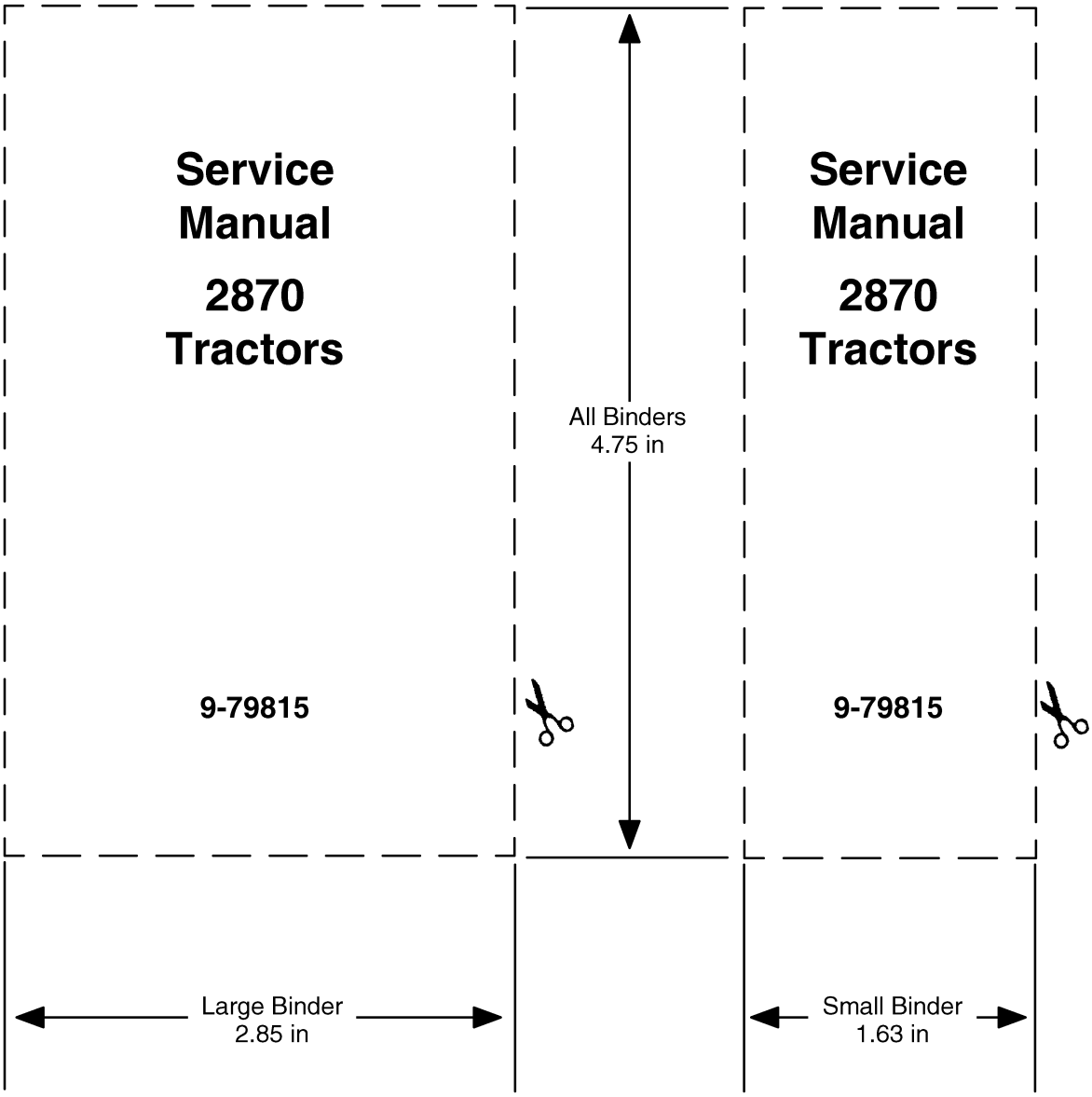
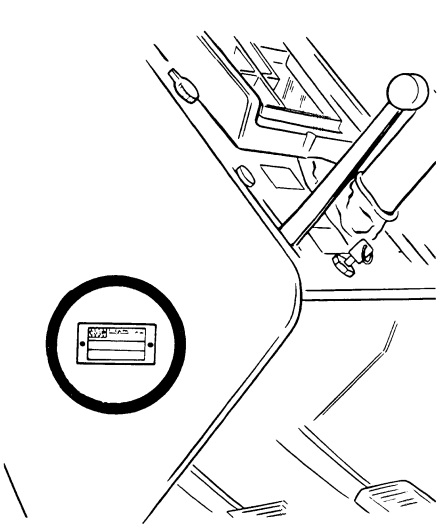

Service
Manual
2870
Tractors
9-79815
All Binders
4.75 in
Service
Manual
2870
Tractors
9-79815
Large Binder
2.85 in
Small Binder
1.63 in

TABLE OF CONTENTS
2870 TRACTORS

Section
1010

2870 TRACTOR
GENERAL SPECIFICATIONS

SERIAL NUMBERS



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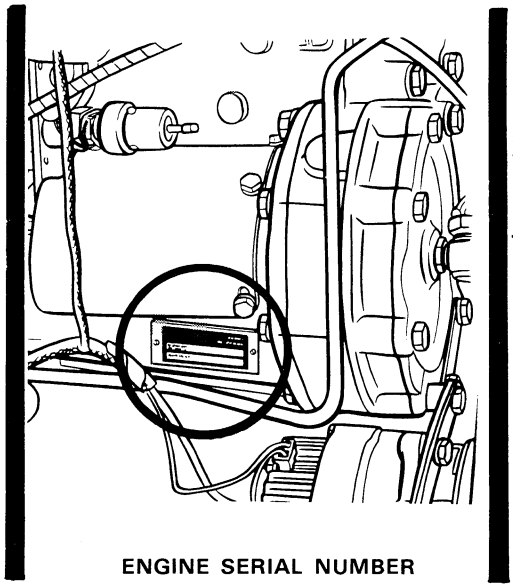

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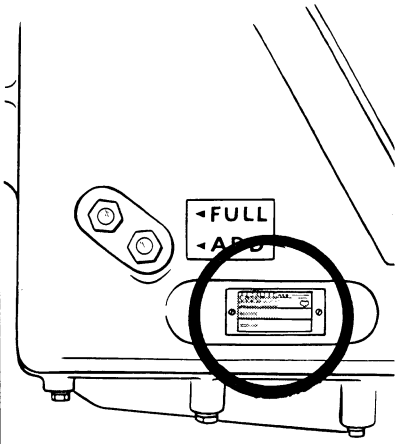

