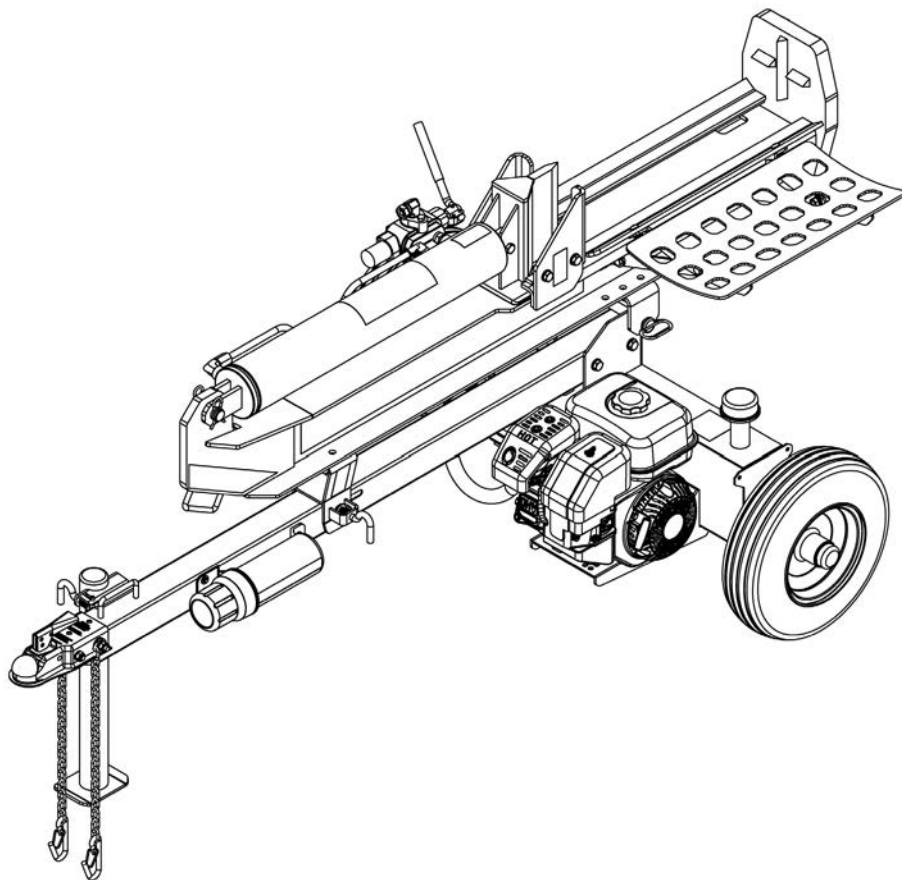




22-Ton, 27-Ton, 28-Ton & 35-Ton Vertical/Horizontal Log Splitters



MODEL #'s 100171 (22-Ton), 100408 (27-Ton), 100342 (28-Ton), 100466 (35-Ton)

Operation Manual



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 # 100164 Rev C
Effective March 1, 2015



For Service or Questions

Call 1-877-487-8275

720-287-5182

www.dirtyhandtools.com

Dirty Hand Tools® is a brand of



FrictionlessWorld

1100 W 120th Ave., Suite 600
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

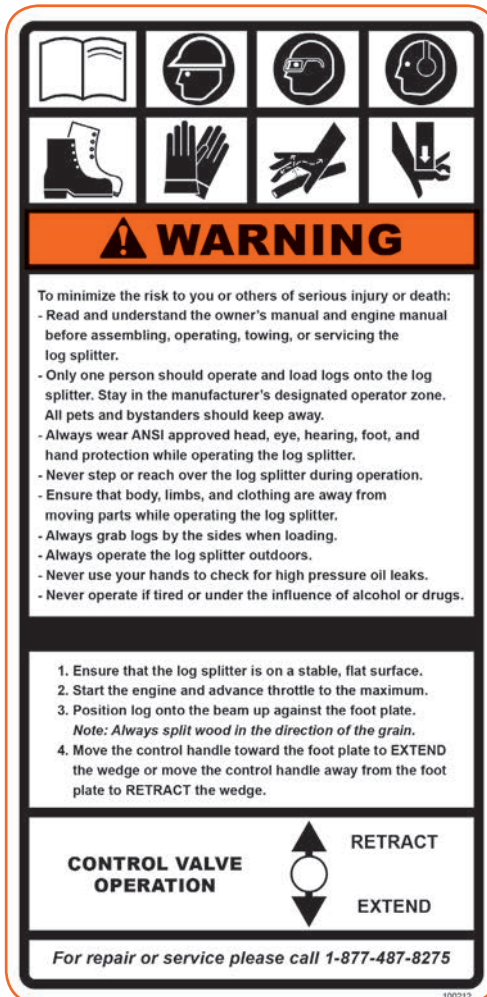
Do Not wear loose clothing or jewelry that can be caught by moving parts of the log splitter. Keep clothing and hair away from all moving parts when operating this log splitter.



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.



WARNING

To minimize the risk to you or others of serious injury or death:

- Read and understand the owner's manual and engine manual before assembling, operating, towing, or servicing the log splitter.
- Only one person should operate and load logs onto the log splitter. Stay in the manufacturer's designated operator zone. All pets and bystanders should keep away.
- Always wear ANSI approved head, eye, hearing, foot, and hand protection while operating the log splitter.
- Never step or reach over the log splitter during operation.
- Ensure that body, limbs, and clothing are away from moving parts while operating the log splitter.
- Always grab logs by the sides when loading.
- Always operate the log splitter outdoors.
- Never use your hands to check for high pressure oil leaks.
- Never operate if tired or under the influence of alcohol or drugs.

1. Ensure that the log splitter is on a stable, flat surface.
2. Start the engine and advance throttle to the maximum.
3. Position log onto the beam up against the foot plate.
Note: Always split wood in the direction of the grain.
4. Move the control handle toward the foot plate to **EXTEND** the wedge or move the control handle away from the foot plate to **RETRACT** the wedge.

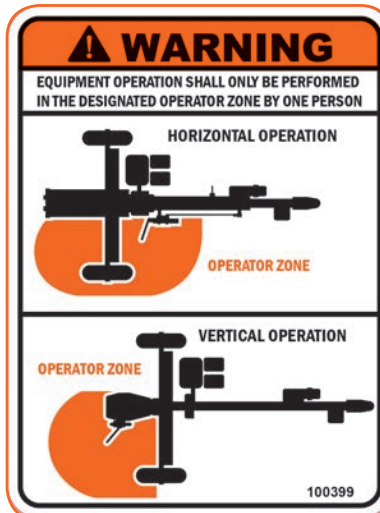
CONTROL VALVE OPERATION

RETRACT
EXTEND

For repair or service please call 1-877-487-8275

100212

Operation Decal Part # 100212



WARNING

EQUIPMENT OPERATION SHALL ONLY BE PERFORMED IN THE DESIGNATED OPERATOR ZONE BY ONE PERSON

HORIZONTAL OPERATION

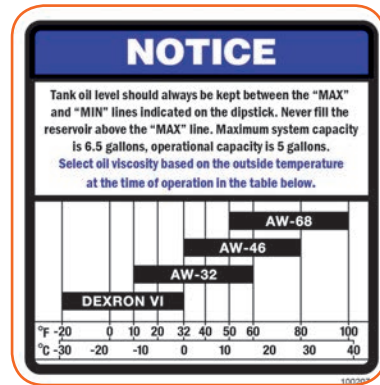
OPERATOR ZONE

VERTICAL OPERATION

OPERATOR ZONE

100399

Operator Zone Decal Part # 100399



NOTICE

Tank oil level should always be kept between the "MAX" and "MIN" lines indicated on the dipstick. Never fill the reservoir above the "MAX" line. Maximum system capacity is 6.5 gallons, operational capacity is 5 gallons.

Select oil viscosity based on the outside temperature at the time of operation in the table below.

°F	-20	0	10	20	32	40	50	60	80	100
°C	-30	-20	-10	0	10	20	30	40		

DEXRON VI
AW-32
AW-46
AW-68

100207

Oil Level Decal Part # 100207

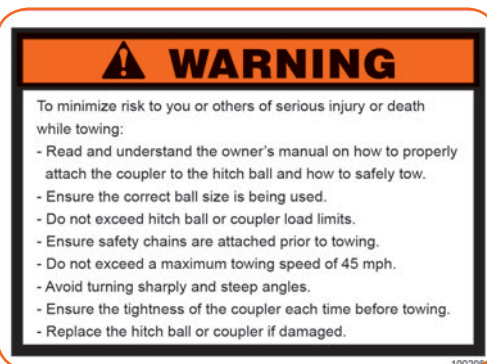


DANGER

**PINCH POINT HAZARD
KEEP CLEAR
DURING OPERATION**

100204

Pinch Point Decal Part # 100204



WARNING

To minimize risk to you or others of serious injury or death while towing:

- Read and understand the owner's manual on how to properly attach the coupler to the hitch ball and how to safely tow.
- Ensure the correct ball size is being used.
- Do not exceed hitch ball or coupler load limits.
- Ensure safety chains are attached prior to towing.
- Do not exceed a maximum towing speed of 45 mph.
- Avoid turning sharply and steep angles.
- Ensure the tightness of the coupler each time before towing.
- Replace the hitch ball or coupler if damaged.

100208

Warning Decal Part # 100208

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. **Operating on a slope could cause the log splitter to roll over or logs to fall off of the equipment, which could result in injury.**
- **Do not** operate the log splitter in an enclosed area. Exhaust fumes from the engine contain carbon monoxide which can be harmful or deadly when inhaled.
- **Do not** move the log splitter over hilly or uneven terrain without a tow vehicle or adequate help.
- Use a tire chock or block on the wheels to prevent movement of the log splitter while in operation.
- 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.

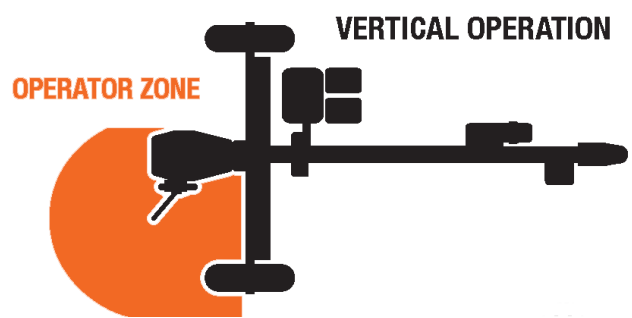
Important Safety Information

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.



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



- 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 engine is running.** Shut off the engine even if you are leaving the log splitter for a short period of time.
- Avoid contact with the muffler and other hot areas of the engine during operation or after running to prevent burns.

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.
- **Do not** tamper with the engine to run it at excessive speeds. The maximum engine speed is preset by the manufacturer and is within safety limits. See Kohler engine manual.
- Remove the spark plug wire before performing any service or repair on the log splitter.
- **Always check the level of hydraulic oil and engine oil before operation.**
- 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** 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.*
- **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.*

Important Safety Information

FIRE PREVENTION



CAUTION

- **Do not** operate the log splitter near an open flame or spark. *Hydraulic oil and gasoline are flammable and can explode.*
- **Do not** fill the gas tank while the engine is hot or running. Allow the engine to cool before refueling.
- **Do not** smoke while operating or refueling the log splitter. Gas fumes can easily explode.
- Refuel the log splitter in a clear area with no gas fumes or spilled gas. Use an approved fuel container. Replace the gas cap securely. If gasoline has spilled, move the log splitter away from the area of the spill and avoid creating any source of ignition until the spilled gas has evaporated.
- Keep a Class B fire extinguisher on hand when operating this log splitter in dry areas as a precautionary measure against possible flying sparks.
- Drain the fuel tank prior to storage to avoid the potential fire hazard. Store gasoline in an approved, tightly sealed container. Store the container in a cool, dry place.
- 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.



CAUTION

IMPORTANT NOTE:

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 (optional by manufacturer) is available as an accessory at your nearest engine dealer. Always check the legal requirements in your area.

