IOWA MOLD TOOLING CO., INC.

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Manual # 99906557

Refuse Container with Loader Operation & Safety Manual

Generation 4

Revised 01-28-2021

Iowa Mold Tooling Co., Inc. is an Oshkosh Corporation Company

⚠ WARNING

Operating, servicing and maintaining this vehicle or equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle or equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing. For more information go to **www.P65Warnings.ca.gov**.

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Introduction

Section - 1

Introduction

This manual includes operation, safety, and maintenance instructions and replacement parts for your IMT Refuse Container with Loader.

READ OUR MANUAL! FAILURE TO READ, UNDERSTAND AND FOLLOW ANY SAFETY PROCEDURES APPLICABLE TO YOU EQUIPMENT MAY RESULT IN EQUIPMENT DAMAGE, SEROUS INJURY OR DEATH.

In addition to reading the manual, it is your responsibility to become familiar with government regulations, hazards, and the specific operation of your equipment. Use caution and common sense while operating and maintaining the equipment and follow all safety procedures and regulations. Treat this equipment with respect and service it regularly.

MODIFICATIONS

Modifications to your equipment must be performed with IMT approved accessories, parts and optional equipment. If in doubt, contact IMT prior to making any modifications. **DO NOT** alter or modify any safety device! All safety devices must be inspected, tested and maintained in proper working condition.

Decals regarding safety and operation are considered safety equipment, and must be kept clean and legible.

The equipment owner and/or designated employee is responsible for informing all operators, maintenance personnel, and others involved in equipment operation about the safe operation and maintenance of the equipment. If questions arise concerning safe operation, contact IMT or your IMT distributor for clarification.

WARRANTY

Warranty of this unit will be void on any part of the unit subjected to misuse due to overloading, abuse, lack of maintenance and unauthorized modifications. No warranty - verbal, written or implied - other than the official, published IMT new machinery and equipment warranty will be valid with this unit.

NOTICE TO THE OWNER / USER

If your equipment is involved in a property damage accident, contact your IMT distributor immediately and provide them with the details of the accident and the serial number of the equipment. If an accident involves personal injury, immediately notify your distributor and IMT Technical Support at:

IOWA MOLD TOOLING CO., INC.
500 HWY 18 WEST
GARNER, IA 50438
641-923-3711

INTRODUCTION, CONTINUED

RESPONSIBILITY

It is the user's responsibility to maintain and operate this unit in a manner that will result in the safest working conditions possible. In addition, it is the user's responsibility to be aware of existing Federal, State, and Local codes and regulations governing the safe use and maintenance of this equipment.

MANUAL STRUCTURE

Throughout this manual, four means are used to draw the attention of personnel. They are CAUTION, WARNING and DANGER and are defined as follows:

CAUTION
A CAUTION is used when there is the very strong possibility of damage to the equipment or premature equipment failure.

WARNING
A WARNING is used when there is the potential for personal injury or death.

DANGER
Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Danger is used in the extreme situations.

NOTE: The crane operation notes in this manual are provided as a reference only, and cannot be substituted for a thorough review of each manual.

Daily Safety Inspections

Use the following list as a guide when you are inspecting your unit at start-up and during operation. Log your inspection results using the *Crane Log (99900686)* or the inspection checklist in the reference section of this manual:

1. **Vehicle** - Check oil level, battery, lights, brakes, and tires for inflation, pressure, cuts, and loose or missing wheel lugs.
2. **Safety Accessories** - Check for proper function, oil levels, leaks and malfunctions.
3. **Hydraulic Oil Reservoir** - Check for proper oil level, above the bottom of the reservoir within the screened area. Check for leaks and blockages.
4. **Weldments** - Check visually for damage, especially cracks or breaks in welds.
5. **Cylinders** - Check for leakage and scored rods.
6. **Fasteners** - Check pins, sheaves, nuts and bolts for breakage, excessive wear and tightness.
7. **Hooks -** Check for the presence of a safety catch, twists, cracks, or damage.
8. **Ropes & Slings** - Check for frayed edges, broken strands, kinks, flat spots, and end attachments.
9. **Covers & Guards** - Check for missing or improperly maintained covers and guards.
10. **Remote Control** - Check all remote functions for function and corrosion.
11. **Operation Placards and Safety Decals** - Check for illegible or missing decals and placards. Refer to the Decal section of *1610 RCS Parts Manual (99906440)* for more information on the required decals.
12. **Work Area** - Check for hazards including powerlines, obstructions, etc. Replace or repair any items as needed prior to equipment operation.

Operations Section - 2

Safety & Pre-Operation Checklist

Your refuse container with crane is an effective waste-handling machine, but you must operate it safely

- Follow all safety instructions in the crane and hoist manual in addition to those listed here.
- Once the pre-operation checklist has been completed, follow proper operating procedures to set stabilizers and run crane.

⚠ DANGER

FAILURE TO OBEY THE FOLLOWING WILL RESULT IN
DEATH OR SERIOUS INJURY,
INSTABILITY OR EQUIPMENT DAMAGE

DO NOT OPERATE THE CRANE UNLESS THE CLAMP PINS ARE ENGAGED! PRESS AND HOLD THE "CRANE MODE" BUTTON ON THE VERTICAL PTO UNIT (POWER TOWER) IN THE CAB TO CLOSE THE CLAMP PINS.

	TASK	VERIFICATION
1.	Pull roll-off container to front of truck.	Visually check to see the front of the roll-off container has contacted the stops. Visually check that container restraint bracket has locked into pocket on roll-off container.
2.	Connect hoses and strap at rear of truck.	Visually check that hoses are connected.
3.	Connect electrical wire at front of truck.	Visually check that wire is connected.
4.	In truck cab, press the green *Crane Mode* button on the power tower in the cab to activate clamping pins.	Visually check that the clamp pins have engaged in the clamp pin brackets. Inspect both sides of the container. **CAUTION**: If you have parked on a slope such that the chassis is tilted, the pin may only engage on one side of the vehicle. Move the vehicle to a location which is more level so that both pins engage.

Make sure each of these tasks are completed before operating the loader on the refuse container with loader.

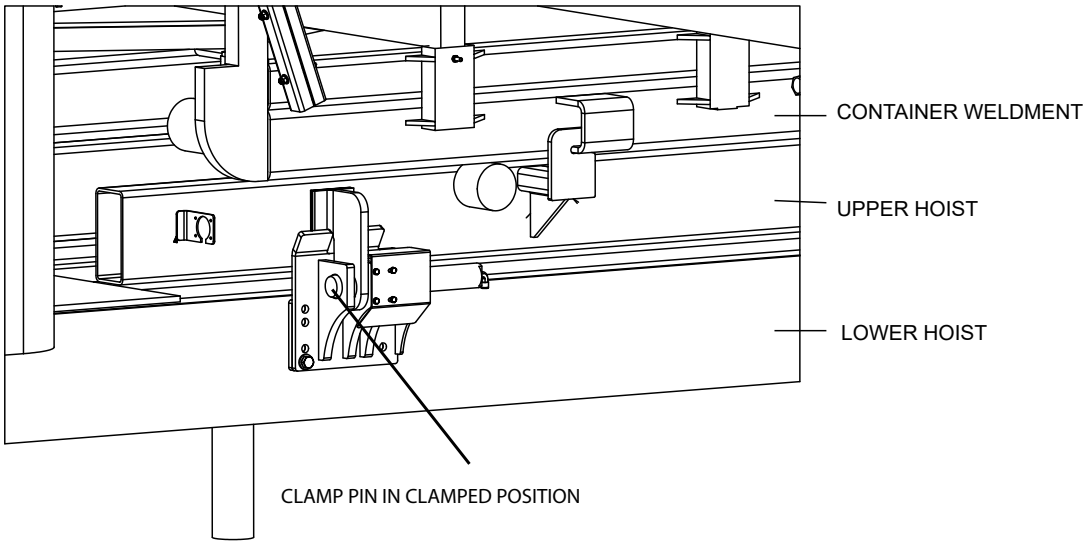
Crane Operation Mode

1. Engage the PTO or activate the crankshaft driven pump. (The PTO or pump switch is located in the vehicle cab.) Follow all job site safety regulations, including activating the truck hazard lights and strobe lights.
2. Follow the directions in the *Roll-Off Hoist* manual to pull the roll-off container onto the chassis. Before continuing, visually check that the hook on the container has contacted the stops at the front of the roll-off hoist, and that the container restraint brackets on both sides of the roll-off container are interlocked with the pockets on the hoist.

