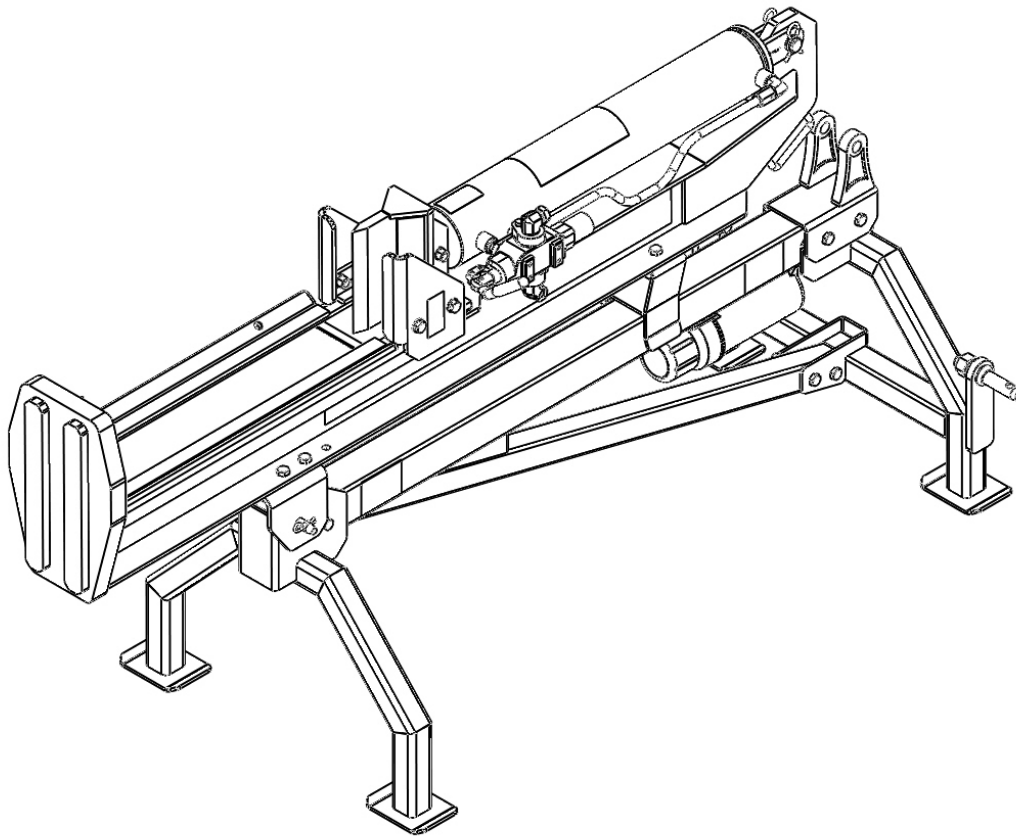




**DIRTY HAND
TOOLS**

3-Point Hitch Vertical/Horizontal Log Splitter



Operation Manual

Model # 100450



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.

Part # 100719 Rev B

Designed & Engineered in Colorado, USA



Assembled with Foreign & Domestic Components

For Service or Questions

Call 1-877-487-8275

720-287-5182

www.dirtyhandtools.com

Dirty Hand Tools® is a brand of



FrictionlessWorld

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Westminster, CO 80234 • 720-287-5182

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Important Safety Information



WARNING

WARNING: Read and understand the complete Operation Manual before assembling or using this product! Failure to comprehend and comply with warnings, cautions and instructions for assembly and operation could result in serious injury or death.

Do not permit children to operate this equipment at any time. Do not permit others that have not read and understood the complete Operation Manual to operate this equipment. Operation of power equipment can be dangerous. It is the sole responsibility of the operator to understand the assembly and safe operation of this product.

Call our customer service department at **720-287-5182**, **1-877-487-8275**, or visit www.dirtyhandtools.com if you have any questions or concerns about the safe operation of this equipment.



DANGER

INTENDED USE

Do Not Use the log splitter for any purpose other than splitting wood, for which it was designed. Any other use is unauthorized and may result in serious injury or death.

PERSONAL PROTECTIVE EQUIPMENT

When operating this log splitter it is essential that you wear safety gear including goggles or safety glasses, steel toed shoes and tight fitting gloves (no loose cuffs or draw strings). Always wear ear plugs or sound deafening headphones to protect against hearing loss when operating this log splitter.



