



HORIZONTAL 16 TON DUAL ACTION GAS LOG SPLITTER



MODEL NO.
GD16T21

Owner's Manual

ASSEMBLY & OPERATING INSTRUCTIONS

Purchase Date _____ Model NO. _____ Serial NO. _____
Dealer _____

Boss Industrial, Inc. · 1864 High Grove Lane, Unit 116 · Naperville, IL 60540 · USA
Phone: (800) 780-BOSS (2677) · Fax (331) 472-2976

To The Owner

Thank You!

Thank you for purchasing a BOSS 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 web site. If you have any problems or questions concerning the machine, phone an authorized service dealer or contact us directly. Boss Industrial's customer support phone number, website and mailing address can be found on this page. We want to ensure your complete satisfaction at all times.

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 Owner's/Operator's Manual, packed separately with your machine, for more information.

Customer Support

Please do NOT return the machine to the retailer or dealer without first contacting the Customer Support Department.

If you have difficulty assembling this product or have any questions regarding the controls, operation, or maintenance of this machine, you can seek help from the experts. Choose from the options below:

- ◇ Visit us on the web at www.boss-industrial.com
- ◇ Call a Customer Support Representative at (800) 780-2677 or (331) 457-5670
- ◇ Write to Boss Industrial, Inc., 1864 High Grove Lane, Unit 116, Naperville, IL 60540

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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 to operate this log splitter who has not read this manual. As with all power equipment, a log splitter can be dangerous if assembled or used improperly. Do not operate this log splitter if you have any questions concerning safe operation. To get answers to any questions, call our customer service department at 1-800-780-2677.

Si no entiende ingles, se prefiere que busque alguien que interprete las instrucciones para usted.



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

CALIFORNIA PROPOSITION 65



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



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.



DANGER indicates a hazardous situation which, if not avoided, will result in serious injury or death.



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



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.



IMPORTANT SAFETY INFORMATION

SAFETY SYMBOLS

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.
	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.
	WEAR SAFETY FOOTWEAR Always wear nonslip steel-toed safety footwear when operating this product.
	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.
	WARNING— HOT SURFACE Engine parts, especially the muffler, become extremely hot during operation. Allow engine and muffler to cool before touching.



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.

SAVE THESE INSTRUCTIONS!



IMPORTANT SAFETY INFORMATION

TRAINING

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. 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.
4. Never allow adults to operate this machine without proper instruction.
5. Many accidents occur when more than one person operates the machine. No helper is allowed to assist in stacking logs.
6. Keep bystanders, pets, and children at least 25 feet from the machine while it is in operation.
7. Never allow anyone to ride on this machine.
8. Never transport cargo on this machine.
9. 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:
 - a. Do not check for leaks with your hand.
 - b. Do not operate machine with frayed, kinked, cracked, or damaged hoses, fittings, or tubing.
 - c. Stop the 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.
 - d. Do not adjust the pressure settings of the pump or valve.
10. 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.
11. If injured by escaping fluid, see a doctor immediately. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
12. Keep the operator zone and adjacent area clear for safe, secure footing.
13. 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.



NEVER use this log splitter for any purpose other than splitting wood. It is designed for this use only. Any other use can cause serious injury or death.



IMPORTANT SAFETY INFORMATION

PRE-OPERATION

1. **BEFORE** operating this log splitter, make sure that you wear safety gear such as 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.
2. **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.
3. 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.
4. Make sure machine is on a flat, dry, solid ground before operating.
5. **ALWAYS** operate your log splitter in an open area. (Exhaust fumes contain carbon monoxide which can be deadly when inhaled.)
6. **ALWAYS** operate your log splitter in daylight or under good artificial light.
7. **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.)
8. **ALWAYS** block wheels to prevent unintended movement.
9. **ALWAYS** lock beam in either the horizontal or vertical position.
10. **ALWAYS** keep the work area clean. Remove split wood around the log splitter immediately so that you don't stumble over it.
11. Check all nuts, bolts and hydraulic fittings are tight to be sure the equipment is in a safe working condition.
12. 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 25 inches in length. Uneven logs (e.g. knotted, curved, etc.) should not be used.
13. **ALWAYS** check the oil level before you start the log splitter. **See Page 30.**
14. Do not allow familiarity with tools to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.



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 operation, 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 which is marked to comply with ANSI Z87.1.



