

# Telemotive Engineered XLTX Transmitter

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Remote Crane Controls

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**MAGNETEK**  
MATERIAL HANDLING  
**TELEMOTIVE**

July 2009  
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## **Your New Radio Remote**

Thank you for your purchase of Magnetek's Telemotive® brand XLTX Radio Remote Crane Control. Magnetek has set a whole new standard in radio-remote performance, dependability, and value with this unique new line of bellybox transmitters.

If your product ever needs modification or service, please contact one of our representatives at the following locations:

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## PRODUCT MANUAL SAFETY INFORMATION

Magnetek, Inc. (Magnetek) offers a broad range of radio remote control products, control products and adjustable frequency drives, and industrial braking systems for overhead material handling applications. This manual has been prepared by Magnetek to provide information and recommendations for the installation, use, operation and service of Magnetek's material handling products and systems (Magnetek Products). Anyone who uses, operates, maintains, services, installs or owns Magnetek Products should know, understand and follow our instructions and safety recommendations in this manual for Magnetek Products.

The recommendations in this manual do not take precedence over any of the following requirements relating to cranes, hoists and lifting devices:

- Instructions, manuals, and safety warnings of the manufacturers of the equipment where the radio system is used,
- Plant safety rules and procedures of the employers and the owners of facilities where the Magnetek Products are being used,
- Regulations issued by the Occupational Health and Safety Administration (OSHA),
- Applicable local, state or federal codes, ordinances, standards and requirements, or
- Safety standards and practices for the overhead material handling industry.

This manual does not include or address the specific instructions and safety warnings of these manufacturers or any of the other requirements listed above. It is the responsibility of the owners, users and operators of the Magnetek Products to know, understand and follow all of these requirements. It is the responsibility of the owner of the Magnetek Products to make its employees aware of all of the above listed requirements and to make certain that all operators are properly trained. **No one should use Magnetek Products prior to becoming familiar with and being trained in these requirements.**

### WARRANTY INFORMATION

FOR INFORMATION ON MAGNETEK'S PRODUCT WARRANTIES BY PRODUCT TYPE, PLEASE VISIT [WWW.MAGNETEKMH.COM](http://WWW.MAGNETEKMH.COM).

## WARNINGS and CAUTIONS

Throughout this document WARNING and CAUTION statements have been deliberately placed to highlight items critical to the protection of personnel and equipment.

**WARNING** – A warning highlights an essential operating or maintenance procedure, practice, etc. which if not strictly observed, could result in injury or death of personnel, or long term physical hazards. Warnings are highlighted as shown below:



**CAUTION** – A caution highlights an essential operating or maintenance procedure, practice, etc. which if not strictly observed, could result in damage to, or destruction of equipment, or loss of functional effectiveness. Cautions are highlighted as shown below:



**WARNINGS and CAUTIONS SHOULD NEVER BE DISREGARDED.**

The safety rules in this section are not intended to replace any rules or regulations of any applicable local, state, or federal governing organizations. Always follow your local lockout and tagout procedure when maintaining any radio equipment. The following information is intended to be used in conjunction with other rules or regulations already in existence. It is important to read all of the safety information contained in this section before installing or operating the Radio Control System.

## 1.1: CRITICAL INSTALLATION CONSIDERATIONS



### WARNING

PRIOR TO INSTALLATION AND OPERATION OF THIS EQUIPMENT, READ AND DEVELOP AN UNDERSTANDING OF THE CONTENTS OF THIS MANUAL AND THE OPERATION MANUAL OF THE EQUIPMENT OR DEVICE TO WHICH THIS EQUIPMENT WILL BE INTERFACED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

ALL EQUIPMENT MUST HAVE A MAINLINE CONTACTOR INSTALLED AND ALL TRACKED CRANES, HOISTS, LIFTING DEVICES AND SIMILAR EQUIPMENT MUST HAVE A BRAKE INSTALLED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

