

840, 940, 1040 and 1140 Tractors



TECHNICAL MANUAL 840, 940, 1040 and 1140 Tractors

TM4353 (01JUN82) English

**John Deere Werke Mannheim
John Deere Ibérica S.A. Getafe
TM4353 (01JUN82)**

LITHO IN U.S.A. (REVISED)
ENGLISH



840, 940, 1040 and 1140 Tractors
Technical Manual
TM-4353

CONTENTS

SECTION 10 — GENERAL

- Group 00 — Specifications and special tools
- Group 05 — Pre-delivery, delivery and after-sale inspections
- Group 10 — Lubrication and periodic service
- Group 15 — Engine and tractor tune-up
- Group 20 — Tractor separation

SECTION 20 — ENGINE

- Group 00 — Specifications and special tools
- Group 05 — Description, diagnosing malfunctions
- Group 10 — Cylinder head, valves and camshaft
- Group 15 — Cylinder block, liners, pistons and connecting rods
- Group 20 — Crankshaft, main bearings and flywheel
- Group 25 — Timing gear train
- Group 30 — Lubrication system
- Group 35 — Cooling system

SECTION 30 — FUEL AND AIR INTAKE SYSTEM

- Group 00 — Specifications and special tools
- Group 05 — General information, diagnosing malfunctions
- Group 10 — Fuel tank, water trap, fuel transfer pumps and fuel filter
- Group 15 — Roto Diesel fuel injection pump
- Group 20 — Fuel injection nozzles
- Group 25 — Cold weather starting aids
- Group 30 — Speed control linkage
- Group 35 — Air cleaner

SECTION 40 — ELECTRICAL SYSTEM

- Group 00 — Specifications and special tools
- Group 05 — Description and diagnosing malfunctions
- Group 10 — Wiring harnesses
- Group 15 — Controls and instruments
- Group 20 — Lighting systems
- Group 25 — Wiring diagrams
- Group 30 — Starting motor
- Group 35 — Alternator

SECTION 50 — POWER TRAIN

- Group 00 — Specifications and special tools
- Group 05 — Description, operation and lubricating system
- Group 10 — Clutch operating linkage
- Group 15 — Engine clutches
- Group 20 — Hi-Lo shift unit
- Group 25 — Creeper transmission
- Group 30 — Transmission shift linkage
- Group 35 — Synchronized transmission and transmission oil pump
- Group 40 — Collar shift transmission and transmission oil pump
- Group 45 — Differential
- Group 50 — Final drives
- Group 55 — Independent PTO
- Group 60 — Continuous-running PTO
- Group 65 — Mechanical front wheel drive

Copyright © by
DEERE & COMPANY
European Office
D 68 Mannheim
All rights reserved

CONTENTS (Contd.)

SECTION 60 – STEERING SYSTEM AND BRAKES

- Group 00 – Specifications and special tools
- Group 05 – Power steering
- Group 10 – Manual steering
- Group 15 – Brakes

SECTION 70 – HYDRAULIC SYSTEM

- Group 00 – Specifications and special tools
- Group 05 – Description, diagnosing malfunctions and pressure tests
- Group 10 – Oil reservoir, filter, valves and oil cooler
- Group 15 – Hydraulic pumps
- Group 20 – Rockshaft
- Group 25 – Selective control valves (spool type)
- Group 30 – Selective control valves (poppet valve type)
- Group 35 – Hose couplers
- Group 40 – Remote cylinder

SECTION 80 – MISCELLANEOUS

- Group 00 – Specifications and special tools
- Group 05 – Front axle
- Group 10 – Belt pulley
- Group 15 – Front and rear wheels
- Group 20 – Axle trailer hitch

SECTION 90 – OPERATOR'S CAB

- Group 00 – Specifications and special tools
- Group 05 – Cab ventilation and heating
- Group 10 – Operator's seats
- Group 15 – Operator's cab
- Group 20 – Roll guard

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>

Section 10

General

CONTENTS OF THIS SECTION

GROUP 00 — SPECIFICATIONS AND SPECIAL TOOLS

	Page
Specifications	00-3
Serial numbers	00-3
Model numbers	00-3
Engine	00-3
Engine clutch	00-4
Cooling system	00-5
Fuel system	00-5
Electrical system	00-5
Synchronized transmission	00-5
Collar shift transmission	00-5
Hi-Lo shift unit	00-6
Creeper transmission	00-6
Differential and final drives	00-6
Differential lock	00-6
PTO	00-6
Mechanical front wheel drive	00-7
Power steering	00-7
Manual steering	00-7
Foot brakes	00-7
Handbrake	00-7
Hydraulic system	00-8
Capacities	00-8
Travel speeds	00-9
Front and rear wheels	00-9
Dimensions and weights	00-9
Predelivery, delivery and after-sales inspections	00-10
Lubrication and service	00-11
Tune-up	00-12
Tractor separation	00-13
Standard torques	00-14
Special tools	00-16

GROUP 05 — PREDELIVERY, DELIVERY AND AFTER-SALES INSPECTIONS

	Page
Tractor storage	05-1
Predelivery inspection	05-2
Delivery inspection	05-9
After-sales inspection	05-10

GROUP 10 — LUBRICATION AND SERVICE

Lubrication and service	10-1
-----------------------------------	------

GROUP 15 — TUNE-UP

Preliminary engine testing	15-1
Dynamometer test	15-1
Testing compression pressure	15-2
Tune-up	15-3
Checking tractor operation	15-8
Standard torques	15-9

GROUP 20 — TRACTOR SEPARATION

Separating between engine and tractor front end	20-1
Removal and installation of engine	20-5
Removal and installation of clutch housing	20-8
Removal and installation of final drives	20-11
Removal and installation of rockshaft	20-13
Removal and installation of operator's cab	20-15

Group 00

Specifications and Special Tools

Specifications

Serial Numbers

The engine serial number is stamped into the plate located on the lower front right-hand side of the cylinder block.

