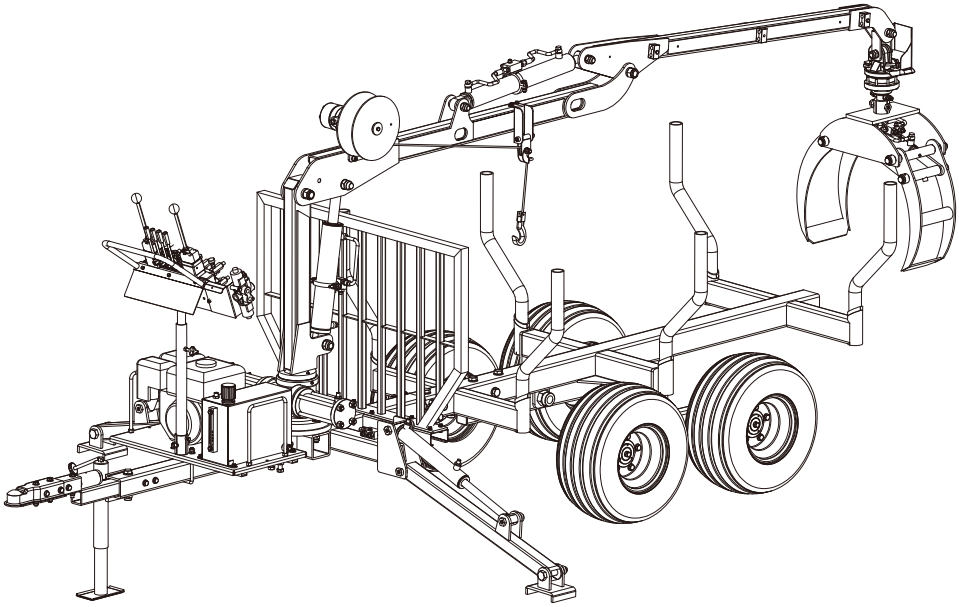
MechMaxx
RELIABLE EFFICIENT VALUE

HYDRAULIC LOG TRAILER WITH CRANE

SKU	150603
Model	**LT4400**



OPERATOR'S MANUAL

This manual contains important safety precautions. Read and understand this manual carefully before using the product. Failure to follow these instructions may result in serious injury.

The specifications, descriptions, and illustrations in this manual are as accurate as possible at the time of publication, but are subject to change without notice.

Keep this manual with the product for future reference.

INTRODUCTION

Before operating the machine, please read this manual carefully and make sure you understand all safety warnings, assembly instructions, operating procedures, maintenance requirements, and troubleshooting information. Proper assembly, safe operation, and regular maintenance will help ensure reliable performance, extend the service life of the machine, and reduce the risk of personal injury or equipment damage.

The illustrations and specifications in this manual are for reference only. The actual product may vary slightly due to model configuration, production updates, or technical improvements. If you have any questions during assembly, operation, or maintenance, stop using the machine and contact your dealer or service representative for assistance.

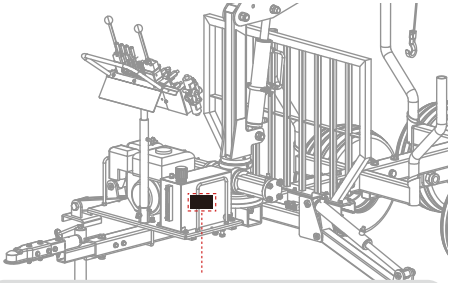
This machine is designed for specific applications only. We strongly recommend that this machine not be modified or used for any application other than its intended purpose. If you have any questions regarding a particular application, DO NOT use the machine until you have contacted us to determine whether the application can or should be performed with this product.

Ordering Parts

Use only genuine MechMaxx parts when servicing or repairing this machine. Replacement parts manufactured by other companies may fit this machine, but they may present potential safety hazards. Replacement parts can be purchased from your authorized MechMaxx dealer.

- The serial number of your machine
- The part number
- The part description
- The quantity needed

SCAN THE QR CODE TO CONTACT US



MechMaxx RELIABLE EFFICIENT VALUE **LOG TRAILER**

Model:		Load Capacity:	
Engine:		Lift Capacity:	
Boom Reach:		Year:	
Serial No.:			

www.mechmaxx.com

Safety Definitions

⚠ DANGER!

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING!

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION!

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

TABLE OF CONTENTS

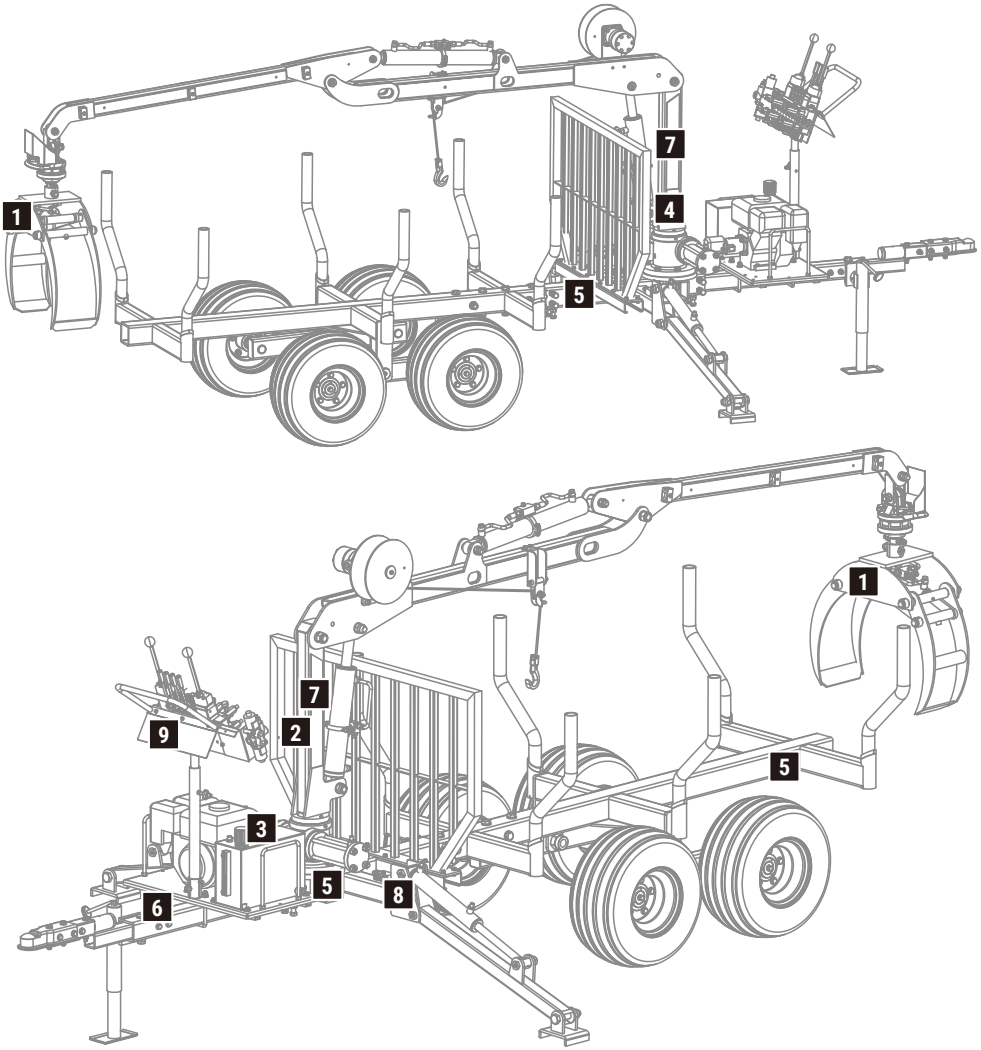
TABLE OF CONTENTS	**2**
SPECIFICATIONS	**3**
SAFETY SIGNS	**4**
Operation Symbols	**7**
SAFETY	**8**
Work Area Safety	**8**
Personal Safety	**8**
Special Safety Instructions	**8**
Maintenance Safety	**9**
Hydraulic Safety	**10**
Refueling Safety	**10**
Storage Safety	**11**
ASSEMBLY	**12**
KNOW YOUR MACHINE	**19**
Know Your Engine	**20**
OPERATION	**21**
Add Oil to Engine	**21**
Add Fuel	**21**
Add Hydraulic Oil	**22**
Start the Engine	**22**
Stopping the Engine	**23**
Controls	**24**
Log Trailer Start-Up	**25**
Load the Log Trailer	**25**
Log Trailer Shutdown	**26**
MAINTENANCE	**28**
Changing The Engine Oil	**28**
Spark Plug	**28**
Add Hydraulic Oil	**29**
Hydraulic Oil Drain	**29**
Hydraulic Filter Replacement	**29**
Greasing	**30**
Maintenance Schedule	**31**
Tightening Torque	**32**
TRANSPORT	**33**
Transport Safety	**33**
Prepare the Machine for Transport	**33**
Attach to a Tow Vehicle	**34**
Trailer Jack	**34**
STORAGE	**35**
Storage Safety	**35**
TROUBLESHOOTING	**36**
HYDRAULIC SYSTEM DIAGRAM	**38**
PARTS DIAGRAM	**39**
Grapple Assembly	**39**
Engine Assembly	**41**
Right Axle Bracket Assembly	**44**
Left Axle Bracket Assembly	**45**
Vertical Boom Assembly	**46**
Rear Boom Assembly	**48**
Front Frame Guard Assembly	**50**
Winch Assembly	**51**

SPECIFICATIONS

Model	LT4400 (150603)
Engine	Ducar DH212
Displacement	212 cc; 7 HP
Maximum Hydraulic Pressure	2,321 psi
Pump Displacement	0.165 in^3/rev
Crane Arm Length	10.6 ft
Lifting Capacity at Max. Reach	440 lb
Swing Angle	±90°
Max. Trailer Load Capacity	4,400 lb
Hydraulic Winch Remote Control Range	98.4 ft
Hydraulic Oil Tank Capacity	3.17 US gal
Tire Size	23 x 10.5 -12 in
Max. Lifting Height	11.5 ft
Hydraulic Fluid Operating Temperature	-22°F to 176°F
Overall Dimensions (L x W x H)	166.1x 105.5 x 76.8 in
Packing Size (L x W x H)	90.3 x 47 x 29.1 in

SAFETY SIGNS

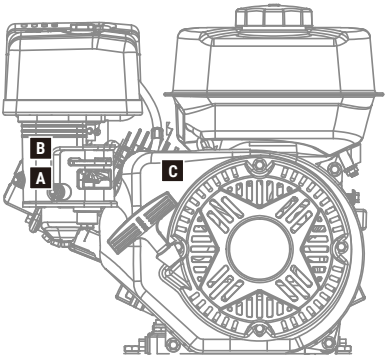
The SAFETY SYMBOL indicates a potential personal-injury hazard. When you see this symbol, be alert, read the message that follows, and take the required safety precautions. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.



	LABEL	MEANING
1		**HYDRAULIC CRANE SAFETY WARNING** Keep clear of suspended loads, high-pressure hydraulic fluid, pinch points, and moving parts. Read the operator's manual and remove the ignition key before maintenance.
2		**PINCH & CRUSH HAZARD WARNING** Keep hands and body clear of pinch, crush, and rotating hazards. Maintain a safe distance during operation.
3		**HYDRAULIC INJECTION & PPE WARNING** Keep clear of high-pressure hydraulic leaks. Wear eye protection, safety boots, and protective gloves.
4		**ELECTRICAL HAZARD & SAFETY WARNING** Keep at least 50 ft (15 m) away from overhead power lines.
5		**LIFTING POINT** Attach lifting slings or hooks at the designated point for safe lifting.
6		**MAXIMUM TOWING SPEED** Do not exceed 50 mph (80 km/h) during towing or transport.
7		**CRANE OPERATION & GENERAL SAFETY WARNING** Keep clear of overhead power lines and the crane operating area. Read the manual, observe load limits, keep bystanders away, and secure the boom before transport.

	LABEL	MEANING
8		**PINCH POINT & STABILIZER WARNING** Keep hands and limbs clear of pinch points. Fully deploy stabilizers before operating the crane.
9		**HYDRAULIC CRANE CONTROL FUNCTIONS** Shows the control directions for crane movement, grapple rotation/opening, boom operation, and stabilizer adjustment.

Operation Symbols



	LABEL	MEANING
A		**FUEL SWITCH LABEL DESCRIPTION** This label indicates the fuel valve control position. Move the switch to **ON** to allow fuel flow before starting, and move it to **OFF** to shut off the fuel supply when the machine is not in use.
B		**CHOKE CONTROL LABEL DESCRIPTION** This label indicates the choke control position. Move the lever to **CLOSED** for cold starting, and move it to **OPEN** after the engine starts or during normal operation.
C		**THROTTLE CONTROL LABEL DESCRIPTION** This label indicates the engine speed control. Move the lever toward the rabbit symbol to increase speed, and toward the turtle symbol to decrease speed.

⚠WARNING!

The symbols and their positions shown may differ from those on the actual engine. If there is any difference, refer to the actual engine markings and positions, and read the engine manual carefully before operation.

These safety labels are designed to help you operate the machine safely. Read and follow all label instructions.

1. Keep all safety labels clean and legible.
2. Replace all damaged or missing labels.
3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by MechMaxx. When ordering new components make sure the correct safety labels are included in the request.

SAFETY

Read and understand this manual and all safety labels before operating the Hydraulic Log Trailer with Crane. Failure to follow these safety instructions may result in **serious injury, death, or property damage.**

⚠WARNING!

Read and understand this manual and all safety labels attached to the machine before operation. Become familiar with the machine's **controls, limitations, proper operation, and potential hazards.**



Read and understand the separate **Engine Manufacturer's manual** supplied with this unit. Do not operate the machine until you fully understand how to properly operate and maintain the engine.

⚠WARNING!

If this machine is loaned, rented, sold, or used by someone other than the original purchaser, always provide this manual and proper safety training before operation.

The operator is responsible for preventing accidents or injuries to themselves, other people, animals, and property.

Work Area Safety

Assemble, adjust, and operate the product only in a safe working environment.

Keep the work area clean and free from distractions. Keep all persons without protective equipment out of the work area.

If working alone, arrange for someone to check on your safety at regular intervals.

Do not allow children or pets in the work area. Do not allow children or pets on or near the equipment.

Do not operate the equipment in the presence of flammable gases or vapors, combustible dust, or flammable liquids.

Personal Safety

⚠WARNING!

Always wear proper personal protective equipment during operation, including **safety glasses with side shields, hearing protection, gloves, heavy long pants, and protective footwear.**



Do not operate, adjust, or maintain any equipment when tired. Parts of this trailer must not be used, adjusted, or serviced while under the influence of fatigue, drugs, alcohol, or medication.

Wear protective clothing suitable for the work environment and equipment.

Use hearing protection with an appropriate noise reduction rating.

Avoid wearing clothing or jewelry that may become entangled.

Keep hair covered and tied back during work.

Use suitable protective gloves for the task.

Keep fingers away from pinch points around materials.

Do not overreach during operation. Use non-slip footwear.