IMPORTANT SAFETY INFORMATION

OPERATION

1. **BEFORE** starting this machine, review the safe instructions in the manual. Failure to follow these rules may result in serious injury to the operator or bystanders.
2. **NEVER** leave this machine unattended with the engine running.
3. **DO NOT** operate machine while under the influence of alcohol, drugs, or medication.
4. **NEVER** allow anyone to operate this machine without proper instruction.
5. **ALWAYS** operate this machine with all safety equipment in place and working. Make sure all controls are operating properly for safe operation.
6. 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.
7. **NEVER** use your foot, a rope or any extension device to operate the control lever on the valve. Only use hand.
8. Use only your right hand to operate the controls.
WARNING! When stabilizing log with left hand, remove your hand when the wedge just contacts the log or serious injury may occur.
9. For logs which are not cut square, the least square end of the log should be placed toward the beam and wedge, and the square end placed toward the end plate.
10. When splitting in the vertical position, stabilize the log before moving the control handle. Split as follows:
 - a. Place log on the end plate and turn until it leans against the beam and is stable.
 - b. When splitting extra-large or uneven logs, the log must be stabilized with wooden shims or split wood placed between the log and end plate or ground
11. **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.
12. **ALWAYS** keep fingers away from any cracks that open in the log while splitting. They can quickly close and pinch or amputate your fingers.
13. Keep your work area clean. Immediately remove split wood around the machine so you do not stumble over it.
14. **NEVER** straddle or step over the log splitter during operation.
15. **NEVER** reach or bend over the log splitter to pick up a log.
16. **NEVER try to split two logs on top of each other. NEVER try to cross split a log.**
17. **NEVER** operate your log splitter when it is in poor mechanical condition or in need of repair.
18. **NEVER** touch the muffler and other hot areas of the engine during operation. Wait until the engine cools down.
19. **NEVER** tamper with the engine to run it at excessive speeds. The maximum engine speed is preset by the manufacturer and is within safety limits. Refer to the engine owner's manual for your particular log splitter.
20. **NEVER** move the log splitter while the engine is running. Shut off the engine if you are leaving the log splitter, even for a short period of time.
21. **ALWAYS** be careful when moving or lifting the log splitter. Get assistance if it feels too heavy to move by yourself.



IMPORTANT SAFETY INFORMATION

MAINTENANCE SAFETY

1. 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.
2. Stop the 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.
3. **ALWAYS** perform all recommended maintenance procedures before using your log splitter.
4. **ALWAYS** check the level of hydraulic oil and engine oil before operation.
5. **ALWAYS** periodically check that all nuts, bolts, screws, hydraulic fittings and hose clamps are tight to be sure equipment is in safe working condition.
6. **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.
7. 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.
8. **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.
9. **NEVER** remove the cap from the hydraulic tank or reservoir while the log splitter is running. The tank could contain hot oil under pressure which could result in serious injury.
10. **NEVER** adjust the hydraulic valve. The pressure relief valve on your log splitter is preset at the factory. Only a qualified service technician should perform this adjustment.
11. **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.
12. **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.



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.



IMPORTANT SAFETY INFORMATION

FIRE PREVENTION

1. **ALWAYS** take a Class B fire extinguisher with you when operating this log splitter in dry areas.
2. **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.
3. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.
4. **ALWAYS** store gasoline in an approved, tightly sealed container, and keep away from heating appliances. Store the container in a cool, dry place.
5. When gasoline is spilled on yourself or your clothes which can ignite, wash your skin and change clothes immediately.
6. **NEVER** refuel the gas tank while the engine is hot or running. Allow the engine to cool before refueling.
7. **ONLY** refuel your log splitter in a clear area with no gas fumes or spilled gas. Never fuel machine indoors.
8. 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.
9. If gasoline is spilled out, wipe it off the engine and equipment and move machine to another area. Wait five (5) minutes before starting the engine.
10. **ALWAYS** replace the gas cap securely. Never remove gas cap while the engine is hot or running.
11. To prevent fires, clean debris and chaff from the engine and muffler areas.
12. Allow machine to cool at least ten (10) minutes before storing.
13. **ALWAYS** drain the fuel tank prior to storage to avoid the potential fire hazard.
14. Never store the machine or fuel container inside where there is an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
15. 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



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.



IMPORTANT SAFETY INFORMATION

TOWING SAFETY

1. **NEVER** carry any cargo or wood on your log splitter.
2. **NEVER** allow anyone to sit or ride on your log splitter.
3. **ALWAYS** turn the fuel shut off valve on the engine to the “OFF” position before towing the log splitter. Failure to do so may result in flooding the engine.
4. **ALWAYS** confirm coupler tightness each time before towing and after towing 50 miles.
5. **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 I, 2” ball with this log splitter.
6. **NEVER** exceed weight capacity of ball or load limits of coupler. **ALWAYS** replace ball or coupler if damaged.
7. **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.
8. **ALWAYS** be careful when backing up with your log splitter in tow. It could jackknife.
9. **ALWAYS** allow for added length of your log splitter when turning, parking, and crossing intersections and in all driving situations.
10. **ALWAYS use safety chains when towing your log splitter.**
11. Be extra cautious when towing over rough terrain, especially railroad crossings, and avoid sharp turns and steep angles when towing your log splitter.
12. Never attempt to move this machine over hilly or uneven terrain without a tow vehicle or adequate help.
13. **ALWAYS** disconnect your log splitter from the towing vehicle before operating it.
14. **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.
15. See Transporting the Log Splitter section in this manual for proper towing instructions once all federal, local, or state requirements are met.

SAVE THESE INSTRUCTIONS

ASSEMBLY & SET-UP INSTRUCTIONS

UNPACKING THE CONTAINER



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 on the metal crate, put aside the packing top and side frames, then remove the cardboard box.

Step 2: Remove all loose parts included in the container, e.g. operator's manual, wheels, hardware box and engine box.

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

NOTE: DO NOT remove the strap securing the hydraulic hoses 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.

If any parts are damaged or missing, please call our customer service department at 1-800-780-2677 for assistance.

