

# OPERATOR'S MANUAL

INSTALLATION • OPERATION • MAINTENANCE  
SAFETY PRECAUTIONS • REPAIR PARTS

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## Model: **U-SERIES**

U-1350 = 1,350 Lb. MAXIMUM LIFTING CAPACITY

U-2000 = 2,000 Lb. MAXIMUM LIFTING CAPACITY

U-2500 = 2,500 Lb. MAXIMUM LIFTING CAPACITY

SERIAL NO. \_\_\_\_\_

### **⚠ CAUTION**

THIS EQUIPMENT CAN BE POTENTIALLY DANGEROUS. THIS MANUAL MUST BE STORED WITH THE EQUIPMENT. ALL INFORMATION AND INSTRUCTIONS CONTAINED IN THIS MANUAL MUST BE READ IN FULL BY ALL OPERATORS OF THIS SYSTEM, AS WELL AS PERSONNEL SUPERVISING THE OPERATION OF THIS EQUIPMENT. FAILURE TO DO SO MAY RESULT IN UNSAFE CONDITIONS THAT COULD RESULT IN INJURY OR DEATH. IF ANY INSTRUCTIONS ARE UNCLEAR, CONTACT THE MANUFACTURER FOR CLARIFICATION PRIOR TO USE OF THE CRANE.

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## **READ THIS FIRST**

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### **THIS MANUAL CONTAINS VERY IMPORTANT INFORMATION**

**ABOUT THE INSTALLATION AND OPERATION OF YOUR WESTERN MULE CRANE. FOR YOUR OWN SAFETY AND THAT OF FELLOW WORKERS, READ THIS MANUAL COMPLETELY PRIOR TO ATTEMPTING INSTALLATION OR OPERATION OF THE WESTERN MULE CRANE.**

The information in this manual is intended to help insure that your Western Mule Crane is installed properly and operated safely.

Although every effort has been made to make this manual complete and understandable, it is not a definitive guide to every possible situation or circumstance.

The safe operation of this product is directly dependent on the operator's skill, knowledge and judgment.

To avoid hazardous situations, every operator must be knowledgeable with appropriate safety guidelines, codes and regulations that are applicable. Remember that a uniformed or careless operator can make the operation of any equipment dangerous.

Ultimately the owner/operator must make the final decision as to how this product will be used and whether that intended use is safe. Keep in mind that every piece of equipment has its limitations.

After reading this manual in its entirety, should you have any questions regarding the installation or the safe use/operation of a Western Mule Crane, contact your Dealer or Western Mule Cranes Customer Service Department for assistance.

Replacement manuals are available from your Dealer or:

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## A WORD TO THE OWNER/EMPLOYER, OPERATOR OR SERVICE PERSONNEL

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This manual was written with the safety of the operator and others who work around this equipment as our goal.

**IT IS THE OWNER/EMPLOYERS' RESPONSIBILITY** to know the specific requirements, governmental regulations, precautions and work hazards which may exist. You should make these known to all personnel who are working with the equipment or in the work area so all necessary precautions and required safety procedures are followed by all. Failure to heed these instructions can result in serious personal injury and/or death.

**IT IS THE OWNER/EMPLOYERS' RESPONSIBILITY** to instruct and insure that all operators understand the safe operation of the Western Mule Crane and to provide the operator with properly maintained equipment.

Anyone who will operate, service or work around this crane should first read and fully understand this manual. Death or serious personal injury can result from improper use or maintenance of this Western Mule Crane.

**IT IS YOUR RESPONSIBILITY** to operate and maintain your Western Mule Crane with skill, good judgment, and caution. Following recognized safety procedures will help prevent accidents. Modification to any part of the Western Mule Crane can create a safety hazard and therefore shall not be made without the manufacturer's prior approval. Use only factory-approved parts to repair or maintain the Western Mule Crane.

Keep children, visitors, and unauthorized personnel away from the work area.

**Be capable, careful, and concerned!**

**Make safety your everyday business!**

## INTRODUCTION

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Congratulations on selecting a Western Mule Crane. WESTERN MULE CRANES have been engineered to provide safe, trouble-free, dependable service for many years when these products are properly used and maintained.

To assist you in obtaining the best service from your crane and to avoid untimely failure of the unit and/or the vehicle on which it is mounted, the following operating and service instructions are herein published. It is specifically recommended that all operating and service personnel consider this manual as mandatory material for reading and studying before operating or servicing of Western Mule Products. It is highly recommended that the crane owner, equipment managers, and supervisors also read this manual.

All Western Mule Cranes have been designed with safety in mind and are manufactured and tested according to the standards of ANSI B30.5 for mobile cranes.

Remember that the crane adds weight to the vehicle and may change the driving and riding characteristics of the vehicle on which it is mounted. The payload of the vehicle is also reduced by the amount that the crane weighs (CAUTION! be sure with the additional weight of the crane, you do not exceed the maximum gross vehicle weight rating for the vehicle) and as the vehicle is loaded, care should be exercised not to overload the vehicle. Exercising care in distributing the payload on the vehicle will greatly improve the driving and riding characteristics of the vehicle.

In the event that the manufacturer receives a warranty claim, it is our policy to respond to the claim as promptly as possible. If material or workmanship is determined to be the cause, immediate corrective action will be taken. It is therefore understandable that Western Mule Cranes will not assume responsibility or liability when one of our products has obviously been abused, misused, overloaded, or otherwise damaged by inexperienced persons trying to operate the equipment without ever reading this manual. The Western Mule is designed and built to be safe and efficient. Western Mule Cranes will not assume responsibility or liability for any unit which has been modified, changed, or has unauthorized, unapproved components installed.

Western Mule Cranes maintains a strong Distributor network and a knowledgeable Customer Service Department.

Continued next page

## INTRODUCTION

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In most cases, equipment related problems could be solved through a telephone conversation with a service representative. If through no fault of the manufacturer, it becomes necessary to send an experienced factory technician on a field call. All charges incurred will be billed to the customer.

The Occupational Health and Safety Act of 1970 state that it is the employer's responsibility to provide a work place free of hazard. To accomplish this, all equipment should be installed, operated, and maintained in compliance with applicable trade, industrial, federal, state, and local regulations. It is the responsibility of the equipment owner to obtain copies of these regulations and, from these, to determine the suitability of the equipment to any particular use.

This owner's manual and all labels attached to the product are intended to serve as guidelines for hazard free installation, operation, and maintenance. They are not, however, intended to prepare the user for every possible situation.

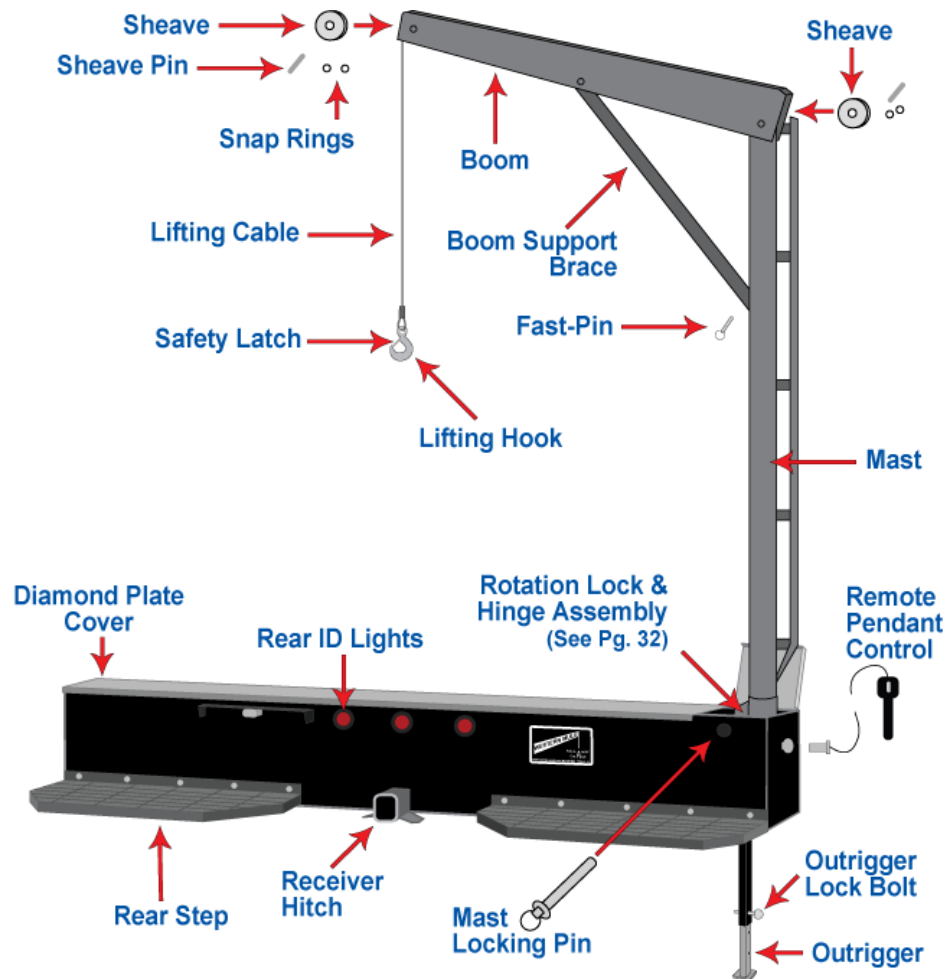
Western Mule Cranes should only be installed by those with sufficient skills to understand the installation and operation of this crane, along with the equipment required to install this crane. The installation instructions in this manual are intended to give typical installation instructions to the installer for both the operation and most common installations. These instructions cannot replace a qualified person, or clear thinking and the basic knowledge that must be possessed by the installer. We urge the installer (or anyone else) to contact Western Mule Cranes if they have any questions regarding the installation or operations, including the proper and appropriate use of this product.

