

# LOG SPLITTER BE-LS16TL6505GX



## **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
- 8 OPERATION
- 12 UNPACKING THE CONTAINER
- **14** ASSEMBLY
- 21 SET-UP
- 23 TRANSPORTATION
- **24** MAINTENANCE & ADJUSTMENT
- **26** SPECIFICATIONS
- 27 TROUBLESHOOTING GUIDE
- 28 EXPLODED DIAGRAM & PARTS LIST

### INTRODUCTION

Thank you for purchasing an Agriease 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 properly 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, it's 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 engine manufacturer's owner/operator's 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.

### **A** DANGER

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.

### **A** WARNING

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

### **A** CAUTION

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.

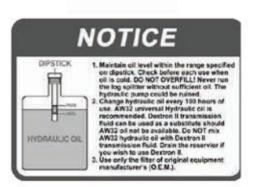
Failure to follow this instruction could result in damage to your machine or property.













16 Ton Log Splitter

Max Splitting Force: 16 Ton Max Splitting Length: 21 inch Max Splitting Diameter: 13.5 inch

Net Weight: 342 lbs

Serial No.

### **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.
25 FE	BYSTANDERS Keep bystanders, helpers and children at least 25 feet away.
	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.
	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.
(3)	WEAR SAFETY FOOTWEAR Always wear nonslip steel-toed safety footwear when operating this product.
Jack Hy.	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.
mittiteittiss	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.

### **A** WARNING

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.

### **OPERATION**

- **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.

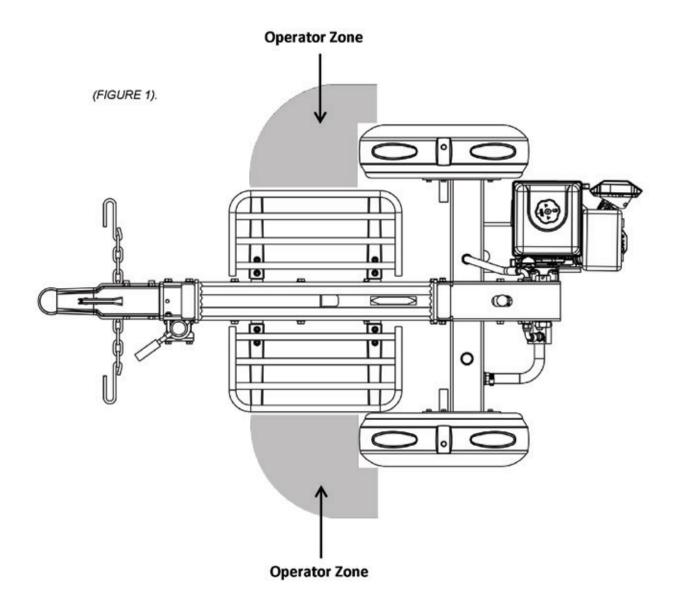
### **A WARNING**

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 diagrams 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.



### **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**

### **A** WARNING

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.

• See Transporting the log splitter section in this manual for proper towing instructions once all federal, local or state requirements are met.

### **UNPACKING THE CONTAINER**

### **A** WARNING

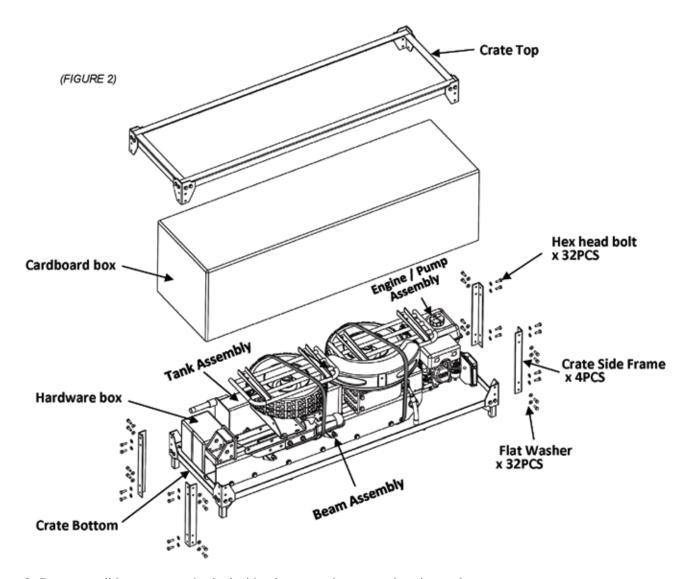
Use extreme caution unpacking this machine. Some components are very heavy and will require additional people or mechanical handling equipment.

**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 securing the side frames on the metal crate, put aside the side frames and hardware just removed and then lift away the crate top and the cardboard box. See Figure 2.



**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 scissors or a knife to cut and remove the straps securing the engine/pump assembly to the crate bottom, then place aside carefully for assembly.

**Step 5:** 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 heavy assemblies.

**NOTE:** Due to the weight/size of the two assemblies, it is recommended that two or more adults assist in lifting and moving the two assemblies. Lifting tools as hoist, crane, jack, etc. are recommended too.

**Step 6:** Inspect all component assemblies, parts and accessories, parts and accessories according to the packing list attached in this manual. Make sure all items in the packing list are included, and of no shipping damage.