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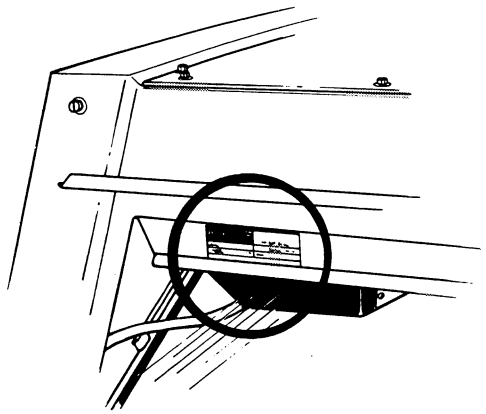
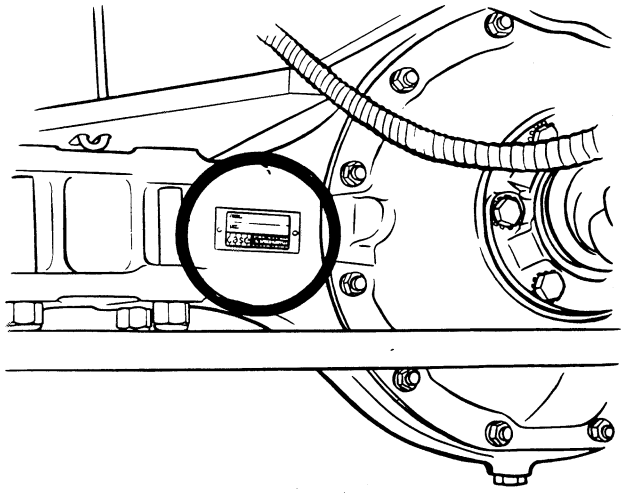


CAB SERIAL NUMBER



AXLE SERIAL NUMBER

CASE CORPORATION

Rac 9-80416

PRINTED IN U.S.A.

DIESEL ENGINE

General

Type	6 Cylinder, 4 Stroke Cycle, Valve-In-Head, Turbocharged Diesel Engine
Firing Order	1-5-3-6-2-4
Bore	5 Inches (127mm)
Stroke	5.71 Inches (145mm)
Piston Displacement	674 Cubic Inches (11 045 cm^3)
Compression Ratio	14.7 to 1
Cylinder Sleeves	Removable Wet Type
No Load Governed Speed	2330 to 2420 RPM
Rated Engine Speed	2200 RPM
Engine Idling Speed	750 to 800 RPM
*Valve Tappet Clearance (Exhaust)	(Cold) .031 Inch (0.80mm)
	(Intake) (Cold) .014 Inch (0.35mm)

Piston and Connecting Rod

Rings per Piston	4
Number of Compression Rings	3
Number of Oil Rings	1
Type Pins	Full Floating Type
Type Bearings	Replaceable Steel Back With Lead-Bronze Liners

Main Bearings

Number of Bearings	7
Type Bearings	Replaceable, Steel Back with Lead-Bronze Liners

Engine Lubrication System

Oil Pressure	65 to 87 PSI (448 to 600 kPa) Engine Warm and Operating at Rated Engine Speed
Type System	Pressure and Spray Circulation
Oil Pump	Gear Type
Oil Filtration	Oil Cleaned Continuously by Cyclonic Separation and Centrifugal Cleaner.
Oil Capacity	28.4 U.S. Qts. (26.9 litres)
Oil Cooling	Oil Cooler Flange Mounted to Oil Cleaner; Water Cooling.
Turbocharger Oil Filter	Full Flow Spin-On Type

Fuel System

Fuel Injection Pump ..... Robert Bosch, Multiple Plunger

Pump Timing ..... 20 Degrees Before Top Dead Center

Fuel Injectors ..... Robert Bosch, 21mm Opening Pressure
2930 to 3045 PSI (20 202 to 20 995 kPa)

Fuel Transfer Pump ..... Plunger Type, Integral Part of Injection Pump

Governor ..... Variable Speed, Fly-Weight Centrifugal Type,
Integral Parts of Injection Pump.

First Stage Filter ..... Full Flow Spin-On Type

Second Stage Filter ..... Full Flow Spin-On Type

Fuel Tank Water Trap and Drain (2) ..... Located in Base of Each Fuel Tank

Fuel Tank Capacity ..... 75 U.S. Gallons (283.9 litres) Each Tank

Fuel Level Gauge ..... Electric, Located on Instrument Panel

Hand Primer Pump ..... Located on Top of the Fuel Transfer Pump

Preliminary Fuel Filter ..... Located at the Bottom of the Fuel Transfer Pump

TRACTOR SPECIFICATIONS

Air Intake System

Type ..... Air Induction System - Aspirated - Strata Tube With Dry Type Final and Safety Elements.

Cooling System

Capacity of System ..... 44 U.S. Quarts (41.6 litres)
Type of System ..... Pressurized, Thermostat Controlled By-Pass Type: Forced Circulation, (Centrifugal Type Pump).
Radiator ..... Heavy Duty Fin and Tube Type
Thermostat (2) ..... Thermostats Start to Open approximately 175°F (79°C) Fully Open at 202°F. (94°C.)
Pressure Cap Required ..... 14 PSI (96.5 kPa)

Hydraulic Brakes

Type ..... Self-Adjusting Multiple Disc Dry Type Transmission Brakes.

Parking Brake

Type ..... Cable Actuated by over center Type Handle - Adjustable from Operator's Seat. Multiple Disc Type

Electrical System

Type of System ..... 12 Volt Negative Ground
Batteries ..... (2) 12 Volt Batteries Connected in parallel Group Size 30H, Rated in 1.255 to 1.265 Specific Gravity. Discharge Rate 300 Amps at 0°F. Voltage drops to 9.2 after 10 seconds. Voltage drops 1.0 Volt per cell after 5 min.
Alternator ..... 12 Volt 61 Amp Output, Negative Ground
Voltage Regulator ..... 12 Volt, Solid State, Internal Component of Alternator.
Starter Motor ..... 12 Volt with Solenoid Switch
Head Lights (2) ..... 12 Volt, 40/60 Watt Sealed High-Low Beam
Front Flood Lights (2) (optional) ..... 12 Volt, 35 Watt Sealed Beam
L.H. Rear Flood and Tail Light (1) ..... 12 Volt, 60 Watt Sealed Beam Combination Tail and Flood Lamp.
R.H. Rear Flood (optional) (1) ..... 12 Volt, 60 Watt Sealed Beam
Circuit Breaker System over Load Check ..... Two 40 Amp. 12 Volt Circuit Breakers connected in parallel, 80 Amp rating, 60 Amp. Min. Continuous Capacity.
Lights Circuit Breaker ..... 40 Amp., Located on Light Switch
Parking Brake Warning Buzzer ..... 12 Volt
Flasher Lights (2) With Directional Turn Signals ..... 12 Volt, Amber Lens

