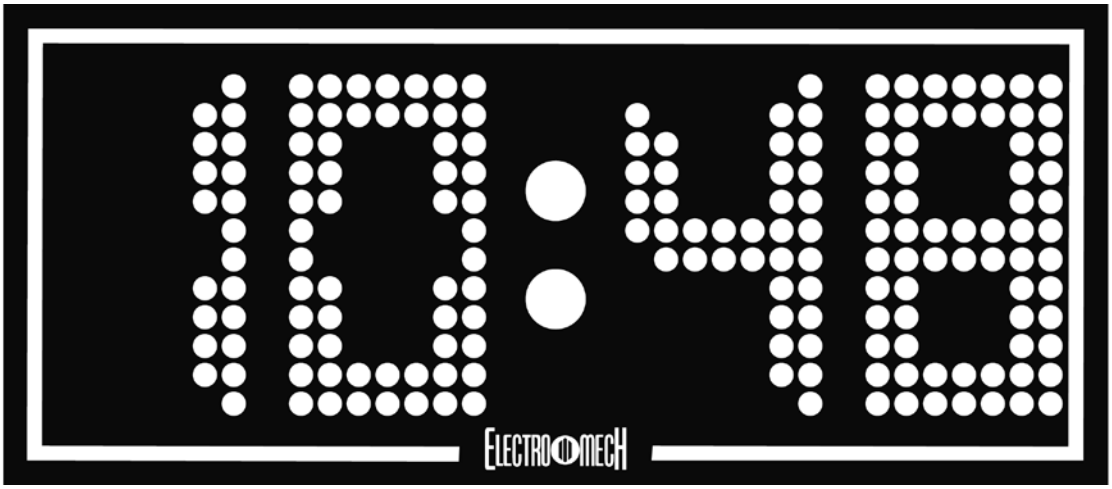
ELECTRO-MECH SCOREBOARD CO.



MODEL LX7406 LOCKER ROOM CLOCK

OWNER'S HANDBOOK

Thank you for choosing an Electro-Mech Scoreboard for your athletic complex. We are confident that your new locker room clock will give many years of reliable service.

Revised: 2012-April-11

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MODEL LX7406 LOCKER ROOM CLOCK

MODEL LX7406 LOCKER ROOM CLOCK SPECIFICATIONS

GENERAL: Includes the locker room clock cabinet, 10 ft. stereo patch cable, and junction box. It may be purchased with or without a control console.

DIMENSIONS: 23 in. W x 10 in. H x 4 in. D.

WEIGHT: 10 lbs.

CONSTRUCTION: The cabinet is made from formed aluminum sheet. The outer surfaces are finished with enamel paint. Black is the standard color. The colon caption and optional accent striping are vinyl.

DISPLAY: The LX7406 is a 4-digit Game Clock display. When it is connected to the control console that operates a compatible scoreboard, the locker room clock will display the same information as the Game Clock on that scoreboard. The Game Clock is capable of counting up or down in the MM:SS format, counting down in the SS.t format during the final minute of a Period, or showing HH:MM in Time of Day mode.

DIGITS AND SYMBOLS: Light emitting diodes mounted on printed circuit boards form the 6-inch tall red digits. The colon is a non-illuminated vinyl caption.

POWER REQUIREMENTS: Locker Room Clock - 120 VAC, 0.2 A, 60 Hz. The standard locker room clock configuration includes a removable 6 ft. power cord. **Control Console** - 120 VAC, 0.5 A, 60 Hz.

ELECTRONICS: 100% solid state fully enclosed.

CONTROL CONSOLE: The optional control console features a microprocessor, 37-key sealed membrane keypad, an LCD display, and a 6-foot power cord. The console housing consists of ABS plastic base and top pieces with a steel back plate.

DATA CABLE: The data cable (purchased separately, to the length required for the facility) has two 22 AWG stranded copper conductors with semi-rigid PVC insulation. It also has a braided shield and a foil shield. The polyethylene jacket is rated at 300 volts. The cable measures approximately 1/4-inch in diameter.