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

### **ASSEMBLY**

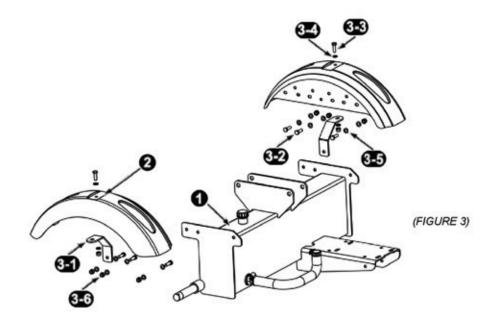
**NOTE:** Due to the weight/size of the log splitter, it is recommended that two or more adults be present to assist with the assembling. Some lifting tools as hoist, crane, jack, etc. are recommended.

### **ASSEMBLING TOOLS NEEDED:**

- 1. Wrench 13mm (x2)
- 2. Wrench 14mm (x2)
- 3. Wrench 16, 17, 18, 19, 27, 32mm (x1 ea.)
- 4. Wrench 1/2" (x1)
- 5. Adjustable Wrench (x1)
- 6. Needle Nose Pliers (x1)
- 7. Allen Wrench 3mm (x1)
- 8. Flat Head Screwdriver (x1)
- 9. Soft Faced Hammer (x1)
- 10. Thread Locking Compound (x1)

### Step 1: Install the fenders. See Figure 3.

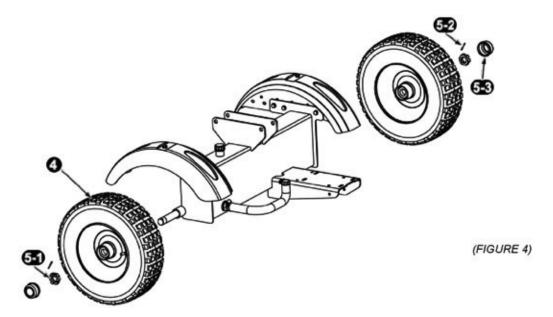
- 1. Loosely secure the fender to the fender support, then loosely secure fender with fender support to the reservoir assembly as shown using the hardware in the Hardware Kit #1.
- 2. Tighten the hardware using two 13mm wrenches.



REF	DESCRIPTION	QTY
1	Reservoir Tank Assembly	1
2	Fender	2
3-1	Fender Support (Hardware Kit #1)	2
3-2	Hex Head Bolt - M8x25 (Hardware Kit #1)	2
3-3	Hex Head Bolt - M8x20 (Hardware Kit #1)	6
3-4	Flat Washer - Ø9xØ24x1.5 (Hardware Kit #1)	2
3-5	Flat Washer - M8 (Hardware Kit #1)	14
3-6	Lock Nut - M8	8

### Step 2: Install the two wheels. See Figure 4.

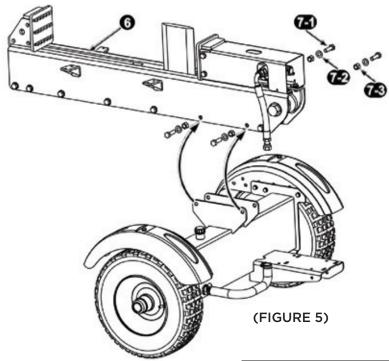
- 1. Block the reservoir tank assembly off the ground. Remove the plastic shipping caps from the wheels, then position the wheels onto the wheel axles.
- 2. Screw the castle nuts onto the axles and tighten with an adjustable wrench to seat the bearings. Then back the castle nut off and snug them up to the bearings slightly.
- 3. Insert the split pin into the slot of castle nut and the hole in the axle, then bend the ends of the pin with needle nose pliers.
- 4. Tap the dust caps onto the wheel using a soft faced hammer.



REF	DESCRIPTION	QTY
4	O-Road Tire/Wheel	2
5-1	Castle Nut - 1-1/4 (Hardware Kit #2)	2
5-2	Split Pin - Ø4x50 (Hardware Kit #2)	2
5-3	Dust Cap (Hardware Kit #2)	2

### **Step 3:** Install the beam assembly. See Figure 5.

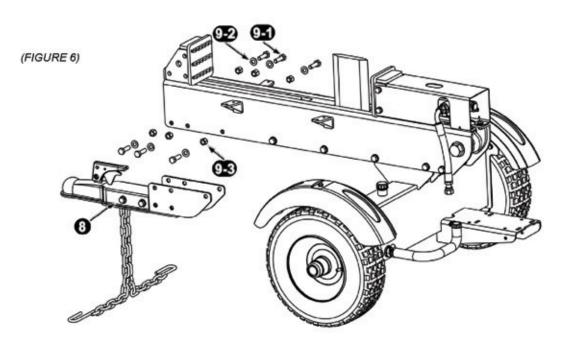
- 1. Block the beam assembly off the ground. Two or more people are recommended to assist with raising the beam as it is very heavy. Lifting tools as hoist, crane, jack, etc. are strongly recommended. Be sure to keep hands away from possible pinch points.
- 2. Screw off the 4 sets of M12 hardware on both sides of the rear end of the beam.
- 3. Position the tank assembly so that the beam support bracket is in between the slot under the beam.
- 4. Slide the bolts M12x40 just removed through the aligned holes and tighten the hardware using a n 18mm wrench for bolts and a 19mm wrench for the lock nuts. You may need another helper to lift up the tongue for the holes to align.



