

LOG SPLITTER BE-LS22TL BE-LS28TL BE-LS34TL



OPERATIONS & PARTS MANUAL

PURCHASE DATE	MODEL NO.	SERIAL NUMBER
DEALER		

TABLE OF CONTENTS

- **3** IMPORTANT SAFETY INFORMATION
- 4 SAFETY DECALS
- **5** SAFETY INFORMATION
- 7 PRE-OPERATION
- 12 UNPACKING THE CONTAINER
- 14 ASSEMBLY
- 21 SET-UP
- 23 OPERATION
- **27** MAINTENANCE & ADJUSTMENTS
- **29** TROUBLESHOOTING
- **30** SPECIFICATIONS
- 31 BREAKDOWN
- 34 PACKING LIST

INTRODUCTION

Thank you for purchasing a BE Log Splitter. It was carefully engineered to provide excellent performance when properly operated and maintained.

Please read this entire manual prior to operating the equipment. It instructs you how to safely and easily set up, operate and maintain your machine. Please be sure that you, and any other persons who will operate the machine, carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury or property damage.

All information in this manual is relative to the most recent product information available at the time of printing. Review this manual frequently to familiarize yourself with the machine, its features and operation. Please be aware that this Operator's Manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable to all models.

We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

If applicable, the power testing information used to establish the power rating of the engine equipped on this machine can be found at the engine manufacturer's manual or website.

Throughout this manual, all references to right and left side of the machine are observed from the operating position. The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Operations & Parts Manual, packed separately with your machine, for more information.

IMPORTANT SAFETY INFORMATION

WARNING: Read and thoroughly understand all instructions in this manual and on safety decals before assembling or operating this log splitter. Failure to do so may cause serious injury or death. Do not allow anyone can be dangerous if assembled or used improperly. Do not operate this log splitter if you have any questions concerning safe operation.



This SAFETY ALERT SYMBOL identifies important safety messages in this manual. Failure to follow this important safety information may result in serious injury death.

CALIFORNIA PROPOSITION 65

A WARNING:

Engine Exhaust, some of its constituents and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

This machine was built to be operated according to the safe operation practices in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing debris.

Failure to observe the following safety instructions could result in serious injury or death.

The following signal words and meanings are intended to explain the levels of risk associated with this product:

A DANGER

Indicates a hazardous situation which, if not followed, will result in serious injury or death.

WARNING

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

Indicates a hazardous situation which, if not followed, could result in minor to moderate injury.

A NOTICE

Is important information about the proper use of your machine. Failure to follow this instruction could result in damage to your machine or property.

SAFETY DECALS

Make sure that all safety warning decals are in good condition and readable.

Always replace missing or defaced decals. Contact an authorized service dealer for replacement decals.

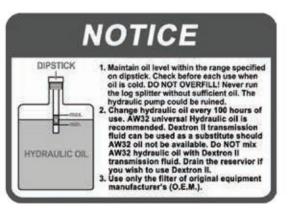


WARNING!

To minimize risk of serious njury or death to you or others, when towing this

- log splitter: Read instruction manual for how to properly attach coupler to hitch ball and
- how to tow safely. Never attempt to move this machine over uneven or hilly terrain without a tow vehicle or adequate help
- Use the ball of correct size. Ose the ball of correct size
 O not exceed weight
 capacity of ball or load
 limits of coupler.
 Always use safety chains.
- Never exceed 45 mph.
- Avoid sharp turns and
- steep angles. Make sure of the coupler tightness each time before towing and after towing 50 mile
- Replace damaged ball or coupler immediatly.





SAFETY INFORMATION

This page depicts and describes safety symbols that may appear on this product. Read, understand and follow all instructions on the machine before attempting to assemble and operate.

Symbol	Description
	READ THE OPERATOR'S MANUAL(S) Read, understand, and follow all instructions in the manual(s) before attempting to assemble and operate.
	FACE PROTECTION Always wear safety goggles or safety glasses with side shields, earplugs and a face shield when operating this product.
	WARNING— MOVING WEDGE Keep hands away from wedge, moving part, end plate, and partially split wood.
	BYSTANDERS Keep bystanders, helpers and children at least 25 feet away.
<u>, </u>	SINGLE OPERATOR Only one person should operate the machine at a time. The adult who loads and stabilizes the log must be the person who operates control handle.
X	WARNING— PRESSURIZED FLUID Never check for hose leaks with your hands. High pressure fluid can escape through a pin hole leak and cause serious injury by puncturing the skin and causing blood poisoning.
	WEAR GLOVES Always wear nonslip, heavy-duty protective gloves when operating this product.
()	WEAR SAFETY FOOTWEAR Always wear nonslip steel-toed safety footwear when operating this product.
far High	WARNING—GASOLINE IS FLAMMABLE Allow the engine to cool at least ten minutes before refueling.
	WARNING— CARBON MONOXIDE Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
millifidifian	WARNING— HOT SURFACE Engine parts, especially the muffler, become extremely hot during operation. Allow engine and muffler to cool before touching.

A 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.

TRAINING

- Read, understand and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual safe place for future and regular reference and for ordering replacement parts.
- Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
- Never allow children under 18 years of age to operate this machine. Children 16 and over should read and understand the instructions and safe operation practices in this manual and on the machine and be trained and supervised by an adult.
- Never allow adults to operate this machine without proper instruction.
- Many accidents occur when more than one person operate the machine. No helpers is allowed to assist in stacking logs.
- Keep bystanders, pets and children at least 25 feet from the machine while it is in operation.
- Never allow anyone to ride on this machine.
- Never transport cargo on this machine.
- Hydraulic log splitters develop high fluid pressures during operation. Fluid escaping through a pin hole opening can penetrate your skin and cause blood poisoning, gangrene or death. Give attention to the following instructions at all times:
 - 1) Do not check for leaks with your hand.
 - 2) Do not operate machine with frayed, kinked, cracked or damaged hoses, fittings or tubing.
 - 3) Stop engine and relieve hydraulic system pressure by cycling the valve control lever from forward to reverse several times while engine is not running; returning to neutral before repairing or adjusting fittings, hoses, tubing or other system components.
 - 4) Do not adjust the pressure settings of the pump or valve.
- Leaks can be detected by passing cardboard or wood, while wearing protective gloves and safety glasses, over the suspected area. Look for discoloration of cardboard or wood.
- If injured by escaping fluid, see a doctor immediately. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
- Keep the operator zone and adjacent area clear for safe, secure footing.
- If your machine is equipped with an internal combustion engine and is intended for use near any unimproved forest, brush or grass covered land, the engine exhaust should be equipped with a spark arrestor. Make sure you comply with applicable local, state and federal codes. Take appropriate firefighting equipment with you.

A NEVER

Use this log splitter for any purpose other than splitting wood, It is designed for this use can cause serious injury or death.

PRE-OPERATION

- **BEFORE** operating this log splitter, make sure that you wear safety goggles or safety glasses, steel toed shoes and tight-fitting gloves (without loose cuffs or draw strings). Always wear a protective hearing device when operating this log splitter.
- **NEVER** wear loose clothing or jewelry that can be caught by moving parts of the log splitter. Keep clothing and hair away from all moving parts when operating this log splitter.
- Check all safety guards and shields to be sure they are in the proper position. Never operate with safety guards, shields or other protective features removed.
- Make sure machine is on a flat, dry, solid ground before operating.
- ALWAYS operate your log splitter in an open area. (Exhaust fumes contain carbon monoxide which can be deadly when inhaled).
- ALWAYS operate your log splitter in daylight or under good artificial light.
- ALWAYS operate your log splitter on level ground. (Operating on a slope could cause the log splitter to roll over or logs to fall off).
- ALWAYS block wheels to prevent unintended movement.
- **ALWAYS** keep the work area clean. Remove split wood around the log splitter immediately so that you don't stumble over it.
- Check all nuts, bolts and hydraulic fittings are tight to be sure the equipment is in a safe working condition.
- Both ends of the log should be cut as square as possible to help prevent the log from riding out of the splitter during operation. Do not split logs greater than 20.5 inches in length. Uneven logs (e.g., knotted, curved, etc.) should not be used.
- ALWAYS check the oil level before you start the log splitter.
- Do not allow familiarity with tools to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.