NOTE: When ordering engine parts, quote all digits of serial number stamped on the plate.

The plate showing the tractor serial number is located on the right-hand side of the front axle carrier.

NOTE: When ordering tractor spare parts (excluding engine parts), quote all digits of serial number stamped on the plate.

A plate showing the tractor type, transmission serial number, cone point measurement etched into pinion face of differential drive shaft as well as reduction of differential is located on the right-hand side of the transmission case.

Model Numbers

The fuel injection pump, fuel injection nozzles, alternator, starting motor, and hydraulic pump have model numbers to facilitate identification of different makes of a given unit.

Engine

Number of cylinders		3
Cylinder liner bore	106.5 mm (4.19 in.)	
Stroke	110 mm (4.33 in.)	
Displacement	2940 cm ³ (179 cu.in.)	
Compression ratio	16.8 : 1	
Maximum torque		
840 at 1300 rpm	135 Nm	100 ft-lb
940 at 1300 rpm	150 Nm	110 ft-lb
1040 at 1400 rpm	165 Nm	122 ft-lb
1140 at 1400 rpm	185 Nm	136 ft-lb
Firing order	1 - 2 - 3	
Valve clearance (engine hot or cold)		
Intake valve	.035 mm	0.014 in.
Exhaust valve	.045 mm	0.018 in.

Fast idle speed

840 and 940 2560 rpm

1040 and 1140 2660 rpm

Slow idle speed 800 rpm

Rated engine speed

840 and 940 2400 rpm

1040 and 1140 2500 rpm

Working speed range

840 and 940 1300 to 2400 rpm

1040 and 1140 1400 to 2500 rpm

Flywheel horsepower according to DIN 70020

at engine rated speed of 2400 rpm

840 28 kW 38 hp

940 32 kW 44 hp

at engine rated speed of 2500 rpm

1040 37 kW 50 hp

1140 41 kW 56 hp

PTO* horsepower according to DIN 70020

at engine rated speed of 2400 rpm (without mid PTO)

840 25 kW 34 hp

940 29 kW 39 hp

at engine rated speed of 2500 rpm

1040 33 kW 45 hp

1140 37 kW 50 hp

PTO* horsepower according to DIN SAE J 816 b

at engine rated speed of 2500 rpm

1040 32 kW 43 hp

1140 36 kW 48 hp

Lubrication system Full internal force feed system, with full flow filter

Engine Clutch Single dry disk with torsion damper or dual-stage dry disk, foot-operated

* With the engine run in (above 100 hours of operation) and having reached operating temperature (engine and transmission); measured by means of a dynamometer. Permissible variation $\pm 5\%$.

Cooling System

Type Pressurized system with centrifugal pump
Temperature regulation Thermostat

Fuel System

Type Direct injection
Fuel injection pump timing to engine TDC
Fuel injection pump type Distributor type
840 Roto Diesel Nr. R 3432 F 720
940 Roto Diesel Nr. R 3432 F 710
1040 Roto Diesel Nr. R 3432 F 690
1140 Roto Diesel Nr. R 3432 F 700

Air cleaner Dry-type air cleaner with secondary
(safety) element

Electrical System

Batteries 2 x 12 volts, 55 Ah
Alternator with internal regulator
Tractors without operator's cab 14 volts, 33 or 55 amps.
Tractors with operator's cab 14 volts, 55 amps.
Starting motor 12 volts, 3 kW (4 hp)
Battery terminal grounded negative

Synchronized Transmission

Type Synchronized transmission
Gear selections 8 forward and 4 reverse
Gear shifting Two forward groups and one reverse group
Synchronized forward and reverse shifting
within groups

Collar Shift Transmission

Type Helical gears
Gear selections 8 forward, 4 reverse speeds
Gear shifting Two forward ranges, One reverse range

Hi-Lo Shift Unit

Type Hydraulic gear reduction unit which can be shifted under load with "wet" multiple disk clutch and brake packs

Travel speed decreases in each gear by Approx. 20 %

Shifting to reduced (Lo) speed Preloaded cup springs

Shifting to normal (Hi) speed Hydraulic

Creeper Transmission

Type Synchronized reduction unit

Travel speed decreases in low (I) and reverse ranges by approx. 79 %

Shifting both ranges Mechanical and not under load

Differential and Final Drives

Type of differential Spiral bevel gears

Type of final drive Planetary reduction drive

Differential Lock

Operation Hand or foot operated

Disengage Will disengage automatically as soon as traction has equalized

PTO

INDEPENDENT PTO

Type Independent of transmission, can be engaged and disengaged under load

PTO clutch Hydraulically operated "wet" disk clutch

PTO brake Hydraulically operated "wet" disk brake

CONTINUOUS – RUNNING PTO

Type Independent of transmission, with engine dual stage clutch

PTO SPEEDS (in rpm) — Tractors with mid PTO

Engine speed	540 rpm shaft	1000 rpm shaft
800	210	385
2075	540	1000
2400	625	1160
2560	665	1230

PTO SPEEDS (in rpm) — Tractors without mid PTO

Engine speed	540 rpm shaft	1000 rpm shaft
800	180	335
2400	540	1000
2500	565	1040
2560	575	1065
2660	600	1110

Mechanical Front Wheel Drive

Type Engaged hydraulically, under full load with "wet" disk clutch

Control Electrical/hydraulic solenoid switch

Engagement Preloaded cup springs

Disengagement Hydraulic

Power Steering Hydraulically operated steering linkage

Manual Steering Recirculating ball bearing type

Foot Brakes Self-adjusting, hydraulically operated "wet" disk brakes

Handbrake Mechanically operated band-type locking brake acting on the differential

Hydraulic System

Type	Closed center, constant pressure system		
Standby pressure*	19000 kPa	190 bar	2760 psi
Operating pressure**	17000 kPa	170 bar	2470 psi
Hydraulic pump	4 or 8-piston pump with variable displacement		

