

LRX™ SCORPION

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Word document and PDF - LAST REVISED - August 10, 2008

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IMPORTANT:

1. **The installation, operation and servicing of this fixture to be carried out by only authorized and qualified personnel.**
2. **Ensure this unit meets all local codes prior to operation.**
3. **Do not operate if unit appears damaged.**
4. **Report damage immediately.**
5. **This unit has more than one power supply. Disconnect all power supplies before servicing or bulb installation/removal to avoid electric shock.**
6. **Do not connect or disconnect under load.**
7. **Ensure power supplies are off when making fixture, power supply and data connections.**
8. **Lamp housing and light energy output very hot when in operation. Do not operate in proximity of substances or materials that are flammable or adversely affected by heat or light.**
9. **In case of malfunction disconnect power supplies, discontinue use, notify supplier.**
10. **Spare fuses for control functions are located inside the hanger assembly. Replace fuses only with the exact type and amperage rating.**
11. **No user serviceable parts**
12. **Unsure about anything or questions, contact representative before use.**
13. **When fixtures are mounted in close proximity to one another, care must be taken so that output energy from one fixture is not directed at another fixture.**
14. **For the latest version of this manual please visit “lrx-lighting.com”**

FIXTURE SPECIFICATIONS:

Bulbs: This unit will accept 650 Watt DWE type bulbs

Electrical ratings:

Control power - Volts - 120 AC - non dimmed feed line.

Hertz - 50 - 60

Amps - 8.0

Connector - U- Ground plug/Edison plug.

Lamps - Volts - 120 VAC

Hertz - 50 - 60

Amps/Circuit - 20 Maximum

Head Input Connector for lamps:

Socapex SL61 Connector - 19 Contacts --- Model - 419AR

Quantity: Two

Data - DMX protocol - Connector - Five pin and five wire

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Physical:

1. Tilt - Range one hundred degrees - vertical (Zero degrees) to negative one hundred degrees
2. Pan - 340 degrees (non continuous)
3. Weight - 135 pounds
4. Gel frames 46" X 46"

BULB INSTALLATION

1. Disconnect all power supplies before installing or removing lamp.
2. Allow bulbs to cool before removing.
3. Loosen the two screws that hold the bulb retaining ring, then rotate ring to remove.
4. Follow bulb manufactures instructions regarding use and handling of their product.
5. Prior to installing the lamp, check bulb contacts and wire ends for signs of arcing or over heating. If bulb contacts or wiring appear damaged contact fixture supplier prior to use.
6. The power wire attachment screws should be tightened as required by the manufacturer.
7. Ensure power supply matches lamp type voltage and wattage.
8. Test all lamps.

DMX CHANNEL ALLOCATION

When using the LRX with a lighting console or other device that offers discrete control over the DMX channels, they are used by the fixture as follows:

Where N= [LRX DMX address shown on display]:

- | | |
|------------------|--|
| N + (0-9) | = motor control (depends on MODE) |
| N+10 | = GEL fan ON/OFF (OFF<127<=ON) |
| N+11 | = lamp control (unimplemented) |
| N+12 | = motor control MODE: N+12<127 = BUMP MODE |
| | N+12>=127 = FADER MODE |
| N+13 | = reserved (future use) |
| N+14 | = reserved (future use) |
| N+15 | = reserved (future use) |

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If (MODE = BUMP): (n+13<127)

- (N+0 > 127) = pan left
- (N+1 > 127) = pan right
- (N+2 > 127) = tilt up
- (N+3 > 127) = tilt down
- (N+4 > 127) = spot
- (N+5 > 127) = flood
- (N+6 thru 9) = reserved (future use)

If (MODE=FADER): (n+13>=127)

- (N+0 < 64) = pan left
- (N+0 > 127) = pan right
- (N+1 < 64) = tilt up
- (N+1 > 127) = tilt down
- (N+2 < 64) = spot
- (N+2 > 127) = flood
- (N+3 thru 9) = reserved (future use); Each motor above is stopped when the fader is in the middle of its range (DMX value 64-127).

FIXTURE ADDRESSING

Lamp addressing is performed at the rear of the hanger assembly. The fixture can be programmed to operate in DMX mode or FIXTURE mode (for use with the hand controller). Because each LRX fixture requires sixteen DMX channels for operation, FIXTURE mode is merely a convenient way of skipping DMX channels in 16 channel increments, beginning with DMX channel #001. Additionally, fixture mode provides power to a connected hand controller, which is also designed to work in 16 channel increments.

The mode (square icon) on the left is used to toggle between DMX mode and FIXTURE mode. FIXTURE mode is designated by a capital 'F' in the left-most digit, with the remaining two digits indicating the fixture number. E.g. F01=fixture#1, etc. DMX mode is shown as a three digit number from 001 to 512. Once the mode is selected the fixture number or DMX address can be increased or decreased using the up/down arrows on right side of the switch assembly. When the correct FIXTURE/address has been selected, the store (round icon) button second from the left is pressed and held (until the display stops flashing) to store that address. *It is important to note that the LRX fixture will not begin responding to a newly selected FIXTURE/DMX address until it has been stored by pressing and holding the store (round icon) button.* If the display is flashing, this is a warning that the displayed FIXTURE/DMX address does not match the address that fixture is currently responding to. Saving the displayed address tells the fixture to begin listening and responding to the new address.