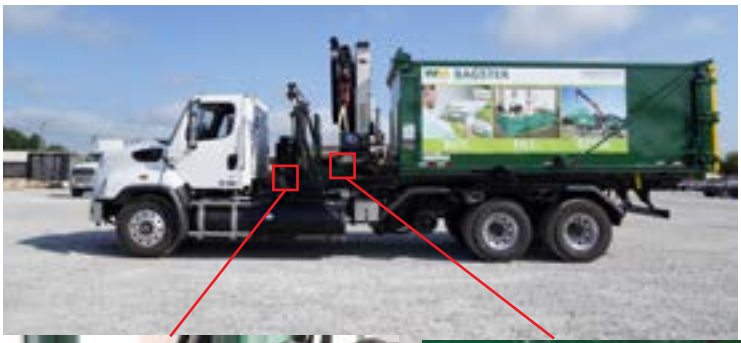
⚠ CAUTION

OPERATE THE HOIST PER MANUFACTURER INSTRUCTIONS. OPERATE ONLY ONE FUNCTION AT A TIME.

NOTE: The roll-off container is secured to the upper hoist using container restraint brackets which hook into the pockets on the upper hoist. The upper hoist is secured to the lower hoist using clamping pins. Both the restraint bracket and the clamping pins, on both sides of the vehicle, must be securely engaged between the hoist and the container before operating the crane.



CRANE OPERATION MODE - CONTINUED



Front of roll-off container is secured in hooks on hoist.

Container restraint bracket is engaged in pocket on hoist.

3. Disengage the PTO or crankshaft-driven pump.

4. Move the hydraulic hoses out of the way. Cinch ratchet strap at both sides of the rear section of the roll-off. This will secure the roll-off container and prevent instability.

⚠ CAUTION

AVOID EQUIPMENT DAMAGE!
USE THE RATCHET STRAPS!

5. Hook up the electrical and hydraulic connections for the crane. The hydraulic connections are located at the rear of the crane and the electrical connection is at the front of the crane. The crane cannot be operated without them.

NOTE: Be sure to hook up the connections in the proper order:

1. Large coupling (Return)
2. Small coupling (Pressure)

Electrical wiring connector

Ratchet strap

Hydraulic hoses

6. In the cab, engage the PTO and activate the crane by turning on the *Crane Mode* switch located on the power tower in the cab.

PTO Switch

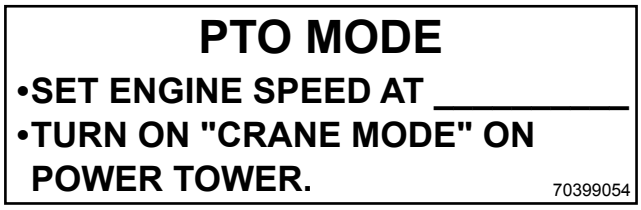
Crane Mode Switch

NOTE: Turning on *Crane* will cause the clamp pins to engage in the roll-off container brackets on each side of the vehicle.

Visually verify that both clamp pins have engaged. **Do Not** place anything in the path of the clamping pins which secure roll-off.

Verify clamp pin has engaged in hoist brackets. Check both sides of vehicle.

7. Elevate the engine RPM (using cruise or speed control) to run engine at sufficient speed to power crane. There is a decal on the dash which lists the recommended RPM.



8. Follow all instructions in the IMT Crane Manual, *1610 / 1620 RCS Technical Specifications* (*99906439),* and *IMT Quick Guides (70490314)* for safe crane operations.

Crane Remote Control

See IMT manual, *Scanreco G2 Instructions (99906486)*

Pneumatic-Hydraulic System

The Refuse Container with Loader (G2 through G4) includes hoist to crane interlocks which activate automatically when the *Crane Mode* switch on the power tower in the cab in turned on. (The green light on the switch will light.) Turning on the *Crane Mode* will cause the pneumatic clamp pins on each side of the container to lock the container to the hoist, and will divert all hydraulic flow from the hoist to the crane. When the *Crane Mode* switch is on, no hoist functions can be operated. When the *Crane Mode* switch is off, the clamp pins will retract and hydraulic flow will be diverted to the hoist.

Crane Operation

Complete details on the crane, remote, and RCL5300 are provided in the following manual kit (91727856):

- 99906499 - MANUAL-ER OPER INSTRUCTIONS 32-80 TM CRANE
- 99906482 - MANUAL-SAFETY SYSTEM-STABILITY
- 99906485 - MANUAL- ARTICULATING CRANE INSTRUCTIONAL
- 99906489 - MANUAL-RCL 5300 ERROR CODES
- 99906483 - MANUAL-RCL 5300 SAFETY SYSTEM-2019
- 99906486 - MANUAL-SCANRECO G2 INSTRUCTION

In addition, IMT has developed a set of quick reference guides which can be easily carried with the operator for reference in operating the refuse container with crane unit. The complete set is part number 70490314. The set includes the following guides:

- 71399055 - QUICK GUIDE-CRANE PRE-OP
- 71399056 - QUICK GUIDE-TRANSPORT
- 70399973 - QUICK GUIDE - CRANE START-UP-2016
- 70399974 - QUICK GUIDE - EMERGENCY MODE-2016
- 70399975 - QUICK GUIDE - CRANE STOW / UNSTOW-2016

NOTE: The crane operation notes in this manual are provided as a reference only, and cannot be substituted for a thorough review of the Crane, RCL5300, and Radio Remote Control manuals.

RCL Errors

See IMT manual, *RCL 5300 Error Codes (99906483)*.

Extending Stabilizers

Your refuse container with loader is equipped with power-out / power-down stabilizers with a swing rotation system. You must properly set the stabilizers before operating the crane.

DANGER

Avoid Death or Serious Injury
Close clamps before operating stabilizers or crane.

1. Make sure:

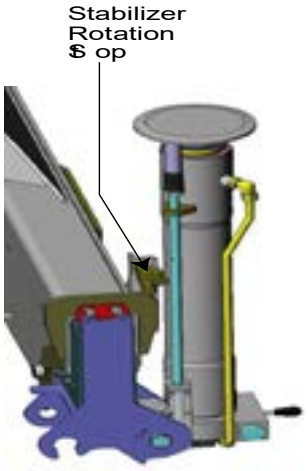
   - The PTO is engaged or the crankshaft driven pump is activated.
   - The hydraulic hoses and electrical harness are connected.
   - The green *Crane Mode* switch on the power tower is on.
   - The clamps pins are completely engaged and the hoist bracket is locked into the container restraint pocket..
   - See *Crane Operation Mode* (on page 6) for details.

2. The stabilizers are operated using cable controls. Stabilizer controls are located on each side of the unit. Each stabilizer must be set up individually. Per the crane operation manual, you must place the crane in stabilizer mode to operate the hydraulic stabilizers. To do this, press the yellow button twice on the RCL control panel or on the remote control transmitter.

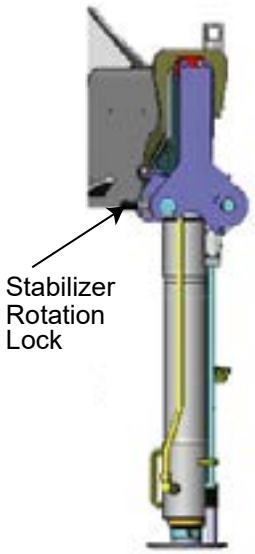
CAUTION

AVOID EQUIPMENT DAMAGE!
Check for Obstructions before extending the stabilizers or crane

3. Make sure the power-down stabilizer is completely retracted and stowed against the rotation stop.



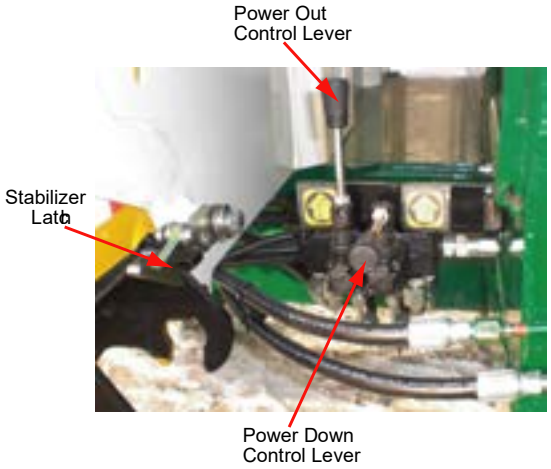
4. Release the manual stabilizer latch on the power-out stabilizer. Fully extend the stabilizer arm, using the power-out control lever.



Slowly operate the power-down stabilizer control lever to automatically rotate the power-down cylinder into the downward position.

When the power-down cylinder foot is positioned just off of the ground, engage the locking pin at the top of the cylinder to lock it into place.

Then extend the power-down stabilizer until it touches the ground per the crane operation manual.



5. **Avoid danger from moving stabilizers!** The unit has swing-up stabilizers that extend 7 ft (2.1 m) from each side of the unit. Stand clear.

6. Repeat with stabilizer on the other side of the truck.

7. After setting the stabilizers, return the electrical system to *Crane Mode* to operate the crane by pressing the yellow button twice on the RCL control panel or on the remote control transmitter.

