4440
Tractor

JOHN DEERE

TECHNICAL MANUAL

4440
Tractor

TM1182 (01SEP77) English

TM1182 (01SEP77)

LITHO IN U.S.A.
ENGLISH

4440 TRACTOR TECHNICAL MANUAL TM-1182 (SEP-77)

CONTENTS—REPAIR SECTIONS

(Continued on page 2)

CONTENTS—OPERATION AND TESTS SECTIONS

Section 10
GENERAL

CONTENTS OF THIS SECTION

Group 00
SPECIFICATIONS AND AND SPECIAL TOOLS
GENERAL TRACTOR SPECIFICATIONS

HORSEPOWER (Factory observed PTO horsepower at 2200 rpm)	130 hp (97 kW)
ENGINE:	
Type	6-cylinder, in-line, valve-in head, diesel, turbocharged,
Slow idle speed	800 rpm
Working speed range	1500 to 2200 rpm
Bore and stroke	4.56 x 4.75 in. (116 x 121 mm)
Displacement	466 cu. in. (7.6 L)
Compression ratio	14.9 to 1
Firing order	1-5-3-6-2-4
Valve clearance	
Intake	0.018 in. (0.46 mm)
Exhaust	0.028 in. (0.71 mm)
Injection pump timing	TDC
Lubrication system	force-feed, pressurized with full-flow filter

FUEL SYSTEM:	
Type	direct injection
Injection pump type	in-line
Air cleaner	dry type with safety element
COOLING SYSTEM	
Type	dual-pressure with centrifugal pump
Temperature control	dual heavy duty thermostats
CAPACITIES	
Fuel tank	65 U.S. gal. (245 L)
Cooling system	36 U.S. qt. (34 L)
Crankcase (with filter change)	16 U.S. qt. (15 L)
Transmission-hydraulic system (Drain and fill)	
Power Shift Transmission	11.0 U.S. gal. (49.2 L)
QUAD-RANGE Transmission	13.0 U.S. gal. (41.6 L)
Add for Power Front-Wheel Drive	4.0 U.S. gal. (15.1 L)
Transmission-hydraulic system (Dry, production fill)	
Power Shift Transmission	15.9 U.S. gal. (60.3 L)
QUAD-RANGE Transmission	15.9 U.S. gal. (60.3 L)
Add for Power Front-Wheel Drive	5.0 U.S. gal. (18.9 L)
POWER SHIFT TRANSMISSION:	
Type	planetary gears, hydraulically actuated wet disk clutches and brakes
Gear selections	8 forward and 4 reverse
Shifting	hydraulic, on-the-go and under load
QUAD-RANGE TRANSMISSION	
Type	2-speed, power-shifted planetary and 8-speed synchronized
Gear selections	16 forward and 6 reverse
Perma-Clutch	hydraulically-operated, multiple-disk wet clutch
POWER TAKE-OFF:	
Type	fully independent
Speed (2200 engine rpm)	dual speed 540-1000 rpm
Size	1-3/8 in. (35 mm)
Clutch	hydraulically-operated, multiple-disk wet clutch
POWER FRONT-WHEEL DRIVE:	
Type	hydraulic motor with planetary gear reduction, constant torque and variable speed
Controls	solenoid-operated valves, synchronized with transmission controls
HYDRAULIC SYSTEM:	
Type	closed-center, constant-pressure
Standby pressure	2250 psi (155 bar) (155 kg/cm²)
BRAKES:	
Type	hydraulically-operated wet disk

ELECTRICAL SYSTEM:	
Type	12-volt, negative ground
Batteries	two, 6-volt, 5D group, 800 amps cold cranking, 376 minutes reserve capacity
Alternator	72-amp with Sound-Gard body 61-amp without
TIRES AND TREADS	see page 05-6 in this section
DIMENSIONS:	
Wheelbase	106.7 in. (2709 mm)
Overall length	158.6 in. (4028 mm)
Height to muffler cover*	128.7 in. (3268 mm)
Height to top of Sound-Gard Body*	117.3 in. (2979 mm)
Overall width (regular axle)	90 in. (2277 mm)
Width at fender	82 in. (2082 mm)
Width at roof	54.4 in. (1382 mm)
Turning radius	146 in. (3700 mm)
SHIPPING WEIGHT**	12,000 lbs. (5400 kg)

*Tractor equipped with 20.8-38 R1 rear tires and 11.00-16 front tires.

**Equipped for average field service, without fuel and ballast. Add approximately 1000 lbs. (450 kg) if equipped with power front-wheel drive.

GROUND SPEEDS

Approximate ground speeds are given in the following charts. Speeds are shown in miles per hour, with kilometers per hour in parentheses.