Electrical System

Bulb and Lamp Replacement:
- Instrument Cluster Warning Bulbs ..... No. 194
- Instrument Cluster Illumination Bulbs ..... No. 168
- Pyrometer Illumination Bulb ..... No. 53
- Dome Light Bulb ..... No. 93
- Console Light Bulb ..... No. 168
- Flasher Light Bulbs ..... No. 1156
- Front Driving Lamps ..... No. 4652
- Front Flood Lamps ..... No. 4406
- Rear Flood Lamp ..... No. 4466
- Rear Flood and Tail Lamp:
  - Lamp ..... No. 4469
  - Bulb ..... No. 1003

Power Shift Transmission

Type ..... 3 Speed Compound Planetary With Hydraulically Actuated Clutches and a 4 Speed Gear Range Section.

Gear Selection ..... 12 Speeds Forward and 4 Speeds Reverse.

Shifting ..... Hydraulic Power Shifting Controlled By a Lever on Operator's Console. 4 Speed Range Controlled by a Mechanical Shifter From a Lever on Operator's Console.

Oil Type ..... Case TFD (Transmission - Final Drive)

Oil Capacity (Without PTO) ..... 40 U.S. Quarts (37.9 litres)
(With PTO) ..... 44 U.S. Quarts (41.6 litres)

Hydraulic Pump

Type ..... Direct Drive, Gear Type, Triple Hydraulic Pump

First Section ..... Charging Pump, Capacity at 2200 Engine RPM - 44 GPM (166.6 l/min.)

Intermediate Section ..... Supplies oil to the Transmission Hydraulics and PTO. Capacity at 2200 Engine RPM - 17 GPM (64.4 l/min.).

Third Section ..... Supplies oil to the Steering System. Capacity at 2200 Engine RPM 19 GPM (71.9 l/min.).

Front Steering ..... 9.8 GPM (37.1) l/min.)
Rear Steering ..... 4.2 GPM (15.9 l/min.)

Hydrostatic Front Power Steering

Oil Supply ..... Triple Hydraulic Pump

HGA Hydrostatic Type ..... Integral and Bi-Directional Gerotor Metering Section, Actuated By The Steering Wheel.

Front Steering Cylinders ..... Two Double Acting Cylinders

Rear Power Steering

Oil Supply ..... Triple Hydraulic Pump

Control Valve Type ..... 4 Way, Three Position Spool Type.

Rear Steering Cylinders ..... Two Double Acting Cylinders

Controls ..... Hand Lever on Instrument Panel (Manual or Automatic)

Axle Differential and Planetaries

Front and Rear ..... Spiral Bevel with Planetary Reduction in Hub.

Differential Oil Cap (Front & Rear) Each ..... 24 U.S. Quarts (22.7 litres)

Planetary Oil Cap. eac. (Front & Rear) Each ..... 12 U.S. Quarts (11.4 litres)

3 Point Hitch System

Type Control ..... Hand Lever

Type Valve ..... 3 Positions - Raise - Hold - Lower with Speed Control

Type Draft Arms ..... Rigid Swinging, with Manual Float Adjustment

Type Hitch ..... 3 Point Category III

Hitch Coupler ..... Case Available - Category III

L.H. Dual Remote Hydraulic System

Type Remote Valve (L.H. Side) ..... Dual Valve w/Built-in Female ASAE R366 Standard Hydraulic Couplers. Individual Hand Lever Control.

Portable Cylinder Male Couplings Available ..... Quick Detachable Break-away Type

Oil Supply ..... Triple Hydraulic Pump

Relief Valve Pressure ..... 2150 to 2250 PSI (14 824 to 15 514 kPa)

Portable Cylinders ..... Case Cylinders Available

R.H. Dual Remote Hydraulic System

Oil Supply ..... From L.H. Remote Valve (Connected in Series)

Type Remote Valve (R.H. Side) ..... Dual Valve W/Built-in Female ASAE R366 Standard Hydraulic Couplers. Individual Hand Lever Control.

Relief Valve Pressure ..... Dependent on L.H. Remote

Portable Cylinder Male Couplings ..... Available Quick Detachable Break-away Type.

Portable Cylinders ..... Case Cylinders Available

Power Take-Off

Type Clutch ..... Hydraulically Operated

Rotation ..... Clockwise

Spline Size ..... 20 Splines 1-3/4 In. (44.5mm) Dia.
Adapter 1-3/4" to 1-3/8" Dia. Available

Engine Speed 2200 RPM ..... 1000 RPM Shaft Speed

Drawbar

Yoke Type ..... Full Swinging Roller Mounted,
Will Accommodate a 1-1/2 Inch (38.1mm), Dia. Pin.

Tire and Wheel Equipment – Front and Rear

TIRE SIZE	TIRE PLY & TREAD	RIM SIZE	TIRE ** PRESSURE (No Added Ballast)	TIRE PRESSURE (With Max. Ballast or Heavy Implement)
18.4-34*	6 R1 & R2	W16L-34	16 PSI (110 kPa)	16 PSI (110 kPa)
18.4-34	8 R1 & R2	W16L-34	16 PSI*** (110 kPa)	20 PSI (138 kPa)
20.8-34	6 R1	W18L-34	14 PSI*** (97 kPa)	14 PSI (97 kPa)
20.8-34	8 R1 & R2	W18L-34	16 PSI*** (110 kPa)	18 PSI (124 kPa)
23.1-30	8 R1 & R2	W20L-30	16 PSI (110 kPa)	16 PSI (110 kPa)
24.5-32	10 R1 & R2	DW27-32DC	18 PSI (124 kPa)	20 PSI (138 kPa)
30.5-32	10 R1 & R2	DW27-32DC	16 PSI (110 kPa)	16 PSI (110 kPa)