CAUTION

Avoid shearing the pin and damaging the stabilizer auto-rotate system. Operate the Power Down function slowly.

Crane Capacity

The IMT crane is designed to lift specific loads. These loads are defined on the capacity placard mounted near the operator's station and on the crane. Exceeding the limits presented on the capacity placard will create severe safety hazards and will shorten the life of the crane. The operator and other concerned personnel must know the load capacity of the crane and the weight of the load being lifted!

The capacity chart model is located on page 15 of this manual, and in the *1610 RCS Technical Specifications Manual (99906439)*, and on placards on the crane and body.

⚠ WARNING

NEVER EXCEED THE RATED LOAD CAPACITY OF THE CRANE OR RIG RELEASE HOOK. DOING SO WILL CAUSE STRUCTURAL DAMAGE AND DAMAGE TO RIG RELEASE HOOK WHICH CAN LEAD TO DEATH OR SERIOUS INJURY.

NOTE: Capacity placards are intentionally located near the operator to assure ready reference in determining when a load can or cannot be handled. Load limit information on the capacity placard is formulated on 85% of tipping. Tipping refers to the crane actually tipping with its opposite stabilizer and tires having broken contact with the surface.

Prior to lifting a load:

1. Determine the weight of the load.
2. Determine the weight of any load handling devices.
3. Add the weight of the load and the weight of the load handling devices. The sum is the total weight of the load being lifted.
4. Determine the distance from the centerline of crane rotation to the centerline of the load being lifted.
5. Determine the distance from the centerline of crane rotation to the centerline of where the oad is to be moved to.
6. The actual distance used should be figured as the larger of items 4 and 5 above.

1610 RCS K3 Load Capacity Chart (70490217)

IMT
MATERIAL HANDLING SYSTEMS

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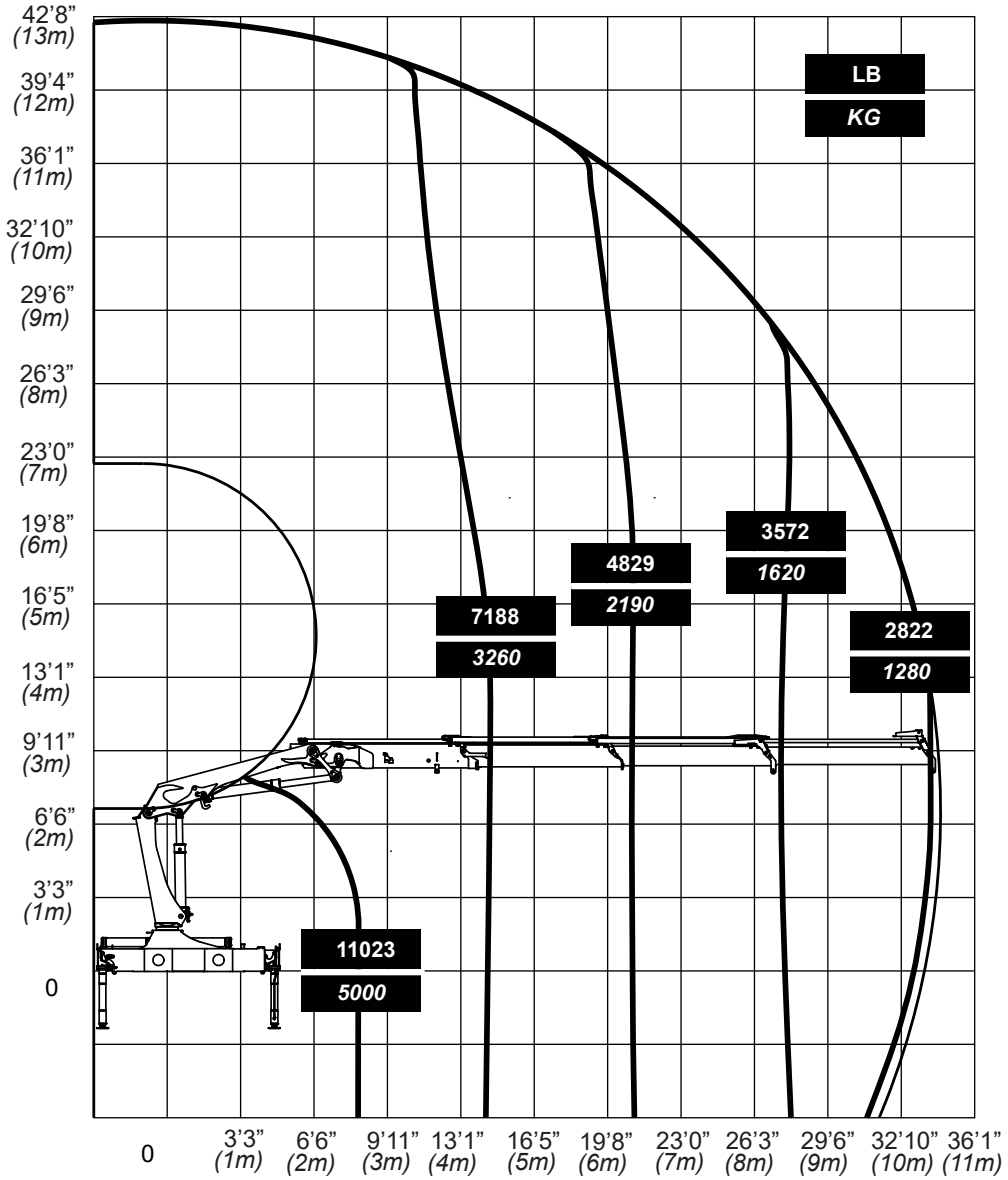
BOX 189 • GARNER • IA • 50438 • 641-923-3711

Model 1610 RCS K3

- **Limit working loads to those shown. Deduct the weight of load handling devices.**
- ***El peso propio (tara) de los dispositivos de manipulación de cargas es parte de la carga levantada y se debe descontar de la capacidad nominal.***



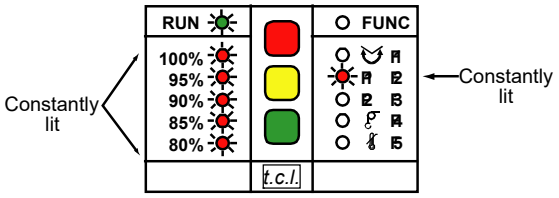
70490217

AVOID DEATH OR SERIOUS INJURY! The rated capacity of the rig release hook is 9,900 lb (4.95 tons). Although the crane capacity exceeds 9,900 lb in certain positions, do not exceed rig release hook capacity.

Crane Overload

Overload is when your crane load moment is at 100% of capacity. In overload:

- The 80% through 100% red diodes are constantly lit.
- The P1 diode is constantly lit.
- The buzzer on the remote will sound constantly.
- The loader suddenly stops working.
- The RCL display reads t.c.l. (Traditional Capacity Limitation)



You can begin to get out of overload when:

- You have released all remote levers to neutral positions.
- The buzzer on the remote sounds intermittently.
- The P1 diode flashes.

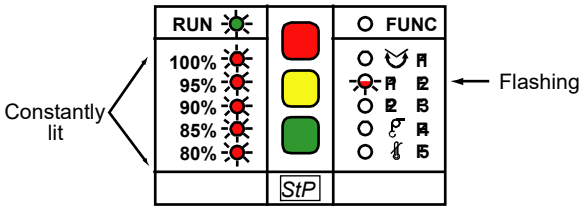
Move the crane into a position which reduces the load moment, such as boom down, or extension in, to get out of overload. If the loader won't move, you can push the red override button on the RCL and you will have five-seconds to move the crane into a load reducing position.

Absolute Stop

If you do not reduce the crane load moment and continue to operate the crane in overload conditions, you will reach absolute stop. The crane will not function at all.

In absolute stop:

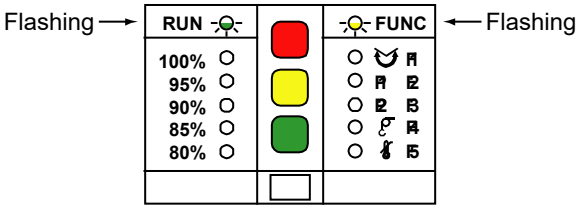
- The 80% through 100% red diodes are constantly lit.
- The P1 diode will flash.
- The buzzer on the remote will sound



You must call an authorized service center to get your crane out of the absolute stop condition.

Crane Radio Failure

If your radio remote fails, the **RUN** and **FUNC** diodes on the RCL panel will flash. You will not be able to run the crane with the remote.