The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool, always wear safety goggles or safety glasses with side shields and when needed, wear a full-face shield and earplugs. We recommend a Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always use eye protection marked to comply with ANSI Z87.1.

- **BEFORE** starting this machine, review the safe instructions in the manual. Failure to follow these rules may resulting in serious injury to the operator or bystanders.
- NEVER leave this machine unattended with the engine running.
- **DO NOT** operate machine while under the influence of alcohol, drugs or medication.
- NEVER allow anyone to operate this machine without proper instruction.
- **ALWAYS** operate this machine with all safety equipment in place and working, make sure all controls are properly for safe operation.
- When loading a log, always place your hands on the side of the log, not on the ends and never use your foot to help stabilize a log. Failure to do so may result in crushed or amputated fingers, toes, hand or foot.
- **NEVER** use your foot, a rope or any extension device to operate the control lever on the valve. Only use hand.
- Use only your right hand to operate the controls.

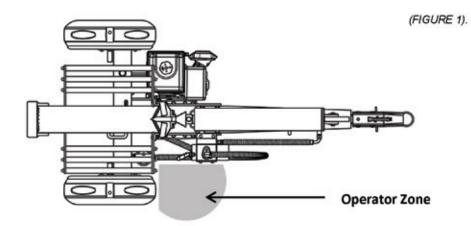
When stabilize log with left hand, remove your hand when the wedge just contacts the log or serious injury may occur.

- For logs which are not cut square, the least square end of the log should be placed toward the beam andwedge, and the square end placed toward the end plate.
- **NEVER** place hands or feet between the log and splitting wedge during forward or reverse stroke as this could result in serious injury or death. NEVER attempt to load the log splitter when the ram or wedge is in motion.
- ALWAYS Keep fingers away from any cracks that open in the log while splitting. They can quickly close and pinch or amputate your fingers.
- Keep your work area clean. Immediately remove split wood around the machine so you don't stumble over it.
- **NEVER** straddle or step over the log splitter during operation.
- **NEVER** reach or bend over the log splitter to pick up a log.
- NEVER try to split two logs on top of each other. NEVER try to cross split a log.
- NEVER operate your log splitter when it is poor mechanical condition or in need of repair.
- **NEVER** touch the muffler and other hot areas of the engine during operation. Wait until the engine cools down.
- **NEVER** tamper with the engine to run it at excessive speeds. The maximum engine speed is preset by the manufacturer and is within limits. Refer to the engine owner's manual for your particular log splitter.
- **NEVER** move the log splitter while the engine is running. Shut o the engine if you are leaving the log splitter, even for a short period of time.
- ALWAYS be careful when moving or lifting the log splitter. Get assistance if it feels too heavy to move
- yourself by yourself.

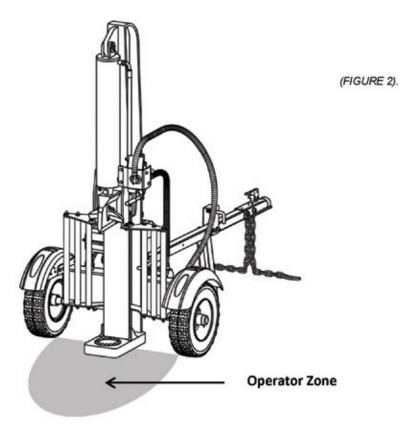
OPERATOR ZONE

ONLY operate the log splitter from the operator zones as shown in the diagram below. The operator has the safest and most efficient access to the control valve and the beam in this location. Operating the log splitter in another location can result in serious injury or death. (See Figure 1).

Horizontal Operating Position: stand on the control lever side of the log splitter and stabilize log as shown. See Figure 1.



Vertical Operating Position: stand on the control lever side of the log splitter and stabilize log as shown. See Figure 2.



MAINTENANCE SAFETY

- Stop the engine, disconnect the spark plug and ground it against the engine before cleaning or inspecting the machine.
- NEVER perform any service or repair on your log splitter without first removing the spark plug wire.
- Stop the engine and relive hydraulic system pressure by cycling the valve control lever from forward to reverse several times while engine is not running; returning to neutral before repairing or adjusting fittings, hoses, tubing or other system components.
- ALWAYS perform all recommended maintenance procedures before using your log splitter.
- ALWAYS check the level of hydraulic oil and engine oil before operation.
- ALWAYS periodically check that all nuts, bolts, screws, hydraulic fittings and hose clamp are tight to be sure equipment is in safe working condition.
- ALWAYS replace all damaged or worn parts immediately with original equipment manufacturer's (O.E.M.) parts only. Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety.
- The hydraulic system of your log splitter requires careful inspection along with the mechanical parts. Be sure to replace frayed, kinked, cracked or otherwise damaged hydraulic hoses or hydraulic components.
- **NEVER** check for leaks of hydraulic fluid with your hand. Fluid escaping from a small hole can be almost invisible. Escaping fluid under pressure can have sufficient force to penetrate skin causing SERIOUS INJURY or even DEATH. Leaks can be safely detected by passing a piece of cardboard over the suspected leak and looking for discoloration.
- **NEVER** remove the cap from hydraulic tank or reservoir while the log splitter is running. The tank could contain hot oil under pressure which could result in serious injury.
- **NEVER** adjust the hydraulic valve. The pressure relief valve on your log splitter is pre-set at the factory. Only a qualified service technician should perform this adjustment.
- **ALWAYS** seek professional medical attention immediately if injured by escaping hydraulic fluid. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
- **ALWAYS** be sure to relieve all pressure by shutting off the engine and moving the valve control handle back and forth should it become necessary to loosen or remove any hydraulic fitting.

A NEVER

Alter your log splitter in any manner. Such alterations may cause your log splitter to be unsafe and will void the warranty.

According to the Consumer Products Safety Commission (CPSC) and the U.S. Environmental Protection Agency (EPA), This product has an Average Useful Life of seven (7) years, or 130 hours of operation. At the end of the Average Useful Life have the machine inspected annually by an authorized service dealer to ensure that all mechanical and safety systems are working properly and not worn excessively. Failure to do so can result in accidents, injuries or death.

FIRE PREVENTION

- ALWAYS take a Class B fires extinguisher with when operating this log splitter in dry areas.
- **NEVER** operate your log splitter near a flame or spark or smoke during operation. Extinguish all cigarettes, cigars, pipes and other sources of ignition. Hydraulic oil and gasoline are flammable and can explode.
- To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.
- **ALWAYS** store gasoline in an approved, tightly sealed container and keep away from heating appliances. Store the container in a cool, dry place.
- When gasoline is spilled on yourself or your clothes which can ignite wash your skin and change clothes immediately.
- **NEVER** refuel the gas tank while the engine is hot or running. Allowing the engine to cool before refueling.
- ONLY refuel your log splitter in a clear area with no gas fumes or spilled gas. Never fuel machine indoors.
- Never overfill the fuel tank. Fill tank to no more than 1/2 inch below bottom of filler neck to provide space for fuel expansion.
- If gasoline is spilled out, wipe it off the engine & equipment and move machine to another area. Wait five (5) minutes before starting engine.
- ALWAYS replace the gas cap securely. Never remove gas cap while the engine is hot or running.
- To prevent fires, clean debris and chaff from the engine and muffler area.
- Allow machine to cool at least ten (10) minutes before storing.
- ALWAYS drain the fuel tank prior to storage to avoid the potential fire hazard.
- Never store the machine or fuel container inside where there is an open flame, spark or pilot light as on a water heater, furnace, clothes dryer or other gas appliances.
- If the engine is equipped with a spark arrestor muffler, clean and inspect it regularly according to manufacturer's instructions. Replace if damaged.

