MM-2MX-K

MARSH MASTER®

OPERATING & MAINTENANCE MANUAL

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Rev. 6/22/2026

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FOREWORD

Your Marsh Master® machine is designed to give you years of dependable service. The marsh and swamp environments where these machines operate are not forgiving; therefore, we build the machine to be simple, reliable, easy to operate and maintain as possible.

To keep the Marsh Master® operating efficiently, familiarize yourself with the contents of this manual. It contains instructions for the safe operation, use, and servicing of the machine.

The descriptions and specifications contained in this manual are subject to change. Coast Machinery, LLC reserves the right to modify specifications or design, and to upgrade its equipment at any time as part of a continuing process of refinement.

Thank you for the confidence you have placed in the Marsh Master®. Care for it properly, and it will give you many years of dependable service.

CLARIFYING DEFINITIONS

Accessory – The word accessory in this manual refers to an optional feature that can be included in the Marsh Master's® design. An accessory may be considered inherent to the Marsh Master design and is different from an "Attachment" as it may or may not be able to be easily removed.

Amphibious – The word amphibious in this manual means suited for land, water, and the area where land converges with water.

Attachment – The word attachment in this manual refers to an additional piece of equipment that meets both of the following criteria:

1.) Connects to the Marsh Master® specifically through the rear hitch, the auxiliary hydraulic circuits (high flow or low flow circuits), the auxiliary electrical circuit, and/or the front hitch.
2.) The Marsh Master® must lift or support the weight of the additional piece of equipment.

Capsize – The word capsize in this manual means to overturn or the act of overturning, specifically **in water**. The act of capsizing can occur in deep and shallow water and where land converges with water.

Custom Engineered to Specific Need – This phrase in this manual refers to the situation where Coast Machinery, LLC., designs and manufactures a Marsh Master® (KD Model) that has special features outside of what is covered in this manual and in which these features result in the necessity for extra safety, operation, and/or maintenance warnings/information. Such information will be provided to the specific customer.

Data plate – The term "data plate" in this manual refers to a placard, label, decal, metal plate, or any marking which contains vital information about the piece of equipment that said data plate is affixed too.

Marsh Master® – The term "Marsh Master®" used in this manual refers to the **Marsh Master® amphibious track vehicle** by Coast Machinery, LLC.

Swamping – The term swamping in this manual refers to the situation where water floods the machine's body (cab, engine compartment, rear bed) adversely impacting the machine's stability.

Swimming – The word swimming in this manual refers to the situation where the Marsh Master's® tracks are no longer engaging land and the machine becomes completely buoyant. Swimming can take place in deep water and the area where land converges with water.

Throwing A Track – The phrase "throwing a track" in this manual refers to the situation where one or both of the Marsh Master's® track systems is forced off of the sprocket drive assembly; therefore, leaving the machine in an immovable position.

Tracking – The word tracking in this manual refers to the situation where the Marsh Master's® tracks are engaging land. Tracking can take place in shallow water or on solid ground, and the area where land converges with water.

Trailering – The term "trailering" in this manual refers to any scenario where the Marsh Master® is engaging a trailer for the purpose of hauling the Marsh Master® down a road or highway. Trailering the Marsh Master® may include, but is not limited to, the situations where the machine is driven onto or off of a trailer OR when the machine is being adjusted on the trailer.

MANUFACTURER'S LIMITED WARRANTY

MACHINE WARRANTY

Coast Machinery, LLC warrants to the original purchaser, for a period of one (1) full year from date of delivery, that goods manufactured by Coast Machinery, LLC will be free from defects of workmanship and materials, provided such goods are operated and maintained in accordance with Coast Machinery, LLC's written manuals or other instructions. No warranty is made with respect to items supplied by Coast Machinery, LLC on special order of purchaser. Coast Machinery, LLC's sole obligation is to repair or replace, at Coast Machinery, LLC's option, parts that do not conform to this warranty.

ENGINE WARRANTY

Kohler Co. warrants to the original retail consumer that each new diesel engine will be free from manufacturing defects in materials or workmanship in normal service for the applicable coverage period set forth below beginning on the date of purchase; provided the engine is operated and maintained in accordance with Kohler Co.'s instructions and manuals.

ENGINE SERIES	WARRANTY PERIOD	OPERATING HOURS	WARRANTY COVERAGE
KDI	3 YEARS	0 – 2,000	100%
		2,001 – 6,000	Major Components Only

*Major component defects are failures related to: a crankcase casting, cylinder head casting, crankshaft, crankshaft pulley, camshaft, connecting rod, flywheel, and oil pump.

For full warranty explanation, see Kohler KDI 2504 TCR Owner's Manual. To obtain warranty service, the original retail purchaser must bring the engine to an authorized service facility designated by Kohler Co. found by visiting www.kohlerengines.com or telephone 1-800-544-2444 (U.S.A and Canada).

LABOR WARRANTY

For one (1) full year from date of delivery, Coast Machinery, LLC, at its option, will repair, pay for outside service, or pay the customer straight time for the particular warranted repairs.

REPLACEMENT PARTS WARRANTY

Repair parts supplied by Coast Machinery, LLC are warranted for a period of ninety (90) days from installation. Coast Machinery, LLC's sole obligation is limited to the replacement of the warranted part with no obligation to provide labor in installing such part. No warranty is given for electrical parts.

ALL ABOVE WARRANTIES DO NOT COVER THE FOLLOWING:

- Maintenance items, adjustments, or required maintenance as per written manuals or other instruction.
- Transportation cost of machine for necessary repairs.
- Repairs required as a result of failure due to normal wear, accidents, misuse, abuse, negligence, or improperly installed repair parts.
- Products altered or modified in a manner not authorized by Coast Machinery, LLC in writing.

- Provision of substitute equipment or service during periods of malfunctions or non-use.
- Electrical parts.

This warranty is expressly in lieu of all other stated or implied warranties and of all other obligations and liabilities on the part of Coast Machinery, LLC, including liabilities for direct, indirect, immediate, special, or consequential damages arising out of the failure of any machine or part of it to operate properly; including the cost of expense of providing substitute equipment or service during periods of malfunctions or non-use.

NOTE: This warranty cannot be expanded, changed, or modified by any representative of Coast Machinery, LLC without written approval from the President of Coast Machinery, LLC.

SAFETY

The Marsh Master® is an amphibious track vehicle designed for wetland terrain. It should not be used in rocky terrain. It is a powerful machine that should be operated and maintained with respect and caution. Misuse or carelessness can result in serious personal injury or death, damage to the machine, or both. Safety precautions must be observed at all times.

This section outlines basic safety procedures that apply to operation, maintenance, and machine adjustment.

OPERATOR QUALIFICATIONS

Inexperienced personnel should not operate the Marsh Master®. It is important that qualified personnel study and understand this manual before attempting to operate the machine. Particular attention should be given to the ***PRE-OPERATION CHECKS*** and ***AMPHIBIOUS OPERATION*** sections.

SAFETY WARNINGS

The following symbol is used throughout this manual as indicated to warn of hazards or unsafe practices that could result in property damage, personal injury, or death.

The table below lists warnings that must be read, understood, and followed prior to and during any activity that involves direct or indirect use and/or interaction with the Marsh Master®. Many of these warnings are shown both here in this table and in the applicable sections throughout this manual.

	WARNING **SERIOUS INJURY OR DEATH CAN OCCUR!**	**WHAT CAN HAPPEN**	**HOW TO AVOID**
PRE-OPERATION SAFETY (SEE *PRE-OPERATION CHECKS* SECTION)			
⚠	READ AND UNDERSTAND THIS MANUAL IN ITS ENTIRETY PRIOR TO OPERATING THE MARSH MASTER®.	The risk of accident, injury, and equipment damage is greatly increased if the operator does not fully understand how to properly operate the Marsh Master® in different situations.	New or inexperienced operators should read and understand this manual, and then regularly practice the operating techniques described in this manual.

	PERFORM A PRE-TRIP ASSESSMENT OF THE AREA IN WHICH THE MARSH MASTER® IS TO BE OPERATED AND IDENTIFY ALL POTENTIAL HAZARDS (OBSTACLES, IMPEDIMENTS, HIGH WATER, STRONG CURRENTS, SUBMERGED OBJECTS, STEEP BANKS, ETC…)	Not fully understanding the operating environment greatly increases the risk of accident, injury, and equipment damage AND increases the chance of leaving the operator and personnel stranded in a remote location.	When performing a pre-trip assessment, consult weather resources, people familiar with the area that you are operating the machine in, and when possible, practice with an experienced operator in similar environments prior to embarkment.
	ENSURE ALL DRAIN PLUGS ARE IN PRIOR TO OPERATING MACHINE.	Failure to do so may lead to swamping the machine, increasing the chance of property damage, injury, or death.	Prior to starting the machine, visually verify that the drain plugs are installed.
	ENSURE THAT THE OPERATOR AND ALL PASSENGERS HAVE ON THE REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR THE JOB-AT-HAND INCLUDING BUT NOT LIMITED TO LIFE JACKETS, HARD-HATS, GLOVES, EYE-PROTECTION, LONG-SLEEVES, FOOT PROTECTION, EAR-PROTECTION, ETC…	Not being equipped with proper PPE increases the chance of severe injury or death in the event of an accident.	Prior to starting the machine, visually and verbally confirm with all crew members that the required PPE is being worn for the task at hand.
	NEVER WEAR CHEST OR HIP WADERS OR ANY CLOTHING THAT MAY IMPEDE ONE'S ABILITY TO SWIM DURING OPERATION.	Clothing that prevents or impedes crew members ability to swim increases the chance of severe injury or death if the crew members become separated from the machine while in a body of water.	Prior to entering a body of water, visually and verbally confirm that all crew members are clothed such that their swimming ability is not impeded.
	WEAR LIFE JACKETS PRIOR TO SWIMMING THE MACHINE.	Failure to wear life jackets prior to swimming the machine greatly increases the risk of injury or death if the crew members become separated from the machine while in a body of water	Prior to entering a body of water, visually and verbally confirm that all crew members are wearing life jackets and are able to swim.
	IT IS THE OPERATOR'S RESPONSIBILITY TO ENSURE THAT A FIRE EXTINGUISHER IS ON BOARD THE MARSH MASTER® PRIOR TO OPERATING THE MACHINE.	If the machine were to catch fire, not having a fire extinguisher on board increases the risk of property damage and injury.	Prior to starting the machine, visually confirm that a properly rated fire extinguisher is on board and located in an area that is easily accessible.

	IT IS THE OPERATOR'S RESPONSIBILITY TO ENSURE THAT A FIRST AID KIT IS ON BOARD THE MARSH MASTER® PRIOR TO OPERATING THE MACHINE.	If an injury were to occur, not having access to a sufficient first aid kit may compromise the crew's ability to complete the job and, in some cases, may escalate to a more serious health situation.	Prior to starting the machine, visually confirm that a sufficient first aid kit is on board and located in an area that is easily accessible.
	IT IS THE OPERATOR'S RESPONSIBILITY TO ENSURE THAT THE MARSH MASTER® IS BEING OPERATED IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL LAWS.	Failure to do so might result in legal consequences and may increase the risk of injury or death, depending on the equipment required.	Check the local, state, and federal laws with regards to your operating environment and if any special equipment is required by law for your specific application.
	IT IS THE OPERATOR'S RESPONSIBILITY TO STAY WITHIN THE CONFINES OF THE LOAD LIMIT STAMPED ON THE MARSH MASTER® DATA PLATE.	Failure to do so will adversely affect the machine's performance which will greatly increase the risk of injury or death.	See load capacity section of this manual.
	DO NOT CARRY HEAVY OBJECTS (OVER 100 POUNDS) IN THE CARGO RACK/BASKET. NEVER ALLOW PASSENGERS TO RIDE ON THE CARGO RACK/BASKET.	Failure to do so will adversely affect the machine's performance and stability, increasing the risk of rolling or capsizing the machine, resulting in injury or death.	Visually confirm that the cargo rack/basket is not overloaded with equipment weighing greater than 100 lbs. When in doubt, move objects to the bed of the Marsh Master®.
	STORE GEAR IN REAR BED AREA TO CENTER THE LOAD PRIOR TO ENTERING WATER, DO NOT STOW ANY GEAR ON THE DECKS WHEN OPERATING IN OR NEAR WATER.	Failure to do so will adversely affect the machine's performance and stability increasing the risk of rolling or capsizing the machine resulting in injury or death.	Visually and verbally confirm the decks are clear of equipment and that equipment is stored in the rear bed area.
	WHEN THE MACHINE IS BEING USED TO TRANSPORT PERSONNEL IN THE REAR BED AREA, ANY REAR ATTACHMENTS SUCH AS THE ANCHOR MASTER®, BACKHOE, CUTTER, SPRAY RIG, ETC. SHOULD BE REMOVED.	Failure to do so may cause the machine to become overloaded. This will adversely affect the machine's performance and stability, increasing the risk of swamping the transom which could lead to capsizing the machine. Overloading the rear bed area increases the risk of injury or death.	Visually and verbally confirm that all crew members are safely seated, and the rear attachments are removed from the machine when using the machine for personnel transport.

	THE OPERATOR IS RESPONSIBLE FOR ENSURING THAT THE LOAD IS DISTRIBUTED PROPERLY FOR SAFE OPERATION BY LOADING THE MACHINE SUCH THAT THE PAYLOAD IS AS CLOSE TO THE MACHINE'S CENTER OF GRAVITY AS POSSIBLE (SEE ***LOAD DISTRIBUTION*** SECTION). THE MARSH MASTER'S® SAFETY AND PERFORMANCE IS DEPENDENT UPON HOW THE MACHINE IS LOADED; THEREFORE, THE OPERATOR MUST UNDERSTAND WHAT TYPE OF ENVIRONMENT THE MARSH MASTER® WILL BE OPERATING IN (OBSTACLES, IMPEDIMENTS, HIGH WATER, STRONG CURRENTS, SUBMERGED OBJECTS, STEEP BANKS, ETC…).	Failure to do so can adversely affect the machine's performance and stability, increasing the risk of rolling or capsizing the machine, resulting in injury or death.	Visually confirm that all equipment and crew members are loaded as described in the ***LOAD DISTRIBUTION*** section of this manual.
	DO NOT ADD SEAT BELTS TO THE MARSH MASTER®.	Seat belts can impede a passenger's ability to escape from the cab of the machine in the event of rolling or capsizing the machine, which greatly increases the risk of injury or death.	Visually confirm that no seatbelts or harnesses have been installed or are being used when operating the Marsh Master®.
	DO NOT ADD ANY TYPE OF HARD CAB DOOR TO THE MARSH MASTER® OTHER THAN CAB DOORS SUPPLIED BY COAST MACHINERY, LLC.	Addition of any other hard cab doors could cause the operator or passenger to become trapped in the cab if the machine were to capsize during operation, which greatly increases the risk of injury or death.	See ***CAB DOORS*** section of this manual. Read and understand the design features prior to operating the machine with these installed.
	REMOVE THE CAB DOORS PRIOR TO OPERATING THE MACHINE IN A SITUATION WHERE CAPSIZING IS POSSIBLE. SEE DOOR REMOVAL PROCEDURE IN THE ***CAB DOOR REMOVAL PROCEDURE*** SECTION OF THIS MANUAL.	Failure to remove the doors prior to operating in a situation where capsizing is possible increases the risk of injury or death, due to the ability to escape being impeded.	See ***CAB DOOR REMOVAL PROCEDURE*** section of this manual. Read and understand this section prior to operating the machine.

OPERATION: DRIVING SAFETY (SEE *OPERATION: DRIVING* SECTION)			
	ALWAYS MOVE THE CONTROL LEVERS SLOWLY. NEVER JERK THEM FROM FORWARD TO REVERSE OR REVERSE TO FORWARD.	Failure to do so can cause damage to the machine and increases the risk of injury or death for the operator and passengers.	Prior to loading the machine with personnel and/or equipment, practice running the Marsh Master® on level ground to familiarize yourself with the control's sensitivity.
	DO NOT OPERATE THE MACHINE FROM ANY POSITION OTHER THAN THE FRONT SEATS.	Failure to do so can cause damage to the machine and increases the risk of injury or death for the operator and passengers.	Visually confirm that the operator is seated properly in the cab prior to operating the machine.
	MAKE SURE ALL PASSENGERS ARE SEATED BEFORE PUTTING THE MACHINE IN MOTION.	Failure to do so increases the risk of injury or death for the passengers.	Visually and verbally confirm that all passengers are properly seated and braced prior to putting the machine into motion.
	DO NOT STAND WHILE THE MACHINE IS IN MOTION.	Failure to do so can contribute to a loss of balance or an unstable machine, which increases the risk of injury or death for the passengers.	Visually and verbally confirm that all passengers are properly seated and braced prior to putting the machine into motion.
	KEEP HANDS AND FEET CLEAR OF THE TRACKS WHILE UNDER WAY.	Failure to do so greatly increases the risk of injury or death as the track cleats are metal and tend to grab items that encounter them.	Visually confirm that all passengers keep their limbs inside the machine and clear of the tracks when in motion.
	MAKE PERIODIC CHECKS FOR HYDRAULIC OR FUEL LEAKS.	Failure to do so increases the risk of equipment malfunction and may lead to injury or death, as hydraulic fluid and fuel may be hot and flammable.	Visually check hoses, connection points, and the floor of the Marsh Master® before, during, and after operations. If a leak is noticed, repair leak prior to continuing to operate the machine.
	DO NOT OVERFILL FUEL TANKS.	Overfilling the fuel tanks increases the risk of leakage due to expansion and may lead to injury or death, as the fuel is flammable and a skin irritant.	Visually confirm that an air space of at least 2 inches is left at the top of the tank.

	IF ANY FUEL IS SPILLED IN THE MARSH MASTER®, CLEAN UP IMMEDIATELY.	Spilled fuel could potentially migrate into the pontoons, creating an explosive atmosphere.	Always check for leaks around the fuel tank and engine. Follow the ***TEST PROCEDURE PRIOR TO WELDING, CUTTING OR DRILLING PONTOON*** procedure in this manual to confirm that an explosive atmosphere is NOT present in the pontoons.
	AVOID EXTREME GRADES: 30^{o} MAXIMUM ANGLE WHEN ASCENDING OR DESCENDING AND 25^{o} MAXIMUM ANGLE ON A SIDE HILL.	Failure to do so greatly increases the risk of rollover and reduced machine stability, which increases the risk of serious injury or death.	Prior to embarking on your journey familiarize yourself with the topography of the terrain ahead. When encountering grade changes, do so slowly with extreme caution.
	WHEN APPROACHING A LEVEE, A DROP OFF, OR ANY OTHER TYPE OF GRADE CHANGE, IT IS IMPERATIVE THAT THE OPERATOR APPROACH AND CROSS OVER THE TRANSITION POINT SLOWLY AND WITH EXTREME CAUTION.	Failure to do so may cause the machine to generate excessive momentum in the longitudinal or lateral directions increasing the risk of rollover and reduced machine stability, which increases the risk of serious injury or death.	Prior to entering the transition point where the terrain grade changes, bring the machine to idle, assess the slope to determine if it is within the machines operating limits, SLOWLY track the machine over the transition point. See the ***CLIMBING OR DESCENDING A STEEP GRADE*** section of this manual.
	THE MACHINE IS NOT EQUIPPED WITH A PARKING BRAKE.	If machine is stopped on a sloping surface the machine may shift or slowly creep down the slope. Failure to chock the machine when parking on a slope may lead to property damage.	Do not park on a slope. If parking on a slope is unavoidable, properly chock the machine prior to leaving the machine unattended.
	AVOID RAIN-SWOLLEN RIVERS, AND ANY RIVER WITH ANYTHING OTHER THAN A SLOW-MOVING CURRENT.	Entering a swiftly moving river greatly increases the risk of rolling or capsizing the machine due to the force of the current, which increases the risk of property damage, serious injury, or death.	Before entering a body of water, it is the operator's responsibility to assess the water current strength and make a "go / no-go" decision. When in doubt, err on the side of caution by finding another route, or aborting the mission.

	EXTREME CAUTION SHOULD BE TAKEN WHEN ENTERING, EXITING, OR OPERATING IN A BODY OF WATER.	Serious injury or loss of life could occur if the machine turns over when entering, exiting, or operating in water. Overloading, improper load distribution, wrong angle of entry or exit, a leaking pontoon, or failure to install drain plugs could cause the machine to turn over.	Follow the recommended practices in the ***AMPHIBIOUS OPERATION*** section of this manual. Always maneuver slowly and precisely when transitioning from water to land and land to water operations.
	NEVER PUT THE MACHINE IN A POSITION WHERE THE WEIGHT OF THE MACHINE IS TRANSFERRED TO A SINGLE, FLOATING PONTOON.	A single pontoon does not provide sufficient flotation to safely support the full weight of the machine. Capsizing may occur in the event that one of the pontoons is operated in water and the other pontoon is on a solid surface, OR where one pontoon drops below the water surface greatly increasing the risk of serious injury or death.	Always maneuver slowly and precisely in situations where this potential exists. Always keep at least ½ the machine's width away from an edge or drop-off.
	DO NOT OPERATE THE MARSH MASTER® ON FROZEN WATERWAYS.	Operating a Marsh Master® on frozen waterways is not recommended due to the potential for the machine to break through on one side, put all the load on one pontoon, and roll over; greatly increasing the risk serious injury or death.	Always maneuver slowly and precisely when operating the machine near frozen waterways. Familiarize yourself with the terrain and weather conditions prior to embarking on your journey.
	EXTREME CAUTION SHOULD BE USED WHILE OPERATING A MARSH MASTER® ON THE EDGE OF A WATER BODY.	If a pontoon were to slip off a steep drop this would put the machine in an adverse situation greatly increasing the risk of rolling or capsizing the machine, which may result in serious injury or death.	Always maneuver slowly and precisely when operating near a steep bank. Always keep at least ½ the machine's width away from an edge or drop-off.

	EXTREME CAUTION SHOULD BE USED WHILE OPERATING A MARSH MASTER® IN A BODY OF WATER WITH SUBMERGED LOGS OR STUMPS.	If a single pontoon were to run up on a log or stump this would put the machine in an adverse situation greatly increasing the risk of flooding the back of the machine, rolling, or capsizing the machine, which may result in serious injury or death.	Always maneuver slowly and precisely when operating in a body of water with submerged obstacles. If you run up on a log or stump, stop the machine, evaluate the situation, and slowly maneuver the machine such that the risky situation is mitigated.
	IT IS THE OPERATOR'S RESPONSIBILITY TO USE GOOD JUDGEMENT AND FOLLOW THE RECOMMENDED BEST PRACTICES WHEN TOWING EQUIPMENT WITH THE MARSH MASTER®.	Failure to do so may put the machine in an adverse situation greatly increasing the risk of serious injury or death.	See the ***TOWING WITH THE MARSH MASTER®*** section of this manual.
TRAILERING THE MARSH MASTER® SAFETY (SEE *TRAILERING THE MARSH MASTER®* SECTION)			
	FOLLOW ALL THE RECOMMENDED BEST PRACTICES OUTLINED IN THE ***TRAILERING THE MARSH MASTER®*** SECTION OF THIS MANUAL.	Failure to follow any and/or all of the recommended practices in the ***TRAILERING THE MARSH MASTER®*** section of this manual may lead to serious injury or death.	If there are any questions regarding towing a Marsh Master® do not hesitate to contact Coast Machinery, LLC.
	EXTREME CAUTION SHOULD BE USED WHEN LOADING THE MARSH MASTER® ONTO A NON-TILT-DECK TRAILER USING STEEL LOADING RAMPS.	The operator should be cautious when approaching the "break-over point" where the angle of the steel ramps level off to the trailer. At this point, the machine will pitch up and the metal track cleats may start to slip on the steel ramps, causing the machine's stability to be less than when using a tilt-deck trailer. This situation increases the risk of property damage and serious injury.	Prior to loading the Marsh Master® on a non-tilt-deck trailer using steel loading ramps, the operator should ensure that a strip of rubber (or other type of tractive material) is placed between the tracks and deck to minimize the possibility of slipping. The operator must slowly track the machine straight onto the trailer past the "break over point." The operator should keep slowly tracking straight even when the machine pitches up. DO NOT PANIC AND JERK THE CONTROLS.