Capacities

Fuel tank			
Plastic tank	78 liters		20.6 U.S.gals.
Metal tank	62.5 liters		16.5 U.S.gals.
Cooling system			
Without operator's cab	10.5 liters		1.8 U.S.gals.
With operator's cab	15.5 liters		4.1 U.S.gals.
Engine crankcase			
Without filter change	6.5 liters		1.7 U.S.gals.
With filter change	7 liters		1.8 U.S.gals.
Transmission - Hydraulic system (including oil reservoir and oil cooler on 940, 1040 and 1140 tractors)			
Synchronized transmission			
Initial filling — 840	53 liters		14 U.S.gals.
— 940, 1040, 1140	59 liters		15.6 U.S.gals.
Oil change — 840	45 liters		11.9 U.S.gals.
— 940, 1040, 1140	51 liters		13.5 U.S.gals.
Collar shift transmission (without mid PTO)			
Initial filling — 840	41 liters		10.8 U.S.gals.
— 940, 1040, 1140	47 liters		12.4 U.S.gals.
Oil change — 840	33 liters		8.7 U.S.gals.
— 940, 1040, 1140	39 liters		10.3 U.S.gals.
Collar shift transmission (with mid PTO)			
Initial filling — 840	36 liters		9.5 U.S.gals.
— 940	42 liters		11.1 U.S.gals.
Oil change — 840	28 liters		7.4 U.S.gals.
— 940	34 liters		9.0 U.S.gals.
Oil reservoir	4 liters		1.1 U.S.gals.
Oil cooler	2 liters		0.5 U.S.gals.
Mechanical front wheel drive			
Front axle housing	5.3 liters		1.4 U.S.gals.
Wheel hub housing, each	0.75 liter		0.2 U.S.gals.
Belt pulley	1 liter		0.3 U.S.gals.

On tractors for Canada only:

* 15500 kPa 155 bar 2250 psi
 ** 14000 kPa 140 bar 2050 psi

Travel Speeds see Operator's Manual

Front and Rear Wheels

Tires, tread widths, tire pressures and ballast weights see Operator's Manual

Dimensions and Weights see Operator's Manual

Predelivery, Delivery and After-Sales Inspections

ENGINE SPEEDS

Slow idle	800 rpm
Fast idle	
840 and 940	2560 rpm
1040 and 1140	2660 rpm
Rated speed	
840 and 940	2400 rpm
1040 and 1140	2500 rpm

FAN BELT

The fan belt should have 19 mm (0.75 in.) flex with 90 N (20 lb) pull midway between crankshaft and alternator or water pump (use a spring scale).

CLUTCH PEDAL

Clutch pedal free travel	approx. 25 mm 1 in.
--------------------------------	------------------------

FRONT WHEEL TOE-IN

Tractors without MFWD	3 to 6 mm	0.12 to 0.25 in.
Tractors with MFWD	0 to 3 mm	0 to 0.12 in.

TORQUES FOR HARDWARE

Start safety switch in rockshaft housing, max.	50 Nm	35 ft-lb
Front wheel rim to hub		
Tractors without MFWD	180 Nm	130 ft-lb
Tractors with MFWD	300 Nm	220 ft-lb
Axle knees to axle center, cap screws	400 Nm	300 ft-lb
Tie rod outer clamp, cap screw	110 Nm	80 ft-lb
Tie rod inner clamp, cap screw	40 Nm	30 ft-lb
Rear wheels to rear axle	240 Nm	175 ft-lb
4-post roll guard		
Roll guard to fender, cap screws	120 Nm	85 ft-lb
U-bolt hex. nuts	130 Nm	95 ft-lb
2-post roll guard		
Supports to crossbar, cap screws	230 Nm	170 ft-lb
U-bolt hex. nuts	230 Nm	170 ft-lb
Rear fender to final drive housing, cap screws	130 Nm	95 ft-lb

Lubrication and Service

CAPACITIES

Engine crankcase

Without filter change	65 liters	1.7 U.S.gals.
With filter change	7.0 liters	1.8 U.S.gals.

Transmission - Hydraulic system (including oil reservoir and oil cooler on 940, 1040 and 1140 tractors)

Synchronized transmission

Initial filling — 840	53 liters	14 U.S.gals.
— 940, 1040, 1140	59 liters	15.6 U.S.gals.
Oil change — 840	45 liters	11.9 U.S.gals.
— 940, 1040, 1140	51 liters	13.5 U.S.gals.

Collar shift transmission (without mid PTO)

Initial filling — 840	41 liters	10.8 U.S.gals.
— 940, 1040, 1140	47 liters	12.4 U.S.gals.
Oil change — 840	33 liters	8.7 U.S.gals.
— 940, 1040, 1140	39 liters	10.3 U.S.gals.

Collar shift transmission (with mid PTO)

Initial filling — 840	36 liters	9.5 U.S.gals.
— 940	42 liters	11.1 U.S.gals.
Oil change — 840	28 liters	7.4 U.S.gals.
— 940	34 liters	9.0 U.S.gals.

Oil reservoir 4 liters 1.1 U.S.gals.

Oil cooler 2 liters 0.5 U.S.gals.

Mechanical front wheel drive

Front axle housing	5.3 liters	1.4 U.S.gals.
Wheel hub housing, each	0.75 liters	0.2 U.S.gals.

Belt pulley 1 liter 0.3 U.S.gals.