CAUTION

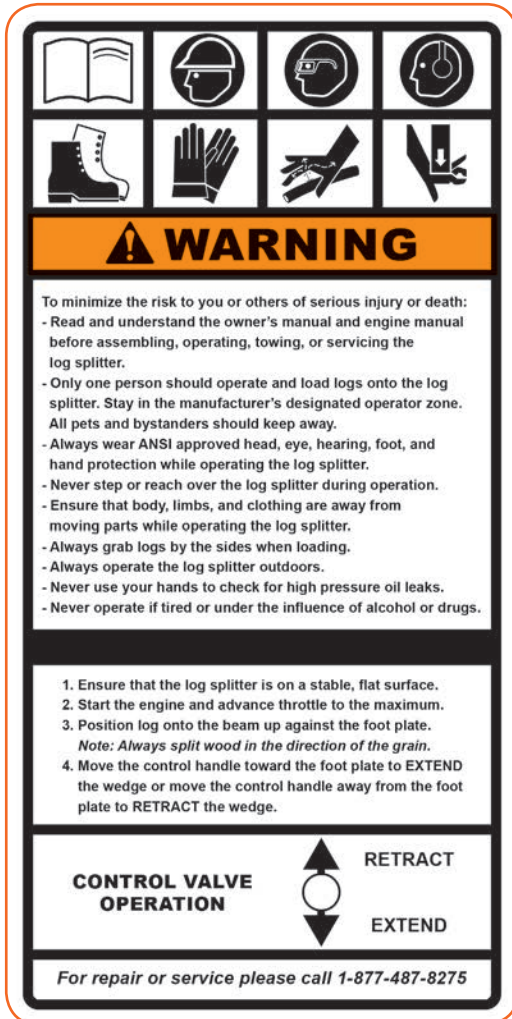
Do Not wear loose clothing or jewelry that can be caught by moving parts of the log splitter. Keep clothing and hair away from all moving parts when operating this log splitter.



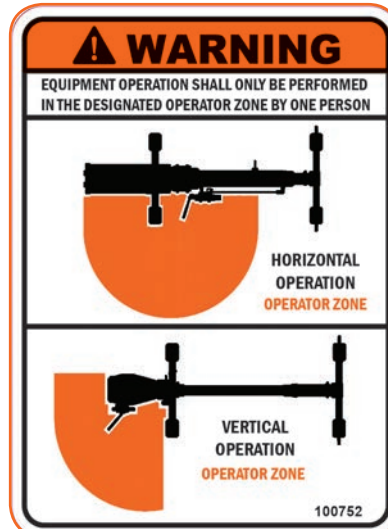
Important Safety Information

SAFETY DECALS

Make sure all safety warning decals are attached and in readable condition. Replace missing or defaced decals. Contact Dirty Hand Tools at **1-877-487-8275** for replacement decals.



Operation Decal Part # 100212



Operator Zone Decal Part # 100752



Pinch Point Decal Part # 100204

Important Safety Information



DANGER

GENERAL SAFETY

Failure to follow warnings, cautions, assembly and operation instructions in the Operation Manual may result in serious injury or death.

Read the Operation Manual before operation.

- **Do not** permit children to operate this equipment at any time. Do not permit others that have not read and understood the complete Operation Manual to operate this equipment.
- Keep all people and pets a minimum of 10 feet away from the work area when operating this log splitter. Only the operator is to be near the log splitter during use.
- **Do not** operate the log splitter when under the influence of alcohol, drugs or medication.
- **Do not** allow a person who is tired or otherwise impaired or not completely alert to operate the log splitter.

PREPARATION OF THE LOG

Both ends of the log should be cut as square as possible to prevent the log from rotating out of the splitter during operation.

Do not split logs greater than 25 in. in length.



DANGER

WORK AREA

- **Do not** operate the log splitter on icy, wet, muddy or otherwise slippery ground. **ONLY** operate your log splitter on level ground.
- **Do not** operate the log splitter in an enclosed area. Exhaust fumes from the tractor's engine contains carbon monoxide which can be harmful or deadly when inhaled.
- Operate the log splitter in daylight or under good artificial light.
- Keep the work area free of clutter. Remove split wood from around the log splitter immediately after each use to avoid potential tripping.

Important Safety Information

OPERATION OF THE LOG SPLITTER

Operate the log splitter from within the operation zone as shown in the diagrams below. The operator has the safest and most efficient access to the control valve and the beam in these locations.