	THE MARSH MASTER® IS NOT EQUIPPED WITH A PARKING BRAKE.	If the machine is not properly secured on the trailer, the machine could shift or move unexpectedly, leading to serious injury or death.	See the ***TRAILERING THE MARSH MASTER®*** section of this manual.
	THE MM-2LX XL GALVANIZED HEAVY-DUTY CUSTOM TRAILER IS DESIGNED SOLELY FOR HAULING THE MARSH MASTER®.	Hauling any other payload or equipment may cause the trailer to be operated outside of the design parameters, which may lead to serious injury or death.	Do not haul anything other than a Marsh Master® on said trailer without contacting a Coast Machinery, LLC, representative first.
	DO NOT MOVE THE PARKING CHOCKS FROM THEIR FACTORY POSITION WITHOUT CONSULTING COAST MACHINERY.	Moving the parking chocks from their original location on each trailer WILL IMPACT the tongue weight of the trailer when in tow. Altering the tongue weight increases the chance of improper balance resulting in an increased potential for property damage, serious injury or death.	Leave the parking chocks where they were originally mounted. If a need arises to move them, contact Coast Machinery LLC to determine whether the new location is acceptable or not. The tongue weight should be 10% to 15% of your gross trailer weight prior to towing.
OPERATION: AUXILIARY HYDRAULIC SYSTEMS SAFETY (SEE *OPERATION: AUXILIARY HYDRAULIC SYSTEMS* SECTION)			
	FAMILIARIZE YOURSELF WITH THE WINCH OPERATION AND SAFETY PROCEDURES OUTLINED.	Failure to do so greatly increases the risk of property damage, serious injury, or death.	See the ***WINCH OPERATION*** section of this manual.
	THOROUGHLY INSPECT THE WINCH HOOK, SPOOL, AND CABLE PRIOR TO LOADING THE WINCH.	Failure to do so may result in the winch system failing while under load, greatly increasing the risk of serious injury or death.	Always inspect the condition of the winch system prior to embarking on a journey. Make note of any weak spots and repair winch as necessary.
	DO NOT ADJUST THE RELIEF VALVE ON THE WINCH CONTROLS WITHOUT FIRST CONSULTING COAST MACHINERY, LLC.	Adjusting or tampering with the relief valve could adversely affect the performance and safe operation of the auxiliary hydraulic system, resulting in an increased risk of property damage, serious injury, or death.	If experiencing problems with the winch and/or winch valve, contact Coast Machinery, LLC, prior to making any adjustments to the valve.

	NEVER HOOK THE WINCH CABLE TO ITSELF WHEN PUTTING THE WINCH CABLE UNDER LOAD.	Hooking the winch cable to itself while under load may create unacceptable strain on the cable strands causing the wire rope to break without warning, resulting in an increased risk of property damage, serious injury, or death.	Always use a separate strap, rope, or other rigging to tie off to the object that is being used when winching.
	ALWAYS KEEP A SAFE DISTANCE FROM THE WINCH AND CABLE WHILE UNDER LOAD AND WHEN POSSIBLE, REMAIN IN THE CAB BEHIND THE WINDSHIELD OR BRUSHGUARD DURING WINCH USE.	If a winch cable breaks under load the two ends may whip through the air and potentially strike any objects in its path. Failure to maintain a safe distance during winch operation greatly increases the risk of serious injury or death.	Only operate the winch from the cab of the Marsh Master®. If bystanders are outside of the confines of the Marsh Master® cab, the operator should ensure that they are at a safe distance from the winch cable, such that if the cable were to snap during operation all bystanders would be safely out of reach of the two cable ends. It is recommended to place a shirt or blanket over the cable prior to tensioning.
	IF YOUR MARSH MASTER® IS EQUIPPED WITH A FOLD-OUT FRONT WINDSHIELD, ENSURE THAT THE WINDSHIELD IS FULLY CLOSED DURING WINCH OPERATION TO PROTECT THE OPERATOR AND/OR PASSENGER FROM INJURY IF THE WINCH CABLE WERE TO SNAP.	Winching with the fold-out front windshield open presents an unsafe scenario by providing an uninhibited path for the winch cable to strike the cab inhabitants if the cable were to snap while under load; which greatly increases the risk of serious injury or death.	Visually and verbally confirm that the fold-out front windshield is closed and secured in place prior to using the winch.
	NEVER PUT YOUR HANDS IN THE SPOOL AREA WHEN WINDING OR UNWINDING THE CABLE. NEVER GRAB THE CABLE AT ANY POINT BEHIND THE HOOK.	Failure to keep all body parts and/or clothing out of the winch spool greatly increases the risk of serious injury or death. The winch is very powerful and can severely injure any body part that gets caught in the spool or other moving parts.	Always use a tool to knock the cable to the side when winding the winch back up after use.
	THE WINCH CABLE IS HARD AND MAY HAVE SOME SHARP POINTS ALONG THE CABLE. USE CAUTION AND PROPER PROTECTIVE EQUIPMENT WHEN HANDLING.	The cable can cut or burn hands when being handled. Failure to wear proper personal protective equipment (PPE) greatly increases the risk of serious injury.	The person handling the winch cable should always be wearing gloves and proper PPE.

	NEVER MANIPULATE THE REAR HITCH WITHOUT FIRST ENSURING THAT ALL PERSONNEL ARE CLEARLY OUT OF THE WAY OF THE REAR HITCH AND ATTACHMENT'S RANGE OF MOTION.	The rear hitch when equipped with an attachment presents a scenario where heavy equipment is moving in a specific range of motion. Failure to ensure that all personnel are safely out of the way prior to rear hitch operation greatly increases the risk for serious injury or death.	When manipulating the rear hitch, the operator must visually and verbally ensure that no personnel are near the rear of the machine.
	EXTRA CAUTION SHOULD BE TAKEN WITH FRONT-MOUNTED ATTACHMENTS SINCE THEY ARE MUCH CLOSER TO THE CAB THAN A REAR-MOUNTED ATTACHMENT.	A front-mounted attachment impacts debris/terrain before any other part of the machine and is closer to the cab than a rear mounted attachment; therefore, reckless operation with a front mounted attachment greatly increases the risk of property damage and serious injury.	The operator should use good judgement and slow movement when first encountering objects with a front attachment. The operator should visually and verbally confirm that the cab windshield is secured, and the cab is protected from any front debris produced during operation.
	IF YOUR MARSH MASTER® IS EQUIPPED WITH A DOWN PRESSURE FEATURE ON ONE OF THE HITCHES, IT IS IMPERATIVE TO MAKE SURE ALL PERSONNEL ARE SAFELY OUT OF RANGE WHEN USING THE DOWN PRESSURE FEATURE.	Down pressure mode lowers the hitch/attachment more quickly than float and may raise the end of the Marsh Master® where the down pressure is being used (front or rear). If personnel are near the hitch's range of motion during down pressure operation the risk of serious injury or death is greatly increased.	When using the down pressure feature the operator must visually and verbally ensure that no personnel are near the end of the machine where the down pressure is being applied.
	NEVER CONTINUOUSLY RUN THE HYDRAULIC CIRCUIT WITHOUT A TOOL ATTACHED (DEAD HEADING THE SYSTEM).	Continuously running the hydraulic circuit without a tool attached will overheat the hydraulic fluid and cause system damage.	The operator should always visually and verbally ensure that the hydraulic circuit is NOT engaged when a tool is not attached or in operation.

	NEVER OPERATE ANY ATTACHMENT THROUGH THE HIGH FLOW CIRCUIT WITHOUT FIRST ENSURING THAT NO PERSONNEL ARE NEAR THE ATTACHMENT.	When an attachment is engaged through the high flow circuit, parts of the attachment typically accelerate instantaneously. These rapidly moving components are typically bladed or parts with sharp points. Therefore, if personnel are near the attachment during operation the risk of serious injury or death is greatly increased.	Prior to engaging the high flow attachment, the operator should always visually and verbally ensure that no personnel are near the attachment.
	NEVER ATTEMPT TO RE-ALIGN A TRACK WITHOUT TWO PEOPLE. SPECIAL CAUTION SHOULD BE TAKEN TO NOT DAMAGE THE MARSH MASTER® BODY OR TRACK PARTS, AND TO RE-ALIGN THE TRACK IN A SAFE MANNER.	Safely re-aligning a thrown track requires a minimum of two people (one person to operate the cab controls and another person to guide the track onto the sprocket). The track re-aligner must be clear of the machine prior to the operator starting the engine. If the machine begins to move or slip off the jack, the operator must shut the engine off immediately. Failure to perform this procedure with extreme caution greatly increases the risk of serious injury or death.	See the ***HOW TO REALIGN A THROWN TRACK*** section of this manual. Follow each step closely and with extreme caution. If in doubt regarding any step of the procedure, contact Coast Machinery LLC before proceeding.
	USE EXTREME CAUTION WHEN USING ANY TYPE OF PRYING TOOL AROUND THE MARSH MASTER® TRACKS.	Failure to communicate and work cautiously and slowly will greatly increase the risk for the prying tool to get caught in the sprockets resulting in property damage, serious injury, or death.	If another method of aligning the track is available, it is recommended to use that method. If using a prying tool is the only option, the operator and prying tool handler must work together, **using extreme caution**, when applying a prying force on the track with a prying tool. The operator should **only** run the engine at **low idle** during this method of repair.

	NEVER WORK ON THE FUEL SYSTEM WITHOUT PROPER TRAINING AND SAFETY EQUIPMENT.	High pressure fluids can puncture skin and cause severe injury or death.	The operator should visually and verbally confirm that any personnel working close to high pressure systems are adequately trained and equipped with the proper PPE for the job at hand.
MAINTENANCE SAFETY (SEE *MAINTENANCE* SECTION)			
	EXPLOSION HAZARD: SERIOUS INJURY OR DEATH COULD OCCUR IF FLAMMABLE LIQUIDS OR GASES ACCUMULATE IN THE PONTOON CHAMBER, AND A SOURCE OF IGNITION PENETRATES THE PONTOON.	Marsh Master® pontoons are sealed chambers, and the possibility for an explosive mixture to be present exists. This mixture can be caused by a generation of methane gas or a fuel such as gasoline, or diesel fuel entering the pontoon through a crack. Failure to check the pontoons for an explosive atmosphere prior to welding, cutting, or drilling greatly increases the risk of property damage, serious injury, or death.	The person performing the pontoon maintenance should thoroughly review and adhere to the ***PONTOON MAINTENANCE*** section of this manual. If any doubt arises before and during the maintenance, contact Coast Machinery LLC before proceeding.
	NEVER CUT, DRILL, WELD, OR PERFORM ANY HEAT OR SPARK GENERATING ACTIVITY UNTIL THE PONTOON CHAMBER ATMOSPHERE HAS BEEN TESTED BY A COMPETENT PERSON USING A PROPERLY CALIBRATED EXPLOSIVE GAS METER (FLAMMABLE GAS DETECTOR).	The heat from welding can generate gas fumes creating an explosive atmosphere inside the pontoon. The risk of property damage, serious injury, or death greatly increases if a monitoring device is not used throughout the entire duration of the pontoon maintenance.	The person performing the maintenance should visually and verbally confirm that a suitable gas monitoring device is being used while working on the pontoons. If the gas monitoring device alarms while working on the pontoon, stop immediately and flush the pontoon internal with air. See the ***PONTOON MAINTENANCE*** section of this manual.
	THE TRACKS ARE HEAVY AND WILL FALL RAPIDLY!	When removing a machine's tracks, extreme caution should be taken as the tracks can fall resulting in serious injury or death.	The person performing the track maintenance or working with the tracks should ensure that all personnel are safely positioned such that the tracks will not impact them if they fall rapidly.

	TURN THE ENGINE OFF WHEN MAKING ANY ADJUSTMENTS ON THE TRACKS, CONTROL LINKAGES, OR HYDRAULIC COMPONENTS.	The hydraulic system (auxiliary and drive systems) is continuously under pressure while the machine's engine is running; therefore, it is best practice to always shut the engine off prior to working on the tracks, control linkages, or hydraulic components. Failure to do so may result in property damage, serious injury, or death.	The operator should ensure that the engine is off prior to performing any adjustments on the tracks, control linkages, or hydraulic components.
	USE EXTRA CAUTION WHEN CLIMBING ONTO OR WALKING ON MUDDY TRACKS.	When mud accumulates in the track cleats the tracks will become slick, creating a slip hazard situation. Failure to use extreme caution may result in serious injury or death.	The operator should try and keep the track cleats as clean as possible by running the machine in water prior to stopping. All personnel should wear appropriate non-slip footwear and move with caution when traversing over the tracks.
	DO NOT OPERATE THE MACHINE IN POORLY VENTILATED AREAS. NEVER RUN THE MACHINE IN A CLOSED BUILDING.	The Marsh Master® emits toxic gases. Operating the machine in a poorly ventilated area or closed building may lead to serious injury or death.	The operator should ensure that the area where the Marsh Master® is being operated is properly ventilated, and should keep the engine properly tuned.
	NEVER OPERATE THE MARSH MASTER WITHOUT PROPER HEARING PROTECTION AS THE MACHINE CAN EMIT EXCESSIVE NOISE.	If proper hearing protection PPE is not worn by the operator or personnel on board, hearing loss may result.	The operator and personnel on board should consult with their regulatory agency for exposure limits and wear hearing protection as needed.
	HOT ENGINE COOLANT. NEVER OPEN RADIATOR CAP OR SERVICE COOLING SYSTEM UNTIL RADIATOR AND ENGINE IS COOL TO THE TOUCH.	If hot fluid contacts the skin, then scalding can result which may lead to serious injury.	Prior to servicing the radiator, the operator or person performing the maintenance should use a thermometer to visually ensure that the coolant is at a safe temperature.

⚠	THE MARSH MASTER® SHOULD NEVER BE SOLELY SUPPORTED BY A JACK WHEN WORKING UNDERNEATH THE MACHINE.	When a machine is jacked up using only a jack (hydraulic or mechanical) the potential always exists for the machine to slip off the jack or the jack to release, which greatly increases the risk of property damage, serious injury, or death.	Always use proper supports (properly rated jack stands) to prevent the machine from slipping off the jack. Use multiple supports for redundancy such that the Marsh Master® is not supported only by one support.
⚠	NEVER USE YOUR HANDS TO LOCATE A FLUID LEAK.	Leaking hydraulic fluid or fuel under pressure can penetrate skin causing severe infection resulting in serious injury or death.	Always use a suitable material (such as cardboard, paper, or plastic) to locate leaks.
⚠	NEVER WORK AROUND THE BATTERY WITHOUT PROPER PPE.	Battery acid causes severe burns. Working around the battery without proper skin and eye protective equipment greatly increases the risk of serious injury.	Avoid skin and eye contact with battery acid. If contact does occur, wash immediately and get medical attention.
⚠	USE CAUTION WHEN MANEUVERING OR WORKING AROUND THE FAN.	The fan is hydraulically powered and is immediately rotating when the Marsh Master® is started. Failure to use caution around the fan when the machine is running greatly increases the risk of serious injury or death.	If working near the fan area, the machine should be turned off. Maintain a safe distance from the fan when the machine is running.
⚠	DO NOT WORK ON THE MARSH MASTER WHILE IT IS LOADED ON A TRAILER.	When loaded on a trailer, the Marsh Master is ~13 ft off the ground. Working on the machine at such a height increases the risk of falling resulting in serious injury or death.	If working on the Marsh Master, unload the machine from the trailer prior to doing any work. Be sure to use 3 points of contact at all times when climbing onto and off of the machine.
OPTIONAL ACCESSORIES SAFETY (SEE *OPTIONAL ACCESSORIES* SECTION)			
⚠	FOLD-OUT WINDSHIELD MUST BE FULLY OPEN WHEN OPERATING OVER WATER TO PROVIDE AN ADDITIONAL EXIT POINT FOR THE OPERATOR AND/OR PASSENGER TO ESCAPE IN THE EVENT OF CAPSIZING.	Failure to do so may result in the cab occupants becoming trapped if the Marsh Master® were to capsize, resulting in serious injury or death.	The operator should visually and verbally confirm that the fold-out windshield is fully open when operating over open water.

	FOLD-OUT WINDSHIELD MUST BE FULLY CLOSED DURING WINCH OPERATION TO PROTECT THE OPERATOR AND/OR PASSENGER FROM INJURY IF THE WINCH CABLE WERE TO SNAP.	Failure to do so may result in the winch cable backlashing upon snapping and contacting a cab occupant, resulting in serious injury or death.	The operator should visually and verbally confirm that the fold-out windshield is fully closed and secured when operating the winch.
	FOLD-OUT WINDSHIELD MUST BE FULLY CLOSED WHEN OPERATING IN AREAS WHERE THERE IS POTENTIAL FOR PROTRUDING OBJECTS (LIMBS, BRUSH, DANGEROUS INSECTS, ETC…) TO PENETRATE THE MARSH MASTER CAB.	Failure to do so may result in unwanted objects/insects entering the cab, resulting in serious injury or death.	The operator should use good judgement in determining when to close the fold-out windshield depending upon the hazards that exist in the operating environment.
	FOLD-OUT WINDSHIELD MUST BE FULLY CLOSED WHEN TOWING THE MARSH MASTER® DOWN THE ROAD.	Failure to do so may result in the windshield becoming detached resulting in property damage.	The operator should visually and verbally confirm that the fold-out windshield is securely closed prior to towing the Marsh Master® down the highway.
	DOOR WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE DOOR DATA PLATE ON DRIVER'S SIDE (INCLUDES BOTH DOORS).	Failure to account for the door weight in the load capacity may result in overloading the Marsh Master®, resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.
	REMOVE CAB DOORS PRIOR TO ENCOUNTERING ANY FORESEEABLE HAZARDOUS SITUATION WHERE CAPSIZING OR ROLLING THE MACHINE IS POSSIBLE.	Failure to do so may result in the cab occupants becoming trapped in the cab during a capsizing event, resulting in serious injury or death.	The operator should use good judgement in determining when to remove the cab doors. It is always recommended to remove the doors prior to operating the machine over open water. See the ***CAB DOOR REMOVAL PROCEDURE*** section of this manual.

	AIR CONDITIONING WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE AIR CONDITIONING DATA PLATE ON DRIVER'S SIDE OF THE PROTECTIVE SHROUD (INCLUDES THE A/C UNIT AND THE SHROUD WEIGHT).	Failure to account for the air conditioning unit weight in the load capacity may result in overloading the Marsh Master® resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.
	CAUTION SHOULD BE USED WHEN WORKING ON OR AROUND THE AIR CONDITIONING UNIT.	The air conditioning unit is charged with high pressure toxic refrigerant. Failure to use caution when working on or around the unit may lead to property damage, serious injury, or death.	Only a qualified person should work on the a/c unit. The a/c unit should only be serviced by a licensed HVAC technician when charging or evacuating the system is required.
	DECK RAILING WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE DECK RAILING DATA PLATE.	Failure to account for the deck railing weight in the load capacity may result in overloading the Marsh Master®, resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.
	CAUTION SHOULD BE USED WHEN LATCHING AND DE-LATCHING THE LADDER FROM THE DECK RAILING.	There is a pinch-point where the ladder folds and latches to the fixed deck railing. Failure to use caution when latching and de-latching the ladder may result in serious injury.	The user should carefully latch and de-latch the ladder wearing appropriate hand PPE to prevent pinching from occurring.
	CARGO RACK/BASKET WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE CARGO RACK/BASKET DATA PLATE.	Failure to account for the cargo rack/basket weight in the load capacity may result in overloading the Marsh Master®, resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.

	DO NOT CARRY HEAVY OBJECTS (OVER 100 POUNDS) IN THE CARGO RACK/BASKET. NEVER ALLOW PASSENGERS TO RIDE ON THE CARGO RACK/BASKET.	Overloading the cargo rack/basket shifts the center of gravity upward which compromises the machine's stability, resulting in increased risk of property damage, serious injury, or death.	The operator should visually and verbally confirm that the cargo rack/basket is properly loaded such that the machine's load distribution does not impact the machine's stability. See the ***LOAD DISTRIBUTION*** section of this manual.
	DECK INSERT WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY WHEN USING MORE THAN ONE INSERT. SEE DECK INSERT WEIGHT DATA PLATE (ACCOUNTS FOR 4 INSERTS).	Failure to account for the deck insert weight in the load capacity may result in overloading the Marsh Master®, resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.
	THE DECK AND DECK INSERTS BECOME SLIPPERY WHEN WET. USE CAUTION WHEN WALKING/WORKING ON THE DECK AND DECK INSERTS.	Failure to do so greatly increases the risk of slipping and falling, resulting in serious injury or death.	All personnel should be equipped with proper non-slip PPE footwear and use extreme caution when traversing wet, slippery decks.
	REMOVE OR PROPERLY SECURE DECK INSERTS PRIOR TO TOWING DOWN THE HIGHWAY.	When being towed at highway speeds, deck inserts may become airborne, greatly increasing the risk for property damage, serious injury, or death.	The operator and/or the driver of the package in tow should visually and verbally ensure that the deck inserts are either removed or properly secured prior to towing the package down the highway.
	MARSH MASTER® JACK WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE JACK WEIGHT DATA PLATE.	Failure to account for the jack weight in the load capacity may result in overloading the Marsh Master® resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.

	SECURE THE MARSH MASTER® JACK PRIOR TO TOWING DOWN THE HIGHWAY. FAILURE TO DO SO MAY LEAD TO SERIOUS INJURY OR DEATH.	When being towed at highway speeds, the jack may become airborne greatly increasing the risk for property damage, serious injury, or death.	The operator and/or the driver of the package in tow should visually and verbally ensure that the jack is either removed or properly secured prior to towing the package down the highway.
	FRONT BRUSH GUARD WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE FRONT BRUSH GUARD WEIGHT DATA PLATE.	Failure to account for the brush guard weight in the load capacity may result in overloading the Marsh Master®, resulting in property damage, serious injury, or death.	The operator should visually and verbally confirm that the Marsh Master® and all attachments, accessories, personnel, equipment, and gear are within the confines of the load capacity limits. See the ***LOAD CAPACITY*** section of this manual.
	CAUTION SHOULD BE USED WHEN OPERATING THE MARSH MASTER® WITH THE FRONT BRUSH GUARD AS IT WILL HELP PROTECT THE WINDSHIELD FROM BLUNT FORCE BUT MAY NOT PROTECT FROM SMALL SHARP PROTRUDING ITEMS.	Failure to use caution when operating the Marsh Master® with the front brush guard may result in property damage, serious injury, or death.	The operator should use good judgement regarding the environment in which the machine is being operated.

MARSH MASTER® MODEL CODE EXPLANATION

MM - 2MX - ___ - ___

TYPE: MARSH MASTER®

CLASS: 2MX
LARGER PONTOONS, WIDER CAB SPACE, INCREASED GROUND CLEARANCE, INCREASED FLOTATION, INCREASED LOAD CAPACITY

MODEL: KB, KC, KD
KB – HIGH & LOW FLOW CIRCUITS WITH NO REAR 3 PT. HITCH
KC – HIGH & LOW FLOW CIRCUITS WITH REAR 3 PT. HITCH
KD – CUSTOM ENGINEERED TO SPECIFIC NEED

SUB MODEL PACKAGE: FH, FF
FH – FRONT 3 PT. HITCH
****FH IS NOT COMPATIBLE WITH THE KB MODEL**
FF – FIREFIGHTER MODEL (INTERNAL WATER TANKS IN PONTOONS)

OPTIONAL ACCESSORIES:

NAME	DESCRIPTION	WEIGHT DATA PLATE
FOLD-OUT FRONT WINDSHIELD	SEE ***FOLD-OUT FRONT WINDSHIELD*** SECTION	
CAB DOORS	SEE ***CAB DOORS*** SECTION	✓
AIR CONDITIONING	SEE ***AIR CONDITIONING*** SECTION	✓
WINCH CATWALK	NON-SLIP ALUMINUM CATWALK OVER FRONT WINCH	
SLIDING OPENING BACK WINDOWS	BACK WINDOWS THAT CAN BE OPENED TO IMPROVE CAB VENTILATION	
DECK RAILING	SEE ***DECK RAILING*** SECTION	✓
CARGO RACK	SEE ***CARGO RACK*** SECTION	✓
FRONT BRUSH GUARD	SEE ***FRONT BRUSH GUARD*** SECTION	✓
DECK INSERTS	SEE ***DECK INSERTS*** SECTION	✓
DECK LINER	NON-SLIP DECK LINING ON PONTOON DECK	
REARVIEW CAMERA	OPERATOR CAN SEE BEHIND THE MARSH MASTER®	
MARSH MASTER® JACK	SEE **MARSH MASTER® JACK** SECTION	✓
CAB COOLING BLOWERS	TWO MOUNTED CAB COOLING BLOWERS	

****ITEMS WITH A ✓ IN THE "WEIGHT DATA PLATE" COLUMN DENOTE THAT THE ITEM SHOULD BE ACCOUNTED FOR WHEN CALCULATING THE LOAD CAPACITY AS DESCRIBED IN THE *LOAD CAPACITY* SECTION.****
****ITEMS WITHOUT A ✓ IN THE "WEIGHT DATA PLATE" COLUMN DENOTE THAT THE ITEM'S WEIGHT IS ALREADY ACCOUNTED FOR.****

INSTRUMENT PANEL

1. Front Lights
   a. Up: On
   b. Down: Off

2. Rear Lights
   a. Up: On
   b. Down: Off

3. Hydraulic Fan
   a. High
   b. Automatic
   c. Reverse (Momentary)

4. Hi Flow Auxiliary
   a. Pushed In: High Flow Tool Circuit Off
   b. Pulled Out: High Flow Tool Circuit Activated/ Marsh Master® Start Disabled

5. Low Flow Auxiliary
   a. Pushed In: Low Flow Tool Circuit Off
   b. Pulled Out: Low Flow Tool Circuit On/ Marsh Master® Start, Winch, and Hitch Disabled

6. Main Circuit Breaker (20A)
   a. Push in to Reset

7. Key Switch
   a. Off
   b. Run
   c. Start

8. Murphy® PowerView® PV380 (see next section for details)

9. Warning Lights
   a. Low Engine Oil Pressure
   b. Battery
   c. High Flow Auxiliary System Hydraulic Oil Filter
   d. Charge Pump Hydraulic Oil Filter

10. Rear 12V Accessory Outlet Switch

11. Cab 12V Accessory Outlet with 10A Circuit Breaker

ENGINE TACHOMETER: The tachometer registers engine speed in revolutions per minute (RPM).

