

Use and maintenance manual

John - Deere
POWERTECH
4.5L & 6.8L
4045 and 6068
OEM Diesel Engines

Réf. constructeur : OMRG25204

Réf. GPAO : 33522039401

Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service your engine correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your engine and should remain with the engine when you sell it.

MEASUREMENTS IN THIS MANUAL are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by standing at the drive or flywheel end (rear) of the engine and facing toward the front of the engine.

WRITE ENGINE SERIAL NUMBERS and option codes in the spaces indicated in the Record Keeping Section.

Accurately record all the numbers. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the engine.

SETTING FUEL DELIVERY beyond published factory specifications or otherwise overpowering will result in loss of warranty protection for this engine.

CERTAIN ENGINE ACCESSORIES such as radiator, air cleaner, and instruments are optional equipment on John Deere OEM Engines. These accessories may be provided by the equipment manufacturer instead of John Deere. This operator's manual applies only to the engine and those options available through the John Deere distribution network.

CALIFORNIA PROPOSITION 65 WARNING: Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

OMRGOEM,IFC -19-12JAN99-1/1

John Deere Engine Owner:

Don't wait until you need warranty or other service to meet your local John Deere Engine Distributor or Service Dealer.

Learn who he is and where he is. At your first convenience, go meet him. He'll want to get to know you and to learn what your needs might be.

Utilisateurs De Moteurs John Deere:

N'attendez pas d'être obligé d'avoir recours a votre Concessionnaire ou Point de Service le plus proche pour vous adresser a lui.

Renseignez-vous des que possible pour l'identifier et le localiser. A la premiere occasion, prenez contact avec lui et faites-vous connaître. Il sera lui aussi heureux de faire votre connaissance et de savoir que vous pourrez compter sur lui le moment venu.

An Den Besitzer Des John Deere Motors:

Warten Sie nicht auf einen evt. Reparaturfall um den nächstgelegenen John Deere Händler kennen zu lernen.

Machen Sie sich bei ihm bekannt und nutzen Sie sein "Service Angebot".

Proprietario Del Motore John Deere:

Non aspetti fino a quando ha bisogno della garanzia o di un altro tipo di assistenza per incontrarsi con il Suo Concessionario che fornisce l'assistenza tecnica.

Impari a conoscere chi è e dove si trova. Alla Sua prima occasione cerchi d'incontrarlo. Egli desidera farsi conoscere e conoscere le Sue necessità.

Propietario De Equipo John Deere:

No espere hasta necesitar servicio de garantía o de otro tipo para conocer a su Distribuidor de Motores John Deere o al Concesionario de Servicio.

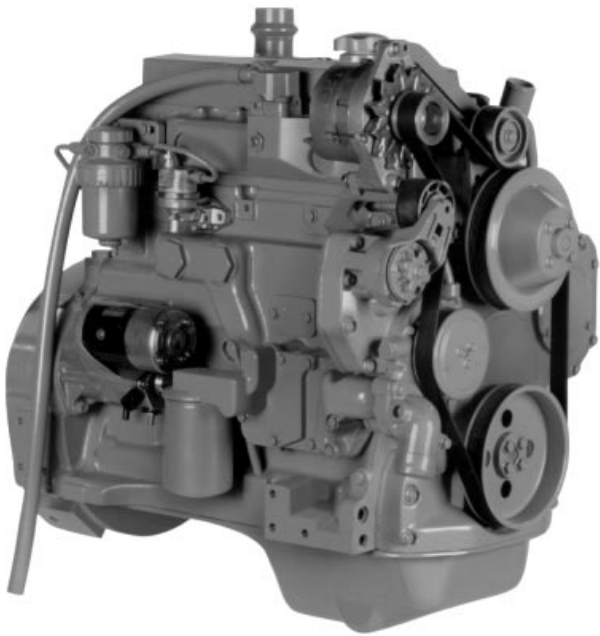
Entérese de quién es, y dónde está situado. Cuando tenga un momento, vaya a visitarlo. A él le gustará conocerlo, y saber cuáles podrían ser sus necesidades.

John Deere MotorÄgare:

Vänta inte med att besöka Din John Deere återförsäljare till dess att Du behöver service eller garanti reparation.

