


# 1090 Tractor Operators Manual

9-2832

Reprinted




**CASE**

	<p><i>THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.</i></p>
	<p>M171B</p>

If Safety Decals on this machine use the words **Danger, Warning or Caution**, which are defined as follows:

- **DANGER:** Indicates an immediate hazardous situation which if not avoided, will result in death or serious injury. The color associated with Danger is RED.
- **WARNING:** Indicates a potentially hazardous situation which if not avoided, will result in serious injury. The color associated with Warning is ORANGE.
- **CAUTION:** Indicates a potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

If Safety Decals on this machine are ISO two panel Pictorial, decals are defined as follows:

- The first panel indicates the nature of the hazard.
- The second panel indicates the appropriate avoidance of the hazard.
- Background color is YELLOW.
- Prohibition symbols such as   and  if used, are RED.



# WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH. BEFORE USING THIS MACHINE, MAKE CERTAIN THAT EVERY OPERATOR:

- Is instructed in safe and proper use of the machine.
- Reads and understands the Manual(s) pertaining to the machine.
- Reads and understands ALL Safety Decals on the machine.
- Clears the area of other persons.
- Learns and practices safe use of machine controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow Case Corporation instructions on machine operation and maintenance.

## **TO THE PURCHASER OF A CASE TRACTOR**

The care you give your Case Tractor will greatly determine the satisfaction and service you will obtain from it. Use this manual as your guide. By observing the instructions and suggestions in this manual, your Case Tractor will serve you well for many years.

As an Authorized Case Dealer, we stock Genuine Case Parts, which are manufactured with the same precision and skill as the original equipment. Our factory trained staff is kept well informed on the best methods of servicing Case equipment and is ready and able to help you.

Should you require additional aid or information, contact us.

