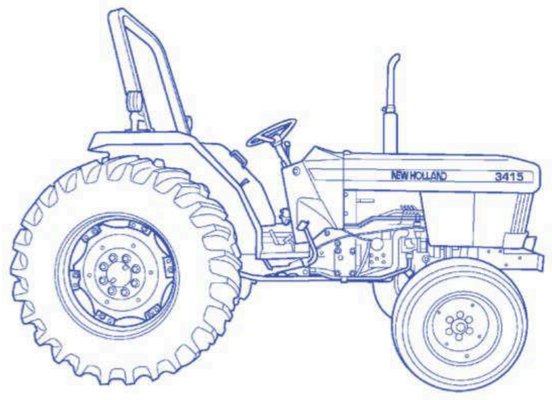


NEW HOLLAND

3415

REPAIR MANUAL

NEW HOLLAND

SERVICE

87028646 1/03

MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646

Order the manual at mid-west-tech.com >

SECTION 1 - ENGINE SYSTEMS

Chapter 1 - Engine and Lubrication System

CONTENTS

Section	Description	Page
00 000	Engine and Lubrication System Description and Operation	1-2
00 000	Engine Overhaul	1-7
00 000	Engine Lubrication System Description	1-18
00 000	Engine Lubrication System Overhaul	1-21

MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646 Order the manual at mid-west-tech.com >

SECTION 1 - ENGINE SYSTEMS

Chapter 3 - Troubleshooting, Specifications, and Special Tools

CONTENTS

Section	Description	Page
00 000	EngineTroubleshooting	1-2
00 000	Engine Specifications	1-9
00 000	Assembly Torques	1-15
00 000	Special Tools	1-17

MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646 Order the manual at mid-west-tech.com >

SECTION 3 - ELECTRICAL SYSTEM

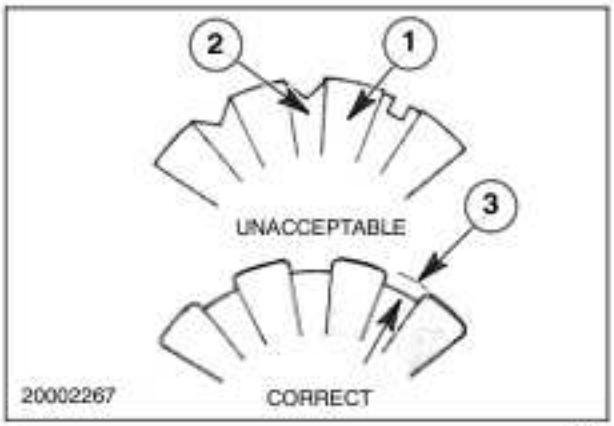
Chapter 1 - Electrical System

CONTENTS

Section	Description	Page
00 000	Electrical System Description and Operation	3-2
00 000	Circuits Description and Operation	3-26
	Starting Circuit	3-27
	Lighting Circuit	3-28
	Glow Plugs Circuit	3-29
	Warning Lights Circuit	3-30
00 000	Charging System Description and Operation	3-32
00 000	Starting System Description and Operation	3-56

MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646 Order the manual at mid-west-tech.com >

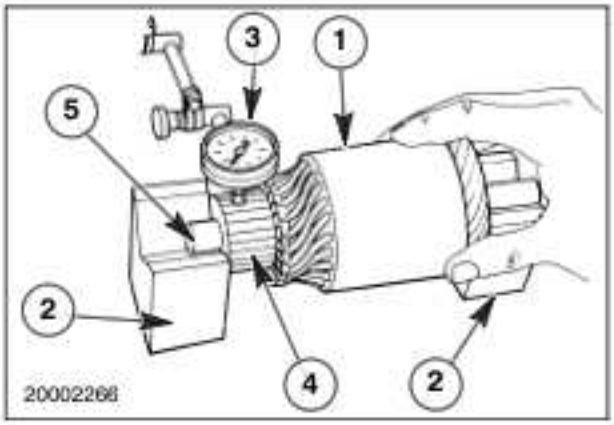
10. Inspect the mica insulating valleys, 2, between the commutator contacts, 1, for uneven wear. Use a suitable measuring device to check the distance, 3, between the top of the contact to the bottom of the insulating valley. The distance should be 0.5 – 0.8 mm (0.020 – 0.031 in.). If the distance is not within these specifications or there is uneven wear, the insulating valleys may be undercut with a suitable file.