SPARK ARRESTOR

This log splitter 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, a spark arrester is required by law. Other states have similar laws. Federal laws apply on federal lands. A spark arrester muffler is optional and available as an accessory at your nearest engine dealer. Always check the legal requirements in your area.

TOWING SAFETY

- NEVER carry any cargo or wood on your log splitter.
- **NEVER** allow anyone to sit or ride on your log splitter.
- **ALWAYS** turn the fuel shaft off valve on the engine to the "OFF" position before towing the log splitter. Failure to do so may result in flooding the engine.
- ALWAYS confirm coupler tightness each time before towing and after towing 50 miles.
- ALWAYS check before towing to make sure that the log splitter is correctly and securely attached to the towing vehicle and that the safety chains are secured to the hitch or bumper of the vehicle with enough slack to allow turning. Always use a Class 1, 2" ball with this log splitter.
- **NEVER** exceed weight capacity of ball or load limits of coupler. ALWAYS replace ball or coupler if damaged.
- **NEVER** exceed 45 MPH when towing your log splitter. Towing the log splitter at speeds higher than 45 MPH could result in loss of control, damage to the equipment, or serious injury or death. Adjust towing speed for terrain and conditions.
- ALWAYS be careful when backing up with your log splitter in tow. IT could jackknife.
- ALWAYS allow for added length of your log splitter when turning, parking and crossing intersections and in all driving situations.
- ALWAYS use safety chains when towing your log splitter.
- Be extra cautious when towing over rough terrain, especially railroad crossings and avoid sharp turns and steep angles when towing your log splitter.
- Never attempt to move this machine over hilly or uneven terrain without a tow vehicle or adequate help.
- ALWAYS disconnect your log splitter from the towing vehicle before operating it.
- ALWAYS check all local and state regulations regarding towing, licensing and lights before towing your log splitter.

This machine should not be towed on any street, highway or public road without checking the existing federal, state or local vehicle requirements. Any licensing or modifications, such as taillights, etc., needed to comply, is the sole responsibility of the purchaser. If a "Statement of Origin" is required in your state, see your local dealer.

UNPACKING THE CONTAINER

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

NOTE: All references in this manual to the left or right side and front or back of the log splitter are from the operating position only. Exceptions, if any, will be specified.

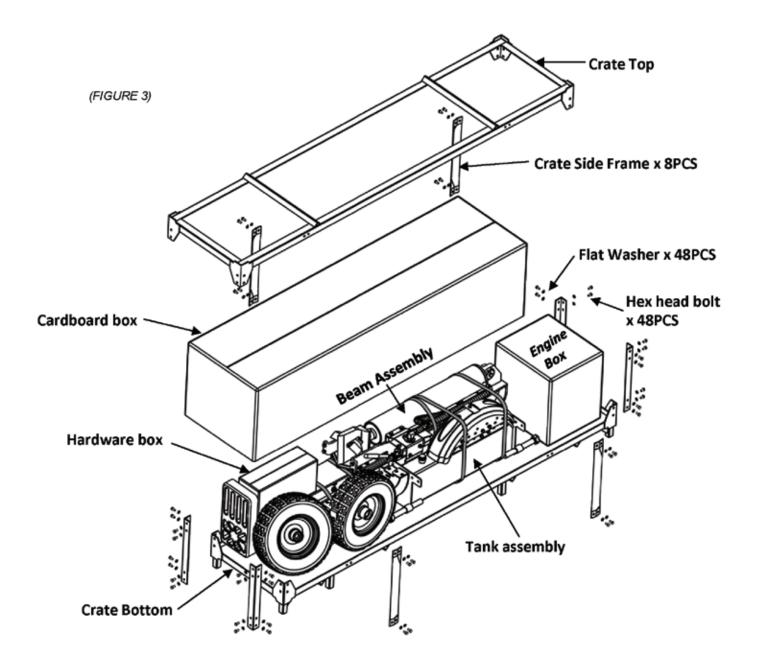
Unpacking Tools Needed:

- 1. Wrench 14mm
- 2. Scissors or knife
- 3. Pry bar or claw hammer

Step 1: Use a 14mm wrench to remove all the bolts and washers on the metal crate, put aside the packing top and side frames, then remove the cardboard box. See Figure 3.

Step 2: Remove all loose parts included in the container, e.g., hardware box.

Step 3: Use scissors or a knife to cut and remove the straps securing the parts to the beam or tank assembly, including fenders, wheels, tongue assembly, log tray assemblies, then put aside these parts for assembly.



NOTE: DO NOT remove the strap securing the hydraulic hose assemblies to the beam at this time, until you do the assembly procedure of the hoses.

Step 4: Use a pry-bar or claw hammer to remove the plywood splinters securing the beam and tank assemblies on the crate bottom. Take out the two assemblies.

Step 5: Inspect all component assemblies, parts and accessories according to the packing list attached in the back of this manual.

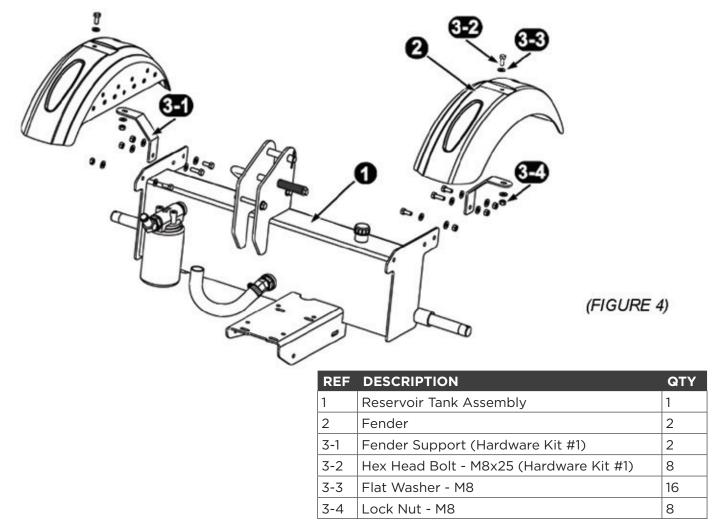
If any parts are damaged or missing, please call the authorized service dealer for assistance.

NOTE: DO NOT discard the packing materials until you have carefully inspected and satisfactorily operated the tool.

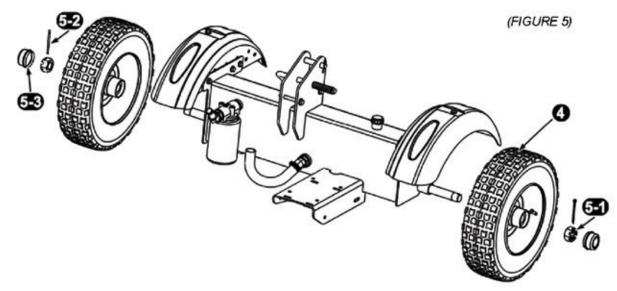
ASSEMBLY

NOTE: Due to the weight/size of the log splitter, it is recommended that two or more adults be present to assist with the assembling. Some lifting tools as hoist, crane, jack, etc. are recommended.

Step 1: Assemble the fenders to the reservoir assembly. See Figure 4.



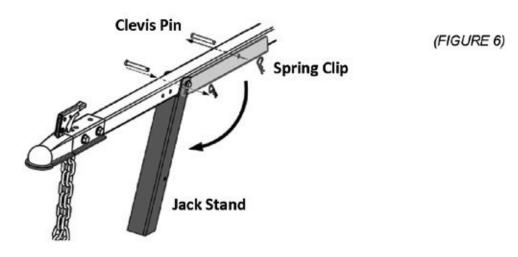
Step 2: IAttach the two wheels to the tank assembly wheels spindles. See Figure 5.



