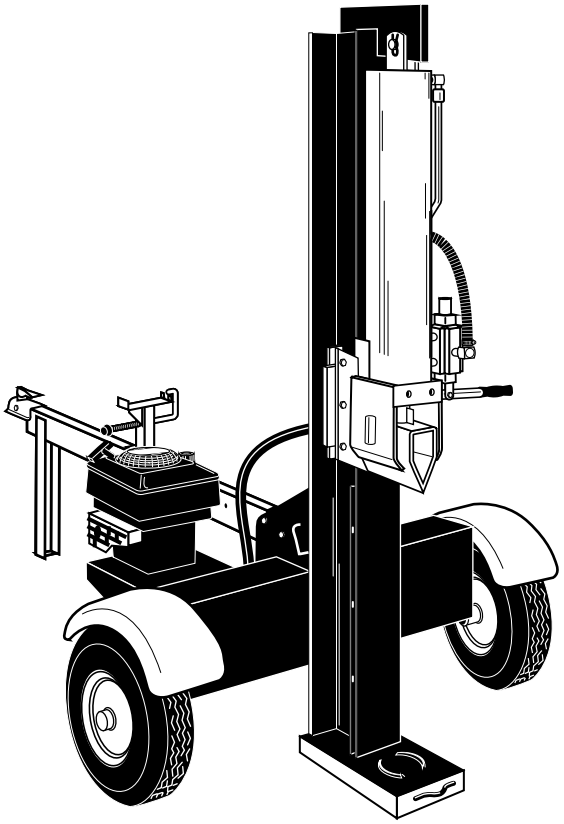
YARD MACHINES by MTD

OPERATOR'S MANUAL



LOG SPLITTER

MODELS
550 and 560

MTD For A Growing World.™

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

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SECTION 1: IMPORTANT RULES FOR SAFE OPERATION

WARNING: THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR LOG SPLITTER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL HEED ITS WARNING.

WARNING: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

DANGER: Your log splitter was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.

1. TRAINING

- Before operating this splitter, read and understand this operator's manual completely. Become familiar with it for your own safety. To fail to do so may cause serious injury. Do not allow anyone to operate your splitter who has not read this manual. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
- Never use your splitter for any other purpose than splitting wood. It is designed for this use and any other use may cause an injury. Your log splitter is a precision piece of power equipment, not a toy. Therefore, exercise extreme caution at all times.
- Never allow children to operate your log splitter. Do not allow adults to operate it without proper instruction. Only persons well acquainted with these rules of safe operation should be allowed to use your log splitter.
- Only the operator is to be near your log splitter during use. Keep all others, including pets and children, a minimum of 20 feet away from your work zone. Flying wood can be hazardous. If a helper is assisting in loading logs, never activate the control until the helper is clear of the area. More accidents occur when more than one person operates the log splitter than at any other time.
- No one should operate this unit while intoxicated or while taking medication that impairs the senses or reactions. A clear mind is essential for safety. Never allow a person who is tired or otherwise not alert to use your splitter.

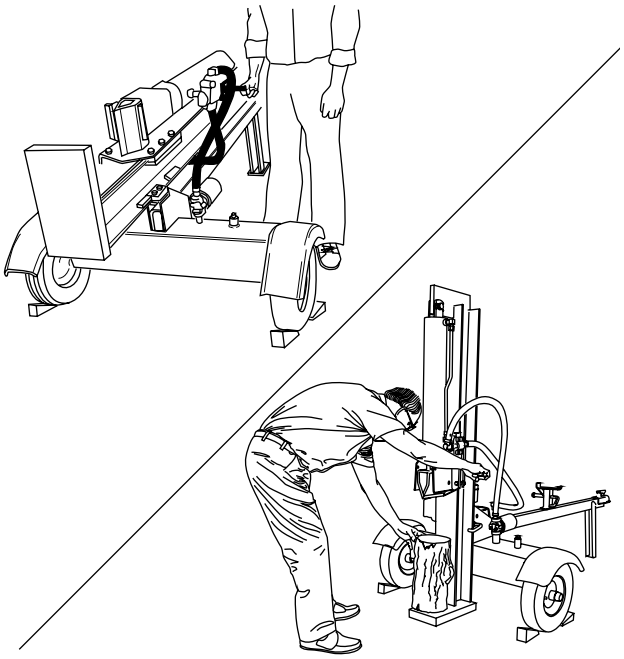
2. PREPARATION

- Never wear loose clothing or jewelry that can be caught by moving parts of your log splitter and pull you into it. Keep clothing away from all moving parts of your log splitter.
- Wear proper head gear to keep hair away from moving parts. Always wear protective hearing devices as needed.
- Always wear safety shoes. A dropped log can seriously injure your foot.
- Always wear safety glasses or goggles while operating your splitter. A piece of splitting log could fly off and hit your eyes.
- Wear leather work gloves. Be sure they are tight fitting without loose cuffs or draw strings.
- Use your log splitter in daylight, or under good artificial light.
- Never operate your splitter on slippery, wet, muddy or icy surfaces. Safe footing is essential in preventing accidents.
- Never operate your splitter while attached to a towing vehicle.
- Only operate your splitter on level ground and not on the side of a hill. It could tip, or rolling logs or poor footing could cause an accident. Operating the splitter on level ground also prevents the spillage of gasoline from the fuel tank.
- Never attempt to move the log splitter over hilly or uneven terrain without a tow vehicle or adequate help.
- Always block the wheels to prevent movement of log splitter while in operation.
- Check the fuel before starting the engine. Gasoline is an extremely flammable fuel. Do not fill the gasoline tank indoors, when the engine is running, or while the engine is still hot. Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.

- Both ends of each log must be cut as square as possible to help prevent the log from riding out of the splitter during operation.

3. OPERATION

- **Vertical Operating Position:** Stand in front of the log splitter.
  Horizontal Operating Position: Stand behind the reservoir tank. See illustrations.



- Know how to stop the unit and disengage the controls.
- Never place hands or feet between log and splitting wedge or between log and end plate during forward or reverse stroke. To do so may result in crushed or amputated fingers or toes, or worse, you may lose an arm or foot.
- Do not straddle the splitter when using it. A slip in any position could result in a serious injury.
- Do not step over your log splitter when the engine is running. You may trip or accidentally activate the splitting wedge if you step over. If you need to get to the other side, walk around.
- Never try to split two logs on top of each other. One may fly out and injure you.
- When loading the log splitter, place your hands on the side of the log, not at the ends. Never attempt to load your splitter while the splitting wedge is in motion. You may get caught by the wedge and injured.
- Only use your hand to operate the splitting wedge or control lever. Never use your foot or a rope or any other extension device. This could result in your inability to stop your splitter quickly enough to avoid injury.
- Always keep fingers away from any cracks that open in the log during splitting operation. They can quickly close and pinch or amputate your fingers.
- Never attempt to split woods across the grain. Some types of wood may burst or fly out of your splitter and result in injury to you or a bystander.
- For logs that are not cut square, the longest portion of the log should be rotated down and the most square end placed against the splitting wedge.
- Keep your work area clean. Immediately remove split wood around your splitter so that you do not stumble over it. Clean chips and dirt off end plate (wood platform) after each log is split, or whenever necessary to maintain flat contact between wood and end plate (platform).
- Never move the log splitter while the engine is running.
- Never leave your log splitter unattended with the engine running. Shut off the engine if you are leaving your splitter, even for a short period of time. Someone could accidentally activate the splitting wedge and be injured.
- Do not run engine in an enclosed area. Exhaust gases contain carbon monoxide. This odorless gas can be deadly when inhaled.
- Be careful not to touch the muffler after the engine has been running. It will be HOT!
- If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- When cleaning, repairing or inspecting, make certain all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.

