

SERVICE MANUAL

T6.120 / T6.140 / T6.150 / T6.155

T6.160 / T6.165 / T6.175

T6.140 AutoCommand / T6.150 AutoCommand

T6.160 AutoCommand

Tractor

Part number 47665859

English

February 2014





SERVICE MANUAL



**T6.120 , T6.140 AutoCommand , T6.140 , T6.150 AutoCommand , T6.150 ,
T6.155 , T6.160 AutoCommand , T6.160 , T6.165 , T6.175**

Contents

INTRODUCTION

Engine	10
[10.001] Engine and crankcase	10.1
[10.216] Fuel tanks	10.2
[10.218] Fuel injection system.....	10.3
[10.202] Air cleaners and lines	10.4
[10.250] Turbocharger and lines.....	10.5
[10.254] Intake and exhaust manifolds and muffler	10.6
[10.500] Selective Catalytic Reduction (SCR) exhaust treatment.....	10.7
[10.400] Engine cooling system	10.8
[10.414] Fan and drive	10.9
[10.310] Aftercooler.....	10.10
Clutch	18
[18.112] Slip clutch or flywheel damper	18.1
Transmission	21
[21.112] Power shuttle transmission.....	21.1
[21.134] Power shuttle transmission external controls	21.2
[21.154] Power shuttle transmission internal components	21.3
[21.111] Semi-Powershift transmission	21.4
[21.133] Semi-Powershift transmission external controls	21.5
[21.103] Semi-Powershift transmission lubrication system.....	21.6
[21.152] Semi-Powershift transmission internal components	21.7
[21.504] Continuously Variable Transmission (CVT)	21.8
[21.505] Continuously Variable Transmission (CVT) external controls.....	21.9
[21.506] Continuously Variable Transmission (CVT) lubrication system	21.10
[21.507] Continuously Variable Transmission (CVT) internal components	21.11
[21.160] Creeper	21.12

<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>

[21.166] Overdrive	21.13
Four-Wheel Drive (4WD) system	23
[23.202] Electro-hydraulic control	23.1
[23.314] Drive shaft	23.2
Front axle system	25
[25.100] Powered front axle	25.1
[25.102] Front bevel gear set and differential	25.2
[25.108] Final drive hub, steering knuckles, and shafts	25.3
[25.122] Axle suspension control	25.4
Rear axle system	27
[27.100] Powered rear axle	27.1
[27.106] Rear bevel gear set and differential	27.2
[27.120] Planetary and final drives	27.3
Power Take-Off (PTO)	31
[31.104] Rear electro-hydraulic control	31.1
[31.114] Two-speed rear Power Take-Off (PTO)	31.2
[31.116] Three-speed rear Power Take-Off (PTO)	31.3
[31.142] Front Power Take-Off (PTO) control	31.4
[31.146] Front Power Take-Off (PTO)	31.5
Brakes and controls	33
[33.202] Hydraulic service brakes	33.1
[33.110] Parking brake or parking lock	33.2
[33.204] Front axle brake	33.3
[33.220] Trailer brake hydraulic control	33.4
[33.224] Trailer brake pneumatic control	33.5
Hydraulic systems	35
[35.000] Hydraulic systems	35.1

[35.300] Reservoir, cooler, and filters.....	35.2
[35.104] Fixed displacement pump.....	35.3
[35.106] Variable displacement pump	35.4
[35.105] Charge pump.....	35.5
[35.322] Regulated/Low pressure system.....	35.6
[35.204] Remote control valves	35.7
[35.220] Auxiliary hydraulic pump and lines	35.8
[35.114] Three-point hitch control valve	35.9
[35.116] Three-point hitch cylinder	35.10
[35.160] Front hitch controls and lines	35.11
Hitches, drawbars, and implement couplings.....	37
[37.120] Rear three-point hitch linkage.....	37.1
Frames and ballasting	39
[39.100] Frame	39.1
Steering.....	41
[41.101] Steering control	41.1
[41.106] Tie rods.....	41.2
[41.200] Hydraulic control components.....	41.3
[41.206] Pump	41.4
[41.216] Cylinders	41.5
Wheels.....	44
[44.511] Front wheels.....	44.1
[44.520] Rear wheels.....	44.2
Cab climate control	50
[50.100] Heating	50.1
[50.104] Ventilation	50.2
[50.200] Air conditioning.....	50.3
Electrical systems	55