DANGER

Failure to operate the log splitter in this position can result in serious injury or death.

HORIZONTAL OPERATION



VERTICAL OPERATION



DANGER

- Make sure the operator knows how to stop and disengage the controls before operating.
- Do not place hands or feet between the log and splitting wedge during forward or reverse stroke. Serious injury or death could result.
- Do not straddle or step over the log splitter during operation.
- Do not reach or bend over the log splitter to pick up a log.
- Do not attempt to split two logs on top of each other.
- Do not attempt to cross split a log.
- Do not attempt to load your log splitter when the ram or wedge is in motion.
- Use your hand to operate the control lever on the valve. Do not use your foot, a rope or any extension device.
- Do not move the log splitter while the engine is running.
- Never leave the equipment unattended while the tractor is running. Shut off the tractor's engine even if you are leaving the log splitter for a short period of time.

Important Safety Information

REPAIR AND MAINTENANCE



- **Do not operate the log splitter when it is in poor mechanical condition or in need of repair.** Frequently check that all nuts, bolts, screws, hydraulic fittings and hose clamps are tight.
- **Do not** alter the log splitter in any manner. Any alteration will void the warranty and could cause the log splitter to be unsafe to operate. Perform all recommended maintenance procedures before using the log splitter. Replace all damaged or worn parts immediately.
- Replacement parts must meet manufacturer's specifications.

HYDRAULIC SAFETY

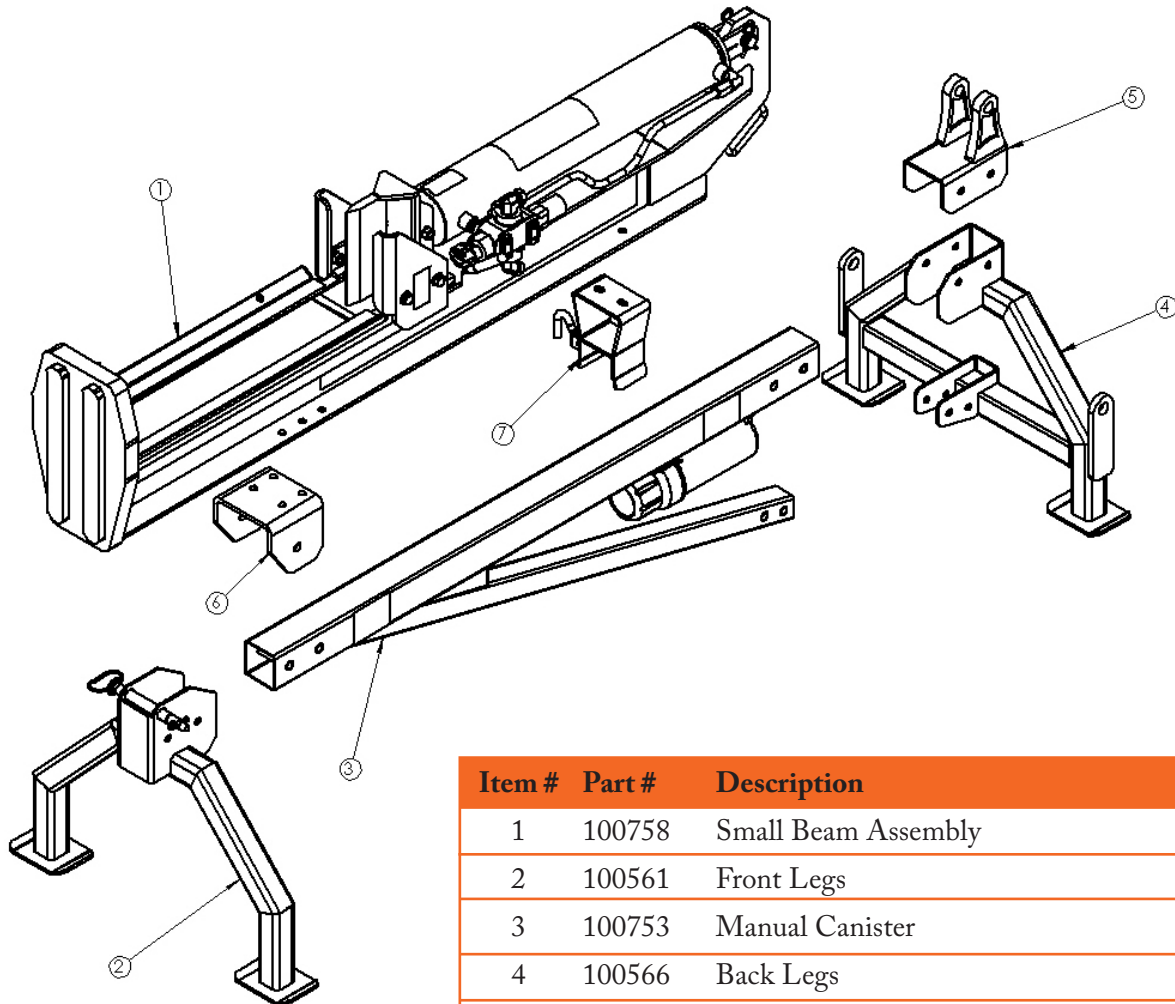
The hydraulic system of the log splitter requires careful inspection along with the mechanical parts. Be sure to replace frayed, kinked, cracked or otherwise damaged hydraulic hoses or hydraulic components.