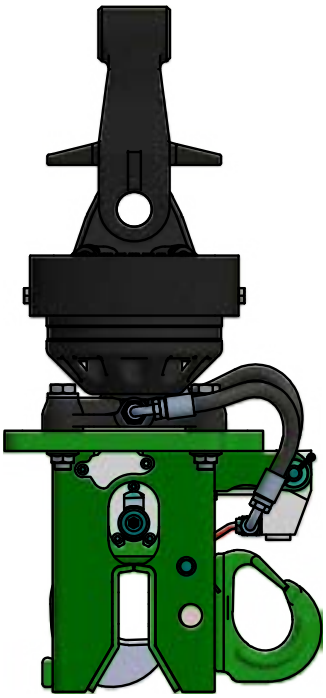


To change to emergency, manual mode:

1. On the RCL panel, press and hold the yellow button while pressing the red button. The **RUN** and **FUNC** diodes on the RCL panel will still flash.
2. To verify the crane can be manually controlled, push the red button on the RCL panel. The 100% diode will flash. If it does not, repeat step 1.
3. To return to the remote control mode, repeat step 1.

Rig Release Hook - Hydraulic (62396)

The Rig Release Hook allows you to release the rigging and set loads down from a distance. When loaded, the rig release lift arm locks the sling in place and the rigging cannot be removed. Once the load is set and the loadline is slack, you can release the load using a remote-controlled rigging disconnect, which is part of the crane remote.



Avoid serious injury or equipment damage! Read and follow rig release hook instructions. Heed all rig release hook warnings.

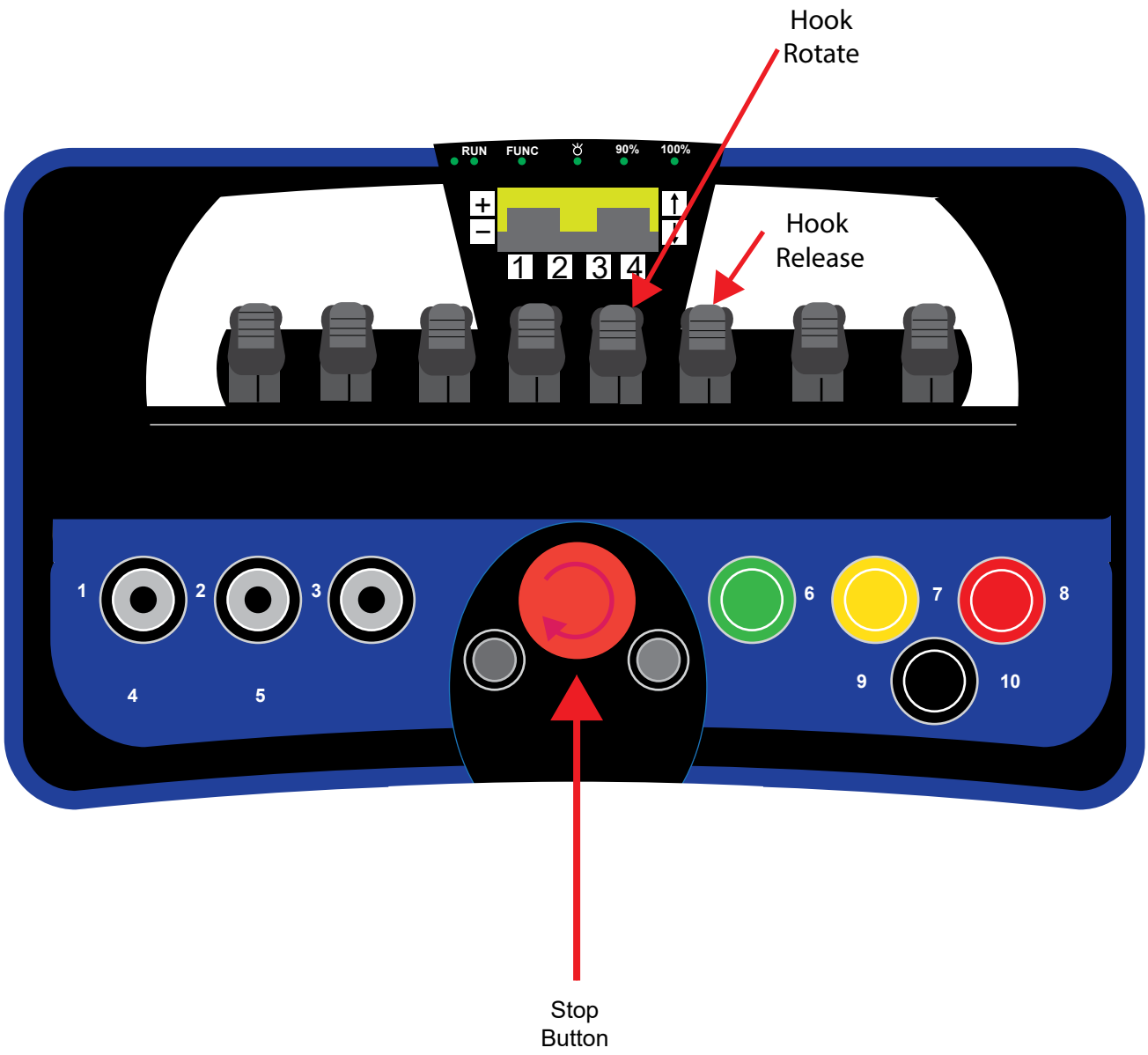
NOTE: Crane capacity may exceed hook capacity. Do not exceed minimum capacity rating.

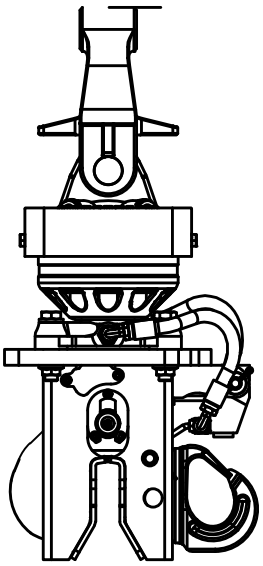
1. Before each use, inspect the hydraulic remote controlled rig release hook for damage or wear. Check for bent or missing components, broken or weak springs, loose bolts, cracked welds, or worn areas. If the inspection reveals any defects, remove the unit from service and report the issue to a designated person. All components must be in place and functioning properly to ensure operation as intended. Missing or defective components may cause an unsafe lifting condition.
2. Never exceed the unit's rated capacity 9,900 lb (4.95 tons) or the rigging's capacity, whichever is less.
3. Do not place a web sling directly on the lift arm, as the web sling material prevents proper lift arm release.
4. The minimum load for the rig release hook lock to activate is 60 lbs. for a straight pull, and 120 lbs. for a basket hitch on the arm. This minimum load ensures that the lift arm will not release unexpectedly if the release lever on the remote is accidentally touched. Lifting a load less than the minimum (60 lbs. straight pull, or 120 lbs. basket hitch) would allow the hook to release with a load on the hook.
5. Always use latches on all hooks.
6. **DO NOT LIFT PEOPLE.** Do not lift higher than necessary. Do not leave load unattended while suspended.
7. Avoid entangling or catching rigging on objects.
8. When using web slings, attach a steel shackle or steel oblong to the lift arm, then attach the web sling to the steel shackle or steel oblong.

⚠ CAUTION

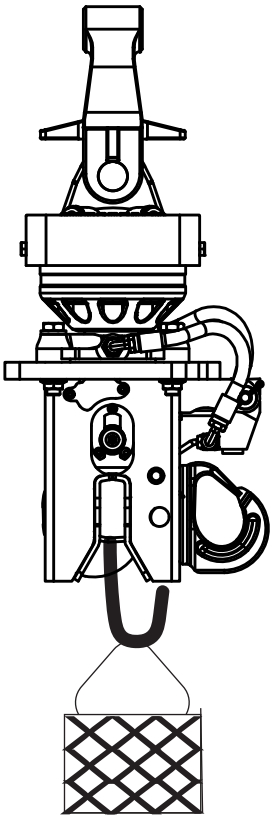
The hook release function on the remote will only operate when there is no load on the hook! Avoid injury! The spring-operated lift arm on the rig release hook snaps open quickly! Keep clear.

Rig Release Hook Operation





HOOK OPEN



HOOK CLOSED

1. Lower the rig release hook to the load. Open the lift arm using the hook release function on the crane radio remote control, or by pressing the green manual release button on the side of the hook.
2. Attach the sling to the load using proper hitching methods. If loading bags, route the sling strap through the handles on the bags. Attach the other end of the sling strap with the metal oblong to the lift arm.
3. Move the lift arm lever up to the closed position. This will close the lift arm.
4. Move the load to the desired position, keeping tension in the rigging. Carefully set the load down on the ground or in the container in a completely supported position. The holes on the crane side of the container allow you to see the load. Lower the crane hook to create slack in the load sling. Once there is no load on the hook, use the hook release button on the crane remote, to open the hook and release the load.
5. Avoid sling damage. Before moving the vehicle, reattach the sling to the lift arm.

