

DR[®] 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER



SAFETY & OPERATING INSTRUCTIONS



Serial No. _____

Order No. _____

DR Power Equipment
Toll-free phone: 1-800-DR-OWNER (376-9637)
Fax: 1-802-877-1213
Website: www.DRpower.com

WARNING!

READ AND UNDERSTAND THIS MANUAL AND ALL INSTRUCTIONS BEFORE OPERATING THIS 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER.

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Conventions used in this manual



THIS INDICATES A HAZARDOUS SITUATION, WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



THIS INDICATES A HAZARDOUS SITUATION, WHICH, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.



THIS INFORMATION IS IMPORTANT IN THE PROPER USE OF YOUR MACHINE. FAILURE TO FOLLOW THIS INSTRUCTION COULD RESULT IN DAMAGE TO YOUR MACHINE OR PROPERTY.

Serial Number and Order Number

A Serial Number is used to identify your machine and is located on the Serial Number Label on your machine. An Order Number is used to check and maintain your order history and is located on the upper left portion of your packing slip. For your convenience and ready reference, enter the Serial Number and Order Number in the space provided on the front cover of this manual.

Additional Information and Potential Changes

DR Power Equipment reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your machine.

Specifications

MECHANICAL SPECIFICATIONS

Beam Heavy-duty 6 inch H-Beam
Wedge 6 inch high-carbon steel (replaceable)
Force/Tonnage 22 ton
Cylinder Stroke 24 inches
Log Opening 25 inch maximum
Cycle Time 12 seconds (approx.)
Operating Positions Vertical/Horizontal
Wheels & Tires High-Speed, 4.80 x 4.00 x 8"
Safety Chains Standard
Hitch Coupler 2 inch locking ball (standard)
Engine Briggs and Stratton OHV horizontal shaft engine

HYDRAULIC SPECIFICATIONS

Cylinder Size 4" x 24" clevis type cylinder, 1.75" rod
Hydraulic Tank 7.5 gallon capacity
Hydraulic System 9.5 gallon capacity (including tank, cylinder, hoses, filter)
Hydraulic Fluid Filter Spin-on type, 60 micron filter
Safety Release Control Valve .. Detent, auto return
Gear Pump 2-stage, 11 GPM
Control Valve Auto Return

Hydraulic Fluid

Above 30° F Use AW-32, 10W (non foaming) or ATF Dextron III
Below 30° F Use only ATF Dextron III

SHIPPING SPECIFICATIONS

Shipping Weight 630 LBS

! WARNING!

TO AVOID PERSONAL INJURY OR DEATH, CAREFULLY READ AND UNDERSTAND ALL INSTRUCTIONS PERTAINING TO THE DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER.

DO NOT ATTEMPT TO ASSEMBLE, OPERATE, OR MAINTAIN OUR PRODUCT WITHOUT FULLY UNDERSTANDING ALL OUR INSTRUCTIONS AND SAFETY PRECAUTIONS. DO NOT OPERATE THE WOOD SPLITTER UNLESS YOU READ AND UNDERSTAND THE INSTRUCTIONS AND WARNINGS IN THIS MANUAL. IF YOU ARE EVER UNSURE ABOUT AN ACTION YOU ARE ABOUT TO TAKE, DON'T DO IT. CONTACT DR POWER EQUIPMENT' TOLL-FREE SUPPORT AT 1-800-DR-OWNER (376-9637) FOR HELP OR INFORMATION.

! WARNING!

ACCIDENTS CAN OFTEN BE AVOIDED BY BEING ALERT AND RECOGNIZING POTENTIALLY HAZARDOUS SITUATIONS. ANY INDIVIDUALS OPERATING, MAINTAINING, OR REPAIRING PRODUCTS MANUFACTURED BY DR POWER EQUIPMENT SHOULD HAVE THE NECESSARY TRAINING, SKILLS, AND TOOLS REQUIRED TO PERFORM THESE FUNCTIONS PROPERLY AND SAFELY. THE SAFETY INFORMATION IN THIS MANUAL SERVES AS A BASIC GUIDE IN AN ATTEMPT TO PREVENT INJURY OR DEATH.

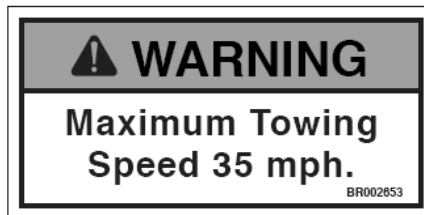
DR POWER EQUIPMENT CANNOT ANTICIPATE EVERY POSSIBLE CIRCUMSTANCE THAT MIGHT INVOLVE A POTENTIAL HAZARD. THE WARNINGS IN THIS MANUAL AND ON THE PRODUCT ITSELF ARE, THEREFORE, NOT ALL INCLUSIVE. IF TOOLS, PROCEDURES, WORK METHODS, OR OPERATING TECHNIQUES THAT ARE NOT SPECIFICALLY MENTIONED BY DR POWER EQUIPMENT ARE USED, YOU MUST SATISFY YOURSELF THAT THEY ARE SAFE FOR YOU AND FOR OTHERS. MAKE SURE THE WOOD SPLITTER WILL NOT BE DAMAGED OR MADE UNSAFE BY ANY OPERATION, LUBRICATION, MAINTENANCE, OR REPAIR PROCEDURES THAT YOU CHOOSE.

Labels

Your DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER carries prominent labels as reminders for its proper and safe use. Shown below are copies of all the labels that appear on the equipment. Take a moment to study them and make a note of their location on your DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER as you assemble and before you operate the unit. Replace damaged or missing safety and information labels immediately.



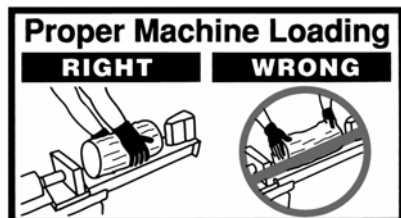
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Personal Protection

WARNING!

- TO AVOID PERSONAL INJURY OR DEATH, CAREFULLY READ AND UNDERSTAND ALL INSTRUCTIONS PERTAINING TO THE WOOD SPLITTER INCLUDING THE ENGINE MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTION MANUAL.
 - ALWAYS WEAR PROTECTIVE GEAR, SUCH AS SAFETY GOGGLES, TIGHT-FITTING GLOVES WITHOUT DRAW STRINGS OR LOOSE CUFFS, STEEL-TOED SHOES, AND A PROTECTIVE HEARING DEVICE.
 - TO PREVENT INJURY, MAKE SURE ALL DECALS ARE ATTACHED TO THE WOOD SPLITTER AND ARE LEGIBLE AT ALL TIMES.
-

Worksite Safety

WARNING!

- TO AVOID TRIPPING, DO NOT LEAVE TOOLS, LOGS, OR OTHER ITEMS LAYING AROUND THE WORK AREA.
 - NEVER OPERATE YOUR WOOD SPLITTER ON SLIPPERY, WET, MUDDY, OR ICY SURFACES. THE LOCATION YOU CHOOSE SHOULD BE SOLID, LEVEL, DRY, AND FREE FROM ANY TALL GRASS, BRUSH, OR OTHER INTERFERENCES.
 - NEVER OPERATE THE ENGINE IN AN ENCLOSED AREA. EXHAUST FUMES CONTAIN CARBON MONOXIDE THAT CAN BE DEADLY WHEN INHALED. MAKE SURE THE AREA IS WELL VENTILATED.
 - NEVER ATTEMPT TO MOVE YOUR WOOD SPLITTER OVER HILLY OR UNEVEN TERRAIN WITHOUT A TOW VEHICLE.
 - NEVER USE YOUR WOOD SPLITTER AT NIGHT.
 - ALWAYS BLOCK THE WHEELS TO PREVENT MOVEMENT OF THE MACHINE WHILE IN OPERATION.
-

Operating Safety

WARNING!

- ALLOW ONLY ONE (1) PERSON TO LOAD AND OPERATE THE WOOD SPLITTER.
- ALLOW ONLY ADULTS TO OPERATE THE WOOD SPLITTER. NO ONE UNDER THE AGE OF 18 SHOULD BE ALLOWED TO OPERATE THE WOOD SPLITTER.

- ALWAYS KEEP BYSTANDERS, INCLUDING CHILDREN AND PETS, AT LEAST TWENTY-FIVE (25) FEET AWAY FROM THE WORK AREA. ONLY THE OPERATOR SHOULD STAND NEAR THE EQUIPMENT AND ONLY WITHIN THE SAFE OPERATING AREA PRESCRIBED IN THIS MANUAL (SEE THE PHOTOS ON SAFE AND UNSAFE OPERATING ZONES IN THE “OPERATING YOUR WOOD SPLITTER” SECTION IN CHAPTER 4.)
 - WHEN THE RAM OF THE WOOD SPLITTER IS IN THE RETURN MODE, KEEP YOUR HANDS OFF THE MACHINE — THE WOOD SPLITTER IS DESIGNED TO AUTOMATICALLY STOP THE RAM WHEN THE CYLINDER IS FULLY RETRACTED.
 - ALWAYS DISCONNECT THE SPARK PLUG WIRE WHEN THE WOOD SPLITTER IS NOT IN OPERATION.
 - DO NOT ALLOW ANY PERSON TO OPERATE THE WOOD SPLITTER UNTIL THEY HAVE READ AND UNDERSTOOD THE SAFE OPERATING INSTRUCTIONS CONTAINED IN THIS MANUAL.
 - DO NOT, UNDER ANY CIRCUMSTANCES, ALTER YOUR WOOD SPLITTER. THIS EQUIPMENT WAS DESIGNED AND ENGINEERED TO BE USED IN ACCORDANCE WITH THE OPERATING INSTRUCTIONS. ALTERING THE EQUIPMENT, OR USING THE EQUIPMENT IN SUCH A WAY AS TO CIRCUMVENT ITS DESIGN CAPABILITIES AND CAPACITIES, COULD RESULT IN SERIOUS OR FATAL INJURY AND WILL VOID THE WARRANTY.
 - NEVER OPERATE, OR ALLOW ANYONE ELSE TO OPERATE, THIS EQUIPMENT WHILE UNDER THE INFLUENCE OF MEDICATION, DRUGS, OR ALCOHOL.
 - NEVER WEAR LOOSE CLOTHING OR JEWELRY THAT MAY GET CAUGHT OR BECOME ENTANGLED IN THE WOOD SPLITTER.
 - NEVER PLACE HANDS OR FEET BETWEEN LOG AND SPLITTING WEDGE OR BETWEEN LOG AND RAM DURING THE FORWARD OR REVERSE STROKE.
 - DO NOT STRADDLE OR REACH ACROSS THE SPLITTING AREA WHEN OPERATING THE WOOD SPLITTER.
 - DO NOT STEP OVER YOUR WOOD SPLITTER WHEN THE ENGINE IS RUNNING, BECAUSE YOU MAY TRIP OR ACCIDENTALLY ENGAGE THE RAM.
 - NEVER ATTEMPT TO LOAD YOUR WOOD SPLITTER WHILE THE RAM IS IN MOTION.
 - ONLY USE YOUR HAND TO OPERATE THE CONTROL VALVE HANDLE.
-

Log Splitting Safety

! WARNING!

- ALWAYS KEEP YOUR FINGERS AWAY FROM ANY CRACKS THAT OPEN IN THE LOG DURING THE SPLITTING OPERATION.
- ALWAYS MAKE SURE THAT BOTH ENDS OF THE LOG YOU ARE SPLITTING ARE CUT AS SQUARE AS POSSIBLE. THIS WILL PREVENT THE LOG FROM SLIDING OUT OF POSITION WHILE UNDER PRESSURE. LOGS SHOULD BE 24 INCHES OR SHORTER IN LENGTH.

- NEVER TRY TO SPLIT TWO LOGS ON TOP OF EACH OTHER.
 - NEVER PILE LOGS TO BE SPLIT IN A MANNER THAT WILL CAUSE YOU TO REACH ACROSS THE WOOD SPLITTER.
-

Maintenance and Repair

! WARNING!

- FOLLOW ALL SAFETY RULES. MOST ACCIDENTS INVOLVING THE OPERATION, MAINTENANCE, OR REPAIR OF PRODUCTS OCCUR BECAUSE THE ASSEMBLER/OWNER/OPERATOR FAILED TO OBSERVE BASIC SAFETY RULES OR OPERATING INSTRUCTIONS.
 - ALWAYS INSPECT YOUR WOOD SPLITTER BEFORE EACH USE. MAKE SURE ALL NUTS, BOLTS, SCREWS, HYDRAULIC FITTINGS, HOSE CLAMPS, ETC. ARE SECURELY TIGHTENED.
 - ALWAYS CHECK THE FLUID LEVEL IN THE HYDRAULIC FLUID TANK AND ENGINE OIL RESERVOIR BEFORE EACH USE.
 - NEVER OPERATE YOUR WOOD SPLITTER WHEN IT IS IN NEED OF REPAIR OR IS IN POOR MECHANICAL CONDITION.
 - NEVER TAMPER WITH THE ENGINE TO RUN IT AT EXCESSIVE SPEEDS. THE MAXIMUM ENGINE SPEED IS PRESET AND IS WITHIN SAFETY LIMITS.
 - NEVER MAKE ALTERATIONS TO YOUR WOOD SPLITTER IN ANY MANNER. SUCH ALTERATIONS MAY CAUSE THE WOOD SPLITTER TO BECOME UNSAFE AND WILL VOID THE WARRANTY.
 - ALWAYS CLEAN THE UNIT AFTER EACH USE. IF POSSIBLE, STORE THE UNIT INSIDE OR COVER IT COMPLETELY IF STORED OUTSIDE.
-

Towing

! WARNING!

- ALWAYS CHECK BEFORE TOWING TO MAKE CERTAIN YOUR WOOD SPLITTER IS CORRECTLY AND SECURELY ATTACHED TO THE TOWING VEHICLE. BE SURE THAT THE BALL HITCH YOU ARE USING IS THE PROPER SIZE FOR THE HITCH COUPLER ON THE LOG SPLITTER. BE SURE THE SAFETY CHAINS ARE PROPERLY HOOKED TO THE VEHICLE LEAVING ENOUGH SLACK FOR TURNING.
- ALWAYS ALLOW FOR ADDED LENGTH OF THE WOOD SPLITTER WHEN TURNING, PARKING, CROSSING INTERSECTIONS, AND IN ALL DRIVING SITUATIONS.
- ALWAYS BE CAREFUL WHEN BACKING UP. YOU COULD JACKKNIFE YOUR WOOD SPLITTER IF CARE IS NOT TAKEN.
- ALWAYS DISCONNECT YOUR WOOD SPLITTER FROM YOUR TOWING VEHICLE BEFORE ATTEMPTING TO USE IT.