Important Safety Information



TOWING SAFETY

- Check all local and state regulations regarding towing, licensing, and lights before towing your log splitter.
- 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.
- **Do not** carry any cargo or wood on the log splitter.
- **Do not** allow anyone to sit or ride on the log splitter.
- Disconnect the log splitter from the towing vehicle before operating it.
- Use care when backing up with the log splitter in tow to avoid jack-knifing. Allow for added length of the log splitter when turning, parking, crossing intersections and in all driving situations.
- **Do not 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, serious injury or death. Adjust towing speed for terrain and conditions. Be extra cautious when towing over rough terrain especially railroad crossings.

1. Assembly Overview

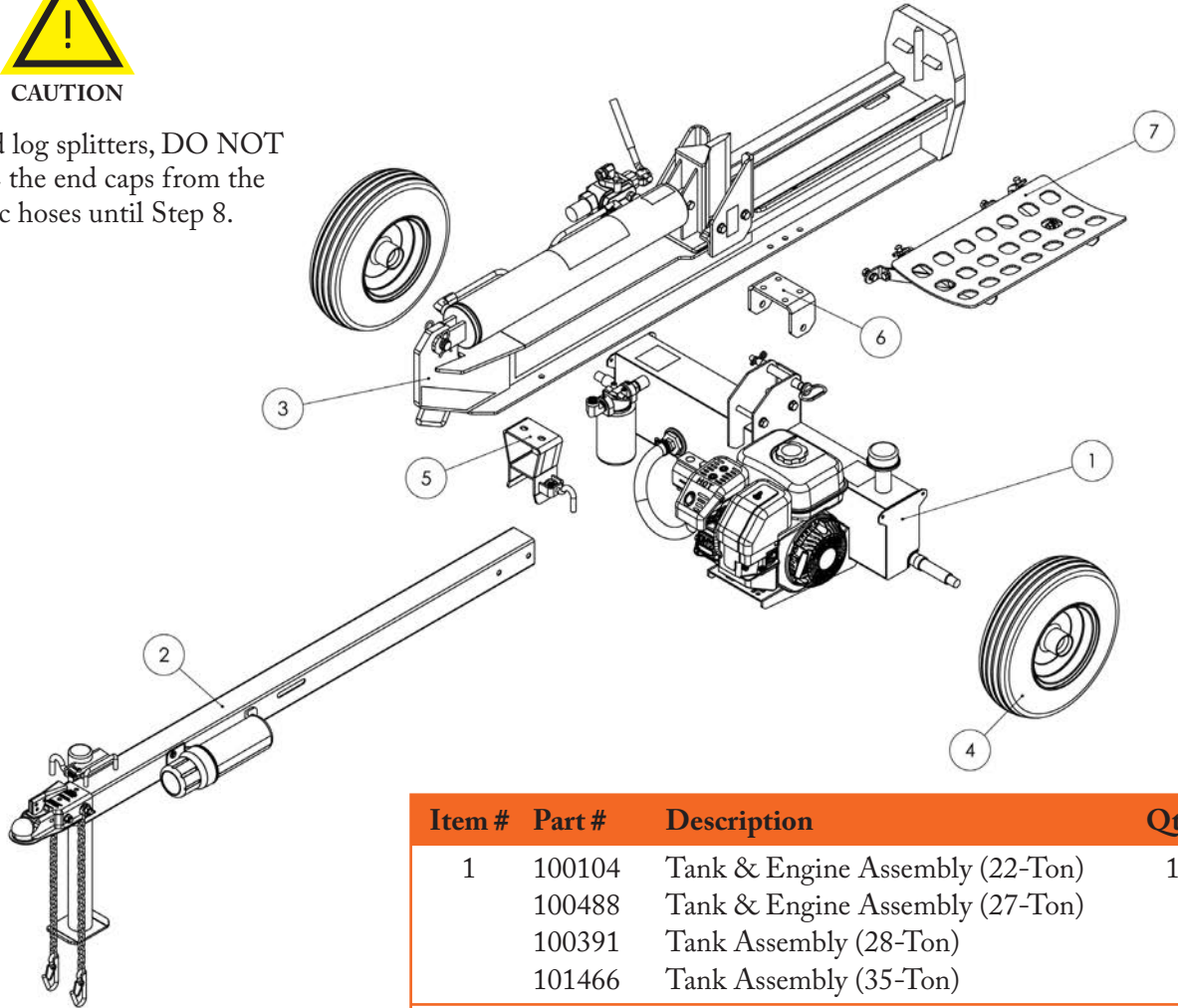
List of tools needed for assembly:

- 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



CAUTION

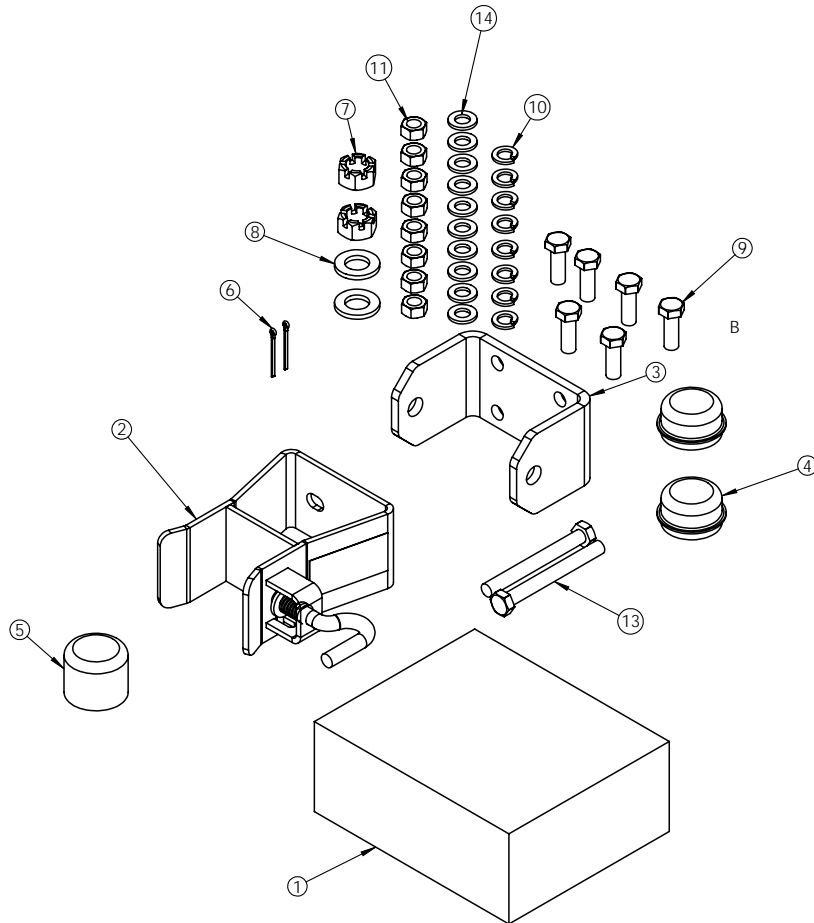
On pre-filled log splitters, DO NOT REMOVE the end caps from the hydraulic hoses until Step 8.



Item #	Part #	Description	Qty.
1	100104	Tank & Engine Assembly (22-Ton)	1
	100488	Tank & Engine Assembly (27-Ton)	
	100391	Tank Assembly (28-Ton)	
	101466	Tank Assembly (35-Ton)	
2	100065	Tongue & Stand Assembly (22/27-Ton)	1
	100379	Tongue & Stand Assembly (28/35-Ton)	
3	100025	Beam & Cylinder Assembly (22-Ton)	1
	100471	Beam & Cylinder Assembly (27-Ton)	
	100180	Beam & Cylinder Assembly (28-Ton)	
	101435	Beam & Cylinder Assembly (35-Ton)	
4	100062	Wheel/Tire Assembly, 4.80 x 8 in.	2
5	100150	Beam Lock Bracket	1
6	100087	Beam Pivot Bracket	1
7	100173	Log Catcher Assembly	1
8	100392	Engine/Pump Assembly (28/35-Ton)*	1