REF	DESCRIPTION	QTY
6	Beam Assembly	1
7-1	Hex Head Bolt - M12x35 (Beam Hardware)	4
7-2	Flat Washer - M12 (Beam Hardware)	4
7-3	Lock Nut - M12 (Beam Hardware)	4

Step 4: Install the tongue assembly. See Figure 6.

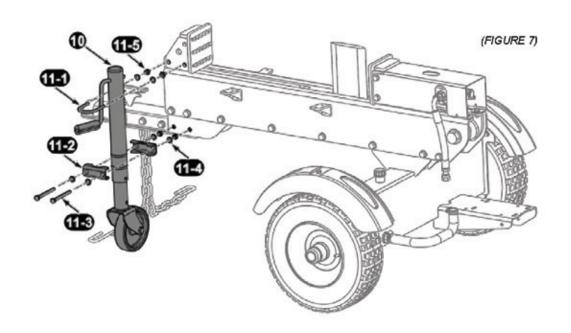
- 1. Screw off the 6 sets of M12 hardware on both sides of the front end of the beam.
- 2. Position the tongue assembly so that the mounting bracket is in between the slot under the beam.
- 3. Slide the bolts M12x40 just removed through the aligned holes and tighten the hardware using a 18mm wrench for bolts and a 19mm wrench for the lock nuts.



REF	DESCRIPTION	QTY
8	Tongue Assembly	1
9-1	Hex Head Bolt - M12x35 (Beam Hardware)	6
9-2	Flat Washer - M12 (Beam Hardware)	6
9-3	Lock Nut - M12 (Beam Hardware)	6

Step 5: Install the wheeled trailer jack assembly. See Figure 7.

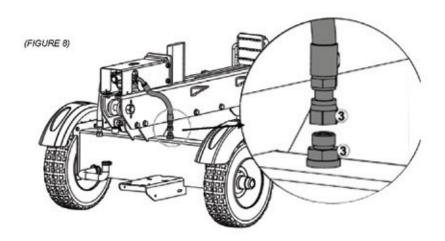
- 1. Position the wheeled trailer jack against the front of the beam.
- 2. Slide the two threaded ends of U-bolt through the two bottom holes on the side bracket of front-end plate and secure it with the M10 washers and lock nuts loosely.
- 3. Position the two jack clamps between the two annular bulges on the trailer jack on the trailer jack, align the holes on the clamps with the two holes on the tongue mounting bracket, then secure with the M10 hardware loosely.
- 4. Adjust the trailer jack and make sure that cranking handle sticking out to the front left direction.
- 5. Tighten all M10 hardware using a 16mm wrench on the bolts and a 17mm wrench on the lock nuts.



REF	DESCRIPTION	QTY
10	Wheeled Trailer Jack	1
11-1	U-Bolt - M10x190 (Hardware Kit #4-1/4-2)	1
11-2	Jack Clamp - W26 (Hardware Kit #4-1) (13T)	1
	Jack Clamp - W35.5 (Hardware Kit #4-2) (16T)	2
11-3	Hex Head Bolt - M10x130 (Hardware Kit #4-1/4-2)	2
11-4	Flat Washer - M10 (Hardware Kit #4-1/4-2)	6
11-5	Lock Nut - M10 (Hardware Kit #4-1/4-2)	4

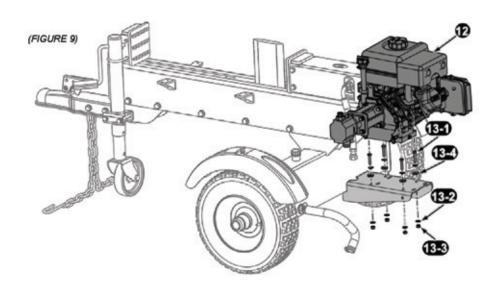
### Step 6: Connect the oil return hose. See Figure 8.

- 1. The oil return hose 1/2", has one end fixed on the right side of the valve on the beam assembly by manufacturer, the other open end needs to be attached, which is labeled as (3) for easy installation.
- 2. Screw the open end of this hose onto the fitting on top of the reservoir, which is labeled of a same (3). Tighten the hose using 27mm wrench or an adjustable wrench.



**Step 7:** Install the engine/pump assembly. See Figure 9.

- 1. Insert vibration isolator each between the engine and the mount plate at the four mounting hole positions.
- 2. Secure the engine with the M8 hardware, then tighten the hardware using two 13mm wrenches.

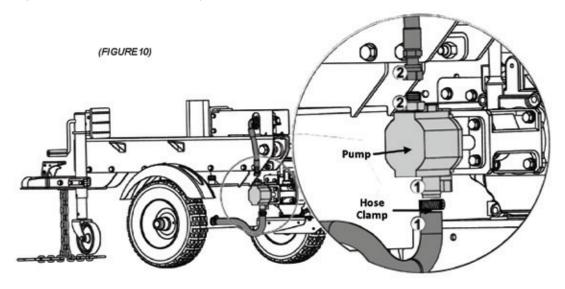


REF	DESCRIPTION	QTY
12	Wheeled Trailer Jack	1
13-1	Hex Head Bolt - M8x40 (Hardware Kit #5-1)	1
13-2	Flat Washer - M8 (Hardware Kit #5-1)	1
13-3	Lock Nut - M8 (Hardware Kit #5-1)	2
13-4	Vibration Isolator - Ø9 (Hardware Kit #5-1)	6

Step 8: Attach the oil suction hose and pump/valve connecting hose. See Figure 10.