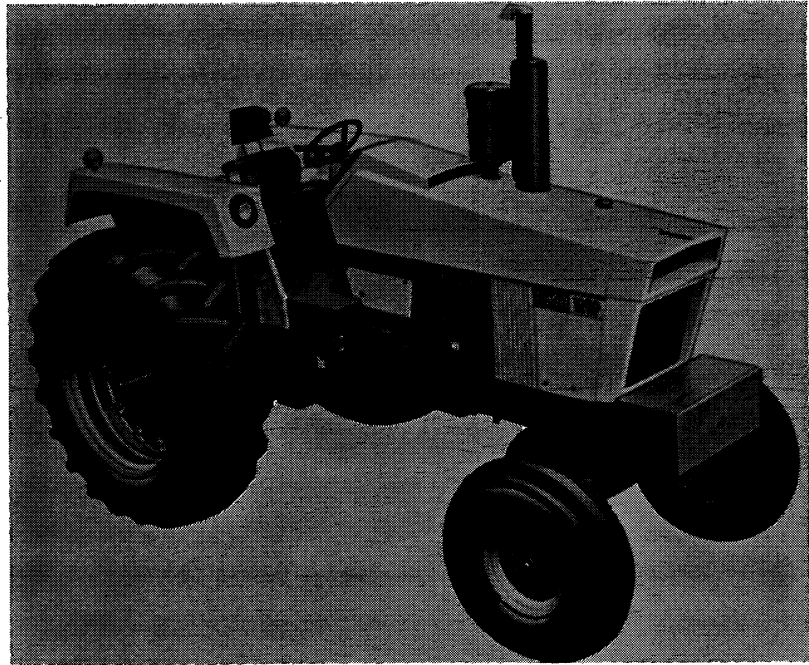
**Your Authorized Case Dealer**



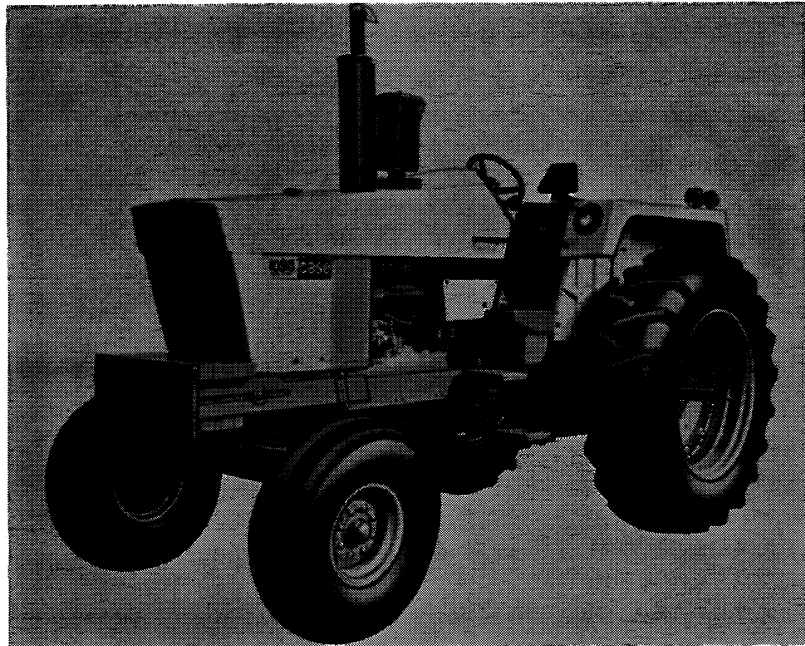
**LOOK FOR THIS SYMBOL TO POINT  
OUT IMPORTANT SAFETY PRECAUTIONS.  
IT MEANS - ATTENTION! BECOME ALERT!  
YOUR SAFETY IS INVOLVED.**

**TO INSURE EFFICIENT AND PROMPT SERVICE, PLEASE  
FURNISH US WITH THE MODEL, SERIAL, ENGINE TRANS-  
MISSION AND CAB SERIAL NUMBERS OF YOUR TRACTOR  
IN ALL CORRESPONDENCE OR CONTACTS.**

**PRICE \$1.25**



**Figure 1**



**Figure 2**

## SERIAL NUMBERS

The Model and Serial Numbers are stamped on the number plate located on the outside and lower left hand side of the fire wall assembly, Figure 3. The Engine Serial Number is stamped on a plate fastened to the rear right hand side of the engine block, Figure 4. The transmission Serial Number is stamped on a plate and fastened to the right hand side and to the front of the axle on the transmission housing, Figure 5. The Cab Serial Number is stamped on a plate fastened to the inside right hand support, Figure 6.

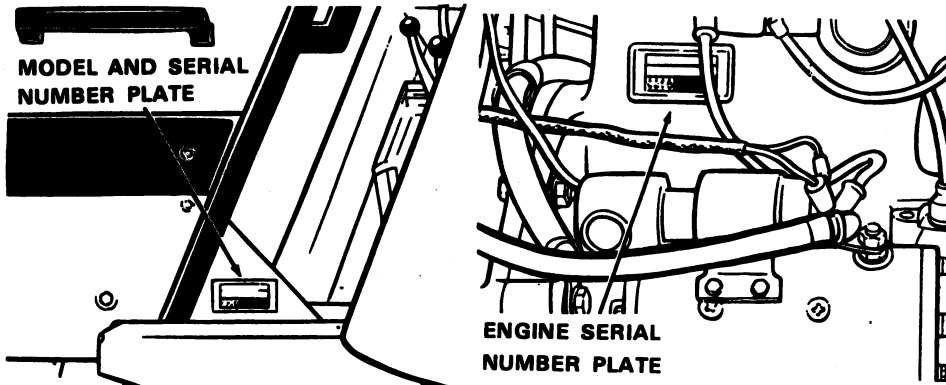


Figure 3

Figure 4

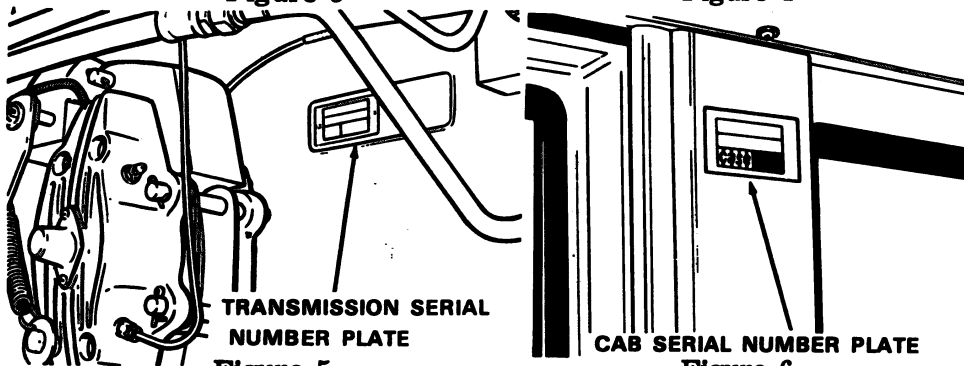


Figure 5

Figure 6

**NOTE:** The terms "Right Hand" and "Left Hand" whenever used in this manual, apply to the tractor when facing in the direction the tractor will move in forward operation.