4. CUSTOMER RESPONSIBILITIES

- Do not operate your splitter in poor mechanical condition or when in need of repair.
- Periodically check that all nuts, bolts, screws, hose clamps and hydraulic fittings are tight to be sure equipment is in safe working condition. Where appropriate, check all safety guards and shields to be sure they are in the proper position. Never operate your splitter with safety guards, shields or other protective features removed. These safety devices are for your protection.
- Replace all damaged or worn parts such as hydraulic hoses and fittings immediately with manufacturer approved replacement parts.
- Do not change the engine governor settings or overspeed the engine. This increases the hazard of personal injury. The maximum engine speed is preset by the manufacturer and is within safety limits.
- Do not alter your splitter in any manner such as attaching a rope or extension to the control lever or

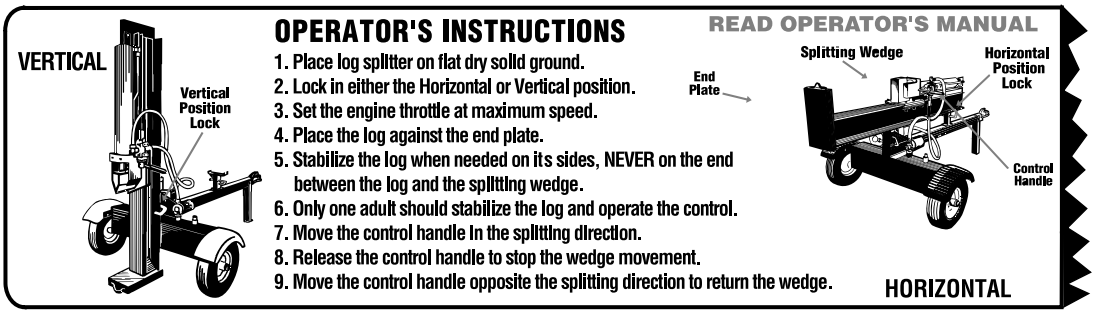
adding to the width or height of the wedge. Such alterations may cause your splitter to be unsafe.

- Perform all recommended maintenance procedures before you use your splitter.
- Do not service or repair your log splitter without disconnecting the spark plug wire and moving it away from the spark plug.
- Never store the equipment with gasoline in the tank inside of a building where ignition sources are present, such as hot water and space heaters, clothes dryers and the like. Allow the engine to cool before storing in any enclosure.
- Always store gasoline in an approved, tightly sealed container. Store the container in a cool, dry place. Do not store in a building where ignition sources are present.
- To reduce fire hazard, keep engine free of grass, leaves, wood chips, and excessive grease and oil.
- The hydraulic system of your log splitter requires careful inspection, along with the mechanical parts. Be sure to replace frayed, kinked, or otherwise damaged hydraulic components.
- Fluid escaping from a very small hole can be almost invisible. Do not check for leaks with your hand. Escaping fluid under pressure can have sufficient force to penetrate skin, causing serious personal injury. Leaks can be located by passing a piece of cardboard or wood over the suspected leak and looking for discoloration.
- Should it become necessary to loosen or remove any hydraulic fitting or line, be sure to relieve all pressure by shutting off the engine and moving the control handle back and forth several times.
- Do not remove the cap from the hydraulic tank or reservoir while your log splitter is running. Hot oil under pressure could cause injury.
- The pressure relief valve on your splitter is preset at the factory. Do not adjust the valve. Only a qualified service technician should perform this adjustment.
- Completely drain fuel tank prior to storage. This guards against accumulation of fuel fumes which could result in a fire hazard.
- Never store log splitter outside without a waterproof cover. Rain will cause rust on the inside of the cylinder.

5. TOWING

- This unit should not be towed on any street, highway or public road without checking the existing federal, local or state vehicle requirements. Any licensing or modifications such as taillights, etc., needed to comply with the existing federal, local or state vehicle requirements is the sole responsibility of the purchaser.
- Before towing, be certain the log splitter is correctly and securely attached to the towing vehicle, and the safety chains are in place. Leave slack in chains for turning allowance.
- Do not allow anyone to sit or ride on your splitter. They can easily fall off and be seriously injured.

WARNING - YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.



SECTION 2: IMPORTANT INFORMATION FOR LOG SPLITTER USERS

Always:

- Use clean fluid and check fluid level regularly
- Use Dexron III Automatic Transmission Fluid or 10W non-foaming hydraulic fluid.
- Use a filter (clean or replace regularly)
- Use a breather cap on fluid reservoir
- Keep end of reservoir return tube below fluid level
- Make certain pump is mounted and aligned properly
- Use a flexible ‘‘spider’’ type coupling between engine and pump driveshafts
- Keep hoses clear and unblocked
- Bleed air out of hoses before operating
- Flush and clean hydraulic system before start-up after any malfunction or servicing
- Use ‘‘pipe dope’’ on all hydraulic fittings
- Allow time for warm-up before splitting wood
- Prime the pump before initial start-up by turning over the engine with spark plug disconnected
- Split wood with the grain (lengthwise) only

Never:

- Use when fluid is below 20° F., or above 150° F.
- Use a solid engine/pump coupling
- Force pump when mounting
- Operate through relief valve for more than several seconds
- Attempt to adjust unloading or relief valve settings without pressure gauges
- Operate with air in hydraulic system
- Use Teflon tape on hydraulic fittings
- Warm up engine apart from pump in cold weather
- Attempt to cut wood across the grain

SECTION 3: FINDING YOUR MODEL NUMBER

This Operators Manual is an important part of your new log splitter. It will help you assemble, prepare and maintain your log splitter. Please read and understand what it says.

Before you start to prepare your log splitter for its first use, please locate the model plate and copy the information from it in this Operators Manual. The information on the model plate is very important if you need help from your dealer or the MTD customer support department.

- Every log splitter has a model plate. You can locate it by standing behind the unit in the operating position and looking down at the hydraulic tank. .

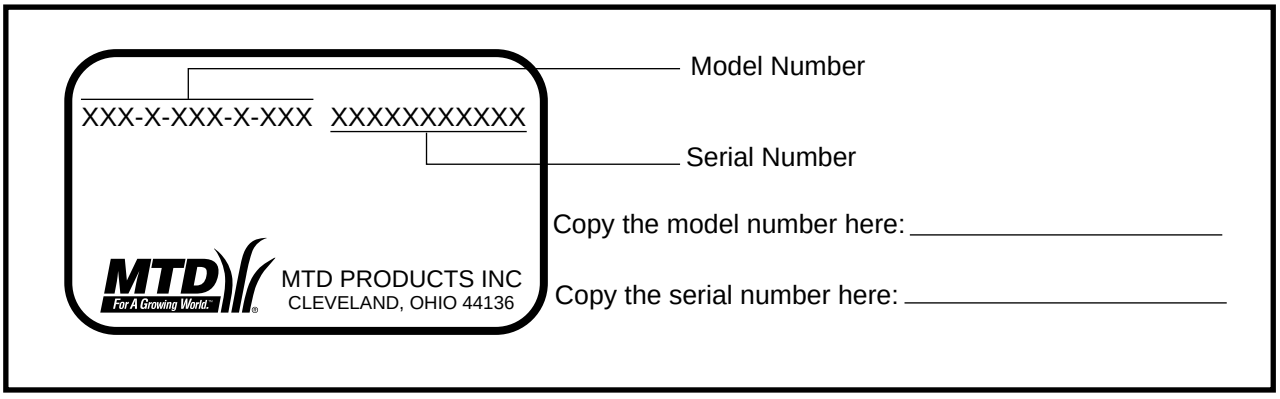


Figure 1

SECTION 4: CALLING CUSTOMER SUPPORT

If you are having difficulty assembling this product or if you have any question regarding the controls, operation or maintenance of this log splitter, please call the Customer Support Department. You can reach them by calling:

1-800-800-7310

Before you call, make sure that you have both your model and serial number ready. By having your model and serial number ready, you help the Customer Support Representative give you faster service.