Only trained, responsible adults who can safely control the equipment may operate the machine. Do not operate when fatigued, impaired, or unable to maintain proper balance and control.

Special Safety Instructions

Failure to follow these instructions may result in serious accidents or injuries.

Wet, slippery, uneven, or steep terrain is potentially hazardous. Operating this machine on hazardous terrain may result in serious injury. Safe operation requires reduced speed and careful route selection based on terrain conditions.

• This log trailer must only be used for its intended purpose and under the conditions described in the operator's manual.

• The operator must use proper judgment, knowledge, and experience to ensure safe operation of the equipment. Always adjust operating speed according to terrain, load, visibility, and other conditions.

• Do not use the equipment for any purpose other than its intended use.

• Do not use the trailer if any components are damaged.

• When disconnecting the trailer from the towing vehicle, ensure that the trailer is secured and cannot move after being detached.

• Inspect the tires after each use and before servicing. If necessary, contact a qualified technician to ensure that the trailer and its components are in proper working condition.

• Always deploy and securely engage the stabilizer legs before operating the crane to improve stability.

• Assembly, maintenance, and repair of the log trailer must only be performed by persons with sufficient mechanical skills and experience in the safe handling of the equipment.

• Ensure that the ATV or UTV is turned off and the brakes are engaged before connecting, loading, or unloading the trailer.

• Operate only on safe and familiar terrain.

• Reduce speed and be prepared to stop while towing, especially on wet or slippery surfaces.

• Avoid loose clothing and jewelry. Long hair must be tied back or covered to prevent entanglement in moving parts.

• Refer to the engine manual for important information regarding fire hazards.

• Immediately clean up any fuel or oil spills before starting the engine.

• THE ENGINE IS SUPPLIED WITHOUT ENGINE OIL!

• Add the correct engine oil before use.

• Do not touch the engine while it is hot.

• The engine can become extremely hot during operation.

• Check the engine oil level before each use.

• Use clean, fresh, unleaded gasoline with a minimum pump octane rating of 87 AKI (91 RON). Gasoline containing up to 10% ethanol (E10) is acceptable.

• Fuel may damage painted surfaces and certain types of plastic.

• Never operate the engine if it is leaking fuel or oil. Avoid spilling fuel when refueling.

• Never refuel a hot engine.

• Never operate the engine without the air filter installed.

• Turn off the engine and allow it to cool before adding oil or gasoline.

• Do not fill the fuel tank in an enclosed area, such as a garage. Do not refuel while smoking or near open flames, sparks, or other ignition sources.

• Avoid getting the air filter wet during operation.

• Ensure the fuel cap is securely tightened to prevent leakage.

• Do not use compressed air to clean the air filter.

Maintenance Safety

1. Proper maintenance is your responsibility. Poor maintenance can lead to equipment failure, unsafe operation, and costly repairs.

2. Follow good shop practices:

• Keep the work area clean and dry.

• Ensure electrical outlets and tools are properly grounded.

• Use adequate lighting for the task.

3. Provide adequate ventilation. Never operate the engine or towing vehicle in an enclosed area. Exhaust fumes can cause serious injury or death.

4. Place the machine in a safe condition before performing maintenance:

• Close the grapple and rest it securely on the trailer.

• Install the boom pin lock.

• Shut off the engine.

• Turn off the fuel valve.

• Ensure the load is secure.

• Secure the trailer to prevent movement.

5. Allow the engine to cool before servicing. Engine components and fluids may become hot enough to cause burns.

6. Never work under raised equipment unless it is securely supported or blocked.

7. Wear appropriate personal protective equipment (PPE) during service or maintenance, including:

- Safety glasses
- Protective gloves
- Hearing protection
- Safety footwear

8. Use only approved replacement parts. Genuine or equivalent replacement parts must be used to maintain the original equipment specifications and safe operation. The manufacturer is not responsible for injury or damage resulting from the use of unapproved parts or accessories.

9. Keep a fire extinguisher and first-aid kit readily accessible when performing maintenance or service.

10. Inspect and tighten all bolts, nuts, and screws. Check all electrical, hydraulic, and fuel connections to ensure they are secure and in good condition before operation.

11. After completing maintenance or service, reinstall all guards, shields, and safety devices before returning the machine to operation.

12. When performing maintenance, have at least two people present whenever possible. Do not work alone during emergency-prone or hazardous service procedures.

13. Use only approved cleaning agents. Do not use gasoline or other flammable solvents for cleaning.

14. Use proper tools that are in good condition. Make sure you understand how to use them correctly before performing service work.

15. Keep all body parts away from pinch points and moving components during assembly, installation, maintenance, adjustment, or repair.

16. Disconnect the spark plug wire before servicing the engine or equipment to prevent accidental starting.

Hydraulic Safety

1. Keep all hydraulic system components clean and in good condition.

2. Before pressurizing the hydraulic system, inspect all components. Make sure fittings are tight and that hydraulic lines, hoses, and couplings are not damaged, worn, or leaking.

3. Never make temporary repairs to hydraulic lines, fittings, or hoses using tape, clamps, cement, or similar materials. Hydraulic systems operate under extremely high pressure, and improper repairs may fail suddenly and create a serious hazard.

4. Wear appropriate hand and eye protection when checking for hydraulic leaks. Never use your hands to locate a leak. Use a piece of wood or cardboard to help detect and identify high-pressure leaks.

⚠ DANGER!

High-pressure hydraulic fluid can penetrate the skin and cause serious injury. If hydraulic fluid is injected into the skin, seek immediate medical attention. Serious infection, tissue damage, or toxic reaction may occur.

5. Always relieve hydraulic system pressure before performing maintenance, inspection, adjustment, or repair.

Refueling Safety

1. Store fuel only in approved safety containers.

2. Do not smoke while refueling.

3. Handle fuel with care. Gasoline is highly flammable.

4. Refuel outdoors whenever possible. If refueling indoors, make sure the area is well ventilated.

5. Never refuel while the engine is running.

6. Allow the engine to cool for at least 5 minutes before refueling.

7. Keep the machine free of accumulated grass, grease, fuel, and debris to reduce the risk of fire.

8. Never store, spill, or use gasoline near open flames, sparks, pilot lights, stoves, furnaces, water heaters, or other ignition sources.

9. Do not start or operate the engine if gasoline has been spilled. Clean up spilled fuel immediately.

10. Move the machine away from the spill area and avoid creating any source of ignition until all fuel vapors have dissipated.

⚠ DANGER!

Fuel vapors can ignite or explode, causing serious injury or death. Do not smoke while refueling. Keep sparks, open flames, and hot surfaces away from fuel.

Storage Safety

1. Store the machine in a secure area away from unauthorized persons and general activity.

2. Do not allow children to play on, near, or around the stored machine.

3. Store the machine on a dry, level, and stable surface. Support or block the frame securely if necessary to prevent movement or tipping.

4. For long-term storage, follow the engine manufacturer's instructions for proper engine and fuel system storage.

Even if certain safety precautions are not specifically mentioned above, always remain alert, follow safe operating practices, and operate the machine properly according to this manual and the engine manual.

ASSEMBLY

This is a complex and potentially dangerous machine. The log trailer and its components may present serious hazards if assembled incorrectly. If you are not fully confident in your ability to complete the assembly safely, seek assistance from a qualified technician.

The trailer is delivered mostly pre-assembled; however, the main components must be installed by the user or a qualified technician. Follow these instructions carefully to ensure proper and safe assembly.

1. Open the shipping crate. Remove all straps and protective coverings.

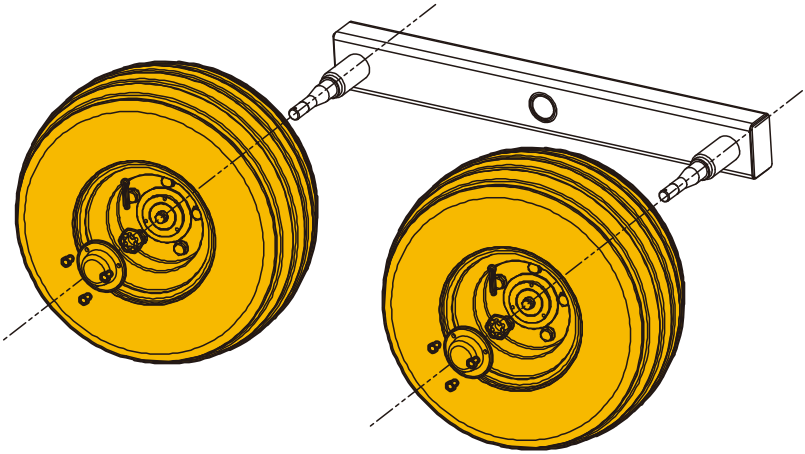
2. Unpack the accessible parts. Once the cover is removed, carefully lift each part out of the crate and set it aside. Group similar parts together for easy identification.

The trailer and its components are heavy. At least two people are recommended for unpacking, lifting, moving, and assembly. Always use proper lifting techniques in accordance with applicable occupational safety guidelines.

3. Verify the contents of the crate. Confirm that all components match the parts list and that the quantities are correct. If any parts are missing or damaged, contact the dealer as soon as possible.

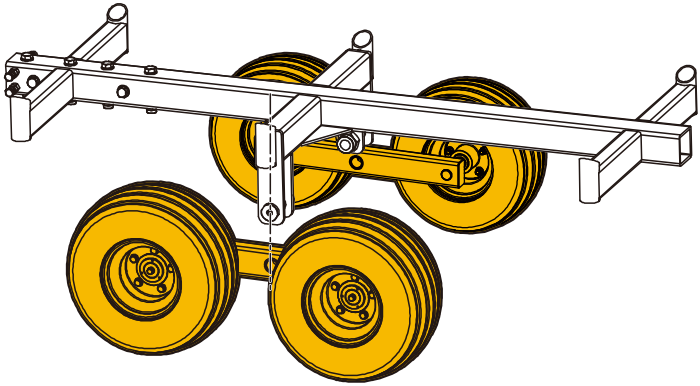
Install the Wheel onto the Axle

4. Position the wheel onto the axle spindle and slide it fully into place. Install the castle nut and tighten it while ensuring that the wheel can still rotate freely. Align a slot in the castle nut with the hole in the axle, then insert the cotter pin to secure the nut. Finally, install the hub cap. Repeat the same procedure for the wheel on the opposite side.



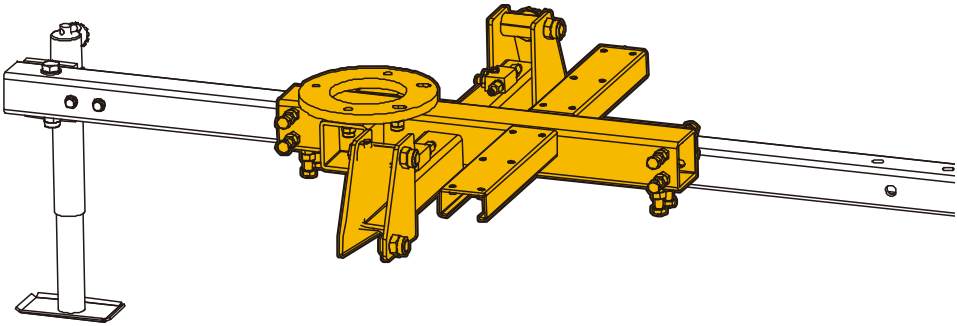
Install the Wheel Assembly to the Frame

5. Move the wheel assembly into position beneath the frame and align the mounting holes with the corresponding holes on the frame. Secure the wheel assembly using the appropriate bolts, washers, and nuts, then tighten all fasteners securely. After installation, check that the wheel assembly is firmly attached, properly aligned, and that the wheels rotate freely without interference.



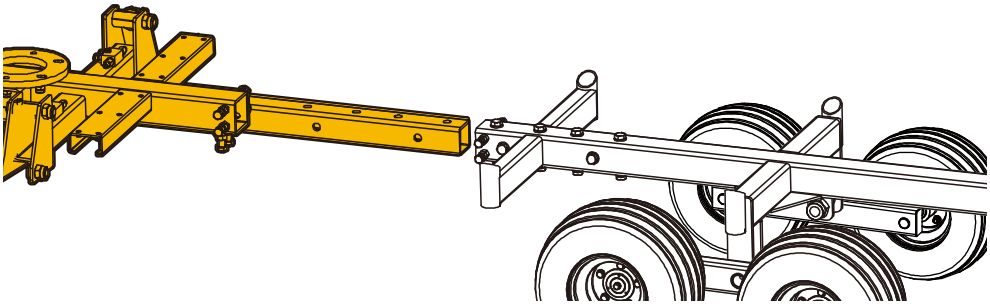
Base Joint Installation

6. Pass the base joint assembly through the drawbar and align the mounting holes. Secure it in place using the appropriate bolts and nuts.



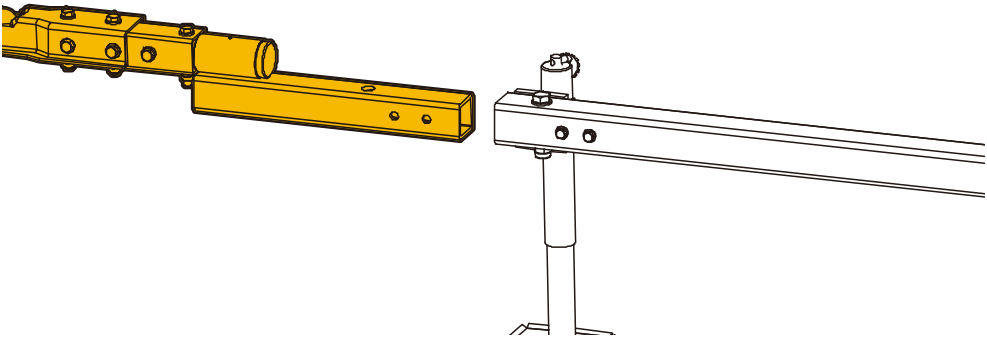
Drawbar Installation

7. Install the drawbar onto the trailer frame. Position the drawbar assembly near the front of the frame. With the assistance of another person, tilt the trailer frame and slowly move it toward the drawbar assembly. Guide the drawbar assembly into the trailer frame and align the mounting holes. Install the appropriate fasteners and tighten them to the torque specified for the bolt size.