For reference, fill in the Serial Numbers of your tractor in the spaces provided below.

Model Designation \_\_\_\_\_  
Tractor Serial Number \_\_\_\_\_  
Engine Serial Number \_\_\_\_\_  
Transmission Serial Number \_\_\_\_\_  
Cab Serial Number \_\_\_\_\_

# Diesel Engine

## SPECIFICATIONS

### General

Type .....	6 Cylinder, 4 Stroke Cycle, Valve-in-Head.
Firing Order .....	1-5-3-6-2-4
Bore .....	4-3/8 Inches (111mm)
Stroke .....	5 Inches (127mm)
Piston Displacement .....	451 Cubic Inches (7390.6cm <sup>3</sup> )
Compression Ratio .....	16.5 to 1
Cylinder Sleeves .....	Removable Wet Type
No Load Governed Speed .....	2260 RPM
Rated Engine Speed .....	2100 RPM
Engine Idling Speed .....	725 RPM
*Valve Tappet Clearance (Exhaust) .....	(Hot) .020 Inch (0.508mm) (Cold) .025 Inch (0.635mm)
(Intake) .....	(Hot and Cold) .015 Inch (0.381mm)

\*Hot Settings Are Made After The Engine Has Operated At Thermostat Controlled Temperature For At Least Fifteen Minutes.

### Piston and Connecting Rods

Rings per Piston .....	3
Number of Compression Rings .....	2
Number of Oil Rings .....	1
Type Pins .....	Full Floating Type
Type Bearing .....	Replaceable Precision, Steel Back, Copper-Lead or Aluminum Alloy Liners.

### Main Bearings

Number of Bearings .....	7
Type Bearings .....	Replaceable Precision Steel Back, Copper-Lead or Aluminum Alloy Liners.

## **Engine Lubricating System**

Oil Pressure ..... 45 to 55 PSI (3.2 to 3.9 kg/cm<sup>2</sup>)  
Operating at Rated Engine Speed.

Type System ..... Pressure and Spray Circulation

Oil Pump ..... Gear Type

Oil Filter ..... Full Flow Spin on Type

## **Fuel System**

Fuel Injection Pump ..... Robert Bosch, Type PES  
(Multiple Plunger.)

Pump Timing ..... 30 Degrees Before Top Dead  
Center (Port Closing).

Fuel Injectors ..... Pencil Type  
(Opening Pressure 2800 PSI). (196.9 kg/cm<sup>2</sup>)

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

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

1st Stage fuel filter ..... Full Flow Spin on Type

2nd Stage fuel filter ..... Full Flow Spin on Type

Hand Primer Pump ..... Located on Fuel Filter Head

Fuel Tank Water Trap and Drain ..... Located in Base  
of Fuel Tank.

Fuel Tank Capacity ..... 50 U.S. Gallons (189.3 liters)

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

# *general specifications*

## **Cooling System**

Capacity .....	40 U.S. Quarts (37.9 liters)
Type of System .....	Pressurized, Thermostat Controlled By-Pass Type: Forced Circulation, (Impeller Type Pump).
Radiator .....	Heavy Duty Fin and Tube Type
Thermostat .....	Starts to Open at Approximately 175°F. (79°C.) Fully Open at 202°F. (94°C.)
Pressure Cap Required .....	(w/o Air Cond. 7 PSI (0.492 kg/cm <sup>2</sup> )
Pressure Cap Required .....	(w/Air Cond.) 14 PSI (0.984 kg/cm <sup>2</sup> )

When using a proper operating 7 PSI (0.984 kg/cm<sup>2</sup>) pressure cap, the engine temperature can safely rise to 230°F. (110°C.), with a 14 PSI (0.984 kg/cm<sup>2</sup>) pressure cap the engine temperature can safely rise to 250°F. (121°C.).