Speeds are for a Tractor with 18.4-38 tires.

POWER SHIFT TRANSMISSION GROUND SPEEDS

Gear	1500 Engine RPM	2200 Engine RPM
1st	1.2 (1.9)	1.8 (2.7)
2nd	1.7 (2.7)	2.5 (4.0)
3rd	2.6 (4.2)	3.8 (6.1)
4th	3.4 (5.5)	4.9 (8.0)
5th	4.4 (7.1)	6.4 (10.5)
6th	5.8 (9.3)	8.2 (13.7)
7th	7.4 (11.9)	11.0 (17.5)
8th	12.6 (20.3)	18.6 (29.8)
1st rev.	1.4 (2.3)	2.2 (3.6)
2nd rev.	2.0 (3.2)	3.0 (5.1)
3rd rev.	3.2 (5.1)	4.6 (7.6)
4th rev.	4.2 (6.8)	5.9 (9.8)

QUAD-RANGE TRANSMISSION GROUND SPEEDS

Range	Speed	1500 Engine RPM	2200 Engine RPM
A	1	1.3 (2.1)	1.9 (3.1)
	2	1.7 (2.7)	2.4 (3.9)
	3	2.2 (3.5)	3.2 (5.1)
	4	2.8 (4.4)	4.0 (6.5)
	1R	2.1 (3.4)	3.1 (5.0)
	2R	2.7 (4.3)	3.9 (6.3)
B	1	3.0 (4.9)	4.4 (7.1)
	2	3.8 (6.2)	5.6 (9.0)
	3	5.0 (8.0)	7.3 (11.8)
	4	6.3 (10.2)	9.3 (15.0)
	1R	4.8 (7.8)	7.1 (11.4)
	2R	6.1 (9.9)	9.0 (14.5)
C	1	3.6 (5.8)	5.2 (8.5)
	2	4.5 (7.3)	6.7 (10.7)
	3	5.9 (9.5)	8.7 (14.0)
	4	7.5 (12.1)	11.0 (17.7)
	1R	5.7 (9.2)	8.4 (13.5)
	2R	7.3 (11.7)	10.7 (17.2)
D	1	5.5 (8.8)	8.1 (13.0)
	2	7.0 (11.2)	10.2 (16.5)
	3	9.1 (14.6)	13.3 (21.4)
	4	11.5 (18.5)	16.9 (27.2)

(Specifications and design subject to change without notice.)

PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

Item	Specification
Toe-in	1/8 to 3/8 inch (3 to 9 mm)
Injection pump timing	TDC
Engine speeds	
Slow idle	780 to 820 rpm
Fast idle	2325 to 2425 rpm
Rated speed at full load	2200 rpm

Torque

	ft-lbs	N·m	kgm
SOUND-GARD® body or Four-Post ROLL-GARD® mounting bolts	150	200	20
Front axle-to-knee bolts:			
All except Hi-Crop	370	500	50
Hi-Crop	445	600	60
Front wheel-to-hub bolts	100	135	14
Special bolts on rear hubs	300	410	41
Steel wheel-to-hub bolts	240	325	33
Rim clamp-to-wheel bolts	170	230	23
Rockshaft lift arm retaining bolts	300	410	41
Other nuts and cap screws:			

Bolt Diameter	Plain Head*			Three Radial Dashes*			Six Radial Dashes*		
	ft-lbs	N·m	kgm	ft-lbs	N·m	kgm	ft-lbs	N·m	kgm
1/4 in. (6.35 mm)	6	8	0.8	10	14	1.4	14	19	1.9
5/16 in. (7.93 mm)	13	18	1.8	20	27	2.7	30	41	4.1
3/8 in. (9.53 mm)	23	31	3.1	35	47	4.7	50	70	7.0
7/16 in. (11.11 mm)	35	47	4.7	55	75	7.5	80	110	11
1/2 in. (12.70 mm)	55	75	7.5	85	115	12	120	160	16
9/16 in. (14.29 mm)	75	100	10	130	175	18	175	240	24
5/8 in. (15.88 mm)	105	140	14	170	230	23	240	325	33
3/4 in. (19.05 mm)	185	250	25	300	410	41	425	575	58
7/8 in. (22.23 mm)	160	220	22**	445	600	60	685	930	93
1 in. (25.40 mm)	250	340	34**	670	900	90	1030	1400	140

**The types of bolts and cap screws are identified by head markings as follows:*

Plain Head: regular machine bolts and cap screws.

3-Dash Head: tempered steel high-strength bolts and cap screws.

6-Dash Head: tempered steel extra high-strength bolts and cap screws.