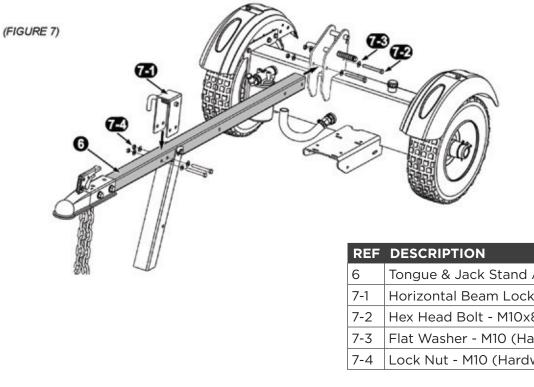
REF	DESCRIPTION	QTY
4	Road-Speed Tire & Wheel	2
5-1	Castle Nut - 1-1/4 (Hardware Kit #2)	2
5-2	Split Pin - Ø4x35 (Hardware Kit #2)	2
5-3	Hub Cap (Hardware Kit #2)	2

Step 3: Attach the tongue and jack stand assembly to the reservoir assembly.

1. Remove the spring clip (\emptyset 3) and clevis pin (\emptyset 6x50) from the jack stand on the tongue, then pivot the jack stand towards the ground into the operating position. Secure the jack stand in position with the clevis pin and spring clip just removed. See Figure 6.



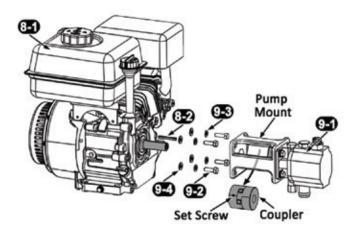
2. Attach the horizontal beam lock to the tongue, then attach the tongue to the reservoir assembly. See Figure 7.



REF	DESCRIPTION	QTY
6	Tongue & Jack Stand Assembly	1
7-1	Horizontal Beam Lock (Hardware Kit #3)	1
7-2	Hex Head Bolt - M10x80 (Hardware Kit #3)	4
7-3	Flat Washer - M10 (Hardware Kit #3)	8
7-4	Lock Nut - M10 (Hardware Kit #3)	4

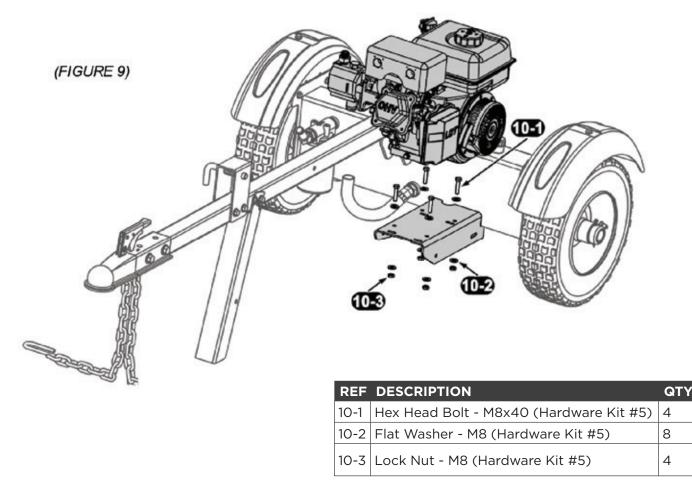
Step 4: Assemble the pump assembly to the engine. See Figure 8.

- 1. Loosen the set screw on the coupler at the engine side.
- 2. Place the engine shaft key into the slot on the engine shaft.
- 3. Insert the engine shaft into the center hole of coupler, pivoting the pump assembly to ensure the engine shaft key to fit in the slot of the coupler center hole. Then tighten the set screw just loosened.
- 4. Rotate the engine shaft to align the fixing holes on both pump mount and engine, ensure the open side of the pump mount facing down as shown in the illustration below, then screw on the hardware and tighten.



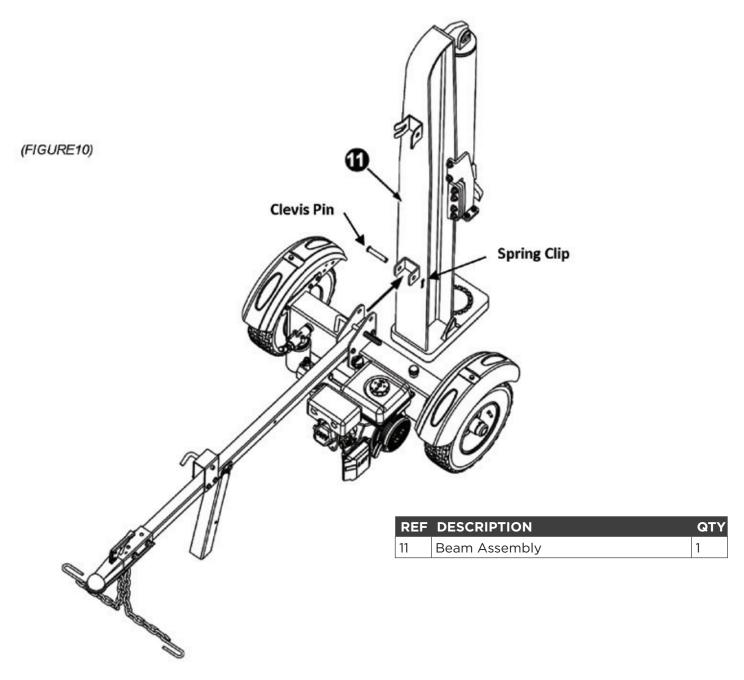
REF	DESCRIPTION	QTY
8-1	Engine (Engine Assembly)	1
8-2	Engine Shaft Key (Engine Assembly)	1
9-1	Two Stage Pump Assembly (Hardware Kit #4)	1
9-2	Hex Head Bolt - 5-16-24 (Hardware Kit #4)	4
9-3	Spring Washer - 5/16 (Hardware Kit #4)	4
9-4	Flat Washer - 5/16 (Hardware Kit #4)	4

Step 4: Attach the engine assembly to the engine mount plate on the reservoir assembly. See Figure 9.



Step 6: Assemble the beam. See Figure 10.

- 1. Stand the beam up on end. Two or more people may be needed for this step to ensure safety. Make sure that the beam is stable and on a level surface.
- 2. Remove the clevis pin and spring pin from the tank brackets. Roll the tongue/tank assembly into position between the two tabs on the beam, Slide the clevis pin through the aligned holes and lock in place with the spring clip.

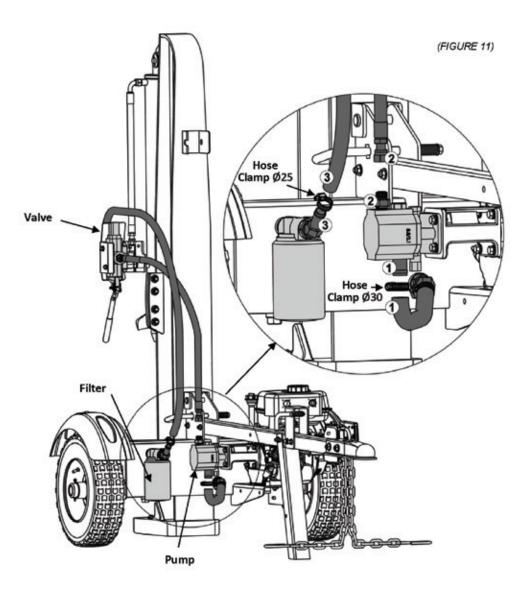


A WARNING

Take extra care when raising and lowering the beam as it is fairly heavy. Having a second person assist with raising or lowering the beam is recommended. Be sure to keep hands away from any possible pinch points. Step 7: Connect the open ends of the hydraulic hoses to their corresponding fittings. See Figure 11.

