

# Range Road RR20T Series Firewood Processor



## Owners Manual

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**Note: Any modification to Processor will void all warranty**

## Warning

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

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Engine is shipped without oil.

Before starting engine, fill with SAE 10/30 motor oil.

See engine manual for engine oil capacity.

Hydraulic reservoir is shipped without oil.

When adding oil, use the dipstick to gauge amount, Approximately 24 litres (6 gallons) of AW Type Hydraulic Oil only.

Closely inspect all processor components and ensure all exterior bolts are tightened

If components are damaged during delivery, please contact the freight company that delivered the unit and file a claim.

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**DANGER (red)** indicates an imminently hazardous situation which, if not voided, could result in death or serious injury

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**WARNING (orange)** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

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**CAUTION (yellow)** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury

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**CAUTION (yellow)** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage

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You must be 16 or older to operate this machine.

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Keep untrained people out of work zone.

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Never leave the firewood processor unattended, while the engine is running.

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The wedges can cut through skin and break bones. Keep both hands away from wedges and ram cylinder. Serious accidents can happen when other people are allowed inside the work zone. Keep everyone else out of the work zone while operating Processor.

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RR20T



Never wear loose clothing, when operating the firewood processor.

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Only operate the firewood processor in daylight.

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Wear safety glasses to avoid eye injury as pieces of log may fly out while splitting.

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

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

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

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If skin injection happens, seek immediate "Medical Assistance".

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Serious injury or death can occur if towing safety rules are not followed.

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Review towing safety warnings in your towing vehicle manual.

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Drive safely. Be aware of the added length of the firewood processor.

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Never ride or transport cargo on the firewood processor.

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Drive the vehicle with the firewood processor securely attached.

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Choose a level surface to operate the firewood processor.  
Block the firewood processor wheels to prevent unintended movement.

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## RR20T



Never tow or operate this processor while under the influence of alcohol, drugs, or medication.

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Risk of fire and explosion.

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

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Position muffler at least 213 cm (7 feet) from combustible objects.

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Before adding fuel, stop the engine and keep heat, sparks, and flame away. Do not add fuel when engine is running or still hot. Do not smoke near the engine while fueling.

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Do not pump fuel directly into engine at gas station. Static charge can build and ignite fuel. Use a safety approved fuel container to transfer gas to the engine. Wipe up fuel spills immediately.

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Only store and handle fuel outdoors. Gasoline vapors can ignite if they collect inside an enclosure. Explosion may result.

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Do not change or add to exhaust system. Fire may result.

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Do not change or add fuel tanks or fuel lines. Fire may result.

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Before each use, check fuel tank and fuel lines for leaks. Any fuel leak is a fire hazard. Fix any fuel leaks before starting engine.

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During transportation take precautions to make sure machine will not tip over and cause a fuel leak fire hazard.

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

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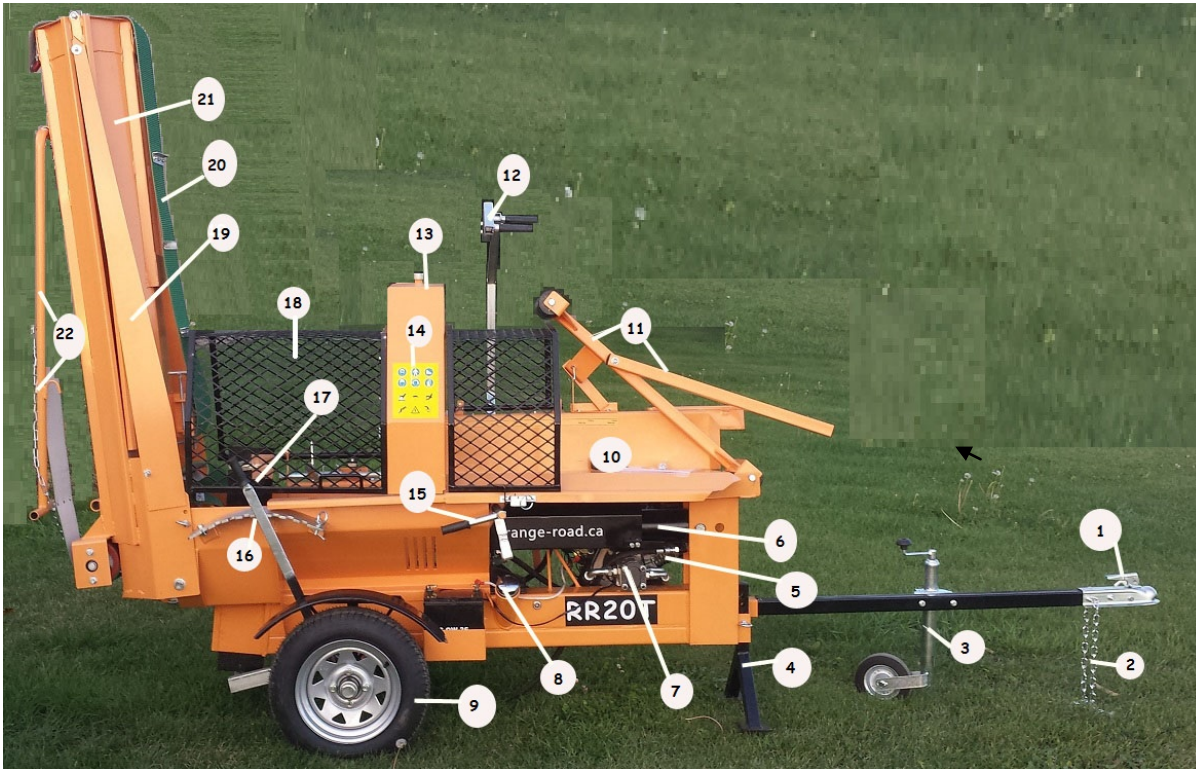