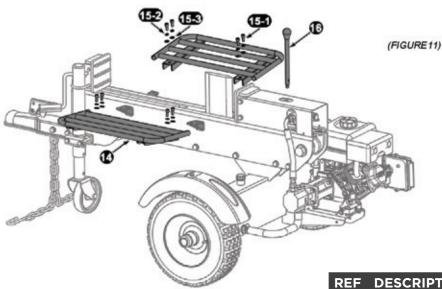
The two hydraulic hoses listed below, each of them has one end fixed on the log splitter by manufacturer, the other open end needs to be attached.

- 1. Oil suction hose 3/4", labeled as (1), comes from the bottom of the reservoir. Loosen the hose clamp on the open end of this hose using a flat head screwdriver, then connect the hose to the fitting on the bottom of the pump, which is labeled of a same (1). Tighten the clamp.
- 2. Pump/valve connecting hose 1/2", labeled as (2), comes from the left side of the valve on the beam assembly. Screw the open end of this hose onto fitting on top of the pump, which is labeled of a same (2). Tighten using a 27mm wrench or an adjustable wrench.



Step 9: Install the log tray assemblies and control handle lever. See Figure 11.

- 1. Position the log tray frames onto the tabs on both sides of the beam as shown and secure with the M8 hardware using a 13mm wrench.
- 2. Screw the control handle lever into its linkage part on top of the valve.



REF	DESCRIPTION	QTY
14	Log Tray	2
15-1	Inner Hex Head Bolt - M8 (Hardware Kit #7)	8
15-2	Spring Washer - M8 (Hardware Kit #7)	8
15-3	Flat Washer - M8 (Hardware Kit #7)	8
15-4	Control Handle Lever (Hardware Kit #7)	1

### **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.

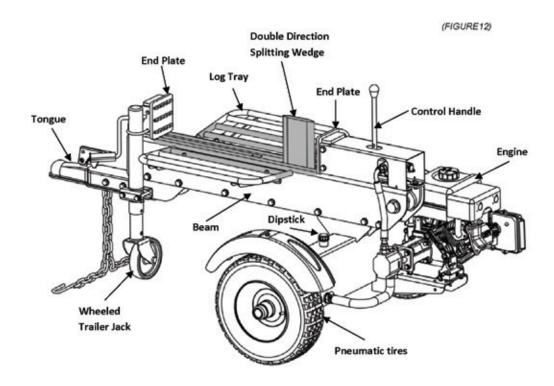
### **A** WARNING

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.

### **KNOW CONTROL & 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.

### **SET-UP**

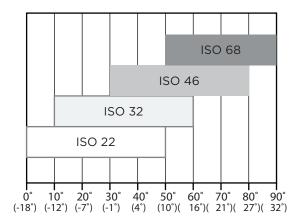
### **LUBRICATE THE BEAM**

Lubricate the beam area (where the splitting wedge will slide) with the engine oil. Do not use grease. See Figure 12.

### FILL HYDRAULIC OIL

The log splitter is shipped without hydraulic fluid in the reservoir. Fill the reservoir before your initial use.

1. Remove the vented reservoir dipstick, which is located on top of the reservoir tank. See Figure 17.



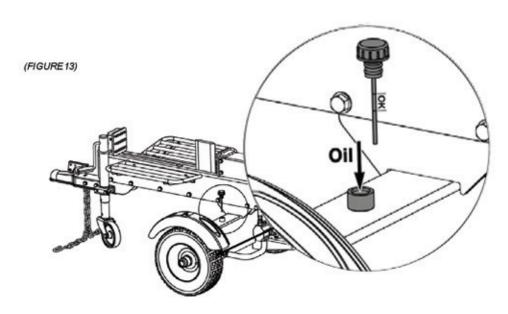
Please select the oil based on the outside temperature range the log splitter will be used in. Refer to the chart provided to select the appropriate hydraulic oil.

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.

- 2. Slowly fill reservoir tank with the recommended hydraulic oil until oil level reach the maximum line on the dipstick.
- 3. Replace the vented dipstick in the reservoir.
- 4. Start the engine, and use the control handle to engage the wedge to the farthest extended position and then retract. Repeat this operation for 12 cycles. Much of the fluid will be drawn into the cylinder and hoses. Stop the engine and check the oil level as instructed below.

**NOTE:** Make sure the oil level is above the bottom line on the dipstick. If not, refill the reservoir to prevent damage heat and the fluid expands and seeks a balanced level.

5. However, you must check fluid level before each operation. If not filled, proceed with above steps:



### **STARTING & STOPPING THE ENGINE**

- 1. Place the log splitter on flat, dry, solid ground.
- 2. Block both wheels to prevent your log splitter from moving during operation.
- 3. Refer to the engine operator's manual packed with your log splitter for instructions on starting and stopping the engine.

### **USING CONTROL HANDLE**

The control handle has three positions. See Figure 14.