⚠ CAUTION

Make sure the lift arm catch is completely closed.

Picking up a Load

1. Move the crane into position so the hook strap is centered over the bag.
2. Release the hook strap using the hook release on the transmitter.
3. Connect the hook strap to the bag. Weave the hook strap through the two straps on the bag, push the metal ring on the end of the strap into the middle of the hook, and lock the ring into place.
4. Stand clear.
5. Lift your load.
6. Retract the boom to bring the load in toward the container box.
7. Make sure the load is high enough to clear the back of the container.
8. Lower the bag into the container. Use the windows at the front of the container to position the bag in the container body.
9. Once the load is placed in the container and the straps have slack, release and raise the boom.

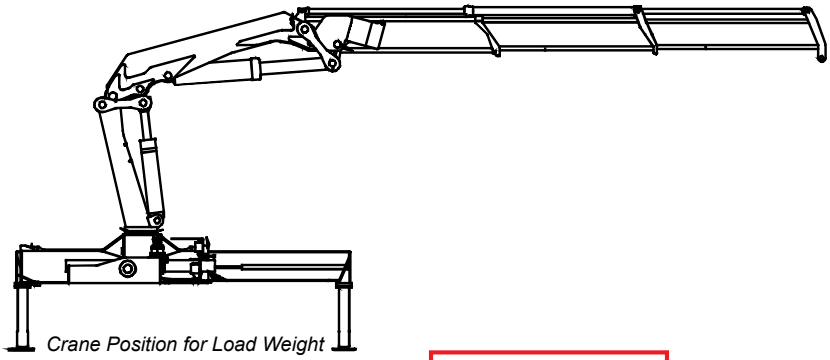
⚠ CAUTION

The hook will not release unless there is slack in the straps.

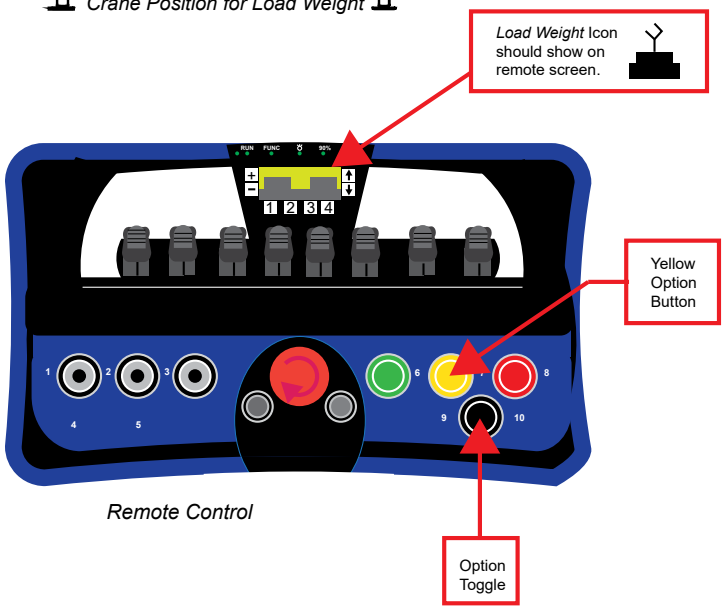
10. Move the crane toward the stowing position. When you can reach it, reattach the metal hook ring to the end of the hook.
11. Stow the crane.

Load Weight

Your crane remote is calibrated with a 1,200 lb load with all extension booms retracted and the inner and outer boom straight out, nearly parallel to the ground. When you position another load in this position and the remote is set to indicate load weight, you can determine the weight of that load.



Crane Position for Load Weight



Remote Control

To weigh a load, position the crane as shown:

- Inner and outer boom nearly horizontal
- All extensions retracted.

Check the remote control screen. If it shows the *Load Weight* Icon, and the crane is in the right position, the weight of the load will display in the lower right corner of the screen.

If the screen doesn't show the load weight icon:

- Flip the option toggle.
- Scroll through the screen options by pressing the yellow button until you see the load weight icon.
- When the crane is in the right position, the weight of the load will display in the lower right corner of the screen.

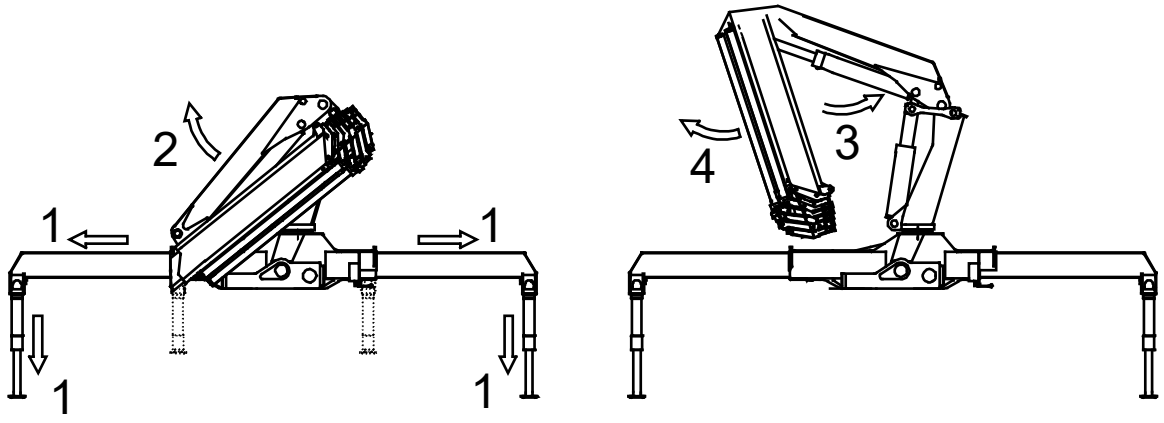
Stowing / Unstowing the Crane

UNSTOWING CRANE:

1. Set up stabilizers prior to unstowing crane.
2. Raise inner boom to 70°.
3. Slightly retract outer boom to allow gravity to swing stowing hook from stowing pin.
4. Raise outer boom until free of base.
5. Slightly extend extension to allow stowing bracket to clear pin–if equipped.

STOWING CRANE:

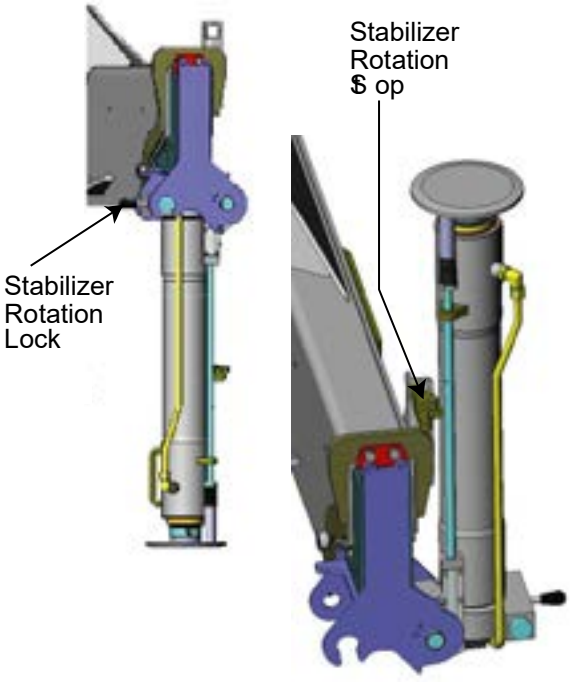
1. Retract extensions, allowing distance for extension stowing bracket to clear stowing pin–if equipped.
2. Raise inner boom to 70°.
3. Lower outer boom completely.
4. Lower inner boom to 0°.
5. Retract extension into stowing pin–if equipped.
6. Raise outer boom to seat in stowing hook.
7. Lower inner boom into saddle.
8. Stow stabilizers.