SERVICE INTERVALS

Checking crankcase oil level	every	10 hours
Changing engine oil	every	100 hours
Changing engine oil filter	every	200 hours
Checking transmission/hydraulic system oil level	every	50 hours
Changing transmission/hydraulic system oil filter	every	500 hours
Changing transmission/hydraulic oil	every	1000 hours
Cleaning hydraulic pump strainer	every	1000 hours
Checking MFWD oil level	every	50 hours
MFWD oil change	every	1000 hours
Cleaning and packing front wheel bearings	every	1000 hours
Lubricating grease fittings		
Front axle and front axle bearings	every	50 hours
Rear axle bearings	every	500 hours
in wet and muddy conditions	every	10 hours
Three-point hitch	every	200 hours

Tune-Up

PTO horsepower* at 2400 rpm rated engine speed (without mid-PTO)

According to DIN 70020,	840	25 kW	34 hp
	940	29 kW	39 hp

PTO horsepower* at 2500 rpm rated engine speed

According to DIN 70020,	1040	33 kW	45 hp
	1140	37 kW	50 hp
According to SAE J 816 b,	1040	32 kW	43 hp
	1140	36 kW	48 hp

Compression 2100 kPa 21 bar 300 psi

Slow idle 800 rpm

Fast idle

840 and 940	2560 rpm
1040 and 1140	2660 rpm

Rated engine speed

840 and 940	2400 rpm
1040 and 1140	2500 rpm

Air intake system vacuum 3.5 to 6.0 kPa 35 to 60 mbar 14 to 25 in. water head

Air cleaner restriction warning

switch closes at a vacuum of 5.5 to 6.5 kPa 55 to 65 mbar 22 to 26 in. water head

Blow-by at crankcase vent tube, max.

840 and 940	1.9 m ³ /h	67 cu.ft./h
1040 and 1140	2.1 m ³ /h	74 cu.ft./h

Thermostat opens at 82° C 180° F

Radiator cap high pressure valve

opens at 40 to 50 kPa 0.4 to 0.5 bar 6 to 7 psi

Radiator cap low pressure valve

opens at 0 to 4 kPa 0 to 0.4 bar 0 to 0.6 psi

FAN BELT

Fan belt should have 19 mm (0.75 in.) flex with 90 N (20 lb) pull midway between crankshaft and alternator or water pump (use a spring scale).

* With the engine run in (more than 100 hours of operation) and having reached operating temperature (engine and transmission); measured by means of a dynamometer. Permissible variation $\pm 5\%$

Tractor Separation

TORQUES FOR HARDWARE

Front axle carrier to engine block		
front attaching cap screws (4 used)	230 Nm	170 ft-lb
rear attaching cap screws (2 used)	180 Nm	130 ft-lb
Hydraulic pump drive shaft, cap screws	50 Nm	35 ft-lb
Jointed shaft flange to front axle drive hub (tractors with MFWD), cap screws	35 Nm	25 ft-lb
Drag link to bell crank and steering arm, slotted nuts*	75 Nm	55 ft-lb
Clutch housing to engine block		
cap screws	230 Nm	170 ft-lb
hex. nuts	325 Nm	240 ft-lb
Clutch housing to transmission case, cap screws	160 Nm	120 ft-lb
Retainer of hydraulic lines to clutch housing, cap screw	45 Nm	30 ft-lb
Final drive housing to transmission case, cap screws	120 Nm	85 ft-lb
Rockshaft housing to transmission case, cap screws	120 Nm	85 ft-lb
Rear wheels to rear axle	240 Nm	175 ft-lb
4-Post roll guard		
Roll guard to fender frame, cap screws	120 Nm	85 ft-lb
U-bolts to rear axle housings, hex. nuts	130 Nm	95 ft-lb
2-Post roll guard		
Supports to crossbar, cap screws	230 Nm	170 ft-lb
U-bolts to rear axle housings, hex. nuts	230 Nm	170 ft-lb
Rear fenders to final drive housings, hex. nuts	130 Nm	95 ft-lb
Drawbar to transmission case, cap screws	120 Nm	85 ft-lb
Basic weight to front axle carrier, cap screws	400 Nm	300 ft-lb

* NOTE: If cotter pin cannot be inserted when tightening to the specified torque, turn nut to next slot and secure with cotter pin.

TORQUES FOR HARDWARE (Contd.)**Operator's Cab**

Cab to rubber mounting block, slotted nuts*	10 to 20 Nm	7 to 14 ft-lb
Rubber bearing block to mounting and pivot brackets, cap screws	50 Nm	35 ft-lb
Mounting pivot bracket to final drive housing, cap screws	100 Nm	70 ft-lb
Mounting bracket to battery box, cap screws	50 Nm	35 ft-lb
Battery box to flywheel housing, upper cap screw	200 Nm	145 ft-lb
lower cap screws	100 Nm	70 ft-lb

* *NOTE: Insert cotter pin within specified torque.*

Standard Torques

Recommended torques in Nm and ft-lb for UNC and UNF cap screws				
Head marking (Identifying strength)	  or 10.9*		  or 12.9**	
Thread-O.D. (in.)	Nm	ft-lb	Nm	ft-lb
1/4	15	10	20	15
5/16	30	20	40	30
3/8	50	35	70	50
7/16	80	55	110	80
1/2	120	85	170	120
9/16	180	130	240	175
5/8	230	170	320	240
3/4	400	300	580	425
7/8	600	445	930	685
1	910	670	1400	1030
1-1/8	1240	910	1980	1460
1-1/4	1700	1250	2800	2060

NOTE: A variation of $\pm 10\%$ is permissible for all torques indicated in this chart.

Torque figures indicated above and in the Specification sections of this manual are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual.

* Tempered steel high strength bolts and cap screws

** Tempered steel extra high strength bolts and cap screws

Recommended torques in Nm and ft-lb for metric cap screws						
Head marking (identifying strength)	8.8 *		10.9 **		12.9 ***	
Thread-O.D. (mm)	Nm	ft-lb	Nm	ft-lb	Nm	ft-lb
M5	7	5	9	6.5	10	8.5
M6	10	8.5	15	10	20	15
M8	30	20	40	30	40	30
M10	50	35	80	60	90	70
M12	100	75	140	100	160	120
M14	160	120	210	155	260	190
M16	240	175	350	260	400	300
M20	480	355	650	480	780	575
M24	820	605	1150	850	1350	995
M30	1640	1210	2250	1660	2700	1990
M36	2850	2110	4000	2950	4700	3465

NOTE: A variation of $\pm 10\%$ is permissible for all torques indicated in this chart.