- NEVER EXCEED 35 M.P.H. WHEN TOWING YOUR WOOD SPLITTER. OBEY ALL STATE AND LOCAL REGULATIONS WHEN TOWING ON STATE AND LOCAL ROADS AND HIGHWAYS. ADJUST YOUR SPEED FOR TERRAIN AND CONDITIONS, AS NEEDED. BE EXTRA CAUTIOUS WHEN TOWING OVER ROUGH TERRAIN, ESPECIALLY OVER A RAILROAD CROSSING.
 - NEVER ALLOW ANYONE TO SIT OR RIDE ON YOUR WOOD SPLITTER.
 - NEVER CARRY ANY CARGO OR WOOD ON YOUR WOOD SPLITTER.
-

Refueling

WARNING!

- ONLY REFUEL THE WOOD SPLITTER OUTDOORS IN A CLEAR AREA VOID OF GAS FUMES OR SPILLED GASOLINE.
 - ALWAYS USE AN APPROVED FUEL CONTAINER TO CARRY GASOLINE.
 - ALWAYS REPLACE THE WOOD SPLITTER GAS CAP AND THE FUEL CONTAINER CAP SECURELY.
 - IF GASOLINE IS SPILLED, MOVE THE MACHINE AWAY FROM THE AREA OF THE SPILL AND AVOID CREATING ANY SOURCE OF IGNITION UNTIL THE SPILLED GASOLINE HAS COMPLETELY EVAPORATED.
 - TAKE A CLASS B FIRE EXTINGUISHER WITH YOU WHEN OPERATING THE WOOD SPLITTER IN DRY AREAS AS A PRECAUTIONARY MEASURE AGAINST POSSIBLE FLYING SPARKS.
 - ALWAYS STORE GASOLINE IN AN APPROVED, TIGHTLY SEALED CONTAINER. STORE THE CONTAINER IN A COOL, DRY PLACE. DO NOT STORE THE CONTAINER IN A HOUSE OR NEAR ANY HEATING APPLIANCE.
 - DO NOT SMOKE OR HAVE OPEN FLAMES WHEN REFUELING THE ENGINE. DO NOT SPILL FUEL. IF FUEL SHOULD SPILL, QUICKLY WIPE UP THE SPILL AND ALLOW THE EXCESS TO EVAPORATE BEFORE CONTINUING. MAKE SURE GASOLINE SOAKED RAGS ARE PROPERLY DISPOSED OF.
 - DO NOT FILL THE GAS TANK WHILE THE ENGINE IS HOT OR RUNNING. ALLOW TIME FOR THE ENGINE TO COOL DOWN BEFORE REFUELING.
-

Preventing Fires

WARNING!

- NEVER OPERATE THE WOOD SPLITTER NEAR A FLAME OR SPARK. OIL AND GASOLINE ARE FLAMMABLE AND CAN EXPLODE.
- NEVER SMOKE WHILE OPERATING OR REFUELING THE WOOD SPLITTER. GASOLINE, OIL, AND EVEN GAS FUMES CAN EXPLODE.

- **THE WOOD 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 LOCAL OR STATE LAWS (IF ANY). IF A SPARK ARRESTER IS USED, IT SHOULD BE MAINTAINED IN EFFECTIVE WORKING ORDER BY THE OWNER AND/OR OPERATOR.**
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A Note to All Users

Under California law, and the laws of some other states, you are not permitted to operate an internal combustion engine using hydrocarbon fuels without an engine spark arrester. This also applies to operation on US Forest Lands. All DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTERS shipped to California, New Mexico and Washington State are provided with spark arresters. Failure of the owner or operator to maintain this equipment in compliance with state regulations is a misdemeanor under California law and may be in violation of other state and/or federal regulations. Contact your local fire marshal or forest service for specific information in your area.

Chapter 2: Setting Up Your DR 22-Ton Vertical/Horizontal Wood Splitter

DR 22-Ton Vertical/Horizontal Wood Splitter Controls and Features

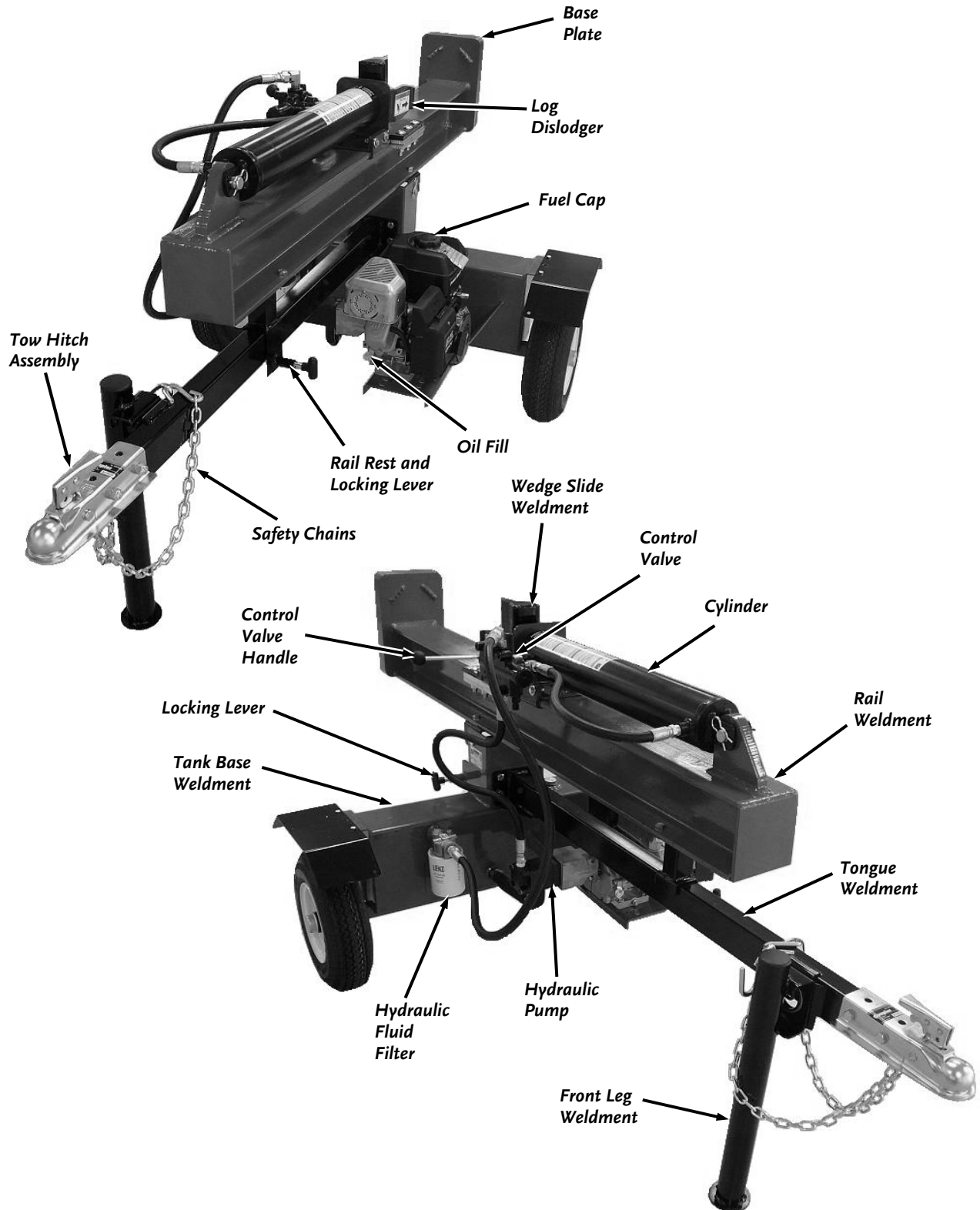


Figure 1

Tools needed:

- Hammer and pry bar
- Utility knife
- 10" crescent wrench
- Ratchet
- 1/2" open end wrench
- 1/2" socket
- 3/4" open end wrench
- 3/4" socket
- Funnel
- Pliers
- Band Cutters

Supplies needed:

- Pipe sealant tape
- Hydraulic fluid (see "specifications", page 3)
- Engine oil (see engine manual)
- General purpose grease

Shipping List

The following chart contains the list of parts that should be shipped as part of the DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER.

DESCRIPTION	QTY	DESCRIPTION	QTY
Base Unit (engine) ¹	1	Rail Latch Assembly	
Rail Unit (hydraulic cylinder) ¹	1	Rail Latch Assembly ¹	1
Hydraulic Fluid Filter ²	1	Bolts (1/2-13 x 1-1/2 inch) ²	2
Hitch Assembly Parts		Lock Washers (1/2 inch) ²	2
Hitch Assembly (2 inch) ²	1	Nuts (1/2-13) ²	2
Bolt (1/2-13 x 3-1/2 inch) ²	2	Valve Assembly	
Locknuts (1/2-13) ²	2	Control Lever (valve) ²	1
Safety Chains ²	2	Knob (valve lever) ²	1
Safety Link ²	1	Valve Link ²	1
Tongue and Front Leg Assembly		Clevis Pins ²	3
Tongue and Front Leg Weldment ¹	1	Cotter Pins ²	3
Bolts (1/2-13 x 3-1/2 inch) ²	2	Fender Assembly	
Lock Washers (1/2 inch) ²	2	Fenders ²	2
Nuts (1/2-13) ²	2	Bolts (5/16-18 x 3/4 inch) ²	4
Rail to Base Assembly		Locknuts (5/16-18) ²	4
Bolts (1/2-13 x 1-1/2 inch) ²	2		
Lock Washers (1/2 inch) ²	2		
Nuts (1/2-13) ²	2		

¹ On the pallet.

² In cardboard box.

Unpacking the Crate

1. Cut the metal banding and remove the protective plastic covering, top, sides and ends, of the packing crate (**Figure 2**). Do not remove the base unit or the rail assembly from the bottom pallet at this time.

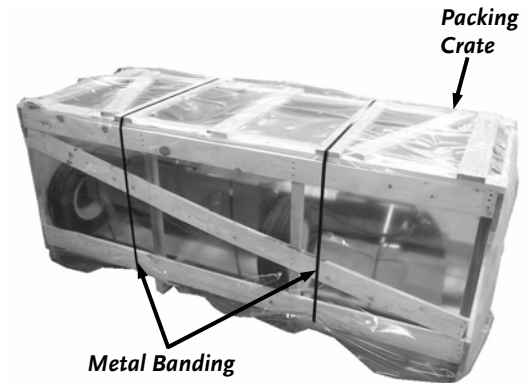


Figure 2

2. Locate and check the condition of the larger components on the shipping pallet (**Figure 3**). If you have any questions, call DR Power Equipment at 1 (800) 376-9637.
3. Cut the remaining banding straps, open the cardboard box, and make sure all the smaller parts have been shipped. The chart in the "Shipping List" section provides a complete list of all the parts shipped with your wood splitter. If you have any questions, call DR Power Equipment at 1 (800) 376-9637.

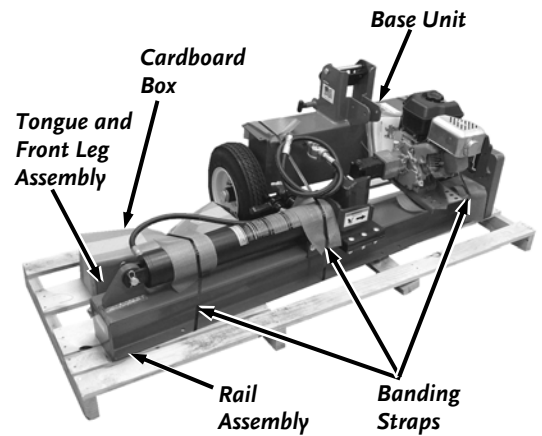


Figure 3

NOTE: The contents of the cardboard box (**Figure 4**) contains the tow hitch assembly, two safety chains and safety link, two fenders, valve handle assembly, hydraulic fluid filter, and rail rest assembly.

Also, included in the box is a plastic bag of miscellaneous hardware and a plastic bag with the control valve handle assembly.

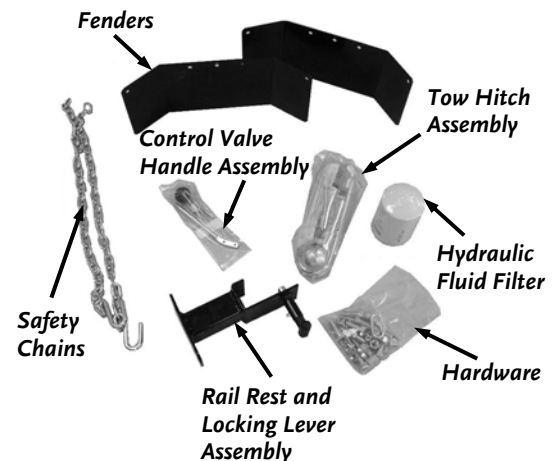


Figure 4

Assembly Procedure

! CAUTION!

SOME COMPONENTS ARE VERY HEAVY AND CAN BE DAMAGED IF MISHANDLED. ALSO, TO HELP PREVENT PERSONAL INJURY, IT IS RECOMMENDED THAT TWO (2) PEOPLE WORK TOGETHER TO UNCRATE AND ASSEMBLE THE WOOD SPLITTER.

! NOTICE!

READ ALL INSTRUCTIONS AND SAFETY RECOMMENDATIONS BEFORE ASSEMBLING OR OPERATING THIS WOOD SPLITTER.

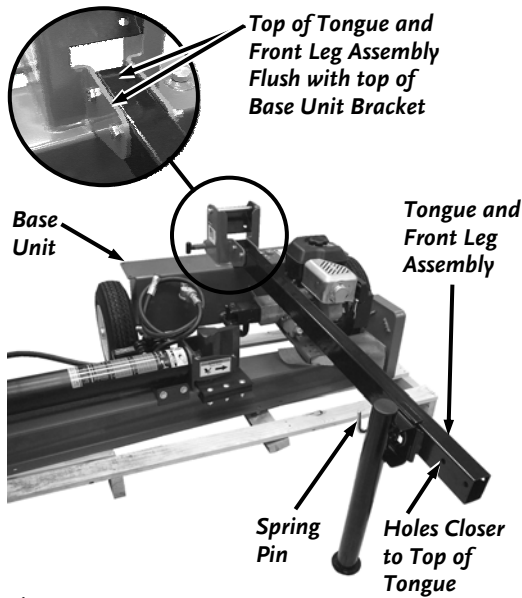


Figure 5

1. Before removing the base unit from the pallet, remove the tongue and front leg assembly from the pallet and fold the leg down and lock it into position with the spring pin. Install the tongue and front leg assembly onto the base using Two 1/2-13 x 3-1/2 inch long hex head bolts and Locknuts (**Figure 5**). Tighten the Locknuts securely. Pull the spring pin to fold the leg back in the up position. Roll the tongue/base unit off the pallet. Lower the front leg and lock it into position with the spring pin.