Retracting Stabilizers

Remote Control

Press the yellow button on the remote transmitter twice to get into *Stabilizer Mode.*

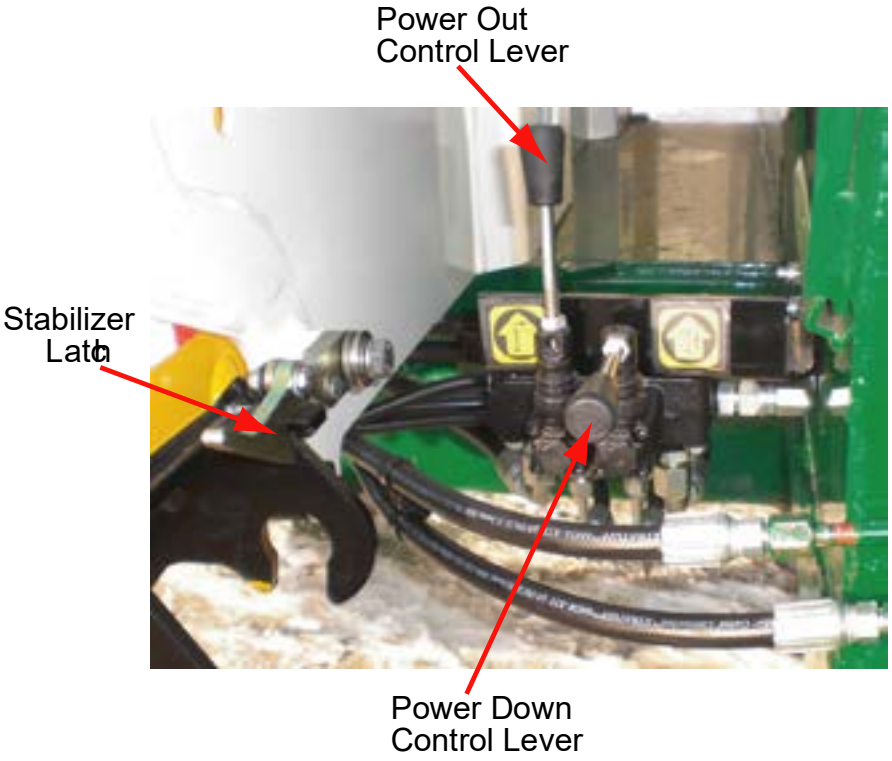


⚠ CAUTION

AVOID MOVING STABILIZERS! THE UNIT HAS SWING-UP STABILIZERS THAT EXTEND 7' 0" (2.1 M) FROM EACH SIDE OF THE UNIT. STAND CLEAR.

1. Raise the power-down cylinder until the cylinder foot is just lifted off the ground.
2. Disengage the locking pin at the top of the cylinder. This will allow the power-down cylinder to swing freely and to auto-rotate.
3. Continue to retract / raise the power-down cylinder, slowly, until the cylinder is completely retracted and the stabilizer has rotated to contact the rotation stop.
4. Retract the power-out stabilizer arm, using the *Power-Out* control lever.
5. Verify the stabilizer arm is completely retracted and the stabilizer latch has slipped in place.

RETRACTING STABILIZERS - CONTINUED



⚠ CAUTION

NEVER RETRACT / RAISE THE POWER DOWN CYLINDER UNLESS ROTATION LOCK IS DISENGAGED. IF THE PIN IS ENGAGED WHEN THE STABILIZER IS RETRACTED, YOU WILL DAMAGE THE AUTO-ROTATE MECHANISM.

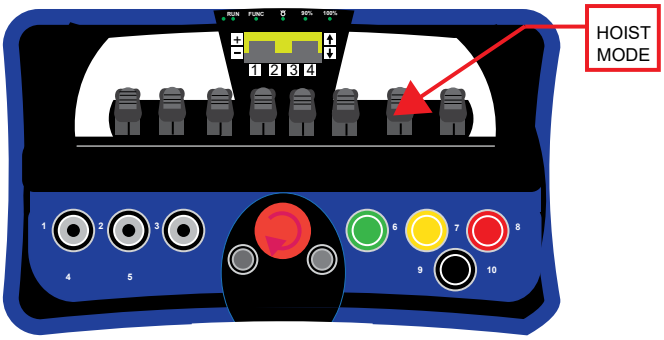
Tarper Control

Remote Control

The container tarper operation is controlled using the radio remote. All loads must be tarped before they are transported. Cover the body with the tarp using the tarper control. Follow the tarper manual for tarper operation.

Hoist Operation Mode

Use *Hoist Mode* on remote control to dump or remove roll-off.



Remote Control

Hoist Mode - Dumping:

1. Turn off the crane power (*Crane Mode* switch) on the power tower in the cab. The green light will go off.
2. Open the door at the back of the container and lock it in the open position.
3. Dump the container per the instructions in the hoist manual.

Hoist Mode - Container Removal:

1. Turn off the crane power (*Crane Mode* switch) on the power tower in the cab. The green light will go off.
2. Disengage PTO or crankshaft-driven pump.
3. Disconnect wiring and hoses in proper order:
   - Electrical Cable
   - Small coupling (pressure)
   - Large coupling (return)

⚠ CAUTION

AVOID EQUIPMENT DAMAGE!

DISENGAGE PTO before connecting or disconnecting wires and hoses.

ROLL-OFF REMOVAL INSTRUCTIONS

NEVER leave roll-off partly connected!

1) Disconnect wiring.
2) Disconnect small coupling (pressure).
3) Disconnect large coupling (return).

Reverse order to connect.

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Electrical wiring connector

Ratchet strap

Hydraulic hoses

4. **Avoid equipment damage!** Cap each end of the hydraulic hoses and wiring harness when disconnected. Uncapped hoses and wires may get wet or damaged. Stow the green electrical cable in the stow pocket once unhooked to keep it clean. Stow the hoses in the hose storage tray above the ratchet strap.

Verify clamp pin has engaged in hoist brackets. Check both sides of vehicle.

5. Disconnect the ratchet straps.
6. Engage the PTO or crankshaft-driven pump.
7. Remove the container using the guidelines in the hoist manual.

Transport Mode

Before moving the vehicle to a different location:

1. Stow the crane. Retract and stow the crane stabilizers.
2. Disengage the PTO or crankshaft-driven pump.

⚠ CAUTION

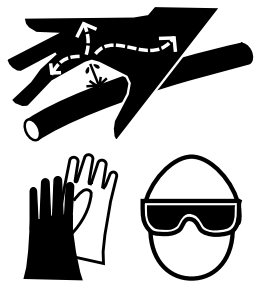
AVOID EQUIPMENT DAMAGE!

DISENGAGE PTO before connecting or disconnecting wires and hoses.

3. Turn off the crane power using the *Crane Mode* switch on the power tower in the cab.
4. Make sure the electrical wiring and hydraulic hoses are connected before moving the vehicle. If disconnected, be sure to connect in the proper order:
    1. Large coupling (return
    2. Small coupling (pressure)
    3. Electrical cable
4. Turn off any job site safety lights, including truck hazard lights and strobe lights, if applicable, before driving the vehicle. Follow all transport safety regulations.

⚠ DANGER

HYDRAULIC FLUID HAZARDS



High pressure fluid leak will pierce skin.

Release pressure before working on system.

Detect leaks with wood or cardboard.
Wear sturdy gloves and goggles.
NEVER use fingers.

Fluid injected in skin must be surgically removed by trained doctor immediately or gangrene will result.

Fluid injected into skin will injure or kill.

Burn Hazard.
Oil temperatures may exceed 120° F (35° C).
Do not touch.
Hot surface can burn skin.

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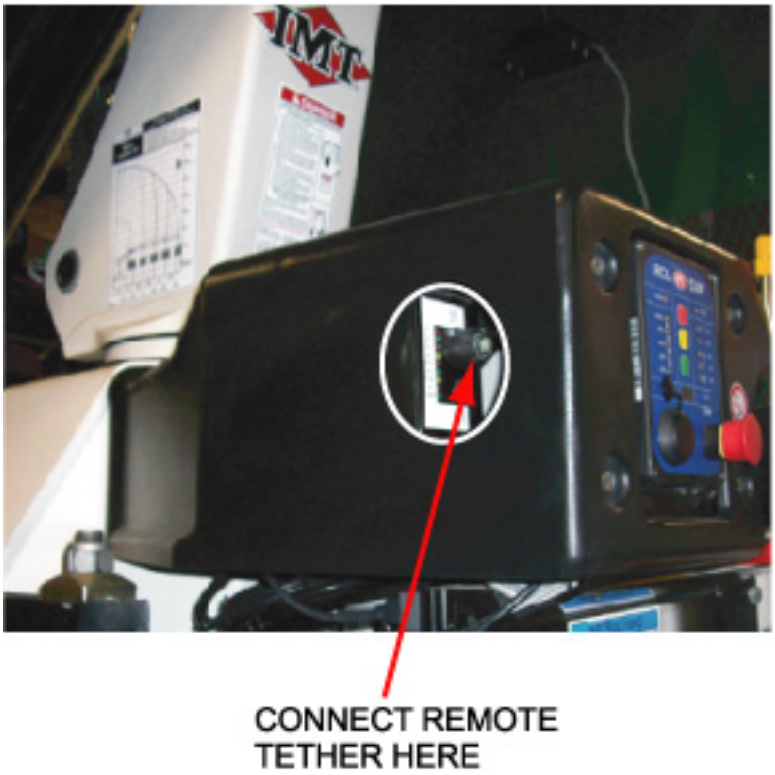
Tethered Remote

In case of radio failure, your crane is equipped with a cable for tethered remote operation. Connect the tether to the fitting inside the RCL box as shown, and to the tethered cable connector on the radio remote.