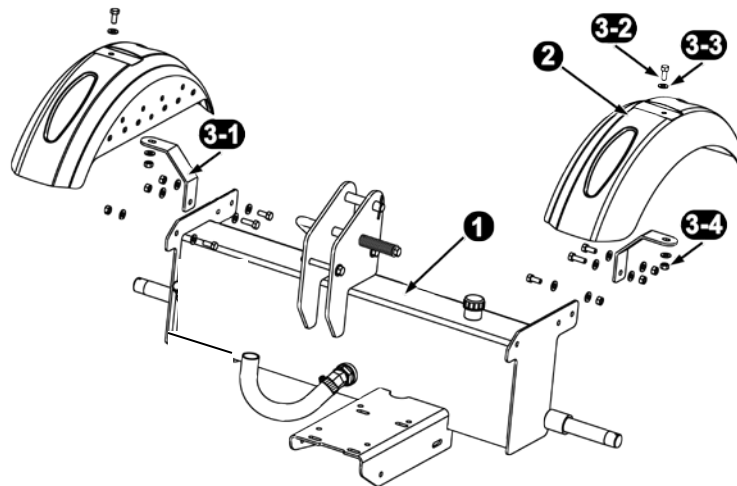
NOTE: DO NOT discard the packing materials until you have carefully inspected and satisfactorily operated the tool.

ASSEMBLY & SET-UP INSTRUCTIONS

ASSEMBLING

NOTE: Due to the weight / size of the log splitter, it's recommended that two or more adults be present to assist with the assembling.

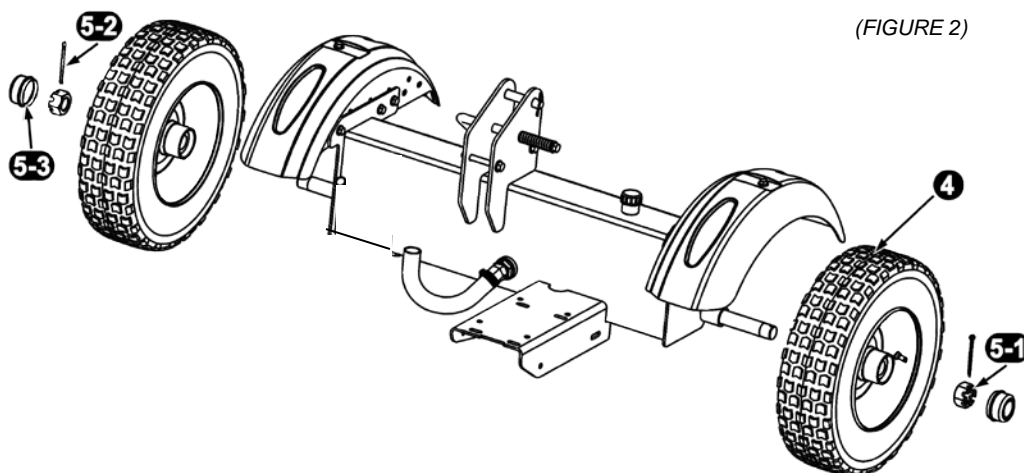
STEP 1: Assemble the fenders to the reservoir assembly. See FIGURE 1.



(FIGURE 1)

REF. NO.	DECSRIPTION	QTY.
1	Reservoir tank assembly	1
2	Fender	2
3	Hardware kit #1(not shown)	1
	Including:	
3-1	Fender support	2
3-2	Hex head bolt / M8 x 25	8
3-3	Flat washer / M8	16
3-4	Lock nut / M8	8

STEP 2: Attach the two wheels to the tank assembly wheel spindles. See FIGURE 2.

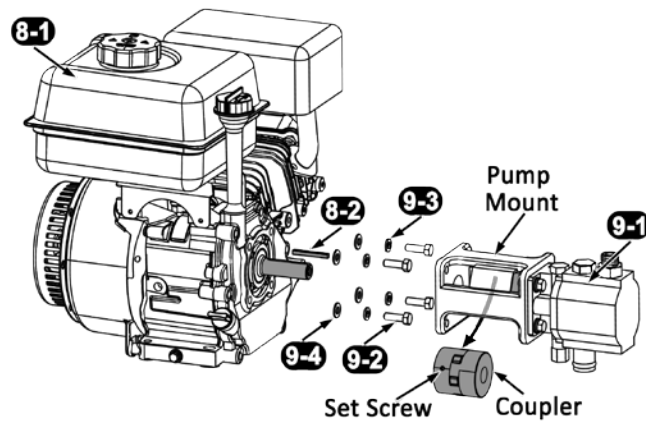


(FIGURE 2)

REF. NO.	DECSRIPTION	QTY.
4	Road-Speed Tire and Wheel	2
5	Hardware Kit #2 (not shown)	1
	Including:	1
5-1	Castle nut / 1-14	2
5-2	Split Pin / Ø4 x 35	2
5-3	Hub cap	2

STEP 3: Assemble the pump assembly to the engine. See FIGURE 38.

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, and ensure the open side of the pump mount facing down as shown in the illustration below, then screw on the hardware and tighten.



(FIGURE 3)

REF. NO.	DECSRIPTION	QTY.
8	Engine assembly (in engine box, not shown), including:	1
8-1	Engine	1
8-2	Engine shaft key	1
9	Hardware Kit #4 (not shown)	1
	Including:	1
9-1	Two stage pump assembly	1
9-2	Hex head bolt / 5/16-24	4
9-3	Spring washer / 5/16	4
9-4	Flat washer / M8	4

STEP 4: Attach the engine assembly to the engine mount plate on the reservoir assembly..

REF. NO.	DECSRIPTION	QTY.
10	Hardware kit #5 (not shown)	1
	Including:	
10-1	Hex head bolt / M8 x 40	4
10-2	Flat washer / M8	8
10-3	Lock nut / M8	4

STEP 5: Assemble the beam to the tank.