- **Check for hydraulic fluid leaks** by passing a piece of paper or cardboard underneath or over the area of the leak. **Do not check for leaks with your hand.** *Fluid escaping from the smallest hole, under pressure, can have enough force to penetrate the skin causing serious injury or death.*
- **Seek professional medical attention immediately if injured by escaping hydraulic fluid.** Serious infection or reaction can develop if medical treatment is not administered immediately.
- 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.
- **Do not** adjust the hydraulic valve. The pressure relief valve on the log splitter is preset at the factory. *Only a qualified service technician should perform this adjustment.*

1. Assembly Overview

List of tools needed for assembly:

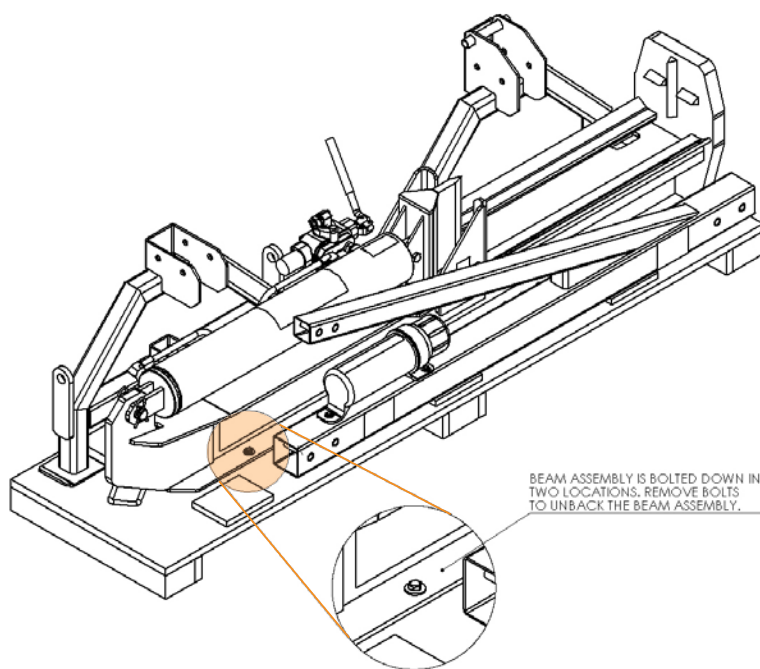
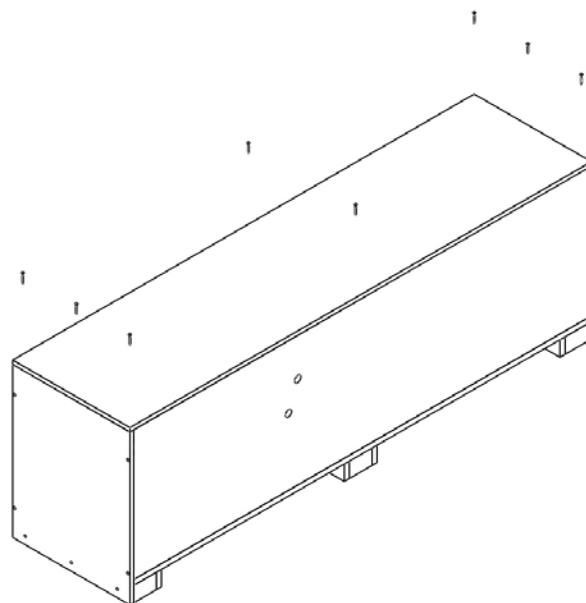
- Hammer
- Needle nose pliers
- Box cutters
- #2 Phillips screw driver
- 6mm hex key wrench
- 8mm driver
- 13mm wrench or socket wrench
- 17mm wrench or socket wrench
- 19mm wrench or socket wrench
- 22mm and 24mm wrenches or crescent wrench
- 28mm socket wrench



