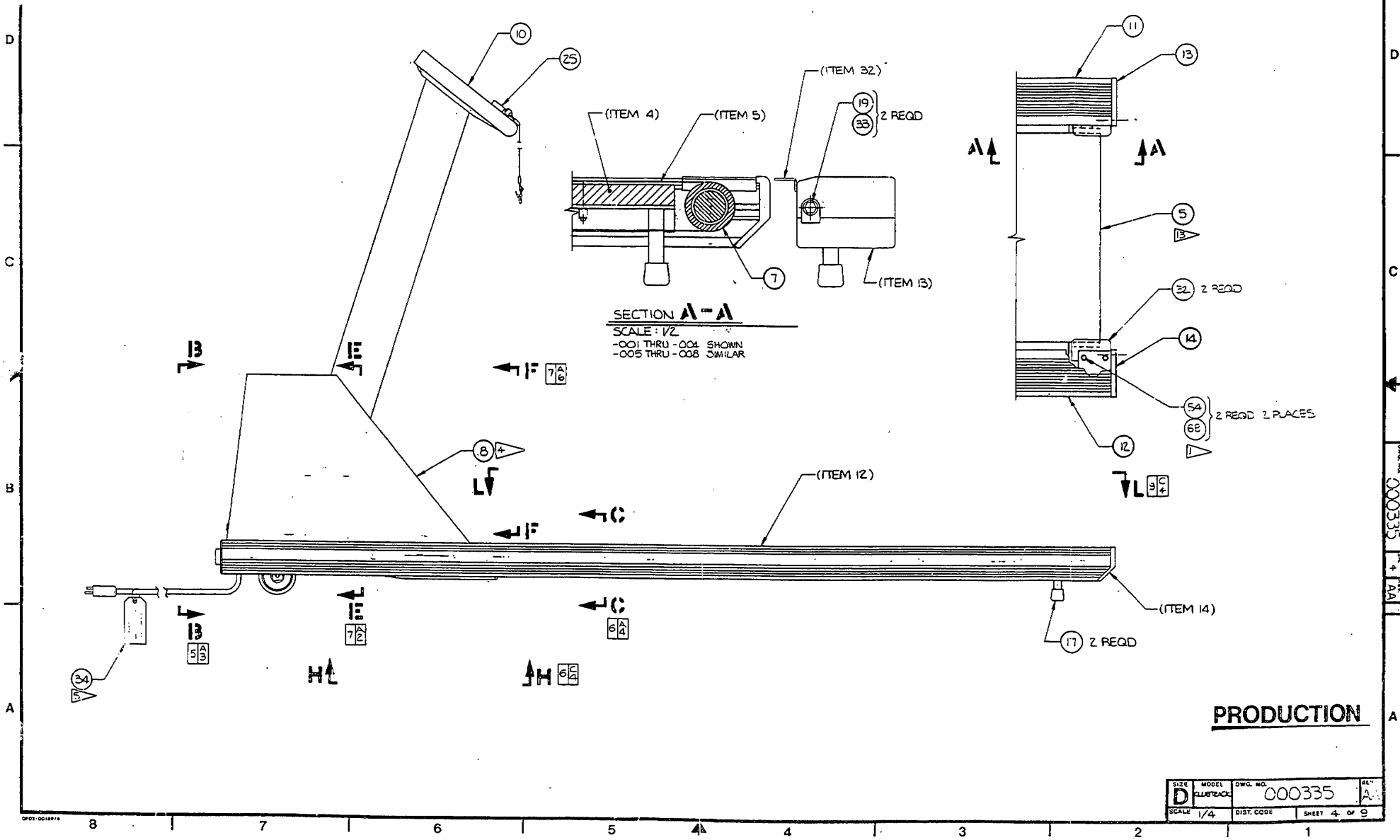
ITEM NUMBER								PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-008	-007	-006	-005	-004	-003	-002	-001				
QUANTITY PER ASSEMBLY								PARTS LIST			

SIZE	MODEL	DWG NO.	REV.
D	CLUBTRACK	000335	AA
SCALE	SOURCE	AUTOCAD	SHEET 3 OF 9
1/2			

DWG NO. 000335
 REV. 3 AA

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REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE



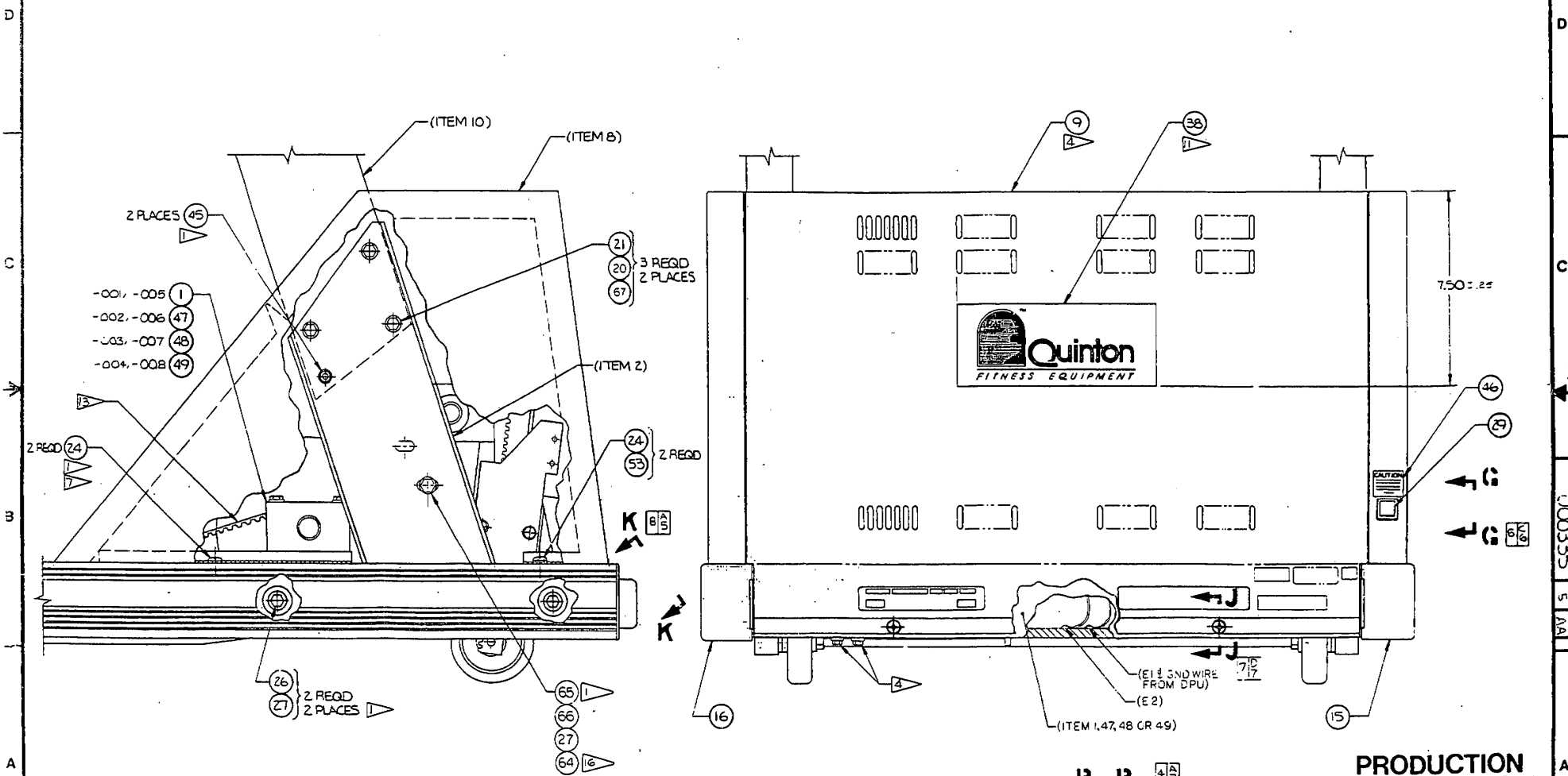
SIZE D	MODEL ILLUSTRATION	DWG. NO. 000335	REV. A
SCALE 1/4	DIST. CODE	SHEET 4 OF 9	

DWG. NO. 000335
 SHEET 4 OF 9

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

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REVISIONS			
LTN	ZONE	DESCRIPTION	APPROVED DATE



VIEW 13-13 4/7

PRODUCTION

SIZE D	MODEL CLUSTER-POL	DWG. NO. 000335	REV. AA
SCALE 1/2	DIST. CODE	SHEET 5	OF 9

000335 5 AA

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

8

7

6

5

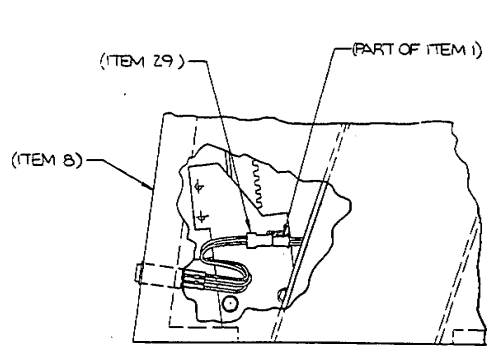
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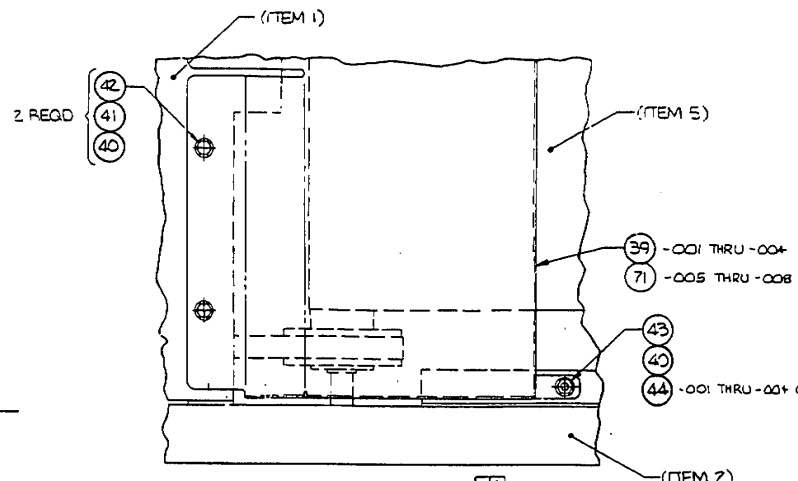
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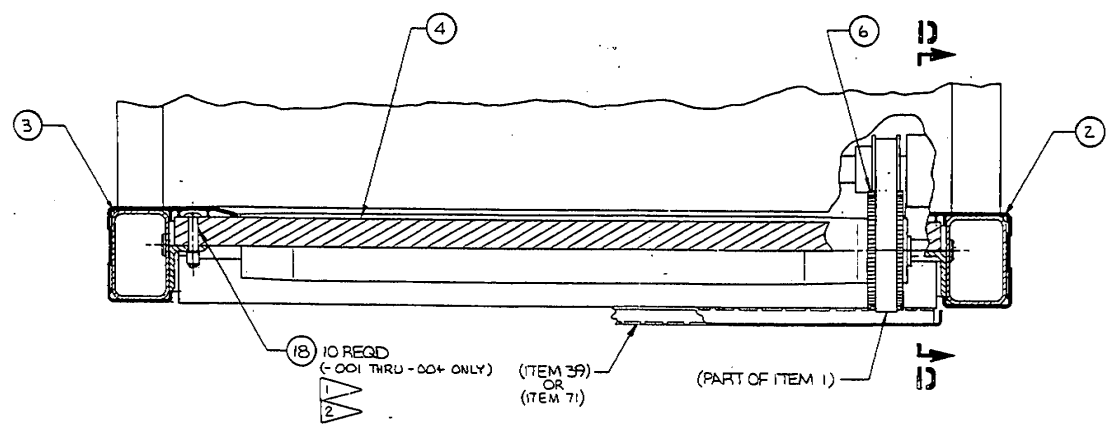
REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE



VIEW **G-G** A
S

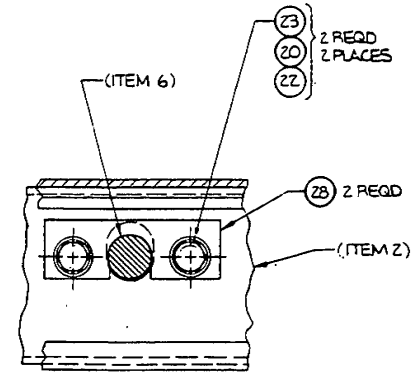


VIEW **H-H** A
S



SECTION **C-C** A
S

-001 THRU -004 SHOWN
-005 THRU -008 SIMILAR AS NOTED



SECTION **D-D**
SCALE = 1/1

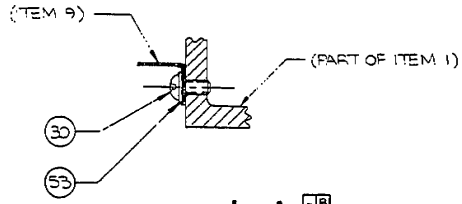
PRODUCTION

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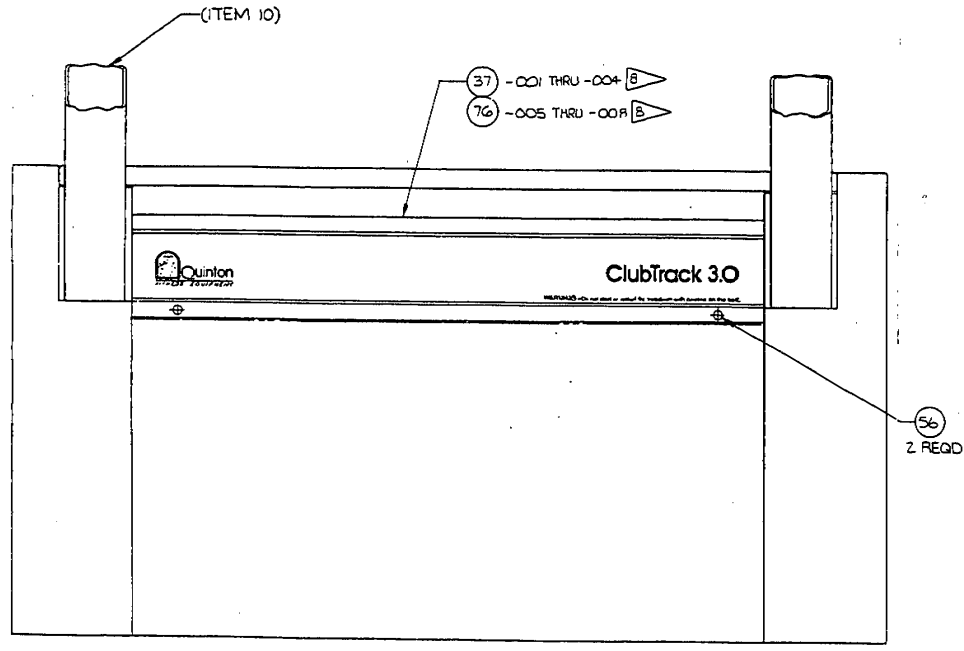
SIZE D	MODEL ELETRACK	DWG. NO. 000335	REV. AA
SCALE 1/2	DIST. CODE	SHEET 6 OF 9	

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

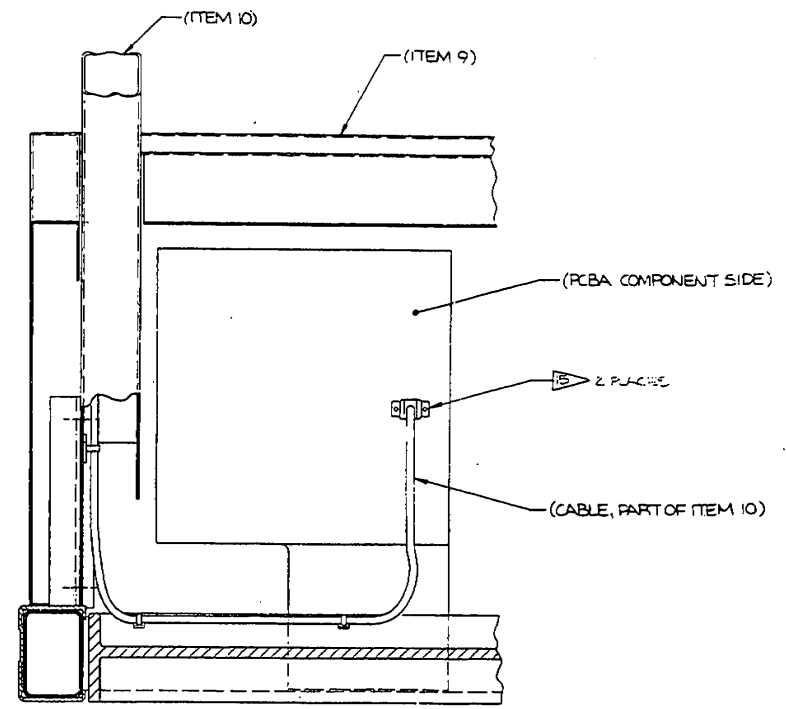
REVISIONS			
LTZ	ZONE	DESCRIPTION	DATE



SECTION J-J $\frac{1}{2}$
SCALE = 1/1



VIEW I-I $\frac{1}{2}$



SECTION I-I $\frac{1}{2}$
DRIVE MOTOR OMITTED FOR CLARITY

PRODUCTION

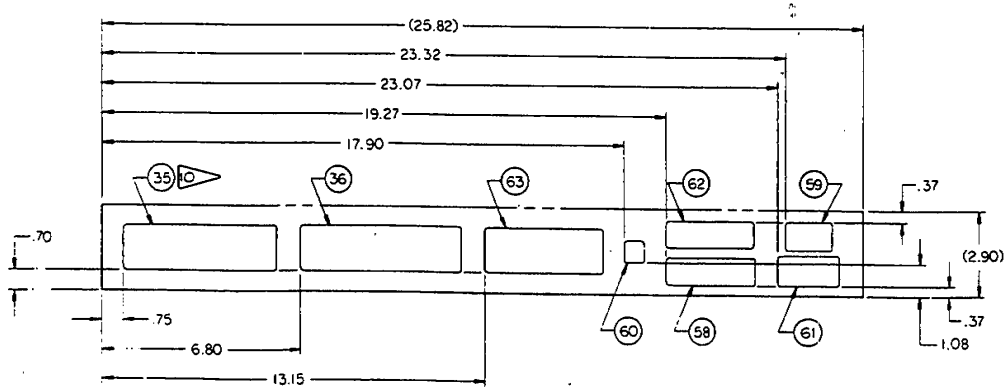
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SIZE D	MODEL CLUBTRACK	DWG. NO. 000335	REV. AA
SCALE 1/2	DIST. CODE	SHEET 7 OF 9	

PART NO. 000335 REV. 7 AA

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REVISIONS			
LTR.	ZONE	DESCRIPTION	DATE

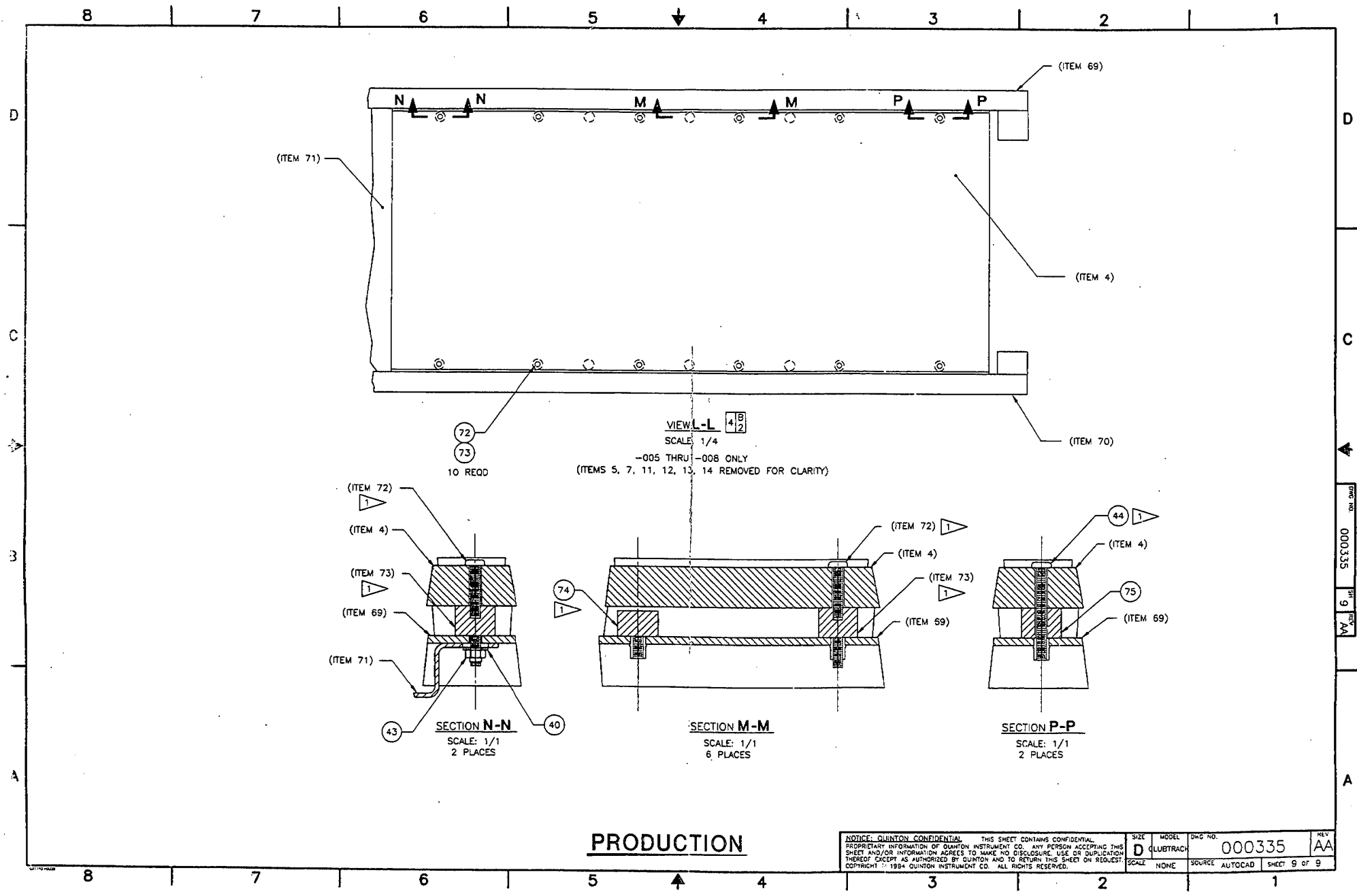


VIEW **K-K** 4/8
5

PRODUCTION

DWG. NO. 000335
 SHEET 8 OF 9
 REV. AA

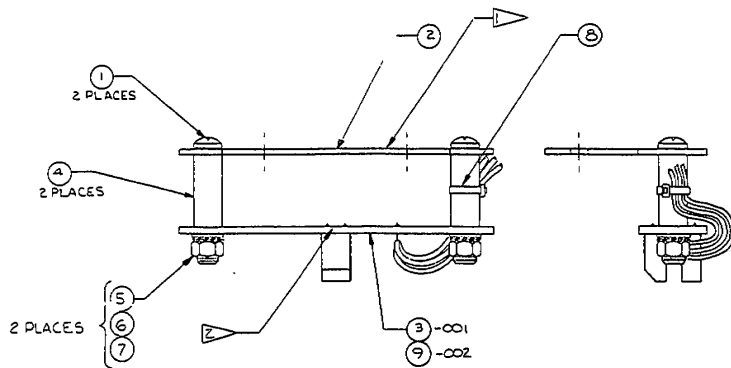
SIZE D	MODEL CLUSTRACK	DWG. NO. 000335	REV. AA
SCALE 1/2	DIST. CODE	SHEET 8 OF 9	



PRODUCTION

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SCALE NONE	SOURCE AUTOCAD	SHEET 9 OF 9			

REV 9 AA
000335



NOTES:

- ▷ LABEL WITH PART NO. AND REV LETTER TO WHICH MFG, AND LOT CODE OF OPTICAL INTERRUPTER.
- ▷ FILE OFF PROTRUSION ON PCB (ITEM 3 OR 9) EDGE.

REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE
A		ADDED COMPONENTS TO PICKUP ONLY EFF PT: VII DISP: NONE RELEASE TO PREPRODUCTION	<i>[Signature]</i>	7/15/72
B	PL 1 HOLD 004	ITEM 1 WAS PART NO 010827-142, QTY WAS 4. 2) ITEM 4 WAS PART NO 007060-001. 3) ADDED ITEMS 5 & 6. 4) EFF. PT: VII DISP: USE	<i>[Signature]</i>	7/26/72 7/28/72 7/31/72 7/31/72
C		DART: 16144 REV. NOTE 1, ADDED FLAG. ADDED ITEMS REL. TO PROD EFF PT: 7, DISP: NONE	<i>[Signature]</i>	7/27/72 7/28/72 7/28/72 7/28/72
F		D ADCAJ 1700B ADDED FLAG/NOTE 2 REVISED VIEW EFF PT: 5, DISP: REV: WORK, MOD: 2-27-91 B ADCAJ 17906 ITEM 5 WAS 007166-001 EFF PT: 7, DISP: NONE RDA: 27754 ADDED -002 CONFIG ADDED ITEM 9 ACTION CODE 1 H1 MODIFIER: DATE OF RELEASE	<i>[Signature]</i>	9-29-93 9-29-93 7-27-95 6-11-95

PRODUCTION

QTY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	9	013075-002	PCB ASSY, INTERRUPTER, OPTICAL		
1	8	001899-001	CABLE TIE		
2	7	001164-001	WASHER, FLAT	* G	
2	6	005485-001	WASHER, LOCK	* G EXT STAR	
2	5	001767-001	NUT, HEX	* G-32 UNC-2B	
2	4	003206-002	SPACER, FIBRE	.25 OD X .44 LG.	
1	3	013075-001	INTERRUPTER, OPTICAL	R.C.B. ASSY.	
1	2	013078-001	BRACKET, TACHOMETER		
2	1	010827-242	SCREW, PANHEAD	* 6 X .75 LG.	
1	1	000208	TACHOMETER PICKUP ASSY		

PART NUMBER		DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
PARTS LIST				
UNLESS OTHERWISE SPECIFIED		DRAWN <i>[Signature]</i>	2-18-2	
CHECKED <i>[Signature]</i>		2-5-82		
ENGR. <i>[Signature]</i>		2-5-82		
DUAL <i>[Signature]</i>		1-1-82		
MFG. <i>[Signature]</i>		2-1-82		
CLASS CODE	TACH	OTHER		
QUANTITY FOR ASSEMBLY	VALUE CODE	VALUE CODE	VALUE CODE	VALUE CODE
DO NOT SCALE DRAWING PRINTS				

0001	013032	000208
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

QUINION	2131 TERRY AVENUE SEATTLE, WASHINGTON 98121 206/223-7373		
TITLE	TACHOMETER PICKUP ASSY		
SIZE	MODEL	DWG. NO.	REV.
D	Q55	013077	F
SCALE NONE..	DIST. CODE	SHEET	OF 1

0001	013032	000208
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

013077

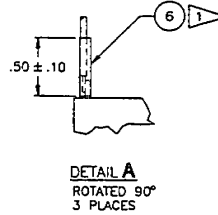
ENR

A

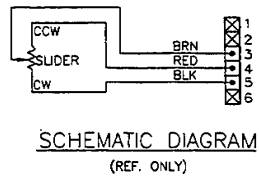
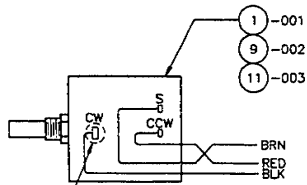
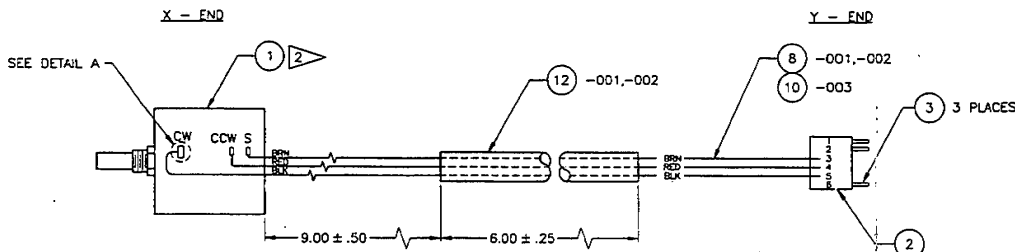
013077

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 COVER TERMINAL (PART OF ITEM 1) AND X END OF WIRE SET (ITEM 8 OR ITEM 10) USING HEAT SHRINK TUBING (ITEM 6) PER DETAIL A.
- 2 FOR ALTERNATE SOURCE POTENTIOMETER, SEE DETAIL B.
- 3 DO NOT IMMERSE POT ASSY IN ANY SOLVENT OR CLEANING SOLUTION.



REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
	R	ADCN: 28919 ZONE C7, 9.00 DIM WAS: 7.00 ACTION CODE: F1, MOD: 3/25/94	C.FOWLER	1/31/95
	T	ADCN: 31551 ZONE B5, ADDED -002 CONFIG. ADDED ITEM 13 ACTION CODE: F1, MOD: 8/16/94		
	U	ADCN: 31907 ZONE B6, ADDED -001, -002 TO BUBBLE 12, DEL. ITEM 12 FROM -003 ON P/L ACTION CODE: F1, MOD: 9/12/94		
	V	ADCN: 3301R ZONE C7, REDREW X-END VIEW ZONE B5, REDREW SCHEMATIC DIAGRAM ACTION CODE: H1, MOD: N/A		



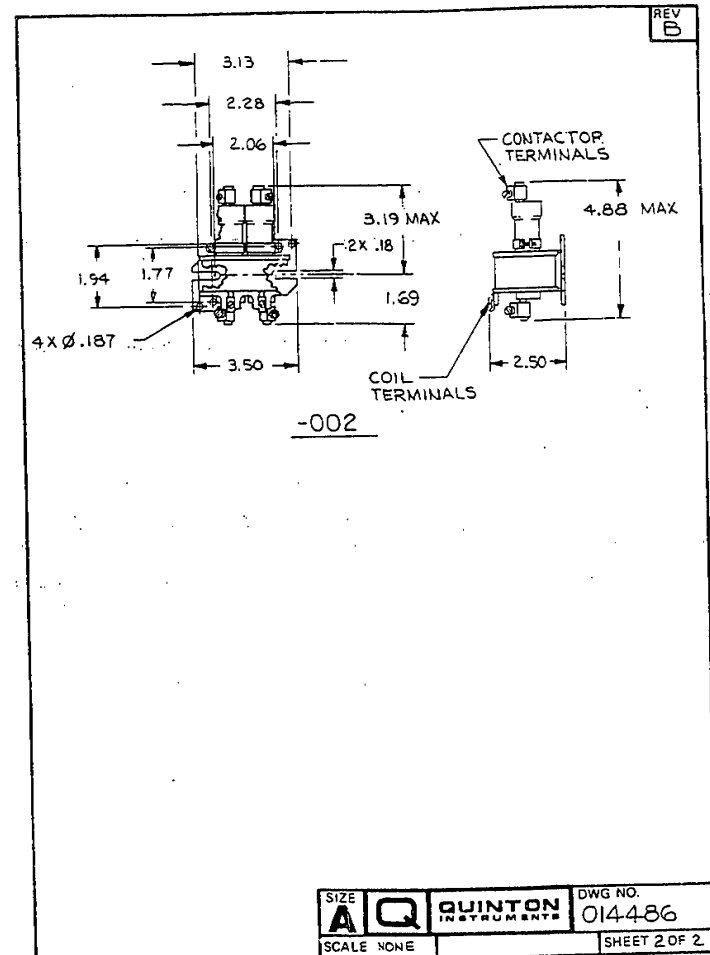
-003	030651	000338
	030650	000335
-002		
-001	013032	000208
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

PRODUCTION

QTY	UNIT	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1		13	001899-002	CABLE TIE	
AR	AR	12	018179-006	TUBING, HEAT SHRINK .250 I.D.	
1		11	030873-001	POTENTIOMETER 5K OHM, 5 TURN	
1		10	018324-002	WIRE SET, GRADE POT	
1		9	016212-002	POTENTIOMETER 5K OHM, 10 T	
1		8	018324-001	WIRE SET, GRADE POT	
		7	DELETED		
AR	AR	AR	6	009173-001	TUBING, HEAT SHRINK .125 I.D.
			5	DELETED	
			4	DELETED	
3	3	3	012746-001	PLUG, KEYING LONG NOSE	
1	1	2	012750-005	CONNECTOR HOUSING, LOCKING RED, 6 POS., 22 AWG	
1	1	1	016212-001	POTENTIOMETER 200 OHM, 10 T	
			-003	GRADE POT. ASSY.	
			-002	GRADE POT. ASSY.	
			-001	GRADE POT. ASSY.	

QTY PER ASSY		DO NOT SCALE DRAWING		PARTS LIST	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1982		DRAWN: S.BEEBE 3/1/82 ENGR: D.EDWARDS 5/8/82 MFG: D.ROPER 5/1/82 DUAL: R.HADFORD 5/7/82		Quinton Instrument Co. 3303 MONTE VILLA PARKWAY BOTHELL, WA 98021-8906 206/482-2000	
TITLE: GRADE POT. ASSY		SHEET: D		MODEL: 013089	
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CLASS CODE: POTA	VALUE CODE: Q55	DIST CODE: 2	SHEET 1 OF 1		

INITIAL APPLICATION				REVISIONS														
PART No.	NEXT ASSY.	MODEL	LTR	DESCRIPTION	APPROVED	DATE												
-001	014493	Q65	D	1) ADDED -002 & SH 2, 2) CLARIFIED -001 DIM: 4.31 WAS 4.81, 1.94 WAS 1.38, 2.65 WAS .65, ADDED 3.87, 4.00 WAS TO WRONG SURFACES. EFF PT: IX DISP: NEW CONFIG	<i>[Signature]</i>	5-13-89 11/20/90 4-4-90 2-24-90												
DESCRIPTION:																		
Relay, DPST, H.O., 24 VDC, Mercury																		
H.P. RATING: 3 HP 1Ø 240 VAC, 2 H.P. 1Ø 120 VAC																		
AMP RATING: 30 amp 240 VAC, 35 amp 120 VAC																		
CONTACT POSITION: Normally open, Double pole single throw																		
FREQUENCY: 60 Hz ratings and coil																		
COIL: 24 VDC, -001 (.255 amp, 95 OHM DC), -002 (.32 amp, 75 OHM DC MIN.)																		
CONTACT MATERIAL: Mercury																		
REGULATORY: U.L. & C.S.A. required																		
UNIT OF MEASURE: EACH																		
ALL DIMENSIONS ARE IN INCHES.																		
<table border="1"> <tr> <td>-002</td> <td>RELAY, MERCURY</td> <td>2</td> <td>WM 35 AA-24D</td> </tr> <tr> <td>-001</td> <td>RELAY, MERCURY</td> <td>1</td> <td>BF2-7032</td> </tr> <tr> <th>PART No</th> <th>DESCRIPTION</th> <th>MFG CODE</th> <th>MFG PART NUMBER</th> </tr> </table>							-002	RELAY, MERCURY	2	WM 35 AA-24D	-001	RELAY, MERCURY	1	BF2-7032	PART No	DESCRIPTION	MFG CODE	MFG PART NUMBER
-002	RELAY, MERCURY	2	WM 35 AA-24D															
-001	RELAY, MERCURY	1	BF2-7032															
PART No	DESCRIPTION	MFG CODE	MFG PART NUMBER															
PARTS LIST																		
SPECIFICATION CONTROL DRAWING																		
CLASS CODE R E L P		Quinton		2121 TERRY AVENUE SEATTLE, WA 98121 206/223-7373														
VALUE CODE 0 6 5 1 1 1		TITLE RELAY, MERCURY		SIZE DWG. No. 014486														
MAGHACRAFT (2) CHICAGO, ILL 60630		DRAWN B. Dube		SCALE NONE														
DURAKOOL INC. ELK HART IHD. 111 218-264-1116		CHECKED [Signature]		SHEET 1 OF 2														
APPROVED SOURCE(S) OF SUPPLY		ENGR [Signature]		PURCH R. Webb														



E-76-0003

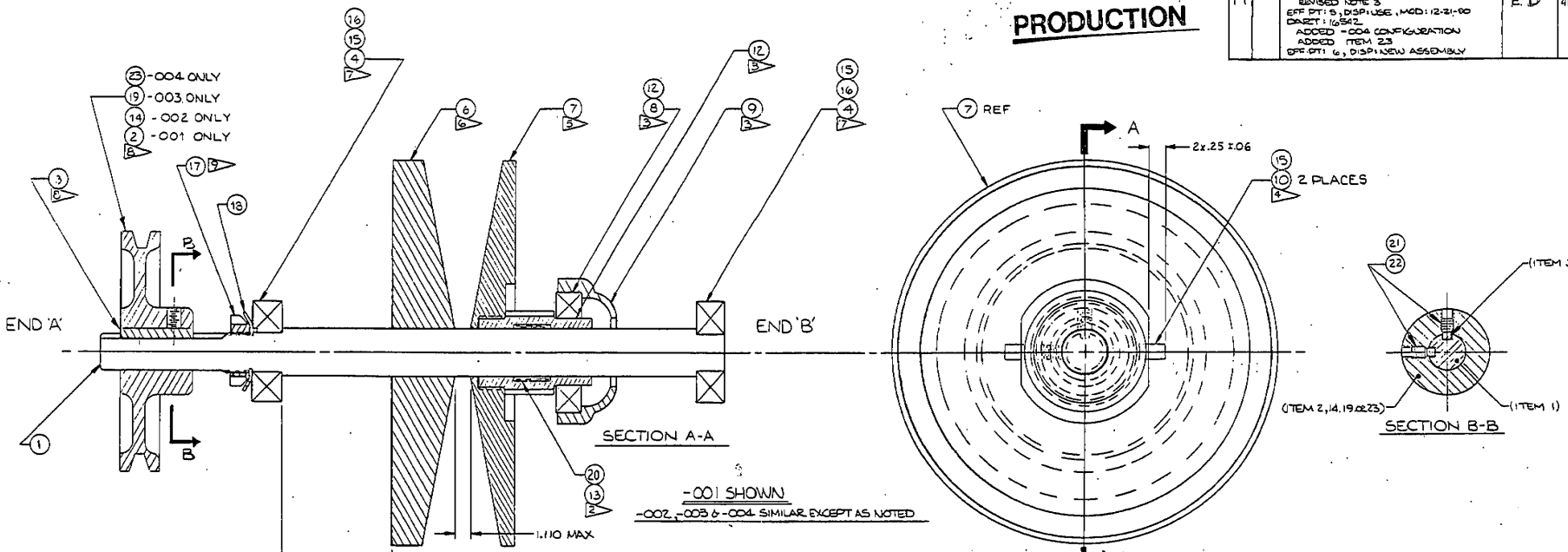
014486

2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

REVISIONS			
LTR	ZONE	DESCRIPTION	APPROVED DATE
H	07A.2	6. ACCN. 14422. ITEM 12 WAS LOCTITE 601 ADDED FLAGNOTE 9 NOTE 7... SO FT LBS WAS 10 FT LBS ITEM 15 WAS ITEM 12 REVISED NOTE 3 EFF. DT: 8, DISP. USE, MOD: 12-21-00 DREW: 11/25/02 ADDED -004 CONFIGURATION ADDED ITEM 23 EFF. DT: 6, DISP. NEW ASSEMBLY	2-10-01 C.V.K. 3/22/01 B.P.T. 4/14/01 E. D.

PRODUCTION



NOTES:

1. BAG OR TAG WITH PART NO. & REV. LTR. TO WHICH MFD.
2. SOAK OIL WICK (ITEM 20) IN CYLINDER OIL (ITEM 3) PRIOR TO INSERTION INTO SHEAVE ASSY. (ITEM 7) IN POSITION INDICATED. PRIME ID AND OD OF BEARING (ITEM 8) AND ID OF HOUSING (ITEM 9). THEN PRESS ITEM 8 INTO ITEM 9 PRIOR TO PRESSING OVER ITEM 7, USING LOCTITE (ITEM 12).
3. APPLY ITEM 15 TO ITEM 10 PRIOR TO PRESSING MEMO INTO ITEM 9, (2 PLACES).
4. SLIDE ITEM 7 ONTO ITEM 1 OVER END 'A'. PRESS ITEM 6 ONTO ITEM 1 OVER END 'A' TO THE GIVEN DIMENSION USING ITEM 12.
5. TO INSTALL BEARINGS, ITEM 4 TO SHAFT (ITEM 1) DEGREASE SHAFT AND BEARING ID. PRIME BOTH SURFACES WITH ITEM 16. PRESS PARTS TOGETHER USING ITEM 15 (LOCTITE 680). TORQUE (LOCK NUT) ITEM 17 TO 30 FT. LBS. LOCK ONE TANG OF THE LOCK WASHER, ITEM 18, TO THE BEST ALIGNED SLOT.
6. PLACE ITEM 3 INTO KEYWAY OF ITEM 1. PRESS ITEM 2, 14, 19 OR 23 ONTO ITEM 1, OVER END 'A', SLIDING KEYWAY OF ITEM 2, 14, 19 OR 23 OVER ITEM 3.
7. APPLY LOCTITE 609 (ITEM 12) TO LOCK NUT (ITEM 17) THREADS AND FACE WHICH CONTACTS LOCK WASHER (ITEM 18).

