



KING CANADA

5 TON - 20" LOG SPLITTER



MODEL: KC-5LS

INSTRUCTION MANUAL

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IMPORTANT INFORMATION

**2-YEAR
LIMITED WARRANTY
FOR THIS 20" LOG SPLITTER**

**KING CANADA TOOLS
OFFERS A 2-YEAR LIMITED WARRANTY
FOR NON-COMMERCIAL USE.**

PROOF OF PURCHASE

Please keep your dated proof of purchase for warranty and servicing purposes.

REPLACEMENT PARTS

Replacement parts for this tool are available at our authorized KING CANADA service centers across Canada. For servicing, contact or return to the retailer where you purchased your product along with your proof of purchase.

LIMITED TOOL WARRANTY

KING CANADA makes every effort to ensure that this product meets high quality and durability standards. KING CANADA warrants to the original retail consumer a 2-year limited warranty as of the date the product was purchased at retail and that each product is free from defects in materials. Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations and lack of maintenance. KING CANADA shall in no event be liable for death, injuries to persons or property or for incidental, special or consequential damages arising from the use of our products. To take advantage of this warranty, the product or part must be returned for examination by the retailer. Shipping and handling charges may apply. If a defect is found, KING CANADA will either repair or replace the product.

KING CANADA TOOLS INC. DORVAL, QUEBEC, CANADA H9P 2Y4

GENERAL SAFETY INSTRUCTIONS



- 1. KNOW YOUR TOOL**

Read and understand the owners manual and labels affixed to the tool. Learn its application and limitations as well as its specific potential hazards.
- 2. GROUND THE TOOL.**

This tool is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. **NEVER** connect the green wire to a live terminal.
- 3. KEEP GUARDS IN PLACE.**

Keep in good working order, properly adjusted and aligned.
- 4. REMOVE ADJUSTING KEYS AND WRENCHES.**

Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- 5. KEEP WORK AREA CLEAN.**

Cluttered areas and benches invite accidents. Make sure the floor is clean and not slippery due to wax and sawdust build-up.
- 6. AVOID DANGEROUS ENVIRONMENT.**

Don't use power tools in damp or wet locations or expose them to rain. Keep work area well lit and provide adequate surrounding work space.
- 7. KEEP CHILDREN AWAY.**

All visitors should be kept a safe distance from work area.
- 8. MAKE WORKSHOP CHILD-PROOF.**

-with padlocks, master switches or by removing starter keys.
- 9. USE PROPER SPEED.**

A tool will do a better and safer job when operated at the proper speed.
- 10. USE RIGHT TOOL.**

Don't force the tool or the attachment to do a job for which it was not designed.
- 11. WEAR PROPER APPAREL.**

Do not wear loose clothing, gloves, neckties or jewelry (rings, watch) because they could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair. Roll up long sleeves above the elbows.
- 12. ALWAYS WEAR SAFETY GLASSES.**

Always wear safety glasses (ANSI Z87.1). Everyday eye-glasses only have impact resistant lenses, they are **NOT** safety glasses. Also use a face or dust mask if cutting operation is dusty.
- 13. DON'T OVERREACH.**

Keep proper footing and balance at all times.
- 14. MAINTAIN TOOL WITH CARE.**

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 15. DISCONNECT TOOLS.**

Before servicing, when changing accessories or attachments.
- 16. AVOID ACCIDENTAL STARTING.**

Make sure the switch is in the "OFF" position before plugging in.
- 17. USE RECOMMENDED ACCESSORIES.**

Consult the manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards.
- 18. NEVER STAND ON TOOL.**

Serious injury could occur if the tool tips over. Do not store materials such that it is necessary to stand on the tool to reach them.
- 19. CHECK DAMAGED PARTS.**

Before further use of the tool, a guard or other parts that are damaged should be carefully checked to ensure that they will operate properly and perform their intended function. Check for alignment of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other parts that are damaged should be properly repaired or replaced.
- 20. NEVER LEAVE MACHINE RUNNING UNATTENDED.**

Turn power "OFF". Don't leave any tool running until it comes to a complete stop.