SECTION 5: CONDITIONS WHICH WILL VOID YOUR WARRANTY

1. Failure to maintain proper fluid level in reservoir will void your warranty, causing permanent damage to pump by allowing air to be drawn into pump. Fluid will become foamy. Refer to ''Initial Preparation'' in the Operation section of this manual.
2. Changing the relief valve setting or pressure adjustment of control valve without proper knowledge and instruction from the factory will void your warranty. A very minor adjustment could destroy the structural and safety limits for which the unit was designed. The system will produce more power than the structure will withstand. Higher pressure could cause the hoses to burst, cylinder to rupture and intense fluid releases, which could result in serious personal injury.
3. Disassembling the pump will void your warranty. If replacement is necessary, merely disconnect and replace. Do not attempt to adjust pump settings, as they are adjusted by the manufacturer at the factory.
4. Use of incorrect hydraulic fluid will void your warranty. Use only Dexron III automatic transmission fluid or 10W non-foaming hydraulic fluid.
5. The flexible pump coupler must be inspected regularly. Allowing the coupler to deteriorate will void your warranty. Deterioration of spider insert and prolonged use after deterioration will destroy pump bearings and engine bearings, along with total destruction of coupler hubs.
6. Improper beam lubrication will cause premature wear and looseness. Lubricate the beam regularly. Lack of lubrication will void your warranty.
7. Improper adjustment of splitting wedge will void your warranty. Become familiar with the proper tolerance required for adjustment of the splitting wedge as instructed in the Adjustment section of this manual.
   If wedge is too loose, cylinder beam and wedge wear will result. Allowing the wedge to loosen and be used under operating stress will cause damage which will not be covered under warranty.
   If wedge is too tight, severe beam damage will result which will not be covered under warranty.
8. Warranty card must be mailed or delivered directly to factory. Proper information must be completed and mailed as per instructions. No warranty records on file may result in delay.
9. Do not overheat the hydraulic system. Excessive heat will destroy the hydraulic system with hardened O-rings and excessive friction.
10. Do not attempt to start in temperatures under 20^{o} F. without pre-heating fluid in reservoir. Excessively cold fluid cannot circulate and draw into pump. Warranty will be void.
11. Repair any leaks in hydraulic system immediately. Unattended leaks will cause air to enter system and/or decrease fluid level in reservoir, causing damage to the hydraulic system which will not be covered by warranty.

SECTION 6: ITEMS REQUIRED FOR ASSEMBLY

QTY	DESCRIPTION
(1)	Crowbar or Large Screwdriver
(1)	Soft Hammer or Mallet
(2)	9/16" Wrenches*
(2)	1/2" Wrenches*
(1)	7/16" Wrench*
(1)	13/16” Wrench*
(1)	7/8” Wrench*
(1)	Adjustable Wrench
(1)	Screwdriver
(1)	Pliers
(1)	Knife
(1)	Cutters

- Engine Oil
- Unleaded Gasoline
- Dexron III Automatic Transmission Fluid or 10W Non-Foaming Hydraulic Fluid

*Adjustable Wrenches may be used.

SECTION 7: UNPACKING

WARNING: Exercise extreme caution as parts are very heavy. Mechanical handling equipment should be used, or sufficient people to prevent injury.

1. Pry the top, sides and ends off crate using a crowbar or large screwdriver.
2. Set panels aside to avoid tire punctures or personal injury.
3. Remove and discard plastic bag that covers unit.
4. Remove wheels and small box from crate.
5. Cut and remove straps which secure parts to bottom of crate. Unbolt parts which are bolted to the bottom of the crate.

CONTENTS OF CRATE

- Reservoir Tank and Engine -Pump Assembly
- Wedge, Beam and Cylinder Assembly
- Tongue Assembly
- Wheels
- Hitch Assembly
- Beam Support/Latch Bracket
- Fenders

CONTENTS OF HARDWARE PACK

- 2 hub caps
- Log Splitter Operators Manual
- 4 bolts
- 4 lock washers
- 4 nuts
- Engine Owners Guide

SECTION 8: ASSEMBLY

ASSEMBLING THE TONGUE

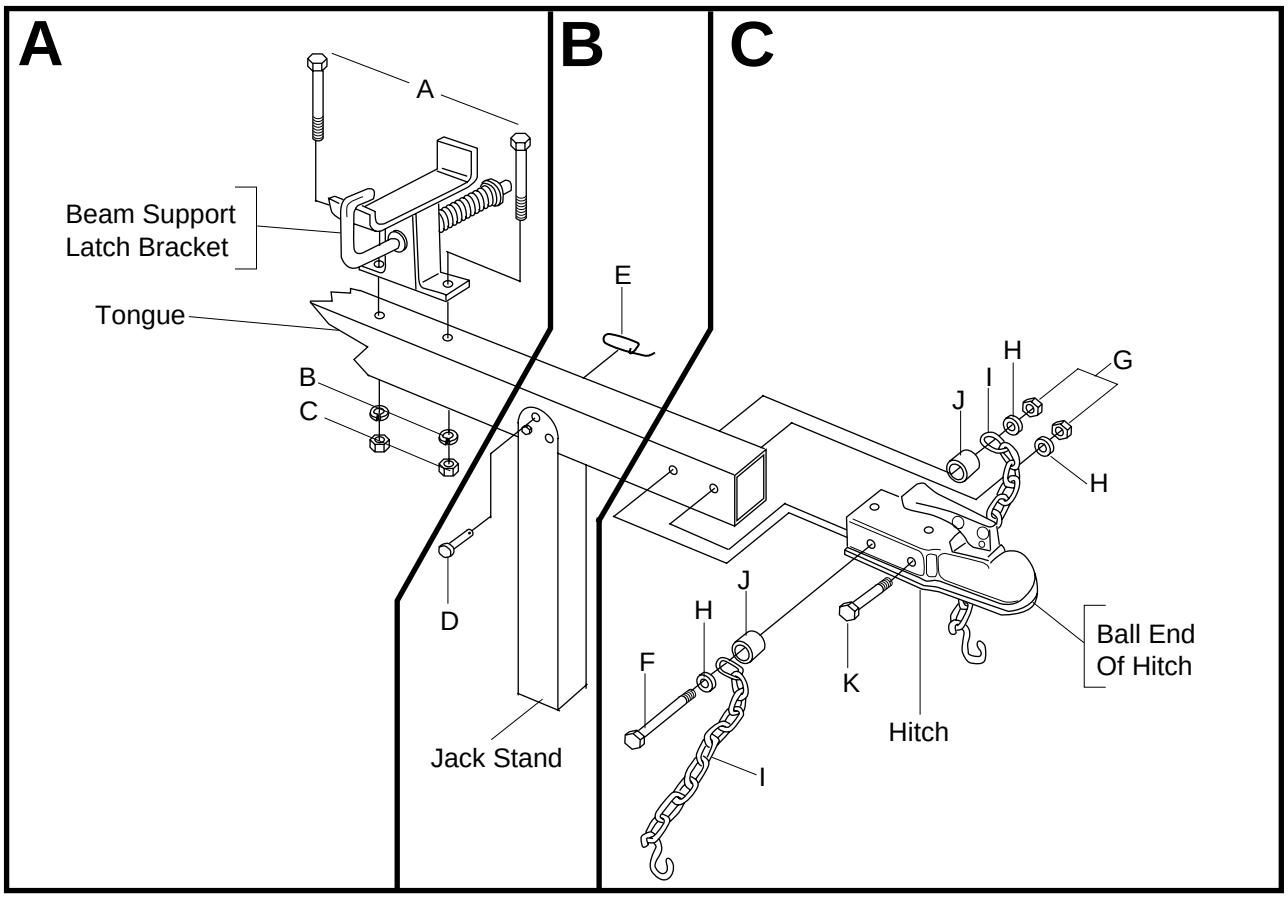


Figure 2

The hardware that is used to assemble the tongue will be found in place on the tongue and hitch. The assembly has been divided into three assemblies A, B and C. Locate the section of Figure 2 that is appropriate to the instructions.

ASSEMBLY A (See Figure 2)

Attach the Beam Support - Latch Bracket as follows:

1. Remove two hex bolts (A), lock washers (B) and hex nuts (C) from the tongue, using two 9/16" wrenches.
2. Place the beam support/latch bracket on the tongue as shown. Secure with hex bolts (A), lock washers (B) and hex nuts (C) just removed. Tighten securely.

ASSEMBLY B (See Figure 2)

Prepare the Jack Stand as follows:

1. The jack stand is in the transport position. Remove spring pin (E) and clevis pin (D). Pivot the jack stand to the operating position, and secure with the clevis pin (D) and spring pin (E).

ASSEMBLY C (See Figure 2)

Attach the hitch as follows:

1. Using two 9/16" wrenches, remove the hardware (F, G, H, I, J and K) assembled on the hitch.
2. Place the hitch in position on the end of the tongue as shown. Insert hex bolt (F) (with H, I and J attached) through hitch and tongue. Pivot the first chain link on the hex bolt (F) so it faces the ball end of hitch.
3. Place other spacer (J), safety chain (I) and flat washer (H) on hex bolt, with the first link of the chain also facing the ball end of hitch. Secure with hex lock nut (G).
4. Secure front of tow hitch to tongue with hex bolt (K), lock washer (H) and hex nut (G), using the forward hole in hitch and tongue.
5. Tighten hardware securely using two 9/16" wrenches.