REV.	QTY.	REV.	QTY.	REV.	QTY.	REV.	QTY.	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION
								015416-001	PULLEY, MACHINED 1G-3VX-9.30-.62	
								-004		
NR	01	01	01	22	015233-001			ADHESIVE	LOCTITE #242	
4	4	4	4	21	010833-145			SCREW, SET	.250-20 X .25 LG	
								016579-001	WICK, OIL	
								015400-001	PULLEY, MACHINED 1G-3VX-787-.62	
								-003	INPUT SHAFT ASSY.	Q50
								015238-001	WASHER, LOCK	W-04
								015240-001	NUT, LOCK, SPANNER	N-04
NR	01	01	01	16	014900-001			PRIMER T	LOCQUIC	
NR	01	01	01	15	012465-001			COMPOUND, RETAINING	LOCTITE 680	
								-002	INPUT SHAFT ASSY.	Q65
								014487-002	PULLEY, MACHINED	1G-3UX-6.30-.625
NR	01	01	01	13	013411-002			OIL, CYLINDER	SYNTHETIC HYDROCARBON	

REV.	QTY.	REV.	QTY.	REV.	QTY.	REV.	QTY.	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
NR	01	01	01	12	012465-001			COMPOUND, RETAINING	LOCTITE 609		
								11	DELETED		
Z	2	2	2	10	012560-001			PIN, DOWEL	.312 DIA. X .750 LG.		
								012986-001	HOUSING, BEARING, THWT. MACHINING		
								006853-001	BEARING	35MM I.D. X 62 MM O.D. X 14MM THK.	
								015882-001	SHEAVE ASSY, INPUT		
								013063-001	SHEAVE, FIXED		
								5	DELETED		
Z	2	2	2	4	015307-001			BEARING, BALL	20MM X 52 X 15		
								001100-004	KEY, SQUARE	.187 X 1.50	
								015362-001	PULLEY, MACHINED	1G-3UX-4.92 X .625	
								015249-001	INPUT SHAFT, H.VY. DTY.		
								-001	INPUT SHAFT ASSY.	Q55	

PART NO.	NEXT ASSY. NO.	END ITEM NO.
-003 013032	000259	
-002, -004 014493	000221	
-001 013032	000208	

UNLESS OTHERWISE SPECIFIED

DRAWN BY: LENNOV
CHECKED BY: J. Dennis
ENGR: [Signature]
DATE: 4/3/04
QUANTITY: 2
ANGLES: 2

Quintan
msimurmontco

3121 TERRY AVENUE
SEATTLE, WASHINGTON 98121
206/323-7213

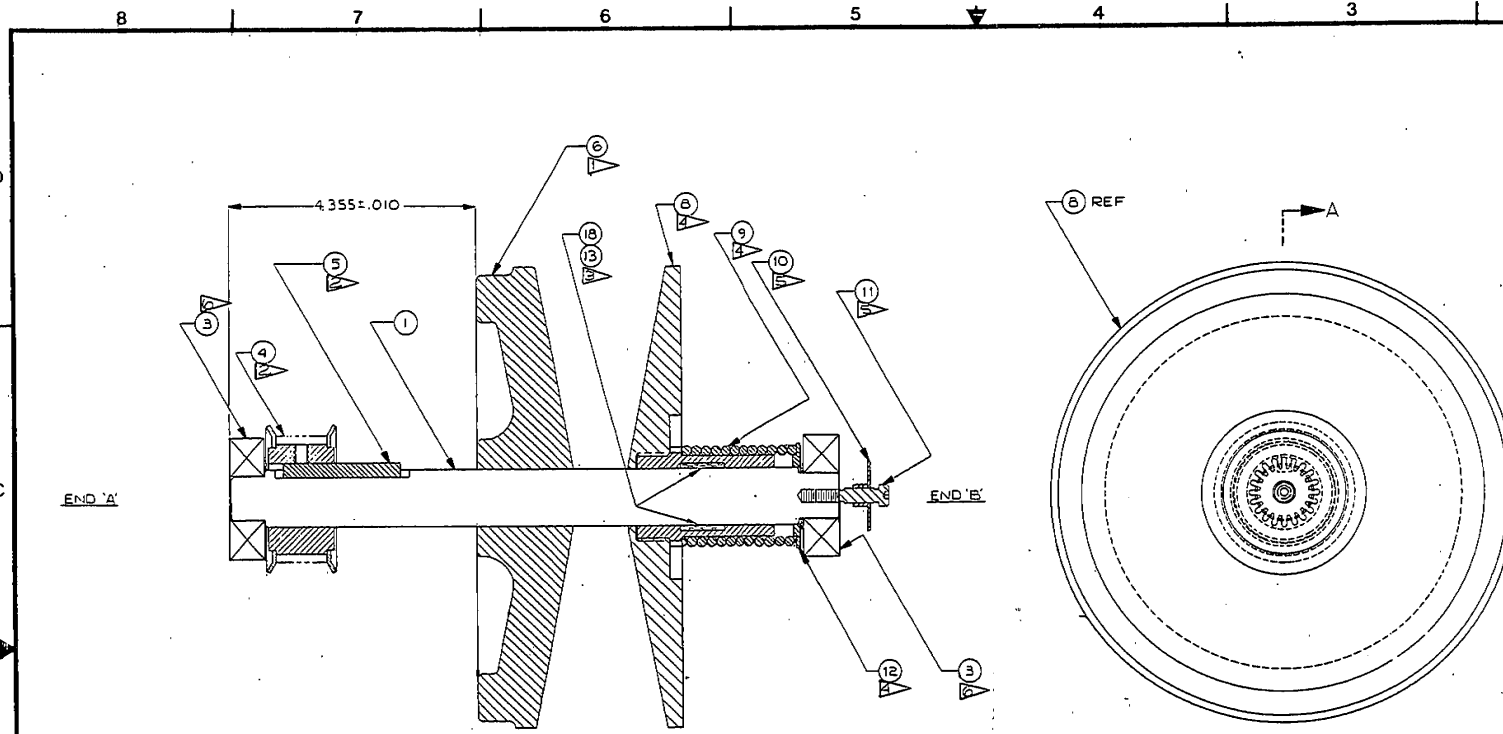
TITLE: INPUT SHAFT ASSY, HEAVY DUTY

CLASS CODE: SHAA
VALUE CODE: 000208
MFG: [Signature]

SIZE: D
MODEL: 053
DWG. NO.: 015273
SCALE: 1/1
REV. H

DO NOT SCALE DRAWING PRINTS

APPLICATION



REVISIONS				
LYR	ZONE	DESCRIPTION	APPROVED	DATE
E		ADCN: 19619		
F		ITEM 15 WAS - 001, LOCTITE 601		10/27/11
		REVISED NOTE 6 - WAS		11/16/11
		LOCTITE 601.		11-2-11
		EFF PT: 7, DISP: NONE		
CS		F DCN: 1975B		
De		DELETED ITEM 2		
		ITEM 18 WAS 7		
		EFF PT: 7, DISP: NONE		

ADCN NO.	21877			
REVISION LEVEL	6			

PRODUCTION

NOTES:

- 1. ASSEMBLE ITEM 6 TO ITEM 1 OVER END 'B', UP TO ITEM 2.
- 2. PLACE ITEMS 3, 4, 5 IN KEY GROOVE OF ITEM 1. SLIDE ITEM 4 OVER END 'A' OF ITEM 1, FITTING KEY GROOVE OF ITEM 4 OVER ITEM 5.
- 3. SOAK OIL WICK (ITEM 18) IN CYLINDER OIL (ITEM 13) BEFORE INSERTING INTO ITEM 8.
- 4. SLIDE ITEMS 8, 9, & 12 OVER END 'B' OF ITEM 1.
- 5. SLIDE ITEM 10 ONTO ITEM 11 AND APPLY ADHESIVE, ITEM 17 TO THREADS OF ITEM 11 PRIOR TO THREADING ITEM 11 INTO END 'B' OF ITEM 1.
- 6. TO INSTALL BEARING (3), ITEM 3, TO SHAFT WITH LESS THAN .015 CLEARANCE. DEGREASE THE SHAFT, ITEM 1, AND BEARING, ITEM 3, I.D.. PRIME BOTH SURFACES WITH LOCTITE PRIMER T, ITEM 14, AND FIT THE PARTS TOGETHER USING LOCTITE 680, ITEM 15.

DO NOT MOVE PARTS FOR 6 HRS. AFTER ASSY.

7. BAG OR TAG WITH PART NO. AND REV LTR. TO WHICH MFD.

ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REF. DES.
18	016579-001	WICK, OIL	3.30 x .72	
17	015233-001	ADHESIVE	LOCTITE 242	
16	DELETED			
15	012463-002	RETAINING COMPOUND	LOCTITE 680	
14	014900-001	PRIMER T	LOCTITE 6	

QUANTITY PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REF. DES.
	-001	014493	000221		
	-001	013032	000208		

APPLICATION	PART NO.	NEXT ASSY. NO.	END ITEM NO.
	-001	014493	000221
	-001	013032	000208

QTY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	13	013411-002	OIL, CYLINDER	SYNTHETIC HYDROCARBON	
1	12	012556-002	RETAINER, SPRING		
1	11	010197-003	SCREW, SHLDR, HEX SOC	.75 x 10-24 UNC-3A	
1	10	006875-001	CHOPPER, BEAM		
1	9	013049-001	SPRING, CYL., L.H. HELIX		
1	8	015882-002	SHEAVE ASSY., OUTPUT		
	7	DELETED			
1	6	013063-001	SHEAVE, FIXED		
1	5	001803-004	KEY, SQUARE	.250 SQ x 2.00 LG.	
1	4	015822-001	SPROCKET ASSY, TIMING		
2	3	015307-001	BEARING, BALL, MEDIUM	20mm BORE x 52mm DIA x 15mm WIDTH	
	2	DELETED			
1	1	015305-001	SHAFT, OUTPUT HEAVY DUTY		
		-001	OUTPUT SHAFT ASSY., HEAVY DUTY		

PART NUMBER		DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
ALL DIM. ARE IN INCHES	TOL.	CHECKED	DATE	
XX	±	Boyle	5/4/11	
XXX	±	J. E. Jamieson	5/9/11	
ANGLE	±	DR. D. D. D.	5/9/11	
QUAL.	±	Boyle	5/9/11	
CLASS CODE	SHEA	MFG.		
VALUE CODE	208221	OTHER		
DO NOT SCALE DRAWING PRINTS				

QUANTITY PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	-001	014493	000221		
	-001	013032	000208		

QUANTITY PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	-001	014493	000221		
	-001	013032	000208		

QUANTITY PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	-001	014493	000221		
	-001	013032	000208		

Quinton INSTRUMENT CO. 3221 TERRY AVENUE SEATTLE, WASHINGTON 98121 206/223-7373

TITLE: OUTPUT SHAFT ASSY., HEAVY DUTY

SIZE: D Q 55 Q 45

MOD. NO.: 015313

DWG. NO.: 015313

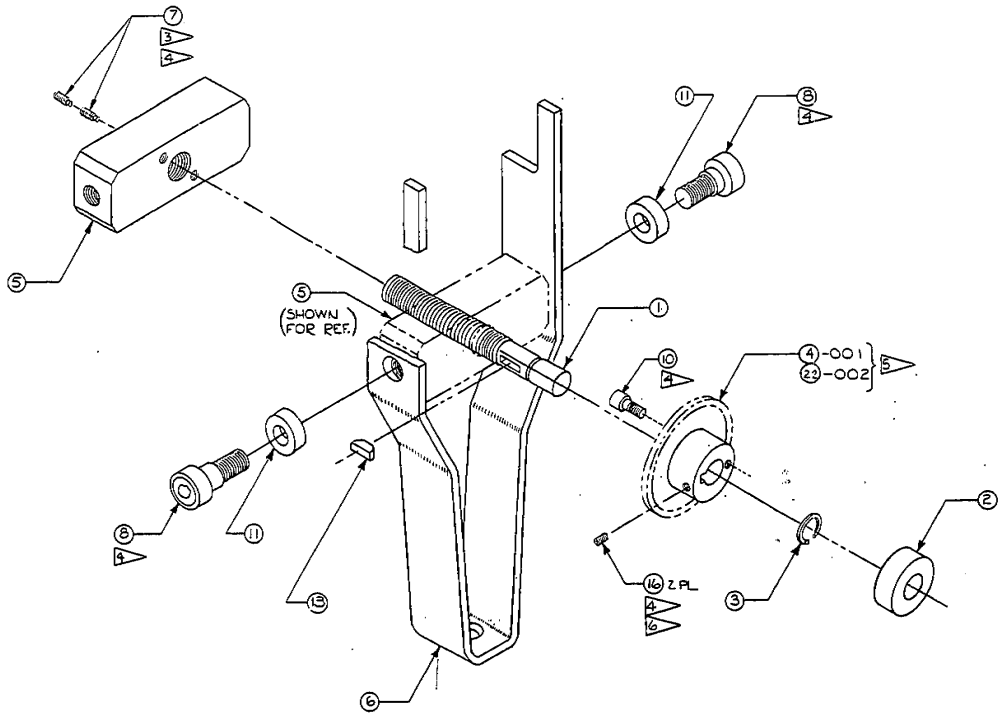
SCALE: FULL

DIST. CODE: F

SHEET 1 OF 1

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE
H		QAHT: 25488 ADDED -002 CONFIG LFF PT: 6 DISPI NEW PART	<i>[Signature]</i>	1/10/93



NOTES:

1. BAG OR TAG PART AND MARK WITH PART NO. AND REV. LETTER TO WHICH MFD.
- ▶ DELETED
- ▶ SET SCREWS (ITEM 7) ARE TO BE ADJUSTED TO WITHIN ±.01 OF DIMENSIONS SHOWN. THEY WILL BE CRITICALLY ADJUSTED AT THE FINAL ASSY. OF THE TREADMILL.
- ▶ APPLY ADHESIVE (ITEM 14) TO ALL THREADED FASTENERS.

NOTES CONT ON SH 2.

1	22	019547-002	SPROCKET, MODIFIED	36 TOOTH (STEEL)
1	-	-002	SPINDLE ASSY SPEED CHANGE	
4/R	21	030194-001	GREASE, MULTI-PURPOSE	
	20	DELETED		
4/R	19	017864-001	ADHESIVE, LOCTITE 660	
4/R	18	014900-001	PRIMER "T"	LOCAQUIC
4/R	17	016258-001	SOLVENT, CHLOROTHENE, INDUSTRIAL	
2	16	010833-132	SCREW, SET	#10-24UNC X .187 L
	15	DELETED		
4/R	14	015233-001	ADHESIVE	LOCTITE #24-2
1	13	015405-001	KEY, WOODRUFF	1/8 X 3/32
	12	DELETED		
2	11	019872-001	WASHER, FLAT, NYLON	3/85 ID X 6/25 OD X .230
1	10	010821-202	SCREW, CAP, HEX SOCKET	#6-32 UNC X .50 L
	9	DELETED		
2	8	001172-006	SCREW, SHOULDER	3/8 SHLDR, SOCKET HEAD
2	7	010833-205	SCREW, SET	1/4-20, FULL DOG
1	6	019004-001	FORK, SPEED CHANGE	
1	5	018287-001	YOKE, SPEED CHANGE	ACME THREAD
-	4	019547-001	SPROCKET, MODIFIED, 36 TOOTH	NYLATRON
1	3	001032-002	RING, RETAINER	
1	2	001535-001	BEARING, SHAFT	
1	1	018288-001	SPINDLE, SPEED CHANGE	ACME THREAD
-	-	-001	SPINDLE ASSY, SPEED CHANGE	

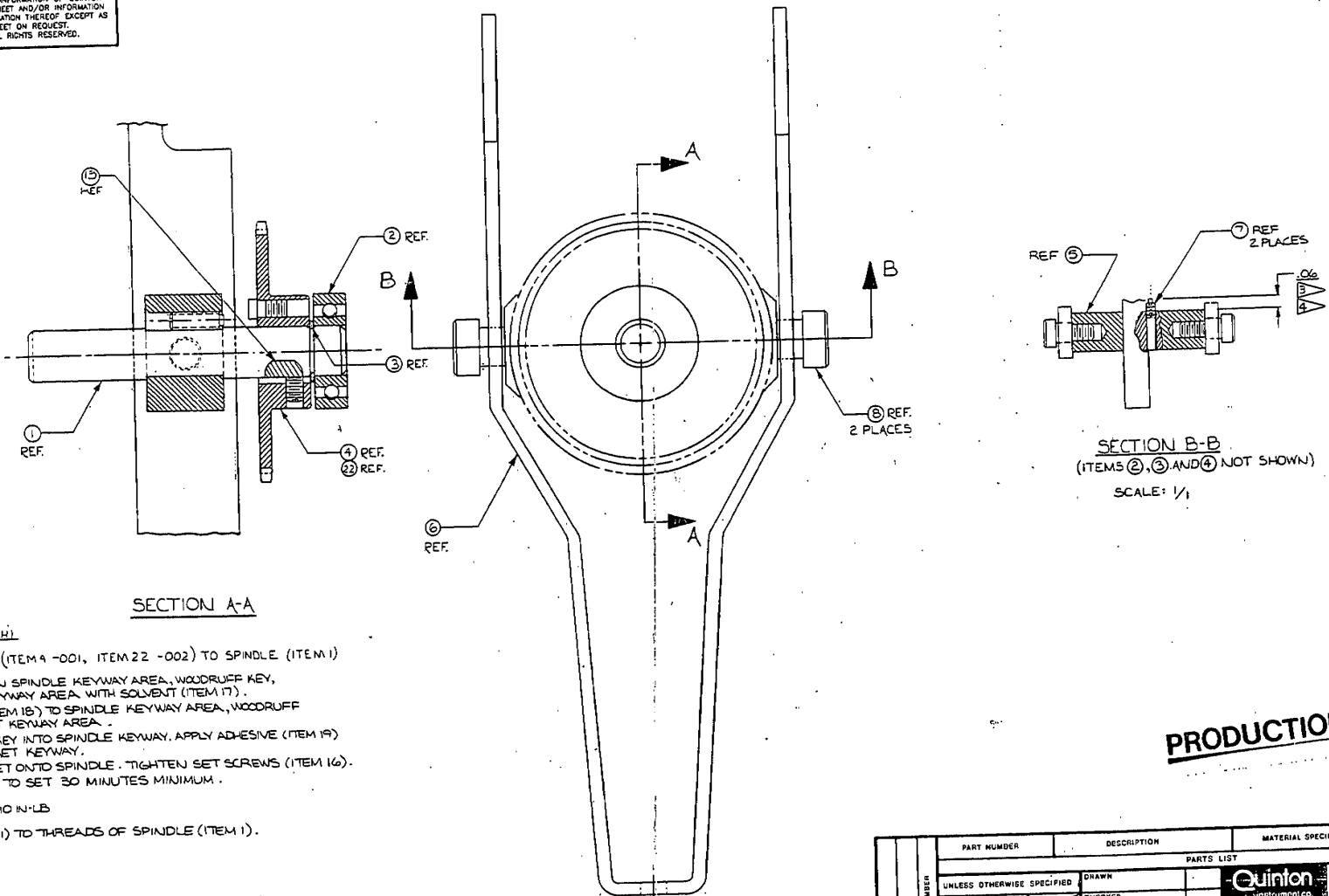
PRODUCTION

-002	018989	000306	
	018990	000309	
	019737	000313	
	018990	000309	
-001	018989	000306	
	013032	000208	
	014493	000221	
PART NO.	NEXT ASSY. NO.	END ITEM NO.	
APPLICATION			

PART NUMBER		DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
PARTS LIST				
-002	-001	UNLESS OTHERWISE SPECIFIED	DRAWN <i>[Signature]</i> 11/88	Quinton instrument co. 2311 TERRY AVENUE SEATTLE, WASHINGTON 98121 206/223-7373
		ALL DIM ARE IN INCHES	CHECKED <i>[Signature]</i> 11/88	
		TOL. .XX ±	ENGR. <i>[Signature]</i> 11/88	
		ANGLE °	QUAL. <i>[Signature]</i> 11/88	
QUANTITY PER ASSEMBLY	CLASS CODE SPIA	MFG. <i>[Signature]</i> 11/88	OTHER <i>[Signature]</i> 11/88	TITLE SPINDLE ASSEMBLY, SPEED CHANGE
VALUE CODE Q55Q65	SIZE D	MODEL 855	OWG. NO. 018290	REV. H
DO NOT SCALE DRAWING PRINTS				SCALE 1/1
				DIST. CODE SHEET 1 OF 2

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REVISIONS			
LTR	DATE	DESCRIPTION	APPROVED



SECTION A-A

SECTION B-B
 (ITEMS 2, 3, AND 4 NOT SHOWN)
 SCALE: 1/1

NOTES: (CONT FROM 5H)

- 15 ASSEMBLE SPROCKET (ITEM 4 -001, ITEM 22 -002) TO SPINDLE (ITEM 1) AS FOLLOWS:
 - A. THOROUGHLY CLEAN SPINDLE KEYWAY AREA, WOODRUFF KEY, AND SPROCKET KEYWAY AREA WITH SOLVENT (ITEM 17).
 - B. APPLY PRIMER-T (ITEM 18) TO SPINDLE KEYWAY AREA, WOODRUFF KEY, AND SPROCKET KEYWAY AREA.
 - C. INSERT WOODRUFF KEY INTO SPINDLE KEYWAY. APPLY ADHESIVE (ITEM 19) TO KEY AND SPROCKET KEYWAY.
 - D. ASSEMBLE SPROCKET ONTO SPINDLE. TIGHTEN SET SCREWS (ITEM 16).
 - E. ALLOW ASSEMBLY TO SET 30 MINUTES MINIMUM.
- 16 ASSEMBLY TORQUE: 10 IN-LB
- 7 APPLY GREASE (ITEM 21) TO THREADS OF SPINDLE (ITEM 1).

PRODUCTION

PART NO.	NEXT ASSY. NO.	END ITEM NO.

APPLICATION

ITEM NUMBER	PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION		REFERENCE DESIGNATION	
	PARTS LIST							
	UNLESS OTHERWISE SPECIFIED	DRAWN						
	ALL DIM. ARE IN INCHES	TOL.	.XX 2	CHECKED				
			.XXX 2	ENGR.				
			ANGLE 2	QUAL.				
	CLASS CODE			MFG.				
	VALUE CODE			OTHER				
	QUANTITY PER ASSEMBLY							
DO NOT SCALE DRAWING PRINTS								

Quinton
 Instrument Co.
 2121 FERRY AVENUE
 SEATTLE, WASHINGTON 98121
 206/223-7373

TITLE: **SPINDLE ASSEMBLY, SPEED CHANGE**

SIZE: **D** MODEL: **Q55 Q65** DWG. NO.: **018290** REV: **11**

SCALE: **2/1** DIST. CODE: SHEET: **2 OF 2**

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REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
N		ADCN: 26581 ITEM 63 WAS: 017883-002 ITEM 64 WAS: LOCTITE CODE F1 MOD: 8-1-93	<i>RFE</i> <i>1/2/93</i>	<i>1/2/93</i>
ADCN NO.		27476	27611	
REVISION LEVEL		2	2	

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 R10, R14, R15, R16, R25, R28.
- 2 R13, R17, R21-R24.
- 3 CB, C9, C12-C17.
- 4 THIS HOLE, LOCATED CLOSEST TO PCB EDGE, IS NOT USED. INSTALL PIN 2 OF DISPLAY (ITEM 32) IN SECOND HOLE FROM PCB EDGE AS SHOWN IN SECTION A-A.
- 5 POSITION LAMPS (ITEM 35) FLAT AND UPRIGHT AGAINST TERMINAL STRIP (ITEM 40). BEND LEADS AND INSTALL PARTS AS SHOWN. NOTE: THIS IS AN APPEARANCE ITEM. LOCATE LAMPS OVER EXACT TERMINAL LOCATION SHOWN IN SECTION B-B.
- 6 LOCATE CATHODE END AS SHOWN AND SOLDER IN PLACE.
- 7 INSTALL LIGHT BAR INTO SOCKET SO THAT IT SEATS FLUSH AGAINST SURFACE OF SOCKET AS SHOWN. TRIM LEADS AS NECESSARY TO ACHIEVE PROPER FIT-UP.
- 8 INSTALL SWITCH S2 (ITEM 31) BY HAND, AS SHOWN, AFTER FLOW SOLDER AND CLEANING. HAND CLEAN SOLDER CONNECTIONS OF S2 ONLY. DO NOT IMMERSE IN FLUID. THROW ACTIVATOR TOWARDS EDGE OF PCB (AWAY FROM R6).
[ENGINEERING NOTE:
MAGNETIC KEY CIRCUIT IS NOW INACTIVE].
9. LAST REFERENCE DESIGNATOR USED:
U18, R28, C20, CR2, VR1, Y1, RN1, S2, DS14, J2, E1, TP3.
10. REFER TO SCHEMATIC DIAGRAM 019027-201.
11. ATE PROGRAM 019027-861.

- 2 SERIALIZE WITH WORK ORDER AND DASH NUMBER (-001 THRU -0XX PER QUANTITY IN LOT) IN AREA SHOWN.
- 3 MARK REV LETTER TO WHICH MFD IN AREA SHOWN.
14. DELETED
15. DELETED
- 6 STRIP WIRE (ITEM 54) .343 ± .020 BOTH ENDS. ATTACH TERMINAL (ITEM 55) TO ONE END AND SOLDER OTHER END INTO E1.
- 7 SWITCH (S1) MUST SIT FLUSH AND EVEN WITH THE PCB (ITEM 1).
18. DELETED
- 9 INSTALL JUMPER WIRE (ITEM 62) BY INSERTING THE END OF THE WIRE INTO PCB HOLE, AT U8 PIN 6 AND AT R12 AS SHOWN.
- 8 ADHERE INSULATED WIRE TO PCB USING ADHESIVE (ITEM 63) AND ACCELERATOR (ITEM 64), AS NEEDED.
- 2 TORQUE SCREW (ITEM 46) TO 4 TO 6 INCH/POUNDS.
- 2 INSTALL RESISTOR NETWORK (ITEM 66) TO SOLDER SIDE OF PCB AT CONNECTOR J2 AS SHOWN. CLIP PINS 3, 4, 5 AND 7 PRIOR TO INSTALLATION.
- 2 INSTALL JUMPER WIRE (ITEM 62) BETWEEN PIN 1 OF RN1 (ITEM 66) AND LEAD OF R14 AS SHOWN.
- 2 ADHERE RN1 (ITEM 66) TO PCB USING ADHESIVE (ITEM 63) AND ACCELERATOR (ITEM 64), AS NEEDED.

1	1	25	011508-001	CAP, TANTALUM	3.3 MFD, 15V	C10
8	8	24	012923-019	CAP, DIP CERAMIC	.01 UF, 50V	3
5	5	23	012189-001	CAP, TANTALUM	1 UF, 50V	C2-C6
2	2	22	003238-001	CAP, TANTALUM	22 UF, 15V	C1,C7
1	1	21	012183-051	RES, CF	360 OHM, 1/4W, 5%	R27
1	1	20	012183-054	RES, CF	470 OHM, 1/4W, 5%	R26
6	6	19	012183-062	RES, CF	1K OHM, 1/4W, 5%	2
2	2	18	012183-070	RES, CF	2.2K OHM, 1/4W, 5%	R11,R12
6	6	17	012183-086	RES, CF	10K OHM, 1/4W, 5%	1
1	1	16	012183-026	RES, CF	33 OHM, 1/4W, 5%	R9
8	8	15	019232-003	RES, MET OX	33 OHM, 3W, 5%	R1-R8
1	1	14	011997-003	ICD, TTL	7407	U16
1	1	13	012079-008	ICD, TTL, LP SCHOTTKY	74LS74	U15
1	1	12	012079-037	ICD, TTL, LP SCHOTTKY	74LS32	U14
1	1	11	019187-001	ICL, OCTAL DRIVER	2985	U13
1	1	10	012203-001	ICD, PROGRAM INTER	8279-5	U12
1	1	9	012079-077	ICD, TTL, LP SCHOTTKY	74LS155	U11
-	1	8	019612-002	ICD, FIRMWARE	(27C256)	U10
1	1	7	019038-001	ICD, MICROCONTROLLER	370C250	U9
1	1	6	016614-001	ICL, SUPPLY V SUPERVISOR	TL7705A	U8
1	1	5	019037-001	ICL, DIFF LINE DRIVER	DS8921	U7
1	1	4	012079-030	ICD, TTL, LP SCHOTTKY	74LS139	U6
3	3	3	015068-001	XSTR ARRAY, HC DARLINGTON	2C68	U3,U4,U5
2	2	2	012174-001	ICD, DECODER	25LS2538	U1,U2
1	1	1	019035-001	PCB, TREADMILL CONTROLLER	REV C	
-	-	-	-001	PCBA TREADMILL CONTROLLER		

PRODUCTION

-002	019248	000322
-001	019248	000313
PART NO.	NEXT ASSY. NO.	EXP. ITEM NO.
APPLICATION		

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRAWN D. BENSCH 3/20/80	
CHECKED R. PIERCE-CANNON 3/29/80		Quinton Instrument Co. 2121 TERRY AVENUE SEATTLE WASHINGTON 98121 206/723-7273	
ENGR. V. PIPINICH 4/2/90		TITLE PCB ASSY, TREADMILL DPU CONTROL	
MFG. S. COZAD 4/12/80		REV. N	
OTHER		SCALE NONE SOURCE AUTOCAD SHEET 1 OF 3	

019027 REV. N

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QTY	REV	ITEM NO	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	1	66	014556-002	RESISTOR NETWORK, SIP	2.2K, 2%	RN1
1	1	65	001164-001	WASHER, FLAT	#6	
A/R	A/R	64	016344-001	ADHESIVE, ACCELERATOR		
A/R	A/R	63	017683-001	ADHESIVE, QUICK GEL		
A/R	A/R	62	012270-001	WIRE, INSULATED	28 AWG, BLK	
3	3	61	012913-003	TERMINAL, TEST POINT		TP1-TP3
1	1	60	013291-001	DIODE, SCHOTTKY	1N5818	CR2
1	1	59	012923-030	CAPACITOR, DIP CERAMIC	1uF	C20
		58		DELETED		
		57		DELETED		
1	-	56	030248-001	IC, FIRMWARE	(27C256)	U10
1	1	55	011969-003	TERMINAL, SOLDERLESS	16/14 AWG, #8	
20	20	54	010606-011	WIRE, INSULATED, STRANDED	16 AWG, GRN/YEL	
		53		DELETED		
2	2	52	012923-003	CAPACITOR, DIP CERAMIC	22pf, 50V	C18, C19
3	3	51	012183-042	RES, CF	150 OHMS, 1/4W, 5%	R18-R20
1	1	50	015800-018	ICD, HSCMOS	74HCT32	U18
1	1	49	012101-009	ICD, CMOS	CD4020	U17
1	1	48	018197-001	NUT, HEX, SMALL PATTERN	6-32 UNC-2B	
1	1	47	010511-005	WASHER, SPLIT, LOCK	#6	
1	1	46	010827-202	SCREW, MACH, PNH PH	6-32 UNC-2A X .500L	

002-001
 ITEM NUMBER
 QUANTITY PER ASSEMBLY

QTY	REV	ITEM NO	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
8	8	45	019301-003	SPACER, NYLON	.040L	
42	42	44	019301-029	SPACER, NYLON	.170L	
1	1	43	011737-001	HEATSINK, TO-220		
1	1	42	019304-002	SOCKET, DIP, PCB	8 PIN	
1	1	41	019304-004	SOCKET, DIP, PCB	16 PIN	
1	1	40	019303-010	SOCKET, IN-LINE STRIP	10 PIN	
1	1	39	012180-009	SOCKET, IC	28 PIN	XU10
1	1	38	016585-001	SOCKET, PLCC	68 PIN	XU9
1	1	37	018705-001	CONNECTOR, HEADER		J2
1	1	36	016586-001	LOCKING HEADER, R/A	10 POSITION	J1
2	2	35	014690-003	DIODE, LED	GREEN	DS13, DS14
1	1	34	019094-002	DISPLAY, LED, LIGHTBAR	2 SEGMENT	DS12
1	1	33	019094-001	DISPLAY, LED LIGHTBAR	4 SEGMENT	DS11
10	10	32	019093-001	DISPLAY, LED	7 SEGMENT	DS1-DS10
1	1	31	019095-001	SWITCH, SPOT DIP X 2		S2
1	1	30	019096-001	SWITCH, HALL EFFECT		S1
1	1	29	014942-003	CRYSTAL, QUARTZ	20.0 MHZ	Y1
1	1	28	006224-002	E.C. REGULATOR	LM340T-5	VR1
1	1	27	017820-003	DIODE, ZENER	1N5339	CR1
1	1	26	012923-029	CAP, DIP CERAMIC	.47 UF, 50V	C11

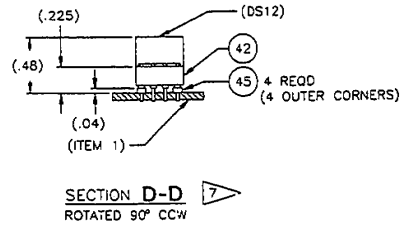
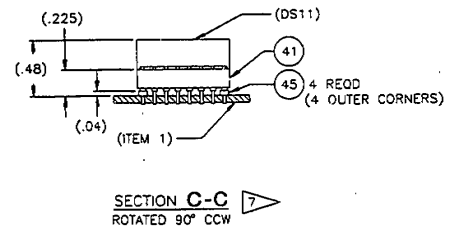
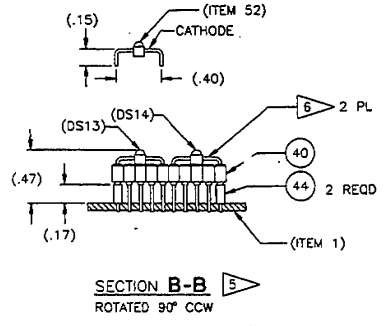
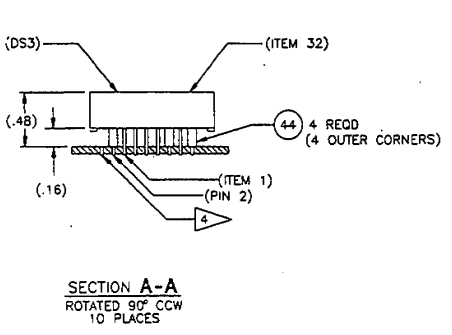
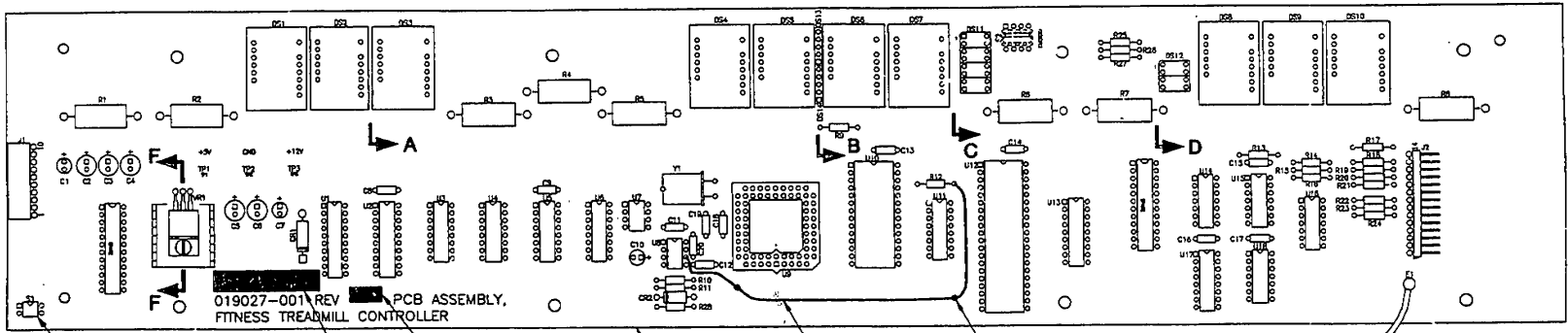
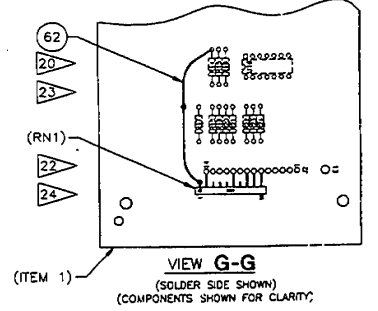
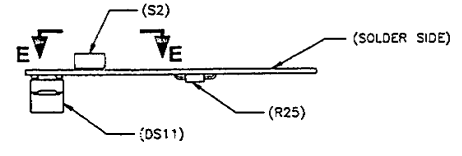
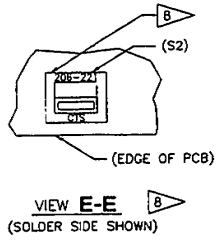
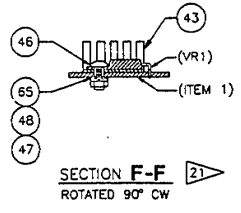
002-001
 ITEM NUMBER
 QUANTITY PER ASSEMBLY

PRODUCTION

SIZE	MODEL	DWG NO.	REV
D	CLUGTRACK	019027	N
SCALE	SOURCE	AUTOCAD	SHEET: 2 OF 3
NONE			

DWG NO. 019027

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PRODUCTION

SIZE	MODEL	DWG. NO.	REV.
D	CLUB-TRACK	019027	N
SCALE	SOURCE	AUTOCAD	SHEET 3 OF 3
NONE			

DWG. NO. 019027
 SHEET 3 OF 3

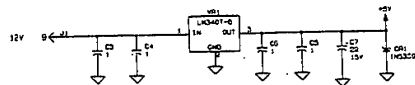
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REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
G		G DCN: 22547 ADDED R#1 TO NOTE 3 ADDED R#1 CONNECTIONS TO +5V AND J2 EFF PT: 7 DISP: NONE	<i>[Signature]</i>	08/14/94

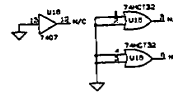
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE 1/4W, 5% AND ALL VALUES ARE IN OHMS.
2. ALL CAPACITORS ARE 50V AND ALL VALUES ARE IN MICROFARADS.
3. LAST REFERENCE DESIGNATORS USED: C20, CR2, DS14, E1, JR, R26, S2, U18, VA1, T1, TP3, RW1.
4. REFERENCE DESIGNATORS NOT USED: NONE

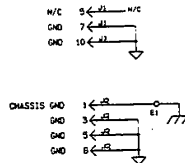
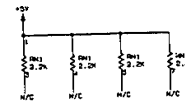
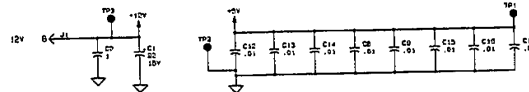
POWER SUPPLY



UNUSED DEVICES



BYPASS CAPACITORS



REFERENCE DESIGNATOR	PIN NUMBER	
	+5V	CHD
U1, U2	20	10
U6, U11, U17	16	8
U7	1	4
U8	8	4
U9	15, 33, 61, 62	9, 16, 62
U10	20	14
U12	43	29
U14, U15, U16, U18	14	7

PRODUCTION

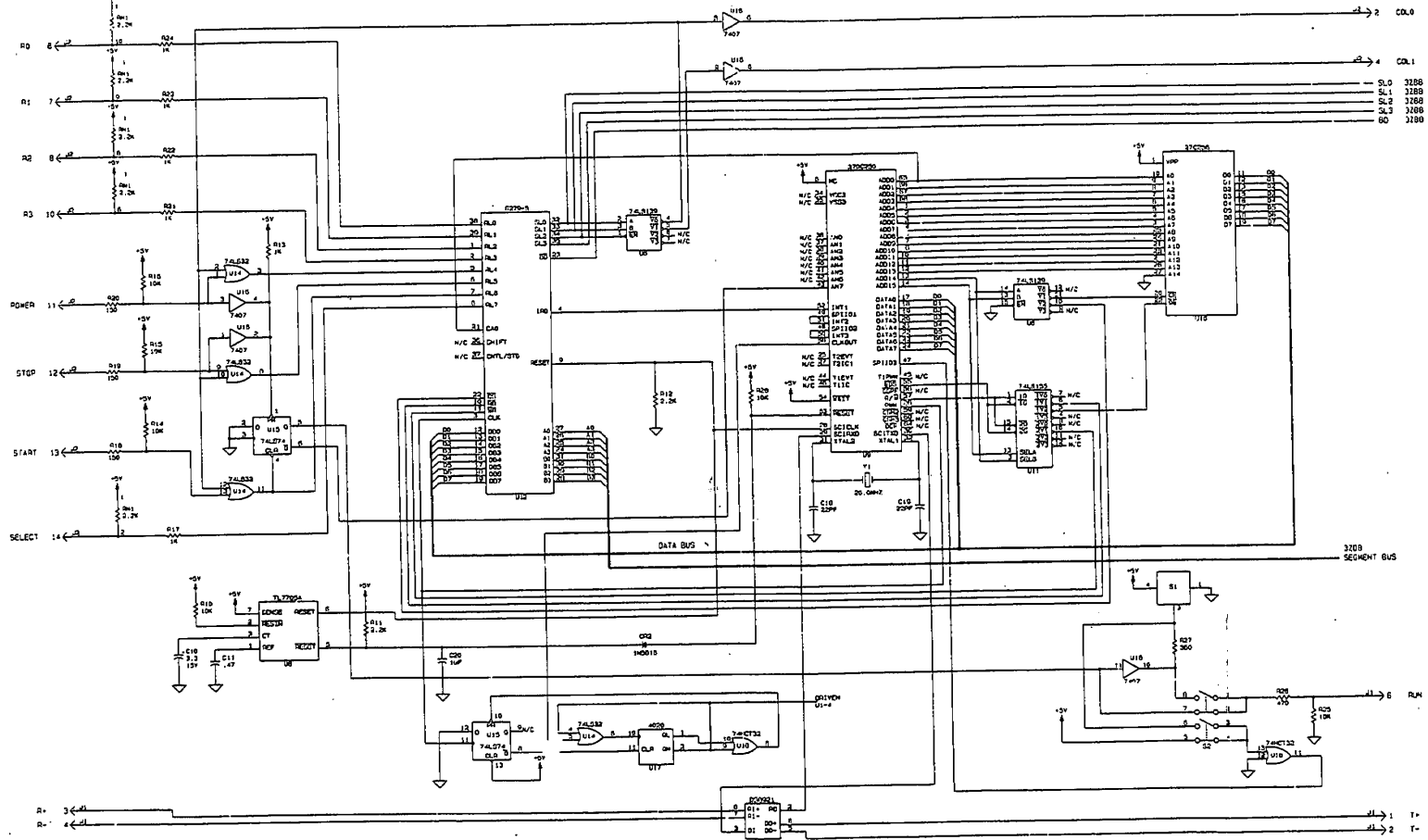
PART NO.	NET ASSY NO.	END ITEM NO.

