

# Owner's Manual

**Log Splitter: Outdoor product that splits wood logs for use as fuel in a fireplace or a woodstove.**



## WARNING

Read this manual.

Serious injury or death can result if safety instructions are not followed.



### **Engine is shipped without oil.**

- Before starting engine, fill with SAE 10W-30 motor oil.
- See engine manual for engine oil capacity.






### **Hydraulic Oil Tank is shipped without oil.**

- When add oil, Verify oil level is 1 from top of hydraulic reservoir (not including fill neck).

### **Closely inspect all log splitter components.**

- If you have damaged components then: Contact the freight company that delivered the unit and file a claim.

# Hazard Signal Word Definitions

	<p>This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.</p>
	<p>DANGER (red) indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</p>
	<p>WARNING (orange) indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
	<p>CAUTION (yellow) indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</p>
	<p>CAUTION (yellow) used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.</p>

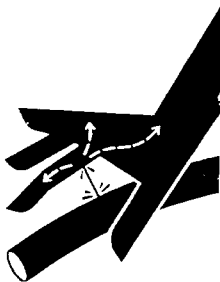
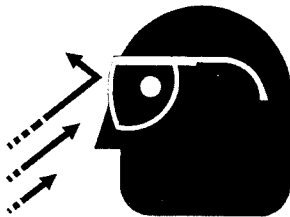
# Table of Contents

▲ Important Safety Rules.....	4.5
▲ Machine Component Definitions.....	6
▲ Operation Instructions.....	7-8
Proper Operation of the Log Splitter.....	7
Vehicle Towing & Working.....	8
▲ Maintenance and Storage.....	9
Troubleshooting.....	10
Specifications.....	11
Assembly Instruction.....	12-14
Parts Explosion.....	15,16
Control Valve Explosion.....	17

# ⚠ Important Safety Rules



## WARNING



### 1.) Read this manual completely.

Serious injury or death can result if safety instructions are not followed.

Everyone who operates the log splitter must read and completely understand all safety rules, operating instructions, and maintenance instructions.

You must be 16 or older to operate this machine. Keep untrained people away.

-Shut engine off before leaving log splitter unattended.

### 2.) Crush hazard.

Wedge can cut through skin and break bones. Keep both hands away from wedge and endplate.

-Serious accidents can happen when other people are allowed inside the work zone. Keep everyone else out of the work zone while operating control valve.

-Do not wear loose clothing. It can get tangled in moving parts of log splitter.

-Only use the log splitter in daylight so you can see what you are doing.

### 3.) Flying objects.

Pieces of log may fly out while splitting. Wear safety glasses. Serious eye injury can occur.

### 4.) Skin injection hazard.

High pressure fluid can inject under skin resulting in serious injury including amputation.

-Make sure all fittings are tight before applying pressure. Relieve system pressure before servicing.

-Do not check for leaks with hand. Instead, use a piece of cardboard to check for leaks.

-If skin injection happens, seek immediate "Surgical Treatment".

## Save These Instructions

# ⚠ Important Safety Rules



## WARNING



### 6.) Risk of fire and explosion.

Hot exhaust fumes from engine can cause fire. Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Position muffler at least 7 feet from combustible objects.
- Before adding fuel, stop the engine and keep heat, sparks, and flame away. Do not add fuel when engine is running or still hot. No smoking near engine.
- Do not pump fuel directly into engine at gas station. Static charge can build and ignite fuel. Use a UL approved fuel container to transfer gas to the engine. Wipe up fuel spills immediately.
- Only store and handle fuel outdoors. Gasoline vapors can ignite if they collect inside an enclosure. Explosion can result.
- Do not change or add to exhaust system. Fire can result.
- Do not change or add fuel tanks or fuel lines. Fire can result.
- Before each use, check fuel tank and fuel lines for leaks. Any fuel leak is a fire hazard. Fix any fuel leaks before starting engine.
- During transportation take precautions to make sure machine will not tip over and cause a fuel leak fire hazard.

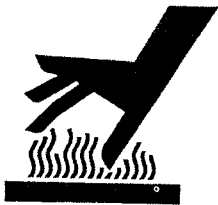


### 7.) Breathing hazard.

Poisonous fumes from engine can kill you. Do not operate indoors even if ventilated. For outdoor use only.



