SERVICE MANUAL

PowerStar™ 65
PowerStar™ 75
Tier 4B (final)
Tractor

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NEW HOLLAND AGRICULTURE

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Two-speed rear Power Take-Off (PTO) - General specification 540/540E rpm hydraulic PTO

PowerStar™ 65 With cab [ELRT4065JJAN00029 -]	(Transmission = Power Shuttle)
PowerStar™ 65 Without cab	(Transmission = Power Shuttle)
PowerStar™ 75 With cab [ELRT4075KHAN00152 -]	(Transmission = Power Shuttle)
PowerStar™ 75 Without cab [ELRT4075LJAN00049 -]	(Transmission = Power Shuttle)

Type	Independent with respect to tractor speed
Engagement and control	Mechanically controlled by means of a hand lever located on the right-hand side of the operator seat
Direction of rotation (from tractor rear)	Clockwise
Engine rpm with power take-off at **540 RPM**. Engine rpm with power take-off at 540E rpm	**2160 RPM** **1592 RPM**
PTO revolution speed with engine at max. power. **2300 RPM** Engine rpm with power take-off at 540E rpm	**575 RPM** **780 RPM**
Diameter of driven shaft at grooved terminal	**3/8 in** (6 splines)

Two-speed rear Power Take-Off (PTO) - General specification - Mechanical PTO 540/540E rpm

PowerStar™ 65 With cab [ELRT4065JJAN00029 -]	(Transmission = Mechanical)
PowerStar™ 65 Without cab	(Transmission = Mechanical)
PowerStar™ 75 With cab [ELRT4075KHAN00152 -]	(Transmission = Mechanical)
PowerStar™ 75 Without cab [ELRT4075LJAN00049 -]	(Transmission = Mechanical)

Type	Independent with respect to tractor speed
Engagement and control (version with cab)	Mechanically controlled by means of a hand lever located on the right-hand side of the operator seat
Engagement and control (version with platform)	Mechanically controlled by means of a hand lever located on the left-hand side of the operator seat
Speed selection	By means of a hand lever located on the left-hand side of the operator seat
Direction of rotation (from tractor rear)	Clockwise
Engine rpm with power take-off at **540 RPM**. Engine rpm with power take-off at 540E rpm	**2160 RPM** **1592 RPM**
PTO revolution speed with engine at max. power. **2300 RPM** Engine rpm with power take-off at 540E rpm	**575 RPM** **780 RPM**
Diameter of driven shaft at grooved terminal	**3/8 "** (6 splines)

Two-speed rear Power Take-Off (PTO) - Torque

PowerStar™ 65 With cab [ELRT4065JJAN00029 -]	(Transmission = Mechanical)
PowerStar™ 65 Without cab	(Transmission = Mechanical)
PowerStar™ 75 With cab [ELRT4075KHAN00152 -]	(Transmission = Mechanical)
PowerStar™ 75 Without cab [ELRT4075LJAN00049 -]	(Transmission = Mechanical)

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Wiring harnesses - Electrical schematic sheet 11 SH09 - POWER DISTRIBUTION ENGINE

PowerStar™ 65 Without cab
PowerStar™ 75 Without cab [ELRT4075LJAN00049 -]

Type	Component	Connector / Link
Fuse	**F-005** - +KEY ENGINE (Fuse)	
Fuse	**F-040** - Fuel heater (Fuse)	
Connector	X-001A	**X-001A** - CAB - ENGINE 1 INLINE [SH34: D-6] (84142902)
Connector	X-001B	**X-001B** - CAB - ENGINE 1 INLINE [SH19: A-6] (84142903)
Connector	X-120	**X-120** - MODULE RELAY R9-R16 + FUSE F37-F [SH8: D-6] (87314762)
Connector	X-130	**X-130** - MODULE FUSE F1-F32 [SH7: A-1] (87314761)
Connector	X-950	**X-950** - WATER IN FUEL SENSOR [SH11: B-1] (87709663)

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3655 (DTC 39D-04) - Torque limitation active

Context:
This is an information fault code only. The fault code is logged and indicates that engine torque has been limited. Troubleshoot the fault codes that cause the reduction in power.

