

2440 and 2640 Tractors

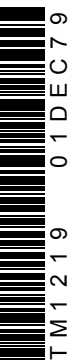


TECHNICAL MANUAL 2440 and 2640 Tractors

TM1219 (01DEC79) English

TM1219 (01DEC79)

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ENGLISH



2440 AND 2640 TRACTORS TECHNICAL MANUAL TM-1219 (Dec-79)

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Group 00 SPECIFICATIONS AND SPECIAL TOOLS GENERAL TRACTOR SPECIFICATIONS

	2440 Tractor	2640 Tractor
HORSEPOWER (Factory observed PTO horsepower at 2500 rpm)	45.3 kW (60.7 hp)	52.5 kW (70.4 hp)
ENGINE:		
Type	4-cylinder, in-line, valve-in-head, diesel	4-cylinder, in-line, valve-in head, diesel
Slow idle speed	800 rpm	800 rpm
Working speed range	1500 to 2500 rpm	1500 to 2500 rpm
Bore and stroke	102 x 110 mm (4.02 x 4.33 in.)	106 x 127 mm (4.17 x 5.00 in.)
Displacement	3589 cm ³ (219 cu. in.)	4523 cm ³ (276 cu. in.)
Compression ratio	16.7 to 1	16.7 to 1
Firing order	1-3-4-2	1-3-4-2

GENERAL TRACTOR SPECIFICATIONS—Continued

	2440 Tractor	2640 Tractor
Valve clearance		
Intake	0.356 mm (0.014 in.)	0.356 mm (0.014 in.)
Exhaust	0.46 mm (0.018 in.)	0.46 mm (0.018 in.)
Injection pump timing	TDC	TDC
Lubrication system	force-feed, pressurized with full-flow filter	force-feed, pressurized with full-flow filter
FUEL SYSTEM:		
Type	direct injection	direct injection
Injection pump type	distributor	distributor
Air cleaner	dry type with secondary element	dry type with secondary element
COOLING SYSTEM:		
Type	pressure with centrifugal pump	pressure with centrifugal pump
Temperature control	heavy duty thermostat	heavy duty thermostat
CAPACITIES:		
Fuel tank	73.8 L (19.5 U.S. gal.)	73.8 L (19.5 U.S. gal.)
Cooling system	17.9 L (13.6 U.S. qt.)	12.9 L (13.6 U.S. qt.)
Crankcase (with filter change)	5.7 L (6 U.S. qt.)	8.6 L (9 U.S. qt.)
Transmission-hydraulic system (Drain and fill)	37.9 L (10.0 U.S. gal.)	37.9 L (10.0 U.S. gal.)
COLLAR SHIFT TRANSMISSION:		
Type	2-speed range selector and 4-speed gear selector	2-speed range selector and 4-speed gear selector
Gear selections	8 forward and 4 reverse	8 forward and 4 reverse
Clutch	foot-operated dry disk dual stage (continuous PTO) single stage (independent PTO)	foot-operated dry disk dual stage (continuous PTO) single stage (independent PTO)
HI-LO SHIFT TRANSMISSION		
Type	collar shift transmission plus 2-speed planetary unit, spring loaded into Lo position	collar shift transmission plus 2-speed planetary unit, spring loaded into Lo position
Gear selections	16 forward and 8 reverse	16 forward and 8 reverse
Shifting	same as collar shift plus 2-position dash mounted lever	same as collar shift plus 2-position dash mounted lever
REVERSER TRANSMISSION:		
Type	collar shift transmission with hydraulic-mechanical unit to provide travel direction change without clutching or shifting gears	collar shift transmission with hydraulic-mechanical unit to provide travel direction change without clutching or shifting gears
Gear selections	same as collar shift. Reverser usable on Lo and reverse ranges only.	same as collar shift. Reverser usable on Lo and reverse ranges only.
POWER TAKE-OFF:		
Type	fully independent or continuous running 540 rpm or dual speed	fully independent or continuous running 540 rpm or dual speed
Speed*	540/1000 rpm 35 mm (1-3/8 in.)	540/1000 rpm 35 mm (1-3/8 in.)
Size	hydraulically-operated, multiple-disk wet clutch. (independent PTO) dual stage, foot-operated dry disk (continuous PTO)	hydraulically-operated, multiple-disk wet clutch. (independent PTO) dual stage, foot-operated dry disk (continuous PTO)
Clutch		

	2440 Tractor	2640 Tractor
HYDRAULIC SYSTEM		
Type	closed center, constant-pressure	closed center, constant-pressure
Standby pressure	15513 kPa (155 bar) (2250 psi)	15513 kPa (155 bar) (2250 psi)
BRAKES:		
Type	hydraulically operated wet disk	hydraulically operated wet disk
ELECTRICAL SYSTEM:		
Batteries	one or two 12 volt, 24 group, 370 amps cold cranking, 106 minutes reverse capacity	one 12 volt, 30H group, 580 amps cold cranking, 180 minutes reverse capacity or: two 12 volt, 24 group, 370 amps cold cranking, 106 minutes reserve capacity
Alternator	35-amp	35-amp
DIMENSIONS:		
Wheelbase (Straight front axle)	2 180 mm (85.8 in.)	2 180 mm (85.8 in.)
Wheelbase (Swept-back front axle)	2 020 mm (79.5 in.)	2 020 mm (79.5 in.)
Overall length	3 540 mm (139.5 in.)	3 540 mm (139.5 in.)
Height to muffler cover**	2 040 mm (80.3 in.)	2 070 mm (81.5 in.)
Height to top of Roll-Gard	2 270 mm (89.3 in.)	2.27 mm (89.3 in.)
Overall width (minimum)	1 770 mm (69.5 in.)	1 770 mm (69.5 in.)
Turning radius (straight front axle)	2 990 mm (117.6 in.)	3 010 mm (118.6 in.)
Turning radius (Swept-back front axle)	2 900 mm (114.0 in.)	2 920 mm (115.0 in.)
SHIPPING WEIGHT***	2 177 kg (4800 lbs.)	2 359 kg (5700 lbs.)