Note: Make sure that the mounting holes on the Tongue and Front Leg Assembly are closer to the top when assembling so that the Top of the Tongue and Front Leg Assembly is Flush with the Top of Base Unit Bracket.

2. With a helper, carefully push the rail assembly off the pallet and stand it in an upright, vertical position with the base plate down (**Figure 6**).

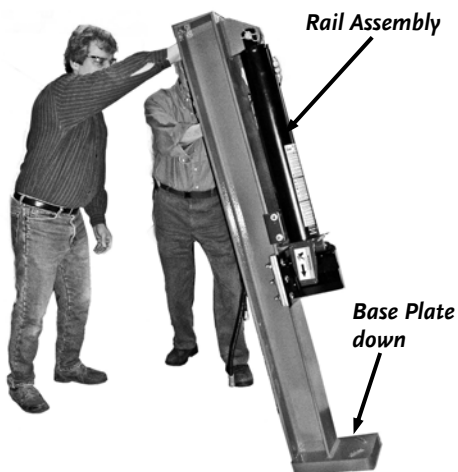


Figure 6

! WARNING!

MAKE SURE THE RAIL ASSEMBLY IS STANDING ON A FLAT, LEVEL AREA. IF NECESSARY, HAVE A HELPER STEADY THE RAIL TO PREVENT IT FROM TIPPING OVER. THE RAIL ASSEMBLY WEIGHS APPROXIMATELY 300 POUNDS AND WILL CAUSE BODILY INJURY IF IT FALLS ON SOMEONE.

3. While supporting the hinge bracket (**Figure 7**), pull the hairpin clip and remove the hinge pin to separate the hinge bracket.
4. Pull out and twist the locking lever to lock it in the out position.

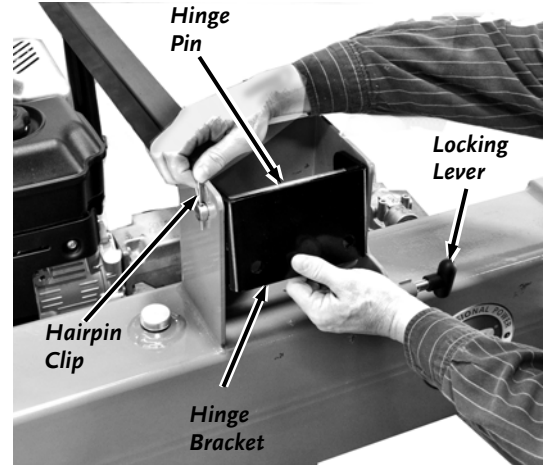


Figure 7

NOTE: For the next step, use the third set of mounting holes up from the Base Plate.

5. Make sure the notch is on top as you position the hinge bracket onto the rail assembly (**Figure 8**). Install two 1/2-13 x 1-1/2 inch long hex head bolts, lock Washers, and nuts. Only hand tighten the nuts at this time.

! WARNING!

HAVE SOMEONE HOLD THE RAIL ASSEMBLY TO PREVENT IT FROM FALLING DURING THIS PART OF THE ASSEMBLY.

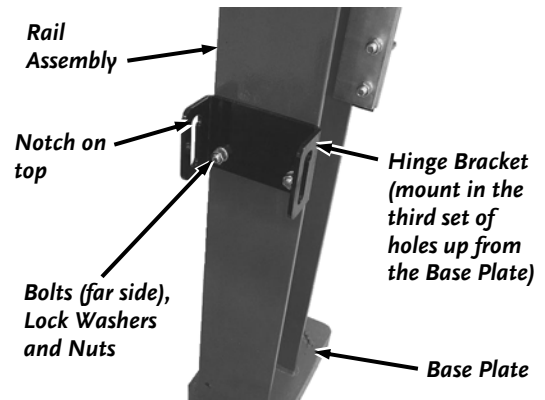


Figure 8

6. Position the base unit against the rail assembly (**Figure 9**).

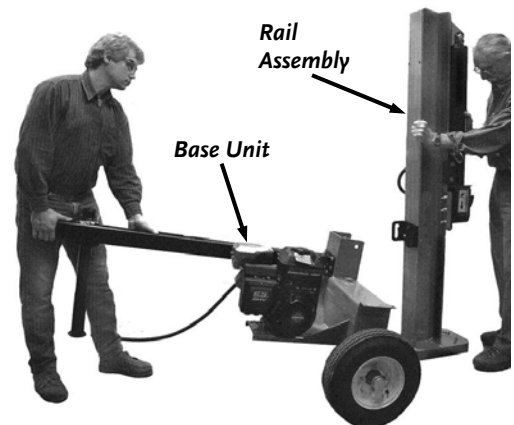


Figure 9

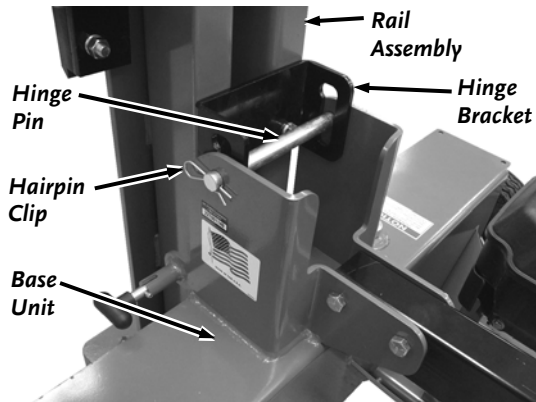


Figure 10

7. Attach the base unit and the rail assembly together by installing the hinge pin and hairpin clip (**Figure 10**).

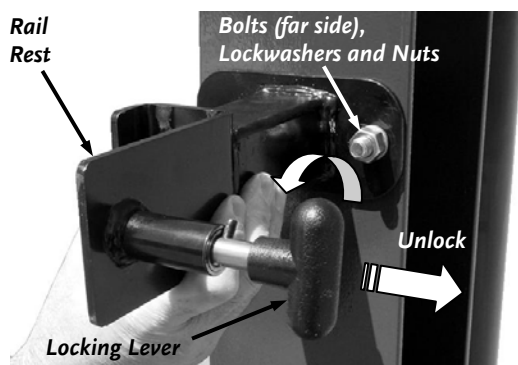


Figure 11

8. Only hand tighten the nuts as you bolt the rail rest to the rail assembly using two 1/2-13 x 1-1/2 inch long hex head bolts, lock Washers, and nuts (**Figure 11**).
9. Pull the locking lever outward and rotate the handle to hold the lock pin in the unlocked position.

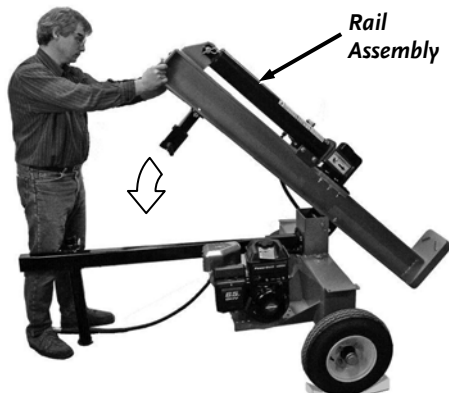


Figure 12

10. Block the wheels to prevent the base unit from moving. Carefully lower the rail assembly to horizontal position (**Figure 12**). Securely tighten the nuts holding the base unit to the rail assembly (Step 5) and the nuts holding the rail rest assembly (Step 8).

11. Link the ends of safety chains together with the safety quick-link and tighten the link's locknut securely with a wrench (**Figure 13**).

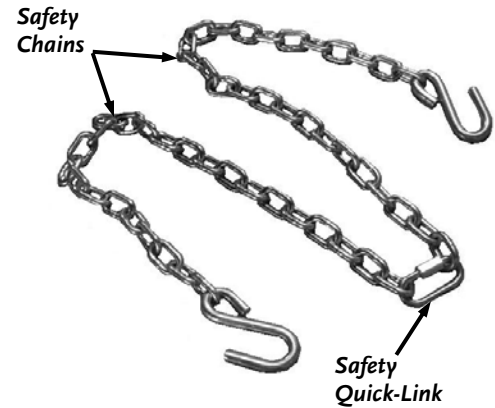


Figure 13

12. Place the hitch over the attachment tube, aligning the bolt holes, and insert the rear 1/2-13 x 3 inch bolt (A). Install and tighten the locknut (**Figure 14**).
13. Insert the large end of the safety chain quick-link into the front tube of the rail assembly and insert a 1/2-13 x 3 inch bolt (B) through the hitch and link. Install and tighten the locknut.

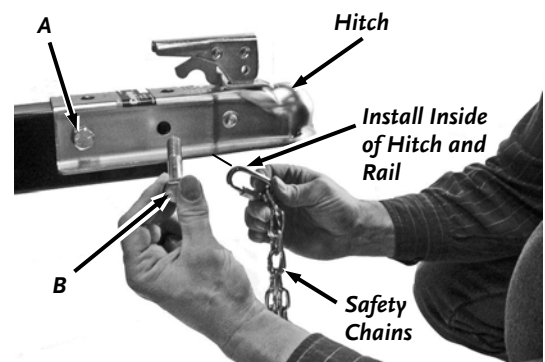


Figure 14

14. Install the valve link onto the valve body (**Figure 15**) using a 1/4 x 1 inch long clevis pin (install clevis pin from the top). Secure the clevis pin with a cotter pin (bend the ends of the cotter pin to make it secure).

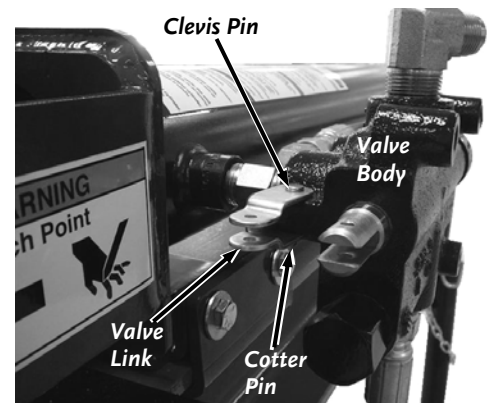


Figure 15

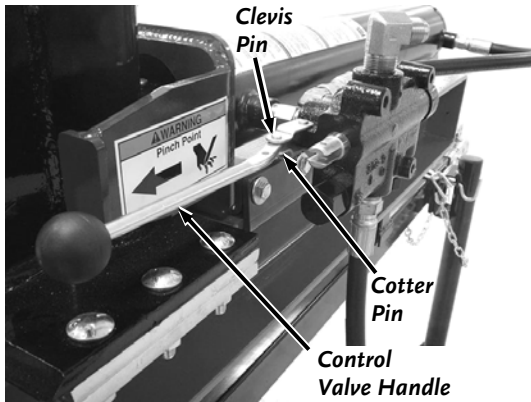


Figure 16

15. Install the control valve handle onto the valve link (**Figure 16**) using a 1/4 x 3/4 inch long clevis pin (install clevis pin from the top). Secure the clevis pin with a cotter pin (bend the ends of the cotter pin to make it secure).

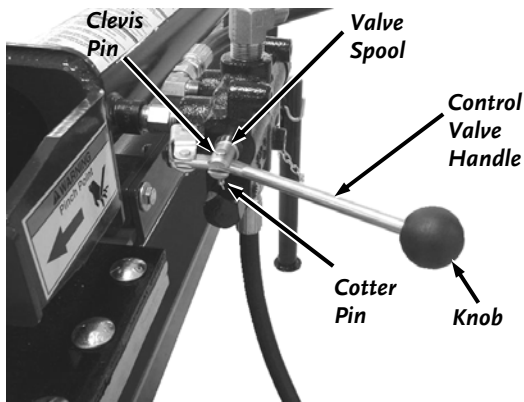


Figure 17

16. Attach the control valve handle to the valve spool (**Figure 17**) using a 1/4 x 1 inch long clevis pin (install clevis pin from the top). Secure the clevis pin with a cotter pin (bend the ends of the cotter pin to make it secure). Attach the knob to the control valve handle, if necessary.

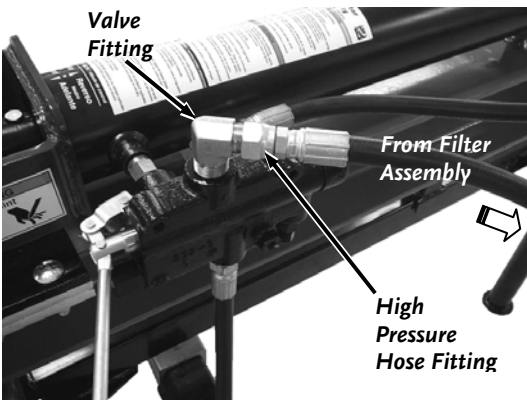


Figure 18

17. Attach the high-pressure hose from the filter assembly to the fitting on the side of the valve (**Figure 18**). Securely tighten the hose fitting with a 10-inch crescent wrench.

NOTE: The high-pressure hose is self-sealing and does not require any type of sealing material.

18. Wrap the threads of the high-pressure hose fitting with a hydraulic pipe tape and attach it to the hydraulic pump (**Figure 19**). Securely tighten the high-pressure hose fitting with a 10-inch crescent wrench.

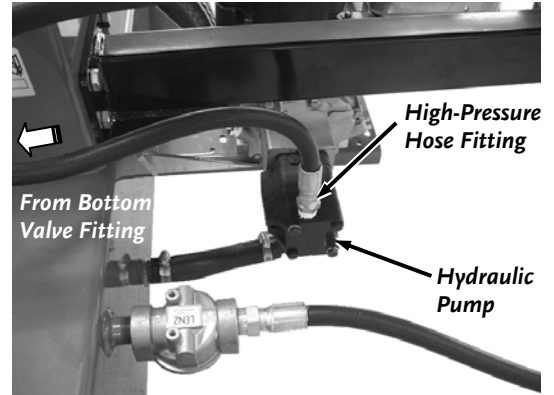


Figure 19

19. Remove the hydraulic fluid filter from the plastic cover and apply a thin coat of hydraulic fluid to the rubber seal. Screw the filter onto the filter head (**Figure 20**), located near the hydraulic tank. Once the filter seal makes contact with the filter head, turn it an additional 3/4 turn. Hand-tighten only.