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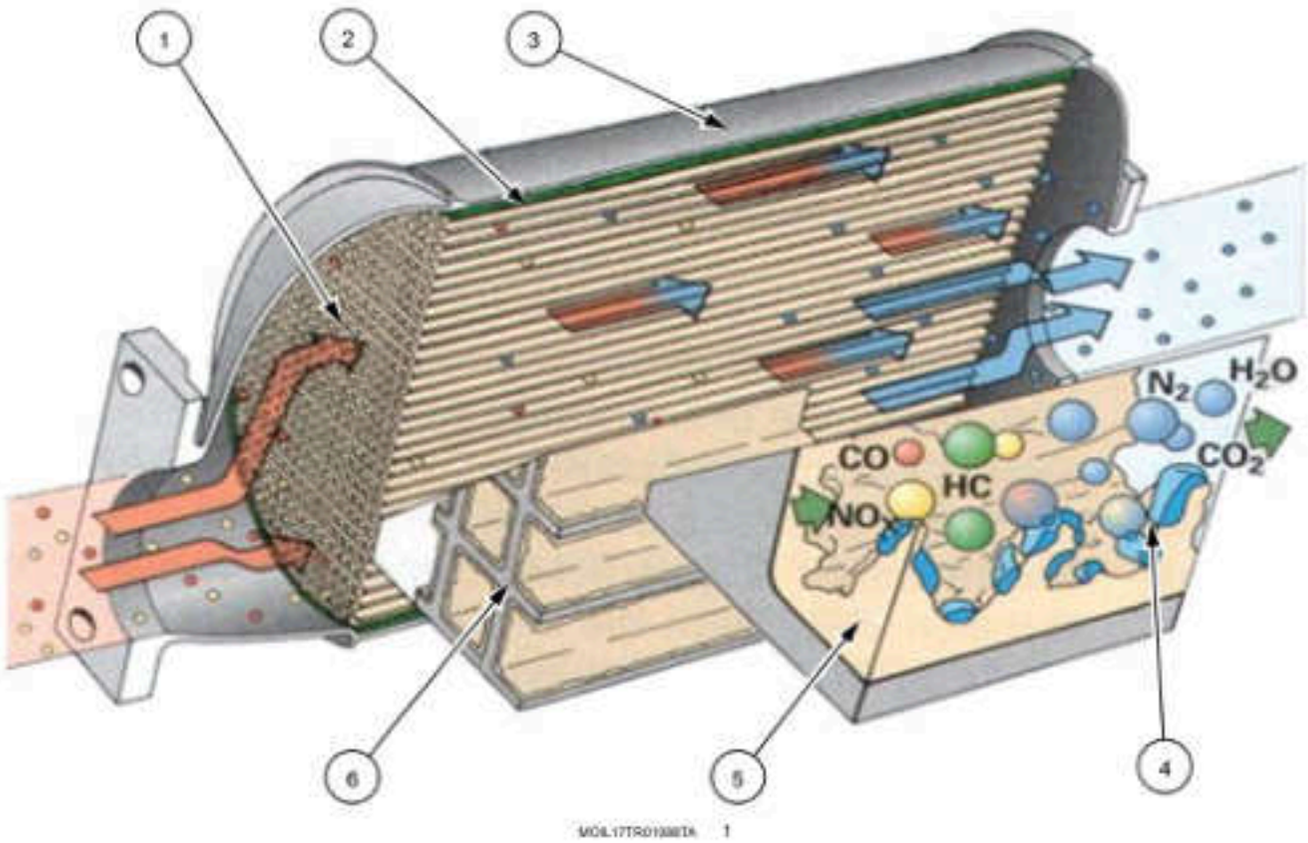
Diesel Oxidation Catalyst (DOC) - Dynamic description

The gases with high pollutant levels emitted by the engine reach the inlet of the exhaust terminal and come into contact with the honeycomb surface of the DOC catalyst.