*Tractor without Hi-Lo, 2100 engine rpm. Tractor with Hi-Lo, 2400 engine rpm.

**Tractor equipped with standard equipment.

***Equipped for average field service, without fuel and ballast.

TRAVEL SPEEDS

Rear Tire	Adjustment
13.6-38	4% slower
15.5-38	3% faster
16.9-30	5% slower
18.4-16.1	23% slower
18.4-26	2% faster

Travel speeds for 2440 and 2640 Tractors are shown in chart on following page. Speeds for 2440 Tractor are with 16.9-28 tires. Speeds for 2640 Tractor are with 16.9-28 or 18.4-30 rear tires. Adjust as shown in chart at left for other tires.

Differential drive ratio for tractors equipped with 30 or 38 inch rims is different.

TRAVEL SPEEDS												
Gear	Lo of Hi-Lo Transmission				Collar Shift Transmission							
	At Standard PTO Speed (Hi-Lo Transmission) (2400 rpm)		At Rated Engine Speed (2500 rpm)		At Standard PTO Speed (Collar-Shift and Reverser Transmission) (2100 rpm)		Hi of Hi-Lo Transmission Reverser Transmission (Hi-Lo Transmission) (2400 rpm)		At Rated Engine Speed (2500 rpm)			
2440 Tractor												
	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph		
1st	1.9	(1.2)	1.9	(1.2)	2.1	(1.3)	2.3	(1.4)	2.5	(1.5)		
2nd	2.5	(1.6)	2.8	(1.7)	3.0	(1.8)	3.4	(2.1)	3.5	(2.2)		
3rd	4.1	(2.5)	4.1	(2.6)	4.4	(2.7)	4.9	(3.1)	5.2	(3.2)		
4th	5.7	(3.5)	5.7	(3.6)	6.1	(3.8)	6.9	(4.3)	7.3	(4.5)		
5th	7.2	(4.5)	7.6	(4.7)	8.1	(5.0)	9.3	(5.8)	9.7	(6.0)		
6th	10.4	(6.4)	10.8	(6.7)	11.6	(7.2)	13.4	(8.3)	13.8	(8.6)		
7th	15.1	(9.4)	16.1	(9.8)	17.2	(10.7)	19.6	(12.2)	20.4	(12.7)		
8th	16.6	(10.3)	22.5	(14.0)	24.0	(14.9)	27.5	(17.1)	28.6	(17.8)		
R1	2.1	(1.3)	2.3	(1.4)	2.4	(1.5)	2.8	(1.7)	2.9	(1.8)		
R2	3.1	(1.9)	3.2	(2.0)	3.4	(2.1)	3.9	(2.4)	4.1	(2.5)		
R3	4.7	(2.9)	4.8	(3.0)	5.1	(3.2)	5.9	(3.7)	6.1	(3.8)		
R4	6.3	(3.9)	6.7	(4.1)	7.1	(4.4)	8.2	(5.1)	8.5	(5.3)		
2640 Tractor												
	km/h	mph	km/h	mph	km/h	mph	km/h	mph	km/h	mph		
1st	1.9	(1.2)	2.0	(1.2)	2.1	(1.3)	2.4	(1.5)	2.5	(1.6)		
2nd	2.8	(1.7)	2.8	(1.8)	3.0	(1.9)	3.4	(2.1)	3.6	(2.2)		
3rd	4.1	(2.5)	4.2	(2.6)	4.5	(2.8)	5.2	(3.2)	5.3	(3.3)		
4th	5.7	(3.5)	5.8	(3.6)	6.2	(3.9)	7.1	(4.4)	7.4	(4.6)		
5th	6.7	(4.1)	6.9	(4.3)	7.4	(4.6)	8.5	(5.3)	8.8	(5.5)		
6th	9.6	(6.0)	9.9	(6.2)	10.6	(6.6)	12.2	(7.6)	12.6	(7.9)		
7th	14.2	(8.8)	14.7	(9.2)	15.7	(9.8)	17.9	(11.1)	18.7	(11.6)		
8th	19.8	(12.3)	20.5	(12.8)	22.0	(13.7)	25.1	(15.6)	26.1	(16.3)		
R1	2.1	(1.3)	2.3	(1.4)	2.4	(1.5)	2.8	(1.7)	2.9	(1.8)		
R2	3.1	(1.9)	3.3	(2.0)	3.5	(2.2)	4.1	(2.5)	4.2	(2.6)		
R3	4.7	(2.9)	4.8	(3.0)	5.2	(3.2)	6.0	(3.7)	6.2	(3.8)		
R4	6.4	(4.0)	6.8	(4.2)	7.2	(4.5)	8.4	(5.2)	8.6	(5.4)		

PREDELIVERY, DELIVERY, AND AFTER SALE SERVICES

- Toe-in 3 to 9 mm (1/8 to 3/8 in.)
- Engine speeds
 - Slow idle 800 rpm
 - Fast idle 2650 rpm
 - Rated speed at full load 2500 rpm
- Clutch Pedal Travel
 - Tractor without reverser with independent PTO 126 to 152 mm (5-1/2 to 6 in.)
 - Tractor without reverser with continuous PTO
 - Free travel 13 to 25 mm (1/2 to 1 in.)
 - Tractors with reverser 146 mm (5-3/4 in.)
- Fan belt tension 19 mm (3/4 in.) with 90 N (20 lb.) force
- Battery specific gravity 1.260 at 27°C (80°F)