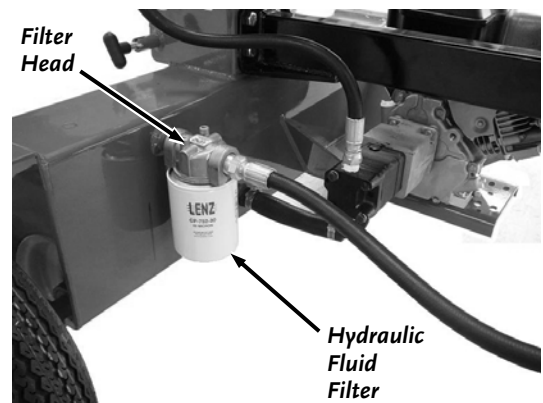


Figure 20

20. Bolt the fenders onto the fender brackets using two 5/16-18 x 3/4 inch long hex head bolts and locknuts (**Figure 21**). The fenders are interchangeable (left or right). Position the fender over the tire with equal spacing in the front and back.

NOTE: Your DR 22-Ton Vertical/Horizontal Wood Splitter is now completely assembled. Follow the “Start-Up Procedure” in the following section, which adds oil to the engine and hydraulic fluid to the hydraulic tank before trying to start the engine.

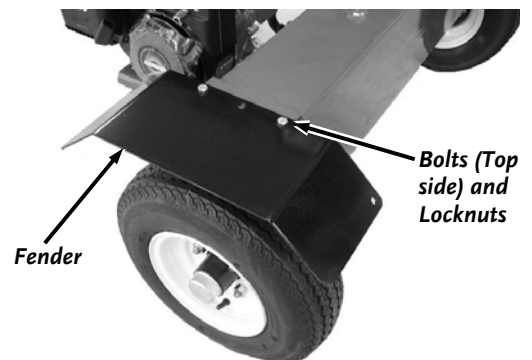


Figure 21

Start-Up Procedure

! NOTICE!

READ AND FOLLOW ALL OF THE INSTRUCTIONS IN THE “START-UP PROCEDURE” BEFORE STARTING THE ENGINE AND OPERATING THE WOOD SPLITTER. FAILURE TO FOLLOW THIS RECOMMENDATION WILL RESULT IN ENGINE AND HYDRAULIC PUMP DAMAGE.

ANY UNAUTHORIZED CHANGES OR MODIFICATIONS TO THE WOOD SPLITTER WILL VOID ALL WARRANTIES.

THE HYDRAULIC FLUID FILTER FOR YOUR WOOD SPLITTER IS NOT FACTORY INSTALLED. MAKE SURE THE FILTER IS INSTALLED BEFORE ATTEMPTING TO FILL THE HYDRAULIC TANK OR START THE ENGINE. (INSTALLATION INSTRUCTIONS ARE PROVIDED IN THE “ASSEMBLY INSTRUCTIONS” SECTION AND ARE ALSO PRINTED ON THE SIDE OF THE FILTER).

BEFORE STARTING THE ENGINE, READ THE ENGINE MANUFACTURER’S OPERATING AND MAINTENANCE INSTRUCTION MANUAL. IF AN ENGINE MANUAL WAS NOT SUPPLIED WITH THE WOOD SPLITTER, PLEASE CONTACT OUR CUSTOMER SERVICE REPRESENTATIVES AT OUR TOLL FREE NUMBER: 1-800-DR-OWNER (376-9637).

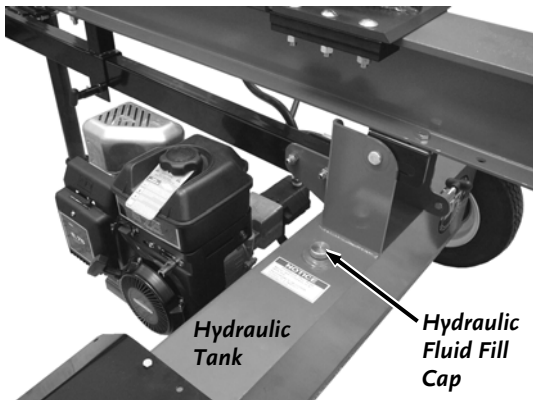


Figure 22

1. Remove the hydraulic fluid fill cap and fill the hydraulic tank (**Figure 22**) with the recommended fluid (see the “specifications” section, page 2). The tank is full when the fluid level is approximately one inch from the top of the tank. Do not tighten the fill cap at this time.

NOTE: The total hydraulic system fluid capacity is 9.5 gallons.

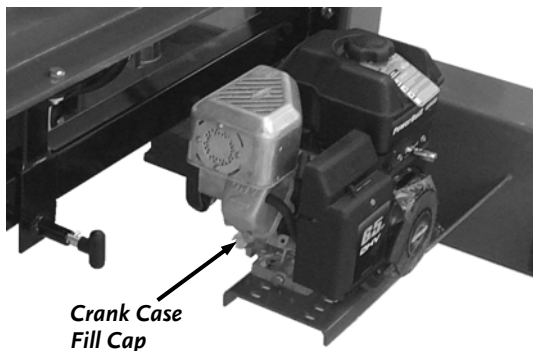


Figure 23

2. Remove the crank case fill cap (**Figure 23**) and fill the engine’s crank case with the engine manufacturers recommended oil in the engine operators manual.

NOTE: fill the crank case with oil all the way up to the threads of the fill cap hole until it is about to overflow.

- Lubricate the surface of slide rail with a general-purpose grease (**Figure 24**). This will help to prevent wear between the slide plates and the slide rail.

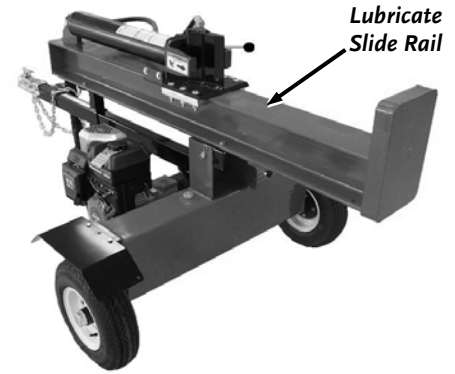


Figure 24

- Pull the spark plug wire off the spark plug (**Figure 25**). This prevents the engine from starting until the hydraulic pump and cylinder are completely filled with fluid. Make sure the spark plug wire is held away from the spark plug with string or other nonconductive material.

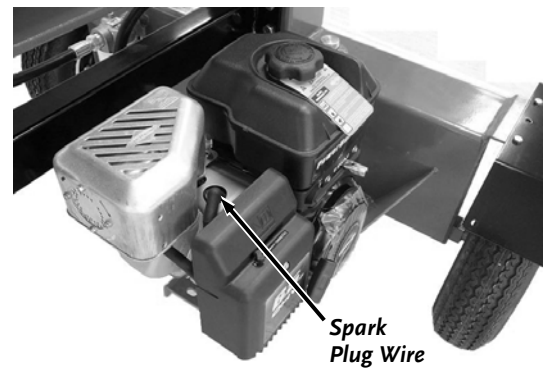


Figure 25

- Push the control valve handle to the forward position (towards the front of the cylinder) (**Figure 26**). Have another person pull the engine starter cord (about 15 times) until the cylinder piston moves forward. (Keep everything away from the splitting wedge during this step.)

NOTE: Extending the cylinder draws the hydraulic fluid through the system and expels any trapped air in the cylinder.

- Check the fluid level in the hydraulic tank and add fluid as needed. Replace and tighten the fill cap.

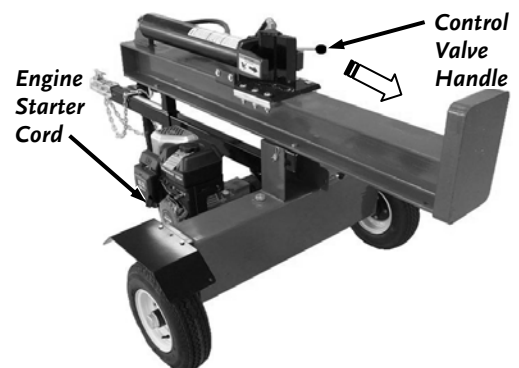


Figure 26

! WARNING!

BE CAREFUL NOT TO SPILL FUEL WHEN FILLING THE ENGINE. IF FUEL SHOULD SPILL, QUICKLY WIPE OFF AND ALLOW THE EXCESS FUEL TO EVAPORATE BEFORE CONTINUING. FUEL AND FUEL VAPORS ARE HIGHLY FLAMMABLE AND CAN CAUSE PERSONAL INIURY OR EVEN DEATH WHEN IGNITED.

! NOTICE!

DO NOT MIX OIL WITH THE GASOLINE. USING MIXED OIL/GASOLINE IN A FOUR CYCLE ENGINE CAN CAUSE ENGINE DAMAGE.

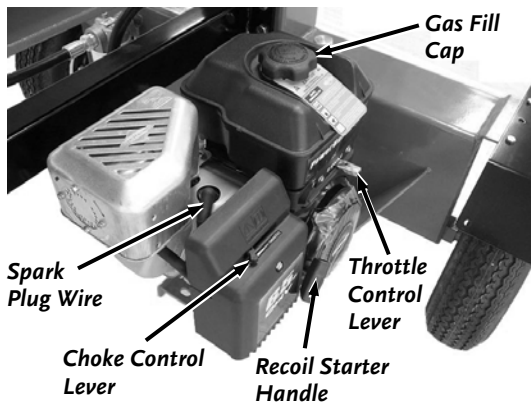


Figure 27

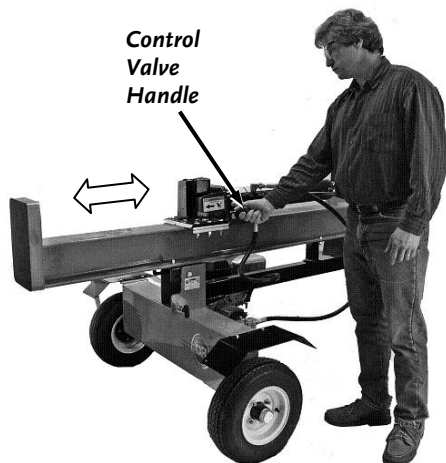


Figure 28

7. Fill the engine's fuel tank to within about 1-1/2" of the neck with fresh, clean, lead-free automotive gasoline (Figure 27).
8. Attach the spark plug wire and make sure the fuel shut-off valve is in the "ON" position.
9. Move the choke control lever to the "CHOKE" position.
10. Move the throttle control lever to the "fast" position.
11. Grasp the recoil starter handle and slowly pull until you feel resistance. Let the cord retract a little bit, then pull the cord rapidly to start the engine. One or two pulls usually starts the engine.
12. Move the choke control lever back to the "RUN" position when the engine is running.
13. With the engine running, push the control valve handle to the retract position and retract the cylinder piston (Figure 28). The cylinder valve will automatically stop the cylinder from retracting when it reaches the end of its stroke. Cycle the wood splitter several times.

! CAUTION!

DO NOT REMOVE THE CAP FROM THE HYDRAULIC TANK OR RESERVOIR WHILE THE WOOD SPLITTER IS RUNNING. HOT OIL, UNDER PRESSURE, COULD BE EXPELLED RESULTING IN SERIOUS INJURY.

14. Move the throttle control lever to the "SLOW" position and then to the "STOP" position to stop the engine.
15. Again, check the fluid level in the hydraulic tank and add fluid as needed. Replace and tighten the fill cap.
16. Your DR 22-Ton Vertical/Horizontal Wood Splitter is now ready to use.

Chapter 3: Operating Your Wood Splitter

! WARNING!

DO NOT ATTEMPT TO OPERATE THE WOOD SPLITTER WITHOUT FULLY UNDERSTANDING ALL INSTRUCTIONS, SAFETY PRECAUTIONS, AND/OR WARNINGS. IF ANY DOUBT OR QUESTION ARISES ABOUT THE CORRECT OR SAFE METHOD OF PERFORMING ANYTHING FOUND IN THIS MANUAL, PLEASE CONTACT OUR CUSTOMER SERVICE REPRESENTATIVES AT OUR TOLL FREE NUMBER: 1-800-DR-OWNER (376-9637).

WHEN OPERATING THE WOOD SPLITTER, MAKE SURE YOU ARE STANDING IN THE SAFE OPERATING AREA (OPERATOR ZONE) AS SHOWN IN FIGURE 29. YOU MUST STAY IN THE SAFE OPERATING AREA AT ALL TIMES WHEN THE SPLITTING WEDGE IS IN MOTION (WHETHER EXTENDING OR RETRACTING). NEVER PLACE ANY PART OF YOUR BODY INTO A POSITION THAT CAUSES AN UNSAFE OPERATING CONDITION.

1. Set your wood splitter on flat, dry ground. Make sure you read all the recommendations from the “General Safety Rules” in chapter 2 before using the WOOD SPLITTER.
2. Make sure the fuel shut-off valve is in the “ON” position (**Figure 30**).
3. Move the choke control lever to the “CHOKE” position (should only be needed if the engine is cold).
4. Move the throttle control lever to the “fast” position.
5. Grasp the recoil starter handle and slowly pull until you feel resistance. Let the cord retract a little bit, then pull the cord rapidly to start the engine. One or two pulls usually starts the engine.
6. Move the choke control lever (if used for cold engine) back to the “RUN” position when the engine is running well.
7. Make sure both ends of the log you are splitting are cut as square as possible (**Figure 31**). This will prevent the log from sliding out of position while under pressure. All logs should be 24 inches or shorter in length.