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 6: Connect the open ends of the hydraulic hoses to their corresponding fittings.

STEP 7: Assemble the log trays

STEP 8: Assemble the control handle.

ASSEMBLY & SET-UP INSTRUCTIONS

SET-UP

Gas and Oil Fill-Up

Service the engine with gasoline and 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 is shipped with motor oil in the engine. 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

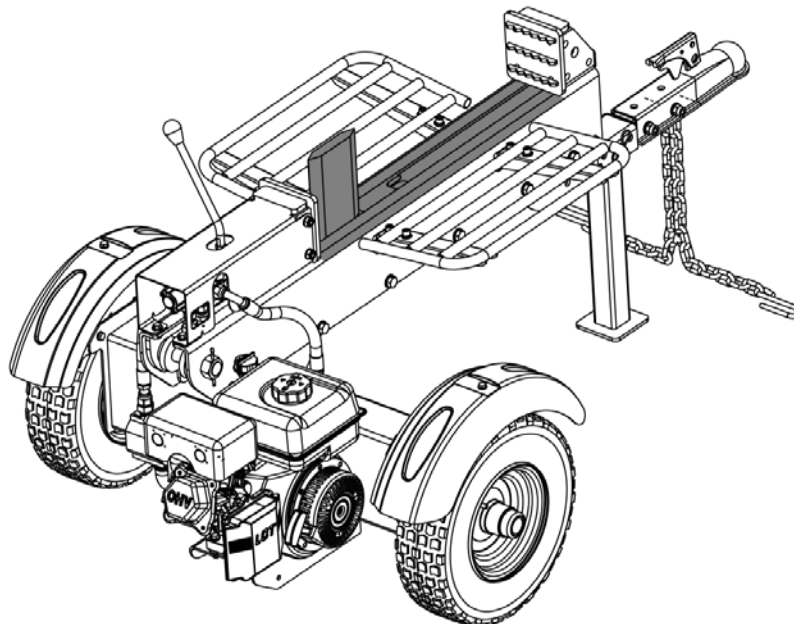
The max recommended operating pressure is 30 psi. Under any circumstances do not exceed the manufacturer's recommended psi. Maintain equal pressure on all tires.



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

Preparing the Log Splitter

1. Lubricate the beam area (where the splitting wedge will slide) with engine oil. Do not use grease. See FIGURE 4.



(FIGURE 4)

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 operating. 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.



WARNING! 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.

- 2) Check the fluid level using the dipstick
- 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.

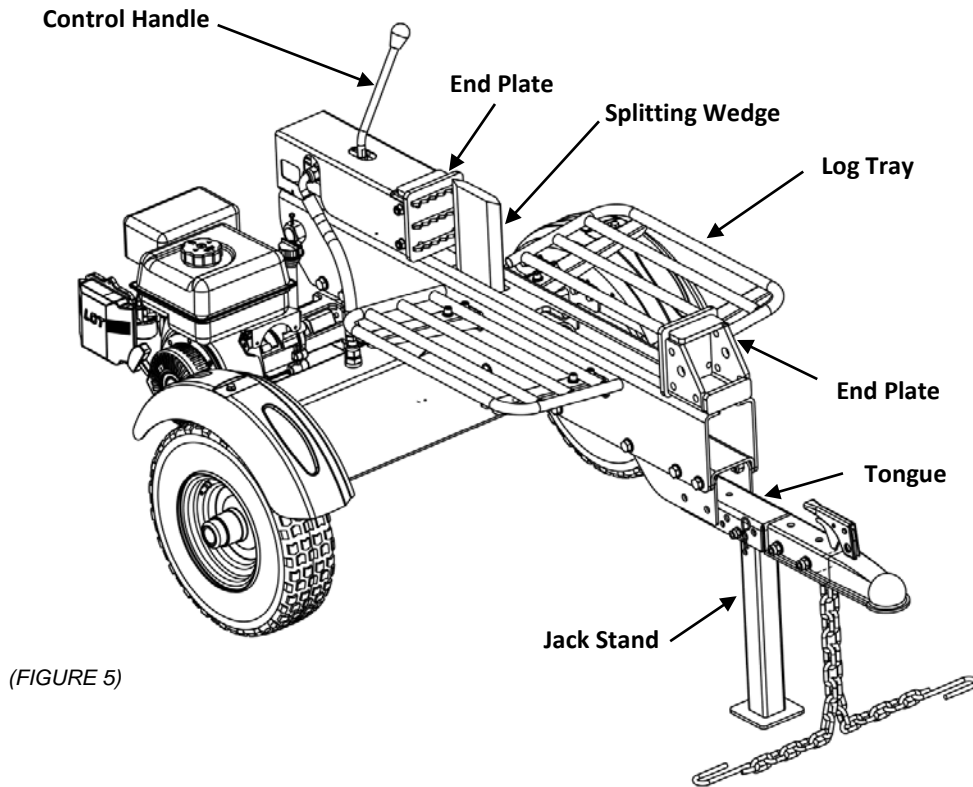
NOTE: Failure to refill the tank will void the splitter's warranty.

- 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.

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

ASSEMBLY & SET-UP INSTRUCTIONS

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 controls on the engine.

Control Handle

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

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.

Splitting Wedge

The wedge is used to split the wood.