JUNCTION BOX AND EXTENSION CABLE: A 4-1/4-inch x 2-1/4-inch x 2-inch junction box with a 1/4-inch stereo jack mounted on the face plate should be attached to the control cable at the point of operation. A 10-foot stereo patch cable connects the control console to the junction box.

WARRANTY: Five-year limited warranty.

LOCKER ROOM CLOCK INSTALLATION

Because Locker Room Clocks are typically positioned in rooms that have no direct line of site back to the control console and its wireless transmitter antenna, the ScoreLink wireless data system is not an option of this product. All locker room clocks should be hard wired to a data source using cable purchased from Electro-Mech. The data source can be the control console, or the data output of one of the scoreboards (or another locker room clock).

Items not provided by Electro-Mech that are necessary for installation:

- Wall fasteners
- Grounded NEMA 5-15R 120 VAC receptacle for the LX7406.
- Grounded NEMA 5-15R 120 VAC receptacle for the control console at the scorekeeper's table.
- Disconnect switch or breaker to turn the clock on and off.

Electro-Mech performs installations in some areas. In other areas, we can help you contact an independent installer. In either case, we will make every effort to answer your installation questions. Qualified personnel should perform the scoreboard installation. Consult national and local codes before installation.

MECHANICAL INSTALLATION

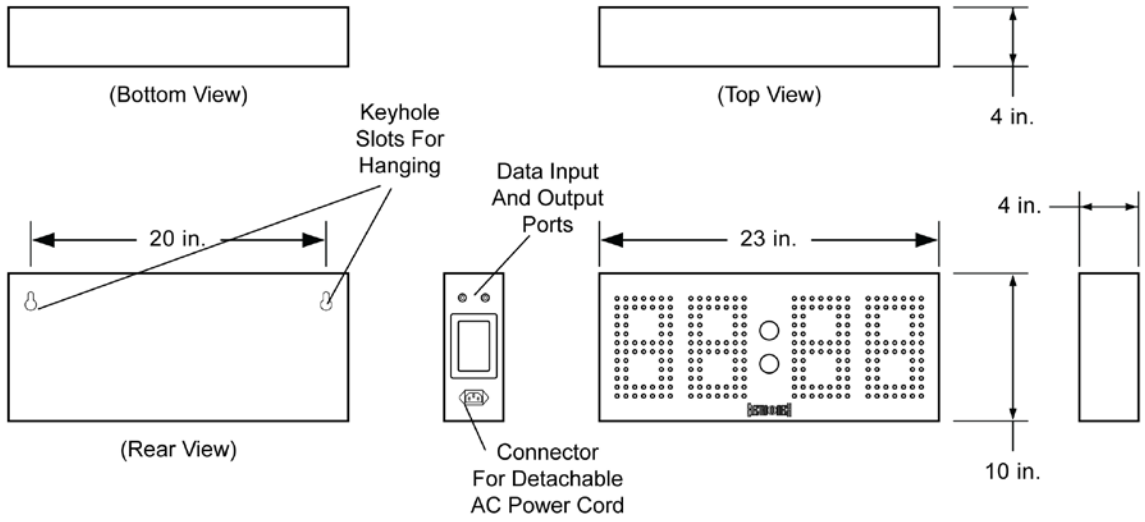
The mechanical installation consists of mounting the locker room clock on the wall. There are keyhole slots in the back of the cabinet. See the illustration on the following page for spacing. You may use the keyhole brackets to hang the cabinet, or you may wish to recess the cabinet within the wall. Electro-Mech can provide alternate means of routing power and data cables to accommodate different mounting techniques. Please contact the factory regarding customizations.

ELECTRICAL INSTALLATION

We recommend a qualified electrician perform the needed electrical connections to ensure proper operation of the locker room clock. These connections include connecting the locker room clock to a power source, installing the data cable, and connecting the control console.

Power Connection

The locker room clock requires a grounded NEMA 5-15R 120 VAC receptacle to provide 120 VAC, 60 Hz service for proper operation. **Maximum power consumption of Model LX7406: 40 Watts.** The locker room clock has a 6 ft. detachable power cord socketed near the bottom of the left side of the cabinet. See the illustration on the following page for details. Plug the power cord into the power receptacle. The receptacle should be controlled by a separate circuit breaker so that the locker room clock can be turned off without turning off other electrical devices in the facility.