	DRAWN	M. HUSSEY	11/28/90	QuinCY <small>INSTRUMENT CO.</small>	8121 TERRY AVENUE SEATTLE, WASHINGTON 98121 206/835-1071			
	CHECKED	R. PIERCE-CANNON	11/28/90					
	ENGR			TITLE	SCHEMATIC, PCBA, FITNESS TREADMILL CONTROLLER			
	DUAL	C. JORDAN	1/27/91	CLASS CODE	SCHE	SIZE	MODEL	QWS NO.
VALUE CODE	286✓✓✓	OTHER	S. CURRAN	12/21/94	D	NTH4	019027-201	G
SCALE	NONE	SOURCE	F-NET	SHEET	1	OF	3	

QWS NO. 019027-201
 SHEET 1 OF 6

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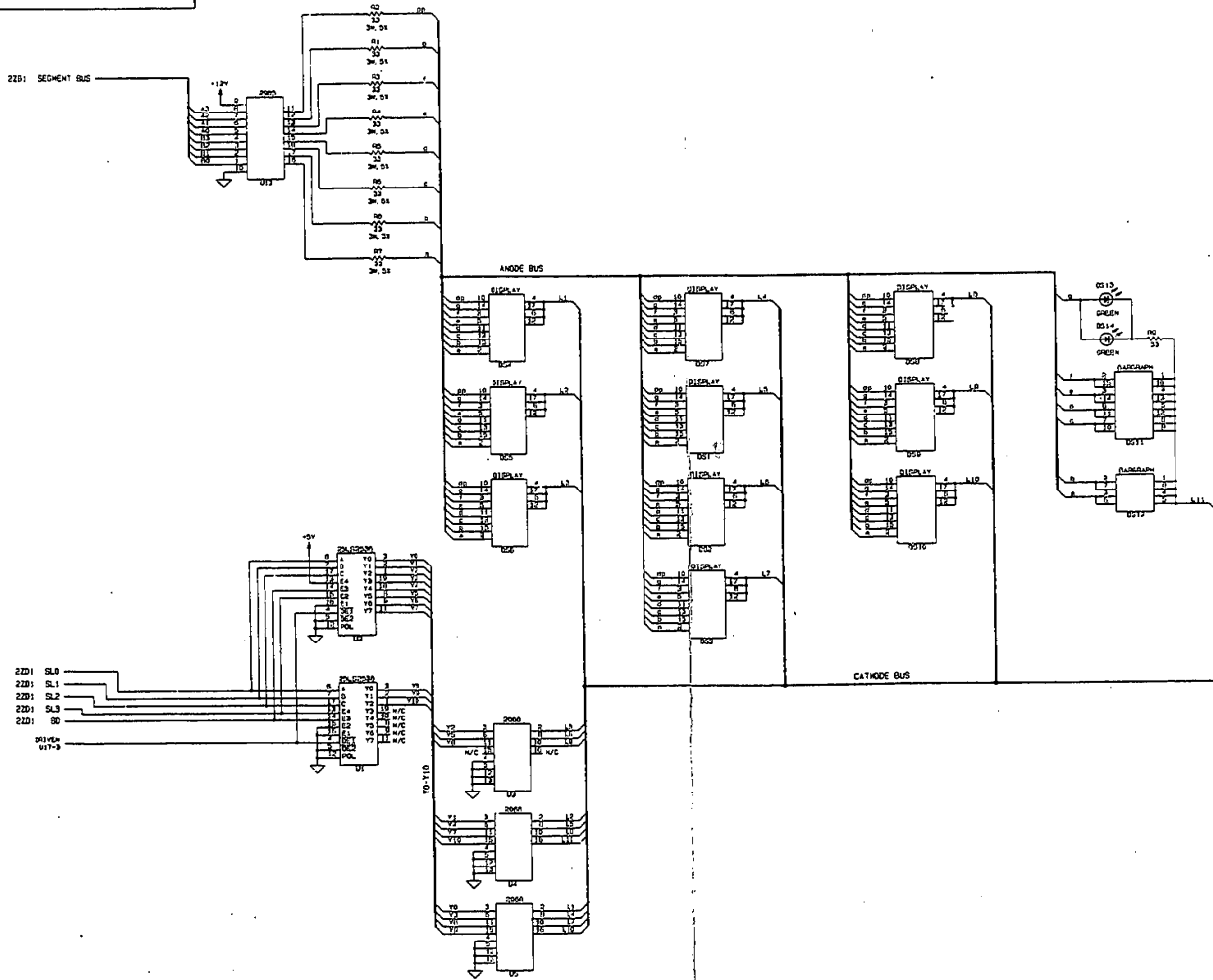


PRODUCTION

SIZE	MODEL	DWG NO.	REV
D	NTH4	019027-201	G
SCALE	NAME	SOURCE F-NET	SHEET 2 OF 3

DWG NO. 019027-201 SHEET 2 OF 3

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PRODUCTION

SIZE	MODEL	DWG NO.	REV
D	NTM4	019027-201	G
SCALE	NONE	SOURCE F-NET	SHEET 3 OF 3

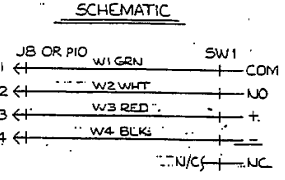
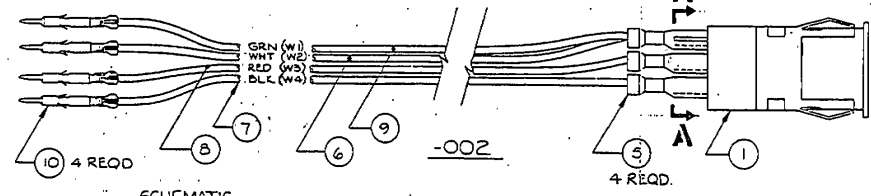
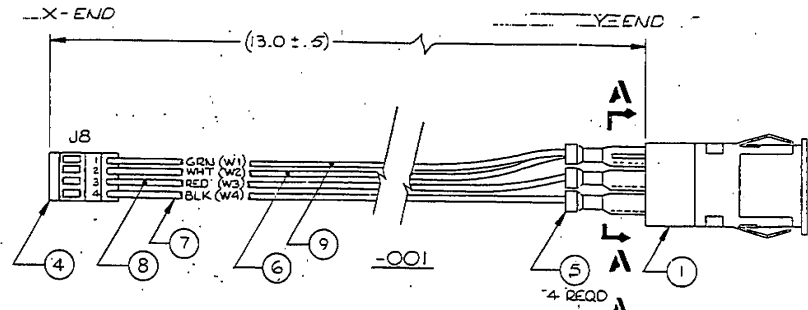
Dwg No 019027-201 3 G

NOTES:

1. MARK WITH PART NUMBER AND REV LTR TO WHICH MFD, ALSO MARK CONNECTOR (ITEM 4) JB OR (ITEM 11) PIO.
2. CUT AND STRIP WIRES (ITEMS 6-9) PER TABLE I.

ACDN NO.	16934	26722	2-019	21558
REVISION LEVEL	E	F	G	H

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
A		DART: 1472 REVISED PART NUMBERS ON ITEMS 6-9. EFF. PT: 7, DISP: USE	<i>[Signature]</i>	8/1/90
B		DART: 14709 RELEASED TO PREPROD. EFF. PT: 7, DISP: ASSYS COMPLY	<i>[Signature]</i>	1/15/90
C	C3	DART: 14262 ADDED ANODE AND CATHODE INDICATORS TO ITEM 2 EFF. PT: 7, DISP: NONE	<i>[Signature]</i>	9/12/90
D		DART: 1543B, ADDED -002 EFF. PT: C, DISP: NEW PART DART: 14245 REL TO PRODUCTION EFF. PT: 7, DISP: USE	<i>[Signature]</i>	11/19/90



VIEW A-A

NOTE:
PREPRODUCTION DASH NUMBERS INDICATED BELOW HAVE BEEN ADDED TO THIS PRODUCTION DRAWING.
-002
THIS BLOCK WILL BE DELETED ON PRODUCTION RELEASE.

PRODUCTION

TABLE I

WIRE NO.	ITEM NO.	LENGTH		-001		-002		-001, -002			
		-001	-002	X-END	ITEM	X-END	ITEM	STRIP	ITEM		
W1	9	12.5 ± .5	3.0 ± .5	N/A	4	12.5 ± .020	10	1	11	25 ± .04	5
W2	6	12.5 ± .5	3.0 ± .5	N/A	4	12.5 ± .020	10	2	11	25 ± .04	5
W3	8	12.5 ± .5	3.0 ± .5	N/A	4	12.5 ± .020	10	3	11	25 ± .04	5
W4	7	12.5 ± .5	3.0 ± .5	N/A	4	12.5 ± .020	10	4	11	25 ± .04	5

-002	000313	000313
-001	019088	000208
PART NO.	NEXT ASSY. NO.	END ITEM NO.

ITEM NO.	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	SWITCH ASSY, RESET		
11	019957-001		PIO
10	019955-001		
9	010603-006	WIRE, INSULATED, STRANDED	
8	-003	GREEN, 22 AWG	W1
7	-001	RED, 22 AWG	W3
6	-001	BLACK, 22 AWG	W4
6	010603-010	WIRE, INSULATED, STRANDED	
5	019090-001	TERMINAL, FEMALE, DISCONNECT	
4	016578-003	CONNECTOR, LOCKING HOUSING, 22 AWG 4 CONTACT	JB
3	019006-001	LENS, SWITCH, RED	
2	019005-001	LAMP, LED	RED
1	019007-001	SWITCH, ELECTRONIC CONTROL PUSHBUTTON	SW1
1	-001	SWITCH ASSY, RESET	

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
019088	SW1		

UNLESS OTHERWISE SPECIFIED	DRAWN	2/16/90
ALL DIM. ARE IN INCHES	CHECKED	2/16/90
TOL. .XX ±	ENGR.	2-15-90
ANGLE	QUAL.	1/29/90
CLASS CODE	SW1A	MFG
VALUE CODE	Q55Q65	OTHER

QUANTITY PER ASSEMBLY	CLASS CODE	VALUE CODE	Q55Q65
DO NOT SCALE DRAWING PRINTS	SCALE	NONE	

PARTS LIST			
QUANTITY	DESCRIPTION	REF. DESIG.	REV.
1	SWITCH ASSY, RESET		D

12 pins inactive

NOTES: UNLESS OTHERWISE SPECIFIED

1. APPLY ADHESIVE (ITEM 11) TO ALL THREADED FASTENERS.
2. CABLE ASSY (ITEM 9) NOT INSTALLED ON -002 AND -003.
3. TORQUE THE SET SCREWS (ITEM 8) TO 30 ± 5 IN-LBS AFTER APPLYING LOCTITE (ITEM 11).

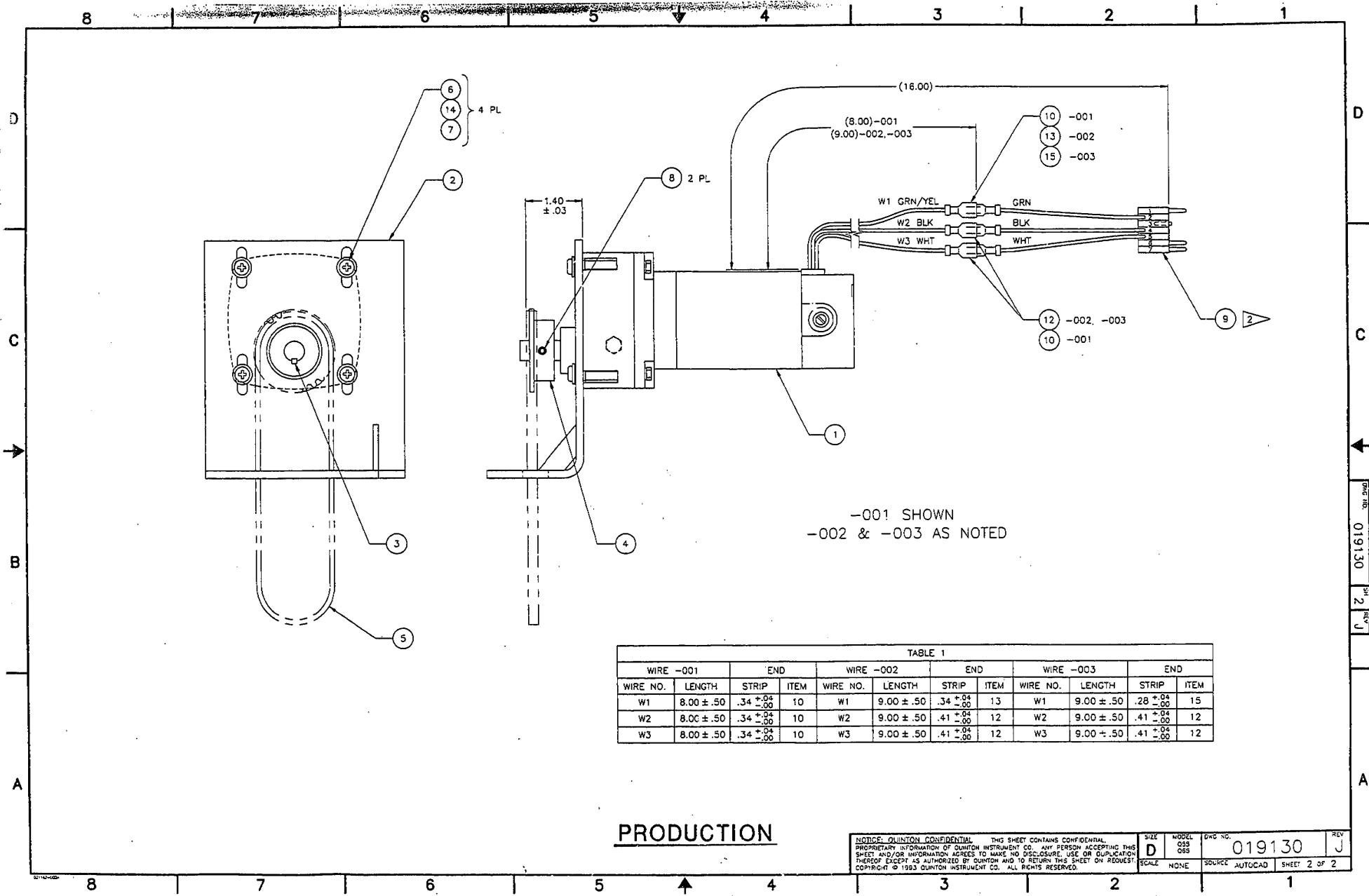
REVISIONS			
LTR	ZONE	DESCRIPTION	APPROVED DATE
		G ADCN: 26646 REDRAWN ON AUTOCAD ITEM 12 WAS 013684-001 ADDED 031474 & 031475 TO -002 NEXT ASSY NO.	S.COZAD 8/9/93
		H ADCN: 27569	
		I ACTION CODE: F1 MODIFIER: 7/15/93	
J	2A3	TABLE 1 -002: W1 LENGTH WAS 7.00, W2 & W3 STRIP LENGTH WAS .34 ACTION CODE: F1 MODIFIER: 8/27/93 J RDA: 27288 ADDED -003 CONFIGURATION ACTION CODE: H1 MODIFIER: DATE OF RELEASE	<i>[Signature]</i> 9/9/93
ADCN NO.		30202	
REVISION LEVEL		K	

1	-	-	15	030690-012	TERMINAL, SLDRLS, RING	#8 14-16 AWG	
4	4	4	14	001182-001	WASHER, LOCK, EXT STAR	#10	
-	1	-	13	001486-001	TERMINAL, SLDRLS, CLE SPLICE		
2	2	-	12	030690-103	TERMINAL, SLDRLS FEMALE QD	FEMALE, .250, 14-16 AWG	
AR	AR	AR	11	016891-001	ADHESIVE	LOCTITE 222	
-	-	3	10	013685-001	TERMINAL, SLDRLS MALE TAB,QD		
-	-	1	9	019307-001	CABLE ASSY, SPEED CHNG MOT		
2	2	2	8	010833-144	SCREW, SET	#10-32 X .250	
4	4	4	7	001164-003	WASHER, FLAT	#10	
4	4	4	6	010827-224	SCREW, MACH PNH PHIL	#10-32 X .625	
1	1	1	5	030449-001	KIT, CHAIN	#25	
1	1	1	4	019199-001	SPROCKET, MOD. 24 TOOTH		
1	1	1	3	001802-001	KEY, SQUARE	.50 LG X .125 X .125	
1	1	1	2	018993-001	BRACKET, SPEED CHNG MOTOR		
1	1	1	1	018972-001	MOTOR, 90 VDC		
-	-	-	-	-003	MOTOR ASSY, SPEED CHANGE		
-	-	-	-	-002	MOTOR ASSY, SPEED CHANGE		
-	-	-	-	-001	MOTOR ASSY, SPEED CHANGE		

-003	031474	000345 000346
	031475	000343 000344
-002	031474	000345 000346
	031475	000343 000344
	019737	000313
-001	018989	000307 000308 000309
	018990	000307 000308 000309
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

PRODUCTION

PART NUMBER		DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
003	002	001	PARTS LIST	
UNLESS OTHERWISE SPECIFIED		DRAWN	S. PRICE	2/28/90
ALL DIM ARE IN INCHES		CHECKED	T. POYNEER	7/11/90
TOL XXX		ENGR	D. FURGERSON	7/12/90
ANGLE		MFG	B. TRATHEN	7/18/90
NOTICE: QUINTON CONFIDENTIAL		QUAL	F. DANESHFAR	7/17/90
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CLASS CODE: SPED	VALUE CODE: MOTOR	DO NOT SCALE DRAWING	SCALE: NONE	SOURCE: AUTOCAD
QUINTON Instrument Co.		2121 TERRY AVENUE SEATTLE, WASHINGTON 98121 (206) 221-7373		REV J
MOTOR ASSEMBLY, SPEED CHANGE			SIZE D	MODEL 033 063
			SWG NO. 019130	SHEET 1 OF 2



-001 SHOWN
-002 & -003 AS NOTED

TABLE 1

WIRE -001				WIRE -002				WIRE -003			
WIRE NO.	LENGTH	STRIP	ITEM	WIRE NO.	LENGTH	STRIP	ITEM	WIRE NO.	LENGTH	STRIP	ITEM
W1	8.00 ± .50	.34 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	10	W1	9.00 ± .50	.34 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	13	W1	9.00 ± .50	.28 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	15
W2	8.00 ± .50	.34 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	10	W2	9.00 ± .50	.41 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	12	W2	9.00 ± .50	.41 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	12
W3	8.00 ± .50	.34 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	10	W3	9.00 ± .50	.41 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	12	W3	9.00 ± .50	.41 $\begin{smallmatrix} +.04 \\ -.00 \end{smallmatrix}$	12

PRODUCTION

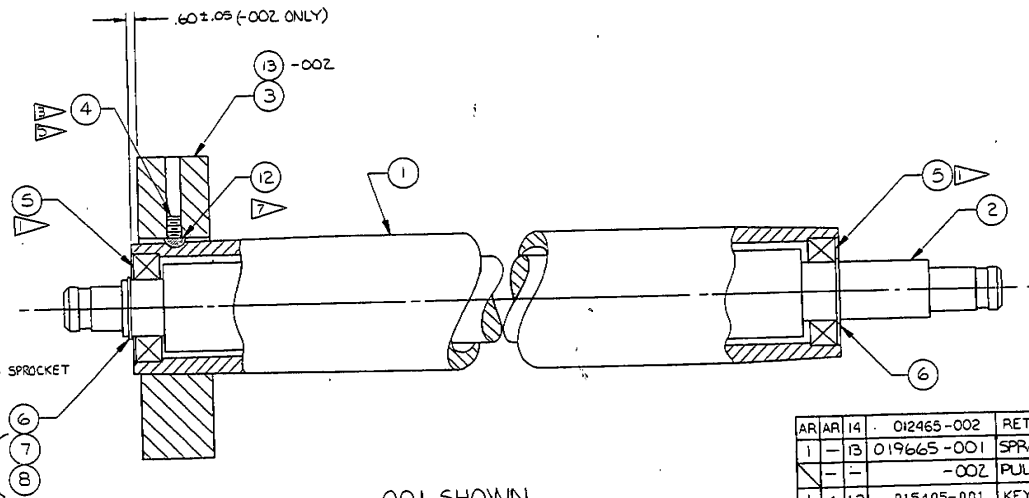
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SIZE: D MODEL: 033 OBS: 019130 REV: J
SCALE: NONE SOURCE: AUTOCAD SHEET: 2 OF 2

Dwg. No. 019130 Rev. J

NOTES:

- 1. PRESS BALL BEARINGS (ITEM 5) INTO ROLLER (ITEM 1) THROUGH THE OUTER RACE OF THE BEARING ONLY.
- 2. USE ARBOR SHIMS (ITEMS 7 & 8) AS REQUIRED TO ACHIEVE .005 TO .015 AXIAL CLEARANCE BETWEEN BEARING (ITEM 5) AND RETAINING RING (ITEM 6).
- 3. APPLY ADHESIVE (ITEM 11) TO SET SCREW (ITEM 4) IN TIMING SPROCKET (ITEM 13). ASSEMBLY TORQUE: 40 IN-LBS.
- 4. TAG WITH PART NUMBER AND REV LETTER TO WHICH MFD.
- 5. THE SET SCREW (ITEM 4) WILL NOT ALIGN IN THE AXIAL DIRECTION WITH THE WOODRUFF KEY (ITEM 12) FOR -002 CONFIGURATION.
- 6. ASSEMBLE PER ASSEMBLY PROCEDURE 019137-880.
- 7. APPLY RETAINING COMPOUND (ITEM 14) TO SPROCKET BORE, AND WOODRUFF KEY LOCATION ON DRIVE ROLLER, PRIOR TO ASSEMBLING.



PRODUCTION

-002	000313	000313
-001	000286	000286
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

REV. NO.		REVISIONS	APPROVED	DATE
G		E ADDU: 17430 ADDED LOTE 6 EFF PT: 7, DSP: NONE	T. DUCKING	2/1/93
CG		F ADDU: 18991 ADDED TEXT TO FLAG LOTE 3 EFF PT: 5, DSP: USE, MOD: 8/28/91		2/19/93
		G ADDU: 21862 ADDED ITEM 14 ADDED FLAG LOTE 7 RELEASED TO PRODUCTION EFF PT: 5, DSP: USE, MOD: 3/23/92		2/21/93

AR	AR	14	012465-002	RETAINING COMPOUND	LOCTITE 680
1	-	13	019665-001	SPROCKET, TIMING, MACHINED	
			-002	PULLEY ASSY, DRIVE	
1	1	12	015405-001	KEY, WOODRUFF	.125 x .375
AR	AR	11	015233-001	ADHESIVE	LOCTITE 242
		10		DELETED	
		9		DELETED	
AR	AR	8	013399-012	ARBDR SHIM	1.00 IDx 1.50 ODX .020 THK
AR	AR	7	013399-011	ARBDR SHIM	1.00 IDx 1.50 ODX .010 THK
Z	Z	6	001032-013	RING, RETAINER	.910 DIA
Z	Z	5	018280-001	BEARING, BALL	1.8504 ODX .9843 IDx .4724 W
1	1	4	010833-185	SCREW, SET	1/4-20 UNC x .375 LONG
-	-	3	018995-001	TIMING SPROCKET, MACHINED	
1	1	2	019000-001	SHAFT, DRIVE ROLLER	
1	1	1	018999-001	ROLLER, DRIVE, MACHINED	
-	-		-001	PULLEY ASSY, DRIVE	

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
001			

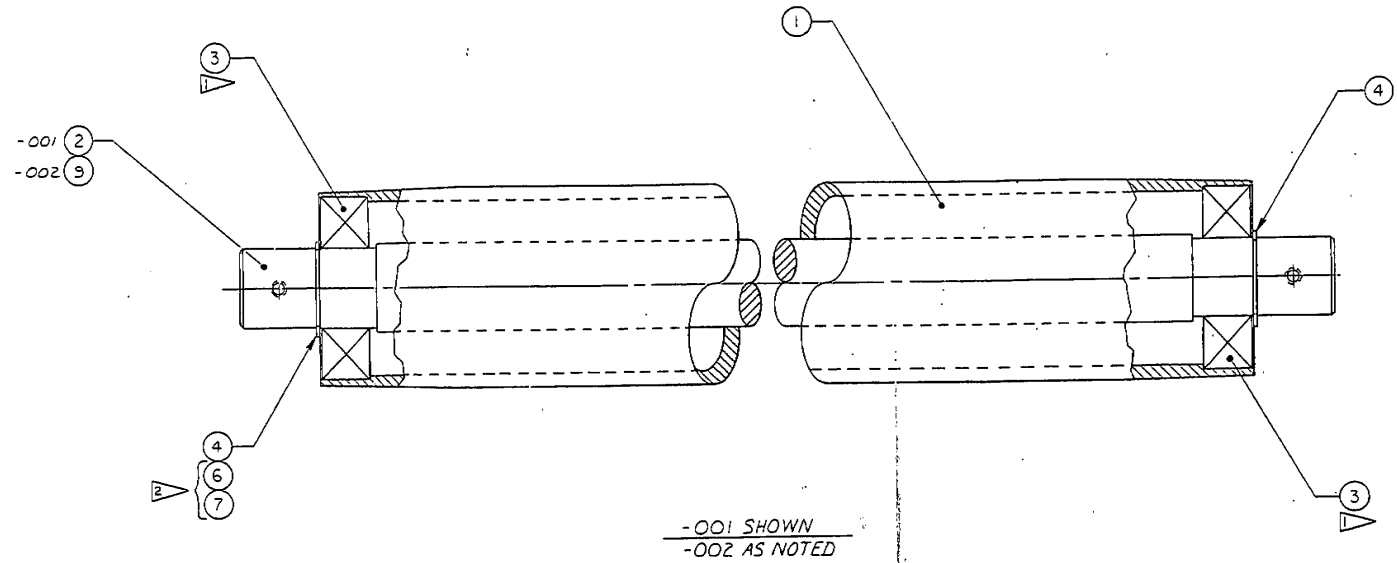
UNLESS OTHERWISE SPECIFIED		DRAWN TO LAS ROUGH		1/20/93	
CHECKED	R. PIERCE-CANNON	2/1/90			
ENGR.		2/4/90			
DATE		11/1/90			
QUANTITY PER ASSEMBLY	CLASS CODE	PULA	SIZE	1/2" x 1/2"	2/1/90
VALUE CODE	TREDFML		OTHER		

QUANTITY PER ASSEMBLY	VALUE CODE	PULA	SIZE	1/2" x 1/2"	2/1/90
MODEL	QUNTON	DWG. NO.	019137	REV.	G
SCALE	1/1	DIST. CODE		SHEET	1 OF 1

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE
E		D ADDN: 17426 ADDED NOTE 4 EFF PT: 7, DISP: NONE E RDA: 26588 ADDED -002 CONFIGURATION RELEASED TO PRODUCTION ACTION CODE: W MOD: DATE OF RELEASE	M. WELGE RPC B. H. A. B. M. F. R. G. H.	6-3-93 4/4/93 4/4/93 4/7/93 4-7-93



- NOTES:**
1. PRESS THE BALL BEARINGS (ITEM 3) INTO THE ROLLER (ITEM 1) THROUGH THE OUTER RACE OF THE BEARING ONLY.
 2. USE ARBOR SHIM (ITEMS 6 & 7) AS REQUIRED TO ACHIEVE .005 TO .015 ENDPLAY.
 3. MARK OR TAG WITH PART NO. AND REV LTR TO WHICH MFD.
 4. ASSEMBLE PER ASSEMBLY PROCEDURE 019137-880.

PRODUCTION

-002	000338	000338
	000335	000335
	000333	000333
	000313	000313
-001	000286	000286
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

QTY	REV	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	-	9	019001-002	SHAFT, REAR ROLLER		
	-	-	-002	PULLEY ASSY, REAR		
	-	8	DELETED			
1/4	A/R	7	013999-011	ARBOR SHIM	1.000 ID X 1.500 OD X .010	
1/4	A/R	6	013999-012	ARBOR SHIM	1.000 ID X 1.500 OD X .020	
	-	5	DELETED			
2	2	4	001032-013	RING, RETAINING	.910 ID X .042 THK	EXT.
2	2	3	018280-001	BEARING, BALL	.9843 ID X 1.8504 OD X .4724 W	
-	1	2	019001-001	SHAFT, REAR, ROLLER		
1	1	1	018998-001	ROLLER, REAR, TREADMILL		
-	-	-	-001	PULLEY ASSY, REAR		

PARTS LIST		DRAWN		TITLE	
UNLESS OTHERWISE SPECIFIED	DRAWN	RPC	1/26/90	PULLEY ASSEMBLY, REAR	
ALL DIM ARE IN INCHES	CHECKED	<i>[Signature]</i>	1/31/90	Quinton instrument co. 2121 TERRY AVENUE SEATTLE, WASHINGTON 98121 206/223-1313	
TOL.	ENGR.	<i>[Signature]</i>	2/9/90	DWG. NO. 019138	
.XX ±	QUAL.	1 D.		REV. E	
.XXX ±	OTHER			SHEET 1 OF 1	
ANGLE ±				SCALE NONE	
CLASS CODE PULA	MFG.	<i>[Signature]</i>	2/4/90	DIST. CODE	
VALUE CODE TREDML	OTHER			DO NOT SCALE DRAWING PRINTS	

REVISIONS			
LTR	ZONE	DESCRIPTION	APPROVED DATE
K		ROA: 32752 REVISED SHEETS 1 AND 2 ADDED -003 CONFIGURATION ACTION CODE: H1 MOD: DATE OF RELEASE	N. WERDE 1/3/90 1/9/93

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 MATERIAL: TO BE SUPPLIED BY VENDOR.
- 2 OVERLAY: TEXTURED POLYESTER TRANSPARENT FILM, .010 THK AUTOTEX 10E2 OR EQUIVALENT. APPROVAL BY QUINTON REQUIRED PRIOR TO START OF INITIAL PRODUCTION.
- 3 BOND SWITCH PACKET TO SUBPANEL WITH 3M ADHESIVE 467 OR EQUIVALENT. ALL EDGES SHALL BE SECURELY BONDED IN PLACE.
- 4 CENTER TEXT WITHIN KEY OUTLINE AS SHOWN.
- 5 TERMINATE FLEX CABLE WITH CONNECTOR (ITEM 2) AS SHOWN.
- 6 SHIELD SWITCH PACKET AGAINST ESD WITH CONDUCTIVE TOP LAYER. TERMINATE LAYER VIA FLEX CABLE PER SCHEMATIC.
- 7 ENTIRE GRAPHIC AREA OF EACH SWITCH SHALL BE ELECTRICALLY ACTIVE. SWITCHES SHALL CONFORM TO REQUIREMENTS OF NOTE 11.
- 8 LOCATE PER DWG USING CAMERA-READY ARTWORK AND COLOR SAMPLES PROVIDED BY QUINTON.
- 9 SEE TABLE 1 FOR TEXT SIZE AND COLOR INFORMATION.
- 10 WINDOWS IN OVERLAY SHALL BE TRANSPARENT YELLOW-GREEN (PLSQ-122) WITH TRANSPARENT ANTIGLARE COATING ON FRONT SURFACE PER APPROVED SAMPLE.
- 11 PERFORMANCE REQUIREMENTS:
 - ENVIRONMENTAL: TEMPERATURE ----- °C TO +50°C (OPERATING)
-40°C TO +70°C (NON-OPERATING)
 - HUMIDITY ----- 0-98% RH NON-CONDENSING
 - ATMOSPHERIC PRESSURE ----- 445-775mmHg (8.6-15.0 PSIA)
 - ELECTRICAL: CONTACT RESISTANCE ----- 150 OHMS MAX.
 - CONTACT BOUNCE ----- 10 ms MAX.
 - CAPACITANCE (BETWEEN UPPER AND LOWER SWITCH LAYERS) ----- 25 pF MAX.
 - INSULATION RESISTANCE ----- 10 MOHMS @ 100 VDC (MIN)
 - ESD SHIELDING (PANEL TOP AND SIDES) ----- 20 KV, 200 pF, 2 SEC DURATION
 - SHIELD LAYER RESISTANCE ----- 50 OHMS/50 IN. MAX.
 - CURRENT CAPACITY OF CIRCUIT TRACES ----- 250 mA @ 6V
 - MECHANICAL: SWITCH ACTUATION FORCE ----- .5-1.5 POUNDS
 - SWITCH LIFE ----- 2,000,000 CYCLES MIN.
 - KEY TRAVEL ----- .010 ± .003 IN.
 - ALL SWITCHES EXTERNAL VENT TO DISPLAY WINDOWS ONLY.
- 12 COLOR: BLACK, PANTONE PROCESS.
- 13 COLOR: SILVER, PANTONE 877C.
- 14 MATCH MUNSELL AND PANTONE COLORS USING COOL WHITE FLORESCENT (4400K) LIGHT STANDARD AND COLOR SAMPLES SUPPLIED BY QUINTON.
- 15 MARK WITH PART NO., REV LETTER TO WHICH MFD, VENDOR IDENT AND FOUR-DIGIT MFG DATE CODE CONSISTING OF YEAR AND WEEK NO. (EG JAN 10, 1990=9002). LOCATE APPROX AS SHOWN.

16. COLOR, TEXT AND GRAPHIC LAYOUT SHALL BE APPROVED BY QUINTON PRIOR TO START OF INITIAL PRODUCTION.
- 17 INSTALL SCREW (ITEM 5) WITH HEAD INTO COUNTERSUNK HOLE PRIOR TO BONDING SWITCH PANEL ONTO ALUMINUM SUBPANEL (SEE SECTION G-G). SCREW MUST BE MAGNETIC.
18. ITEMS SHALL BE SUITABLY PACKAGED FOR ACCEPTANCE BY COMMON CARRIER FOR SURFACE AND AIR TRANSPORTATION, HANDLING AND STORAGE WITHOUT DETRIMENTAL EFFECTS TO THE ITEMS.
- 19 SWITCH PACKET TO COME WITHIN .025 OF THE EDGE OF PANEL WINDOW. NO ADHESIVE IN THIS AREA 3 PLACES.
- 20 TRIANGULAR AREA SHOWN IS TO BE "ACTIVE", THE "SPACER" OPENING IS TO BE A .70 X 2.00 RECTANGLE AS PER THE PHANTOM LINE SHOWN.
- 21 .025 WIDE LINE, COLOR MATCHED TO PANTONE 206C.
22. ALL DEPRESSIONS OR BULGES IN THE TOP LAMINATE FROM WHERE THE RIBBON CABLE ENTERS THE CONTROL PANEL TO THE NEAREST EDGE ARE ACCEPTABLE. (ROUGHLY AN AREA 1.5 X 2.0 INCHES SQUARE).

NOTE:
PROTOTYPE DASH NUMBERS INDICATED BELOW HAVE BEEN ADDED TO THIS DRAWING.
-003

PART NO.	DESCRIPTION	MFG CODE	MFG PART NO.
-003	CONTROL KEYBOARD ASSEMBLY	1	
-002	CONTROL KEYBOARD ASSEMBLY	1	
-001	CONTROL KEYBOARD ASSEMBLY	1, 2	

SOURCE CONTROL DRAWING

ONLY THE ITEMS DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE QUINTON DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

UNIT OF MEASURE: EACH UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

MENTION TECHNOLOGIES
FRANCONIA, NH
02238
ADVANCED INPUT DEVICES
COEUR D'ALENE, IDAHO
83814
APPROVED SAMPLES
BY QUIN

PART NO.	NEXT ASSY NO.	END ITEM NO.
-003	000335 000333	
-002	000338 000322	
-001	000335 000313	

APPLICATION

PRODUCTION

AR	AR	AR	AR	7	016891-001	ADHESIVE	LOCTITE #222
1	1	1	6		001575-001	NUT, HEX	8-32UNC-2B
1	1	1	5		010293-011	SCREW, 100FLH, TYPE I RECESS	8-32UNC-2A X .438L
10	10	10	4	1		STUD, SELF-CLINCHING	PEM #FHS-832-12
8	B	8	3	1		STANDOFF, SELF-CLINCHING	PEM #BSOS-632-16
1	1	1	2		018854-013	CONN, FEM, FLEX CABLE	J1
AR	AR	AR	1	1		SHEET, ALUMINUM	.090 THK 6061-T6
-	-	-	-	-	-003	CONTROL KEYBOARD ASSEMBLY	JAPANESE
-	-	-	-	-	-002	CONTROL KEYBOARD ASSEMBLY	
-	-	-	-	-	-001	CONTROL KEYBOARD ASSEMBLY	

QTY PER ASSY	DO NOT SCALE DRAWING	DRAWN: S. COZAD 3/29/90	ENGR: T. K. Morrow 2/28/90	MFG: B. Trothen 3/1/90	QUAL: F. Doneshor 3/20/90	CHKG:	TECH SVCS:
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1982	.XX ± .03 .XXX ± .010 ANGLE ± 2°	<p>NOTICE: QUINTON CONFIDENTIAL THIS SHEET CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION OF QUINTON INSTRUMENT CO. ANY PERSON ACCEPTING THIS SHEET AND/OR INFORMATION AGREES TO MAKE NO DISCLOSURE, USE OR REPLICATION THEREOF EXCEPT AS AUTHORIZED BY QUINTON AND TO RETURN THIS SHEET ON REQUEST. COPYRIGHT ©1990 ALL RIGHTS RESERVED.</p>					
<p>QUINTON INSTRUMENT CO. 3303 MONTE VILLA PARKWAY BOTHELL, WA 98021-8908 206/462-2000</p>				<p>CONTROL KEYBOARD ASSEMBLY</p>			
PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION		REFERENCE DESIGNATION	
SIZE	MODEL	DWG NO.	REV	SCALE	SOURCE	AUTOCAD	SHEET 1 OF 5
D	CLUBTRK	019186	K	1/1			

DWG NO. 019186

A

D

C

B

A

8 7 6 5 4 3 2 1

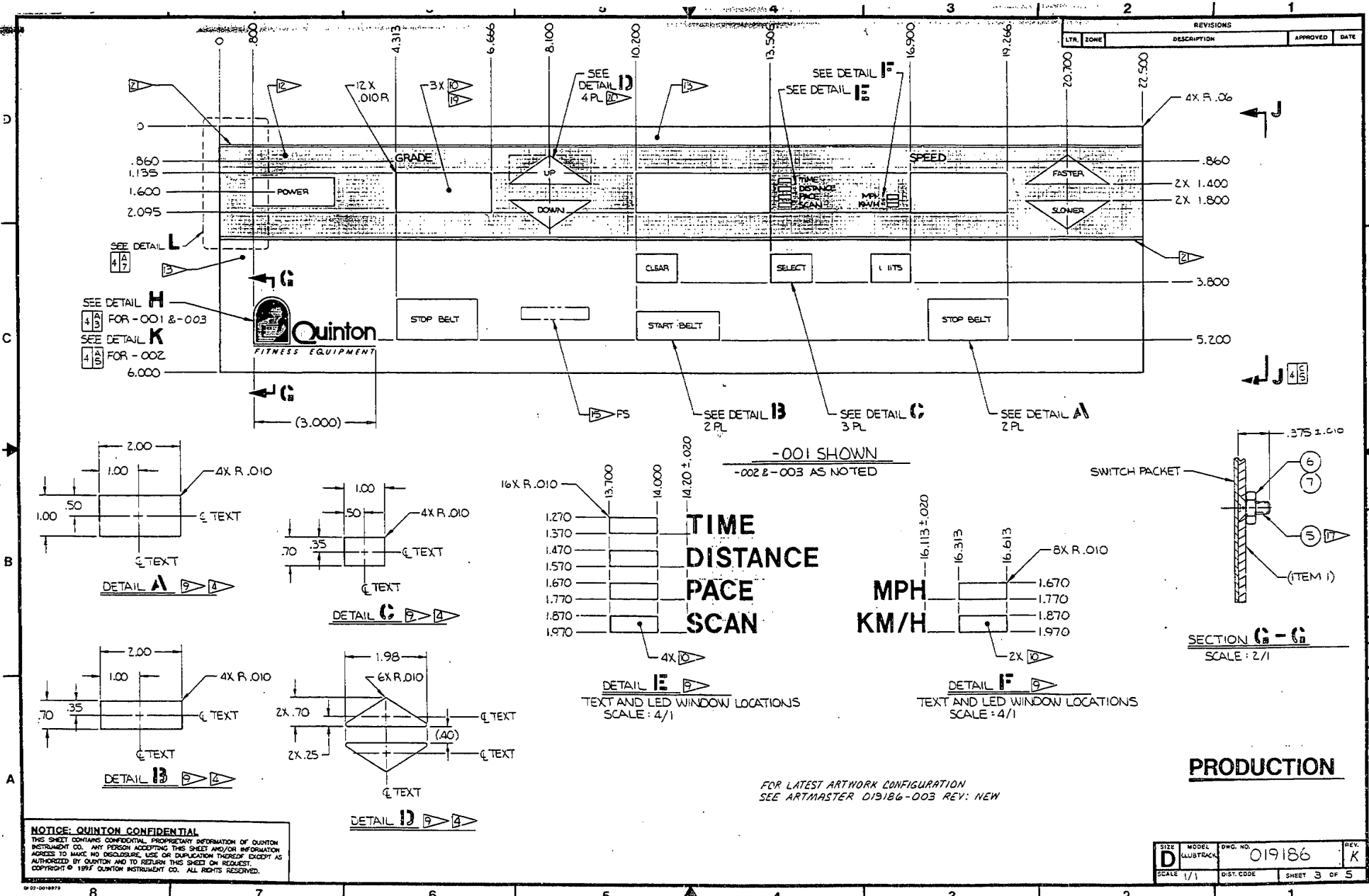
TABLE 1: TEXT GRAPHIC INFORMATION 

-001 & -002 TEXT	-003 TEXT	TEXT SIZE	TEXT COLOR	BACKGROUND COLOR
POWER	入/切	FUTURA, MEDIUM, 14 PT	WHITE	GREEN, MUNSELL 2.5G 4/10
UP	+	FUTURA, MEDIUM, 14 PT	BLACK PANTONE PROCESS	SILVER, PANTONE 877C
DOWN	-	FUTURA, MEDIUM, 14 PT	BLACK PANTONE PROCESS	SILVER, PANTONE 877C
FASTER	+	FUTURA, MEDIUM, 14 PT	BLACK PANTONE PROCESS	SILVER, PANTONE 877C
SLOWER	-	FUTURA, MEDIUM, 14 PT	BLACK PANTONE PROCESS	SILVER, PANTONE 877C
CLEAR	表示クリアー	FUTURA, MEDIUM, 14 PT	WHITE	BLACK PANTONE PROCESS
SELECT	表示選択	FUTURA, MEDIUM, 14 PT	WHITE	BLACK PANTONE PROCESS
UNITS	速度単位	FUTURA, MEDIUM, 14 PT	WHITE	BLACK PANTONE PROCESS
STOP BELT	ストップ	FUTURA, MEDIUM, 14 PT	WHITE	RED, PANTONE 206C
START BELT	スタート	FUTURA, MEDIUM, 14 PT	WHITE	GREEN, MUNSELL 2.5G 4/10
GRADE	傾斜	FUTURA, MEDIUM, 16 PT	WHITE	BLACK PANTONE PROCESS
SPEED	速度	FUTURA, MEDIUM, 16 PT	WHITE	BLACK PANTONE PROCESS
TIME, DISTANCE, PACE, SCAN	経過時間, 走行距離, ペース, スキャン	FUTURA, MEDIUM, 14 PT	WHITE	BLACK PANTONE PROCESS
MPH, KM/H	時速/マイル 時速/キロ	FUTURA, MEDIUM, 14 PT	WHITE	BLACK PANTONE PROCESS

FOR LATEST ARTWORK CONFIGURATION
SEE ARTMASTER: 019186-003 REV: NEW

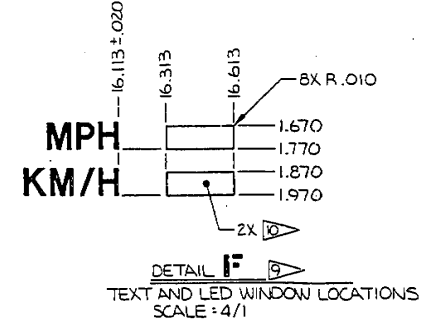
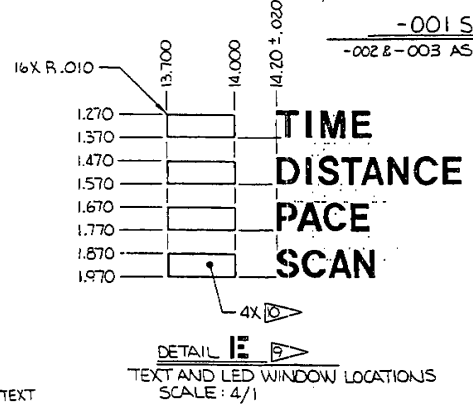
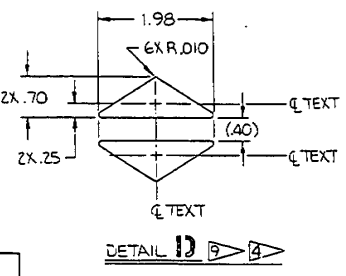
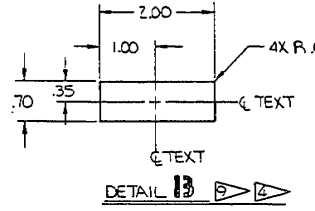
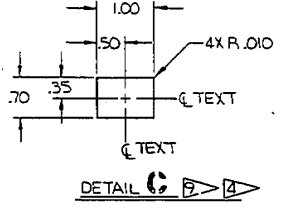
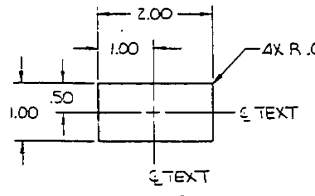
PRODUCTION

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SCALE 1/1	SOURCE AUTOCAD	SHEET 2 OF 5			