HYDRAULIC OIL TEMPERATURE: This value indicates temperature of hydraulic fluid in the oil tank. Normal range is 110°F - 175°F.
NOTE: At no time should the machine be operated continuously above 180°F.

ENGINE COOLANT TEMPERATURE: This value registers the engine's coolant temperature. Normal engine coolant temperature ranges 175°F -200°F. Temperature above 220°F indicates an overheating engine.

SYSTEM VOLTAGE: This value indicates the condition of the charging system. Normal condition is 12 to 14 volts. Less than 12 volts indicates a discharging condition.

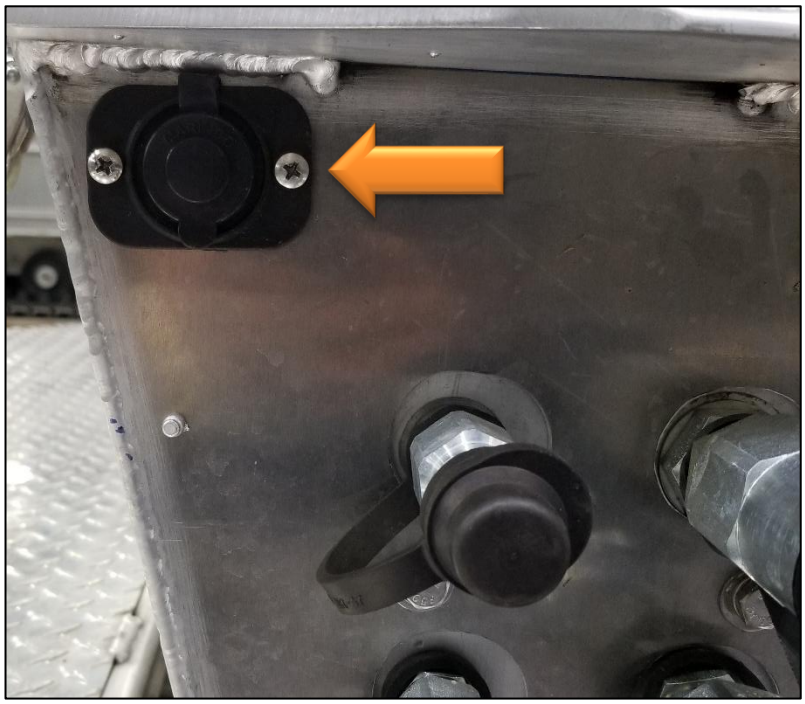
ENGINE HOUR METER: The engine hour meter records the number of hours the engine has been operated. This information is useful in determining when to service the machine.

FUEL LEVEL: Fuel level indicator. It is important to keep clean fuel in system and never allow fuel system to run dry. Allowing a diesel to run dry will require priming the engine.

PERCENT LOAD: Displays the percentage of available engine torque at the current engine speed.

REAR 12V ACCESSORY OUTLET

There is a 12V accessory outlet at the rear of the engine compartment near the hydraulic quick connects. It is intended to be a pre-installed point for providing power to additional electrical components or accessories with electric controls. Power is controlled by the switch on the top-right corner of the instrument panel.



PRE-OPERATION CHECKS

LOAD CAPACITY

Marsh Master® load limits can vary depending on model, components and special options. Therefore, each Marsh Master® is equipped with a metal data plate on the driver's side console panel that has the load capacity stamped on it for that particular unit. The machine also has metal tags on the upper square tubing of the cab above the driver's head. It is imperative to stay within the confines of these load limits. The picture below demonstrates where the metal data plate is located on the Marsh Master®.

Maximum load capacity stated on the data plate accounts for the Marsh Master® class, model, and sub model package (see ***MARSH MASTER® MODEL CODE EXPLANATION*** section). The Maximum load capacity stated on the data plate also accounts for the selected Marsh Master® with a full capacity of diesel and hydraulic oil, **BUT WITH NO PERSONNEL, ATTACHMENTS, OR OPTIONAL ACCESSORIES ABOARD.** Any additional weight added to the selected Marsh Master® must be subtracted from the Maximum load capacity limit stated on the data plate.

The load capacity can be further restricted when certain attachments are installed on the Marsh Master®. Such restrictions may regulate where and how much weight may be added with the attachment as well as the number of passengers. Such restrictions shall be clearly marked on the specific machine.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

IT IS THE OPERATOR'S RESPONSIBILITY TO STAY WITHIN THE CONFINES OF THE LOAD LIMIT STAMPED ON THE MARSH MASTER® DATA PLATE.

If there are any questions regarding load limits, contact Coast Machinery, LLC.

LOAD DISTRIBUTION

On all Marsh Masters®, the total weight of personnel and cargo should be evenly distributed so that the Marsh Master® is as well-balanced as possible. Loads should be kept as low as possible to keep the center of gravity of the machine low and reduce the possibility of roll over.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DO NOT CARRY HEAVY OBJECTS (OVER 100 POUNDS) IN THE CARGO RACK/BASKET. NEVER ALLOW PASSENGERS TO RIDE ON THE CARGO RACK/BASKET.

The decks are intended to be used as a walking platform or a seating surface. Never transport materials on the rear decks or allow rear passengers to stand on the decks while the machine is in motion.

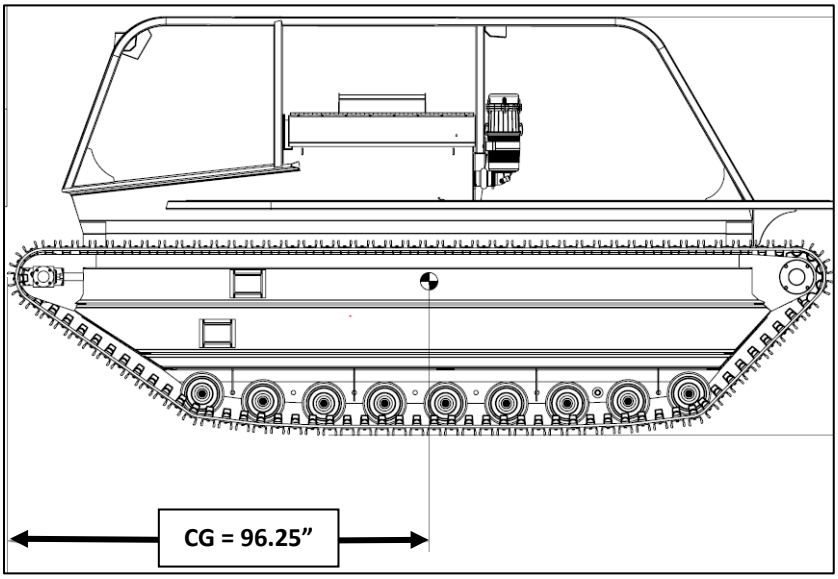
In a situation when a large amount of material must be transported to the jobsite (that may exceed the load capacity), we recommend using the Slick Sled™ transport system or additional Marsh Masters®. Trailers can also be used in some situations where the work area allows.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

WHEN THE MACHINE IS BEING USED TO TRANSPORT PERSONNEL IN THE REAR BED AREA, ANY REAR ATTACHMENTS SUCH AS THE ANCHOR MASTER®, BACKHOE, CUTTER, SPRAY RIG, ETC. SHOULD BE REMOVED.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

THE OPERATOR IS RESPONSIBLE FOR ENSURING THAT THE LOAD IS DISTRIBUTED PROPERLY FOR SAFE OPERATION BY LOADING THE MACHINE SUCH THAT THE PAYLOAD IS AS CLOSE TO THE MACHINE'S CENTER OF GRAVITY AS POSSIBLE (SEE SKETCH BELOW). THE MARSH MASTER'S® SAFETY AND PERFORMANCE IS DEPENDENT UPON HOW THE MACHINE IS LOADED; THEREFORE, THE OPERATOR MUST UNDERSTAND WHAT TYPE OF ENVIRONMENT THE MARSH MASTER® WILL BE OPERATING IN (OBSTACLES, IMPEDIMENTS, HIGH WATER, STRONG CURRENTS, SUBMERGED OBJECTS, STEEP BANKS, ETC…).



ENTERING & EXITING THE MARSH MASTER®

Always use three points of contact when entering or exiting the machine.

OPERATOR AND PASSENGER SEATING

All operators and passengers must be seated before operating the machine. The standing position can contribute to a loss of balance of the operator and/or passengers if they are not adequately prepared for the machine's movement. Also, the standing position raises the center of gravity, reducing the stability of the machine.

The operator is responsible for assuring that he and all passengers are seated before operating the vehicle.

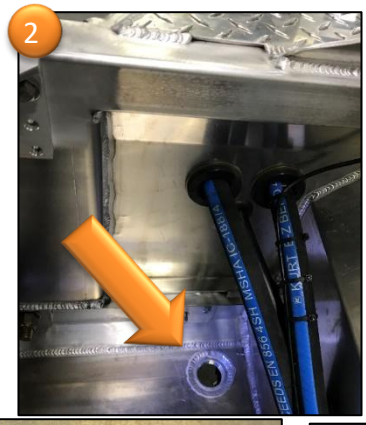
WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

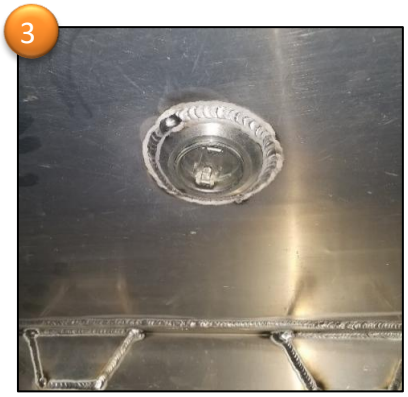
DO NOT STAND WHILE THE MACHINE IS IN MOTION. STANDING UP WHILE THE MACHINE IS IN OPERATION CAN CONTRIBUTE TO A LOSS OF BALANCE, OR AN UNSTABLE MACHINE.

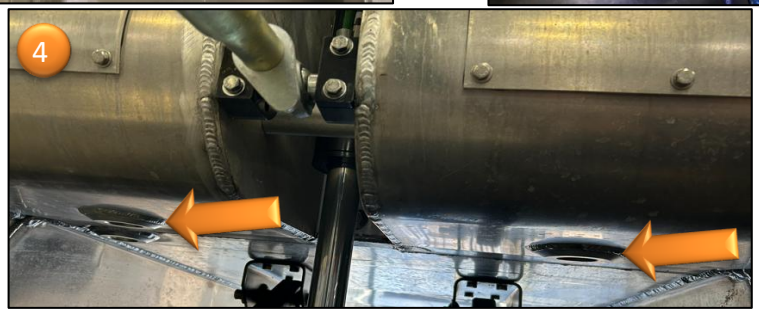
DRAIN PLUGS

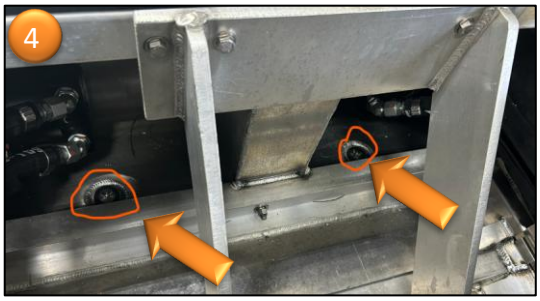
The Marsh Master® MM-2MX-K models have the following drain plugs that need to be installed before operation.

1. Front body drain plug
   - Access from inside Cab on Driver's side floor near front channel
2. Rear body drain plug
   - Access from inside rear bed area on Driver's side floor near rear channel
3. Engine oil pan access plug
   - Access from underneath machine in middle of the bottom floor
4. Motor cavity drain plugs (Closed Rear Drive Machines Only)
   - Access through the inside of the rear bed area of the machine in the motor cavities.
5. Driver side pontoon drain plug
   - Access between 2nd and 3rd bogey wheel from rear on outside of machine
6. Passenger side pontoon drain plug
   - Access between 2nd and 3rd bogey wheel from rear on outside of machine









MARSH MASTER® PRE-OPERATION FIELD CHECKLIST

Safety

1. __Have the operator and all passengers been trained on proper technique for boarding, seating, and exiting of the Marsh Master® per this manual?
2. __Have the pontoon plugs been pulled, and the pontoons been checked for leaks in accordance with the procedure in this manual?
3. __Have all the body and pontoon drain plugs installed?
4. __Has the operator read this manual, and become fully familiar with the machine and its capabilities?
5. __Has the operator been trained & gained experience when operating the Marsh Master® in amphibious situations? Does the operator fully understand how to properly enter and exit the water, and swim the machine?
6. __Has the operator calculated all additional weight such as attachments, accessories, personnel, gear, hardware, etc., and ensured that the total is within the load limit stamped on the Marsh Master®?
7. __Has all gear been stowed in the rear bed area prior to entering the water?
8. __Has the operator done a pre-trip assessment of the area where the Marsh Master® is to be used?
9. __Have any potential hazards been identified, and a plan made to deal with those hazards? (such as a rain-swollen river with strong current, steep banks, stumps & logs)
10. __Does the operator and passengers have all their PPE?
11. __Have the operator and passengers been made aware of the situations in which they are required to wear a life jacket?
12. __Has the machine been equipped with a fire extinguisher and first aid kit? (Not supplied by Coast Machinery, LLC.)
13. __Has the operator been trained on the operating and safety procedures related to the use of the winch?
14. __Has the operator read and understood the procedure for reinstalling a jumped track?

Maintenance

1. __Have all track bearings been greased?
2. __Do the track belts have proper tension?
3. __Have all fluid levels been checked?
4. __Has the machine been checked for any visible engine or hydraulic oil leakage?
5. __Have the radiator screens been cleaned?
6. __Has the winch been inspected and determined to be in good working order?
7. __Has the winch cable been checked for frays, rolled up properly on the drum, and ready for service?
8. __Has the machine been inspected for any broken or bent track cleats that need attention?
9. __Has it been confirmed that there is an operation manual box with this manual installed on the Marsh Master®?
10. __Has it been confirmed that the necessary tools to install a jumped track are on board?

Recommended tools to bring on every trip

1. ___Marsh Master® Jack
2. ___Boards for jack base
3. ___Two 1-5/16” wrenches
4. ___Two Come-along ratchet winches
5. ___Long pry bar

OPERATION: DRIVING

Your Marsh Master® is primarily designed for wetland terrain. It is not intended for use on the following surfaces: sticky clay, gumbo mud, rock, cement, snow and ice, frozen ground, or gravel. The suspension system is rigid and depends upon the terrain for cushion. Rock and gravel can damage the wheels, sprockets, and other track components and should be avoided.

Your Marsh Master® can be used in swamp terrain and will crawl over stumps and logs. However, prudent operation in swamp terrain is required. When operating in this type of environment, travel slowly and lighten your load if possible.

Your Marsh Master® will perform best where it is soft and wet. Water helps the Marsh Master® perform. The machine will operate at its best when running in water about 1 to 3 feet deep where the Marsh Master® is almost floating, but still getting traction. In this condition, there is very little load on the undercarriage. Do not be afraid of deep water; the Marsh Master® is very stable in the full-float-mode and is designed to seamlessly transition from land to water. Water also keeps the tracks running clean and prevents mud from clogging the tracks. The Marsh Master® is an **AMPHIBIOUS** machine.

Your Marsh Master® will not operate well in sticky, heavy, clay soils. This type of mud builds up on top of the pontoon and will eventually clog the tracks and lift the tracks off of the pontoons. If the track raises high enough off the pontoon, it can scrape the side of the pontoon body and cause serious damage. If this situation occurs, the best solution is to find water or pour water on top of the tracks, and slowly work the machine until the packed mud begins to loosen and work out. This same situation can also occur with snow and ice.

Your Marsh Master® is not an ATV- it is a Marsh Master®. Experience and good judgment are required to know what terrains the machine is capable of handling.

STARTING ENGINE

1. Ensure that seats are down, and engine covers are closed (required for cooling system to function properly).
2. Ensure that the battery disconnect switch is set to the “ON” position. See ***BATTERY DISCONNECT*** section.
3. Pull throttle lever all the way back.
4. Ensure that all auxiliary switches are turned to the “OFF” position.
5. Turn key to the “ON” position (Oil pressure and battery lights will illuminate).
6. Turn key to the “START” position and hold (No longer than 15 seconds).
7. Release key to the “ON” position when the engine starts.
8. Let engine idle according to the times in the table or until the hydraulic oil temperature is at least 75°F.

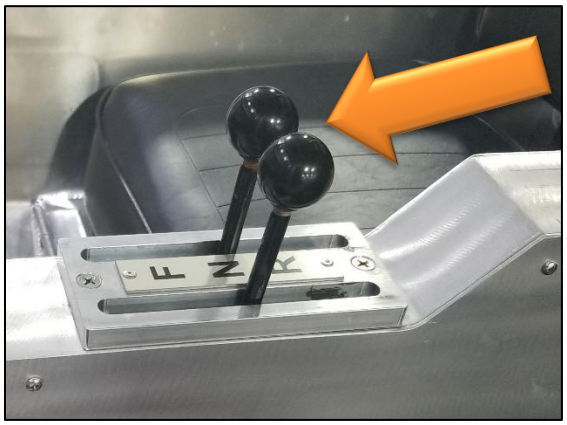
AMBIENT TEMPERATURE	TIME
≤ -4°F	2 minutes
From -4°F to 14°F	1 minute
From 14°F to 23°F	30 seconds
From 23°F to 41°F	20 seconds
≥ 41°F	15 seconds

THROTTLE

The throttle controls the engine speed. Normal operating speed ranges between 1600 to 2200 RPM. The throttle function may be deactivated temporarily upon startup to allow the engine to warm up. The engine should idle at 1000 RPM.

TRACK CONTROLS

The left lever controls the left track and the right lever controls the right track. The drive system is in neutral when the levers are in the detent position.



- To make the machine move forward, slowly move both levers forward.
  - The more the levers are advanced, the faster the machine travels.
  - With the levers all the way forward you are at full speed.
  - If conditions are such that the engine begins to lug, simply pull back on the levers to slow down.
  - Maximum pulling power is with the control levers slightly forward.
- To reverse the machine, pull the levers back from the neutral position.
  - The same principles for forward motion apply to reverse.
- To turn the machine, simply advance one lever more than the other.
- One way to allow for smoother control of the levers is to rest the forearm on the console.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

ALWAYS MOVE THE LEVERS SLOWLY. NEVER JERK THEM FROM FORWARD TO REVERSE OR REVERSE TO FORWARD. DAMAGE TO THE MACHINE OR INJURY TO THE OPERATOR OR PASSENGERS COULD OCCUR.

When the machine is parked, flip the control lever lockout over the control rods. This safety feature protects the controls so that they are not accidentally bumped.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

THE MACHINE IS NOT EQUIPPED WITH A PARKING BRAKE. MACHINE MUST BE CHOCKED WHEN PARKING ON A SLOPE.

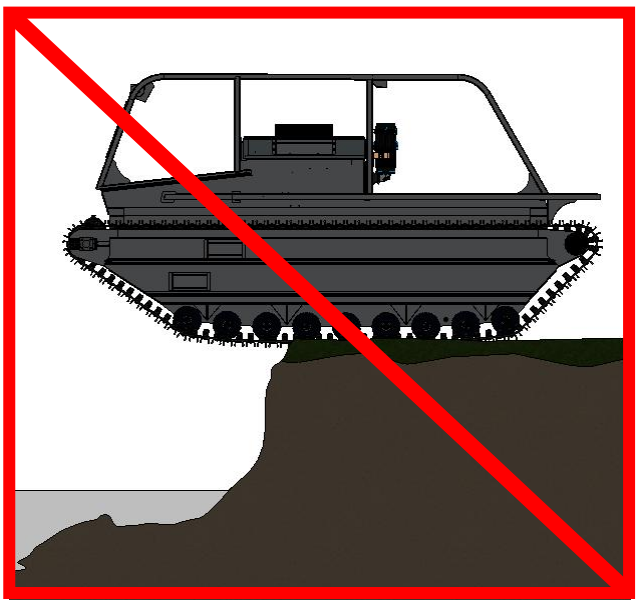
AMPHIBIOUS OPERATION

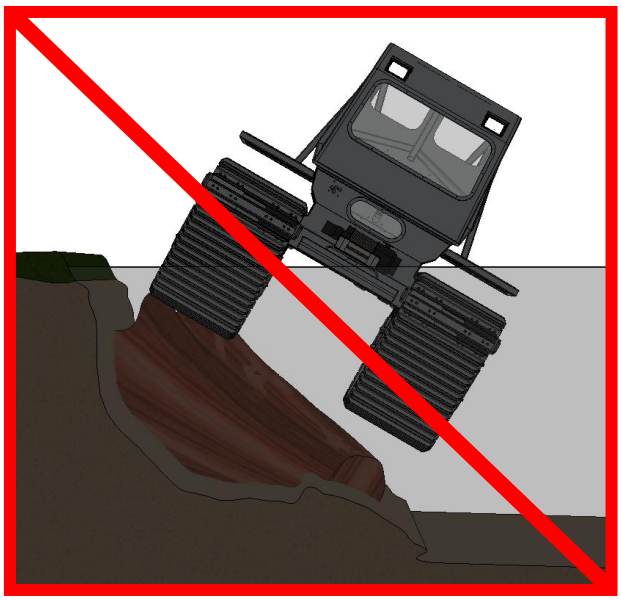
The Marsh Master® is an **AMPHIBIOUS** machine; therefore, the machine is **ALWAYS** considered to be in an amphibious mode of operation. Coast Machinery, LLC recommends the following best practices when operating the Marsh Master®.

- The drain plugs should always be in when operating the Marsh Master®.
- The pontoons should always be checked prior to operating the Marsh Master®. See ***PONTOON MAINTENANCE*** section.
- A US Coast Guard approved flotation device must be available for everyone on board and worn when operating in or near bodies of water.
- Use extreme caution while operating the Marsh Master® near the edge of a body of water where there is a steep drop-off between the land and water.
- Never put the machine in a position where the weight of the machine is transferred to a single, floating pontoon.
- Never operate the Marsh Master® on a frozen waterway where the potential exists for the machine to break through on one pontoon leading to potential capsizing/roll-over.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

CAPSIZING MAY OCCUR IN THE EVENT THAT ONE OF THE PONTOONS IS OPERATED IN WATER AND THE OTHER PONTOON IS ON A SOLID SURFACE, OR WHERE ONE PONTOON DROPS BELOW THE WATER SURFACE.





SWIMMING THE MARSH MASTER®

PRE-SWIMMING CHECKLIST

1. ___Confirm that all drain plugs have been installed correctly, see ***DRAIN PLUGS*** section of this manual.
2. __Check pontoons for leaks. See ***PROCEDURE TO CHECK PONTOONS FOR LEAKS*** section of this manual.
3. ___Confirm that there are adequate US Coast Guard approved flotation devices available for everyone on board.
4. ___Confirm that the Marsh Master® is below the Load Capacity that is stamped on the machine's data plate on the center console. See ***LOAD CAPACITY*** section of this manual.
5. ___Confirm that the Marsh Master® is loaded such that the payload is as close to the machine's center of gravity as possible to maintain machine balance. See ***LOAD DISTRIBUTION*** section of this manual.
6. __When possible, lighten the load before swimming the Marsh Master®.
7. ___If the Marsh Master® is equipped with cab doors by Coast Machinery, LLC. remove the doors. See ***CAB DOOR REMOVAL PROCEDURE*** section of this manual.
8. ___If the Marsh Master® is equipped with the fold-out front windshield, fully open the windshield. See ***FOLD-OUT FRONT WINDSHIELD*** section of this manual.

BEST PRACTICES WHEN SWIMMING THE MARSH MASTER®

Once the above checklist has been performed, the operator must select a suitable entry point into the body of water that allows the machine to go straight down the bank. Both tracks should enter the water at the same time. This allows both the left and right pontoon to provide equal flotation. Avoid entering the water at an angle, which puts much of the load on only one pontoon. When possible, the load should be lightened before entering the water, and the machine should be operated at slow speeds. Avoid high banks with steep drop-offs and select a suitable entry point with sloping banks.

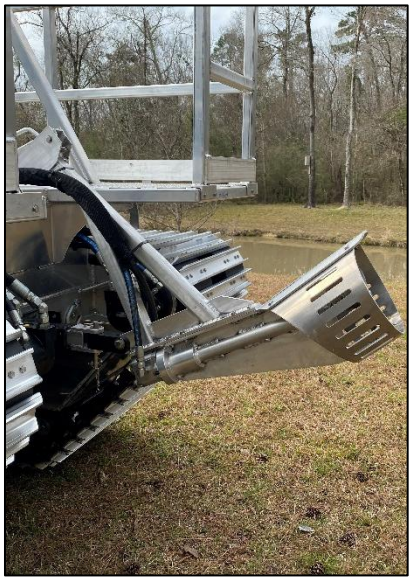
When swimming the Marsh Master®, the operator should continue to use extreme caution. Running the tracks will propel the Marsh Master® through the water. There is a natural tendency to run the tracks at a fast speed to swim the machine faster; **however, running the tracks quickly will not make the machine swim faster.** The high speed causes the cleats to carry water on top of the pontoons and throw it forwards, generating a counteractive force. **Run the tracks at ¼ speed until the machine begins to move forward.** At this point, provided that the operator is confident that there are no underwater obstacles beneath the surface in the Marsh Master's® path, track travel speed can be increased to **half speed**.