AN AUDIBLE AND/OR VISUAL WARNING MEANS MUST BE PROVIDED ON ALL REMOTE CONTROLLED EQUIPMENT AS REQUIRED BY CODE, REGULATION, OR INDUSTRY STANDARD. THESE AUDIBLE AND/OR VISUAL WARNING DEVICES MUST MEET ALL GOVERNMENTAL REQUIREMENTS. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

FOLLOW YOUR LOCAL LOCKOUT TAGOUT PROCEDURE BEFORE MAINTAINING ANY REMOTE CONTROLLED EQUIPMENT. ALWAYS REMOVE ALL ELECTRICAL POWER FROM THE CRANE, HOIST, LIFTING DEVICE OR SIMILAR EQUIPMENT BEFORE ATTEMPTING ANY INSTALLATION PROCEDURES. DE-ENERGIZE AND TAGOUT ALL SOURCES OF ELECTRICAL POWER BEFORE TOUCH-TESTING ANY EQUIPMENT. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

THE DIRECT OUTPUTS OF THIS PRODUCT ARE NOT DESIGNED TO INTERFACE DIRECTLY TO TWO STATE SAFETY CRITICAL MAINTAINED FUNCTIONS, I.E., MAGNETS, VACUUM LIFTS, PUMPS, EMERGENCY EQUIPMENT, ETC. A MECHANICALLY LOCKING INTERMEDIATE RELAY SYSTEM WITH SEPARATE POWER CONSIDERATIONS MUST BE PROVIDED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH OR DAMAGE TO EQUIPMENT.

## 1.2: GENERAL

Radio controlled material handling equipment operates in several directions. Cranes, hoists, lifting devices and other material handling equipment can be large, and operate at high speeds. Quite frequently, the equipment is operated in areas where people are working in close proximity to the material handling equipment. **The operator must exercise extreme caution at all times.** Workers must constantly be alert to avoid accidents. The following recommendations have been included to indicate how careful and thoughtful actions may prevent injuries, damage to equipment, or even save a life.

## 1.3: PERSONS AUTHORIZED TO OPERATE RADIO CONTROLLED CRANES

Only properly trained persons designated by management should be permitted to operate radio controlled equipment.

Radio controlled cranes, hoists, lifting devices and other material handling equipment should not be operated by any person who cannot read or understand signs, notices and operating instructions that pertain to the equipment.

Radio controlled equipment should not be operated by any person with insufficient eyesight or hearing or by any person who may be suffering from a disorder or illness, is taking any medication that may cause loss of equipment control, or is under the influence of alcohol or drugs.

#### **1.4: SAFETY INFORMATION AND RECOMMENDED TRAINING FOR RADIO CONTROLLED EQUIPMENT OPERATORS**

Anyone being trained to operate radio controlled equipment should possess as a minimum the following knowledge and skills before using the radio controlled equipment.

The operator should:

- have knowledge of hazards pertaining to equipment operation
- have knowledge of safety rules for radio controlled equipment
- have the ability to judge distance of moving objects
- know how to properly test prior to operation
- be trained in the safe operation of the radio transmitter as it pertains to the crane, hoist, lifting device or other material handling equipment being operated
- have knowledge of the use of equipment warning lights and alarms
- have knowledge of the proper storage space for a radio control transmitter when not in use
- be trained in transferring a radio control transmitter to another person
- be trained how and when to report unsafe or unusual operating conditions
- test the transmitter emergency stop and all warning devices prior to operation; testing should be done on each shift, without a load
- be thoroughly trained and knowledgeable in proper and safe operation of the crane, hoist, lifting device, or other material handling equipment that utilizes the radio control
- know how to keep the operator and other people clear of lifted loads and to avoid “pinch” points
- continuously watch and monitor status of lifted loads
- know and follow cable and hook inspection procedures
- know and follow the local lockout and tagout procedures when servicing radio controlled equipment
- know and follow all applicable operating and maintenance manuals, safety procedures, regulatory requirements, and industry standards and codes

The operator shall not:

- lift or move more than the rated load
- operate the material handling equipment if the direction of travel or function engaged does not agree with what is indicated on the controller
- use the crane, hoist or lifting device to lift, support or transport people
- lift or carry any loads over people
- operate the crane, hoist or lifting device unless all persons, including the operator, are and remain clear of the supported load and any potential pinch points
- operate a crane, hoist or lifting device when the device is not centered over the load

- operate a crane, hoist or lifting device if the chain or wire rope is not seated properly in the sprockets, drum or sheave
- operate any damaged or malfunctioning crane, hoist, lifting device or other material handling equipment
- change any settings or controls without authorization and proper training
- remove or obscure any warning or safety labels or tags
- leave any load unattended while lifted
- leave power on the radio controlled equipment when the equipment is not in operation
- operate any material handling equipment using a damaged controller because the unit may be unsafe
- operate manual motions with other than manual power
- operate radio controlled equipment when low battery indicator is on



## **WARNING**

THE OPERATOR SHOULD NOT ATTEMPT TO REPAIR ANY RADIO CONTROLLER. IF ANY PRODUCT PERFORMANCE OR SAFETY CONCERNS ARE OBSERVED, THE EQUIPMENT SHOULD IMMEDIATELY BE TAKEN OUT OF SERVICE AND BE REPORTED TO THE SUPERVISOR. DAMAGED AND INOPERABLE RADIO CONTROLLER EQUIPMENT SHOULD BE RETURNED TO MAGNETEK FOR EVALUATION AND REPAIR. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

### **1.5: TRANSMITTER UNIT**

Transmitter switches should never be mechanically blocked ON or OFF. When not in use, the operator should turn the transmitter OFF. A secure storage space should be provided for the transmitter unit, and the transmitter unit should always be placed there when not in use. This precaution will help prevent unauthorized people from operating the material handling equipment.

Spare transmitters should be stored in a secure storage space and only removed from the storage space after the current transmitter in use has been turned OFF, taken out of the service area and secured.

### **1.6: PRE-OPERATION TEST**

At the start of each work shift, or when a new operator takes control of the crane, operators should do, as a minimum, the following steps before making lifts with any crane or hoist:

Test all warning devices.

**Test all direction and speed controls.**

Test the transmitter emergency stop.

## 1.7: BATTERIES



### **WARNING**

KNOW AND FOLLOW PROPER BATTERY HANDLING, CHARGING AND DISPOSAL PROCEDURES. IMPROPER BATTERY PROCEDURES CAN CAUSE BATTERIES TO EXPLODE OR DO OTHER SERIOUS DAMAGE. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

## 1.8: BATTERY HANDLING

Use only batteries approved by Magnetek for the specific product.

Do not dispose of a battery pack in fire; it may explode.

Do not attempt to open the battery pack.

Do not short circuit the battery.

For intrinsically safe environments only use specified Magnetek Telemotive intrinsically safe batteries.

Keep the battery pack environment cool during charging operation and storage (i.e., not in direct sunlight or close to a heating source).

## 1.9: BATTERY CHARGING

For those transmitters equipped with battery chargers, please familiarize all users with the instructions of the charger before attempting to use.

Do not attempt to charge non-rechargeable battery packs.

Avoid charging partially discharged rechargeable batteries to help prolong battery cycle life.

Avoid charging the battery pack for more than 24 hours at a time.

Do not charge batteries in a hazardous environment.

Do not short the charger.

Do not attempt to charge a damaged battery.

Use only Magnetek Telemotive approved chargers for the appropriate battery pack.

Do not attempt to use a battery that is leaking, swollen or corroded.

Charger units are not intended for outdoor use. Use only indoors.