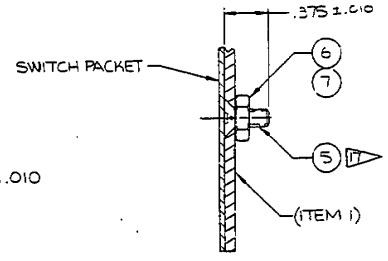


REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE

SEE DETAIL H
 4 A B FOR -001 & -003
 SEE DETAIL K
 4 A B FOR -002
 6.000



-001 SHOWN
 -002 & -003 AS NOTED



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FOR LATEST ARTWORK CONFIGURATION
 SEE ARTMASTER D19186-003 REV: NEW

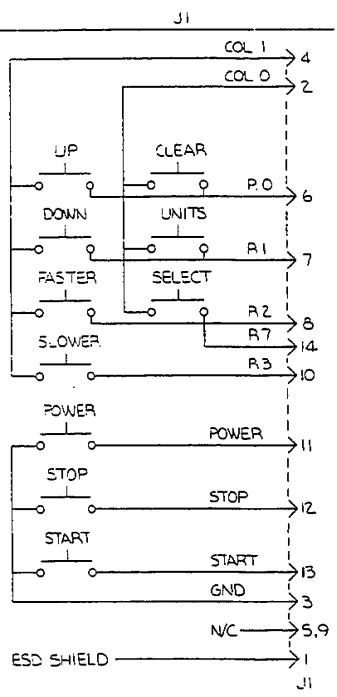
SIZE	MODEL	DWG. NO.	REV.
D	GLUSTRACK	019186	K
SCALE	DIST. CODE	SHEET	OF
1/1		3	5

981610

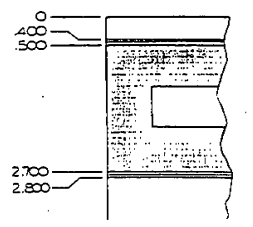
NOTE: If the microfilm document is less clear than this

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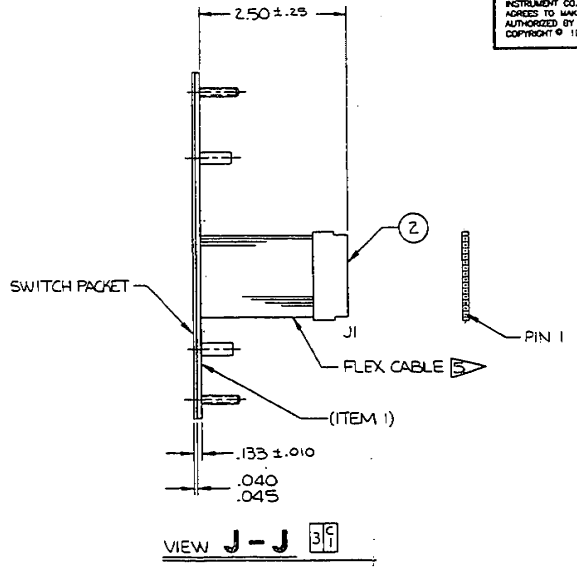
REVISIONS			
LTR.	ZONE	DESCRIPTION	DATE



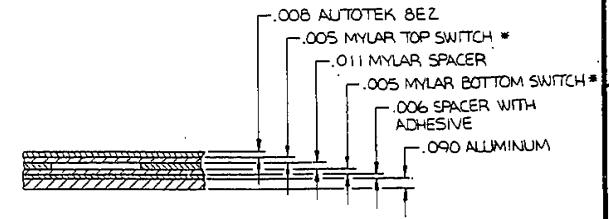
SCHMATIC



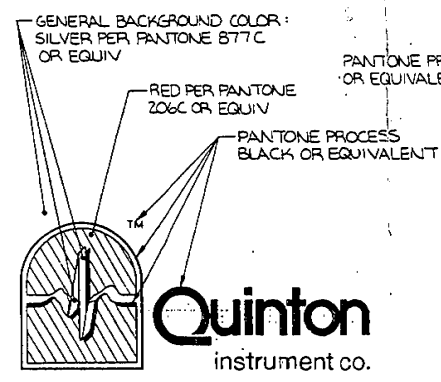
DETAIL L 3/8
SCALE: 1/1



VIEW J-J 3/9

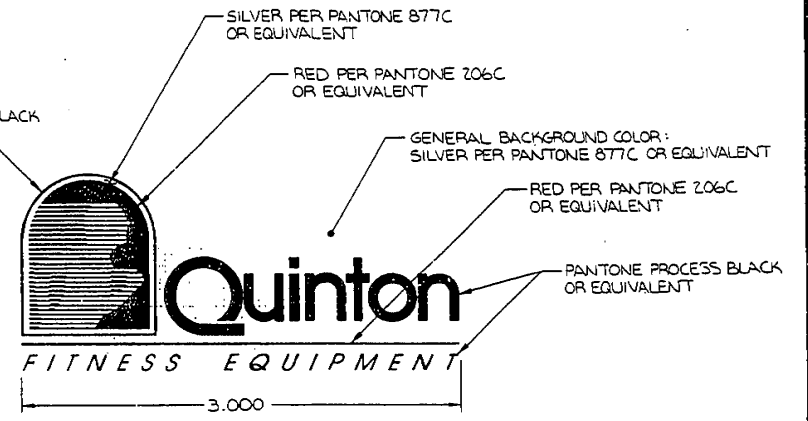


SWITCH PANEL CONSTRUCTION
 SCALE: NONE
 * WITH CONDUCTIVE SILVER INK, SILKSCREENED IN PLACE



DETAIL K 3/8 -002 ONLY
 LOGO COLOR SCHEME
 SCALE: 2/1

FOR LATEST ARTWORK CONFIGURATION
 SEE ARTMASTER 019186-002, REV NEW



DETAIL H 3/8 -001 & -003
 LOGO COLOR SCHEME
 SCALE: 2.5/1

FOR LATEST ARTWORK CONFIGURATION
 SEE ARTMASTER 019186-001, REV A

PRODUCTION

SIZE D	MODEL FLUBTRACK	DWG. NO. 019186	REV. K
SCALE 1/1	DIST. CODE	SHEET 4 OF 5	

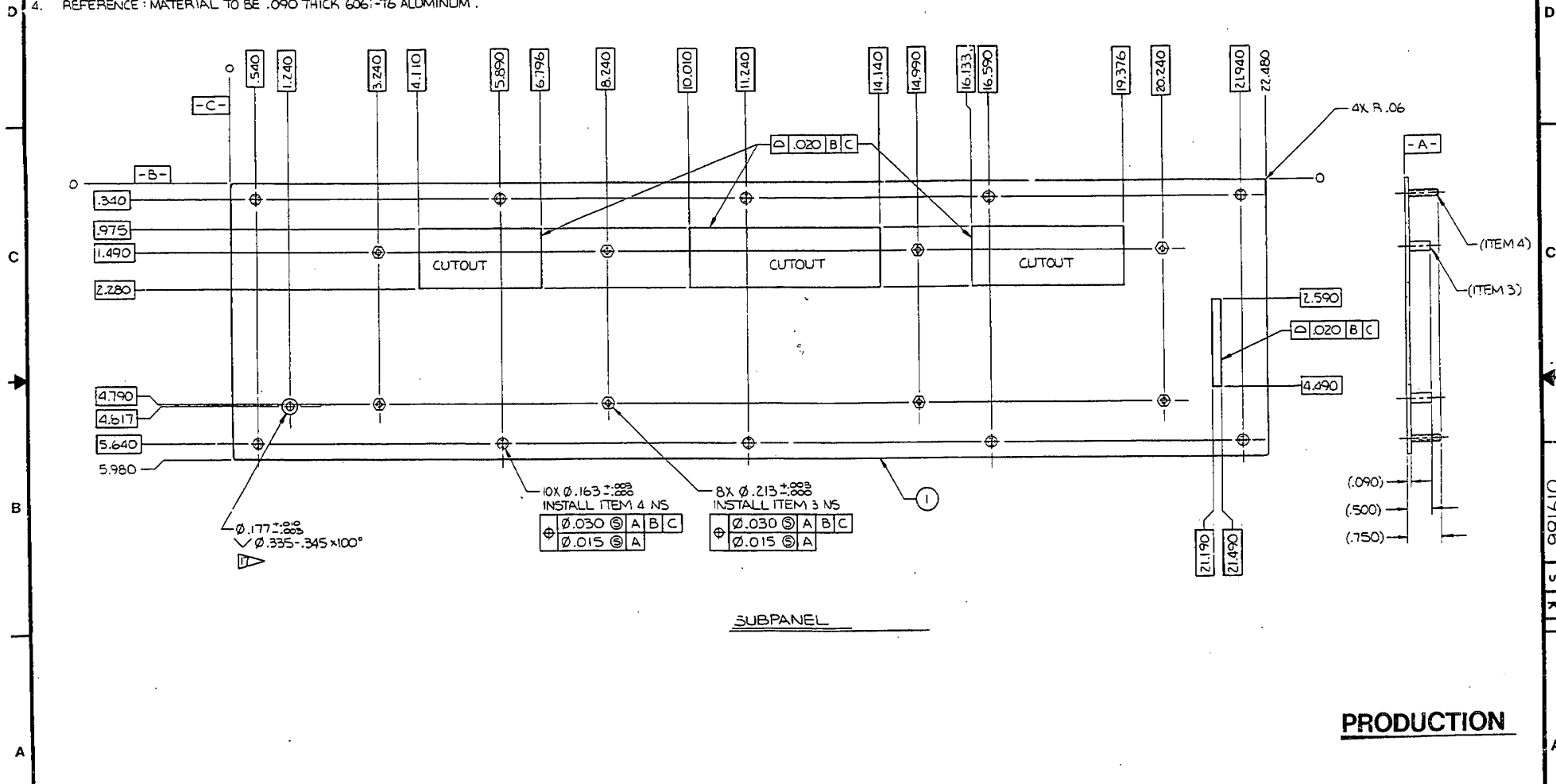
019186

0191610

NOTES: (THIS SHEET ONLY)

1. DEBURR AND BREAK ALL SHARP EDGES, CR .010 MAX.
2. FINISH: SULFURIC ANODIZE PER MIL-A-8625C, TYPE II. OPTIONAL FINISH: IRIDITE PER MIL-C-5541.
3. MAXIMUM INSIDE CORNER RADIUS FOR CUTOUTS IS .020.
4. REFERENCE: MATERIAL TO BE .090 THICK 6061-T6 ALUMINUM.

REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE



SUBPANEL

PRODUCTION

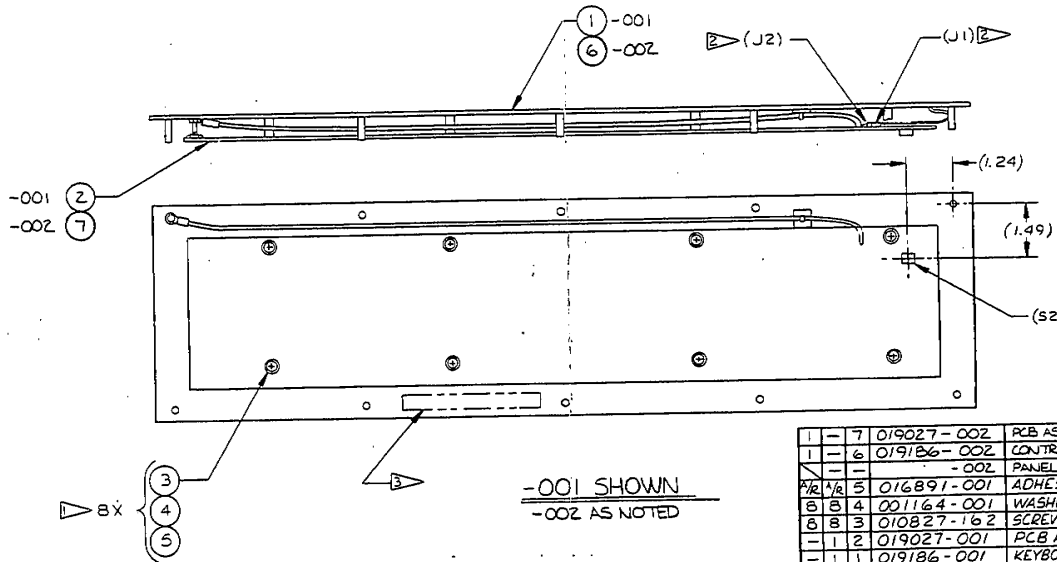
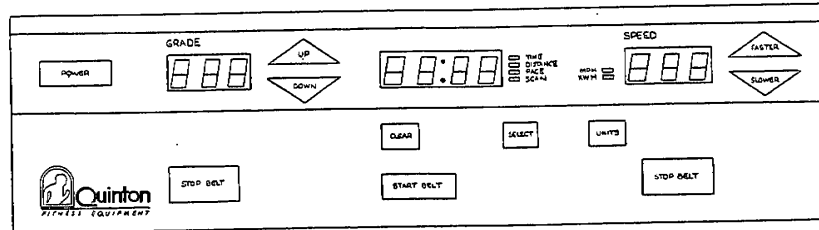
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SIZE D	MODEL CLUBTRAK4	DWG. NO. 019186	REV. K
SCALE 1/1	DIST. CODE	SHEET 5 OF 5	

981610 DWG. NO.

NOTES:

- ▶ APPLY ADHESIVE (ITEM 5) TO SCREW (ITEM 3) PRIOR TO ASSY.
- ▶ CONNECT J1 (ITEM 1) AND J2 (ITEM 2) AS SHOWN.
- ▶ MARK WITH PART NO + REV LTR TO WHICH MFD IN APPROX LOCATION SHOWN.



PRODUCTION

-001 SHOWN
-002 AS NOTED

-002	019620	000322
-001	019620	000313
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

REVISIONS		APPROVED	DATE
A	DART: 15076 REL TO PREPRODUCTION EFF PT: 7, DISP: NONE	J PILEM RPC TPA:IC BPT PT D	10/12/90 10/12/90 10/12/90 11/15/91
	B ADDN 1 7013 ITEM 3 WAS D10B27-202 EFF PT: 5, DISP: NONE, MODIFIER: 2-D7A1 C ADDN 1 7183 ITEM 3 WAS D10B27-202 MODEL WAS N7M4 EFF PT: 7, DISP: NONE DART: 17786 ADDED -002 CONFIGURATION ADDED ITEMS 6 & 7 RELEASED TO PRODUCTION EFF PT: 6, DISP: NEW ASSEMBLY	SUGGARD RPC TPA:IC BPT PT D	4/28/91 5/13/91 6/11/91

ADCN NO.	23131		
REVISION LEVEL	E		

ITEM NUMBER	QUANTITY PER ASSEMBLY	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	7	019027-002	PCB ASSY, FITNESS TREADMILL CONTROLLER		
1	6	019186-002	CONTROL KEYBOARD ASSEMBLY		
1	-	-002	PANEL ASSY, CONTROL		
1	5	016891-001	ADHESIVE	LOCTITE 222	
1	4	001164-001	WASHER, FLAT	#6	
1	3	010827-162	SCREW, MACH, PH PHILLIPS	#6-32 X .312 L	
1	2	019027-001	PCB ASSY, TREADMILL CONTROL		
1	1	019186-001	KEYBOARD ASSY, CONTROL		
1	-	-001	PANEL ASSY, CONTROL		

UNLESS OTHERWISE SPECIFIED	DRAWN	CHECKED	DATE
ALL DIM. ARE IN INCHES	J. P. ...	J. P. ...	3/14/90
TOL. .XX	ENGR.	QUAL.	
ANGLE E	2X Common	2.0	
CLASS CODE	MFG.	OTHER	
VALUE CODE	FTM-JW		

		3121 TERRY AVENUE SEATTLE, WASHINGTON 206/220-7375	08121
TITLE		PANEL ASSY, CONTROL	
SIZE	MODEL	DWG. NO.	REV.
D	CLSTRACK	019248	D
SCALE	NONE	DIST. CODE	SHEET 1 OF 1

IND. NO. 019248

REV. D

A

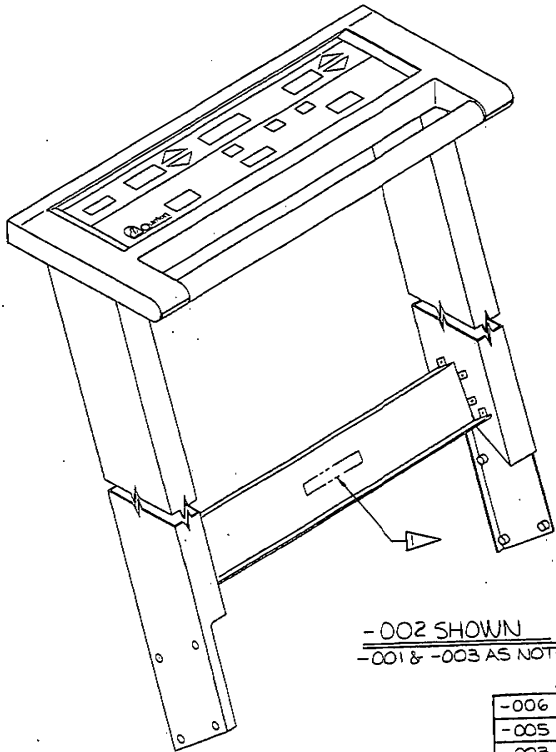
NOTES:

- ▷ MARK WITH PART NO. AND REV LETTER TO WHICH MFD IN APPROX LOCATION SHOWN.
- ▷ MINIMUM 1 INCH SLACK IN CABLE (ITEM 15) BETWEEN CABLE TIE (ITEM 17) AND PCB.
- ▷ BOND IN PLACE USING ADHESIVE (ITEM 18).
- 4. ASSEMBLE PER ASSEMBLY PROCEDURE 019620-880.
- ▷ BOND IN PLACE USING ADHESIVE (ITEM 31).

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ASCH NO.	22113	24249	
REVISION LEVEL	L	M	

REVISONS		APPROVED	DATE
TR	ZONE		
K		S. COZAD	02-02-92
		RPC	02/06/92
		Bill	02/10/92
		78 MTS	02/10/92
		10/6/92	02/10/92



-002 SHOWN
 -001 & -003 AS NOTED

NOTE:

PREPRODUCTION DASH NUMBERS INDICATED BELOW HAVE BEEN ADDED TO THIS PRODUCTION DRAWING.
 -004 -005
 -006

PRODUCTION

-006	000333	000333
-005	000338	000338
-003	000322	000322
-004	000335	000335
-002	000313	000313
-001		
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

ITEM NUMBER	QUANTITY PER ASSEMBLY	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-	-	-005	CONTROL PANEL ASSY, AC TREADMILL	MEDTRACK	
-	-	-004	CONTROL PANEL ASSY, AC TREADMILL		
1	1	019441-003	UPRIGHT ASSY, AC TREADMILL		
1	1	019248-002	PANEL ASSY, CONTROL		
-	-	-003	CONTROL PANEL ASSEMBLY, MEDTRACK		
-	-	019441-002	UPRIGHT ASSEMBLY, AC TREADMILL		
-	-	-002	CONTROL PANEL ASSEMBLY, AC TREADMILL		
8	8	019407-006	WASHER, SPLIT LOCK, BLACK .250		
1	1	001182-002	WASHER, LOCK, EXT STAR #8		
1	1	012029-006	WASHER, LOCK, INT STAR #8		
1	1	019968-001	WIRE ASSY, GROUND		
1	1	001900-001	TYRAP CABLE TIE MOUNT	NYLON # 8 HOLE	
1	1	006769-001	RIVET	Ø.125 x .250 GRIP	
8	8	019409-004	WASHER, FLAT, TYPE A, BLACK .250		
2	2	019407-007	WASHER, SPLIT LOCK, BLACK .313		
8	8	019409-003	WASHER, FLAT, TYPE A, BLACK #10		
NR	NR	015233-001	ADHESIVE	LOCTITE 242	
8	8	001899-001	CABLE TIE		
2	2	019409-006	WASHER, FLAT	.313	
1	1	019238-001	CABLE ASSY, D-SUB TO MAS-CON		
10	10	010511-006	WASHER, SPLIT, LOCK	#8	
11	11	001575-001	NUT, HEX	#8-32UNC-2B	
2	2	010829-426	SCREW, BUTTON HEAD, SOCKET	3/16-18UNC-2A x 1.000L	
8	8	010829-395	SCREW, BUTTON HEAD, SOCKET	#10-24UNC-2A x .375L	
8	8	010829-365	SCREW, BUTTON HEAD, SOCKET	.250-20UNC-2A x .812L	
1	1	006737-001	CABLE TIE MOUNT		
-	-	019441-001	UPRIGHT ASSEMBLY, AC TREADMILL		
1	1	019312-001	CLAMP, HANDRAIL, LH		
1	1	019313-001	CLAMP, HANDRAIL, RH		
1	1	019920-001	HANDRAIL ASSEMBLY		
1	1	019249-001	GASKET, CONTROL PANEL		
-	-	019248-001	PANEL ASSY, CONTROL		
1	1	019312-001	COVER, REAR, CONTROLLER		
1	1	019601-001	ENCLOSURE, CONTROL PANEL-MACHINING		
-	-	-001	CONTROL PANEL ASSEMBLY, AC TREADMILL		

PART NUMBER		DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION	
-006	-005	-004	-003	-002	-001
PARTS LIST					
UNLESS OTHERWISE SPECIFIED		DRAWN	S. COZAD	7/20/90	
CHECKED		7/20/90			
ENGR		7/20/90			
QUAL		12/10/91			
MFG		12/10/91			
OTHER					
CLASS CODE		ASSY			
VALUE CODE		TREDML			
DO NOT SCALE DRAWING PRINTS					
SCALE		1/2			
DIGT. CODE					
SHEET		1	OF	4	

Quinton INSTRUMENT CO.
 2121 TERRY AVENUE
 SEATTLE, WASHINGTON 98121
 206/233-7373

TITLE: CONTROL PANEL ASSEMBLY, AC TREADMILL

REV. K

DWG. NO. 019620

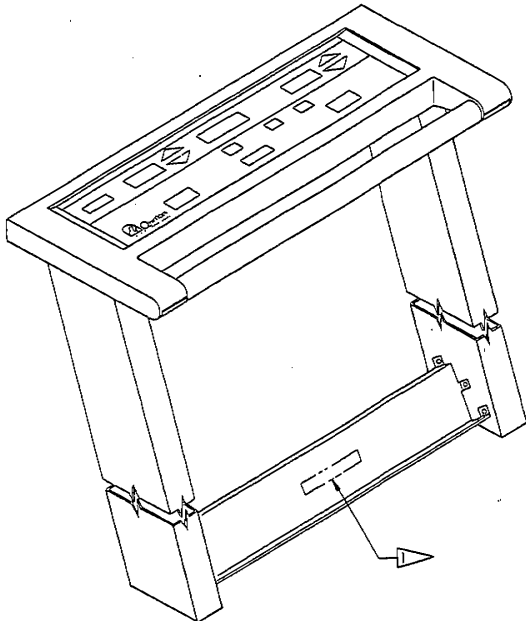
SIZE D

MOBIL CLUSTALOCK

019620

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REVISIONS			
LTN	ZONE	DESCRIPTION	APPROVED DATE



-004 SHOWN
 -005 & -006 AS NOTED

PRODUCTION

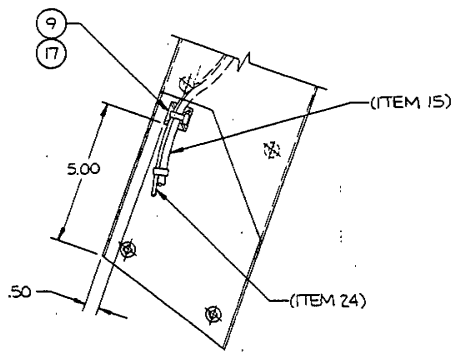
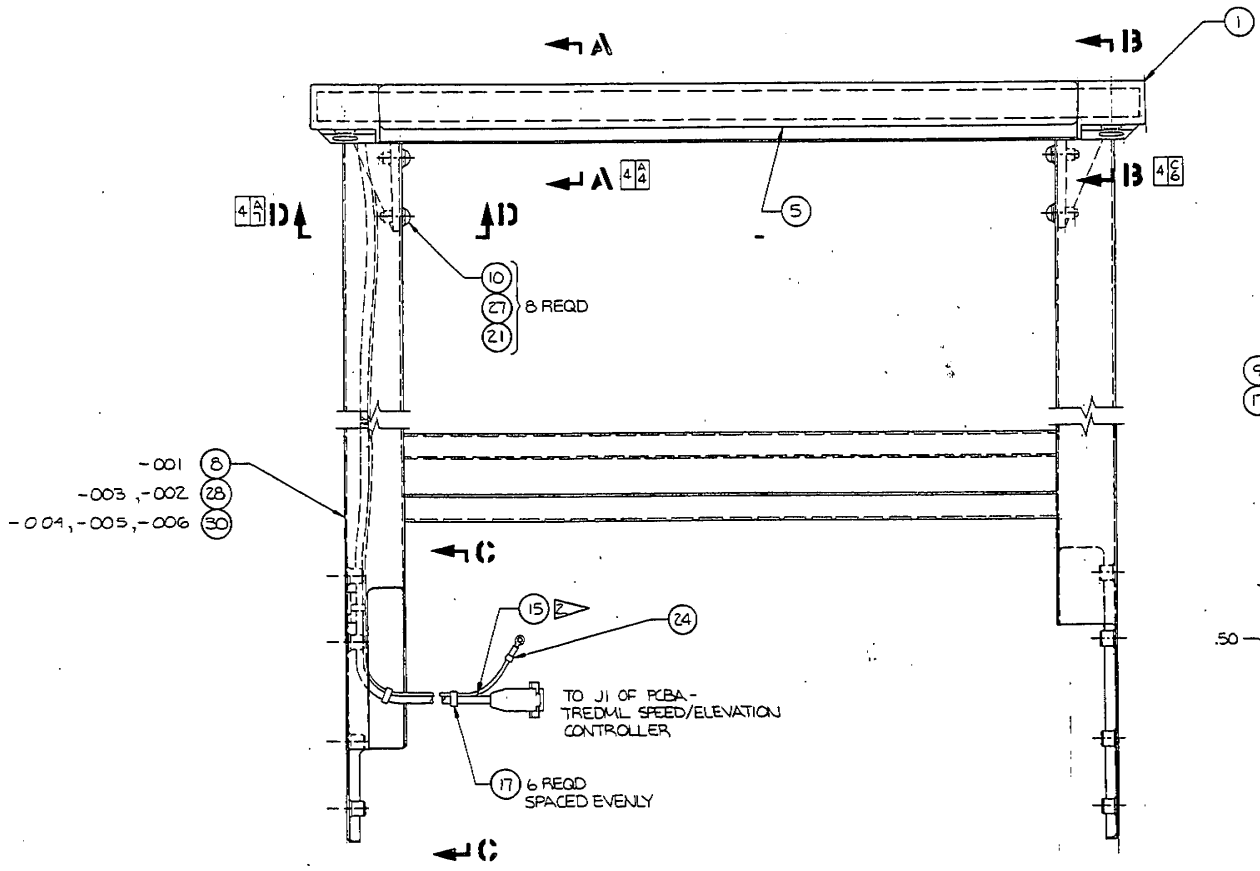
REV	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REF DES
1	-	030548-001	PANEL ASSY	MOTIVATIONAL CONTROL	
	-	-006	CONTROL PANEL ASSY	ACTREDML	
A/R	31	016891-001	ADHESIVE	LOCTITE 222	
	-006				
	-005				
	-004				
	-003				
	-002				
	-001				
QUANTITY PER ASSEMBLY					

SIZE D	MODEL CLUBFRACM	DWG. NO. 019620	REV. K
SCALE NONE	DIST. CODE	SHEET 2 OF 4	

029660
 019620
 2
 4

REVISIONS			
LET. ZONE	DESCRIPTION	APPROVED	DATE

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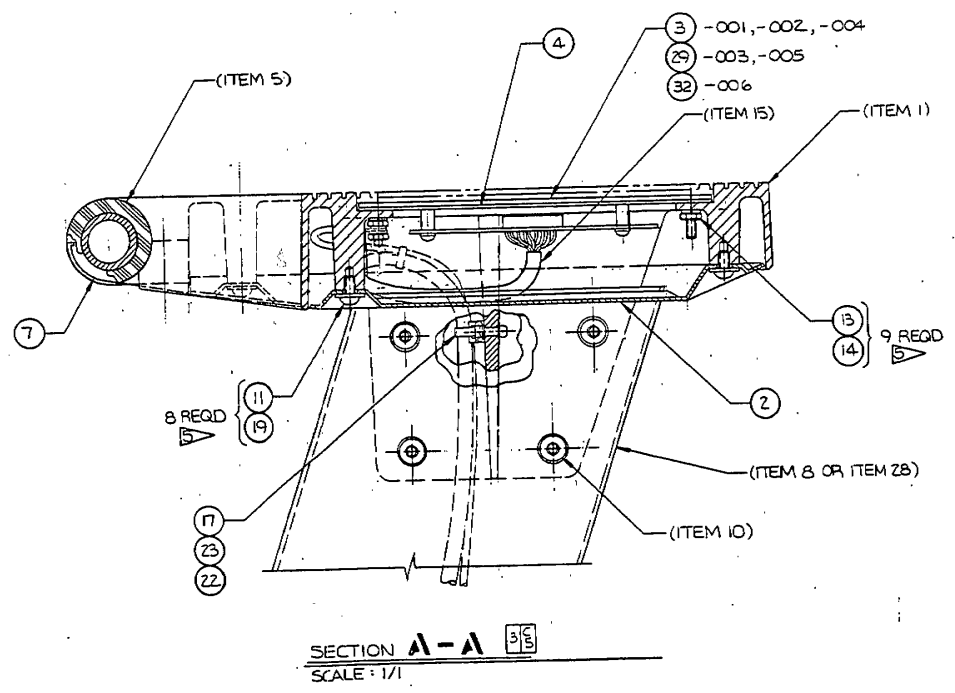
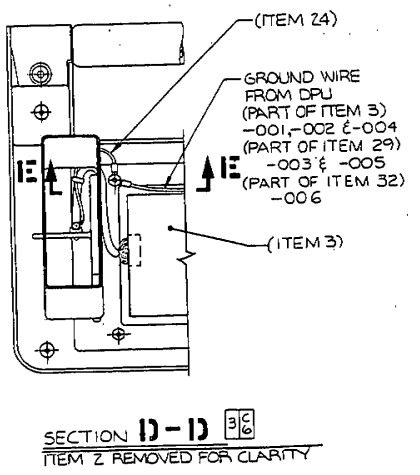
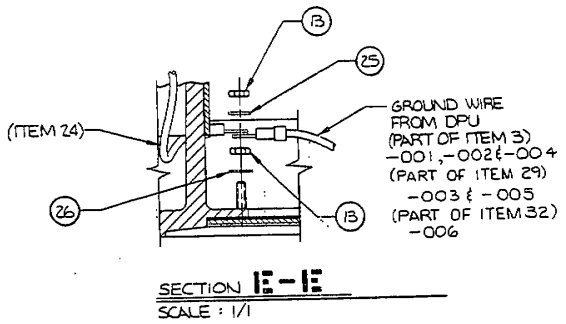
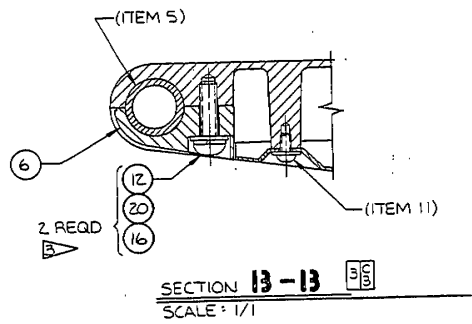
PRODUCTION

SIZE	MODEL	OWG. NO.	REV.
D	ELECTRICAL	019620	K
SCALE	DIST. CODE	SHEET 3 OF 4	
1/2			

DWG. NO. 019620
 SHEET 3 OF 4
 REV. K

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REVISIONS			
LTR.	ZONE	DESCRIPTION	DATE



PRODUCTION

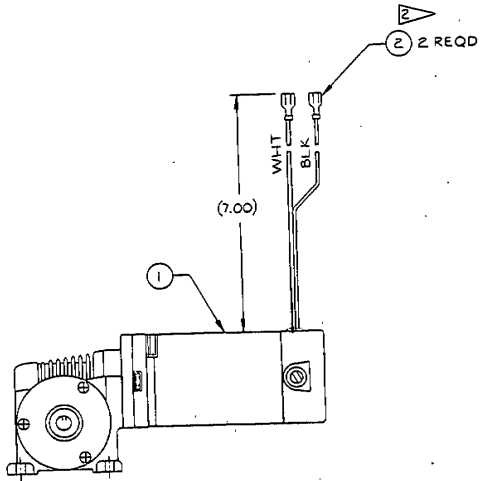
SIZE D	MODEL CLUSTACK	DWG. NO. 019620	REV. K
SCALE 1/2	DIST. CODE	SHEET 4 OF 4	

QUINTON INSTRUMENT CO. 019620 4 K

NOTES:

1. MARK WITH PART NO. AND LETTER TO WHICH MFD.

2. CUT WIRES TO 7.00 INCHES. STRIP BOTH WIRES .343 ± .020.



ADCH NO.	25648		
REVISION LEVEL	C		

REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE
		A ADCH: 22401	<i>Ed Brown</i>	2-5-93
		ITEM 2 2/AL WAS, 013685-001, MAT'L	<i>RPC</i>	2/9/93
		SPEC WAS, 16-14 AWG.	<i>Ed Brown</i>	2-17-93
		APPLICATION WAS, -001, 019737, 000313	<i>Ed Brown</i>	2-23-93
		EFF PT: 5, DISP: USE, MOD: 5-20-92	<i>Ed Brown</i>	2-24-93
B		DART: 25115 RELEASED TO PRODUCTION EFF PT: 7, DISP: NONE		

PRODUCTION

-001	030451	000338
	030450	000335
	030241	000322
	019737	000313
APPLICATION		

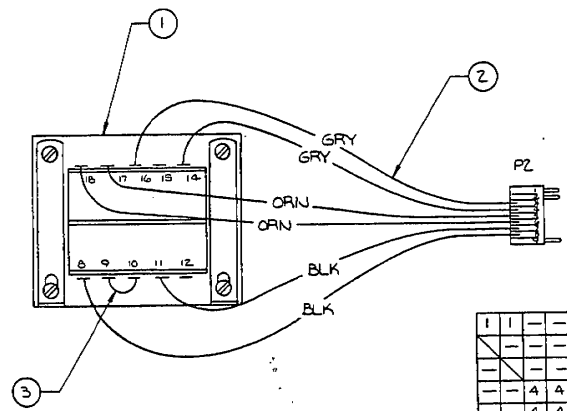
2	2	013681-001	TERMINAL, SOLDERLESS MALE TAB, QD 22 -18 AWG		
1	1	019211-003	MOTOR, RIGHT ANGLE GEAR		
		-001	GRADE MOTOR ASSY		
PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION	REFERENCE DESIGNATION
PARTS LIST					
UNLESS OTHERWISE SPECIFIED	ALL DIM IN INCHES	TOL.	XX ± .50	XXX ±	ANGLE ±
	DRAWN		PILON 2/9/90		
	CHECKED		C.J. KLITSCHBAKER 2/7/90		
	ENGR.		G.W. FISSEL 2/6/90		
QUAL.		2/4/90			
MFG.		B. Trauth 2/11/90			
OTHER					
QUANTITY PER ASSEMBLY	CLASS CODE	MOTA		VALUE CODE	FITTMV
DO NOT SCALE DRAWING PRINTS					
TITLE			GRADE MOTOR ASSY		
SIZE	MODEL	DWG. NO.	REV.		
D	ELCTRCA	019933	B		
SCALE	NONE	DIST. CODE	SHEET	1	OF 1

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NOTES:

- MARK WITH PART NO. AND REV LETTER TO WHICH MFD.

REVISONS		APPROVED	DATE
D	A	ADCN: 18422	12/26/70
		ADDED -003 & -004	
		ADDED ITEMS 5 THRU 10	
		EFF PT: 6, DISP: NEW ASSY	
	B	ADCN: 18438	1/14/71
		P2(7) WAS CONNECTED TO TH14-002.	
	P2(7) WAS CONNECTED TO TH14-003.		
	EFF PT: 4, DISP: REWORK MOD: 3229		
C	ADCN: 19243		
	ITEM 7 WAS -224		
	ITEM 8 WAS -003		
	ITEM 9 WAS -007		
	ITEM 10 WAS 002:58-001		
	EFF PT: 5, DISP: USE MOD: 8-19-71		
	D PART: 20354		
	ADDED -005 & -006		
	ADDED ITEM 11		
	EFF PT: 6, DISP: NEW ASSY		



-001

PRODUCTION

-006	019737	000322
-005		000313
		000333
-004	018989	000306
-003		
-002	019737	000313
-001		
PART NO.	NEST ASSY. NO.	END ITEM NO.
APPLICATION		

ITEM NUMBER	QUANTITY PER ASSEMBLY	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	1	013389-005	HARNASS ASSY, XFMR		
		-006	TRANSFORMER ASSY	100-120VAC, 50/60 Hz	
		-005	TRANSFORMER ASSY	208-230VAC, 50/60 Hz	
	4	001575-001	NUT, HEX	8-32 UNC - 2 B	
	4	010511-006	WASHER, LOCK, SPLIT	#8	
	8	001164-002	WASHER, FLAT	#8	
	4	010827-223	SCREW, MACH, PNH, PH	8-32 UNC-2A x 5/8 L	
	1	030288-001	BRACKET, XFMR MTG		
	1	013389-004	HARNASS ASSY, XFMR		TIW1
		-004	TRANSFORMER, ASSY	200-240V, 50/60 Hz	S 90
		-003	TRANSFORMER, ASSY	100-120 V, 50/60 Hz	S 90
	4	011506-001	TUBING, TEFLON, EXTRUDED, FLEXIBLE	22 AWG	
	3	010612-005	WIRE, BUS	22 AWG	
	1	013389-003	HARNASS ASSEMBLY, TRANSFORMER		TIW1
	1	030116-001	TRANSFORMER, SPLIT BOBBIN, 25V, 110V		
		-002	TRANSFORMER ASSY	100-120VAC 50-60HZ	
		-001	TRANSFORMER ASSY	208-230VAC 50-60HZ	

UNLESS OTHERWISE SPECIFIED		PARTS LIST	
ALL DIM. AND IN. INCHES	.XX ±	CHECKED	5-4-91
TOL.	.XXX ±	E. PIERCE - CANNON	2/10/91
ANGLE	±	G. FISSELL	3/25/91
CLASS CODE	XFMA	DUAL	2 1/2 1/2 1/2
VALUE CODE	FTM/JW	ENG.	4/1/91
DO NOT SCALE DRAWING PRINTS		OTHER	

		3121 TERRY AVENUE SEATTLE, WASHINGTON 98121 206/223-7373
TITLE: TRANSFORMER ASSEMBLY		
SIZE: D SCALE: NONE	MODEL: 030198	DWG. NO.: 030198
SHEET: 1 OF 2	DIST. CODE:	REV. D

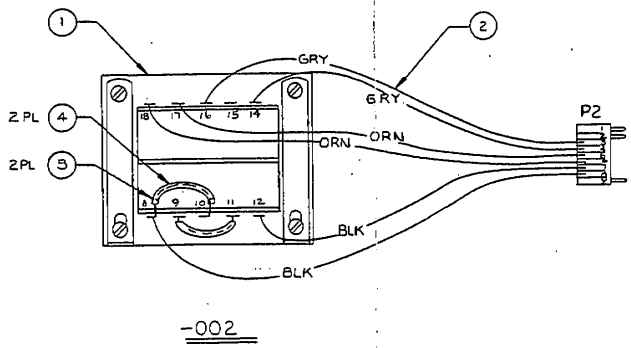
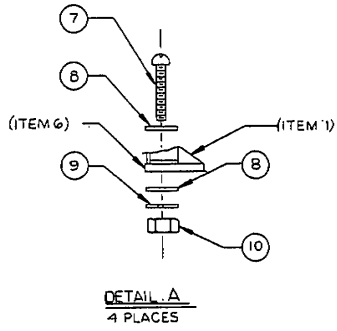
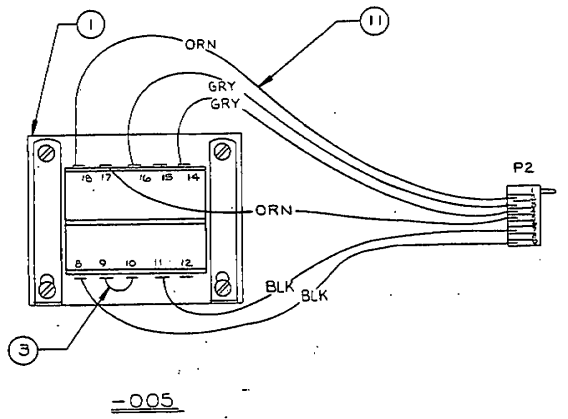
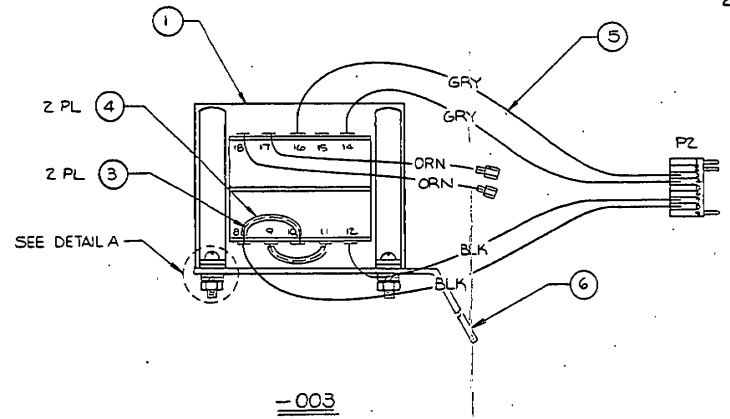
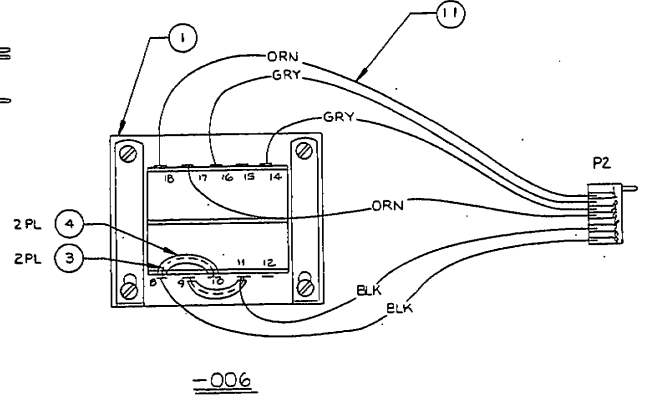
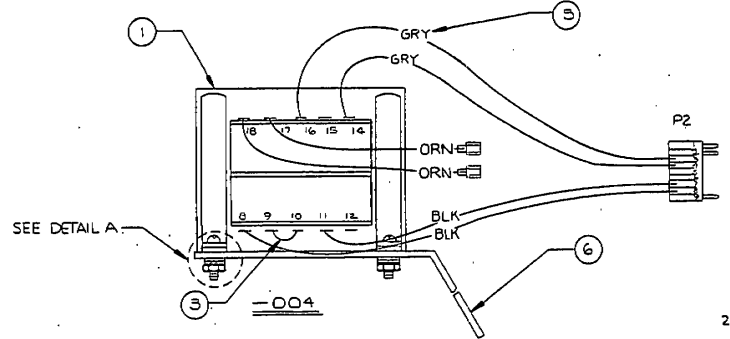
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030198
 SHEET 1 OF 2

030198

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REVISIONS			
LTG. ZONE	DESCRIPTION	APPROVED	DATE



PRODUCTION

SIZE	MODEL	DWG. NO.	REV.
D		030198	D
SCALE	DIST. CODE	SHEET 2 OF 2	
NONE			

030198 2 OF 2

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 APPLY GREASE (ITEM 17) TO THREADS OF SPINDLE (ITEM 1).
- 2 APPLY ADHESIVE (ITEM 12) TO SET SCREWS (ITEM 7) AND THREAD SET SCREWS IN UNTIL DOG POINTS ARE FLUSH WITH SURFACE OF YOKE. FACING SPROCKET. THEN ADJUST ONE SET SCREW AS FOLLOWS.
 1. THREAD SPINDLE IN UNTIL CAP SCREW (ITEM 9) CONTACTS YOKE. BACK OFF SPINDLE UNTIL CAP SCREW IS JUST PAST FIRST SET SCREW HOLE. TURN SET SCREW IN UNTIL IT PROTRUDES JUST BEYOND CAP SCREW.
 2. BACK OFF SPINDLE (WITH SPROCKET) ONE REVOLUTION, SO SET SCREW IS IN LINE WITH CAP SCREW. TURN SET SCREW IN UNTIL THERE IS .025 ± .005 CLEARANCE WITH CAP SCREW.
 3. LEAVE SECOND SET SCREW FLUSH.
- 3 APPLY ADHESIVE (ITEM 12) TO FASTENERS INDICATED.
- 4 ASSEMBLE SPROCKET (ITEM 4, -001)(ITEM 18, -002) TO SPINDLE (ITEM 1) AS FOLLOWS:
 - A. THOROUGHLY CLEAN SPINDLE KEYWAY AREA, WOODRUFF KEY AND SPROCKET KEYWAY AREA WITH SOLVENT (ITEM 14).
 - B. APPLY PRIMER "T" (ITEM 15) TO SPINDLE KEYWAY AREA, WOODRUFF KEY AND SPROCKET KEYWAY AREA.
 - C. INSERT WOODRUFF KEY INTO SPINDLE KEYWAY. APPLY ADHESIVE (ITEM 16) TO KEY AND SPROCKET KEYWAY.
 - D. ASSEMBLE SPROCKET ONTO SPINDLE. TIGHTEN SET SCREWS (ITEM 13).
 - E. ALLOW ASSEMBLY TO SET 30 MINUTES MINIMUM.
- 5 ASSEMBLY TORQUE: 10 IN-LB
- 6 BAG OR TAG PART AND MARK WITH PART NO. AND REV LETTER TO WHICH MFD.
- 7 APPLY ADHESIVE (ITEM 19) TO SET SCREWS INDICATED.