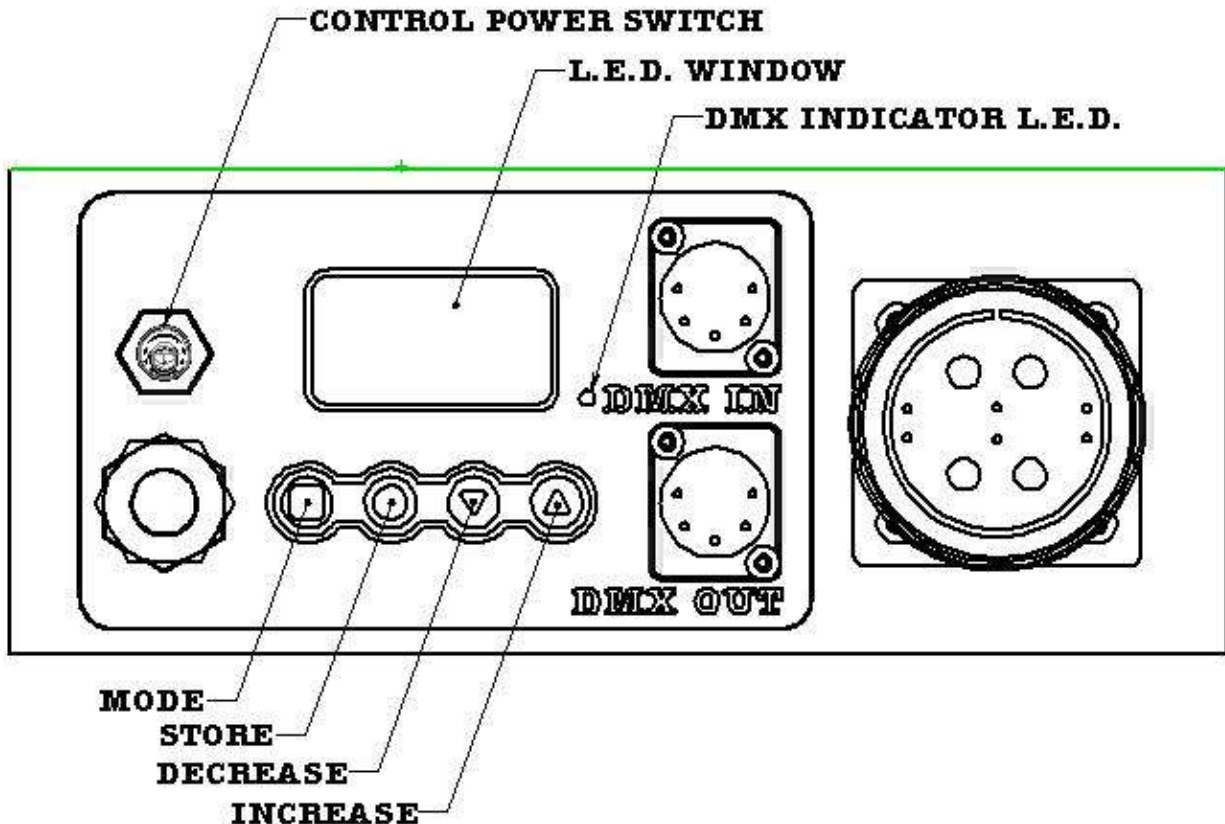
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The LRX fixture always writes the last saved address and mode to non-volatile memory, such that in the event of a power interruption, the fixture will power up in the mode and address it was using before the power interrupt.

IMPORTANT: When the LRX fixture is in **FIXTURE** mode, pins 4 & 5 on the **DMX IN** connector become energized to 12VDC to supply power to the hand controller. No power is supplied to pins 4 & 5 when in **DMX** mode. Ensure that fixture is in the correct mode prior to connecting DMX lines. Always connect the hand controller to the fixture with the power off. Damage could result if attempting to connect the hand controller to the LRX while the power is on.

Pressing and holding the mode button will provide access to the hour meter. Once in hour meter mode press the up icon to display bulb hours, indicated as a scrolling number. It will show as a blank digit followed by three digits then a decimal place and two more digits (i.e. _120.59). The bulb hours can be reset by pressing and holding the store button until the meter zeros, about five seconds.

To display fixture hours, press the down icon. Fixture hours will be displayed as a scrolling number with an "F" prefix. This can not be reset by the user.