It is the responsibility of the equipment owner to keep this owner's manual and all labels legible and available with the crane at all times. If they should become lost or illegible, immediately order replacements from the factory.

The material herein does not imply to cover all maintenance instructions, operating instructions, or variations to every possible situation. If additional information is required, please refer to Western Mule Cranes at the following telephone number (559) 266-6977. The information contained in this manual was in effect at the time of printing. Western Mule Cranes reserves the right to update this manual at any time without notice.

## ILLUSTRATION

Refer to this illustration until you become familiar with the operation of the crane



## GENERAL OPERATION

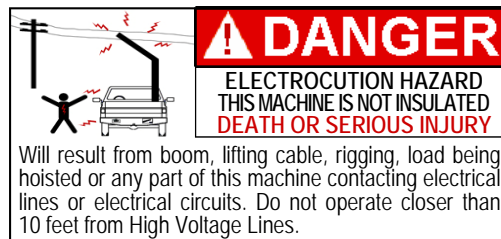
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### **⚠ CAUTION**

THE FOLLOWING CONTAINS SOME GENERAL PRECAUTIONS THAT MUST BE CAREFULLY FOLLOWED WHEN INSTALLING, OPERATING, OR MAINTAINING A WESTERN MULE CRANE.

This Crane **must be** operated by persons, both qualified and trained, in its safe use, only in accordance with the manufacturer's instructions and applicable governmental safety requirements.

**READ AND OBEY ALL** information contained in this operator's manual and on all placards and decals attached to the Western Mule Crane. A careless or untrained operator can make the use of any equipment dangerous and may cause property damage, serious personal injury, and/or death.



**KEEP ALL** bystanders clear of the operation area to prevent obstruction of the operation and/or to avoid serious personal injury and/or death.

**KEEP** hands away from sheaves, lifting cable, pinch points and, moving parts of the crane, which may cause serious personal injury and/or death.

**ALWAYS** be certain the rigging that you intend to use is capable of withstanding the load. Never wrap the lifting cable around load. This will cause damage to the lifting cable.

**DO NOT** divert your attention from the Western Mule Crane while an operation is being performed.

**CONSTANTLY** check for signs of damage or poor operation. Make sure that the load remains unobstructed and securely attached.

**AVOID** lifting loads over persons or the operator himself. To do so may cause serious personal injury and/or death.



## GENERAL OPERATION

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**NEVER** operate the crane in the stored position. Cable failure will result!

**SHOULD** avoid continues use of the crane to prevent overheating of the electric motor.

**DO NOT** operate the Western Mule Crane if signs of damage or poor operation are noticed. To do so may result in property damage, serious personal injury, and/or death. Place a “**DO NOT USE - CRANE OUT OF ORDER**” sign on the Western Mule Crane and in the vehicle. Do not use until the Western Mule Crane is repaired by a qualified maintenance person who has seen to the complete correction of the problem and inspection of the crane removes the signs.

**KNOW** the weight of the load you are lifting to avoid overloading the Western Mule Crane.

**DO NOT** overload the Western Mule Crane or exceed the load rating of the weakest component in the system (I.E. the lifting cable, sling, lifting attachment, etc.). Overloading may result in damage and/or failure of the equipment, which may lead to serious personal injury and/or death.

**DO NOT** use two cranes to move a load that is greater than the load rating of a single crane. A shift in the load may place all the weight on one crane, which may overload the equipment and/or cause it to fail.

**MAKE SURE** That a minimum of five (5) wraps of lifting cable are always maintained on the hoist drum at all times.

**ALWAYS** keep your hands away from the lifting cable while tensioned and from moving parts while in use.

**NEVER** handle the lifting cable/rigging while someone else is at the controls.

**DO NOT** shock load/bounce or swing the load. Such violent motions may momentarily exceed the cranes maximum load rating. Overloading the Western Mule Crane may cause the crane to fail or cause serious personal injury and/or death.

**DO NOT SIDE LOAD THE WESTERN MULE CRANE.** The Crane shall not be used for dragging or pulling loads sideways across a surface. To do so may strain the equipment resulting in its damage and/or failure.

**DO NOT** alter or modify the Western Mule Crane or any of its components. Do not operate the crane using any form of power other than that which it is specifically intended to use. To do so may reduce the load rating of the crane and/or cause the crane to fail.

## SETTING UP VEHICLE AT THE JOB SITE

### ⚠ CAUTION

ONE OF THE MOST IMPORTANT PREREQUISITES TO PROPER SET UP ON A JOB SITE IS TO THOROUGHLY PLAN THE LIFT BEFORE POSITIONING THE VEHICLE.

1. Vehicle should be positioned in an area free from obstructions to allow performance of the entire task without repositioning the vehicle.
2. ALWAYS operate the crane in a level area.
3. Remove the vehicle's keys from the ignition. All keys shall be in the possession of the worker designated to be responsible for the operation of the Western Mule Crane.
4. Wheel chocks (blocks) shall be installed before using the Western Mule Crane.
5. **ALWAYS** use the outrigger (support leg) from the bumper to the ground during crane operation. Insure that it is firmly positioned on a solid footing using a pad under the outrigger if necessary due to soft/uneven ground. (See figure to the right)



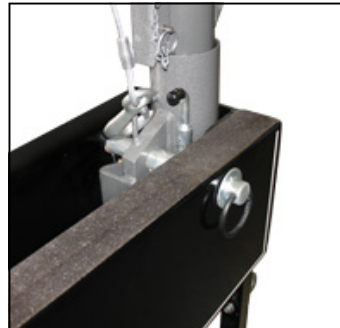
6. Pre-position the Mast Locking Pin partially in the hole before raising the Mast. (See figure to the left)

## SETTING UP VEHICLE AT THE JOB SITE

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7. Manually lift the Mast from the bumper by hand, then tilt the mast into place.
8. **NEVER** attempt to tilt the mast into the upright position by powering it up using the cranes hoist.

9. Insert Mast Locking Pin fully. **DO NOT** leave the mast in the vertical (upright) position without the mast locking pin inserted fully. (See figure to the right)



10. Raise Boom into position and secure the support arm with the Fast Pin.

11. Insert the plug of the remote pendant control into receptacle at end of bumper. (See figure to the right)

**NOTE:** This is a polarized connection, so the ridge on the connector must line up with the groove in the receptacle.



12. **INSPECT** the Western Mule Crane before operation. Any defects should be corrected immediately.

**NOTE: ALWAYS** disengage the Rotation Lock (if so equipped) before starting the lift.

## MAKING THE LIFT

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This section is designed to provide general instruction on the use of the crane.

Practice with light loads to familiarize yourself with operation of the crane.