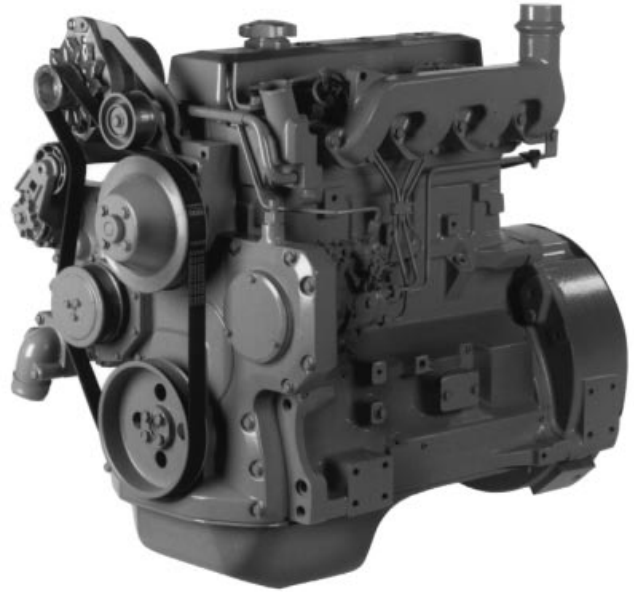
Bekanta Dig med var han är och vem han är. Tag första tillfälle att besöka honom. Han vill också träffa Dig för att få veta vad Du behöver och hur han kan hjälpa Dig.