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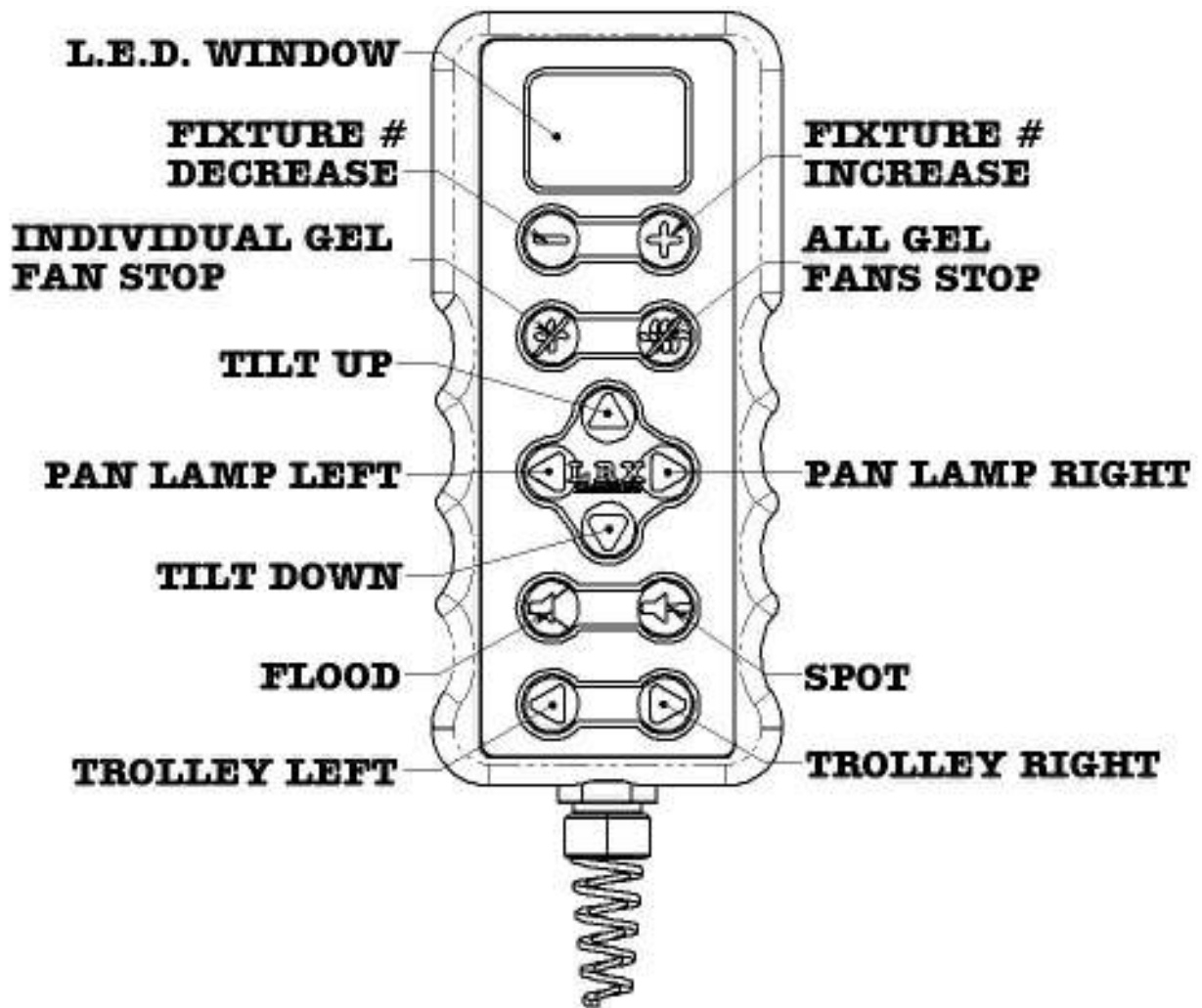
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HAND CONTROLLER

The hand controller is designed to operate a maximum of thirty two fixtures connected to a single controller; the controller will provide control of the fixture selection, tilt (up & down), pan (left & right) , and trolley move left & right (when connected to the LRX beam trolley).

Please note that the flood/spot functions and the individual gel cooling fans or all gel cooling fans switches are for use with the LRX singles.

All switches act as momentary type.