-002	030913 030912 018990 018989	000338 000335 000333 000306 THRU 000309
-001	050241 019737 018990 018989	000322 000313 000307 THRU 000309 000306
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

PRODUCTION

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVED	DATE
A		ADCN: 18800 ITEM 6 WAS 019004-004 REVISED FLAGNOTE 2 DELETED .06 DIM EFF PT: 5, DISP: USE. MODIFIER: 6/25/91	S. COZAD	3/1/93
B		ADCN: 21494 ADDED ITEM 19 REVISED NOTE 3 ADDED FLAGNOTE 7 EFF PT: 5, DISP: USE. MODIFIER: 3/12/92 DART: 25549 ADDED -002 EFF PT: 6, DISP: NEW CONFIG	<i>S. Cozad</i>	2-2-93 7-2-92 5-4-93
C	307			
D				

ADCN NO.	26348		
REVISION LEVEL	D		

AR	AR	19	016891-001	ADHESIVE	LOCTITE #222
1	-	18	019547-002	SPROCKET, MODIFIED	36 TOOTH (STEEL)
AR	AR	17	030194-001	GREASE, MPC	
AR	AR	16	017864-001	ADHESIVE	LOCTITE #660
AR	AR	15	014800-110	PRIMER, "T"	LOCOQUIC
AR	AR	14	016258-001	SOLVENT	CHLOROTHENE, INDL
2	2	13	010833-132	SCREW, SET	10-24 UNC X .187L
AR	AR	12	015233-001	ADHESIVE	LOCTITE #242
1	1	11	015405-001	KEY, WOODRUFF	.125 X .375
2	2	10	019872-001	WASHER, FLAT, NYLON	.385ID X .625OD X .230THK
1	1	9	010821-202	SCREW, CAP, HEX SCH	6-32 UNC X .500L
2	2	8	001172-006	SCREW, SHOULDER SCH	.313-18 UNC X .375L
2	2	7	010833-205	SCREW, SET	.250-20, FULL DOG
1	1	6	019004-002	FORK, SPEED CHANGE	
1	1	5	018287-001	YOKE, SPEED CHANGE	
-	1	4	019547-001	SPROCKET, MODIFIED	36 TOOTH
1	1	3	001032-002	RING, RETAINER	
1	1	2	001535-001	BEARING, SHAFT	
1	1	1	018288-002	SPINDLE, SPEED CHANGE	
-	-	-	-002	SPINDLE ASSY, SPEED CHANGE	
-	-	-	-001	SPINDLE ASSY, SPEED CHANGE	

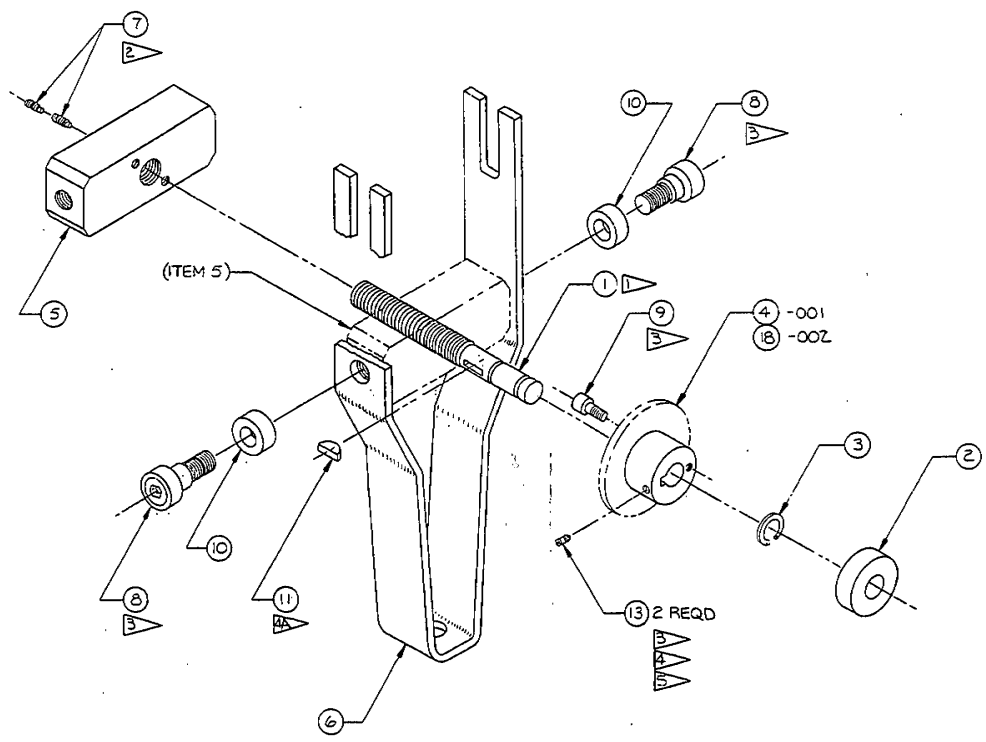
PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
-002	-001		
QUANTITY PER ASSEMBLY	ITEM NUMBER	PARTS LIST	
		UNLESS OTHERWISE SPECIFIED	DRAWN J. PILON 9/14/91
		ALL DIM ARE IN INCHES	CHECKED C. KLUTENBAKER 6/7/91
		TOL. XXXX =	ENGR R. PASIC 6/12/91
		ANGLE =	HFG B. TRATHEN 6/17/91
			GVAL F. DANESHFAR 6/19/91
			OTHER
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CLASS CODE: SPIA	VALUE CODE: TREUML	DD NOT SCALE DRAWING	SCALE 1:1
SOURCE AUTOCAD		SHEET 1 OF 3	

Quinton Instrument Co. 2121 TERRY AVENUE SEATTLE, WASHINGTON (206) 223-7373 98121

SPINDLE ASSEMBLY, SPEED CHANGE

SIZE: D MODEL: CLUBTRACK Dwg No: 030262 REV: C

REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE



PRODUCTION

DWG. NO. 030262 SHEET 2 OF 3

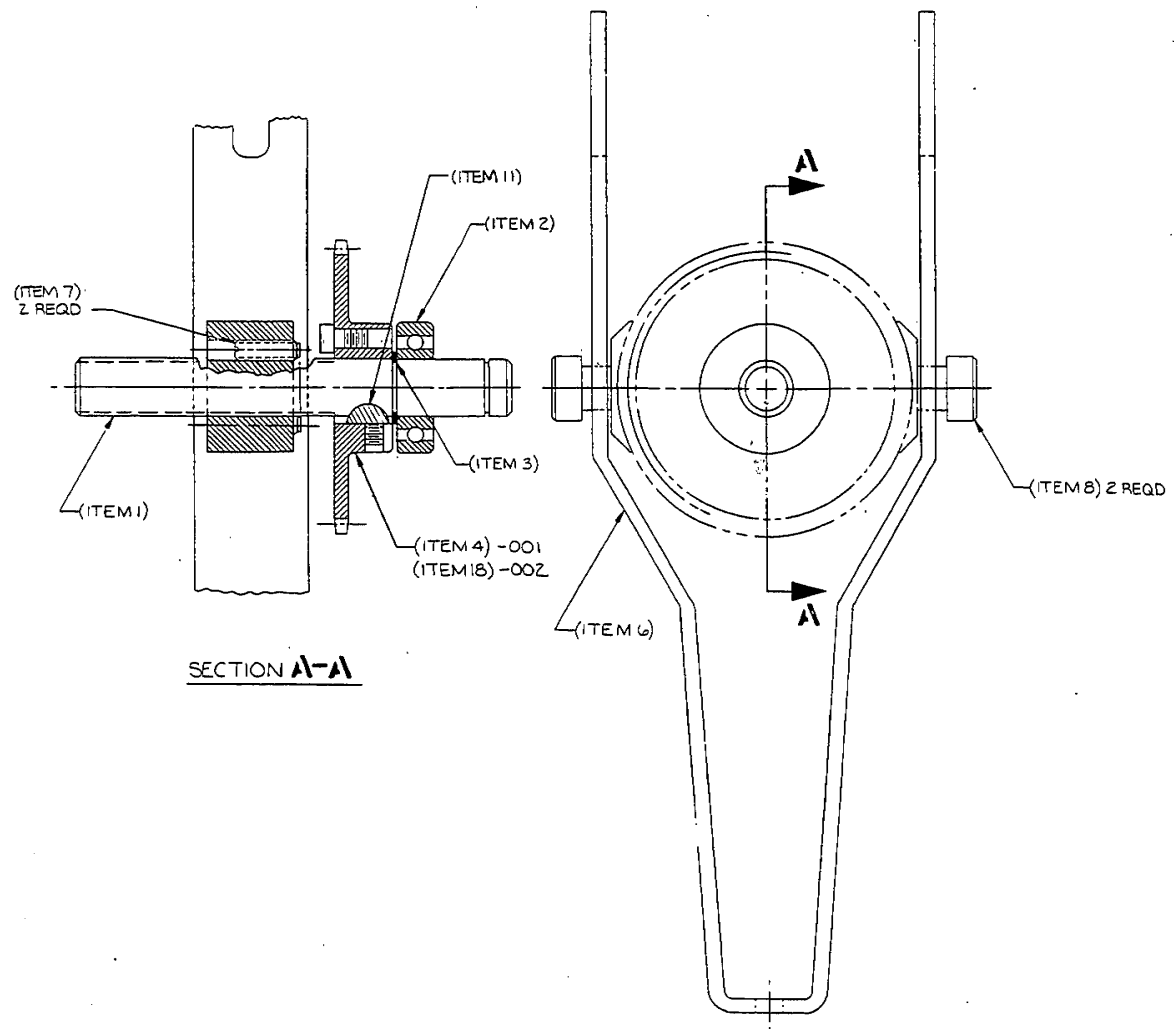
SIZE D	MODEL CLUB- TRACK	DWG. NO. 030262	REV. C
SCALE 1:1	DIST. CODE	SHEET 2 OF 3	

24 X

IF THIS MICROFILMED DOCUMENT IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO

8 7 6 5 4 3 2 1

REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE

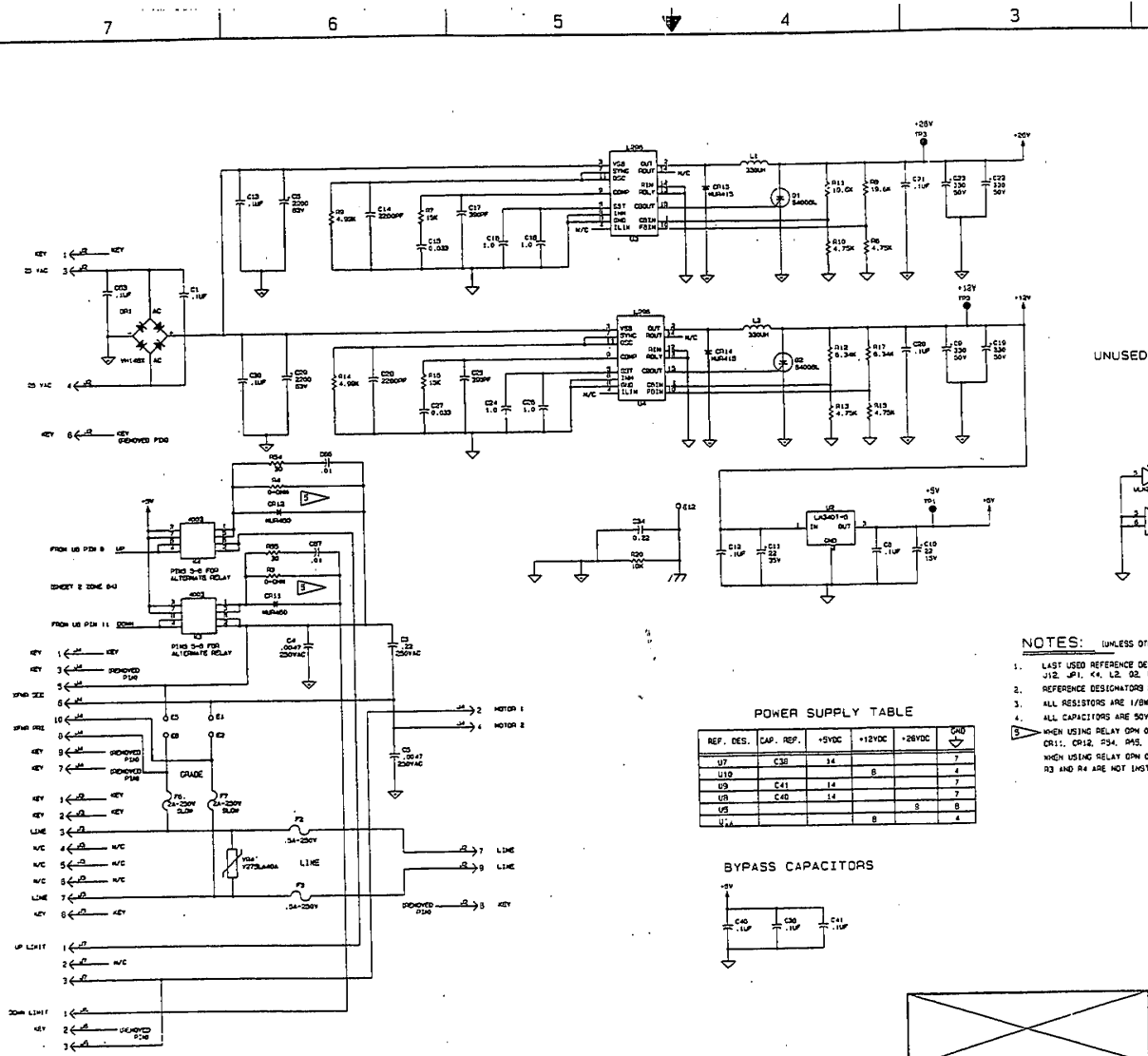


PRODUCTION

SIZE D	MODEL CLUB TRAC	DWG. NO. 030262	REV. C
SCALE 2 = 1	DIST. CODE	SHEET 3 OF 3	

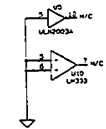
8 7 6 5 4 3 2 1

272060



REVISIONS				
LTB	ZONE	DESCRIPTION	APPROVED	DATE
	A	ADCN 23825 C10 VALUE WAS: 3.3 EFF PT: 7 DISP: NONE		10/14/93
	B	ADCN 28611 FLAGNITE S WAS: CR11 AND CR12 ARE NOT INSTALLED ON PCB		9/28/93
	C	ADCN 27608 NOTE 1 WAS: ... C65 ... P53 ... FLAGNITE S WAS: ... CR11 AND CR12 ARE NOT INSTALLED ON PCB. ADDED R54 AND C66, P55 AND C67		
	100.7	CODE: H1 MOD: 5/1/93		
ADCN NO.		23825-1		
REVISION LEVEL		D		

UNUSED GATES:



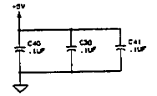
NOTES: (UNLESS OTHERWISE SPECIFIED)

1. LAST USED REFERENCE DESIGNATORS: R41, C67, CR10, E12, F7, U12, J41, K4, L2, Q2, R52, T19, U15, V4, Y1, D51.
 2. REFERENCE DESIGNATORS NOT USED: NONE.
 3. ALL RESISTORS ARE 1/8W. IS WITH VALUES IN OHMS.
 4. ALL CAPACITORS ARE 50V WITH VALUES IN MICROFARADS.
- WHEN USING RELAY QM 019254-001 (K3 AND K4):
CR11, CR12, P54, P45, C66, AND C67 ARE NOT INSTALLED ON PCB.
- WHEN USING RELAY QM 019940-001 (K3 AND K4):
R3 AND R4 ARE NOT INSTALLED ON PCB.

POWER SUPPLY TABLE

REF. DES.	CAP. REF.	+5VDC	+12VDC	+28VDC	GRD
U7	C30	14			7
U10			8		4
U9	C41	14			7
U8	C40	14			7
U5			8		8
U1A			8		4

BYPASS CAPACITORS



PRODUCTION

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	<p>SIZE: D</p> <p>MODEL: #CD-1042C</p> <p>DWG NO: 030556-201</p> <p>REV: C</p>	<p>SCALE: NONE</p> <p>SOURCE: F-HET</p> <p>SHEET: 1 OF 3</p>		
	<p>REVISION CODE: SCHE</p> <p>NAME CODE: TREDML</p> <p>DO NOT SCALE DRAWING</p>			
	<p>REVISIONS</p>			

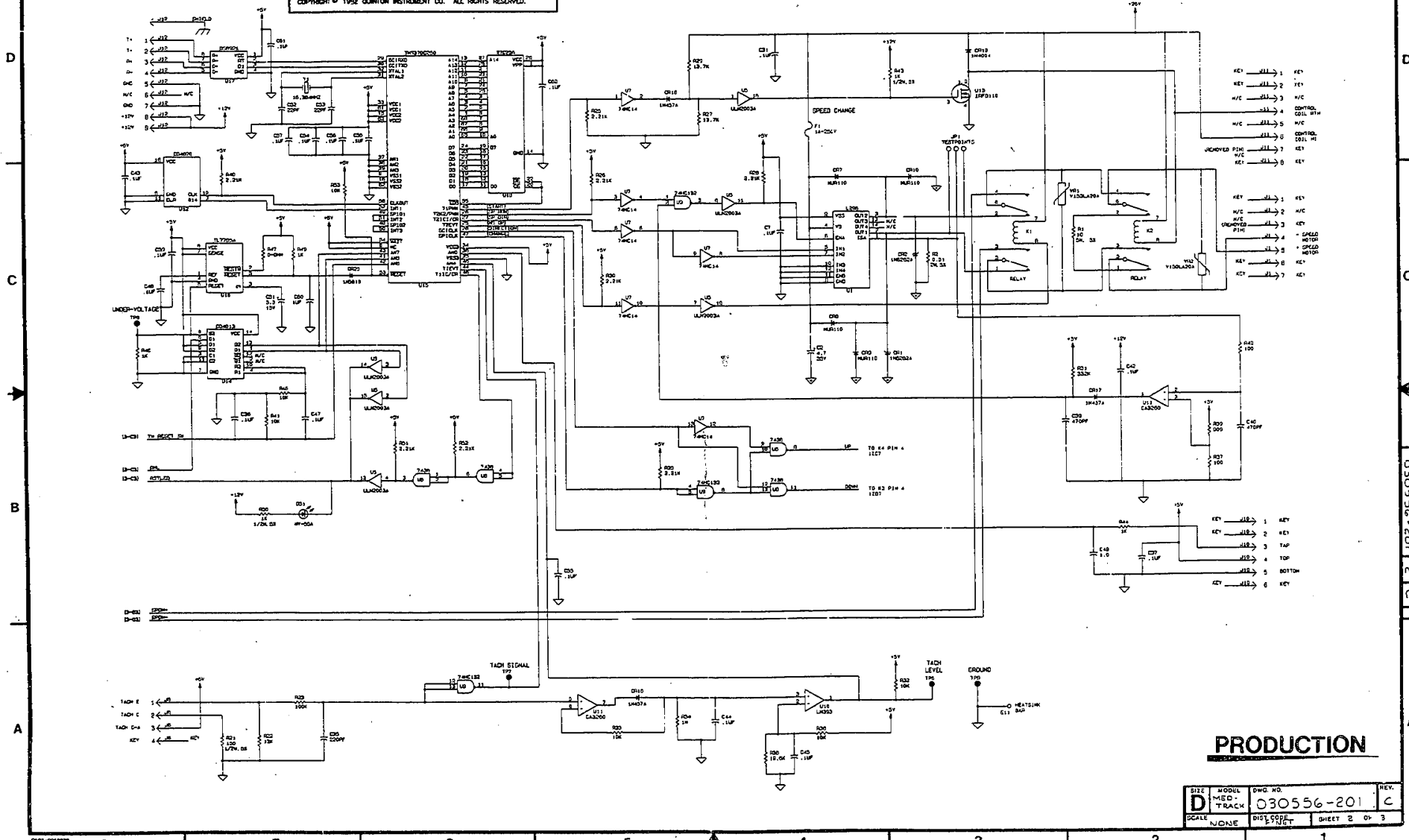
PART NO.	NEXT ASSY NO.	END ITEM NO.

REV. 030556-201 1 C

8 7 6 5 4 3 2 1

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REVISIONS			
LIT. ZONE	DESCRIPTION	APPROVED	DATE



PRODUCTION

SIZE	MODEL	DWG. NO.	REV.
D	TRACK	030556-201	C
SCALE	DIST. SCALE	SHEET 2 OF 3	
NONE	1:1		

24 X

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Q30556-201 2

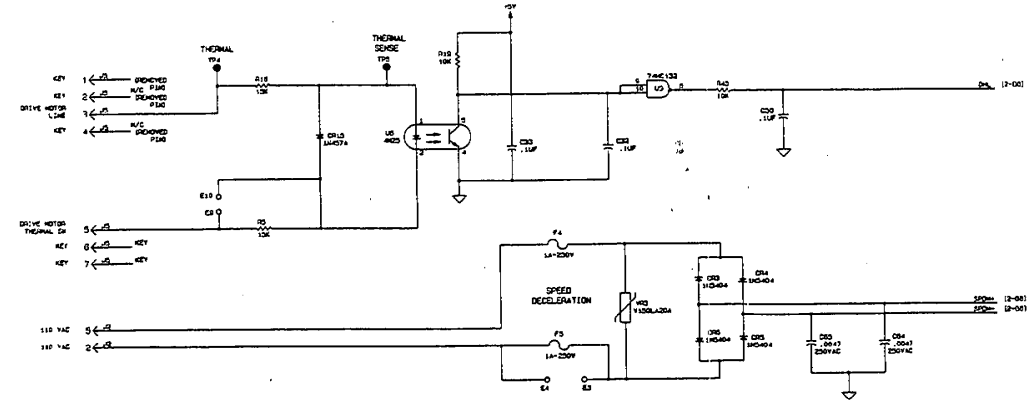
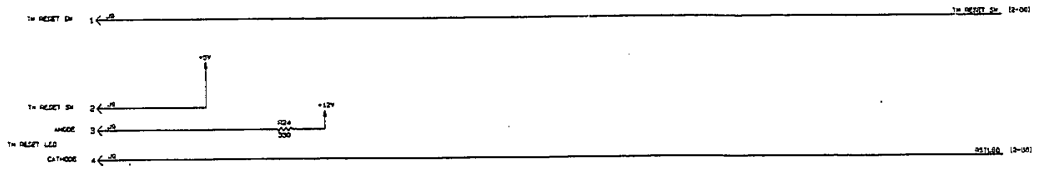
030556-201

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE



PRODUCTION

SIZE D	MODEL MED-TRACK	DWG. NO. 030556-201	REV. C
SCALE NONE	DWG. CODE E-AS	SHEET 3 OF 3	

PART NO. 030556-201 REV. C

030556-201

24 X IF THIS MICROFILMED DOCUMENT IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE ORIGINAL DOCUMENT

8 7 6 5 4 3 2 1

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REVISIONS			
LTR	ZONE	DESCRIPTION	APPROVED DATE
		L ADDN: 26651 ITEM 109 DESCRIPTION WAS: LOCTITE #408 ITEM 110 DESCRIPTION WAS: LOCTITE #710 ACTION CODE: F1 MOD: 6-3-93	K. BARTON 8/25/93
M		M ADDN: 27578 ADDED ITEMS 115, 116, AND 117 ADDED FLAGNOTE #9 NOTE 5 WAS: ...R53... FLAGNOTE 6 WAS: COMPONENTS NOT INSTALLED: ...CR11, CR12... FLAGNOTE 28 WAS: ...DO NOT INSTALL R3 AND R4 WHEN USING THIS COMPONENT... SHT 3: ADDED VIEW J-J SHT 4: ADDED VIEW J-J CALLOUT TO PICTORIAL ACTION CODE: D2 MOD: 8-24-93	<i>[Signature]</i> 11/15/93
4C3			

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 R19, R20, R32, R33, R36, R41, R45, R48, R53.
- 2 R25, R26, R28, R30, R35, R40, R51, R52.
- 3 C1, C13, C20, C21, C30, C37, C44, C63.
- 4 C7, C8, C12, C31-C33, C36, C38, C40-C43, C45, C47, C48, C50, C54-C59, C61, C62.
- 5. LAST USED REFERENCE DESIGNATORS:
BR1, C67, CR20, F7, J12, JP1, K4, L2, Q2, R55, TP9, U18, VR4, Y1, DS1.
- 6 COMPONENTS NOT INSTALLED--WHEN USING SOLID STATE RELAY ITEM 76: CR11, CR12, C66, C67, R54, R55. WHEN USING SOLID STATE RELAY ITEM 113: R3, R4.
- 7. REFER TO SCHEMATIC DIAGRAM:
-001 AND -004: 030556-201 REV: B OR SUBSEQUENT
-002 AND -005: 030556-202 REV: B OR SUBSEQUENT
-003 AND -006: 030556-203 REV: B OR SUBSEQUENT
- 8 REMOVE PIN 3 FROM J1. INSTALL AS SHOWN.
- 9 REMOVE PINS 1, 2 AND 4 FROM J5. INSTALL AS SHOWN.
- 10 REMOVE PIN 2 FROM J6. INSTALL AS SHOWN.
- 11 REMOVE PIN 7 FROM J11. INSTALL AS SHOWN.
- 12 INSTALL FUSE CLIPS AS SHOWN.
- 13 INSTALL SOCKETS FOR U15 AND U18.
- 14 INSTALL SILPAD (ITEM 101) ON THREE SURFACES OF HEAT BAR (ITEM 93) BEFORE SECURING U1-U4, Q1 & Q2, AND HEATSINK (ITEM 92) TO HEAT BAR.
- 15 REMOVE PINS 6 AND 8 FROM J2. INSTALL AS SHOWN.
- 16 MARK REV LETTER TO WHICH MANUFACTURED IN AREA SHOWN.
- 17 SERIALIZE WITH WORK ORDER (-001THRU -0XX PER QUANTITY IN LOT) IN AREA SHOWN.
- 18 REMOVE PINS 3, 7 AND 9 FROM J4. INSTALL AS SHOWN.
- 19 MARK DASH NUMBER TO WHICH MANUFACTURED IN AREA SHOWN.
- 20 MARK APPROPRIATE VOLTAGE RATING IN AREA SHOWN:
-001 AND -004: 200-240 VAC, 50/60Hz
-002 AND -005: 200-240 VAC, 50/60Hz
-003 AND -006: 100-120 VAC, 50/60Hz
- 21 -001, -002, -004, AND -005: F1, F4, F5.
-003 AND -006: F1-F5.

22 INSTALL JUMPERS AT THE FOLLOWING LOCATIONS USING BUS WIRE (ITEM 107).

-001 & -004	-002 & -005	-003 & -006
NO JUMPERS REQUIRED	NO JUMPERS REQUIRED	E9-E10

- 23 C16, C18, C24, C26, C49.
- 24 -001, -002, -004 AND -005: VR1-VR3
-003, -006: VR1-VR4
- 25 ADD JUMPER TO SOLDE? SIDE OF PCB AS INDICATED USING (ITEM 108) INSULATED WIRE. SECURE WITH (ITEM 109) AND (ITEM 110) AS REQUIRED.
- 26 REMOVE SEAL FROM RELAYS (ITEM 75), K1 AND K2, AFTER A.T.E. TEST.
- 27 TORQUE MOUNTING HARDWARE (ITEMS 95, 94, AND 112) TO 4-6 INCH POUNDS.
- 28 ALTERNATE COMPONENT FOR ITEM 76. INSTALL CR11 AND CR12 WHEN USING THIS COMPONENT. REPLACE R3 AND R4 WITH C66, R54, AND C67, R55 AND SECURE WITH SILICONE ADHESIVE (ITEM 117). SEE VIEW J-J.
- 29 WRAP LEADS, SOLDER AND TRIM AS SHOWN. SOLDER RESISTOR/CAPACITOR COMBINATION TO PCB ASSEMBLY. AFFIX RESISTOR/CAPACITOR CONNECTION TO PCB ASSEMBLY WITH SILICONE ADHESIVE (ITEM 117).

PRODUCTION

-003 & -006	030551	000338
-002 & -005	030551	000338
-001 & -004	030650	000333
		000335
PART NO.	NEXT ASSY NO.	END ITEM NO.

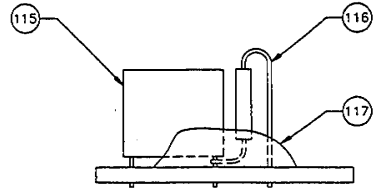
REV NUMBER	QTY	DESCRIPTION	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION				
1	1	1	1	1	1	10	012996-002	ICL DUAL VOLTAGE COMPARATOR	LM393N	U10
1	1	1	1	1	1	9	014612-053	ICD, HS, CMOS, QUAD NAND	74HC132	U8
1	1	1	1	1	1	8	011997-002	ICD, TTL, QUAD NAND BUFFER	7438	U8
1	1	1	1	1	1	7	014612-004	ICD, HS, CMOS, HEX SCHMITT	74HC14	U7
1	1	1	1	1	1	6	005316-001	ICL, OPTICAL ISOLATOR	4N25	U6
1	1	1	1	1	1	5	012133-001	ICL, DARLINGTON ARRAY	ULN2003	U5
2	2	2	2	2	2	4	018537-001	ICL, SWITCHING REGULATOR	L296V	U3, U4
1	1	1	1	1	1	3	009224-002	ICR, VOLTAGE	LM340T-5	U2
1	1	1	1	1	1	2	015106-001	ICL, DUAL FULL BRIDGE DRIVER	L298	U1
1	1	1	1	1	1	1	030557-001	PCBA, AC FITNESS TMU	REV: B	
-	-	-	-	-	-	-	-005	PCBA, AC FITNESS TMU	100-120 VAC, 50/60 Hz	
-	-	-	-	-	-	-	-005	PCBA, AC FITNESS TMU	200-240 VAC, 50/60 Hz	
-	-	-	-	-	-	-	-004	PCBA, AC FITNESS TMU	200-240 VAC, 50/60 Hz	
-	-	-	-	-	-	-	-003	PCBA, AC FITNESS TMU	100-120 VAC, 50/60 Hz	
-	-	-	-	-	-	-	-002	PCBA, AC FITNESS TMU	200-240 VAC, 50/60 Hz	
-	-	-	-	-	-	-	-001	PCBA, AC FITNESS TMU	200-240 VAC, 50/60 Hz	

REV NUMBER	UNLESS OTHERWISE SPECIFIED	DRAWN	A. STOCKER	3/7/92		2121 TERRY AVENUE SEATTLE, WASHINGTON 98121 (206) 225-7373
	ALL DIM ARE IN INCHES	CHECKED	R. PIERCE-CANNON	3/7/92		
	TOL.	ENG'G	R. PASIC	4/2/92		
	ANGLE	QUAL	K. BAILEY	4/2/92		
QUANTITY PER ASSEMBLY	CLASS CODE	PCBA	MFG	S. CURRAN	4/2/92	
PART NO.	VALUE CODE	FTM	OTHER			

DO NOT SCALE DRAWING PRINTS

SIZE	MODEL	UNC NO.	REV
D	CLUTCHACK	030556	M
SCALE	HONE	SOURCE	AUTOCAD
			SHEET 1 OF 5

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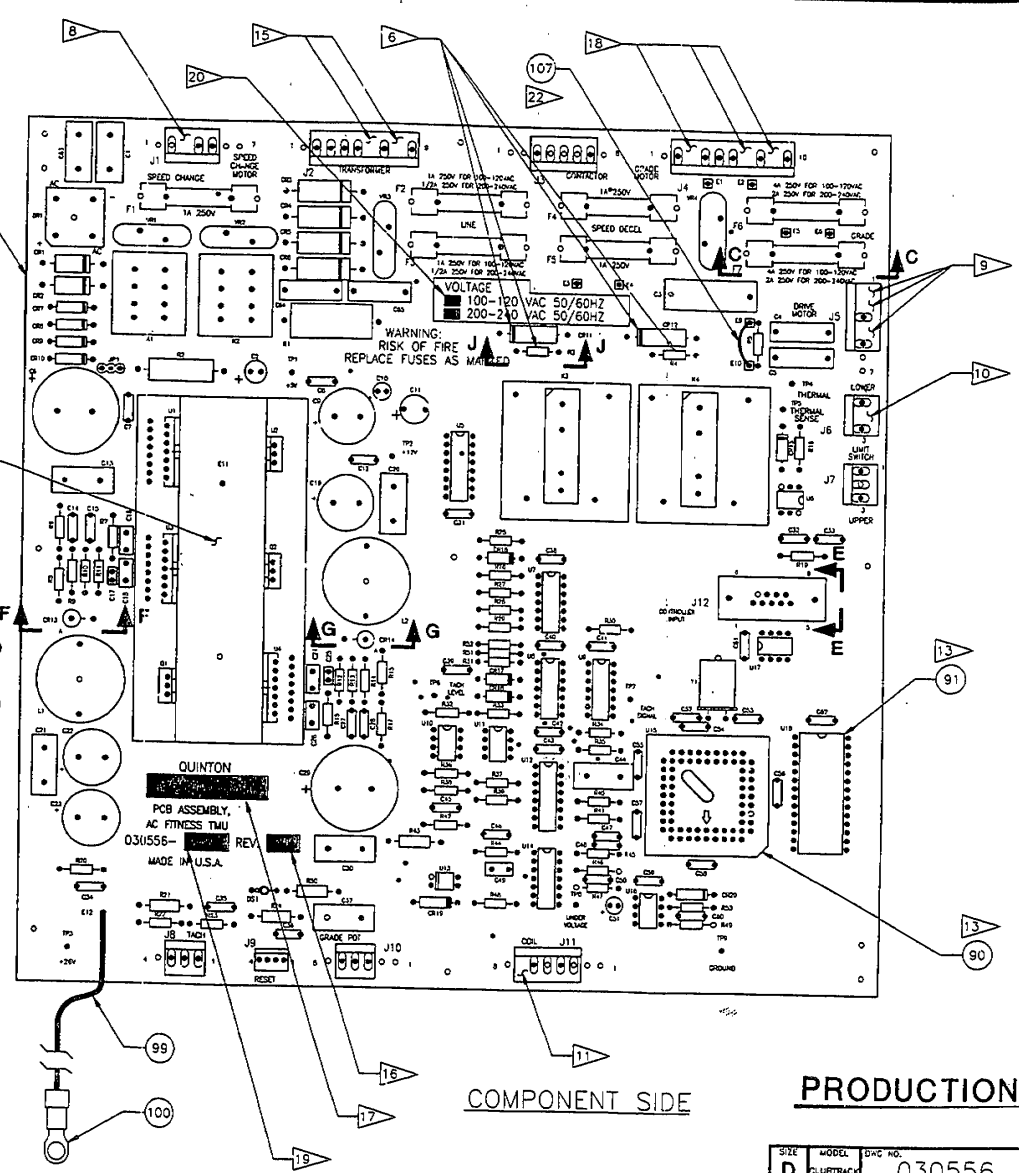
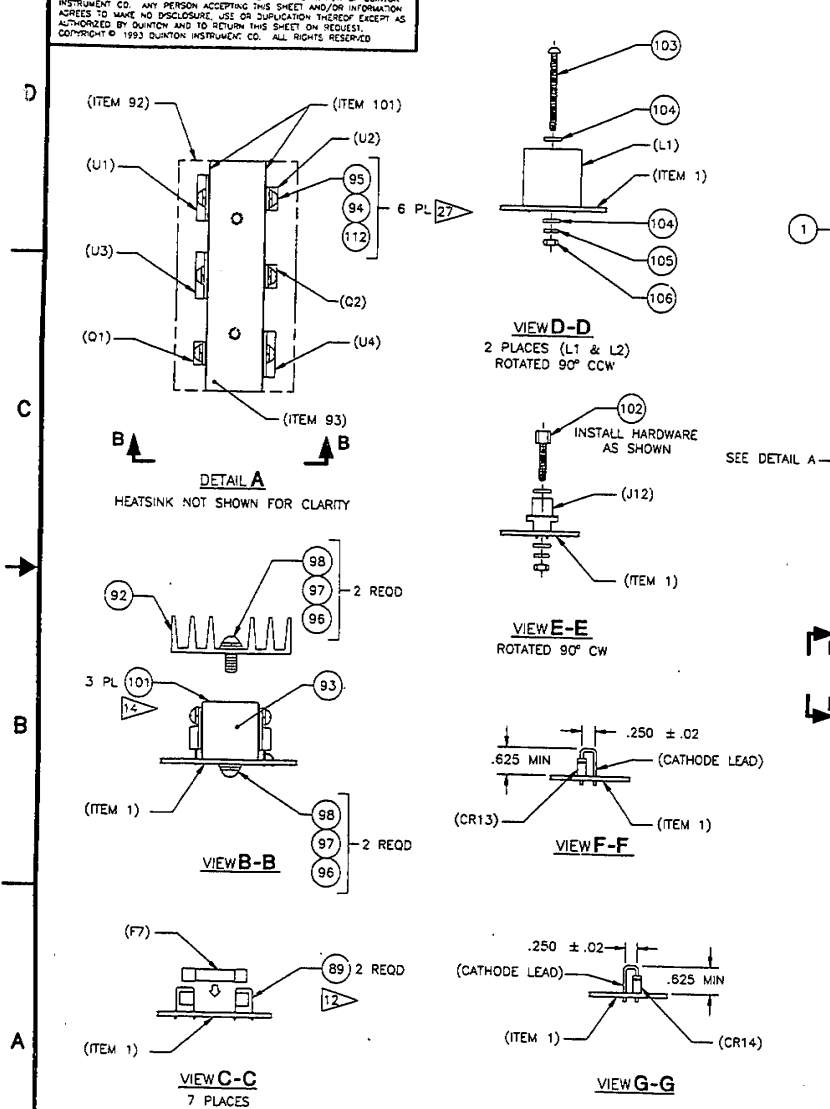
VIEW J-J
2 PLACES

28	A/R/A/R/A/R/A/R/A/R/117	007202-001	ADHESIVE, SILICONE	RTV3145CL	
28	2 2 2 2 2 2 2 116	009627-047	RESISTOR, MF	30.1 OHMS, 1/4W	R54, R55
6	2 2 2 2 2 2 2 115	012323-001	CAPACITOR, POLYCARBONATE	.01UF, 250V	C66, C67
28	2 2 2 2 2 2 2 114	019751-001	DIODE, RECTIFIER, FAST RECOVERY		CR11, CR12
	2 2 2 2 2 2 2 113	018940-001	RELAY, SOLID STATE, AC		K3, K4
	6 6 6 6 6 6 6 112	030838-001	WASHER, FLAT RECTANGULAR, STEEL		
	1 1 1 1 1 1 1 111	003236-001	CAP, TANT ELECT	22 uF, 15V	C10
	A/R/A/R/A/R/A/R/A/R/110	016344-001	ACCELERATOR, ADHESIVE		
	A/R/A/R/A/R/A/R/A/R/109	017683-001	ADHESIVE, QUICK GEL		
	A/R/A/R/A/R/A/R/A/R/108	012270-001	WIRE, INSULATED	26 AWG	
	A/R/A/R/A/R/A/R/A/R/107	010612-005	WIRE, BUS	22 AWG	
	2 2 2 2 2 2 2 106	002579-001	NUT, HEX	4-40 UNC-2B	
	2 2 2 2 2 2 2 105	010511-003	WASHER, SPLIT, LOCK	#4	
	4 4 4 4 4 4 4 104	001164-010	WASHER, FLAT	#4	
	2 2 2 2 2 2 2 103	010828-101	SCREW, MACH, PNH, PH	4-40 UNC-2A X 1.25L	
	1 1 1 1 1 1 1 102	015625-002	SCREW LOCK ASSY, FEMALE	4-40 UNC	
	3 3 3 3 3 3 3 101	019938-001	INSULATOR, SILPAD		
	1 1 1 1 1 1 1 100	011969-002	TERMINAL, SOLDERLESS	#10, BLUE, 14-16 AWG	
	24 24 24 10 10 10 99	010806-011	WIRE, INSULATED, STRANDED	16 AWG, GRN W/YEL STR	
	4 4 4 4 4 4 4 98	010827-183	SCREW, MACH, PNH, PH	8-32 UNC-2A X .375L	
	4 4 4 4 4 4 4 97	010511-006	WASHER, SPLIT, LOCK	#8	
	4 4 4 4 4 4 4 96	001164-002	WASHER, FLAT	#8	
	6 6 6 6 6 6 6 95	010827-162	SCREW, MACH, PNH, PH	6-32 UNC-2A X .312L	
	8 6 6 6 6 6 6 94	010511-005	WASHER, SPLIT, LOCK	#6	
	1 1 1 1 1 1 1 93	019903-001	HEAT, BAR		
	1 1 1 1 1 1 1 92	019902-001	HEATSINK, ACT/M		
	1 1 1 1 1 1 1 91	012180-009	SOCKET, IC, DIP	28 PIN	XU18
	1 1 1 1 1 1 1 90	016585-001	SOCKET, PLCC	68 PIN	XU15
	14 14 14 14 14 14 89	003243-001	CLIP, FUSE		XF1-XF7
	1 1 1 1 1 1 1 88	019834-001	CONNECTOR, D-SUB, SOCKET	9 POS	J12
	1 1 1 1 1 1 1 87	016577-003	CONNECTOR, HEADER	4 POS	J9
	1 1 1 1 1 1 1 86	014572-002	CONNECTOR, HEADER	3 POS	J8
	3 3 3 3 3 3 3 85	013138-002	CONNECTOR, HEADER	3 POS	J6, J7, J10
	1 1 1 1 1 1 1 84	013138-008	CONNECTOR, HEADER	9 POS	J4
	3 3 3 3 3 3 3 83	013138-004	CONNECTOR, HEADER	5 POS	J3, J5, J11
	1 1 1 1 1 1 1 82	013138-007	CONNECTOR, HEADER	8 POS	J2
	1 1 1 1 1 1 1 81	013138-003	CONNECTOR, HEADER	4 POS	J1

QUANTITY PER ASSEMBLY	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	PARTS LIST			
	PRODUCTION			
	SIZE	MODEL	DWG NO.	REV
	D	CLUBTRACK	030556	M
	SCALE	NONE	SOURCE	AUTOCAD
			SHEET	3 OF 3

REV NO. 030556
REV M

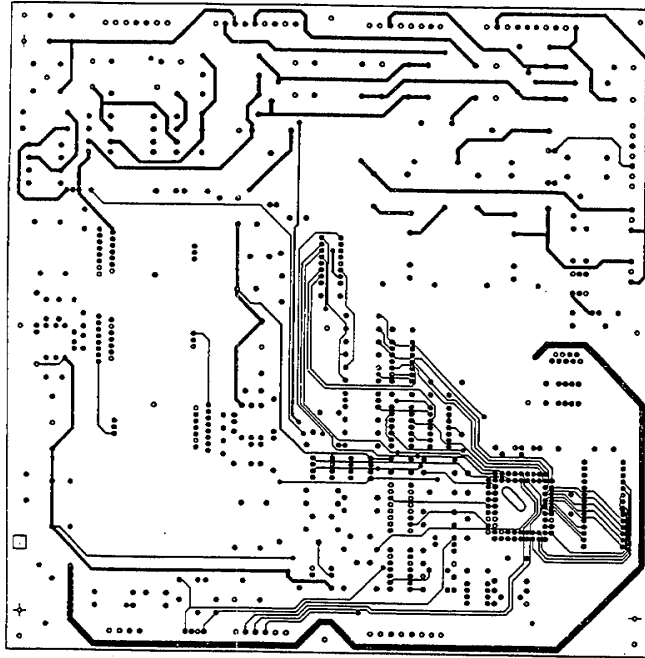
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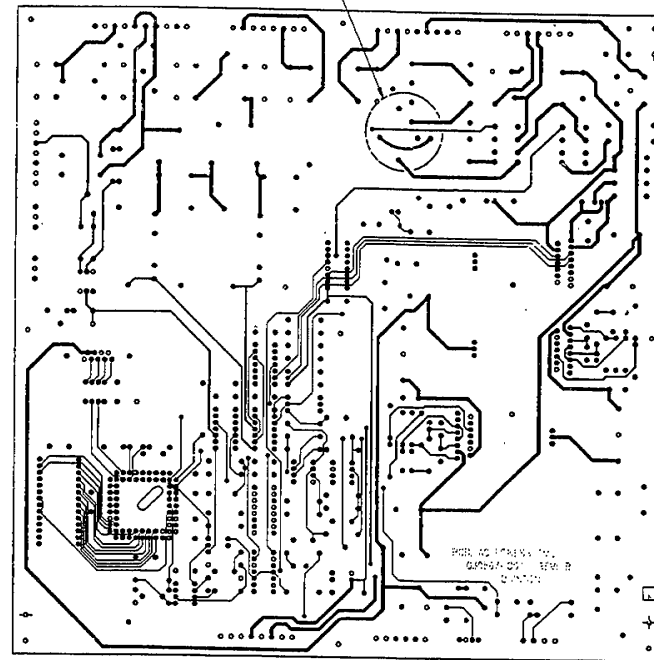
PRODUCTION

SIZE	MODEL	ENC. NO.	REV.
D	FLUETRACK	030556	M
SCALE	NONE	SOURCE	AUTOCAD
		SHEET	4 OF 5

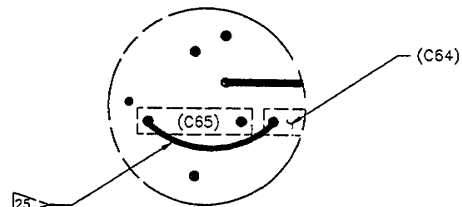
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COMPONENT SIDE
 (SILKSCREEN OMITTED FOR CLARITY)



SOLDER SIDE



DETAIL H
 SOLDER SIDE SHOWN
 (COMPONENTS SHOWN HIDDEN FOR CLARITY)

PRODUCTION

SIZE	MODEL	DWG NO.	REV
D	ELIUBTRACK	030556	M
SCALE	SOURCE	AUTOCAD	SHEET 3 OF 3
NONE			

030556
 5
 M

NOTES:

- 1 MATERIAL TO BE SUPPLIED BY VENDOR.
- 2 ALL PARTS MUST BE PER DRAWING RECOMMENDATION.
- 3 PERMANENTLY MARK WITH QUINTON PART NO., DASH NO., REV LETTER TO WHICH MFD AND VENDOR IDENT IN APPROX LOCATION SHOWN.
- 4 THIS COMPONENT MUST BE CERTIFIED BY A RECOGNIZED TESTING AGENCY TO COMPLY WITH APPROPRIATE CSA AND UL STANDARDS.
- 5 MOTOR WIRES P1, P2, T4, T8 SHOULD EXTEND AT LEAST 4 INCHES FROM MOTOR CASE.
- 6 STRIP LENGTH: .343
- 7 INSTALL CONNECTORS PER MANUFACTURERS RECOMMENDATIONS.
- 8 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 7.
- 9 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 3.
- 10 NOT SHOWN.

