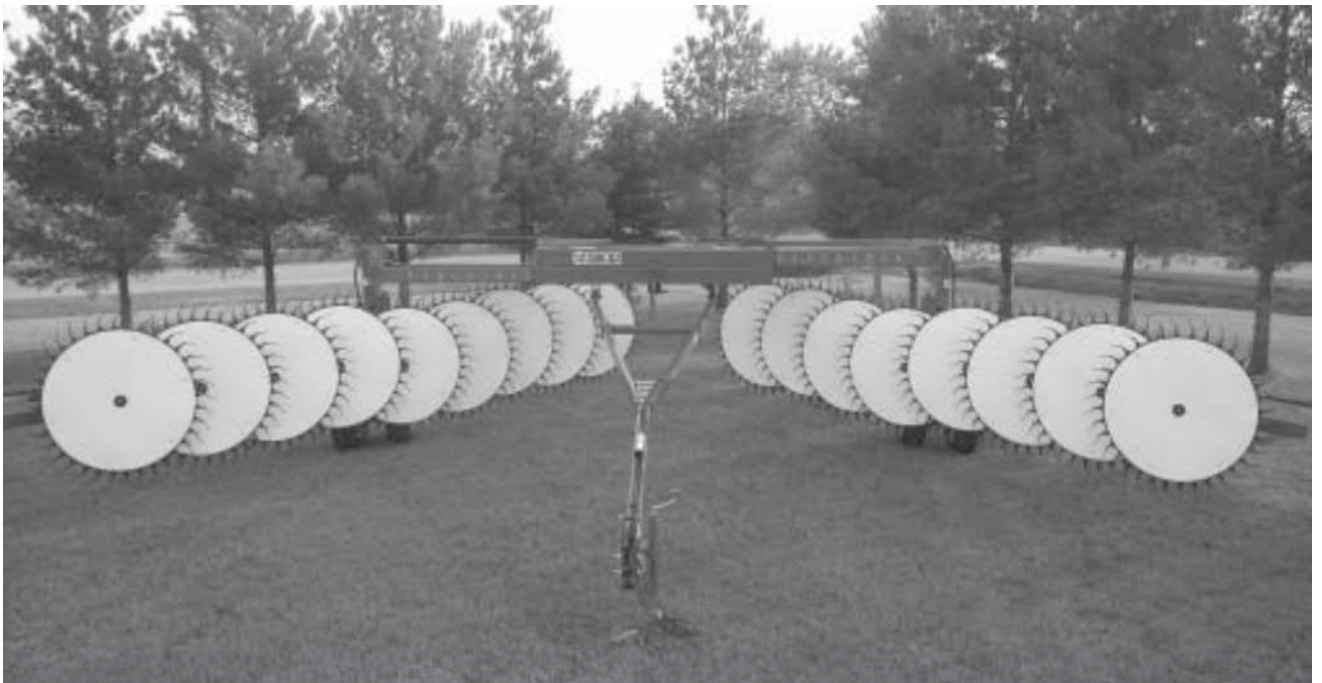


OPERATOR'S MANUAL

HEAVY DUTY WHEEL RAKE

|WR1417

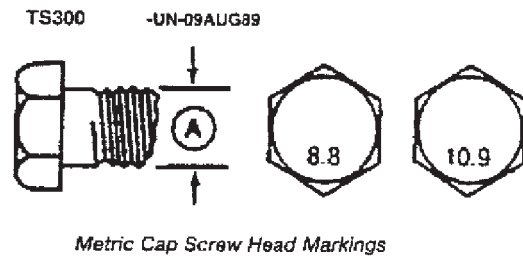
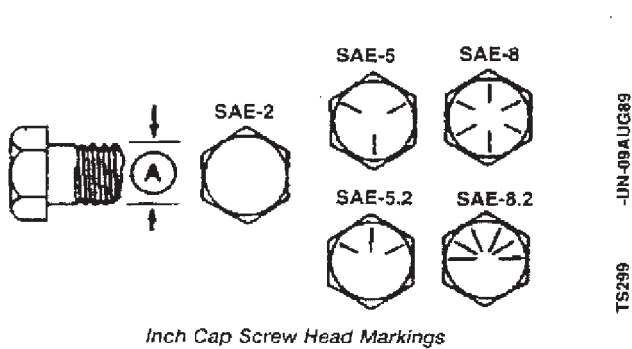


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TABLE OF CONTENTS

TABLE OF CONTENTS.....	INSIDE COVER
WARRANTY & WARRANTY STATEMENT.....	1
DEALER PRE-DELIVERY & DELIVERY CHECKLIST.....	3
SPECIFICATIONS.....	5
BOLT TORQUE CHART.....	6
BE ALERT SYMBOL.....	7
SAFETY RULES.....	8-9
DANGER - WARNING DECALS.....	10
OPERATION WR1417.....	11-13
ADJUSTMENTS.....	14-15
LUBRICATION WR1417.....	16
DECAL LOCATION.....	17
TROUBLE SHOOTING.....	18
ORDERING PARTS - ABOUT IMPROVEMENTS.....	19
PARTS LISTS & DIAGRAMS WR1417.....	20-29
TECHNICAL HYDRAULICS.....	30
TECHNICAL WIRING MAIN HARNESS.....	31
TECHNICAL WIRING CONTROL BOX HARNESS.....	32
OPEN CENTER CHANGE.....	33
SERVICE RECORDS.....	34