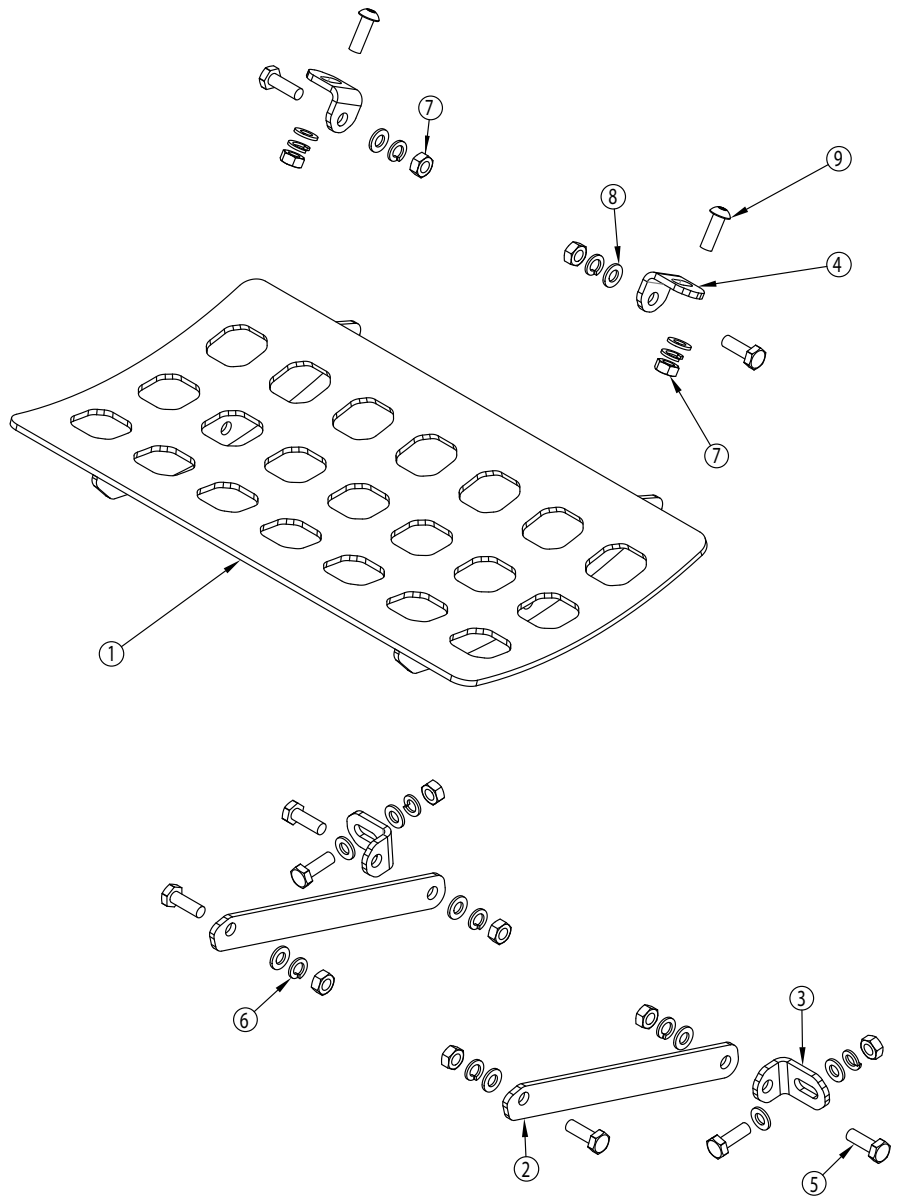
*Item not shown

Hardware Kit - 100163



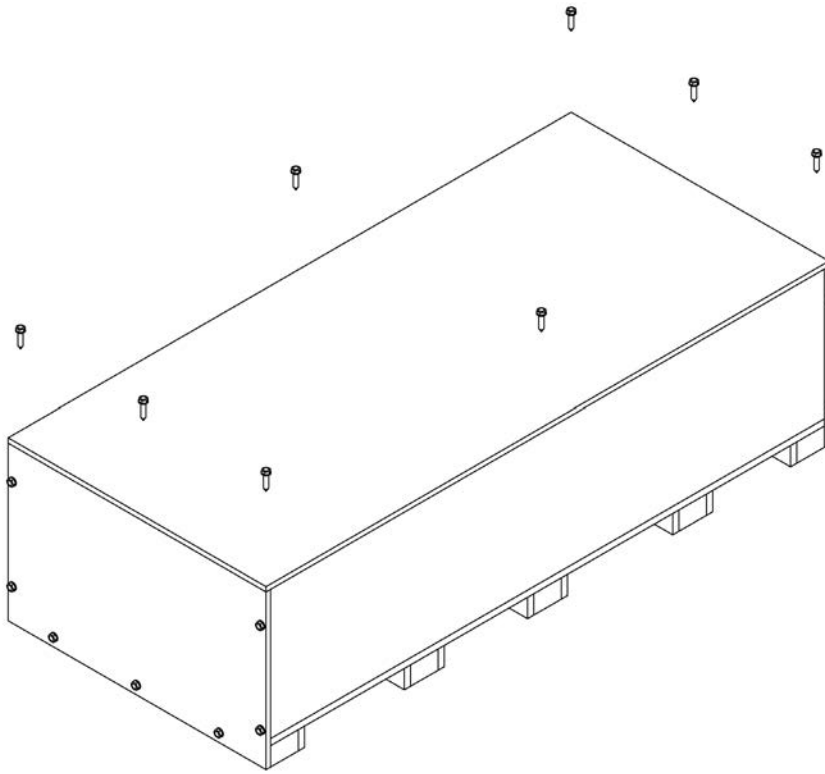
Item #	Part #	Description	Qty.
1	100166	Hardware Kit	1
2	100150	Beam Lock Assembly	1
3	100087	Beam Pivot Bracket Plate	1
4	100063	Hub Cap	2
5	100162	Hub Cap Tool	1
6	100143	Cotter Pin, 1/8 in. x 1-1/2 in.	2
7	100140	Castle Nut, 3/4 in.16	2
8	100142	Flat Washer, 3/4 in.	2
9	100021	Hex Bolt, M12 x 1.75 x 35mm, G8.8	6
10	100023	Lock Washer, M12	8
11	100022	Hex Nut, M12 x1.75, G8.8	8
12	100164	Manual, 22/27/28/35 Ton	1
13	100200	Hex Bolt, M12 x 1.75 x 110mm, G8.8	2
14	100181	Flat Washer, M12	10

Log Catcher Assembly - 100173



Item #	Part #	Description	Qty.
1	100157	Log Catcher Grate	1
2	100154	Log Catcher Support Plate	2
3	100155	Log Catcher Mount, Lower	2
4	100152	Log Catcher Mount, Upper	2
5	100165	Hex Bolt M10X1.5 x 30mm, G8.8	8
6	100089	Lock Washer, M10	10
7	100009	Hex Nut M10 x 1.5, G8.8	10
8	100161	Flat Washer, M10	12
9	100064	Button Head Screw, M10 x 1.5 x 30mm, G8.8	2

2. Unpacking the Container



Step 2.1 Remove top and sides of crate

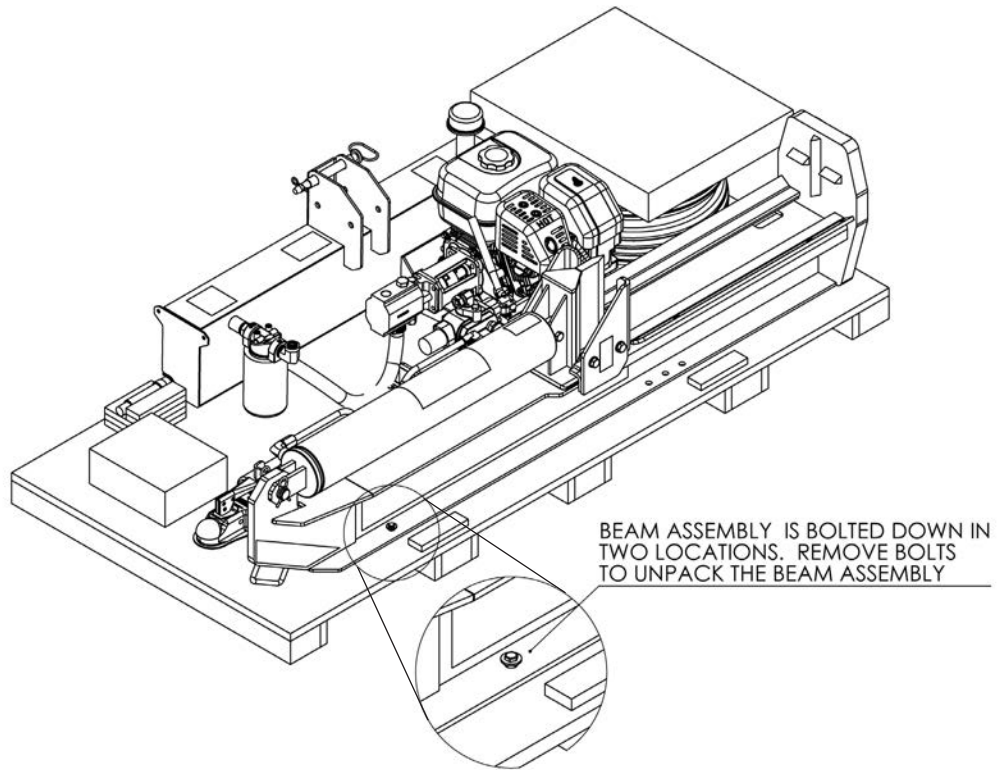
Use a #2 phillips head and 8mm driver to remove hardware from the plywood shipping crate (shown above). Due to the use of wood staples, it may be necessary to use a hammer and/or a crow bar to fully remove the packaging top and sides.

Step 2.2 Remove the log catcher box, wheels and hardware box from the crate. Then remove the Tongue & Stand Assembly from the crate.

2. Unpacking the Container *(continued)*

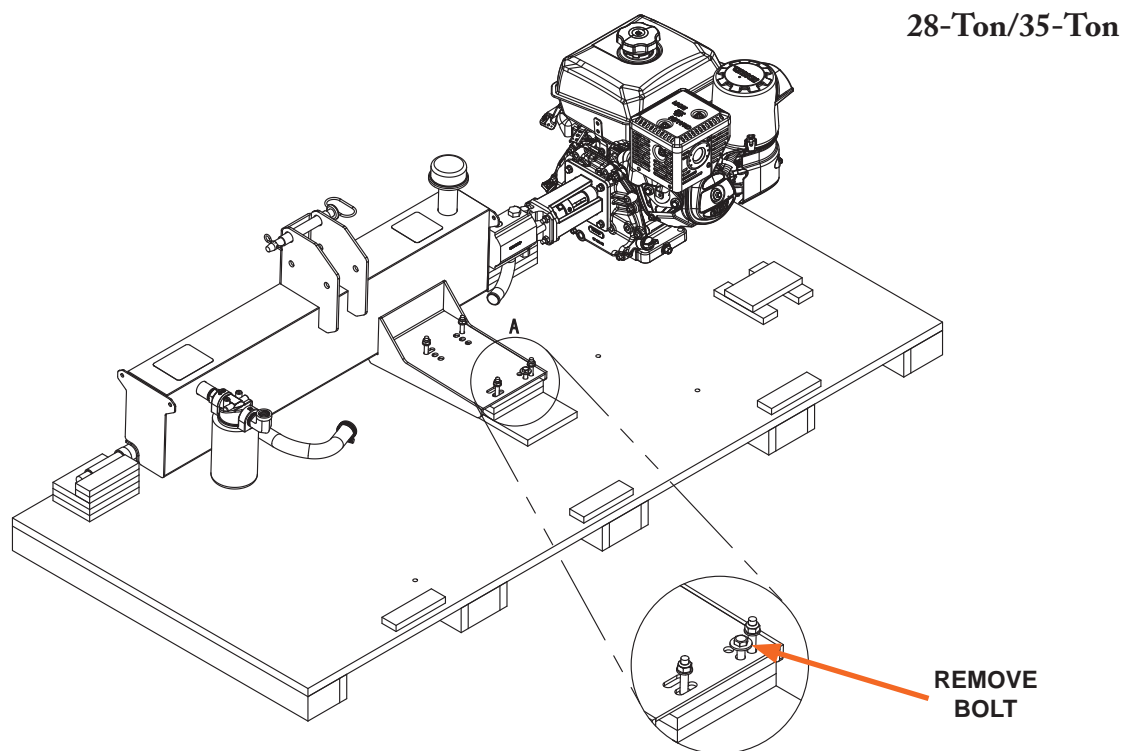
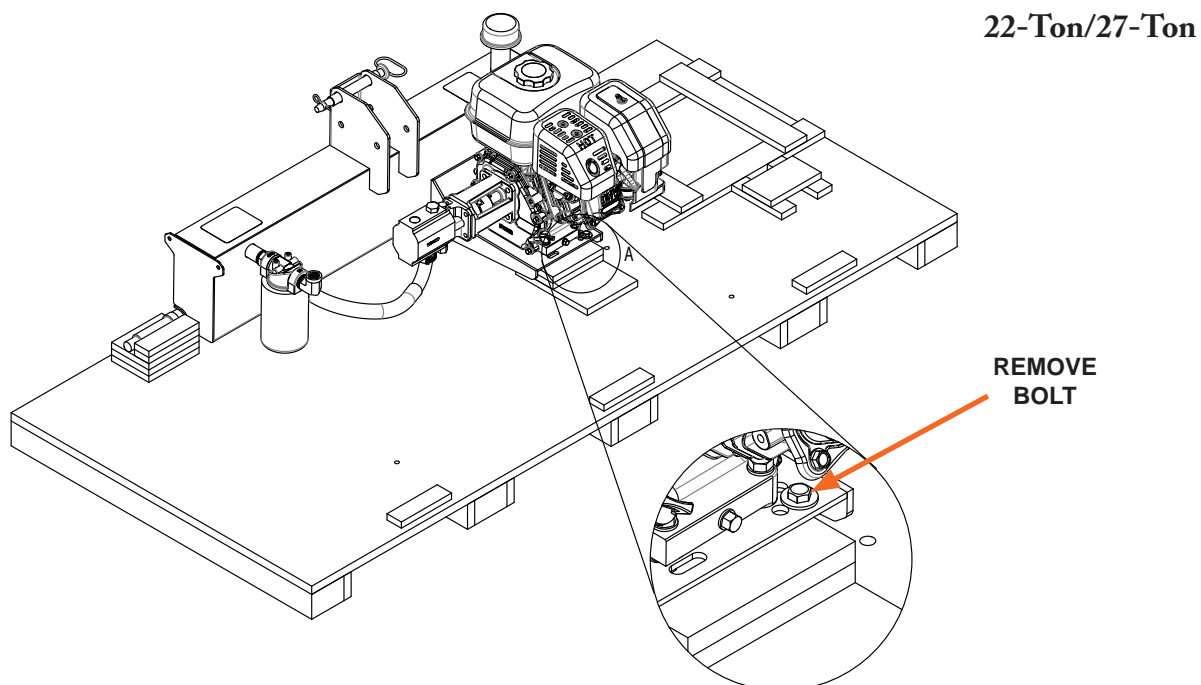
Step 2.3 Remove restraining bolts (tee nut bolts) from the beam.

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.