ONLY THE ITEMS DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE QUINTON DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

LEESON ELEC CORP
CRAFTON, WI 53024
(1)
APPROVED SOURCE(S)
OF SUPPLY

REVISIONS			
LTR	ZONE	DESCRIPTION	DATE

ADCN NO.	A		
REVISION LEVEL	22275		

-001	MOTOR ASSY, DRIVE	1	113867.00
PART NUMBER	DESCRIPTION	MFC CODE	MFC PART NO.
SOURCE CONTROL DRAWING			

MOTOR SPECIFICATIONS:

HP _____ 3	MAX FULL LOAD AMPS _____ 14 AMPS	AMBIENT _____ 40° C MAX
NEMA FRAME _____ G56H	SERVICE FACTOR _____ 1.15	DUTY CYCLE _____ CONT
ENCLOSURE _____ OPEN DRIP PROOF	LOCKED ROTOR TORQUE _____ 9.11 LB-FT MIN	TEMP RISE _____ --
RPM _____ 3450 @ RATED LOAD	LOCKED ROTOR AMPS _____ 63 AMPS MAX	INSULATION CLASS _____ B1
PHASE _____ SINGLE	BREAKDOWN TORQUE _____ 7.81 LB-FT MIN	ROTATION _____ CW ROTATION LEAD END
FREQUENCY _____ 60 HZ	POWER FACTOR _____ 93%	
VOLTAGE _____ 208-230 VRMS	EFFICIENCY-FULL LOAD _____ 76% MIN	
MOTOR TYPE _____ KD	75% LOAD _____ --	
	50% LOAD _____ --	
	PROTECTOR _____ AUTO CEJ36CV	

PRODUCTION

-001	019737	000313
	018990	000307
		000309
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

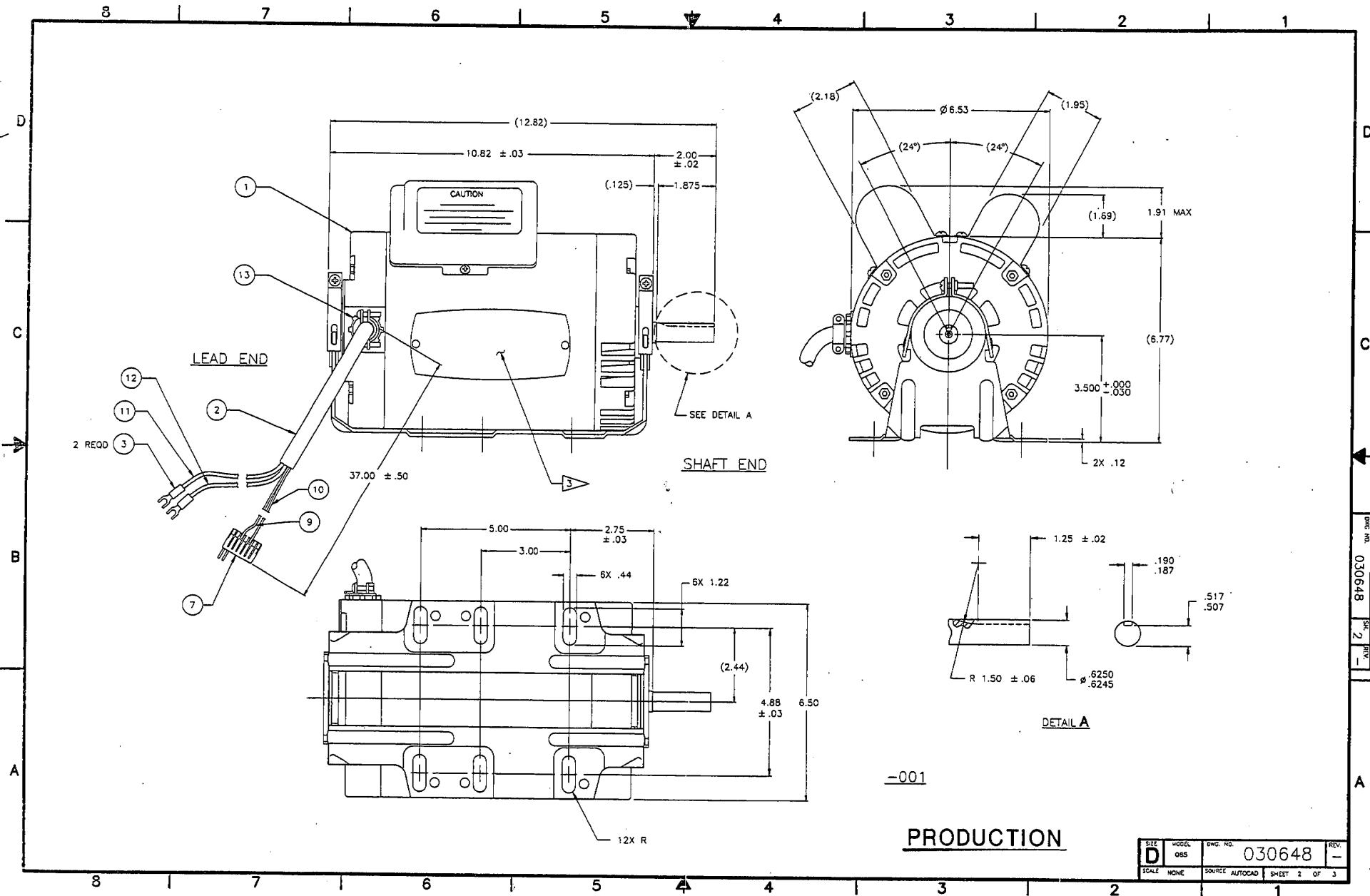
ITEM NUMBER	QTY	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	13	CLAMP, CABLE	REGAL, 6623-3/8	
9	A/R 12	WIRE, INSULATED, STRANDED	14AWG, 600V, UL1015, BLU	W2
9	A/R 11	WIRE, INSULATED, STRANDED	14AWG, 600V, UL1015, BRN	W1
8	A/R 10	WIRE, STRANDED	18AWG, 300V, UL1007, BLK	W3
8	A/R 9	WIRE, STRANDED	18AWG, 300V, UL1007, VID	W4
10	1	KEY	□.19 X 1.38 L	
1	7	CONN HSG, LKG, 18 AWG	PANDUIT, CE156F18-7-X	
3	6	PLUG, KEYING, FLUSH	AMP, 640629-1	
2	5	PLUG, KEYING, LONG NOSE	AMP, 640630-1	
3	4	TERM, SLDRLS, CLE SPLC	AMP, 35653	
2	3	TERMINAL, SOLDERLESS	T&B, RB2237	
7.0 IN	2	TUBING, VINYL (PVC)	TYGON, B-44-4X	
4	1	DRIVE MOTOR	PER SPEC	
		-001	MOTOR ASSY, DRIVE	3.0 HP, 208-230V, 60HZ

100	PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION		REFERENCE DESIGNATION
	UNLESS OTHERWISE SPECIFIED						
	ALL DIM. ARE IN INCHES	.XX = .01	CHECKED	S. COZAD	1-30-92		
	ANGLE = 0°30'	.XXX = .005	ENGR	G.W. FISHER	4/2/92	TITLE MOTOR ASSEMBLY, DRIVE Dwg. No. 030648	
QUANTITY PER ASSEMBLY	CLASS CODE	MOTR	MFG		SIZE	MODEL	DWG. NO.
	VALUE CODE	065VVV	OTHER		D	065	030648
DO NOT SCALE DRAWING PRINTS							
SCALE NONE				SOURCE AUTOCAD		SHEET 1 OF 3	

ALONG A

870648

A



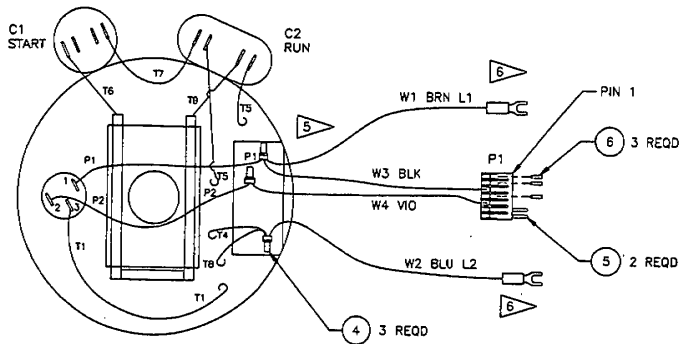
PRODUCTION

-001

SIZE	MODEL	DWG. NO.	REV.
D	085	030648	-
SCALE	NONE	SOURCE	AUTOCAD
		SHEET	2 OF 3

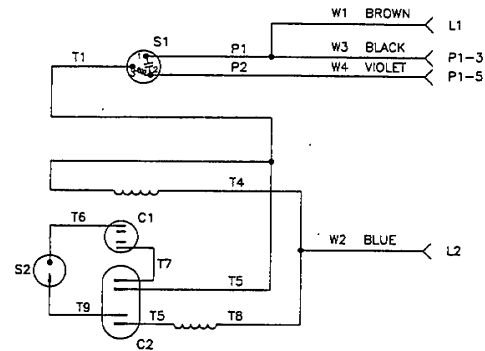
DWG. NO. 030648 SH. 2 REV. 1

030648



-001 208-230V 60 HZ

VIEW FROM OUTSIDE OF MOTOR AT SWITCH END.
LEAD WIRE INSULATION TO EXTEND MIN OF .25"
INTO CONNECTOR INSULATION.



SCHEMATIC & WIRING DIAGRAM
-001 208-230V, 60HZ

PRODUCTION

SIZE D	MODIF. 005	DRG. NO. 030648	REV. -
SCALE NONE	SOURCE AUTOCAD	SHEET 3 OF 3	

FORM NO. 030648 REV. 3

030648

REVISIONS			
LTR	ZONE	DESCRIPTION	APPROVED DATE
M		ADCN: 33664 DELETED MFG CODE 2 (BALDOOR)	S.COZAD 3/10/92
		ACTION CODE: M1 MODIFIER: DATE OF RELEASE	

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 MATERIAL TO BE SUPPLIED BY VENDOR.
- 2 ALL PARTS MUST BE PER DRAWING RECOMMENDATION.
- 3 PERMANENTLY MARK WITH THE FOLLOWING: QUINTON PART NUMBER, DASH NUMBER, REVISION LETTER TO WHICH MANUFACTURED, VENDOR IDENTIFICATION, RPM, HORSE POWER, VOLTAGE CONFIGURATION AS LISTED IN MATERIAL SPEC., FREQUENCY, FULL LOAD AMPS, NEMA FRAME TYPE, POWER FACTOR, EFFICIENCY, MOTOR TYPE, SERVICE FACTOR, DUTY CYCLE, MAXIMUM AMBIENT TEMPERATURE, INSULATION CLASS, PHASE, AND THERMAL PROTECTOR.
- 4 THIS COMPONENT MUST BE CERTIFIED BY A RECOGNIZED TESTING AGENCY TO COMPLY WITH APPROPRIATE CSA AND UL STANDARDS.
- 5 MOTOR WIRES P1, P2, T4, T8 SHOULD EXTEND AT LEAST 4 INCHES FROM MOTOR CASE.
- 6 STRIP WIRE PER TERMINAL MANUFACTURERS RECOMMENDATIONS PRIOR TO CRIMPING.
7. INSTALL CONNECTORS PER MANUFACTURERS RECOMMENDATIONS.
- 8 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 7.
- 9 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 3.
- 10 NOT SHOWN.
- 11 DELETED.
- 12 DELETED.
- 13 ALL WIRE LENGTHS PER TABLE 1. WIRES WITH TERMINALS ARE MEASURED FROM THE CABLE CLAMP TO THE END OF THE TERMINAL.
- 14 "X" IS A NON-SIGNIFICANT NUMBER.

PRODUCTION

ONLY THE ITEMS DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE QUINTON DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

DELETED
(2)
LEASON ELEC CORP
DRAFTON, WI 53024
(1)
APPROVED SOURCE(S)
OF SUPPLY

-001	MOTOR ASSY, DRIVE	1	113867.00
PART NUMBER	DESCRIPTION	MFG CODE	MFG PART NO.
SOURCE CONTROL DRAWING			

MOTOR SPECIFICATIONS:

HP _____ 3	MAX FULL LOAD AMPS _____ MFG 1: 10.4 AMPS	AMBIENT _____ 40° C MAX
NEMA FRAME _____ MFG 1: G56H	SERVICE FACTOR _____ 1.15	DUTY CYCLE _____ CONT
ENCLOSURE _____ OPEN DRIP PROOF	LOCKED ROTOR TORQUE _____ 9.11 LB-FT MIN	TEMP RISE _____ --
RPM _____ 3450 @ RATED LOAD	LOCKED ROTOR AMPS _____ 63 AMPS MAX	INSULATION CLASS _____ B "X" 14
PHASE _____ SINGLE	BREAKDOWN TORQUE _____ 7.81 LB-FT MIN	ROTATION _____ CW ROTATION LEAD END.
FREQUENCY _____ 60 HZ	POWER FACTOR _____ MFG 1: 93%	
VOLTAGE _____ 187-253 VRMS	EFFICIENCY-FULL LOAD _____ 76% MIN	
MOTOR TYPE _____ MFG 1: KD	75% LOAD _____ --	
	50% LOAD _____ --	
	PROTECTOR _____ MFG 1: CEJ36CV	

REV	NO	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	15	DELETED		
	14	DELETED		
	13	CLAMP, CABLE		
9	AR 12	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, BLU	W2
9	AR 11	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, BRN	W1
8	AR 10	WIRE, STRANDED	18 AWG, 300V, UL1007, BLK	W3
8	AR 9	WIRE, STRANDED	18 AWG, 300V, UL1007, VIO	W4
10	1 8	KEY	□.19 X 1.38 L	
	1 7	CONN HSG, LKG, 18 AWG	PANDUIT, CE156F18-7-X	
	3 6	PLUG, KEYING, FLUSH	AMP, 640629-1	
	2 5	PLUG, KEYING, LONG NOSE	AMP, 640630-1	
	3 4	TERM, SLDRLS, CLE SPLC	AMP, 35653	
	2 3	TERMINAL, SOLDERLESS	T&B, R82237	
	1B IN 2	TUBING, VINYL (PVC)	TYGON, B-44-4X	
	1 1	DRIVE MOTOR	PER SPEC	
	-	-001	MOTOR ASSY, DRIVE	3.0 HP, 208-230V, 60HZ

QTY PER ASSY	DO NOT SCALE DRAWING	DRAWN: S. COZAD 1/20/90	Quinton Instrument Co. 3303 MONTE VILLA PARKWAY BOYDSELL, WA 99021-8904 206/402-2000
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1982	TOL .XX ± .010 .XXX ± .005 ANGLE ± 0°30'	ENGR: C. Fissel 3/3/92 WFC: S. Curran 3/3/92 DUAL: K. Bailey 3/4/92	TITLE MOTOR ASSEMBLY, DRIVE
NOTICE: QUINTON CONFIDENTIAL THIS SHEET CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION OF QUINTON INSTRUMENT CO. ANY PERSON ACCEPTING THIS SHEET AND/OR INFORMATION AGREES TO MAKE NO DISCLOSURE, USE OR DUPLICATION THEREOF EXCEPT AS AUTHORIZED BY QUINTON AND TO RETURN THIS SHEET ON REQUEST. COPYRIGHT © 1990 ALL RIGHTS RESERVED.		DATE: _____ CHKD: _____ TECH SVCE: _____	SIZE MODEL DWG NO. 030648 SCALE NONE SOURCE AUTOCAD SHEET 1 OF 3
CLASS MOTR	VALUE 065	TEST CODE: 2	REV M

-001	030650	000335
	018990	000307
		000309
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

030648

8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A

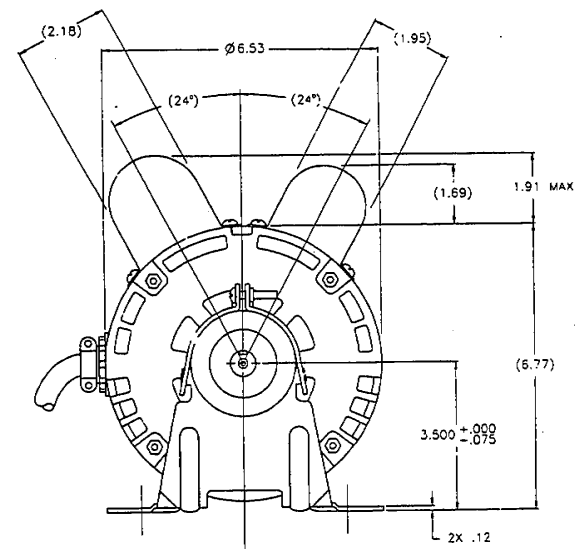
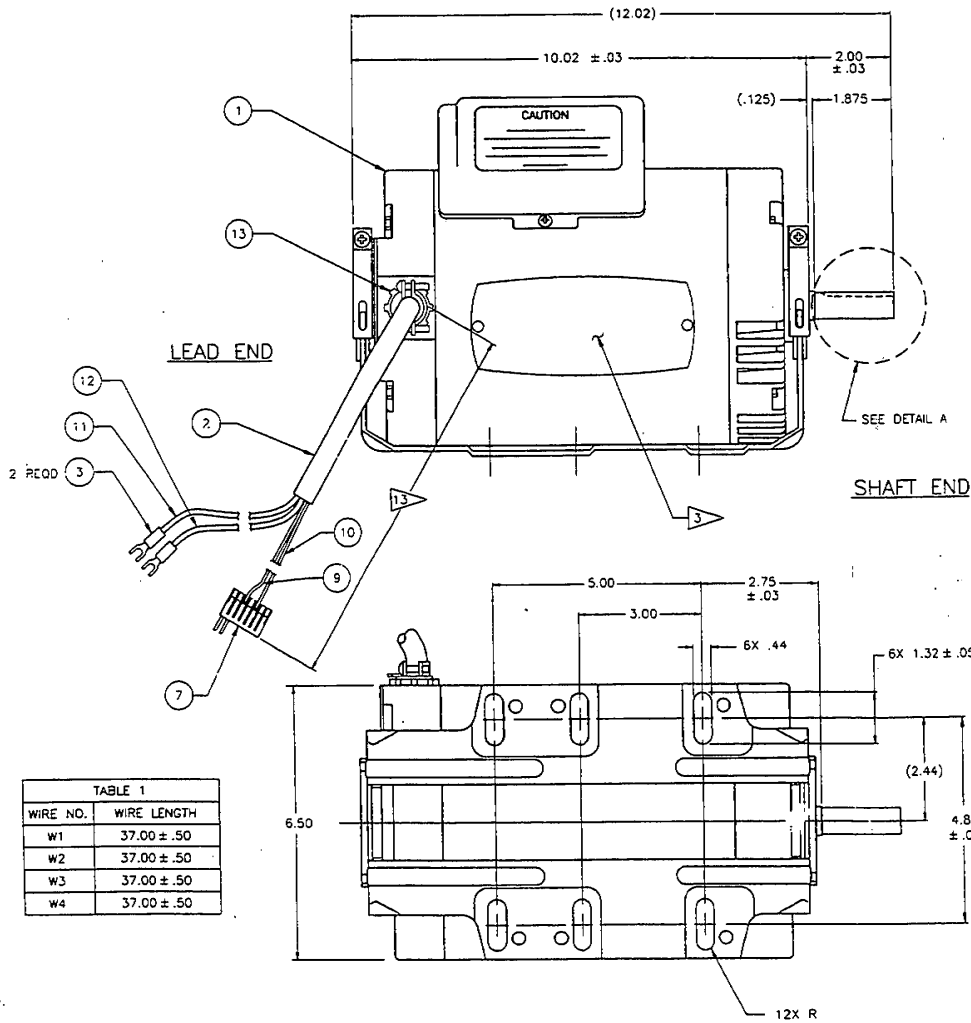
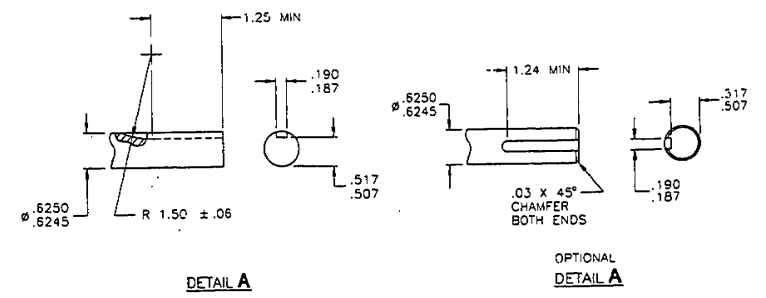


TABLE 1

WIRE NO.	WIRE LENGTH
W1	37.00 ± .50
W2	37.00 ± .50
W3	37.00 ± .50
W4	37.00 ± .50

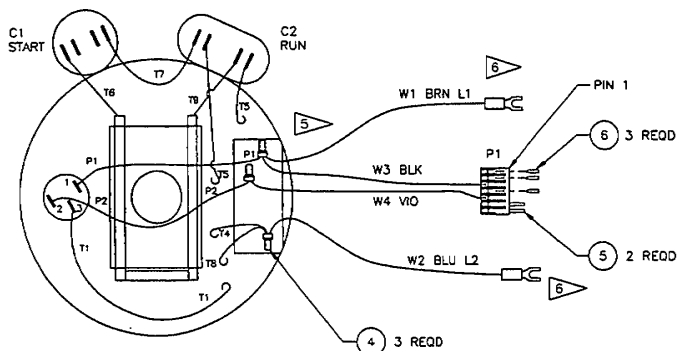


PRODUCTION

-001

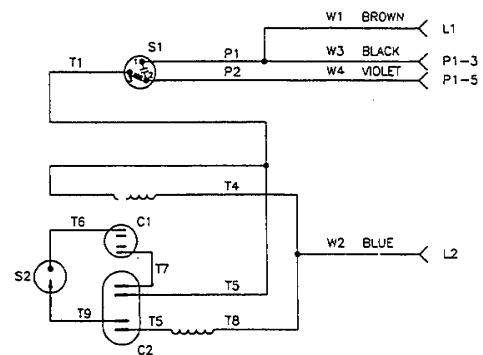
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		D	085	030648	M
SCALE	SOURCE	AUTOCAD	SHEET 2 OF 3		
NONE					

8 7 6 5 4 3 2 1



-001 208-230V 60 HZ

VIEW FROM OUTSIDE OF MOTOR AT SWITCH END.
LEAD WIRE INSULATION TO EXTEND MIN OF .25"
INTO CONNECTOR INSULATION.



SCHEMATIC & WIRING DIAGRAM

-001 208-230V. 60HZ

PRODUCTION

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D	Q85	030648	M		
SCALE	NONE	SOURCE	AUTOCAD	SHEET	3 OF 3

DWG NO. 030648
REV M

030648

1. PREFIX TO REFERENCE DESIGNATION ON THIS DWG IS Z.

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2. ASSEMBLE PER MFG PROCEDURE 019737-880.

3. THESE CABLES HAVE INTERCHANGABLE LEADS.

4. SEE SHEETS 7 & 8 FOR WIRE ROUTING. WIRES MUST NOT BE SUBJECT TO PINCHING OR ABRASION; ROUTE AWAY FROM MOVING PARTS AND SHARP EDGES. USE CABLE TIES (ITEM 42) AS REQD.

5. PRIME OD OF BEARINGS ON SHAFT ASSEMBLIES (ITEMS 23 & 24) AND ID OF BEARING CAPS (ITEMS 25, 26 & 27) WITH LOCTITE PRIMER (ITEM 79). COAT BEARING OD AND CAP ID WITH LOCTITE 680 (ITEM 81). ASSEMBLE CAP OVER BEARING AND MOUNT SHAFT ASSEMBLY TO HEADFRAME (ITEM 10) IMMEDIATELY. "T" STAMPED ON BEARING CAPS (ITEMS 25, 26 & 27) MUST FACE UPWARDS. ROTATE SHAFT ASSEMBLY BY HAND BEFORE FULLY TIGHTENING SCREWS (ITEMS 76 & 77). THE BEARING ON THE FIXED SHEAVE END OF EACH SHAFT ASSEMBLY MUST BE SEATED IN THE BEARING CAP. DO NOT MOVE OR STRESS THE ASSEMBLY FOR TWO HOURS AFTER TORQUING THE MOUNTING SCREWS.

6. USE ADHESIVE (ITEM 80) ON ALL THREADED CONNECTIONS.

7. ASSEMBLY TORQUE 70 ±10 INCH-LBS.

8. LENGTH OF CHAIN SHOULD BE 88 PITCHES.

9. PRESS BRONZE BEARING (ITEM 18) INTO THE MACHINED HEADFRAME (ITEM 10) PRIOR TO ASSEMBLY.

10. DO NOT OVERTIGHTEN. BOWING OF THE MOUNT ADAPTER (ITEM 51) IS UNACCEPTABLE.

11. ASSEMBLY TORQUE 46 ±4 FT-LBS.

12. TENSION V-BELT (ITEM 30 OR 103) SUCH THAT A .13 INCH DEFLECTION CAN BE MEASURED AT MID SPAN WITH A 2.8 - 4.1 LB LOAD APPLIED PERPENDICULAR TO THE BELT AT THE MID SPAN LOCATION.

13. ASSEMBLE DRIVE PULLEY TO INPUT SHAFT AS FOLLOWS:
 A. THOROUGHLY CLEAN THE INPUT SHAFT OD, INCLUDING THE KEYWAY GROOVE, FROM THE END OF THE SHAFT TO THE RUNOUT OF THE KEYWAY GROOVE USING SOLVENT (ITEM 104).
 B. THOROUGHLY CLEAN THE DRIVE PULLEY BORE/KEYWAY AREA, SET SCREW THREADED HOLES, SET SCREW AND KEY USING SOLVENT (ITEM 104).
 C. APPLY ADHESIVE (ITEM 105) TO INPUT SHAFT KEYWAY AND DRIVE PULLEY KEYWAY.
 D. APPLY RETAINING COMPOUND (ITEM 81) TO INPUT SHAFT OD FROM THE END OF THE SHAFT TO THE RUNOUT OF THE KEYWAY GROOVE.
 E. APPLY ADHESIVE (ITEM 80) TO DRIVE PULLEY SET SCREWS.
 F. ASSEMBLE DRIVE PULLEY AND KEY ONTO INPUT SHAFT. ALIGN DRIVE BELT. SECURE DRIVE PULLEY SET SCREWS.
 G. ALLOW ASSEMBLY TO SET A MINIMUM OF 30 MINUTES.

14. INSTALL REQUIRED AMOUNT OF SHIMS (ITEM 68) BETWEEN SNAP RING (ITEM 40) AND BEARING (PART OF ITEM 22) TO ACHIEVE A MINIMUM GAP OF .175 BETWEEN PLASTIC SPROCKET (PART OF ITEM 22) AND CLOSEST POINT OF HEADFRAME POST.

15. LEAVE 1.0 INCH OF SLACK IN SPEED CHANGE MOTOR LEADS (PART OF ITEM 2) WHERE CONNECTED TO LINE FILTER (ITEM 96).

16. TORQUE THE TWO MOTOR RESILIENT MOUNT SCREWS TO 25-27 IN-LBS.

17. SHIM HERE USING ITEM 68 TO OBTAIN .010 TO .040 ENDPLAY OF THE SPINDLE ASSEMBLY (ITEM 22).

18. REMOVE CHANGE WIRE WITH MALE QUICK DISCONNECT TERMINAL FROM IDC P5-5.

19. HAND TIGHTEN ITEM 65 (2 PLACES, REAR LOCATION ONLY).

ITEM 80 DESCRIPTION WAS BUSHING, SILICONE EFF PT: 7, DISP: USE	1/19/92 Kendall 17 199.1/16	8/25/92 6/25/92 8/25/92 8/25/92
B ACDCN: 22489 CONT ON SH 3 WAS CONT ON SH 8		
ITEM 32 WAS 34 EFF PT: 7, DISP: NONE		
C ACDCN: 22738 FLAG NOTE 7 WAS 100FIC EFF PT: 5, DISP: USE, MOD: 6/1/92		
D ACDCN: 22987 ITEM 7 WAS 013089-001, 100R ITEM 30 WAS 01249-009 DELETED ITEM BUBBLE 108 & ALL SURROUNDING DASH NUMBERS EFF PT: 7, DISP: ASSYS COMPLY		
E ACDCN: 23724 ADDED ITEM 107 -002L-004 ITEM 24 QTY WAS 1 EFF PT: 4, DISP: REWORK MOD: 8-18-92 DART: 23764 RLSE TO PRODUCTION EFF PT: 7, DISP: NONE		

ADDCN NO.	24197		
REVISION LEVEL	G		

(CONTINUED ON SHEET 2)

1	1	1	1	20	001393-001	SPROCKET	20-B-25		
1	1	1	1	19	014561-001	SPROCKET, MODIFIED			
2	2	2	2	18	012990-002	BEARING, BRONZE			
2	2	2	2	17	002594-001	COLLAR, SET			
1	1	1	1	16	013044-001	SHAFT, PINION			
2	2	2	2	15	013081-005	GEAR, RACK-MODIFIED			
2	2	2	2	14	002298-002	WHEEL, BALL OR ROLLER BEARING, CLUSHION TREAD			
1	1	1	1	13	016935-001	BRACKET, SPEED CHANGE ADJUSTMENT			
1	1	1	1	12	019808-001	BRACKET, PCB MOUNTING			
1	1	1	1	11	016213-001	BRACKET, ELEVATION POTENTIOMETER			
1	1	1	1	10	030649-001	HEADFRAME, MACHINING			
1	1	1	1	9	013387-001	HARNESS ASSY, CONTACTOR		W2	
1	1	1	1	8	013077-001	TACHOMETER PICKUP ASSY		A3	
1	1	1	1	7	013089-002	GRADE POT ASSY	5kΩ	R1	
1	1	1	1	6	014486-001	RELAY, MERCURY		K1	
1	1	1	1	5	030556-001	PCB ASSY, TREADMILL CONTROL		A1	
1	1	1	1	4	030449-004	KIT, ROLLER CHAIN	#25		
1	1	1	1	3	019933-001	MOTOR ASSY, GRADE		M1	
1	1	1	1	2	019130-002	MOTOR ASSY, SPEED CHANGE		M3	
-	-	-	-	1	030648-001	MOTOR ASSY, DRIVE	208/230V, 60HZ	M2	
-	-	-	-	-	-001	HEADFRAME ASSY, TREADMILL	208/230V 60HZ		

PRODUCTION

-004		
-003	000335	000335
-002	000333	000333
-001		
PART NO.	NEAT ASSY. NO.	END ITEM NO.
APPLICATION		

QUANTITY PER ASSEMBLY	CLASS CODE	VALUE CODE	DO NOT SCALE DRAWING PRINTS
004	FRAA	TREDML	
PART NUMBER			
DESCRIPTION			
MATERIAL SPECIFICATION			
REFERENCE DESIGNATION			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRAWN: F. RAMIREZ 2/19/92	
ALL DIM. ARE IN INCHES	XX ±	CHECKED & APPROVED: CANNON 4/1/92	DATE: 4/1/92
TOL. .XXX ±	ANGLO ±	ENG: K.W. BILLY 4/1/92	DATE: 4/1/92
QUAL. OTHER		MFG: T. J. 4/1/92	DATE: 4/1/92
TITLE: HEADFRAME ASSEMBLY, TREADMILL		QUINTON INSTRUMENT CO. 2121 TERRY AVENUE SEATTLE, WASHINGTON 98121 208/225-7273	
SIZE: D	MODEL: CLUSTACK	DWG. NO.: 030650	REV. F
SCALE: NOJE	DIST. CODE:	SHEET: 1 OF 8	

(CONTINUED ON SHEET 3)

QTY	ITEM NO.	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	98	CABLE ASSY, SPEED CHANGE MOTOR		F1W1
1	97	HARNESS ASSY, JACK		W3
1	96	FILTER, LINE		F1
1	95	CABLE ASSY, RESET		W4
17	94	WASHER, FLAT #6		
1	93	SWITCH HARNESS, LIMIT DOWN		W6
11	92	ANCHOR, TIE		
1	91	BELT, TIMING "HTD" 600 mm		
2	90	SWITCH, SNAP ACTION		SW1, SW2
4	89	WASHER, LOCK, INTL STAR #6		
13	88	NUT, HEX #6-32 UNC-2B		
4	87	SCREW, MACHINE, PNH PHILLIPS #6-32 UNC-2A x 1.000L		
8	86	SCREW, CAP, HEX HEAD .250-20 UNC-2A x .750L		
1	85	BRACKET, SWITCH, ELEVATION LH		
1	84	BRACKET, SWITCH, ELEVATION RH		
2	83	PLATE, RACK GEAR		
1	82	LABEL, ADHESIVE-BACKED AL FOIL CAUTION		
AR	81	RETAINING COMPOUND LOCTITE 680		
AR	80	ADHESIVE, SCREW LOCK #242		
AR	79	PRIMER "T" LDCQUIC		
2	78	SCREW, CAP, HEX HEAD .313-18 UNC-2A x .875 L		
2	77	SCREW, CAP, HEX HEAD .313-18 UNC-2A x 4.000L		
6	76	↑ -246	↑	↑
2	75	↑ -207	↑	↑
2	74	↑ -125	↑	↑
2	73	SCREW, CAP, HEX HEAD .250-20 UNC-2A x 1.500 L		
3	72	SCREW, MACHINE, PNH PHILLIPS #10-24 UNC-2A x .500L		
13	71	SCREW, MACHINE, PNH PHILLIPS #10-32 UNF-2A x .500L		
6	70	SCREW, MACHINE, PNH PHILLIPS #10-32 UNF-2A x .375L		
1	69	CABLE ASSY, DC GRADE MOTOR		T2W1
2	68	SHIM, ARBOR .750 1D x 1.125 0D x .020 THK		
3	67	SCREW, MACHINE, PNH PHILLIPS #6-32 UNC-2A x .250L		
9	66	SCREW, MACHINE, PNH PHILLIPS #6-32 UNC-2A x .375L		
11	65	NUT, LOCK .250-20 UNC-2B		
13	64	NUT, HEX SEMI-FINISH #10-32 UNF-2B		
1	63	TRANSFORMER ASSY		T1
2	62	WASHER, FLAT .375		
10	61	WASHER, FLAT .313		
4	60	WASHER, LOCK, INTERNAL, EXTERNAL .250		
28	59	WASHER, FLAT .250		
2	58	WASHER, LOCK, EXTERNAL STAR #10		
22	57	WASHER, FLAT #10		
2	56	SCREW, CAP, HEX HEAD .250-20 UNC-2A x 4.500L		

ITEM NUMBER	QTY PER ASSEMBLY
004	
003	
002	
001	

PART NUMBER DESCRIPTION MATERIAL SPECIFICATION REFERENCE DESIGNATION

PARTS LIST

PRODUCTION

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REV. NO.	DESCRIPTION	APPROVED	DATE
1			

QTY	ITEM NO.	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	55	SWITCH HARNESS, LIMIT UP		W5
4	54	SCREW, SET .250-20 UNC-2A x .250L		STEEL
1	53	POWER CORD		W1
2	52	SCREW, SET #10-32 UNF-2A x .250L		STEEL
2	51	ADAPTER, PCB MOUNTING BRACKET		
4	50	WASHER, SHOULDER, ISOLATION		
2	49	WASHER, SHOULDER, ISOLATION		
1	48	TRANSFORMER ASSY		T2
2	47	WASHER, FLAT, ISOLATION		
1	46	SPROCKET, CHAIN		
4	45	WASHER, FLAT, ISOLATION		
9	44	STANDOFF, M/F #6-32 .500 L		
16	43	RIVET ALUMINUM		
AR	42	CABLE TIE #6 SCREW HOLE		
17	41	MOUNT, CABLE TIE		
1	40	RETAINING RING, INTERNAL		
-	39	KEY, SQUARE .188 x .188 x 1.50		
3	38	KEY, SQUARE .188 x .188 x 1.00		
2	37	ROLL PIN		
1	36	BEARING, BALL		
1	35	RING, RETAINER		
4	34	SCREW, CAP, HEX HEAD 250-20 UNC-2A x 1.75 L		
1	33	CLAMP, CABLE		
1	32	STRAIN RELIEF		
1	31	KIT, ROLLER CHAIN # 40		
-	30	BELT, 3VX, MOLDED NOTCH 3VX 335		
1	29	BELT, VARIABLE SPEED		
-	28	PULLEY, MACHINED, 1G-3UX-2.53 x -.625		
1	27	CAP, BEARING		
1	26	CAP, BEARING		
2	25	CAP, BEARING		
-	24	INPUT SHAFT ASSY, HEAVY DUTY		
1	23	OUTPUT SHAFT ASSY, HEAVY DUTY		
1	22	SPINDLE ASSY, SPEED CHANGE		
1	21	SPROCKET, CHAIN		