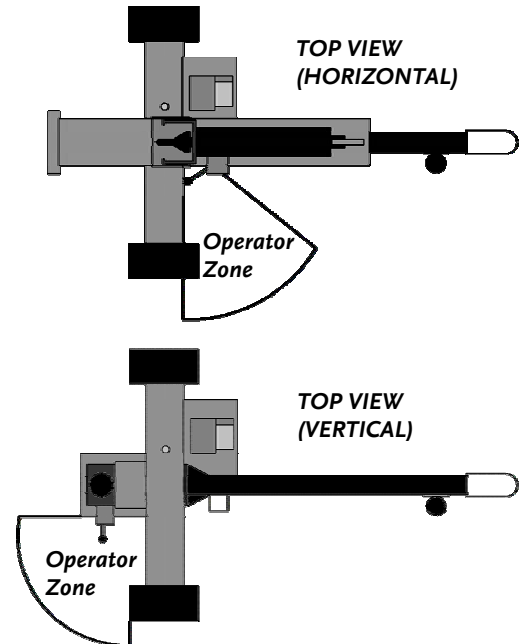


Figure 29

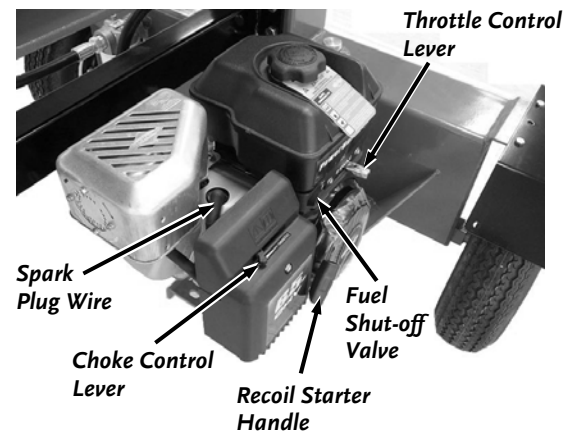


Figure 30

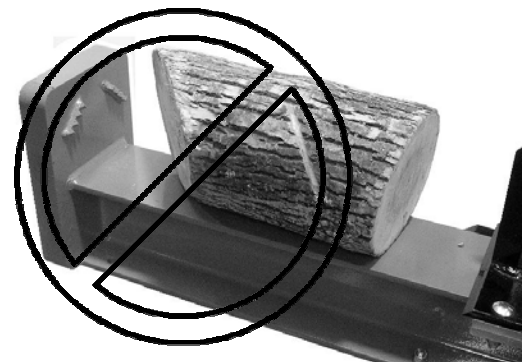


Figure 31

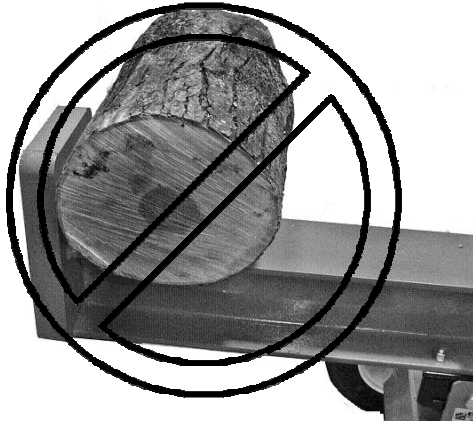


Figure 32

! WARNING!

NEVER ATTEMPT TO SPLIT WOOD ACROSS THE GRAIN (FIGURE 32). THE WOOD SPLITTER WAS NOT DESIGNED FOR CROSS-GRAIN SPLITTING. DOING SO WILL DAMAGE THE WOOD SPLITTER AND MAY CAUSE PERSONAL INJURY.

8. If the wood splitter has not been running (cold engine), warm up the engine and hydraulic system by running the engine at half throttle for 3 to 4 minutes, then advance the engine throttle control to maximum speed.

! WARNING!

BEFORE LOADING AND OPERATING THE WOOD SPLITTER, ALWAYS WEAR PROTECTIVE GEAR, INCLUDING SAFETY GOGGLES, HEARING PROTECTION, TIGHT-FITTING GLOVES WITHOUT DRAW STRINGS OR LOOSE CUFFS, AND STEEL-TOED SHOES.

USE THE FOLLOWING PHOTOS FOR THE CORRECT AND INCORRECT METHODS OF SPLITTING LOGS. NEVER SPLIT A LOG USING AN INCORRECT OR UNSAFE METHOD.



Figure 33

Operation – Horizontal Position

9. Place the log on the wood splitter (**Figure 33**). Grasp the log on the sides near the middle of the block. Center the log, side-to-side, on the rail of the wood splitter, making sure that one end is against the base plate.

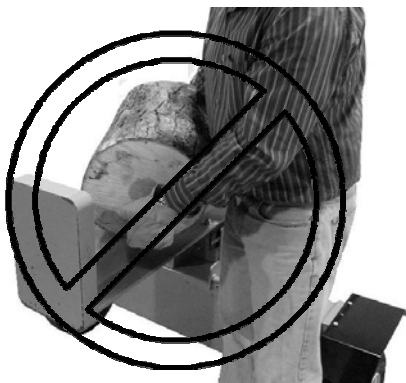


Figure 34

! CAUTION!

DO NOT PLACE YOUR HANDS ON THE ENDS OF THE LOG WHEN LOADING THE WOOD SPLITTER (FIGURE 34). THIS IS A VERY UNSAFE METHOD AND COULD RESULT IN INJURY TO YOUR HANDS.

10. Only using your hand, pull the control valve handle forward (towards the log) (**Figure 35**). If the log moves before it is contacted by the splitting wedge, release the control lever and then reposition the log. Operate the WOOD SPLITTER only when standing in the **safe operating area**, shown in Figure 29.

! CAUTION!

MAKE SURE YOU STAND CLEAR FROM THE ENGINE'S EXHAUST. HOT EXHAUST IS INTENSE AND CAN CAUSE SERIOUS INJURY.

IF YOU FIND YOU MUST HOLD THE LOG UNTIL THE WEDGE TOUCHES IT AND HOLDS IT IN PLACE, BE VERY CAREFUL NOT TO PUT YOUR HAND BETWEEN THE LOG AND THE END PLATE OR THE LOG AND THE WEDGE. IF YOU MUST, HOLD THE LOG ON TOP AND IN THE MIDDLE. REMOVE YOUR HAND IMMEDIATELY WHEN THE SPLITTING WEDGE ENGAGES THE LOG. NEVER USE YOUR HIP OR ANY EXTENSION DEVICE TO OPERATE THE CONTROL VALVE HANDLE.

! WARNING!

DO NOT OPERATE THE WOOD SPLITTER BY REACHING ACROSS THE RAIL (FIGURE 36). THIS IS A VERY UNSAFE METHOD THAT COULD CAUSE PERSONAL INJURY OR EVEN DEATH.

DO NOT REACH OR STEP ACROSS THE RAIL WHILE THE WOOD SPLITTER IS RUNNING. THIS IS A VERY UNSAFE METHOD THAT COULD CAUSE PERSONAL INJURY OR EVEN DEATH.

11. Hold the control valve handle, to extend the splitting wedge until the log is split or the cylinder rod stops at its maximum travel position (**Figure 37**). Stop the WOOD SPLITTER (forward movement) at any point in the splitting process if you feel an unsafe log splitting condition is occurring. As the log is being split, DO NOT reach forward and attempt to catch the split wood — let it fall to the ground.

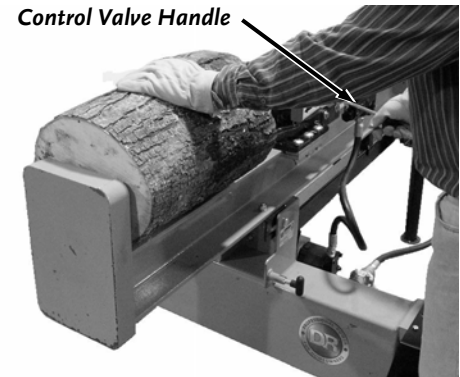


Figure 35



Figure 36

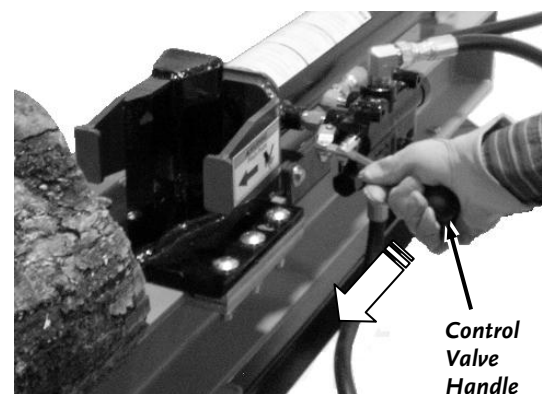


Figure 37

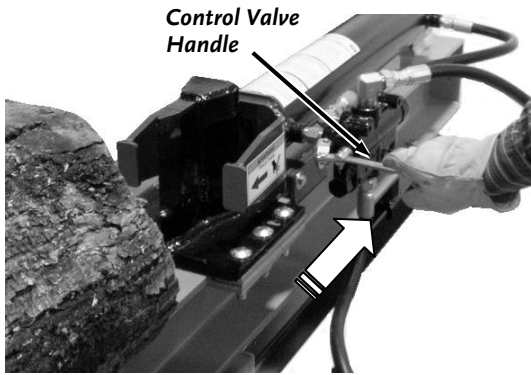


Figure 38

12. Once the wedge reaches its full forward travel, pull back on the control valve handle to the full retract position (**Figure 38**). The ram of the cylinder will automatically retract into the cylinder. It is not necessary to hold the control lever as the cylinder retracts. Stop the wedge if the log sticks (see caution below). When the cylinder is fully retracted, the control valve will automatically shift to a neutral position.
13. DO NOT load another log or remove split pieces until the wedge has completely stopped and the control handle automatically returns to the neutral position.

! CAUTION!

DEPENDING ON THE TYPE OF WOOD BEING SPLIT, A LOG MAY NOT ALWAYS BREAK INTO TWO PIECES AND FALL TO THE GROUND. IF A LOG STICKS TO THE WEDGE AND STARTS TO RETURN WITH WEDGE ON THE RETURN STROKE, THE WOOD SPLITTER IS EQUIPPED WITH A LOG DISLODGER THAT WILL REMOVE THE LOG FROM THE WEDGE IF NEEDED. DO NOT STAND NEAR THE LOG AS IT CONTACTS THE LOG DISLODGER IN CASE IT FALLS FROM THE SLIDE RAIL

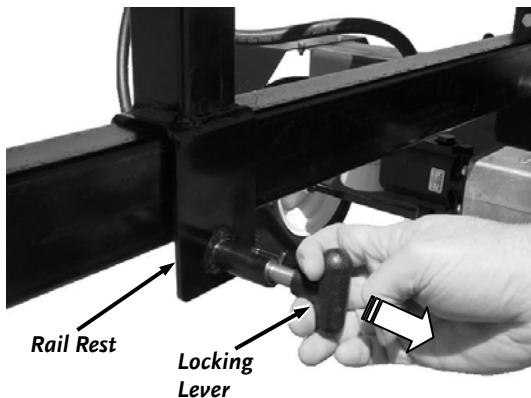


Figure 39

Operation – Vertical Position

! WARNING!

BEFORE LOADING AND OPERATING THE WOOD SPLITTER, ALWAYS WEAR PROTECTIVE GEAR, INCLUDING SAFETY GOGGLES, HEARING PROTECTION, TIGHT-FITTING GLOVES WITHOUT DRAW STRINGS OR LOOSE CUFFS, AND STEEL-TOED SHOES.

USE THE FOLLOWING PHOTOS FOR THE CORRECT AND INCORRECT METHODS OF SPLITTING LOGS. NEVER SPLIT A LOG USING AN INCORRECT OR UNSAFE METHOD.

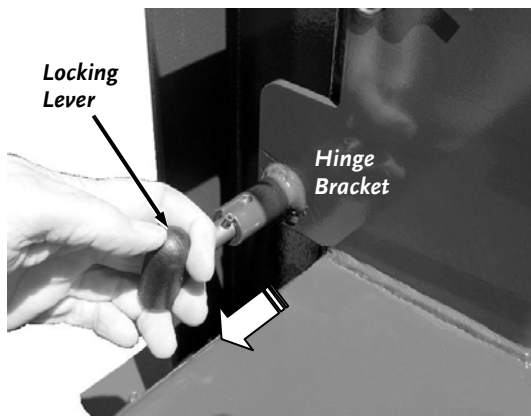


Figure 40

1. To operate the wood splitter in a vertical position, pull the spring-loaded locking lever of the rail rest and twist the locking lever either direction to lock it in the “unlocked” out position (**Figure 39**).
2. Pull the spring-loaded locking lever of the hinge bracket and twist the locking lever either direction to lock it in the “unlocked” out position (**Figure 40**).

3. Block the wheels and stand the rail assembly up into a vertical position (**Figure 41**).
4. Turn the spring-loaded locking lever knob of the Hinge Bracket until the pin slides into the slot. This allows the plunger to snap into place, securing the rail assembly in a vertical position.

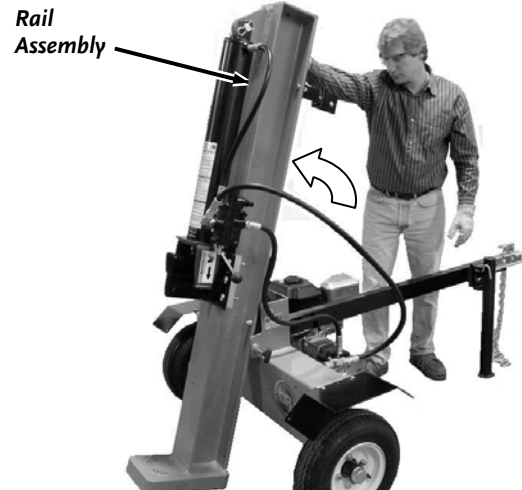


Figure 41

5. Move the log under the splitting wedge keeping your hands on the sides of the log near the middle of the block. Center the log making sure that the sawed end is sitting on the base plate (**Figure 42**).

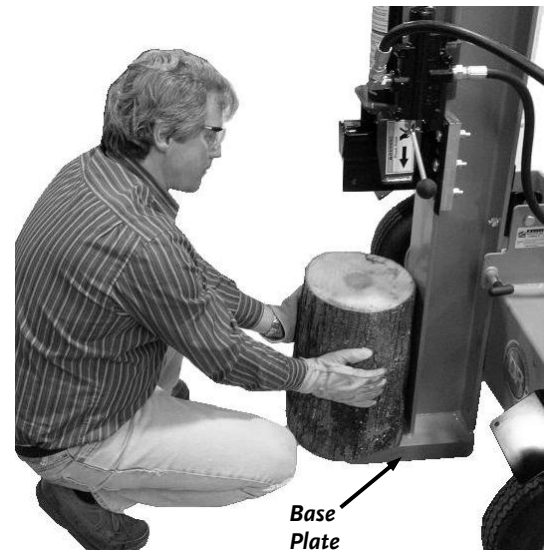


Figure 42

! CAUTION!