SPECIFIC SAFETY INSTRUCTIONS FOR THIS LOG SPLITTER

- 1) It is obligatory to read the instruction manual in full before using the log splitter.
- 2) It is obligatory to wear safety footwear at all times to provide protection against the risk of logs accidentally falling on feet.
- 3) It is obligatory, at all times, to wear gloves which protect the hands against chips and splinters which may be produced during work.
- 4) It is obligatory, at all times, to wear goggles or a visor which protects the face against chips and splinters which may be produced during work.
- 5) It is forbidden to remove or tamper with the protection devices and safety devices.
- 6) It is forbidden to stand in the range of action of the machine, apart from the operator. No other person or animal may be present within a radius of 5 meters from the machine.
- 7) Dumping of used oil in the environment is forbidden. The oil must be disposed of in accordance to current legislation in the country where this operation is carried out.
- 8) Never touch hazardous areas while the wedge is moving. This may result in cutting or crushing of the hand.
- 9) Always pay attention to the movement of the log pusher.
- 10) Never remove a log trapped in the wedge with your hands.
- 11) Before carrying out any maintenance operation, disconnect the plug of the machine.
- 12) The log splitter must always be used by one operator only.
- 13) Nobody must be allowed to use the log splitter unless they have read the instruction manual and have been instructed in the regulations to follow for correct and safe use.
- 14) The machine must be used by adults only. Use of the log splitter by apprentices younger than 16 years of age must be supervised by an adult authorized to use the machine.
- 15) It is recommended to not work with the machine on the ground. This is not only an uncomfortable working position but it can also be dangerous because the operator has to bring his/her face close to the machine, and thus risks being struck by chips or debris.
- 16) Check that the logs to be split are free from nails or wire. The ends of the logs must be cut square and branches must be cut off flush with the trunk.
- 17) Never try to split logs larger than the rated capacity. This could be dangerous and may damage the machine.
- 18) Split wood in the direction of the grain. Do not place wood across the log splitter and leave it in that position for splitting as it is dangerous and may damage the machine or cause injury to the operator.
- 19) Never attempt to cut more than one log at a time as one may fly up and hit you.
- 20) Do not attempt to load the log in the log splitter while the ram is in motion, you could get trapped and injured.
- 21) Keep your hands well away from any splits and cracks which open in the log. These may close suddenly and crush or amputate your fingers.
- 22) Never force the log splitter for more than 5 seconds keeping the cylinder under pressure attempting to split excessively hard wood. After this time interval, the oil under pressure is overheated and the machine could be damaged. It is thus better to stop and rotate the log 90 degrees to see whether it can be split in a different position. In any case, if you are not able to split the log, this means that its hardness exceeds the capacity of the machine and thus the log should be discarded so as to not damage the log splitter.
- 23) Do not force the blade by pushing the log on the upper part, as this can cause the blade to break or damage the body of the machine. Always set the log on the guides.

ELECTRICAL INFORMATION & SPECIFICATIONS



WARNING!

ALL ELECTRICAL CONNECTIONS MUST BE DONE BY A QUALIFIED ELECTRICIAN. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY! ALL ADJUSTMENTS OR REPAIRS MUST BE DONE WITH THE LOG SPLITTER DISCONNECTED FROM THE POWER SOURCE. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY!

KC-5LS POWER SUPPLY (110V-1 PHASE)

WARNING: THIS LOG SPLITTER MUST BE CONNECTED TO A 110V, 15-AMP, BRANCH CIRCUIT. FAILURE TO CONNECT IN THIS WAY CAN RESULT IN INJURY FROM SHOCK OR FIRE.

110V OPERATION

As received from the factory, your log splitter is wired for 110V operation and is intended for use on a circuit that has an outlet and a plug which looks like the one illustrated in Fig.1.

GROUNDING

This log splitter must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current, to reduce the risk of electric shock. This log splitter must be equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Not all outlets are properly grounded. If you are not sure if your outlet is properly grounded, have it checked by a qualified electrician.

WARNING: IF NOT PROPERLY GROUNDED, THIS LOG SPLITTER CAN CAUSE ELECTRICAL SHOCK, PARTICULARLY WHEN USED IN DAMP LOCATIONS. TO AVOID SHOCK OR FIRE, IF THE POWER CORD IS WORN OR DAMAGED IN ANY WAY, HAVE IT REPLACED IMMEDIATELY.