## 1.10: BATTERY DISPOSAL

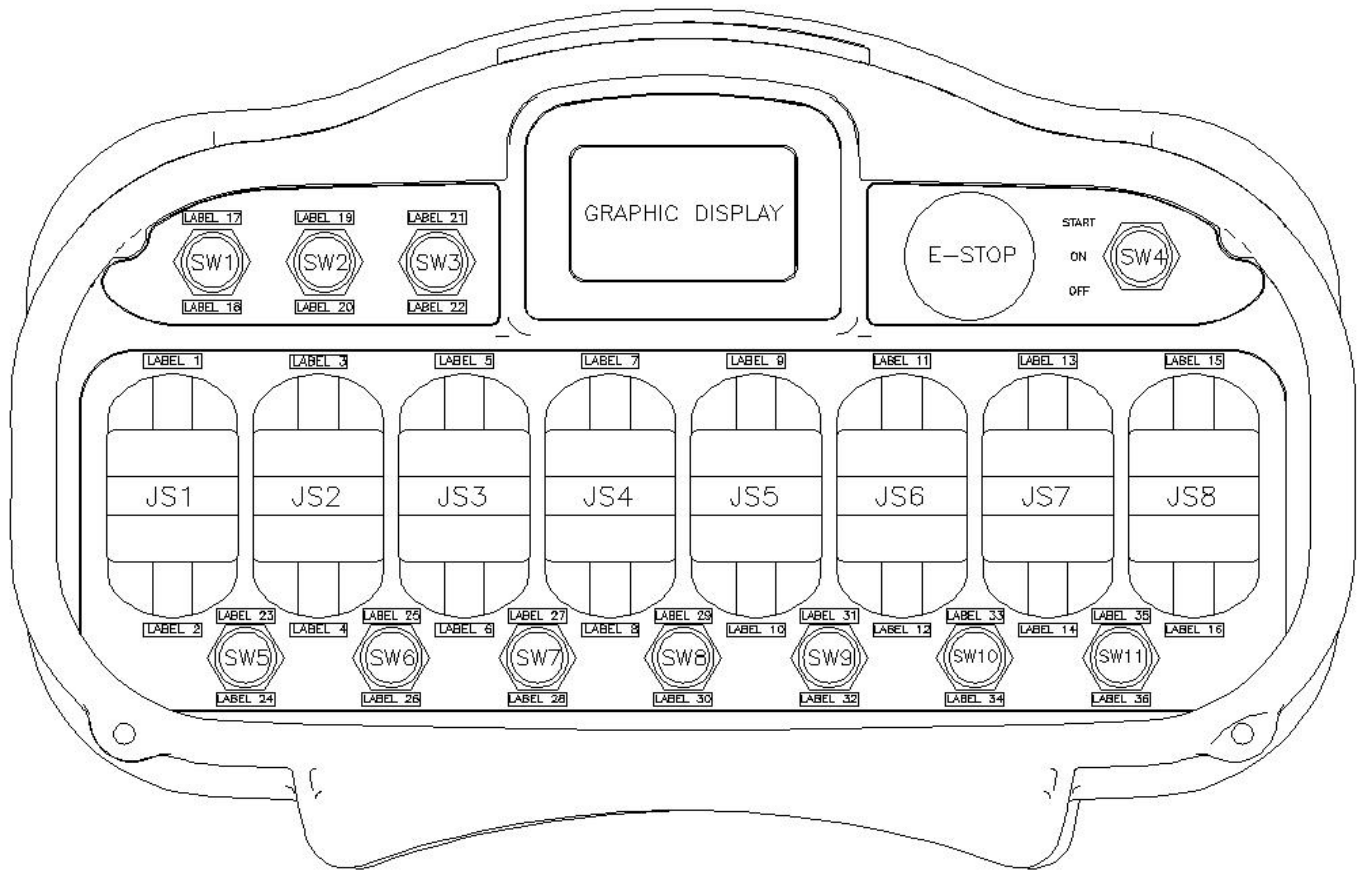
Before disposing of batteries consult local and governmental regulatory requirements for proper disposal procedure.

## 2.1: XLTX TRANSMITTER STANDARD CONFIGURATION AND OPERATION



# WARNING

BEFORE OPERATING THE TRANSMITTER FAMILIARIZE YOURSELF WITH ALL SAFETY INFORMATION IN THIS MANUAL, THE CORRESPONDING RECEIVER SYSTEM MANUAL, APPROPRIATE MANUAL SUPPLEMENTS AND ANY OTHER LOCAL, STATE, OR FEDERAL RULES OR REGULATIONS ALREADY IN EXISTENCE. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.