***Machine bolts and cap screws 7/8-inch and larger are sometimes formed hot rather than cold, which accounts for the lower torque.*

TUNE-UP

Item	Specification
PTO horsepower	130 hp (97 kW)
Compression	330 to 370 psi (22.5 to 25.5 bar)
Vacuum (full speed, full load, clean air filters)	10.5 to 11.5 in. (26 to 29 mbar)
Air cleaner indicator switch closing vacuum	24 to 26 in. (60 to 65 mbar)
Manifold pressure (full speed, full load, clean air filters)	14 to 16 psi (0.96 to 0.97 bar)
Thermostat opening temperature	160 to 180°F (71 to 82°C)
Radiator cap pressure release	
Low pressure cap	6.25 to 7.50 psi (0.4 to 0.5 bar)
High pressure cap	14 to 17 psi (0.9 to 1.2 bar)
Engine speeds	
Slow idle	780 to 820 rpm
Fast idle	2325 to 2425 rpm
Rated speed at full load	2200 rpm

LUBRICATION

Engine crankcase oil capacity	16 U.S. qt. (15 L)
Transmission-hydraulic system oil capacity	
(Drain and fill)	
Power Shift Transmission	11.0 U.S. gallons (49.2 L)
QUAD-RANGE Transmission	13.0 U.S. gal. (41.6 L)
Add for Power Front-Wheel Drive	4.0 U.S. gal. (15.1 L)
Transmission-hydraulic system	
(Dry, production fill)	
Power Shift Transmission	15.9 U.S. gal. (60.3 L)
QUAD-RANGE Transmission	15.9 U.S. gal. (60.3 L)
Add for Power Front-Wheel Drive	5.0 U.S. gal. (18.9 L)
Service intervals	
Check engine oil level	Every 10 hours
Change engine oil	Every 100 hours
Replace engine oil filter	Every 200 hours
Clean crankcase breather filter	Every 200 hours
Check transmission-hydraulic system oil level	Every 200 hours
Replace transmission-hydraulic system oil filter (QUAD-RANGE)	Every 200 hours
Replace transmission-hydraulic system oil filters (Power Shift)	Every 600 hours
Change transmission-hydraulic oil	Every 1200 hours
Clean main hydraulic pump screen	Every 1200 hours
Clean and repack front wheel bearings	Every 1200 hours
Lubricate grease fittings	
Front axle pivot pins, steering spindles, tie rods (10 fittings)	Every 10 hours
Wide-swing drawbar rollers (if equipped)	Every 10 hours
Front wheel bearings (only in extremely wet conditions)	Every 10 hours
3-point hitch	Every 200 hours
Load control shaft bushings	Every 200 hours
Rear axle bearings	Every 600 hours

SEPARATION

ITEM	SPECIFICATION
Fan belt tension	**New Belt**
Single belt	130-140 lbs. (572-622 N)
Dual belt	95-104 lbs. (423-467 N)
	After Run In
All belts	85-94 lbs. (378-423 N)

ITEM	TORQUE
SOUND-GARD body retaining cap screws	150 ft-lbs (203 N·m) (20.3 kgm)
ROLL-GARD (4-post) mounting cap screws	150 ft-lbs (203 N·m) (20.3 kgm)
Engine-to-clutch housing cap screws	1/2 in.—85 ft-lbs (115 N·m) (11.5 kgm) 3/4 in.—300 ft-lbs (406 N·m) (40.6 kgm)
Clutch housing-to-engine cap screws	300 ft-lbs (406 N·m) (40.6 kgm)
Hydraulic pump support-to-engine cap screws	85 ft-lbs (115 N·m) (11.5 kgm)
Hydraulic pump coupler lock nuts	30 ft-lbs (41 N·m) (4.1 kgm)
Hydraulic pump drive coupling	35 ft-lbs (47 N·m) (4.7 kgm)
Side frames-to-engine	5/8 in.—275 ft-lbs (373 N·m) (37.3 kgm) 3/4 in.—425 ft-lbs (578 N·m) (57.8 kgm)
Clutch housing-to-transmission case cap screws	5/8 in.—170 ft-lbs (230 N·m) (23 kgm) 3/4 in.—300 ft-lbs (406 N·m) (40.6 kgm)
Oil filter inlet pipe elbow cap screws	45 ft-lbs (61 N·m) (6.1 kgm)
Axle housing-to-transmission case cap screws	170 ft-lbs (230 N·m) (23 kgm)
Hi-Crop drive shaft housing-to-final drive gear housing	275 ft-lbs (373 N·m) (37.3 kgm)
Radiator hose clamps (clean and dry)	36 in-lbs (4 N·m) (0.4 kgm)
Transmission pump elbow-to-clutch housing cap screws	45 ft-lbs (61 N·m) (6.1 kgm)
Oil pan-to-clutch housing cap screws	85 ft-lbs (115 N·m) (11.5 kgm)
Hose clamps	30 in-lbs (3.4 N·m) (0.3 kgm)