Running the tracks to propel the machine must be done with caution because there are often many unseen objects below the surface of the water. When the machine encounters these objects, it will run up on the object. If only one track runs up on the object, then the machine will tilt at an angle. If the angle becomes too great, OR the momentum of the tilting motion becomes too great, the Marsh Master® can capsize. For this reason, the operator should not continue over such an object, but slowly

back off of it and find a way around. If the operator is running the tracks too fast, this tilting action can happen quicker than the operator's ability to react, increasing the likelihood of capsizing the machine. **Good judgment and caution must be used if encountering such a situation.**

When swimming the Marsh Master® with a rear attachment it is always best to enter the body of water with the attachment entering first. The Marsh Master® swims best in reverse when operating with a rear attachment on the rear 3-point hitch. The weight and balance of the system with the rear attachment pitches the machine such that propulsion through the body of water is more effective in reverse as compared to forwards. Operating with any attachment impacts the machine's performance; therefore, if there is ANY current in the body of water, the operator should use extreme caution prior to entering the body of water.

When swimming the machine long distances, in slow-moving currents, or windy conditions, we recommend using a small outboard motor (4-40 hp), our patented hydraulic Prop Drive system (Patent # US 10,293,648 B2), or a sufficiently equipped boat for towing (see towing video in Marsh Master® PowerPoint training material). The Marsh Master® has a 21" transom.



WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

AVOID RAIN-SWOLLEN RIVERS, AND ANY RIVER WITH ANYTHING OTHER THAN A SLOW-MOVING CURRENT.

TRANSITIONING FROM SWIMMING TO TRACKING

BEST PRACTICES WHEN TRANSITIONING FROM SWIMMING TO TRACKING

Transitioning from swimming the Marsh Master® to tracking the machine must be performed with **CAUTION**. The operator should select a suitable exiting position where both tracks leave the water at the same time, and the machine climbs straight up the bank. When possible, the load should be lightened before climbing the bank, and the machine should be operated at very slow speeds.

The operator should avoid transitioning by climbing up too steep of an embankment. Though the machine may have enough traction to pull itself out of the water, too steep of a bank will put the machine at an angle that can drop the rear transom below the water level. At this point, the water can swamp the machine and create a very dangerous situation. If the machine does become swamped, **DO NOT CONTINUE BACKING DOWN INTO THE BODY OF WATER.**

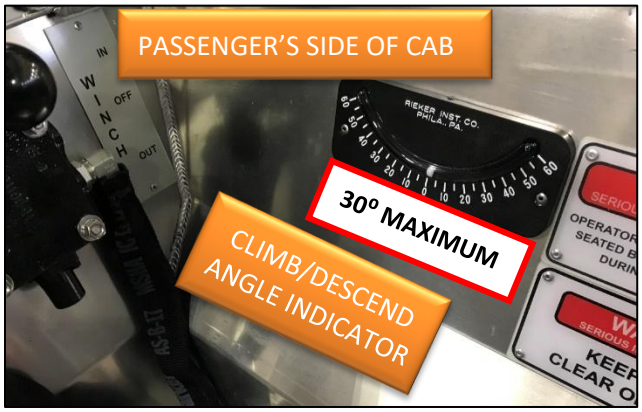
The operator is responsible for assuring the proper positioning and operation of machine to ensure safe operation when swimming the machine or when transitioning from swimming to tracking.

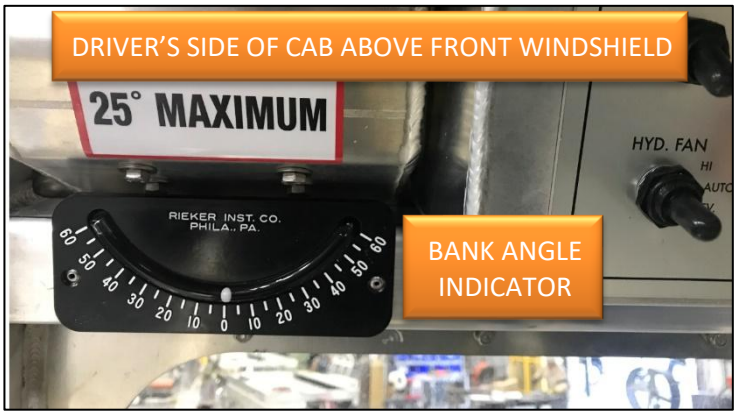
SERIOUS INJURY OR LOSS OF LIFE COULD OCCUR IF THE MACHINE TURNS OVER WHEN ENTERING, EXITING, OR OPERATING IN WATER. OVERLOADING, IMPROPER LOAD DISTRIBUTION, WRONG ANGLE OF ENTRY OR EXIT, A LEAKING PONTOON, OR FAILURE TO INSTALL DRAIN PLUGS COULD CAUSE THE MACHINE TO TURN OVER.

EXCESSIVE OR UNEVEN LOADING CAN MAKE FOR AN UNSAFE AND DANGEROUS SITUATION, PARTICULARLY WHEN ENTERING, EXITING, OR OPERATING IN WATER. SERIOUS INJURY OR LOSS OF LIFE COULD OCCUR IF THE MACHINE IS LOADED IMPROPERLY. HEAVY LOADS POSITIONED HIGH CAN SIGNIFICANTLY RAISE THE CENTER OF GRAVITY AND CAN CAUSE A DANGEROUS SITUATION. POSITION AND SECURE LOADS AS CLOSE TO THE BOTTOM OF THE MARSH MASTER® AS POSSIBLE.

BEST PRACTICES WHEN CLIMBING OR DESCENDING A STEEP GRADE

Climbing or descending a steep grade must be performed with **EXTREME CAUTION.** The grade should not exceed a 30° maximum climb/descend angle. If travelling along the side of a hill, the maximum bank angle is 25°. The tracks should be positioned to go straight up or down the grade. Never approach a grade at an angle. Angle indicators have been mounted in the cab of the machine to show these two angles, see pictures below.



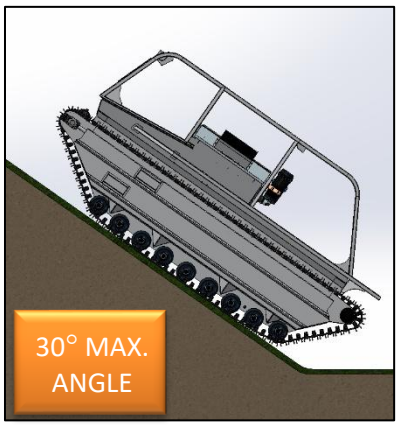


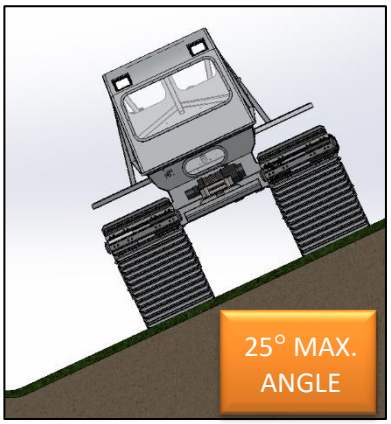
When climbing a steep grade, the machine should be operated at ¾ to full engine RPM's, **BUT with very slow track speed**. This method of controlling the Marsh Master® allows for maximum torque and power which helps the machine successfully scale the embankment. The operator should avoid turning the machine sharply when ascending, descending, or running along a side hill, ditch bank, or uneven ground. Turn slowly to avoid plowing the downhill track. Failure to do so may cause the machine to throw a track.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

SERIOUS INJURY OR LOSS OF LIFE COULD OCCUR IF MACHINE IS NOT OPERATED PROPERLY WHEN OPERATING ON A STEEP GRADE DUE TO LOSS OF TRACTION AND/OR A CHANGE IN CENTER OF GRAVITY.

SAFE OPERATING ANGLES



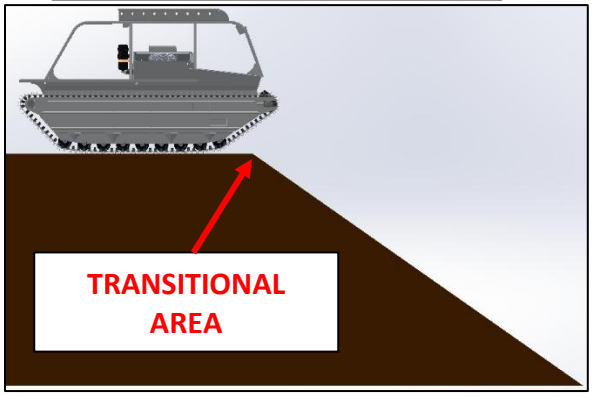


When operating at an angle of 30° or greater, special attention should be paid to the oil pressure light. The engine can be run at 30° for a maximum of 30 minutes. Exceeding these limits will cause insufficient oil pressure and damage the engine.

APPROACHING A TRANSITION IN TERRAIN GRADE

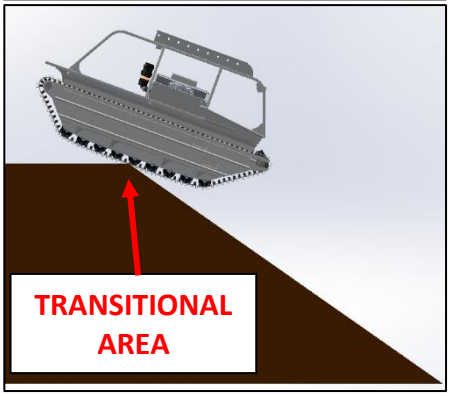
When approaching a levee, a drop off, or any other type of terrain grade change, the operator must approach and cross over the transition point slowly and with **EXTREME CAUTION**. It is recommended that prior to entering the transitional area where the grade changes that the operator brings the machine to idle, assesses the slope to determine if it is within the machine's operating limits, and **SLOWLY** tracks the machine over the transition point. See pictorial below:

MARSH MASTER APPROACHES TRANSITION: **STOP, IDLE RPMS, ASSESS THE SLOPE**

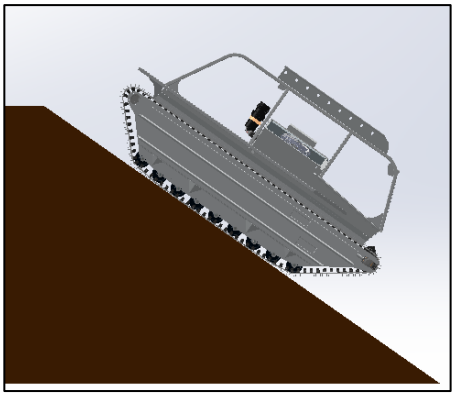


DETERMINED THAT SLOPE IS NAVIGABLE: **SLOWLY PROCEED WITH RPMS @ IDLE**

MACHINE WILL PIVOT ABOUT THE CENTER BOGEY WHEEL, GENERATING MOMENTUM. TRANSITIONING SLOWLY WILL MINIMIZE THE MOMENTUM GENERATED.



MARSH MASTER DESCENDS DOWN THE STEEPER TERRAIN: **SLOWLY AND SMOOTHLY PROCEED DOWN THE GRADE WITHOUT ABRUPTLY JERKING OR STOPPING THE CONTROLS.**



WARNING!

SERIOUS INJURY OR DEATH CAN OCCUR!

FAILURE TO FOLLOW THE BEST PRACTICES DESCRIBED ABOVE WHEN OPERATING AROUND CHANGES IN TERRAIN GRADE MAY CAUSE THE MACHINE TO GENERATE EXCESSIVE MOMENTUM IN THE LONGITUDINAL OR LATERAL DIRECTIONS, INCREASING THE RISK OF ROLLOVER AND REDUCED MACHINE STABILITY, INCREASING THE RISK OF SERIOUS INJURY OR DEATH.

HOW TO AVOID THROWING A TRACK

When traveling through heavy brush, or stump-filled areas - track very slowly, take as direct a path as possible, and turn very slowly if necessary. This type of environment provides many obstacles that you will either have to climb over or straddle. Avoid thick stands of cypress knees or stumps that can bend or break track cleats and increase track-throw probability.

In a situation when climbing over or straddling an obstacle, avoid turning the machine until it has been crossed. When you are on an obstacle, the track is point-loaded, meaning that all of the weight of the machine is concentrated at one point. This point is where the track is engaging the obstacle. Turning under this condition will increase the risk of throwing a track.

To reduce the risk of throwing a track, avoid turning the machine sharply or quickly when ascending, descending, or running along a side hill, ditch bank, or uneven ground. Slow and gradual movements will help prevent plowing the downhill track when operating on uneven ground.

TOWING WITH THE MARSH MASTER®

MARSH MASTER® TOWING THE COAST MACHINERY, LLC, SLICK SLED™ (PATENT # US 10,464,383)

The Marsh Master® can be used as necessary for towing equipment through otherwise impassible wetlands. Coast Machinery, LLC recommends the following best practices when towing equipment with the Marsh Master®:

- **ONLY** tow equipment using the rear or front hitches. **NEVER** tow equipment using the deck, overhead brush guards, winch frame, cargo rack, the transom, or any other structural component outside of the rear or front hitches.

- Ensure that the equipment in tow is securely connected to the Marsh Master's® rear or front hitches.

- Make sure the tongue weight of the equipment in tow is not putting the Marsh Master® in an unstable condition when considering the towing environment that you will be traversing.

- Plan your route accordingly and familiarize yourself with the limitations of the Marsh Master® and equipment in tow.

- Use extreme caution when turning the Marsh Master® while towing equipment. The pivoting capabilities of the Marsh Master® allows for potential jack-knifing the equipment in tow which may cause damage to the equipment in tow or the Marsh Master® cleats, tracks, pontoons, rear drive, or body.

- **NEVER** plan on towing equipment long distances while swimming the Marsh Master®.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

IT IS THE OPERATOR'S RESPONSIBILITY TO USE GOOD JUDGEMENT AND FOLLOW THE BEST PRACTICES WHEN TOWING WITH THE MARSH MASTER®.

OPERATION: AUXILIARY HYDRAULIC SYSTEMS

All Marsh Master® MM-2MX-K models come with two auxiliary hydraulic pumps, a low flow pump with two separate sections and a high flow pump. The low flow pump handles the hydraulic controls and can be switched to provide a low flow hydraulic tool circuit. The high flow pump is fully devoted to the high flow hydraulic tool circuit.

WINCH OPERATION

The Marsh Master® is equipped with a hydraulic winch. Read and familiarize yourself with the winch manual before using the winch.

- To activate the winch system, the low flow auxiliary switch must be in the "OFF" position.

- The valve to control the winch is located on the front passenger side of the cab.
  - Pull out and lift up to reel the winch cable in.
  - Pull out and push down to let the cable out.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DO NOT ADJUST THE RELIEF VALVE ON THE WINCH CONTROLS WITHOUT FIRST CONSULTING COAST MACHINERY, LLC.

LETTING THE CABLE OUT

When letting the winch cable out, you have two options: 1.) You can use the hydraulics to run the motor, which is a two-person operation, or 2.) you can free-spool the motor, which is a single-person operation.

When hydraulically releasing the cable, always make sure that someone is pulling on the cable to create tension. This tension is necessary to keep the cable from tangling in the winch housing.

To set the winch to free spool, lift and twist the knob located on the driver's side of the winch.

USING THE WINCH

The winch has 10,000 lbs. of pulling force. This force is typically more than sufficient to handle the task at hand. However, in some instances the use of a snatch block may be necessary. A snatch block will essentially double the pulling force of the winch. This device can also be used as a guide when you need to pull from a different angle. Refer to winch manual for additional instructions.

When hauling, or winching with the cable, make sure that there is no slack in the line when tension is applied. Smoothly apply tension to the line. Rapidly jerking the load will put an impact load on the winch gears, causing severe damage. Even though the winch is equipped with a brake, it should not be used to lift or suspend people or heavy loads in the air. **IT IS TO BE USED FOR RECOVERY PURPOSES ONLY! ALWAYS REMEMBER THE FOLLOWING WHEN USING THE WINCH:**

5. Do not operate the winch until you've read the winch manual.
6. Do not overload your winch
7. Never use your winch for lifting or moving people
8. Keep the winching area clear of all personnel
9. Remain in the cab with the fold-out windshield fully closed and latched prior to putting any load on the winch cable.
10. Inspect your winch cable regularly
11. Make sure that there are at least 5 complete turns of cable on the winch drum before winching (the cable fastener will not support a heavy load).

8. Keep hands and fingers clear of the winch cable when operating the winch.
1. NEVER hook the winch cable to itself, always use a separate recovery strap to hook to.
2. Lay a heavy blanket or jacket over the rope about 15 feet from the hook end when pulling heavy loads. If the cable snaps, the weight of the cloth will act as a damper and prevent the broken cable from whipping.
3. Avoid continuous pulls from extreme angles.
4. Never engage or disengage the free spool handle when there is a load on the winch.

WINCHING IN THE CABLE AFTER USE

When you are finished using the winch, you need to pay attention to how the cable is reeled in. Simply winching the cable in with no one to guide it will create a tangle, which causes many problems. It is important that someone guides the cable in by putting tension on the cable and knocking it over (with something such as a hammer handle, see picture below) so that each turn on the drum is adjacent to the previous one. This orderliness helps to prevent damaging the cable and makes the next use of the cable much smoother.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

THE WINCH IS VERY POWERFUL, AND CAN SEVERELY INJURE ANY BODY PART THAT GETS CAUGHT IN THE SPOOL OR OTHER MOVING PARTS. NEVER GRAB THE CABLE AT ANY POINT BEHIND THE HOOK.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

THE CABLE CAN CUT OR BURN HANDS WHEN BEING HANDLED. WE RECOMMEND THAT THE PERSON HANDLING THE CABLE USE GLOVES.

THREE-POINT HITCH

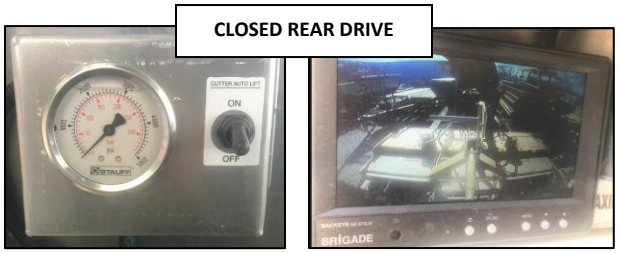
Some Marsh Master® models come with a Category 1 three-point hitch on the rear, front, or both (see ***MARSH MASTER® MODEL CODE EXPLANATION*** section). The pull or push frame is designed specifically for the conditions that come with running in wetland terrain. When not using an attachment, the pull or push frame tucks neatly up against the bottom of the Marsh Master® to give maximum ground clearance. When the frame is down during attachment use operations, the angle of the frame creates a smoother contact with obstacles over which the Marsh Master® runs. While the hitch is designed to work optimally for the Marsh Master® Cutter, other Category 1 tools will mount on the hitch with little or no modifications to the attachment.

REAR 3 POINT HITCH ONLY

The hitch is controlled by the lever on the left side of the driver seat. The valve is a spool valve, so it is sensitive to how far the lever is moved. This sensitivity allows for feathering the controls for lifting/lowering precision. On open rear drive models, the height of the pull frame is displayed by the pointer on the cutter box. On closed rear drive models, the height of the pull frame is displayed using a rear attachment camera.

OPEN REAR DRIVE

CLOSED REAR DRIVE



RAISING THE HITCH

Pull & hold the lever to the UP position to lift the hitch. Release the lever and it will spring-return to the HOLD position causing the hitch to stop at its current position.

HOLD

The hold position hydraulically locks the hitch in the current position.

LOWERING/FLOATING THE HITCH

Pushing the lever forward to this position allows the hitch to freely move up and down. When the hitch is up, the weight of the attachment pulls the hitch down. When the attachment is on the ground, the float mode allows the attachment to follow the contour of the terrain. The lever will detent in the down/float position, so the operator does not have to hold the lever in this position when running the machine.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

WHEN MANIPULATING THE REAR HITCH, THE OPERATOR MUST ENSURE THAT NO PERSONNEL ARE NEAR THE REAR OF THE MACHINE WHEN RAISING OR LOWERING AN ATTACHMENT. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

REAR AND FRONT HITCH

Both hitches are controlled by the lever on the left side of the driver seat. The lift control valve is a spool type, so it is sensitive to how far the lever is moved. This sensitivity allows for feathering the controls for lifting/lowering precision. **The front hitch has a maximum load capacity of 400 lb**. Any attachments weighing more than this amount will make the Marsh Master® too front heavy.

Only one hitch can be operated at a time, so the operator must select between front and rear using the "Hitch Select" switch. Whichever hitch is not being used will be hydraulically locked in its current position. The operator should keep an eye on the frame position because it may creep down over time. The height of the rear pull frame is displayed either by the pointer in the cutter box (open rear drive) or the rear attachment camera (closed rear drive) depending on the Marsh Master®.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

EXTRA CAUTION SHOULD BE TAKEN WITH FRONT-MOUNTED ATTACHMENTS SINCE THEY ARE MUCH CLOSER TO THE CAB THAN A REAR-MOUNTED ATTACHMENT.

RAISING THE HITCH

Pull & hold the lever to the UP position to lift the hitch. Release the lever and it will spring-return to the HOLD position causing the hitch to stop at its current position.

HOLD

The hold position hydraulically locks the hitch in the current position.

LOWERING/FLOATING/DOWN PRESSURING THE HITCH

The DOWN/FLOAT position has two modes. When the lever is pushed to the end of its stroke, it will detent/lock into that position. Pulling back on the lever will release the detent/lock.

FLOAT MODE: This mode is the default mode for the fully forward lever position. If not already in this mode, flip the "Hitch Lower Mode" switch to the FLOAT position. When the hitch is up, the weight of the attachment pulls the hitch down. When the attachment is on the ground, the FLOAT mode allows the attachment to follow the contour of the terrain.

DOWN PRESSURE MODE: Flip the "Hitch Lower Mode" switch down to activate the DOWN PRESSURE mode. This mode uses hydraulic pressure to push the hitch down.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DOWN PRESSURE MODE LOWERS THE HITCH/ATTACHMENT MORE QUICKLY THAN FLOAT AND MAY RAISE THE FRONT OF THE MARSH MASTER®.

AUTO-LIFT HITCH SYSTEM

The MM-2MX-KC (model with rear 3 pt. hitch) is equipped with the ***Auto-Lift System.*** This system is designed specifically for the Marsh Master® when equipped with the MM-2 Cutter attached on the rear 3-point hitch. The *Auto-Lift System* allows the operator to mow continuously without worrying about overloading the Hi-Flow hydraulic circuit (the circuit that drives the cutter) causing the Marsh Master® to "bog down" or continuously relieve when mowing in tough environments. The *Auto-Lift System* also protects the Marsh Master's® hydraulic circuit by preventing heat buildup due to continually going over a relief when the cutter gets very high loads.

How Does it Work?

The *Auto-Lift System* is a control system that utilizes the pressure from the Hi-Flow circuit to "automatically" start lifting the cutter just before the cutter "bogs-down" when cutting through a harsh environment (e.g., tall & thick material, flooded pockets of material, etc...). As soon as the hitch begins lifting the cutter, clogged material clears out, the pressure on the Hi-Flow system drops, and the hitch lowers the cutter back down.

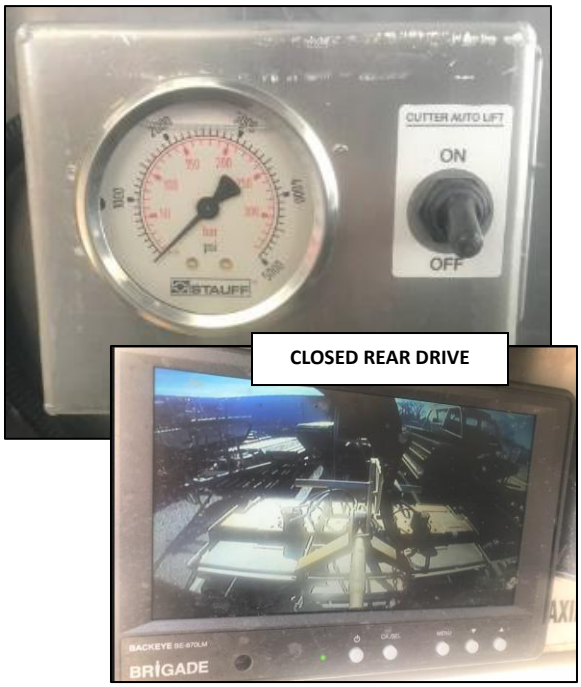
How to Activate the System?

To activate the *Auto-Lift System,* simply flip the switch located on the cutter instrument box. Once the system is activated, shift the hitch into the FLOAT position, activate the Hi-Flow circuit, and depress the foot pedal. It is imperative that the lift lever remains in FLOAT while mowing with the *Auto-Lift System* engaged. Note that the cutter may slightly lift when first starting up due to the pressure spike created upon start-up, this is normal, and the cutter should quickly return to ground level.

When to Utilize Auto-Lift?

The *Auto-Lift System* is recommended to be used when mowing in most applications except for when mowing in continuously flooded material. When mowing in water over a couple of inches deep, the *Auto-Lift System* will constantly be engaged causing the hitch to continuously be raised and lowered. When operating in this this type of environment, it is recommended to turn the *Auto-Lift System* off and use the three-point hitch lever to manually maintain the desired cut height. Also, the system should be turned off when using any other rear attachment other than the MM-2 Cutter.