### **FORWARD:**

To split wood in froward direction. Move the control handle to the FORWARD position to move the wedge toward the log to split.

### **NEUTRAL:**

To stop wedge. The control handle will return to the NEUTRAL position as soon as the handle is released and the wedge stops moving at any point during splitting.

# Reverse (FIGURE 14)

### **REVERSE:**

To split wood in reverse direction. Move the control handle to the REVERSE position to move the wedge backward into another log to split.

### NOTE:

Do not hold the handle in the FORWARD or REVERSE positions when the wedge is fully extended or retracted.

### A WARNING!

- 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.
- Do not attempt to adjust or modify the control valve or the hydraulic system from its original settings or manufacturer in any way.

### **OPERATION INSTRUCTIONS**

### **SPLITTING THE WOOD**

- Start the engine as instructed in the engine operators manual included with the log splitter.
- 2. Grasp the log on the sides, place it on top of the beam against the front-end plate to split wood in the direction of the grain. See figure 15.
- 3. To stabilize the log, place your left hand on the side of the log. See Figure 15.

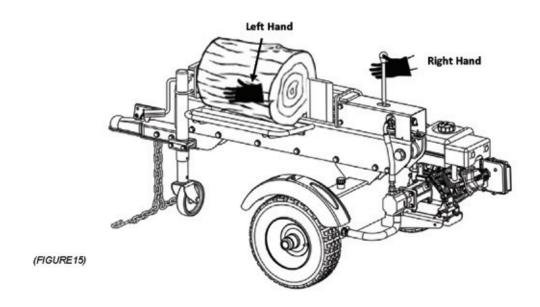
### **A** WARNING!

- Never place hands 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 and stabilizes the log, must be the person who
  operates the control handle.

- 4. Use your right hand to push the control handle lever to the forward position to split the wood.
- 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 at any point int he splitting process, it you feel an unsafe splitting condition is occurring, NEVER reach crossly and attempt to catch a falling split wood, let it fall. The control handle will return to the neutral position automatically when you release it.
- 7. Once the log split or the wedge fully extended, load another log between the wedge and the back-end plate and pull the control handle backward to split log.
- 8. Remove partially split wood from wedge.
  - If the log is clipped or jammed on the wedge, release the control handle and shut o\_ the engine immediately.
  - Once removed from the wedge, split the wood from the opposite end or in another location.

### A WARNING!

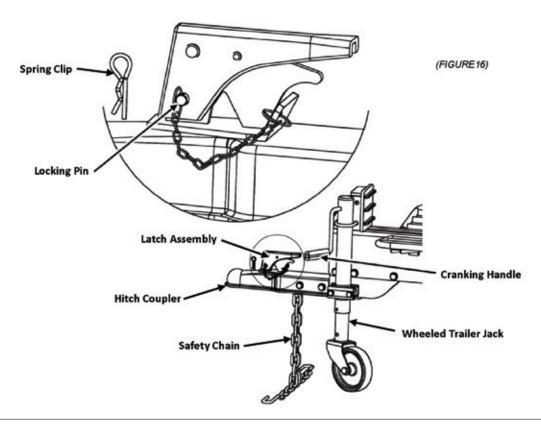
Never remove partially split wood from the wedge with your hands. fingers may become trapped between the split wood.



### **TRANSPORTATION**

This log splitter has a built-in wheeled trailer jack for easy maneuvering.

- 1. Swing the jack up or down using the cranking handle on the jack, to position the hitch coupler over the tow ball behind your vehicle. See Figure 16.
- 2. Pull the latch on the hitch coupler up, place the coupler onto the tow ball, then close the latch to lock the ball securely.
  - If the coupler hitch does not fit on the ball, turn the adjustment nut one turn counter-clockwise.
  - If the coupler hitch is too loose on the ball, turn the adjustment nut one turn clockwise. Then recheck and adjust accordingly.
- 3. Attach the safety chains to the towing vehicle crossing each other under the tow ball, ensuring there is enough slack for turning.
- 4. Insert the locking pin into the hole in the latch assembly and lock with the spring clip.



### A WARNING!

Do not tow faster than 45mph 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 & ADJUSTMENT**

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual and the engine and the engine manufacturer's owner's manual for maintenance procedures.

### **A** 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 engine operator's manual packed with your log splitter for all engine maintenance e.g., how to check and change the engine oil.

**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 o\_ the log splitter and hoses after completing service.

### **TIRE PRESSURE**

The tires coming with your log splitter are pneumatic o\_-road tires. 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.

### **A** WARNING!

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

### **FLEXIBLE PUMP COUPLER**

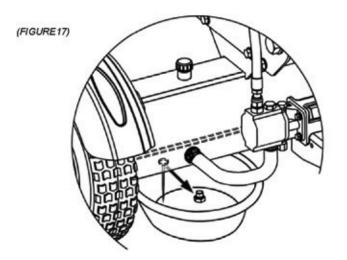
The flexible pump coupler, located between the pump and the engine shaft, has a nylon "spider" insert. Over time the insert will harden and deteriorate. If you detect vibration or noise coming from the area between the engine and the pump, contact an authorized dealer. Change a new coupler spider immediately,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

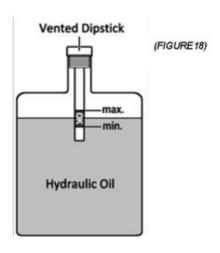
### **HYDRAULIC FLUID**

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. Follow these 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 17.
- 3. Allow the fluid to drain into the container. NOTE: The reservoir tank has a capacity of 4 gallons of hydraulic fluid.
- 4. After draining, screw on the oil drain screw and tighten.