TORQUES

Front axle cap screws	406 N·m (300 ft-lbs)
Front rim to hub cap screws	136 N·m (100 ft-lbs)
Rack and pinion wheels	
Special cap screws	406 N·m (300 ft-lbs)
Rim cap screws	230 N·m (170 ft-lbs)
Eight position wheels	
Rim cap screws	230 N·m (170 ft-lbs)
Wheel cap screws	136 N·m (100 ft-lbs)
Two position wheels	
Stud nuts	136 N·m (100 ft-lbs)
Power adjusted wheels	
Clamp cap screws	115 N·m (85 ft-lbs)
Wheel cap screws	177 N·m (130 ft-lbs)

TUNE UP

PTO horsepower	
2440	45.3 kW (60.7 hp)
2640	52.5 kW (70.4 hp)
Compression	2067 kPa (300 psi)
Vacuum (fast idle, full load, clean filters)	
2440	0.87 kPa (3.5 in.)
2640	1.2 kPa (4.5 in.)
Air restriction indicator switch closing vacuum	5.96 to 6.45 kPa (24 to 26 in.) water
Thermostat opening temperature	82°C (180°F)
Radiator cap pressure release	43 to 53 kPa (0.43 to 0.52 bar) (6.25 to 7.50 psi)
Injection pump timing	TDC
Engine speeds	
Fast idle	2650 rpm
Slow idle	800 rpm
Rated speed at full load	2500 rpm
Battery specific gravity	1.260 at 27°C (80°F)
Front wheel toe-in	3 to 9 mm (1/8 to 3/8 in.)

LUBRICATION

Engine crankcase oil capacity (including filter)	
2440	5.7 L (6 U.S. qts.)
2640	8.5 L (9 U.S. qts.)
Transmission/hydraulic system oil capacity (drain and fill)	37.9 L (10 U.S. gal.)
Service intervals	
Check engine oil level	Every 10 hours
Change engine oil	Every 100 hours
Replace engine oil filter	Every 200 hours
Check transmission/hydraulic system oil level	Every 50 hours
Replace transmission/hydraulic system oil filter	Every 600 hours
Change transmission/hydraulic system oil	Every 1200 hours
Clean main hydraulic pump screen	Every 1200 hours
Clean and repack front wheel bearings	Every 1200 hours

LUBRICATION—Continued

Lubricate grease fittings

Front axle pivot pins (2 fittings)	Every 10 hours
Steering spindles (2 fittings)	Every 10 hours
Tie rod ends (2 fittings)	Every 10 hours
Bell crank bearing (1 fitting)	Every 10 hours
Rear axle bearings (2 fittings)	Every 1200 hours
3-point hitch (3 fittings)	Every 600 hours

SEPARATION

Item	Specifications
Fan belt adjustment	19 mm (3/4 in.) with 90 N (20 lb.) force
Engine-to-clutch housing	230 N·m (170 ft-lbs)
Drag link nuts	75 N·m (55 ft-lbs)
Clutch housing-to-transmission case	115 N·m (85 ft-lbs)
Front end support-to-engine block	
5/8 inch	230 N·m (170 ft-lbs)
9/16 inch	176 N·m (130 ft-lbs)
Hydraulic pump drive coupling nuts	34 N·m (25 ft-lbs)
Axle housing-to-transmission case	115 N·m (85 ft-lbs)
Roll-Gard-to-axle housing	406 N·m (300 ft-lbs)
Rear wheel-to-hub bolts	
(rack and pinion axle)	406 N·m (300 ft-lbs)
Rim-to-wheel disk nuts	230 N·m (170 ft-lbs)
Rear wheel-to-flanged axle cap screws	
Cast wheel (regular and power adj.)	176 N·m (130 ft-lbs)
Steel wheel	135 N·m (100 ft-lbs)
Demountable rim wheel	135 N·m (100 ft-lbs)
Front wheel bearing	47 N·m (35 ft-lbs)
Front wheel hub bolts	135 N·m (100 ft-lbs)

SPECIAL TOOLS

Predelivery, Delivery and After-Sale Services

TOOL

USE

JDST-28 Belt Tensioning Tool*

Check fan belt tension

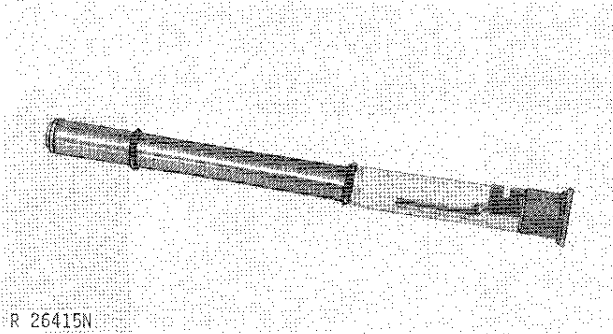


Fig. 1-Belt Tensioning Tool

Tune-Up

JDE-28 Hand Tachometer*

Checking engine speeds

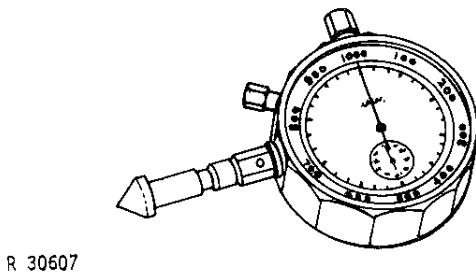


Fig. 2-Hand Tachometer

JD-281 Engine Rotation Tool*

Turn engine to TDC to check injection pump timing.