1. **ALWAYS** disengage the Rotation lock prior to starting the lift. (Refer to page 17—Disengaging the Rotation Lock)
2. **ALWAYS** provide firm footing for the outrigger. Lower the Outrigger to the ground. If on a soft footing, place pad under foot. When loading, leave Outrigger 1 or 2 inches above the ground.
3. Power the lift cable out to the desired length while maintaining tension on the cable.
4. Attach the cable hook directly to load, sling or other attachment device. The safety latch of the hook **MUST** be closed before lifting a load.
5. **NEVER** wrap the cable around the load or hook it back into the cable.
6. Start the lift always maintaining tension on the cable.
7. **NEVER** raise load higher than required.
8. Keep the load close to ground level while swinging the load. **NEVER** position yourself between the load and the vehicle.
9. When loading is complete, follow the following procedure described on page 13 “Leaving the Job Site” on how to store the crane in the bumper.



## LEAVING THE JOB SITE

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1. Return the crane to the stored position. **NEVER** move the vehicle with the crane in the upright position.
2. Remove Fast-Pin from the support arm and lower boom. Re-insert Fast-Pin to lock boom into place.
3. Reattach cable, leaving some slack in the cable when stored. (See photo below)
4. Remove Mast Locking Pin with one hand while maintaining contact with the mast with the other hand. Then lower Mast and Boom into bumper. **NO NOT DROP!**
5. Return Outrigger (Outriggers) to the stored position.
6. Remove the Pendant Control and store in a secure place along with the Mast Locking Pin when done.
7. Report any unusual occurrence during crane operation that may require maintenance or repair.



**ALWAYS STORE CRANE WITH THE LIFTING CABLE LOOSE. FAILURE WILL CAUSE DAMAGE TO THE LIFTING CABLE AND PREMATURE WEAR UPON COMPONENTS!**

### **⚠CAUTION**

**NEVER MOVE THE VEHICLE WITH THE BOOM IN THE RAISED POSITION OR WITH A LOAD SUSPENDED FROM IT.**

## FURTHER SUGGESTIONS

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This section is designed to present some of the general precautions that must be taken by the operator when making a lift with the Western Mule Crane.

**WEAR** a protective hard hat while raising loads.

**NEVER** stand beneath a load.

**DO NOT** exceed load limits of the Western Mule Crane as shown on the warning decals.

**NOTE:** Crane ratings are based upon crane lifting capacity. Not the crane's stability.

**ALWAYS** use the outrigger (support leg) from the bumper to the ground during crane operation. Insure that it is firmly positioned on a solid footing.

**ALWAYS** secure the support arm to the mast with the fast pin.

**KEEP** tension on the lifting cable at all times.

**NEVER** wrap lifting cable around load.

**DO NOT** stand between the load and the vehicle.

**NEVER** pull the lifting hook or hook eye fittings into the boom sheaves.

**ALWAYS** center the tip of the boom over the load to be lifted.

**NEVER** attempt to side load, drag or pull loads across a surface.

**NOTE:** To do so may strain the crane, resulting in damage and/or failure.

**ALWAYS** maintain a minimum of five (5) wraps of lifting cable on the hoist drum.

**KEEP** tension on the lifting cable at all times.

## FURTHER SUGGESTIONS

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**BE SURE** that the load is well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

**ALWAYS** allow the load to come to a full stop before reversing direction.

**NEVER** raise the load being lifted any higher than needed when moving the load.

**KEEP** work area clear. **DO NOT** allow unauthorized people in the work area while lifting a load.

**NEVER** place a chain link on the tip of the lifting hook or attempt to lift a load from the tip of the lifting hook.

**DO NOT** leave suspended load unattended.

**DO NOT** tow another vehicle with the crane.

**DO NOT** attempt any service or repair while the Western Mule Crane is operating.

**NEVER** use a sling or anything larger than the hook throat that could prevent the latch from closing when lifting a load.

## WINCHING

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### THE OPTIONAL WA-30 WINCHING BLOCK IS REQUIRED FOR WINCHING!

The crane must be in the raised position to be used for winching purposes.

Insert Winching Block into the receiver hitch and secure with the locking pin.

Remove the sheave pin from the winching block.  
(See picture to the right)



Power out the desired amount of cable maintaining tension on the cable at all times. Insert cable into the winching block and reinstall the sheave secured with the locking pin.

**KEEP** area clear. Do not allow people in area while winching.

**DO NOT** stand close to the cable while it is under tension.

**NEVER** attach the cable to itself or wrap around a load.

**ALWAYS** pull as straight from the vehicle as possible.

**DO NOT** use the winching feature to tow.



## (OPTION) WO-14 ROTATION LOCK

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The optional Rotation Lock feature is available on most models of the Western Mule Cranes. This feature offers an advantage in many lifting and lowering situations where it may be desirable to hold the boom in a fixed point of rotation.

### TO DISENGAGE THE ROTATION LOCK:

Push down on the Rotation Lock Lever and turn. Placing it in this position disengages the Rotation Lock.



### TO ENGAGE THE ROTATION LOCK:

Place the boom at the desired position of rotation, and turn the Rotation Lock Lever. The Lock will now engage to hold the boom at one of 12 points rotation. (It may be necessary to rotate the boom one way or the other slightly before it engages).

### *When using the Rotation Lock:*

**ALWAYS** start all lifts with the Rotation Lock Disengaged. (If the tip of the boom is not directly over the load, side loading will result in damage to the Rotation Lock)

**NEVER** attempt to drag a load or induce any side loading to the boom. Doing so may cause damage to the Rotation Lock and also overload the Western Mule Crane.

**NEVER** swing a load suspended from the lifting cable while the Rotation Lock is engaged or at any time while a load is suspended.

**NEVER** work on a load while it is suspended on the lifting cable.

**DO NOT** engage the Rotation Lock while the mast/boom are rotating. Always bring the rotation of the mast/boom to a halt and then engage the Rotation Lock.

## IMPORTANT INFORMATION ON TOWING

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**TOWING EQUIPMENT OWNERS:** Make sure all operators of your equipment read and understand this information before towing. Refer to owner's manuals for your tow vehicle, trailer, and other parts of your towing system. Learn the capabilities and limitations of each part. GROSS TRAILER WEIGHT and TONGUE WEIGHT are two of the most important items to consider. THESE WEIGHTS MUST NEVER EXCEED THE LOWEST RATING OF ANY PART OF YOUR TOWING SYSTEM.

### Towing Terms

**Gross Axle Weight Rating (GAWR)** is the weight each axle is capable of supporting. The load on each axle must not exceed its GAWR. The GAWR is displayed on the driver's door or door-lock pillar label.

**Gross Combination Weight Rating (GCWR)** is the maximum possible weight of the vehicle and trailer combination, including the weight of the driver, passengers, fuel, optional equipment and cargo.

**Gross Trailer Weight (GTW)** is the weight of a loaded trailer.

**Maximum Trailer Rating** is determined by subtracting vehicle weight from the GCWR. At the maximum trailer rating for a properly equipped vehicle, you should be able to accelerate and merge with traffic, climb typical interstate grades at highway speeds, have control on varying road surfaces and stop adequately within a reasonable distance.

**Gross Vehicle Weight Rating (GVWR)** is the maximum number of pounds a tow vehicle may weigh. Everything that contributes to the weight of the tow vehicle is featured in this rating, including the weight of the vehicle, driver and all passengers, fuel, payload, trailer tongue weight, hitch weight and all optional equipment. The GVWR is displayed on the driver's door or door-lock pillar label of your vehicle.

**Tongue (or Hitch) Weight** is the total number of pounds of trailer weight pressing down on the trailer hitch. Keep in mind that the way a trailer is loaded affects the overall tongue weight and will also affect the handling of the tow vehicle when pulling a trailer.

## IMPORTANT INFORMATION ON TOWING

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**Draw Bar (Ball Mount)** is placed inside the opening of the receiver hitch which is built into your Western Mule Crane. Make sure an appropriate hitch pin is properly securing the draw bar to the receiver hitch before you begin towing.

**Safety Chains** should be suitable for use between the tow vehicle and the trailer. If the hitch should break or become disengaged, these chains will provide an emergency connection between the vehicle and the trailer.

***DON'T OVERLOAD ANY PART  
OF YOUR TOWING SYSTEM.***

**Towing a trailer requires special driving skills.** When considering how large a trailer you can tow, keep in mind that each truck has a published Gross Combined Weight Rating (GCWR). This is the maximum weight of the tow vehicle and the loaded trailer, including cargo and passengers.