127

NOTE: *If not previously removed, the armature bearings will need to be removed for this test.*

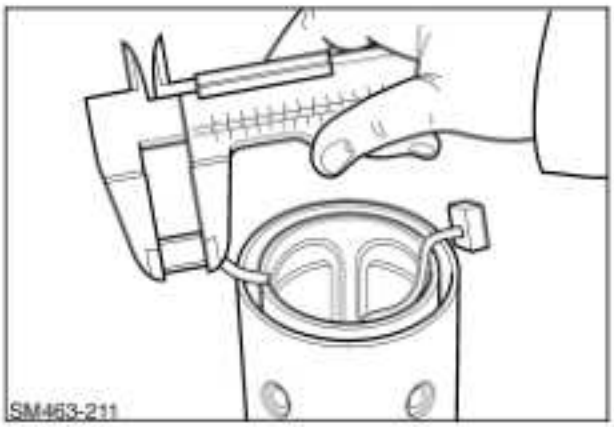
11. Place the armature, 1, in a set of precision V-blocks, 2, and use a dial indicator, 3, to measure commutator, 4, runout and shaft, 5, runout. Commutator runout should not be more than 0.2 mm (0.008 in.). Shaft runout should not be more than 0.05 mm (0.002 in.).



128

NOTE: *When measuring the brush length, remove the brush from the brush support and measure the middle portion of the brush.*

12. Use a suitable measuring device to measure the length of the four armature brushes. Compare the measurement of each brush with brush length specifications. If the brush is not within specifications or is damaged in any way, replace the brushes.



129

MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646 Order the manual at mid-west-tech.com >

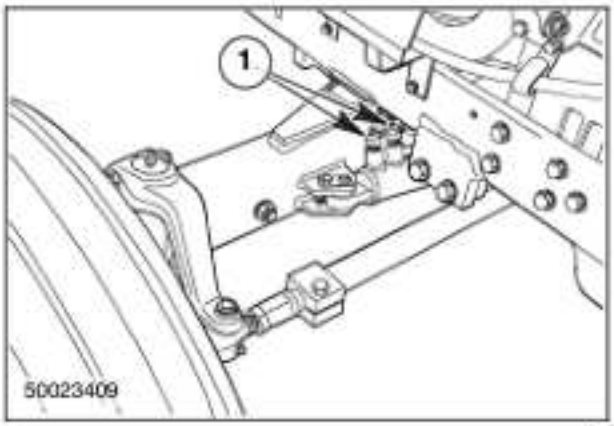
TROUBLE SHOOTING

CONDITION	POSSIBLE CAUSE	REMEDY
Hard Steering	1. ORBITROL (Control Valve Unit)	
	a. ORBITROL – not aligned to steering column	Reposition ORBITROL. (If loosening the mounting bolts lightens the steering wheel, the ORBITROL is misaligned.)
	b. Spool and Sleeve combination is seized because of foreign matter.	Replace
	c. Over-tightening of the end cap bolt (7 bolts)	Retighten to the specified torque
	2. Oil Pump	
	a. The pump is stuck and will not work.	Replace the oil pump
	b. The pump is worn	Replace the oil pump
	c. Pumping performance inadequate.	Check the performance and, as necessary, replace
	3. Relief Valve	Replace control valve assembly.
	a. The valve is out of order because of internal deterioration.	Replace control valve assembly
Steering wheel will not return to neutral or will turn by itself	1. ORBITROL	
	a. Spool and sleeve combination is stuck and will not rotate.	Replace control valve assembly.
	b. ORBITROL not aligned to steering column.	Re-align
Steering cylinder will not follow steering wheel rotation or will respond sluggishly.	1. ORBITROL	
	a. ORBITROL has been improperly rebuilt, resulting in valve mistiming.	Replace oil seal. Change the oil.
	2. Piping	Replace.
	a. Pipes are misconnected to the four ports of ORBITROL	