ASSEMBLING THE WHEELS, BEAM AND TANK

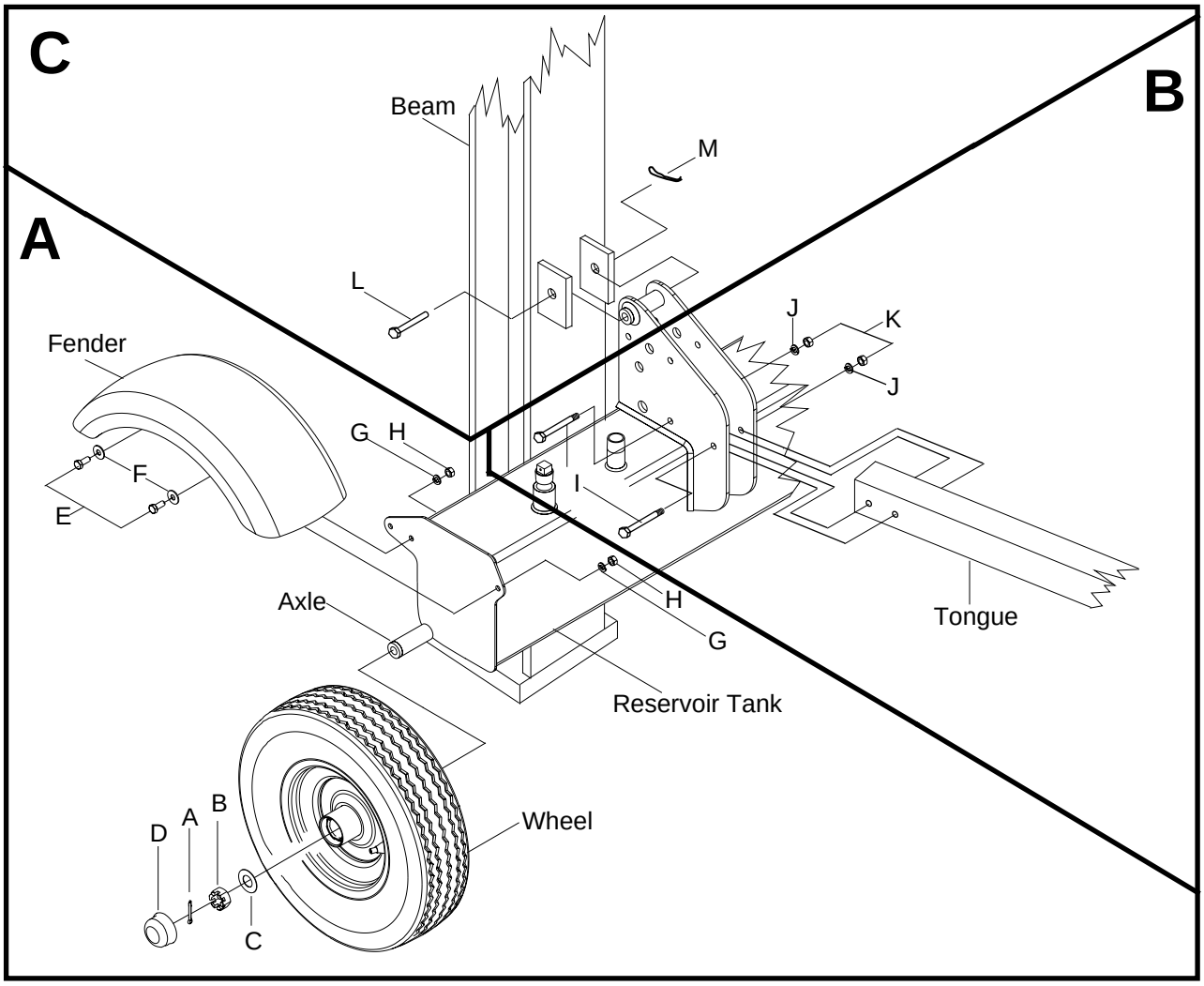


Figure 3

The hardware that is used to assemble the wheels, beam and tank will be found in place on the tank or in the hardware pack. The assembly has been divided into three sections A, B and C. Locate the section of Figure 3 that is appropriate to the instructions.

ASSEMBLY A (See Figure 3)

Attach the wheels to the reservoir tank assembly as follows:

1. Block up the reservoir tank assembly about 8 inches.
2. Remove and discard plastic shipping caps on the outside of the wheels.
3. Remove the cotter pin (A), hex slotted nut (B) and flat washer (C) from each axle.

NOTE: To maximize bearing life, It is recommended that you polish the axles of the log splitter with emory cloth before you install the wheels.

4. Place one wheel on each axle, valve stem facing outward.
5. Place one flat washer (C) just removed on each axle. Secure with hex slotted nut (B). Tighten slotted nut until snug, then back off approximately 1/3 turn or until one of the slots on the slotted nut lines up with the hole in the axle.
6. Insert cotter pins (A) through slots in nuts (B) and holes in axle. Secure by bending the ends of the cotter pins (A) in opposite directions, using pliers and a screwdriver.
7. Check the assembly of the wheels. There should be no side to side play, and the wheels should spin freely.
8. Place hub caps (D) in position on wheels, and tap on with a soft hammer or mallet. (It may be necessary to use a screwdriver to tap on the raised rib of the hub cap.)
9. Check tires for correct air pressure. See the side wall of the tires for recommended pressure.

(OPTIONAL FENDERS)

10. Using two 1/2" wrenches, remove the hex nuts (H), lock washers (G), flat washers (F) and hex bolts (E) from the tank.
11. Determine the proper assembly holes in the fender by centering the fenders over the tires against the tank.
12. Insert hex bolts (E) through flat washers (F) and holes in fenders and tank. Secure fender with lock washers (G) and hex nuts (H). Tighten securely.

ASSEMBLY B (See Figure 3)

Attach the tongue as follows:

1. Remove the two hex bolts (I), lock washers (J) and hex nuts (K) on the front of the reservoir tank with two 9/16".
2. Place the tongue in position and secure with hardware just removed.
3. Remove the reservoir assembly from the blocks.

ASSEMBLY C (See Figure 3)

Attach the beam to the reservoir tank as follows:

1. For shipping purposes, the pressure hose is attached to the pump on the engine, and to the control valve on the cylinder. Disconnect the pressure hose from the adapter on the pump.
2. **This step will require two people.** Stand the wedge, beam and cylinder assembly upright, with cylinder to the top.

WARNING: Use extreme caution as assembly is very heavy.

3. Remove cotter pin (M) and clevis pin (L), located beneath the beam assembly. Move the reservoir tank assembly in position against the beam. Line up holes by lifting hitch end of tongue.
4. Insert clevis pin (L) just removed through welded brackets on beam and reservoir tank assembly. Secure with cotter pin (M), bending the ends of the pin in opposite directions.