**DRIVING:** The additional weight of a trailer affects acceleration, braking and handling. Allow extra time for passing, stopping and lane changes. Severe bumps can damage your towing vehicle, hitch, and trailer. **DRIVE SLOWLY WHILE TOWING**, especially on rough roads. Inspect your towing system regularly. **STOP IMMEDIATELY** if any part of your towing system strikes the road, or if any abnormal handling or swaying is noticed. Correct any problems before resuming travel. **IF ANY SWAYING IS OBSERVED, ELIMINATE IT.** Swaying can lead to loss of control. **DO NOT RESUME DRIVING UNTIL CORRECTED!**

**WARNING: DO NOT MODIFY ANY PART OF THIS HITCHING SYSTEM. INSTALL ONLY ON VEHICLES IN GOOD CONDITION.**

Refer to owner's manuals of your tow vehicle, trailer, and other parts of your towing system for capabilities and limitations of each part.

## PREPARING FOR INSTALLATION

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### CAUTION

THE MANUFACTURER CANNOT FORESEE THE MANY VARYING TYPES OF PLATFORMS THAT INSTALLATIONS MAY BE PERFORMED ON. EACH INSTALLATION SHOULD BE EVALUATED BEFOREHAND TO ENSURE THAT THE STRUCTURAL INTEGRITY IS SUFFICIENT TO HANDLE THE EXTRA WEIGHT OF THE WESTERN MULE CRANE MOUNTED ON THE VEHICLE AND THE LOADS BEING LIFTED BY THE CRANE.

**BEFORE** installing the Western Mule Crane, consult applicable codes and regulations for specific instructions and rules regarding the installation of mobile cranes.

**DO NOT** install the Western Mule Crane in an area that contains corrosive chemicals, combustible materials, explosives or other elements which may cause property damage, serious personal injury and/or death.

**DO NOT** install the Western Mule Crane on a vehicle or platform that is not in good sound mechanical working condition.

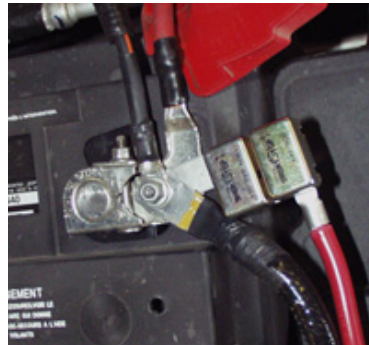
**ALWAYS CHECK** location of fuel tanks, fuel lines, brake lines, wiring, or other hazards, before drilling, cutting, welding to or on the vehicle.

**BEFORE** placing the Western Mule Crane into service, thoroughly inspect it.

## INSTALLATION

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1. Un-box the Western Mule Crane and check the packing slip to verify contents.
2. Remove existing bumper and bumper mounting brackets from the vehicle. Also remove the existing hitch if so equipped.
3. Bolt the supplied mounting brackets to the vehicles frame rails with the bolts provided. Each mounting bracket must be secured to each frame rail with a minimum of three (3)  $\frac{1}{2}$ " x 13 Grade 8 Fasteners. The brackets are marked with the truck type and either right or left side. **Hand tighten only.**
4. Using a floor jack or another crane or hoist, raise the Western Mule Crane up to the mounting brackets. Place the bolts provided through the holes in the crane and brackets. Each mounting bracket must be secured to each bumper mounting tab with a minimum of three (3)  $\frac{1}{2}$ " x 13 Grade 8 Fasteners. **Hand tighten only.**
5. Level the Western Mule Crane by measuring from the top of the bed/box to the top of the bumper, raising/lowering the bumper to level. The crane should be level both side to side, and front to rear. If the vehicle is unloaded, the bumper may be mounted tilted forward so that when the vehicle is loaded it will then be level.
6. Tighten all bolts, securing the crane to the vehicle in the level position. (*Refer to table, page 23 for torque specifications*)
7. The shortest of the two power leads is the GROUND (-). Attach this lead to the truck frame and attach securely using the supplied crimp type ring terminal.
8. Attach circuit breaker to the POSITIVE SIDE (+) of the battery or 12 VDC power source. (See Electrical Circuit Diagram page 24) The circuit breaker acts as a safety switch in case of a short circuit or overloading of the Western Mule Crane.



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## INSTALLATION

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9. Route power lead wire from the crane to the circuit breaker at the battery. Secure to frame using wire ties. Avoid routing next to fuel lines, brake lines, fuel tank, exhaust system, or any moving parts.
10. Attach the power lead to the circuit breaker. If the lead is too long, it should be cut to length. Crimp the supplied connector to the shortened power lead. Secure these wires with the supplied cable ties.
11. Manually lift the mast from bumper by hand. (Refer to page 10, numbers 6-11)

### CAUTION

**DO NOT** ATTACH POWER LEADS TO ANY PART OF FUEL SYSTEM OR BRAKE SYSTEM. KEEP WIRE AWAY FROM HOT OR MOVING PARTS.

**DO NOT** OPERATE CRANE WITHOUT CIRCUIT BREAKERS AND **DO NOT** BYPASS BREAKERS. BYPASSING CIRCUITS CREATES A FIRE HAZARD AND IS DANGEROUS TO THE PERSONAL SAFETY OF THE OPERATOR.

12. Plug in the remote pendent control to the receptacle on the end of the bumper. Check crane operation. Lifting cable should be able to power up and down. Keep tension on the lifting cable at all times.
13. Inspect crane fully before placing in operation. Recheck all bolts, electrical connections and wiring to see that they are secure.
14. Your crane is now ready for operation. **Refer to Operation Section of this manual before operating.** Read it carefully and follow all instructions for proper and safe procedures.

## BOLT TORQUE SPECIFICATIONS

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UNC Size	Grade 8 Tightening Torque
1/2" - 13	110 +/-11
9/16" - 11	150 +/-15

**Table 1**

**NOTE:** Torque values are in foot-pounds. Torque values specified are with residual oils or no special lubricants applied to the bolts. If special lubricants of high stress ability, such as never-seize compound, graphite, oil or molybdenum disulfide, etc. are used multiply the torque figures in the chart by a factor of .90.

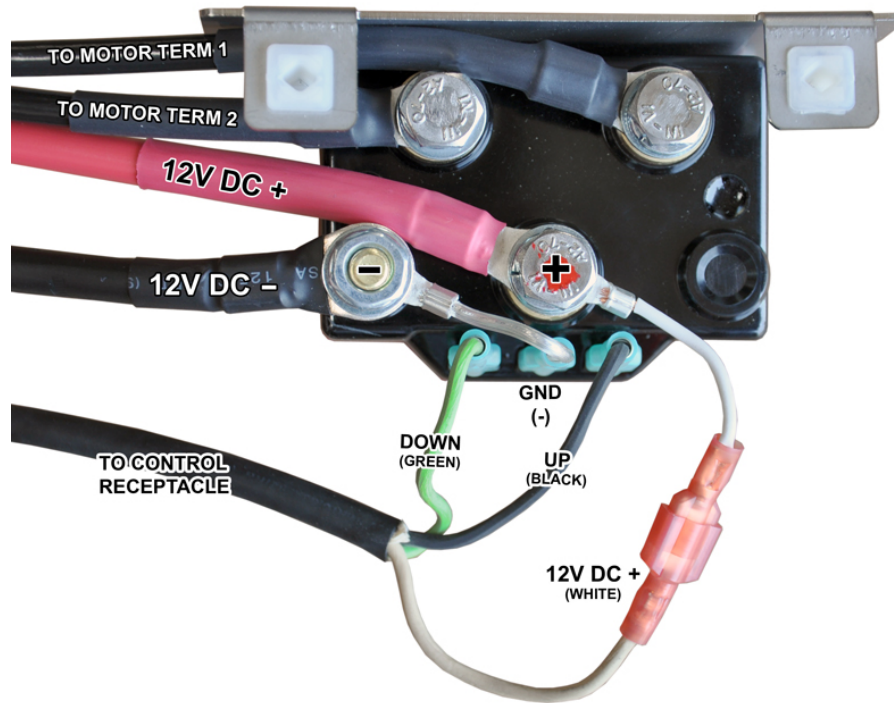
Torque values for bolts listed above are not affected with the use of Loctite or similar product. Hardened washers should be used with Grade 8 or better bolts.