OPEN REAR DRIVE



CLOSED REAR DRIVE

HYDRAULIC COOLING FAN

MM-2MX models are equipped with a hydraulically driven cooling fan. This fan is mounted on the driver side engine cover. The hydraulic fan pulls a vacuum on the engine compartment, so both hood hatches ***must be kept shut*** to maintain proper cooling. All air flow through the cooler is produced solely by this fan.

When the fan switch is on "Auto" mode, the hydraulic fan speed is automatically proportioned to maintain proper engine temperature. The fan will start off at low speed upon initial startup. When the engine reaches 197°F the fan will switch to high speed. As you run the Marsh Master®, the fan will cycle back and forth between high and low speed; this cycling is normal.

When the fan switch is on "Hi" mode, the hydraulic fan runs at full speed. This mode may be necessary when the hydraulic oil temperature rises faster than the engine temperature. The "Auto" mode may not respond quickly enough if this situation were to occur.

The hydraulic fan also has a reversing feature for blowing out the radiator. This feature is critical when running or cutting in dry reeds such as phragmites or cattails that produce large amounts of airborne spores/debris.

To put the fan in reverse:

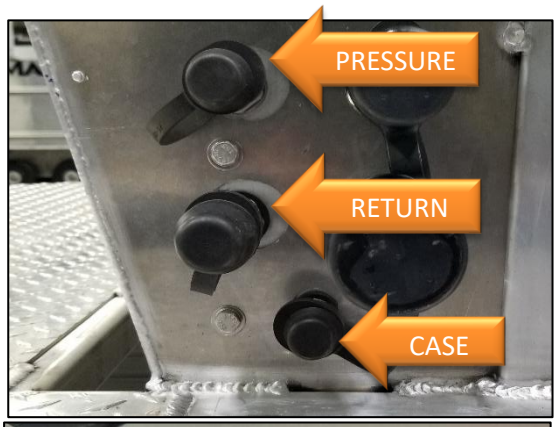
1. Lower the engine speed to idle.
    a. The engine speed may need to be slightly above idle for some machines to fully switch from forward to reverse.
2. Flip and hold the switch to the "REV." position.
3. Bring the engine speed up to 2000 rpm.
4. Hold for about 10 seconds.
5. Lower the engine speed back to idle.
6. Release the fan switch, and set to "AUTO."

This reversing process may be repeated as often as needed, depending on the operating environment.

LOW FLOW HYDRAULIC TOOL CIRCUIT

All MM-2MX-K models come standard with a 6-8 gpm auxiliary tool circuit for running ancillary ***open center*** hydraulic tools. All tools must be open center to function properly with the Marsh Master®. This tool circuit will produce approximately 7 gpm at 2000 rpm. The flow rate is proportional to the engine speed. The pressure on this system is regulated by a relief valve inside the engine compartment.

Tools are to be attached using the quick connects located at the rear of the engine compartment, on the driver side of the Marsh Master®. Be sure to check for a case drain line on the tool that is being used. **If a case drain line is present on the tool, it must be connected to the case drain port to avoid over pressuring the seal in the tool! Make sure all connections are free of foreign materials such as dirt, sand, mud, etc. These contaminants could damage the hydraulic system.**



To activate the low flow tool circuit, pull out the "Low Flow Auxiliary" switch. When the system has been activated the light on the side of the switch will be illuminated. When this tool circuit is activated the winch and lift system become inactive. This tool circuit must be off to start the Marsh Master®.

If no tools are hooked up or in use then the low flow auxiliary circuit switch must be in the "OFF" position (pushed in). If not, then hydraulic fluid will run continuously through the tool circuit and will generate excess heat which could be dangerous to the operator and damage the hydraulic circuit.

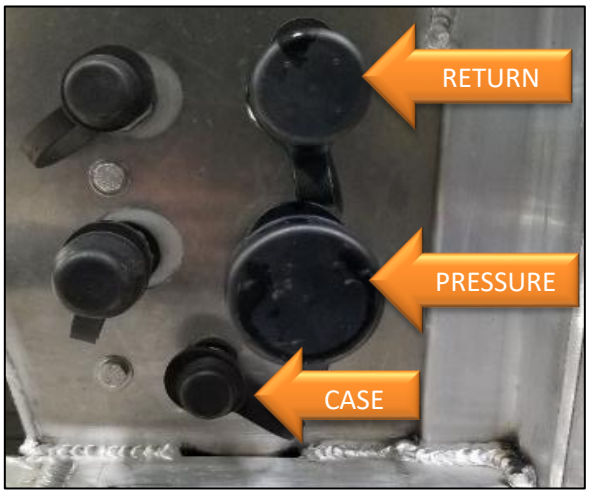
WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

CONTINUOUSLY RUNNING THE HYDRAULIC CIRCUIT WITHOUT A TOOL ATTACHED (DEAD HEADING THE SYSTEM) WILL OVERHEAT THE HYDRAULIC FLUID AND CAUSE SYSTEM DAMAGE.

HIGH FLOW HYDRAULIC TOOL CIRCUIT

All Marsh Master® MM-2MX-K models come with a 15-25 gpm high-flow ***open center*** tool circuit (see ***MARSH MASTER® MODEL CODE EXPLANATION*** section)***.*** This circuit will produce approximately 22 gpm at 2000 rpm. The flow rate is proportional to the engine speed. The pressure on this system is regulated by a relief valve inside the engine compartment. The system pressure can be monitored by the gauge in the cutter box.

Tools are to be attached using the quick connects located at the rear of the engine compartment, on the driver side of the Marsh Master®. **Be sure to check for a case drain line on the tool that is being used. That line is plugged into the quick connect on the same manifold. Make sure all connections are free of foreign materials such as dirt, sand, mud, etc. These contaminants could damage the hydraulic system.**



HI FLOW TOOL CIRCUIT OPERATION – MARSH MASTER® WITH NO REAR HITCH

Models that do not have a hitch only have one step in activating the Hi Flow Circuit.

To activate the high flow tool circuit with the engine already running:

1. Pull out the "Hi Flow Auxiliary" switch to turn the system ON.
    - When the system has been activated the light on the side of the switch will be illuminated.
    - This tool circuit must be turned OFF prior to starting the Marsh Master®.

HI FLOW TOOL CIRCUIT OPERATION – MARSH MASTER® WITH REAR HITCH

Models that have a rear hitch have multiple steps to activate the Hi Flow Circuit to increase safety and ease of use.

To activate the high flow tool circuit with the engine already running:

1. Pull out the "Hi Flow Auxiliary" switch.
   - When the system has been activated the light on the side of the switch will be illuminated.
   a. This switch puts the system in "ready" mode.
   b. This tool circuit must be turned OFF when starting the Marsh Master®.

2. Lower the attachment so that the indicator in the cutter box is below the "Cutter Off" line. **This step is not applicable to machines with closed rear drives.**
   - Open Rear Drive Machines - There is a switch in the cutter box that disables the high flow auxiliary tool circuit when the hitch is lifted above a certain point.

3. Depress the foot pedal to the floor to turn on the tool system.
   a. The foot pedal acts as the final ON/OFF switch for the system.

****MACHINES WITH CLOSED REAR DRIVES – HIGH FLOW CIRCUIT IS ENGAGED IMMEDIATELY AFTER STEPS 1 AND 3 ARE COMPLETED, REGARDLESS OF THE HITCH HEIGHT****

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

PRIOR TO OPERATING ANY ATTACHMENT THROUGH THE HIGH FLOW CIRCUIT, IT IS THE OPERATOR'S RESPONSIBILITY TO ENSURE THAT NO PERSONNEL ARE NEAR THE ATTACHMENT. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

TRAILERING THE MARSH MASTER®

The Marsh Master® can be loaded and unloaded on any trailer that is rated and suitable for hauling such a load. Coast Machinery, LLC recommends hauling the Marsh Master® on either the MM-2 or MM-2 XL Heavy Duty Custom Trailers designed and supplied by Coast Machinery, LLC. The following best practices should be followed when loading and unloading the Marsh Master.

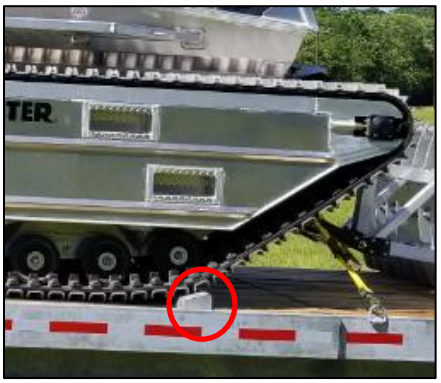
WHEN LOADING

- Bring the machine to idle rpm's (approximately 1000 rpm's).
- Lift all attachments to the fully raised position and ensure that all auxiliary hydraulic circuits are turned off.
- Line the center console up with the center of the trailer.
- Slowly track forward until the track cleats engage the end of the trailer.
- If loading on a non-Marsh Master® trailer the following is recommended:
    - If possible, do not use a trailer with steel ramps as there is very little friction between the aluminum track cleats and the steel ramps causing the machine to slip.
    - If using a steel ramp trailer, secure a strip of rubber (or other type of tractive material) between the tracks and deck to minimize the possibility of slipping.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

IF USING A NON-TILT-DECK TRAILER, THE OPERATOR SHOULD BE CAUTIOUS WHEN APPROACHING THE "BREAK-OVER POINT" WHERE THE ANGLE OF THE RAMP LEVELS OFF TO THE TRAILER. AT THIS POINT, THE MACHINE WILL PITCH UP AND MACHINE STABILITY WILL BE LESS THAN WHEN USING A TILT-DECK TRAILER. THE OPERATOR MUST SLOWLY TRACK THE MACHINE STRAIGHT ONTO THE TRAILER PAST THE "BREAK OVER POINT."

- Slowly track forward such that the cleats "grab" the trailer one cleat at a time, pulling the machine up the trailer while keeping the center console centered on the trailer.
- Track up the trailer until the tilt deck portion of the trailer starts to close (when using a Marsh Master® trailer).
- Allow the tilt deck trailer to slowly drop to the "closed/level" position.
- Pull the Marsh Master® up until the track cleats engage the trailer chocks or the front bumper contacts the ladder bump stop (depending on the trailer, see picture below). **DO NOT MOVE THE CHOCKS FROM THEIR FACTORY LOCATION ON THE TRAILER AS THIS WILL ADVERSELY IMPACT TONGUE WEIGHT RESULTING IN A DANGEROUS TOWING SITUATION.**



- The Marsh Master® is equipped with a 4-point tie down system for securing the machine to the trailer.
- Properly strap the Marsh Master® to the trailer using properly rated straps such that the straps (other than the hooks) do not contact any part of the Marsh Master® or attachment.
- Always cross-over the straps.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

THE MARSH MASTER® IS NOT EQUIPPED WITH A PARKING BRAKE; THEREFORE, IF THE MACHINE IS NOT PROPERLY TRAILERED, THE MACHINE COULD SHIFT OR MOVE UNEXPECTEDLY LEADING TO SERIOUS INJURY OR DEATH.

WHEN UNLOADING

- If unloading from any type of tilting-deck trailer, ensure that the trailer tilt-deck latching mechanism is **UNLATCHED PRIOR TO BACKING THE MARSH MASTER® OFF THE TRAILER.**
- Un-hook the straps that are securing the Marsh Master® to the trailer.
- Start the Marsh Master as described in the ***STARTING ENGINE*** section of this manual.
- Lift all attachments to the fully raised position and ensure that all auxiliary hydraulic circuits are turned off.
- Slowly track the machine backwards keeping the center console aligned with the center of the trailer.
- If unloading from a non-Marsh Master® trailer the following is recommended:
  - If possible, do not use a trailer with steel ramps as there is very little friction between the aluminum track cleats and the steel ramps causing the machine to slip.
  - If using a steel ramp trailer, secure a strip of rubber (or other type of tractive material) between the tracks and deck to ensure the tracks do not slip.
- Track backwards until the tilt-deck portion of the trailer starts to open.
- Slowly track down the tilted trailer until the Marsh Master® contacts the ground.
- Slowly back the machine off the trailer until the machine is no longer contacting the trailer.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

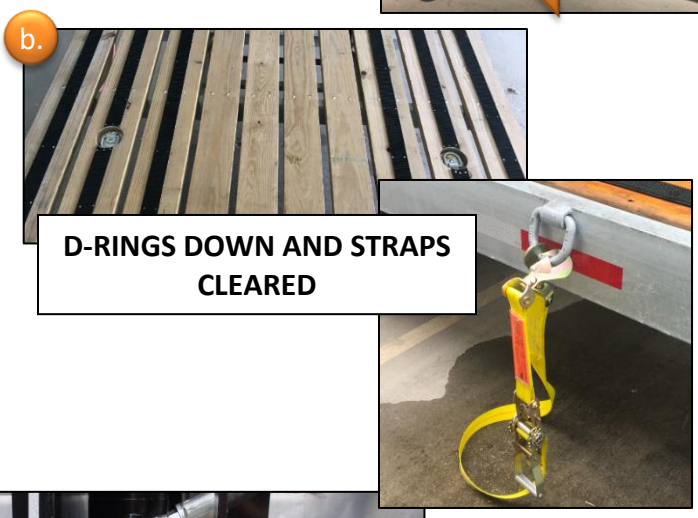
PRIOR TO UNLOADING, THE TRAILER TILT-DECK LATCHING MECHANISM MUST BE UNLATCHED. FAILURE TO DO SO MAY RESULT IN PROPERTY DAMAGE AND/OR SERIOUS INJURY OR DEATH.

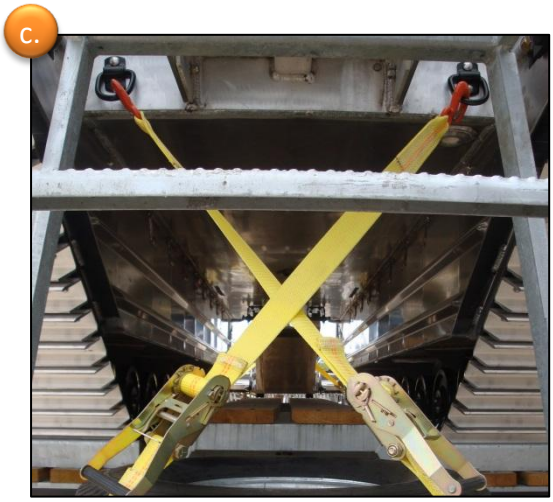
MM-2 GALVANIZED HEAVY-DUTY CUSTOM TRAILER

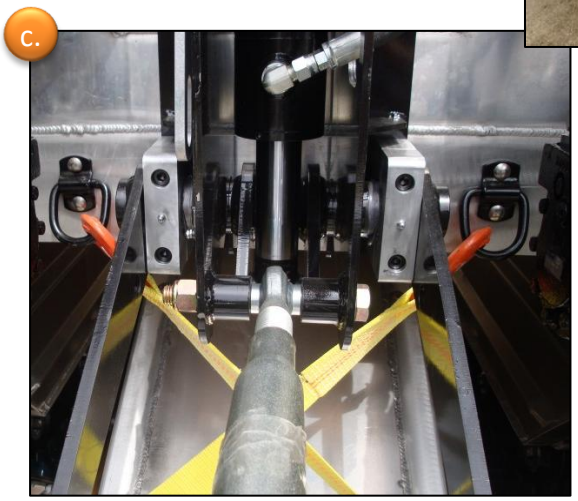
a. Make sure that the tilt deck portion of the trailer has been properly unlatched prior to backing the machine down the trailer. Unlatching the trailer typically requires removing a pin or manipulating a rod & spring latch system.

b. When unloading the Marsh Master® make sure that all D-rings, straps, and other objects are clear of the path by which the Marsh Master® tracks will traverse when descending the trailer deck.

c. The MM-2 Galvanized Heavy-Duty Custom Trailer is equipped with a four-point tie down system to match the Marsh Master's® tie down system.
- Always cross over the straps.
- Ensure straps (other than the hooks) are not contacting any of the surrounding equipment.







MM-2 XL GALVANIZED HEAVY-DUTY CUSTOM TRAILER

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

THE XL TRAILER IS DESIGNED SOLELY FOR HAULING THE MARSH MASTER®. HAULING ANY OTHER PAYLOAD OR EQUIPMENT MAY CAUSE THE TRAILER TO BE OPERATED OUTSIDE OF THE DESIGN PERAMETERS WHICH MAY LEAD TO SERIOUS INJURY OR DEATH. DO NOT HAUL ANYTHING OTHER THAN A MARSH MASTER® WITHOUT CONTACTING A COAST MACHINERY, LLC. REPRESENTATIVE FIRST.

The MM-2 XL trailer is designed solely for hauling a Marsh Master®. The XL trailer allows room for the Marsh Master® to ride safely with the front and rear attachments installed. The XL trailer has a deck latch rod & pin system that allows the operator to latch and unlatch the tilt deck portion of the trailer. The deck latch system utilizes a catch plate and spring such that the operator must pull the rod out and then drop the handle into the unlatched position. To latch the deck, simply lift the rod up such that the spring & pin combination allows for latching as the deck closes. It is imperative that the operator remembers to unlatch the deck prior to unloading the Marsh Master®.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

FAILURE TO PROPERLY LATCH AND UNLATCH THE TILT DECK PORTION OF THE TRAILER MAY RESULT IN PROPERTY DAMAGE, SERIOUS INJURY, OR DEATH. IT IS THE OPERATOR'S RESPONSIBILTY TO ENSURE THAT THE TRAILER DECK IS SECURELY LATCHED PRIOR TO HAULING THE MARSH MASTER®

HIGHWAY MODE

Before towing your Marsh Master® down the highway, the following practices should be followed to ensure a safe journey for both you and your equipment, and also for other travelers that you will encounter on the road.

- Secure the Marsh Master® with properly rated straps as described in the ***TRAILERING THE MARSH MASTER®*** section of this manual.

- Ensure that there are no loose items (tools, equipment, trash, PPE, etc…) on the Marsh Master® deck, tracks, bed of the Marsh Master®, the cargo rack, the cargo basket, or anywhere else on the trailer package in tow.

- If your Marsh Master® is equipped with a fold-out front windshield, make sure the windshield is in the **fully closed** position and securely latched.

- If your Marsh Master® is equipped with cab doors supplied by Coast Machinery, LLC, make sure the cab doors are in the **fully closed** position. Remove the vinyl window covering and secure the coverings in the cab. Ensure that the screen cable tethers are in good condition and adequately secured between the door frame and aluminum screen.

- If your Marsh Master® is equipped with deck inserts, make sure the inserts are removed and/or secured properly.

- Ensure that the trailer is securely coupled to the vehicle hitch and the vehicle hitch is securely fastened to the vehicle, the safety chains secured, the trailer emergency brake cable fastened appropriately to the truck hitch, the trailer jack is lifted all the way up, the trailer is approximately level and with the appropriate tongue weight (approximately 10% to 15% of the gross vehicle weight of the package in tow), the trailer lights are working properly, the trailer tires have the correct air pressure, etc…

- Ensure the vehicle towing the Marsh Master® package is properly rated and equipped with a properly rated hitch and receiver.

- When towing the Marsh Master®, plan your route accordingly and familiarize yourself with any and all potential hazards (obstacles, road conditions, construction zones, terrain conditions, weather conditions, height hazards, etc…). Drive in a defensive manner and prepare to stop well in advance of your stopping point. Stay within the posted speed limit and never tow a Marsh Master® package over 65 mph.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

FAILURE TO FOLLOW ANY AND/OR ALL OF THE RECOMMENDED PRACTICES LISTED ABOVE MAY LEAD TO SERIOUS INJURY OR DEATH. IF THERE ARE ANY QUESTIONS REGARDING TOWING A MARSH MASTER® DO NOT HESITATE TO CONTACT COAST MACHINERY, LLC.

EMERGENCY

BATTERY DISCONNECT

There is a battery disconnect switch located in the cab by the passenger seat. This switch completely cuts off all electrical power from the battery to the machine. Coast Machinery, LLC recommends switching this to the “OFF” position when performing maintenance on the machine.

HOW TO REALIGN A THROWN TRACK

1. Re-aligning a thrown track requires two people: 1) cab operator, 2) track re-aligner

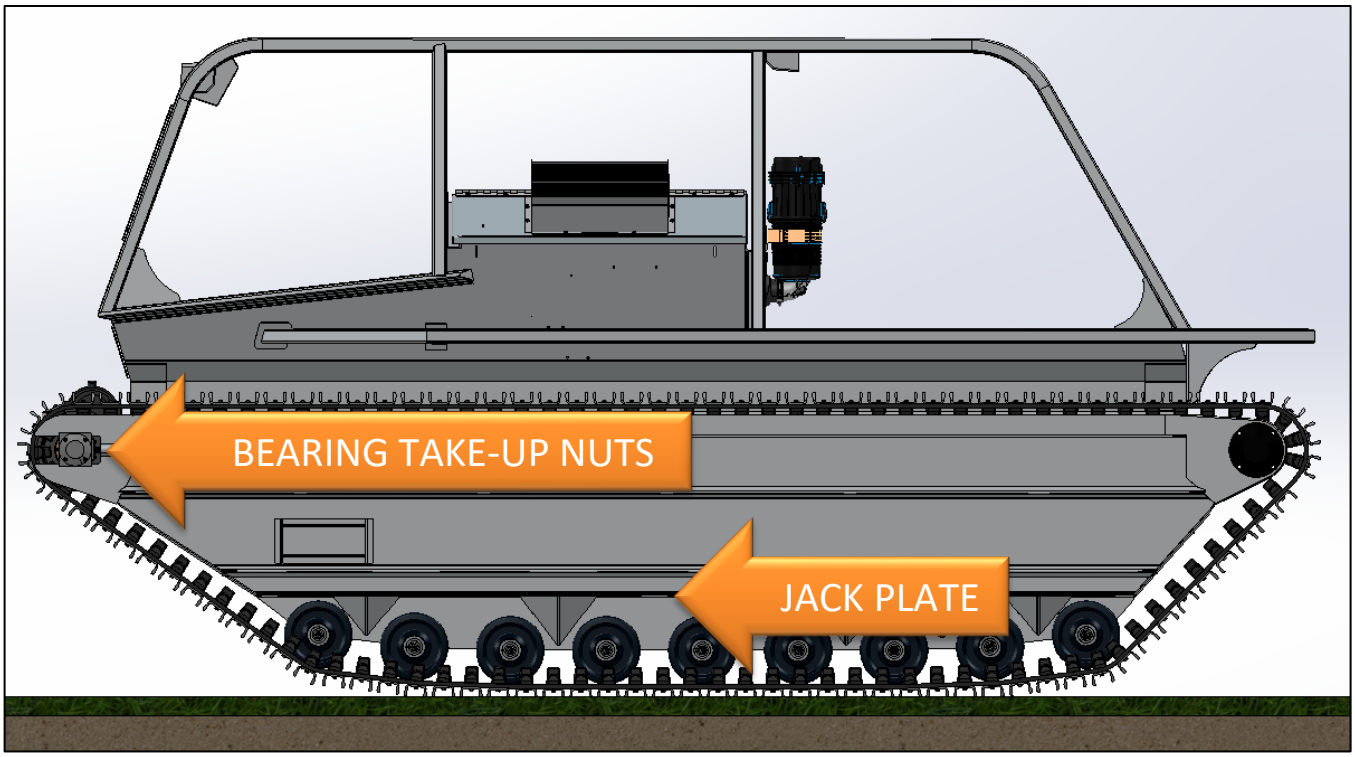
NEVER ATTEMPT TO RE-ALIGN A THROWN TRACK WITHOUT TWO PEOPLE. SPECIAL CAUTION SHOULD BE TAKEN TO NOT DAMAGE THE MARSH MASTER® BODY OR TRACK PARTS, AND TO RE-ALIGN THE TRACK IN A SAFE MANNER.

2. Using a 1-5/16” wrench, loosen the bearing take-up nuts to allow as much slack as possible in the belts.
3. Jack up the machine, getting the load off the track.
   a. Jacking the machine up is not absolutely necessary to put the track back on, but it will make the job easier.
   b. Lift the machine using the jack plate at the center of the Marsh Master®.
4. Attach a come-along to the thrown track.
   a. If the track is thrown to the outside:
      i. Attach one hook of a come-along to the outside end of a track cleat in front of the sprocket.
      ii. Attach the other hook to the outside end of a cleat on the other track.
   b. If the track is thrown to the inside:
      i. Attach one hook of a come-along to the inside end of a track cleat in front of the sprocket.
      ii. Attach the other hook to some object, such as a tree or another Marsh Master®, which can serve as an anchor.
   c. Avoid attaching the hooks to the belts, as this will likely damage them.
5. Tighten the come-along to put tension on the thrown track.

THE PERSON ACTING AS THE TRACK RE-ALIGNER MUST BE CLEAR OF THE MACHINE PRIOR TO THE OPERATOR STARTING THE ENGINE. IF THE MACHINE BEGINS TO MOVE OR SLIP OFF THE JACK, THE OPERATOR MUST KILL THE ENGINE IMMEDIATELY.