SPECIAL TOOLS

Predelivery, Delivery, and After-Sale Services

TOOL	USE
JDG-18 Snap Ring Tool	Remove and install snap rings on ends of rear axles

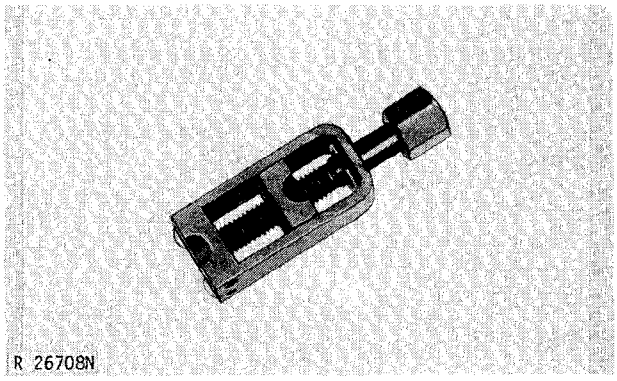
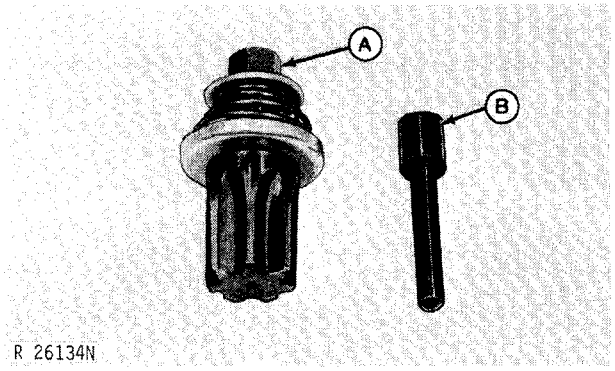


*Fig. 1-JDG-18 Snap Ring Tool**

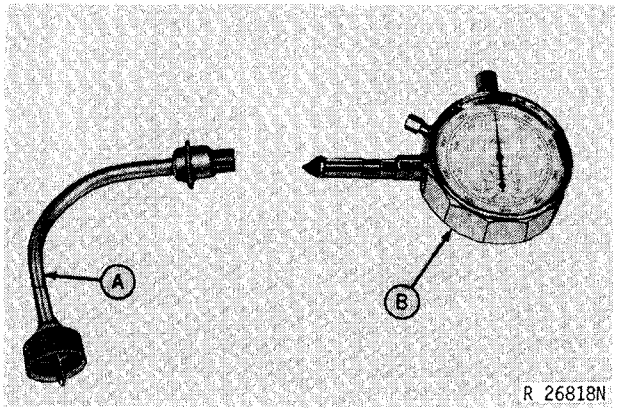
JDE-81-1 Engine Rotation Tool and JDE-81-4 Timing Pin	Turn engine to TDC to check injection pump timing



A—JDE-81-1 Engine Rotation Tool*
B—JDE-81-4 Timing Pin*

Fig. 2-Tools Required for Checking Timing

JDE-28 Adapter and Hand Tachometer	Check engine speeds



A—JDE-28 Adapter* **B—Hand Tachometer**

Fig. 3-Tools Required for Checking Engine Speeds

Tune-Up

TOOL	USE
JDE-81-1 Engine Rotation Tool and JDE-81-4 Timing Pin	Turn engine to TDC to check injection pump timing
JDE-28 Adapter and Hand Tachometer	Check engine speeds
AR62377 Dry Element Cleaning Gun	Clean primary element of air cleaner