Torque figures indicated above and in the Specification sections of this manual are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual.

* Regular bolts and cap screws

** Tempered steel high strength bolts and cap screws

*** Tempered steel extra high strength bolts and cap screws

Recommended torques in Nm and ft-lb for pipe and hose connections				
Thread size	with O-rings		with cone	
	Nm	ft-lb	Nm	ft-lb
3/8-24 UNF	7.5	5.5	8	6
7/16-20 UNF	10	7	12	9
1/2-20 UNF	12	9	15	11
9/16-18 UNF	15	11	25	18
3/4-16 UNF	25	20	45	35
7/8-14 UNF	40	30	60	45
1-1/16-12 UNC	60	45	100	75
1-3/16-12 UNC	70	50	120	90
1-5/16-12 UNC	80	60	140	105
1-5/8-12 UNC	110	80	190	140
1-7/8-12 UNC	150	110	220	160

Special Tools

Tune-Up

Tool

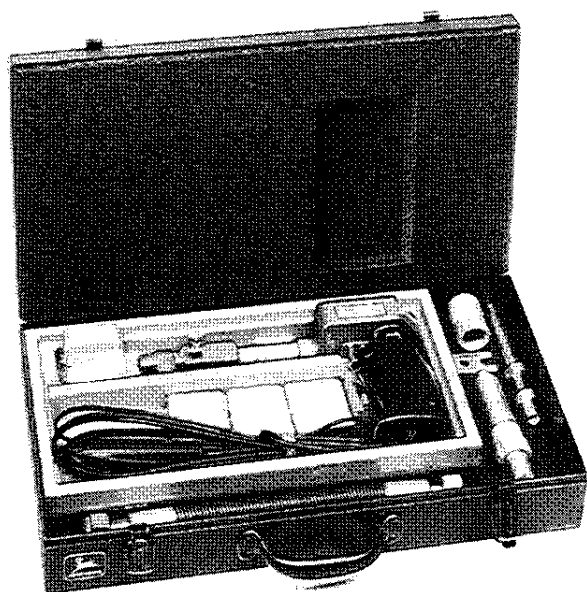
Description and Part No.

Use

Compression tester
kit

Checking engine com-
pression

FKM 10021



L30722

Fig. 1 — Compression Tester Kit

Pressure test kit

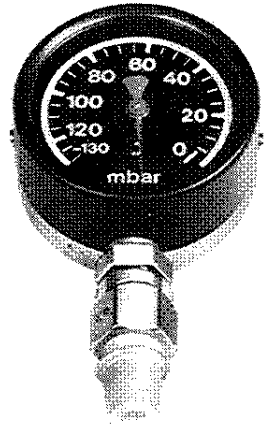
Measuring air intake
system vacuum

FKM 10002



L30515

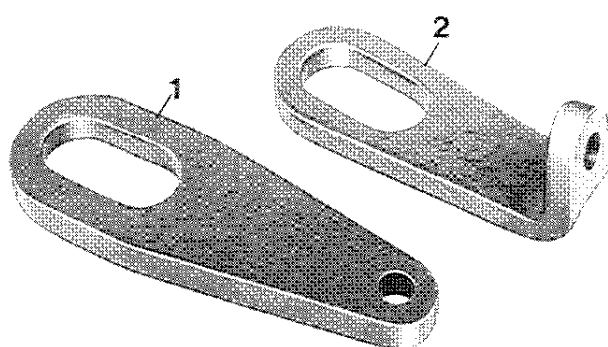
Fig. 2 — Pressure Gauge Set

Tool	Description and Part No.	Use
	Vacuum gauge FKM 10242	Measuring air intake system vacuum

L 30913

Fig. 3 — Vacuum Gauge

Tractor Separation



- 1 Lifting eye,
straight
JD-244-1
- 2 Lifting eye,
bent
JD-244-2

Tractor separation

L 23985

Fig. 4 — Lifting Eyes, Straight and Bent

Tractor Separation (Contd.)

Tool	Description and Part No.	Use
Technical drawing of the tool for removing a rockshaft. The drawing shows two views: a side view and a cross-sectional view. The side view shows a horizontal pipe (2) with a total length of 650 mm (25.6 in.). A flat metal plate (3) is attached to the top of the pipe, with a width of 60 mm (2.36 in.) and a height of 130 mm (5.12 in.). A hole with a diameter of 25 mm (0.98 in.) is located 105 mm (4.13 in.) from the top edge of the plate. A vertical rod (1) is inserted into the pipe, with a diameter of 40 mm (1.57 in.) and a length of 120 mm (4.72 in.). The rod has a 9 mm (0.35 in.) diameter section. The cross-sectional view shows the rod (1) with a 40 mm (1.57 in.) diameter and a 9 mm (0.35 in.) diameter section. The rod is inserted into the pipe (2) which has an outer diameter of 48 mm (1.89 in.) and a wall thickness of 3.5 mm (0.14 in.). The pipe has a total length of 650 mm (25.6 in.). The flat metal plate (3) is 60 mm (2.36 in.) wide and 130 mm (5.12 in.) high. The plate has a hole with a diameter of 25 mm (0.98 in.) located 105 mm (4.13 in.) from the top edge. The plate is attached to the pipe with a 95 mm (3.74 in.) wide flange. The distance from the center of the hole to the end of the pipe is 450 mm (17.7 in.). The distance from the center of the hole to the end of the plate is 60 mm (2.36 in.). The distance from the center of the hole to the end of the rod is 120 mm (4.72 in.). The distance from the center of the hole to the end of the pipe is 450 mm (17.7 in.). The distance from the center of the hole to the end of the plate is 60 mm (2.36 in.). The distance from the center of the hole to the end of the rod is 120 mm (4.72 in.).	—	Removing rockshaft (tractors with operator's cab)

Fig. 5 — Tool for Removing Rockshaft (Self-Manufacture)

- 1 Round material 40 x 120 mm (1.57 x 4.72 in.)
 2 Pipe 48 x 3.5 x 650 mm (1.89 x 0.14 x 25.6 in.)
 3 Flat metal 60 x 12 x 130 mm (2.36 x 0.47 x 5.12 in.)