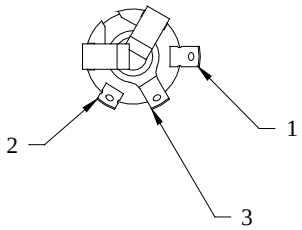


Mechanical and Electrical Connection Points

Data Cable Installation

Data cable must connect the locker room clock to the control console (either directly or via daisy chaining from another display). Run data cable in conduit to protect it from being pulled or damaged. Avoid running the data cable near any power cabling.

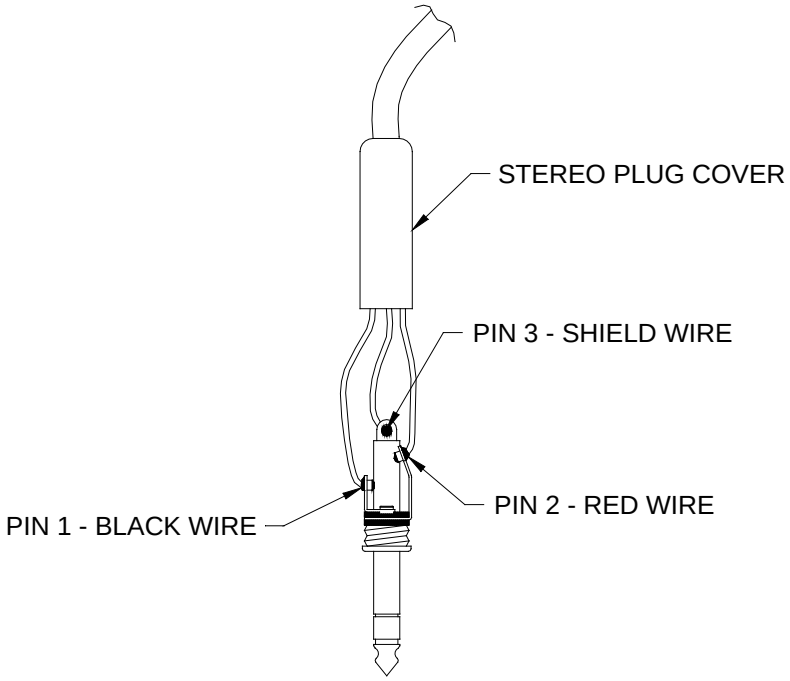
A small junction box with a 1/4-inch stereo jack mounted on the face plate is attached to the data cable at the point of operation of the main scoreboard(s). This junction box should be securely mounted within ten feet of the rear of the control console. Most customers order the data cable with the junction box attached. Some customers prefer to attach the junction box after the cable is installed. Those customers must solder the data cable to the 1/4-inch stereo jack. The diagram below shows the data cable wire connection points on the rear of the 1/4-inch stereo jack.



PIN 1 - BLACK WIRE
PIN 2 - RED WIRE
PIN 3 - SHIELD WIRE

Stereo Jack Wiring Diagram

A 1/4-inch stereo plug is attached to the "scoreboard end" of the data cable. It is inserted into the 1/4-inch stereo "Data Input" jack on the left side of the locker room clock cabinet. Most customers order the data cable with the 1/4-inch stereo plug attached. Some customers prefer to attach it after the cable is installed. Those customers must solder the 1/4-inch stereo plug to the cable according to the diagram below. Unscrew the stereo plug cover from the plug body to expose the contact pins.



Stereo Plug Wiring Diagram

You may choose to "daisy chain" data from one scoreboard, locker room clock, or other Electro-Mech display to the next. There is no limit to the number of displays you can tie together using this technique. Consult the owner's handbooks for the other displays in your facility to find out exactly where the data output jacks or terminals are located. In general, indoor scoreboards and shot clocks have data output jacks at the top-center of the cabinet (or on the right-hand side for older models). Most permanently installed outdoor scoreboards have a data output terminal block located behind an access panel in the rear of the cabinet.