Item #	Part #	Description	Qty.
1	100758	Small Beam Assembly	1
2	100561	Front Legs	1
3	100753	Manual Canister	1
4	100566	Back Legs	1
5	100745	Top Link	1
6	100720	Beam Pivot Bracket	1
7	100150	Beam Lock	1

2. Unpacking the Container

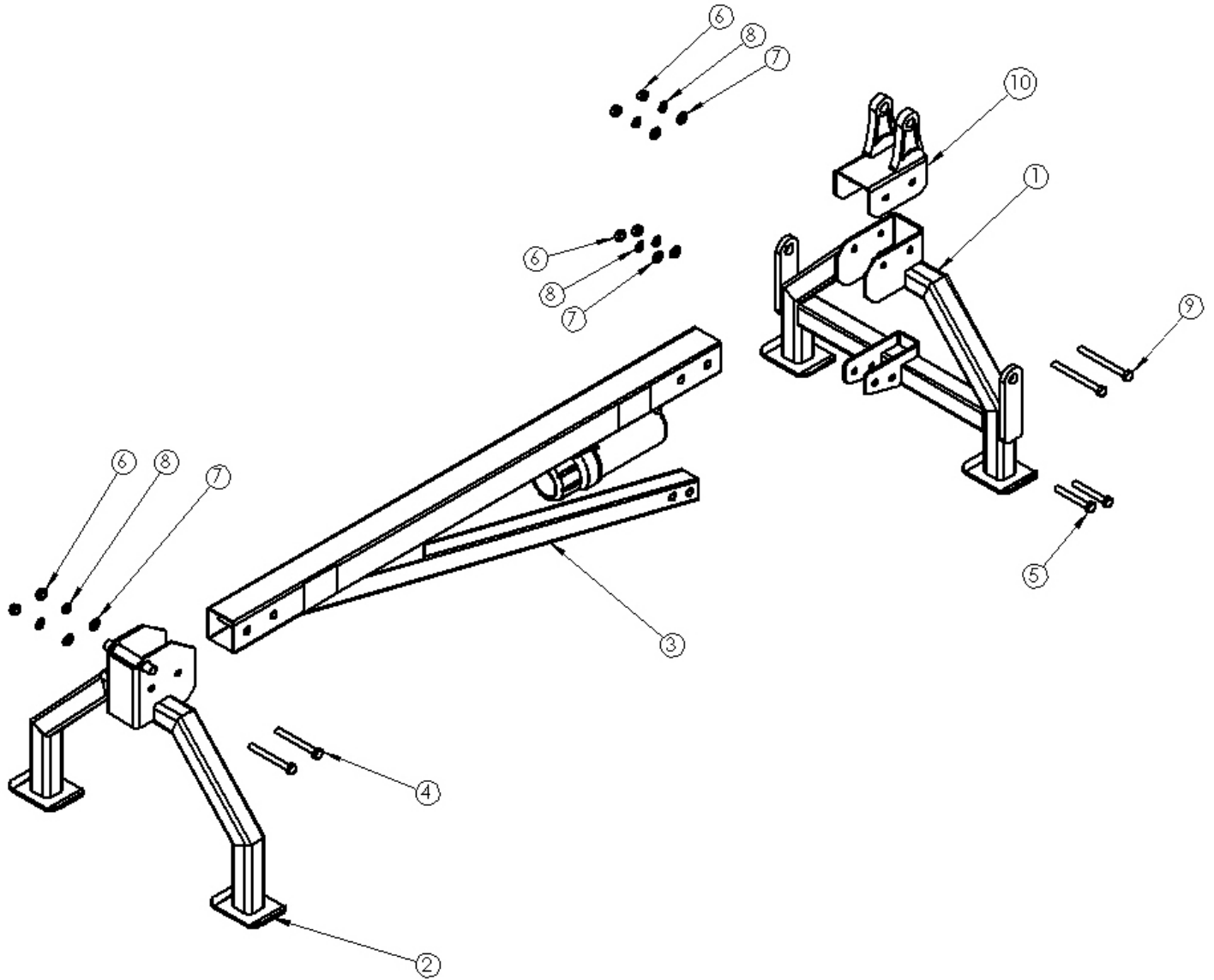
Step 1: Remove top and sides of crate. Use a #2 phillips head and 8mm driver to remove hardware from the plywood shipping crate (shown above). Remove the straps securing the frame to the side of the crate. Due to the use of wood staples, it may be necessary to use a hammer and/or a crow bar to fully remove the packaging top and sides.