6. Start the engine, and slowly run the track backwards with the engine at idle.
   a. The track will pop and jump, but once the sprocket grabs a drive lug, the track will roll back on.
   b. The concept is just like putting a bicycle chain back on. Once a sprocket tooth grabs a link of a bicycle chain, the chain will roll back on.
7. Use procedure for adjusting track tension found in the maintenance section of this manual once the track is realigned.

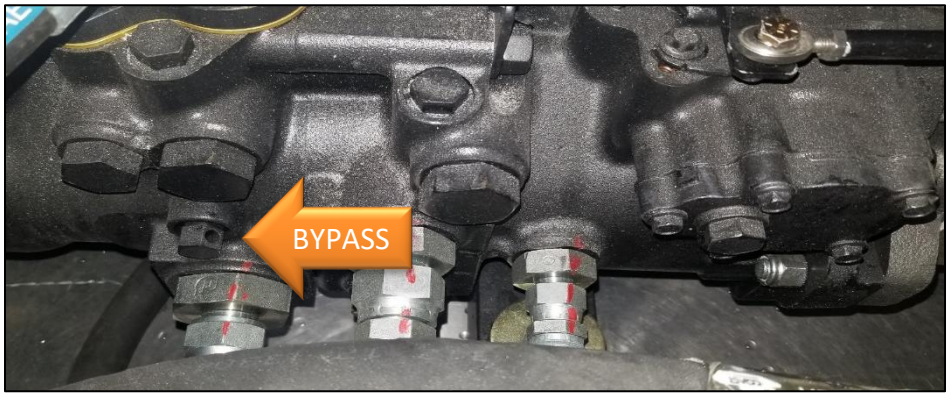
USE EXTREME CAUTION WHEN USING ANY TYPE OF PRYING TOOL AROUND THE MARSH MASTER® TRACKS. IF ANOTHER METHOD OF RE-ALIGNING THE TRACK IS AVAILABLE, IT IS RECOMMENDED TO USE THAT METHOD.



TOWING

The Marsh Master® can be towed in case of emergency. The following steps show how to put the Marsh Master® in "Tow Mode":

1. Locate by-pass valve on each side of hydraulic pump. This is the bolt with a hole through the head. (See Sundstrand manual for details).
2. Back out 2 turns to open bypass.
3. Tow unit to suitable or safe work area.
4. Re-tighten bypass valves before running machine.



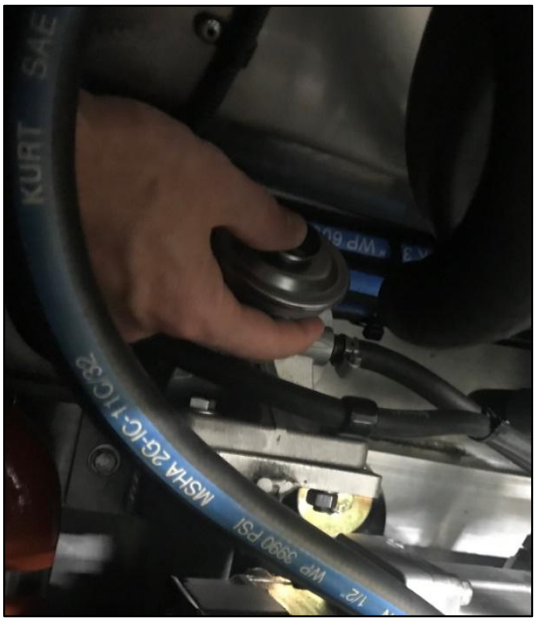
OUT OF FUEL: RE-PRIMING ENGINE

If the Marsh Master® runs out of fuel, then the system needs to be primed. There is a priming bulb on the top of the fuel filter located on the driver side of the engine compartment. Once the tank has been filled, press the bulb repeatedly until it becomes hard to press. Once the bulb has become hard, perform normal starting procedures as outlined in the operation section.

Do not crack injectors! This engine operates using a high-pressure common rail. Cracking fuel lines to bleed air out of the system will damage the components and may cause injury. Only technicians certified to work on Kohler engines should troubleshoot fuel system.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

HIGH PRESSURE FLUIDS CAN PUNCTURE SKIN AND CAUSE SEVERE INJURY OR DEATH. DO NOT WORK ON FUEL SYSTEM WITHOUT PROPER TRAINING AND SAFETY EQUIPMENT.



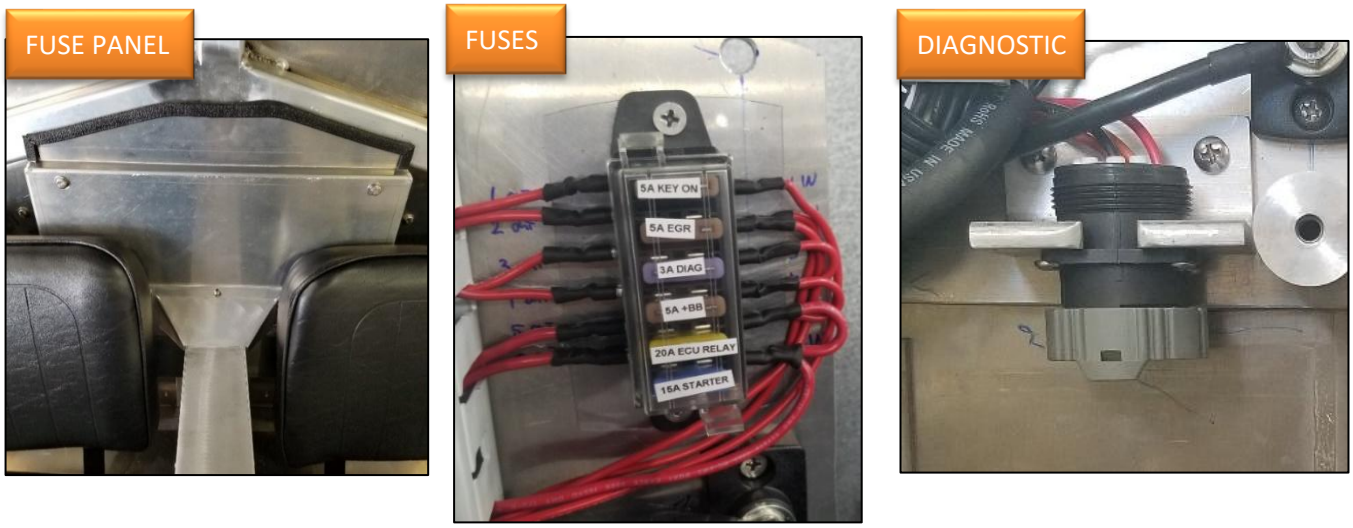
TROUBLESHOOTING

The engine must be immediately turned off if any of the following conditions occur:

- The engine speed suddenly increases and decreases.
- A sudden and/or unusual noise is heard.
- The exhaust becomes consistently a blue or black color.
- The oil pressure indicator light turns on while running.
- The engine temperature jumps up to or above 220 ^{o}F.

FUSE PANEL AND DIAGNOSTIC PORT

The fuse panel is behind the driver and passenger seats. There are six ATO/ATC automotive style fuses that should be checked when troubleshooting a problem. The CAN diagnostic port is also located in this area at the bottom on the driver's side. The Kohler diagnostic tool is connected at this port.



WARNING LIGHTS ON INSTRUMENT PANEL

If any of the following indicator lights come on when the engine is running, then action is required.

- Engine Oil Pressure Light
  - Indicates that the engine oil pressure has dropped below an acceptable amount.
  - Should be accompanied with ECU code and derated engine (reduced power).
- Battery Light
  - Indicates a problem with the charging system.
- Charge Pump Hydraulic Oil Filter Light
  - Indicates that the oil filter needs to be replaced.
- High Flow Auxiliary Hydraulic Oil Filter Light
  - Indicates that the oil filter needs to be replaced.

ECU FAULT CODES

The ECU will generate a fault code if a malfunction occurs. Depending on the issue at hand, the ECU may force the engine to enter a derate mode ("limp" mode) to protect the engine from damage. The machine will display low power. There are other actions that the ECU can trigger in addition to derating. It is critical that the issue be resolved before continuing operation of the machine.

The Murphy® PowerView® will give feedback when a code is generated by displaying it on the screen. The operator will have to acknowledge the fault for the screen to clear. The Murphy® PV380 has indicator lights just below the screen that illuminate when a fault code is active, amber = warning and red = stop. In addition to the light, a check engine icon will be displayed on the top left corner of the screen.

MURPHY® DISPLAY SET POINTS

In addition to ECU fault codes, the Murphy® display has the capability to generate a warning when an input signal reaches a limit. These limits are custom set on the PV380, not the ECU. The following limits have been set on the PV380:

- Hydraulic Oil Temperature: 175°F

If the setpoint listed above is exceeded, then the Murphy® display will trigger a warning code. Warning codes should be addressed prior to operating the Marsh Master®.

TABLE OF COMMON PROBLEMS

Problem	Possible Cause
Instrument Panel Will Not Turn On	Battery Disconnect Turned Off
	Battery Voltage Low
Engine Does Not Start	Auxiliary Switches Not Turned Off (Tool Circuits Engaged)
	Sulphated Battery Terminals
	Battery Voltage Low
	Low Fuel Level
	Frozen Fuel
	Clogged Fuel Filter
	Air Suction in Fuel System
	Clogged Air Filter
	Clogged Fuel Lines
	Blown Fuse
	Intake or Exhaust System Clogged
Engine Starts but Stops	Inefficient Electrical Connections
	Sulphated Battery Terminals
	Clogged Fuel Filter
	Clogged Fuel Lines
RPM Unstable at Idle	Clogged Fuel Lines
Low Idle Speed	Clogged Fuel Lines
	Poor Quality Fuel
Blue Smoke	High Engine Oil Level
	Clogged Air Filter
Excessive Fuel Consumption	Clogged Air Filter
	High Engine Oil Level
Engine Lost Its Initial Performance	Clogged Air Filter
	Clogged Fuel Lines
	Poor Quality Fuel / Contaminated Fuel
	High Engine Oil Level
Slow Acceleration	Clogged Fuel Filter / Fuel Lines
Engine Jerking	Clogged Fuel Lines
Engine Temperature High	Low coolant level
	Clogged radiator / radiator screen
	Loose engine belt
	Malfunctioning cooling fan
	Engine covers not closed
Hydraulic Oil Temperature High	Hydraulic fluid level low
	Clogged oil cooler / cooler screen
	Malfunctioning cooling fan
	Engine covers not closed

MAINTENANCE

MAINTENANCE SCHEDULE

DAILY PROCEDURES

1. Check Engine Oil Level – *See 'DAILY-1' in the **SERVICE POINTS** section.*
2. Check Hydraulic Fluid Level – *See 'DAILY-2' in the **SERVICE POINTS** section.*
3. Check Radiator Coolant Level – *See 'DAILY-3' in the **SERVICE POINTS** section.*
4. Check Fuel Level
5. Check Radiator for Restricted Air Flow
6. Clean Air Intake Screens
7. Grease Front Track Bearings (two on each track) – *See 'DAILY-7' in the **SERVICE POINTS** section.*
8. Grease 3 PT. Hitch, Front & Rear (If Equipped)
9. If Marsh Master® has an Attachment Attached – Grease and Inspect as Necessary
10. Check Track Tension
11. Remove Any Wrap-Up from Rear and Front Drive Sprockets
12. Check Indicator on High Flow Auxiliary Hydraulic Oil Filter (Marsh Master® must be running) – *See 'DAILY-9' in the **SERVICE POINTS** section.*
13. Check indicator on Charge Pump Hydraulic Oil Filter (Marsh Master® must be running) – *See 'DAILY-10' in the **SERVICE POINTS** section.*
14. With Marsh Master® Running – Inspect Rear Drive Systems for Leaks & Damage

EVERY 50 HOURS

1. Check Pontoons for Leakage (Remove Drain Plugs)
2. Inspect Tracks for Bent or Broken Cleats and Loose Drive Lug Bolts

EVERY 250 HOURS

1. Top Off Bogey Tubes with Fresh Oil using Alemite® oil gun model 4035 (Coast Item ID: 2AT31-LUBE GUN).
2. Check Oil in Rear Shaft for Moisture (Shaft should be filled 3/4 with SAE 85W-140 gear oil) – *See '250 HOURS-2' within the **SERVICE POINTS** section.*
3. Grease Drive Control Detent Shaft – *See '250 HOURS-3' in the **SERVICE POINTS** section.*
4. Lubricate Control Rods (light 3 in 1 oil) – *See '250 HOURS-4' in the **SERVICE POINTS** section.*

EVERY 500 HOURS

1. Change Engine Oil and Filter
   - Murphy® Service Reminder: Requires Reset
2. Change Bogey Tube Oil – See ***BOGEY TUBE SERVICE PROCEDURE*** section.
   - Murphy® Service Reminder: Requires Reset
3. Change Rear Shaft Oil
4. Change Engine Air Filter – *See '500 HOURS-3' in the **SERVICE POINTS** section.*
   - Murphy® Service Reminder: Requires Reset
5. Change Engine Coolant

6. Change Fuel Filter – *See '500 HOURS-5' in the **SERVICE POINTS** section.*
    - Murphy® Service Reminder: Requires Reset

EVERY 1000 HOURS

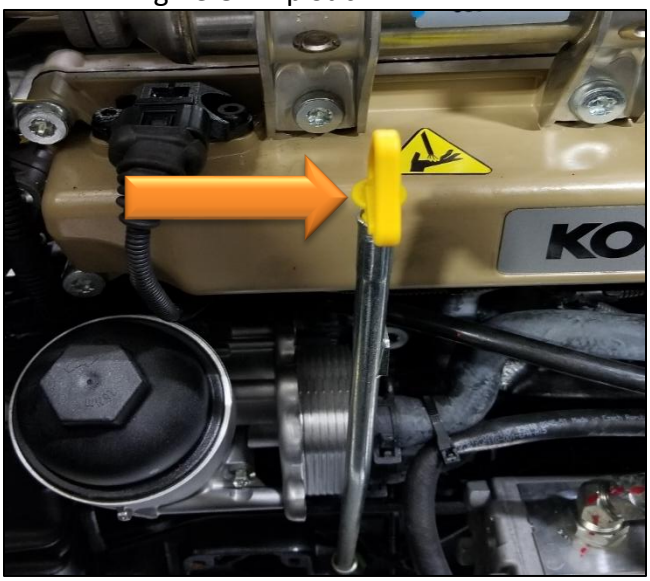
1. Drain Hydraulic System and Refill
    - Murphy® Service Reminder: Requires Reset
2. Change Hydraulic Filters

EVERY 1500 HOURS

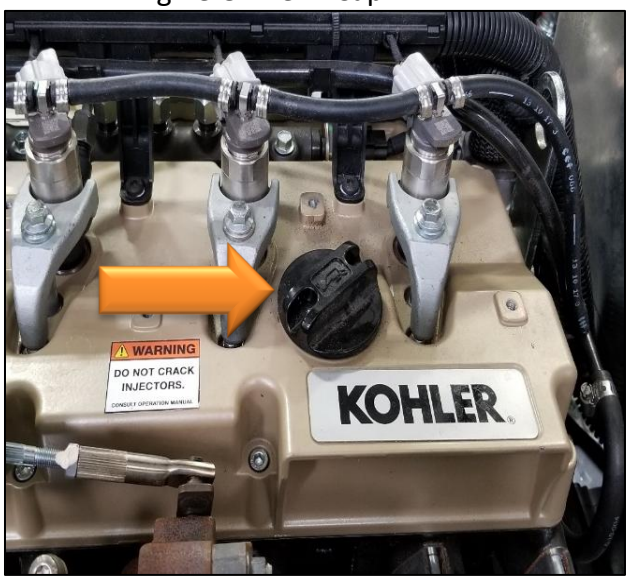
1. Check Bogey Wheel Endplay – Rebuild as Necessary
2. Check Rear Shaft Assembly – Rebuild as Necessary

SERVICE POINTS

DAILY-1: Engine Oil Dip Stick



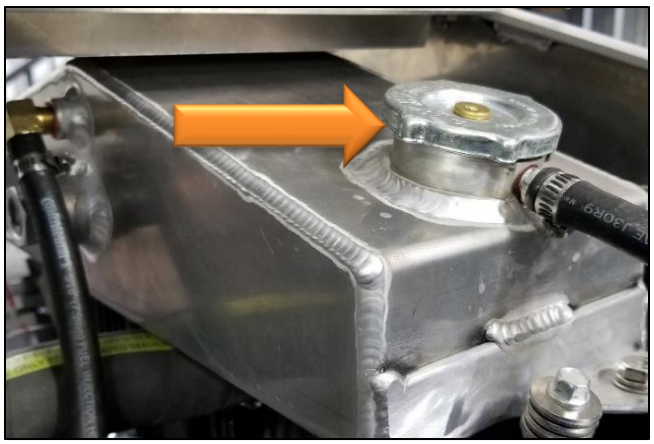
DAILY-1: Engine Oil Refill Cap



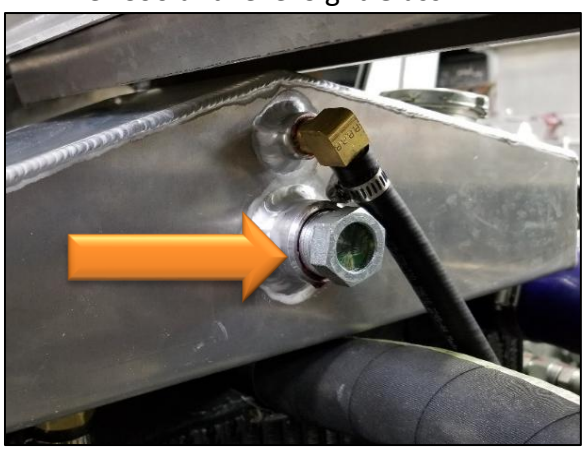
DAILY-2: Hydraulic Oil Filler Neck

DAILY-2: Hydraulic Oil Tank Dip Stick

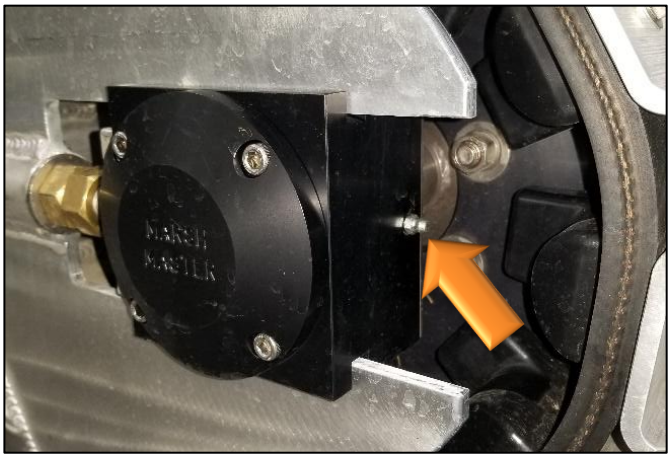
DAILY-3: Radiator Overflow Tank Filler Neck



DAILY-3: Coolant Level Sight Glass



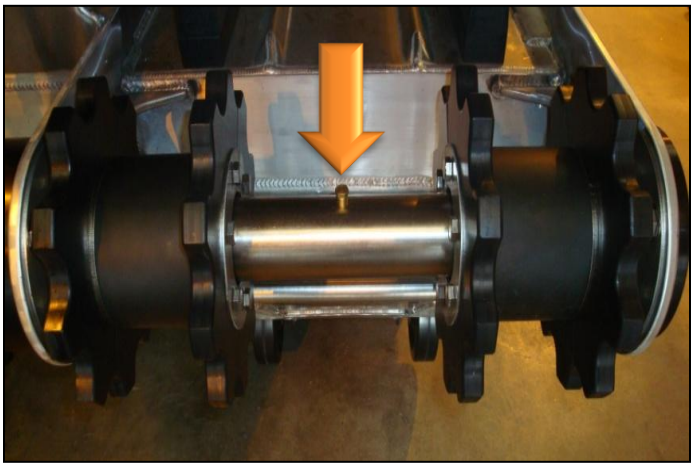
DAILY-7: Front Track Grease Port



DAILY-9: High Flow Hydraulic Oil Filter

DAILY-10: Charge Pump Hydraulic Oil Filter

250 HOURS-2: Rear Shaft



250 HOURS-3: Detent Shaft Grease Port

250 HOURS-4: Control Rods

500 HOURS-3: Air Filter

500 HOURS-5: Fuel Filter

AKG RADIATOR/OIL COOLER SCREEN

The AKG cooler is a single unit that houses three cooling systems which provide cooling capacity for the engine coolant, the charge air, and the hydraulic oil. The cooler is located at the rear of the engine compartment. It is critical that air can flow through the fins of this device with minimal resistance. Therefore, the screen will need to be cleaned periodically. The time interval between cleaning depends heavily upon the operating environment. In all models, the hydraulic fan pulls air through the cooler into the engine compartment. To blow out the screens, the fan direction must be reversed see ***HYDRAULIC COOLING FAN*** section.

The following steps explain how to thoroughly clean the cooler screen:

1. Lift the screen so that the cooler is not blocked.
2. Use compressed air to blow the fins from the inside of the engine compartment out.
3. After blowing out with air, wash with water.
    - Spraying with a pressure washer may damage the cooling fins on the cooler.

MURPHY® DISPLAY SERVICE REMINDER RESET

To reset the service reminders on the Murphy® Display, use the following procedure:

1. Turn key to “ON” position.
   - Do not start the engine.
2. Press the center button to access the main menu.
3. Press the arrow keys to access “SYSTEM SETTINGS”
4. Enter the passcode 3482.
5. Press the arrow keys to access “SERVICE REMINDERS”
6. Press the arrow keys to access service being performed.
7. Press the arrow keys to access “RESET”
8. Press the “OK” key.
9. Press the “back” key to return to the home screen.

LUBRICANT SPECIFICATIONS

- Hydraulic Oil
  - ISO VG46 (Mobil DTE 25 or Equivalent)
  - 10 Gallons (Verify by checking tank dipstick)

- Bogey Tube Oil
  - 85W-140 Gear Oil (Mobilube HD 85W-140)
  - Bogey Tubes = fill full (4.5 fl oz. per tube)

- Rear Shaft = ¾ FULL (54 oz.)
  - 85W-140 Gear Oil (Mobilube HD 85W-140)

- Fuel
  - Ultra Low Sulfur Diesel
  - 29 Gallon Tank - standard

- Coolant
  - 50/50 Ethelene glycol/Water
  - 3-1/2 Gallons (Verify by checking sight glass)

- Engine Oil
  - 10W30 (Mobil Delvac 1300)
  - 3 Gallons (Verify by checking engine dipstick)

REPLACEMENT FILTERS

Charge Pump Hydraulic Oil Filter: Coast #: **2AH5-E**
High Flow Hydraulic Oil Filter: Coast #: **2CH5-E**
Air Filter Outer Element: Coast #: **2CP72-E1**
Air Filter Inner Element: Coast #: **2CP72-E2**
Fuel Filter: Coast #: **KDI-ED0021753180-S**
Engine Oil Filter: Coast #: **KDI-ED0021750010-S**

CHANGING ENGINE OIL

1. Run the engine at idle for 5-10 minutes to allow the oil to warm up and thin out.
2. Turn off engine.
3. Loosen the oil filler cap.
4. Remove the dip stick.
5. Remove plug from the bottom floor of the machine to access the oil pan drain fitting.
6. Remove JIC cap from oil pan drain fitting.
7. Drain oil into an appropriate container.
8. Replace oil filter element and gaskets.
    - See Kohler engine manual for detailed drawing of element and gaskets.
9. Refasten JIC cap on oil pan drain fitting.
10. Refasten access plug on the bottom floor of the machine.
11. Fill engine with oil through filler cap located on top of valve cover.
12. Check dip stick to ensure oil level is correct.
    - Do not exceed the MAX level mark on the dipstick.
13. Crank engine and let idle for a minute, re-check oil level, add if necessary.
14. Reset “Engine Oil Service Reminder” on Murphy® display.

TEST PROCEDURE PRIOR TO WELDING, CUTTING OR DRILLING PONTOON

POTENTIAL HAZARD: Marsh Master® pontoons are sealed chambers, and the possibility for an explosive mixture to be present exists. This mixture can be caused by a generation of methane gas or a fuel such as gasoline or diesel fuel entering the pontoon through a crack.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

IT IS IMPERATIVE THAT THE PONTOON BE CHECKED FOR EXPLOSIVE ATMOSPHERE PRIOR TO WELDING, CUTTING, OR DRILLING THE PONTOONS!!!!

STEP 1: Remove the drain plug from the pontoon. It is located between the #7 and #8 outside bogey wheels. A small amount of water (<1 gallon) may drain from the pontoon. It is normal for a small amount of water to form due to condensation in the pontoons.

STEP 2: Using an ATX612 Multi-Gas Monitor or equal, insert the gas pick-up tube at least 6 inches into the drain opening in the pontoon. Avoid getting any water into the pickup tube as water can damage the instrument.

NOTE: The Gas Monitor instrument must be "bump" tested before each use. It must also be calibrated monthly. The person using the instrument must be trained in the use of the instrument. If there is any question concerning the instrument, contact the instrument manufacturer or Hagemeyer/Vallen, our local supplier, at 225-673-5670.