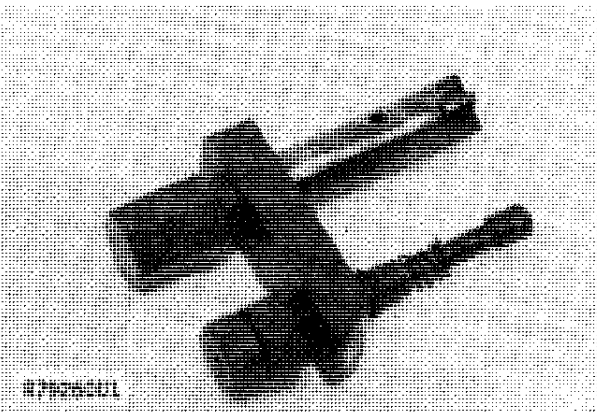


Fig. 3-Rotation Tool

*Order tools from: Service Tools
P.O. Box 314
Owatonna MN 55060

Tune-Up—Continued

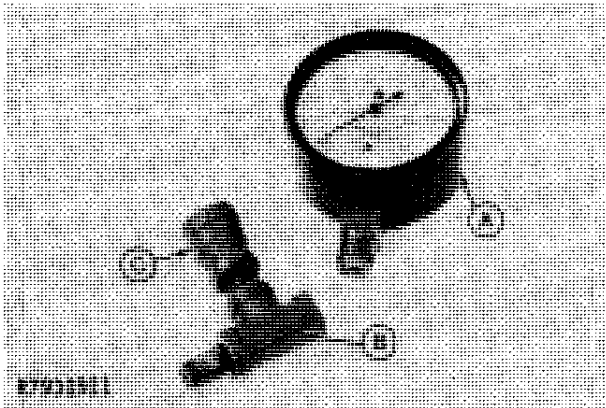


Fig. 4-Water Vacuum Gauge

TOOL	USE
A—D05022ST Water Vacuum Gauge*	Measure air intake vacuum.
B—1/8 in. "T" Fitting***	
C—1/8 to 3/8 in. Adaptor***	

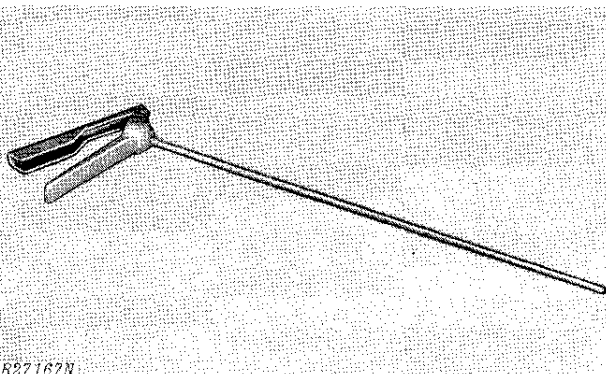


Fig. 5-Dry Element Cleaning Gun

AR62377 Dry Element Cleaning Gun**	Clean primary element or air cleaner.
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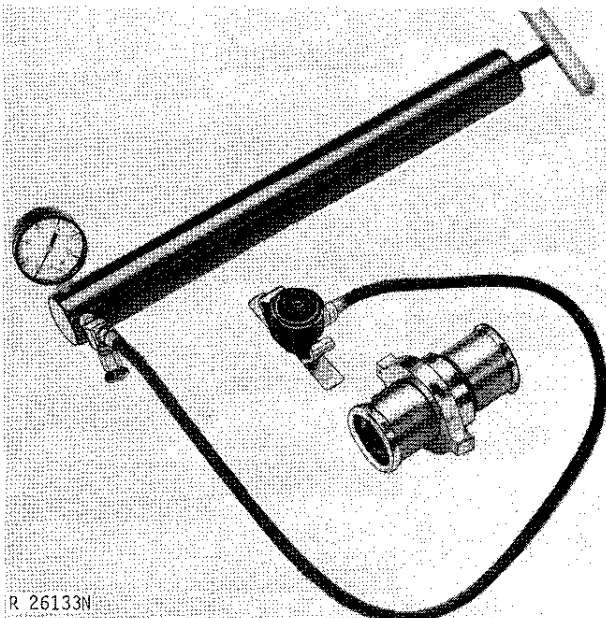


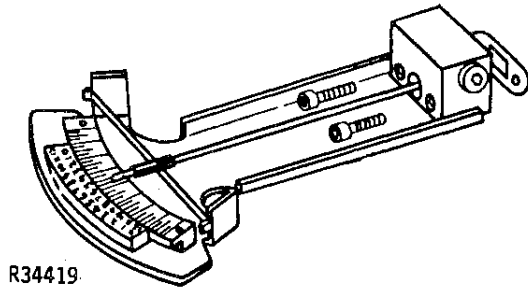
Fig. 6-Radiator Tester

BT-11-52 Radiator* Tester	Pressure test radiator and radiator cap.
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*Order tools from: Service Tools
P.O. Box 314
Owatonna MN 55060

**Order from John Deere Parts

***Obtain from local source



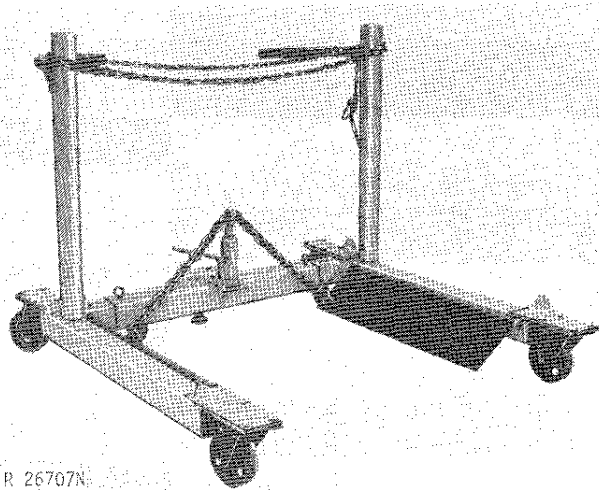
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Fig. 7-Speed Advance Gauge

TOOL
JDF-21-1 Speed Advance Gauge*

USE
Check automatic speed advance.