Group 05

Predelivery, Delivery and After-Sales Inspections

The John Deere Delivery Receipt, when properly filled out and signed by the dealer and customer, verifies that the predelivery and delivery services were satisfactorily performed. When delivering this machine, give the customer his copy of the delivery receipt and the operator's manual. Explain their purpose to him.

To promote complete customer satisfaction, a predelivery inspection including mending of possible shipping damage and giving the finishing touches to the tractor, is of prime importance to the dealer.

After the first 100 operating hours another inspection should be performed by the dealer to make sure that the tractor is in proper operating condition.

The predelivery and after-sale inspection check lists in the operator's manual will be completed by the dealer when the inspections are being performed. He will then forward them to the sales branch service department.

Tractor Storage

When storing a new tractor, proceed as follows:

Short Term (Under 30 Days)

1. Fill fuel tank. This prevents condensation of moisture in tank.
2. Check engine oil level, transmission-hydraulic oil level, and coolant level. Add oil or coolant if necessary. During cold weather, be sure coolant contains sufficient anti-freeze.

3. Check electrolyte level in batteries. If electrolyte does not cover plates, add distilled water. Make sure batteries are fully charged.
4. Store tractor in a dry, protected place. If necessary to store tractor outside, cover it with a protective material. Protect tires from heat, sunlight, and petroleum products.

Long Term (Over 30 Days)

To protect engine, fuel system, transmission and hydraulic system, use the AR 41785 rust inhibitor. The above part no. includes one can of rust inhibitor, masking tape and protective caps to cover all engine openings.

Protect as follows:

1. Add 220 cm³ (7.5 oz.) of rust inhibitor to the engine oil.
2. Add 185 cm³ (6.5 oz.) of rust inhibitor to the oil in the transmission/hydraulic system with collar shift transmission and 230 cm³ (8 oz.) in the transmission/hydraulic system with synchronized transmission.
3. Drain fuel tank, pour 150 cm³ (5 oz.) of rust inhibitor into the empty tank and add approx. 10 liters (2.6 U.S. gals.) of fuel. Start engine and run at fast idle for 15 to 20 minutes to distribute the mixture through the whole fuel system. While the engine is running, operate the complete hydraulic system several times. Shut off engine in time to leave some fuel in the tank. Then allow the engine to cool down for 15 to 20 minutes.
4. Prepare 15 c.c. (0.5 oz.) of rust inhibitor for each cylinder. Remove plug of intake manifold or connecting pipe of starting fluid adapter at

the intake manifold, whichever applies, Inject rust inhibitor into the intake manifold. Pull out shut-off knob and crank engine with starter several times.

However, do not allow the engine to start. Otherwise the whole procedure must be repeated.

After the rust inhibitor has been added, the engine may not be started again.

IMPORTANT! Rust inhibitor agents evaporate very easily. For this reason, seal all openings after the inhibitor has been added. Also, always keep the inhibitor container closed.

5. Fill the fuel tank.
6. Remove batteries. Add distilled water, if necessary. Charge the batteries and store in a cool, dry place where they will not freeze.
7. Seal all openings such as the vent tube and exhaust outlet.
8. Slacken fan belt.
9. Replace or repair damaged parts. Touch up any painted surfaces which are scratched or chipped.
10. Coat exposed metal surfaces, such as axles and piston rods of hydraulic cylinders, with grease or corrosion preventative.
11. Store the tractor in a dry, protected place. If the tractor is stored outside, cover it with a waterproof tarpaulin.
12. Block up the tractor so that tires do not touch the ground. Protect tires from heat and sunlight.

Removing the Tractor from Storage

1. Remove all protective coverings.
2. Check crankcase and transmission/hydraulic system oil levels.
3. Check coolant level.
4. Check tire inflation pressure.
5. Install batteries and connect cable and ground strap.
6. Adjust fan belt.
7. Carry out 500-hour check.
8. Run engine at approx. 1500 rpm for some minutes. Check all systems before placing tractor under load.

Predelivery Inspection

Before delivering the tractor to the customer, the following checks and services should be performed by the dealer:

Engine

LEAKS

1. Check engine and fuel lines for leaks. Repair as necessary.

CHECKING CRANKCASE OIL LEVEL

NOTE: Tractor should be on a level surface when oil level is checked. If it is not, check only to make sure the crankcase is not dry. Recheck oil level later, when tractor is on level ground.

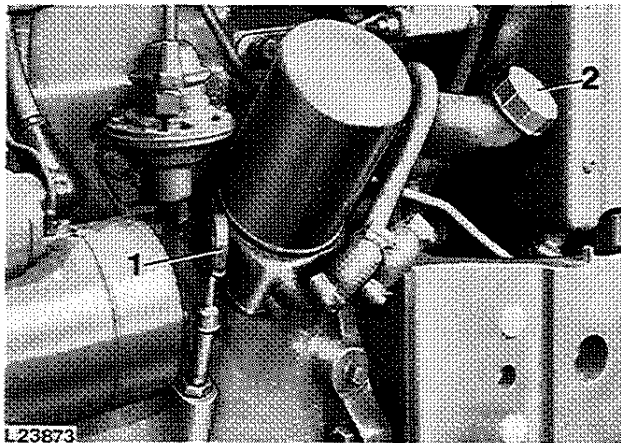


Fig. 1 — Engine Oil Dipstick and Filler Cap

- 1 Dipstick
- 2 Filler cap

1. Pull out dipstick 1 (fig. 1) and check oil level.
2. If necessary, add oil to bring oil level to top mark on dipstick. Use John Deere Torq-Gard Supreme engine oil SAE 10W-20 or an equivalent oil (see group 10).