## **Electrical System**

Type of System .....	12 Volt Negative Ground
Batteries .....	(2) 12 Volt Batteries Connected in parallel. Group Size 30H, Rated at 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 4 min.
Alternator .....	12 Volt 55 Amp Output
Voltage Regulator .....	12 Volt, Solid State, Mounted on Alternator.
Starter Motor .....	12 Volt with Solenoid Switch
Head Lights (2) .....	12 Volt, 35 Watt, Sealed Beam
Flood Lights (2) .....	12 Volt, 35 Watt, Sealed Beam
Amber Warning Lights (2) .....	12 Volt, Double Face, Flasher Type
Rear Tail Light .....	12 Volt, 60 Watt Sealed Beam Combination Tail and Flood Lamp.
Circuit Breaker System over Load check .....	12 Volt Twin 40 AMP Breakers connected in parallel, 80 AMP rating. 60 Amp. Min. Continuous capacity.
Lights Circuit Breaker .....	30 Amp., Located on Light Switch
Parking Brake Warning Light .....	12 Volt, Red Flasher Type
Transmission Oil Filter Warning Light ....	12 Volt, Red Flasher Type



## **Parking Brake**

Type ..... Cable Actuated by Orscheln  
Type Handle - Adjustable from  
Operators Seat, With Adjustable  
and Replaceable Lining Pads

## **Hydraulic Power Assist Brakes**

Type ..... Hydraulic, Power Assisted,  
Self-Adjusting Caliper Disc Type  
Differential Brakes With Replaceable Lining Pads

## **Mechanical Transmission**

Type ..... 2 Speed Gear Range With  
a 4 Speed Gear Section.

Gear Selection ..... 8 Speeds Forward - 2 Speeds Reverse.

Shifting ..... Mechanical With Plunger Type  
Locks and Tube Type Interlocks

## **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.

## **Hydrostatic Power Steering**

Pump Type ..... Gear Type, Driven By The Engine.  
Pump Capacity at 2000 Engine RPM ..... 8 GPM (30.3 l/mn)  
Hand Pump Type ..... Gerotor Bi-Directional Driven  
By the Steering Wheel.  
Steering Cylinders ..... Two Double Acting Cylinders

## **Remote Hydraulic System**

Pump Type ..... Gear Type, Driven By The Engine.  
Type Valve ..... Dual Valve-Individual Hand Lever Control.  
Portable Cylinder Coupling ..... Case Quick Detachable  
Break-away Type.  
Pump Capacity at 2000 Engine RPM ..... 16 GPM (60.6 l/mn)  
Relief Valve Pressure ..... 2050 to 2250 PSI (144.2 to 158.2 kg/cm<sup>2</sup>)  
Portable Cylinders ..... Available

## **Power Take-Off**

Type Clutch ..... Hydraulically Operated  
Rotation ..... Clockwise  
Spline Size ..... 540 RPM ..... 6 Splines ..... 1-3/8 (34.9mm) Dia.  
1000 RPM ..... 21 Splines ..... 1-3/8 (34.9mm) Dia.  
Engine Speed 1900 RPM ..... 540 or 1000 RPM Shaft Speed