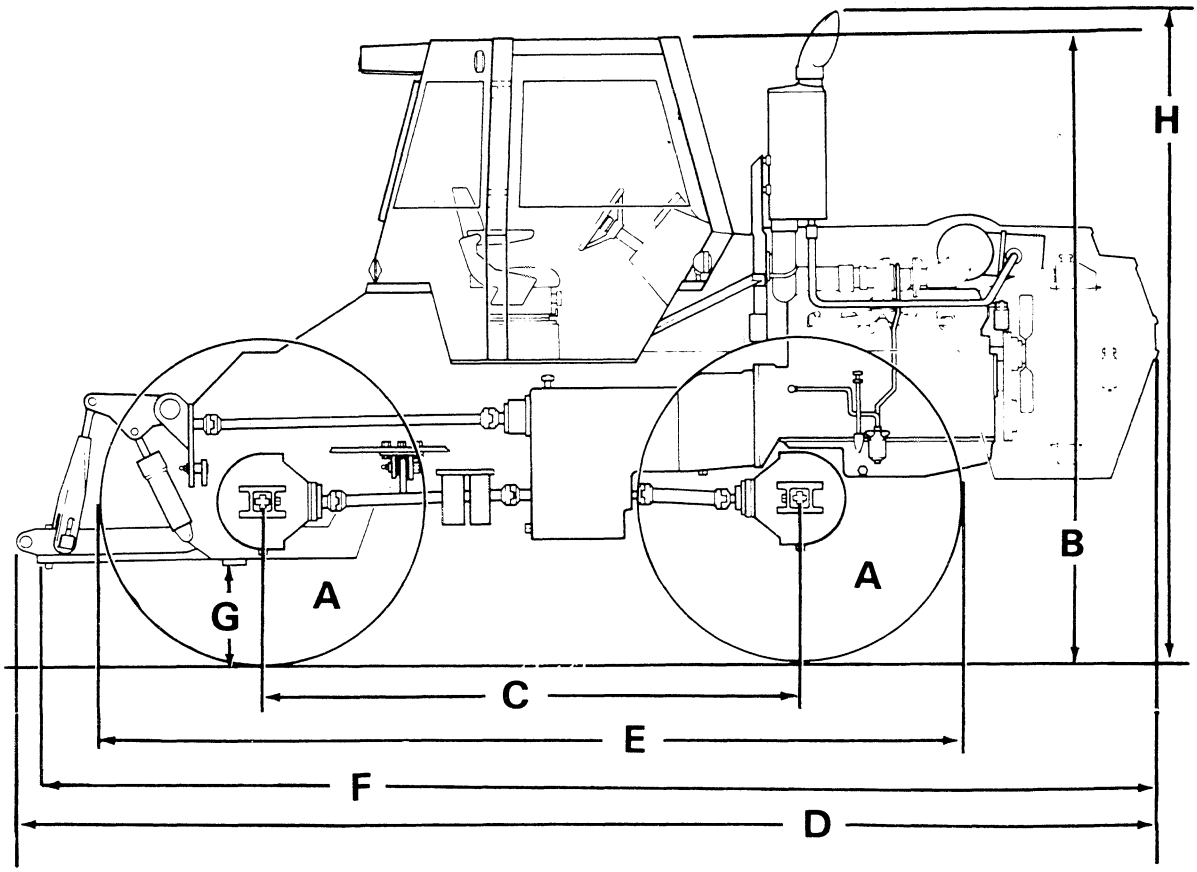
*18.4-34, 6 ply tires can only be used with duals and on outside tires only.
**Minimum inflation pressure for single tires.
***Absolute minimum inflation pressure for tires used as duals is 12 PSI (82.7 kPa).

IMPORTANT: 18.4-34 and 20.8-34 singles are not suitable for use with ballast, either tire liquid or added weights, or with heavy mounted attachments.

Approximate Travel Speeds in MPH and KM/H at 2200 RPM with 12 Speed Power Shift Transmission

TRANSMISSION RANGE	POWER SHIFT			TIRE SIZE
	1	2	3 AND REVERSE	
1	2.0 mph (3.2 km/h)	2.7 mph (4.4 km/h)	3.4 mph (5.5 km/h)	23.1-30
2	3.1 mph (5.0 km/h)	4.1 mph (6.6 km/h)	5.1 mph (8.2 km/h)	
3	4.3 mph (6.9 km/h)	5.8 mph (9.3 km/h)	7.2 mph (11.6 km/h)	
4	7.9 mph (12.7 km/h)	10.7 mph (17.2 km/h)	14.7 mph (23.7 km/h)	
1	2.2 mph (3.5 km/h)	2.9 mph (4.7 km/h)	3.7 mph (6.0 km/h)	30.5-32
2	3.4 mph (5.5 km/h)	4.4 mph (7.1 km/h)	5.6 mph (9.0 km/h)	
3	4.6 mph (10.5 km/h)	6.2 mph (10.0 km/h)	7.7 mph (12.4 km/h)	
4	8.6 mph (13.8 km/h)	11.4 mph (18.3 km/h)	15.7 mph (25.3 km/h)	
1	2.0 mph (3.2 km/h)	2.7 mph (4.4 km/h)	3.3 mph (5.3 km/h)	18.4-34
2	3.0 mph (4.8 km/h)	4.1 mph (6.6 km/h)	5.1 mph (8.2 km/h)	
3	4.3 mph (6.9 km/h)	5.7 mph (9.2 km/h)	7.2 mph (11.6 km/h)	
4	7.9 mph (12.7 km/h)	10.6 mph (17.0 km/h)	14.5 mph (23.3 km/h)	
1	2.0 mph (3.2 km/h)	2.7 mph (4.3 km/h)	3.4 mph (5.5 km/h)	20.8-34
2	3.1 mph (5.0 km/h)	4.2 mph (6.8 km/h)	5.2 mph (8.4 km/h)	
3	4.4 mph (7.1 km/h)	5.9 mph (9.5 km/h)	7.4 mph (11.9 km/h)	
4	8.1 mph (13.0 km/h)	10.8 mph (17.4 km/h)	14.9 mph (24.0 km/h)	

Approximate Overall Measurements



A	TIRE	WHEEL RIM
	23.1-30 RI	W20L-30

F	228 Inches (5 791mm)
B	123 Inches (3 124mm)
D	237 Inches (6 020mm)
G	18 Inches (457mm)
C	110 Inches (2 794mm)
E	175 Inches (4 445mm)
H	131 Inches (3 327mm)

Overall Width (Minimum) ..... 99 Inches (2 515mm)
Turning Radius (Minimum) ..... 210 Inches (5 334mm)
Overall Length (W/Hitch Coupler) ..... 243 Inches (6 172mm)
Rear Axle Oscillation ..... 30°

Approximate Shipping Weight

4 Wheel Steering w/20.8 x 34 Tires ..... 18,500 Pounds (8392 kg)

IMPORTANT: The total tractor weight with ballast and weights must not exceed 28,500 lbs. (12 930 kg).