Control Console Connections

The 10 ft. stereo patch cable has a molded 1/4-inch stereo plug attached on each end. It is used to connect the control console to the junction box or ScoreLink transmitter. Although the ScoreLink system is not designed for use with locker room clocks (due to their being in a different room and, therefore, lacking a line of sight to the console and transmitter), other displays controlled by the same console may use the ScoreLink system. The following steps describe how to connect the control console:

1. Plug one end of a stereo patch cable into the 1/4-inch stereo jack on the junction box or the ScoreLink transmitter, if purchased.
2. Plug the other end of the patch cable into one of the four 1/4-inch stereo jacks mounted on the control console back plate.
3. Repeat steps 1 and 2 for any additional displays driven directly by this control console.
4. Plug the control console power cord into a grounded NEMA 5-15R 120 VAC receptacle.

Control Console Safety Warning

This product is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a qualified electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

LOCKER ROOM CLOCK OPERATION

LOCKER ROOM CLOCK STARTUP

1. Place the circuit breaker for the locker room clock in the **ON** position.
2. Plug one end of each stereo patch cable into a junction box (or ScoreLink transmitter) feeding each scoreboard display controlled by the console.
3. Plug the other end of each patch cable into one of the 1/4-inch stereo jacks mounted on the control console back plate.
4. Plug the control console power cord into a grounded NEMA 5-15R 120 VAC receptacle.

GAME TIME OPERATION

The details of game time operation are covered in the documentation that ships with your scoreboard control console. You should reset the console each time that it is turned on. Test out all the functions to ensure that all attached scoreboards are operating properly.

LOCKER ROOM CLOCK SHUTDOWN

1. Place the power disconnect for the locker room clock in the **OFF** position.
2. Unplug the control console power cord.
3. Unplug the stereo patch cable(s).
4. If a ScoreLink detached transmitter is used, unplug the transmitter's power supply.
5. Store the control console (and ScoreLink transmitters) in a dry location. These units are not waterproof.

Proper locker room clock shutdown will help protect the locker room clock and control console from power surges and lightning strikes.

SERVICING THE LOCKER ROOM CLOCK

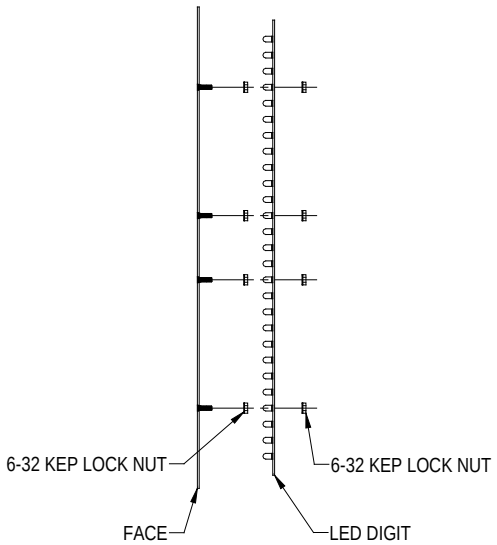
While your locker room clock was designed for years of trouble-free operation, some problems may occasionally occur. Electro-Mech offers onsite service in some areas. In other areas, we can help you contact an independent service technician. In either case, we will make every effort to answer your questions. Our trained personnel at are ready to provide technical support from Monday to Friday during the hours of 8 AM to 5 PM Eastern Standard Time. Our convenient toll free number is listed at the bottom of every page in this manual. Be sure to know your product's model number when calling. Most scoreboard replacement parts are available for immediate shipment. Damaged parts can usually be repaired at a significant cost savings.

If the locker room clock turns on some LEDs, but does not operate normally, make note of which functions are affected. If some LEDs either never turn on or always stay on, make note of their specific locations on the clock. Refer to the COMPONENT REPLACEMENT section of this manual before changing parts.