MAKE SURE YOU STAND CLEAR FROM THE ENGINE'S EXHAUST. HOT EXHAUST IS INTENSE AND CAN CAUSE SERIOUS INJURY.

DO NOT PLACE YOUR HANDS ON TOP OF THE LOG WHEN LOADING THE WOOD SPLITTER. THIS IS A VERY UNSAFE METHOD AND COULD RESULT IN INJURY TO YOUR HANDS (**FIGURE 43**).

IF YOU FIND YOU MUST HOLD THE LOG UNTIL THE WEDGE TOUCHES IT AND HOLDS IT IN PLACE, BE VERY CAREFUL NOT TO PUT YOUR HAND ON TOP OF THE LOG. IF YOU MUST, HOLD THE LOG IN THE MIDDLE OF THE BLOCK. REMOVE YOUR HAND IMMEDIATELY WHEN THE WEDGE ENGAGES THE LOG. NEVER USE YOUR HIP OR ANY EXTENSION DEVICE TO OPERATE THE CONTROL VALVE HANDLE.



Figure 43



Figure 44

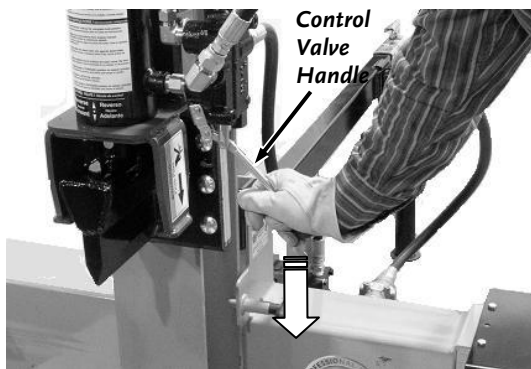


Figure 45

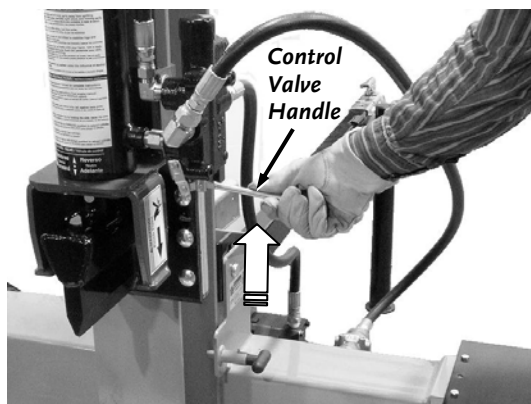


Figure 46

6. Only using your hand, pull the control valve handle down (towards the log) (**Figure 44**). If the log moves, before it is contacted by the splitting wedge, release the control valve handle and then reposition the log. Operate the WOOD SPLITTER only when in the safe operating area, as shown in Figure 29.

7. Hold the control valve handle to extend the splitting wedge until the log is split or the cylinder rod stops at its maximum travel position (**Figure 45**). Stop the wood splitter downward movement at any point in the splitting process if you feel an unsafe log splitting condition is occurring. As the log is being split, DO NOT reach forward and attempt to catch the split wood — let it fall to the ground.

8. Once the wedge reaches its full downward travel, pull up on the control valve handle to the full retract position (**Figure 46**). The ram of the cylinder will automatically retract into the cylinder. It is not necessary to hold the control valve handle as the cylinder retracts. Stop the wedge if the log sticks (see caution below). When the cylinder is fully retracted, the control valve will automatically shift to a neutral position.

9. DO NOT load another log or remove split pieces until the wedge has completely stopped and the control valve handle automatically returns to the neutral position.

! CAUTION!

DEPENDING ON THE TYPE OF WOOD BEING SPLIT, A LOG MAY NOT ALWAYS BREAK INTO TWO PIECES AND FALL TO THE GROUND. IF A LOG STICKS TO THE WEDGE AND STARTS TO RETURN WITH WEDGE ON THE RETURN STROKE, THE WOOD SPLITTER IS EQUIPPED WITH A LOG DISLODGER THAT WILL REMOVE THE LOG FROM THE WEDGE IF NEEDED. DO NOT STAND NEAR THE LOG AS IT CONTACTS THE LOG DISLODGER IN CASE IT FALLS FROM THE SLIDE RAIL.

Towing

WARNING!

MAXIMUM SPEED LIMIT — 35 MPH

YOUR WOOD SPLITTER IS BUILT ON A SOLID, UNSUSPENDED AXLE. TO PREVENT DAMAGE OR POSSIBLE LOSS OF VEHICLE CONTROL, USE EXTREME CAUTION WHEN TOWING AND DO NOT EXCEED A VEHICLE SPEED OF 35 MPH, ESPECIALLY WHEN DRIVING ON A BUMPY ROAD. TIRE PRESSURE SHOULD BE 40PSI.

1. Pull the latch assembly on the tow hitch assembly up and into the open position. Position the hitch coupler of the WOOD SPLITTER over and onto the tow vehicle's tow ball (must be a 2" tow ball) (**Figure 47**). In some cases, the hitch coupler may not totally engage with the tow ball without raising the front leg weldment (see step 3).

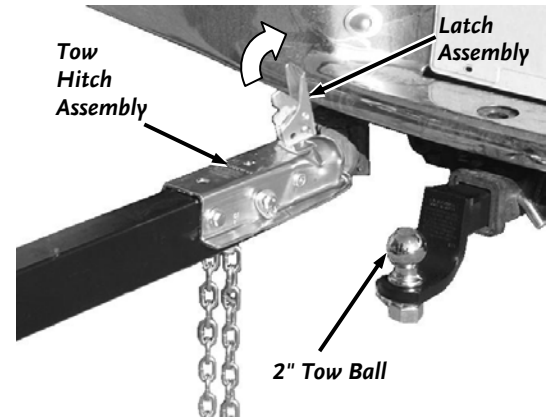


Figure 47

2. Close the latch assembly on the tow hitch assembly to lock the tow hitch assembly onto the tow ball (**Figure 48**). Attach the towing safety chains to the tow vehicle ensuring there is enough slack for turning.

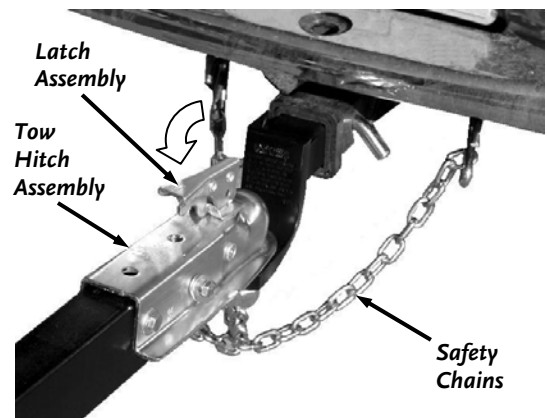


Figure 48

3. Raise the front leg to the towing position by pulling the spring pin (**Figure 49**). If not already secure, make sure the hitch coupler is properly and securely attached to the tow ball.

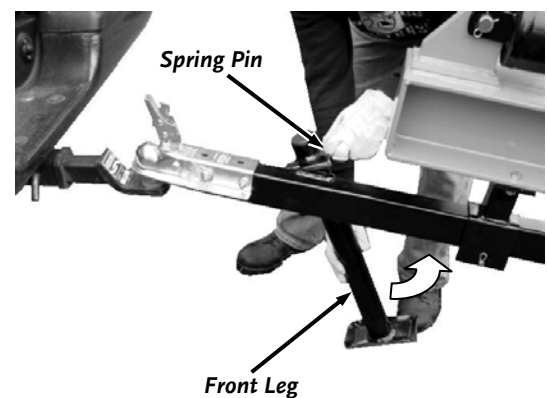


Figure 49

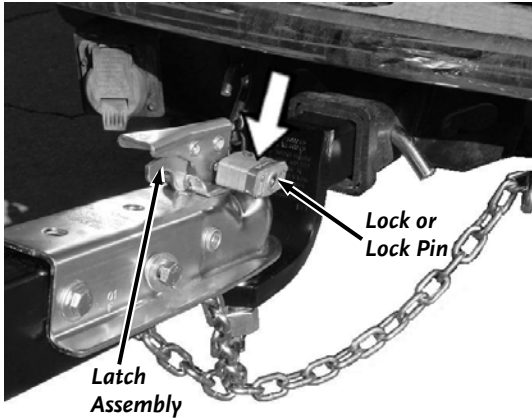


Figure 50

4. For extra safety and security, you may want to purchase a lock or lock pin to install into the latch assembly of the tow hitch assembly (Figure 50).

! WARNING!

MAKING SURE THE WOOD SPLITTER IS SECURELY ATTACHED TO THE VEHICLE IS THE RESPONSIBILITY OF THE OWNER/OPERATOR. FAILURE TO SECURELY ATTACH THE WOOD SPLITTER CAN CAUSE LOSS OF CONTROL OF THE VEHICLE OR THE WOOD SPLITTER BEING SEPARATED FROM THE TOWING VEHICLE, RESULTING IN SERIOUS INJURY OR DEATH.

Hitch Coupler Adjustment Check

1. Place the proper size ball in the socket of the coupler and close the latch assembly (Figure 51). Verify that the locking trigger is properly engaged in its detent.
2. Pull on the ball and/or coupler, trying to remove the ball from the socket. If the ball moves more than 1/16" in the coupler's socket, the clamp requires adjustment. Follow the proper adjustment procedure in the following steps.

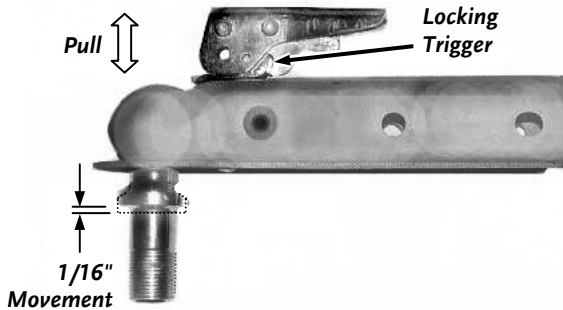


Figure 51

Hitch Coupler Adjustment

1. With the proper size ball in the socket of the hitch coupler, close the latch of the coupler completely (Figure 52). Verify that the locking trigger is properly engaged in its detent.
2. Tighten the lock nut on the underside of the coupler until the spring between the nut and the clamp is fully compressed. Then back off the lock nut 1/2 turn or just enough that the latch is able to clamp and unclamp from the ball.

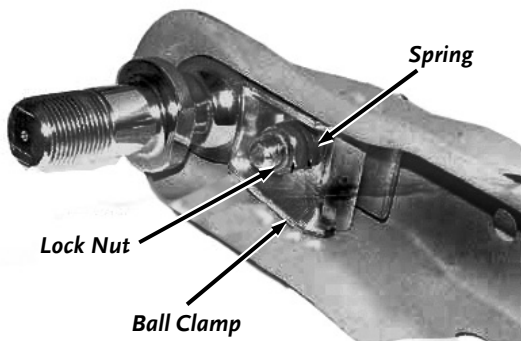


Figure 52

Chapter 4: Inspection And Maintenance

This chapter covers regular maintenance procedures that will ensure the best performance and long life of your machine. For engine maintenance, please refer to the engine owner's manual that came with your splitter. Service intervals listed in the check list below supercede those listed in the engine owner's manual.

Regular Maintenance Check List

NOTE: *Service intervals shown are considered maximum under normal operating conditions. Increase frequencies under extremely dirty or dusty conditions.*

Procedure	Before Each Use	Every 25 Hours	Every 100 Hours
Check Engine Oil Level	▲		
Check General Equipment Condition	▲		
Check Wedge for Sharpness	▲		
Grease Surface of Slide Rail	▲		
Check Tire Pressure (40 psi)		▲	
Clean Engine Exterior and Cooling Fins		▲	
Change Engine Oil	1 st time 5 hours	▲	
Replace Air Filter		▲	
Change Hydraulic Fluid Filter			▲
Change Hydraulic Fluid			▲
Replace Spark Plug			▲

General Maintenance Check (before operating)

The hydraulic system (hoses, cylinder, and pump) should be carefully inspected before each use. Also, inspect the mechanical parts at the same time. Make sure all clamps, nuts, bolts, fittings, etc. are properly installed and tightened.

! WARNING!

DO NOT CHECK FOR LEAKS WITH YOUR HAND. LEAKS CAN BE LOCATED BY PASSING A PIECE OF CARDBOARD OR WOOD AROUND THE SUSPECTED LEAK AND LOOKING FOR DISCOLORATION. HIGH-PRESSURE FLUID ESCAPING FROM A VERY SMALL HOLE CAN BE ALMOST INVISIBLE. ESCAPING FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE SKIN, CAUSING SERIOUS INJURY OR EVEN DEATH. IF FLUID IS INJECTED INTO YOUR SKIN, IT MUST BE TREATED IMMEDIATELY BY A DOCTOR FAMILIAR WITH THIS TYPE OF INJURY.

Always replace frayed, kinked, or cracked hoses and/or other damaged hydraulic components with DR Power Equipment authorized parts and components specified in the “Parts” section (Chapter 7) of this manual. Replacement parts from secondary suppliers (not original DR Power Equipment replacement parts) can lead to product damage and/or personal injury, and will void the warranty.

! CAUTION!

DO NOT REMOVE THE CAP FROM THE HYDRAULIC TANK OR RESERVOIR WHILE THE WOOD SPLITTER IS RUNNING. HOT FLUID, UNDER PRESSURE, COULD BE EXPELLED RESULTING IN SERIOUS INJURY.

Should it become necessary to loosen or remove any hydraulic fitting or line, be sure to relieve all hydraulic pressure by shutting off the engine, removing the spark plug wire, and moving the valve control handle back and forth several times until no cylinder movement is visible.

Engine Service

Refer to the engine manufacturers’ manual for engine maintenance, repair and storage.

Rail Maintenance

Between each use of the WOOD SPLITTER, we recommend applying a rust preventative (Fluid Film or equivalent) to any bare metal areas on the top of the rail. This will assure the longest possible service life of the wear pads.

Hydraulic Fluid Change

! NOTICE!

NEVER RUN THE WOOD SPLITTER UNLESS THE HYDRAULIC FLUID TANK IS FULL.

Tools needed:

- Screwdriver
- 10" crescent wrench
- Spark plug socket and Ratchet

1. Drain the head end of the cylinder.

- Remove the spark plug wire and spark plug to help reduce the back pressure on the engine and to prevent it from starting.