### CAUTION

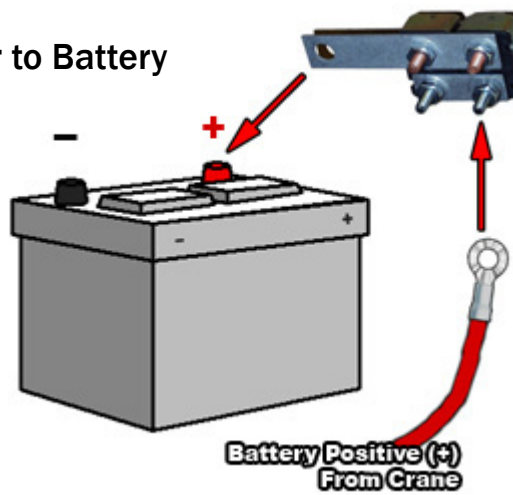
ALWAYS WEAR SOME FORM OF HAND PROTECTION. LIFTING CABLE CAN CAUSE SERIOUS INJURY TO HANDS.

## WIRING DIAGRAM

### Control Box



### Circuit Breaker to Battery





## DAILY INSPECTION

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### WARNING

SAFE OPERATION **DEPENDS ON YOU**, THE CONDITION OF YOUR EQUIPMENT AND YOUR MAINTENANCE AND INSPECTION PROCEDURES.

The single most important factor in the prevention of equipment failures and accidents is a positive attitude towards safety. The habit of anticipating possible problems normally prevents many accidents from occurring.

**The crane shall be inspected by the user daily before each use and additionally by a competent person other than the user at periodic intervals.**

Inspection checks **must be** performed. Below are several important inspections that should be performed before and during **each** operation of the Western Mule Crane.

**FASTENERS** - visually check all pins, retainers, bolts, and nuts. Check for presence and proper tightness.

**SHEAVES** - check for lifting cable wear, cracks and ease of rotation. If they do not turn freely or the bushings in the sheaves are worn, replace them immediately.

**LIFTING CABLE** - check for frayed edges, broken strands, kinks, and flat spots. If damaged, replace before use. *(See page 27 for cable inspection procedures)*

**HOIST** - check lifting cable for proper spooling on the hoist drum.

**CRANE HOOKS** - check hook and safety catch, for twist or distortion. *(See page 27 for hook inspection procedures)*

**OPERATING PLACARDS AND SAFETY DECALS** - check for missing, illegible, defaced decals and placards. *(see page 36, Decal Diagram)*

Make necessary repairs of the above items and/or replacements before operating the Western Mule Crane.

## DAILY INSPECTION

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Continued from previous page

### **WARNING**

**DO NOT** OPERATE THE WESTERN MULE CRANE IF SIGNS OF DAMAGE OR POOR OPERATION ARE NOTICED. TO DO SO MAY RESULT IN PROPERTY DAMAGE, SERIOUS PERSONAL INJURY AND/OR DEATH. PLACE A “**DO NOT USE - CRANE OUT OF ORDER**” SIGN ON THE WESTERN MULE CRANE AND IN THE VEHICLE. DO NOT USE UNTIL THE WESTERN MULE CRANE IS REPAIRED AND A QUALIFIED MAINTENANCE PERSON WHO HAS SEEN TO THE COMPLETE CORRECTION OF THE PROBLEM AND INSPECTION OF THE CRANE REMOVES THE SIGNS.

**IMPORTANT:** THE MANUFACTURER AND GOVERNMENT REGULATIONS REQUIRE THAT AN EMPLOYER SHALL PERFORM FREQUENT AND PERIODIC INSPECTIONS AND MAINTAIN RESULTS OF THESE INSPECTIONS FOR EACH WESTERN MULE CRANE AND THAT A COMPETENT PERSON SHALL MAKE A THOROUGH ANNUAL INSPECTION OF THE CRANE. THE EMPLOYER SHALL MAINTAIN A RECORD OF THE DATES AND RESULTS OF THE INSPECTIONS FOR EACH CRANE AND ITS OPTIONAL EQUIPMENT.

## INSPECTION OF LIFTING CABLE AND HOOK

Many variable factors can cause the deterioration of the lifting cable that it is not possible to pre-determine a definite life expectancy.

**Some of the contributing factors are:**

Load being lifted, corrosive conditions, and maintenance of the Western Mule Crane, such as sheaves not turning freely, improper spooling on hoist drum, kinks in lifting cable, abrasive action and contact with sharp corners, storing crane with lifting cable excessively tight, and frequency of use.

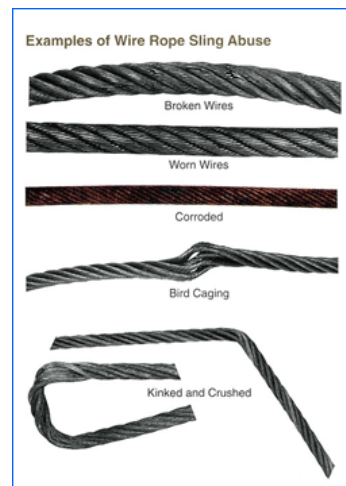
Keeping the working load ratings in mind and knowing the kind of loads that will be handled, the user can determine by inspection of the lifting cable as to when the lifting cable should be replaced.

**Items to look for while inspecting the lifting cable are:**

Broken wires or strands, kinks and flattened sections, corrosion and abrasion, and distortion of the lifting cable, such as kinking, crushing, etc.

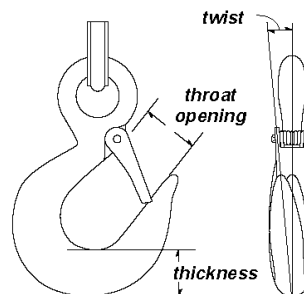
### **WARNING**

STOP USING THE HOIST AND REPLACE THE LIFTING CABLE OR HOOK IF ANY OF THE DEFECTS LISTED ARE FOUND.



**Items to look for while inspecting the lifting hook are:**

Bent or twisted hook, damaged or non-operable safety latch, and if hook is securely attached to the lifting cable.



## LIFTING CABLE REPLACEMENT

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The lifting cable must be installed and spooled as shown in the illustration on page 29, or the brake **MAY NOT FUNCTION**.

If it becomes necessary to replace the lifting cable, use only the minimum recommended cable size for your crane model noted on the crane's serial number plate.

### REPLACING LIFTING CABLE

PLEASE READ ALL STEPS BEFORE PROCEEDING.

1. Raise mast to upright lifting position.
2. Power out the lifting cable completely until the cable is completely unwound from the drum.
3. Disconnect the Remote Pendant Control to insure the crane is not operated during this procedure.
4. Grab the cable near where it enters the slot in the drum and apply force to the cable, pushing it into the slot of the drum.

*See illustration on next page.*

**NOTICE:** As the cable exits the opposite end of the drum slot, be sure to secure the loose metal slug located in the center of the looped cable. This will be needed when installing a new cable.

5. With the looped cable and metal slug pushed out of the drum slot, remove the cable from the drum by pulling it back through the drum slot.
6. Secure a length of string or wire 10' or more in length to the end of the cable that has been removed from the drum with vinyl (electrical) tape. This string will be used to feed the new replacement cable back through the mast.
7. Begin pulling the cable out of the crane while making sure the string feeds through freely.

### **⚠CAUTION**

ALWAYS WEAR SOME FORM OF HAND PROTECTION WHEN HANDLING LIFTING CABLE. LIFTING CABLE CAN CAUSE SERIOUS INJURY TO YOUR HANDS.

## LIFTING CABLE REPLACEMENT

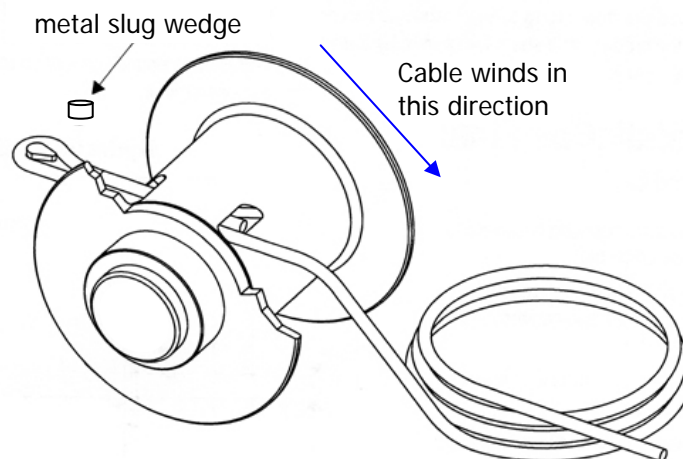
The lifting cable must be installed and spooled as shown in the illustration below, or the brake **MAY NOT FUNCTION**.

If it becomes necessary to replace the lifting cable, use only the minimum recommended cable size for your crane model noted on the cranes serial plate.