The filter, consisting of a tightly packed series of small parallel channels, provides a large surface area which is highly efficient for catalysing the exhaust gases, and by a chemical reaction converts the gases which are then emitted from the terminal.

The catalysing process is more efficient the higher the temperature of the exhaust gases in contact with the DOC filter.

The chemical reaction produced allows the filter to transform the particulate present in the exhaust gases (nitrogen oxide, cobalt, hydrocarbons) into harmless substances such as water and carbon dioxide



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1.	Ceramic honeycomb conductor
2.	Mesh with high thermal resistance
3.	Steel casing
4.	Active catalytic surface
5.	Intermediate layer
6.	Ceramic supports

The control strategy of the DOC catalytic converter takes place by controlling certain parameters to keep the temperature range between 220 and 600°C.
The parameters are:

1. Gas temperature in the intake manifold
2. Gas pressure in the intake manifold.
3. Turbine inlet gas temperature
4. Boost Press
5. Injection timing
6. Injection pressure
7. EGR valve position

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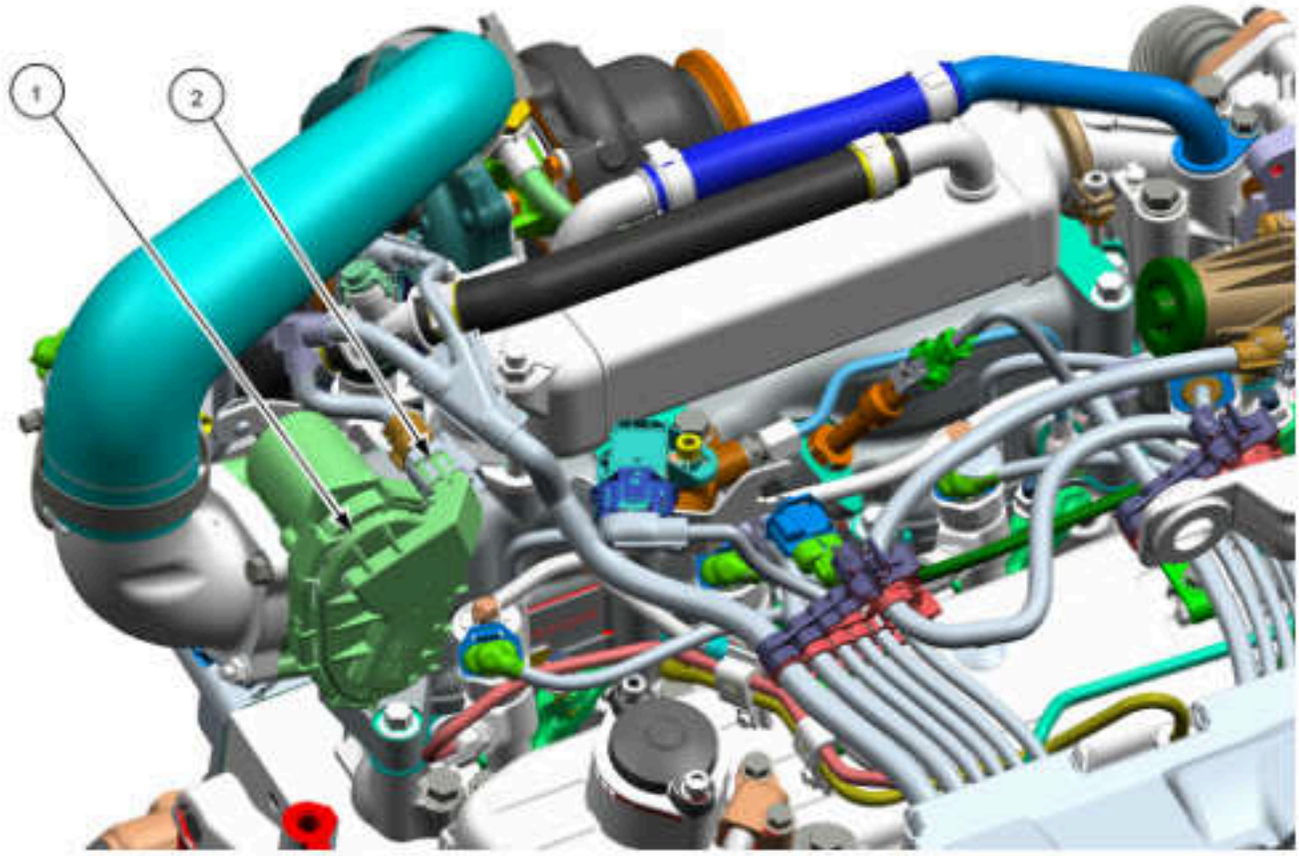
Throttle Valve Actuator (TVA) - Component localization