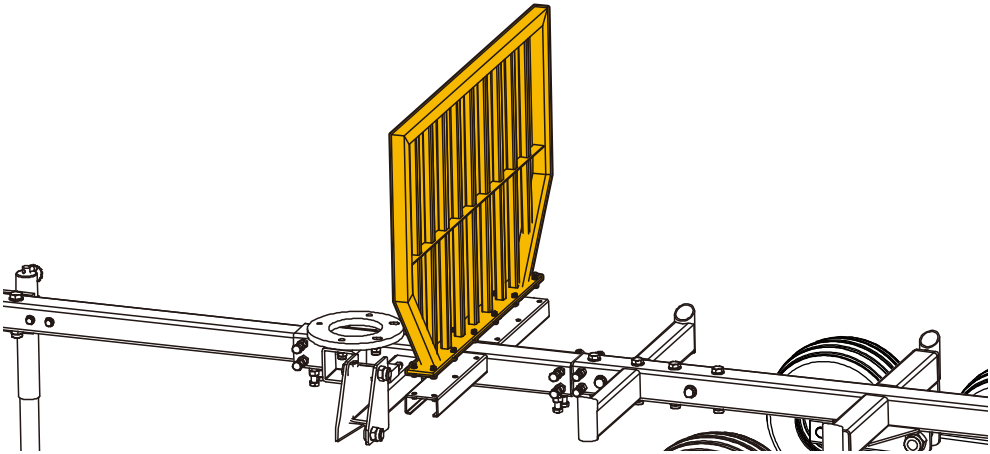
Trailer Coupler Installation

8. Attach the trailer coupler to the drawbar. Align the mounting holes, install the appropriate bolts and nuts, and tighten the fasteners to the specified torque for the bolt size.



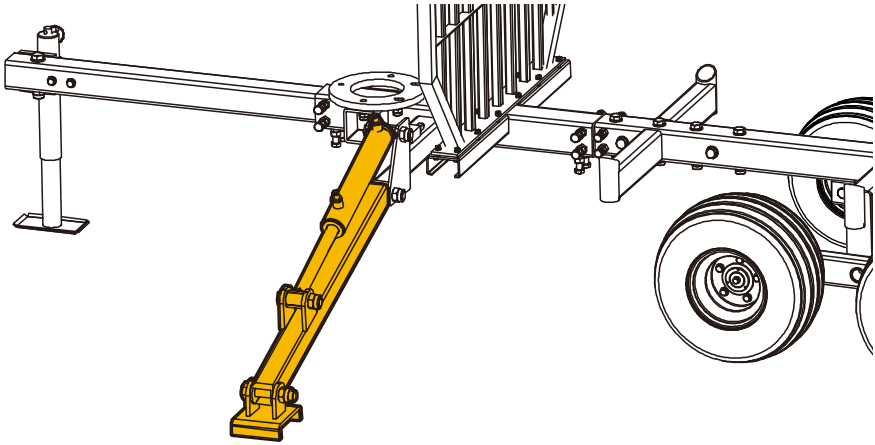
Safety Guard Installation

9. Position the safety guard on the frame base and align the mounting holes. Install the appropriate fasteners and tighten them evenly to a torque of 230–258 N·m (170–190 lb-ft).



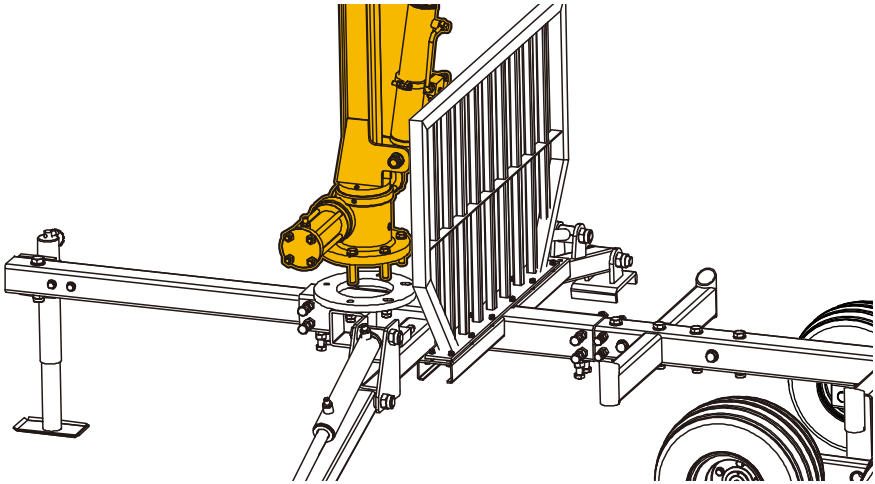
Stabilizer Leg Installation

10. Align the stabilizer leg with the mounting holes on the frame base, then insert the pivot pin. Because the stabilizer leg must remain movable, tighten the nut only until it just contacts the bottom of the pivot pin. Lower the stabilizer leg so that it rests flat on the ground. Connect the hydraulic hose after installation to help prevent oil leakage from the cylinder.



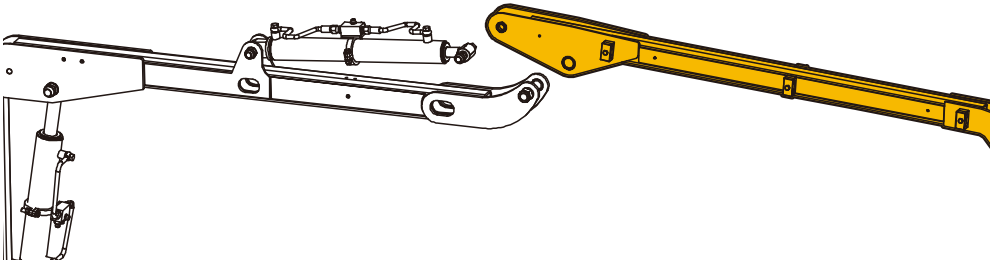
Vertical Boom Assembly Installation

11. Position the vertical boom assembly on the stabilizer frame base and align the mounting holes. Secure it using the appropriate bolts and nuts, then tighten all fasteners to the specified torque for the corresponding bolt size.



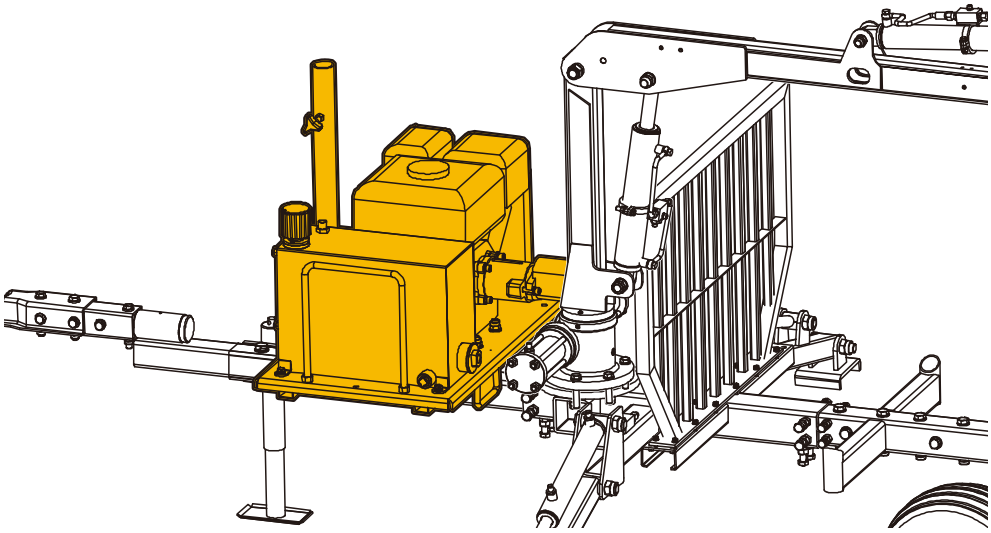
Boom Installation

12. Install the boom onto the vertical boom assembly as shown. Because the boom must move freely, tighten the nuts only until they just contact the shoulder of each pivot pin.



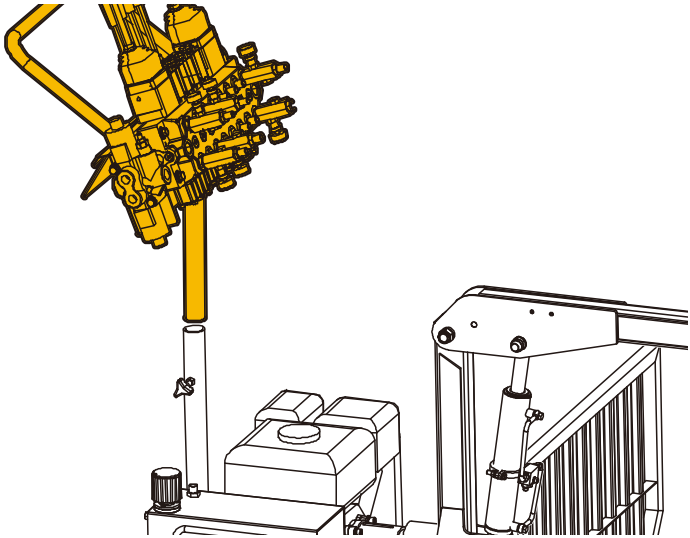
Engine Installation

13. With the assistance of another person, position the engine on the drawbar in front of the stabilizer frame base. Secure the engine to the drawbar using the two engine-mount U-brackets. Tighten the fasteners until the lock washers are fully compressed. Do not overtighten, as excessive tightening may bend the U-brackets.



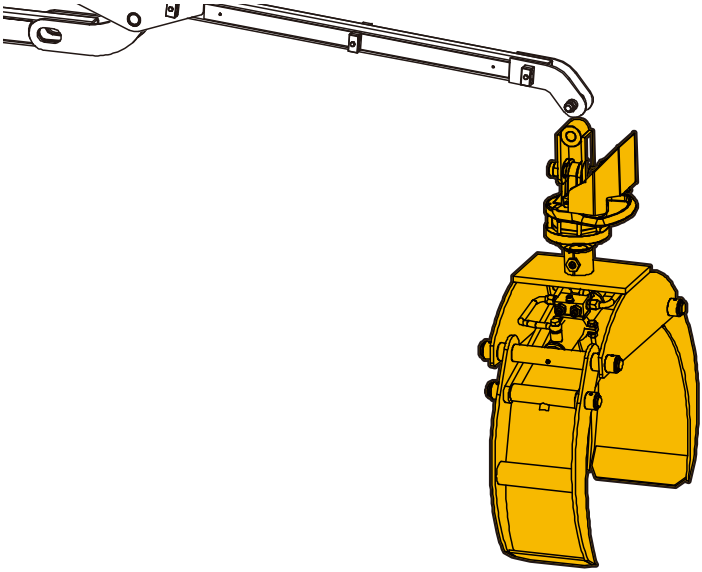
Hydraulic Control Panel Installation

14. Insert the control support rod into the engine base sleeve and secure it with the mounting bolt. Hand-tighten the bolt.



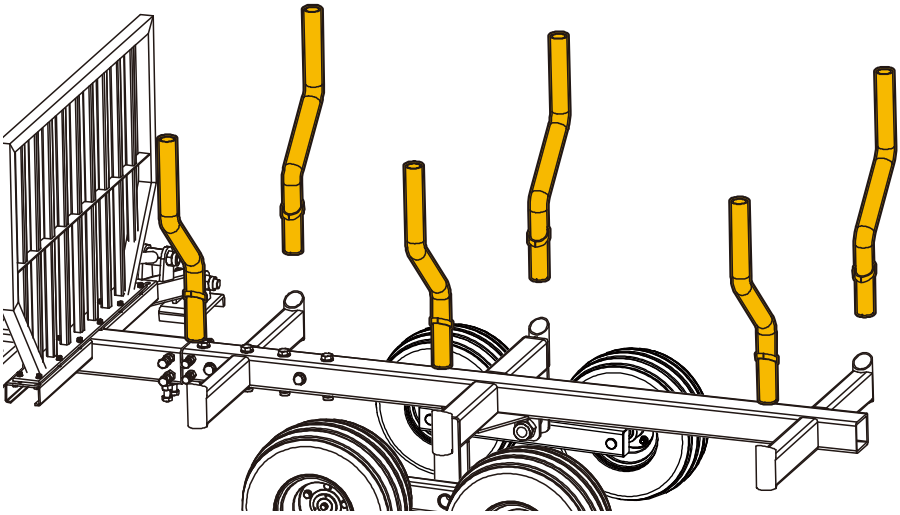
Grapple Installation

15. Remove the pivot pin from the end of the boom assembly. Position the grapple so that its hydraulic hose fittings are oriented for connection to the boom hoses, then align the mounting holes between the grapple connector and the boom. Insert the pivot pin and install the nut. Because the grapple joint must move freely, tighten the nut only until it just contacts the bottom of the pivot pin.



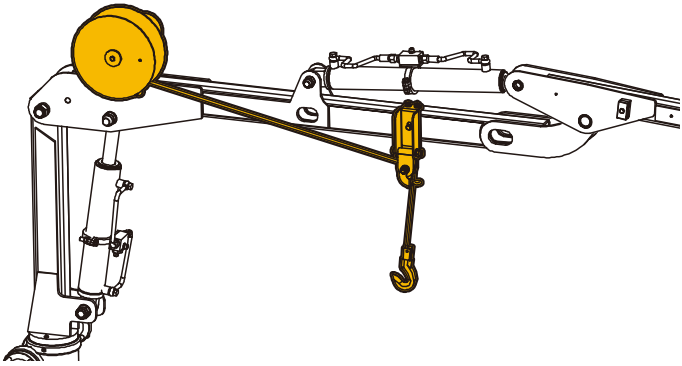
Support Bar Installation

16. Insert the six support bars into the frame. Ensure that the curved side of each support bar faces outward.



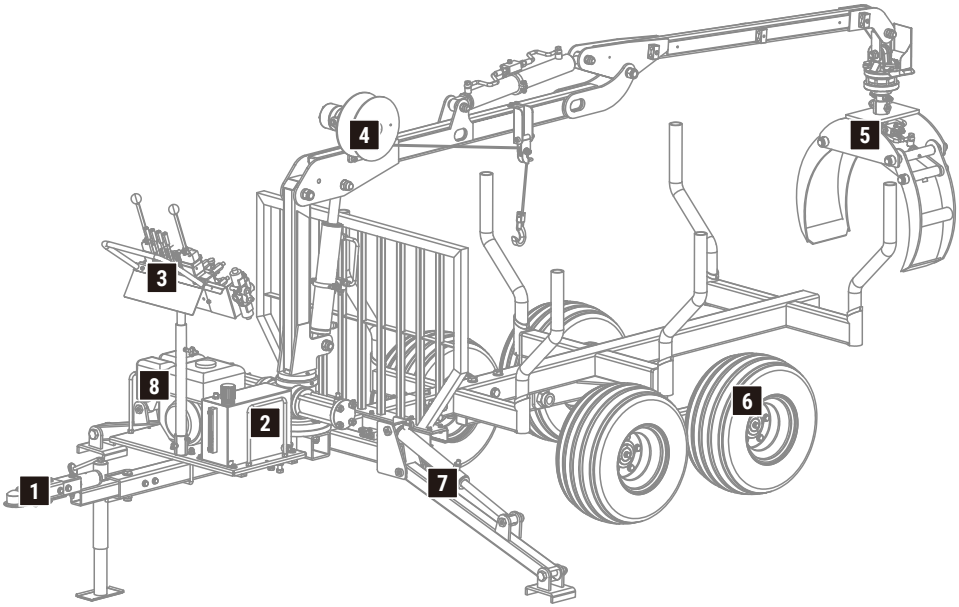
Winch Installation

17. Install the winch on top of the vertical boom assembly, and install the wire-rope guide bracket at the middle of the main boom. Secure both components with the appropriate fasteners. Route the wire rope along the boom as shown, ensuring that it is properly seated in the pulley groove and is free from twisting, binding, or interference.