CAP SCREW TORQUE VALUES



INCH CAP SCREW TORQUE VALUES

METRIC CAP SCREW TORQUE VALUES

Bolt Diameter Wrench (A) Size	Cap Screw Grade					
	SAE 2		SAE 5		SAE 8	
	N-m	lb.-ft	N-m	lb.-ft	N-m	lb.-ft
1/4" 7/16"	7 (5)		11 (8)		16 (12)	
5/16" 1/2"	14 (10)		23 (17)		33 (24)	
3/8" 9/16"	24 (18)		41 (30)		54 (40)	
7/16" 5/8"	41 (30)		68 (50)		95 (70)	
1/2" 3/4"	61 (45)		102 (75)		142 (105)	
9/16" 13/16"	88 (65)		142 (105)		203 (150)	
5/8" 15/16"	122 (90)		197 (145)		278 (205)	
3/4" 1-1/8"	217 (160)		353 (260)		495 (365)	
7/8" 1-5/16"	224 (165)		563 (415)		800 (590)	
1" 1-1/2"	332 (245)		848 (625)		1193 (880)	
1-1/4" 1-7/8"	685 (490)		1492 (1100)		2393 (1765)	

Bolt Diameter Wrench (A) Size	Markings on Cap Screw Heads			
	8.8		10.9	
	N-m	lb.-ft	N-m	lb.-ft
5 mm 8 mm	6 (4.5)		9 (6.5)	
6 mm 10 mm	10 (7.5)		15 (11)	
8 mm 13 mm	25 (18)		35 (26)	
10 mm 16 mm	50 (37)		75 (55)	
12 mm 18 mm	85 (63)		130 (97)	
16 mm 24 mm	215 (159)		315 (232)	
20 mm 30 mm	435 (321)		620 (457)	
24 mm 36 mm	750 (553)		1070 (789)	
30 mm 46 mm	1495 (1103)		2130 (1571)	



CAUTION: Use only metric tools on metric hardware. Other tools may not fit properly. They may slip and cause injury.

DO NOT use these values if a different torque value tightening procedure is listed for a specific application. Torque values listed are for general use only. Check tightness of cap screws periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade. Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fastener threads are clean and you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of amount shown in chart. Tighten toothed or serrated-type lock nuts to full torque value.



**BE
ALERT!**

**YOUR SAFETY
IS INVOLVED.**

THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER YOUR PERSONAL SAFETY IS INVOLVED. TAKE TIME TO BE CAREFUL. REMEMBER: THE CAREFUL OPERATOR IS THE BEST OPERATOR. MOST ACCIDENTS ARE CAUSED BY HUMAN ERROR. CERTAIN PRECAUTIONS MUST BE OBSERVED TO PREVENT THE POSSIBILITY OF INJURY OR DAMAGE.

TRACTORS

This operator's manual uses the term "Tractor" when identifying the power source.

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



UNDERSTAND SIGNAL WORDS

A signal word- DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

Safety signs with signal word DANGER or WARNING are typically near specific hazards.

General precautions are listed on CAUTION safety signs.



FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual, and all safety signs on your machine. Follow all recommended precautions and safe operating procedures.

Keep signs in good condition. Immediately replace any missing or damaged signs.

TRACTORS

This operators manual uses the term “Tractor” when identifying the power source.



WARNING

TO PREVENT SERIOUS INJURY OR DEATH

BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT, WHETHER FAMILY MEMBER OR EMPLOYEE, IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

DO NOT attempt to perform maintenance or repair with tractor running.

DO NOT step up on machine at any time.

DO NOT allow minors to operate or be near the machine.

DO NOT ALLOW PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MACHINE.

Loose or floppy clothing should not be worn by the operator.

Stop the tractor engine, remove ignition key, and allow all mechanisms to stop before cleaning, working, or adjusting on machine.

Stay clear of hydraulic lines, they may be under extreme pressure or heat.

Stay clear of rake when opening or closing main rake arm beams, or raising or lowering rake wheels.

For transport, always make sure that the hair pin at the rear of the lift pipes, and the transport lock bracket with safety lynch pins for main rake beam cylinders, are securely locked in place.

To reduce stress on rake arms, lift pipe, springs and spring brackets, reduce oil flow from tractor to lift cylinders whenever possible.

Be sure to raise rake wheels before opening or closing main rake beams.

Frontier always takes the operator and his safety into consideration and guards exposed moving parts for their protection. However, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operators manual and decals on the machine itself warn you of further danger and should be read and observed closely.

Study The Above Safety Rules

ATTENTION - BE ALERT - YOUR SAFETY IS INVOLVED

Thank you so much for reading.
Please click the “Buy Now!”
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