## CAUTION

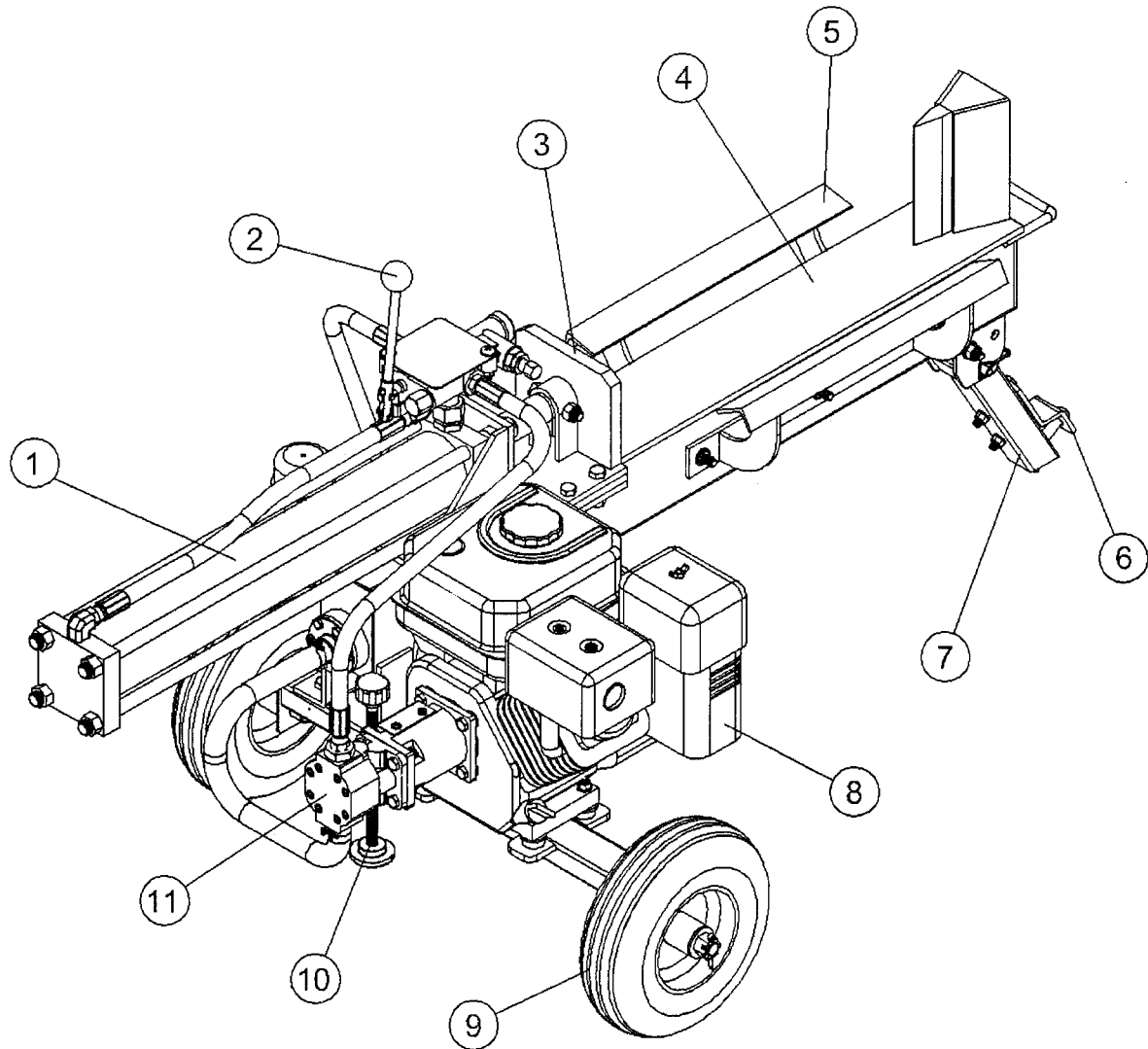


### 1.) Hot muffler.

You can be burned by muffler.  
Do not touch.

## Save These Instructions

# Machine Component Definitions

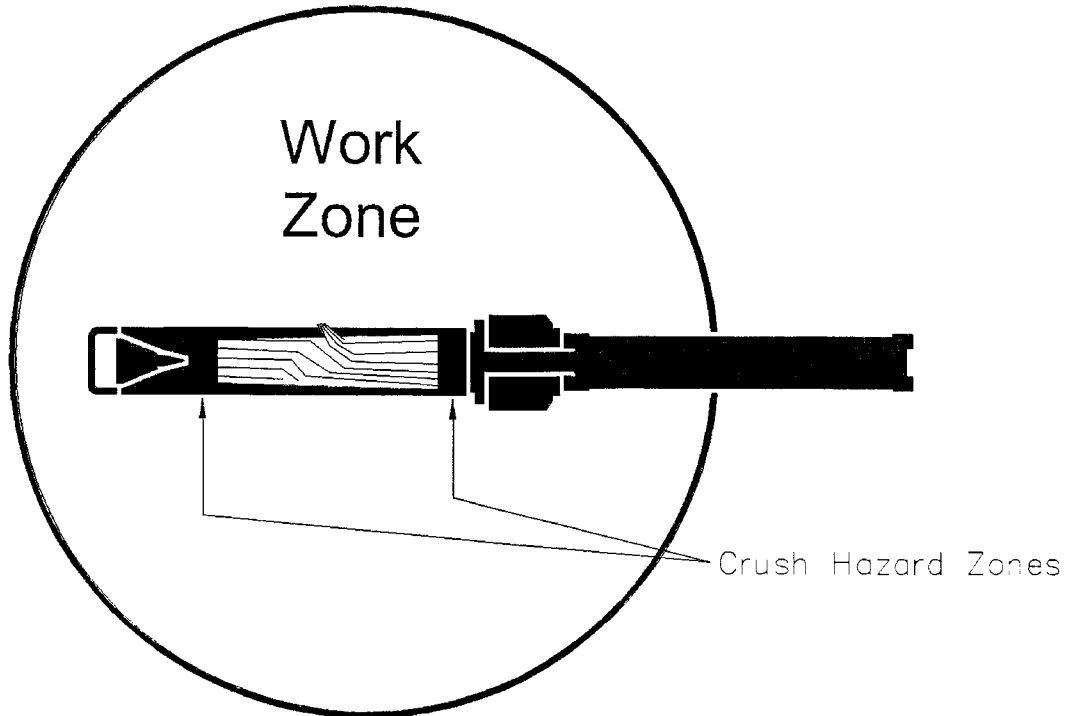


- 1.) **Hydraulic Cylinder.** The hydraulic cylinder has a 3" bore and a 19" stroke. It is rated to 3500 psi.
- 2.) **Control Valve Handle.** Use the control valve handle to move the cutting wedge slide forward and backward.
- 3.) **Ram.** The ram pushes the log past the wedge.
- 4.) **Beam.** The beam is made of 4-3/4" wide.
- 5.) **Log Cradle.** The cradle can hold the log from falling off when splitting.
- 6.) **Hitch Bracket .** Attaches the log splitter to your vehicle.
- 7.) **Hitch Tongue.** Attached the log splitter to your vehicle with hitch bracket.
- 8.) **Engine.** The air cooled engine powers the hydraulic pump.
- 9.) **Tires.** 10", for off-road hauling only.
- 10.) **Leg.** The leg supports the log splitter while operating. The leg should be raised while towing(see Operation Instructions).
- 11.) **Gear Pump.** The gear pump makes the hydraulic oil flow through the system.

# ⚠ Operation Instructions

## Proper Operation of the Log Splitter

- 1.) Load a log onto the beam and against the ramplate.
- 2.) Serious accidents can happen when other people are allowed inside the work zone. Keep everyone else out of the work zone while operating control valve.
- 3.) Push control valve handle FORWARD to split log.
- 4.) Push control valve handle BACKWARD to return wedge to its original position.
- 5.) Clear the split wood from the work zone.