- [55.000] Electrical system 55.1
- [55.100] Harnesses and connectors..... 55.2
- [55.015] Engine control system..... 55.3
- [55.301] Alternator..... 55.4
- [55.302] Battery..... 55.5
- [55.011] Fuel tank system 55.6
- [55.988] Selective Catalytic Reduction (SCR) electrical system 55.7
- [55.012] Engine cooling system 55.8
- [55.640] Electronic modules 55.9
- [55.513] Cab transmission controls..... 55.10
- [55.024] Transmission control system..... 55.11
- [55.020] Transmission speed sensors..... 55.12
- [55.021] Transmission pressure sensors 55.13
- [55.022] Transmission temperature sensors 55.14
- [55.023] Transmission position sensors 55.15
- [55.610] Ground speed control 55.16
- [55.048] Rear Power Take-Off (PTO) control system 55.17
- [55.031] Parking brake electrical system 55.18
- [55.035] Remote control valve electric control 55.19
- [55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls..... 55.20
- [55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system..... 55.21
- [55.047] Steering control system 55.22
- [55.130] Rear three-point hitch electronic control system 55.23
- [55.911] Global Positioning System (GPS) 55.24
- [55.405] External lighting switches and relays 55.25
- [55.510] Cab or platform harnesses and connectors..... 55.26
- [55.408] Warning indicators, alarms, and instruments 55.27
- [55.DTC] FAULT CODES..... 55.28

Platform, cab, bodywork, and decals.....	90
[90.150] Cab.....	90.1
[90.100] Engine hood and panels	90.2



INTRODUCTION

Contents

INTRODUCTION

Foreword	3
Foreword - How to use and navigate through this manual	4
Foreword Ecology and the Environment	9
Safety rules	10
Torque	14
Basic instructions	16
Conversion factors	18
Consumables Lubrications and Coolants	19
Capacities	22

Foreword

IMPORTANT INFORMATION

All repair and maintenance works listed in this manual must be carried out only by staff belonging to the NEW HOLLAND Service network, strictly complying with the instructions given and using, whenever required, the special tools.

Anyone who carries out the above operations without complying with the prescriptions shall be responsible for the subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional or local dealers, reject any responsibility for damages due to the anomalous behavior of parts and/or components not approved by the manufacturer himself, including those used for the servicing or repair of the product manufactured or marketed by the Manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the Manufacturer in case of damages due to an anomalous behavior of parts and/or components not approved by the Manufacturer.

No reproduction, though partial of text and illustrations allowed.

Foreword - How to use and navigate through this manual

This manual has been produced by a new technical information system. This new system is designed to deliver technical information electronically through web delivery (eTIM), DVD, and paper manuals. A coding system called SAP has been developed to link the technical information to other Product Support functions, e.g., Warranty.

Technical information is written to support the maintenance and service of the functions or systems on a customer's machine. When a customer has a concern on their machine it is usually because a function or system on their machine is not working at all, is not working efficiently, or is not responding correctly to their commands. When you refer to the technical information in this manual to resolve that customer's concern, you will find all the information classified using the SAP coding, according to the functions or systems on that machine. Once you have located the technical information for that function or system, you will then find all the mechanical, electrical or hydraulic devices, components, assemblies, and sub assemblies for that function or system. You will also find all the types of information that have been written for that function or system: the technical data (specifications), the functional data (how it works), the diagnostic data (fault codes and troubleshooting), and the service data (remove, install adjust, etc.).

By integrating SAP coding into technical information, you will be able to search and retrieve just the right piece of technical information you need to resolve that customer's concern on his machine. This is made possible by attaching 3 categories to each piece of technical information during the authoring process.

The first category is the Location, the second category is the Information Type and the third category is the Product:

- LOCATION - the component or function on the machine, that the piece of technical information is going to describe (e.g., Fuel tank).
- INFORMATION TYPE - the piece of technical information that has been written for a particular component or function on the machine (e.g., Capacity would be a type of Technical Data describing the amount of fuel held by the fuel tank).
- PRODUCT - the model for which the piece of technical information is written.

Every piece of technical information will have those three categories attached to it. You will be able to use any combination of those categories to find the right piece of technical information you need to resolve that customer's concern on their machine.