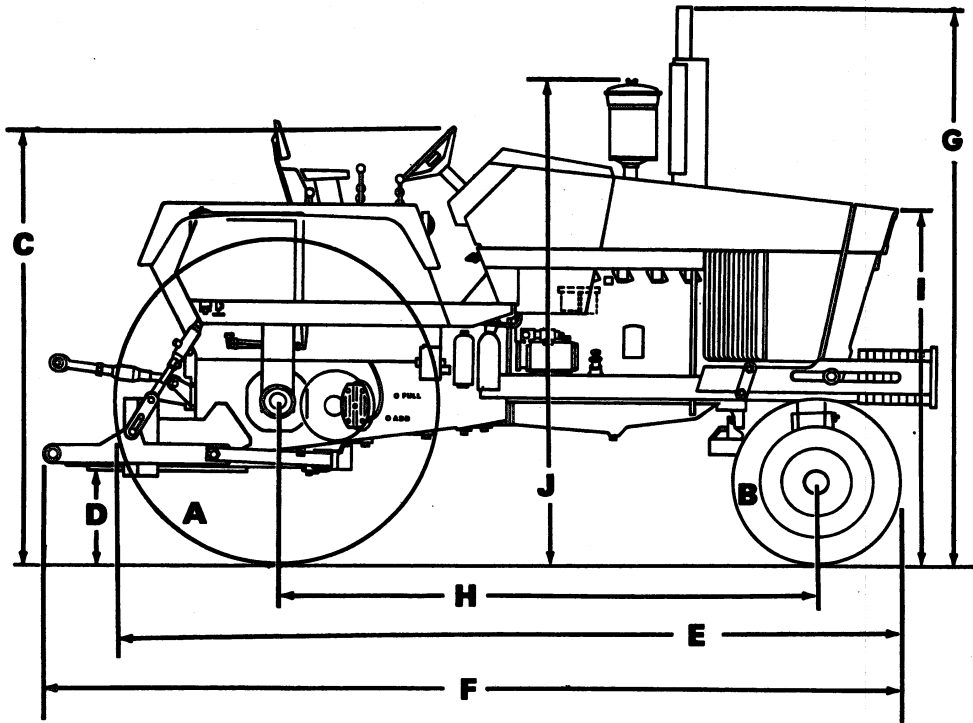
## **Draft-O-Matic System**

Type of sensing ..... Lower Link  
Type Control ..... Hand Lever  
Type Valve ..... 3 Positions - Raise - Hold - Lower  
Type Draft Arms ..... Swinging, with Manual Float Adjustment  
Type Hitch ..... 3 Point Category II

## **Drawbars**

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

## APPROXIMATE OVERALL MEASUREMENTS



MODEL	ADJUSTABLE
A	18.4-38R2
B	11.00-16F2
C	88 in. (2 235mm)
D	20 in. (508mm)
E	162 in. (4 115mm)

F	171 in. (4 343mm)
G	109 in. (2 769mm)
H	108 in. (2 743mm)
I	73 in. (1 854mm)
J	97 in. (2 464mm)

A and B Tire Sizes C thru J Dimensions in Inches and Millimeters.

## APPROXIMATE WEIGHT

1090 Tractor ----- 12,200 Pounds (5 534 kg.)

## TIRE AND WHEEL EQUIPMENT

### Front

TIRE SIZE	TIRE PLY	RIM SIZE	TREAD TYPE	TIRE PRESSURE
7.50-16	8	550F-16	F2	40 PSI (2.8 kg/cm <sup>2</sup> )
9.50-20	6	W7L-20	F2	40 PSI (2.8 kg/cm <sup>2</sup> )
10.00-16	8	W8L-16	F2	36 PSI (2.5 kg/cm <sup>2</sup> )
11.00-16	6	W8L-16	F2	28 PSI (1.9 kg/cm <sup>2</sup> )
11.00-16	8	W8L-16	F1	36 PSI (2.5 kg/cm <sup>2</sup> )
14.00-16A	6	W11L-16A	F2	24 PSI (1.7 kg/cm <sup>2</sup> )

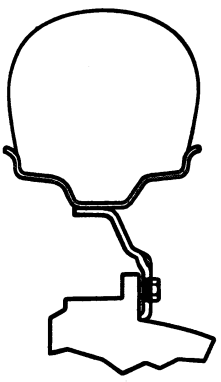
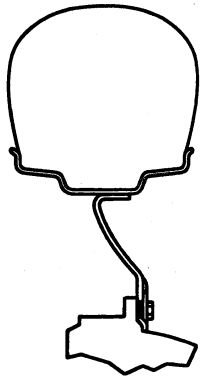
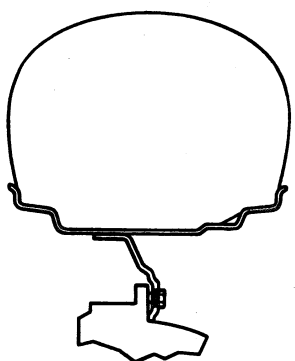
### Rear