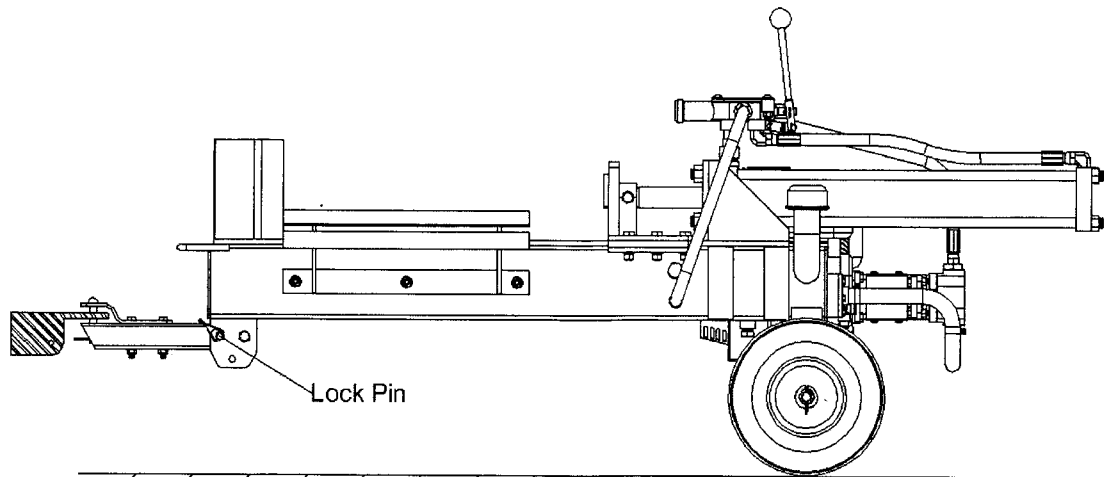
## ⚠ WARNING

### Crush hazard.

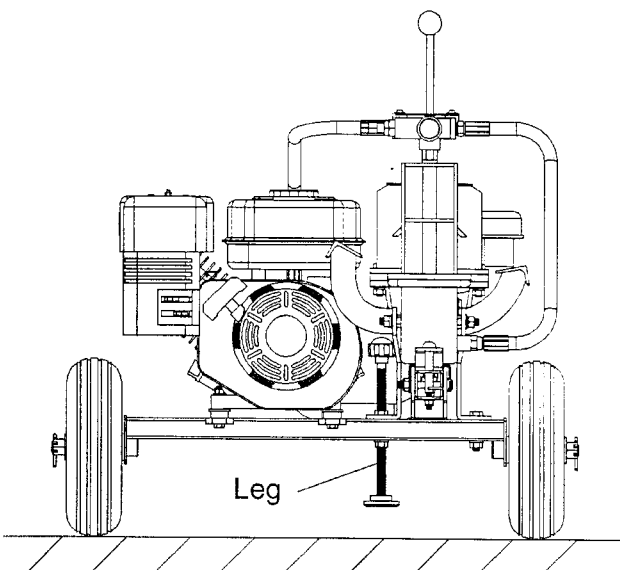
Wedge can cut through skin and break bones. Keep both hands away from wedge and beam slide.

- Serious accidents can happen when other people are allowed inside the work zone. Keep everyone else out of the work zone while operating control valve.
- Do not wear loose clothing. It can get tangled in moving parts of log splitter.
- Only use the log splitter in daylight so you can see what you are doing.

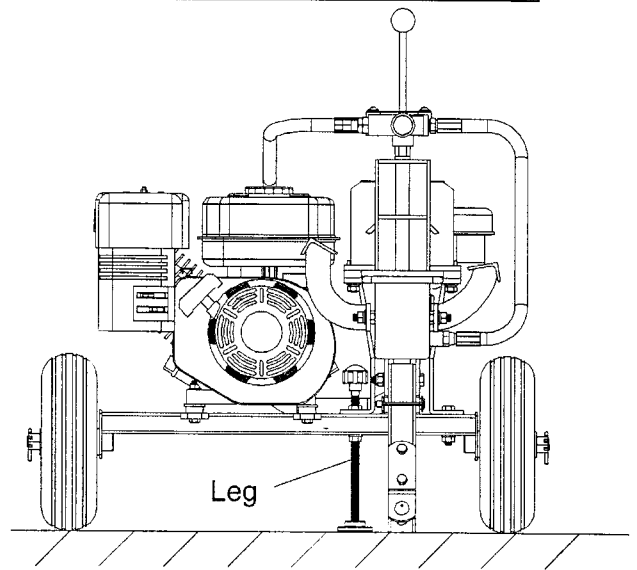
# ⚠ Operation Instructions



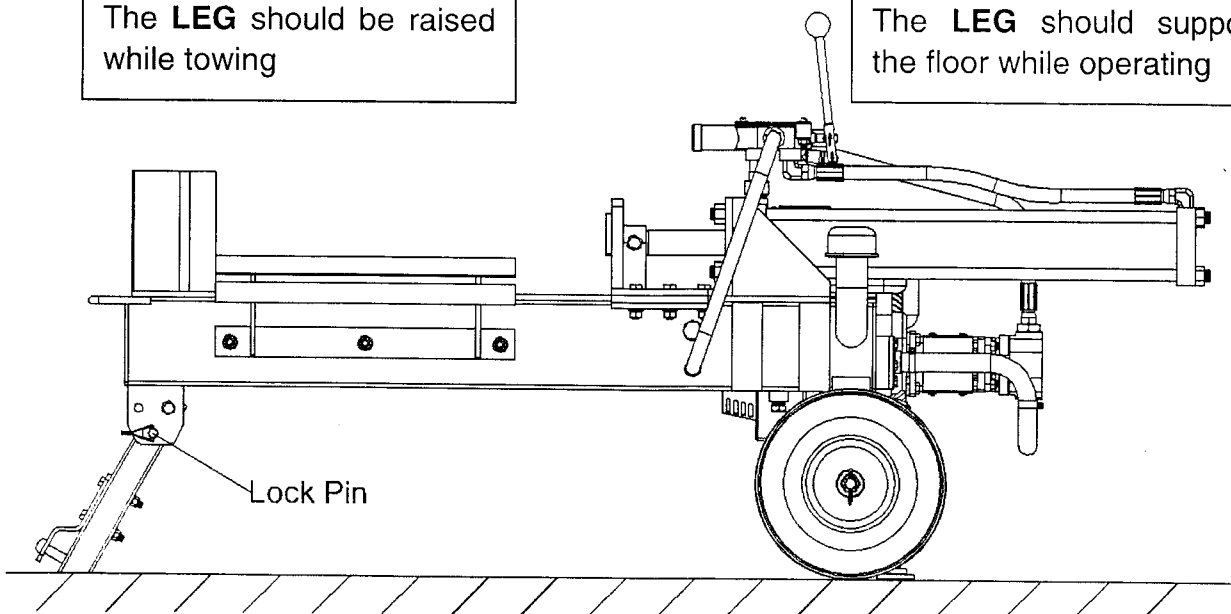
While towing, connect the hitch bracket and hitch tongue to your vehicle. Note, the Lock Pin should be in the upper hole.