POWERTECH® 4.5 L Engines



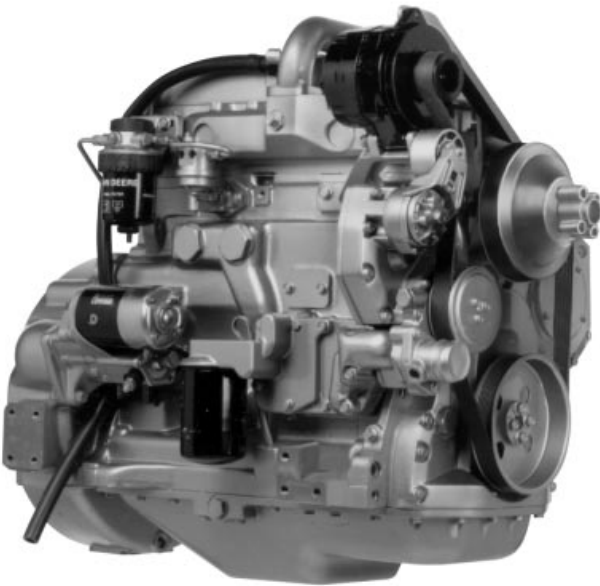
4045D Engine

RG7999 -UN-19JUN00



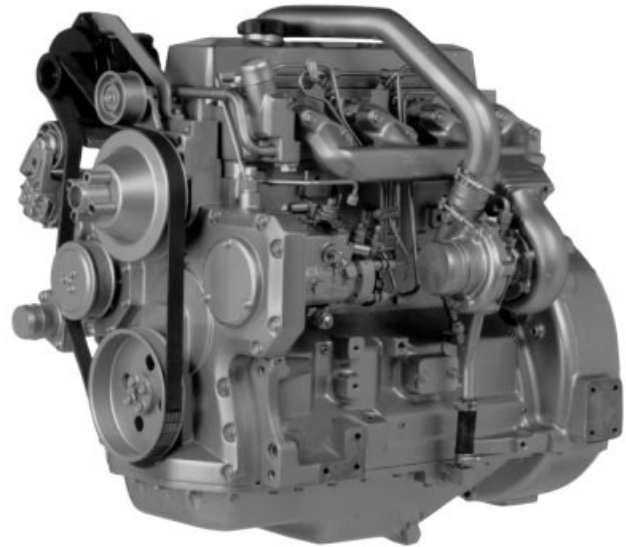
4045D Engine

RG7998 -UN-19JUN00



4045T Engine

RG7996 -UN-19JUN00



4045T Engine

RG7997 -UN-19JUN00

POWERTECH® 6.8 L Engines



6068D Engine

RG8003 -UN-19JUN00



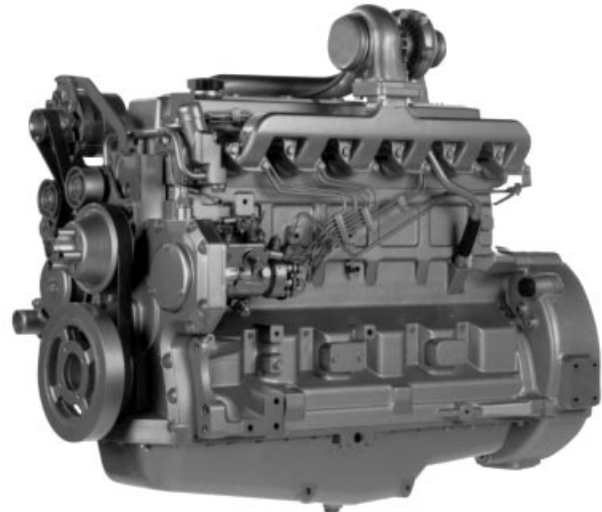
6068D Engine

RG8002 -UN-19JUN00



6068T Engine

RG8001 -UN-19JUN00



6068T Engine

RG8000 -UN-19JUN00

Contents

	Page		Page
Record Keeping		Generator Set (Standby) Applications	15-9
POWERTECH® Medallion	01-1	Starting the Engine	15-10
Engine Serial Number Plate	01-1	Cold Weather Operation	15-12
Record Engine Serial Number	01-2	Warming Engine	15-13
Engine Option Codes	01-3	Changing Engine Speed—Standard (Mechanical) Governor	15-14
Record PTO Serial Number	01-5	Avoid Excessive Engine Idling	15-14
Record Fuel Injection Pump Model Number . . .	01-5	Stopping the Engine	15-15
		Using a Booster Battery or Charger	15-16
Safety	05-1		
Fuels, Lubricants, and Coolant		Lubrication and Maintenance	
Diesel Fuel	10-1	Observe Service Intervals	20-1
Lubricity of Diesel Fuel	10-1	Use Correct Fuels, Lubricants, and Coolant . . .	20-2
Diesel Fuel Storage	10-2	Lubrication and Maintenance Service Interval Chart—Standard	20-3
Filling Fuel Tank	10-2	Lubrication and Maintenance Service Interval Chart—Generator (Standby) Applications	20-5
Minimizing the Effect of Cold Weather on Diesel Engines	10-3	Lubrication & Maintenance/Daily	
Diesel Engine Break-In Oil	10-4	Daily Prestarting Checks	25-1
Diesel Engine Oil	10-5	Lubrication & Maintenance/250 Hour/6 Month	
Extended Diesel Engine Oil Service Intervals . .	10-5	Servicing Fire Extinguisher	30-1
Mixing of Lubricants	10-6	Lubricating PTO Clutch Shaft Bearings	30-1
OILSCAN® and COOLSCAN™	10-6	Changing Engine Oil and Replacing Oil Filter . .	30-2
Alternative and Synthetic Lubricants	10-7	Checking PTO Clutch Adjustment	30-5
Lubricant Storage	10-7	Checking Engine Mounts	30-6
Grease	10-8	Servicing Battery	30-7
Diesel Engine Coolant	10-9	Manual Belt Tensioner Adjustment	30-9
Diesel Engine Coolants, Supplemental Additive Information	10-10	Lubrication & Maintenance/500 Hour/12 Month	
Testing Diesel Engine Coolant	10-11	Lubricating PTO Clutch Internal Levers and Linkage	40-1
Replenishing Supplemental Coolant Additives (SCAs) Between Coolant Changes	10-12	Cleaning Crankcase Vent Tube	40-1
Operating in Warm Temperature Climates . . .	10-13	Checking Air Intake System	40-2
Disposing of Coolant	10-13	Replacing Fuel Filter Element	40-3
		Checking Belt Tensioner Spring Tension and Belt Wear (Automatic Tensioner)	40-4
Engine Operating Guidelines		Checking Cooling System	40-6
Instrument (Gauge) Panels	15-1	Checking Effectiveness of Coolant Solution . . .	40-7
Instrument (Gauge) Panel (North America) . . .	15-2		
VDO Instrument (Gauge) Panel (Except North America)	15-4		
Normal Engine Operation	15-6		
Break-In Service	15-6		
Auxiliary Gear Drive Limitations	15-9		

Continued on next page

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

COPYRIGHT © 2000
DEERE & COMPANY
Moline, Illinois
All rights reserved
A John Deere ILLUSTRATION® Manual
Previous Editions
Copyright © 1996

Page

Page

Adding Supplemental Coolant Additives
(SCA's) 40-8
Pressure Testing Cooling System 40-9