Do not touch the muffler as you may get burned.

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**Note: Any modification to Processor will void all warranty**

## Component Identification



1. **2" Coupler:** Attaches the firewood processor to your ATV or vehicle. Fits only 2" hitch balls.
2. **Safety Chains:** for attaching to tow vehicle along with 2" coupler.
3. **Front Wheel:** Used for moving on even stable ground & raising or lowering coupler height.
4. **Leg:** The leg helps support the firewood processor while operating. The leg should be pulled out of the sleeve and reinserted from top down while towing (see Operation Instructions)
5. **Engine:** The air cooled engine powers the hydraulic pump.
6. **Hydraulic Cylinder:** The hydraulic cylinder has a 192.5cm (19") stroke. It is rated to 3500 PSI
7. **Gear Pump:** The gear pump makes the hydraulic oil flow through the system. The RR20T has a 2 stage pump with one live section dedicated to the conveyor(s).
8. **Hydraulic Filler Cap:** Unscrew the cap to add hydraulic oil to the tank, oil should be midway up the siteglass
9. **Tires:** Maximum rated speed is: RR20T - 12" Wheels - 80Kph (50 Mph).
10. **Log Deck:** The log deck is angled to help keep the log against the deck wall without operator assistance.
11. **Log Roller Bar:** When this is unfolded it allows longer logs to be loaded onto the Log Deck.
12. **Saw Bar Handle:** Use the saw bar handle to draw the chain saw bar down, run the chain, and to move the splitter ram forward.
13. **Bar Oil Tank:** Fill this with bar oil to lubricate the cutting chain.

**14. Safety Sticker**

**15. Manual Engagement Lever:** Pushing this down manually engages the splitting ram.

**16. Wedge Height Adjuster:** The wedge features wedge wings and a taper that makes splitting easier. Added is the optional side wedges for splitting 4 ways

**17. Safety Screen:** Stops hydraulic operations when screen is raised.

**18. Safety Cover Splitter/Chainsaw:** This cover has to be in the down position for processor to operate, when it lifts up the chainsaw and bar will stop and not operate until it is lowered again.

**19. Conveyor Side section:** This give the conveyor extra height on the sides so wood does not fall off conveyor.

**20. Conveyor Belt:** The belt moves the wood up the conveyor, it should be tensioned so that if a piece of wood jams the belt will stop moving.

**21. Output Conveyor:** Shown folded up in travel mode, when unfolded the conveyor can be adjusted to the output height needed.

**22. Conveyor Leg:** When conveyor is unfolded the safety chain must be attached to this leg to keep the conveyor at the desired height.