The **LEG** should be raised while towing



The **LEG** should support the floor while operating



When operating, please connect the hitch tongue to the lower hole with LOCK PIN.

# ! Maintenance and Storage

- !** Before performing maintenance, the log splitter must be placed in maintenance mode.
- 1.) Turn off engine.
  - 2.) Move the control valve handle forward and backward to relieve hydraulic pressure.

**!** After performing maintenance, make sure all guards, shields, and safety features are put back in place. Failure to follow this warning can result in serious injury.

**Refer to the engine owner's manual for engine maintenance.**

What	When	How
Hoses	Each Use	Inspect for exposed wire mesh and leaks. Replace all worn or damaged hoses before starting engine
Hydraulic Fittings	Each Use	Inspect for cracks and leaks. Replace all damaged fittings before starting engine
Nuts and Bolts	Each Use	Check for loose bolts
Beam	Each Use	Apply grease to beam surface
Moving Parts	Each Use	Clear debris

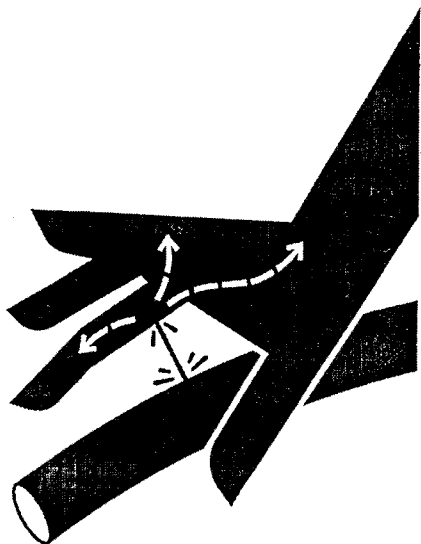
## ! CAUTION

### Residual Hydraulic Energy

Residual energy must be released from the pressurized hydraulic fluid before any maintenance or repair work is done on the firewood processor. Hydraulic fluid can remain highly pressurized even while the processor's Engine is off. Escaping pressurized hydraulic fluid can penetrate skin and cause serious injury.

To release residual hydraulic energy:

1. Shut off Engine
2. Move control valves back and forth, from one limit of travel to the other, at least four times.
3. Hold valve for three seconds at each limit of travel.



## ! WARNING

### Skin injection hazard.

High pressure fluid can inject under skin resulting in serious injury including amputation.

-Make sure all fittings are tight before applying pressure. Relieve system pressure before servicing.

-Do not check for leaks with hand. Instead, use a piece of cardboard to check for leaks.

-If skin injection happens, seek immediate "Surgical Treatment".

# Troubleshooting

<b>Problem</b>	
Cylinder rod will not move	SOLUTION: A,D,E,H,J
Slow cylinder shaft speed when extending or retracting	SOLUTION: A,B,C,H,I,K,L
Wood will not split or splits extremely slowly	SOLUTION: A,B,C,F,I,K
Engine bogs down during splitting	SOLUTION: G,L
Engine stalls under low load condition	SOLUTION: D,E,L,M
<b>Cause</b>	<b>Solution</b>
<b>A</b> -Insufficient oil to pump	Check oil level in oil tank
<b>B</b> -Air in oil	Check oil level in oil tank
<b>C</b> -Excessive pump inlet vacuum	Check pump inlet hose for blockage or kinks
<b>D</b> -Blocked hydraulic lines	Flush and clean the splitter hydraulic system
<b>E</b> -Blocked control valve	Flush and clean the splitter hydraulic system
<b>F</b> -Low control valve setting	Adjust control valve with a pressure gauge
<b>G</b> -High control valve setting	Adjust control valve with a pressure gauge
<b>H</b> -Damaged control valve	Return control valve for authorized repair
<b>I</b> -Internal control valve leak	Return control valve for authorized repair
<b>J</b> -Internal cylinder leak	Return cylinder for authorized repair
<b>K</b> -Internally damaged cylinder	Return cylinder for authorized repair
<b>L</b> -Engine Control out of adjustment	Adjust idle control nuts
<b>M</b> -Engine is loaded during idle down mode	Use shorter log length (20" or less) to allow engine to speed up before contact.

# Specifications

Ram force : 12ton

Engine: 5.5HP 2 GPM Gear Pump

Maximum Pressure: 3500PSI

Hydraulic Cylinder Size (bore x stroke): 3"x19"

Cycle time : 30s

Hydraulic Tank Capacity : 8L

Max. Log Opening : 20" long and 8" Diameter

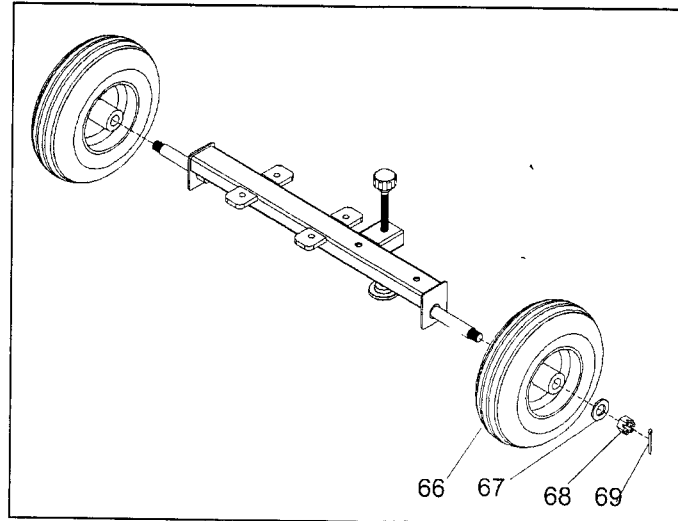
Hardsteel Wedge:6"

The manufacturer reserves the right to make improvements in design and/or changes in specifications at any time without incurring any obligation to install them on units previously sold.