Operator's Cab

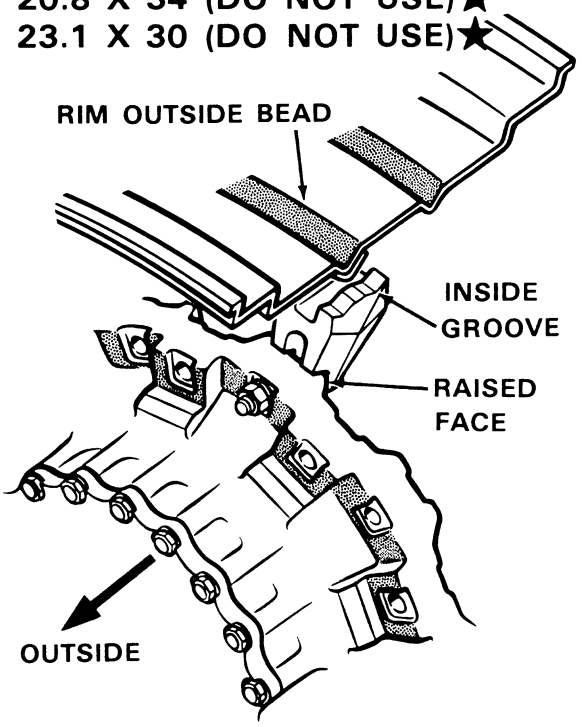
The Case Operators Cab is equipped with built-in roll over protection as specified in ASAE Standard S336.1, SAE Standard J168a, and OSHA Regulation 1928.53.

Wheel Tread Spacing

70 Inch (1 778mm)

TIRE SIZE

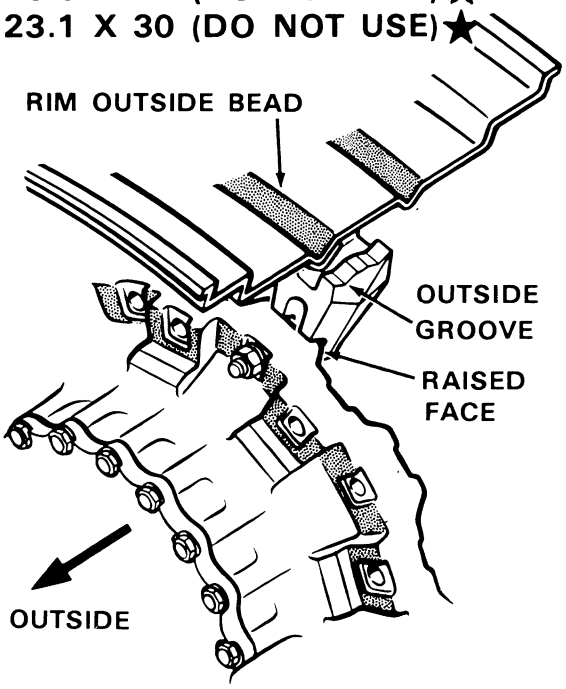
18.4 X 34 (DO NOT USE)★
20.8 X 34 (DO NOT USE)★
23.1 X 30 (DO NOT USE)★



74 Inch (1 880mm)

TIRE SIZE

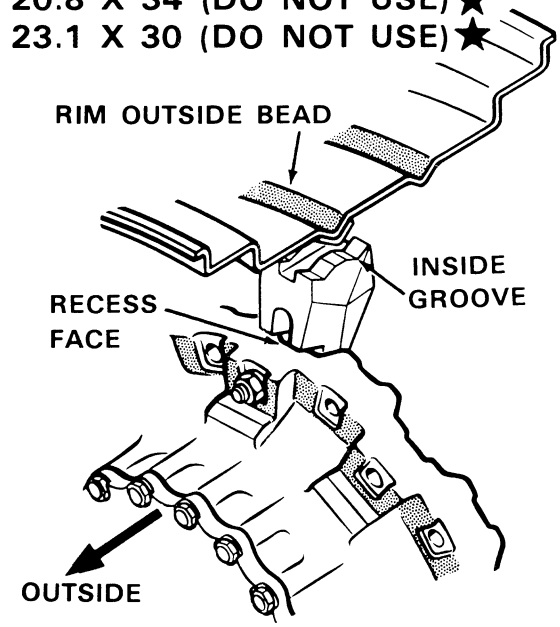
18.4 X 34
20.8 X 34 (DO NOT USE)★
23.1 X 30 (DO NOT USE)★



72 Inch (1 829mm)

TIRE SIZE

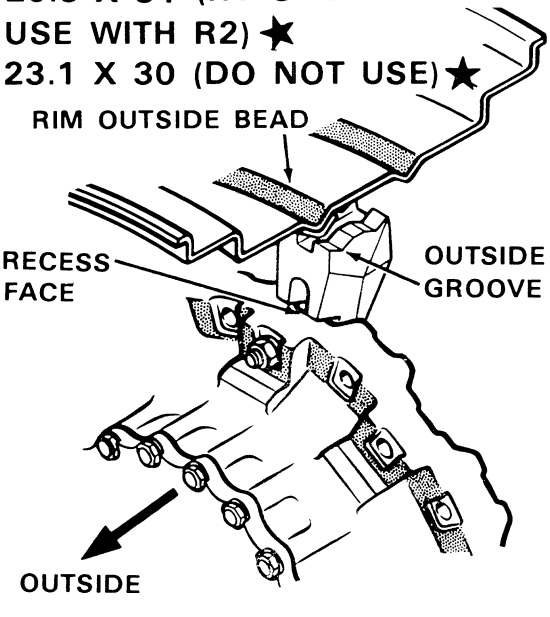
18.4 X 34 (DO NOT USE)★
20.8 X 34 (DO NOT USE)★
23.1 X 30 (DO NOT USE)★