**Figure 1: Typical XLTX with maximum number of Paddles and Auxiliary Switches**

## **2.2: TURNING THE TRANSMITTER ON AND OFF**

The XLTX uses both a three position toggle switch labeled OFF-ON-START and an E-Stop switch to turn on the transmitter. First, the E-Stop switch must be in the raised position. Next, push the OFF-ON-START toggle switch to the START position and release it once the Magnetek logo appears on the LCD screen. Following the logo screen, the unit will perform a routine initialization. In initialization, the XLTX scans for any switches or motions that may be on upon power up. If any switches or motions are on, the failure will be displayed on the display, and then the XLTX will power itself down. After a successful initialization, the XLTX will enter the Normal Operation Mode and display the normal operating screen. See section 2.5.2 for more information on the Normal Operation Mode.

*NOTE: Holding the OFF-ON-START toggle in the START position for more than 5 seconds will put the device into Setup Mode. For normal use release the START toggle once the Magnetek logo appears. See section 2.5.1 for more information on the Setup Mode.*

The transmitter can be turned off by pressing the OFF-ON-START toggle switch down to the OFF position. Once turned off, the MLC relays in the receiver are immediately opened.

*NOTE: Depressing the E-Stop switch will also turn the transmitter off and open the MLC relays in the receiver. See section 2.4 for more information on the E-Stop switch.*

## **2.3: PULLING IN THE MLC RELAY**

Once the XLTX has been turned on (as described in 2.2) and in the Normal Operating Mode, the MLC relay can be pulled in by pushing the OFF-ON-START toggle switch to the START position.

Please note, you must release the OFF-ON-START switch to the ON position after the unit is powered up, then push to the START position a second time to pull in the MLC.

## **2.4: “E-STOP” (FOR EMERGENCY STOPPING ONLY)**

When depressed, the MLC relays in the receiver are immediately opened. Under normal operating conditions, the E-STOP must be in the raised position. The E-Stop is to be used for emergency stopping only, not for normal system shut down.

## **2.5: GRAPHIC USER INTERFACE**

The LCD screen located at the center of the device is an integral part of the XLTX transmitter. It is used to change configuration settings, confirm commands being operated, provide two-way feedback, and display transmitter diagnostic information such as battery life and signal strength.

### **2.5.1: SETUP MODE**

The Setup Mode can be used to edit configuration settings such as: Access Code, Channel Select, User Code, Transmitter Time Out, Backlight Time Out, A/B Select, C/D Select, E/F Select, Active E-Stop, Low Battery Alarm, Password Enable, Change Password, and more.

To navigate through Setup Mode, the Joystick/Paddle designated (MTN 1) and the OFF-ON-START switch are used. The Joystick/Paddle cycles through the menus and is also used to change parameters within the menus. Pushing the OFF-ON-START switch to the START position will toggle between the menu and its parameter(s). When adjusting larger values, the speed is dependent on how far the Joystick/Paddle is depressed.

*NOTE: No parameter changes will take effect until the user has selected ‘Save and Exit’ from the Setup Mode.*

## **ENTERING SETUP MODE**

To enter the Setup Mode, first make sure the unit is OFF and the E-Stop is raised. Next, push the OFF-ON-START toggle switch to the START position and hold it in the START position for more than 5 seconds until the setup screen appears. The user will see a prompt for a four digit password. Use the Joystick/Paddle to increment/decrement the value and toggle to the START position when finished. If the password is entered correctly, the device will enter Setup Mode. If it is entered incorrectly, the device will power down.

## **ACCESS CODE**

The Access Code determines which receiver will be controlled by the transmitter. If the Access Codes on the receiver and transmitter do not match, no communication will occur. The Access Code is a 16-bit binary value with a decimal equivalent of 0-65,536. It will be displayed as binary or decimal depending on the application. The Access Code in the XLTX transmitter must match the receiver Access Code or DIP switches.