2. Unpacking the Container *(continued)*

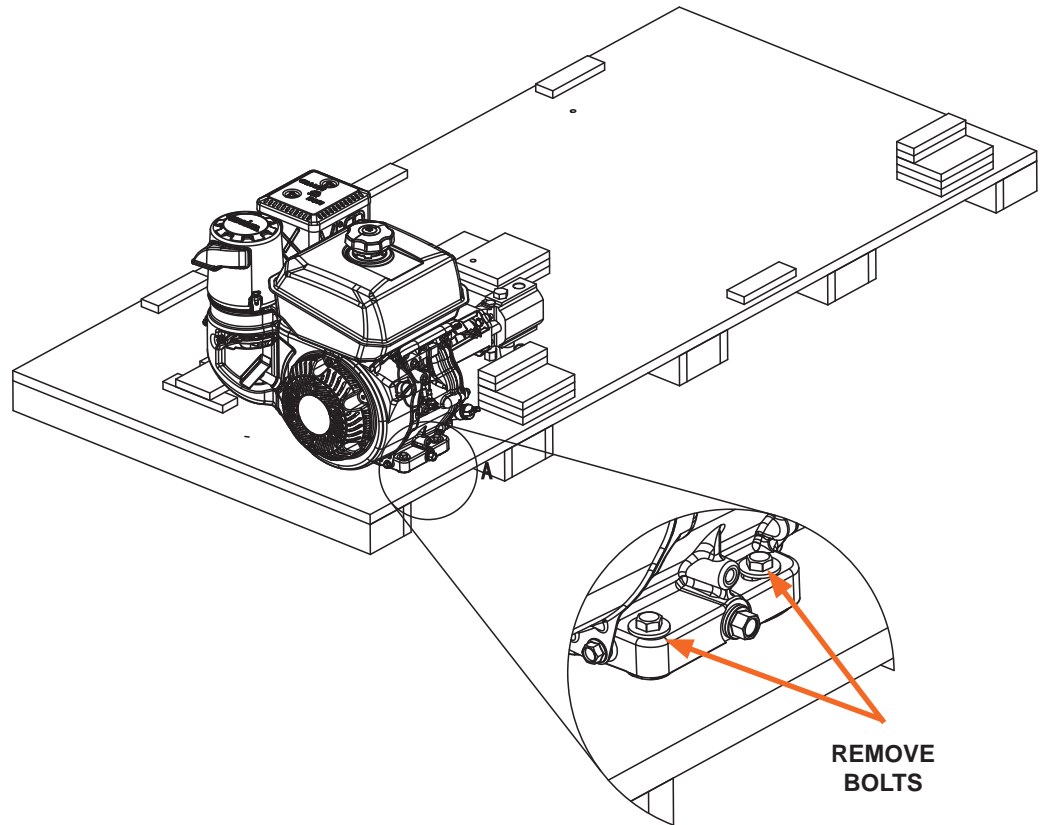
Step 2.4 Use a 13mm wrench or socket to remove the single hex bolt that is securing the tank assembly to the crate bottom (as shown below).



2. Unpacking the Container *(continued)*

Step 2.5 Use a 13mm wrench or socket to remove the two hex bolts that secure the Kohler engine to the crate bottom (as shown below).

28-Ton/35-Ton ONLY



Step 2.6 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. Tank and Wheel Assembly

Installing the wheels:

Step 3.1 Remove disposable spindle covers and wheel bearing covers.

Step 3.2 Slide **Wheel/Tire Assembly** ② on to the spindle with valve stem of tire facing outwards.

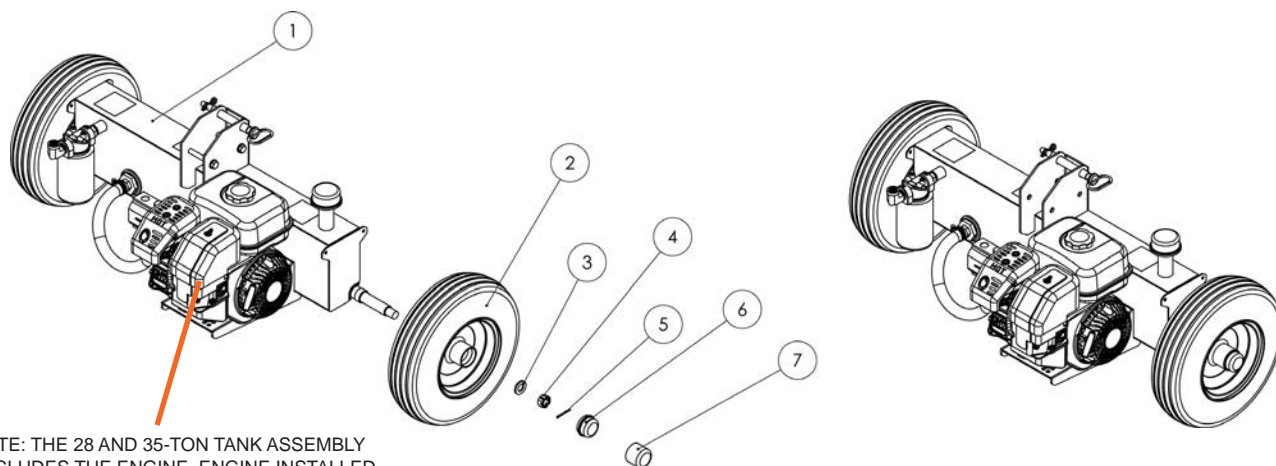
Step 3.3 Install the **Flat Washer**, 3/4 in. ③ onto the spindle.

Step 3.4 Thread the slotted **Castle Nut**, 3/4 in. ④ onto the spindle. The slotted nut should be attached with a 28mm socket tight enough to eliminate the free-play of the wheel assembly and not tighter. Make sure the wheels can freely rotate. The Castle Nut needs to be oriented to allow for the installation of the **Cotter Pin**, 1/8 in. ⑤.

Step 3.5 Install the **Cotter Pin**, 1/8 in. 5 through the **Castle Nut**, 3/4 in. ④ and spindle. Bend pin ends around spindle to secure its position.

Step 3.6 Install the **Hub Cap** ⑥ using the **Hub Cap Tool** ⑦. Gently tap on the hub cap tool with a hammer to drive the hub cap into place.

Step 3.7 Repeat these steps to install the 2nd wheel.



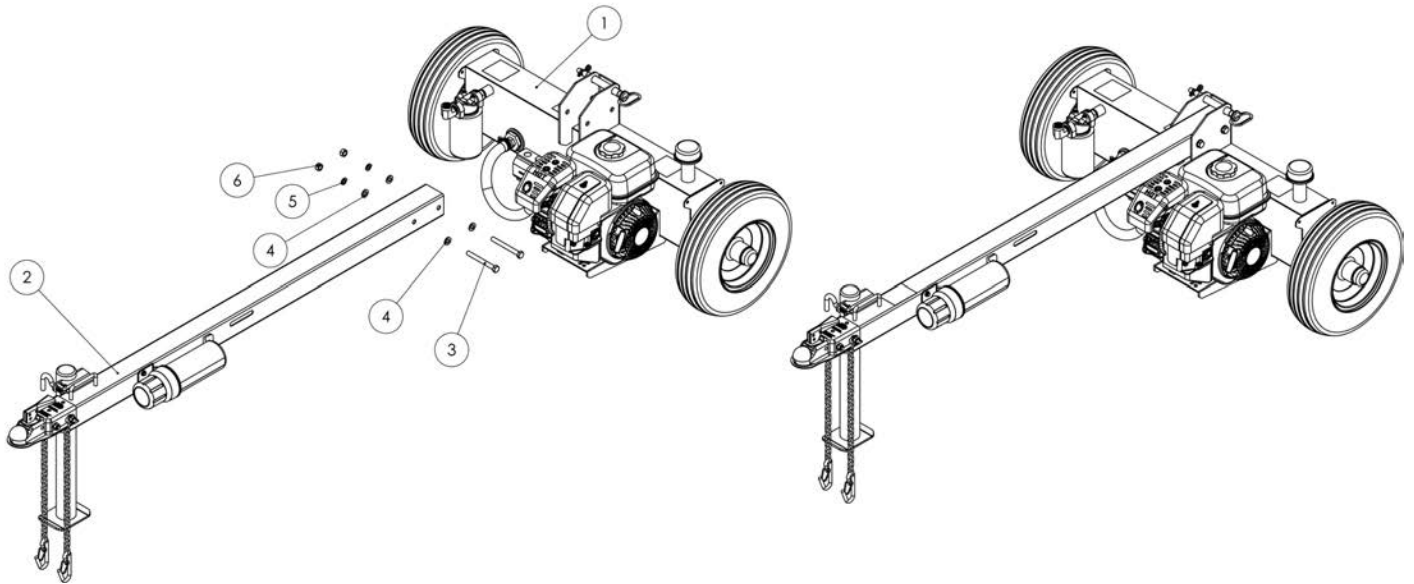
NOTE: THE 28 AND 35-TON TANK ASSEMBLY EXCLUDES THE ENGINE. ENGINE INSTALLED IN STEP 5 OF INSTRUCTIONS

#7 (HUB CAP TOOL) IS ONLY TO BE USED TO INSTALL #6 (HUB CAP)

Item #	Part #	Description	Qty.
1	100104	Tank & Engine Assembly (22-Ton)	1
	100488	Tank & Engine Assembly (27-Ton)	
	100391	Tank Assembly (28-Ton)	
	101466	Tank Assembly (35-Ton)	
2	100062	Wheel/Tire Assembly, 4.80 x 8 in.	2
3	100142	Flat Washer, 3/4 in.	2
4	100140	Castle Nut, 3/4-16, Clear Zinc	2
5	100143	Cotter Pin, 1/8 in. x 1-1/2 in.	2
6	100063	Hub Cap	2
7	100162	Hub Cap Tool	1

4. Tank & Tongue Assembly

Step 4.1 Attach the **Tongue & Stand Assembly** ② to the **Tank & Engine Assembly** ① with Hex Bolt, M12 x 1.75 x 1.10mm ③; Flat Washer, M12 ④; Lock Washer, M12 ⑤; and Hex Nut, M12 x 1.75 ⑥ in two places. Tighten securely using 19mm socket wrenches.



Item #	Part #	Description	Qty
1	100104	Tank & Engine Assembly (22-Ton)	1
	100488	Tank & Engine Assembly (27-Ton)	
	100391	Tank Assembly (28-Ton)	
	101466	Tank Assembly (35-Ton)	
2	100065	Tongue & Stand Assembly (22/27-Ton)	1
	100379	Tongue & Stand Assembly (28/35-Ton)	
3	100200	Hex Bolt M12 x 1.75 x 1.10mm, G8.8	2
4	100181	Flat Washer, M12	10
5	100023	Lock Washer, M12	8
6	100022	Hex Nut, M12 x 1.75, G8.8	8

5. Tank and Engine Assembly (28/35-Ton ONLY)

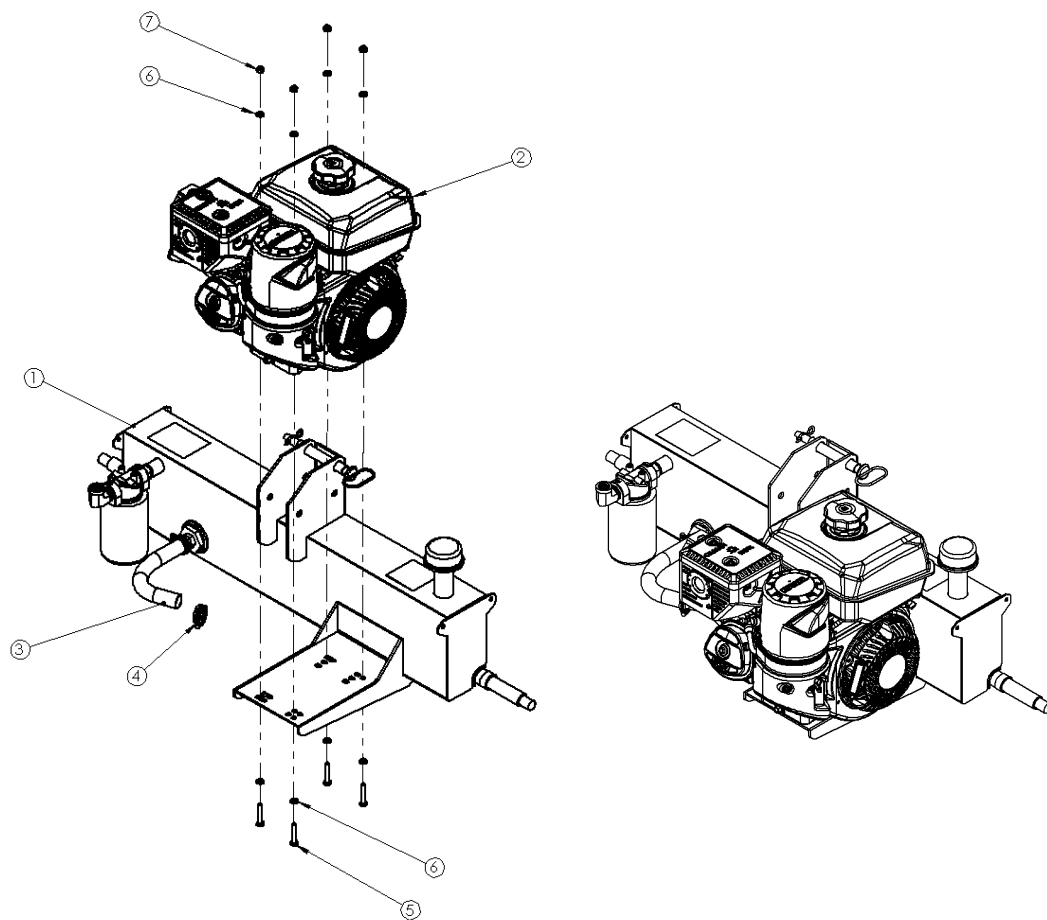
Step 5.1 Remove **Engine Bolts** ⑤ from tank.