Refuse Container with Loader Maintenance Tasks

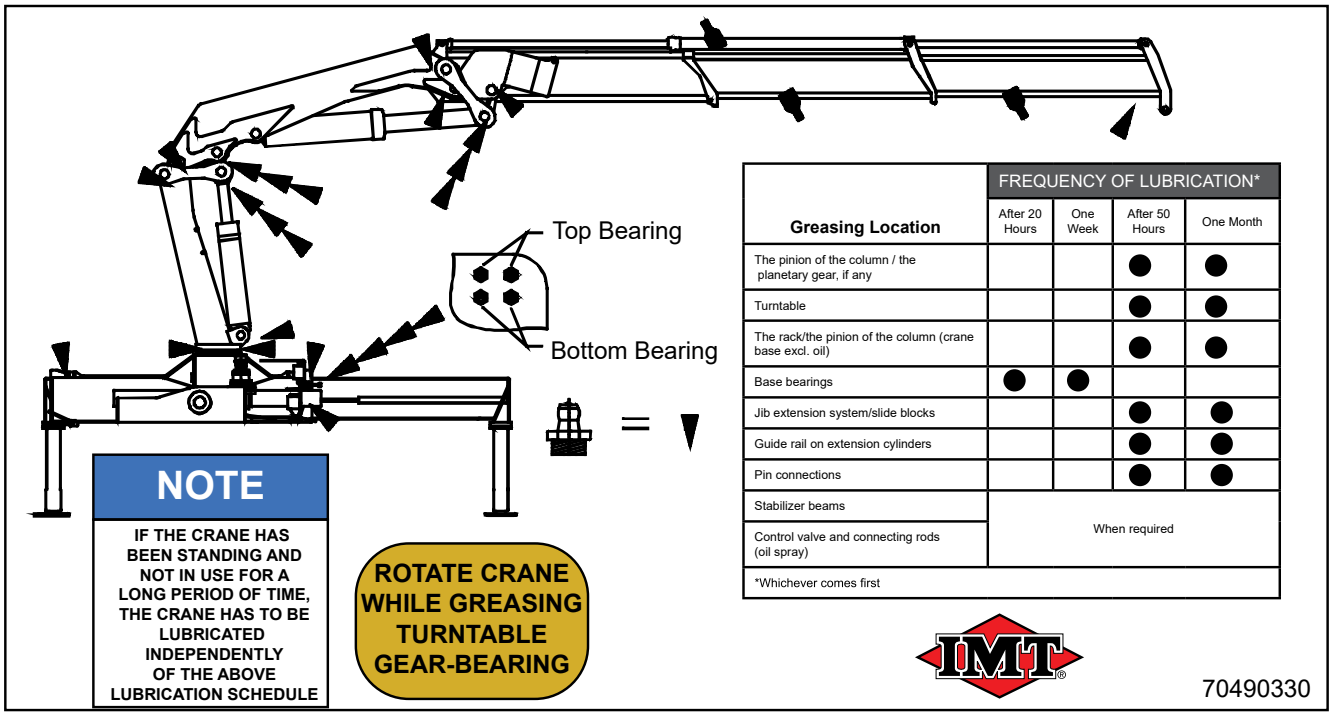
Complete daily, weekly, monthly, and periodic inspections as noted in the General Reference section of the Material Handling Crane Operation & Safety manual, IMT # 99904591.

High-Pressure Filter

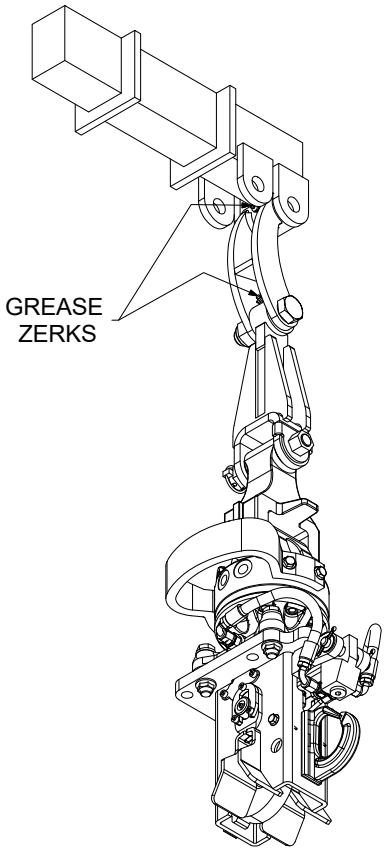
The filter should be changed annually or more frequently if needed. Replacement parts for the high-pressure filter include:

- Filter element - P/N: 49402
- Seal kit - P/N: 49417

Grease Zerks



Greasing Location	FREQUENCY OF LUBRICATION*			
	After 20 Hours	One Week	After 50 Hours	One Month
The pinion of the column / the planetary gear, if any			●	●
Turntable			●	●
The rack/the pinion of the column (crane base excl. oil)			●	●
Base bearings	●	●		
Jib extension system/slide blocks			●	●
Guide rail on extension cylinders			●	●
Pin connections			●	●
Stabilizer beams	When required			
Control valve and connecting rods (oil spray)				
*Whichever comes first				



The Refuse Container with Loader has two additional grease zerks which are not part of the crane, located near the rig release hook as shown. Grease, using Shell Alvania 2EP, Shell Retinax “A”, Mobilith AW2 or equivalent, every six months.

Troubleshooting

Condition	Possible Cause	Solution
Crane will not work	PTO / crankshaft-driven pump is not activated.	Activate PTO or crankshaft driven pump.
	Electrical harness and hydraulic hoses are not connected.	Connect electrical harness at the front of the container, and the hydraulic hoses at the rear of the body. (Deactivate PTO / crankshaft-driven pump before connecting!)
	Crane Mode switch on power tower in cab is not turned on.	Turn on *Crane Mode* switch.
	RCL safety system is not on.	Make sure all emergency stop buttons on the remote and RCL are released. Start the RCL by turning on the remote and pressing the green button.
	Crane Power toggle near manual control levers is flipped down (off).	Flip up (on) the *Crane Power* toggle.
Crane and roll-off container leans or tilts unexpectedly during rotation.	Clamps pins are not fully engaged.	Check both sides of the vehicle for clamp pin engagement. Reposition the vehicle so it is more level if the clamp pins are only closed on one side.
	Stabilizers are not fully deployed.	Deploy stabilizers.
Clamp pins are not engaged.	*Crane Mode* switch on power tower in cab is not turned on.	Turn on *Crane Mode* switch.
	Pneumatic failure	Test pneumatic function using the override button for the solenoid in the control panel.
Hoist will not work.	Clamp pins are closed.	Open pins by turning off crane power (*Crane Mode* switch) in the cab.
Rig release will not work.	Hydraulic failure	Check hydraulic connections and hoses for leaks.
Vehicle moves very slowly.	Dash-mounted warning light is lit.	Check that the hoist is lowered completely.

Quick Guide Kit (70490314)

IMT MAT'L HANDLING CRANES QUICK REFERENCE GUIDE

Crane Pre-Operation Checklist

Before operating crane:

1) Pull roll-off container to front of truck. Follow hoist manufacturer instructions. Visually check:
   - ☑ Front of roll-off container has contacted stops.
   - ☑ Container restraint bracket is engaged with roll-off container pocket.

2) Connect hoses at rear of truck in this order:
   a) Large coupling (return)
   b) Small coupling (pressure)

3) Connect electrical wire at front of truck.

4) Engage the PTO in the cab.

5) Turn on *Crane Mode* switch in cab. Visually check:
   - ☑ Clamp pins have engaged on both sides of truck.

6) Follow IMT instructions to set stabilizers and operate crane.

71399055

This chart is to be used as a "quick reference" guide only. It should never be substituted for a thorough review of the manual.

IMT MAT'L HANDLING CRANES QUICK REFERENCE GUIDE

Transport Checklist

Complete all of these steps before moving the refuse container with crane to a new location:

1) Stow the crane.

2) Retract and stow the crane stabilizers.

3) Disengage the PTO or crankshaft-driven pump.

4) Turn off *Crane Mode* switch in cab.

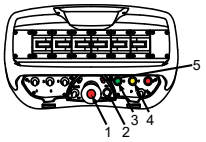
5) Make sure electrical cable and hoses are connected. Connect hoses in this order:
   a) Large coupling (return)
   b) Small coupling (pressure)

71399056

This chart is to be used as a "quick reference" guide only. It should never be substituted for a thorough review of the manual.

IMT MAT'L HANDLING CRANES QUICK REFERENCE GUIDE

Crane Start-Up



1) Pull out all stop buttons, red button #1, at each control position. Note: E-Stop buttons may be pulled or twisted out to release.
2) Control levers on remote must be in the neutral position.
3) Push the ON button, black button #2. The red LED #5 button will illuminate.
4) Push the green button #3. This links the remote to the RCL.
5) To set-up the stabilizers, press the yellow button #4, twice. The RCL will beep periodically. Set-up the stabilizers. Press the yellow button #4, twice again, to return to crane operation.