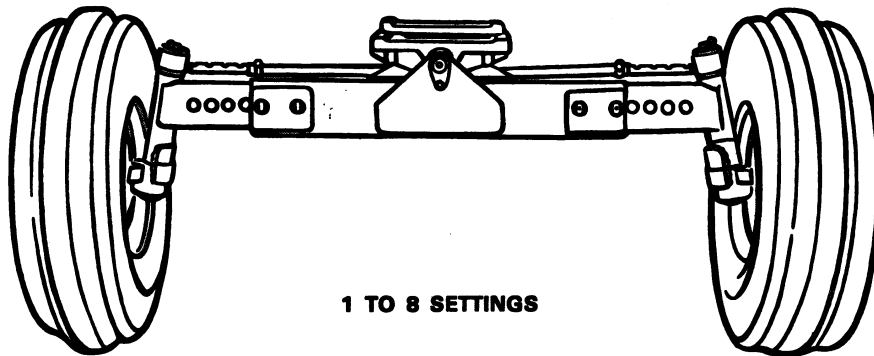
TIRE SIZE	TIRE PLY	RIM SIZE	TREAD TYPE	TIRE PRESSURE
15.5-38	10	W14-38	R1&R2	30 PSI (2.1 kg/cm <sup>2</sup> )
16-9-34	8	W16L-34	R1	22 PSI (1.5 kg/cm <sup>2</sup> )
18.4-34	8	W15L-34	R1&R2	16 PSI (1.1 kg/cm <sup>2</sup> )
18.4-38	8	W16L-38	R1&R2	20 PSI (1.4 kg/cm <sup>2</sup> )
23.1-30	8	DW20-30	R1&R2	16 PSI (1.1 kg/cm <sup>2</sup> )
23.1-34	8	DW20-34	R1&R2	16 PSI (1.1 kg/cm <sup>2</sup> )
20.8-38	8	W18-38	R1&R2	18 PSI (1.3 kg/cm <sup>2</sup> )

**NOTE:** Keep tires inflated to recommended pressures. Check pressures at least every 60 hours of operation or once a week, whichever occurs first. Do not reduce rear tire pressure to increase traction. When plowing, increase furrow wheel tire pressure 4 PSI (0.281 kg/cm<sup>2</sup>).

## FRONT WHEEL TREAD SPACING (With Wheels Dished In Only)

### ADJUSTABLE AXLE SPACING IN INCHES

1-1/4 in. (31.8mm) OFFSET WHEEL	1-1/2 in. (38.8mm) OFFSET WHEEL	NON-OFFSET WHEEL
		
<b>60-88 inch</b> (1 524-2 235mm)	<b>59.5-87.5 inch</b> (1 511-2 223mm)	<b>62.5-90.5 inch</b> (1 588-2 299mm)

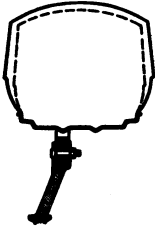


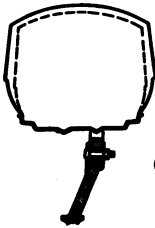
**NOTE:** Axle spacing listings above are from the narrow setting, with increments of 4 inches (101.6mm) to the wide setting.

**NOTE:** When tightening the front wheel bolts, torque 70 to 80 ft. lbs. (9.7 to 11.1 m-kg).

# MANUAL ADJ. REAR WHEEL TREAD SPACING

## WHEELS DISHED OUT ONLY

 <p><b>INSIDE BEAD</b></p>	<p><b>30 INCH (762mm) WHEELS</b></p>	<p><b>34 AND 38 INCH (864 AND 965mm) WHEELS</b></p>
<p><b>96 INCH (2 438mm) REAR AXLE</b></p>	<p><b>76 TO 102 INCH (1 930 TO 2 591mm)</b></p>	<p><b>70 TO 98 INCH (1 778 TO 2 489mm)</b></p>
<p><b>118 INCH (2 997mm) REAR AXLE</b></p>	<p><b>76 TO 124 INCH (1 930 TO 3 150mm)</b></p>	<p><b>70 TO 120 INCH (1 778 TO 3 048mm)</b></p>

 <p><b>OUTSIDE BEAD</b></p>	<p><b>30 INCH (762 mm) WHEELS</b></p>	<p><b>34 AND 38 INCH (864 AND 965mm) WHEELS</b></p>
<p><b>96 INCH (2 438mm) REAR AXLE</b></p>	<p><b>68 TO 94 INCH (1 727 TO 2 388mm)</b></p>	<p><b>62 TO 90 INCH (1 575 TO 2 286mm)</b></p>
<p><b>118 INCH (2 997mm) REAR AXLE</b></p>	<p><b>68 TO 116 INCH (1 727 TO 2 946mm)</b></p>	<p><b>62 TO 112 INCH (1 575 TO 2 845mm)</b></p>

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