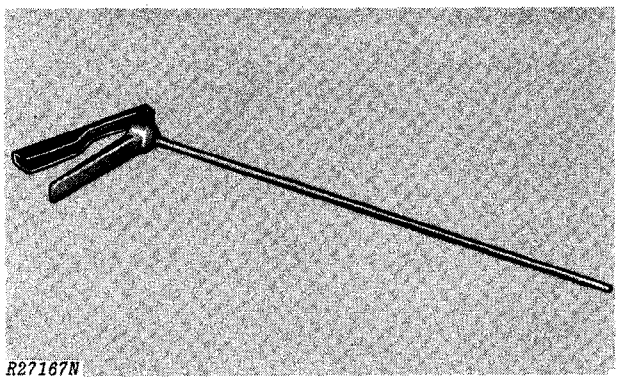


Fig. 4-AR62377 Dry Element Cleaning Gun

D-05022ST Water Vacuum Gauge	Measure air intake vacuum

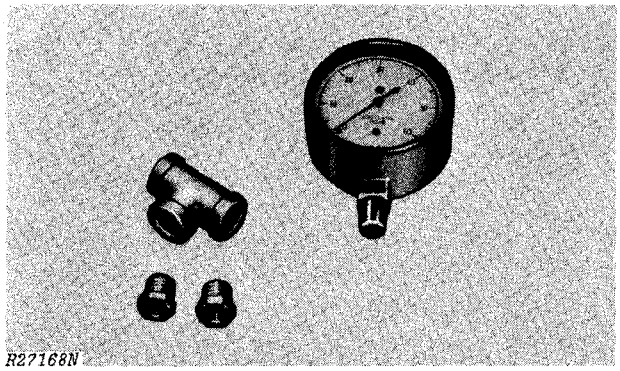


*Fig. 5-D-05022ST Water Vacuum Gauge**
(Formerly JDST-11)

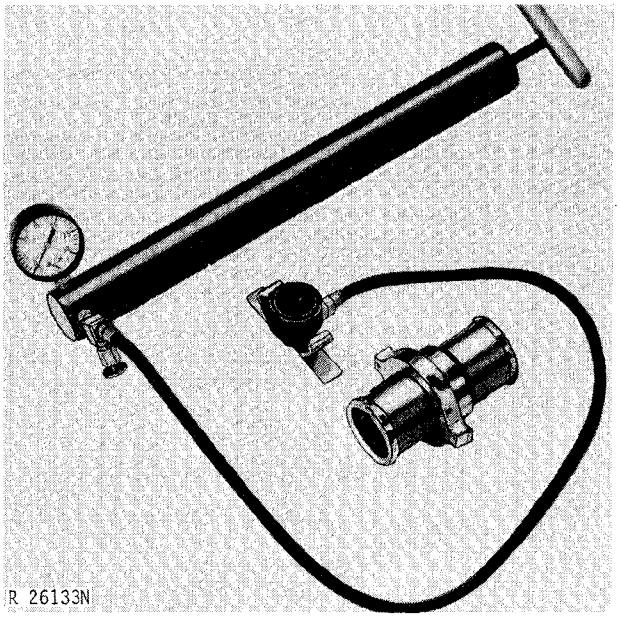
TOOL	NUMBER	USE
	BT-11-52 Radiator Tester	Pressure test cooling system and radiator caps

*Fig. 6-BT-11-52 Radiator Tester**

Separation

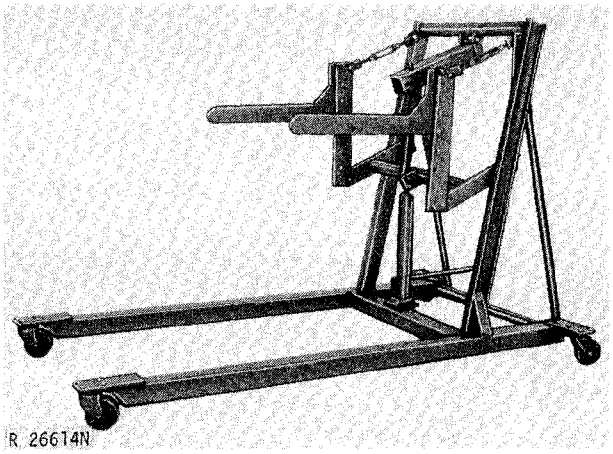
	Brown Body Lift	To remove Sound-Gard Body.