WARNING: TO MAINTAIN PROPER GROUNDING OF YOUR LOG SPLITTER, DO NOT REMOVE OR ALTER THE GROUNDING PRONG IN ANY MANNER.

WARNING: DO NOT USE A TWO-PRONG ADAPTOR FOR THEY ARE NOT IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES. NEVER USE IN CANADA.

EXTENSION CORDS

The use of any extension cord will cause some loss of power. Use the following table to determine the minimum wire size (A.W.G-American Wire Gauge) extension cord. Use only extension cords which accept the tool's plug.

For circuits that are further away from the electrical circuit box, the wire size must be increased proportionately in order to deliver ample voltage to the motor. Refer to Fig.2 for wire length and size.

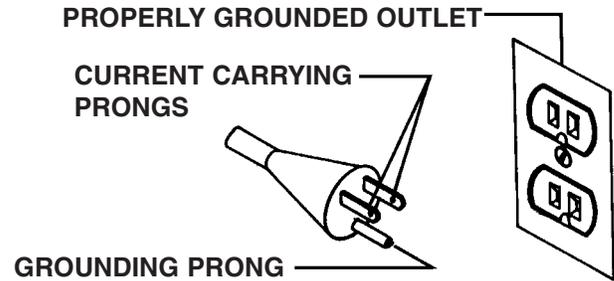


FIGURE 1

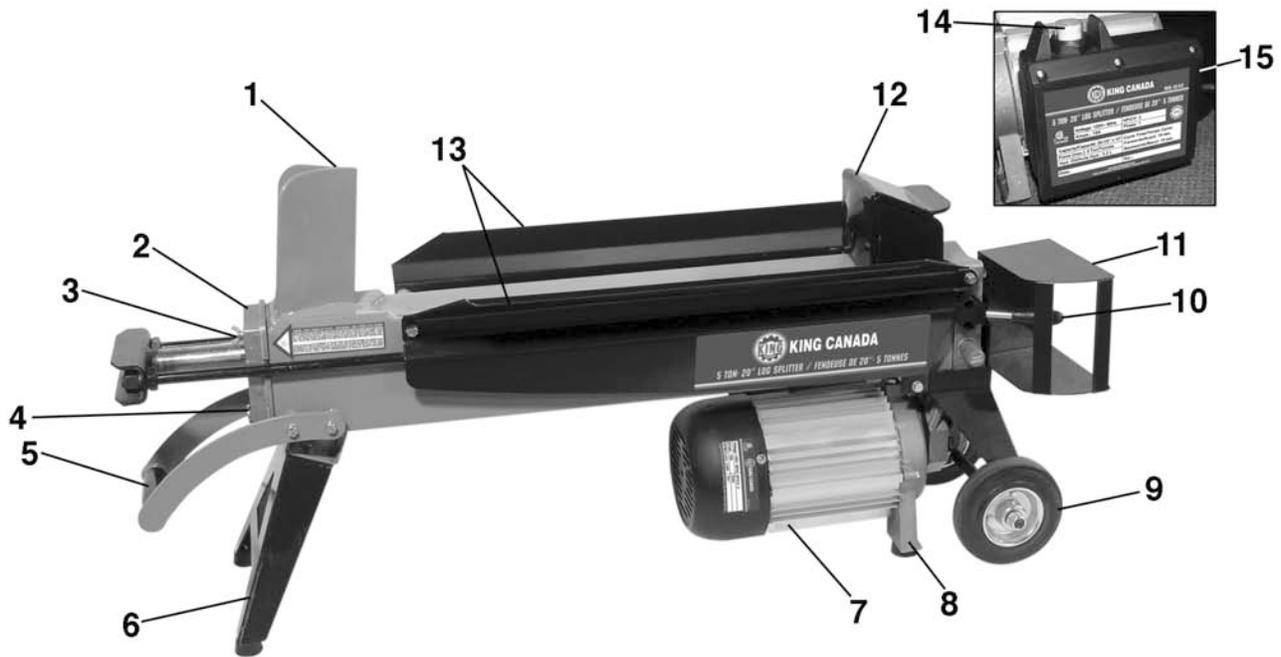
Tool's Amperage Rating	Cord Size in A.W.G.				Wire Sizes in mm ²			
	Cord Length in Feet				Cord Length in Meters			
	25	50	100	150	15	30	60	120
3-6	18	16	16	14	.75	.75	1.5	2.5
6-8	18	16	14	12	.75	1.0	2.5	4.0
8-10	18	16	14	12	.75	1.0	2.5	4.0
10-12	18	16	14	12	1.0	2.5	4.0	-
12-16	14	12	-	-	-	-	-	-