NOTE: The total amount of hydraulic fluid in the system is 9.5 gallons.

- Disconnect the return hose from the hydraulic fluid filter housing and place it in a waste fluid container (**Figure 53**). (Please properly dispose of the waste hydraulic fluid per local regulations.)
- Extend the cylinder by holding the hydraulic control valve handle forward and have someone pull on the engine's pull start cord until fluid from the return line stops flowing. This step drains the head end of the cylinder.

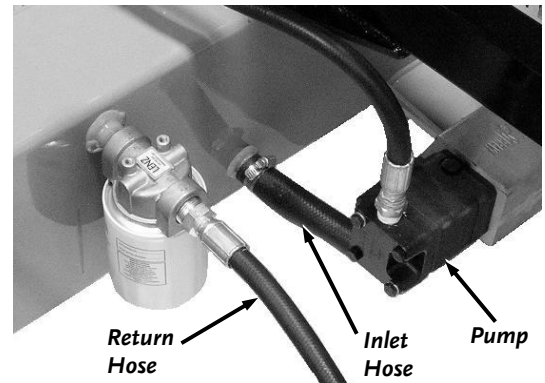


Figure 53

2. Drain the hydraulic tank.

- Place a waste fluid container under inlet hose (**Figure 53**).
- Remove the inlet hose from the pump.
- Slightly lower the front of the WOOD SPLITTER by folding the leg assembly to completely drain the tank.

3. Remove and replace the hydraulic fluid filter.

- Remove the existing hydraulic fluid filter and properly dispose of it (**Figure 54**).
- Apply a thin coat of hydraulic fluid to the rubber seal of the new hydraulic fluid filter.
- Screw the filter onto the filter head. Once the filter seal makes contact with the filter head, turn it an additional $\frac{3}{4}$ turn. Hand-tighten only.

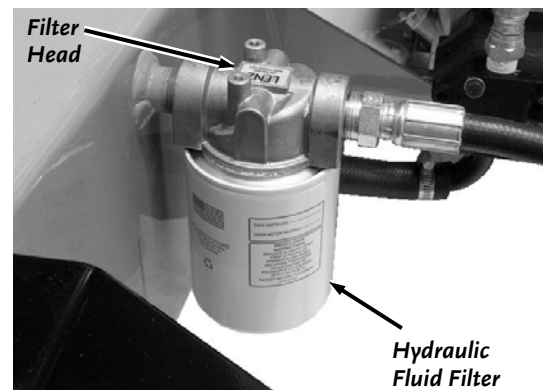


Figure 54

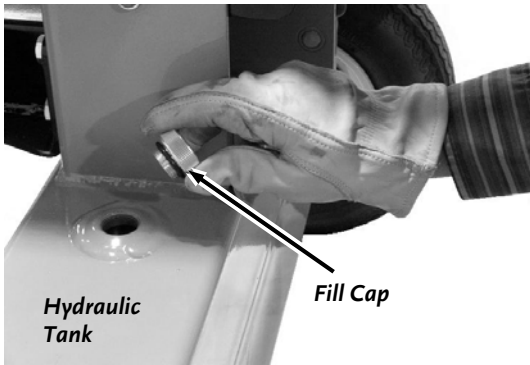


Figure 55

4. Refill the hydraulic tank.

- a. Reconnect inlet hose to the pump (**Figure 53**).
- b. Remove the hydraulic tank fill cap and fill the tank with the recommended type and quantity of hydraulic fluid (**Figure 55**). Replace the cap.

5. Drain and refill the piston end of the cylinder.

- a. Hold the valve handle in the retract position and pull the engine pull start cord until the rod is fully retracted. This step removes the old fluid from the piston end of the cylinder.
- b. Reconnect return hose to the hydraulic fluid filter (**Figure 53**).
- c. Extend the cylinder by holding the control valve handle forward and pulling on the engine's pull start cord until the cylinder is completely extended. This step refills the piston end of the cylinder.

6. Start the engine and cycle the cylinder.

- a. Replace the spark plug and spark plug wire.
- b. Start the engine and cycle the cylinder several times (see "Operating Your Wood Splitter", Chapter 4).
- c. Retract the cylinder and shut off the engine.
- d. Recheck the hydraulic tank to make sure it is filled with fluid approximately one inch from the top of the tank.

Hydraulic Fluid Specifications

Above 30° F AW-32, 10W (non-foaming) or ATF DEXTRON III
 Below 30° F use only ATF DEXTRON III

Hydraulic Fluid Capacities

Hydraulic Tank 7.5 Gallons
 Hydraulic System (including cylinder, tank, hoses and filter) 9.5 Gallons

! NOTICE!

DO NOT MIX TRACTOR HYDRAULIC FLUID WITH TRANSMISSION FLUID. USE ONE OR THE OTHER.

End of Season and Storage



BEFORE PERFORMING ANY MAINTENANCE PROCEDURE, STOP THE ENGINE AND DISCONNECT THE SPARK PLUG WIRE.

NOTE: Please refer to the engine owner's manual for engine-specific procedures.

- Change the engine oil.
- Remove the spark plug and pour about 1 ounce of motor oil into the cylinder hole. Replace the plug and pull the recoil starter rope until you feel strong resistance. This will coat the piston and seat the valves to prevent moisture buildup.
- Clean/replace the air filter.
- Clean dirt and debris from the cylinder head cooling fins and muffler area of the engine.
- If your DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER will be idle for more than 30 days, we recommend using a gas stabilizer. This will prevent sediment from gumming up the carburetor. If there is dirt or moisture in the gas or tank, remove it by draining the tank. Completely fill the tank with fresh, unleaded gas and add the appropriate amount of stabilizer or gasoline additive. Run the engine for a short time to allow the additive to circulate. Close the fuel shut-off valve to prevent carburetor overflow and leakage.
- Check the wedge for nicks and wear. Sharpen if needed.
- Apply Fluid Film to areas where the paint has worn or chipped off to bare metal.

Chapter 5: Troubleshooting

Most problems are easy to fix. Consult the troubleshooting table for common problems and their solutions. If you continue to experience problems call DR Power Equipment, Inc. Toll Free at **1-800-DR-OWNER (376-9637)** for support.

WARNING!

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE, STOP THE ENGINE AND DISCONNECT THE SPARK PLUG WIRE.

Troubleshooting Table

SYMPTOM	POSSIBLE CAUSE
<i>When the valve control handle is pushed forward (extend), the splitting wedge does not move.</i>	<ul style="list-style-type: none"> ⇒ Check the hydraulic tank to make sure the fluid level is one inch from the top of the tank. ⇒ If the fluid level is OK then call 1 (800) DR-OWNER (376-9637) for assistance.
<p><i>The engine won't start.</i></p> <p><i>(Please refer to the engine owner's manual for engine-specific procedures.)</i></p>	<ul style="list-style-type: none"> ⇒ Check that the Fuel Shut-Off Valve is turned ON (See "Operating your WOOD SPLITTER", Chapter 4). ⇒ Are you using fresh, clean gas? If the gas is old, change it. Use a fuel stabilizer if you keep gas longer than two months. ⇒ Is the spark plug clean? If the spark plug is dirty or cracked, change it. If it's oily, leave it out, hold a rag over the plug hole and pull the recoil cord several times to blow out any oil in the cylinder, then wipe off the plug and reinsert it. ⇒ If your engine still won't start, call 1(800) DR-OWNER (376-9637) for assistance.
<p><i>The engine lacks power or is not running smoothly.</i></p> <p><i>(Please refer to the engine owner's manual for engine-specific procedures.)</i></p>	<ul style="list-style-type: none"> ⇒ Check that the Throttle Lever in the "Run" position. ⇒ Is the air filter clean? If it's dirty, change it following the procedure in the engine manufacturer's owner's manual. ⇒ Is the spark plug clean? If it's fouled or cracked, change it. If it's oily, leave it out, hold a rag over the plug hole and pull your recoil cord several times to blow out any oil in the cylinder, then wipe off the plug and reinsert it. ⇒ Are you using fresh, clean unleaded gas? If it's old, change it. Use a fuel stabilizer if you keep gas longer than two weeks or so. ⇒ Does your engine have the right amount of clean oil? If it's dirty, change it following the procedure in the engine manufacturer's owner's manual. ⇒ Check the oil level and adjust as needed. ⇒ If your engine still lacks power, call 1(800) DR-OWNER (376-9637) for assistance.

SYMPTOM	POSSIBLE CAUSE
<p><i>Engine smokes.</i> (Please refer to the engine owner's manual for engine-specific procedures.)</p>	<p>⇒ Check the oil level and adjust as needed.</p> <p>⇒ Check the air filter and clean or replace if needed.</p> <p>⇒ You may be using the wrong oil—too light for the temperature. Refer to your Engine Owner's Manual for detailed information.</p> <p>⇒ Clean the cooling fins if they're dirty.</p> <p>⇒ If the engine still smokes, call 1(800) DR-OWNER (376-9637) for assistance.</p>
<p><i>The engine stalls when the splitting wedge engages the wood.</i></p>	<p>⇒ The engine may not be properly adjusted. Call 1(800) DR-OWNER (376-9637) for assistance.</p>
<p><i>The splitting wedge moves slowly, but will split wood.</i></p>	<p>⇒ Check the hydraulic fluid level in the hydraulic tank and fill if necessary.</p> <p>⇒ Check the high-pressure hose, fittings, and valve openings for dirt and debris that may have obstructed the openings.</p>
<p><i>The ram will not automatically retract.</i></p>	<p>⇒ Check the slide rail or splitting wedge for damage.</p> <p>⇒ Push the valve handle to the retract position. If the handle will not stay in this position, call 1(800) DR-OWNER (376-9637) for assistance.</p>
<p><i>Hydraulic fluid squirts from the fill plug during operation.</i></p>	<p>⇒ The hydraulic fluid tank may be over-filled. Drain fluid to 1 inch below the top of the tank.</p> <p>⇒ The WOOD SPLITTER is not level. Make sure the WOOD SPLITTER is on level ground.</p>

Chapter 6: Parts Lists, Schematic Diagrams And Warranty

Parts List – Base Unit

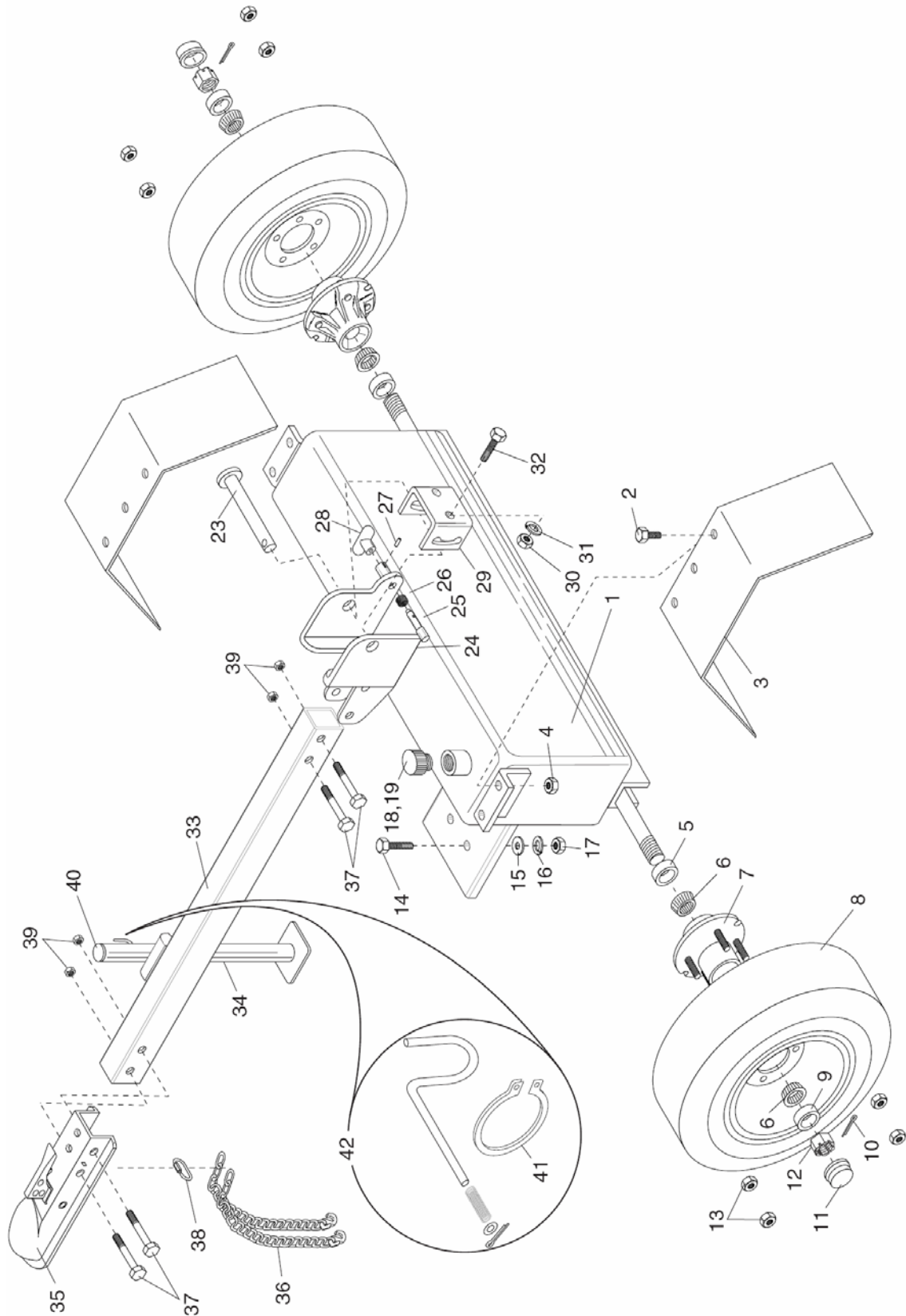
NOTE: Part numbers listed are available through DR Power Equipment.