ATTACHING THE HOSES

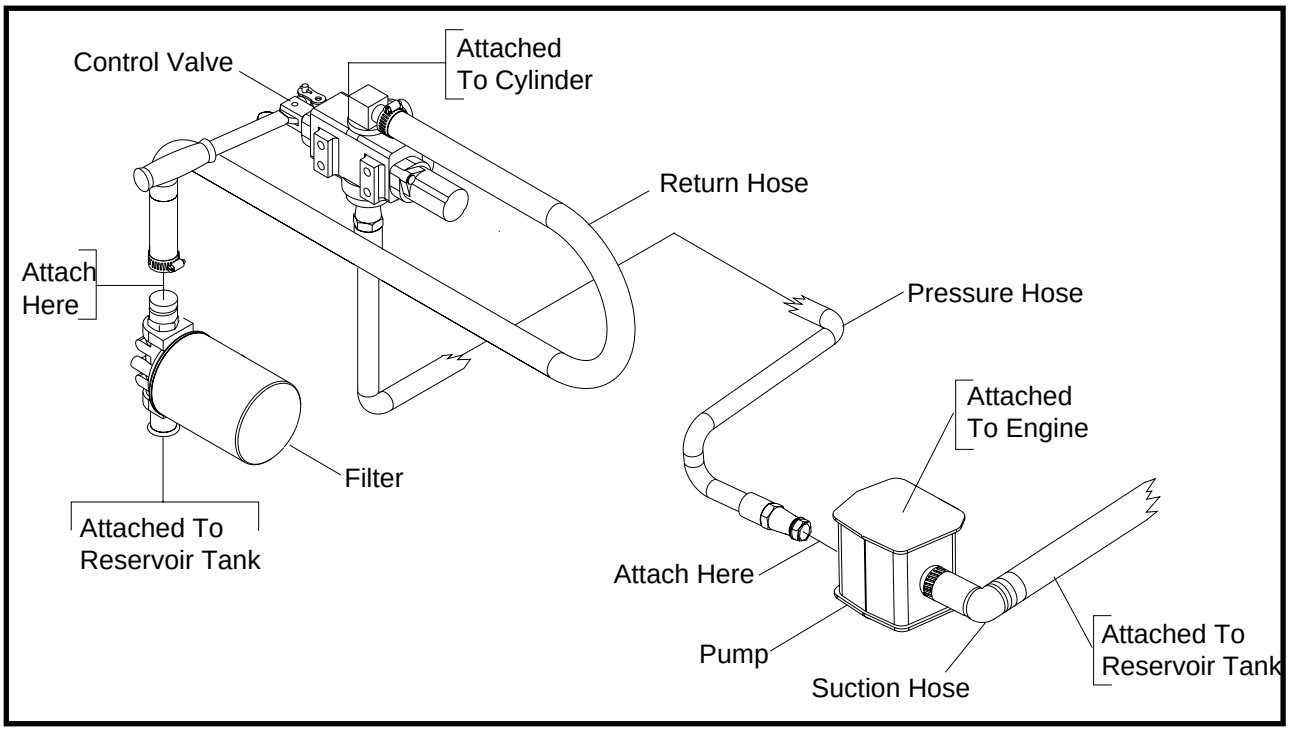


Figure 4

RETURN HOSE

1. The return hose is attached to the top of the control valve. Loosen the hose clamp on the free end of the hose using a screwdriver. Cut the securing strap.
2. Remove the protective cap from the fitting on top of the filter head. Attach the end of the hose to the fitting on top of the filter. Place the hose clamp at the base of the fitting, and tighten securely.

PRESSURE HOSE

1. The pressure hose is attached to the control valve. Route the hose between the beam and the tongue. Secure the pressure hose to the adapter on the side of the pump, using a 7/8" wrench.

PREPARING THE ENGINE

1. Place the log splitter on a firm, level surface.
2. Fill engine with oil as instructed in the separate engine manual packed with your log splitter.
3. Fill engine with gasoline as instructed in the separate engine manual packed with your log splitter.

PREPARING THE LOG SPLITTER

1. Lubricate the beam area where splitting wedge will slide with engine oil (DO NOT USE GREASE). Make certain to oil both front and back of the beam face.
2. Remove reservoir vent plug. Refer to Figure 4.
3. Fill the reservoir tank as follows. Using Dexron III automatic transmission fluid, or 10W non-foaming hydraulic fluid, fill reservoir to the top. Replace vent plug securely.

NOTE: There are two reservoir tank capacities depending on the log splitter model. The large tank has a capacity of approximately 7 gallons. The small tank has a capacity of approximately 4 gallons.

4. Disconnect the spark plug wire. Prime the pump by pulling the recoil starter, to turn the engine over, approximately 10 times.
5. Reconnect the spark plug wire.
6. Start engine.
7. Use the control handle to engage the wedge to the far extended position.
8. Now retract the wedge.
9. Refill tank to within 1-1/2" to 2" from the top of the tank.
10. Extend and retract the wedge fully 10 to 12 complete cycles to remove trapped air in the system (system is ‘‘self-bleeding’’).
11. Refill the reservoir to within 1-1/2" to 2" from the top of the tank. Much of the original fluid has been drawn into the cylinder and hoses. Make certain to refill the reservoir, to prevent extreme damage to the hydraulic pump. Failure to refill the tank will void your warranty.

NOTE: Some fluid may overflow from the vent plug as the system builds heat and the fluid expands and seeks its own level.

WARNING: Do not operate the log splitter without the proper amount of transmission fluid in the reservoir tank.

SECTION 9: CONTROLS

ENGINE CONTROLS

See the separate engine owners guide that was shipped with your log splitter.

LOG SPLITTER CONTROLS

CONTROL HANDLE

The control handle has three positions. Read the following descriptions of the three positions.

Splitting: Push the control handle forward or down. Splitting wedge moves toward the end plate.

Neutral: Control handle will return to neutral position when handle is released. Splitting wedge stops in place.

Disengage: Pull the control handle up or back. Splitting wedge moves toward the cylinder. The control handle will lock in the disengage position, and will return to neutral automatically when the disengage stroke is complete.

BEAM LOCKS

There are two beam locks one for each operating position. See Figure 5 for the locations.

Vertical: The vertical beam lock is located next to the oil filter.

Horizontal: The horizontal beam lock is part of the beam support latch bracket. Refer to Figure 2 for location.

SECTION 10: OPERATION

BEFORE EACH USE

1. Remove the vent plug and check the fluid level. Fluid level should be 1-1/2" to 2" from the top of the tank.
2. Check the engine oil level as instructed in the separate engine owners manual shipped with you log splitter.

IMPORTANT: Reservoir tank must be full as instructed. Low fluid level will damage the pump and void your warranty.

3. Lubricate the beam area where splitting wedge will slide with engine oil (DO NOT USE GREASE). Make certain to oil both front and back of the beam face.
4. Fill gasoline tank as instructed in separate engine owners manual shipped with your log splitter.
5. Make sure fuel shut-off located under gasoline tank is open (if so equipped).
6. Make sure spark plug wire is attached to spark plug.

USING THE LOG SPLITTER

Never attempt to cut a log in half sideways. Always split the log lengthwise. Maximum length of log to be split is 24".

WARNING: When splitting heavy logs, always use the log splitter in the vertical position.

WARNING: Wear leather work gloves, safety shoes and safety glasses when operating log splitter. Ensure safe footing.

1. Place the log splitter on level, dry and solid ground.
2. Place the beam in either the horizontal or vertical position and lock in place with the appropriate locking rod.
3. Place a chock (block) in front and back of both wheels.
4. Set the engine throttle at maximum speed.
5. Place the log against the end plate. Only split wood in the direction of the grain.
6. When necessary to stabilize the log, place your hand only on sides of log, NEVER on the end between the log and splitting wedge.
7. ONLY ONE ADULT SHOULD STABILIZE THE LOG AND OPERATE THE CONTROL HANDLE so the operator has full control over stabilizing the log and movement of the splitting wedge.

STARTING THE ENGINE

IMPORTANT: Refer to the separate engine manual for detailed starting instructions for your model.

1. Place the engine shut-off switch in ON position or move throttle control lever to FAST position.

Engines with choke lever: Place choke lever in CHOKE position (a warm engine may not require choking).

Engines with primer: Prime engine as instructed in separate engine manual.

2. Grasp starter handle and pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly.

WARNING: When restarting a warm engine, keep away from muffler and other heated surfaces on the engine.

3. Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on the starter handle. Let the rope rewind slowly. Do not let starter handle snap back against starter.
4. Repeat preceding instructions until engine fires. When engine starts, move choke lever halfway between CHOKE and RUN.
5. Gradually move choke lever to RUN position as engine warms up.
6. If weather is cold, run wedge up and down beam 6 to 8 times to circulate the hydraulic fluid.

TO STOP ENGINE

1. Move the engine shut-off switch to the OFF position or move throttle control to STOP position.
2. After engine has stopped, disconnect spark plug wire from spark plug to prevent accidental starting while equipment is unattended.