## ASSEMBLY STEP

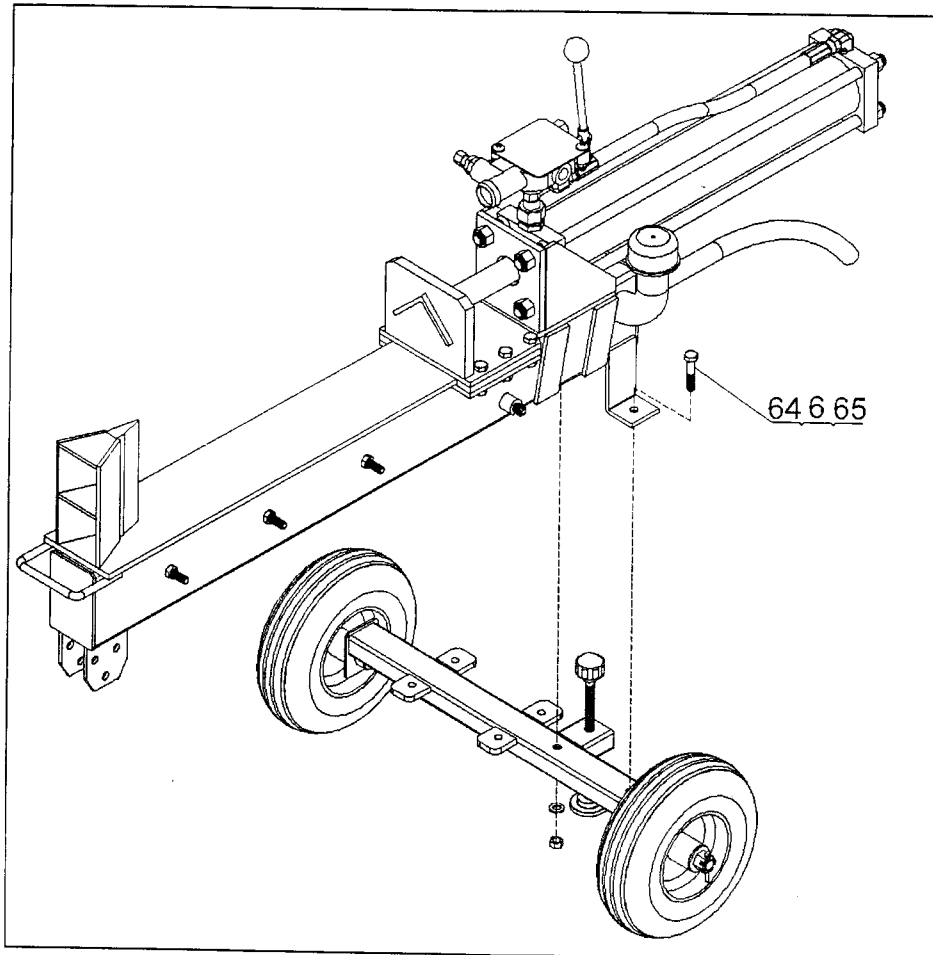
### STEP 1: WHEEL ASSEMBLY

Assemble the wheel (#66) to the wheel stand by using Cotter Pin  $\text{Ø}4 \times 36$  (#69), Hex Nut M16x1.5 (#68) and Flat Washer  $\text{Ø}20$  (#67)



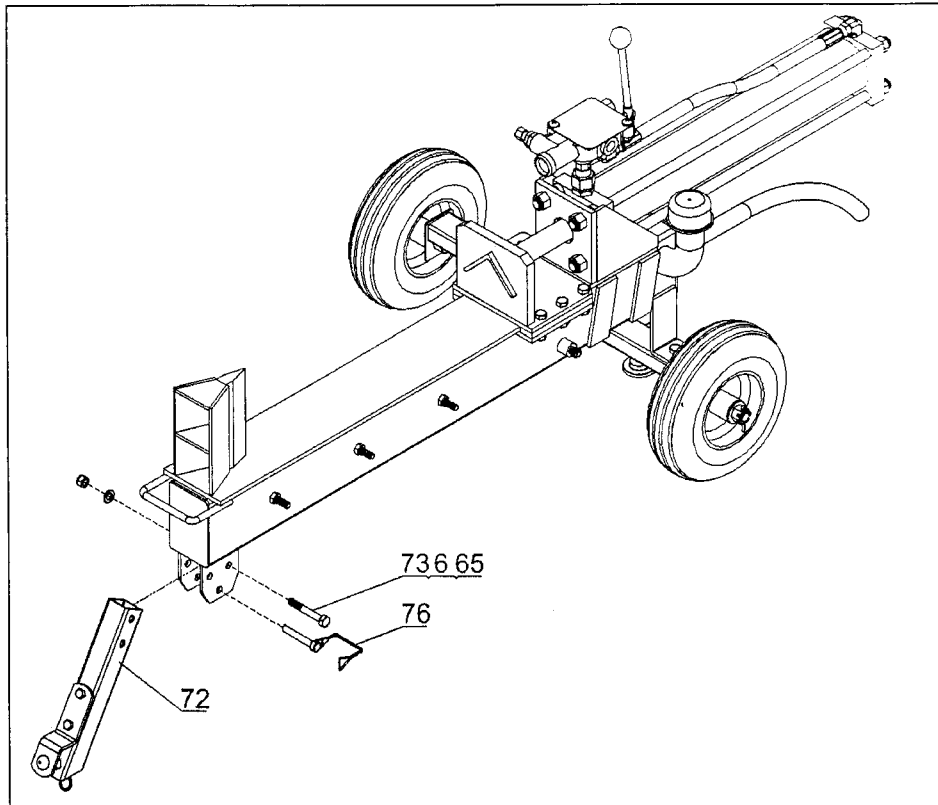
### STEP 2: WHEEL STAND ASSEMBLE

Assemble the wheel stand to the main frame by using Hex Bolt M10x50 (#64), Flat Washer  $\text{Ø}10$  (#6) and Hex Lock Nut M10 (#65).