FIGURE 2

MODEL	KC-5LS
Log Capacity	20-1/2" x 12"
Splitting Force (Ton)	5
Hydraulic Oil Capacity	3.2 L
Hydraulic Pressure	16 MPa
Cycle Time (Forwards/Backwards in seconds)	10/15
Motor	15 Amp.
Voltage	110V, 1 phase, 60 Hz
Dimensions (LxWxH)	36" x 12" x 19"
Weight	105 LBS



GETTING TO KNOW YOUR LOG SPLITTER & OPERATING GUIDELINES



Getting to Know your Log Splitter

Before attempting to use the log splitter, it is recommended to familiarize yourself with all the controls, operating features and safety requirements of your log splitter.

- 1. Wedge
- 2. Oil tank
- 3. Bleed screw
- 4. Oil drain bolt
- 5. Carrying handle
- 6. Supporting leg
- 7. Motor
- 8. Motor support w/ rubber feet
- 9. Wheel
- 10. Hydraulic control lever
- 11. Safety guard for hydraulic control lever
- 12. Log pusher
- 13. Log retention brackets
- 14. Power button
- 15. Reset button

Operating Guidelines

Size of the logs to be split

Figure 3 shows the maximum log sizes that can be split. The diameter of the log is indicative. A small log can be difficult to split if it has knots or a particularly tough fibre. On the other hand, if the wood has regular fibres it is not difficult to split logs with diameter greater than the maximum shown in Fig. 3. It is important not to insist when the log does not split on the first attempt, as the pump may be damaged by the overheating of the oil when the machine is made to work under the maximum stress in the attempt to split excessively hard wood.

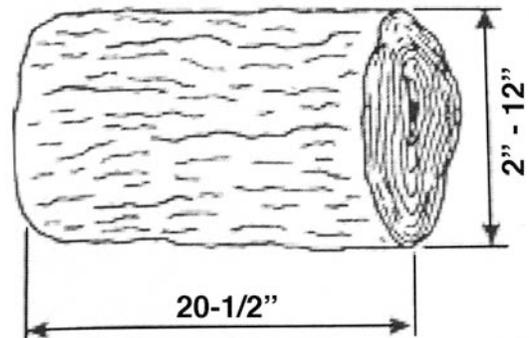


FIGURE 3

Recommended Hydraulic Oil

We recommend using hydraulic oil grade 22. Here are some examples;

- SHELL TELLUS T22
- ARAL VITAM GF22
- SP ENERGOL HCP22
- MOBILE DTE 11 or equivalent

DO NOT USE OTHER GRADE OILS

Application conditions

This log splitter is a home use model. It is designed for operating under ambient temperature between 5 degrees Celsius and 40 degrees Celsius and for installation at altitudes no more than 1000m above sea level. The surrounding humidity should be less than 50% at 40 degrees Celsius. It can be stored or transported under ambient temperatures between -25 degrees Celsius and 55 degrees Celsius.

ASSEMBLY & ADJUSTMENTS



Warning! For your own safety, do not connect the log splitter to the power source until the machine is completely assembled and you have read and understood the entire instruction manual.

Warning! For your own safety, never forget to bolt the support leg to the log splitter. Lift the log splitter by the handles at both ends and place it on a 23" - 30" high, stable, flat and level work surface.

Warning! Never use the log splitter if it is not in perfect order or if it needs servicing. Before starting work, check correct functioning of all the safety devices (power button).

Assembling Wheels

Before operating the log splitter, it is necessary to fit both wheels on the supporting shaft. Slide a wheel (B) Fig.4 onto the shaft (A), block it using the large washer (C), and fasten using the nylon hex. nut (D). Repete on the other side.