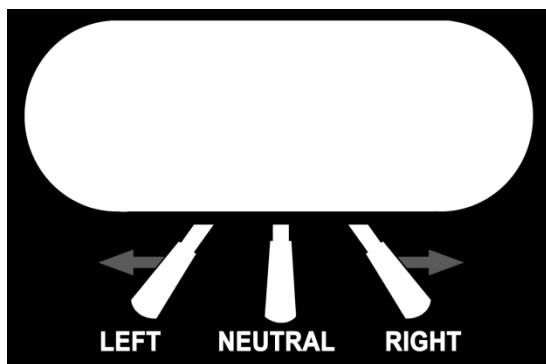
OPERATION INSTRUCTIONS

STARTING & STOPPING THE ENGINE

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 6.



(FIGURE6)

- **RIGHT** — To split wood right. Move the control handle to the right position to move wedge toward the log to split.
- **NEUTRAL** — To stop wedge. The control handle will stop at any position as soon as the handle is released.
- **LEFT** — To split wood left. Move the control handle to the left position to move wedge toward the log to split.

Do not hold the handle in both positions when fully extended or retracted.



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



WARNING! Do not attempt to service, repair or replace control valve. Contact an authorized service dealer.



WARNING! 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

1. Start the engine as instructed in the Engine Operator's manual included with the log splitter.
2. Place the log against one of the end plates and only split the wood in the direction of the grain. See FIGURE 7.
3. To stabilize the log, place your left hand on the side of the log opposite the beam as shown in FIGURE 7.

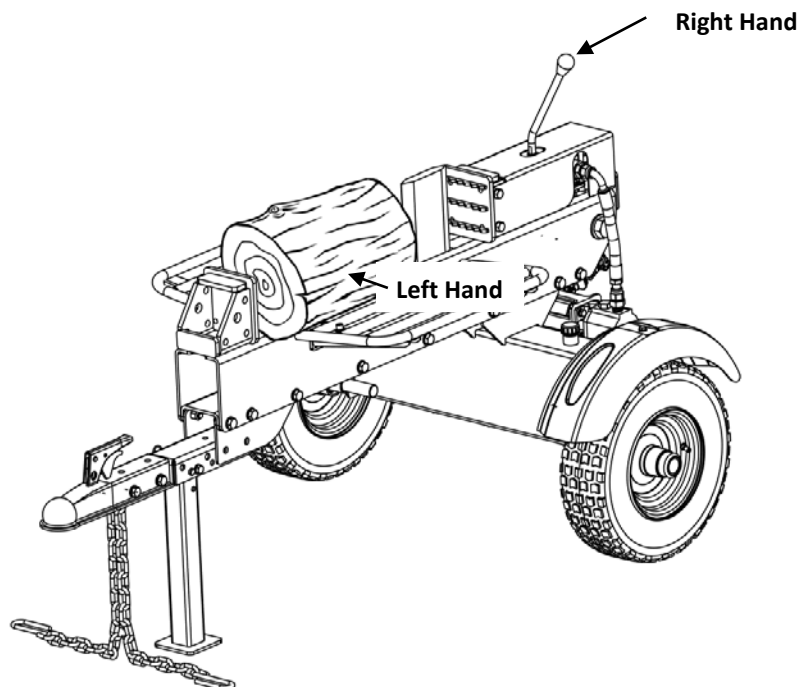


WARNING! Never place a hand on the ends of the log, between the log and the end plate or the log and the splitting wedge.



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

4. Move the control handle to the left or right to split the wood.
5. Remove left hand from the side of the log once wedge just contacts the log. Continue moving control handle forward to split the log.
6. Release the control handle to stop the wedge movement.



(FIGURE 7)



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

OPERATION INSTRUCTIONS

OPERATION TIPS

Always:

1. Use clean fluid and check the fluid level regularly.
2. Use an approved hydraulic fluid. 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.
NOTE: It is recommended that fluids not be mixed.
3. Use a breather cap on fluid reservoir.
4. Make sure the pump is mounted and aligned properly.
5. Use a flexible “spider” type coupling between the engine and pump drive shafts.
6. Keep the hoses clear and unblocked.
7. Bleed the air out of the hoses before operating.
8. Flush and clean the hydraulic system before restarting after servicing.
9. Use “pipe dope” on all hydraulic fittings.
10. Allow time for the engine to warm-up before splitting wood.
11. Prime the pump before the initial start-up by turning over the engine with the spark plug disconnected (if not already done at factory).
12. Split wood along the grain (lengthwise) only.

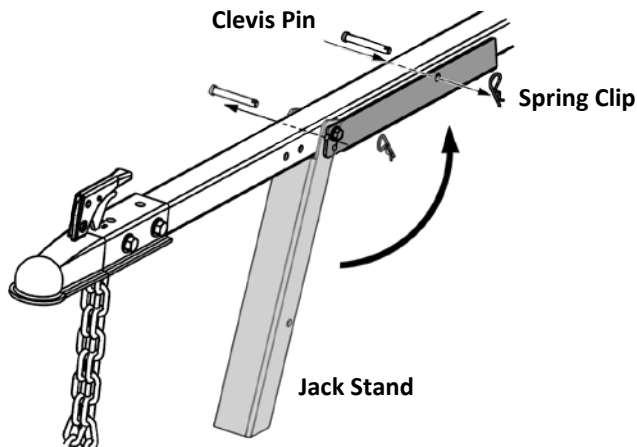
Never:

1. Use when fluid is below 20° F or above 150° F.
2. Use a solid engine / pump coupling.
3. Operate through relief valve for more than 5 seconds.
4. Attempt to adjust the unloading or relief valve settings.
5. Operate with air in hydraulic system.
6. Use teflon tape on hydraulic fittings.
7. Attempt to cut wood across the grain.
8. Attempt to remove partially split wood from the wedge with your hands.