### INSTALLING LIFTING CABLE

PLEASE READ ALL STEPS BEFORE PROCEEDING.

1. Disconnect the Remote Pendant Control, to insure the crane is not operated during this procedure
2. Insert cable through slot in drum as shown below.
3. Form a loop and reinsert end into slot. The "live" or load carrying portion of the lifting cable must be closest to the drum flange.
4. Insert the metal slug wedge or hex nut (7/16 in.) supplied with the hoist into loop and pull live end of lifting cable to seat the wedge or hex nut into slot. The end of the lifting cable must remain visible in the slot as shown. The wedge locks the cable in the slot.
5. With end of cable securely installed, reconnect the remote pendant control and carefully wind the cable evenly onto drum. Keep cable under tension at all times. It may be necessary to assist the tracking of the cable onto the spool. **Always maintain a minimum of five (5) wraps of cable on the drum. Fewer wraps may cause the end of the cable to pull free of the drum and drop the load.**

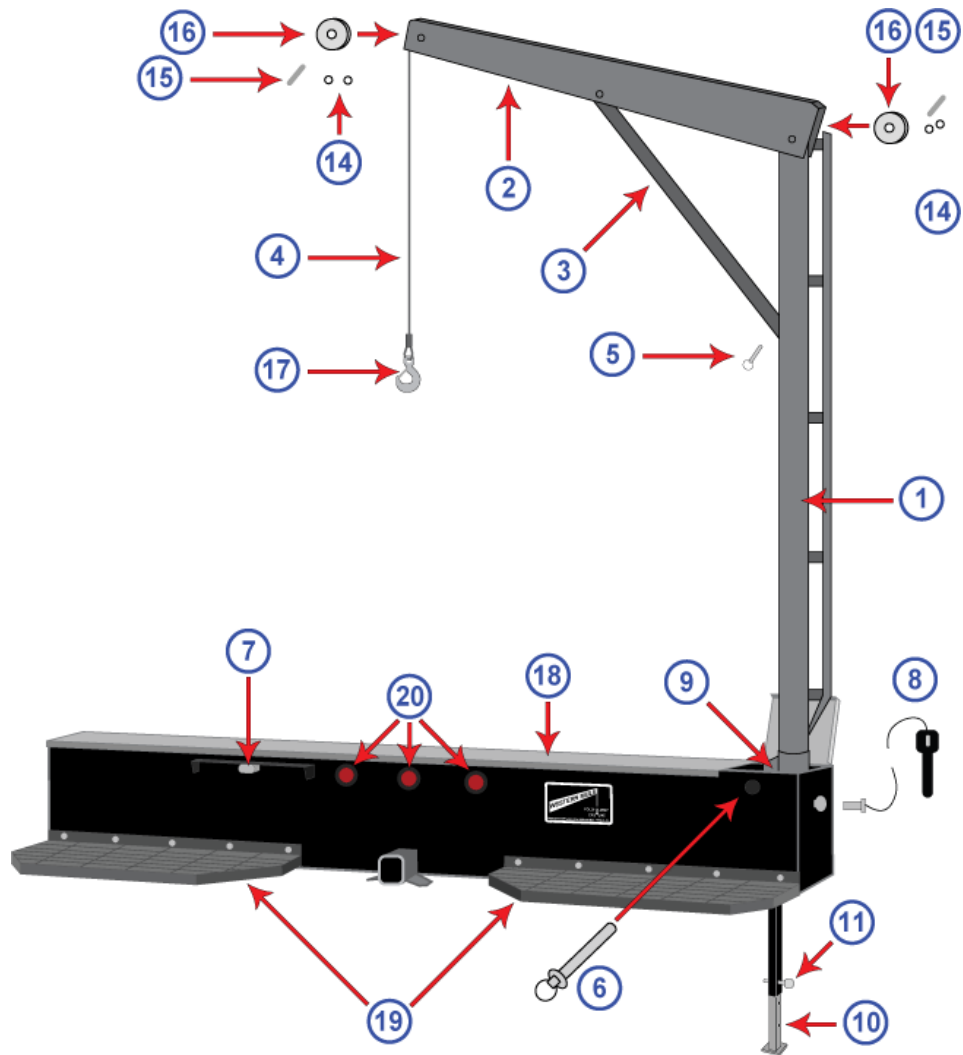


### **⚠ WARNING**

**ALWAYS MAINTAIN A MINIMUM OF 5 WRAPS OF LIFTING CABLE ON THE DRUM AT ALL TIMES. FEWER WRAPS MAY RESULT IN THE CABLE PULLING FREE OF THE DRUM AND DROPPING THE LOAD.**

## STANDARD PARTS

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See next page for part numbers and descriptions for the parts shown above.

## STANDARD PARTS

When ordering parts, please supply the part number along with your crane's model and serial number. Parts may be obtained through your local dealer or distributor.

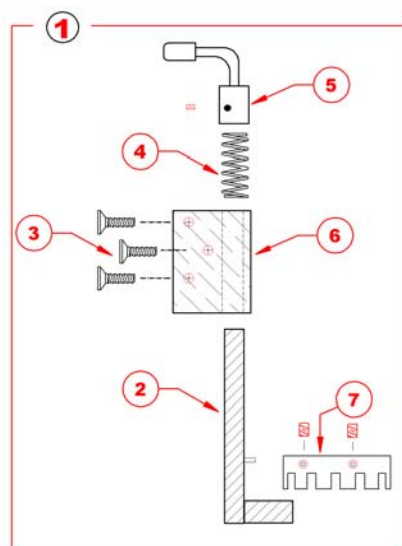
Crane's Serial# Required when ordering parts marked with an \*

Key #	U-1350	U-2000	U-2500	Description
1	WM13030	WM13050	WM13070	Mast
2	WM14030	WM14045	WM14060	Boom
	WM13300	WM13300	WM13300	Gas Spring –Boom Lift Assist
3	WM13325	WM13330	WM13335	Boom Support Arm Brace
4	WM22020	—	—	3/16" x 35' Galv. Cable Assy. with Hook
	—	WM23020	—	7/32" x 35' Galv. Cable Assy. with Hook
	—	—	WM23027	7/32" x 40' Galv. Cable Assy. with Hook
5	WM13340	WM13340	WM13340	Support Brace Lock Pin
6	WM30035	WM30035	WM30035	Mast Locking Pin—1"
7	WM67155	WM67155	WM67155	License Plate Lamp
	WM67160	WM67160	WM67160	License Plate Lamp (Bulb Only)
8	WM30135	WM30135	WM30135	Hinge Pivot Pin—1"
9	-	-	-	See next page for Hinge Assy. Parts
10	WM17010	WM17010	WM17010	Fold Down Outrigger Lower Section
11	WM17060	WM17060	WM17060	Outrigger Lock Bolt
12	WM16030	WM16030	WM16030	Crane Rest –Rubber Cushion
13	WM13415	WM13425	WM13425	Spacer Set for Boom Support Brace
14	WM15110	WM15120	WM15120	Boom Sheave Pin Snap Rings (each)
15	WM15310	WM15330	WM15330	Boom Sheave Pin
161	WM15425	WM15455	WM15455	Boom Sheave
17	WM26050	WM26050	WM26050	Latch Replacement For Lifting Hook
18	WM41015	WM41015	WM41015	Aluminum Diamond Plate Cover with Hinge
19	WM44220	WM44220	WM44220	Rear Step U-Series Curb (Right) Side
19	WM44235	WM44235	WM44235	Rear Step U-Series Street (Left) Side
20	WM67130	WM67130	WM67130	2" LED Replacement Lamps (each)

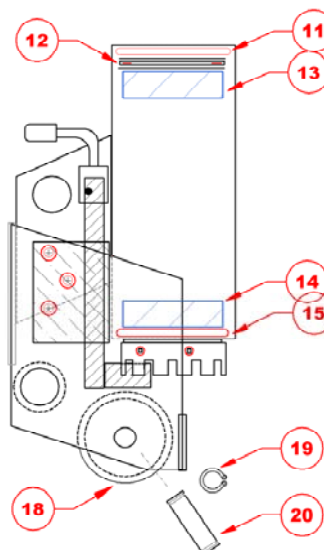
## ROTATION LOCK & HINGE ASSEMBLY PARTS DIAGRAM

When ordering parts, please supply the part number along with the crane's model and serial number. Parts may be obtained through your local dealer or distributor.