- 5. Refill the reservoir tank (Please follow the steps in this manual to fill the tank and repel the air in the tank).
- 6. Maintain the fluid level within the range specified on the dipstick at all times. See Figure 18. NOTE: When checking fluid, always make sure to tighten the dipstick until the top of the threads are flush with the top of the pipe.
  - NOTE: 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 into contact 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.

### **SPECIFICATIONS**

MODEL		GD13T21	GD16T21
ENGINE		See engine manual	See engine manual
PUMP		Two-Stage, 9 GPM	Two-Stage, 11 GPM
CYLINDER (B	ORE X STROKE)	3 in. x 1.84 in.	3.5 in. x 1.84 in.
MAXIMUM SP	LITTING FORCE	13 Tons*	16 Tons*
HYDRAULIC F	PRESSURE	3700 PSI*	3400 PSI*
MAXIMUM LO	G LENGTH	20.5 in	20.5 in
WEDGE HEIG	HT	6.5 in	6.5 in
CVCLETIME	FORWARD	4 seconds*	6 seconds*
CYCLE TIME	REVERSE	3.5 seconds*	5.5 seconds*
WHEELS		16x4.8x8 in.	16x4.8x8 in.
HYDRAULIC (	CAPACITY	4 gallons	4 gallons
HEIGHT		37.5 in	38 in
LENGTH		71.5 in	71.5 in
WIDTH		40.5 in	40.5 in
NET WEIGHT		315 lbs	342 lbs

 $<sup>^{*}</sup>$ Tonnage and cycle times may vary dependent upon mechanical and eviromental conditions

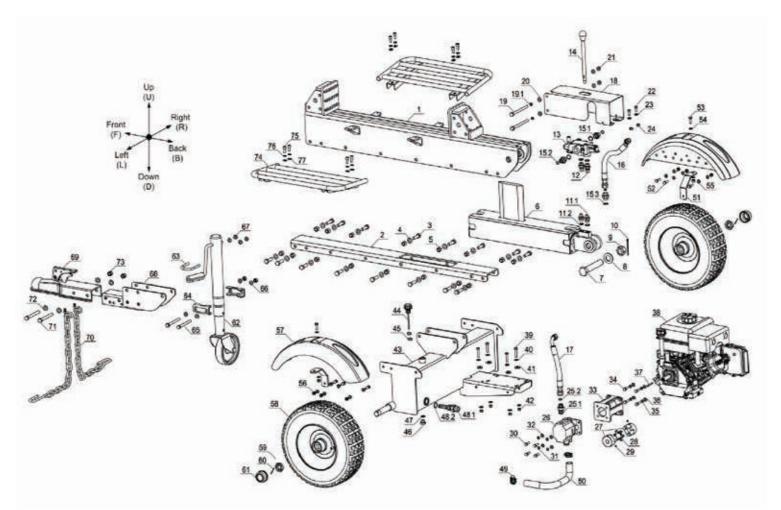
### **TROUBLE SHOOTING GUIDE**

Most problems are easy to fix. Consult the trouble shooting table below for common problems and their solutions.

If the machine should start making an unusual noise or vibration, shut down the engine, wait 5 minutes for 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.	<ol> <li>Broken drive shaft.</li> <li>Shipping plugs left in hydraulic hoses.</li> <li>Set screws in coupling not adjusted properly.</li> <li>Loose shaft coupling.</li> <li>Gear sections damaged.</li> <li>Damaged relief valve.</li> <li>Hydraulic lines blocked.</li> <li>Low oil level or air trapped in hydraulic system.</li> <li>Damaged control valve.</li> <li>Blocked control valve.</li> </ol>	<ol> <li>See authorized service dealer.</li> <li>Disconnect hydraulic hoses, removeshipping plugs, and reconnect hoses.</li> <li>See authorized service dealer.</li> <li>Correct engine/pump alignment as necessary.</li> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> <li>Flush and clean hydraulic system.</li> <li>Fill oil or bleed air.</li> <li>See authorized service dealer.</li> <li>Flush and clean hydraulic system.</li> </ol>
Slow cylinder shaft speed while extending and retracting.	<ol> <li>Gear sections damaged.</li> <li>Excessive pump inlet vacuum.</li> <li>Slow engine speed.</li> <li>Damaged relief valve.</li> <li>Low oil level or air trapped in hydraulic system.</li> <li>Contaminated oil.</li> <li>Control valve leaking internally.</li> <li>Internally damaged cylinder.</li> </ol>	<ol> <li>See authorized service dealer.</li> <li>Make certain pump inlet hoses are clear and unblocked. Use short, large diameter inlet hoses.</li> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> <li>Fill oil bleed air.</li> <li>Drain oil, clean reservoir and refill.</li> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> </ol>
Leaking cylinder.	Worn seals.     Scored cylinder.	<ol> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> </ol>
Wood will not split or wood splits too slowly.	<ol> <li>Small gear section damaged.</li> <li>Pump check valve leaking.</li> <li>Excessive pump inlet vacuum.</li> <li>Low oil level or air trapped in hydraulic system.</li> <li>Contaminated oil.</li> <li>Control valve leaking internally.</li> <li>Overloaded cylinder.</li> <li>Internally damaged cylinder.</li> </ol>	<ol> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> <li>Make certain pump inlet hoses are clear and unblocked.</li> <li>Fill oil or bleed air.</li> <li>Drain oil, clean reservoir and refill.</li> <li>See authorized service dealer.</li> <li>Do not attempt to split wood against the grain.</li> <li>See authorized service dealer.</li> </ol>
Leaking pump shaft seal.	<ol> <li>Broken drive shaft.</li> <li>Engine/pump misalignment.</li> <li>Gear sections damaged.</li> <li>Damaged shaft seal.</li> <li>Plugged oil breather.</li> </ol>	<ol> <li>See authorized service dealer.</li> <li>Correct alignment as necessary.</li> <li>See authorized service dealer.</li> <li>See authorized service dealer.</li> <li>Make certain reservoir is properly vented.</li> </ol>
Wedge continues to move forward when control handle is released.	Damaged control valve.	See authorized service dealer.
Control handle does not return to neutral when released from forward position.	<ol> <li>Hydraulic fluid too cold.</li> <li>Hydraulic fluid too thick.</li> <li>Hydraulic fluid contaminated.</li> <li>Damaged control valve.</li> </ol>	<ol> <li>Warm up engine.</li> <li>Replace hydraulic fluid.</li> <li>Replace hydraulic fluid.</li> <li>See authorized service dealer.</li> </ol>