That information could be:

- the procedure for how to remove the cylinder head
- a table of specifications for a hydraulic pump
- a fault code
- a troubleshooting table
- a special tool



SERVICE MANUAL

Engine



**T6.120 , T6.140 AutoCommand , T6.140 , T6.150 AutoCommand , T6.150 ,
T6.155 , T6.160 AutoCommand , T6.160 , T6.165 , T6.175**

Contents

Engine - 10

[10.001] Engine and crankcase	10.1
[10.216] Fuel tanks	10.2
[10.218] Fuel injection system.....	10.3
[10.202] Air cleaners and lines	10.4
[10.250] Turbocharger and lines.....	10.5
[10.254] Intake and exhaust manifolds and muffler	10.6
[10.500] Selective Catalytic Reduction (SCR) exhaust treatment.....	10.7
[10.400] Engine cooling system	10.8
[10.414] Fan and drive	10.9
[10.310] Aftercooler.....	10.10



Engine - 10

Engine and crankcase - 001

**T6.120 , T6.140 AutoCommand , T6.140 , T6.150 AutoCommand , T6.150 ,
T6.155 , T6.160 AutoCommand , T6.160 , T6.165 , T6.175**

Contents

Engine - 10

Engine and crankcase - 001

TECHNICAL DATA

Engine

Torque	3
T6.120 --- WE, T6.140 --- WE, T6.150 --- WE, T6.155 --- WE, T6.160 --- WE, T6.165 --- WE, T6.175 --- WE	

SERVICE

Engine

Disconnect	13
T6.155 --- WE, T6.165 --- WE, T6.175 --- WE	
Connect	25
T6.155 --- WE, T6.165 --- WE, T6.175 --- WE	
Remove	38
T6.155 --- WE, T6.165 --- WE, T6.175 --- WE	
Install	52
T6.155 --- WE, T6.165 --- WE, T6.175 --- WE	
Remove	67
T6.120 --- WE, T6.140 AutoCommand --- WE, T6.140 --- WE, T6.150 AutoCommand --- WE, T6.150 --- WE, T6.160 AutoCommand --- WE, T6.160 --- WE	
Install	80
T6.120 --- WE, T6.140 AutoCommand --- WE, T6.140 --- WE, T6.150 AutoCommand --- WE, T6.150 --- WE, T6.160 AutoCommand --- WE, T6.160 --- WE	
Disconnect	93
T6.120 --- WE, T6.140 AutoCommand --- WE, T6.140 --- WE, T6.150 AutoCommand --- WE, T6.150 --- WE, T6.160 AutoCommand --- WE, T6.160 --- WE	
Connect	109
T6.120 --- WE, T6.140 AutoCommand --- WE, T6.140 --- WE, T6.150 AutoCommand --- WE, T6.150 --- WE, T6.160 AutoCommand --- WE, T6.160 --- WE	

Engine - Torque

T6.120	WE
T6.140	WE
T6.150	WE
T6.155	WE
T6.160	WE
T6.165	WE
T6.175	WE

PART		TORQUE
		Nm (lb ft)
Bolts securing connecting rod caps:	1st phase	30 +/- 3 (22.1269 +/- 2.2127)
	2nd phase	60 +/- 5 (44.2537 +/- 3.6878)
	Angle closed	60 ° +/- 5 °
Nuts securing engine cover (6 cylinder engines refer to figure 3 4 cylinder engines refer to figure 4) M8 125		25 ± 5 (18.4391 ± 3.6878)
Bolts securing engine flywheel:	1st phase	30 +/- 4 (22.1269 +/- 2.9502)
	2nd phase	60 ° +/- 5 °
Bolts securing pulley and damper:	1st phase	50 ± 5 (36.8781 ± 3.6878) +
	2nd phase	90 ° +/- 5 °
Cooling nozzles (mechanical engines only)		15 ± 3 (11 ± 2)
Bolts securing injectors on cylinder head:		110 ± 5 (81.1318 ± 3.6878)
Nut securing P.A.P. gear:		105 ± 7 (77.4440 ± 5.1629)
Nut securing compressor gear:		125 ± 19 (92.1953 ± 14.0137)
Bolts securing timing gear:		36 ± 4 (26.5522 ± 2.9502)
Unions securing piston lubrication nozzles:		15 ± 3 (11.0634 ± 2.2127)
Bolts securing timing system casing M8 1.25x40 M10 1.5x30		24 ± 4 (17.7015 ± 2.9502)
		47 ± 5 (34.6654 ± 3.6878)
Bolts securing front cover M10 1.5x30		24 ± 4 (17.7015 ± 2.9502)
Bolts securing main bearing caps with angle closed M12 1.50 12.9	1st phase	50 +/- 6 (36.8781 +/- 4.4254)
	2nd phase	80 +/- 6 (59.0050 +/- 4.4254)
	Angle closed	+ 90 ° +/- 5 °
Viti fissaggio Ladder Frame: M10 1.5x25		43 ± 5 (31.7152 ± 3.6878)
Bolts securing lifting brackets: M12 1.75x25 M10		7 ± 12 (5.1629 ± 8.8507)
		43 ± 5 (31.7152 ± 3.6878)
Bolts securing cooler (refer to figure 7) M8 1.25x35 M8 1.25x100 M12 Connector		25 ± 5 (18.4391 ± 3.6878)
		25 ± 5 (18.4391 ± 3.6878)
		25 ± 5 (18.4391 ± 3.6878)
Bolts securing valve cover M8 Nuts		24 ± 4 (17.7015 ± 2.9502)
Engine Vent Fastener (Ccv) M8 1.25x45 M8 1.25x35		24 ± 4 (17.7015 ± 2.9502)
		24 ± 4 (17.7015 ± 2.9502)
Bolts securing oil sump 6 cylinder engines (refer to figure 8) ♦ Tightening Bolts No 31 & 34 M10 1.5x45 Tightening Bolts No 4-14; 17-27; 32-33 M10 1.5x90		50 ± 5 (36.8781 ± 3.6878) 70 ± 5 (51.6293 ± 3.6878)