There are three hydraulic hoses listed below, each of them has one end fixed on the link part assembly at the manufacturer's field, the other open end needs you to attach. For clear view of the hydraulic hoses, the hose protective springs are not shown in the illustration below.

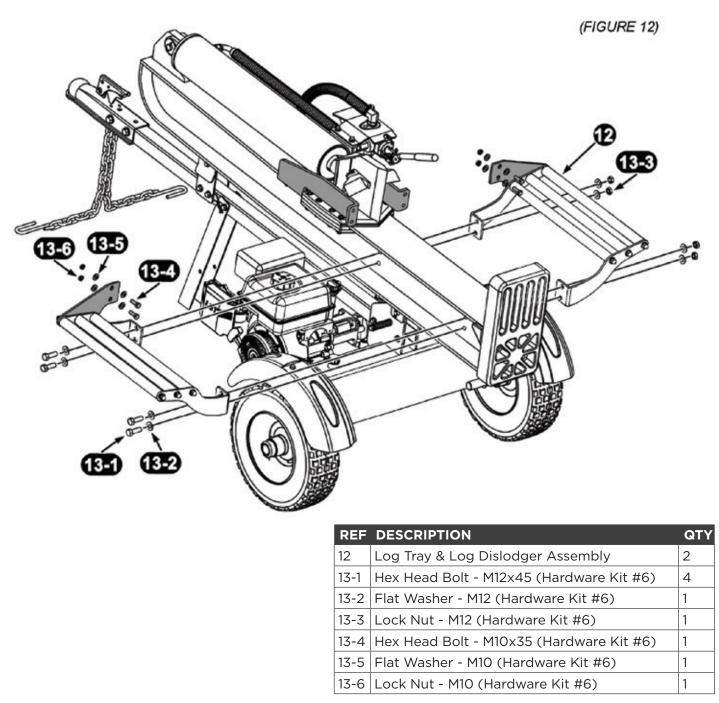
- Oil suction hose / Ø25x310mm, labeled as (1), comes from the tank. Loosen the hose clamp /Ø30 on the open end of this hose, then connect the hose to the fitting on the bottom of the pump, which is labeled of a same (1). Tighten the hose clamp.
- 2. Pump/Valve connecting hose/Ø19x900mm, labeled as (2), comes from the bottom of the valve. Screw the open end of this hose onto the fitting on top of the pump, which is labeled of a same (2).
- 3. Oil return hose/Ø19x1500mm, labeled as (3), comes from the top of the valve. Loosen the hose clamp/Ø25 on the open end of this hose, then connect the hose to the fitting on the filter, which is labeled of a same (3). Tighten the hose clamp.



Step 8: Assemble the log dislodger and log tray. See Figure 12.

1. Attach the log tray to the beam and log dislodger to its link part (see highlighted parts in illustration below).

You could perform this procedure with the beam in horizontal or vertical position.



Step 9: Assemble the control handle. The control handle is shipped hanging from the valve on the handle link. See Figure 13.

- 1. Remove the clevis pin and bow-tie cotter pin from the control handle.
- 2. Rotate the control handle into the operating position and secure with the clevis pin and bow-tie cotter pin removed in step above.

	(FIGURE14)	
REF	DESCRIPTION	QTY
14-1		1
14-2	L-Shape Support	2
14-3	Hex Head Bolt - M8x55	1
14-4	Lock Nut - M8	1
14-5	Hex Head Bolt - M8x25	2
14-6	Spring Washer - M8	2
		2

GAS OIL FILL-UP

Service the engine with gasoline and engine oil as instructed in the engine manual packed with your log splitter. Read the instructions carefully.

WARNING

Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running.

NOTE:

Your log splitter may be shipped without engine oil. You must check the oil level before operating. Be careful not to overfill. Gasoline can be added to the engine when the log splitter is in either the horizontal or vertical position. However, it may be easier when the splitter is in the vertical position.

TIRE PRESSURE

The max recommended operating pressure is 30 psi. Under any circumstances do not exceed the manufacturer's recommended psi. Maintain equal pressure on all tires.

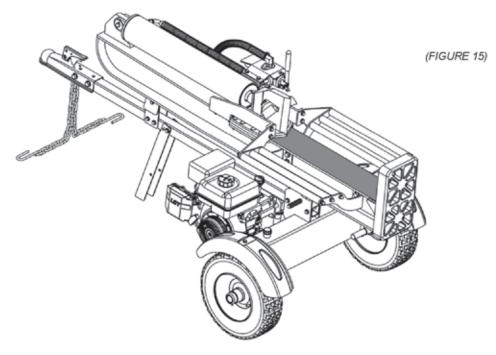
Excessive pressure when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

SET-UP

PREPARING THE LOG SPLITTER

- 1. Lubricate the beam area (where the splitting wedge will slide) with the engine oil. Do not use grease. See Figure 15.
- 2. Fill hydraulic oil before your initial use.

NOTE: The log splitter is shipped without hydraulic fluid in the reservoir. Use the hydraulic oil your dealer provides or buy the hydraulic oil recommended below.

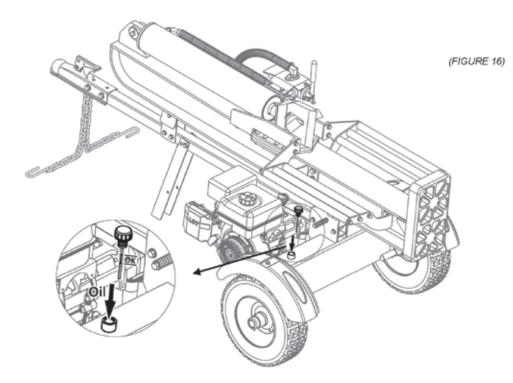


NOTE: Approved fluids include Shell Tellus® S2 M 32 Hydraulic Fluid, Dexron® III / Mercon® automatic transmission fluid, Pro-Select[™] AW-32 Hydraulic Oil or 10WAW-ISO viscosity grade 32 hydraulic oil. It is not recommended that fluids be mixed, to top off the reservoir tank during initial set-up use Shell Tellus® S2 M 32 Hydraulic Fluid only.

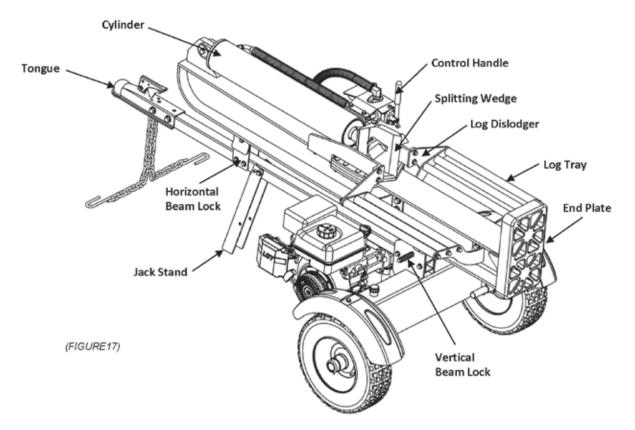
- 3. However, you MUST check the fluid level before each operation. If not filled, proceed with the following steps:
 - 1) Remove the vented reservoir dipstick, which is located in front of the engine on top of the reservoir tank. See Figure 16.
 - 2) Check the fluid level using the dipstick. See Figure 16 below and Figure 25 in this manual.

Much of the original fluid has been drawn into the cylinder and hoses. Make certain to refill the reservoir to prevent damage to the hydraulic pump. DO NOT overfill.

- 3) Replace the vented dipstick securely, tightening it until the top of the threads are flush with top of the pipe.
- 4) Disconnect the spark plug and prime the pump by pulling the recoil starter as far as it will go. Repeat Approximately 10 times.
- 5) Reconnect the spark plug wire and start the engine, following instructions in the Engine Operator's manual.
- 6) Use the control handle to engage the wedge to the farthest extended position. Then retract the wedge.