Step 5.2 Place **Engine** ② on tank.

Step 5.3 Secure **Engine** on **Tank** ① in 4 places with Hex Bolt, M8 x 45mm, G8.8 ⑤,
Flat Washer, M8 ⑥ and Hex Nut, Nylock, M8 x 1.25, G8.8 ⑦.

Step 5.4 Attach **Suction Line Tube** ③ to **Pump**.

Step 5.5 Fasten the **Suction Line Tube** to the Pump Assembly with **Hose Clamp** ④.

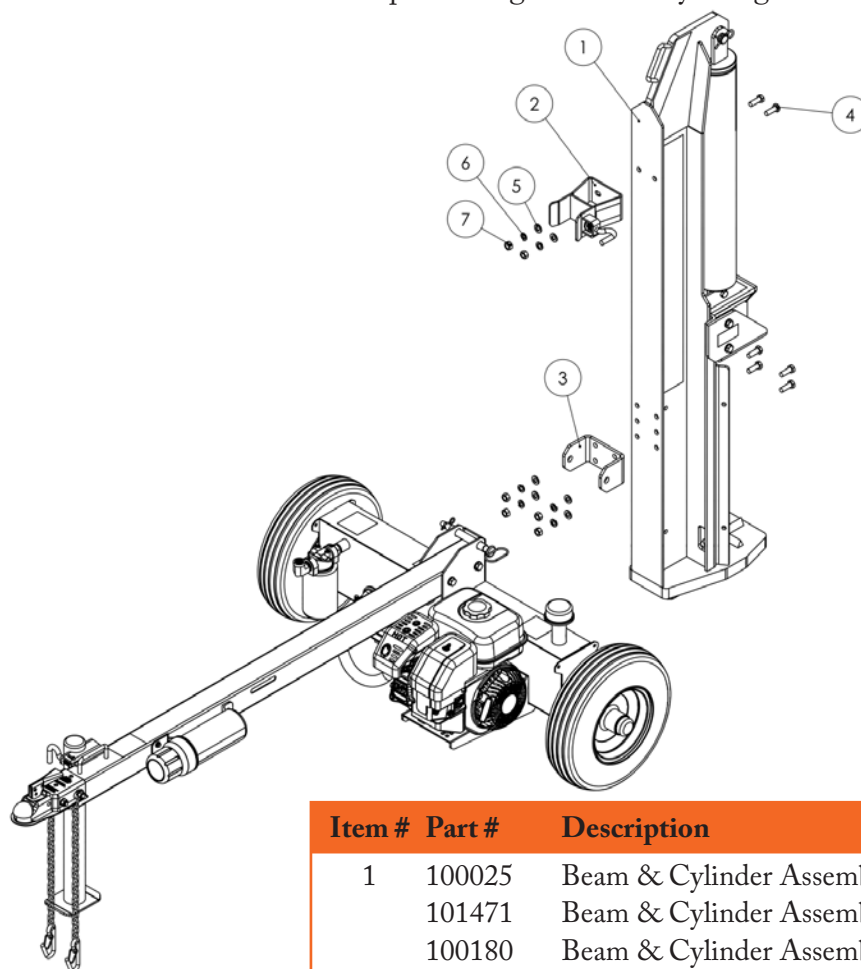


Item #	Part #	Description	Qty.
1	100505	Tank Assembly (28-Ton)	1
	101466	Tank Assembly (35-Ton)	
2	100392	Kohler Engine, 17.5 GPM Pump	1
3	100135	Suction Line Tube, Wire Reinforced	1
4	100138	Hose Clamp, 15/16 in. to 1-1/4 in.	2
5	100129	Hex Bolt, M8 x 45mm, G8.8	4
6	100130	Flat Washer, M8	8
7	100162	Hex Nut, Nylock, M8 x 1.25, G8.8	4

6. Beam Bracket Assembly

Step 6.1 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.

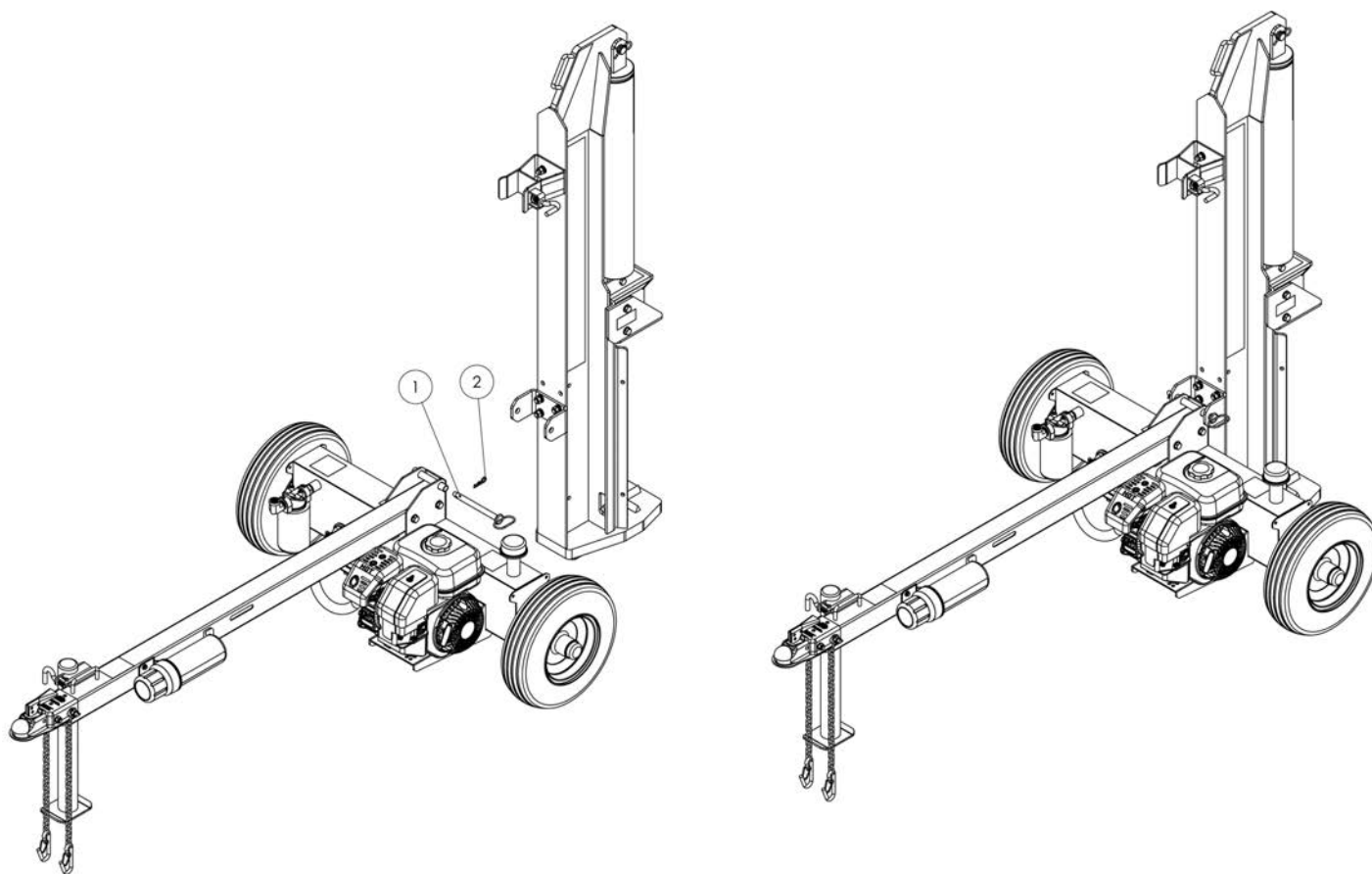
Step 6.2 Attach the **Pivot Bracket** ③ to the **Beam & Cylinder Assembly** ① using the four bottom holes with Hex Bolt, M12 x 1.75 x 35mm ④; Flat Washer, M12 ⑤; Lock Washer, M12 ⑥; and Hex Nut, M12 x 1.75 ⑦ in four places. Tighten securely using 19mm socket wrenches.



Item #	Part #	Description	Qty.
1	100025	Beam & Cylinder Assembly (22-Ton)	1
	101471	Beam & Cylinder Assembly (27-Ton)	
	100180	Beam & Cylinder Assembly (28-Ton)	
	101435	Beam & Cylinder Assembly (35-Ton)	
2	100150	Beam Lock Bracket	1
3	100087	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

7. Beam & Tank Assembly

- Step 7.1** Rotate the Jack Stand attached to the side of the Tongue Assembly downwards into position by releasing the pin and then securing the release pin.
- Step 7.2** Remove the **Retaining Clip**, 1/8 in. ② and **Hitch Pin**, 5/8 in. x 6-1/4 in. ① from the assembled unit (as shown below).
- Step 7.3** Slowly back the assembled unit up to the Beam & Cylinder Assembly. Align the Tongue Bracket of the assembled unit to the Pivot Bracket of the Beam Assembly.
- Step 7.4** Once the brackets are aligned, install the **Hitch Pin** ① through the brackets then install the **Retaining Clip** ② into the Hitch Pin.