COMPONENT REPLACEMENT

LED Digit Replacement

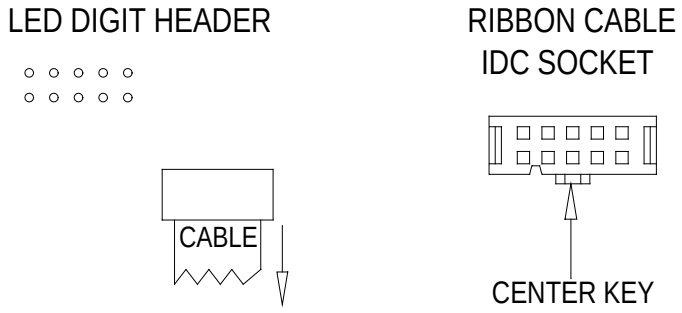
The LEDs that form the display digits are soldered on circuit boards mounted behind the locker room clock's metal face. Do not attempt to replace individual LEDs. In case of a malfunction, an entire LED circuit board should be replaced. **To avoid damage to the LX driver PCB, always turn off the power to the locker room clock when removing or replacing LED digits**. The illustration below shows how an LED digit is attached to the face of Model LX7406.



LED Digit Assembly

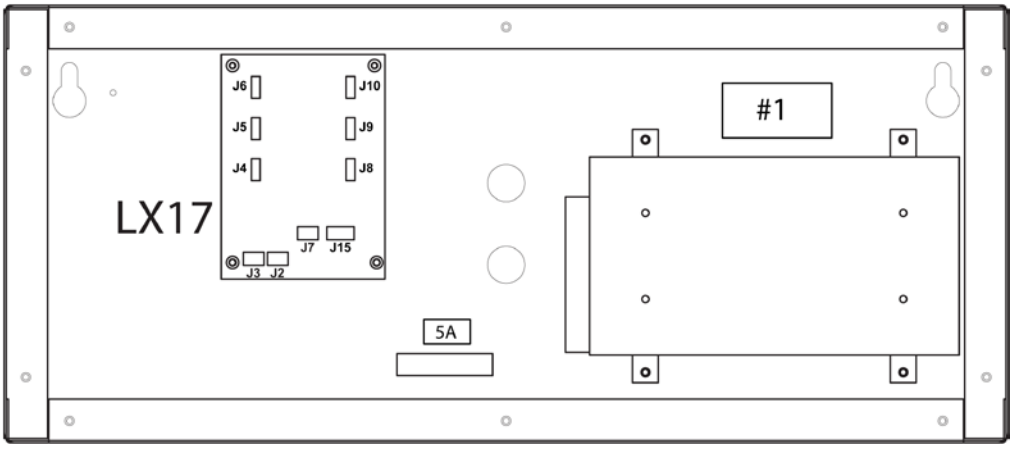
The following steps describe how to remove and replace a defective LED digit:

1. Remove the machine screws that fasten the face to the frame of the locker room clock. **Caution: Support the mask with your hand before removing the last screw. The ribbon cable that connects to the rear of the circuit board is not designed to support the weight of the assembly.**
2. Disconnect the ribbon cables from the rear of the four digit PCBs. The cables are labeled to show which digit they are supposed to connect to when you reattach them later. **Caution: Do not let the ribbon cables hang outside of the locker room clock cabinet. They can be cut by the metal edges of the cabinet frame. Damage to a ribbon cable may create short circuit paths that will lead to damage of the LX Driver PCB**.
3. Place the face assembly on a flat surface and remove the 6-32 kep lock nuts that hold the circuit board in place.
4. Remove the circuit board.
5. Align the mounting holes in the circuit board with the threaded studs on the mask and install the replacement digit on the mask.
6. Remove the ribbon cable from the old digit and plug it onto the header on the back of the new digit. Refer to the illustration below to plug the ribbon cable IDC connector onto the circuit board in the proper orientation.
7. Reinstall the face assembly, re-connecting the four ribbon cables to the LX17 driver PCB, reusing the tie wraps to secure the ribbon cables, and reattaching the metal face plate using the machine screws.



CENTER KEY ON RIBBON CABLE IDC SOCKET MUST POINT IN THE SAME DIRECTION AS THE ARROW ON THE REAR OF THE LED DIGIT.

The illustration below shows the view inside the locker room clock.