## **CHANNEL SELECT**

The Channel Select determines the frequency on which the XLTX is operating. The user can select channels 1-32 which correspond to the frequencies in tables 1.A and 1.B.

## **USER CODE**

The User Code is a unique identifier that allows the user to select multiple modes when using the same channel. The receiver can be tuned to only 'hear' messages sent from a transmitter with the same user code.

## **TRANSMITTER TIMEOUT**

This section controls the amount of time that the transmitter can be inactive before it automatically shuts off. Time-Out can be set from 1 to 60 minutes. Setting Time-Out to 0 disables Transmitter Timeout. When the unit times out, the transmitter will turn off.



## **BACKLIGHT TIMEOUT**

Backlight Timeout controls the amount of time that the backlight will stay on after a command is pressed before it automatically shuts off. Backlight Time-Out can be set from 1 to 30 seconds. Setting Time-Out to 0 disables the backlight. Leaving the backlight on longer will cause the battery to drain faster.

## **A/B/BOTH SETTING**

This menu allows the user to enable or disable BOTH when selecting Trolley/Hoist A or B. A+B allows the user to run BOTH Trolley/Hoist. A, B only allows the user to select A or B and never BOTH.

## **ACTIVE E-STOP**

When Active E-stop is enabled the receiver will monitor the e-stop messages coming from the transmitter and will turn off the e-stop relay should the transmitter go out of range.

## **LOW BATTERY ALARM**

When Low Battery Alarm is enabled, a low battery condition will cause the low battery relay in the receiver to close, sounding the horn periodically.

## **PASSWORD ENABLE**

This menu enables the use of a password to enter the Setup Mode. When it is disabled the user will go directly into Setup Mode without being prompted to enter a password. Magnetek strongly recommends enabling the Setup Mode password to prevent unauthorized or accidental changes to parameters. Please note that the unit is shipped with this feature enabled containing the default password.

## **CHANGE PASSWORD**

This allows the user to change the password needed to enter the Setup Mode.

## **EXIT WITHOUT SAVE**

If the user does not wish to save any of the configuration changes made there is an Exit Without Save option. None of the changes will be saved and the device will then start up with the old configuration settings.

## **EXIT WITH SAVE**

This saves all changes and exits the Setup Mode. Upon exit, the device will start up with the new configuration settings.

## 2.5.2: NORMAL OPERATING MODE

In the Normal Operating Mode, the XLTX displays real time information relating to the operation of the transmitter. This may include Command Confirmation, Battery Life, Signal Strength, Two-Way Feedback, and more.



Figure 2: Normal Operating Screen

### WATCH DOG INDICATOR (SPINNING ARROW)

The spinning arrow represents the watch dog timer within the CPU of the unit. The arrow should be continuously spinning at all times.

### COMMAND CONFIRMATION

Each time the user operates a control on the transmitter, a message will be displayed on the screen confirming what is being operated. For example, if the second paddle is moved to its 4<sup>th</sup> position in the UP direction the display will show 'MTN2 D1 SP=4'. This translates to 'Motion 2, Direction 1, Speed 4'.

### BATTERY LIFE INDICATOR

Remaining battery life is displayed in the bottom left hand corner of the screen. Battery Life is displayed in 5% increments.

### SIGNAL STRENGTH INDICATOR

The Signal Strength Indicator is only available in systems equipped for Two-Way feedback. For such systems, Signal Strength is displayed at the bottom right hand corner of the screen. Signal Strength is displayed in 5% increments.

## TWO-WAY FEEDBACK SYSTEM

This allows the user to view various parameters that may be important to the operation of the crane. Parameters such as the amount of weight on a hoist, the torque or speed of a drive, temperature, current, or any other useful values can be sent from the receiver and displayed on the transmitter.

## 2.6: JOYSTICKS AND PADDLES/LEVERS

To activate motor functions, press and hold the Joystick or Paddle/Lever that corresponds to the desired motion. To activate higher speed functions, for those models so equipped, press the Joystick or Paddle/Lever further.