STEP 3: Turn the instrument on and take a reading. The instrument will alarm at 10 % LEL (lower explosion limit). If you get an alarm or a reading above 2 percent LEL, go to Step 4. If you get a reading of 0 or 1, the pontoon is safe to weld, cut, or drill. Keep the instrument running at all times when welding.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

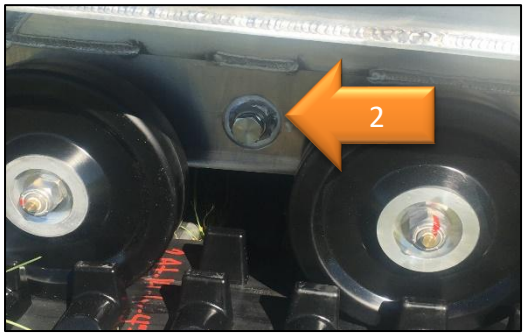
THE HEAT FROM WELDING CAN GENERATE GAS FUMES. STOP WELDING IMMEDIATELY IF YOU GET AN ALARM AND GO TO STEP 4.

STEP 4: Purge the pontoon with air as follows. Insert an air hose into the pontoon through the drain opening. Slowly bleed air into the pontoon allowing the pontoon to purge. After 1 hour of purging, test again. If you get a reading above 2 percent LEL, try purging another hour and test again. If you cannot get a low enough reading by purging this way, proceed to Step 5.

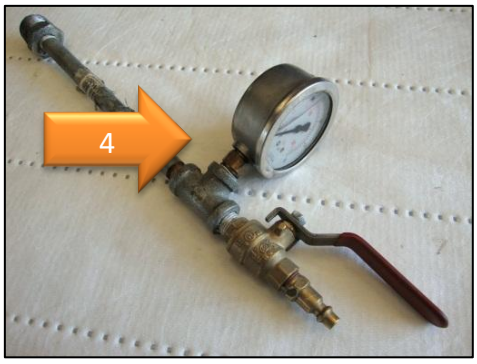
STEP 5: Remove the tracks and top slides from the machine. Removing the top slides will give you 16 bolt hole openings in the top of the pontoon to bleed through. Connect an air hose with a regulator and shut-off valve to the drain port of the pontoon. Slowly bleed air into the pontoon so that it comes out of the top bolt holes. Make sure the pressure in the pontoon does not exceed 2 psi. Purge for several hours, and then retest LEL. Purge as necessary to obtain a reading of 0 to 1 LEL. When you obtain a safe reading of less than 1 percent LEL, the pontoon is safe for welding, drilling, or cutting. Be sure to keep the instrument connected and running when welding.

PROCEDURE TO CHECK PONTOONS FOR LEAKS

1. Turn off engine.
2. Locate drain plug at bottom outside edge of pontoon.
3. Remove plug using a 1-1/16” or 1-1/8” socket with breaker bar, and allow any water to drain.
   - Air inside the pontoon will expand, especially on a warm day.
   - If air rushes out when the plug is pulled, then the pontoon is leak free.
   - If no air comes out, then we recommend pressure checking the pontoon.
   - Never assume if no water comes out that no leaks are present. The leak may be in the bottom of the pontoon, allowing the water to drain back out over time.



4. With the drain plug removed, attach the pressure tester to the drain plug boss.
5. Attach an air hose to the tester.
6. Quickly open and close the ball valve, putting no more than 2 psi of air into the pontoon.
   CAUTION: More than 2 psi can damage the pontoon.
7. Let it sit for a few minutes while observing the gauge.
   - A drop in pressure indicates a leak.
   - Use a squirt bottle with soap and water to find the leak.



8. Perform the test procedure to check pontoon atmosphere, and then repair the pontoon.
9. After the repair is complete, repeat the pressure test to ensure that the pontoon is completely sealed.
10. Using Loctite #545 thread sealant, reinstall the pontoon drain plug. Do not over tighten.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

EXPLOSION HAZARD: SERIOUS INJURY OR DEATH COULD OCCUR IF FLAMMABLE LIQUIDS OR GASES ACCUMULATE IN THE PONTOON CHAMBER, AND A SOURCE OF IGNITION PENETRATES THE PONTOON.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DO NOT CUT, DRILL, WELD OR PERFORM ANY HEAT OR SPARK GENERATING ACTIVITY UNTIL THE PONTOON CHAMBER ATMOSPHERE HAS BEEN TESTED BY A COMPETENT PERSON USING A PROPERLY CALIBRATED EXPLOSIVE METER (FLAMMABLE GAS DETECTOR).

NOTE: Before doing any work on pontoon, contact Coast Machinery, LLC, to review the work procedure planned.

TRACK MAINTENANCE

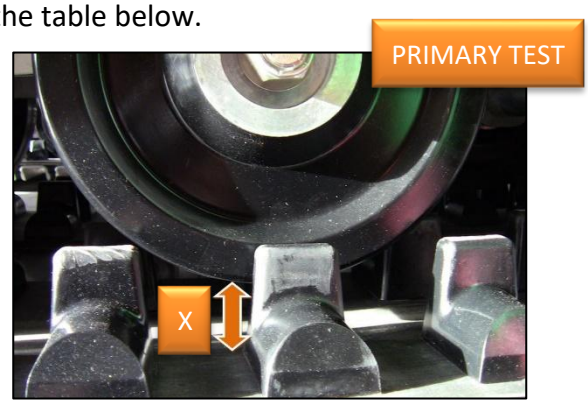
Two items are required to keep the Marsh Master® tracks properly maintained.

1. Proper belt tension/alignment.
2. Proper bearing lubrication (Poor bearing lubrication will result in short bearing life).

CHECKING TRACK TENSION

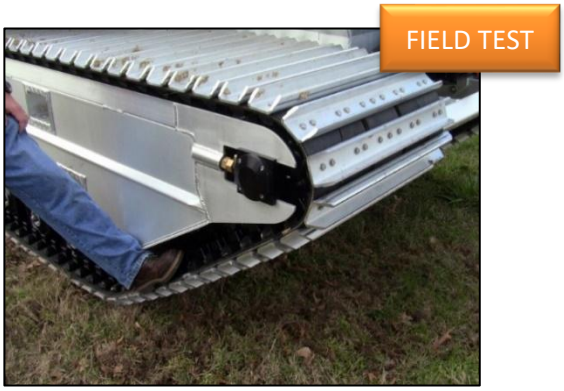
Method 1: Primary Test

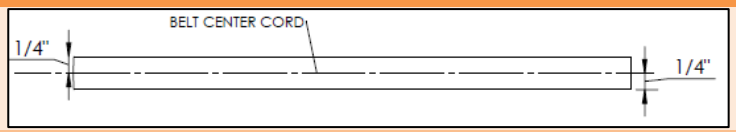
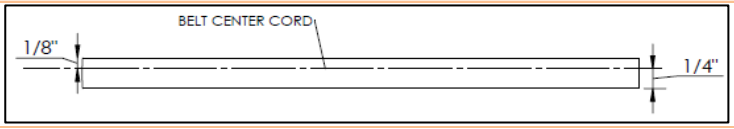
- Place jack at jack plate. Jack up one side of machine until the track is off the ground.
- Examine the track clearance between the bottom of the 5th bogey wheel and the top of the rubber belt (gap "X" in picture below).
- The distance should be in accordance with the table below.



Method 2: Field Test

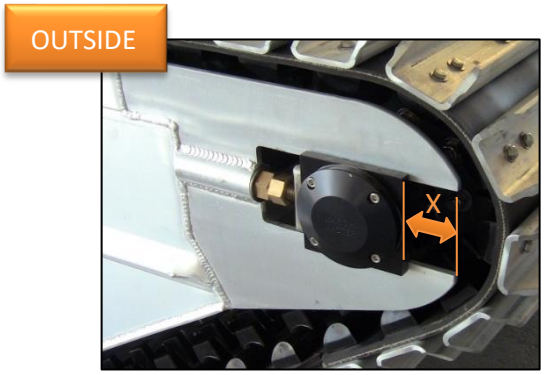
- Place your foot on the track in front of the Marsh Master® and apply pressure.
- Properly tensioned tracks will spring back.
- Improperly tensioned tracks will either be floppy and have no rebound (if too loose) or will not be able to move (if too tight).



BELT TYPE	HOW TO DIFFERENTIATE BELT TYPES	PICTORIAL	CLEARANCE GAP "X" (IN.)
A	Both covers are ¼" thick		3"
B	Outer cover is ⅛" thick, Inner cover is ¼" thick		¾"

ADJUSTING TRACK TENSION

1. To adjust the track tension, you must first unlock the bearing take-up nuts by loosening the lead jam nut (the one farthest to the front).
2. With the lead jam nut backed off, loosen or tighten the other nut to obtain the correct track tension, as noted in the previous section.
3. Once the track is properly tensioned, make sure that the distance from the bearing housing to the front of the bearing pad is the same on both sides of the track. (See pictures below)
4. Re-lock the bearing take-up nuts, but do not over tighten them.



TRACK CLEAT REPLACEMENT

1. When a track cleat is bent, it can usually be straightened in a hydraulic press.
   The only time that it cannot be straightened is if the cleat is twisted or cracked.
2. Roll the cleat in need of replacement to the rear sprockets.
   a. The rear sprockets will hold the drive lugs in place as you remove the cleat.
3. Remove the cleat, and either straighten or replace it.
4. Apply 3 drops of blue Loctite #243 to the threads of the drive lug inserts, not the bolts.
5. Install the cleat, tightening the bolts to 110 in.-lb.

OTHER TRACK MAINTENANCE ITEMS

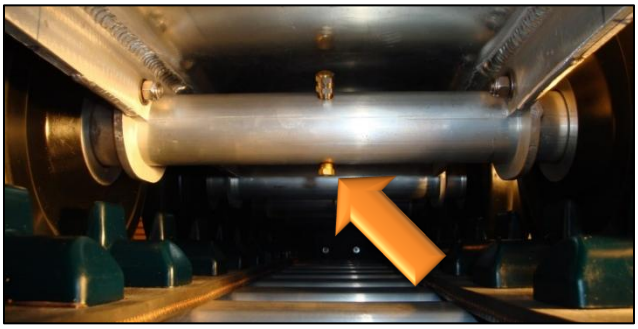
- Check periodically for loose bolts or broken or bent cleats. Replace or repair immediately.
- Remove any wire, fishing line, grass, or other materials that might be wound up on the sprocket shafts.

CHECKING BOGEY TUBES

1. Jack the machine up until the track is off the ground.
2. Grab each wheel, pulling upward.
   a. If the shaft moves vertically, then it is a bad tube. Slight in and out movement is considered endplay and is normal.
   b. If the whole bogey tube moves, the mounting bolts are either loose or have come out.
   NOTE: A bad bogey tube will squeak. If addressed early enough, the seals can be replaced or the tube can be rebuilt, rather than replacing the entire assembly.
   c. The bogey tube life is highly dependent upon the seal life. Seal life typically ranges between 1500 to 2000 hours; therefore, it is recommended to rebuild tubes around the 1500-hour mark. Doing this could potentially double the life of the tube. The tube is designed such that it can be rebuilt easily. Contact Coast Machinery, LLC, for information regarding parts and the tube rebuild procedure.

BOGEY TUBE SERVICE PROCEDURE

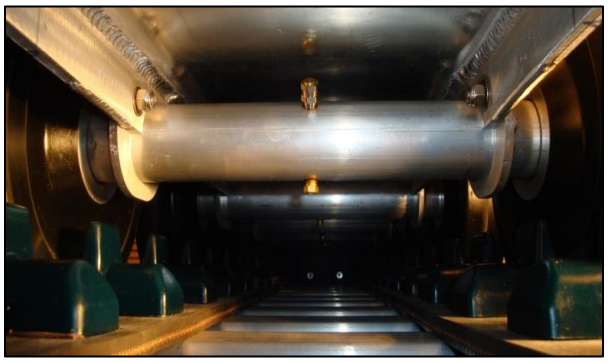
1. Make sure the oil in the tubes is at least 70°F.
2. It is best to change the oil in the tubes when the machine is level.
3. Place a container to catch the oil under the tube and remove the bottom plug.



4. Remove the hex head 1/8” pipe plug from the end of the shaft of the tube.

5. Once the oil has drained, insert the Alemite fitting into the end of the shaft where the plug was.
   a. Napa part #715-1016
   b. Coast part #SPNL-0227

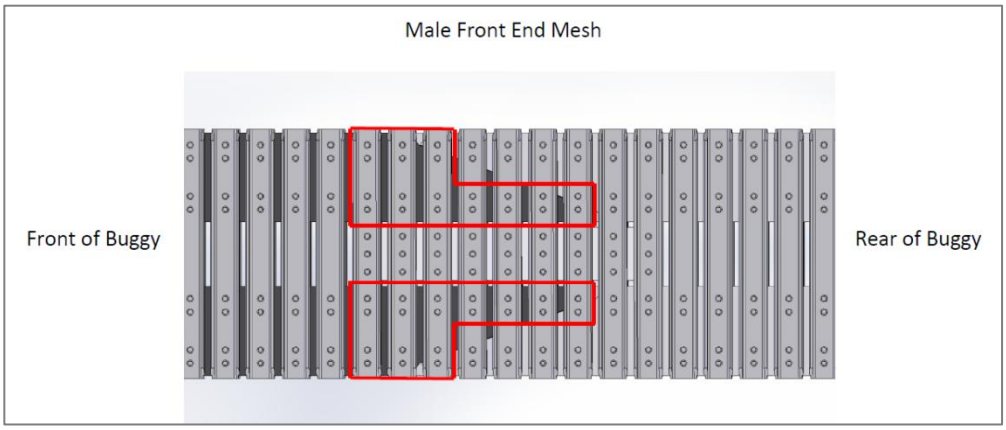
6. Hand tighten the drain plug back into the bogey tube to prepare for the flushing process.
7. Use an Alemite Lever-Operated Oil Gun Model 4035 (Coast Item ID: 2AT31-LUBE GUN) to fill the bogey tube with a diesel or another solvent that is compatible with NBR rubber.
8. Rotate the bogey wheel several rotations and then remove drain plug. Remove the Alemite fitting from the tube end and lightly blow compressed air through the tube to force draining of the bogey tube by dislodging any clogs.
9. Once the tube flushing is completed, re-install the drain plug using Loctite #545 thread sealant and pump 85W-140 gear oil into the tube until oil comes out of the top vent.
    a. Typically, 30-32 pumps (4 - 4.5 FL.OZ.) per tube.

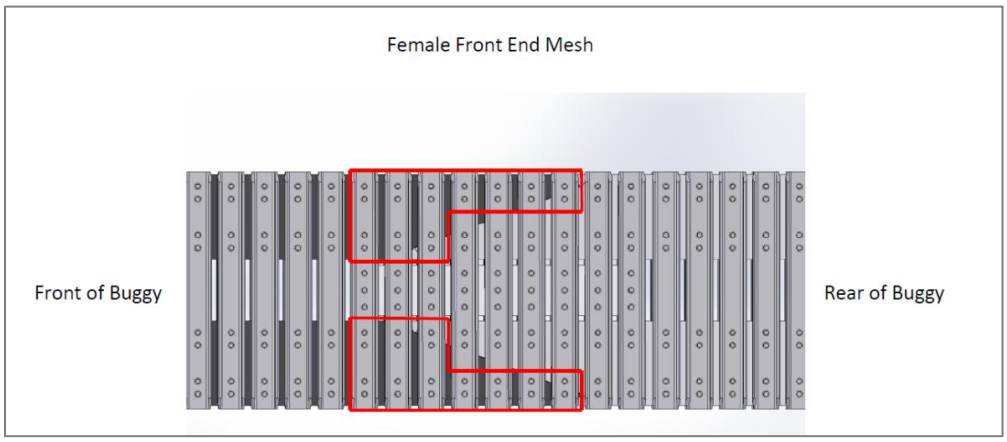


10. Once the tube is full, remove the Alemite fitting, and immediately insert the hex head 1/8” pipe plug using Loctite #545 thread sealant.
11. Repeat this process for every tube on the machine.

PROCEDURE TO REPLACE DRIVE SPROCKETS

1. Using the jack plate at the center of the Marsh Master®, raise the Marsh Master® so that the tracks are clear off the ground, and clear of any other objects.
2. Rotate the track until the front of the center belt is in line with the winch.
3. Loosen the tension on the belt by unscrewing the bearing take-up nuts on the front idler shaft.
4. Remove the bolts that fasten the drive lugs attached to the front end of the belt.
   a. You will need to take note of which way the belts are meshed





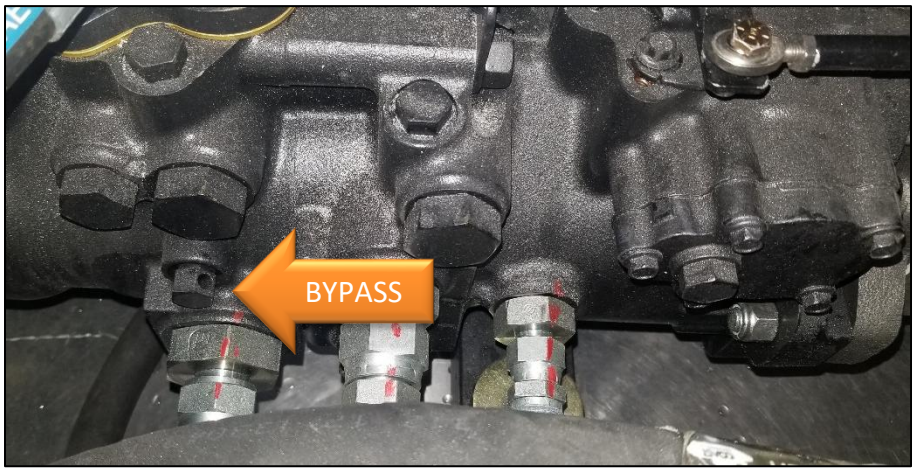
5. The center belt should stay with the rear end of the track.
6. With a little prying, the tracks should now be loose enough so that they fall on their own.
   a. You may want to tie a rope to the tracks so that you can let them down easily.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

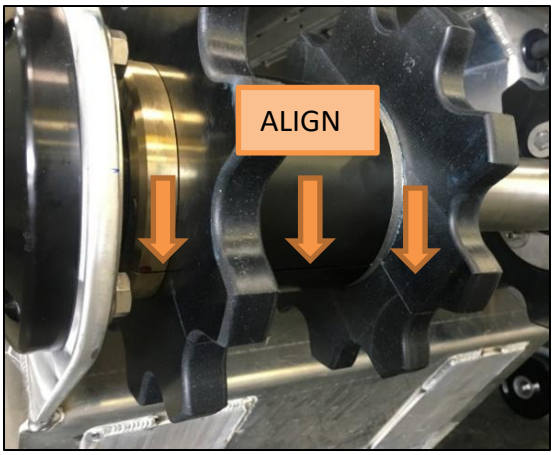
THE TRACKS ARE HEAVY AND WILL FALL RAPIDLY!

7. Start the engine and run the track backwards to clear the rear sprocket.

8. Locate bypass valve on the drive pump under the seat on the side opposite of the track you are working on. There is a 5/8” hex head bolt with a pinhole located about halfway down the length of the pump.

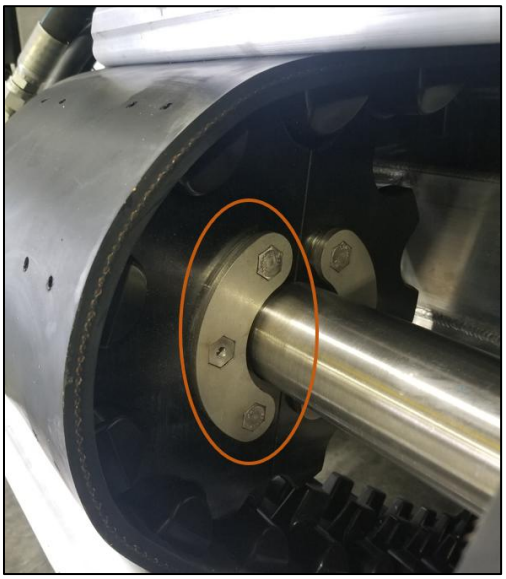


9. Open the bypass/towing valve by turning counterclockwise 2 turns max. (See Sundstrand manual p. 7 for details)
   a. Now the rear shaft will rotate freely by hand.
10. Remove the bolts from the rear sprocket nuts. Be careful not to gall the bolts when backing them out of the sprocket/spacer/shaft assembly. **Do not use a high-speed air impact. Use only a low speed air ratchet.**
11. Remove the rear sprockets and rear shaft spacers.
    a. While the shaft is exposed, inspect the sprocket bolt holes for wear, and the weld along the rings for any cracks.
12. Install the new sprockets, making sure the split in the sprocket is aligned with the split in the spacer located between the sprockets. Apply anti-seize lubricant to the shoulder of the bolt to help prevent galling.

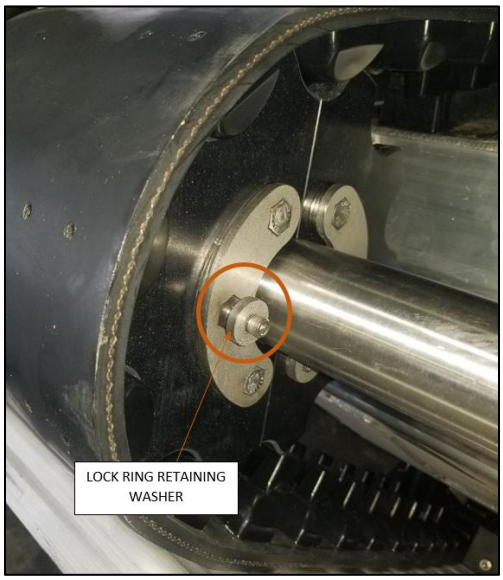


13. Once the bolts are through the sprocket, coat the full length of the threads with red Loctite #271.
14. Put the sprocket nut back on the bolts and torque to 40 ft-lbs.

15. Clock the three bolts such that the sprocket bolt lock ring aligns with the three bolts and will slip on over the three bolts. The lock ring may need to be tapped on with a hammer.

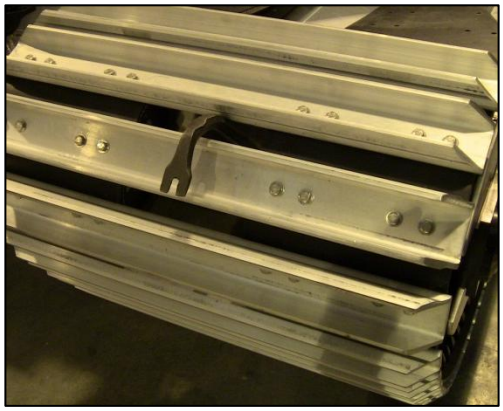


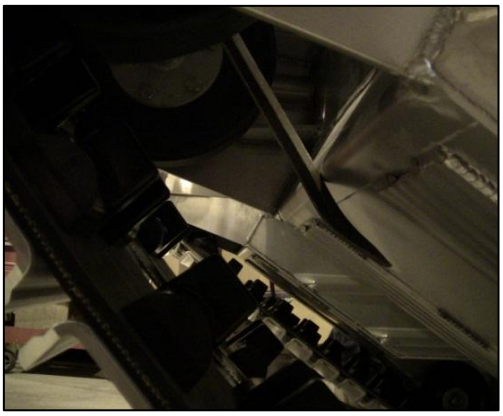
16. Apply 3 drops of blue Loctite 243 to the 5/16-18 socket head bolt threads and insert into the lock ring retaining washer, then install into the middle sprocket bolt. Torque bolt to 10 ft-lbs.



17. Lay the front end of the tracks back on the front idler shaft.

18. Place a pry bar through the cleats, over the front shaft and against the angled face of the pontoon.
    a. This will hold the front end in place.





19. Before starting the machine, close the bypass/towing valve by turning the 5/8” hex head bolt clockwise until it bottoms out.
20. Lay the rear track back on the sprocket and use the engine to run the track back onto the pontoon.
21. Use C-clamps to hold each end of the belt together.

22. Put the washers, lock washers, and bolts back into the belts to hold the splice together.
    a. Do not put the drive lugs on yet.
23. Once all the bolts have been run down through the belt, remove the C-clamps.
24. Run the track forward so that the drive lugs can be reassembled in the gap between the track and the pontoon at the front of the Marsh Master®.
25. Apply 3 drops of blue Loctite #243 to both inserts in each drive lug and reinstall.
    a. Torque to 110 in-lbs.
26. Use procedure for adjusting track tension found in a previous section of this manual to re-tension the tracks.

CONTROLS ADJUSTMENT

The controls may need adjustment after the machine has been run for many hours. Over time, the steering may veer to the left or right. This change can be caused by worn spools in the drive pump. The veering may also be a result of loose engine or pump mounting bolts. The vibration of the machine may have loosened the bolts and caused the motor and pump to move to a slightly different position. These issues should be addressed before adjusting the controls.

DETENT ADJUSTMENT

When looking from the side, the left and right control levers should be parallel and line up. The levers typically lean back about 5° off vertical as seen in the picture below. The detent position of the control levers is controlled by the length of the vertical control rods. To change the length of the control rod:

1. Remove the driver's side console panel, or the control lever plate to access the detent control rods.
2. Remove the nut and bolt connecting the control rod to the control arm.
3. Loosen the nut on the rod end.
4. Turn the rod end.
   a. Clockwise to shorten.
   b. Counter-clockwise to lengthen.
5. Tighten the jam nut on the rod end.
6. Reconnect the control rod to the control arm by fastening the bolt and nut.
7. Refasten the panel/plate that was removed to access the control rods.