Fig. 7-Brown Body Lift

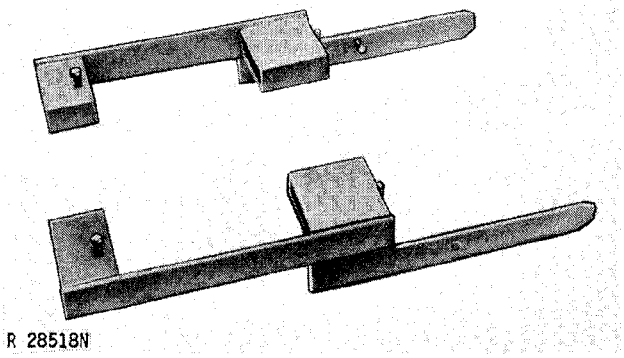
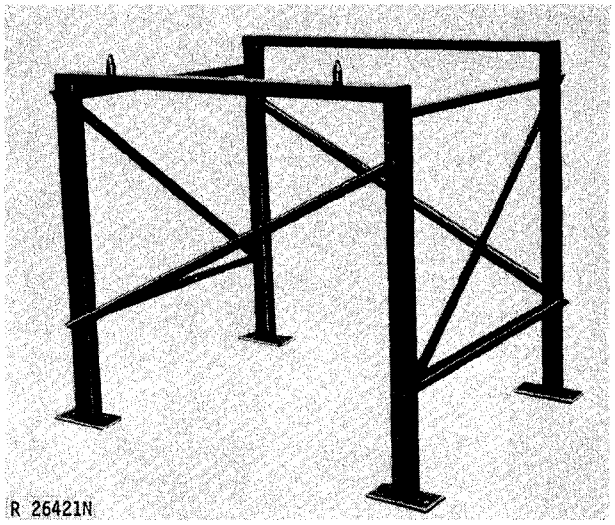
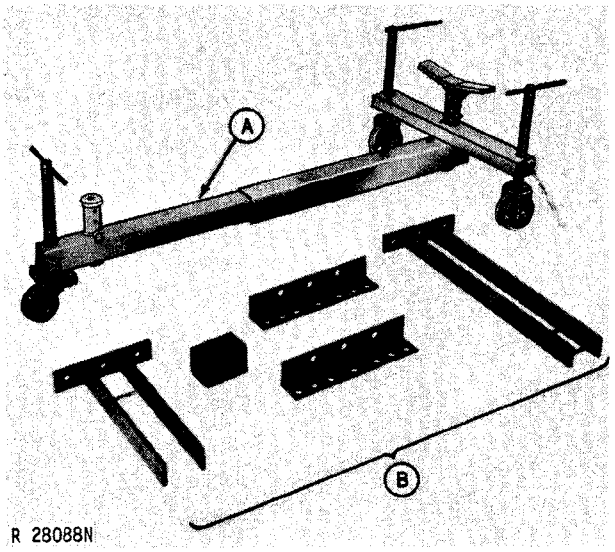
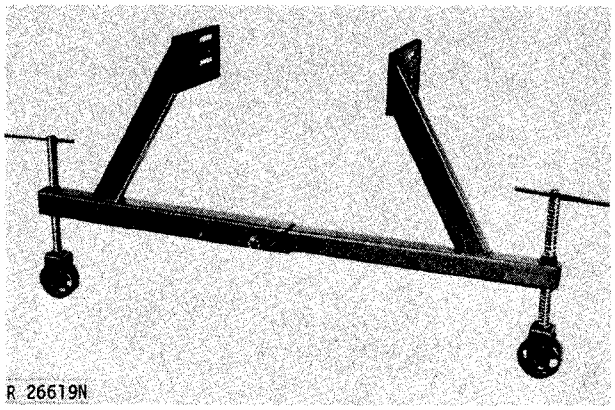
	JDG-21 Fork Lift Adapters	To remove Sound-Gard Body

Fig. 8-Fork Lift Adapters

Separation—Continued

TOOL	NUMBER	USE
 *Fig. 9-Sound-Gard Body Stand**	**JDG-10-2**	**To support Sound-Gard Body after removal.**
 *Fig. 10-Splitting Stand**	**A-D-05007ST Splitting Stand** **B-D-05149ST Attachments**	**To support tractor in various separations.**
 *Fig. 11-Splitting Stand**	**JDG-12-1 Splitting Stand**	**To support front end of tractor.**

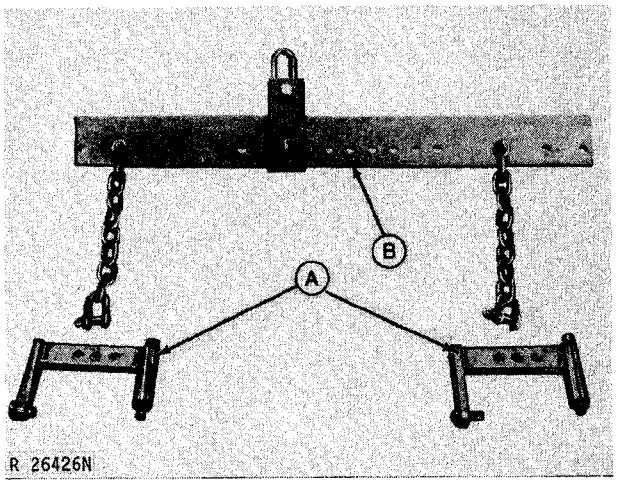
TOOL	NUMBER	USE
	**A-JDE-63 Engine Lift Brackets** **B-JDG-23 Engine Lift Sling**	**To remove engine**