Step 2: Remove restraining bolts (tee nut bolts) from the beam assembly. Use a 13mm wrench or socket to remove the two hex bolts that are securing the beam to the crate bottom (as shown below). Please note that the two hex bolts are located diagonally opposed to each other.

Step 3: Remove Tank & Engine Assembly from crate, then remove the Beam & Cylinder Assembly. Lift Beam & Cylinder Assembly to its vertical position standing on the footplate.

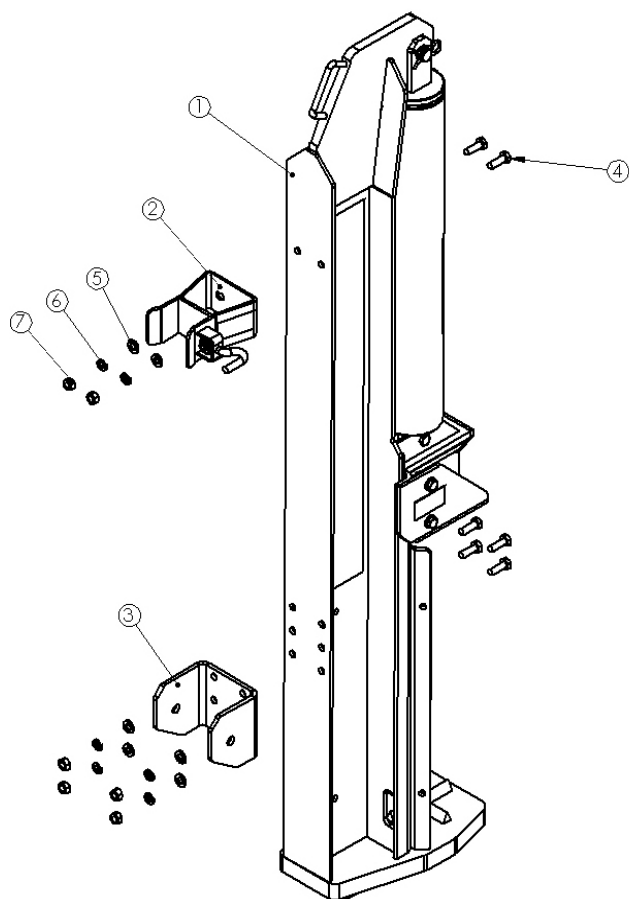
3. Frame Assembly



Item #	Part #	Description	Qty.
1	100566	Back Legs	1
2	100561	Front legs	1
3	100753	Manual Canister	1
4	100200	Hex Bolt, M12 x 1.75 x 110mm, G8.8	2
5	100570	Hex Bolt, M12 x 1.75 x 90mm, G8.8	2
6	100022	Hex Nut, M12 x 1.75, G8.8	6
7	100181	Flat Washer, M12	6
8	100023	Lock Washer, M12	6
9	100751	Hex Bolt, M12 x 1.75 x 130mm, G8.8	2
10	100745	Top Link	1