ITEM NUMBER	QTY PER ASSEMBLY
004	
003	
002	
001	

PART NUMBER DESCRIPTION MATERIAL SPECIFICATION REFERENCE DESIGNATION

PARTS LIST

SIZE	MODEL	DWG. NO.	REV.
D	CLUTCHPACK	030650	F
SCALE	NONE	DIST. CODE	SHEET 2 OF 8

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE

QTY	UNIT	ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION																														
1	-	107	015273-002	INPUT SHAFT ASSY, HEAVY DUTY																																
1	1	106	010819-325	SCREW, CAP HEX HEAD #250-20UNC-2A x 1.000L																																
1	1	105	017864-001	ADHESIVE, LOCTITE 660																																
1	1	104	016258-001	SOLVENT, CHLOROTHENE, INDUSTRIAL																																
1	1	103	015241-002	BELT, 3VX, MOLDED NOTCH																																
1	1	102	015403-002	PULLEY, MACHINED, 1G-3UX-2.64x-.625																																
1	1	101	030657-001	MOTOR ASSEMBLY, DRIVE 200V, 50HZ		MZ																														
1	1	00	030659-001	MOTOR ASSEMBLY, DRIVE 200V, 60HZ		MZ																														
1	1	99	030658-001	MOTOR ASSEMBLY, DRIVE 230V, 50HZ		MZ																														
1	1	-	-004	HEADFRAME ASSEMBLY, TREADMILL 200V, 50HZ																																
1	1	-	-003	HEADFRAME ASSEMBLY, TREADMILL 200V, 60HZ																																
1	1	-	-002	HEADFRAME ASSEMBLY, TREADMILL 230V, 50HZ																																
PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION		REFERENCE DESIGNATION																														
PARTS LIST																																				
<table border="1"> <tr> <th>QTY PER ASSEMBLY</th> <th>ITEM NUMBER</th> <th>PART NUMBER</th> <th>DESCRIPTION</th> <th>MATERIAL SPECIFICATION</th> <th>REFERENCE DESIGNATION</th> </tr> <tr> <td>1</td> <td>004</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>000</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>200</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>100</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>							QTY PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION	1	004					1	000					1	200					1	100				
QTY PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION																															
1	004																																			
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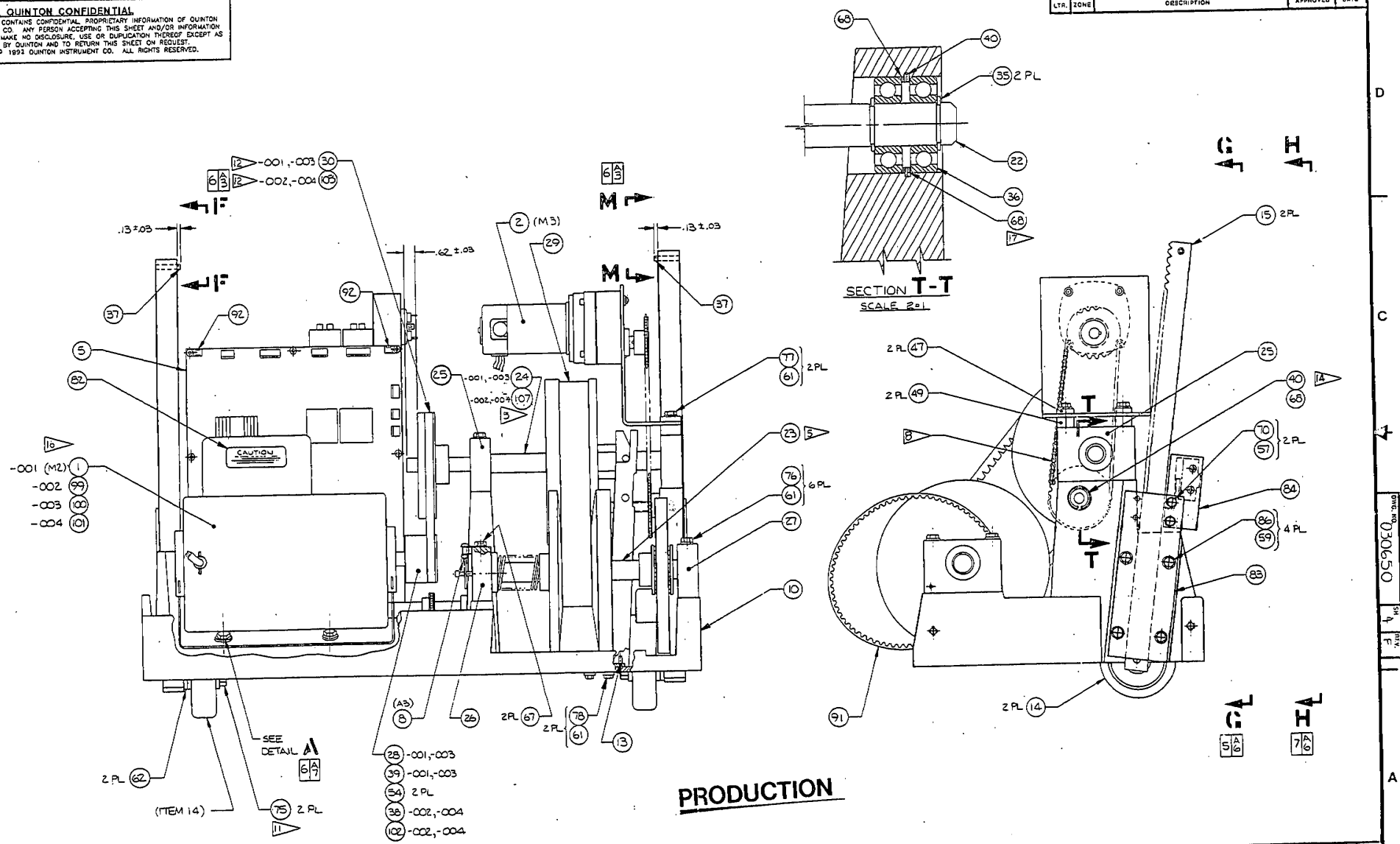
PRODUCTION

SIZE	MODEL	DWG. NO.	REV.
D	ILLUSTRATION	030650	F
SCALE	NONE	DIST. CODE	SHEET 3 OF 8

030650
REV. 3

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REVISIONS			
LTR.	ZONE	DESCRIPTION	APPROVED DATE

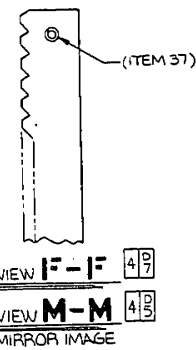
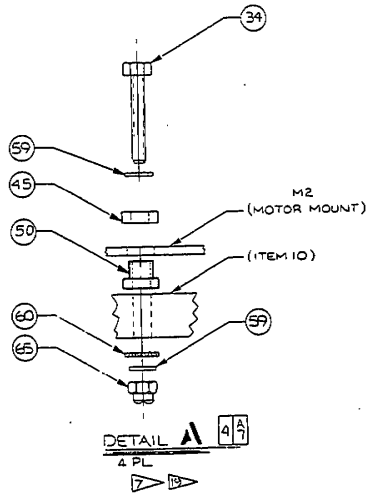
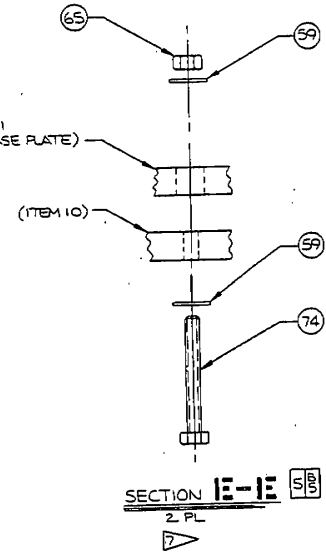
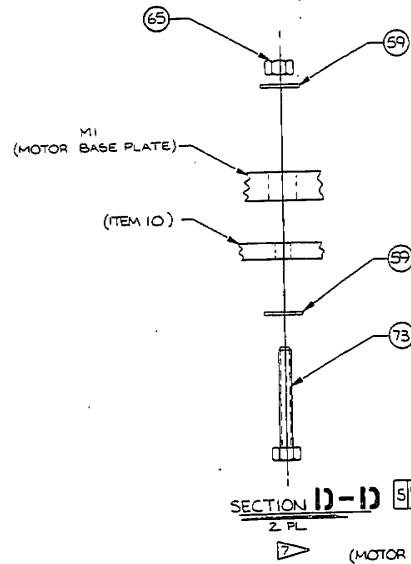
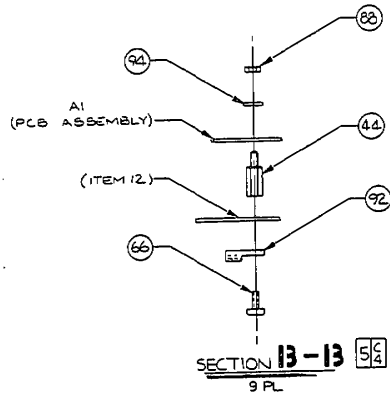
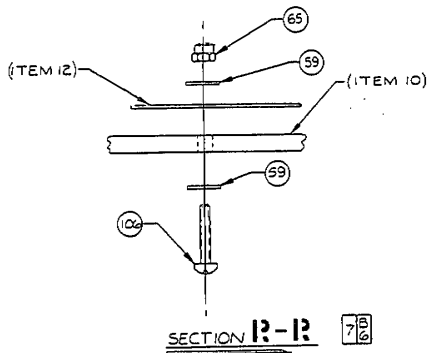


PRODUCTION

SIZE D	MODEL ELECTROCK	DWG. NO. 030650	REV. F
SCALE 1/2	DIST. CODE	SHEET 4 OF 8	

030650
 1st
 2nd
 3rd
 4th
 5th
 6th
 7th
 8th
 9th
 10th

REVISIONS			
LTR. ZONE	DESCRIPTION	APPROVED	DATE



PRODUCTION

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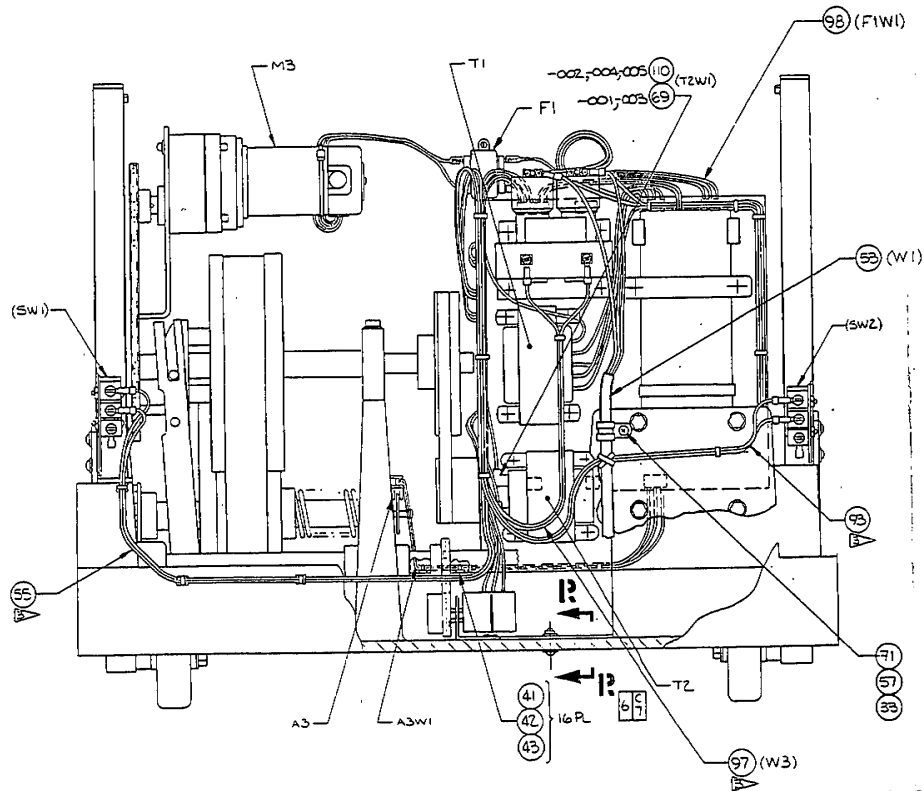
SIZE	MODEL	OWC. NO.	REV.
D	030650	030650	F
SCALE	DIST. CODE	SHEET	OF
1/1		6	8

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REVISIONS				
LTR.	ZONE	DESCRIPTION	APPROVED	DATE

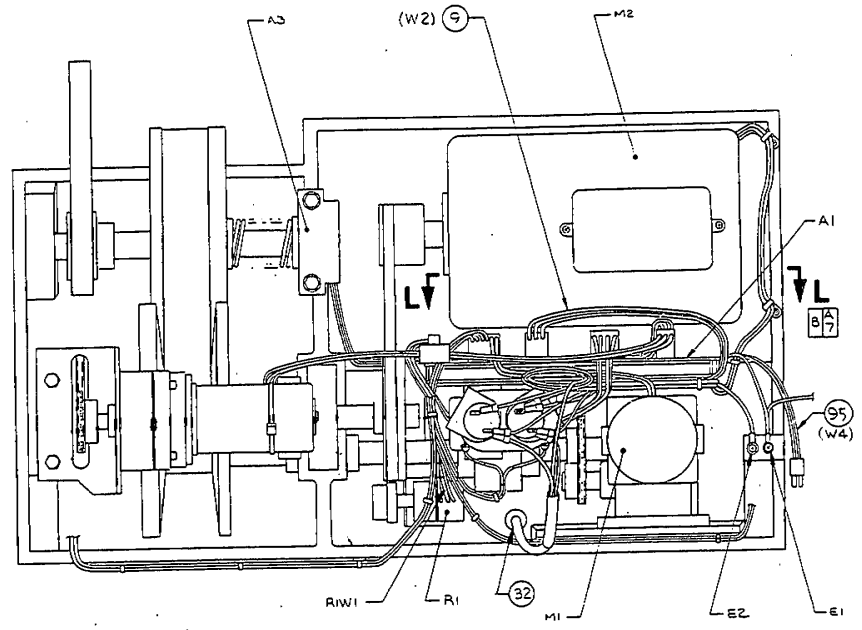
J

J



VIEW H-H 4

WIRING DETAILS
 (MECHANICAL DETAILS SIMPLIFIED)



VIEW J-J

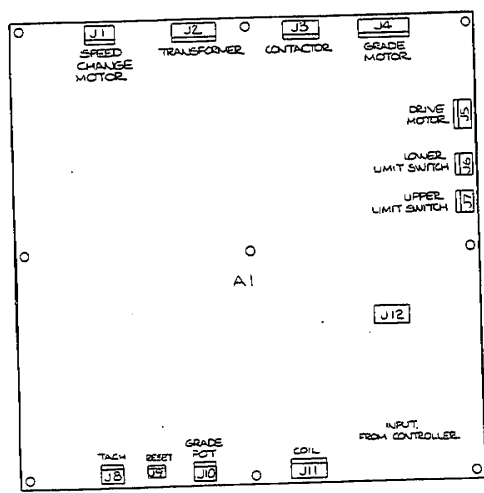
PRODUCTION

SIZE D	MODEL MEDTRACK	DWG. NO. 030650	REV. F
SCALE 1/2	DIST. CODE	SHEET 7	OF 8

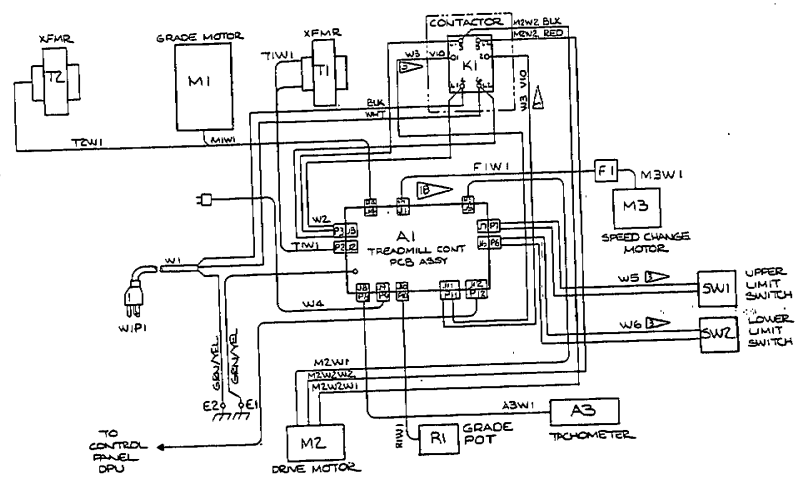
030650

REVISIONS			
LTR.	ZONE	DESCRIPTION	DATE

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TREADMILL CONTROLLER
 PCB
 (CONNECTOR LOCATIONS)
 VIEW L-L
 SCALE: NONE



PRODUCTION

SIZE D	MODEL ILLUSTRATION	QWG. NO. 030650	REV. F
SCALE NONE	DIST. CODE	SHEET 8 OF 8	

QWG. NO. 030650
REV. F

8 7 6 5 4 3 2 1

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REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
H	06	ADDN: 32056 MAX FULL LOAD AMPS WAS 13 ACTION CODES: F1 MODIFIER: 9/28/94	POWER	10/2/94

PRODUCTION

ONLY THE ITEMS DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDORS LISTED HEREON IS APPROVED BY THE QUINTON DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

LESSON ELEC CORP
 GRAFTON, WI 53024
 (1)
 APPROVED SOURCE(S)
 OF SUPPLY

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 MATERIAL TO BE SUPPLIED BY VENDOR.
- 2 ALL PARTS MUST BE PER DRAWING RECOMMENDATION.
- 3 PERMANENTLY MARK WITH QUINTON PART NO., DASH NO., REV LETTER TO WHICH MFD AND VENDOR IDENT IN APPROX LOCATION SHOWN.
- 4 THIS COMPONENT MUST BE CERTIFIED BY A RECOGNIZED TESTING AGENCY TO COMPLY WITH APPROPRIATE CSA AND UL STANDARDS.
- 5 MOTOR WIRES P1, P2, T4, T8 SHOULD EXTEND AT LEAST 4 INCHES FROM MOTOR CASE.
- 6 STRIP WIRE PER TERMINAL MANUFACTURERS RECOMMENDATIONS PRIOR TO CRIMPING.
7. INSTALL CONNECTORS PER MANUFACTURERS RECOMMENDATIONS.
- 8 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 7.
- 9 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 3.
- 10 NOT SHOWN.
- 11 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 15.
- 12 W5 ELECTRICALLY CONNECTS DIRECTLY TO MOTOR FRAME WITH LESS THAN ONE OHM CONTACT RESISTANCE.
- 13 ALL WIRE LENGTHS PER TABLE 1. WIRES WITH TERMINALS ARE MEASURED FROM THE CABLE CLAMP TO THE END OF THE TERMINAL.
- 14 X IS A NONSIGNIFICANT NUMBER.

MOTOR SPECIFICATIONS:

HP _____ 3	MAX FULL LOAD AMPS _____ 14-14.3	AMBIENT _____ 40° C MAX
NEMA FRAME _____ J56HZ	SERVICE FACTOR _____ 1.15	DUTY CYCLE _____ CONT
ENCLOSURE _____ OPEN DRIP PROOF	LOCKED ROTOR TORQUE _____ 8.2 LB-FT	TEMP RISE _____ --
RPM _____ 2850 @ RATED LOAD	LOCKED ROTOR AMPS _____ 71.6	INSULATION CLASS _____ B"X" 14
PHASE _____ SINGLE	BREAKDOWN TORQUE _____ 12.6 LB-FT	ROTATION _____ CW ROTATION LEAD END
FREQUENCY _____ 60 HZ	POWER FACTOR _____ 97%	
VOLTAGE _____ 230/240 VRMS	EFFICIENCY-FULL LOAD _____ 80% MIN	
MOTOR TYPE _____ KD	75% LOAD _____ --	
VOLTAGE RANGE _____ 200-264 VRMS	50% LOAD _____ --	
	PROTECTOR _____ BEJ40DV	

-001	MOTOR ASSY, DRIVE	1	113866.00
PART NUMBER	DESCRIPTION	MFG CODE	MFG PART NO.
SOURCE CONTROL DRAWING			

ITEM NO.	QTY	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATOR
11	1	TERM. SLDRLS, RING, #10	HOLLINGSWORTH XR1903SN	
9	1	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, GRN/YEL	W5
9	1	CLAMP, CABLE	REGAL, 6623-3/B	
9	1	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, BLU	W2
8	1	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, BRN	W1
8	1	WIRE, STRANDED	18 AWG, 300V, UL1007, BLK	W3
5	1	WIRE, STRANDED	18 AWG, 300V, UL1007, VIO	W4
10	1	KEY	□.19 X 1.38 L	
1	1	CONN HSG, LKG, 18 AWG	PANDUIT, CE156F18-7-X	
3	6	PLUG, KEYING, FLUSH	AMP, 640629-1	
2	5	PLUG, KEYING, LONG NOSE	AMP, 640630-1	
3	4	TERM, SLDRLS, CLE SPLC	AMP, 35653	
2	3	TERMINAL, SOLDERLESS	T&B, RB2237	
18.0 IN	2	TUBING, VINYL (PVC)	TYGON, B-44-4X	
4	1	DRIVE MOTOR	PER SPEC	
		-001	MOTOR ASSY, DRIVE	3.0 HP, 230/240 V, 50HZ

ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATOR
-002	-001	MOTOR ASSY, DRIVE		
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
ALL DIM. ARE IN INCHES	.XX ± .01	CHECKED R.P. CANNON	3-3-92	Quinton INSTRUMENT CO.
TOL.	.XX ± .005	ENGR. G. FISSEL	3-3-93	2121 HENRY AVENUE SEATTLE, WASHINGTON 98127 206/223-1374
ANGLE	± 0°30'	DUAL K. BAILEY	3-3-92	TITLE MOTOR ASSEMBLY, DRIVE
CLASS CODE	MOTR	MFG. S. CURRAN	3/1/93	SIZE D 065
VALUE CODE	065 VJV	OTHER		DWG. NO. 030658
DO NOT SCALE DRAWING PRINTS				
QUANTITY PER ASSEMBLY		DIST CODE:	2	SHEET 1 OF 3

-001	018990	000307 000309
	030650	000335
PART NO.	NEXT ASSY. NO.	END ITEM NO.
APPLICATION		

8 7 6 5 4 3 2 1

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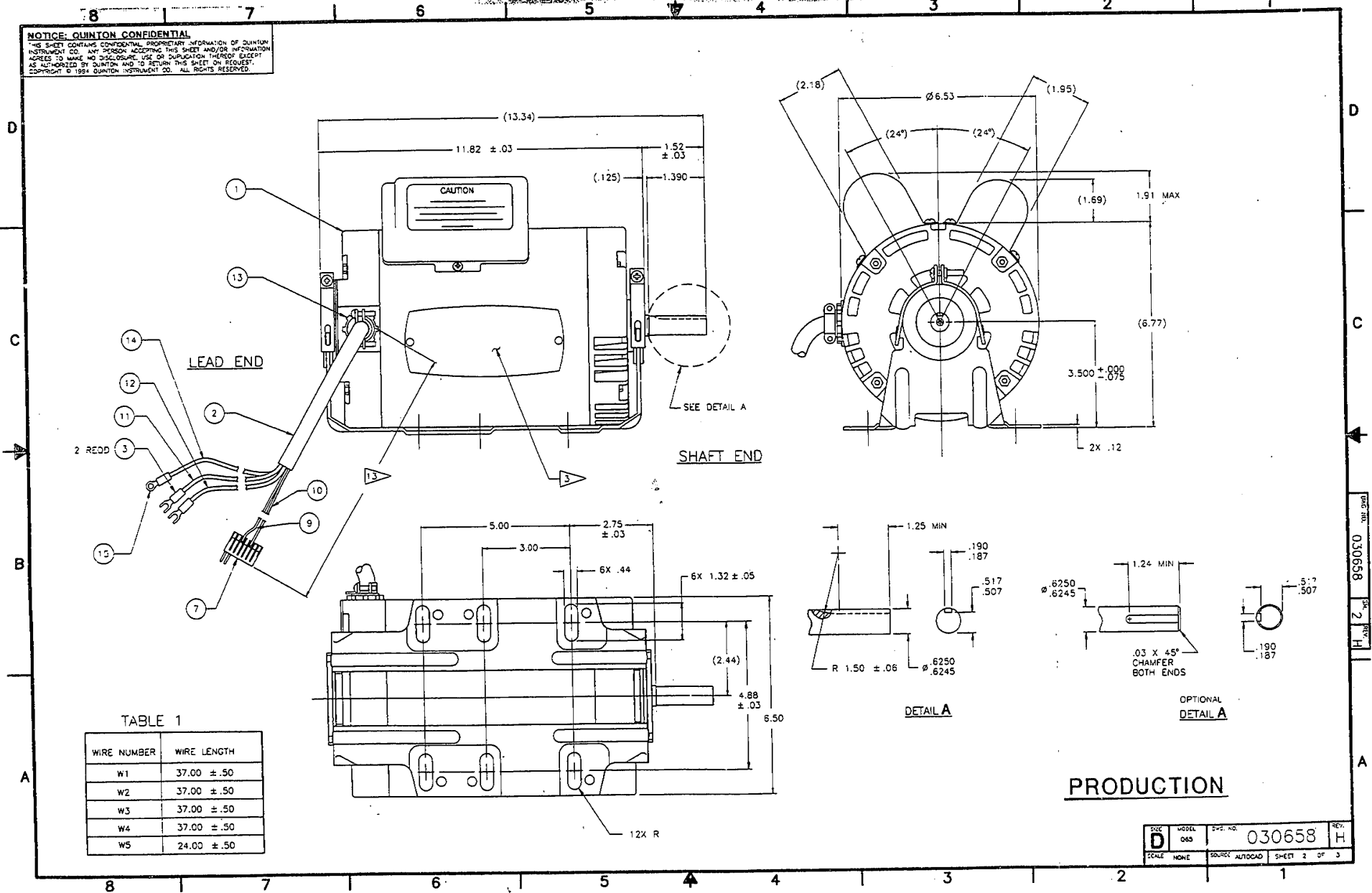


TABLE 1

WIRE NUMBER	WIRE LENGTH
W1	37.00 ± .50
W2	37.00 ± .50
W3	37.00 ± .50
W4	37.00 ± .50
W5	24.00 ± .50

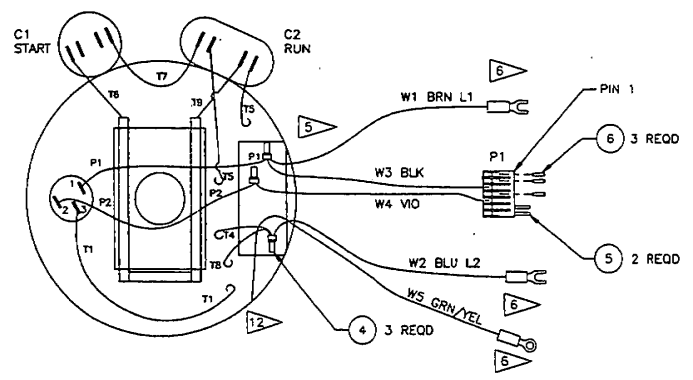
PRODUCTION

REV. D	MODEL 045	DWG. NO. 030658	REV. H
SCALE NONE	COURT. AUTODAD	SHEET 2 OF 3	

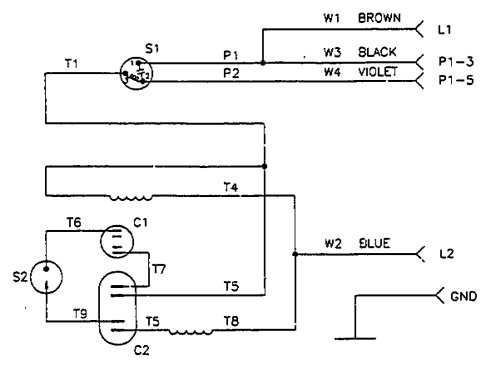
DWG. NO. 030658
 REV. H
 SHEET 2 OF 3

030658

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-001 230/240V 50 HZ
 VIEW FROM OUTSIDE OF MOTOR AT SWITCH END.
 LEAD WIRE INSULATION TO EXTEND MIN OF .25"
 INTO CONNECTOR INSULATION.



SCHEMATIC & WIRING DIAGRAM
-001 230/240V, 50HZ

PRODUCTION

SIZE D	MODEL 085	DWG. NO. 030658	REV. H
SCALE NONE	SOURCE AUTOCAD	SHEET 3 OF 3	

DWG. NO. 030658
 SHEET 3 OF 3

030658

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 MATERIAL TO BE SUPPLIED BY VENDOR.
- 2 ALL PARTS MUST BE PER DRAWING RECOMMENDATION.
- 3 PERMANENTLY MARK WITH THE FOLLOWING: QUINTON PART NUMBER, DASH NUMBER, REVISION LETTER TO WHICH MANUFACTURED, VENDOR IDENTIFICATION, RPM, HORSE POWER, VOLTAGE CONFIGURATION AS LISTED IN MATERIAL SPEC., FREQUENCY, FULL LOAD AMPS, NEMA FRAME TYPE, POWER FACTOR, EFFICIENCY, MOTOR TYPE, SERVICE FACTOR, DUTY CYCLE, MAXIMUM AMBIENT TEMPERATURE, INSULATION CLASS, PHASE, AND THERMAL PROTECTOR.
- 4 THIS COMPONENT MUST BE CERTIFIED BY A RECOGNIZED TESTING AGENCY TO COMPLY WITH APPROPRIATE CSA AND UL STANDARDS.
- 5 MOTOR WIRES P1, P2, T4, T8 SHOULD EXTEND AT LEAST 4 INCHES FROM MOTOR CASE.
- 6 STRIP WIRE PER TERMINAL MANUFACTURERS RECOMMENDATIONS PRIOR TO CRIMPING.
- 7 INSTALL CONNECTORS PER MANUFACTURERS RECOMMENDATIONS.
- 8 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 7.
- 9 WIRE INSULATION DIAMETER SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION FOR ITEM 3.
- 10 NOT SHOWN.
- 11 DELETED.
- 12 DELETED.
- 13 ALL WIRE LENGTHS PER TABLE 1. WIRES WITH TERMINALS ARE MEASURED FROM THE CABLE CLAMP TO THE END OF THE TERMINAL.
- 14 "X" IS A NONSIGNIFICANT NUMBER.

MOTOR SPECIFICATIONS:

HP _____ 3	MAX FULL LOAD AMPS _____ 14.5/16.2 AMPS	AMBIENT _____ 40° C MAX
NEMA FRAME _____ G56H	SERVICE FACTOR _____ 1.15	DUTY CYCLE _____ CONT
ENCLOSURE _____ OPEN DRIP PROOF	LOCKED ROTOR TORQUE _____ 3.15 LB-FT	TEMP RISE _____ --
RPM _____ 3450 @ RATED LOAD	LOCKED ROTOR AMPS _____ 77 AMPS MAX	INSULATION CLASS _____ F "X" 14
PHASE _____ SINGLE	BREAKDOWN TORQUE _____ 9.95 LB-FT	ROTATION _____ CW ROTATION LEAD END
FREQUENCY _____ 60 HZ	POWER FACTOR _____ 92%	
VOLTAGE _____ 180-220 VRMS	EFFICIENCY-FULL LOAD _____ 76%	
MOTOR TYPE _____ KD	75% LOAD _____ --	
	50% LOAD _____ --	
	PROTECTOR _____ BEJ40DV	

PRODUCTION

ONLY THE ITEMS DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY THE QUINTON DESIGN ENGINEERING DEPARTMENT IN THE APPLICATIONS SPECIFIED BY THIS DOCUMENT NUMBER. SUBSTITUTE ITEMS SHALL NOT BE USED.

LEESON ELEC CORP
GRAFTON, WI 53024
(1)
APPROVED SOURCE(S)
OF SUPPLY

REVISIONS				
LTR	ZONE	DESCRIPTION	APPROVED	DATE
		G ADDN: 31134 PROTECTOR WAS: AUTO BEJ40DV DIM 6X 1.32 ± .05 WAS: 6X 1.28 ± .05 DIM 1.24 MIN WAS: 1.25 MIN ACTION CODE: H1, MOD: 7/12/94	H. WERGE	7/29/94
		H ADDN: 31354 INSULATION CLASS WAS: F1 ADDED FLACNOTE 14 ACTION CODE: H1, MOD: 7/29/94		

-001	MOTOR ASSY, DRIVE	1	113875.00
PART NUMBER	DESCRIPTION	MFG CODE	MFG PART NO.
SOURCE CONTROL DRAWING			

ITEM NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
15	DELETED		
14	DELETED		
13	CLAMP, CABLE	REGAL, 6623-3/8	
AR 12	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, BLU	W2
AR 11	WIRE, INSULATED, STRANDED	14 AWG, 600V, UL1015, BRN	W1
AR 10	WIRE, STRANDED	18 AWG, 300V, UL1007, BLK	W3
AR 9	WIRE, STRANDED	18 AWG, 300V, UL1007, VIO	W4
8	KEY	Ø.19 X 1.38 L	
7	CONN HSG, LKG, 18 AWG	PANDUIT, CE156F18-7-X	
6	PLUG, KEYING, FLUSH	AMP, 640629-1	
5	PLUG, KEYING, LONG NOSE	AMP, 640630-1	
4	TERM, SLDRLS, CLE SPLC	AMP, 35653	
3	TERMINAL, SOLDERLESS	T&B, RB2237	
2	TUBING, VINYL (PVC)	TYGON, B--44-4X	
1	DRIVE MOTOR	PER SPEC	
-	-001 MOTOR ASSY, DRIVE, JAPAN	3.0HP, 200V, 60HZ	

QTY PER ASSEMBLY	ALL DIM ARE IN INCHES	IDU	XX ± .010 XX ± .005 ANGLE : 0°30'	CHECKED	DATE	PARTS LIST		TITLE
						MFG	QTY	
				S. Cozod	1/24/93	Quinton	2124 TERRY AVENUE SEATTLE, WASHINGTON (206) 232-7373	9812:
				Pierce-Cannon	3/3/92	Instrument Co.		
				G. Fissel	3/3/92			
				S. Curran	3/3/92			
				K. Bailey	3/4/92			

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DISTRIBUTION CODE:	2	D	REV H
CLASS CODE: MOTR	VALUE CODE: 065///	DD NOT SCALE DRAWING	SCALE NONE
SOURCE AUTOCAD	SHEET 1 OF 3		

-001	018990	000307 000309
PART NO.	NEXT ASSY NO.	END ITEM NO.
APPLICATION		

030659

030659

A

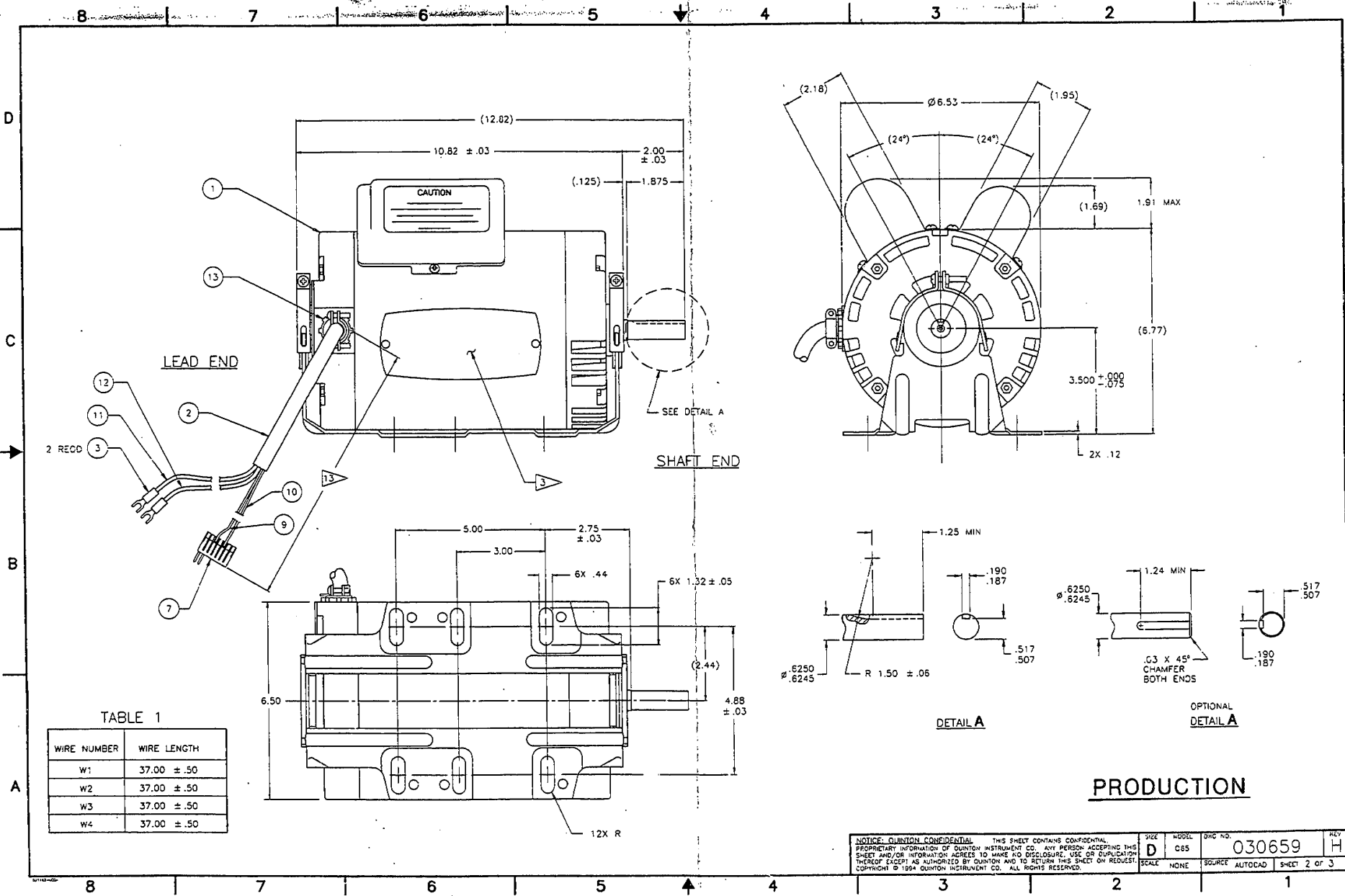


TABLE 1

WIRE NUMBER	WIRE LENGTH
W1	37.00 ± .50
W2	37.00 ± .50
W3	37.00 ± .50
W4	37.00 ± .50

PRODUCTION

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SHEET D MODEL C65 DWG NO. 030659 REV H
 SCALE NONE SOURCE AUTOCAD SHEET 2 OF 3

DWG NO. 030659
 REV 2
 H

030659

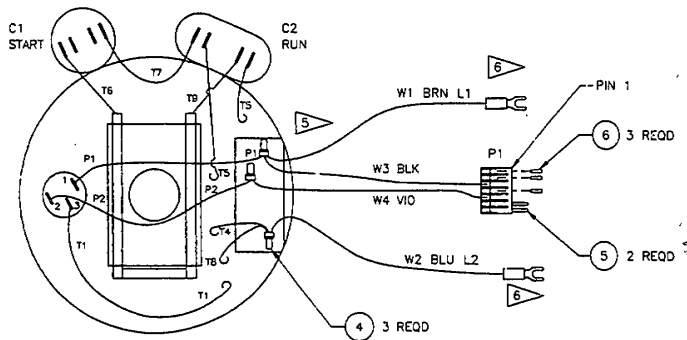
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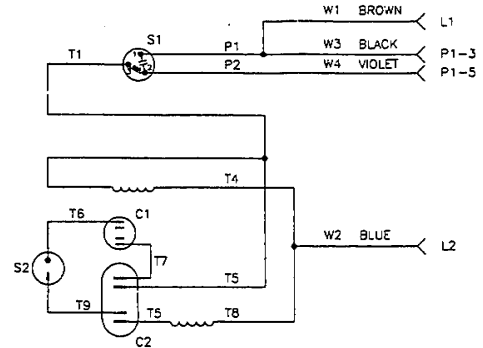
C

B

A



-001 200V 60 HZ
 VIEW FROM OUTSIDE OF MOTOR AT SWITCH END.
 LEAD WIRE INSULATION TO EXTEND MIN OF .25"
 INTO CONNECTOR INSULATION.



SCHEMATIC & WIRING DIAGRAM
 -001 200V, 60HZ

PRODUCTION

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		SCALE NONE	SOURCE AUTOCAD	SHEET 3 OF 3	

8 7 6 5 4 3 2 1

659050
 030659
 H

NOTES:

1. PREFIX TO REFERENCE DESIGNATION ON THIS DWG IS Z.
2. ASSEMBLE PER QUINTON WORKMANSHIP STANDARDS AND PROCEDURES.
3. THESE CABLES HAVE INTERCHANGABLE LEADS.
4. SEE SHEETS 7 & 8 FOR WIRE ROUTING. WIRES MUST NOT BE SUBJECT TO PINCHING OR ABRASION; ROUTE AWAY FROM MOVING PARTS AND SHARP EDGES. USE CABLE TIES (ITEM 42) AS REQD.
5. PRIME OD OF BEARINGS ON SHAFT ASSEMBLIES (ITEMS 23 & 24) AND ID OF BEARING CAPS (ITEMS 25, 26 & 27) WITH LOCTITE PRIMER (ITEM 79). COAT BEARING OD AND CAP ID WITH LOCTITE 680 (ITEM 81). ASSEMBLE CAP OVER BEARING AND MOUNT SHAFT ASSEMBLY TO HEADFRAME (ITEM 10) IMMEDIATELY. "T" STAMPED ON BEARING CAPS (ITEMS 25, 26 & 27) MUST FACE UPWARDS. ROTATE SHAFT ASSEMBLY BY HAND BEFORE FULLY TIGHTENING SCREWS (ITEMS 76 & 77). THE BEARING ON THE FIXED SHEAVE END OF EACH SHAFT ASSEMBLY MUST BE SEATED IN THE BEARING CAP. DO NOT MOVE OR STRESS THE ASSEMBLY FOR TWO HOURS AFTER TORQUING THE MOUNTING SCREWS.
6. USE ADHESIVE (ITEM 80) ON ALL THREADED CONNECTIONS.
7. ASSEMBLY TORQUE 70 ±10 INCH-LBS.
8. LENGTH OF CHAIN SHOULD BE 88 PITCHES.
9. PRESS BRONZE BEARING (ITEM 18) INTO THE MACHINED HEADFRAME (ITEM 10) PRIOR TO ASSEMBLY.
10. DO NOT OVERTIGHTEN. BOWING OF THE MOUNT ADAPTER (ITEM 51) IS UNACCEPTABLE.
11. ASSEMBLY TORQUE 46 ±4 FT-LBS.
12. TENSION V-BELT (ITEM 30 OR 84) SUCH THAT A .13 INCH DEFLECTION CAN BE MEASURED AT MID SPAN WITH A 2.8-4.1 LB LOAD APPLIED PERPENDICULAR TO THE BELT AT THE MID SPAN LOCATION.
13. ASSEMBLE DRIVE PULLEY TO INPUT SHAFT AS FOLLOWS:
 - A. THOROUGHLY CLEAN/PRIME THE INPUT SHAFT OD, INCLUDING THE KEYWAY GROOVE; FROM THE END OF THE SHAFT TO THE RUNOUT OF THE KEYWAY GROOVE USING PRIMER T (ITEM 79).
 - B. THOROUGHLY CLEAN/PRIME THE DRIVE PULLEY BORE/KEYWAY AREA, SET SCREW THREADED HOLES, SET SCREW AND KEY USING PRIMER T (ITEM 79).
 - C. APPLY ADHESIVE (ITEM 72) TO INPUT SHAFT KEYWAY AND DRIVE PULLEY KEYWAY.
 - D. APPLY RETAINING COMPOUND (ITEM 81) TO INPUT SHAFT OD FROM THE END OF THE SHAFT TO THE RUNOUT OF THE KEYWAY GROOVE.
 - E. APPLY ADHESIVE (ITEM 80) TO DRIVE PULLEY SET SCREWS.
 - F. ASSEMBLE DRIVE PULLEY AND KEY ONTO INPUT SHAFT. ALIGN DRIVE BELT. SECURE DRIVE PULLEY SET SCREWS.
 - G. ALLOW ASSEMBLY TO SET A MINIMUM OF 30 MINUTES.
14. INSTALL REQUIRED AMOUNT OF SHIMS (ITEM 68) BETWEEN SNAP RING (ITEM 40) AND BEARING (PART OF ITEM 22) TO ACHIEVE A MINIMUM GAP OF .175 BETWEEN PLASTIC SPROCKET (PART OF ITEM 22) AND CLOSEST POINT OF HEADFRAME POST.
15. LEAVE 1.0 INCH OF SLACK IN SPEED CHANGE MOTOR LEADS (PART OF ITEM 2) WHERE CONNECTED TO LINE FILTER (ITEM 96).
16. TORQUE THE TWO MOTOR RESILIENT MOUNT SCREWS TO 25-27 IN-LBS.
17. SHIM HERE USING ITEM 68 TO OBTAIN .010 TO .040 ENDPLAY OF THE SPINDLE ASSEMBLY (ITEM 22).
18. HAND TIGHTEN NUT (ITEM 65) (2 PL., REAR LOCATION ONLY).
19. JAW NUT AND NUT STAR LOCK WASHER ARE PART OF ITEM 7.