OPERATING POSITIONS

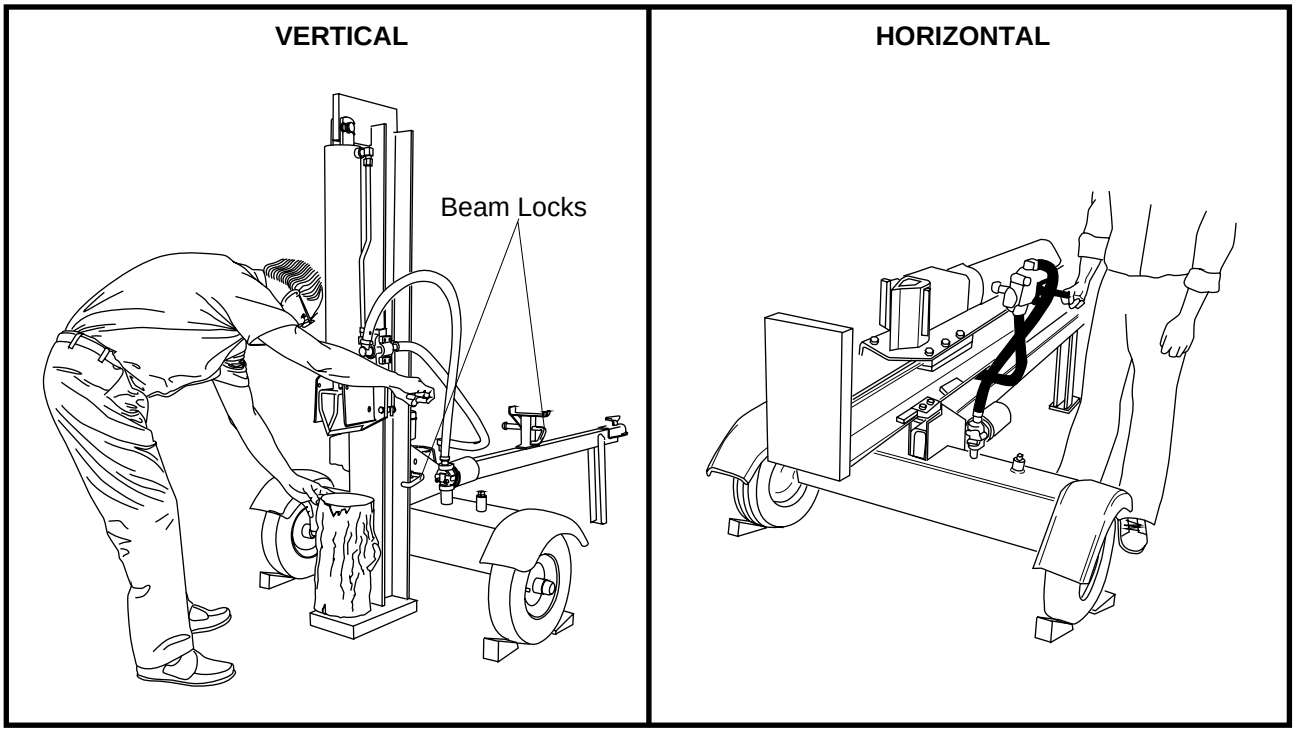


Figure 5 *

* Figure 5 shows optional fenders not all unit are equipped with fenders.

VERTICAL

- For vertical operation, pull the horizontal beam lock out and pivot it down to release the beam. Pivot the beam to the vertical position.
- Lock the beam in the vertical position, by pulling out on the vertical beam lock and pivoting it to the left.
- Stand in front of the log splitter. Operate the control handle with your right hand and stabilize the log, if necessary, with your left hand. See Figure 5.

HORIZONTAL

- For horizontal operation, pull the vertical position release rod out and pivot it down to release the beam. Pivot the beam to the horizontal position.
- Lock the beam in the horizontal position, by pulling out on the horizontal beam lock and pivoting it to the left.
- Stand behind the reservoir tank. Operate the control handle with your right hand and stabilize the log, if necessary, with your left hand. See Figure 5.

CONTROL HANDLE POSITIONS

- Move control handle FORWARD or DOWN to split wood.
- Release the control handle to stop the wedge movement.
- Move control handle BACK or UP to return the wedge.

TRANSPORTING THE LOG SPLITTER

1. Lower the beam to its horizontal position. Make certain the beam is locked securely with the horizontal beam lock.
2. Remove the quick release pin which secures the jack stand. Support the tongue, and pivot the jack stand up against the tongue. Secure with the quick release pin.
3. Attach the hitch to a towing vehicle, making certain to latch securely.
4. Attach the safety chains to the towing vehicle.

SECTION 11: ADJUSTMENTS

WARNING: Always stop the engine and disconnect the spark plug wire before performing any adjustments.

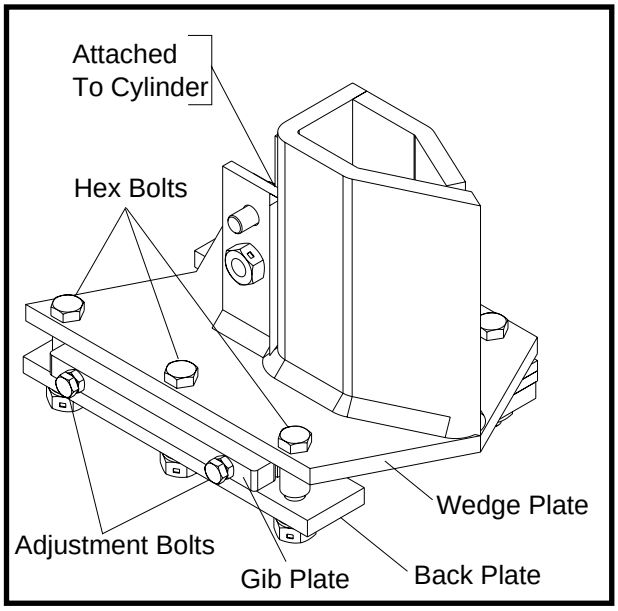


Figure 6

WEDGE PLATE ADJUSTMENT

As normal wear occurs, periodically adjust the bolts on the side of the wedge plate as follows to eliminate the excess space between the wedge plate and the beam. See Figure 6.

Adjust wedge plate as follows:

1. Loosen the three hex bolts on top of the wedge plate (beneath the splitting wedge).
2. Loosen the jam nuts on the two adjustment bolts on the side of the gib plate, located beneath the splitting wedge. Turn the adjustment bolts in until snug, then back them off slowly until the wedge assembly will slide on the beam.
3. Tighten the jam nuts securely against the gib plate to hold the adjustment bolts in this position.
4. Retighten the three hex bolts on top of the wedge plate

GIB PLATE ADJUSTMENT

Periodically remove and replace the “gibs” (spacers) between the wedge plate and the back plate as follows. See Figure 6.

NOTE: If desired, the gibs may be rotated and/or turned over for even wear.

1. Remove the center bolt on top of the wedge plate. Slide the gib plate out.
2. Remove and replace the gibs. Reassemble the gib plate, making certain flat washers are in place under the gib plate.
3. Readjust the bolts on the side of the wedge plate as instructed above.

SECTION 12: MAINTENANCE

WARNING: Always stop the engine and disconnect the spark plug wire before performing any maintenance or repairs.

RESERVOIR FLUID

Check the hydraulic fluid level in the log splitter reservoir tank before each use. Fluid level should be 1-1/2" to 2" from the top of the tank.

Change the hydraulic fluid in the reservoir every 100 hours of operation. Disconnect the suction hose from the bottom of the reservoir tank, and drain the fluid into a suitable container. Refill using only Dexron III automatic transmission fluid or 10W non-foaming hydraulic fluid.

NOTE: Drain the fluid and flush the reservoir tank and hoses with kerosene whenever any repair work is performed on the tank, hydraulic pump or valve. Contaminants in the fluid will damage the hydraulic components. (Should be performed by an authorized service dealer.)

WARNING: Use extreme caution when working with kerosene, as it is an extremely flammable fluid.

HYDRAULIC FILTER

Change the hydraulic filter every 50 hours of operation. Use only a 10 micron hydraulic filter. Order part number 723-0405.

BEAM AND SPLITTING WEDGE

Lubricate both sides of the beam where it contacts the splitting wedge with engine oil before each use to obtain years of service. However, normal wear will occur. The wedge plate on the log splitter is designed so the gibs on the side of the wedge plate can be easily removed and rotated and/or turned over for even wear. Make certain to readjust the adjustment bolts so wedge moves freely, but no excess space exists between the wedge plate and beam.

HOSE CLAMPS

Check the hose clamps on the suction hose (attached to side of the pump) for proper tightness before each use. Check the hose clamps on the return hose at least once a season.

ENGINE

Refer to the separate engine manual for all engine maintenance instructions.

FLEXIBLE PUMP COUPLER

The flexible pump coupler is a nylon ‘‘spider’’ insert, located between the pump and engine shaft. Over a period of time, the coupler will harden and deteriorate.

Replacement is needed if you detect vibration or noise coming from the area between the engine and the pump. If the coupler fails completely, you will experience a loss of power.

IMPORTANT: Never hit the engine shaft in any manner, as a blow will cause permanent damage to the engine.

When replacing the flexible pump coupler, proceed as follows. Follow the instructions carefully as the alignment is critical.