76 Inch (1 930mm)

TIRE SIZE

18.4 X 34
20.8 X 34 (R1 ONLY - DO NOT USE WITH R2) ★
23.1 X 30 (DO NOT USE)★



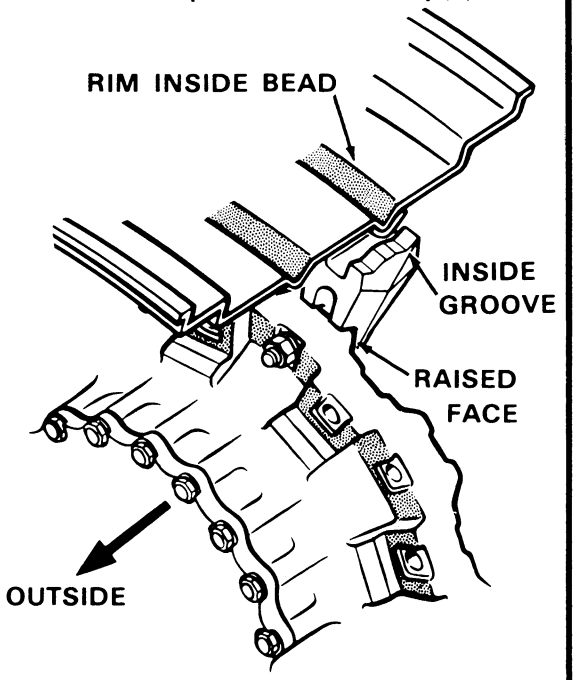
★

IMPORTANT: ***This location should not be used with designated tire because the steering will be reduced and damage to the tires could result.***

Wheel Tread Spacing

78 Inch (1 981mm)

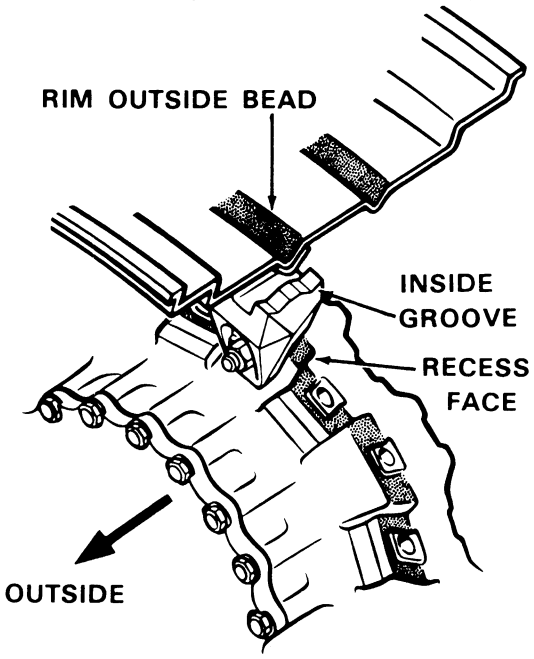
TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30 (DO NOT USE)★



80 Inch (2 032mm) B

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30 (DO NOT USE)★

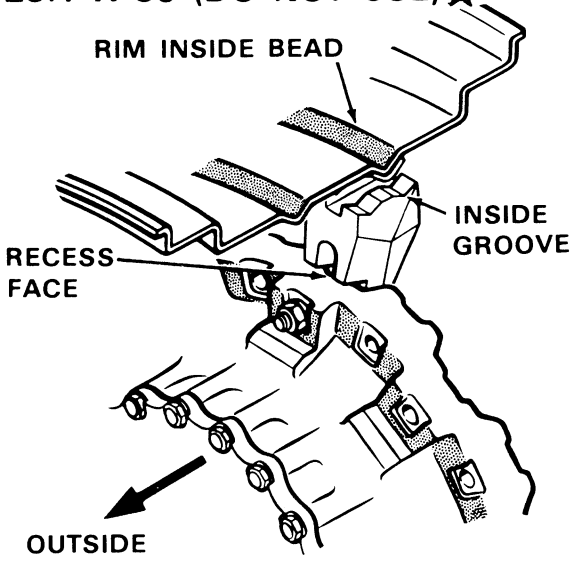
ALSO SEE POSITION "A"



80 Inch (2 032mm) A

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30 (DO NOT USE)★

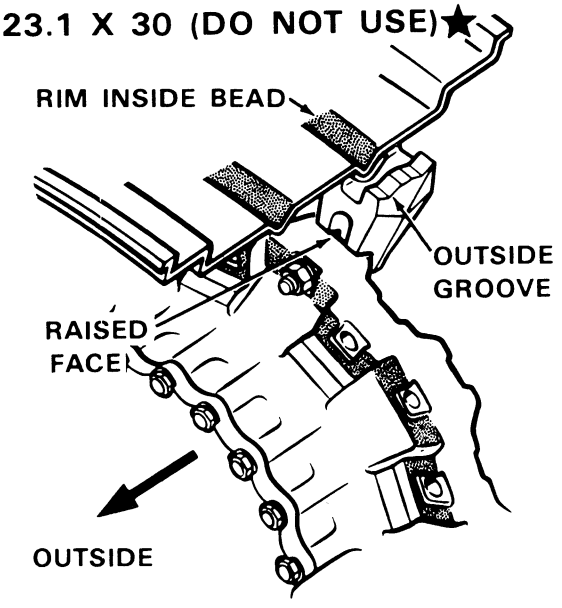
ALSO SEE POSITION "B"



82 Inch (2 083mm) A

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30 (DO NOT USE)★

ALSO SEE POSITION "B"



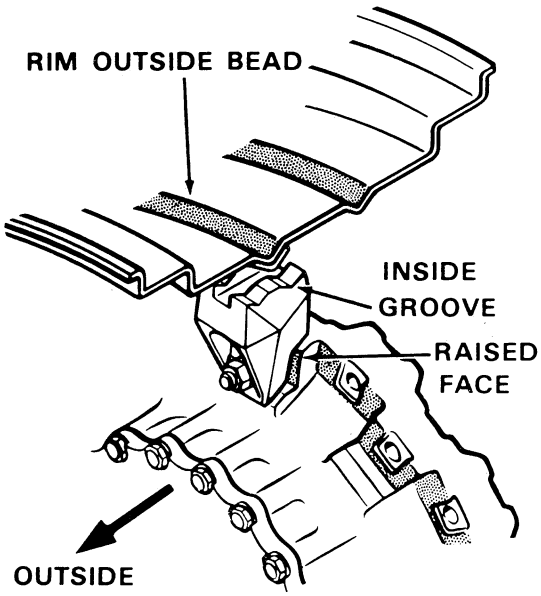
★ **IMPORTANT:** *This location should not be used with designated tire because the steering will be reduced and damage to the tires could result.*