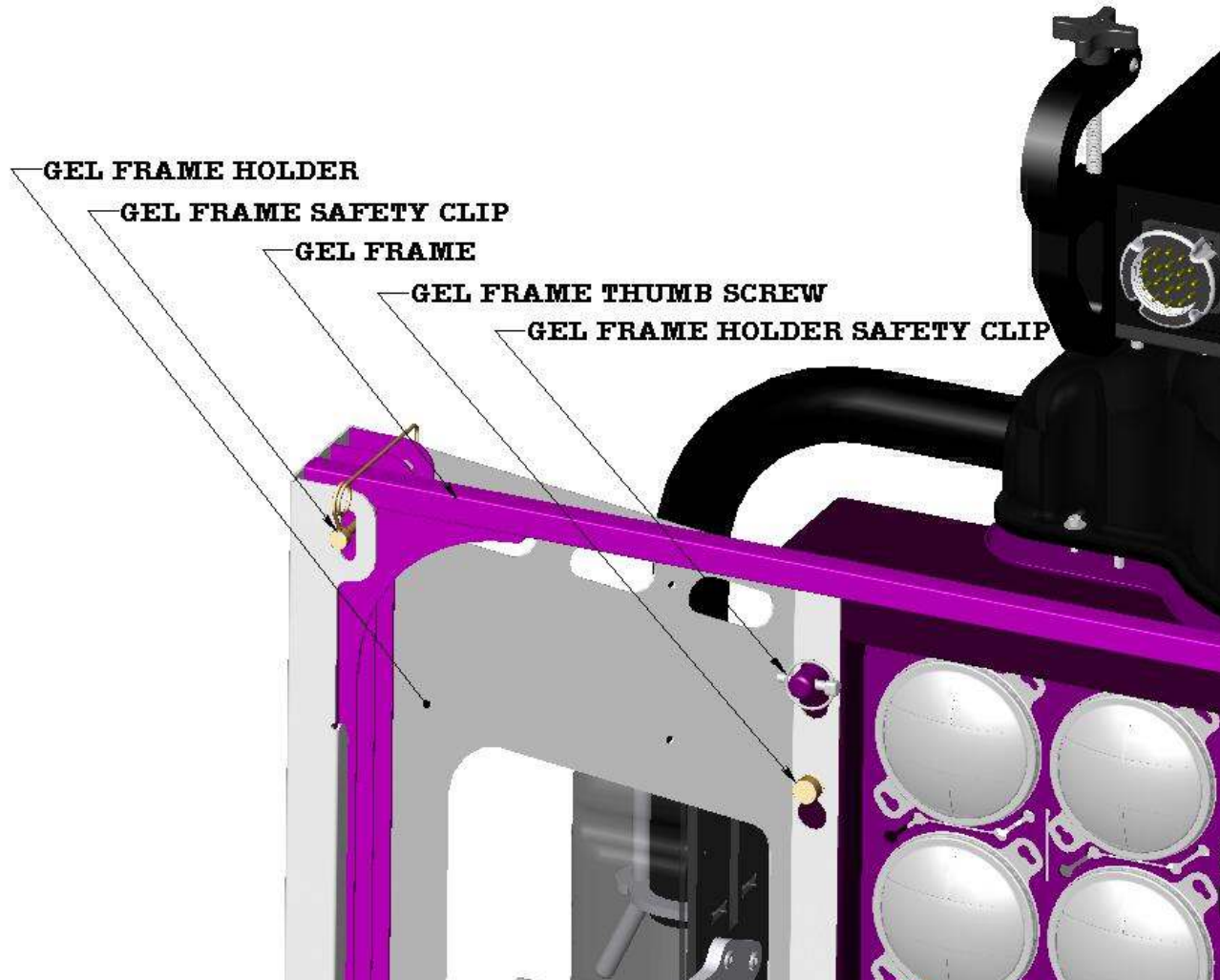
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GEL FRAMES

1. To install gel frame holders, loosen four thumb screws located on the front of the fixture housing.
2. Slide the keyhole slots located on the gel frame holder over the loosened thumb screws and lower into place.
3. Tighten thumb screws and install the four safety clips provided.
4. The outside gel slot must be used first as this will hold the two gel frame holders together. No gel material is to be used on the side of the filter frame that has been slotted. These slots will mate with bend returns on the outer most slot of the filter frame holder. **See illustration.**
5. Install the supplied gel frame safety pins in the top two corners. **See illustration.**



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MOUNTING THE LIGHT IN THE SHIPPING CASE