1. Disconnect the spark plug wire, and secure it away from the spark plug.
2. Drain gasoline from fuel tank or place a piece of plastic film underneath the gas cap to prevent gasoline from leaking.
3. Using a 1/2 inch socket with an extension, remove the three bolts securing the engine to the engine mounting bracket. The three bolts can be found under the engine mounting bracket.
4. Carefully lift engine off mounting bracket and set aside on a sturdy, level surface.
5. Remove the nylon “spider” insert from the pump coupling half. You may need a pair of needle nose pliers to grasp the insert.
6. Place a new “spider” insert into the pump coupling half.
7. Re-seat the engine making sure to align the pump and engine coupling halves. The pump coupling half can be rotated by hand to aid in alignment. If the two parts are not aligned the unit will not operate properly and damage could occur.
8. Secure engine with three bolts removed in step 3.
9. Reattach spark plug wire to spark plug. Be sure to remove plastic film from under gas cap if necessary.

TIRES

See sidewall of tire for recommended pressure. Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on all tires.

WARNING: Excessive pressure (over 30 p.s.i.) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

SECTION 13: OFF-SEASON STORAGE

If the log splitter will not be used for a period longer than 30 days, the following steps should be taken to prepare the log splitter for storage.

1. Clean the engine and the entire log splitter thoroughly.
2. Refer to the engine manual for correct engine storage instructions.
3. Wipe unit with an oiled rag to prevent rust, especially wedge and beam.
4. Store unit in a clean, dry area. Do not store next to corrosive materials, such as fertilizer.

NOTE: When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment by coating with a light oil or silicone.

SECTION 14: TROUBLE SHOOTING GUIDE

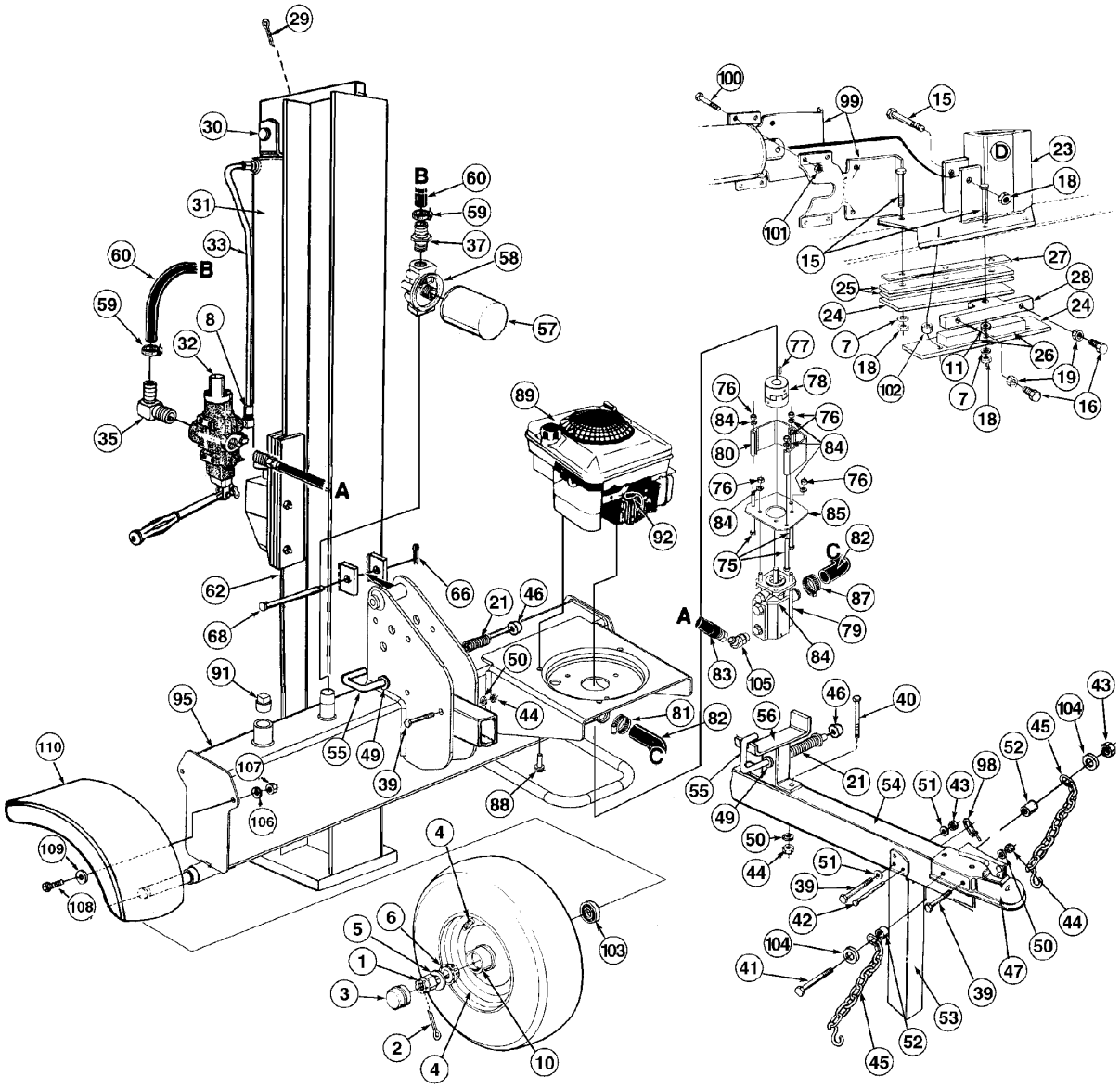
Problem	Possible Cause(s)	Corrective Action
Engine fails to start	Dirty air cleaner.	Refer to the engine manual packed with your unit.
	Fuel shut-off valve closed (if so equipped).	Open fuel shut-off valve.
	Fuel tank empty, or stale fuel.	Fill tank with clean fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used.
	Choke not in ON position.	Move switch to ON position.
	Blocked fuel line.	Clean fuel line.
	Spark plug wire disconnected.	Connect wire to spark plug.
	Faulty spark plug.	Clean, adjust gap or replace.
Engine runs erratic	Unit running on CHOKE.	Move choke lever to OFF position.
	Spark plug wire loose.	Connect and tighten spark plug wire.
	Blocked fuel line or stale fuel.	Clean fuel line; fill tank with clean fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used.
	Water or dirt in fuel system.	Drain fuel tank. Refill with fresh fuel.
	Dirty air cleaner.	Refer to the engine manual packed with your unit.
	Carburetor out of adjustment.	Refer to the engine manual packed with your unit.
Engine overheats	Engine oil level low.	Fill crankcase with proper oil.
	Dirty air cleaner.	Refer to the engine manual packed with your unit.
	Air flow restricted.	Stop engine and disconnect spark plug wire. Remove blower housing and clean.
	Carburetor not adjusted properly.	Refer to the engine manual packed with your unit.
Will not split logs	Reservoir fluid level low.	Check and fill reservoir tank as instructed in Operation section of this manual.
Leaking cylinder	Broken seals.	Return unit for authorized repair.
	Scored cylinder.	Return unit for authorized repair.

Note: For repairs beyond the minor adjustments above, contact your local authorized service dealer.