Assembling the Supporting Leg

Assemble the supporting leg (A) Fig.5 on the machine body as shown using two washers, spring washers and hex. bolts.

Assembling Control Level Knob and Guard

Screw the rubber knob (A) Fig.6 onto the hydraulic control lever shaft. Use two washers, spring washers and hex. bolts to fasten the safety guard (B) on the supporting bracket to protect the hydraulic control lever.

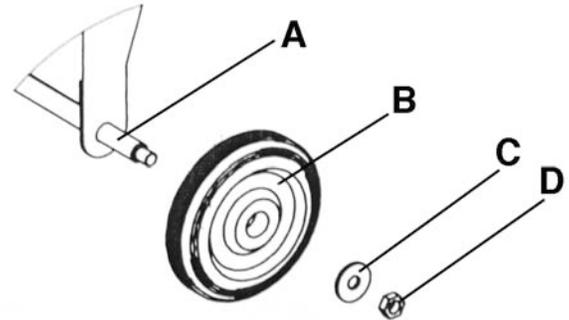


FIGURE 4

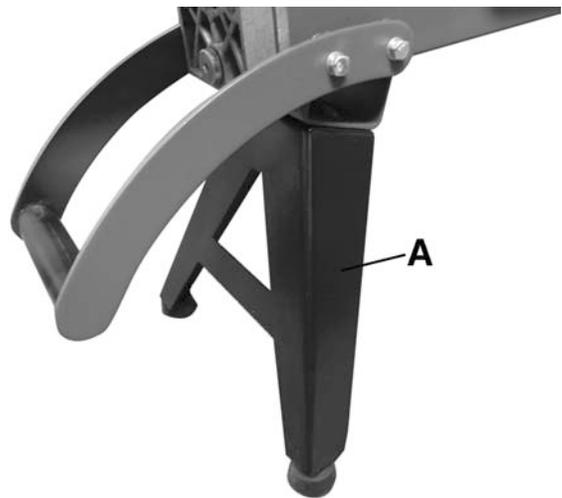


FIGURE 5

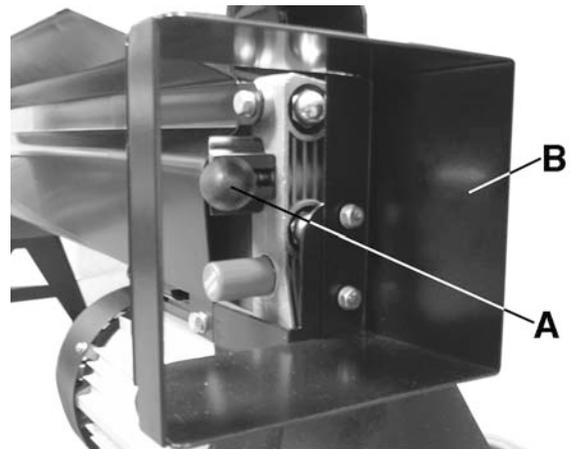


FIGURE 6



OPERATION

Operation

Warning! Before operating the log splitter, the bleed screw (A) Fig.7 should be loosened by some rotations until air can go in and out of the oil tank smoothly. Air flow through the bleed screw hole should be detectable while the log splitter is under operation. Before moving the log splitter, make sure the bleed screw is tightened to avoid oil leaking from this point.

FAILURE TO LOOSEN THE BLEED SCREW WILL KEEP THE SEALED AIR IN HYDRAULIC SYSTEM BEING COMPRESSED AFTER BEING DECOMPRESSED. SUCH CONTINUOUS AIR COMPRESSION AND DECOMPRESSION WILL BLOW OUT THE SEALS OF THE HYDRAULIC SYSTEM AND CAUSE PERMANENT DAMAGE TO THE LOG SPLITTER. DO NOT ADJUST THE MAX PRESSURE LIMITING SCREW (A) Fig.8.

Max pressure was set during production and the max pressure limiting screw is tightened to ensure the log splitter works under pressure of no more than 5 tons. The setting was done by qualified mechanics with professional instruments. Unauthorized resetting will cause the hydraulic pump to fail to output enough splitting pressure or RESULT IN SERIOUS INJURY AS WELL AS DAMAGE TO THE MACHINE. The max pressure limiting screw (A) Fig.8 is protected by a plastic cap (B). If the plastic cap gets loosened, adjust it.