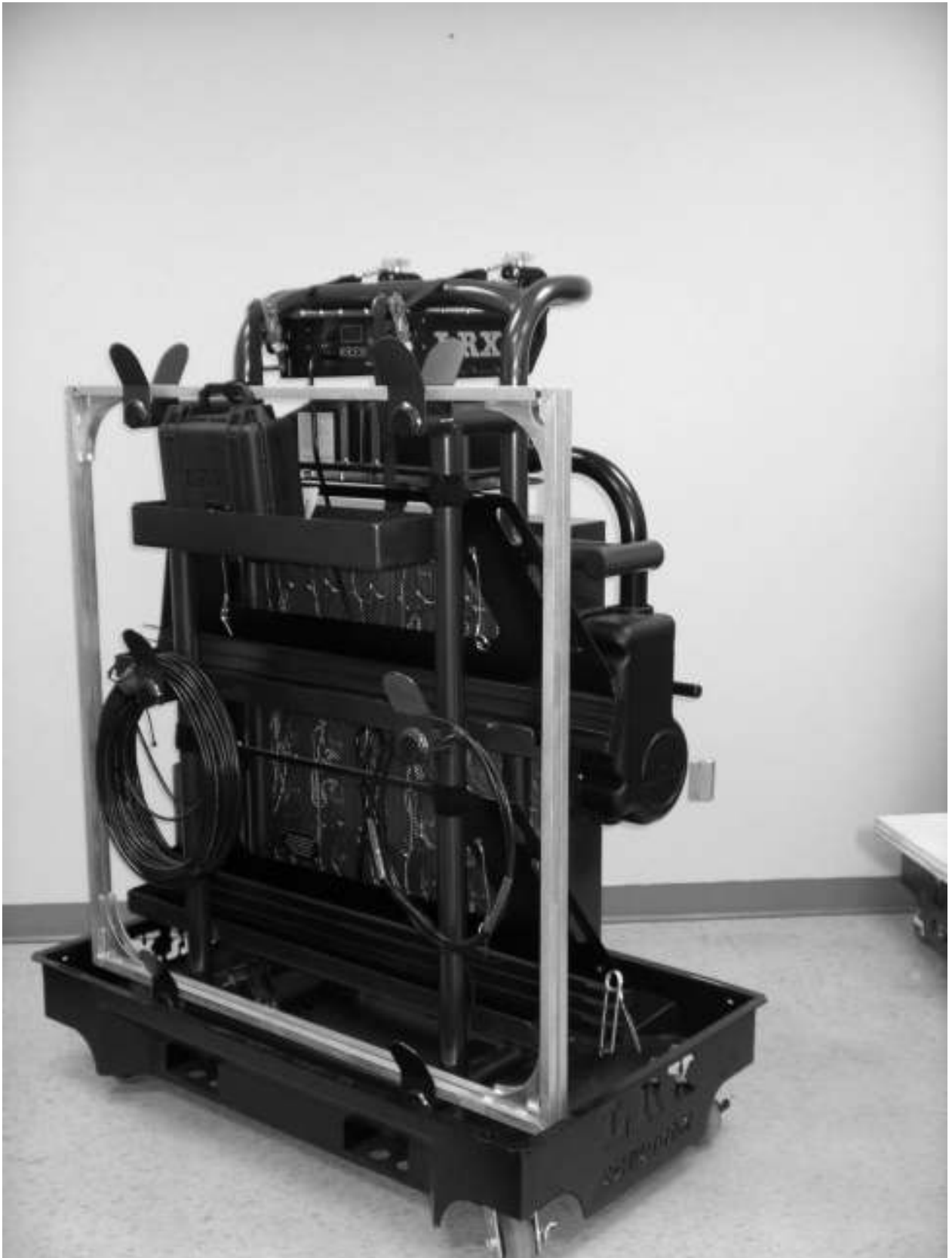
IMPORTANT: before re-installing the fixture into the shipping case

1. Tilt fixture up until it reaches its upper limit switch.
1. Pan fixture so that it is pointed straight ahead.
2. Install and tighten T-bolts and ratchet straps
3. Secure gel frame holders using the Velcro straps provided in there shipping trays.
4. Hang gel frames at the of rear shipping stand.
5. Place hand controller Pelican case and place in tray.
6. Hang DMX cables on shipping stand.
7. Always store shipping cases in a dry location.



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LIFTING THE LIGHT

1. Lifting with chain motor or other mechanical means (for installation only) can be done using the safety chain holes directly below the main mounting hooks.
2. Lifting by hand; Use lifting handles provided as well as the yoke tubes.
3. **If there are any concerns please contact your health and safety representative.**
4. **PLEASE NOTE: the fixture is approximately 135 pounds.**

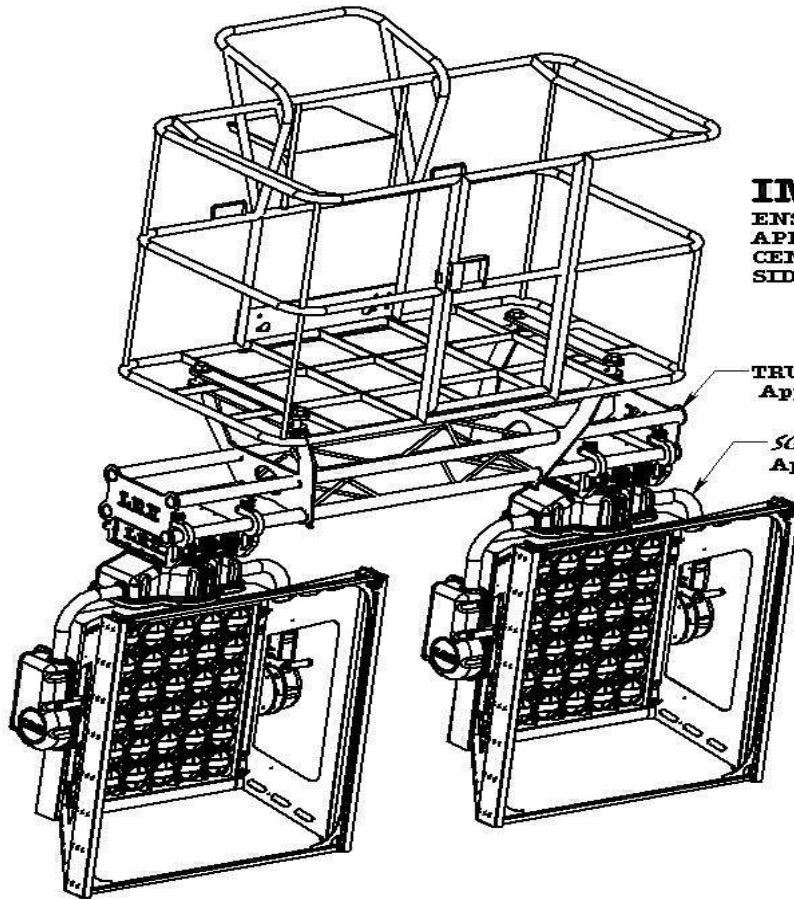
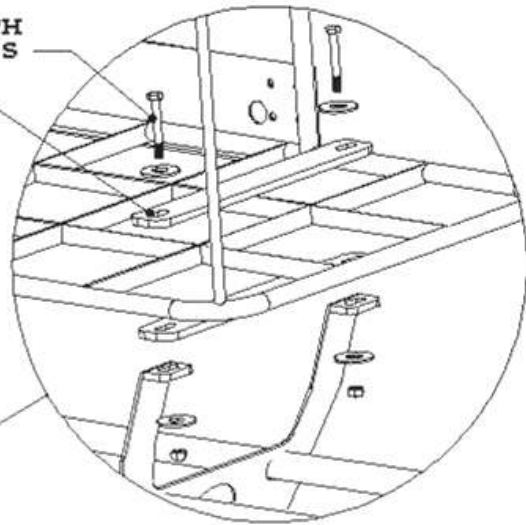
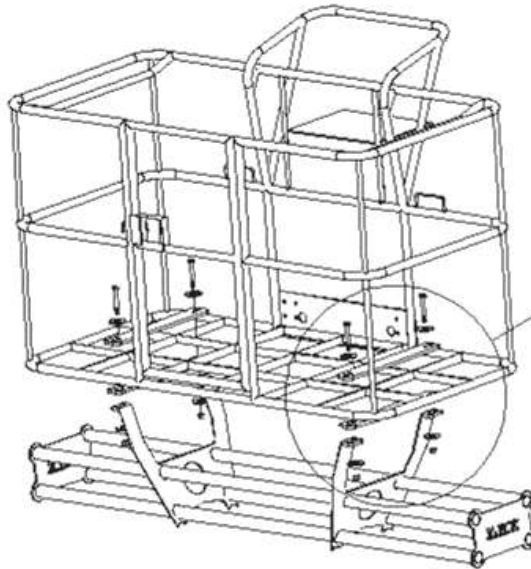
INSTALLATION OF FIXTURES ON TRUSS AND TELESCOPIC TYPE MAN LIFTS