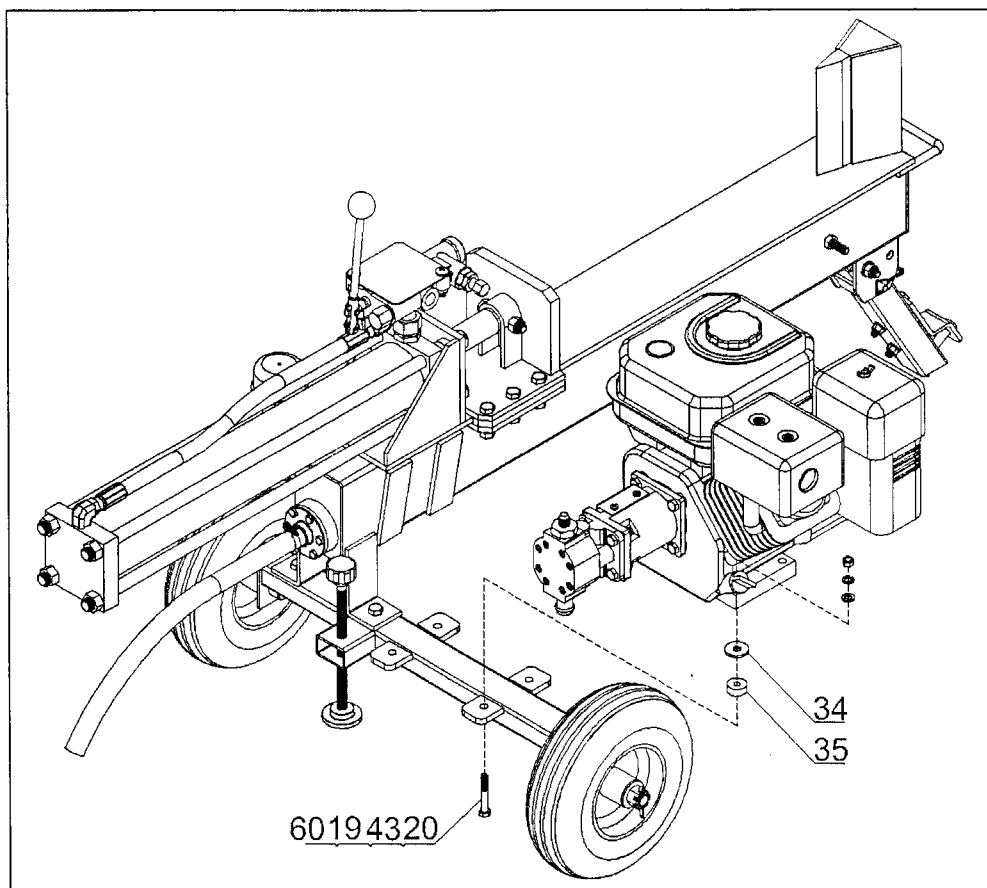
### STEP3: ATTACH HITCH TONGUE

Attach the hitch tongue(#72) to the main frame by using Hex Bolt M10x70 (#73), Flat Washer Ø10(#6) and Hex Lock Nut M10 (#65), then fix the Lock Pin (#76).



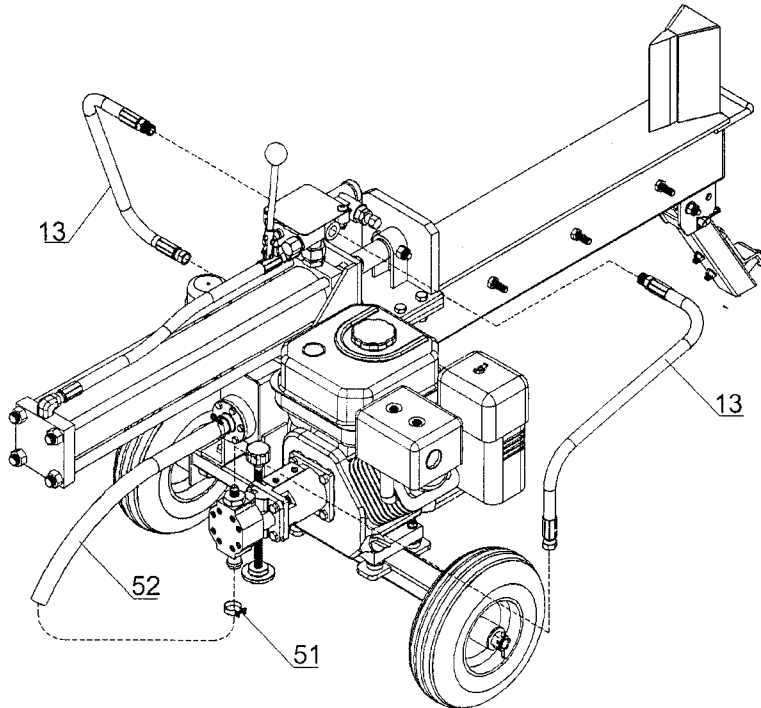
### STEP 4: ASSEMBLY ENGINE

Assemble the engine to the wheel stand by using Hex Bolt M8x55 (#60), Flat Washer Ø8 (#19), Lock Washer Ø8 (#43) and Hex Lock Nut M8 (#20), between Engine & Wheel Stand, please add Polyurethane Block (#35) and Big Flat Washer Ø10 (#34).



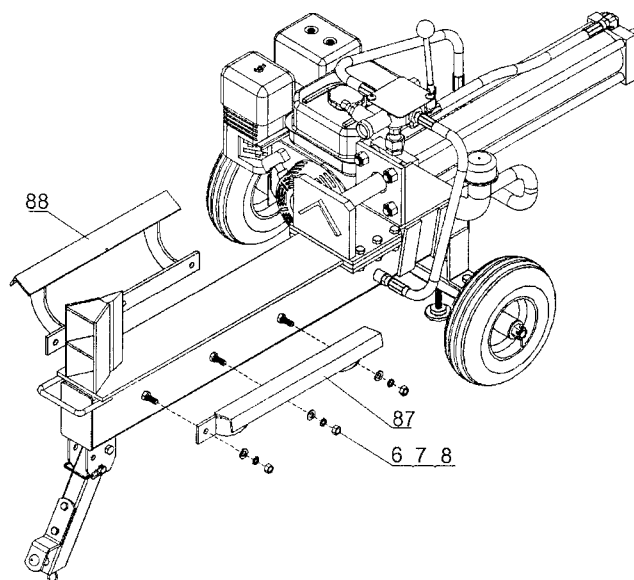
## STEP 5: ASSEMBLY HYDRAULIC HOSES

1. Attach the hydraulic hoses (#13). Using one hydraulic hose (#13) which will assemble to the control valve and engine gear pump. Fix one end to the control valve input joint (already fixed at factory) and another end to the Engine Gear Pump.
2. Using the other hydraulic hose (#13) which will assemble to the control valve and oil tank. Fix one end to the control valve output joint (already fixed at factory) and another end to the oil tank.
3. Then assemble the Oil Pipe (#52) to the gear pump, fix it by clamp (#51).