*Fig. 12-Engine Removal Tools**

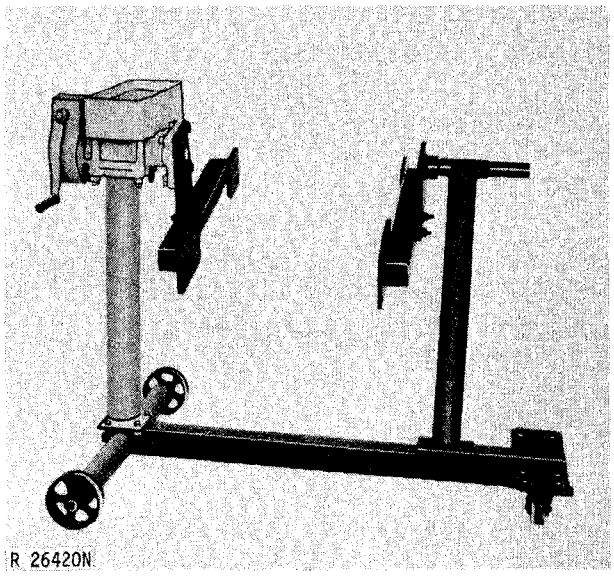
	**D-05001ST Repair Stand**	**To support engine during repair.**

*Fig. 13-Engine Repair Stand**

*Tools marked with an asterisk can be ordered from Service Tools, Box 314, Owatonna MN 55060.

Group 05
PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

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 verfied 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.

Lubricate Grease Fittings

Grease all fittings with John Deere AT30408 High Temperature Grease (1 lb. [0.45 kg] can) or its equivalent. TY6281 Lubricant is the same John Deere High Temperature Grease in a 14 oz. (0.39 kg) cartridge. Lubricant must be an extreme-pressure grease with non-soap base and NGLI No. 2 consistency, and must meet John Deere JDM J13 E4 specifications.

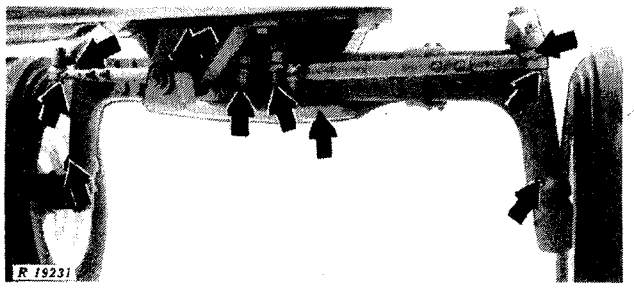


Fig. 1-Grease Fittings

1. Apply several shots of grease to tie rods, pivot pins, and the steering spindles (10 fittings).

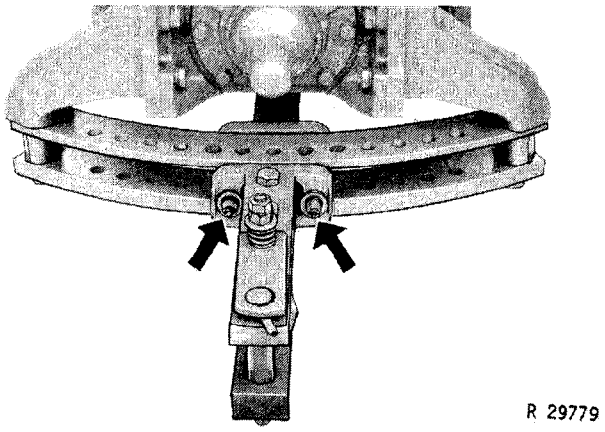


Fig. 2-Wide Swing Drawbar Grease Fittings

2. If tractor is equipped with a wide-swing drawbar (Fig. 2), apply several shots of John Deere High Temperature Grease or its equivalent to drawbar rollers.

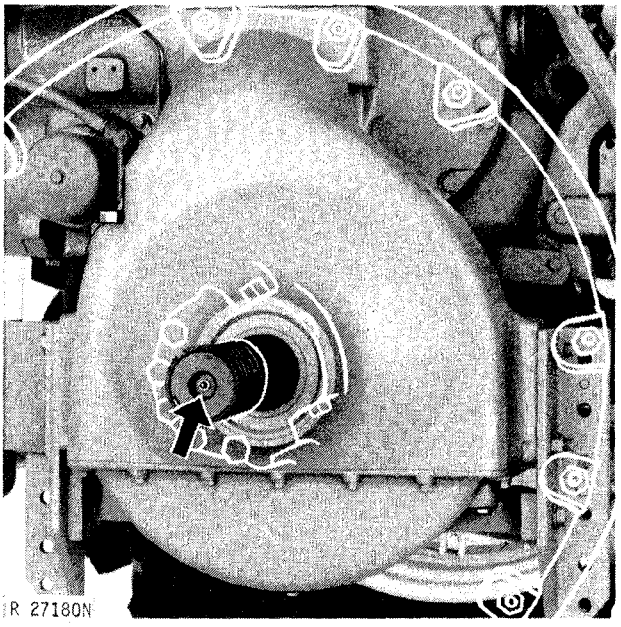


Fig. 3-Hi-Crop Rear Axle Grease Fitting

3. On Hi-Crop tractors, apply several shots of John Deere High Temperature Grease or its equivalent to grease fittings on ends of rear axles.