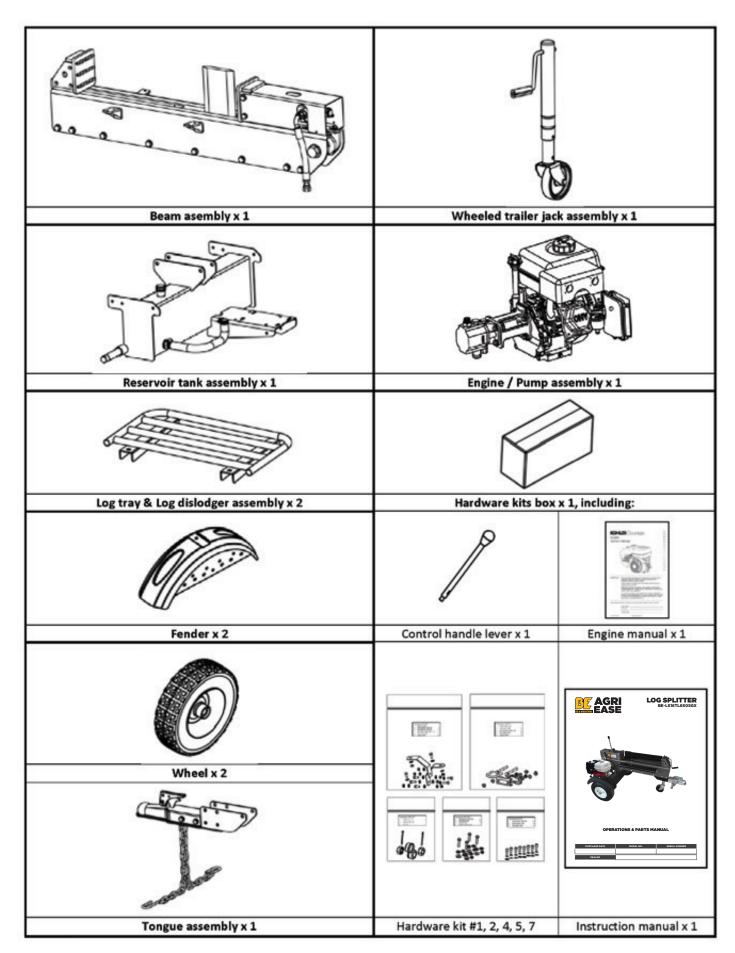
### **EXPLODED DIAGRAM & PARTS LIST**



REF	PART NO.	DESCRIPTION	SPECIFICATION	QTY
1	310-850	Machine Body Incl. End Plate 13 Ton	115*298*6mm/130*140*10	1
1	310-853	Machine Body Incl. End Plate 16 Ton	130*307*8mm/150*140*10	1
2	310-851	Machine Body Bottom 13 Ton	W100	16
2	310-854	Machine Body Bottom 16 Ton	W114	16
3	710-438	Hex Head Bolt	ZP, M12*35	16
4	750-621	Flat Washer	ZP, M12	16
5	720-536	Lock Nut	ZP, M12	1
6	530-480	Cylinder 13 Ton	3 inch	1
6	530-482	Cylinder 16 Ton	3.5 inch	1
7	760-137	Pin 13 Ton	PH, M27*141	1
7	760-132	Pin 16 Ton	PH, M32*165	1
8	750-623	Flat Washer 13 Ton	PH, M27*4	1
8	750-677	Flat Washer 16 Ton	PH, M32*6	1
9	720-815	Bored Nut 13 Ton	PH, M27	1
9	720-872	Bored Nut 16 Ton	PH, M32	1
10	60-744	Split Pin	Ø4*50	1
11.1	510-211	Hydraulic Adapter	Straight, Hex 24	2
11.2	730-077	O Seal Ring	Ø21*2.4	4