OPERATION INSTRUCTIONS

TRANSPORTING THE LOG SPLITTER

1. Lower the beam to its horizontal position. Make certain the beam is locked securely with the horizontal beam lock.
2. Change the jack stand to transporting position. See FIGURE 8.
 - 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 with the spring clip and clevis pin previously removed.



(FIGURE 8)

3. Attach 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 the towing vehicle.



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 & 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 Operator's 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 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.

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 or Boss Industrial, Inc. Change a new coupler immediately (refer to the pump assembly *STEP 3* in Page 10), if the coupler fails completely, you will experience a loss of hydraulic power.

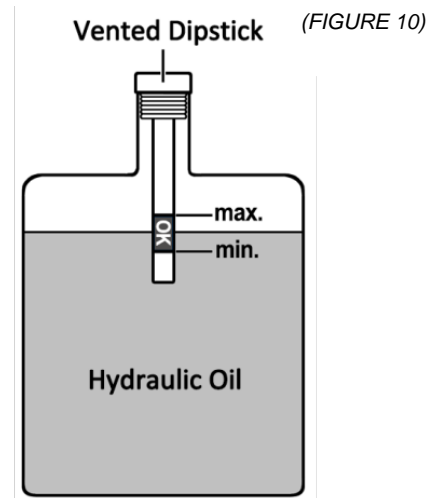
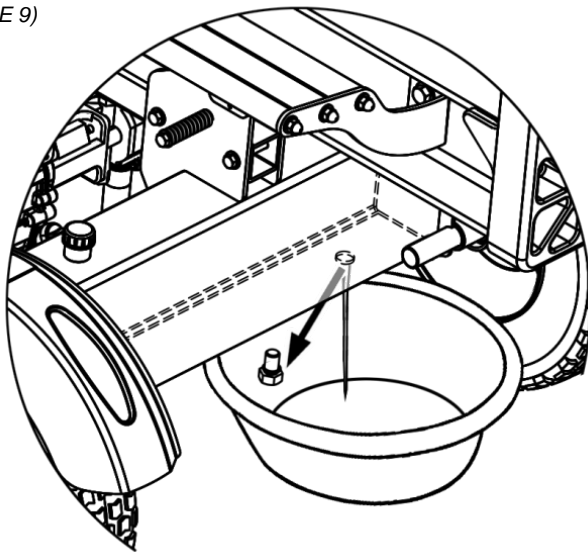
Hydraulic Fluid

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 collection container under the tank.
2. Disconnect the oil drain screw from the bottom of the reservoir tank. See FIGURE 9.
4. Allow the fluid to drain into the container.

(FIGURE 9)



5. After draining, screw on the oil drain screw and tighten.
6. Refill the reservoir tank, and repel the air in the tank).
7. Maintain the fluid level within the range specified on the dipstick at all times. See FIGURE 10.

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.

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 and 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:



WARNING! Never store the machine with fuel in the fuel tank inside of building where fumes may reach an open flame or 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 a 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