Lubrication & Maint./2000 Hour/24 Month

Adjusting Variable Speed (Droop) on
Generator Set Engines 45-1
Checking Crankshaft Vibration Damper
(6-Cylinder Engine Only) 45-3
Flushing Cooling System 45-4
Testing Thermostats Opening Temperature 45-6
Check and Adjust Valve Clearance 45-10

Service as Required

Additional Service Information 50-1
Do Not Modify Fuel System 50-1
Adding Coolant 50-2
Replacing Single Stage Air Cleaner 50-4
Replacing Axial Seal Air Cleaner Filter
Element 50-5
Replacing Radial Seal Air Cleaner Filter
Element 50-7
Replacing Fan and Alternator Belts 50-9
Power Take-Off (PTO) Clutch. 50-10
Checking Fuses 50-11
Bleeding the Fuel System 50-12

Troubleshooting

General Troubleshooting Information 55-1
Engine Wiring Diagram Legend (North
America) 55-2
Wiring Diagram (North America) 55-3
Engine Wiring Diagram Legend—VDO
Instrument Panel (Except North America) 55-4
Engine Wiring Diagram—VDO
Instrument Panel (Except North America) 55-5
Engine Troubleshooting 55-6

Storage

Engine Storage Guidelines 60-1
Use AR41785 Engine Storage Kit 60-1
Preparing Engine for Long Term Storage 60-2
Removing Engine from Long Term Storage 60-4

Specifications

General OEM Engine Specifications 65-1
Fuel Injection Pump Specifications¹ 65-3
Engine Crankcase Oil Fill Quantities 65-7
Unified Inch Bolt and Cap Screw Torque
Values 65-11
Metric Bolt and Cap Screw Torque Values 65-12

Lubrication and Maintenance Records

Using Lubrication and Maintenance Records . . . 70-1
Daily (Prestarting) Service 70-1
250 Hour/6 Month Service 70-2
500 Hour/12 Month Service 70-3
2000 Hour/24 Month Service 70-4
Service as Required 70-5

Emission System Warranty

U.S. EPA Emissions Control Warranty
Statement 75-1
Emissions Control System Certification Label . . . 75-2

John Deere Service Literature Available. 80-1

John Deere Service Keeps You On the Job

John Deere Parts IBC-1
The Right Tools IBC-1
Well-Trained Technicians IBC-1
Prompt Service IBC-1

Record Keeping

POWERTECH[®] Medallion

A medallion is located on the rocker arm cover which identifies each engine as a John Deere *POWERTECH*[®] engine.



POWERTECH is a trademark of Deere & Company.

RG, RG34710, 5505 -19-20MAY96-1/1

Engine Serial Number Plate

Each engine has a 13-digit John Deere engine serial number. The first two digits identify the factory that produced the engine:

- "T0" indicates the engine was built in Dubuque, Iowa
- "CD" indicates the engine was built in Saran, France
- "PE" indicates the engine was built in Torreón, Mexico

Your engine's serial number plate (A) is located on the right-hand side of cylinder block behind the fuel filter.



RG, RG34710, 5506 -19-20MAY96-1/1

Record Engine Serial Number

Record all of the numbers and letters found on your engine serial number plate in the spaces provided below.

This information is very important for repair parts or warranty information.

Engine Serial Number (B)

Engine Model Number(C)

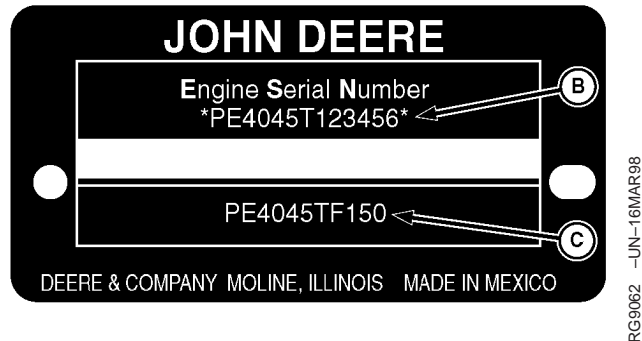
Coefficient of Absorption Value (D)
(Saran Engines Only)



Dubuque Engine Serial Number Plate



Saran Engine Serial Number Plate



Torreon Engine Serial Number Plate

RG, RG34710, 5507 -19-20MAY96-1/1