REF	PART NO.	DESCRIPTION	SPECIFICATION	QTY
12	510-224	Hydraulic Adapter	Straight Wing, Hex 24/19	2
13	520-766	Hydraulic Valve		1
14	520-405	Control Handle Lever	Ø15.264	1
15.1	510-448	Hydraulic Adapter	Straight, Hex 27*36.5	3
15.2	730-619	O Seal Ring	Ø15*1.9	3
15.3	730-077	O Seal Ring	Ø21*2.4	3
16	560-409	Hydraulic Hose (Valve - Reservoir)	1/2inch*350	1
17	560-403	Hydraulic Hose (Pump - Valve)	1/2inch*300	1
18	350-200	Valve cover 13 ton	W118	1
18	350-203	Valve cover 16 ton	W135	1
19	710-669	Hex Head Bolt 13 Ton	ZP, M10*130 (8.8)	2
19	710-614	Hex Head Bolt 16 Ton	ZP, M8*15	4
19.1	750-834	Spring Washer 16 Ton	ZP, M8	4
20	750-525	Flat Washer 13 Ton	ZP, M10	4
20	750-638	Flat Washer 16 Ton	ZP, M8	4
21	720-120	Lock Nut 13 Ton	ZP, M10	2
22	710-637	Hex Head Bolt	ZP, M8*20 (8.8)	2
23	750-638	Flat Washer	ZP, M8	2
24	720-500	Lock Nut	ZP, M8	2
25.1	510-432	Hydraulic Adapter on Pump for Connecting Hose	Straight, Hex 27*45	1
25.2	730-619	O Seal Ring	Ø15*1.9	1
26	550-308	Two Stage Pump	9 GPM (13T)	1
26	550-412	Two Stage Pump	11 GPM (16T)	1
27	550-702	Coupling Shaft	3/4"	1
28	550-706	Coupling Spider		1
29	740-600	Set Screw	Black Oxide, M6*10	2
30	710-637	Hex Head Bolt	ZP, M8*20 (8.8)	4
31	750-834	Spring Washer	ZP, M8	4
32	750-638	Flat Washer	ZP, M8	4
33	550-814	Pump Mount	Al	1
34	710-632	Hex Head Bolt	ZP, 5/16-24*20 (8.8)	4
35	750-844	Spring Washer	Zinc, 5/16	4
36	750-617	Flat Washer	ZP, 5/16	4
37	770-123	Engine Shaft Square Key	3/16x1.75	1
38	960-327	Gas Engine (Kohler 6.5)		1
39	710-693	Hex Head Bolt	ZP, M8*40	4
40	750-638	Flat Washer	ZP, M8	8
41	960-429	Vibration Isolator 22/28 Ton	Ø24*Ø9*3	4
42	720-500	Lock Nut	ZP, M8	4
43	540-911	Reservoir Tank		1
44	540-328	Vented Dipstick	Ø4*83	1
45	730-655	O Seal Ring	Ø15*3.1	2

REF	PART NO.	DESCRIPTION	SPECIFICATION	QTY
46	710-877	Oil Drain Screw	PH, M16*15	1
47	730-064	O Seal Ring	Ø20*2.4	1
48.1	540-074	Suction Filter	Straight Adapter Hex 32	1
48.2	730-602	O Seal Ring	Ø28*3.1	1
49	760-377	Hose Clamp	1 inch	2
50	560-315	Oil Suction Filter	Ø24*320	1
51	330-674	Fender Support		2
52	710-661	Hex Head Bolt	ZP, M8*25 (8.8)	2
53	710-637	Hex Head Bolt	ZP, M8*20 (8.8)	6
54	750-699	Flat Washer	ZP, Ø9*Ø24*1.5	2
55	750-638	Flat Washer	ZP, M8	14
56	720-500	Lock Nut	ZP, M8	8
57	330-612	Fender		2
58	330-524	Wheel	Pneumatic, 16*4.8*8in.	2
59	720-836	Castle Nut	ZP, 1-14	2
60	760-744	Split Pin	ZP, Ø4*50	2
61	330-631	Dust Cap		2
62	320-455	Wheeled Trailer Jack		1
63	710-333	U-Bolt	ZP, M10x190	1
64	320-457	Jack Clamp 13 Ton	W26	2
64	320-459	Jack Clamp 16 Ton	W35.5	2
65	710-669	Hex Head Bolt	ZP, M10*130 (8.8)	2
66	750-525	Flat Washer	ZP, M10	6
67	720-120	Lock Nut	ZP,M10	4
68	320-431	Tongue		1
69	320-437	Hitch Coupler	2inch*3inch	1
70	320-421	Safety Chain		2
71	710-622	Hex Head Bolt	ZP, M12*100 (8.8)	2
72	750-621	Flat Washer	ZP, M12	4
73	720-536	Lock Nut	ZP, M12	2
74	320-913	Log Tray		2
75	710-895	Inner Hex Head Bolt	Black Oxide, M8*20	8
76	750-075	Spring Washer	Black Oxide, M8	8
77	750-160	Flat Washer	Black Oxide, M8	8





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