Splitting a Log

This log splitter is equipped with a control system that requires both hands of the user to be operated. The left hand controls the hydraulic control lever while the right hand controls the momentary push button switch. First push the momentary push button switch to start the motor, then move the hydraulic control lever to the right to engage the hydraulic pusher, see Fig.9 (the safety guard was removed for illustration purposes). The log splitter will stop upon absence of either hand. Only after both hands release the controls will the log pusher start to return to the starting position.

Operational Guidelines

Never force the log splitter for more than 5 seconds by keeping pressure on it to split excessively hard wood.

After this time interval, the oil under pressure will be overheated and the machine could be damaged. For such extremely hard wood, rotate the log by 90 degrees to see whether it can be split in a different direction. In any case, if you are not able to split the log, this means that its hardness exceeds the capacity of the machine and thus, the log should be discarded to protect the log splitter.

NOTE: During operation, the metal part connected to the motor remains cold or in any case, reaches a temperature only slightly higher than the ambient temperature. After several hours of use with particularly difficult wood, the pump may become very hot. This is not a dangerous situation for the machine, which returns to full functioning capacity after being cooled. On the other hand, it is very important not to cause overheating of the oil, and thus the pump, by forcing the machine in an attempt to split logs that exceed the capacity of the machine.

Always set logs firmly on the log retaining plates and work table. Make sure logs will not twist, rock or slip while being split. Do not force the blade by splitting the log on the upper part. This will break the blade or damage the machine. Split log in the direction of its grown grain. Do not place log across the log splitter for splitting. It may be dangerous and may seriously damage the machine. Do not attempt to split more than one log at a time. One of them may fly up and hit you.

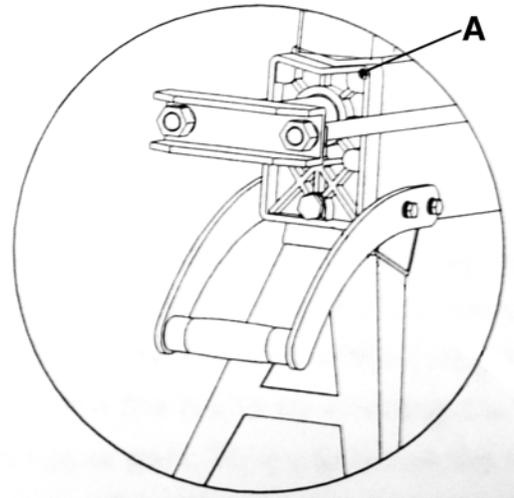


FIGURE 7

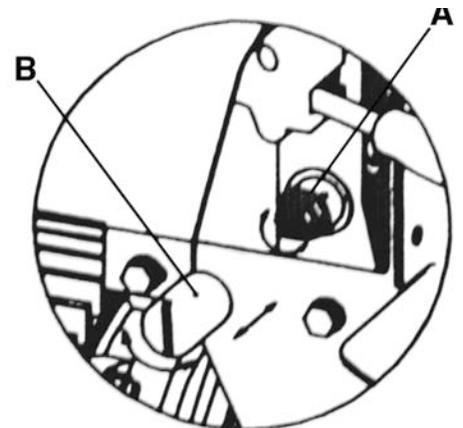


FIGURE 8



FIGURE 9

OPERATION



Freeing a Jammed Log

If a log gets jammed, follow these instructions;

- 1) Release both controls.
- 2) After the log pusher moves back and completely stops at its starting position, insert a wedge wood (A) Fig.10 under the jammed log.
- 3) Start the log splitter to push the wedge wood to go on completely under the jammed one. See Fig.10.
- 4) Repeat above procedure with sharper slope wedge woods until the log is completely free.

Do not try to knock the jammed log off. Knocking will damage the machine or may launch the log and cause an accident.