KNOW YOUR MACHINE

Before operating the Hydraulic Log Trailer with Crane, read this operator's manual carefully.



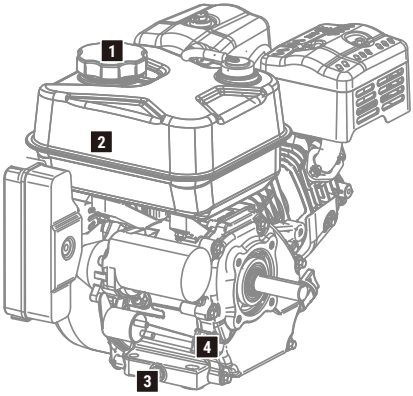
1. **Tow Bar:** Connects the trailer to the towing vehicle for transport.
2. **Hydraulic Oil Tank:** Stores hydraulic oil for the hydraulic system.
3. **Hydraulic Control Panel:** Controls the boom, grapple, and other hydraulic functions.
4. **Winch:** Used to pull or assist in lifting logs and other heavy materials.
5. **Grapple:** Used to grab, lift, and load logs or other materials.
6. **Wheels:** Support the trailer and allow it to be towed.

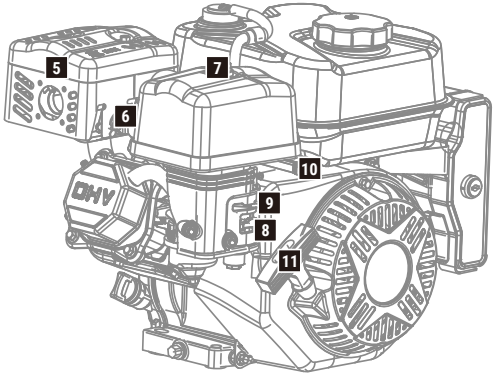
7. Stabilizer Legs: Provide support and stability during operation.

8. Engine: Provides power to operate the hydraulic system.

Know Your Engine

Before starting the engine, become familiar with your engine first. The information shown in this section may differ from the actual engine on your machine. If there is any difference, please refer to the engine manual.





1. Fuel Filler Cap: Used to fill fuel into the tank.

2. Fuel Tank: Stores fuel for engine operation.

3. Oil Drain Plug: Used to drain engine oil.

4. Oil Filler Cap / Dipstick: Used to add and check engine oil.

5. Muffler: Reduces engine exhaust noise and releases exhaust gas.

6. Spark Plug: Ignites the fuel-air mixture to start the engine.

7. Air Cleaner: Filters air before it enters the engine.

8. Fuel Valve Lever: Opens or closes the fuel supply.

9. Choke Lever: Helps start the engine when cold.

10. Throttle Lever: Controls the engine speed.

11. Recoil Starter: Used to start the engine by pulling the starter handle.

⚠WARNING!

If there is any difference from the actual engine, refer to the actual engine manual and read the engine manual carefully before operation.

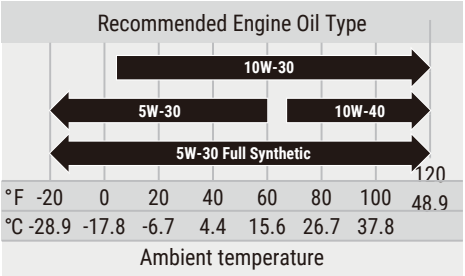
OPERATION

Add Oil to Engine

⚠WARNING!

Do not start the engine before adding engine oil. Never overfill. Check the oil level daily and add oil as needed.

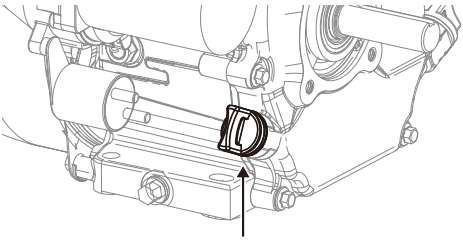
Use **SAE 10W-30** 4-stroke detergent engine oil meeting API service classification SJ, SL, or equivalent.



Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

1. Park the log trailer on a firm, level surface and shut off the engine before checking or adding engine oil.

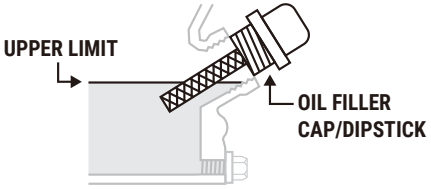
2 .Remove the oil filler cap/dipstick and wipe it clean.



OIL FILLER CAP/DIPSTICK

3. Insert the oil filler cap/dipstick into the oil filler neck as shown, but do not screw it in. Remove it again to check the oil level.

4. If the oil level is near or below the lower limit mark on the dipstick, add engine oil until it reaches the upper limit mark. Do not overfill.



5. Reinstall the oil filler cap/dipstick securely.

Add Fuel

⚠DANGER!

Do not start the engine before adding fuel.

Gasoline is highly flammable and explosive. Refueling may cause burns or serious injury if proper precautions are not followed.

Keep gasoline away from heat, sparks, and open flames. Refuel only outdoors in a well-ventilated area. Never refuel indoors.

Do not overfill the fuel tank. If fuel is spilled, wipe it up immediately before starting the engine.

Use clean, fresh, regular unleaded gasoline with a minimum octane rating of **87** and an ethanol content of less than **10%** by volume.

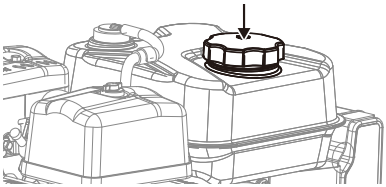
⚠WARNING!

Fuel can damage paint and some types of plastic. Be careful not to spill fuel when filling your fuel tank.

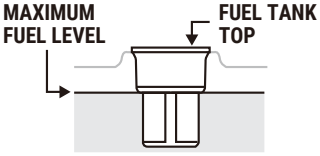
Never use stale or contaminated gasoline or oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

1. Park the log trailer on a firm, level surface. Shut off the engine and allow it to cool before refueling.

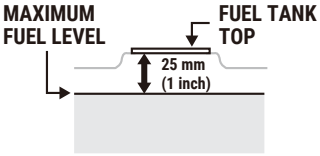
FUEL TANK TOP



2. Fill the fuel tank below the maximum fuel level mark.



(strainer type)



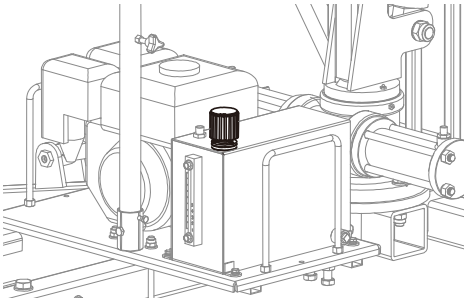
(non-strainer type)

3. Do not fill the fuel tank completely. Fill the tank to approximately 25 mm (1 in.) below the top of the tank to allow room for fuel expansion. Depending on actual operating conditions, a lower fuel level may be required. After refueling, tighten the fuel tank cap securely.

⚠WARNING!

If there is any difference from the actual engine, refer to the actual engine manual and read the engine manual carefully before operation.

Add Hydraulic Oil



Before operation, fill the hydraulic oil tank with the recommended hydraulic oil to the proper level. Do not overfill.

Applicable hydraulic oil type: **ISO VG 46 hydraulic oil.**

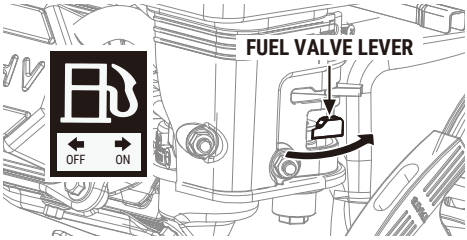
⚠WARNING!

The hydraulic system may contain air before initial start-up. During the first operation, hydraulic oil circulates through the system and the oil level may drop. After the first use, check the hydraulic oil level and add oil as needed. Ensure all hydraulic hoses and fittings are properly secured before operation.

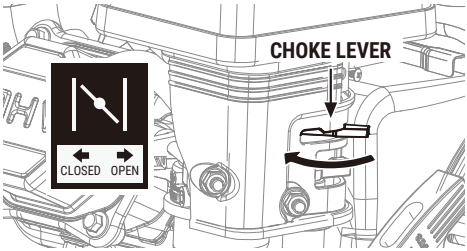
Start the Engine

1. Make certain the Log Trailer is on a flat, level surface.

2. Move the fuel valve to the "ON" position.

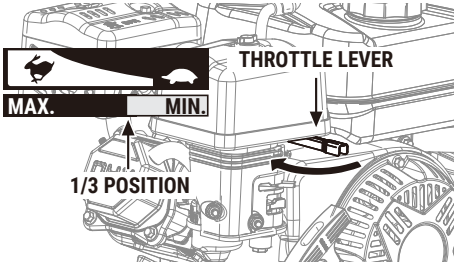


3.To start a cold engine, move the choke lever to the "CLOSED" position.

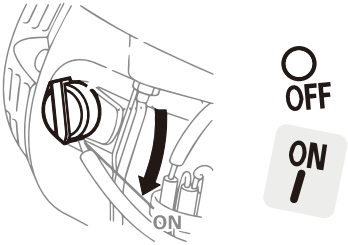


To restart a warm engine, leave the choke lever in the "OPEN" position.

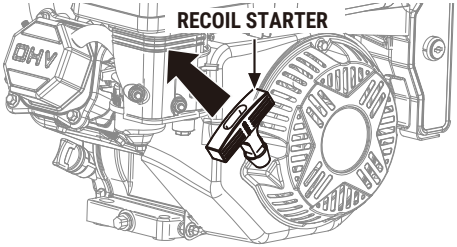
4. Move the throttle lever away from the MIN. position, about 1/3 of the way toward the MAX. position.



5. Turn the engine switch to the "ON" position.



6. Pull the starter grip lightly until you feel resistance, then pull briskly in the direction of the arrow as shown below. Return the starter grip gently.



⚠ CAUTION!

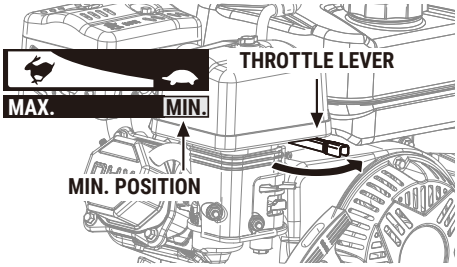
Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

Keep choke lever in "CHOKE" position for 2 pulls of the recoil starter. After second pull, move choke lever to the "RUN" position for up to the next 3 pulls of the recoil starter.

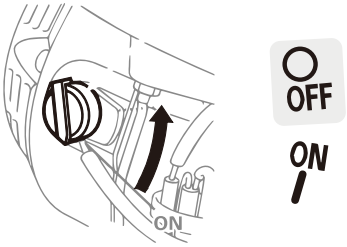
6. Always wear hearing and eye protection, protective clothing, and proper safety equipment during operation.

Stopping the Engine

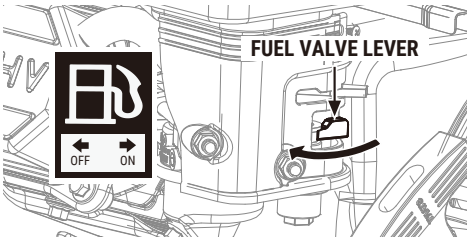
1.Move the throttle lever to the MIN position.



2.Turn the engine switch to the OFF position.



3.Turn the fuel valve lever to the OFF position.



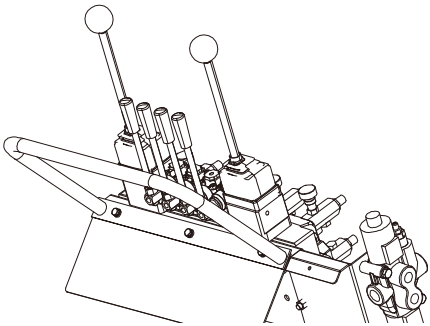
⚠ WARNING!

Always ensure that the fuel valve is in the "OFF" position when the engine is not in use.

Controls

⚠ CAUTION!

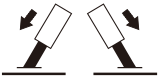
Do not operate the machine until you are thoroughly familiar with the position and function of the various controls. Read the operator's manual thoroughly. Your safety is involved!



Stabilizer Control



Retract
Pull the lever backward to retract the stabilizer.



Extend
Push the lever forward to extend the stabilizer.

Log Grapple Control



Open
Push the lever forward to open the grapple.



Close
Pull the lever backward to close the grapple.



Turn Counterclockwise
Move the lever to the LH side to rotate the grapple counterclockwise.



Turn Clockwise
Move the lever to the RH side to rotate the grapple clockwise.

Main boom Control



Lower
Push the lever forward to lower the main boom.



Raise
Pull the lever backward to raise the main boom.



Turn Counterclockwise
Move the lever to the LH side to rotate the main boom counterclockwise.



Turn Clockwise
Move the lever to the RH side to rotate the main boom clockwise.

Dipper Boom Control



Raise
Push the lever forward to raise the dipper boom.



Lower
Pull the lever backward to lower the dipper boom.

Hydraulic Winch Controls



Unwind

Push and hold the lever forward to unwind the winch rope.

Release the lever to stop. The lever automatically returns to the neutral position.

Wind

Pull and hold the lever backward to wind the winch rope onto the drum.

Release the lever to stop. The lever automatically returns to the neutral position.

⚠ CAUTION!

LH and RH are viewed from the operator's control position facing the trailer.

Log Trailer Start-Up

⚠ DANGER!

Always operate the Log Trailer outdoors, away from buildings, windows, and doors. Only trained adults may operate the log trailer. Keep children and bystanders away from the operating area.

Before starting the log trailer, make sure the machine is properly connected, stable, and ready for operation.

1. Park the tow vehicle and log trailer on firm, level ground whenever possible.

2. Engage the tow vehicle parking brake and secure the trailer to prevent unintended movement.

3. Inspect the trailer, tires, fasteners, hydraulic hoses, fittings, grapple, boom, and winch for damage or excessive wear.

4. Check the engine oil, fuel level, and hydraulic oil level. Add fluids if necessary.

5. Make sure all hydraulic hoses and connections are secure and free from leaks.

6. Fully deploy both stabilizer legs before operating the crane.

7. Make sure the crane boom, grapple, and surrounding work area are clear of people and obstacles.

8. Move all hydraulic control levers to the neutral position.

9. Start the engine according to the engine starting procedure.

10. Allow the engine to warm up briefly, then operate each hydraulic function slowly to confirm proper operation.

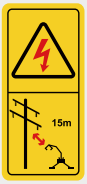
11. Check for abnormal noise, vibration, hydraulic leaks, or erratic movement before beginning work.

Do not operate the log trailer if any damage, leakage, or unsafe condition is found.

Load the Log Trailer

⚠ DANGER!