Wheel Tread Spacing

82 Inch (2 083mm) B

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30 (DO NOT USE) ★

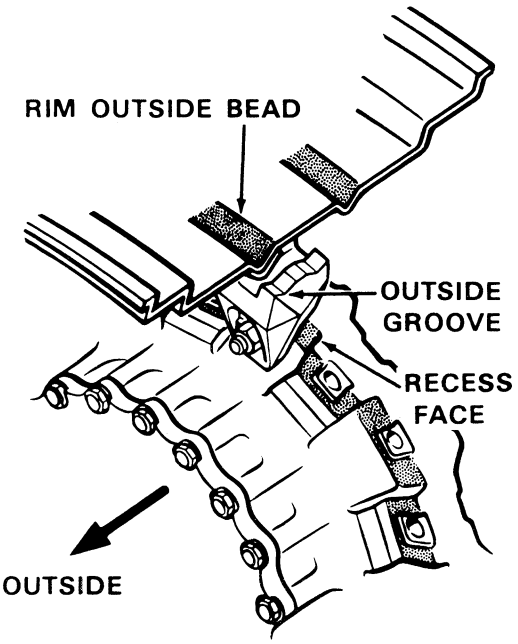
ALSO SEE POSITION "A"



84 Inch (2 134mm) B

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30

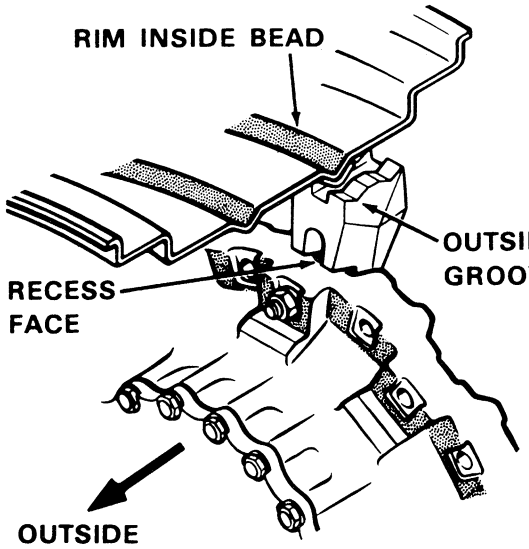
ALSO SEE POSITION "A"



84 Inch (2 134mm) A

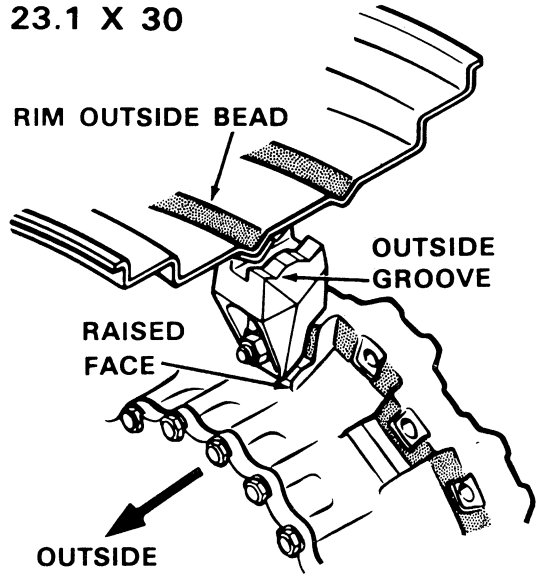
TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30

ALSO SEE POSITION "B"



86 Inch (2 184mm)

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30

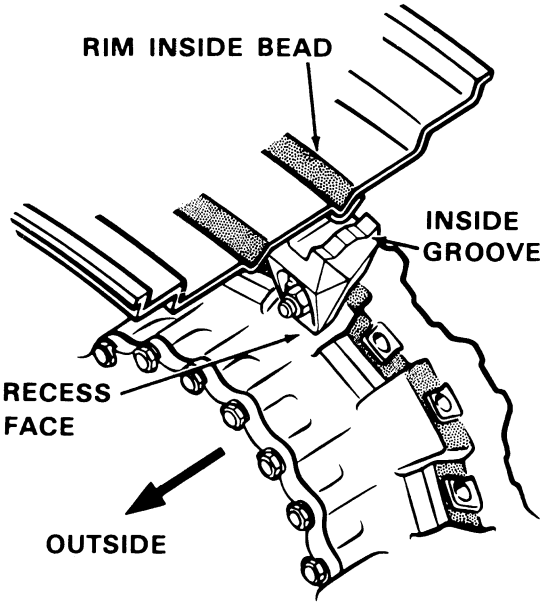


★ **IMPORTANT:** *This location should not be used with designated tire because the steering will be reduced and damage to the tires could result.*

Wheel Tread Spacing

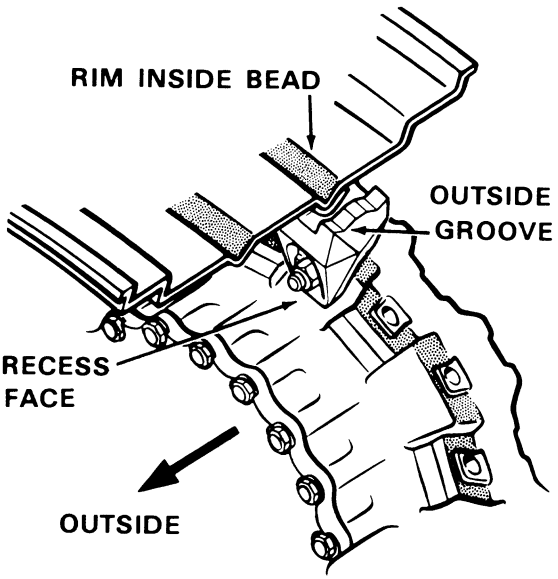
88 Inch (2 235mm)

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30



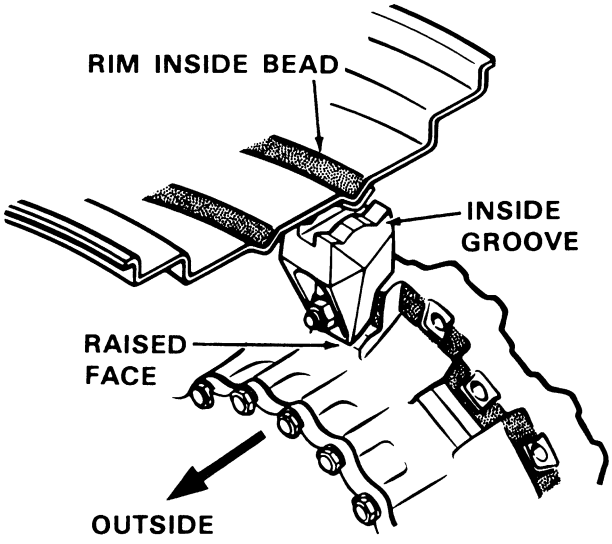
92 Inch (2 337mm)