## 2.7: ROTARY SELECTOR SWITCH

The rotary selector switch can be used to select various modes of operation. For example, the rotary selector switch may be used to select between the main and auxiliary hoist/trolley. Position "A" activates the hoist/trolley lever to control only the main hoist/trolley. Position "B" activates the hoist/trolley lever to control only the auxiliary hoist/trolley. Position "BOTH" activates the hoist/trolley lever to control both the main and auxiliary hoist/trolley at the same time, in tandem.

## 2.8: AUXILIARY SWITCHES

These switches activate special function relays that control items such as grab attachments, magnets, lights, or more depending on what the receiver is controlling. The switches can be momentary or latched.

## 2.9: BATTERIES

The XLTX comes standard with a battery pack that holds three disposable AA alkaline batteries. To change the battery, separate the inner tray from the outer housing and replace all the batteries with new ones. When reinserting the tray into the outer housing, make sure the grooves in the inner tray align with the slides in the outer housing. When placing the battery pack into the XLTX, make sure that the sticker is facing out.

## 2.10: FCC STATEMENTS

### Compliance Statement (Part 15.19)

This device complies with Part 15 of FCC rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

### Warning (Part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance should void the user's authority to operate the equipment.

This portable transmitter with its antenna complies with FCC's RF exposure limits for general population/uncontrolled exposure.

**2.11: CHANNEL AND FREQUENCY DESIGNATIONS BY COUNT**

**400 MHz Part 15: TMS**

| <b>Indicator<br/>Count</b> | <b>Channel<br/>Designator</b> | <b>Actual<br/>Frequency</b> |
|----------------------------|-------------------------------|-----------------------------|
| 01)                        | AK01                          | 439.8 MHz                   |
| 02)                        | AK02                          | 439.6 MHz                   |
| 03)                        | AK03                          | 439.4 MHz                   |
| 04)                        | AK04                          | 439.2 MHz                   |
| 05)                        | AK05                          | 439.0 MHz                   |
| 06)                        | AK06                          | 438.8 MHz                   |
| 07)                        | AK07                          | 438.6 MHz                   |
| 08)                        | AK08                          | 438.4 MHz                   |
| 09)                        | AK09                          | 438.2 MHz                   |
| 10)                        | AK10                          | 438.0 MHz                   |
| 11)                        | AK11                          | 437.8 MHz                   |
| 12)                        | AK12                          | 437.6 MHz                   |
| 13)                        | AK13                          | 437.4 MHz                   |
| 14)                        | AK14                          | 437.2 MHz                   |
| 15)                        | AK15                          | 437.0 MHz                   |
| 16)                        | AK16                          | 436.8 MHz                   |
| 17)                        | AK17                          | 436.6 MHz                   |
| 18)                        | AK18                          | 436.4 MHz                   |
| 19)                        | AK19                          | 436.2 MHz                   |
| 20)                        | AK20                          | 436.0 MHz                   |
| 21)                        | AKA00                         | 433.125 MHz                 |
| 22)                        | AKA01                         | 433.325 MHz                 |
| 23)                        | AKA02                         | 433.525 MHz                 |
| 24)                        | AKA03                         | 433.725 MHz                 |
| 25)                        | AKA04                         | 433.925 MHz                 |
| 26)                        | AKA05                         | 434.125 MHz                 |
| 27)                        | AKA06                         | 434.325 MHz                 |
| 28)                        | AKA07                         | 434.525 MHz                 |
| 29)                        | AKA08                         | 434.725 MHz                 |
| 30)                        | AK38                          | 432.4 MHz                   |
| 31)                        | AK50                          | 430.0 MHz                   |