1. This fixture is intended to be mounted on a level truss with a tubing diameter not larger than two inches and that the truss is mounted to a structure capable of supporting the load being applied.
2. Tee bolts in hanger assembly must be installed and both ratchet straps clipped onto their locking bolts then tightened around the rear cord of the truss. See picture.
3. Safety wires are required for each fixture.
4. All feed cables must have a strain relief.
5. When fixtures are mounted in close proximity to one another, care must be taken so that output energy from one fixture is not directed at another fixture.
6. Cable rollers when used on a telescopic lift should only be installed on fully retracted boom.
7. LRX truss is to be install so that load is centered and evenly applied to basket, see illustrations. Maximum capacity for LRX truss is 500 pounds evenly distributed.
8. Follow all lift manufactures guide lines for load/wind capacities and de-rating as required. See the JLG & Genie (or others) operator manuals & special supplement for Authorized and Trained Set Lighting Technicians and Studio Grips. These guides will be made available with this manual and is also available for our office 1-818-669-3334 / 1-416 287 3107 or on-line at "lrx-lighting.com"

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INSTALL TRUSS WITH 1/2"-13 X 4" BOLTS WITH WASHERS AND NYLOCK NUTS - FOUR PLACES

USE 1/8" X 3" PLATES TOP AND BOTTOM



IMPORTANT NOTE:

ENSURE THAT LOAD IS EVENLY APPLIED TO BASKET. LOAD TO BE CENTERED FRONT TO BACK AND SIDE TO SIDE.

TRUSS:
Approximately 60 pounds

SCORPION Light Fixture:
Approximately 135 lbs each

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PRE-DELIVERY INSPECTION

1. Warning labels in place and in good order.
2. Check socket contacts for signs of overheating or arcing.
5. All hardware in place and tightened.
6. U-ground plug and cable at hanger assembly in good condition.
7. Power up unit and test control functions.
8. Function test hanger switch assembly, and LED display.
9. Plug in hand controller and test tilt, pan, and trolley output.
10. Hanger hooks, T-bolts and ratchet straps in good condition.
11. Input connectors secure and in good condition.
12. Check yoke for signs of damage.
13. Drive assemblies should be lubed with light oil every three months.
14. Visual inspection of all wiring should be performed every three months or sooner as required
15. Each case should include :
 - 1 - Fixture
 - 2 - Gel frames
 - 1 - 120 foot DMX cable
 - 1 - 10 foot DMX cable
 - 1 - Hand controller

TROUBLE SHOOTING GUIDE

FUSES:

1. All fuses are located in the hanger assembly. Ensure all power supplies are disconnected prior to removing any covers. Three fuses are located on the rear hanger plate and one 12VDC circuit breaker is located near the transformer. Spare fuses are provided in the plastic container on top of the transformer. If a fuse is removed from container, please make service department aware, so that the fuses taken can be replaced.