CHECKING COOLANT LEVEL

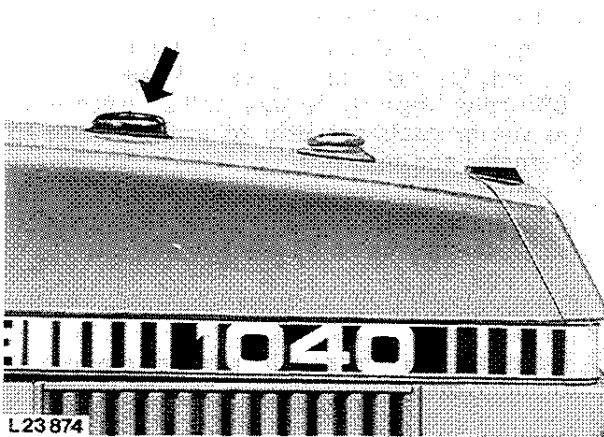


Fig. 2 — Radiator Filler Cap

1. Remove radiator filler cap and check coolant level. Coolant level must be midway between the filler neck and top of radiator core.

2. If necessary, add coolant to obtain this level.

John Deere Engine Cooling Fluid is filled into the cooling system at the factory. It protects the engine against corrosion and against frost down to -36°C (-35°F).

IMPORTANT: Use only John Deere Engine Cooling Fluid in the cooling system, independent of the season.

If no John Deere Engine Cooling Fluid is available use a mixture of 50 % ethylene-glycol antifreeze/ anticorrosion inhibitor and 50 % clear, soft water. This mixture guarantees engine protection against corrosion and against frost down to -36°C (-35°F).

Never use any cooling system sealing additives.

IDLE SPEEDS

1. Warm up engine to operating temperature and check slow and fast idle speeds. Adjust, if necessary (see Section 30, Group 30).
2. Slow idle speed: 750 rpm
3. Fast idle speed:
 - Tractors 840 and 940: 2560 rpm
 - Tractors 1040 and 1140: 2660 rpm

ENGINE SHUT-OFF CABLE

1. Check operation of shut-off cable. Move hand throttle lever completely forward and idle engine for 1 to 2 minutes.
2. Completely pull out shut-off knob, making sure engine stops immediately.
3. If necessary, adjust shut-off cable (see Section 30, Group 30).

AIR CLEANER AND SAFETY ELEMENT

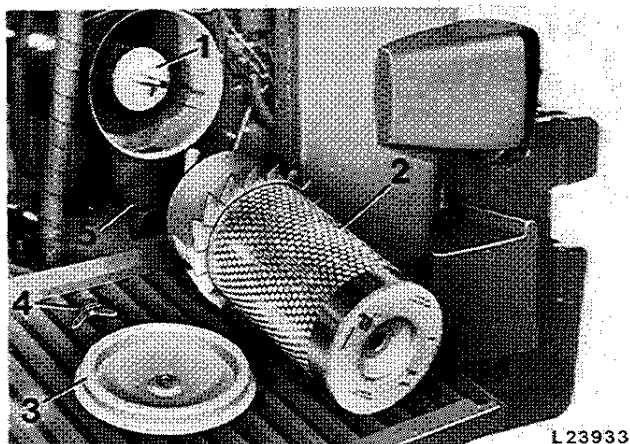


Fig. 3 – Air Cleaner and Safety Element

- | | |
|-----------------------|------------------------|
| 1 Safety element | 4 Wing nut |
| 2 Air cleaner element | 5 Dust unloading valve |
| 3 Cover | |

1. Check air cleaner and safety elements for proper installation.
2. Make sure that dust unloading valve 5 (fig. 3) (rubber cap) is installed on air cleaner.

AIR INTAKE CONNECTIONS

Check air intake connections for tightness. Tighten any loose clamps.

EXHAUST STACK

1. Install exhaust stack, making sure it is in vertical position.
2. Install exhaust stack flap with flap hinge at the rear (as seen in direction of forward travel). When closed, flap should not contact exhaust stack end. If necessary, clamp flap to exhaust stack to obtain a clearance of 2 mm (0.08 in.) between flap and stack end.

CHECKING V-BELT TENSION

Fan Belt

The fan belt should have 19 mm (3/4 in.) flex with 90 N (20 lb) pull midway between crankshaft and alternator or water pump (use a spring scale).

Electrical System

BATTERIES

1. Check battery terminals and battery cable ends. If they are corroded, clean and coat them with petroleum jelly.
2. Check electrolyte level in each battery cell. Add distilled water if necessary to bring level above cell plates.
3. If batteries are not fully charged, charge them. Remove cell caps before charging the battery.

Important Notes

1. If the engine is to be run for a short time without battery (using a slave battery for starting), do not, under any circumstances, interrupt the circuit by switching off the main switch before stopping the engine by means of the fuel pump shut-off cable. Further it is recommended to use additional current (lights) while engine is running. Do not run engine at a speed above 1000 rpm. Insulate battery end of disconnected starter cable properly to avoid damage to alternator and regulator.

On tractors with operator's cab: Do not connect ground strap of slave battery to cab.

2. Connect batteries or battery charger in the proper polarity ("+" and "-"). If they are improperly connected, the rectifier diodes will be immediately destroyed.

START SAFETY SWITCH

1. Check operation of start safety switch.
2. If the starting motor does not work although the main switch is in starting position and the range shift lever is in neutral or "park"* position, check the start safety switch by installing a new switch and check circuit (see Section 40, Group 15).