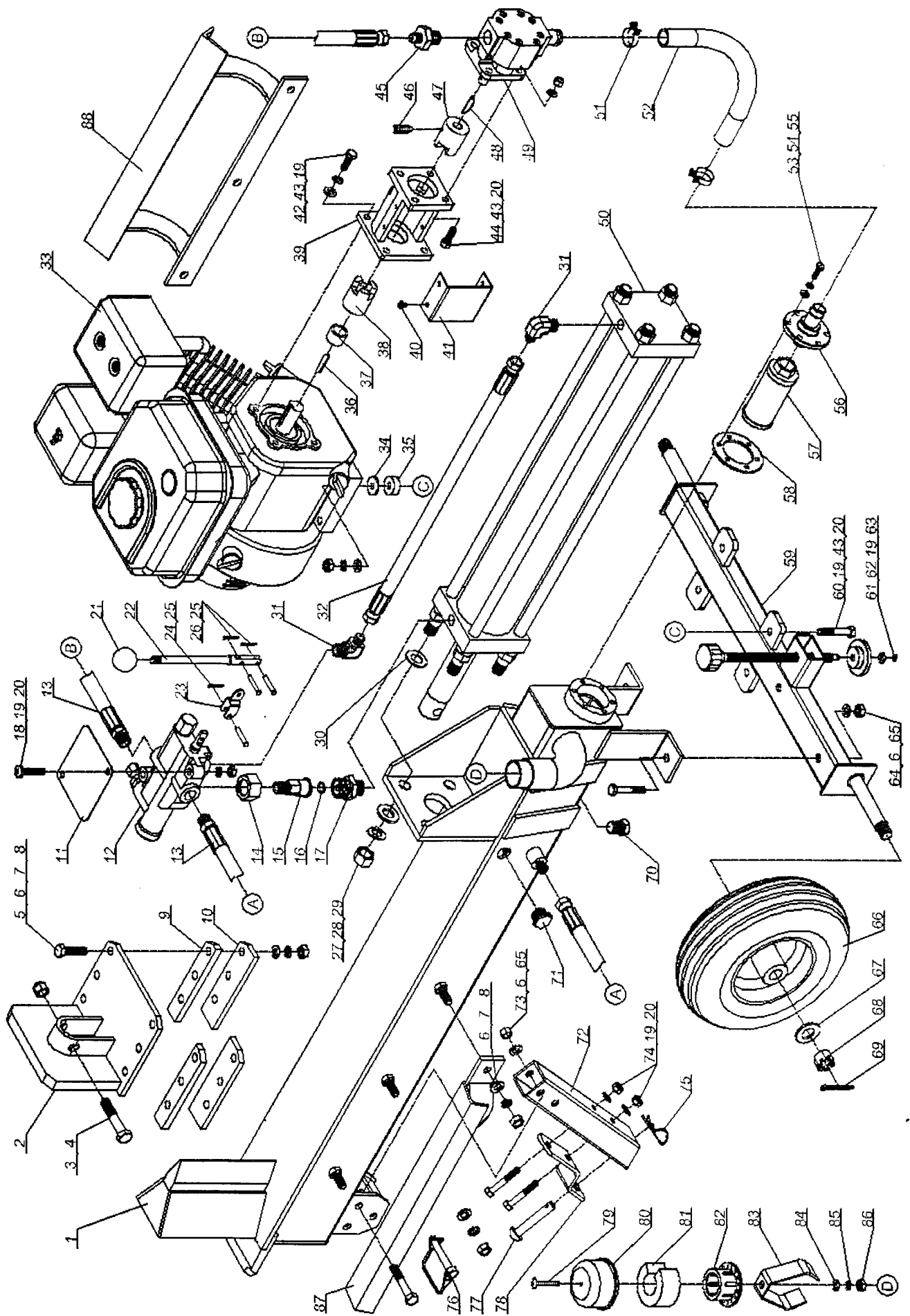


## STEP 6: ASSEMBLY THE LOG CRADLE

Attach the log cradle (#88 & #87) by using flat washer  $\varnothing 10$  (#6), lock washer  $\varnothing 10$  (#7) and hex nut M10 (#8).