NO DISPLAY AT REAR OF HANGER ASSEMBLY:

1. Ensure 120vac power to fixture (non dimmed line)
2. Power switch is on
3. Check fuse # 1 (2 amp)
4. Check power across C7(12vdc)
5. Check power across fuse 4 (12VDC circuit breaker).
6. Check ribbon cable from main board to display board.

FIXTURE DOESN'T RESPOND TO ANY FUNCTIONS REQUESTED FROM HAND CONTROLLER OR OTHER DMX INPUT:

7. Establish power is correct and display is functioning properly, see above.
8. Check hanger display for proper addressing and mode.
9. Test fixture with the hand controller supplied; set fixture to fixture mode, the address will have an "F" as a prefix - E.g.- FO1. When the

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correct **FIXTURE**/address has been selected, the store (round icon) button second from the left on the hanger is pressed and held (until the display stops flashing) to store that address. *It is important to note that the LRX fixture will not begin responding to a newly selected **FIXTURE**/DMX address until it has been stored by pressing and holding the store (round icon) button.* If the display is flashing, this is a warning that the displayed **FIXTURE**/DMX address does not match the address that the fixture is currently responding to.

10. Ensure the address at the fixture matches the address on the hand controller.
11. When the LRX hand controller is plugged in to the “DMX IN” receptacle at the rear of the hanger the hand controller will power up and the DMX light on the hanger will light up. If this doesn’t happen try another hand controller if available.
12. If the 2nd hand controller does not light up, meter across pins #4 & #5 of the “DMX IN” receptacle at the hanger, it should measure 12VDC. If no voltage is present check poly fuse, (this is located either on the main board or on the fuse block depending on the version). If the fuse checks out OK it is possible that there is a defective relay on the main board and the main PCB should be replaced.

TILT, PAN OR FOCUS MOTOR NOT OPERATING IN ONE OR BOTH DIRECTION OR HAS LIMITED TRAVEL; BUT OTHERS OPERATE AS NORMAL.

1. Test with another hand controller if available. If still unresponsive proceed to next step.
2. If the problem is with a tilt or pan drive, actuate non responsive function and listen for motor drive noise. The tilt and pan drive assemblies use a slip clutch inline between the motor and drive gear as a protective measure, this clutch will slip and make a clicking sound once each revolution when driven by the motor if the clutch has exceeded its preset limits. If the clutch is slipping inspect the motor drive assembly; gears, gear lash, bearings etc. The tilt & pan motor drive assemblies can be disengaged from the driven brass gear by loosening the mounting bolts and then retested. If motor drives normal when disengaged check the brass driven gear for damage to the teeth or other mechanical binding within the assembly and repair as required. If the problem is with the flood/spot or trolley functions proceed to next step.
3. If there is no response at the motor, remove the hanger cover and check main PCB motor outputs. 12VDC should be measured across any two mating outputs when a corresponding function is selected and then reverse polarity when the opposite function is selected. (See wiring diagram or see below). If any of these outputs fail to supply the output as required, check the outputs individually. This can be achieved by connecting one test lead to the system negative, (this is easily found at the negative side of the large blue capacitor, blue wire #16), and then test suspect outputs one by one. Actuate the corresponding function

on hand controller in one direction then the other direction. One of these two directions should provide a positive 12VDC output, repeat test for the mating output. If there is no output the PCB board should be replaced.

- A. Pan motor output labeled M1 - & M1+ at main board
 - B. Tilt motor output labeled M2 - & M2+ at main board
 - C. Focus motor output labeled M3 - & M3+ at main board
 - D. Trolley relay output labeled M4 - & M4+ at main board.
4. If above checks out good, check related wiring & limit switches from PCB to motor.
 - IF Pan; check for 12VDC across the common side of the two pan limit switches and then at the normally closed side of the switches when the corresponding function on the hand controller is selected. Next check at the motor terminals. If 12VDC is found at the motor, replace motor and test.
 - IF Tilt; check for 12VDC across the common side of the two tilt limit switches and then at the normally open side of the switches when the corresponding function on the hand controller is selected. Next check at the motor terminals. If 12VDC is found at the motor, replace motor and test.
 - If Focus is not operating; check for 12VDC at the motor, if 12VDC is found at the motor, undo fastener at rod end of the actuator and test, if still not working replace linear actuator, if actuator is operating as normal check for binding of lamp socket carriage and associated linkages, repair as required.