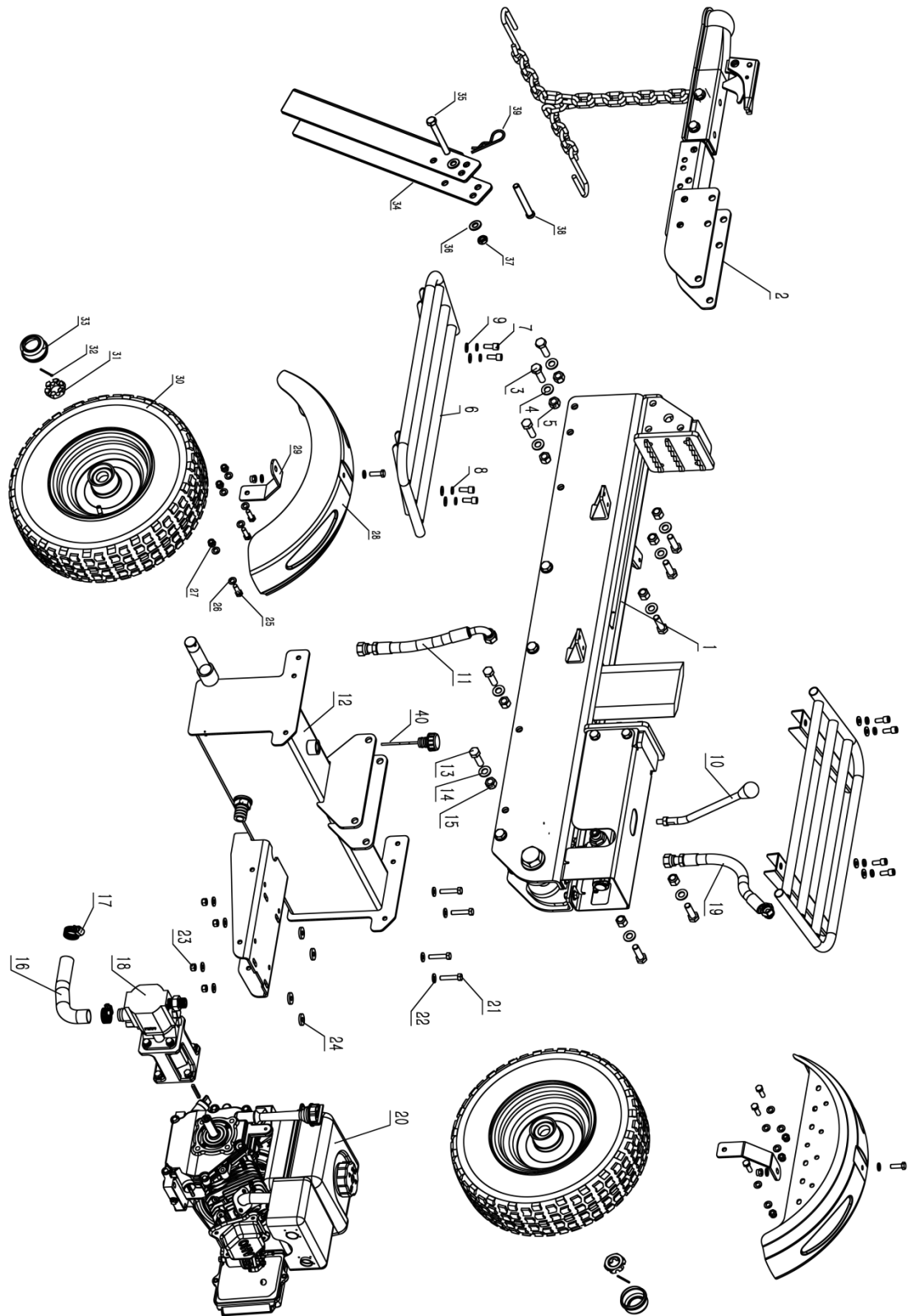
Problem	Cause	Remedy
Cylinder rod will not move	<ol style="list-style-type: none"> 1. Broken drive shaft. 2. Shipping plugs left in hydraulic hoses. 3. Set screws in coupling not adjusted properly. 4. Loose shaft coupling. 5. Gear sections damaged. 6. Damaged relief valve. 7. Hydraulic lines blocked. 8. Incorrect oil level. 9. Damaged control valve. 10. Blocked control valve. 	<ol style="list-style-type: none"> 1. See authorized service dealer. 2. Disconnect hydraulic hoses, remove shipping plugs, and reconnect hoses. 3. See authorized service dealer. 4. Correct engine/pump alignment as necessary. 5. See authorized service dealer. 6. See authorized service dealer. 7. Flush and clean hydraulic system. 8. Check oil level. 9. See authorized service dealer. 10. Flush and clean hydraulic system
Slow cylinder shaft speed while extending and retracting	<ol style="list-style-type: none"> 1. Gear sections damaged. 2. Excessive pump inlet vacuum. 3. Slow engine speed. 4. Damaged relief valve. 5. Incorrect oil level. 6. Contaminated oil. 7. Control valve leaking internally. 8. Internally damaged cylinder. 	<ol style="list-style-type: none"> 1. See authorized service dealer. 2. Make certain pump inlet hoses are clear and unblocked. use short, large diameter inlet hoses. 3. See authorized service dealer. 4. See authorized service dealer. 5. Check oil level. 6. Drain oil, clean reservoir and refill. 7. See authorized service dealer. 8. See authorized service dealer
Leaking Cylinder	<ol style="list-style-type: none"> 1. Worn seals. 2. Scored cylinder. 	<ol style="list-style-type: none"> 1. See authorized service dealer. 2. See authorized service dealer.
Wood will not split or wood splits too slowly	<ol style="list-style-type: none"> 1. Small gear section damaged. 2. Pump check valve leaking. 3. Excessive pump inlet vacuum. 4. Incorrect oil level. 5. Contaminated oil. 6. Control valve leaking internally. 7. Overloaded cylinder. 8. Internally damaged cylinder. 	<ol style="list-style-type: none"> 1. See authorized service dealer. 2. See authorized service dealer. 3. Make certain pump inlet hoses are clear and unblocked. 4. Check oil level. 5. Drain oil, clean reservoir and refill. 6. See authorized service dealer. 7. Do not attempt to split wood against the grain. 8. See authorized service dealer.
Leaking pump shaft seal	<ol style="list-style-type: none"> 1. Broken drive shaft. 2. Engine/pump misalignment. 3. Gear sections damaged. 4. Damaged shaft seal. 5. Plugged oil breather. 	<ol style="list-style-type: none"> 1. See authorized service dealer. 2. Correct alignment as necessary. 3. See authorized service dealer. 4. See authorized service dealer. 5. Make certain reservoir is properly vented.
Wedge continues to move forward when control handle is released	<ol style="list-style-type: none"> 1. Damaged control valve 	<ol style="list-style-type: none"> 1. See authorized service dealer.
Control handle does not move when released from forward position	<ol style="list-style-type: none"> 1. Hydraulic fluid too cold. 2. Hydraulic fluid too thick. 3. Hydraulic fluid contaminated. 4. Damaged control valve. 	<ol style="list-style-type: none"> 1. Warm up engine. 2. Replace hydraulic fluid. 3. Replace hydraulic fluid. 4. See authorized service dealer.