Stay at least 50 ft (15 m) away from overhead power lines and electrical cables. Electrocution can occur without direct contact due to electrical arcing. Contact with electricity can cause burns, serious injury, or death.



⚠ WARNING!

Always be aware of the position of the boom and the material being handled. Even with the boom fully retracted, handling an 8 ft (2.4 m) log may create a crush or impact hazard for the operator.

⚠ DANGER!

Never lift or move loads over people. Keep all bystanders outside the work area. A swinging or falling log can cause serious injury or death.



⚠ CAUTION!

Before using the grapple, estimate the log's center of gravity. Grip the log as close as possible to its center of gravity to keep the load balanced.

⚠ CAUTION!

Watch the log continuously while moving the boom or grapple. Make sure the log does not contact the machine.

A balanced load is necessary to distribute weight evenly across the tires and trailer frame. Place longer, larger-diameter logs on the bottom. Place shorter, smaller-diameter logs near the top of the bunk posts.

Log Loading Safety

- Do not load logs above the top of the bunk posts.
- Distribute logs evenly across the trailer and keep the load as low as possible.
- Do not concentrate excessive weight in one area.
- Make sure no logs or branches extend beyond the sides of the trailer.
- Keep the entire load within the bunk posts.
- Make sure all logs are stable before transport.
- Secure the load with suitable straps before towing.

Load Procedure

1. Park on firm, level ground; secure the trailer against movement; fully deploy both stabilizers on solid footing; keep bystanders clear; remove the boom lock pin only after the machine is stable.

2. Raise the boom until the bottom of the grapple is above the bunk posts.

3. Rotate the boom until the grapple is positioned above the log's center of gravity.

4. Rotate the grapple until it is perpendicular to the log.

5. Pick up the log:

a. Open the grapple.

b. Lower the grapple around the log.

c. Close the grapple securely around the log.

d. Slowly raise the boom.

6. Check whether the log is balanced in the grapple:

If the log is balanced, continue to Step 7.

If the log is not balanced:

i. Lower the boom.

ii. Open the grapple.

iii. Reposition the grapple along the log.

iv. Repeat Step 5.

7. Raise the boom until the log is clear of the bunk posts.

8. Slowly rotate the boom to position the log above the trailer.

9. Rotate the grapple until the log is parallel with the trailer.

10. Slowly lower the boom and place the log onto the trailer.

11. Open the grapple and release the log.

12. Repeat Steps 2–11 until loading is complete. Make sure the total load does not exceed the trailer's maximum rated load capacity.

Unload the Log Trailer

1. Set up the machine for operation.

2. If the grapple is closed, open the grapple.

3. Raise the boom until the grapple is above the trailer bunk posts.

4. Rotate the boom to position the grapple above the trailer and over the log's center of gravity.

5. Rotate the grapple until it is perpendicular to the log.

6. Pick up the log:

a. Open the grapple.

b. Lower the grapple around the log.

c. Close the grapple securely around the log.

d. Slowly raise the boom.

7. Check whether the log is balanced in the grapple:

If the log is balanced, continue to Step 8.

If the log is not balanced:

i. Lower the boom.

ii. Open the grapple.

iii. Reposition the grapple along the log.

iv. Repeat Step 6.

8. Raise the boom until the log is clear of the trailer bunk posts.

9. Slowly rotate the boom to move the log above the unloading area or log stack. Keep the log clear of the main boom, cylinders, trailer, and other components.

10. If necessary, rotate the grapple until the log is aligned with the stack.

11. Slowly lower the boom and place the log on the ground or stack.

12. Open the grapple and release the log.

13. Repeat Steps 3–12 until the trailer is empty.

Log Trailer Shutdown

Follow the steps below to safely shut down the log trailer after operation:

1. Finish all lifting operations and make sure no load remains suspended from the grapple.

2. Lower and secure the crane boom and grapple in the transport position.

3. Move all hydraulic control levers to the neutral position.

4. Allow the engine to idle briefly before shutting it down.

5. Stop the engine according to the engine shutdown procedure.

6. Move the hydraulic control levers through all positions to relieve residual hydraulic pressure.

7. Retract and secure both stabilizer legs only after the crane is fully stowed.

8. Inspect the machine for hydraulic leaks, damage, or loose components.

9. Remove debris from the trailer and clean the machine as necessary.

10. Park the trailer on firm, level ground and secure it against unintended movement.

Do not leave the machine unattended with the engine running or with a load suspended.

MAINTENANCE

Regular maintenance helps ensure reliable performance and long service life. Follow this manual and the engine manufacturer's owner's manual for maintenance procedures.

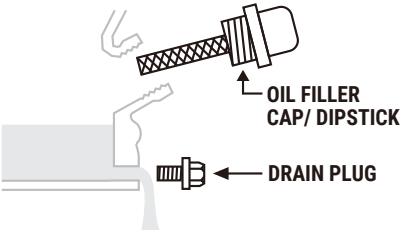
⚠ DANGER!

Shut down the engine, wait for all moving parts to come to a complete stop, remove the spark plug wire, and then wait five minutes before performing maintenance on the log trailer or engine.

Changing The Engine Oil

Drain the used oil when the engine is warm. Warm oil drains quickly and completely.

1. Place a suitable container below the engine to catch the used oil, then remove the oil filler cap/dipstick, oil drain plug and washer.



2. Allow the used oil to drain completely, then reinstall the oil drain plug and new washer, and tighten the oil drain plug securely.

Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash, pour it on the ground, or down a drain.

3. With the engine in a level position, fill to the upper limit mark (bottom edge of the oil fill hole) on the dipstick with the recommended oil.

4. Install the oil filler cap/dipstick and tighten securely.

Spark Plug

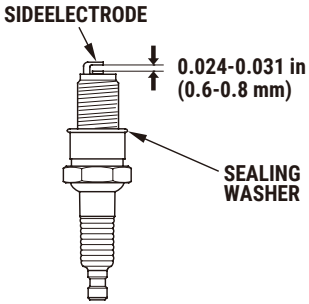
1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.

2. Remove the spark plug with a spark plug wrench.

3. Inspect the spark plug. Replace it if damaged, badly fouled, if the sealing washer is in poor condition, or if the electrode is worn.

4. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode. The gap should be:0.024-0.031 in (0.6-0.8 mm)

5. Install the spark plug carefully, by hand, to avoid cross-threading.



6. After the spark plug is seated, tighten with a spark plug wrench to compress the sealing washer.

7. When installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer.

8. When reinstalling the original spark plug, tighten 1/8 -1/4 turn after the spark plug seats to compress the washer.

⚠ CAUTION!

A loose spark plug can overheat and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.

9. Attach the spark plug cap to the spark plug.

⚠ CAUTION!

When replacing the spark plug, refer to the engine manual for the correct spark plug type.

Add Hydraulic Oil

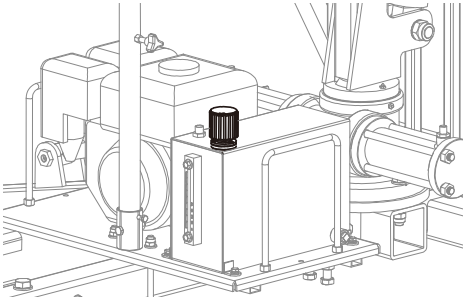
The hydraulic oil tank is located beside the trailer tongue, opposite the engine. The tank is equipped with an oil level indicator cap and dipstick for checking the hydraulic oil level. Check the hydraulic oil level daily and inspect the oil condition every 50 operating hours. Replace the hydraulic oil if it becomes contaminated or develops a burnt odor.

1. Allow the engine to cool.

2. Clean the area around the hydraulic oil tank cap and remove the cap.

3. Using a clean funnel, add hydraulic oil according to the oil level indicator. Do not fill above the MAX line on the indicator. Never operate the machine if the oil level is below the MIN line.

4. Reinstall and tighten the oil tank cap securely. Wipe up any spilled hydraulic oil.



Applicable hydraulic oil type: **ISO VG 46 hydraulic oil.**

Hydraulic Oil Drain

The hydraulic oil tank may need to be drained periodically. The drain plug is located at the bottom of the tank. Follow the steps below to drain and replace the hydraulic oil:

1. Allow the machine to cool before changing the hydraulic oil. Hot oil can cause serious burns if it comes into contact with exposed skin. For best results, drain the oil while it is still warm so contaminants remain suspended in the oil.

2. Place a suitable drain pan under the drain port. Clean the area around the drain plug, then remove the plug.

3. Allow the hydraulic oil to drain completely. Flush the hydraulic tank if necessary.

4. Reinstall and securely tighten the drain plug.

5. Refill the hydraulic tank with the specified hydraulic oil to the proper level.

6. Operate the hydraulic system briefly to circulate the oil and purge trapped air. Shut down the machine, recheck the oil level, and add oil if necessary.

7. Check the drain plug and hydraulic connections for leaks.

8. Dispose of used hydraulic oil in accordance with local environmental regulations.

Hydraulic Filter Replacement

Replace the hydraulic filter periodically or whenever it becomes clogged or damaged. Always use a filter that meets the manufacturer's specifications.

1. Park the machine on a level surface, shut off the engine, and allow the hydraulic system to cool.

2. Move the hydraulic control levers through all positions to relieve residual system pressure.

3. Clean the area around the hydraulic filter to prevent dirt from entering the system.

4. Place a suitable container beneath the filter to catch any spilled hydraulic oil.

5. Remove the old hydraulic filter.

6. Apply a thin coat of clean hydraulic oil to the seal of the new filter.

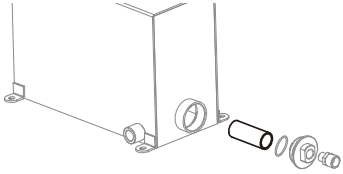
7. Install the new filter and tighten it securely according to the filter manufacturer's instructions. Do not overtighten.

8. Check the hydraulic oil level and add the specified hydraulic oil if necessary.

9. Start the engine and operate the hydraulic controls briefly to circulate the oil and purge trapped air.

10. Shut off the engine, check the filter area for leaks, and recheck the hydraulic oil level.

11. Dispose of the used filter and hydraulic oil in accordance with local environmental regulations.



Greasing

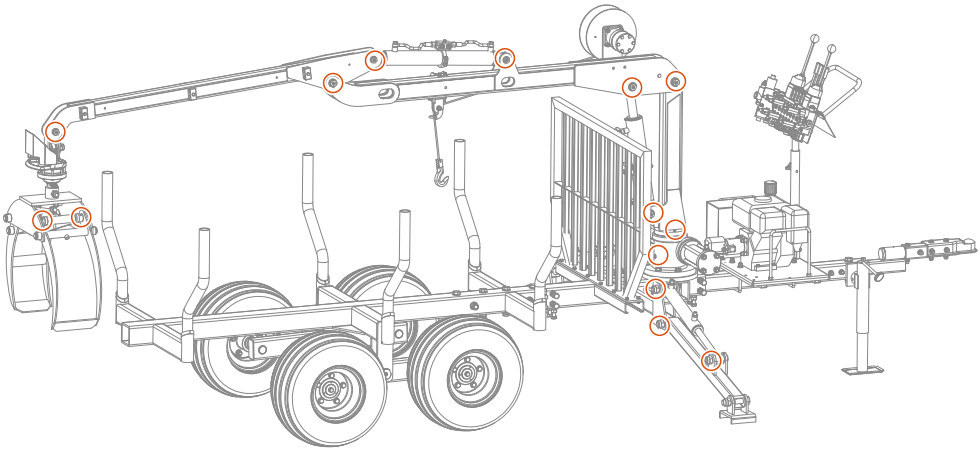
Use a hand-operated grease gun for all lubrication.

Before greasing, wipe each grease fitting with a clean cloth to prevent dirt and debris from entering.

Replace or repair damaged fittings immediately.

If a fitting does not accept grease, remove it and clean it thoroughly. Also clean the grease passage. Replace the fitting if necessary.

The illustration shows the approximate locations of all lubrication points on LT4400/8800 models.



Maintenance Schedule

PROCEDURE	8 HOURS OR DAILY	25 HOURS OR ANNUALLY	100 HOURS OR ANNUALLY	ANNUALLY
Check the hydraulic hoses and fittings.	●			
Check the hydraulic fluid level.	●			
Check the engine oil level and quality.	●			
Check the engine fuel level.	●			
Clean around the muffler and controls.	●			
Clean the engine air-intake grille.	●			
Check fasteners and wheel lug nut torque.	●			
Grease the machine.		●		
Check the hydraulic fluid quality.		●		
Repack the axle bearings.			●	
Check the tire pressure.			●	
Change the hydraulic fluid and filter.			●	
Clean the machine.			●	
Service the engine exhaust system.			●	
Clean the engine air filter.			●	
Change the engine oil.			●	
Replace the engine spark plug.				●
Service the engine cooling system.				●
Service the engine fuel system.				●
Replace the engine air filter.				●

Tightening Torque

Please follow the table below to identify the torque value as required.

TORQUE VALUES CHART FOR COMMON BOLT SIZES

Bolt Size (Inches) in-tpi[1]	Bolt Head Identification					
	 Grade 2		 Grade 5		 Grade 8	
	N.m[2]	ft-lb[3]	N.m	ft-lb	N.m	ft-lb
1/4"-20	7.4	5.6	11	8	16	12
1/4"-28	8.5	6	13	10	18	14
5/16"-18	15	11	24	17	33	25
5/16"-24	17	13	26	19	37	27
3/8" -16	27	20	42	31	59	44
3/8" -24	31	22	47	35	67	49
7/16" -14	43	32	67	49	95	70
7/16"-20	49	36	75	55	105	78
1/2" -13	66	49	105	76	145	105
1/2" -20	75	55	115	85	165	120
9/16"-12	95	70	150	110	210	155
9/16"-18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" -18	150	110	230	170	325	240
3/4" -10	235	170	360	265	510	375
3/4" -16	260	190	405	295	570	420
7/8" -9	225	165	585	430	820	605
7/8" -14	250	185	640	475	905	670
1"-8	340	250	875	645	1230	910
1"-12	370	275	955	705	1350	995
1-1/8"-7	480	355	1080	795	1750	1290
1-1/8" -12	540	395	1210	890	1960	1440
1-1/4"-7	680	500	1520	1120	2460	1820
1-1/4" -12	750	555	1680	1240	2730	2010
1-3/8"-6	890	655	1990	1470	3230	2380
1-3/8" -12	1010	745	2270	1670	3680	2710
1-1/2" -6	1180	870	2640	1950	4290	3160
1-1/2" -12	1330	980	2970	2190	4820	3560

Bolt Size (Inches) mm x pitch[4]	Bolt Head Identification					
	 Class 5.8		 Class 8.8		 Class 10.9	
	N.m	ft-lb	N.m	ft-lb	N.m	ft-lb
M5X0.8	4	3	6	5	9	7
M6X1	7	5	11	8	15	11
M8X 1.25	17	12	26	19	36	27
M8X1	18	13	28	21	39	29
M10X 1.5	33	25	52	39	72	53
M10X0.75	39	29	61	45	85	62
M12X 1.75	58	42	91	67	125	93
M12X 1.5	60	44	95	70	130	97
M12X1	90	66	105	77	145	105
M14 X2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16X2	145	105	225	165	315	230
M16X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24X3	480	355	760	560	1050	780
M24 X2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30×2	1060	785	1680	1240	2320	1710
M36 X3.5	1730	1270	2650	1950	3660	2700
M36X2	1880	1380	2960	2190	4100	3220

[1] in-tpi = nominal thread diameter in inches-threads per inch

[2] N.m= newton-meters

[3] ft-lb= foot pounds

[4] mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance +0%,-15% of torquing values. Unless otherwise specified use torque values listed above.