Separation

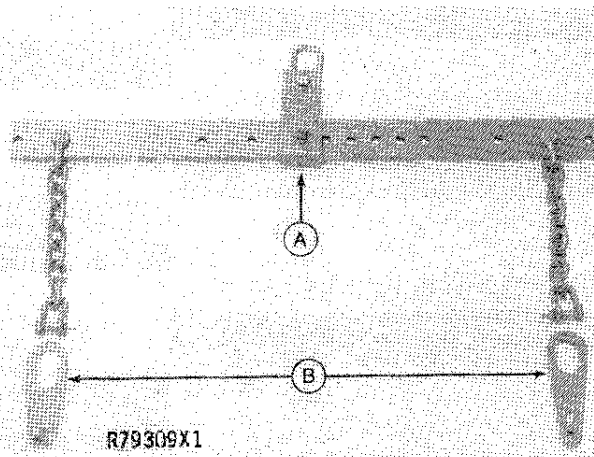


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Fig. 8-Wheel Lift

D-05018ST Wheel Lift*

To remove rear wheels.



R79309X1

Fig. 9-Engine Removal Tools

A—JDG-1 Engine Sling*

To remove engine.

B—JD-244 Lift Eyes*

*Order tools from: Service Tools
P.O. Box 314
Owatonna MN 55060

Separation—Continued

TOOL	USE
JDG-9 Support Stand*	Tractor separation

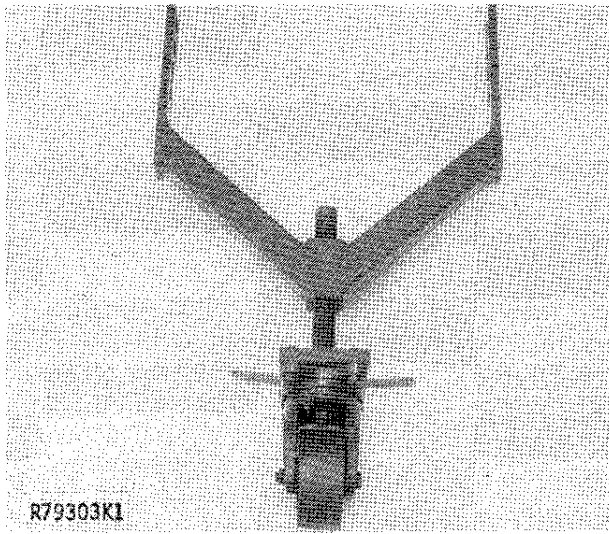


Fig. 10-Support Stand

*Order tool from: Service Tools
P.O. Box 314
Owatonna MN 55060

Group 05

PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

Lubricating Grease Fittings

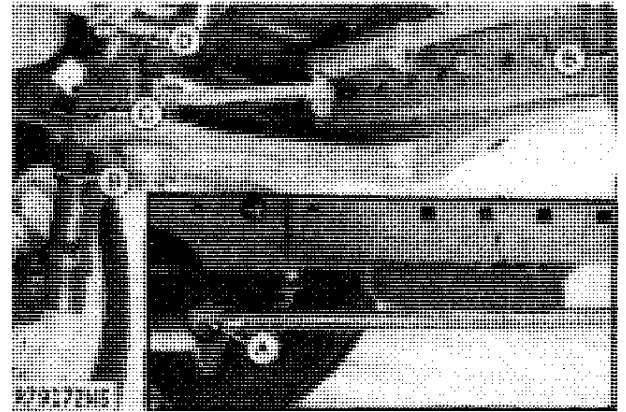
The John Deere delivery receipt, when properly filled out and signed by the dealer and customer, verifies that predelivery and delivery services were satisfactorily performed. When delivering the tractor, give the customer his copy of the delivery receipt and operators manual. Be sure to explain their purpose to him.

Because of the shipping factors involved, plus extra finishing touches necessary to promote customer satisfaction, there are certain predelivery services that must be performed by the dealer. These services are listed in the first of two sections on the predelivery form which is attached to the tractor. The second section is a list of factory inspections that must be verified by the dealer.

Fill the form in completely and sign it. Send a copy to the factory and file the original with the shop order for the job. This will certify that the proper predelivery service has been completed.

DEALER PREDELIVERY SERVICE

Using the first part of the predelivery form, along with the following illustrated procedures, perform all services listed and check each job off as it is completed.



A—Tie Rod Ends
B—Steering Spindles
C—Bell Crank Bearing
D—Pivot Pins

Fig. 1-Lubricating Axle and Steering Grease Fittings

1. Apply several shots of grease to both front and rear front axle pivot pins (D, Fig. 1), left and right hand steering spindles (B), tie rod ends (A), and bell crank bearing (C).