IMPORTANT! Do not overtighten switch when installing it in the rockshaft housing. Tighten switch to maximum torque of 50 Nm (35 ft-lb).

LIGHTING SYSTEM

1. Check lighting system and repair as necessary. Replace any defective bulbs (see Section 40, Group 20).
2. Check headlight adjustment and correct, if necessary (see Section 40, Group 20).

OPERATOR'S CAB CONTROLS

Fan Switch

Open air outlets. Check fan switch 2 (fig. 4) for proper operation.

Heater Switch

With fan operating, check heater switch 1 (fig. 4) for proper operation. For this purpose, turn switch counterclockwise, making sure that warm air enters cab (with engine at operating temperature).

Windshield Wiper Switch

Check windshield wiper switch for proper operation.

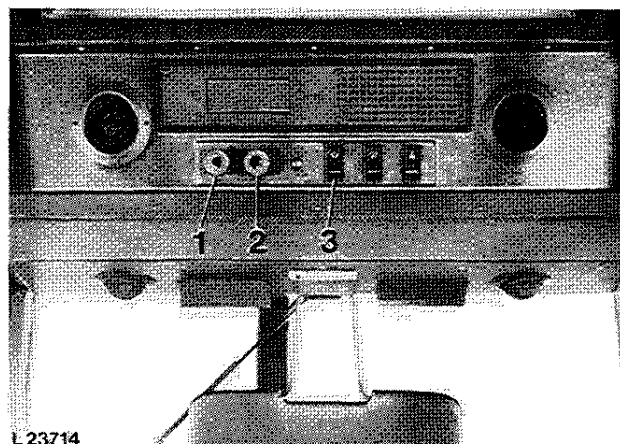


Fig. 4 — Operator's Cab Controls

1 Heater switch
2 Fan switch

3 Windshield wiper switch

CONTROLS AND INSTRUMENTS

Check controls and instruments for proper operation.

NOTE: On tractors with collar shift transmission, transmission indicator light glows only when there is a malfunction.

Power Train

CHECKING TRANSMISSION/HYDRAULIC SYSTEM OIL LEVEL

1. With the tractor on level ground, run the engine 2 to 3 minutes.
2. Place range and gear shift lever in neutral position.
3. Apply handbrake.

* On tractors equipped with collar shift transmission and parking lock only.



Suggest:

If the above button click is invalid.

Please download this document first, and then click the above link to download the complete manual.

Thank you so much for reading

4. Lower draft links.
5. Run engine at slow idle (750 rpm).

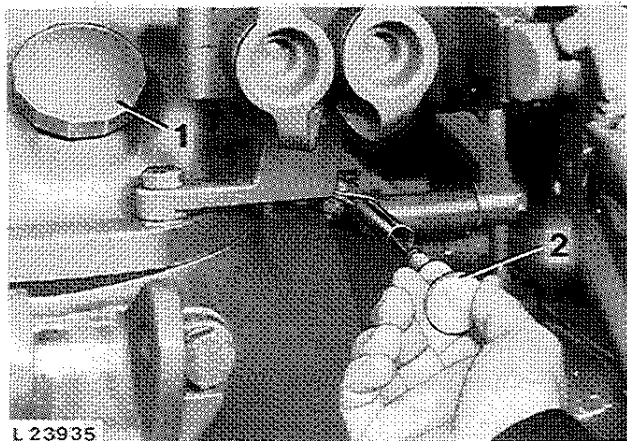


Fig. 5 — Transmission/Hydraulic System Dipstick and Filler Cap (Tractors with Synchronized Transmission)

- 1 Filler cap
- 2 Dipstick

6. Pull out dipstick and wipe clean.

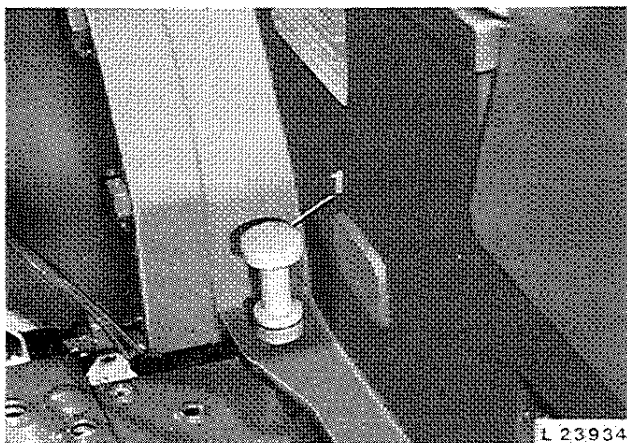


Fig. 6 — Transmission/Hydraulic System Dipstick (Tractors with Collar Shift Transmission)

- 1 Dipstick

7. Insert dipstick. Remove dipstick and check oil level.
8. If necessary, add John Deere Hy-Gard Transmission and Hydraulic Oil or equivalent oil to bring oil level to top mark on dipstick.

NOTE: Types of oil not meeting our specifications will not give satisfactory service and may result in eventual damage.

TRANSMISSION

1. Check transmission for proper operation.
2. While driving tractor, shift transmission through all gears. If transmission does not function properly, refer to Section 50, Group 30 and 35 or 40.

DIFFERENTIAL LOCK

Check differential lock for proper operation. If you find any problem, refer to section 50, Group 45.

HI-LO SHIFT UNIT

Check PTO operation. For this purpose, run engine and move PTO control lever to engaged and disengaged position. If PTO does not operate properly, refer to Section 50, Group 55 or 60.

HI-LO SHIFT UNIT

Check Hi-Lo shift unit as follows:

1. Operate tractor in both high and low ranges, carefully observing both operations.
2. Use the brakes to simulate a load condition on the tractor.
3. Low oil pressure will be indicated by disk pack slippage, which causes the clutch pack to become noisy.
4. A mechanical failure in the Hi-Lo shift unit will also be indicated by unusual noise.
5. If you find any problems, refer to Section 50, Group 20.

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>