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

8. Hydraulic Line Connection



CAUTION

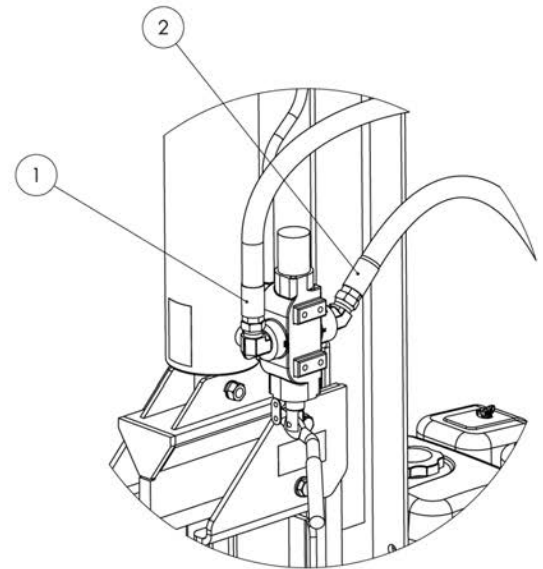
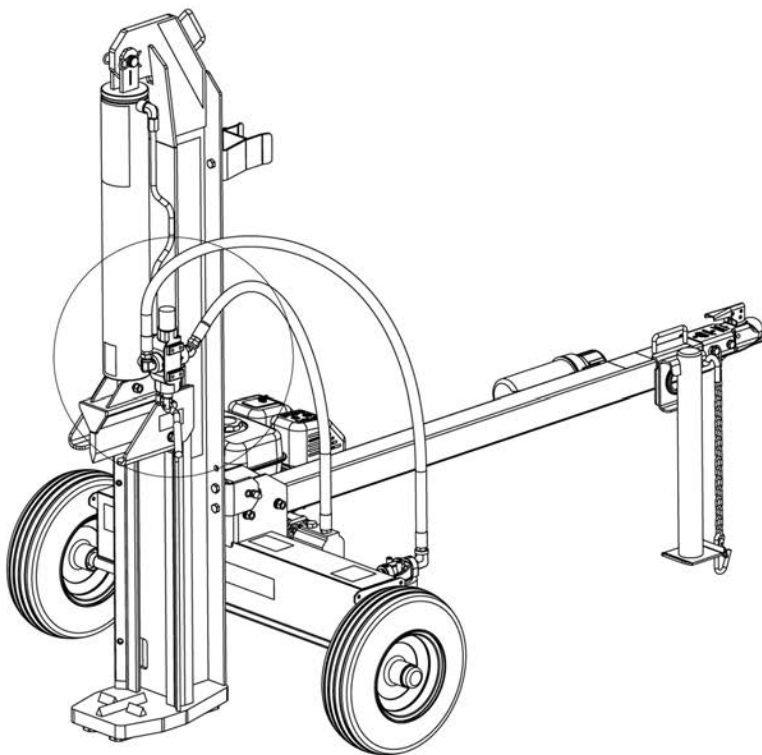
On pre-filled log splitters,
hold hoses above the level of the hydraulic tank
before removing end caps.

Step 8.1 Hold **Hydraulic Hoses** ① and ② above the level of the hydraulic tank to prevent fluid leakage and remove the end caps.*

Step 8.2 Apply teflon tape or pipe sealant on to the hose fitting threads. Install the ends of the two **Hydraulic Hoses** ① and ② to the **Valve** (as shown in detail drawing). Securely tighten the fitting connections using 22mm and 24mm wrenches.

Step 8.3 Remove tank cap and install the vent cap.*

*On pre-filled log splitters only

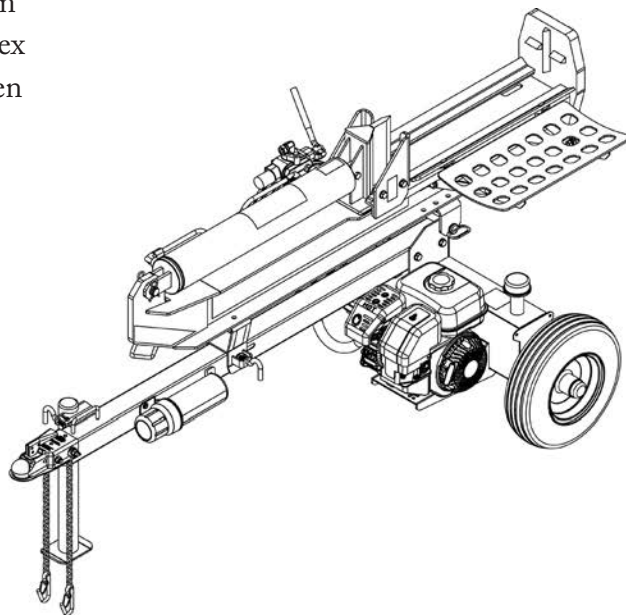
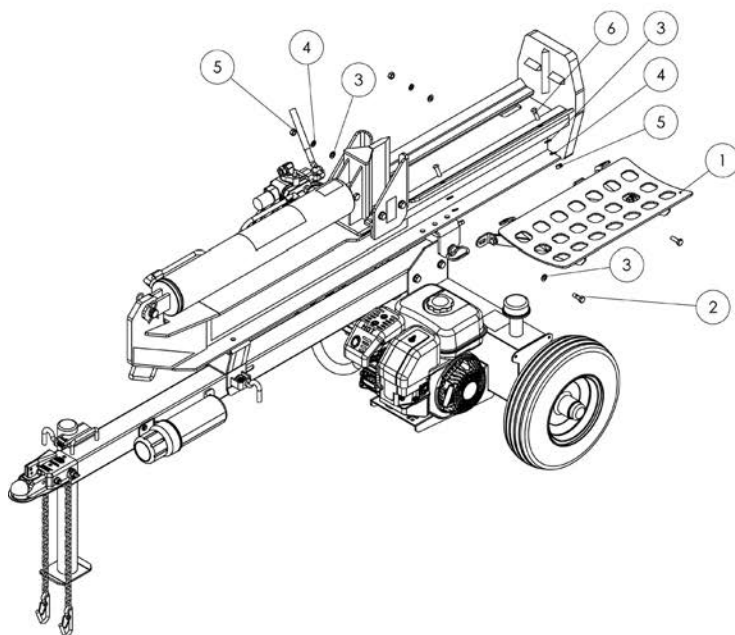


Item #	Part #	Description	Qty.
1	100136	Hydraulic Hose, 1/2 in. x 56 in.	1
2	100137	Hydraulic Hose, 1/2 in. x 38 in.	1

9. Log Catcher Installation

Step 9.1 Rotate Beam & Cylinder Assembly down from upright position and lock in place with the release pin.

Step 9.2 Install the **Log Catcher Assembly** ① with Hex Bolts, M10 x 1.5 x 30mm ②; Flat Washer, M10 ③; Lock Washer, M10 ④; Hex Nut, M10 x 1.5 ⑤; and Button Screw, M10 x 1.5 x 30mm ⑥; in 2 places. Tighten hex nuts securely with a 17mm socket wrench and tighten button screws with 6mm hex key wrench.



Item #	Part #	Description	Qty.
1	100179	Log Catcher Kit	1
2	100165	Hex Bolt, M10 x 1.5 x 30mm, G8.8	2
3	100161	Flat Washer, M10	6
4	100089	Lock Washer, M10	4
5	100009	Hex Nut, M1 x 1.5, G8.8	4
6	100064	Button Screw, M10 x 1.5 x 30mm, G8.8	2

10. Final Installation Check

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

Operating Instructions



DANGER

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.



CAUTION

CAUTION: Oil must be added to the hydraulic reservoir and the engine before starting or operation.

STEP 1: Please add approximately 4 gallons of hydraulic fluid. The remaining hydraulic fluid will be added after the cylinder is cycled. AW32 or AW46 hydraulic oil is recommended. Automatic transmission fluid can be substituted instead of hydraulic oil when temperatures are below 32°F. Use only clean oil and take care to prevent dirt from entering the hydraulic reservoir.

ENGINE OIL RECOMMENDATIONS

Use 4-stroke automotive detergent oil. SAE 10W-30 is recommended for general use. Refer to the SAE Viscosity Grades chart in your engine owner's manual for average temperature ranges. The engine manufacturer recommends using API SERVICE Category SE or SF oil. The engine oil capacity is 20 oz. for Kohler SH265 (22-Ton/27-Ton) and 40 oz. for Kohler CH395 (28-Ton). Always check oil level before starting the engine and keep level full.

Operating Instructions

Step 2: After the hydraulic reservoir and the engine crankcase are filled with oil, start the engine. The hydraulic pump is self-priming. With the engine running, move the hydraulic valve lever toward the foot plate. This will cause the cylinder to extend and expel air. When the cylinder is fully extended, retract it. Repeat this procedure several times. An erratic movement of the cylinder indicates that there is still air in the system. Add about 1.0 to 1.5 gallons of hydraulic fluid. Five gallons will register just above the top fill line on the dip stick. The total capacity of the entire hydraulic system is 6.5 gallons, 5 gallons of hydraulic fluid is the minimum required to operate.

NOTE: If the tank is overfilled it will expel oil from the breather cap when the cylinder is retracted. Cycle the cylinder again until it has a constant speed which indicates that all air has been expelled.

STARTING INSTRUCTIONS

NOTE: Refer to the Engine Owner's Manual for complete information on starting, maintenance and troubleshooting.

1. Move the fuel valve lever to the ON position.
2. To start a cold engine, move the choke lever to the CLOSE position. To restart a warm engine, leave the choke lever in the OPEN position.
3. Move the throttle lever away from the SLOW position, about 1/3 of the way toward the FAST position.
4. Turn the engine switch to the ON position.
5. Pull the starter grip until you feel resistance, then pull briskly. Return the starter grip gently.
6. If the choke lever has been moved to the CLOSE position to start the engine, gradually move it to the OPEN position as the engine warms up.
7. To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, move the throttle lever to the SLOW position and then turn the engine switch to the OFF position. Then turn the fuel valve lever to the OFF position.

For further information on starting and stopping the engine, refer to your engine owner's manual.

Operating Instructions



CAUTION

CAUTION: Turn Fuel Shut Off Valve to the “Off” position before towing to avoid flooding the engine.

NOTE: The engine’s maximum speed is factory preset at 3600 RPM as the no load speed. The throttle should be set at the maximum speed for wood splitting to reach the horsepower required for the pump.



WARNING

WARNING: Review safety information related to operation of the log splitter on pages 3-6 of this manual. Make sure that you have the recommended personal protective equipment described on page 3.

1. Set up the log splitter in a clear, level area and block the wheels. Make sure that the suction port on the tank is always on the lower side of the log splitter.
2. For horizontal operation place a log on the beam against the foot plate. Make sure the log is securely on the foot plate and against the beam. To split wood in the vertical position, release the pin on the beam latch located on the front end of the beam. Carefully tilt the beam up until the foot plate is sitting squarely on the ground and the log splitter is stable. Place the log on the foot plate against the beam. When the beam is returned to the horizontal position make sure the beam latch is securely locked down.
3. With the engine running, 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.

Store manuals in the Manual Cannister attached to the tongue of the log splitter or file in a safe place for future reference.

Operating Instructions

NOTE: For operation in wooded areas, obtain a spark arrestor for the exhaust system. See the engine operating and maintenance manual and check with your authorized service center. See also Fire Prevention on page 5 of this manual.

IMPORTANT: To extend the life of the hydraulic cylinder avoid bottoming out the wedge plate to the foot piece.
To conform with industry safety recommendations the wedge stops 1/2 inches from the end of the stroke.