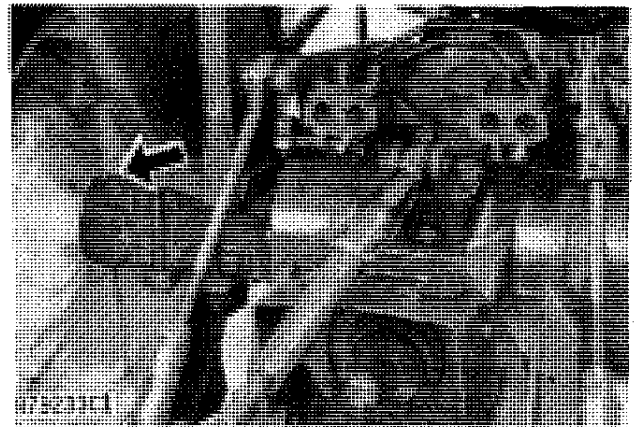


Fig. 2-Lubricating Rear Axle Bearings

2. Apply several shots of grease to rear axle bearings (Fig. 2).

3-Point Hitch

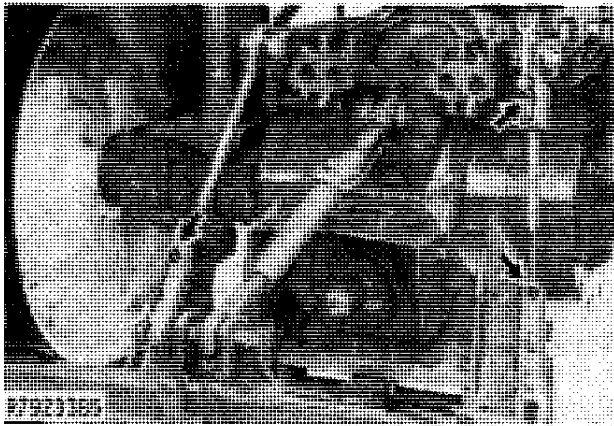


Fig. 3-Lubricating 3-Point Hitch

Apply several shots of grease to the three fittings on the lift links (Fig. 3).

NOTE: Lubricate grease fittings more frequently under extremely wet or dirty conditions.

Muffler and Air Stack

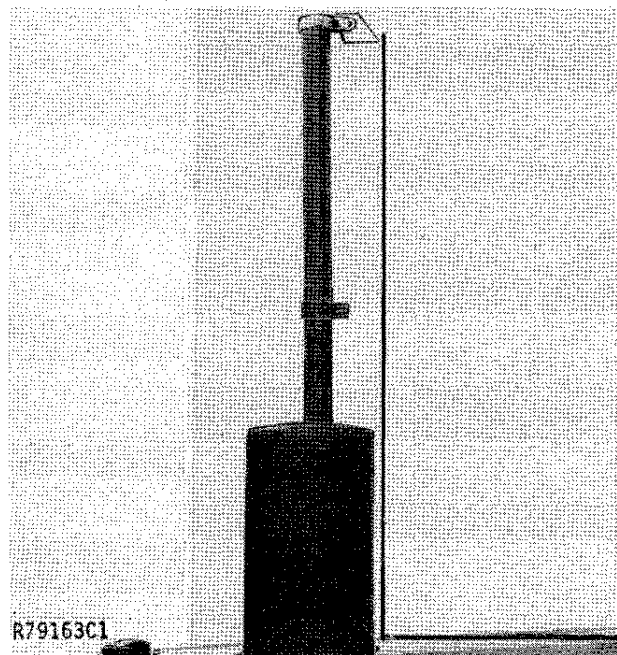


Fig. 4-Aligning Muffler and Air Stack

Align muffler and air stack so that they are perpendicular to the tractor hood (Fig. 4)

Adjust All Lamps

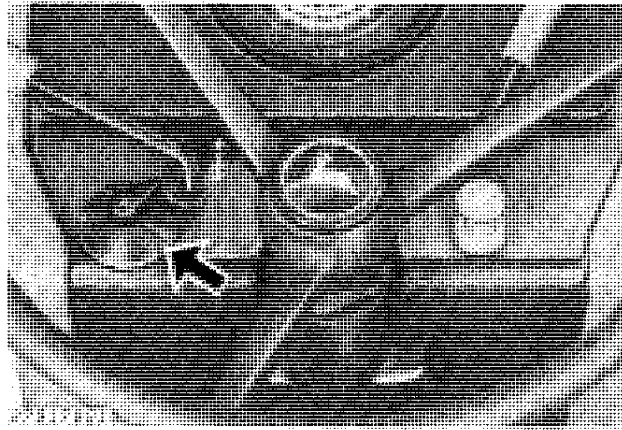


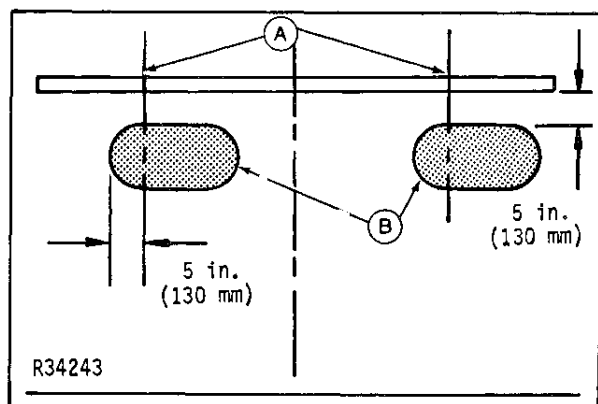
Fig. 5-Light Switch Positions

Check operation of lamps in all switch positions (Fig. 5).