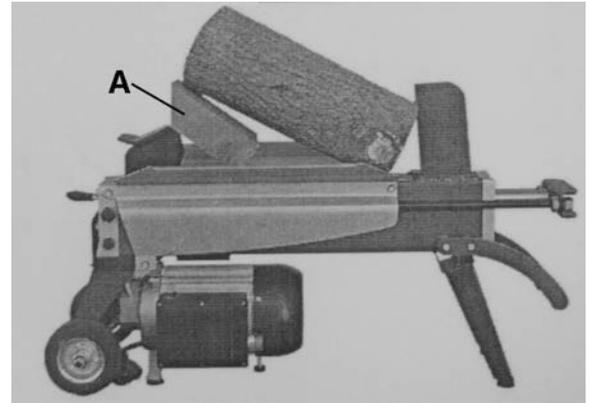


FIGURE 10

Replacing Hydraulic Oil (Grade 22)

Replace the hydraulic oil in the log splitter after every 150 hours of use. Follow these instructions to replace the hydraulic oil;

- 1) Make sure all moving parts stop and unplug from the power source.
- 2) Unscrew the oil drain bolt/dipstick (A) Fig.11 with a hex. key.
- 3) Use a container with a capacity of approx. 4 litres to drain out the hydraulic oil.
- 4) Once the oil is drained, place the log splitter in a vertical position as shown in Fig.12 and refill fresh hydraulic oil at the volume as per the hydraulic oil capacity (3.2L).
- 5) Clean the surface of the dipstick on the oil drain bolt and put it back into the oil tank while keeping the log splitter vertical.
- 6) Make sure the level of the refilled oil is just between two grooves around the dipstick.
- 7) Clean the oil drain bolt before you screw it back in. Make sure that it is tight to avoid leakage before placing the log splitter horizontally.

Periodically check the oil level to ensure it is between two grooves around the dipstick. Upon lower oil level, oil refilling is required.

Warning: Never mix oil with general waste! Used oil must be disposed of according to current laws in your province.

Sharpening the Wedge

After using the log splitter for an extended period of time, sharpen the wedge of the log splitter using a fine-toothed file and smooth any burrs or dented areas along the cutting edge.

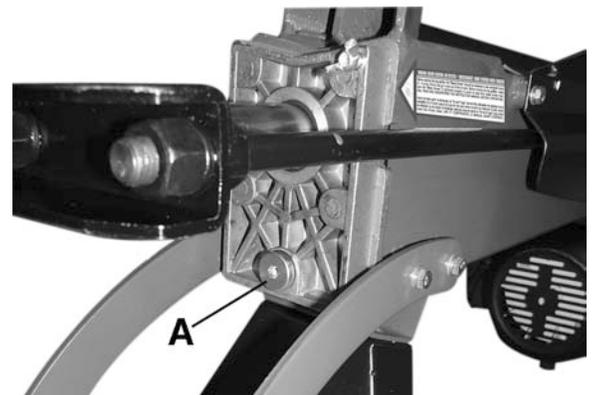


FIGURE 11



FIGURE 12



TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	REMEDY SUGGESTED
Motor does not start	Overload protection device disengaged to protect the log splitter from being damaged.	Let motor cool down, and push the reset button of the overload protection device to re-start the motor.
Fails to split logs	Log is improperly positioned	Refer to "Log splitter operation" section for perfect log loading.
	The sizes or hardness of the log exceeds the capacity of the machine.	Reduce the log size before splitting it on the log splitter.
	Wedge cutting edge is blunt	Refer to "Sharpening wedge" section to sharpen the cutting edge.
	Oil leaks	Locate leak(s)/contact service center.
	Unauthorized adjustment was made on Max. Pressure Limiting Screw. Lower max pressure rating was set	Contact closest service center.
The log pusher moves unevenly, making unfamiliar noise or vibrating a lot	Lack of hydraulic oil and excessive air in the hydraulic system	Check oil level for possible oil refilling. Contact closest service center.
Oil leaks around cylinder ram or from other points	Air sealed in hydraulic system while operating	Loosen bleed screw by some rotations before operating the log splitter
	Bleed screw is not tightened before moving the log splitter	Tighten the bleed screw before moving the log splitter
	Oil drain bolt with dipstick is not tight	Tighten the oil drain bolt with dipstick
	Hydraulic control valve assembly and/or seal(s) worn	Contact closest service center.

PARTS DIAGRAM & PARTS LISTS

Refer to the Parts section of the King Canada web site for the most updated parts diagram and parts list.