- 7) Refill the tank as specified on the dipstick if necessary. NOTE: Failure to refill the tank will void the splitter's warranty.
- 8) Extend and retract the wedge 12 complete cycles to remove any trapped air in the system (the system is "self-bleeding").
- 9) Refill the reservoir within the range marked on the dipstick if necessary. See Figure 25 in this manual. NOTE: Some fluid may overflow from the vent plug as the system builds heat and the fluid expands and seeks a balanced level.



KNOW CONTROLS & FEATURES

NOTE: This Operator's Manual covers several models. Log splitter features may vary by model. Not all features in this manual are applicable to all log splitter models and the log splitter depicted may differ from yours.

Engine Controls

See the Engine Operator's Manual; for the location and function of the control on the engine.

Beam Locks

These two locks, as their name suggests, are used to secure the beam in the horizontal or the vertical position. The vertical beam lock is located next tot he engine. The horizontal beam lock is located on the beam support latch bracket.

Control Handle

The control handle has three positions; Forward, Neutral and Reverse. See the Operation section for instructions.

Splitting Wedge

The wedge is used to split the wood.

Log Dislodger

The log dislodger is designed to remove any partially split wood from the wedge. This may occur while splitting large diameter wood or freshly cut wood.

Log Tray

The log tray is designed to catch the log after it is split.

Tongue

The tongue is used to attach to a towing vehicle for transportation.

End Plate

The end plate holds the log in place while the wedge splits the log.

OPERATION

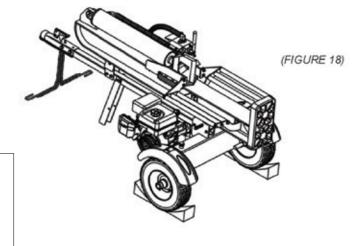
STARTING & STOPPING THE ENGINE

Refer to the Engine Operator's manual packed with your log splitter for instructions on starting and stopping the engine.

OPERATING POSITIONS

- 1. Place the log splitter on flat, dry, solid ground.
- 2. Block the front and back of both wheels. See Figure 18.
- 3. Place the beam in either the horizontal or vertical position and lock into place.

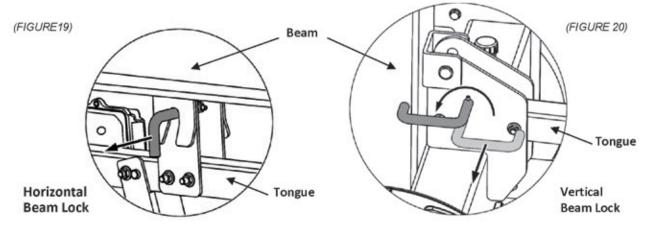
Take extra care when raising and lowering the beam as it is fairly heavy. Having a second person assist with raising or lowering the beam is recommended. Be sure to keep hands away from any possible pinch points.



- 4. To place the beam in the Vertical Position proceed as follows:
 - Pull the horizontal beam lock out to release the beam and pivot the beam to the vertical position. See Figure 19.
 - 2) To lock the beam in the vertical position, pull out the vertical beam lock and rotate it to secure the beam. See Figure 20.

Always use the log splitter in the vertical position when splitting heavy logs.

- 5. To place the beam in Horizontal Position proceed as follows:
 - 1) Pull the vertical beam lock out and rotate it down. Pivot the beam to horizontal position. See Figure 20.
 - 2) The horizontal beam lock is self-locking. The spring-loaded lock will snap into place when the beam is lowered into position.

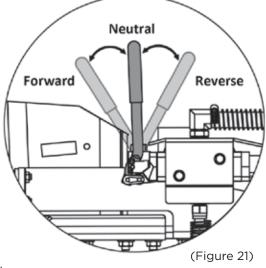


USING THE CONTROL HANDLE

The control handle has three positions. See Figure 21.

- FORWARD To split wood. Move the control handle to the FORWARD position to move the wedge toward the log to split. NOTE: The control handle will return to the NEUTRAL position as soon as the handle is released (FORWARD position only), and the wedge stops moving forward.
- NEUTRAL To stop wedge. Release the control handle or move the lever to the NEUTRAL position to stop the wedge movement.
- REVERSE To return the wedge. Move the control handle to the REVERSE position, the wedge returns automatically toward the cylinder. When the wedge is fully retracted, the control handle returns to the NEUTRAL position automatically.

Do not hold the handle in the REVERSE position when fully retracted.



NOTE: The REVERSE position may also be moved back to the NEUTRAL position manually, if necessary.

If the control handle on your log splitter is not functioning properly, STOP USE IMMEDIATELY and contact an authorized service dealer.

Do not attempt to service, repair or replace control valve. Contact an authorized service dealer. Do not attempt to adjust or modify the control valve or the hydraulic system from its original settings or manufacturer in any way.

SPLITTING THE WOOD

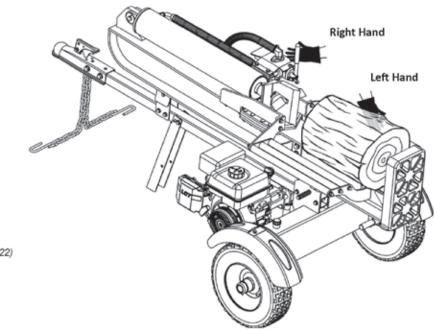
- 1. Start the engine as instructed in the Engine Operator's manual included with the log splitter.
- 2. Place the log against the end plate and only split the wood in the direction of the grain. See Figure 22.
- 3. To stabilize the log, place your left hand on the side of the log opposite the beam as shown in Figure 22.
- 4. Move the control handle to the forward position to split the wood.

Never place a hand on the ends of the log, between the log and the end plate or the log and the splitting wedge.

Only one operator permitted. The adult who loads & stabilizes the log, must be the person who operates the control handle.

- 5. Remove left hand from the side of the log once the wedge just contacts the log. Continue moving control handle forward to split the log.
- 6. Release the control handle to stop the wedge movement.
- 7. Move the control handle to the reverse position to return the wedge.
- 8. Remove partially split wood from wedge.
 - 1) Move the control handle to the REVERSE position until the wedge is fully retracted to allow split wood portion to contact the log dislodger.
 - 2) Once removed from the wedge with the log dislodger, split the wood from the opposite end or in another location.

Never remove partially split wood from the wedge with your hands. Fingers may become trapped between the split wood.



(FIGURE22)

OPERATION TIPS

Always:

- Use clean fluid and check fluid level regularly.
- Use an approved hydraulic fluid. Approved fluids include Shell Tellus® S2 M 32 Hydraulic Fluid, Dexron® III/ Mecron® Automatic Transmission Fluid, Pro-Select™ AW-32 Hydraulic Oil or 10WAW-ISO viscosity grade 32 hydraulic oil.

NOTE: it is recommended that fluids not be mixed.

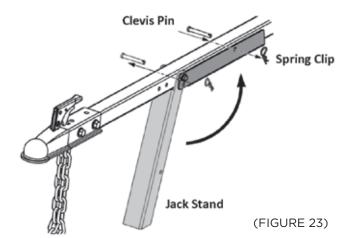
- Use a filter (clean or replace regularly).
- Use a breather cap on fluid reservoir.
- Make sure the pump is mounted and aligned properly.
- Use a flexible "spider" type coupling between the engine and pump drive shafts.
- Keep the hoses clear and unblocked.
- Bleed the air out of the hoses before operating.
- Flush and clean the hydraulic system before restarting after servicing.
- Use "pipe dope" on all hydraulic fittings.
- Allow time for the engine to warm-up before splitting wood.
- Prime the pump before the initial start-up by turning over the engine with the park plug disconnected (if not already done at the factory).
- Split wood along the grain (lengthwise) only.