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REVISIONS				REVISIONS					
LTR	ZONE	DESCRIPTION	APPROVED	DATE	LTR	ZONE	DESCRIPTION	APPROVED	DATE
		R	ADCN: 29045						
			CANCELLED BY ADCN 29290						
		T	ADCN: 29290						
			ITEM 10 WAS 030619-002						
			ITEM 50 WAS 030199-002						
			ITEM 62, PA1 WAS 030124-021						
			ITEM 94, QTY WAS 3						
			ITEM 94, QTY WAS 16						
			ADDED ITEM 106						
			ADDED ITEM 62, 2 PL						
			REVISED ITEM 50						
			ITEM 106 WAS ITEM 94						
			ACTION CODE: F1						
			MODIFIER: 1/4/94						
			U						
			ADCN: 29380						
			ADDED ITEMS 107 AND 108						
			ADDED FLAGNOTE 2+						
			ADDED ITEM 108						
			ADDED ITEM 107 AND FLAGNOTE 2+						
			ACTION CODE: F1						
			MODIFIER: 1/4/94						
			ADCN NO. 30732 32506						
			REVISION LEVEL Y W						

(CONTINUED ON SHEET 2)

QTY	PER ASSEMBLY	ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
1	1	20	010819-325	SCREW, CAP, HEX HEAD	.250-20UNC-2AX1.00L	
1	1	19	030843-001	GEAR, SPUR		
2	2	18	012990-002	BEARING, BRONZE		
2	2	17	002591-001	COLLAR, SET		
1	1	16	013044-001	SHAFT, PINION		
2	2	15	013081-006	GEAR, RACK-MODIFIED		
2	2	14	002298-002	WHEEL, BALL OR ROLLER BEARING, CUSHION TREAD		
1	1	13	016935-001	BRACKET, SPEED CHANGE ADJUSTMENT		
1	1	12	019808-002	BRACKET, PCB MOUNTING		
1	1	11	030886-001	PLATE, COVER, RACK GEAR, RIGHT		
1	1	10	031380-001	MACHINING, HEADFRAME, PERMANENT MOLD		
1	1	9	013387-001	HARNESS ASSY, CONTACTOR		W2
1	1	8	013077-001	TACHOMETER PICKUP ASSY		A3
1	1	7	013089-003	GRADE POT ASSY	SK R	R1
1	1	6	014486-001	RELAY, MERCURY		K1
1	1	5	030556-004	PCB ASSY, TREADMILL CONTROL		A1
1	1	4	030887-001	COVER PLATE, RACK GEAR, LEFT		
1	1	3	019933-001	MOTOR ASSY, GRADE		M1
1	1	2	019130-002	MOTOR ASSY, SPEED CHANGE		M3
-	-	-	030648-001	MOTOR ASSY, DRIVE	208/230V, 60 HZ	M2
-	-	-	-	HEADFRAME ASSY, TREADMILL	208/230V 60 HZ	

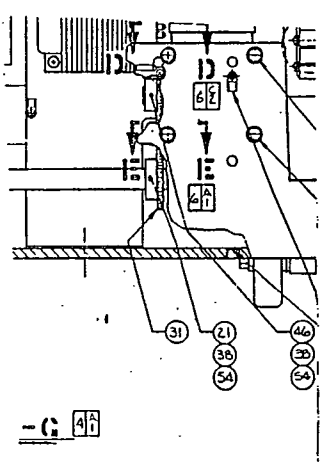
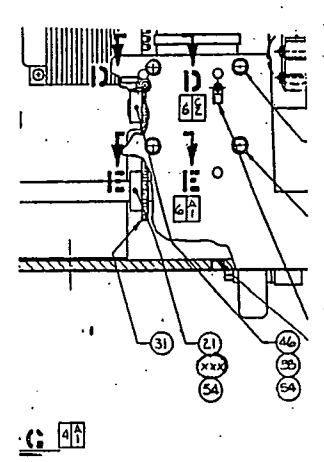
PRODUCTION

PART NO.	REF ASST. NO.	END ITEM NO.
-004		
-003	000335	000335
-002	000335	000333
-001		

PART NUMBER		DESCRIPTION		MATERIAL SPECIFICATION		REFERENCE DESIGNATION
004	003	200	001			
PARTS LIST UNLESS OTHERWISE SPECIFIED DRAWN S. COZAD 7/23/92 CHECKED J. Hagan 7/29/92 ENG'D. P. RASIC 7/29/92 QUAL. K. B. 8/10/92 MFG. B. 8/10/92 OTHER						
QUANTITY PER ASSEMBLY		CLASS CODE FRAA		VALVE CODE TREDML		DO NOT SCALE DRAWING PRINTS
TITLE: HEADFRAME ASSEMBLY, TREADMILL		Dwg. NO. 030912		REV. U		
SCALE: NONE		DIST. CODE:		SHEET 1 OF 8		

030912

Quinton		DRAWING NUMBER: 030912	CHANGE LETTER: W	CHANGE NOTICE NO: 32506	SHEET 1 OF 2
CHANGE NOTICE		TITLE: HEADFRAME ASSEMBLY, TREADMILL			RELEASE AS: DCN <input type="checkbox"/> ADCN <input checked="" type="checkbox"/> MCN <input type="checkbox"/>
MODEL: CLUBTRACK	NEXT ASSEMBLY: 000333,335	END ITEM: 000333,335	MARKETING APPROVAL REQUIRED: <input type="checkbox"/>	INCORPORATE ADCN: <input type="checkbox"/>	
ORIGINATOR: <i>W. O. Jacobson</i>	PROD. SUPVR: <i>W. O. Jacobson</i>	DOC. CONTROL: <i>W. O. Jacobson</i>	ACTION CODE		
COORDINATOR: <i>R. Price-Cannon</i>	PROD. CONTROL: <i>R. Price-Cannon</i>	MARKETING: <i>W. O. Jacobson</i>	F1		
ENGINEER: <i>D. Wood</i>	Q.A.: <i>D. Wood</i>	FIELD SERVICE: <i>W. O. Jacobson</i>	MODIFIER:		
MFG. ENGR: <i>W. O. Jacobson</i>	PURCHASING: <i>D. Wood</i>	OTHER: <i>W. O. Jacobson</i>	D.O.R. 11-18-94		
REASON FOR CHANGE: CUSTOMER COMPLAINT NO:	MFG. IMPROVEMENT <input type="checkbox"/> DESIGN IMPROVEMENT <input type="checkbox"/> PROD. ENHANCEMENT <input type="checkbox"/> DOCUMENT UPDATE <input type="checkbox"/>	ITEMS SUBMITTED WITH CHANGE NOTICE: DRAWING MARK UP <input checked="" type="checkbox"/> PROJECT SCHEDULE <input type="checkbox"/> WHERE USED LIST <input type="checkbox"/>	5.25" DISK <input type="checkbox"/> 3.50" DISK <input type="checkbox"/> PROM <input type="checkbox"/>	LASER DISK <input type="checkbox"/> CARTRIDGE <input type="checkbox"/> ARTWORK <input type="checkbox"/>	CHANGES REQ: ARTWORK <input type="checkbox"/> MANUAL <input type="checkbox"/>
AFFECTS SAFETY: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		AFFECTS PERFORMANCE: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		LAB NOTEBOOK: (EMPLOYEE & NOTEBOOK NUMBER)	
OTHER VALIDATION EVIDENCE:(DESCRIBE)					
QTY. PER ASSY	ITEM NO.	PART NO.	DESCRIPTION	MATL. SPEC.	REF. DESIG.
*BILL OF MATERIAL CHANGES AS FOLLOWS:					
*ADD					
1	1	1	xxx	001100-006	Key, Square .188x.188x2.00
*ITEM 38 WAS					
3	2	3	2	38	001100-002 Key Square .188x.188x1.00
*ITEM 38 IS					
2	1	2	1	38	001100-002 Key Square .188x.188x1.00
CHANGE BD DISTRIBUTION:			CHARGE NO: 8704 8598	DISTRIBUTION CODE: 3	
<i>STILLWELL COLVIN TETHER JACKMAN DANESH FAR</i>					

Quinton		DRAWING NUMBER: 030912	CHANGE LETTER: W	CHANGE NOTICE NO: 32506	SHEET 2 OF 2
CHANGE NOTICE		TITLE: HEADFRAME ASSEMBLY, TREADMILL			
QTY. PER ASSY	ITEM NO.	PART NO.	DESCRIPTION	MATL. SPEC.	REF. DESIG.
<p>* Page 5 of 8 WAS: Zone A5</p> 					
<p>* Page 5 of 8 IS: Zone A5</p> 					
031163-002B					

(CONTINUED ON SHEET 3)

1	1	1	98	019307-002	CABLE ASSY, SPEED CHANGE MOTOR		FIW1
1	1	1	97	013391-005	HARNESS ASSY, JACK		W3
1	1	1	96	014735-001	FILTER, LINE		F1
1	1	1	95	030073-001	CABLE ASSY, RESET		W4
2	5	5	94	001164-001	WASHER, FLAT	#6	
1	1	1	93	019895-002	SWITCH HARNESS, LIMIT DOWN		WG
10	10	10	92	010561-001	ANCHOR, TIE		
1	1	1	91	031107-003	BELT, TIMING, RPP	600 mm	
2	2	2	90	019082-001	SWITCH, SNAP ACTION		SW1, SW2
4	4	4	89	012029-005	WASHER, LOCK, INTL STAR, #6		
13	13	13	88	002387-001	NUT, HEX	#6-32 UNC-2B	
4	4	4	87	010828-10Z	SCREW, MACHINE, FNH PHILLIPS	#6-32 UNC-2A x 1.25L	
8	8	8	86	010819-205	SCREW, CAP, HEX HEAD	.250-20UNC-2A x .50L	
1	-	-	85	015403-002	PULLEY, MACHINED, 16-3UX-2.64X-.625		
1	-	-	84	015241-002	BELT, 3VX, MOLDED NOTCH		
AR	AR	AR	83	016258-001	SOLVENT, CHLOROPHTHENE, INDUSTRIAL		
3	3	3	82	010011-013	LABEL, ADHESIVE-BACKED AL FOIL, CAUTION		
WR	WR	WR	81	012465-002	RETAINING COMPOUND	LOCTITE 680	
AR	AR	AR	80	001739-002	ADHESIVE, SCREW LOCK	#242	
WR	WR	WR	79	014900-001	PRIMER, T	LOGQUIC	
2	2	2	78	010819-286	SCREW, CAP, HEX HEAD	.313-18UNC-2A x .875 L	
2	2	2	77	010820-326	SCREW, CAP, HEX HEAD	.313-18UNC-2A x 4.000L	
6	6	6	76			.313-18UNC-2A x 3.000L	
2	2	2	75			.375-16UNC-2A x 2.500L	
2	2	2	74			.250-20UNC-2A x 1.500L	
2	2	2	73	010820-105	SCREW, CAP, HEX HEAD	.250-20UNC-2A x 1.250 L	
AR	AR	AR	72	017864-001	ADHESIVE, LOCTITE 660		
9	9	9	71	010827-204	SCREW, MACHINE, FNH PHILLIPS	#10-32UNF-2A x 500L	
2	2	2	70	010827-184	SCREW, MACHINE, FNH PHILLIPS	#10-32UNF-2A x 375L	
			69	DELETED			
2	2	2	68	013399-003	SHIM, ARBOR	.750 ID x 1.125 OD x .020 THK	
3	3	3	67	010827-142	SCREW, MACHINE, FNH PHILLIPS	#6-32 UNC-2A x 250L	
9	9	9	66	010827-18Z	SCREW, MACHINE, FNH PHILLIPS	#6-32 UNC-2A x 375L	
9	9	9	65	011881-006	NUT, LOCK	.250-20UNC-2B	
1	1	1	64	002158-001	NUT, HEX SEMI-FINISH	#10-32UNF-2B	
			63	DELETED			
4	4	4	62	001164-021	WASHER, FLAT	.375 X .125 THK, HARDENED	
10	10	10	61	001164-005	WASHER, FLAT	.313	
4	4	4	60	017775-001	WASHER, LOCK, INTERNAL, EXTERNAL	.250	
30	30	30	59	001164-004	WASHER, FLAT	.250	
2	2	2	58	00118Z-001	WASHER, LOCK, EXTERNAL STAR	#10	
9	9	9	57	001164-003	WASHER, FLAT	#10	
2	2	2	56	010820-345	SCREW, CAP, HEX HEAD	.250-20UNC-2A x 4.500L	

ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	PARTS LIST			

PRODUCTION

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REVISONS		APPROVED	DATE
LTR.	ZONE	DESCRIPTION	

1	1	1	55	019895-001	SWITCH HARNESS, LIMIT UP		W5
4	4	4	54	010833-145	SCREW, SET	.250-20UNC-2A x .250L	STEEL
1	1	1	53	030611-003	POWER CORD		W1
1	1	1	52	010833-144	SCREW, SET	#10-32UNF-2A x .250L	STEEL
2	2	2	51	019866-001	ADAPTER, PCB MOUNTING BRACKET		
4	4	4	50	030199-002	WASHER, SHOULDER, ISOLATION		
2	2	2	49	01901Z-001	WASHER, SHOULDER, ISOLATION		
			48	DELETED			
2	2	2	47	019011-001	WASHER, FLAT, ISOLATION		
1	1	1	46	019081-004	SPROCKET, CHAIN		
4	4	4	45	030200-001	WASHER, FLAT, ISOLATION		
9	9	9	44	010652-00Z	STANDOFF, MVF #6-32	.500 L	
16	16	16	43	006769-001	RIVET	ALUMINUM	
AR	AR	AR	42	0C1899-001	CABLE TIE		
17	17	17	41	011560-00Z	MOUNT, CABLE TIE	#6 SCREW HOLE	
1	1	1	40	015508-001	RETAINING RING, INTERNAL		
-	-	-	39	001100-004	KEY, SQUARE	.188 x .188 x 1.50	
3	2	3	38	001100-00Z	KEY, SQUARE	.188 x .188 x 1.00	
2	2	2	37	001210-001	ROLL PIN		
1	1	1	36	001535-001	BEARING, BALL		
1	1	1	35	001032-002	RING, RETAINER		
4	4	4	34	010820-145	SCREW, CAP, HEX HEAD	.250-20UNC-2A x 1.75 L	
1	1	1	33	030014-003	CLAMP, CABLE		
1	1	1	32	001227-010	STRAIN RELIEF		
1	1	1	31	030448-001	KIT, ROLLER CHAIN	# 40	
-	-	-	30	015241-005	BELT, 3VX, MOLDED NOTCH	3VX.335	
1	1	1	29	013062-001	BELT, VARIABLE SPEED		
-	-	-	28	016251-001	PULLEY, MACHINED, 16-3UX-2.53 X -.625		
1	1	1	27	013705-003	CAP, BEARING		
1	1	1	26	013705-002	CAP, BEARING		
2	2	2	25	013705-001	CAP, BEARING		
-	-	-	24	015273-003	INPUT SHAFT ASSY, HEAVY DUTY		
1	1	1	23	015313-001	OUTPUT SHAFT ASSY, HEAVY DUTY		
1	1	1	22	030262-002	SPINDLE ASSY, SPEED CHANGE		
1	1	1	21	031869-001	SPROCKET, 40B 24 X .75		

ITEM NUMBER	PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION
	PARTS LIST			

SIZE	MODEL	DWG. NO.	REV.
D	ELECTRICAL	030912	U
SCALE	NONE	DIST. CODE	SHEET 2 OF 8

216030

030912

248

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REVISIONS		APPROVED	DATE
LTR.	ZONE		

- 20 SHIM MOUNTING SCREW (ITEM 56) WITH WASHERS (ITEM 59) TO OBTAIN FLUSH TO 6 THREADS PROTRUDING THROUGH THE PEMNUT, PART OF PCB BRACKET (ITEM 12).
- 21 COVER EDGES OF (ITEM 12) PCB MOUNTING BRACKET WITH TAPE (ITEM 104) WHERE WIRING CROSSES OVER OR AROUND BRACKET.
- 22 CUT GREEN/YELLOW WIRE ON DRIVE MOTOR (M2) TWO INCHES FROM END OF NYLON TUBING. CRIMP CLOSED END SPLICE TERMINAL (ITEM 105) ONTO WIRE END.
- 23 ALTERNATE PART NUMBER 030844 - 001.
- 24 INSTALL COVER (ITEM 107) AT FRONT LOCATION ONLY.

QTY	UNIT	ITEM NO.	DESCRIPTION	MATERIAL SPECIFICATION	REFERENCE DESIGNATION																				
1		108	032352-005	PLUG, EXPANSION, COP. STEEL																					
1		107	032351-001	COVER, SLOT, HEADFRAME																					
8	B	106	006543-001	WASHER, INSULATING #6																					
1		105	001486-001	TERMINAL, SOLDERLESS, CLOSED END SPLICE																					
AR	AR	104	017210-006	TAPE, FOAM X 15.0 LG																					
1		103	030914-001	TRANSFORMER ASSY																					
1		102	015273-002	INPUT SHAFT ASSY, HEAVY DUTY																					
1		101	030657-001	MOTOR ASSEMBLY, DRIVE 200V, 50HZ	MZ																				
-	-	00	030657-001	MOTOR ASSEMBLY, DRIVE 200V, 60HZ	MZ																				
-	-	99	030658-001	MOTOR ASSEMBLY, DRIVE 230V, 50HZ	MZ																				
-	-	-	-004	HEADFRAME ASSEMBLY, TREADMILL 200V, 50HZ																					
-	-	-	-003	HEADFRAME ASSEMBLY, TREADMILL 200V, 60HZ																					
-	-	-	-002	HEADFRAME ASSEMBLY, TREADMILL 230V, 50HZ																					
PARTS LIST																									
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SIZE	MODEL	DWG. NO.	REV.																						
D	ILLUSTRATION	030912	U																						
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SCALE	DRAWING CODE	SHEET	OF																						
NONE		3	8																						

PRODUCTION



24 X

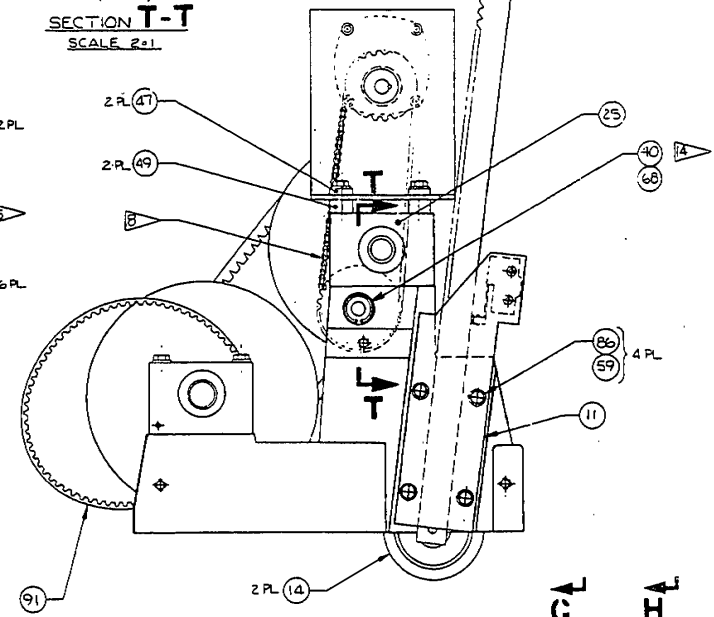
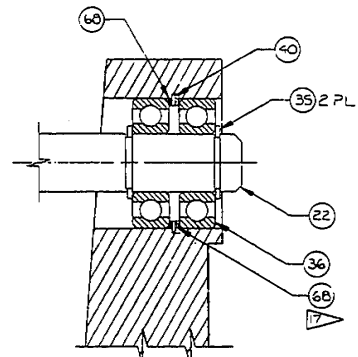
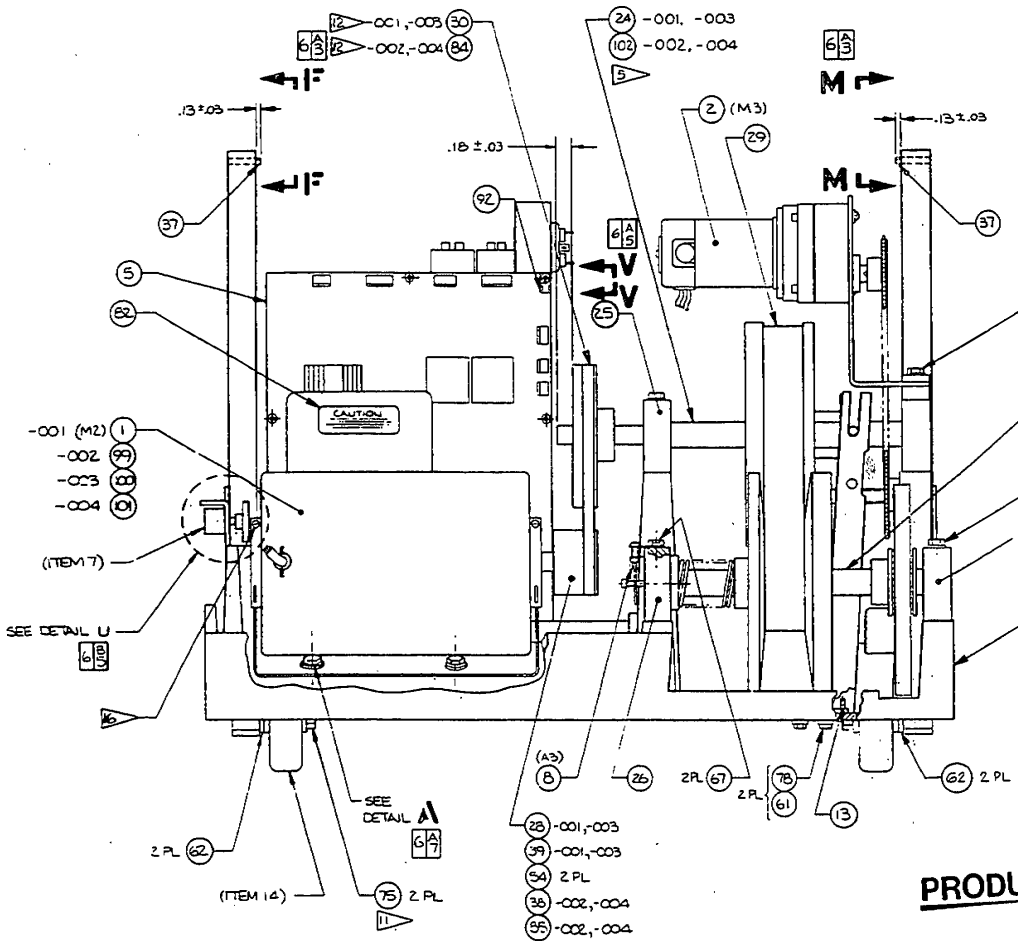
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DRAWING NO. 030912 SHEET 3 OF 8

Quinton		DRAWING NUMBER: 030912		CHANGE LETTER: V	CHANGE NOTICE NO. 30752	SHEET 1 OF 1
CHANGE NOTICE				TITLE: HEAD FRAME ASSEMBLY TREADMILL		RELEASE AS: DCN <input type="checkbox"/> ADCH <input checked="" type="checkbox"/> MCN <input type="checkbox"/>
MODEL: CLUBTRAK	NEXT ASSEMBLY: 000353 000335	END ITEM: 000333 000335	MARKETING APPROVAL REQUIRED: <input type="checkbox"/>		INCORPORATE ADCH. <input type="checkbox"/>	
ORIGINATOR: D. COLVIN	5-27-94	PROD. SUPVR: R. Kipp	6-1-94	DOC. CONTROL: Charlene	6/2/94	ACTION CODE: F1
COORDINATOR: K. Price-Cannon	6/1/94	PROD. CONTROL: M. Strain	6/1/94	MARKETING:	MODIFIER: P.O.R.	
ENGINEER: D. Johnson	5-27-94	O.A.:	4/1/94	FIELD SERVICE:	6-2-94	
MFG ENGR: T. Smith	6/1/94	PURCHASING: J. Holman	6/2/94	OTHER:		
REASON FOR CHANGE:		MFG IMPROVEMENT <input type="checkbox"/>		ITEMS SUBMITTED WITH CHANGE NOTICE:		CHANGES RECD:
CUSTOMER COMPLAINT NO.		DESIGN IMPROVEMENT <input checked="" type="checkbox"/>		DRAWING MARK UP <input checked="" type="checkbox"/>		ARTWORK <input type="checkbox"/>
		PROD. ENHANCEMENT <input type="checkbox"/>		PROJECT SCHEDULE <input type="checkbox"/>		MANUAL <input type="checkbox"/>
		DOCUMENT UPDATE <input type="checkbox"/>		WHERE USED LIST <input type="checkbox"/>		DISTRIBUTION:
				5.25" DISK <input type="checkbox"/>		BILL OF MATL AFFECTED <input checked="" type="checkbox"/>
				3.50" DISK <input type="checkbox"/>		PURCHASED PART <input type="checkbox"/>
				PROM <input type="checkbox"/>		MANUFACTURED PART <input checked="" type="checkbox"/>
				LASER DISK <input type="checkbox"/>		
				CARTRIDGE <input type="checkbox"/>		
				ARTWORK <input type="checkbox"/>		
AFFECTS SAFETY:		AFFECTS PERFORMANCE:		LAB NOTEBOOK:		
YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		OTHER VALIDATION EVIDENCE: (DESCRIBE)		
				(EMPLOYEE & NOTEBOOK NUMBER)		
QTY PER ASSY.		ITEM NO.	PART NO.	DESCRIPTION	MATL SPEC	REF DESIG
15		1	28	016251-001	PULLEY, MACHINED	1G-3VX-2.53 x 625
		1	28	016251-002	PULLEY, MACHINED	1G-3VX-2.53 x 625
CHANGE BOARD DISTRIBUTION:				CHARGE NO. 8599	DISTRIBUTION CODE: 3	

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REVISIONS			
LTR. ZONE	DESCRIPTION	APPROVED	DATE

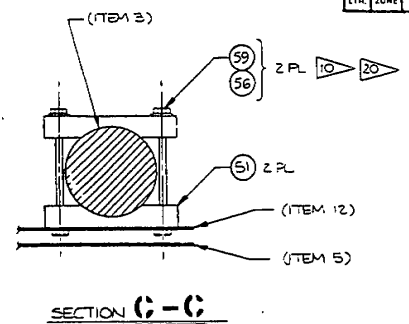
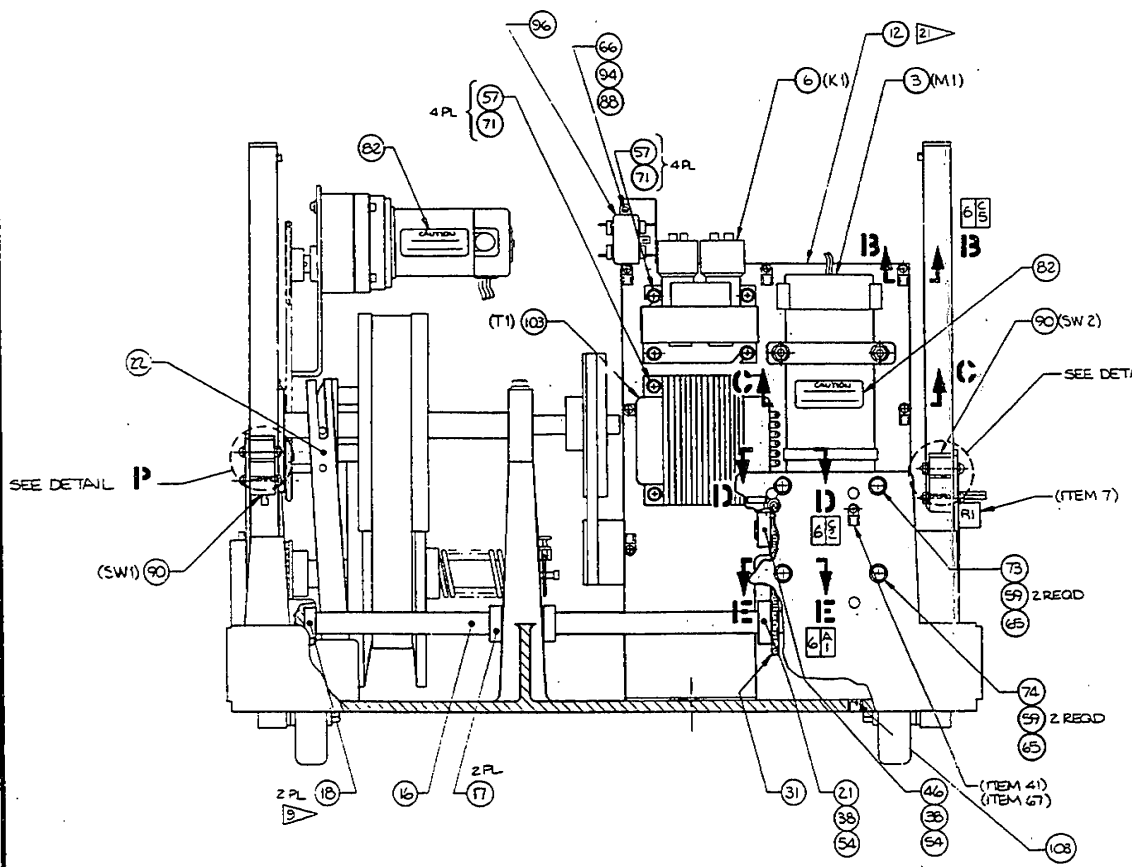


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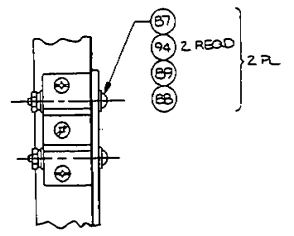
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SCALE	DIST. CODE	SHEET	4 OF 8
1/2			

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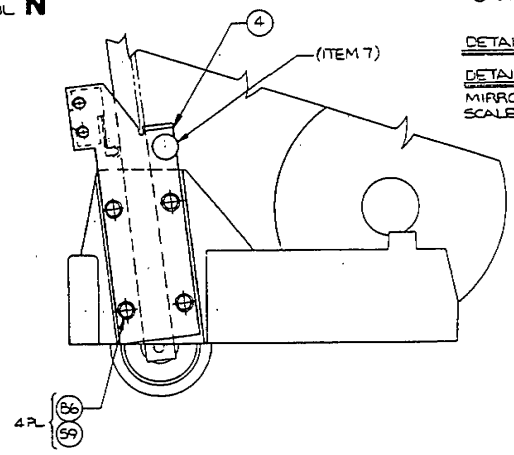
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LTR	ZONE	DESCRIPTION	APPROVED	DATE



SECTION C-C



DETAIL N
DETAIL 13
 MIRROR IMAGE
 SCALE = 1/1



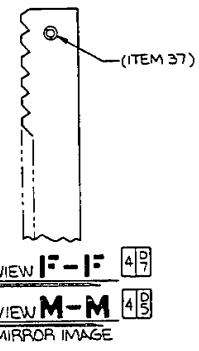
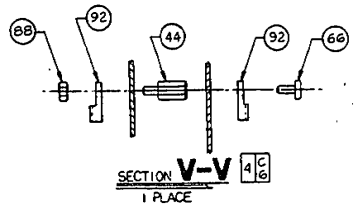
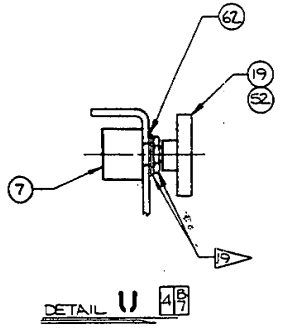
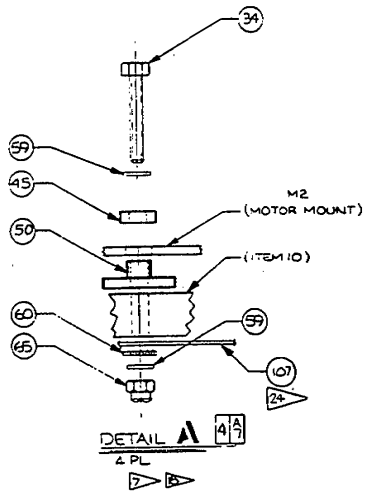
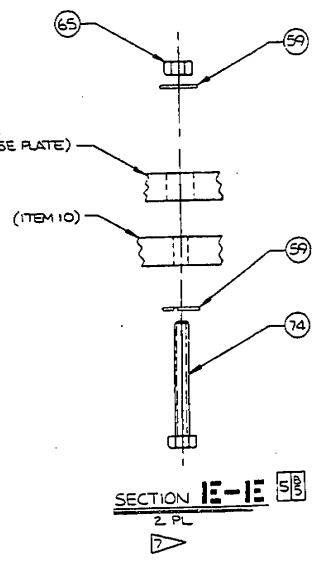
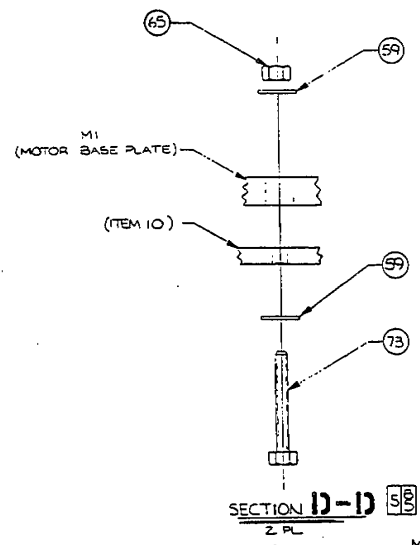
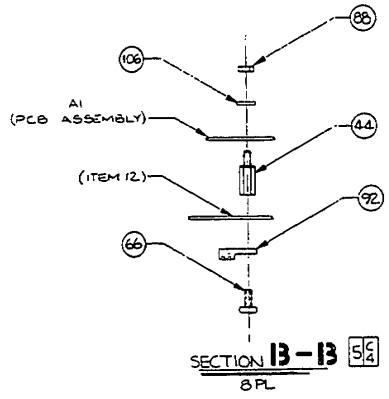
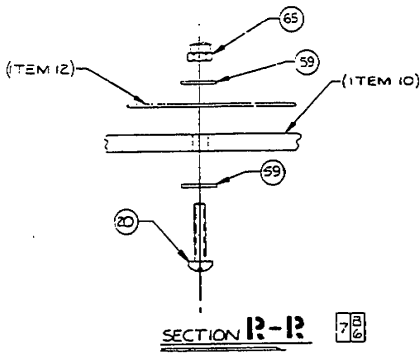
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VIEW C-C 4↑

SIZE D	MODEL 030912	DWG. NO. 030912	REV. U
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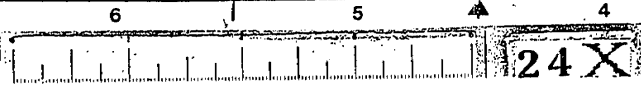
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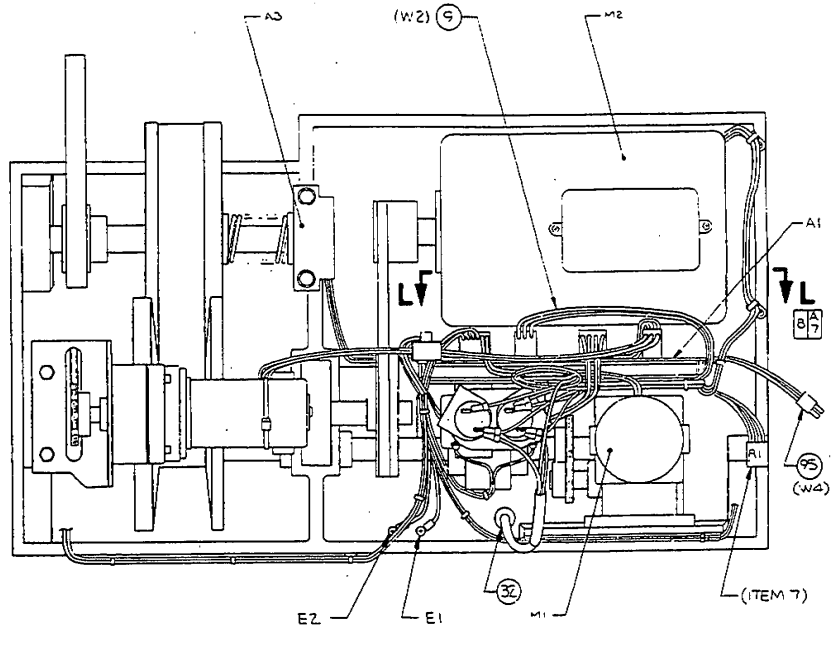
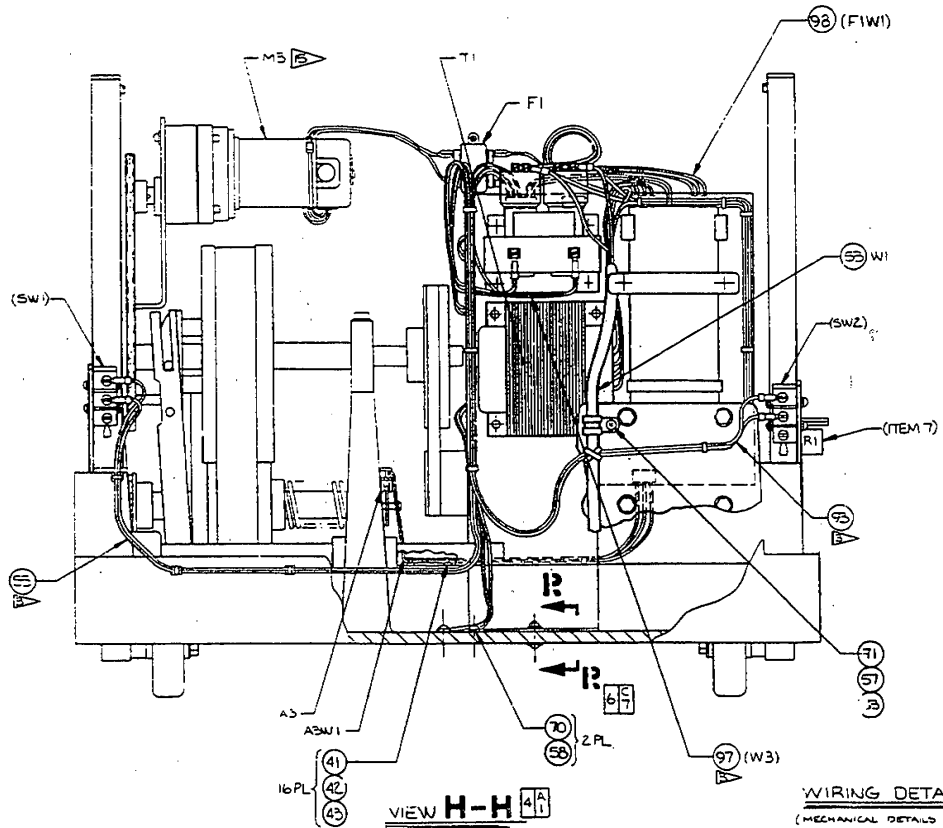
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LTR.	ZONE	DESCRIPTION	APPROVED	DATE

JF

JJ

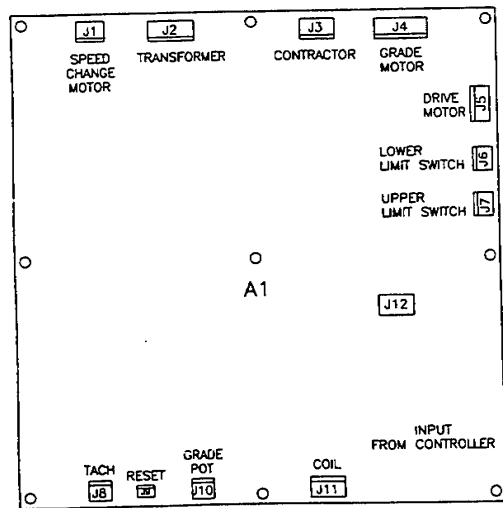


WIRING DETAILS
 (MECHANICAL DETAILS SIMPLIFIED)

PRODUCTION

SIZE	MODEL	DWG. NO.	REV.
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SCALE	DIST. CODE	SHEET	OF
1/2		7	8

PART NO. 030912-7
 REV. U

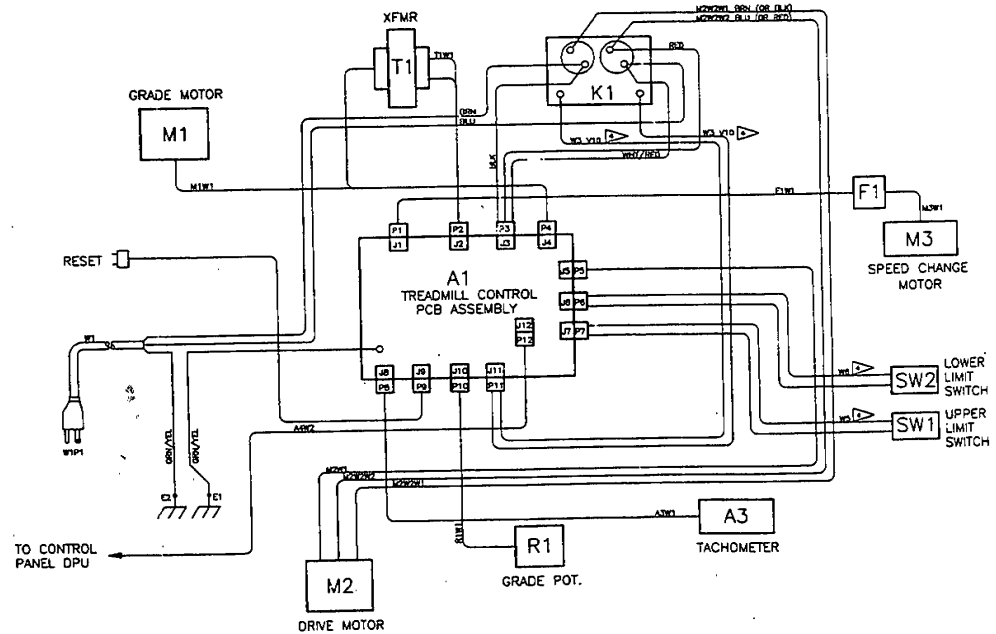


**TREADMILL CONTROLLER
PCB**

(CONNECTOR LOCATIONS)

VIEW **L-L** 7/8

SCALE: NONE



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		SCALE NONE	SOURCE AUTOCAD	SHEET 8 OF 8	

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