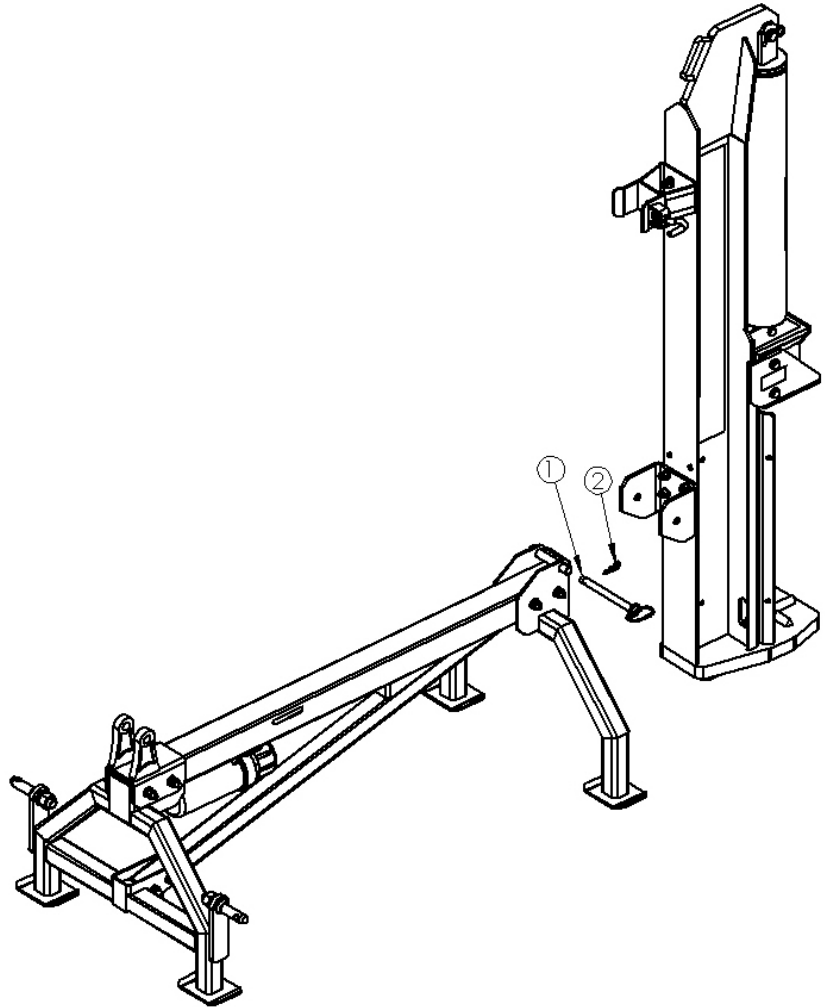
4. Beam Bracket Assembly

1. Attach the **Beam Lock Bracket** ② to the **Beam & Cylinder Assembly** ① with Hex Bolt, M12 x 1.75 x 35mm ④; Flat Washer, M12 ⑤; Lock Washer, M12 ⑥; and Hex Nut, M12 x 1.75 ⑦ in two places. Tighten securely using 19mm socket wrenches.
2. Attach the **Pivot Bracket** ③ to the **Beam & Cylinder Assembly** ① using the four bottom holes with Hex Bolt, M12 x 1.75 x 35mm ④; Flat Washer, M12 ⑤; Lock Washer, M12 ⑥; and Hex Nut, M12 x 1.75 ⑦ in four places. Tighten securely using 19mm socket wrenches.



Item #	Part #	Description	Qty.
1	100025	Beam & Cylinder Assembly	1
2	100150	Beam Lock Bracket	1
3	100720	Beam Pivot Bracket	1
4	100021	Hex Bolt, M12 x 1.75 x 35mm, G8.8	7
5	100181	Flat Washer, M12	10
6	100023	Lock Washer, M12	8
7	100022	Hex Nut, M12 x 1.75, G8.8	8

5. Beam and Frame Assembly



Item #	Part #	Description	Qty.
1	100131	Hitch pin, 5/8 in. x 6 1/4 in.	1
2	100132	R-Clip, 1/8 in., Fits 1/2 in. to 3/4 in.	1

6. Final Installation Check

Check tightness of all fittings, nuts and bolts prior to filling the log splitter with fluids.

Operating Instructions



DANGER

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Call our customer service department at **720-287-5182, or 1-877-487-8275**, or visit www.dirtyhandtools.com if you have any questions or concerns about the safe operation of this equipment.

1. Set up the log splitter in a clear, level area.
2. Place a log on the beam against the foot plate. Make sure the log is securely on the foot plate and up against the beam.
3. Depress the valve handle so that the cylinder will drive the wedge into the log. Extend the cylinder until the log splits or to the end of its stroke. If the log has not completely split after the cylinder has reached the end of its extension, retract the cylinder.

IMPORTANT: Leaving the valve in the “actuate” position at the end of the stroke may damage the pump. Always use extra care when splitting logs with unsquare ends.