- OFF - To turn off all lights.
- W - To turn on warning lamps.
- F - To turn on bright head lamps and rear flood lamp.
- H1 - To turn on bright head lamps, tail lamp, and warning lamps.
- H2 - Same as H1 except head lamps are dim

NOTE: When switch is in "W", "H1", or "H2" positions, be sure warning lamp indicator in instrument cluster blinks. If not, see Section 240, Group 25.

Head Lamps



- A—Points Directly in Front of Lamps
- B—Small Zones of Bright Light

Fig. 6-Adjusting Head Lamp Position

1. Park tractor on level ground 8 m (25 ft.) from a wall.
2. Measure height of lamps above ground and place a strip of masking tape on the wall at the same height.
3. Sight across steering wheel and hood ornament to obtain tractor centerline. Mark this spot on the wall and measure out 584 mm (23 in.) in each direction. This locates a spot directly in front of each lamp (A, Fig. 6).
4. Turn light switch to "H2" position, which switches lamps to low beam.
5. Locate a small zone of bright light from each lamp (B, Fig. 6). The top of bright zone should be 130 mm (5 in.) lower than the lamp, and left edge of zone should be 130 mm (5 in.) to left of lamp.

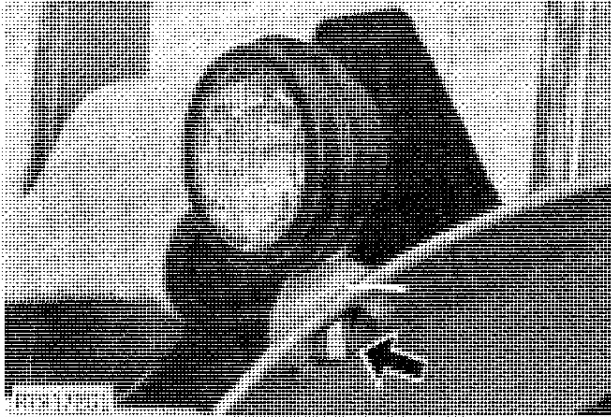


Fig. 7-Head Lamp Adjusting Nut

6. Adjust lamp assemblies as necessary. Loosen adjusting nut (Fig. 7) below each lamp and rotate lamp housing according to above specifications.

Removing SMV Plastic Cover

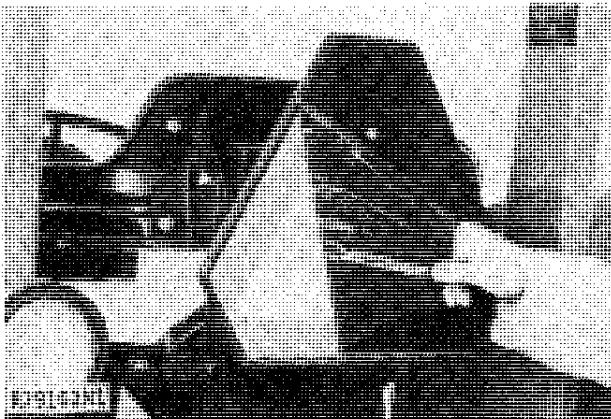


Fig. 8-Removing Plastic Cover

Remove the plastic cover from the slow moving vehicle emblem at the rear of tractor (Fig. 8).

Rockshaft Retaining Wire

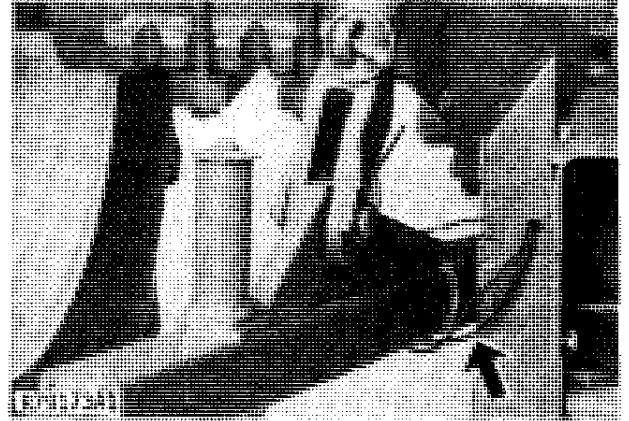
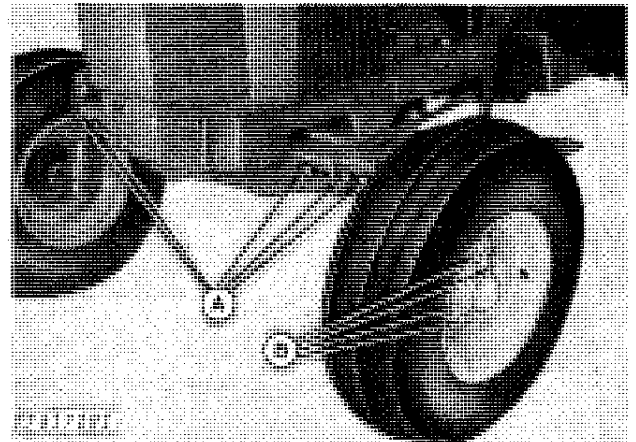


Fig. 9-Removing Retaining Wire

Remove retaining wire from rockshaft lift arm (Fig. 9).