SPECIFICATIONS

Model		GD16T21
Engine		See engine manual
Pump		Two-Stage, 9 gpm
Cylinder (Bore)		3 in.
Maximum Splitting Force		16 Tons*
Hydraulic Pressure		4200 psi*
Maximum Log Length		20.5 in.
Wedge Height		6 in.
Cycle Time	Right	3.5 Seconds*
	Left	4 Seconds*
Wheels		16 x 4.8 x 8 in.
Hydraulic Capacity		3.4 Gallons
Height		41.5 / 71 in.
Length		87 / 84 in.
Width		41 in.
Net Weight		307 lbs

*Tonnage and cycle times may vary dependent upon mechanical and environmental conditions.

EXPLODED DIAGRAM & PARTS LIST



REF #	PART NAME	SPECIFICATIONS	QTY PER UNIT
1	Beam incl. Cylinder, wedge, end plates	16T	1
2	Tongue w/ Tow Hitch		1
3	Hex Head Bolt	1/2-13*40	6
4	Flat Washer	1/2	6
5	Lock Nut	1/2-13	6
6	Log Tray		2
7	Inner Hex Bolt	M8*20	8
8	Spring Washer	M8*2.5	8
9	Flat Washer	M8	8
10	Control Handle Lever		1
11	Hydraulic Hose (Oil return)		1
12	Reservoir		1
13	Hex Head Bolt	1/2-13*40	4
14	Flat Washer	1/2-13	4
15	Lock Nut	1/2-13	4
16	Oil Suction Tube		1
17	Hose Clamp	Ø30	2
18	Hydraulic pump w/ pump mount, coupling		1
19	Hydraulic Hose		1
20	Gas Engine		1
21	Hex Head Bolt	M8*40	4
22	Flat Washer	M8	8
23	Lock Nut	M8	4
24	Rubber Damping Washer		4
25	Hex Head Bolt	M8*25	8
26	Flat Washer	M8	16
27	Lock Nut	M8	8
28	Fender		2
29	Fender Support		2
30	Wheel	16*4.8*8 in.	2
31	Castle Nut	1-14	2
32	Split Pin	Ø4*50	2
33	Hub Cap		2
34	Jack Stand		1
35	Hex Head Bolt	M10*120	1
36	Flat Washer	M10	2
37	Lock Nut	M10	1
38	Clevis Pin	Ø10	1
39	Spring Clip	Ø3	1
40	Dipstick		1

WARRANTY

LIMITED WARRANTY STATEMENT

Boss Industrial, Inc., ("Boss Industrial") warrants to the original retail purchaser that this BOSS brand outdoor product is free from defect in material and workmanship and agrees to repair or replace, at Boss Industrial's discretion, any defective product free of charge within these time periods from the date of purchase.

- Two years for all models if used for personal, family, or household use;
- 90 days for any unit used for other purposes, such as rental or commercial.

This warranty extends to the original retail purchaser only and commences on the date of the original retail purchase. Any part of the this product manufactured or supplied by Boss Industrial and found in the reasonable judgment of Boss Industrial to be defective in material or workmanship will be repaired or replaced without charge for parts and labor by a Boss Industrial authorized service center. **How to process a warranty claim? You must first call the BOSS INDUSTRIAL service hotline 1 800 780 2677. Our technical team will guide you in trouble shooting, repairing, or returning a defective part or machine. Any unauthorized repair or return without a valid return Authorization Number from Boss Industrial will invalidate this warranty.** The expense of delivering the product to the dealer for warranty work and the expense of returning it back to the owner after repair or replacement will be paid by the owner. Boss Industrial's responsibility in respect to claims is limited to making the required repairs or replacements and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any BOSS brand product. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by a Boss Industrial authorized service center.

This warranty is limited to ninety (90) days from the date of original retail purchase for any Boss Industrial brand product that is used for rental or commercial purposes, or any other income-producing purpose.

This warranty does not cover any BOSS brand product that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in this operator's manual. This warranty does not apply to any damage to the product that is the result of improper maintenance or to any product that has been altered or modified. The warranty does not extend to repairs made necessary by normal wear or by the use of parts or accessories which are either incompatible with the BOSS brand product or adversely affect its operation, performance, or durability. In addition, this warranty does not cover:

- A. Tune-ups – Spark Plugs, Carburetors, Adjustments, Ignition, Filters
- B. Wear items – Tires, nylon liners, rubber seals, hydraulic oil, etc...
- C. Gas Engines – as they are covered under the Engine Manufacturers' Warranty.

Boss Industrial reserves the right to change or improve the design of any BOSS brand product without assuming any obligation to modify any product previously manufactured.

ALL IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE STATED WARRANTY PERIOD. ACCORDINGLY, ANY SUCH IMPLIED WARRANTIES INCLUDING MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, ARE DISCLAIMED IN THEIR ENTIRETY AFTER THE EXPIRATION OF THE APPROPRIATE TWO-YEAR, ONE-YEAR, OR NINETY-DAY WARRANTY PERIOD. BOSS INDUSTRIAL'S OBLIGATION UNDER THIS WARRANTY IS STRICTLY AND EXCLUSIVELY LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS AND BOSS INDUSTRIAL DOES NOT ASSUME OR AUTHORIZE ANYONE TO ASSUME FOR THEM ANY OTHER OBLIGATION. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. BOSS INDUSTRIAL ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL, OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, EXPENSE OF RETURNING THE PRODUCT TO AN AUTHORIZED BOSS INDUSTRIAL SERVICE CENTER AND EXPENSE OF DELIVERING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY SERVICE IS BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, OR INCONVENIENCE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty applies to all BOSS brand products manufactured by or for Boss Industrial and sold in the United States.



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