NOTE: Normal crane operation, the RUN diode on the RCL is lit and the display will have a running ._._. across the bottom, and the receiver box will have a running square.

70399973

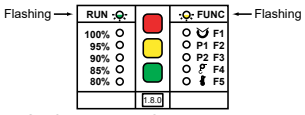
This chart is to be used as a "quick reference" guide only. It should never be substituted for a thorough review of the manual.

IMT MAT'L HANDLING CRANES QUICK REFERENCE GUIDE

Emergency Mode

RADIO REMOTE SYSTEM ERROR

If your radio remote stops working, the red diode on the receiver box and the RUN and FUNC diodes on the RCL indicator panel, will flash. You can no longer run the crane with the remote.



EMERGENCY (MANUAL) MODE

To change to emergency (manual) mode,
1) On the RCL panel, press and hold the yellow button, and then while holding the yellow button, press the red button. The RUN and FUNC diodes on the RCL panel will be flashing.
2) To verify that the crane can be controlled manually, the 1.8.0 will be replaced by 1.8.6, or a running dash on the top -------- with running dots ..... on the bottom. If this does not happen, repeat step one.
3) To return to remote control mode, repeat step one.

NOTE:
The transmitter must be off to go into manual mode. The Remote/Manual Switch must always remain on remote at all times.

70399974

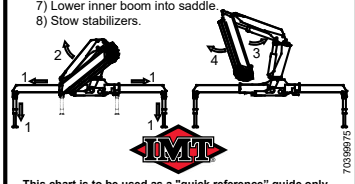
This chart is to be used as a "quick reference" guide only. It should never be substituted for a thorough review of the manual.

IMT MAT'L HANDLING CRANES QUICK REFERENCE GUIDE

Crane Stow / Unstow

UNSTOWING CRANE:
1) Set-up stabilizers prior to unstowing crane.
2) Raise inner boom to 70°
3) Slightly retract outer boom to allow gravity to swing stowing hook from stowing pin.
4) Raise outer boom until free of base.
5) Slightly extend extension to allow stowing bracket to clear pin–if equipped.

STOWING CRANE:
1) Retract extensions, allowing distance for extension stowing bracket to clear stowing pin–if equipped.
2) Raise inner boom to 70°.
3) Lower outer boom completely.
4) Lower inner boom to 0°.
5) Retract extension into stowing pin–if equipped.
6) Raise outer boom to seat in stowing hook.
7) Lower inner boom into saddle.
8) Stow stabilizers.



70399975

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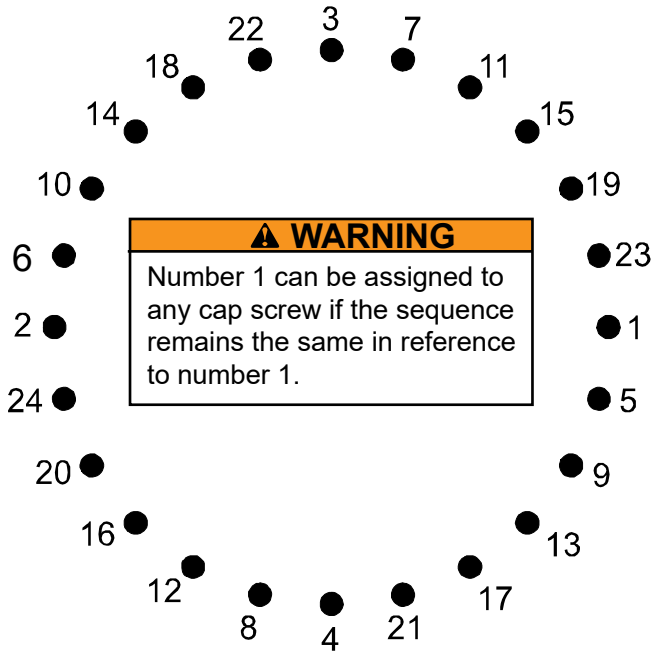
Turntable Bearing Thread Tightening Sequence



NOTES: Refer to the turntable bearing thread tightening diagram for proper tightening / torquing sequence of the turntable bearing to the crane base and crane mast. The total quantity of cap screws varies dependent on crane model.

TIGHTENING PROCEDURE

1. Refer to the torque data chart to determine the proper torque value to apply to the size of cap screw used.
2. Follow the tightening sequence shown in the diagram. Note the crisscross pattern as shown in the diagram.
3. Torque all cap screws to approximately 40% of the specified torque value, by following the sequence.
   - (Example: .40 X 265 ft-lb = 106 ft-lb)
   - *(Example-metric: .40 X 36 kg-m = 14.4 Kg-m)*
4. Repeat step 3, but torquing all cap screws to 75% of the specified torque value. Continue to follow the tightening sequence.
   - (Example: .75 X 265 ft-lb = 199 ft-lb)
   - *(Example-metric: .75 X 36 kg-m = 27 kg-m)*
5. Using the proper sequence, torque all cap screws to the listed torque value as determined from the torque data chart.

Thread Torque Chart (English)

FINE THREAD BOLTS (ENGLISH)					
SIZE	BOLT DIA.	GRADE 5  SAE J429 GRADE 5		GRADE 8  SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN	PLATED	PLAIN	PLATED
		(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)
5/16-24	0.3125	19	14	27	20
3/8-24	0.375	35	26	49	35
7/16-20	0.4375	55	41	78	58
1/2-20	0.5	90	64	120	90
9/16-18	0.5625	120	90	170	130
5/8-18	0.625	170	130	240	180
3/4-16	0.75	300	225	420	315
7/8-11	0.875	445	325	670	500
1-12	1	645	485	995	745
1 1/8-12	1.125	890	670	1445	1085
1 1/4-12	1.25	1240	930	2010	1510
1 3/8-12	1.375	1675	1255	2710	2035
1 1/2-12	1.5	2195	1645	3560	2670

COARSE THREAD BOLTS (ENGLISH)					
SIZE	BOLT DIA.	GRADE 5  SAE J429 GRADE 5		GRADE 8  SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN	PLATED	PLAIN	PLATED
		(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)
5/16-18	0.3125	17	13	25	18
3/8-16	0.375	31	23	44	33
7/16-14	0.4375	49	37	70	52
1/2-13	0.5	75	57	105	80
9/16-12	0.5625	110	82	155	115
5/8-11	0.625	150	115	220	160
3/4-10	0.75	265	200	375	280
7/8-9	0.875	395	295	605	455
1-8	1	590	445	910	680
1 1/8-7	1.125	795	595	1290	965
1 1/4-7	1.25	1120	840	1815	1360
1 3/8-6	1.375	1470	1100	2380	1780
1 1/2-6	1.5	1950	1460	3160	2370

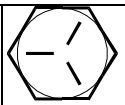
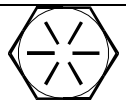
NOTES:

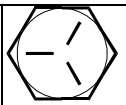
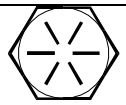
1. Tightening torques provided are midrange.
2. Consult bolt manufacturer's particular specifications, when provided.
3. Use flat washers of equal strength.
4. All torque measurements are given in foot-pounds.
5. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as never-seez compound graphite and oil, molybdenum disulfide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of loctite does not affect the torque values listed above.

⚠ WARNING

Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads after torqueing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

Thread Torque Chart (Metric)

FINE THREAD TORQUE CHART (METRIC)					
TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.375	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.625	24	18	33	25
3/4-16	0.75	41	31	58	44
7/8-11	0.875	62	45	93	69
1-12	1	89	67	138	103
1 1/8-12	1.125	123	93	200	150
1 1/4-12	1.25	171	129	278	209
1 3/8-12	1.375	232	174	375	281
1 1/2-12	1.5	304	228	492	369

COARSE THREAD TORQUE CHART (METRIC)					
TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-18	0.3125	2	2	3	2
3/8-16	0.375	4	3	6	5
7/16-14	0.4375	7	5	10	7
1/2-13	0.5	10	8	15	11
9/16-12	0.5625	15	11	21	16
5/8-11	0.625	21	16	30	22
3/4-10	0.75	37	28	52	39
7/8-9	0.875	55	41	84	63
1-8	1	82	62	126	94
1 1/8-7	1.125	110	82	178	133
1 1/4-7	1.25	155	116	251	188
1 3/8-6	1.375	203	152	329	246
1 1/2-6	1.5	270	210	438	328

NOTES:

1. Tightening torques provided are mid-range.
2. Consult bolt manufacturer's particular specifications, when provided.
3. Use flat washers of equal strength.
4. All torque measurements are given in kilogram-meters.
5. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as never-seez compound graphite and oil, molybdenum disulfide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of loctite does not affect the torque values listed above.

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Revisions

DATE	LOCATION	DESCRIPTION

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