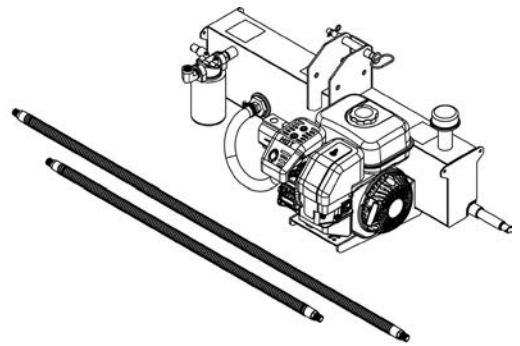
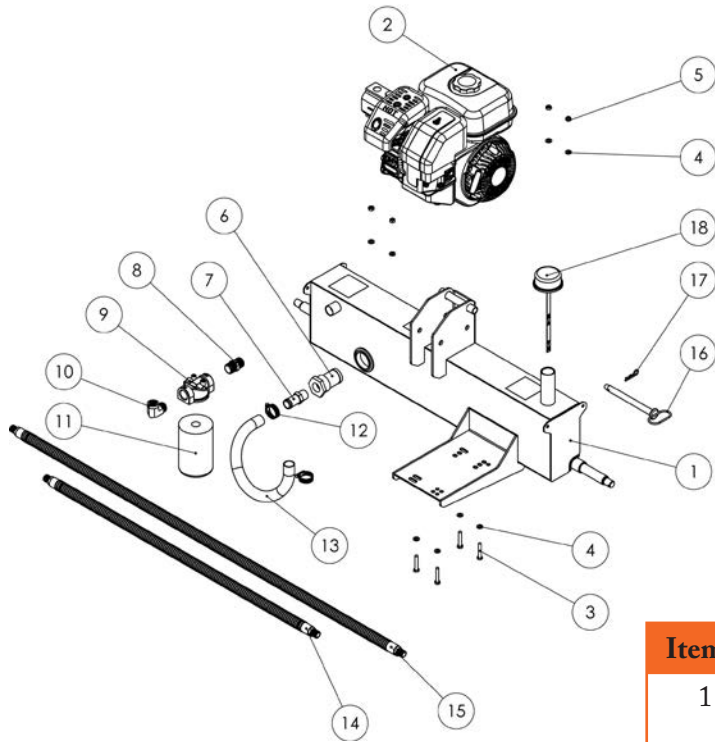
TOWING

This log splitter is equipped with pneumatic tires, a Class I coupler (2 in. diameter ball required) and safety chains. Before towing, the safety chains must be secured to the hitch or bumper of the vehicle. Local regulations should be checked regarding licensing, lights, towing, etc. Turn fuel shut off valve on the engine to the “Off” position prior to towing. Failure to do so may result in flooding the engine. Do not exceed 45 mph when towing this log splitter. *See also Towing Safety on page 9 of this manual.*

MAINTENANCE

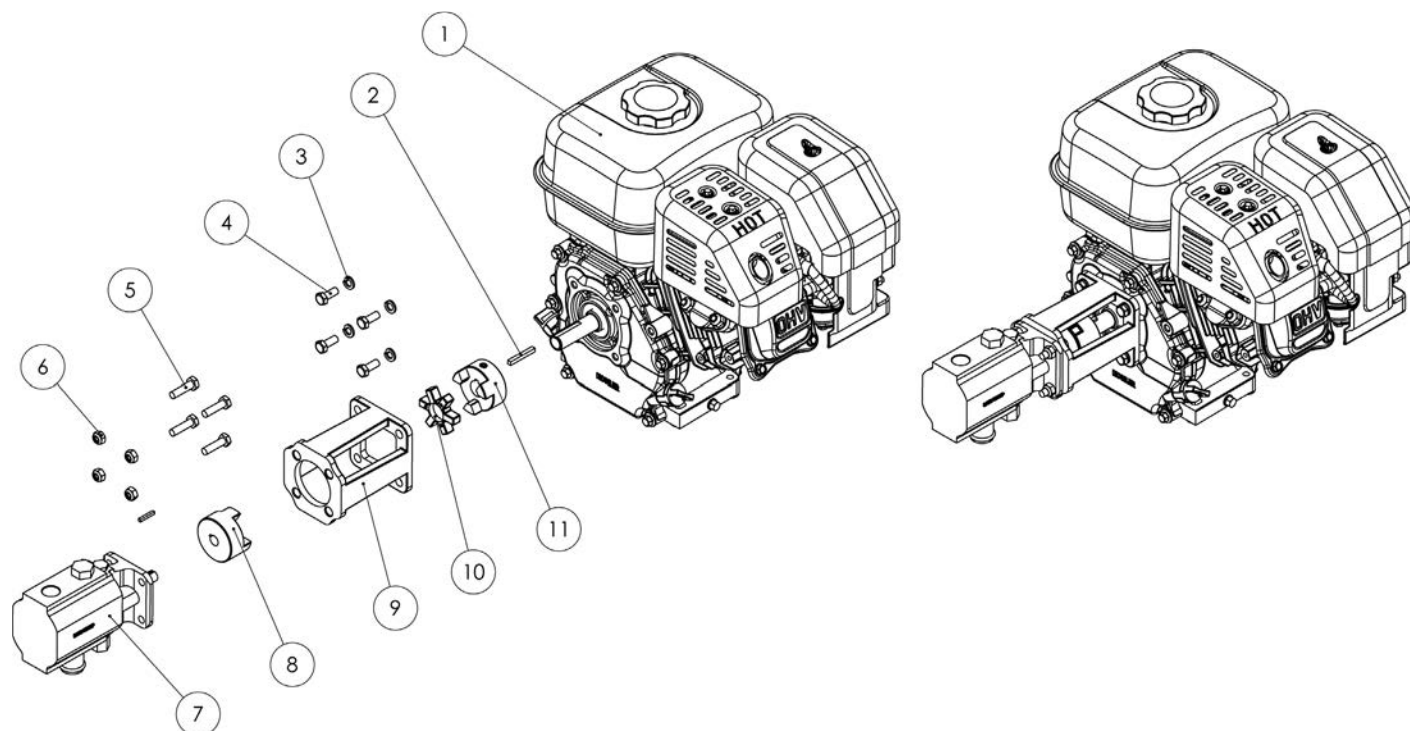
1. Consult the operating and maintenance instructions of the engine manufacturer for engine care and maintenance.
2. **Always check the oil level of the hydraulic reservoir before operation.** Operating the log splitter without an adequate oil supply will cause severe damage to the pump.
3. Change the oil filter after the first 25 hours of operation.
There after change the oil filter every 100 hours or seasonally, whichever comes first.
4. To drain the hydraulic oil, loosen the clamp on the hose coming from the fitting on the bottom of the tank. It is located just to the right of the oil filter.
5. If the wedge becomes dull or nicked, it can be removed and sharpened. Remove the bolt that connects the wedge to the cylinder. The hose from the valve may need to be removed. Carefully lift the cylinder to allow the wedge to slide forward. The wedge can now be lifted off and sharpened.
6. Clean the breather cap after 25 hours of operation. Clean it more often when operated in dusty conditions. To clean, remove the breather cap from the tank and flush with kerosene or liquid detergent to remove the dirt.
7. *See Repair and Maintenance on page 7 of this manual.*
8. All replacement parts must meet manufacturer's specifications.

Tank & Engine Assembly



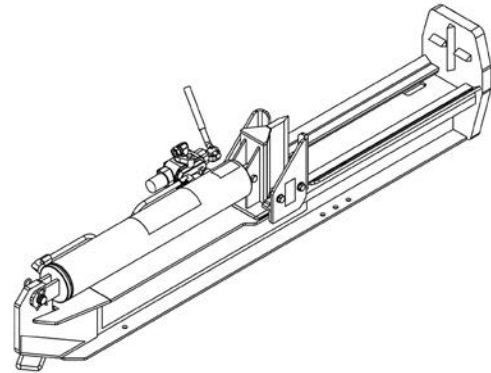
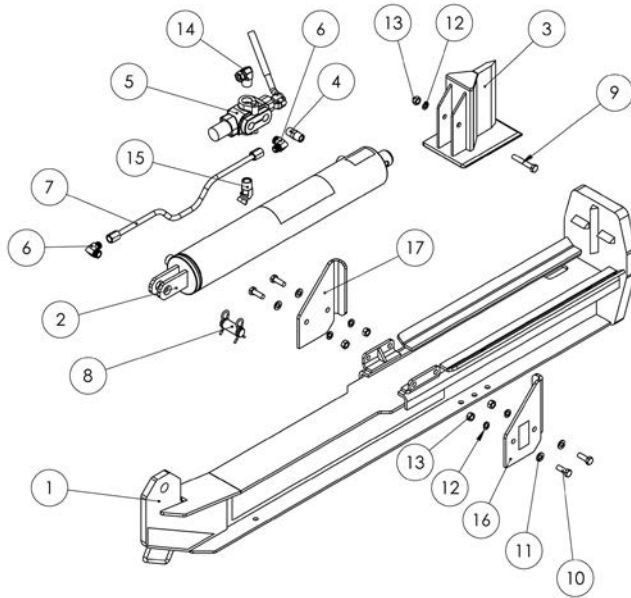
Item #	Part #	Description	Qty.
1	100103	Tank with Decals (22-Ton)	1
	100487	Tank with Decals (27-Ton)	
	100391	Tank with Decals (28-Ton)	
	101447	Tank with Decals (35-Ton)	
2	100120	Engine/Pump Assembly (22/27-Ton)	1
	100392	Engine/Pump Assembly (28/35-Ton)	1
3	100129	Hex Bolt, M8 x 1.25 x 45MM, G8.8	4
4	100130	Flat Washer, M8	8
5	100128	Hex Nut, Nylock, M8 x 1.25, G8.8	4
6	100105	Suction Filter	1
7	100111	Fitting, 3/4 NPT to 1 in. Tube	1
8	100112	Fitting, M 3/4 NPT, M 3/4 NPT	1
9	100117	Filter Base, 3/4 NPT, 1-12 UNF	1
10	100118	Elbow M 3/4 NPT, F 1/2 NPT	1
11	100116	Hydraulic Oil Filter (DHT logo)	1
	100448	Hydraulic Oil Filter (Generic logo)	1
12	100138	Hose Clamp, 15/16 in. to 1-1/4 in.	2
13	100135	Suction Line Tube, Wire Reinforced	1
14	100137	Hydraulic Hose, 1/2 in. x 38 in.	1
15	100136	Hydraulic Hose, 1/2 in. x 56 in.	1
16	100131	Hitch Pin, 5/8 in. x 6 1/4 in.	1
17	100132	R-Clip, 1/8 in., 1/2 in. to 3/4 in.	1
18	100110	Vent Cap Assembly	1

Pump & Engine Assembly



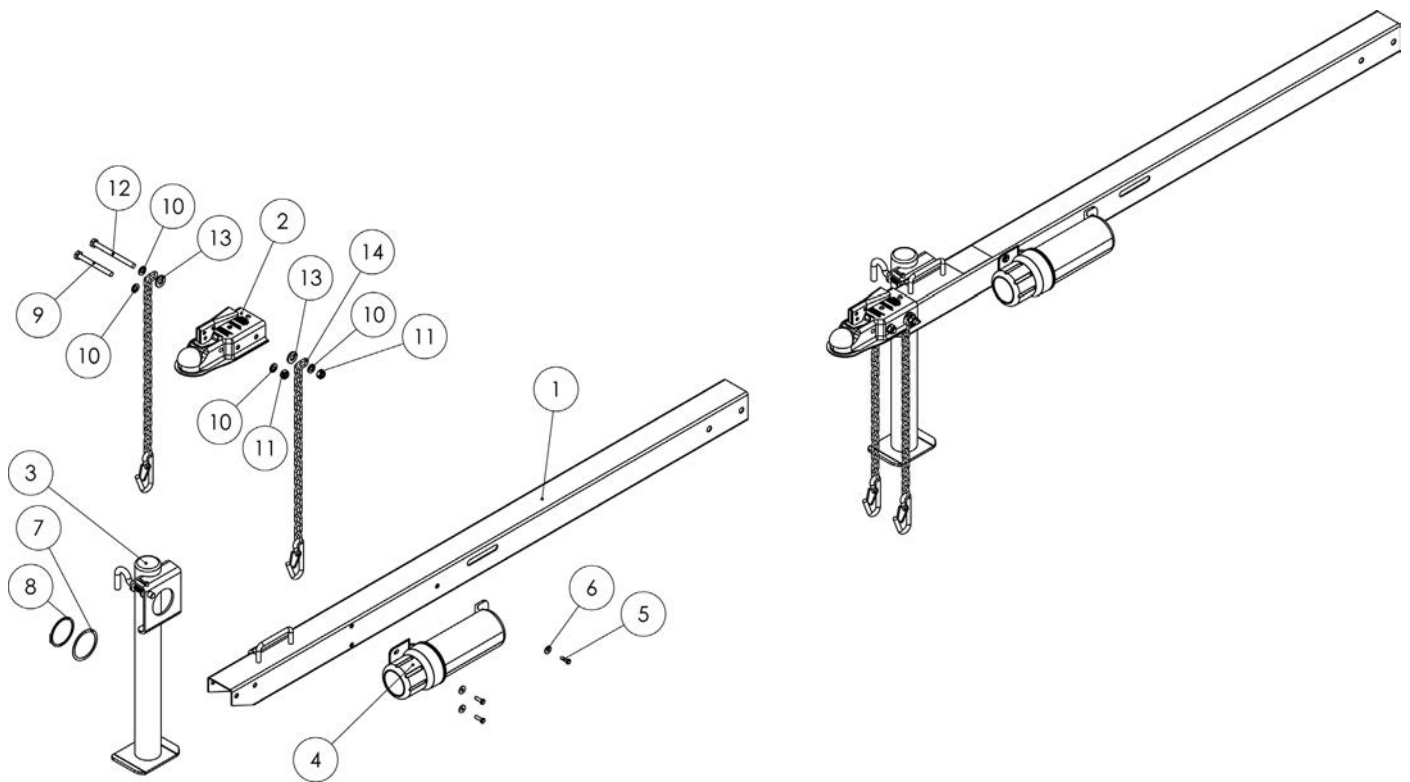
Item #	Part #	Description	Qty.
1	100121	Engine, Kohler SH265 (22/27-Ton)	1
	100390	Engine, Kohler CH395 (28/35-Ton)	1
2	100159	Bar, Key Stock, SQ 3/16 in. x 1-1/2 in. (22/27-Ton)	1
	100483	Bar, Key Stock, SQ 1/4 in. x 2 in. (28/35-Ton)	
3	100127	Lock Washer, M8	4
4	100486	Hex Bolt, 5/16 in.-24 x 1.25 in., Z5	4
5	100126	Hex Bolt, M8 x 1.25 x 30mm, G8.8	4
6	100128	Hex Nut, Nylock, M8 x 1.25, G8.8	4
7	100158	Pump, 2 Stage, 13 GPM (22/27-Ton)	1
	100479	Pump, 2 Stage, 17.5 GPM (28/35-Ton)	
8	100397	Jaw Coupler Assembly, 1/2 in. Bore, L090	1
9	100016	Pump Mount, 92mm BC (22/27-Ton)	1
	100393	Pump Mount, LG 127mm BC (28/35-Ton)	
10	100124	Jaw Spider Coupler, L090	1
11	100398	Jaw Coupler Assembly, 3/4 in. Bore (22/27-Ton)	1
	100482	Jaw Coupler Assembly, 1 in. Bore (28/35-Ton)	