IMPORTANT: To extend the life of the hydraulic cylinder, avoid “bottoming out” the wedge plate to the foot piece. To conform with industry safety standards the wedge stops 2 inches from the end of the stroke.

The log splitter can easily be rotated from horizontal to vertical operating position by removing and replacing the lynch pin. Make sure the lynch pin is fully engaged and secure.



WARNING

WARNING: Tilt slowly. Do not move from vertical to horizontal operating position until the support frame legs are in a secure position. Tractor lift arms could fall resulting in serious injury.



Maintenance

1. With normal use the log splitter will not require any regular maintenance other than checking for loose bolts and the inspection of hoses and fittings.
2. If the wedge becomes dull or nicked, it can be removed and sharpened. Remove the 1/2 in. diameter bolt that connects the wedge to the cylinder. The hose from the valve may need to be removed. While the log splitter is in the horizontal position, loosen the hose clamp and disconnect the hose from the valve. Carefully lift the cylinder to allow the wedge to slide forward. The wedge can now be lifted off and sharpened.
3. See also Repair and Maintenance Safety on page 8 of this manual.
4. All replacement parts must meet manufacturer's specifications.

Splitting Force and Cycle Time

Splitting force is determined by cylinder size and tractor PSI. Cycle time depends on cylinder size and GPM's that the tractor produces. Tractor should ideally produce 8-15 GPM at 1500 to 2500 PSI.

Do not exceed 3200 PSI. See tables below for approximate splitting force and cycle time calculations.



WARNING

The 3-Point Hitch Log Splitter is designed for tractors with pressure ratings that are under 3200psi. Exceeding the recommended pressure rating will void the warranty and damage the equipment.

Splitting Force in Tons

Cylinder Dia.	1000 psi	1500 psi	2000 psi	2500 psi	3000 psi	3500 psi
3"	3.5	5.3	7.1	8.8	10.6	12.4
3-1/2"	4.8	7.2	9.6	12.0	14.4	16.8
4"	6.3	9.4	12.6	15.7	18.8	22.0
4-1/4"	7.1	10.6	14.2	17.7	21.3	24.8
4-1/2"	7.9	11.9	15.9	19.9	23.9	27.8
5"	9.8	14.7	19.6	24.5	29.5	34.3

Cycle Time in Seconds

Cylinder Size	5 GPM	10 GPM	15 GPM	20 GPM	25 GPM
3" x 24"	15.4	7.7	5.1	3.9	3.1
3-1/2" x 24"	21.8	10.9	7.3	5.4	4.4
4" x 24"	28.3	14.2	9.4	7.1	5.7
4-1/4" x 24"	32.4	16.2	10.8	8.1	6.5
4-1/2" x 24"	36.6	18.3	12.2	9.2	7.3
5" x 24"	45.0	22.5	15.0	11.3	9.0

Warranty

IMPORTANT NOTICE

We, the manufacturer, reserve the right to change the product and/or specifications in this manual without notification. The manual is for information usage only and the pictures and drawings depicted herein are for reference only.

Warranty Repair and Service

Do not return this product to the store for warranty issues or repair. Call our customer service department at **720-287-5182, 1-877-487-8275**, or visit www.dirtyhandtools.com for the location of the nearest service center.

Record the information below for future reference.

Model No. _____

Serial No. _____

Date of Purchase _____

Place of Purchase _____

Specifications

SKU/Part No.	100450
Description	Vertical/Horizontal Log Splitter
Tractor Categories	CAT 1 and CAT 2
Hitch	Tractor 3-Point
Maximum Splitting Force	15 to 22 Tons*
Maximum Log Length	25"
Cycle Time	9 to 15.4 Seconds*
Cylinder	4" Diameter x 24" Stroke
Wedge	8" High Heat-Treated Steel
Beam	8" Foot Plate & Removable Stripper Plates
Valve	Auto Return with Adjustable Detent
Dimensions	72"L x 22"W x 42"H (72" Vertical)
Shipping Weight	365 Lbs.
Warranty	3 Year / 1 Year Limited Warranty

*Depends on Tractor and Cylinder Diameter. (see charts on previous page)
Splitting Force is determined by cylinder size and tractor PSI. Cycle Time is determined by cylinder size and GPM produced by tractor. Ideally tractor should produce 8 - 15 GPM at 1500 to 2500 PSI. Do not exceed 3200 PSI, exceeding 3200 PSI will overstress log splitter mechanism and void warranty.

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