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

Engine - Engine and crankcase

PART	TORQUE
	Nm (lb ft)
Tightening Bolts No 1-3, 28-30 M10 1.5x125	70 ± 5 (51.6293 ± 3.6878)
Tightening Bolts No 15-16 M10 15x190	70 ± 5 (51.6293 ± 3.6878)
Bolts securing oil sump 4 cylinder engines (refer to figure 9) ♦	
Tightening Bolts No 23 & 26 M10 1.5x45	50 ± 5 (36.8781 ± 3.6878)
Tightening Bolts No 3-10; 13-20; 24-25 M10 1.5x90	70 ± 5 (51.6293 ± 3.6878)
Tightening Bolts No 1-2, 21-22 M10 1.5x125	70 ± 5 (51.6293 ± 3.6878)
Tightening Bolts No 11-12 M10 15x190	70 ± 5 (51.6293 ± 3.6878)
Bolts / Plugs On Head	
1/2 in Nptf	24 ± 4 (17.7015 ± 2.9502)
3/4 in Nptf	36 ± 5 (26.5522 ± 3.6878)
1/4 in Nptf	12 ± 2 (8.8507 ± 1.4751)

♦ Lubricate With Engine Oil Before Assembly
(continued)

TORQUE WRENCH SETTINGS

PART	TORQUE
	Nm (lb ft)
Bolts securing 6 cylinder head (refer to figure 1) ♦	
Step 1. Tightening bolts No 1-2-7-8-9-10-15-16-17-18-23-24-25-26 M12 1.75x150	55 (40.5659)
Step 2.	+90 °
Step 3.	+90 °
Step 1. Tightening bolts No 3-4-5-6-11-12-13-14-19-20-21-22 M12 1.75x130	35 (25.8147)
Step 2.	+90 °
Step 3.	+90 °
Bolts securing 6 cylinder head (refer to figure 2) ♦	
Step 1. Tightening bolts No 1-2-7-8-9-10-15-16-17-18 M12 1.75x150	55 (40.5659)
Step 2.	+90 °
Step 3.	+90 °
Step 1. Tightening bolts No 3-4-5-6-11-12-13-14 M12 1.75x130	35 (25.8147)
Step 2.	+90 °
Step 3.	+90 °
Bolts securing heater grille: M6	10 ± 2 (7.3756 ± 1.4751)
Bolts securing intake manifold: M8 1.25x25	25 ± 5 (18.4391 ± 3.6878)
M8 1.25x60	25 ± 5 (18.4391 ± 3.6878)
Bolts securing exhaust manifold on 6 cylinder head: (refer to figure 5) M12 1.75x25	80 ± 5 (62.6928 ± 3.6878)
Bolts securing exhaust manifold on 4 cylinder head: (refer to figure 6) M8 1.25x25	25 ± 5 (18.4391 ± 3.6878)
M8 1.25x14	25 ± 5 (18.4391 ± 3.6878)
Bolts securing connecting rod caps (6 cylinder engines): M11 1.25 10.9 Flg	1st phase 30 +/- 3 (22.1269 +/- 2.2127)
	2nd phase 60 +/- 5 (44.2537 +/- 3.6878)
Torque/Angle	3rd phase +60 ° +/- 5 °
Bolts securing connecting rod caps (4 cylinder engines): M10 1.25x52 10.9 Flg	1st phase 30 +/- 3 (22.1269 +/- 2.2127)
	2nd phase 60 +/- 5 (44.2537 +/- 3.6878)

<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>