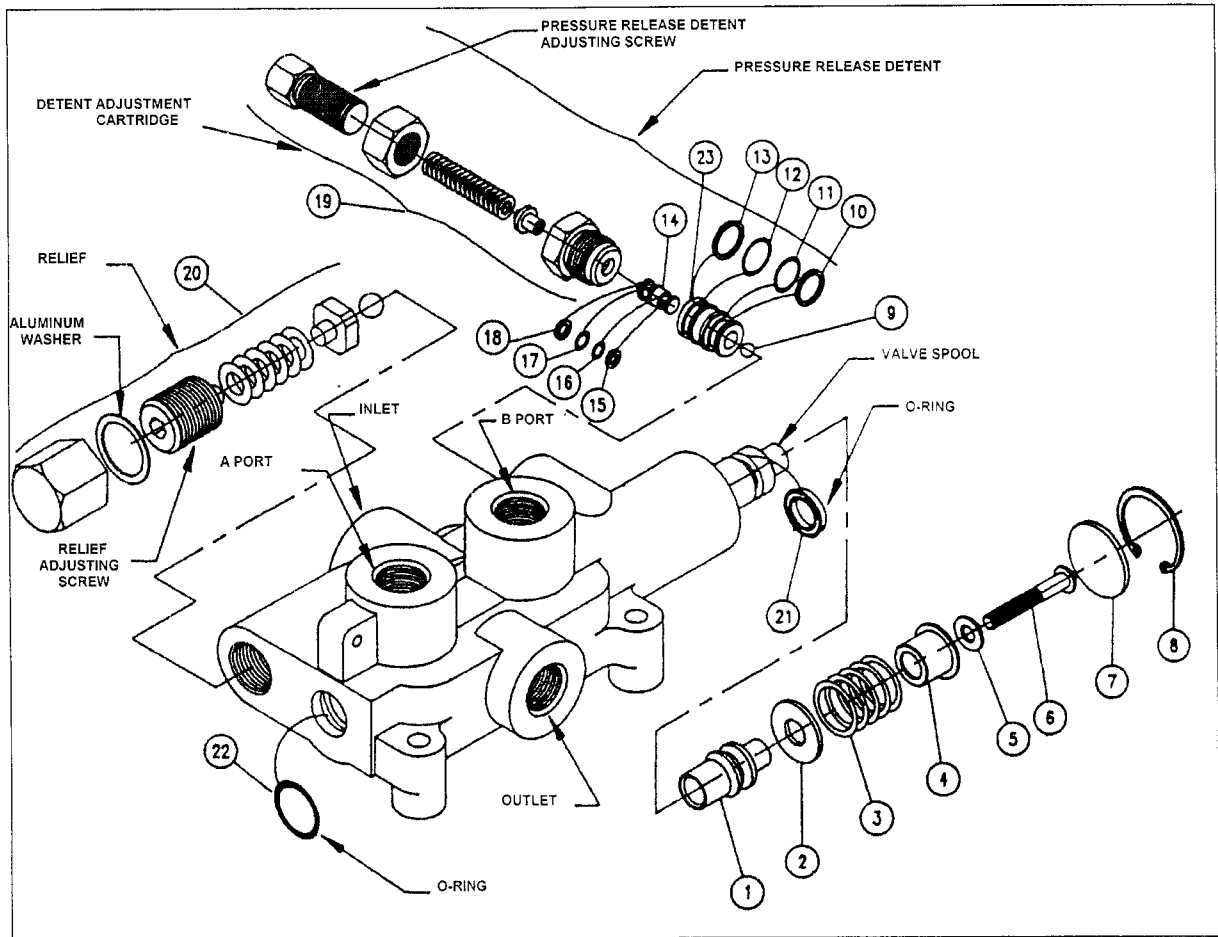


# LOG SPLITTER PARTS DRAWING



# LOG SPLITTER PARTS LIST

Ref.No	Description	Qty	Ref.No	Description	Qty
1	Beam	1	45	Connector Z1/2-M14x1.5	1
2	Ram Plate	1	46	Inner Hex Screw M6x10	1
3	Hex Bolt M12x60	1	47	Gear Pump Connector	1
4	Hex Lock Nut M12	1	48	Semicircular Key	1
5	Hex Bolt M10x40	6	49	Gear Pump	1
6	Flat Washer Ø10	15	50	Cylinder	1
7	Lock Washer Ø10	12	51	Clamp	2
8	Hex Nut M10	12	52	Oil Pipe	1
9	Wedge Spacer	2	53	Hex Bolt M6x20	6
10	Wedge Plate	2	54	Lock Washer Ø6	6
11	Plate	1	55	Flat Washer Ø6	6
12	Control Valve	1	56	Filter Fix Plate	1
13	Hydraulic Hose	2	57	Filter	1
14	Nut	1	58	Seal Washer	1
15	Valve B Joint	1	59	Wheel Stand	1
16	O Ring	1	60	Hex Bolt M8x55	4
17	Front Cover Connector	1	61	Support Leg	1
18	Screw M8x35	2	62	Support Leg Base	1
19	Flat Washer Ø8	13	63	Axial Spring Collar Ø8	1
20	Hex Lock Nut M8	12	64	Hex Bolt M10x50	2
21	Valve Handle Ball	1	65	Hex Lock Nut M10	3
22	Valve Handle	1	66	Wheel	2
23	Valve Handle Connector	2	67	Flat Washer Ø20	2
24	Pin B5x22	1	68	Nut M16x1.5	2
25	Cotter Pin Ø2x10	3	69	Cotter Pin Ø4x36	2
26	Pin B5x18	2	70	Oil Plug	1
27	Flat Washer Ø16	4	71	Oil Leveler M20x1.5	1
28	Lock Washer Ø16	4	72	Hitch Tongue	1
29	Hex Nut M16	4	73	Hex Bolt M10x70	1
30	Adjustable Washer F		74	Hex Bolt M8x60	2
31	Hydraulic Valve connector	2	75	R Pin Ø3	1
32	Hydraulic Hose (Valve-Cylinder)	1	76	Lock Pin	1
33	5.5HP Engine	1	77	Round Pin	1
34	Big Flat Washer Ø10	4	78	Hitch Bracket	1
35	Polyurethane Block	4	79	Screw M4x12	1
36	Flat Key	1	80	Oil Cap	1
37	Engine Bushing	1	81	Sponge	1
38	Engine Connector	1	82	Oil Cap Bushing	1
39	Gear Pump Stand	1	83	Breather Cap	1
40	Screw ST4.8x9.8	4	84	Flat Washer Ø4	1
41	Connector Cover	1	85	Lock Washer Ø4	1
42	Hex Bolt M8x25	4	86	Hex Lock Nut M4	1
43	Lock Washer Ø8	12	87	Log Cradle (Right)	1
44	Hex Bolt M8x30	4	88	Log Cradle (Left)	1



**PLEASE NOTE:**  
BEFORE REMOVING VALVE SPOOL OR SPOOL SLEEVE REMOVE DETENT ADJUSTING CART, DETENT PISTON AND STEEL BALL. INSTALL SPOOL AND SPOOL SLEEVE BEFORE REINSTALL STEEL BALL.

**PRESSURE RELEASE DETENT**

This feature provides a pressure release detent for the spool "out" (handle in ) position. When the spool is manually placed in the detent position oil is directed to the "B" work port reaches a preset level the detent will release and the spool will center. The factory setting is 700psi. The detent release pressure is adjustable by loosening the jam nut and turning the adjusting screw. Turning the adjusting screw clockwise will increase the detent release pressure and counterclockwise will decrease the detent release pressure. NOTE: if the detent release pressure is set too high the spool will not center, if the pressure is too low the detent will not hold. If cap screw item 6 becomes loose detent will not function properly.

**RELIEF VALVE**

An adjustable ball spring relief valve is standard on all valves. The factory setting is 3500psi, 3gpm and 120°F. Other settings can be specified.

The relief pressure is adjusted by removing nut, and turning the adjusting screw. Turning the adjusting screw clockwise will increase the pressure and counterclockwise will decrease the pressure (a pressure gauge must be installed in the inlet line whenever the relief pressure is adjusted). Do not backout adjusting screw to the point it falls out.

**▲ WARNING:** OVERPRESSURE MAY CAUSE SUDDEN AND UNEXPECTED FAILURE OF A COMPONENT IN THE HYDRAULIC SYSTEM RESULTING IN SERIOUS PERSONAL INJURY. ALWAYS USE A GAUGE WHEN ADJUSTING A RELIEF VALVE.

ITEM	QTY	DESCRIPTION
1	1	detent sleeve
2	1	washer
3	1	spring
4	1	stop cup
5	1	washer
6	1	cap screw
7	1	spacer
8	1	snap ring
9	1	steel ball
10	1	back-up washer
11	1	o-ring
12	1	o-ring
13	1	back-up ring
14	1	piston
15	1	back-up washer
16	1	o-ring
17	1	o-ring
18	1	back-up washer
19	1	detent adjusting cart.
20	1	relief kit
21	1	o-ring
22	1	o-ring
23	1	piston sleeve