Never:

- Use when fluid is below 20°F or above 150°F.
- Use a solid engine/pump coupling.
- Operate through relief valve for more than 5 seconds.
- Attempt to adjust the unloading or relief valve settings.
- Operate with air in hydraulic system.
- Use Teflon tape on hydraulic fittings.
- Attempt to cut wood across the grain.
- Attempt to remove partially split wood from the wedge with your hands. Fully retract the wedge to dislodge wood with log dislodger.

TRANSPORTING

- 1. Lower the beam to its horizontal position. Make certain the beam is locked securely with the horizontal beam lock.
- 2. Change the jack stand to transporting position. See Figure 23.
 - 1) Remove the spring clip and clevis pin from the jack stand.
 - 2) Support the tongue and pivot the jack stand up against the tongue.
 - 3) Secure the spring clip and clevis pin previously removed.



- 3. Attached the coupler hitch to a class I or higher 2" ball on the towing vehicle latch securely.
 - 1) If the coupler hitch does not fit on the ball, turn the adjustment nut one turn counter-clockwise.
 - 2) If the coupler hitch is too loose on the ball, turn the adjustment nut one turn clockwise. Then recheck and adjust accordingly.
- 4. Connect the safety chains to towing vehicle.

A WARNING

Do not tow faster than 45 mph and check the local, state and federal requirements before towing on any public road.

NOTE: Use caution when backing up, using a spotter outside the vehicle is recommended.

MAINTENANCE & ADJUSTMENTS

WARNING

Do not make any adjustments without first stopping the engine, disconnecting the spark plug wire and grounding it against the engine. Always wear safety glasses during operation or while performing any adjustments or repairs.

Engine

Refer to the Engine's Operators manual packed with your log splitter for all engine maintenance.

NOTE: When draining oil from the engine on this log splitter, shield the hoses from any oil that may run down the frame and drip onto the hoses. Thoroughly wipe any residual oil off the log splitter and hoses after completing service.

Tire Pressure

The max recommended operating pressure is 30 psi. Do not, under any circumstances, exceed the manufacturer's recommended psi. Maintain equal pressure on all tires.

WARNING

Excessive pressure when seating beads may cause the tire/rim assembly to burst with force sufficient enough to cause serious injury. Refer to the sidewall of the tire for the recommended pressure.

Hose Clamps

Check the clamps on the return hose before each use and check the clamps on the suction hose once a season.

Hydraulic Filter

Change the hydraulic filter every 50 hours of operation. Use only a 10-micron hydraulic spin-on filter, or buy from an authorized dealer. Order part #51 in Exploded Diagram.

Flexible Pump Coupler

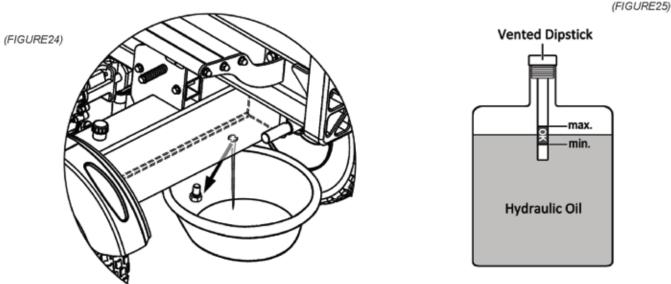
The flexible pump coupler, located between the pump and the engine shaft, has a nylon "spider" insert. Over time, the insert will harden and deteriorate. If you detect vibration or noise coming from the area between the engine and the pump, contact an authorized dealer. Change a new coupler immediately (refer to the pump assembly STEP 4 in this manual), if the coupler fails completely, you will experience a loss of hydraulic power.

Hydraulic Fluid

Check the hydraulic fluid level in the log splitter reservoir tank before each use. Maintain the fluid level within the range specified on the dipstick at all times.

Change the hydraulic fluid in the reservoir every 100 hours of operation. The filter should also be changed with each hydraulic fluid change. Follow the steps below:

- 1. Place a suitable oil connection container under the tank.
- 2. Disconnect the oil drain screw from the bottom of the reservoir tank. See Figure 24.
- 3. Allow the fluid to drain into the container.
- 4. After draining, screw on the oil drain screw and tighten.
- 5. Refill the reservoir tank.
- 6. Maintain the fluid level within the range specified on the dipstick at all times. See Figure 25



NOTE:

When checking the fluid, always make sure to tighten the dipstick until the top of the threads are flush with the top of the pipe.

Always dispose of any used hydraulic fluid and engine oil at approved recycling centers only. Contaminants in the fluid may damage the hydraulic components. Flushing the reservoir tank and hoses with kerosene whenever service is performed on the tank, hydraulic pump or valve is recommended.

Beam & Splitting Wedge

Lubricate top, sides and bottom of the beam and where it comes with the splitting wedge with engine oil before each use.

If the wedge becomes dull or nicked, it can be sharpened.

OFF-SEASON STORAGE

If the log splitter will not be used for more than 30 days, prepare it for storage as follows:

A WARNING!

Never store the machine with fuel in the fuel tank inside of building where fumes may reach an open flame, spark, or where ignition sources are present such as hot water and space heaters, furnaces, clothes dryers, stoves, electric motors, etc.

- 1. Refer to the engine operator's manual packed with your log splitter for information on the off-season storage of the engine.
- 2. Clean the log splitter thoroughly.

NOTE: The use of pressure washers or garden hose to clean the splitter is not recommended. They may cause damage to the bearings or the engine. The use of water will result in a shortened life and reduce serviceability.

- 3. Wipe the machine with an oiled rag to prevent rust, especially on the wedge and the beam.
- 4. Store the log splitter in a clean, dry area. Do not store it next to corrosive materials, such as fertilizer. NOTE: If storing in an unventilated or metal storage shed, be certain to rustproof the equipment by coating it with a light oil or silicone.

TROUBLESHOOTING

Most problems are easy to fix. Consult the trouble shooting table below for common problems and their solutions. If you continue to experience problems, contact your local dealer.

If the machine should start making an unusual noise or vibration, shut down the engine, wait 5 minutes for the machine to cool down, then inspect for damage. Vibration is generally a warning of trouble. Check for damaged parts and clean, repair and/or replace as necessary.

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Cylinder rod will not move.	 Broken drive shaft. Shipping plugs left in hydraulic hoses. Set screws in coupling not adjusted properly. Loose shaft coupling. Gear sections damaged. Damaged relief valve. Hydraulic lines blocked. Low oil level or air trapped in hydraulic system. Damaged control valve. Blocked control valve. 	 See authorized service dealer. Disconnect hydraulic hoses, removeshipping plugs, and reconnect hoses. See authorized service dealer. Correct engine/pump alignment as necessary. See authorized service dealer. See authorized service dealer. See authorized service dealer. Flush and clean hydraulic system. Flush and clean hydraulic system. See authorized service dealer. See authorized service dealer. Flush and clean hydraulic system.
Slow cylinder shaft speed while extending and retracting.	 Gear sections damaged. Excessive pump inlet vacuum. Slow engine speed. Damaged relief valve. Low oil level or air trapped in hydraulic system. Contaminated oil. Control valve leaking internally. Internally damaged cylinder. 	 See authorized service dealer. Make certain pump inlet hoses are clear and unblocked. Use short, large diameter inlet hoses. See authorized service dealer. See authorized service dealer. Fill oil bleed air. Drain oil, clean reservoir and refill. See authorized service dealer. See authorized service dealer.
Leaking cylinder.	 Worn seals. Scored cylinder. 	 See authorized service dealer. See authorized service dealer.
Wood will not split or wood splits too slowly.	 Small gear section damaged. Pump check valve leaking. Excessive pump inlet vacuum. Low oil level or air trapped in hydraulic system. Contaminated oil. Control valve leaking internally. Overloaded cylinder. Internally damaged cylinder. 	 See authorized service dealer. See authorized service dealer. Make certain pump inlet hoses are clear and unblocked. Fill oil or bleed air. Drain oil, clean reservoir and refill. See authorized service dealer. Do not attempt to split wood against the grain. See authorized service dealer.
Leaking pump shaft seal.	 Broken drive shaft. Engine/pump misalignment. Gear sections damaged. Damaged shaft seal. Plugged oil breather. 	 See authorized service dealer. Correct alignment as necessary. See authorized service dealer. See authorized service dealer. Make certain reservoir is properly vented.
Wedge continues to move forward when control handle is released.	1. Damaged control valve.	1. See authorized service dealer.
Control handle does not return to neutral when released from forward position.	 Hydraulic fluid too cold. Hydraulic fluid too thick. Hydraulic fluid contaminated. Damaged control valve. 	 Warm up engine. Replace hydraulic fluid. Replace hydraulic fluid. See authorized service dealer.