TRANSPORT

⚠WARNING!

Equipment transported on public roads must comply with all applicable local laws and regulations governing the safe transport of machinery.

Before operating or towing the machine on a public roadway, make sure all required lights, reflectors, warning devices, and markings are installed, clearly visible, and in proper working condition.

Requirements may vary by location. Contact your local transportation authority for specific legal requirements.

Transport Safety

Make sure the machine is securely attached to the tow vehicle and that the hitch pin is properly secured with a retaining clip.

Always connect the safety chains between the machine and the tow vehicle before transport.

Never allow passengers to ride on the machine.

Plan your route in advance and avoid heavy traffic whenever possible.

Do not transport or move the machine while the engine is running.

Inspect the wheel rims for cracks, dents, or other damage. Tighten all wheel lug nuts to the specified torque.

Inspect the tires for cuts, punctures, excessive wear, or other damage.

Make sure all tires are inflated to the recommended pressure.

Use a hitch ball that matches the coupler size and has a rated capacity equal to or greater than the loaded trailer weight.

Make sure all guards, shields, and covers are properly installed and securely closed before transport.

Make sure the engine fuel cap, engine oil cap, and hydraulic oil reservoir cap are properly installed and tightened to prevent leakage during transport.

Remove all loose debris and materials from the machine before transport.

Lower the boom into the transport position and secure the grapple to prevent movement during transport.

Make sure the total load does not exceed the maximum rated load capacity of the machine.

Do not exceed the maximum transport speed of 50 mph (80 km/h). Reduce speed when traveling over rough terrain or when turning.

Prepare the Machine for Transport

1. If the winch accessory is installed:

a. Remove the winch rope and strap from the log.

b. Retract the winch rope fully into the winch.

c. Secure the winch hook to the machine to prevent movement during transport.

2. Move the log grapple to transport positions:

If logs are loaded, securely grip the end of a log at the rear of the machine.



3. Install the boom lock pin.

4. Retract and secure both stabilizers:

a. Use the LH or RH stabilizer control lever to fully retract each stabilizer.

b. Engage the latch bar to lock each stabilizer in position.

5. Stop the machine.

6. Operate each hydraulic control lever to relieve residual hydraulic pressure.

Attach the machine securely to the tow vehicle.

Attach to a Tow Vehicle

Position the tow vehicle so the hitch ball is directly below the trailer coupler. Lower the coupler onto the hitch ball until it is fully seated, then close and lock the coupler latch. Install the safety pin or locking device to prevent accidental release. Attach the safety chains securely to the tow vehicle, crossing them under the trailer tongue if required. Connect the trailer electrical plug, if equipped, and verify that all lights operate properly. Raise and secure the trailer jack before towing. Finally, check that the coupler, safety chains, and all connections are secure before transport.

Trailer Jack

⚠WARNING!

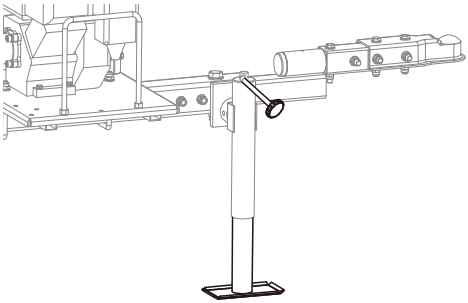
Do not remove the trailer jack pin while the jack is supporting the weight of the machine. The machine may move unexpectedly and cause injury.

Before removing the jack pin, securely attach the machine to the tow vehicle or support the trailer tongue with suitable blocks.

The trailer jack supports the front of the machine when it is not connected to a tow vehicle and helps stabilize the machine during coupling or uncoupling.

Lower the Trailer Jack

1. Pull the retaining pin out of the jack mounting bracket.
2. Rotate the trailer jack to the vertical position.
3. Reinsert the retaining pin through the bracket to lock the jack in position.
4. Turn the jack handle clockwise to lower the jack foot until it firmly contacts the ground.



Stow the Trailer Jack

1. Support the machine to remove all weight from the trailer jack. Attach the machine securely to the tow vehicle or support the trailer tongue with suitable blocks.
2. Turn the jack handle counterclockwise to fully raise the jack foot.
3. Pull the retaining pin out of the jack mounting bracket.
4. Rotate the trailer jack to the horizontal storage position.
5. Reinsert the retaining pin through the bracket to lock the jack securely in the stowed position.

STORAGE

At the end of the operating season, or whenever the machine will not be used for an extended period, thoroughly inspect all major systems and components. Repair or replace any worn or damaged parts to help prevent downtime when the machine is returned to service.

Clean the machine thoroughly and touch up any scratched or damaged painted surfaces to help prevent corrosion.

Storage Safety

⚠WARNING!

Do not allow children to play on, near, or around the stored machine. Serious injury or death may result.

⚠WARNING!

Do not use a pressure washer directly on the product identification plate. High-pressure water may damage the plate or make the information unreadable. Clean the plate with a soft cloth dampened with water.

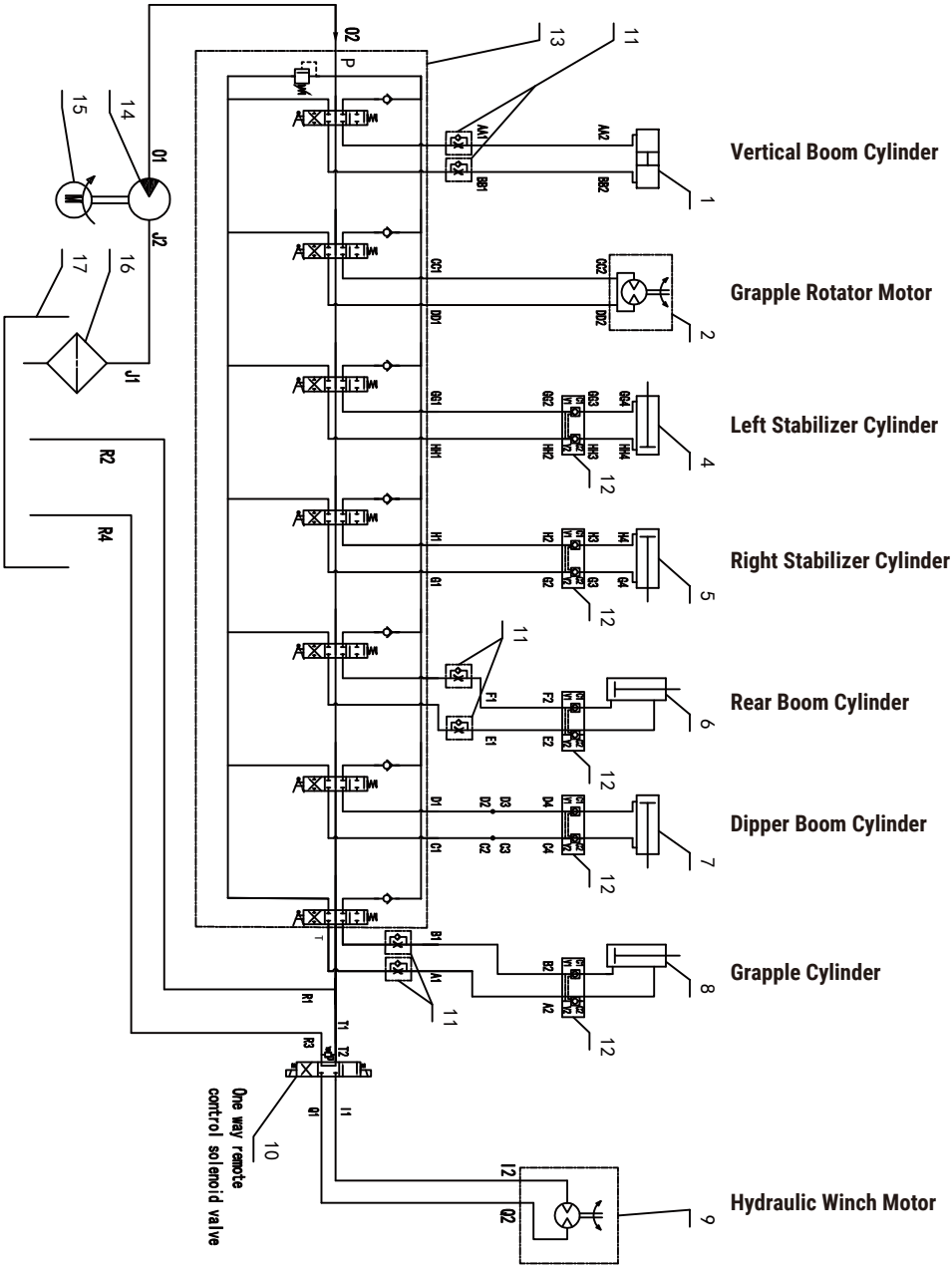
- Store the machine in a dry, level, and secure location away from unauthorized persons and general activity.
- Store the machine indoors whenever possible.
- Support the main frame securely with suitable blocks if necessary.
- Make sure the machine is stable and cannot roll, shift, or tip during storage.
- Keep the storage area clean and free of flammable materials.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	RECOMMENDED SOLUTION
Hydraulic cylinders move slowly or do not move (main boom, dipper boom, grapple, or stabilizers).	The hydraulic system is not building sufficient pressure. The grapple hydraulic hoses are connected incorrectly. The engine speed is too low.	Check the hydraulic oil level and refill if necessary. Replace the hydraulic oil filter if it is restricted or due for service. Check the hydraulic hose connections and match the color-coded couplers correctly. Set the throttle to the normal operating position specified in the engine manual.
Hydraulic cylinder movement is not smooth.	There is air in the hydraulic system or a hydraulic leak.	Inspect the hydraulic system for leaks and tighten all hose and fitting connections securely.
Hydraulic control lever does not return to neutral when released.	The valve spool return spring or valve spool is faulty. The hydraulic system is not building sufficient pressure. The hydraulic control valve may be damaged.	Replace the return spring, valve spool, or control valve as required. Check the hydraulic oil level and hydraulic oil filter. Refill or replace components as necessary. Have the hydraulic control valve inspected and repaired or replaced by a qualified service technician.
Hydraulic hose leaks.	The hose is worn, cracked, or damaged.	Replace the damaged hydraulic hose.
Hydraulic cylinder leaks.	The hydraulic cylinder seals are worn or damaged.	Replace the cylinder seals or the hydraulic cylinder as required.
Main boom or dipper boom slowly drifts downward.	The hydraulic cylinder seals are leaking. The hydraulic cylinder counterbalance valve is damaged.	Replace the cylinder seals or the hydraulic cylinder as required. Have the counterbalance valve inspected and replaced if necessary.

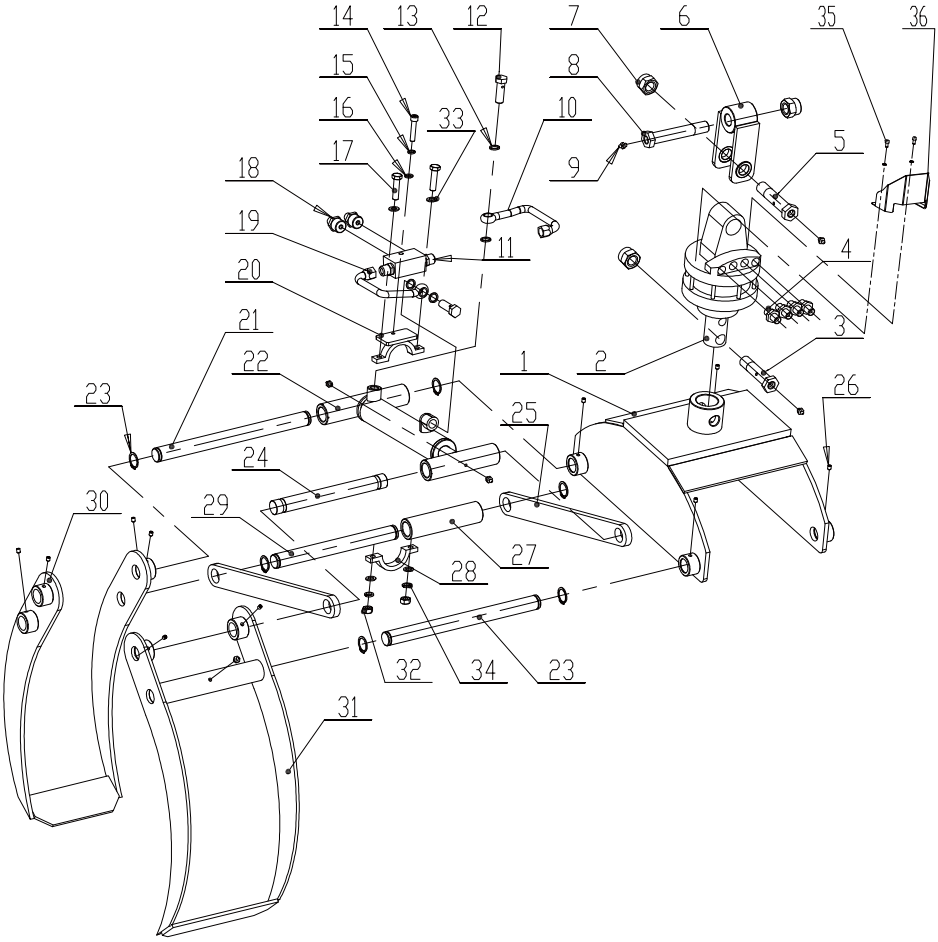
PROBLEM	POSSIBLE CAUSE	RECOMMENDED SOLUTION
Main boom does not rotate or rotates slowly.	The boom lock pin is installed.	Remove the boom lock pin before operating the boom.
	The hydraulic system is not building sufficient pressure.	Check the hydraulic oil level and hydraulic oil filter. Refill or replace components as necessary.
	The engine speed is too low.	Make sure the choke is fully open after warm-up, then increase the engine speed to the recommended operating RPM.
	The main boom rotation gears are jammed.	Remove dirt, wood chips, and other debris from the rotation gears.
	The main boom rotation sprocket and gears are not lubricated.	Apply grease to the rotation sprocket and gears.

