

OPERATOR'S MANUAL

ROTARY RAKE

RR2324



FRONTIER

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INTRODUCTION

Thank-You for choosing the Frontier Rotary Rake. Your rake is the result of years of research and development work. This Operator's Manual will familiarize the operator with the safety and operation of the machine. Included are complete instructions for assembly, operation, lubrication, and maintenance procedures. Understanding and following these procedures will result in years of maximum performance from your Frontier Rake.

Read entire manual before operating. Failure to follow the instructions outlined in this manual may result in personal injury and/or damaged equipment, and could void the warranty.

Rake Serial Number

The rake's serial number can be found near the front on the main frame of the rake. Please use this number when requesting service, seeking information, or ordering parts. For the operator's convenience, space to record the serial number, model number, purchase date, and dealer has been provided inside the front cover of this manual.

All pictures and instructions in this manual assume that the right and left side of the machine are that of someone standing behind the rake facing forward.

Specifications



Specifications	RR2109	RR2211	RR2324
Working Width	10' 8"	13'	27'
Raking Width	9'	11'	24'
Transport Width	9' 4"	59"	101"
Gear Box	Enclosed Oil Bath		Sealed/Greasable
Gear Reduction	9.7 to 1		
Tine Arms	9	11	13
Double Tines per Arm	3	4	4
PTO HP Requirement	30 HP - 540 RPM	40 HP - 540 RPM	50 HP - 540 RPM
Hydraulic Requirement	1200 psi		1800 psi
Direction of Raking Action	Left	Left	Left
Weight	1050 lbs	1550 lbs	3840 lbs.
Tandem Axles	Standard	Standard	Standard
Wheels & Tires	18.5 x 8 Flotation Tire/Painted Steel 4-Bolt Rim		

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SAFETY

-  ***This symbol precedes specific safety instructions throughout this manual. When reading the manual pay close attention to the information that follows this symbol.***
-  FAILURE TO FOLLOW INSTRUCTIONS IN THIS MANUAL COULD RESULT IN PERSONAL INJURY OR DEATH. READ ENTIRE MANUAL BEFORE OPERATING ROTARY RAKE.
-  Keep hands, feet and clothing away from the machine's input power take-off (PTO) and any other moving parts until the machine has been shut down and the power source has been locked out. (Refer to Power Source Safety)
-  Do not adjust, unclog, lubricate, or service the machine until it has been shut down and the power source has been locked out. (Refer to Power Source Safety)
-  Do not lubricate or adjust the machine while it is in motion.
-  Support the rake securely while working under it.
-  Do not stand between the tractor and the rake while attaching or detaching the rake unless the tractor engine is shut off and the parking brake has been set.
-  Be certain all bystanders and animals are a safe distance away from the rake before raising or lowering it. Never allow anyone to ride on the rake or the tractor.
-  When transporting, never exceed a speed of 20 MPH (32 km/hr.) and avoid sudden turns which may compromise the operator's control of the tractor.
-  Be constantly aware of the location of the ends of the rake to avoid collision with other objects.
-  When moving the rake on public roads use the proper reflectors, lights, and slow moving vehicle signs required by local government agencies.

Power Source Safety

-  Do not use a power take-off (PTO) shaft without a rotating shield in good working order. Make sure drive system safety shields are in place for both the power source and the rake.
-  The rake input PTO must be securely attached to both the power source and the input shaft.
-  Do not overextend the input PTO shaft.
-  Make sure PTO is disengaged before starting power source.
-  PTO shield chains must be attached to the tractor and the rake to keep the shield from rotating.



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SAFETY CONT'D

Safety Decals and Reflectors

Decals and reflectors are for the protection of yourself and others. If they are missing, faded, or not readable, get replacements from your dealer immediately.

CAUTION

To avoid serious injury:

- Read Operator's Manual before operating, servicing or repairing equipment. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from tractor seat only.
- Keep all shields in place and good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.

DANGER



Entanglement in rotating driveline can cause serious injury or death.


Keep all shields in place.

Avoid contact with rotating parts.

CAUTION

Operate only with 540 rpm PTO

WARNING



High-Pressure hydraulic oil leaks can penetrate skin resulting in serious injury, gangrene, or death.

- Check for leaks with cardboard; never use hand.
- Before loosening fittings: lower load, release pressure, and be sure oil is cool.
- Consult physician immediately if skin penetration occurs.

WARNING



To help prevent entanglement, stand clear of tines.

Disengage and shut off all engine power before adjusting tine height.

WARNING

THROWN OBJECTS



Do not operate near people. Debris can be thrown a long distance.

WARNING



Do not exceed this implement's maximum transport speed of 32km/h (20mph).

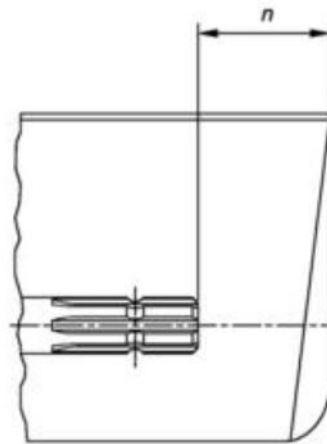
Exceeding this speed may result in loss of control during transport or braking and serious injury or death.

Transport only with a properly ballasted tractor and a properly attached safety tow chain. Do not transport with a motor vehicle. Reduce speed and use additional caution when on inclines, towing under adverse surface conditions, and turning.

Stay Clear of Rotating Drivelines



TS1644-UN-22AUG95



H96219-UN-29APR10

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Wear close fitting clothing. Stop the engine and be sure that PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Do not install any adapter device between the tractor and the primary implement PTO drive shaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft and the added adaptor device as outlined in the table.

PTO Type	Diameter	Splines	$n \pm 5 \text{ mm (0.20 in.)}$
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)

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