LX17 CONNECTORS USED	
PCB JACK	**FUNCTION**
J2	ScoreLink Data Input (not used)
J3	Data Output
J4	Minutes Units
J5	Minutes Tens
J6	Seconds Units
J7	DC Power Input
J8	Period (not used)
J9	Seconds Tens
J10	Colon / Decimal (not used)
SHLD, RED, BLK	Data Input

LX Driver PCB Replacement

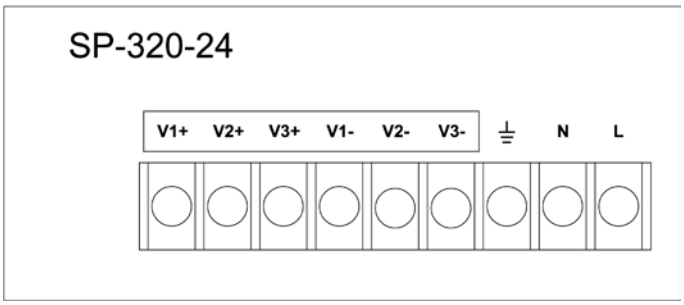
Electrical connections to the LX driver PCB are made with ribbon cable polarized IDC sockets and locking ramp crimp terminal housings that mate with jacks on the circuit board. The circuit board is secured to the back the locker room clock cabinet using four machine screws.

1. Unplug the electrical connections from the PCB. Do not cut the plastic tie wraps around any of the cabling.
2. Remove the four screws.
3. Remove the circuit board from the scoreboard.
4. Insert the replacement PCB.
5. Secure the PCB with the four screws.
6. Insert the plugs into the jacks on the PCB.

To avoid damage to the module, always turn off the power to the locker room clock when removing or replacing any components.

Power Supply Module Replacement

The Model LX7406 uses a Mean Well SP-320-24 power supply module. Replacement modules are available from Electro-Mech or through distributors of Mean Well power supplies. The power supply must be set to provide 18.9 VDC output, which is how they are configured when shipped from Electro-Mech. Connections are made to a set of screw terminals along the left side of the power supply as illustrated below:



To avoid damage to the module, always turn off the power to the locker room clock when removing or replacing any components.

A fuse holder is mounted to the left of the power supply and connected in line with the incoming 120 VAC line side of the power running from the power cord jack to the SP-320-24 power supply module. The fuse is a 5 amp 250 volt 3AG style fuse and should only be replaced with a fuse of that type

ELECTRO-MECH SCOREBOARD CO.
FIVE YEAR LIMITED WARRANTY

THE ELECTRICAL COMPONENTS OF ALL ELECTRO-MECH SCOREBOARDS ARE GUARANTEED FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF INVOICE AGAINST DEFECTS IN WORKMANSHIP OR MATERIAL AND WILL BE REPLACED OR REPAIRED WITHOUT COST TO THE OWNER PROVIDED THE EQUIPMENT OR PARTS ARE RETURNED POSTAGE-PAID TO THE FACTORY IN WRIGHTSVILLE, GA. SHIPPING BACK TO THE OWNER WILL BE VIA UPS GROUND SERVICE EXCEPT WHEN AIR OR SPECIAL METHOD OF RETURN IS SPECIFIED BY THE OWNER, IN WHICH CASE SHIPPING WILL BE FREIGHT COLLECT.

EXCLUDED FROM THIS WARRANTY ARE FUSES.

THIS WARRANTY DOES NOT INCLUDE LABOR CHARGES INCURRED IN THE REMOVAL OF COMPONENT PARTS, SERVICE CALLS, OR DAMAGES RESULTING FROM IMPROPER INSTALLATION, IMPROPER OPERATION, OR PROBLEMS CAUSED BY ANY REPAIR, ALTERATION OR MODIFICATION OF THE SCOREBOARD NOT PERFORMED BY ELECTRO-MECH.

EQUIPMENT WHICH IS SUBJECTED TO ACCIDENT, NEGLECT, ABUSE, MISUSE OR OTHER NATURAL DISASTERS, INCLUDING BUT NOT LIMITED TO FIRE, WIND, LIGHTNING, OR FLOOD, IS NOT COVERED BY THIS GUARANTEE.