SPECIFICATIONS

MODEL		BE-LS22TL	BE-LS28TL	BE-LS34TL
ENGINE		See engine manual	See engine manual	See engine manual
PUMP		Two-Stage, 9 GPM	Two-Stage, 11 GPM	Two-Stage, 16 GPM
CYLINDER (B	ORE X STROKE)	4x24"	4.5x24"	5x24"
MAXIMUM SP	LITTING FORCE	22 Tons*	28 Tons*	34 Tons*
HYDRAULIC PRESSURE		3400 PSI*	3450 PSI*	3500 PSI*
MAXIMUM LOG LENGTH		25"	25"	25"
WEDGE HEIGHT		8"	8"	8"
CYCLE TIME	FORWARD	8 seconds*	8 seconds*	8 seconds*
	REVERSE	5 seconds*	5 seconds*	5 seconds*
WHEELS		16x4.8x8"	16x4.8x8"	16x4.8x8"
HYDRAULIC CAPACITY		518 lbs	551 lbs	633 lbs

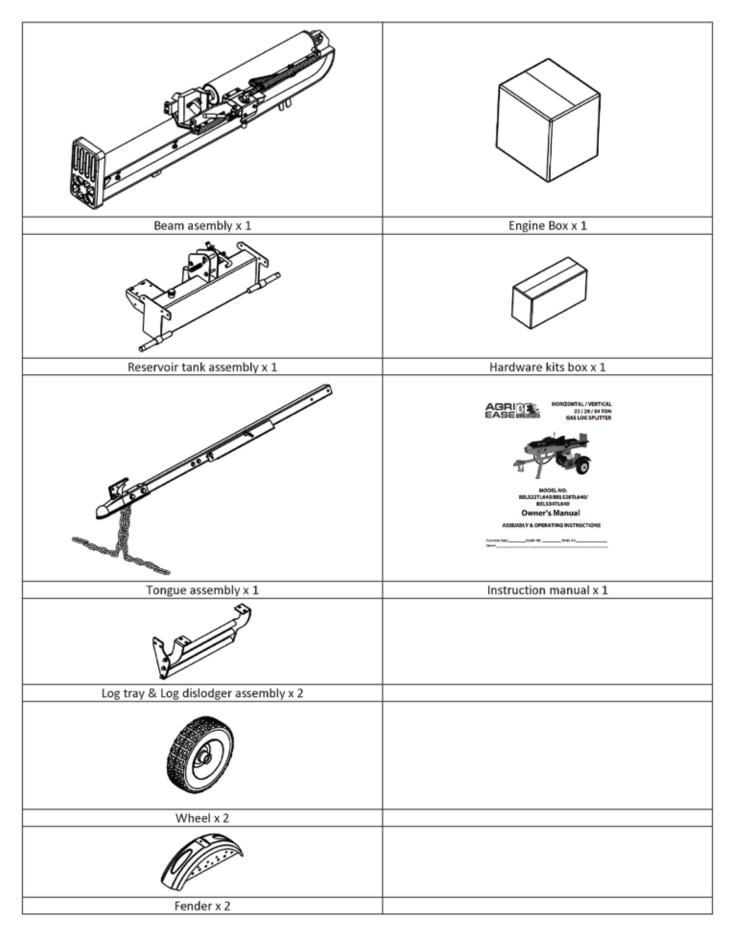
 $\ensuremath{^*\text{Tonnage}}$ and cycle times may vary dependent upon mechanical and eviromental conditions



REF	DESCRIPTION	QTY
1	Beam Incl. End Plate	1
2	Splitting Wedge	1
3	Hex Head Bolt	1
4	Lock Nut	1
5	Cylinder	1
6	Pin	1
7	Flat Washer	2
8	Split Pin	2
9	Hydraulic Hose for A-Capacity	1
10	Protective Spring	1
11	Fitting for A-Capacity	1
12	Fitting for B-Capacity	1
13	Valve w/ Control Handle	1
14	Connecting Hydraulic Hose	1
15	Fitting on Valve for Connecting Hose	1
16	Protective Spring	1
17	Oil Return Hose	1
18	Protective Spring	1
19	Hose Clamp	1
20	Fitting for Oil Return Hose	2
21	Valve Connecting Plate	1
22	Hex Head bolt	4
23	Spring Washer	4
24	Flat Washer	4
25	Fitting on Pump for Connecting Hose	1
26	Two Stage Pump	1
27	Pump Coupler	1
28	Set Screw	2
29	Pump Mount	1
30	Hex Head Bolt	4
31	Flat Washer	4
32	Spring Washer	4
33	Hex Head Bolt	4
34	Flat Washer	4
35	Spring Washer	4
36	Engine Shaft Key	1
37	Gas Engine	1
38	Hex Head Bolt	4
39	Flat Washer	8
40	Lock Nut	4
41	Reservoir Tank	1
42	Vented Dipstick	1

REF	DESCRIPTION	QTY
43	O Seal Ring	2
44	Oil Drain Screw	1
45	O Seal Ring	1
46	Fitting for Oil Suction Hose	1
47	Oil Suction Hose	1
48	Hose Clamp	2
49	Fitting on Filter for Oil Return Hose	1
50	Filter Cap	1
51	Filter	1
52	Fender Support	2
53	Hex Head Bolt	8
54	Flat Washer	16
55	Lock Nut	8
56	Fender	2
57	Wheel	2
58	Castle Nut	2
59	Split Pin	2
60	Hub Cap	2
61	Check Pin	1
62	Vertical Lock Lever	1
63	Vertical Lock Lever	1
64	Spring	1
65	Hex Head Bolt	1
66	Spring Clip	1
67	Clevis Pin	1
68	Hex Head Bolt	2
69	Flat Washer	4
70	Lock Nut	2
71	Tongue	1
72	Horizontal Beam Lock	1
73	Hex Head Bolt	2
74	Flat Washer	1
75	Lock Nut	1
76	Jack Stand	1
77	Hex Head Bolt	1
78	Flat Washer	2
79	Lock Nut	1
80	Clevis Pin	1
81	Spring Clip	1
82	Hitch	1
83	Safety Chain	2
84	Hex Head Bolt	2

REF	DESCRIPTION	QTY
85	Flat Washer	4
86	Lock Nut	2
87	Log Tray w/ Log Dislodger	2
88	Hex Head Bolt	4
89	Flat Washer	8
90	Lock Nut	4
91	Dislodger Connecting Plate	2
92	Hex Head Bolt	4
93	Flat Washer	8
94	Lock Nut	4
95	Hex Head Bolt	4
96	Flat Washer	8
97	Lock Nut	4
98	Cross Wedge	1
99	L-Shape Support	2
100	Hex Head Bolt	1
101	Lock Nut	1
102	Hex Head Bolt	2
103	Spring Washer	2
104	Flat Washer	2





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