## **Operation**

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### Proper Operation of the Firewood Processor

1. Preset the cut off length using the measuring bar, loosen the 2 wing nuts and slide the bar to the correct position, re-tighten the wing nuts.
2. Load a log onto the log cradle and slide into processor until the end of the log touches the measuring bar.
3. Open the ball valve to start the flow of bar oil.
4. Pull the Saw Bar Handle down to engage the chain.
5. Gently pull the Saw Bar handle downwards with the chain running and cut through the wood.
6. When pulling the saw bar down and the saw is getting close to cutting through the log you will notice tension on the bar as the cable to engage the ram starts to be activated, keep drawing the saw blade down until cut is complete.
7. The cut piece will drop into the splitter area, raise Saw Bar Handle and ram will engage.
8. Once the log has been pushed through the splitter, the ram will automatically retract.
9. Repeat steps above, when a stub piece needs to be cut, make sure to cut the short piece off so that the longer piece is on log deck, this keeps hands away from moving chain.
10. Serious accidents may happen when other people are allowed inside the work zone.
11. It is recommended to have a minimum 7 metre (20 ft) radius safe work zone.
12. Keep all non-essential people out of the work zone while operating processor.
13. Make sure hands are clear of crush hazard zones.
14. Clear the split wood from the work zone.

## **Maintenance**

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Before performing maintenance, the firewood processor must be placed in maintenance mode.

1.) Turn off engine.

2.) Move the saw bar handle down and up multiple times to relieve hydraulic pressure.

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

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

**Failure to do regular maintenance will void warranty**

**Only Use AW Series Hydraulic Oil, Use of any other Oil will Void All Warranties**



**Check The Following Each time the Processor is Used**

What	How
Hoses	Inspect for exposed wire mesh and leaks. Replace all worn or damaged hoses before starting engine
Hydraulic Fittings	Inspect for cracks and leaks. Reseal or replace all damaged fittings before starting engine
Nuts and Bolts	Visually Check for loose bolts
Moving Parts	Clear debris
Ram Valley	Clean Sawdust from slider area after every use to prevent possible jamming
Grease	Grease Ram slider & log length adjuster every use
Chain	Check saw chain for sharpness and correct tension
Bar Oil	Ensure Bar Oil tank is full
Conveyor	If Conveyor Belt is not centered on pulleys use adjusting bolts to correct position of belt, run

**10 Hour Maintenance - Every 10 Hours of Operation**

Nuts and Bolts	Snug and Tighten all Bolts, Including Motor Mounts and large nut on hydraulic ram
Grease	Grease 3 Conveyor Bearings
Grease	Grease wheel hubs
Grease	Log Rollers
Engine Oil	Check level and cleanliness <b>Use 10/30 Oil</b>
Hydraulic Oil	Check level and cleanliness <b>Use AW Series Hydraulic Oil Only</b>
Air Filter	Check & Clean Engine Air Filter if Necessary

## Saw and Ram engagement Adjustments

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**Fig.1**



**Fig.2**



The Saw Chain engagement arm is used to control when the chain starts to spin. This is an on/off valve, when the engagement arm is in the up position the bolt head from the lever touches the bolt on the valve, (Fig. 1)disengaging the chain. Fig. 2 shows when the engagement arm is pulled forward, allowing the valve to automatically move to the on position, starting the saw motor.

## Troubleshooting

Problem	Solution
Cylinder rod will not move	SOLUTION: A,D,E,H,J
Slow cylinder rod speed when extending or retracting	SOLUTION: A,B,C,H,I,K,L
Wood will not split or splits extremely slowly	SOLUTION: A,B,C,F,I,K
Engine bogs down during splitting	SOLUTION: G,L
Engine stalls under low load condition	SOLUTION: D,E,L,M,O

Cause	Solution
<b>A</b> -Insufficient oil to pump	Check oil level in reservoir
<b>B</b> -Air in oil	Check oil level in reservoir
<b>C</b> -Excessive pump inlet vacuum	Check pump inlet hose for blockage or kinks
<b>D</b> -Blocked hydraulic lines	Flush and clean the processor hydraulic system
<b>E</b> -Blocked control valve	Flush and clean the processor hydraulic system
<b>F</b> -Low control valve setting	Adjust control valve with a pressure gauge
<b>G</b> -High control valve setting	Adjust control valve with a pressure gauge
<b>H</b> -Damaged control valve	Return control valve for authorized repair
<b>I</b> -Internal control valve leak	Return control valve for authorized repair
<b>J</b> -Internal cylinder leak	Return cylinder for authorized repair
<b>K</b> -Internally damaged cylinder	Return cylinder for authorized repair
<b>L</b> -Engine Control out of adjustment	Adjust idle control nuts
<b>M</b> -Engine is loaded during idle down mode	Use shorter log length (24" or less) to allow engine to speed up before contact.
<b>N</b> -Coupler between engine and hydraulic pump disconnected	Ensure the rubber coupler is in place and tighten hex screw.
<b>O</b> -Dirty Air Filter	Clean or Replace Filter