<u>Ref#</u>	<u>Part#</u>	<u>Description</u>	<u>Ref#</u>	<u>Part#</u>	<u>Description</u>
1	229741	Weldment, Base Tank	24	229971	Clip, Hairpin, 3/32 x 2-1/2" long
2	229751	Bolt, 5/16-18 x 3/4" long	25	229981	Pin, Plunger
3	229761	Fender	26	229991	Spring
4	229771	Locknut, 5/16-18	27	230001	Pin, Slotted Spring, 3/16" dia.
5	229781	Seal, Inside	28	230011	Knob, Bar
6	229791	Bearing, Tapered Roller	29	230021	Bracket, Hinge
7	229801	Hub, Studded	30	229951	Nut, 1/2-13
8	229811	Tire, 4.8" x 8"	31	229941	Lock Washer, 1/2"
9	229821	Washer, Thrust	32	229931	Bolt, 1/2-13 x 1-1/2" long
10	229831	Key, Cotter, 1/8"	33	230031	Weldment, Tongue
11	229841	Dust Cap	34	230041	Weldment, Front Leg
12	229851	Nut, Spindle	35	230051	Coupler, Hitch, 2"
13	229861	Nut, Lug	36	230061	Chain Assembly
14	229871	Bolt, 5/16-18 x 1-3/4" long	37	230071	Bolt, 1/2-13 x 3-1/2" long
15	229881	Washer, 5/16"	38	230081	Safety Quick-Link
16	229891	Lock Washer, 5/16"	39	230091	Locknut, 1/2-13
17	229901	Nut, 5/16-18	40	230101	Plug Cap
18	229911	Plug, Vented Fill	41	230111	Retaining Clip
19	229921	O-ring, Vented Fill Plug	42	230121	Jack Leg Plunger Kit
23	229961	Pin, Hinge			

Safety & Information Labels (not shown)

230611	Label, Warning, Towing Speed
230621	Label, Notice, Hydraulic Fill

Schematic – Base Unit



Parts List – Standard Rail

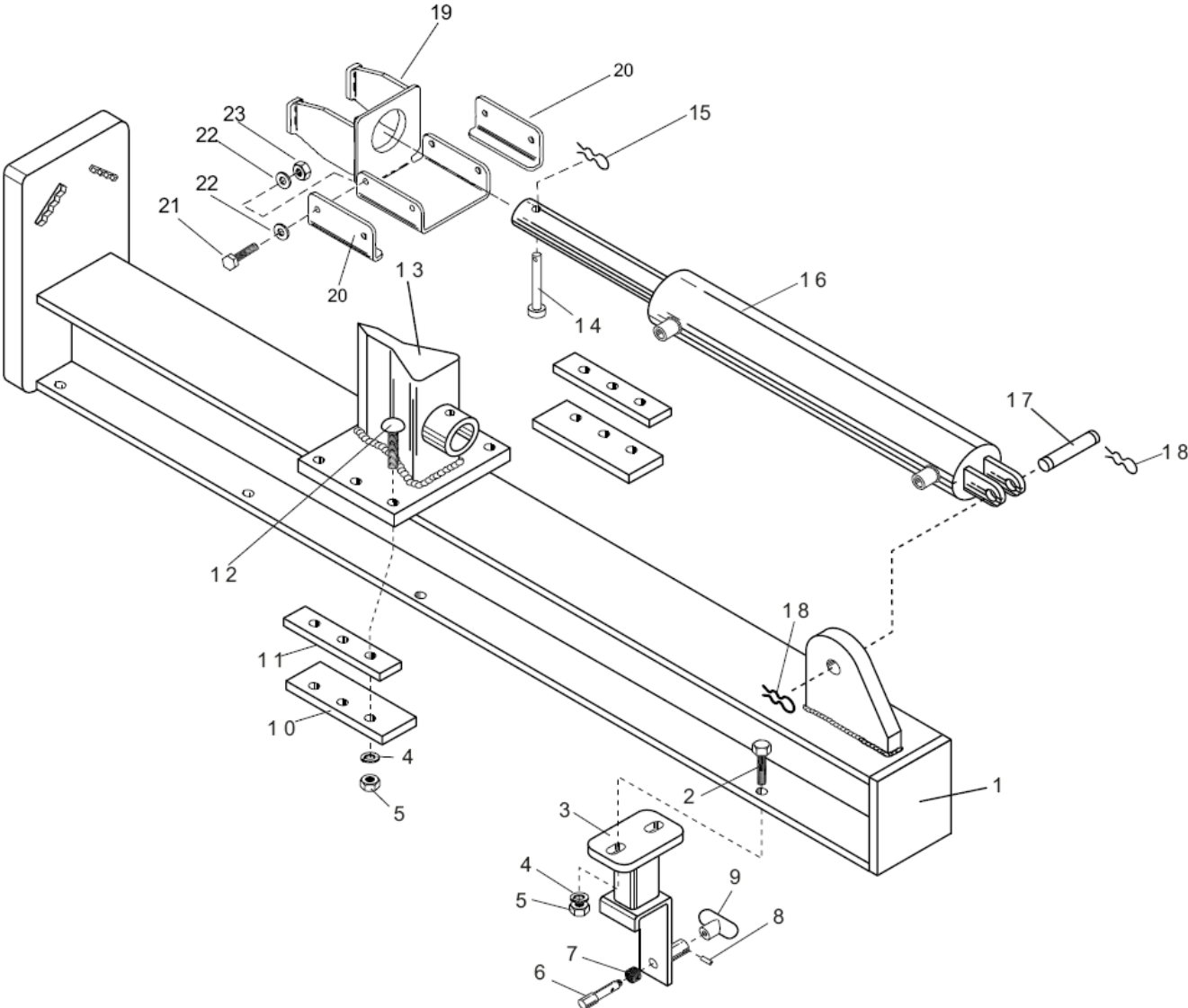
NOTE: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description
1	230131	Weldment, Rail
2	229931	Bolt, 1/2-13 x 1-1/2" long
3	230141	Weldment, Rail Rest
4	229941	Lock Washer, 1/2"
5	229951	Nut, 1/2-13
6	229981	Pin, Plunger
7	229991	Spring
8	230001	Pin, Slotted Spring, 3/16" dia.
9	230011	Knob, Bar
10	230151	Retainer, Slide
11	230161	Guide, Slide
12	230171	Bolt, Carriage, 1/2-13 x 2-1/2"
13	230181	Weldment, Slide Wedge
14	230191	Pin, Clevis, 1/2 x 2-3/4" long
15	230201	Clip, Hairpin 3/32 x 1-3/4" long
16	230241	Cylinder
17	230211	Pin, Grooved, 1" dia.
18	230221	Clip, Hairpin (Cylinder)
19	230541	Log Dislodger
20	230581	Bracket, Clamp
21	230551	Bolt
22	230561	Washer
23	230571	Nut

Safety & Information Labels (not shown)

230591	Label, Warning, Pinch Point
265941	Label, Proper Machine Loading
230601	Label, Operating Instructions

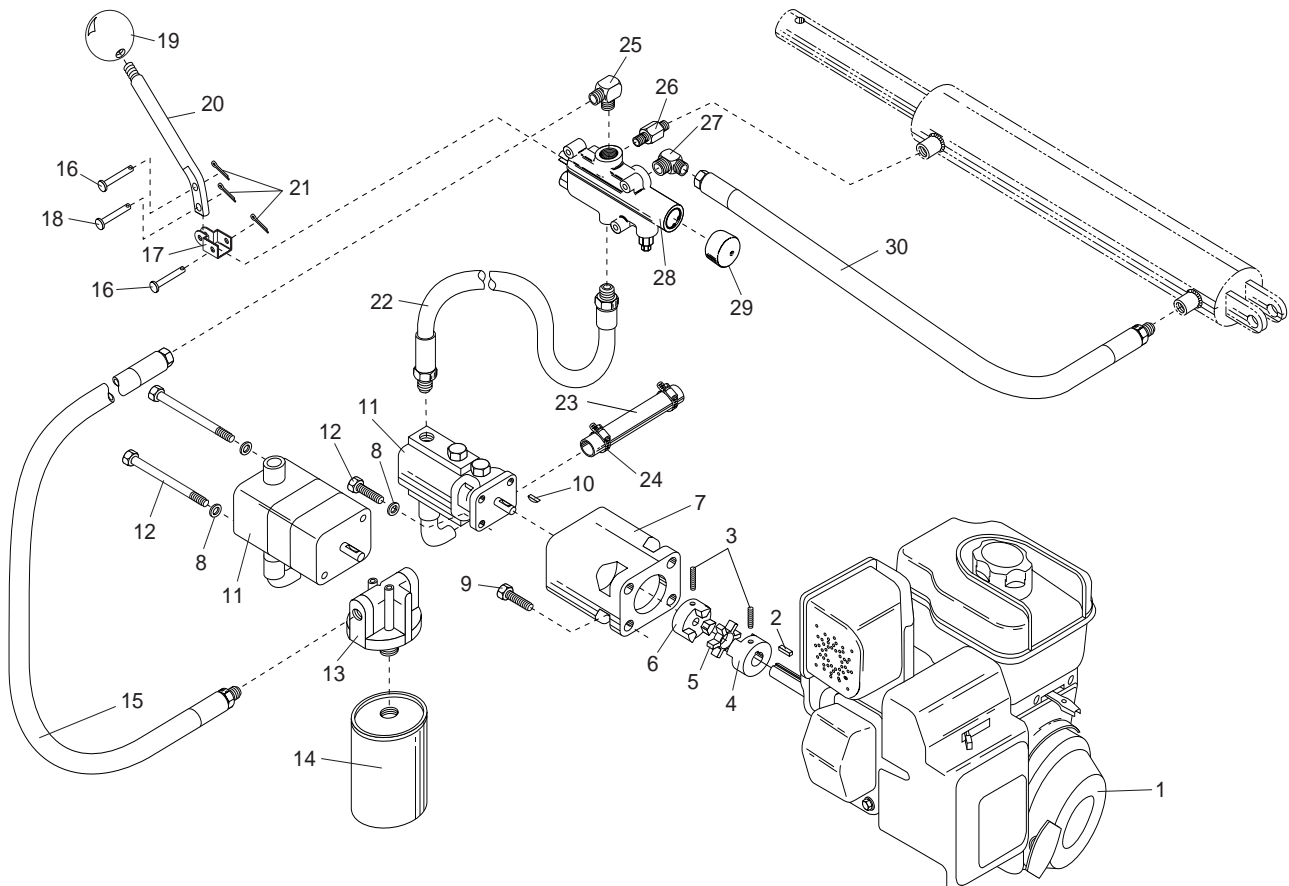
Schematic – Standard Rail



Parts List and Schematic – Pump and Piston Assembly

NOTE: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description	Ref#	Part#	Description
1	230231	Engine, Briggs & Stratton	16	230371	Pin, Clevis, 1/4 x 1" long
2	230251	Key, 3/16 x 1"	17	230381	Valve Link
3	230261	Screw, Set, 1/4-20	18	230391	Pin, Clevis, 1/4 x 3/4" long
4	230271	Coupling, Engine	19	230401	Knob
5	230281	Spider	20	230411	Handle, Valve
6	230291	Coupling, Pump	21	230421	Pin, Cotter, 3/32 x 1/2" long
7	230301	Small Flange, Engine	22	230431	Hose, High-Pressure
8	229891	Lock Washer	23	230441	Hose, Low-Pressure 1 x 9"
9	230311	Bolt, 5/16-24 x 3/4" lg.	24	230451	Clamp, Hose, No. 16
10	230351	Key	25	230461	Fitting, High-Pressure, 90°
11	230361	Pump, Hydraulic	26	230471	Fitting, Straight
12	230521	Bolt, 5/16-24 x 5 1/2" long	27	230481	Fitting, 90° Elbow
13	230321	Casting, Head Filter	28	230491	Valve
14	230331	Element, Filter	29	230501	End Cap
15	230341	Hose, High-Pressure	30	230511	Hose, High-Pressure



DR[®] 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER



2-Year Limited Warranty Terms and Conditions

The DR[®] 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER is warranted for two (2) year against defects in materials or workmanship when put to ordinary and normal consumer use; ninety (90) days for any other use. The engine manufacturer warrants the engine separately.

For the purposes of all the above warranties, "ordinary and normal consumer use" refers to non-commercial residential use and does not include misuse, accidents or damage due to inadequate maintenance.

Country Home Products, Inc. (home of DR[®] Power Equipment) certifies that the DR[®] 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER is fit for ordinary purposes for which a product of this type is used. Country Home Products, Inc. however, limits the implied warranties of merchantability and fitness in duration to a period of two (2) year in consumer use, ninety (90) days for any other use.

The 2-Year Limited Warranty on the DR[®] 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER starts on the date the machine ships from our factory. The 2-Year Limited Warranty is applicable only to the original owner.

The warranty holder is responsible for the performance of the required maintenance as defined by the manufacturer's owner's manuals. The warranty holder is responsible for replacement of normally wearing parts such as the air filter, spark plug, hydraulic fluid filter and tires. Attachments and accessories to the machine are not covered by this warranty.

During the warranty period, the warranty holder is responsible for the machine transportation charges, if required. During the warranty period, warranty parts will be shipped by standard method at no charge to the warranty holder. Expedited shipping of warranty parts is the responsibility of the warranty holder.

SOME STATES DO NOT ALLOW LIMITATIONS ON THE LENGTH OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Country Home Products, Inc. shall not be liable under any circumstances for any **incidental or consequential damages or expenses** of any kind, including, but not limited to, cost of equipment rentals, loss of profit, or cost of hiring services to perform tasks normally performed by the DR[®] 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

Daily Checklist for the DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER

To help maintain your DR 22-TON VERTICAL/HORIZONTAL WOOD SPLITTER for optimum performance, we recommend you follow this checklist each time you use your machine.

- [] **OIL:** With the machine on a level surface, check the engine oil level with the dipstick and add more if necessary (only add oil to the level indicated on the dipstick - DO NOT OVERFILL). Use SAE 30 high detergent motor oil.
- [] **GAS:** Fill the gas tank with clean, fresh, unleaded gasoline. Make sure the fuel shut-off valve on the front of the engine is open. Always close the fuel shut-off valve when storing your machine.
- [] **ENGINE AIR COOLING SYSTEM:** It is very important to keep the engine clean of debris. Remove wood chips and other built-up materials from the air intake screen before, during and after you run the splitter. Regularly remove debris from the cooling fins. A dirty engine retains heat and can cause damage to the internal engine parts.
- [] **WEDGE:** Check the wedge for tightness, nicks and wear.
- [] **GENERAL CONDITION:** Check the general condition of the machine (e.g.; nuts, bolts, welds etc.).
- [] **SLIDE RAIL:** Apply a rust preventative (Fluid Film or equivalent) to any bare metal areas on the top of the rail. This will assure the longest possible service life of the wear pads.



DR Power Equipment

MEIGS ROAD, P.O. BOX 25, VERGENNES, VERMONT 05491

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