Beam Assembly



Item #	Part #	Description	Qty.
1	100018	Beam (22-Ton)	1
	100469	Beam (27-Ton)	
	100197	Beam (28-Ton)	
	101434	Beam (35-Ton)	
2	100026	Cylinder Assembly, 4 in., F 1/2 NPT (22-Ton)	1
	100218	Cylinder Assembly, 4-1/2 in., F 1/2 NPT (27/28-Ton)	
	100211	Cylinder Assembly, 5 in., F 1/2 NPT (35-Ton)	
3	100035	Wedge, 8 in. (22/27/28-Ton)	1
	101418	Wedge, 9 in. (35-Ton)	
4	100030	Nipple, 1/2 NPT, 1/2 NPT	1
5	100034	Valve, Adjustable Detent, 3500 PSI	1
6	100029	Elbow, 1/2 NPT, 1/2 Flare Tube	2
7	100028	Tube, 1/2 OD, Flared, 3/4-16 in. Nuts	1
8	100033	Clevis Pin Assembly, 1 in. OD, w/clips	1
9	100041	Hex Bolt, M12 x 1.75 x 75mm, G8.8	1
10	100021	Hex Bolt, M12 x 1.75 x 35mm, G8.8	4
11	100181	Flat Washer, M12	4
12	100023	Lock Washer, M12	5
13	100022	Hex Nut, M12X1.75, G8.8	5
14	100043	Elbow M 3/4 NPT TO F1/2 NPT	1
15	100042	Fitting, 45°, M 3/4NPT TO F1/2NPT	1
16	100205	Stripper, RT	1
17	100206	Stripper, LT	1

Tongue Assembly



Item #	Part #	Description	Qty.
1	100050	Tongue	1
2	100061	Ball Coupler Assembly, 2 in.	1
3	100080	Tongue Stand (22/27-Ton)	1
	100378	Tongue Stand with Jack (28/35-Ton)	1
4	100084	Manual Canister	1
5	100085	Hex Bolt, M6 x 1.0 x 20mm, G8.8	3
6	100445	Fender Washer, M6	3
7	100070	Shim, OD 75mm, ID 64mm x 1mm	1
8	100069	Retaining Ring, External, 63mm Shaft	1
9	100066	Hex Bolt, M10 x 1.5 x 100mm, G8.8	1
10	100161	Flat Washer, M10	4
11	100068	Hex Nut, Nylock, M10 x 1.5, G8.8	2
12	100067	Hex Bolt, M10 x 1.5 x 120mm, G8.8	1
13	100077	Flat Washer, 1/2 in.	2
14	100047	Safety Chain	2

Log Splitter Accessories

4-Way Wedge System

The 4-Way Wedge System replaces the existing wedge on 22, 27 & 28-Ton Log Splitters and 3-Point Hitch Vertical/Horizontal Log Splitter converting it to a four way splitter for fast quarter splitting of logs. System includes stripper plates, 2-way wedge and all hardware. Fits part #'s 100171, 100408 and 100342.



Log Splitter Cover

Weather-proof heavy duty PVC coated polyester cover easily slips over log splitter for year round outdoor protection. Water, UV and mildew resistant with convenient drawstring for fast use. Use with 22, 27, 28 and 35-Ton Log Splitters.



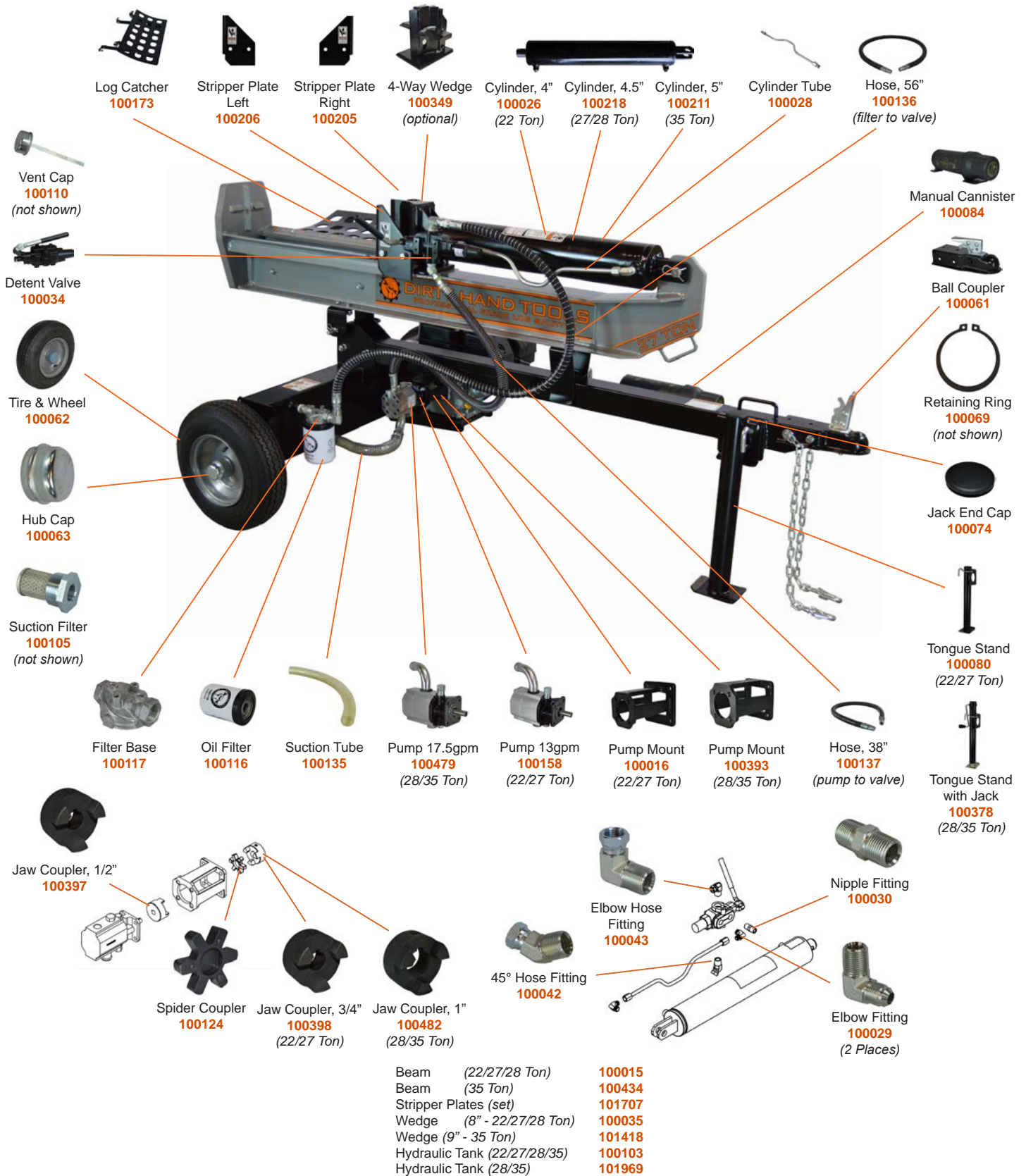
Log Catcher Kit

Quickly attaches to 22, 27, 28 and 35-Ton Log Splitters. Catches the split log as the cylinder and wedge retract for easier operation.



SKU/Part#	Description	Specification	Weight (Lbs)
100349	4-Way Wedge System	8.66" L x 8.86" W x 8.67" H	55
100506	Log Splitter Cover	90" L x 48" W x 40" H	10
101749	Log Catcher Assembly	20.75" L x 12" W x 6" H (installed)	15

22/27/28/35 Ton Log Splitter Replacement Parts



For other part numbers including hardware and other components, see the Operation Manual or contact Customer Service at 1-877-487-8275 or info@frictionlessworld.com

Notes

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Specifications Vertical/Horizontal Log Splitters

SKU/Part No.	100171 (22-Ton)	100408 (27-Ton)	100342 (28-Ton)	100466 (35-Ton)
Maximum Splitting Force	22-Tons ¹	27 Tons ¹	28 Tons ¹	35 Tons ¹
Engine ²	6.5 HP 196CC ³ Kohler SH265	6.5 HP 196CC ³ Kohler SH265	9.5 HP 277CC ³ Kohler CH395	9.5 HP 277CC ³ Kohler CH395
Maximum Log Length	25"	25"	25"	25"
Cycle Time, Down & Back	10.9 Seconds ¹	14.0 Seconds ¹	10.5 Seconds ¹	12.8 Seconds ¹
Cylinder	4" Dia. x 24" Stroke	4-1/2" Dia. x 24" Stroke	4-1/2" Dia. x 24" Stroke	5" Dia. x 24" stroke
Pump, Two Stage	13 GPM	13 GPM	17.5 GPM	17.5 GPM
Wedge, Heat-Treated Steel	8" High	8" High	8" High	9" High
Beam	8" Foot Plate	8" Foot Plate	8" Foot Plate	9" Foot Plate
Hydraulic Capacity	6.5 Gallons Max. ⁴	6.5 Gallons Max. ⁴	6.5 Gallons Max. ⁴	8.5 Gallons Max. ⁵
Shipping Weight	580 Lbs.	590 Lbs.	615 Lbs.	686 Lbs.
Weight with Fluids	621 Lbs.	631 Lbs.	656 Lbs.	725 Lbs.

Common Specifications

Valve	Auto Return with Adjustable Detent
Wheels	D.O.T. Approved 16" O.D. Road Tires
Coupler	2" Ball with Safety Chains
Optional Accessories	4-Way Wedge, Fenders, Storage Cover
Replacement Filters	Part # 100116 Return Filter Part # 100105 Suction Screen
Warranty	3 Year / 2 Year / 1 Year, Limited

¹Tonnage and cycle times may vary dependent upon mechanical and environmental conditions.

²EPA/CARB Approved/50 State Legal

³As rated by engine manufacturer

⁴Minimum Operational Capacity is 5 Gallons of Hydraulic Fluid

⁵Minimum Operational Capacity is 6 Gallons of Hydraulic Fluid

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 _____

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