SECTION 15: HYDRAULIC TROUBLE SHOOTING GUIDE

Trouble	Possible Causes	Corrective Action
Cylinder rod will not move	Broken drive shaft.	Return unit for authorized repair.
	Shipping plugs left in hydraulic hoses.	Disconnect hydraulic hoses, remove shipping plugs, reconnect hoses.
	Set screws in coupling not adjusted properly.	See operator's manual for correct adjustment.
	Loose shaft coupling.	Correct engine/pump alignment as necessary. See operator's manual.
	Gear sections damaged.	Return unit for authorized repair.
	Damaged relief valve.	Return unit for authorized repair.
	Hydraulic lines blocked.	Flush and clean hydraulic system.
	Incorrect oil level.	Check oil level.
	Damaged directional valve.	Return unit for authorized repair.
	Blocked directional valve.	Flush and clean hydraulic system; return unit for authorized repair.
Slow cylinder shaft speed while extending and retracting	Gear sections damaged.	Return unit for authorized repair.
	Excessive pump inlet vacuum.	Make certain pump inlet hoses are clear and unblocked-use short, large diameter inlet hoses.
	Slow engine speed.	Return unit for authorized repair.
	Damaged relief valve.	Return unit for authorized repair.
	Incorrect oil level.	Check oil level.
	Contaminated oil.	Drain oil, clean reservoir, refill, make certain oil return tube is below oil level.
	Directional valve leaking internally.	Return unit for authorized repair.
	Internally damaged cylinder.	Return unit for authorized repair.
Engine runs but wood will not split, or wood splits too slowly	Small gear section damaged.	Return unit for authorized repair.
	Pump check valve leaking.	Return unit for authorized repair.
	Excessive pump inlet vacuum.	Make certain pump inlet hoses are clear and unblocked; use short, large diameter inlet hoses.
	Incorrect oil level.	Check oil level.
	Contaminated oil.	Drain oil, clean reservoir, refill, make certain oil return tube is below oil level.
	Directional valve leaking internally.	Return unit for authorized repair.
	Overloaded cylinder.	Do not attempt to split wood against the grain.
	Internally damaged cylinder.	Return unit for authorized repair.
Engine stalls during splitting	Low horsepower/weak engine.	Return unit for authorized repair.
	Overloaded cylinder.	Do not attempt to split wood against the grain. If engine stalls repeatedly, take unit for authorized repair.
Engine will not turn or stalls under low load conditions	Engine/pump misalignment.	Correct alignment as necessary. See operator's manual.
	Frozen or seized pump.	Return unit for authorized repair.
	Low horsepower/weak engine.	Return unit for authorized repair.
	Hydraulic lines blocked.	Flush and clean hydraulic system.
	Blocked directional valve.	Flush and clean hydraulic system; return unit for authorized repair.
Leaking pump shaft seal	Broken drive shaft.	Return unit for authorized repair.
	Engine/pump misalignment.	Correct alignment as necessary. See operator's manual.
	Gear sections damaged.	Return unit for authorized repair.
	Poorly positioned shaft seal.	Return unit for authorized repair.
	Plugged oil breather.	Make certain reservoir is properly vented.

SECTION 16: ILLUSTRATED PARTS LIST



REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
1	712-0359		Slotted Nut 3/4-16 Thd.	52	750-0497		Spacer 3/8" I.D. x .625" O.D.
2	714-0162		Cotter Pin 5/32" Dia. x 1-1/4" Lg.	53	781-0162		Jack Stand
3	734-0873		Hub Cap	54	781-0680		Tongue Tube
4	734-1016		Wheel Ass'y. Comp.	55	781-0690		Locking Rod
	734-0872		Tire Only	56	781-0398		Beam Support Ass'y.
	734-1017		Rim Only	57	723-0405		Filter Element
	721-0168		Bearing Seal Only	58	723-0406		Filter Head
	734-0255		Air Valve Only	59	726-0132		Hose Clamp 5/8"
5	736-0351		Fl-Wash. .76" I.D. x 1.5" O.D.	60	727-0443		Return Hose 3/4" I.D. x 44" Lg.
6	741-3028		Bearing Cone	62	681-0093		Vertical Beam Ass'y.
7	736-0921		L-Wash. 1/2" I.D.*	66	714-0470		Cotter Pin 1/8" Dia.
8	737-0192		90° Solid Male Adapter	68	738-0805		Hinge Pin 1/2 x 4.8" Lg.
10	741-3029		Bearing Cup	75	710-1338A		Hex Bolt 5/16-24 x 3.25" Lg.
11	736-0192		Fl-Wash. .531" I.D. x .94" O.D.	76	712-0123		Hex Nut 5/16-24 Thd.
15	710-1018		Hex Bolt 1/2-20 x 2.75" Lg. (Grd 8)	77	714-0122		Sq.-Key 3/16" x .75"
16	710-1032		Hex Bolt 3/8-24 x 1.5" Lg.	78	718-0250A		Flexible Coupling
18	712-0239		Hex L-Nut 1/2-20 Thd.	79	718-0476		Gear Pump
19	712-3001		Hex Jam Nut 3/8-24 Thd. (Grd 5)	80	719-0353		Coupling Shield
21	732-0583		Comp. Spring 4" Lg.	81	726-0174		Hose Clamp
23	781-0323B		Wedge Ass'y.	82	735-0256		Suction Hose
24	781-0537		Back Plate	83	727-0502		High Pressure Hydraulic Hose
25	781-0350A		Fixed Side Gib	84	736-0119		L-Wash. 5/16" I.D.*
26	781-0351		Adj. Gib .625 x .625 x 2.00	85	781-0097		Rear Coupling Support Brkt.
27	781-0352A		Adjustable Gib Shim	87	726-0174		Hose Clamp
28	781-0356		Floating Gib Plate	88	710-0654A		Hex Wash Hd. TT-Tap Scr. 3/8-16 x 1" Lg.
29	714-0211		External Cotter Pin				
30	715-1135		Cylinder Mounting Pin	89	—		Engine
31	718-0307		Hydraulic Cylinder	91	737-0236		L-Vent Pipe Plug
32	718-0481		Control Valve	92	735-0639		Spark Plug Boot
33	727-0471		Metal Pressure Tube	95	681-0092A		Tank Ass'y.
35	737-0153		Return Elbow	98	732-0194		Spring Pin
37	737-0235		3/4" Hose Barb.	99	781-0168A		Stripper Plate
39	710-0521		Hex Bolt 3/8-16 x 3" Lg.	100	710-3144		Hex Bolt 3/8-16 x 2.0" Lg. (Gr. 5)
40	710-0411		Hex Bolt 3/8-16 x 4" Lg.	101	712-0130		Hex L-Nut 3/8-16 Thd.
41	710-0944		Hex Bolt 3/8-16 x 4" Lg. (Grd 5)	102	750-0743		Spacer 1/2" I.D. x .68" Lg.
42	711-0813		Clevis Pin 5/16 x 2.5" Lg.	103	721-0168		Bearing Seal Only
43	712-0375		Hex L-Nut 3/8-16 Thd.	104	736-0262		Fl-Wash. 3/8" I.D. x .87" O.D.
44	712-0798		Hex Nut 3/8-16 Thd.*	105	737-0329		45 degree Elbow
45	713-0433		Chain—Tow Hitch	106	736-0119		L-Wash. 5/16" I.D.
46	726-0214		Push Cap	107	712-0123		Hex nut 5/16-24Thd.
47	727-0311		Hitch Coupler	108	710-0157		Hex Bolt (5/16-24 x .75" Lg.
49	736-0116		Fl-Wash. .635" I.D. x .93" O.D.	109	736-0159		Fl-Wash .344" I.D. x .875" O.D.
50	736-0169		L-Wash. 3/8" I.D.*	110	681-0138		Fender
51	736-0185		Fl-Wash. .406" I.D. x .75" O.D.				

MANUFACTURER'S LIMITED WARRANTY FOR:

YARD MACHINES by MTD®

For TWO YEARS from the date of retail purchase within the United States of America, its possessions and territories, MTD PRODUCTS INC will, at its option, repair or replace, for the original purchaser, free of charge, any part or parts found to be defective in material or workmanship. This warranty covers units which have been operated and maintained in accordance with the operating instructions furnished with the unit, and which have not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance or alteration.

Normal wear parts or components thereof are subject to separate terms as noted below in the "No Fault Ninety Day Consumer Warranty" clause.

All normal wear part failures will be covered on this product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear parts failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts are defined as batteries*, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires.

How to obtain service: Warranty service is available, with proof of purchase, through your local authorized service dealer. To locate the dealer in your area, please check the yellow pages or contact the Customer Service Department of MTD PRODUCTS INC, P. O. Box 368022, Cleveland, Ohio 44136-9722. Phone 1 (800) 800-7310. The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by the Customer Service Department of MTD PRODUCTS INC.

Transportation charges: Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser.

Units exported out of the United States: MTD PRODUCTS INC does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD PRODUCTS INC's authorized channels of export distribution.

Other Warranties:

1. The engine or component parts thereof carry separate warranties from their manufacturers. Please refer to the applicable manufacturer's warranty on these items.
2. *Batteries are covered by a 90-day replacement warranty.
3. Log splitter pumps, valves and cylinders or component parts thereof are covered by a one year warranty.
4. All other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose, are hereby expressly disclaimed in their entirety.
5. The provisions as set forth in this warranty provide the sole and exclusive remedy of MTD PRODUCTS INC's obligations arising from the sales of its products. MTD PRODUCTS INC will not be liable for incidental or consequential loss or damage.

How state law relates to this warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Certain disclaimers are not allowed in some states and therefore they may not apply to you under all circumstances.

NOTE: This warranty does not cover routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments. Nor does this warranty cover normal deterioration of the exterior finish due to use or exposure.