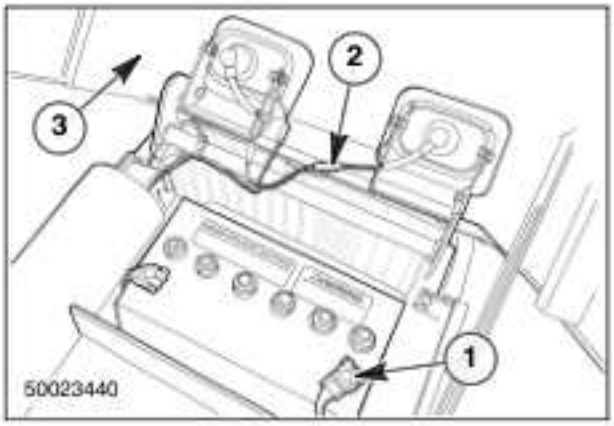
MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646 Order the manual at mid-west-tech.com >

SEPARATING THE TRACTOR BETWEEN THE ENGINE AND TRANSMISSION CLUTCH HOUSING

1. Park the tractor on a clean level surface.
2. Block the rear tires and engage the parking brake.
3. Disconnect the power steering cylinder hoses, 1, and cap all openings.
4. Place a floor jack under the transmission housing.
5. Gently raise the front end of the tractor to take the weight off the front axle.
6. Disconnect the negative (-) battery cable, 1, from the negative (-) battery terminal.
7. Disconnect the headlight wire connectors, 2, from the headlight harness.
8. Remove the hood, 3, and side panels from the tractor.



8

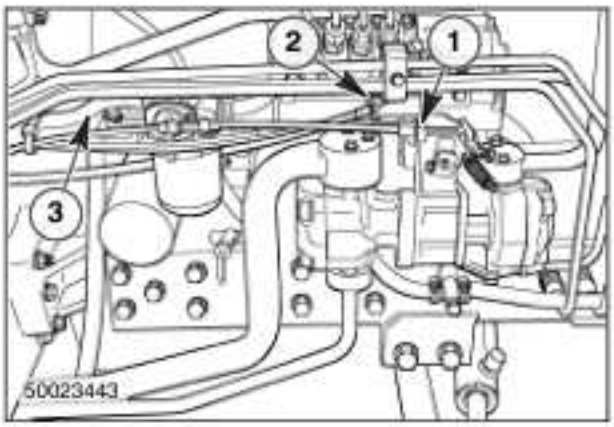


9

9. Disconnect the throttle control cable, 1, from the injection pump.
10. Disconnect the fuel shutoff cable, 2, from the Fuel injection pump.
11. Disconnect the glow plug wire from the harness connector.
12. Disconnect the tachometer cable from the engine drive.

CAUTION

Store fuel in containers that are approved for use with diesel fuel only.



10

13. Disconnect the fuel line hose, 3, from the tank at the fuel shut-off valve and drain the fuel into a clean closed container.
14. Cap or plug all fuel tank and fuel line openings.
15. Disconnect the wiring harness connectors from the instrument cluster and rear wiring harness and release the wiring harness from the retaining clips.
16. Disconnect the two fuel return line hoses from the top of the fuel tank.

MidWestTech | New Holland 3415 Tractor Service Manual | Publication 87028646 Order the manual at mid-west-tech.com >