### (OPTION WO-14) Rotation Lock



### Hinge Assembly/Bearings

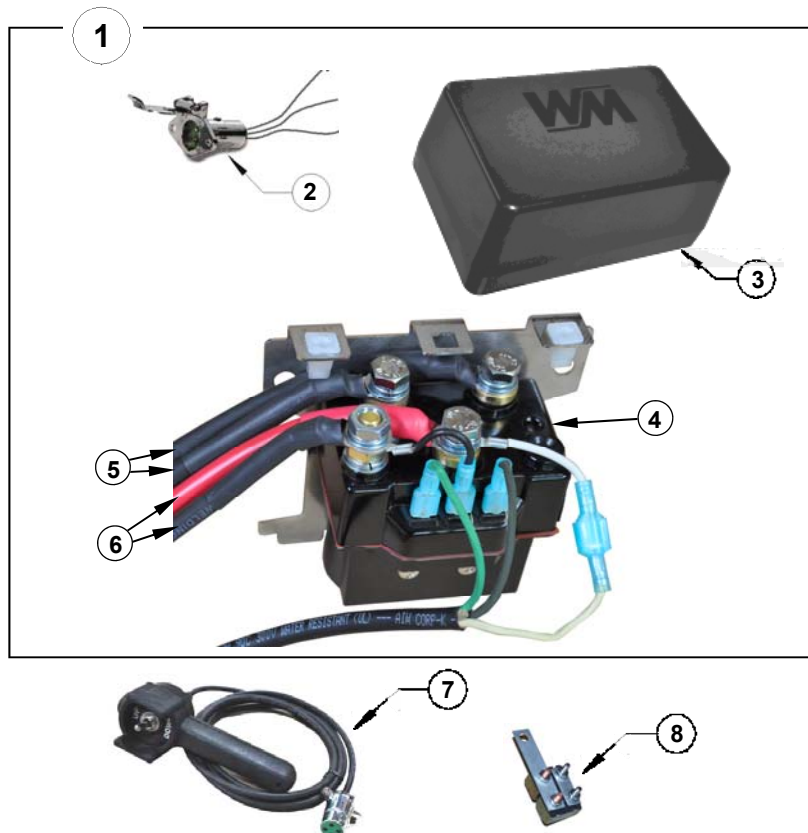


Crane's Serial# Required when ordering ANY Rotation Lock parts.

Key #	U-Series	Description
1	WM33230	Rotation Lock Assembly (Complete Assy.)
2	WM33310	Rotation Lock Shaft
3	WM33510	Rotation Lock Mounting Screws (contains 3)
4	WM33410	Rotation Lock Spring
5	WM33440	Rotation Lock Handle (with set screw)
6	WM33520	Rotation Lock Body
7	WM33610	Rotation Lock Collar (with set screws)
10	WM31120	Hinge Assembly Bearing Kit (includes 11, 12, 13, 14, 15)
11	WM31210	O-Ring Upper
12	WM31215	Thrust Bearing & Washers
13 & 14	WM31220	Bearing
15	WM31230	O-Ring Lower
18	WM15425	Sheave—1/2"
19	WM15110	Sheave Pin Snap Rings (Requires 2)—1/2"
20	WM15230	Sheave Pin Lower—1/2"



## ELECTRICAL PARTS

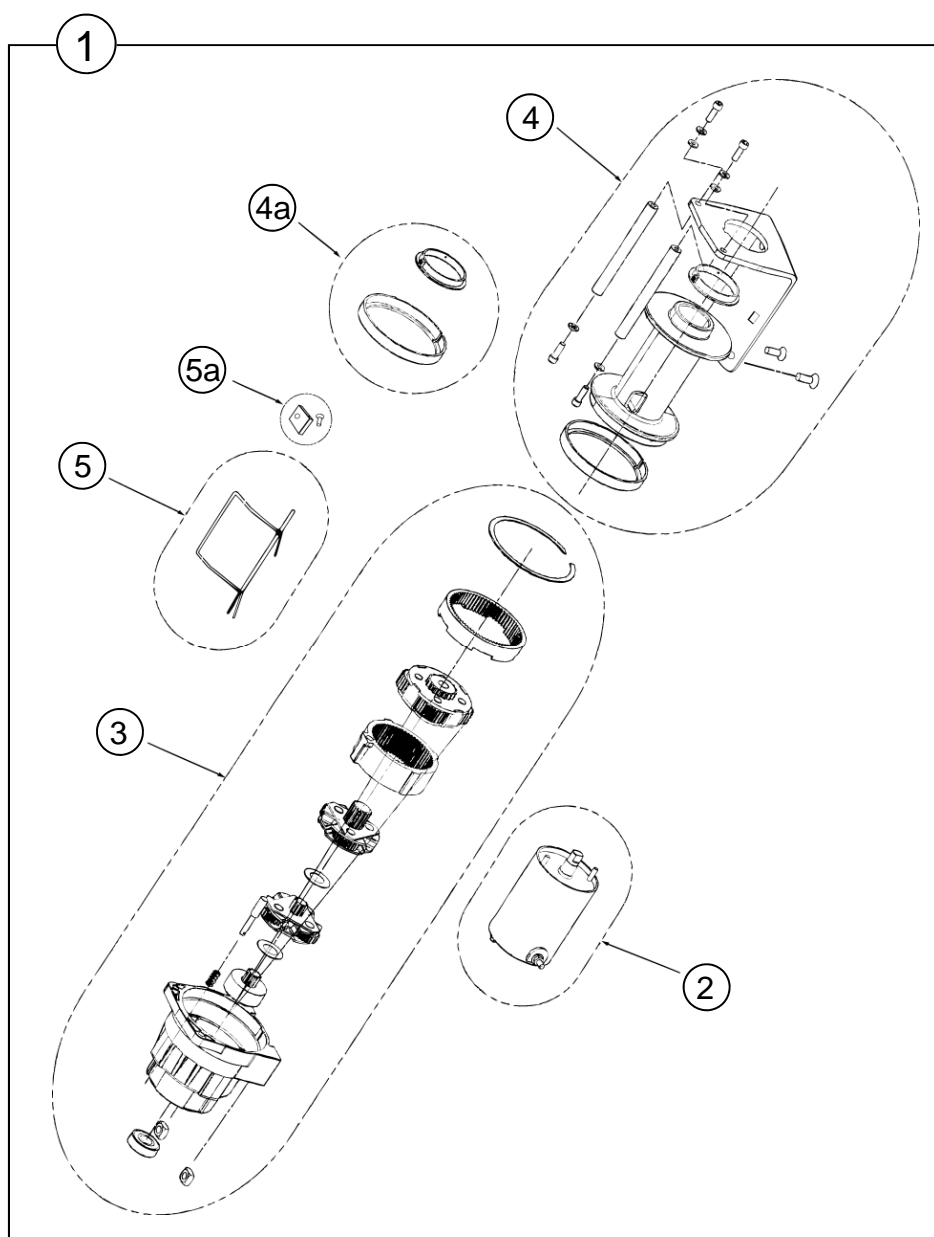


Crane's Serial# Required when ordering parts marked with an \*

Key #	U-1350	U-2000	U-2500	Description
1	WM61120	WM61120	WM61120	Contactors Control Assy. Power Leads #5, #6, not included)
2	WM65130	WM65130	WM65130	Receptacle for Pendant Control
3	WM61220	WM61220	WM61220	Contactors Control Assy. Plastic Cover
4	WM62020	WM62020	WM62020	Replacement Contactor (each)
5	WM63130	WM63130	WM63130	Hoist Motor Power Leads (both)
6	WM63220	WM63230	WM63230	Power Leads (both)
	WM61320	WM61320	WM61320	Backing Plate
7	WM65020	WM65020	WM65020	10' Remote Pendant Control
8	WM63320	WM63320	WM63320	Circuit Breaker

## HOIST PARTS

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## HOIST PARTS

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When ordering hoist parts, please supply your crane's model and serial number. Parts may be obtained through your local dealer or distributor.