**Table 1.A**

**900 MHz Part 15: TMS**

| <b>Indicator<br/>Count</b> | <b>Channel<br/>Designator</b> | <b>Actual<br/>Frequency</b> |
|----------------------------|-------------------------------|-----------------------------|
| 01)                        | 1                             | 903.30 MHz                  |
| 02)                        | 2                             | 906.30 MHz                  |
| 03)                        | 3                             | 907.80 MHz                  |
| 04)                        | 4                             | 909.30 MHz                  |
| 05)                        | 5                             | 912.30 MHz                  |
| 06)                        | 6                             | 915.30 MHz                  |
| 07)                        | 7                             | 919.80 MHz                  |
| 08)                        | 8                             | 921.30 MHz                  |
| 09)                        | A                             | 902.30 MHz                  |
| 10)                        | B                             | 904.10 MHz                  |
| 11)                        | C                             | 904.30 MHz                  |
| 12)                        | D                             | 905.10 MHz                  |
| 13)                        | E                             | 905.50 MHz                  |
| 14)                        | F                             | 905.70 MHz                  |
| 15)                        | G                             | 906.60 MHz                  |
| 16)                        | H                             | 908.70 MHz                  |
| 17)                        | I                             | 908.90 MHz                  |
| 18)                        | J                             | 909.10 MHz                  |
| 19)                        | K                             | 910.10 MHz                  |
| 20)                        | L                             | 910.70 MHz                  |
| 21)                        | M                             | 911.00 MHz                  |
| 22)                        | N                             | 911.20 MHz                  |
| 23)                        | O                             | 912.00 MHz                  |
| 24)                        | P                             | 914.20 MHz                  |
| 25)                        | Q                             | 914.40 MHz                  |
| 26)                        | R                             | 914.60 MHz                  |
| 27)                        | S                             | 914.80 MHz                  |
| 28)                        | T                             | 915.80 MHz                  |
| 29)                        | U                             | 917.40 MHz                  |
| 30)                        | V                             | 923.20 MHz                  |
| 31)                        | W                             | 927.00 MHz                  |
| 32)                        | X                             | 927.30 MHz                  |

**Table 1.B**

**OTHER FREQUENCIES AND CHANNELS THAT MAY APPLY TO YOUR UNIT**

**900 MHz: FHSS**

Channel sets are designated between 1-32. The frequency range is between 902-928 MHz. The frequency hopping protocol does not use one particular frequency to transmit a message. Messages are transmitted over multiple frequencies in a predefined sequence or channel set. In doing so, this protocol is able to compensate for interference that may be present on a single frequency by sending the message across multiple frequencies.

## **2.4 GHz: FHSS**

Similar to 900 MHz, channels are designated between 1-32. The frequency range is between 2402-2478 MHz.

## 2.12 TROUBLE SHOOTING

| Problems  | Possible Reasons  | Suggestions  |
|---|---|--|
| <b>Transmitter will not turn on</b>                   | Batteries are dead or installed backwards, battery holder is damaged.     | Replace the batteries and confirm they are installed according to the polarity marking in the battery pack. Inspect all battery pack contacts for damage. When installing the battery pack into the XLTX, confirm it is installed with the label facing out. |
|   | Transmitter is failing switch scan  | Be sure all switches and motions are in the off position on startup. See section 2.2 for more info.  |
|   | Transmitter E-Stop Switch is down or pressed                              | Be sure the E-Stop switch is pulled up.  |
| <b>Transmitter will not respond with the receiver</b> | Incorrect system RF channel   | Make sure the transmitter and receiver unit are both set to the same RF channel. See section 2.5.1.  |
|   | Incorrect system access code  | Make sure the transmitter and receiver both have the same access code. See section 2.5.1.  |
|   | System out of range   | Make sure that the startup procedure is initiated within 300 feet from the receiver location. If equipped with the Signal Strength Indicator, make sure the level is greater than 0%.  |
|   | The antenna on the receiver is missing, damaged, or improperly installed. | Inspect the antenna on the receiver for damage and try to locate the antenna in a location that is visible when operating the equipment at all times.  |

### **2.13: ASSEMBLY AND REPLACEMENT PARTS**

If your transmitter ever needs repair, we always recommend that you have Magnetek perform the repair. If you need to refer to a parts list, refer to your transmitter's drawing that was included in the shipment of your transmitter. Please contact Magnetek's service department at 1.800.MAG.SERV for information regarding parts and service.