NEUTRAL BAND ADJUSTMENT

If the Marsh Master® veers to one side when tracking with the control levers fully forward, then the drive pump control rods need to be adjusted. In other words, the neutral band needs adjustment. Another symptom for needing adjustment is if the tracks don't begin to move at the same time when moving both control levers forward or backward. This adjustment can be done in the shop, but the final adjustment must be done in the field to ensure that the machine is tracking straight. As with the detent position, the neutral band is adjusted by changing the length of the drive pump control rods.

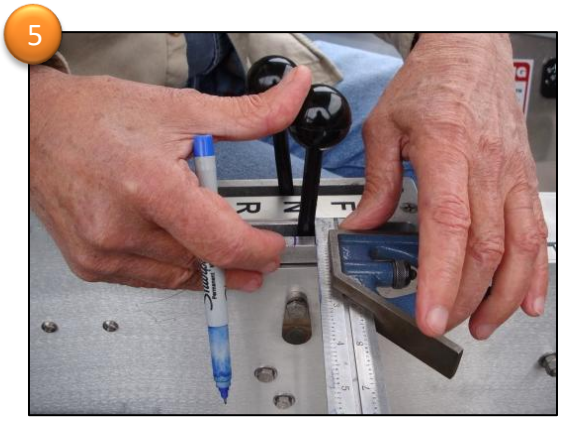
WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DO NOT ADJUST THE DRIVE PUMP CONTROL RODS WHEN THE ENGINE IS RUNNING. SHUT THE ENGINE OFF BEFORE DISCONNECTING ANY OF THE DRIVE PUMP CONTROL RODS.

Follow the procedure below to adjust the neutral band and make the machine track straight:

1. Before adjusting the controls, make sure that there is ample room for the machine to sway from side to side, and front to back.
2. Crank the engine and let it idle.
3. Put a square up against the console and the front of the left control lever.
4. Make a line with a pen to mark the detent position N.

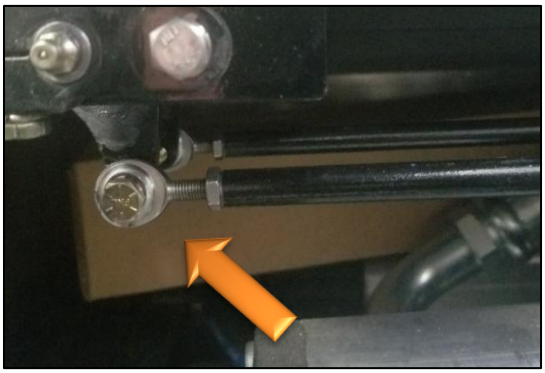
5. Move the lever forward, sliding the square along with it, until the pump begins to engage.
   a. The track will begin to move, and you will hear a difference in the sound of the pump.
6. Leave the square at the point where the pump began to engage, and release the lever back to detent.
7. Draw a line to mark the engagement point.



8. Move the square to the back of the left control lever.
9. Draw a line.
10. Move the lever backward until the pump begins to engage, and draw a line.
11. Turn off the engine.

12. Compare the distance between the front two lines to the distance between the back two lines.
    a. These two measurements should be the same. If so, move on to step 18.
    b. If the front two lines are closer together than the back two, then the control rod is too short and needs to be lengthened.
    c. If the back two lines are closer together than the front two, then the control rod is too long and needs to be shortened.

13. With the engine off, lift the driver's seat and remove the nut and bolt that connect the left control rod to the pump control arm.
14. Turn the rod end to either lengthen or shorten the control rod in accordance with the measurements from step 12.
    a. Typically requires ½ turn to 2 full turns.
15. Reconnect the control rod to the pump control arm, fastening the bolt and nut.
16. Erase the front and back lines from steps 7 and 10.



17. Repeat steps 2-16, omitting steps 4 and 9, until the measurements from step 12 are the same.
    a. Do not erase the marks once the final adjustment has been made.

18. Move the square to the right side, and apply steps 2, 4-11 to the right lever.
    a. The front line on the left and right should be aligned for proper controls adjustment.
    b. If the right line is further back than the left line, then the pump control rod is too short and needs to be lengthened.
    c. If the right line is further forward than the left line, then the pump control rod is too long and needs to be shortened.
19. With the engine off, lift the passenger's seat and remove the nut and bolt that connect the right control rod to the pump control arm.
20. Turn the rod end to either lengthen or shorten in accordance with the location of the line in step 18.
21. Reconnect the control rod to the pump control arm, fastening the bolt and nut.
22. Erase the lines from step 18.
23. Repeat steps 18-22 until the lines are aligned.

Confirming Controls Adjustment

At this point, the controls should be very close to the correct position. The machine must now be field tested to check whether or not it is actually tracking straight. Use the following procedure to finalize the adjustment:

1. Start the engine and bring it up to 2000 rpm.
2. Pick a straight, flat path with no obstacles, and make sure that the tracks are clear of anything.
3. Push both control levers fully forward.
4. Pick a point off in the distance directly in front of the Marsh Master®, and watch it.

a. If the machine continues to head straight at the point, then the controls are good.
b. If the machine veers to the left of the point, then the left track is running too slowly.
    i. In this case, the pump control rod on the driver's side needs to be adjusted.
    ii. The pump is not being fully stroked, so the rod needs to be shortened.
c. If the machine veers to the right of the point, then the right track is running too slowly.
    i. In this case, the pump control rod on the passenger's side needs to be adjusted.
    ii. The pump is not being fully stroked, so the rod needs to be shortened.

5. Stop the machine, bring it to idle, and turn off the engine.
6. Lift the seat cover and adjust the control rod in accordance with the notes of step 4.
7. Repeat steps 1-6 until the machine tracks straight.

PROCEDURE TO REPLACE HYDRAULIC OIL

1. Stop Engine.
2. Let hydraulic fluid cool.
3. Attach hydraulic system drain hose to the male quick connect of the low-flow auxiliary circuit.
    a. The Parker number for the female quick connect fitting to be used on the drain hose is FF-371-6FP
4. Place the free end of the drain hose into a 5-gallon bucket, or suitable container for used hydraulic oil.
    a. Have an extra 5-gallon bucket ready.
5. Crank engine and let idle.
6. Turn on the low flow auxiliary system.
    a. The hydraulic pump will pump fluid into the bucket at a rate of 3-4 gpm.
    b. Stop the engine as necessary and switch the bucket with the second one.
7. As soon as the oil flow begins to sputter and stop, shut the engine down.
    a. Do not run the engine after the oil flow stops.
8. Disconnect the drain hose from the quick connect.
9. Turn off the low flow auxiliary system.
10. Remove the main oil filter and replace with a new filter. Coat the gasket with a thin coat of oil before screwing the filter on.
11. Remove drain plug at bottom of oil reservoir. Drain remaining fluid.
12. Replace plug. Use Loctite #545 thread sealant on plug threads.
13. Fill the reservoir with Mobil DTE 25M ISO VG46 or equal.
14. Crank the machine, allowing motor cases and hoses to refill.
15. Kill the machine, and add oil, bringing level back to full.
16. Reset "Hydraulic Oil Service Reminder" on Murphy® display.

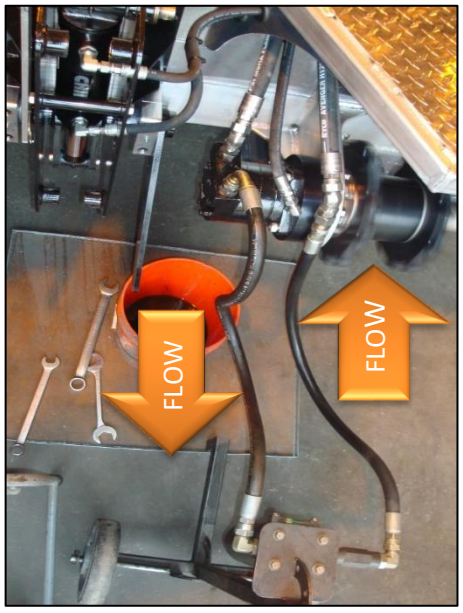
DRIVE HOSE REPLACEMENT

Hydraulic components depend on the system hydraulic fluid for internal lubrication. The smallest amount of contamination in the system will cause accelerated wear, reduced tracking power, or total failure. When changing a high-pressure hydraulic hose, it is imperative to use a 4 wire, 5000 psi hose with high-pressure fittings that meets the SAE 100R13 standard. This hose must be cut using a non-abrasive blade. It is also imperative to use all necessary precautions to keep contaminants from getting in the system. Thoroughly clean the fittings off before disconnecting, cap the hoses and motor fitting, and blow out the new hoses with high-pressure compressed air, or wash out with soap and water before installing. See the following section for filtering the system after replacement.

DRIVE SYSTEM FILTRATION

When a component of the hydraulic drive system fails or is opened, there is a high risk of contamination. The smallest amount of contamination can diminish the performance of the machine or cause premature failure. In a closed loop system, it is essential to pre-filter the fluid to re-establish its proper cleanliness.

PROCEDURE TO FILTER DRIVE SYSTEM

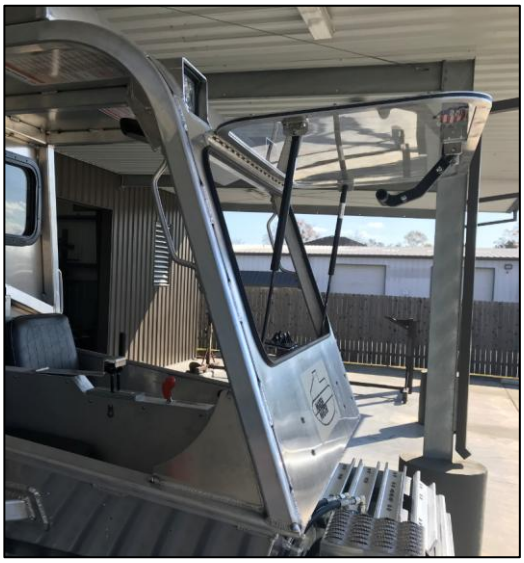


1. **<u>Clean the area around the hose fittings thoroughly.</u>**
2. Disconnect the rearmost hose of the drive motor.
3. Attach the inlet hose of the filtration system to the drive motor and the outlet hose to the drive hose.
   - Make sure that the hose coming from the drive motor is the inlet hose to the filtration system.
   - The filter will have an arrow to indicate the direction of flow.
4. If the tracks are still on, jack the Marsh Master® up.
5. Run the track **FORWARD** for 5-10 minutes with the engine at 1800 rpm and the control lever fully forward.
6. Reattach the hoses, taking every precaution to ensure that nothing gets into the fittings.
7. If the pump or high pressure hoses on both sides have been replaced, then you would need to repeat this process for both sides.
8. Check the hydraulic oil level in the reservoir, and replace any lost fluid.

NOTE: Operating room cleanliness is the rule!

OPTIONAL ACCESSORIES

FOLD-OUT FRONT WINDSHIELD



The fold-out front windshield is an optional accessory designed to provide more airflow through the cab of the Marsh Master® in an effort to cool the operator and passenger when operating in hot temperatures over open areas where there is no risk of protruding objects (Limbs, Brush, Dangerous Insects, etc…) entering the cab through the windshield opening. The fold-out windshield is a 3-position design, 1) Fully Open, 2) Partially Open, and 3) Fully Closed. The following warnings should be followed if the Marsh Master® is equipped with a fold-out front windshield:

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

WINDSHIELD MUST BE FULLY OPEN WHEN OPERATING OVER WATER TO PROVIDE AN ADDITIONAL EXIT POINT FOR THE OPERATOR AND/OR PASSENGER TO ESCAPE IN THE EVENT OF CAPSIZING.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

WINDSHIELD MUST BE FULLY CLOSED DURING WINCH OPERATION TO PROTECT THE OPERATOR AND/OR PASSENGER FROM INJURY IF THE WINCH CABLE WERE TO SNAP.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

WINDSHIELD MUST BE FULLY CLOSED WHEN OPERATING IN AREAS WHERE THERE IS POTENTIAL FOR PROTRUDING OBJECTS (LIMBS, BRUSH, DANGEROUS INSECTS, ETC…) TO PENETRATE THE MARSH MASTER® CAB.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

WINDSHIELD MUST BE FULLY CLOSED WHEN TOWING THE MARSH MASTER® DOWN THE ROAD.

CAB DOORS

The cab doors are designed with three layers of redundancy to allow for escaping from the cab of the Marsh Master® in hazardous situations. The three layers include: 1) Assisted Door Opening, 2) Easy Door Removal, and 3) Pull-Out / Pop-Out Screens. These three features are incorporated in the door design to help prevent the operator and/or passenger from becoming trapped in the event of a submerged cab situation. See pictures and explanations below regarding the cab door design features.

GAS SPRING, MOUNT, AND MAGNETIC LATCH DESIGNED SUCH THAT DOOR EASILY OPENS WITH A BUMP OF THE HAND.

DOOR MOUNTS TO MARSH MASTER® ON "LIFT-OFF" HINGES. SEE *CAB DOOR REMOVAL PROCEDURE* SECTION FOR DOOR REMOVAL PROCEDURE

VINYL COVERING AND ALUMINUM SCREEN DESIGNED SUCH THAT A STRONG PUNCH WILL DISLODGE FROM DOOR FRAME ALLOWING FOR CAB ESCAPE.

In an ideal situation, the operator and/or passengers should remove the doors prior to encountering any foreseeable hazardous situation where capsizing the machine is possible. SEE *CAB DOOR REMOVAL PROCEDURE* SECTION. However, if the operator or passenger encounters an unforeseeable capsizing hazard with the doors installed then exit the machine by opening door or by pulling the vinyl window off and then punching out the aluminum screen.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DOOR WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE DOOR DATA PLATE ON DRIVER'S SIDE (INCLUDES BOTH DOORS).

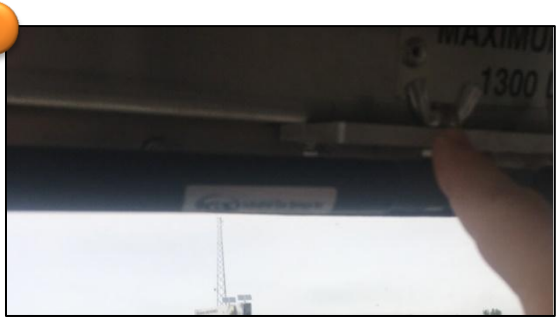
CAB DOOR REMOVAL PROCEDURE

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

REMOVE THE CAB DOORS PRIOR TO ENCOUNTERING ANY FORESEEABLE HAZARDOUS SITUATION WHERE CAPSIZING OR ROLLING THE MACHINE IS POSSIBLE.

The following procedure describes how to remove the cab doors:

1.) Come to a complete stop on a relatively level ground, turn the engine off.
2.) Open both doors.
3.) While supporting the door with your hand, un-bolt the gas spring from the body mount by loosening the wingnut where the gas-spring mounts to the cab. Once the gas spring is unfastened the door will want to fall to the closed position if not supported.
4.) Climb out of the cab and stand on the pontoon deck such that you can access the door hinges.
5.) Grab the door frame with both hands and carefully lift the door off the hinges. By design, the hinge leaves mounted on the door will slide off the hinge leaves that are mounted on the Marsh Master®.
6.) Safely secure the doors either in the cargo rack/basket or in the rear of the Marsh Master®.



AIR CONDITIONING

When specified by the customer, the Marsh Master® can be purchased with an air conditioner that mounts above the cab. The A/C unit is a self-contained system that delivers cold air to the operator and/or passenger through overhead vents. Coast Machinery, LLC recommends the following best practices be used when running the Marsh Master® with air conditioning:

- Always turn the A/C unit off prior to stopping or starting the engine. By doing this you will maximize both the A/C unit's life and the Marsh Master's® battery life.
- Do not operate at extreme angles for extended periods of time with the A/C running. If operating at extreme angles for a long time, turn the A/C off. This prevents the condensate drain from backing up into the unit and causing unnecessary damage.
- Do not drop the engine RPM's below 1400 while the A/C is on. The alternator does not produce enough power below 1400 RPM's, and the A/C will begin to drain the battery.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

AIR CONDITIONING WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE AIR CONDITIONING DATA PLATE ON DRIVER'S SIDE OF THE PROTECTIVE SHROUD (INCLUDES THE A/C UNIT AND THE SHROUD WEIGHT).

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

AIR CONDITIONING UNIT IS CHARGED WITH HIGH PRESSURE TOXIC REFRIGERANT. CAUTION SHOULD BE USED WHEN WORKING AROUND UNIT. A/C UNIT SHOULD ONLY BE SERVICED BY A LICENSED HVAC TECHNICIAN.

DECK RAILING

When specified by the customer, the Marsh Master® can be purchased with deck rails that attach to the back deck of the Marsh Master®. The deck rails are an aluminum bolt-on design with an integrated fold down ladder. The purpose of the deck railing is to provide a secure and convenient work area. Coast Machinery, LLC recommends the following best practices be used when working around or with the deck railing:

- Never use the railing to tow another piece of equipment or tie any heavy load to them. The railing is designed for fall prevention measures.
- Never stand atop the railing and work while balancing on the railing.
- Always make sure the fold down ladder is in the upright and latched position while operating the Marsh Master® or towing the Marsh Master® down the highway.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DECK RAILING WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE DECK RAILING DATA PLATE.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

PINCH-POINT WHERE LADDER FOLDS AND LATCHES TO THE FIXED RAILING. CAUTION SHOULD BE USED WHEN LATCHING AND DE-LATCHING THE LADDER.

CARGO RACK

When specified by the customer, the Marsh Master® can be purchased with a cargo rack that mounts either above the cab and/or above the engine compartment of the Marsh Master®. The cargo racks/baskets are an aluminum bolt-on design equipped with tie downs and are perforated to prevent water accumulation. Coast Machinery, LLC recommends the following best practices be used when your Marsh Master® is equipped with a cargo rack/basket:

- Never transport more than 100 lbs in the cargo rack/basket. Doing so will alter the Marsh Master's® center of gravity which will impact the machine's performance and will increase the likelihood of turning the machine over.
- Never transport passengers in the cargo rack/basket.
- Never tie off to the cargo rack/basket.
- Always be sure to clean out or tie down any loose items in the cargo rack/basket prior to towing down the highway.

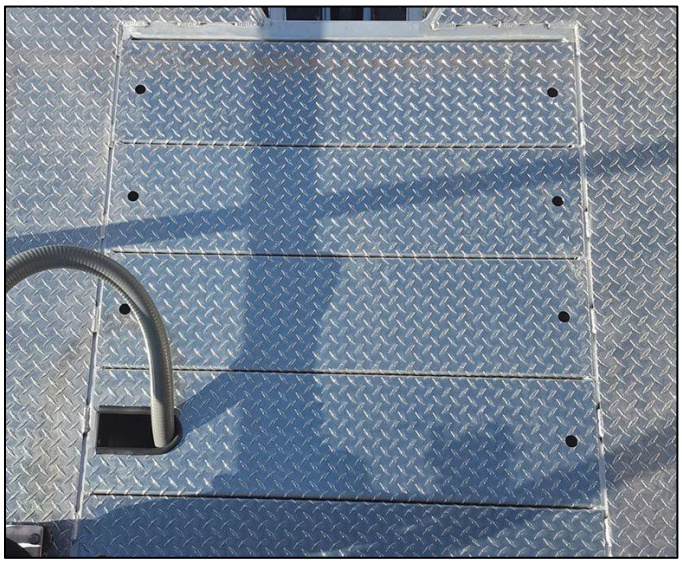
WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

CARGO RACK/BASKET WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE CARGO RACK/BASKET DATA PLATE.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DO NOT CARRY HEAVY OBJECTS (OVER 100 POUNDS) IN THE CARGO RACK/BASKET. NEVER ALLOW PASSENGERS TO RIDE ON THE CARGO RACK/BASKET.

DECK INSERTS



When specified by the customer, the Marsh Master® can be purchased with deck inserts that slide into place and cover the bed opening of the Marsh Master®, providing a flat walking surface. The deck inserts are aluminum slip-in design which makes them easily removable. Coast Machinery, LLC recommends the following best practices be used when your Marsh Master® is equipped with deck inserts:

- Always remove or properly secure the deck inserts prior to towing the Marsh Master® down the highway.
- The deck inserts are designed for a walking surface and NOT for supporting significant loads; therefore, use caution if loading the deck inserts in a manner other than walking.
- Always use caution when walking across the deck, as oil or water will make the deck slippery. It is recommended to wear non-slip footwear when working on the Marsh Master® deck.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DECK INSERT WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY WHEN USING MORE THAN ONE INSERT. SEE DECK INSERT WEIGHT DATA PLATE (ACCOUNTS FOR 4 INSERTS).

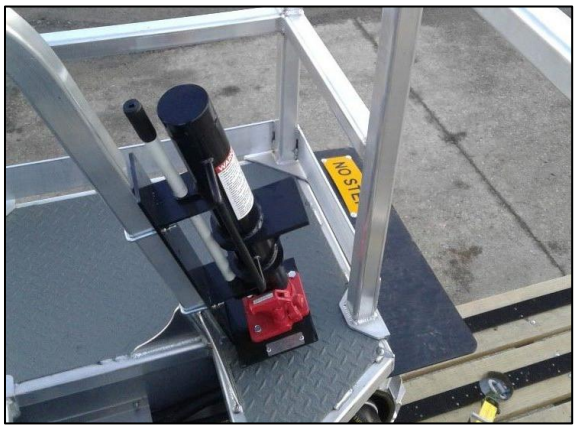
WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

DECK INSERTS BECOME SLIPPERY WHEN WET. USE CAUTION WHEN WALKING/WORKING ON THE DECK.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

REMOVE OR PROPERLY SECURE DECK INSERTS PRIOR TO TOWING DOWN THE HIGHWAY. FAILURE TO DO SO MAY LEAD TO SERIOUS INJURY OR DEATH.

MARSH MASTER® JACK



When specified by the customer, the Marsh Master® can be equipped with the Marsh Master® Jack. The jack is a multi-level, custom built jack designed specifically for jacking up the Marsh Master®. Coast Machinery, LLC recommends the following best practices be used when using the Marsh Master® Jack:

- Only jack the Marsh Master® up at the jack plate located in the center of the buggy as shown in the ***HOW TO REALIGN A THROWN TRACK*** section of this manual.
- Always ensure that the base of the jack is supported on a solid, level, surface prior to jacking up the Marsh Master®.
- Always ensure that the jack is properly secured to the Marsh Master® prior to towing down the highway.
- Always ensure that the jack clears the tracks before rotating the tracks. Failure to do so may cause the tracks to kick the jack out from under the Marsh Master®.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

MARSH MASTER® JACK WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE JACK WEIGHT DATA PLATE.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

MARSH MASTER® SHOULD NEVER BE SOLELY SUPPORTED BY THE JACK WHEN WORKING UNDERNEATH THE MACHINE. ALWAYS USE PROPER SUPPORTS TO PREVENT THE MACHINE FROM SLIPPING OFF THE JACK.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

SECURE THE MARSH MASTER® JACK PRIOR TO TOWING DOWN THE HIGHWAY. FAILURE TO DO SO MAY LEAD TO SERIOUS INJURY OR DEATH.

FRONT BRUSH GUARD

When specified by the customer, the Marsh Master® can be equipped with the front brush guard. The brush guard is a bolt-on steel mesh guard to protect the windshield when operating the Marsh Master® in heavy brush and small trees. The brush guard is not compatible with the fold-out windshield. Coast Machinery, LLC recommends the following best practices be used when the Marsh Master® is equipped with the brush guard:

- Always keep the brush guard clear from debris that may restrict vision and impede safe machine operation.
- Ensure that the brush guard is securely fastened to the Marsh Master® cab prior to operating the machine.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

FRONT BRUSH GUARD WEIGHT MUST BE ACCOUNTED FOR AND SUBTRACTED FROM THE LOAD CAPACITY. SEE FRONT BRUSH GUARD WEIGHT DATA PLATE.

WARNING!
SERIOUS INJURY OR DEATH CAN OCCUR!

CAUTION SHOULD BE USED WHEN OPERATING THE MARSH MASTER® WITH THE FRONT BRUSH GUARD AS IT WILL HELP PROTECT THE WINDSHIELD FROM BLUNT FORCE BUT MAY NOT PROTECT FROM SMALL SHARP PROTRUDING ITEMS.

PARTS ORDERING

(1-800-827-5320)

The components used on the Marsh Master® have been carefully selected for performance, reliability, and safety. Use only genuine Marsh Master® replacement parts.

WHEN ORDERING PARTS PLEASE FURNISH ALL OF THE FOLLOWING (SEE ***MARSH MASTER® MODEL CODE EXPLANATION*** SECTION OF THIS MANUAL):

- Machine Type
- Machine Class
- Machine Model
- Machine Sub Model Package
- Machine Optional Accessories
- Date Manufactured (Month and Year)
- All of the above can be found on the machine data plate
- Also include:
  - Company name
  - Shipping address
  - Billing address
  - Name of person ordering
  - Telephone number
  - Purchase order number
  - Part number, description, and quantity of each item

Thank you for choosing Coast Machinery, LLC, and the MM-2MX-K Marsh Master®. If you have any questions regarding the Marsh Master® please call Coast Machinery, LLC at 1-800-827-5320.