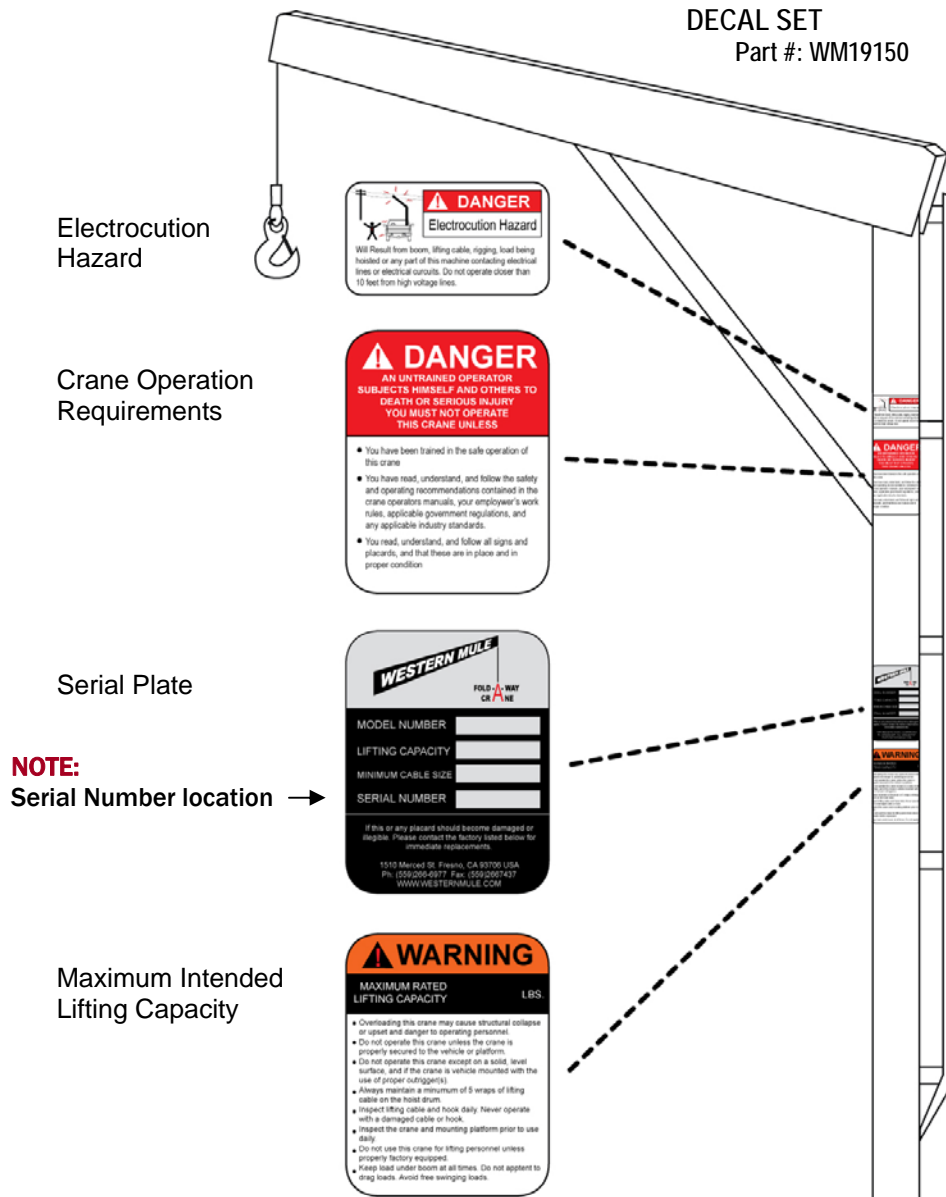
**DO NOT** attempt to disassemble the hoist yourself as it will **VOID** the warranty!

If the hoist fails to operate, and you have checked all wiring connections, battery power, the pendant control, solenoids and the motor and have determined the hoist and/or motor is defective, then in order to satisfy the warranty requirements, contact Western Mule Cranes for instructions on the return of the defective part.

[Crane's Serial# Required when ordering hoist parts.](#)

Key #	U-1350	U-2000	U-2500	Description
1	WM71220	WM71230	WM71230	Complete Power Unit,
2	WM76060	WM76065	WM76067	Motor Kit
3	WM76020	WM76020	WM76020	Gear Train
4	WM76045	WM76045	WM76045	Drum Kit (with Bushings)
4a	WM76035	WM76035	WM76035	Drum Bushings (Included in WW986 Drum Kit)
5	WM77020	WM77020	WM77020	Level Wind Spring Kit
5a	WM77025	WM77025	WM77025	Level Wind Spring Block
5b	WM77040	WM77040	WM77040	Level Wind Spring Mounting Block Screw

## DECAL DIAGRAM



For replacement decals, please contact  
Western Mule Cranes at 800-288-6853

## GENERAL INFORMATION

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Your WESTERN MULE CRANE is designed to handle loads up to designated maximum rated lifting capacity. Do not exceed.

Practice using the crane with lighter loads until you become familiar with the safe operation of the crane.

**DO NOT** overload the Western Mule Crane or exceed the load rating of the weakest component in the system (I.E. the lifting cable, sling, lifting attachment, etc.). Overloading may result in damage and/or failure of the equipment, which may lead to serious personal injury and/or death.

**DO NOT SIDE LOAD THE WESTERN MULE CRANE.** The Crane shall not be used for dragging or pulling loads sideways across a surface. To do so may strain the equipment resulting in its damage and/or failure.

**DO NOT** alter or modify the Western Mule Crane or any of its components. Do not operate the crane using any form of power other than that which it is specifically intended to use. To do so may reduce the load rating of the crane and/or cause the crane to fail.

**MAKE SURE** that at least a minimum of 5 wraps of lifting cable remain on the hoist drum at all times in order for the lifting cable to remain securely anchored to the hoist drum.

**ALWAYS** return the Western Mule Crane to its stored position before moving vehicle.

## REPLACEMENT PARTS

When ordering, please supply your crane's model and serial number. Parts may be obtained through your local dealer or distributor.

## PRODUCT REGISTRATION

Every effort is made to supply product updates and other information relevant to the use of this crane. To register your crane, we request that you do this online on our **Tech/Support page at [Westernmule.com](http://Westernmule.com)** click on **Warranty Registration**. If you do not have internet access, please fax or mail the enclosed warranty registration card.

## NOTES

[illegible]

## **WESTERN MULE CRANES**

1510 Merced Street  
Fresno, CA 93706  
Phone (559)266-6977



### **1 YEAR LIMITED WARRANTY**

The manufacturer, warrants to the original retail purchaser its product, the Western Mule, for twelve months (one year) from the date of delivery that your new Western Mule Crane is free from defects in material and workmanship if properly set up and operated in accordance with the recommendations set forth in the Western Mule Owner's Manual. If a date cannot be established, then the date the product was sold by the Distributor will be used.

Obligation of the manufacturer, under this warranty, is expressly limited to the replacement or repair of parts, which prove defective in material or workmanship for the duration of this warranty. To make a claim under this warranty, the product must be returned, freight pre-paid to the manufacturer. The sole measure of damages shall be limited to the price of defective parts.

This warranty does not obligate the manufacturer to bear the cost of labor in the field or transportation charges in connection with replacement or repair of defective parts.

Factory authorized repair or replacement as provided under this warranty is the exclusive remedy to the consumer. The Manufacturer shall not be liable for any incidental or consequential damages or for breach of any express or implied warranty on this product.

Any damage to the Western Mule, as a result of abuse, misuse, overloading, negligence, accidents, improper installation or any unauthorized alteration, repair or modifications made without written authorization by the manufacturer or any act that violates the instructions furnished by the manufacturer, will void the warranty.

NO representative of the manufacturer has the authority to amend or modify the warranty of to bind the company by any other warranty, guarantee or assumption of liability. There are no warranties which extend beyond the above description and it is expressly understood and agreed that no warranty of merchantability or warranty of fitness or particular purpose, or other warranty express, implied or statutory is made.

**FREIGHT CHARGES**—This warranty does not cover freight charges incurred to return defective parts to the manufacturer's location or the shipment of replacement parts to the warranty holder

**EXCLUSION**—There is no warranty on the lifting cable against breakage or fraying.

Certain limitations expressed herein are excludable in accordance with provisions of local law. Such limitations shall be deemed struck if such law is applicable. All other limitations and provisions shall continue to apply.

## **MANUFACTURED AND DISTRIBUTED BY**

### **Western Mule Cranes**

**1510 Merced Street**

**Fresno, CA 93706 USA**

**Ph: 559-266-6977 Fax: 559-266-7437**

**E-Mail: [cranes@westernmule.com](mailto:cranes@westernmule.com)**

**[www.westernmule.com](http://www.westernmule.com)**

Western Mule Cranes reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations are specifications used.

Made in the U.S.A.