Lubricate Grease Fittings—Continued

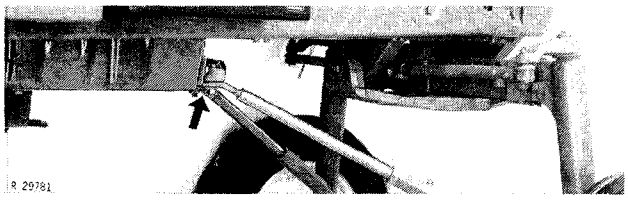


Fig. 4-Radius Rod Pivot Grease Fitting

4. On Hi-Crop tractors, apply several shots of John Deere High Temperature Grease or its equivalent to grease fittings.

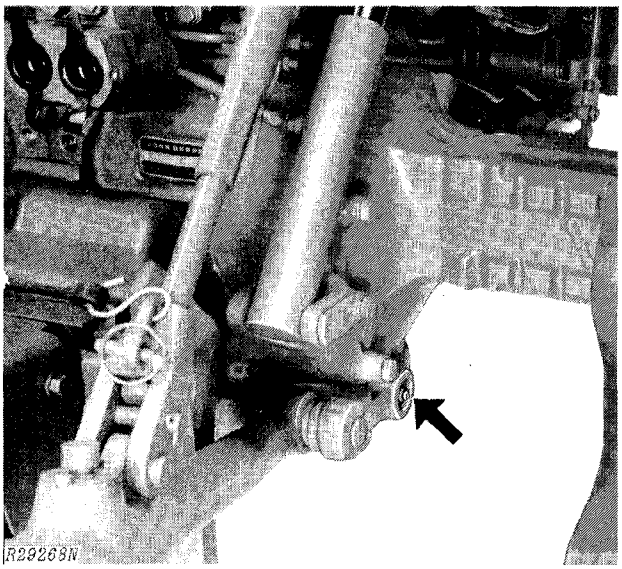


Fig. 5-Load Control Shaft Bushing Grease Fitting

5. Apply several shots of John Deere High Temperature Grease or its equivalent to each load control shaft bushing.

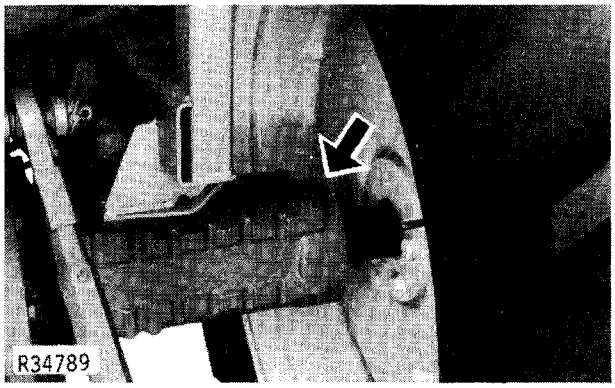


Fig. 6-Rear Axle Grease Plug

6. Grease the rear axle bearings by removing the pipe plug on each end of the axle housing, installing a grease fitting and applying John Deere High Temperature Grease or its equivalent at each fitting. Apply grease until grease appears at seals, or a maximum of 25 shots.

Install Ether Aid Solenoid Wiring (if equipped)

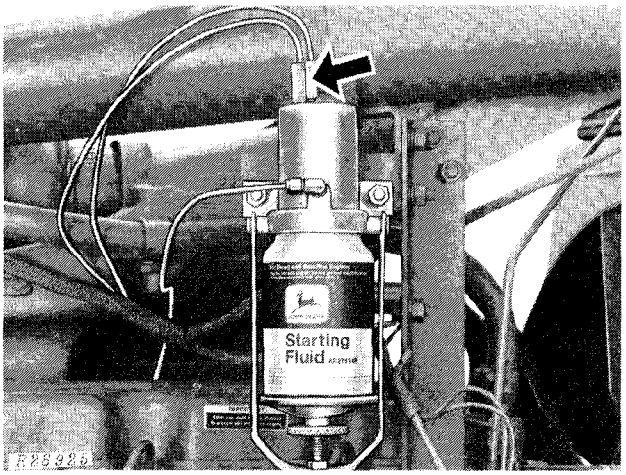


Fig. 7-Electric Starting Aid Connector

Connect starting aid wiring to starting aid solenoid (if equipped).