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30



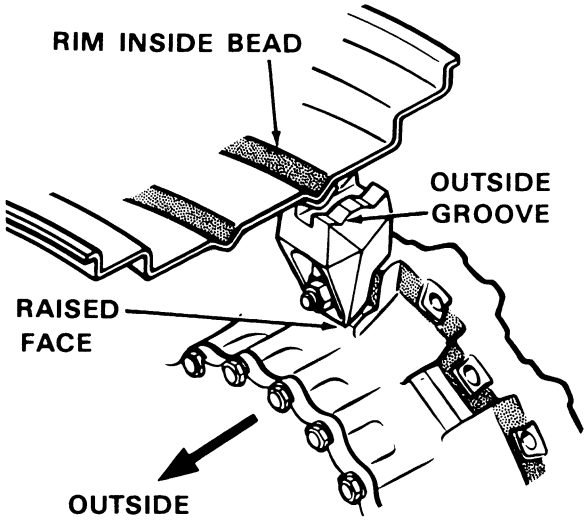
90 Inch (2 286mm)

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30



94 Inch (2 388mm)

TIRE SIZE
18.4 X 34
20.8 X 34
23.1 X 30



NOTE: *Front and rear wheel tread spacing is measured from center-to-center of wheel rims.*

Wheel Tread Spacing With Flanged Mounted Wheels

TIRE SIZE	FIXED TREAD SETTING
24.5 X 32	82 INCHES (2 083mm)
30.5 X 32	88 INCHES (2 235mm)

IMPORTANT: *Do not attempt to remove, repair or install a tractor tire on a rim. Take the tire and rim to an experienced and properly equipped tire shop where special safety equipment is available. If the tire is not positioned properly on the rim or if over-inflated, the bead can blow out on side creating a continuous, high velocity, escaping air jet much like a rocket engine. This jet force can thrust the tire and rim at such tremendous speed and force that the tire and rim becomes a dangerous projectile.*

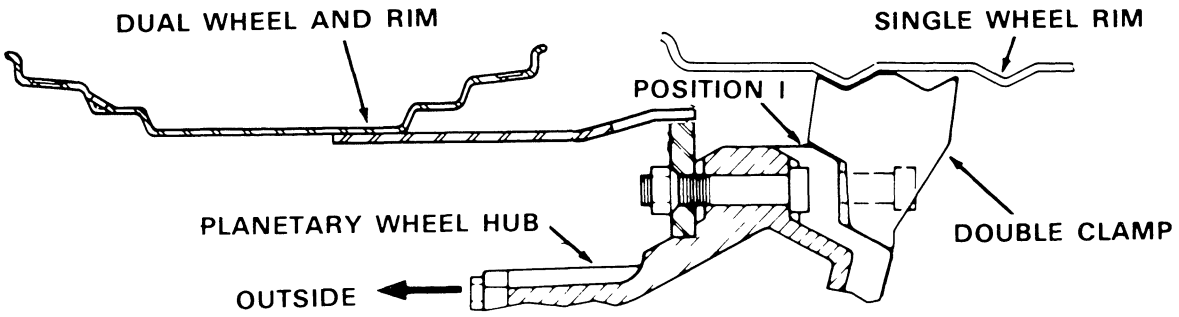
Dual Wheel Tire Pressures

Refer to Tire Pressures listed on Page 7.

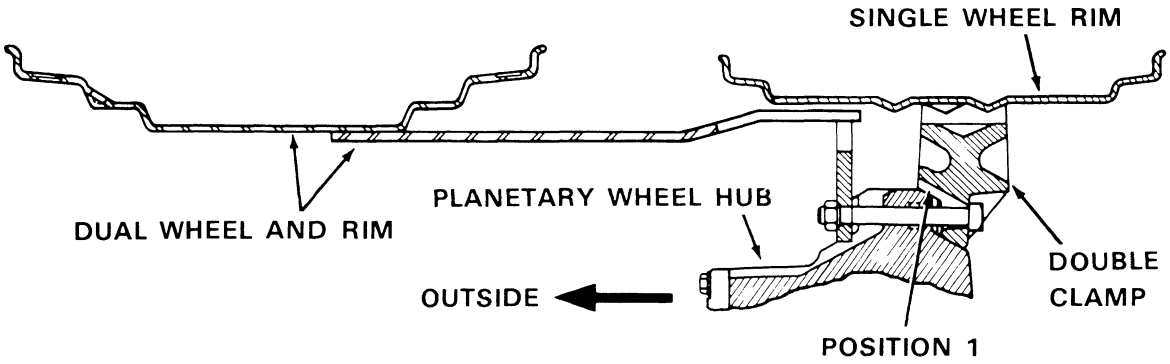
IMPORTANT: **Inflate inside tires to recommended pressure to maintain good ground contact and manueverability. Inflate outside tires to 4 PSI (28 kPa) below pressure of inside tire but never less than 12 PSI (82.7 kPa).**

Dual Wheels

WITH 18.4 X 34 TIRES
INNER WHEEL SETTINGS - 74", 76", 78" OR 80"



WITH 20.8 X 34 TIRES
INNER WHEEL SETTINGS (R1 TREAD) - 76", 78" OR 80"
INNER WHEEL SETTINGS (R2 TREAD) - 78" OR 80"



NOTE: 80" INNER PAIR TREAD IS FOR DRY SOIL CONDITIONS ONLY AND NOT RECOMMENDED FOR WET OR ROCKY SOIL BECAUSE OF THEIR TENDENCY TO PLUG DUE TO CLOSENESS OF TIRES.

Dual wheels are bolted in a fixed piloted position on the wheel hub and have a fixed tread setting of 126 inches (3 200mm). The corresponding inner wheel of the same tire can be set as shown above then, when the outer dual wheels and tires are installed the proper running clearance between tires will be maintained.

NOTE: *Clamps must be mounted at inside position for use with duals at 80 inch tread settings.*

GENERAL TORQUE SPECIFICATION TABLE (Revised 11-73)

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

NOTE: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly-disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SAE Grade No.		5				8 ★			
Bolt head identification marks as per grade NOTE: Manufacturing Marks Will Vary									
Bolt Size		Torque Foot Pounds		Torque Newton-Meters		Torque Foot Pounds		Torque Newton-Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	9	11	12.2	14.9	12	15	16.3	20.3
5/16	7.94	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	580	696	786.5	943.8	900	1080	1220.4	1464.5
1-1/8	25.58	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1-1/4	31.75	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1-3/8	34.93	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1-1/2	38.10	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

★ Thick nuts must be used with Grade 8 bolts

NOTE: The CASE CORPORATION reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

Section 1012

2870 TRACTOR LUBRICATION

CASE CORPORATION Rac 9-80405 PRINTED IN U.S.A.