HYDRAULIC SYSTEM DIAGRAM



PARTS DIAGRAM

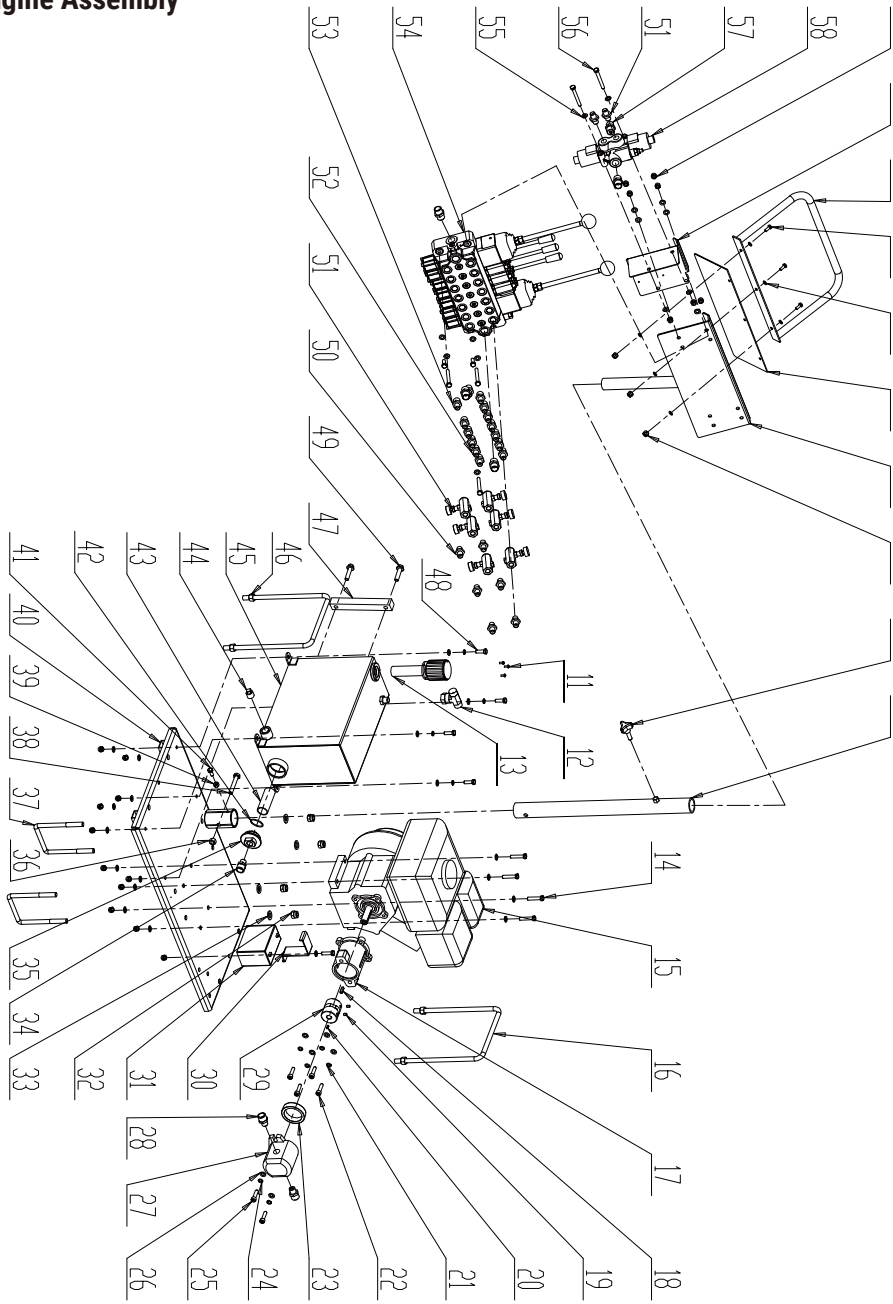
Grapple Assembly



Parts List

NO.	DESCRIPTION	QTY.
1	1.5-2.0 Ton Grapple Base Plate Weldment	1
2	Grapple Rotator Motor	1
3	3 Ton Grapple Threaded Connecting Shaft	1
4	1/4ED-1/4C Hydraulic Fitting	4
5	M20 Rotator Motor Mounting Bolt	1
6	Rotary Joint Mounting Bracket Weldment	1
7	M20 Hex Lock Nut	3
8	M20 Front Crossbeam Cylinder Mounting Bolt, 1.5 Ton	1
9	M6 x 1 Grease Fitting	6
10	50 Grapple Cylinder CE Steel Tube Weldment	1
11	LB4 Valve (Hydraulic Lock Valve)	1
12	1/4 in. Banjo Bolt	2
13	1/4 in. Bonded Seal Washer	4
14	M8 x 40 Socket Head Cap Screw	1
15	M8 Spring Washer	3
16	M8 Flat Washer	1
17	M10 x 65 Hex Head Bolt	2
18	3/8 in. to 1/4 in. Reducing Nipple	2
19	50 Grapple Cylinder CE Steel Tube No. 2 Weldment	1
20	50 Grapple Cylinder CE Clamp Plate No. 2 Weldment	1
21	Grapple Long Connecting Link	2
22	Grapple Cylinder	1
23	25 mm External Circlip	6
24	Grapple Short Connecting Pin No. 1	1
25	Grapple Support Plate	2
26	M6 x 6 Hex Socket Cup-Point Set Screw	11
27	Grapple Large Spacer	1
28	50 Grapple Cylinder CE Clamp Plate No. 1	1
29	Grapple Short Connecting Pin	1
30	1.5-4 Ton Grapple Jaw No. 1 Weldment	1
31	1.5-4 Ton Grapple Jaw No. 2 Weldment	1
32	M10 Hex Nut	2
33	M10 Flat Washer	4
34	M10 Spring Washer	2
35	M8 x 25 Socket Head Cap Screw	2
36	Rotator Motor Guard Plate	1

Engine Assembly

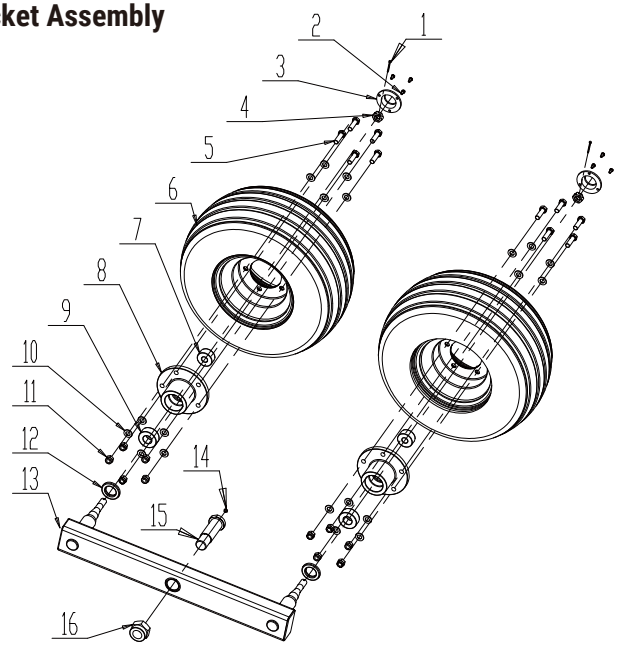


Parts List

NO.	DESCRIPTION	QTY.
1	M8 Hex Lock Nut	16
2	Single Solenoid Valve Mounting Plate	1
3	Handlebar Weldment	1
4	M5 x 20 Hex Bolt	3
5	M5 Flat Washer	6
6	Identification Plate	1
7	8-Section Valve Mounting Plate Weldment	1
8	M5 Hex Lock Nut	3
9	M10 x 40 x 30 Triangular Knob	1
10	Directional Valve Support Rod Weldment	1
11	M4 x 10 Phillips Pan Head Screw	3
12	1/2" Female Tee Fitting	1
13	Hydraulic Tank Breather Filler Cap	1
14	M8 x 40 Hex Bolt	4
15	Engine	1
16	Bent Handle for 1.5 Ton Engine Mounting Plate	2
17	Hydraulic Pump Mounting Bracket	1
18	4.8 x 4.8 Engine Parallel Key	1
19	M6 x 8 Hex Socket Cup-Point Set Screw	2
20	3.18 x 3.18 Hydraulic Pump Parallel Key	1
21	M8 Spring Washer	4
22	M8 x 30 Socket Head Cap Screw	4
23	Hydraulic Pump Bushing	1
24	M10 Spring Washer	2
25	M10 x 40 Socket Head Cap Screw	2
26	M10 Flat Washer	2
27	Gear Pump	1
28	M18-M22H Adapter Fitting	2
29	XL1 Jaw Coupling	1
30	Battery Clamp	1
31	12 V 3 Ah Lithium Battery	1
32	M12 Hex Lock Nut	8
33	M12 Flat Washer	12
34	M16-M22H Adapter Fitting	1
35	Hydraulic Oil Filter Fitting	1
36	M10 Hex Lock Nut	1

NO.	DESCRIPTION	QTY.
37	Base Plate Mounting Bolt	2
38	M10 x 65 Hex Bolt	1
39	M8 Hex Nut	1
40	1.5 Ton Engine Mounting Plate	1
41	M8 x 20 Hex Bolt	1
42	35.5 x 3.55 O-Ring	1
43	Hydraulic Suction Filter Element	1
44	G3/8 x 19 Drain Plug	1
45	1.5 Ton Hydraulic Oil Tank Weldment	1
46	M12 Hex Nut	4
47	Oil Level Gauge / Sight Glass	1
48	M8 x 25 Hex Bolt	5
49	Special Mounting Screw	2
50	1/4 Taper-1/4C Hydraulic Fitting	6
51	1/4" One-Way Flow Control Valve	6
52	3/8"-1/4" Reducing Nipple	8
53	3/8"-1/4" Taper Adapter	6
54	7-Section Directional Control Valve	1
55	M8 Flat Washer	38
56	M8 x 60 Hex Bolt	5
57	1/2" Straight Nipple	5
58	Single Solenoid Valve	1

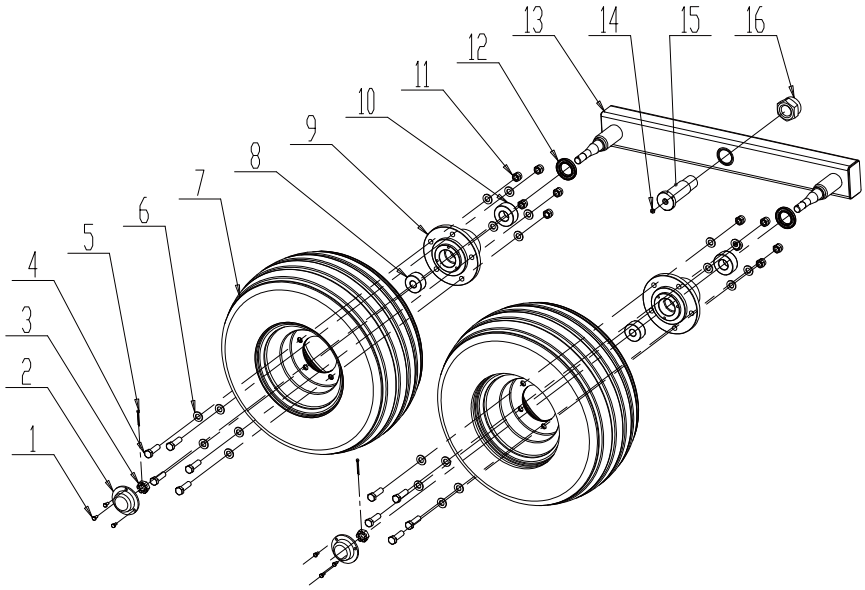
Right Axle Bracket Assembly



Parts List

NO.	DESCRIPTION	QTY.
1	4 x 35 Cotter Pin	2
2	M6 x 12 Flat Head Hex Bolt	6
3	Grapple Wheel Hub Dust Cap	2
4	M20 x 1.5 Hex Slotted Nut (29 x 15 mm)	2
5	M14 x 45 Flat Head Hex Bolt	10
6	Grapple Tire / Wheel Rim, 23-R-4	2
7	32304 Tapered Roller Bearing	2
8	5-Hole Grapple Wheel Hub	2
9	33206 Tapered Roller Bearing	2
10	M14 Flat Washer	10
11	M14 Hex Lock Nut	10
12	62 x 38 x 8 Radial Shaft Oil Seal	2
13	3-4 Ton Grapple Axle Connecting Tube Weldment	1
14	M6 x 1 Grease Fitting	2
15	Grapple Axle Bracket Connecting Shaft	2
16	M36 Hex Lock Nut	1

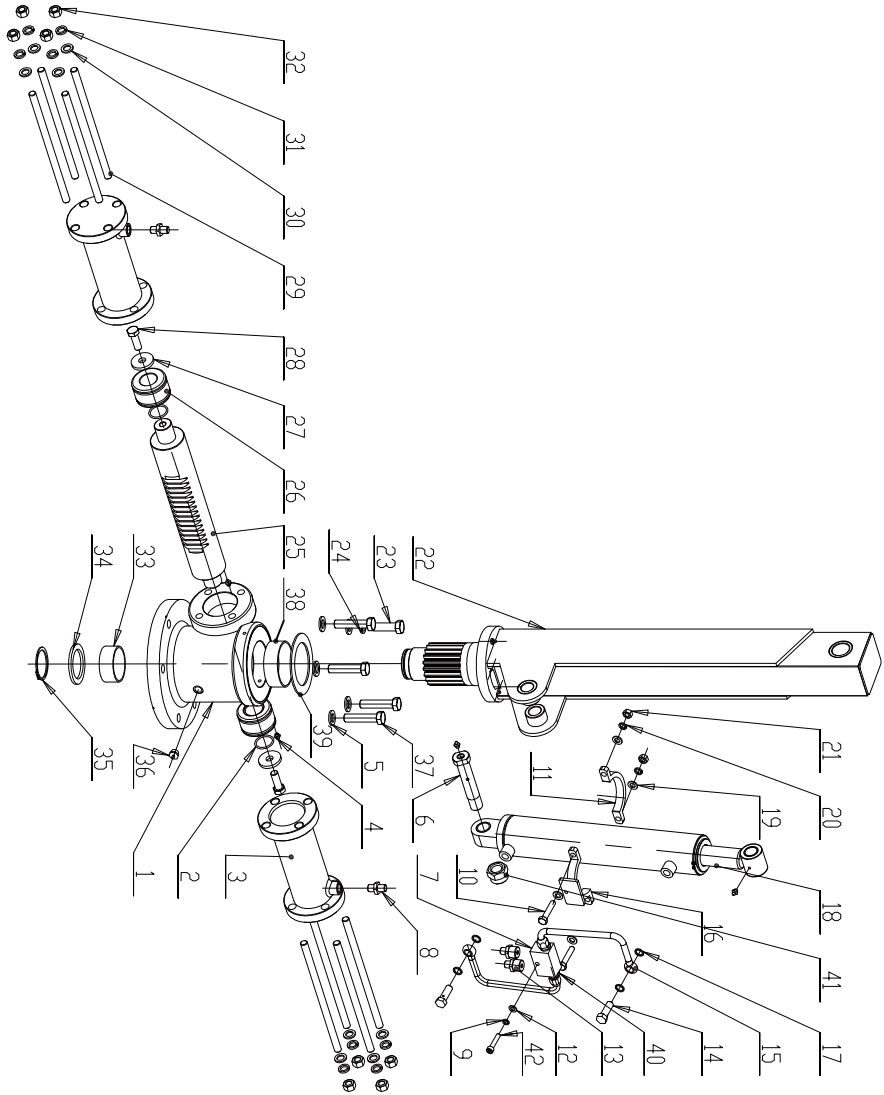
Left Axle Bracket Assembly



Parts List

NO.	DESCRIPTION	QTY.
1	M6 x 12 Flat Head Hex Bolt	6
2	Grapple Wheel Hub Dust Cap	2
3	M20 x 1.5 Hex Slotted Nut (29 x 15 mm)	2
4	M14 x 45 Flat Head Hex Bolt	10
5	4 x 35 Cotter Pin	2
6	M14 Flat Washer	10
7	Grapple Tire / Wheel Rim, 23-R-4	2
8	32304 Tapered Roller Bearing	2
9	5-Hole Grapple Wheel Hub	2
10	33206 Tapered Roller Bearing	2
11	M14 Hex Lock Nut	10
12	62 x 38 x 8 Radial Shaft Oil Seal	2
13	3-4 Ton Grapple Axle Connecting Tube Weldment	1
14	M6 x 1 Grease Fitting	2
15	Grapple Axle Bracket Connecting Shaft	2
16	M36 Hex Lock Nut	1