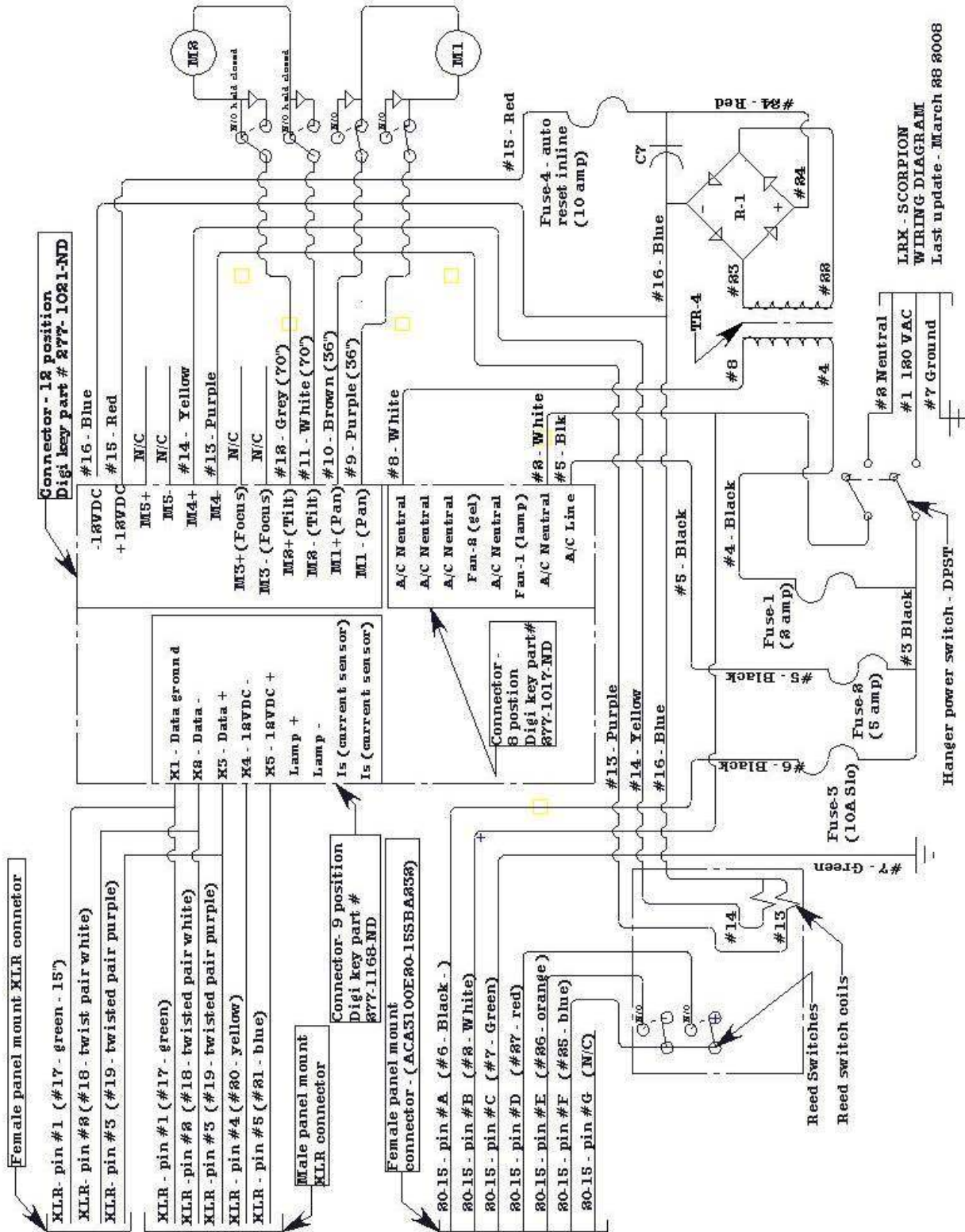
TROLLEY DOESN'T TRAVEL OR ONLY TRAVELS IN ONE DIRECTION; ALL OTHER FUNCTIONS OPERATE AS NORMAL.

1. Test with another hand controller if available. If still unresponsive proceed to next step.
2. Disengage trolley plug from the rear of the hanger assembly and install hardwire trolley hand controller from trolley shipping case. Power trolley hand controller with 120VAC , non dimmed line. Test, if trolley operates as normal proceed to next step. If trolley is still inoperative check for mechanical interference on I-beam flange or other signs of mechanical binding. If nothing is found remove trolley from I-beam, loosen four motor mounting bolts on the trolley side plates and lift motor to remove tension on the drive belts, and now retest. If there is no response at the drive motor when tested replace trolley. If trolley operates as normal with the trolley hand controller proceed to next step.
3. Disengage trolley plug from rear of the hanger assembly. Using a multi-meter test output at pin's #A & B, this should measure 120VAC. If it doesn't check fuse # 3 in the hanger assembly. If blown replace with exact type/size and retest. If above tests good check for continuity between pins# D & F when trolley function is selected on the LRX hand controller, check both directions, it should show continuity for one of the two directions. Repeat this test for pins # E & F. (E & F should show continuity for one direction and D & F should show continuity for the other direction, see wiring diagram).
4. If above doesn't check out remove hanger assembly cover and check the output of M4 - & M4+ at the main PCB. Check these outputs individually. This can be

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- achieved by connecting one test lead to the system negative, (this is easily found at the negative side of the large blue capacitor, blue wire #16), and then test suspect outputs one by one. Actuate the corresponding function on hand controller in one direction then the other direction. One of these two directions should provide a positive 12VDC output, repeat test for the mating output. If there is no output the PCB board should be replaced. If this tests OK proceed to the next step.
5. Check trolley circuit board located in the hanger assembly. Measure voltage at relay coil when function is selected, (12VDC). If the coils are receiving 12VDC replace this board and retest.

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WIRING DIAGRAM
Last update - March 88 8008

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