SERVICE MANUAL

S4Q
S4Q2
Engine

Part number 47409622
2nd edition English
August 2012
Replaces part number 84373330

MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622
Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Engine 10

Engine and crankcase 10.001

Cylinder heads 10.101

Pan and covers 10.102

Crankshaft and flywheel 10.103

Connecting rods and pistons 10.105

Valve drive and gears 10.106

Balancer and damper 10.110

Fuel filters 10.206

Fuel injection system 10.218

Intake and exhaust manifolds and muffler 10.254

Engine lubrication system 10.304

Engine cooling system 10.400

Electrical systems 55

Fuel injection system 55.010

Engine starting system 55.201

Cold start aid 55.202

Alternator 55.301

MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622 Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Foreword - Ecology and the environment 3
Safety rules 4
Personal safety 5
Basic instructions - Important notice regarding equipment servicing 6
Torque - Minimum tightening torques for normal assembly 7
Basic instructions - Shop and assembly 12
General specification - Biodiesel Fuels 14
Product identification 15

MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622 Order the manual at mid-west-tech.com >

Contents

Engine - 10

Engine and crankcase 10.001
S4Q2 , S4Q

Cylinder heads 10.101
S4Q2 , S4Q

Pan and covers 10.102
S4Q2 , S4Q

Crankshaft and flywheel 10.103
S4Q2 , S4Q

Connecting rods and pistons 10.105
S4Q2 , S4Q

Valve drive and gears 10.106
S4Q2 , S4Q

Balancer and damper 10.110
S4Q2 , S4Q

Fuel filters 10.206
S4Q2 , S4Q

Fuel injection system 10.218
S4Q2 , S4Q

Intake and exhaust manifolds and muffler 10.254
S4Q2 , S4Q

Engine lubrication system 10.304
S4Q2 , S4Q

Engine cooling system 10.400
S4Q2 , S4Q

MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622 Order the manual at mid-west-tech.com >

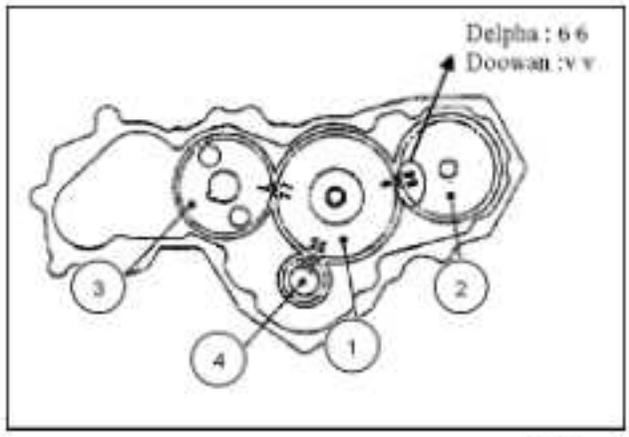
Crankshaft and flywheel - General specification

Item		Nominal size	Assembly standard	Repair limit	Service limit	Remarks
Crankshaft	Runout		**0.02 mm (0.0008 in)** maximum	**0.05 mm (0.0020 in)**		
	Diameter of Journal	**65 mm (2.56 in)**	**64.965 - 64.985 mm (2.55767 - 2.55846 in)**			
	Diameter of crank pin	**58 mm (2.28 in)**	**57.955 - 57.970 mm (2.28169 - 2.28228 in)**			
	Distance from center of journal to center of crank pin	**47.5 mm (1.870 in)**	**47.46 - 47.54 mm (1.8685 - 1.8716 in)**			
	Parallelism between journal and crank pin		Runout: **0.01 mm (0.0004 in)**, maximum			
	Out-of-round of journal and crank pin		**0.01 mm (0.0004 in)**, maximum	**0.03 mm (0.0012 in)**		
	Taper of journal and crank pin					
	Fillet radius of journal and crank pin	**3 mm (0.12 in)**	**±0.2 mm (±0.008)**			
	End play		**0.100 - 0.204 mm (0.00394 - 0.00803 in)**		**0.300 mm (0.01181 in)**	
Flywheel	Flatness		**0.15 mm (0.0059 in)**, maximum	**0.50 mm (0.0197 in)**		
	Face runout		**0.25 mm (0.0098 in)**, maximum			

MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622 Order the manual at mid-west-tech.com >

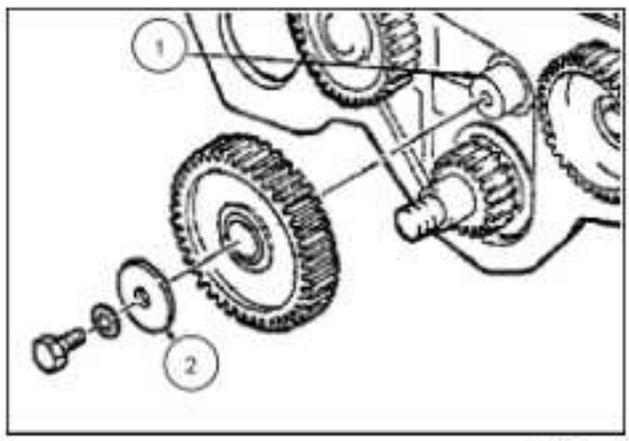
Idler gear - Install

1. Apply clean engine oil to the idler gear shaft.
2. Align all the timing marks and install the gear.



1

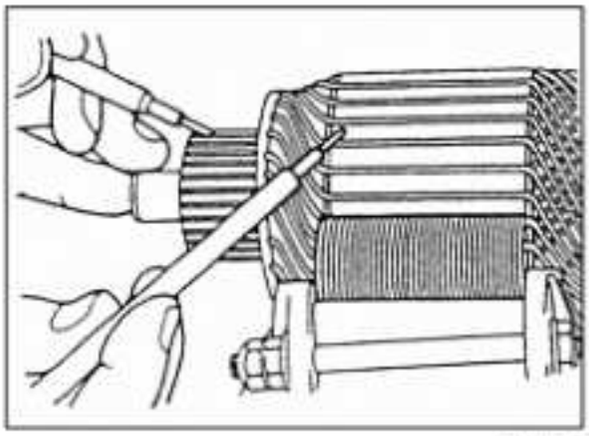
3. Install the thrust plate **(2)** on the idler gear and torque the bolt with washer to standard torque.
4. Move the idler gear back and forth in the axial direction to make sure it has correct end play.



2

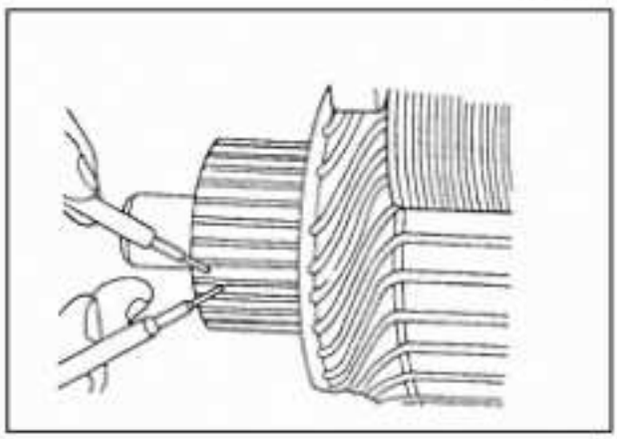
MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622 Order the manual at mid-west-tech.com >

8. Check for current flow between each terminal and body of the armature or coil. Replace the armature assembly if current flows.



7

9. Check for a short circuit between each of the terminals. If current does not flow, the coil of the armature is short-circuited and needs to be replace.



8

10. Check for a short circuit between coil and yoke assembly. If current flows between them, the yoke assembly needs to be replaced.



9

MidWestTech | New Holland S4Q, S4Q2 Engine Service Manual | Publication 47409622 Order the manual at mid-west-tech.com >