Vertical Boom Assembly

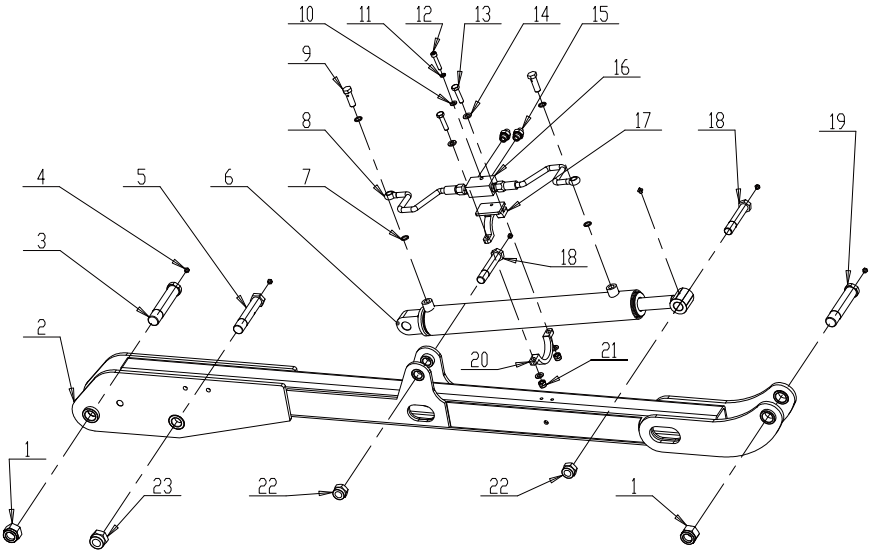


Parts List

NO.	DESCRIPTION	QTY.
1	4 Ton Grapple Crane Slewing Base	1
2	35.5 x 3.55 O-Ring	2
3	Slewing Cylinder	2
4	M6 x 1 Grease Fitting	5
5	M16 Flat Washer	5
6	4 Ton Crane Rear Boom Threaded Pin, L=120 mm	1
7	Hydraulic Lock Valve	1
8	1/4ED-1/4C Hydraulic Fitting	2
9	M8 Spring Washer	1
10	M10 x 50 Hex Head Bolt	2
11	80 Upright Boom Cylinder CE Clamp Plate No. 1	1
12	M8 Flat Washer	1
13	3/8-1/4 Reducing Nipple	2
14	1/4 in. Banjo Bolt	2
15	80 Upright Boom Cylinder CE Steel Tube No. 2 Weldment	2
16	80 Upright Boom Cylinder CE Clamp Plate No. 2 Weldment	1
17	1/4 in. Bonded Seal Washer	4
18	Main Boom Cylinder	1
19	M10 Flat Washer	4
20	M10 Spring Washer	2
21	M10 Hex Nut	2
22	1.5-2.0 Ton Grapple Crane Upright Beam Weldment	1
23	M16 x 50 Hex Head Bolt	1
24	M16 Spring Washer	1
25	3 Ton Grapple Crane Gear Rack	1
26	Slewing Cylinder Piston	2
27	Gear Rack Shaft Piston Washer	2
28	M14 x 30 Flat Head Hex Bolt (Grade 8.8)	2
29	M14 x 290 Double-End Stud Bolt	8
30	M14 Flat Washer	8
31	M14 Spring Washer	8
32	M14 Hex Nut	8
33	Bearing Housing Plain Bearing 70 x 65	1
34	Large Washer, dia. 59 x 80	1
35	External Circlip, dia. 60	1
36	M14 x 1.5 Grease Fitting	1

NO.	DESCRIPTION	QTY.
37	M16 x 70 Hex Head Bolt	4
38	Bearing Housing Plain Bearing 90 x 85	1
39	Bearing Housing Thrust Plain Bearing	1
40	M18 Swivel Nut - M14H Fitting	2
41	M24 Hex Lock Nut	1
42	M8 x 40 Socket Head Cap Screw	1

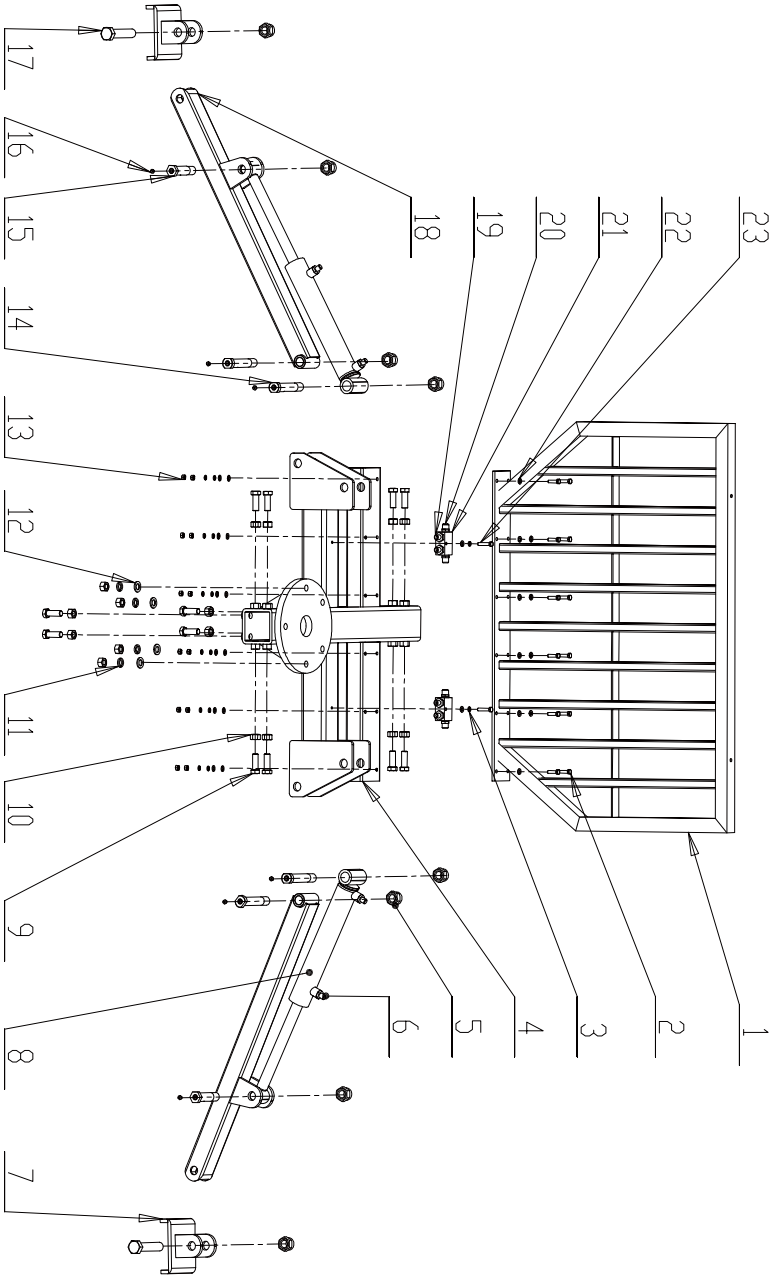
Rear Boom Assembly



Parts List

NO.	DESCRIPTION	QTY.
1	M27 Hex Lock Nut	2
2	1.5 Ton Non-Telescopic Rear Crossbeam Weldment	1
3	M27 Rear Crossbeam Threaded Pin, 1.5 Ton	2
4	M6 x 1 Grease Fitting	6
5	M24 Main Boom Cylinder Upper Mounting Bolt	1
6	Rear Boom Cylinder (Jib Arm)	1
7	1/4" Bonded Seal Washer	4
8	70 Cylinder Steel Tube Weldment with Hydraulic Lock	2
9	1/4" Banjo Bolt	2
10	M8 Flat Washer	1
11	M8 Spring Washer	1
12	M8 x 40 Socket Head Cap Screw	1
13	M10 x 40 Hex Bolt	2
14	M10 Flat Washer	4
15	3/8"-1/4" Reducing Nipple	2
16	LB4 Valve (Hydraulic Lock Valve)	1
17	70 Rear Boom Cylinder Hydraulic Lock Weldment	1
18	M20 Front Crossbeam Cylinder Mounting Pin, 1.5 Ton	2
19	M27 Front Crossbeam Threaded Pin, 1.5 Ton	1
20	70 Rear Boom Cylinder CE Clamp Plate No. 1	1
21	M10 Hex Lock Nut	2
22	M20 Hex Lock Nut	2
23	M24 Hex Lock Nut	1

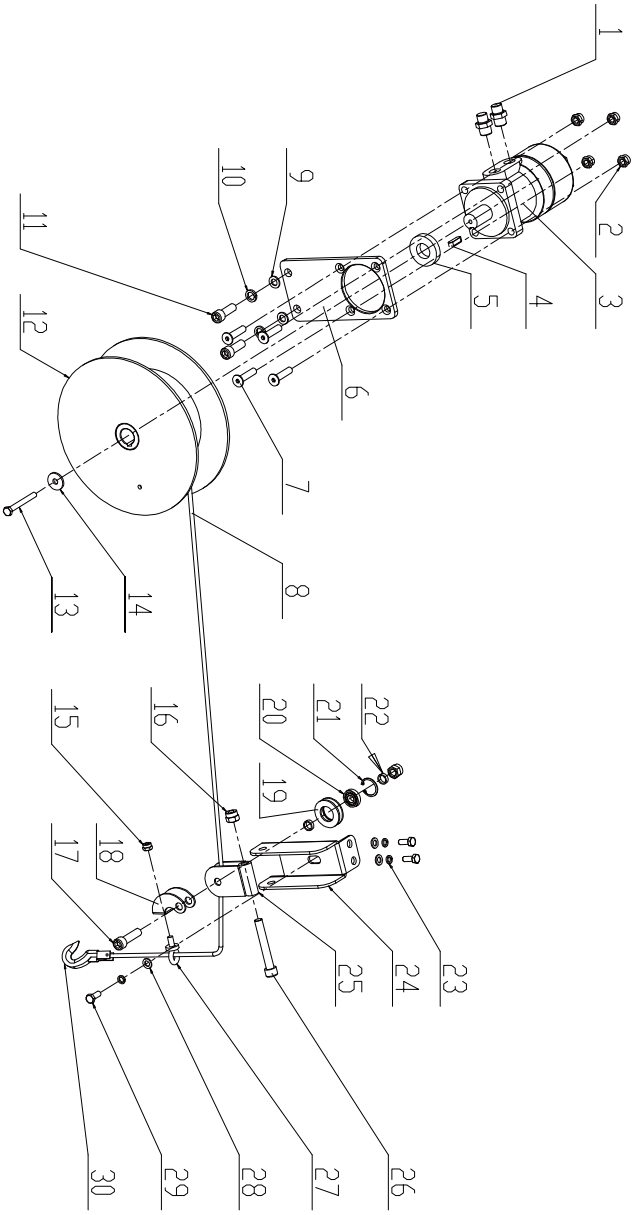
Front Frame Guard Assembly



Parts List

NO.	DESCRIPTION	QTY.
1	Grapple Large Mesh Weldment	1
2	M8 x 30 Hex Head Bolt	12
3	M8 Spring Washer	14
4	4 Ton Grapple Front Frame Weldment	1
5	M24 Hex Lock Nut	8
6	1/4ED-1/4C Hydraulic Fitting	4
7	Grapple Base Plate Weldment	2
8	Outrigger Cylinder	2
9	M16 x 45 Hex Head Bolt	12
10	M16 Hex Nut	16
11	M16 Spring Washer	4
12	M16 Flat Washer	4
13	M8 Hex Nut	12
14	4 Ton Crane Rear Boom Threaded Shaft, L=130 mm	4
15	4 Ton Crane Outrigger Cylinder Lower Threaded Shaft	2
16	M6 x 1 Grease Fitting	6
17	M24 x 120 Hex Head Bolt	2
18	New Outrigger Assembly Weldment	2
19	3/8-1/4 Reducing Nipple	4
20	M18 Swivel Nut-M14H Fitting	2
21	LB4 Valve (Hydraulic Lock Valve)	2
22	M8 Flat Washer	26
23	M8 x 40 Hex Head Bolt	2

Winch Assembly



Parts List

NO.	DESCRIPTION	QTY.
1	M18-1/4 Hydraulic Adapter Fitting	2
2	M10 Hex Lock Nut	4
3	BM2-160 Hydraulic Motor	1
4	8 x 30 Parallel Key	1
5	Winch Drum Washer	1
6	Hydraulic Motor Mounting Plate	1
7	M10 x 45 Hex Socket Countersunk Head Screw	4
8	5 mm x 25 m Steel Wire Rope (7x19)	1
9	M12 Flat Washer	2
10	M12 Spring Washer	2
11	M12 x 25 Hex Bolt	2
12	Winch Drum Weldment	1
13	M8 x 80 Hex Bolt	1
14	45 x 5.0 Large Washer	1
15	M8 Hex Lock Nut	1
16	M12 Hex Lock Nut	2
17	M12 x 45 Socket Head Cap Screw	1
18	Rope Guide Mount	1
19	550 Pulley No. 2	1
20	6001-2RS (ZZ) Bearing	1
21	28 mm Internal Circlip	1
22	550 Spacer No. 2	2
23	M8 Spring Washer	2
24	Winch Rope Guide Bracket	1
25	Guide Pulley Bracket Weldment	1
26	M12 x 80 Socket Head Cap Screw	1
27	M8 x 16 Eye Bolt	1
28	M8 Flat Washer	3
29	M8 x 20 Hex Bolt	3
30	Hook	1

MechMaxx
RELIABLE EFFICIENT VALUE

Our company is committed to continuous product improvement. The actual product may differ from the pictures or descriptions in this manual. Specifications and design are subject to change without prior notice.

315-750-4008
sales@mechmaxx.com

www.mechmaxx.com