## Specifications

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Model	RR20T 20 Ton Firewood Processor
Engine	Powerfist 15HP or Kohler 14HP
Maximum Splitting Force	20 Tons
Bar	18"
Chain	18" .325" .058"/1.5mm 72 drive teeth
Hydraulic Oil Capacity	25 litres (6 gallons) AW32
Maximum Log Length (cut)	47.5 cm (19")
Maximum Log Diameter	38.75 cm (15.5")
Pump Capacity	36L/Min 2 Stage Pump 3000 Psi
Saw Motor	28.8L/Min 6000 RPM
Conveyor	320 cm (128")
Conveyor Pump	18L/min 3000 Psi
Trailer Coupler	2"
Hydraulic Cylinder Stroke	50 cm (20")
Cycle Time	8 seconds
Maximum Towing Speed	70 km/h (45 mph)

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

**Note: Any modification to Processor will void all warranty**

**Failure to do regular maintenance will void warranty**

**Only Use AW Series Hydraulic Oil, Use of any other Oil will Void All Warranties**

## Spare Parts

RR2121	18" Chain
RR2122	18" Bar
RR2166	6 Way Splitter
RR2124	12" Tire & Rim Assembly
RR1103	Ram Engagement Cable
RR2125	Saw Motor
RR2126	Conveyor Motor
RR2127	Hydraulic Pump, 2 Stage
RR2130	Hydraulic Valve, Ram Engagement
RR2131	Conveyor Belt
RR2133	Battery
RR2134	Slider Wear Plate
RR2140	95 Series Lovejoy Rubber Coupler
RR2138	18mm Hydraulic Pump Coupler
RR2167	1" Engine Coupler
RR2158	P55-1551 Donaldson Hydraulic Filter (or equivalent)
RR2144	Chainsaw Drive Sprocket
RR2143	Saw Motor Oil Seal

## **Range Road Equipment (Except Pellet Machines & Hammer Mills)**

This equipment comes with a 12 month warranty against Manufacturer's defects and excludes wear parts. If any product or part is proved to be defective within 12 months from date of purchase, by reason of improper workmanship and/or material we will replace, or repair at Range Road Enterprises Ltd. discretion, that part or product at no charge to you, excluding any freight costs. Pellet Makers & Hammer Mills come with a 6 month warranty against Manufacturer's defects and excludes wear parts.

### **Items not covered:**

Wear parts -including Saw Bar, Saw Chain, Drive Sprocket, Lovejoy Coupling & Rubbers, Tires, Bearings, Etc.  
(Conveyor Belt - does not include rips or tears)

**The engine is warranted separately by the engine manufacturer** (Honda, Lifan, Kohler, Princess Auto, Subaru, Etc.)

The warranty begins on the date of sale and is warranted by Range Road Enterprises Ltd. to the original purchaser only. This Warranty does not cover items that have been damaged by accident, alteration, abuse or improper lubrication.

If the equipment is used commercially (Over 50 cords of firewood per year for processor) or a rental, warranty for this product is limited to a period of 90 days from the date of purchase.

### **Warranty cancellation**

Unauthorized modification voids the warranty, Including but not limited to, welding, engine modification, pump and hydraulic system modification. The warranty is void if the user violates the assembly and/or operating & maintenance instructions.

Range Road Enterprises Ltd. shall not be liable under any circumstances for any incidental or consequential damages or expenses of any kind, including but not limited to - the cost of equipment rental, loss of profits, or cost of hiring services to perform tasks normally performed by the equipment.

Range Road Enterprises Ltd. obligation under this warranty shall be exclusively limited to repairing or replacing (at Range Road Enterprises Ltd. discretion) products which are determined by Range Road Enterprises Ltd. to be defective upon delivery F.O.B. (return freight paid by customer) Range Road Enterprises Ltd., and on inspection by Range Road Enterprises Ltd.. This warranty does not apply to defects due, directly or indirectly, to misuse, abuse, negligence, accidents, unauthorized repairs, alterations, lack of maintenance, acts of nature, or items that would normally be consumed or require replacement due to normal wear. In no event shall Range Road be liable for death, personal or property injury, or damages arising from the use of its products. Range Road Enterprises Ltd. does not issue credits or refunds on products purchased directly from a distributor or dealer.