Torquing Wheel Hardware



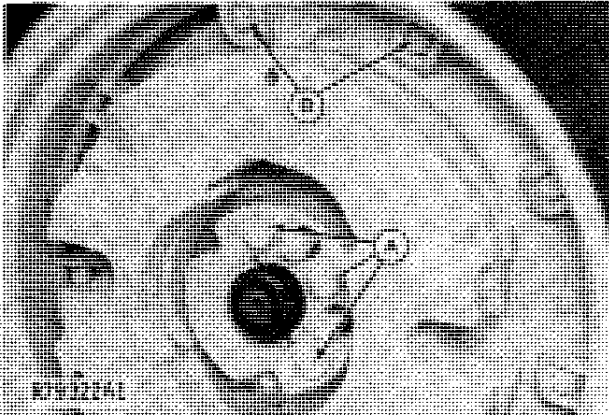
A—Axle Cap Screws

B—Front Wheel Cap Screws

Fig. 10-Torquing Cap Screws

1. Torque axle cap screws (A, Fig. 10) to 406 N·m (300 ft-lbs).
2. Torque front wheel cap screws (B) to 136 N·m (100 ft-lbs).

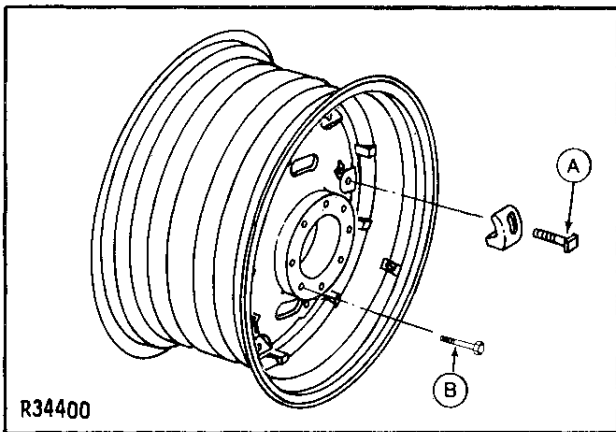
Torquing Wheel Hardware—Continued



A—Special Cap Screws B—Rim Cap Screws

Fig. 11-Rack and Pinion Wheel

3. On rack and pinion wheels, torque special cap screws (A, Fig. 11) to 406 N·m (300 ft-lbs) and torque rim cap screws (B) to 230 N·m (170 ft-lbs).



A—Rim Cap Screws B—Wheel Cap Screws

Fig. 12-Eight Position Wheel

4. On eight position wheels, torque rim cap screws (A, Fig. 12) to 230 N·m (170 ft-lbs) and torque wheel cap screws (B) to 136 N·m (100 ft-lbs).

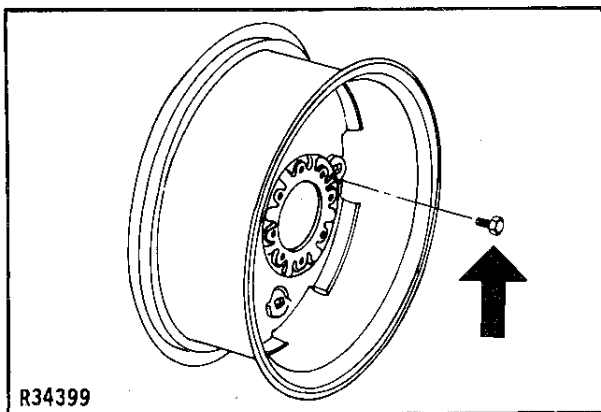
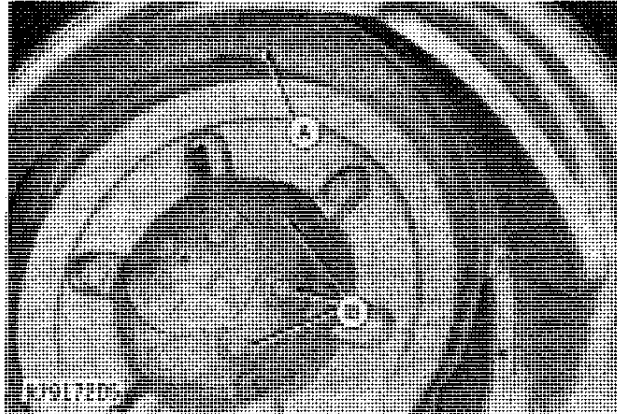


Fig. 13-Two Position Wheel

5. On two position wheels, torque stud nuts (Fig. 13) to 136 N·m (100 ft-lbs).



A—Clamp Cap Screws B—Wheel Cap Screws

Fig. 14-Power Adjusted Wheels

6. On power adjusted wheels, torque clamp cap screws (A, Fig. 14) to 115 N·m (85 ft-lbs) and torque wheel cap screws (B) to 177 N·m (130 ft-lbs).

Checking Tire Pressures

Check tire pressure to be sure it is within the specifications listed in the chart below.

FRONT TIRES		INFLATION PRESSURE	
Tire Size	Ply	Minimum kPa (bar) (psi)	Maximum kPa (bar) (psi)
7.5L-15	6	193 (1.9) (28)	303 (3.1) (44)
7.50-16	6	193 (1.9) (28)	303 (3.1) (44)
9.5L-15	6	193 (1.9) (28)	248 (2.5) (36)
11L-15	6	166 (1.7) (24)	276 (2.8) (32)
27X9.5-15	10	166 (1.7) (24)	221 (2.2) (40)
REAR TIRES			
13.6-38	4	90 (1.0) (14)	90 (1.0) (14)
15.5-38	6	124 (1.2) (18)	138 (1.4) (20)
16.9-28	6	110 (1.1) (16)	124 (1.2) (18)
16.9-30	6	110 (1.1) (16)	124 (1.2) (18)
18.4-16.1	6	90 (1.0) (14)	110 (1.1) (16)
18.4-26	6	110 (1.1) (16)	110 (1.1) (16)
18.4-30*	6	110 (1.1) (16)	110 (1.1) (16)

*2640 Tractor only