The valve is used to reduce the shaking of the engine when it is being turned off and to implement the strategy of reducing harmful emissions from the exhaust.

When the throttle is in a resting position it is open, and remains whether the engine is running or not; it immediately closes as ordered by the control unit when switching off the powertrain, thereby reducing shaking.

When implementing the strategies to reduce harmful emissions, the throttle is continuously controlled by the control unit to manage the temperatures needed to regenerate the particulate filter or during the activation of the EGR.

There is an electronic module inside the component, which fully controls it according to orders sent from the control unit; these orders are of the PWM type and have an amplitude of **12 V**. Moreover, the module is equipped with an internal sensor that tells it what position the valve is in: This data is used to prepare a feedback signal to send to the engine control unit that tells it if the order it has sent has been carried out correctly. The feedback signal is generated by the electronic module on the throttle modulating the signal in voltage, amplitude **5 V**, directly sent from the engine central control unit in order to immediately understand the type of response received.



M06.17TR01429DX 1

1.	Control valve actuator	**Throttle Valve Actuator (TVA) - Technical Data (55.014)**
2.	Electrical connection	

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Hydraulic systems - Hydraulic schema - Power shuttle transmission

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4WD hydraulic diagram with electrohydraulic engagement and selectable trailer brake valve (MR + Universal)

1.	Low pressure switch **10 bar** (**145 psi**)	
2.	Modulation valve	**Power shuttle transmission external controls - Exploded view - Power Shuttle transmission control valve (21.134)**
3.	Forward gear	
4.	Reversing	
5.	PTO brake	**Two-speed rear Power Take-Off (PTO) - Exploded view (31.114)**
6.	PTO clutch	**Rear electro-hydraulic control - Dynamic description PTO engagement 540 rpm, 540/540E rpm (31.104)**
7.	Primary shaft lube	
8.	PTO lubrication	
9.	Safety valve	**Safety valve - Static description (33.220)**
10.	Unloading valve	**Dump valve - Static description (33.220)**
11.	Trailer brake coupling manifold	**Trailer brake coupling manifold - Static description (33.220)**
12.	Trailer brakes	
13.	Trailer brake valve	**Trailer brake valve - Static description - Dual-line circuit, compatible with single-line universal (33.220)**
14.	Brake master cylinder	
15.	Left-hand rear brake	
16.	Right-hand rear brake	
17.	Mid mount valve	
18.	Mechanical Draft Control (MDC) lift	**Three-point hitch control valve - Exploded view (35.114)** **Hitch control valve - Technical Data - Hitch control valve (35.114)**
19.	Lift cylinder shock safety valve **210 – 215 bar** (**3045 – 3118 psi**)	
20.	Remote valve (open center)	**Remote control valve - Static description (35.204)**
21.	Main relief valve **190 bar** (**2755 psi**)	**High pressure relief valve - Component localization (35.350)** **High pressure relief valve - Technical Data (35.350)**
22.	**19 cm³/rev** (**1.2 in³/rev**) pump	**Fixed displacement pump - Static description (35.104)** **Pump - Technical Data - Tandem gear pump (35.104)** **Fixed displacement pump - Static description - Fixed displacement pumps (35.104)**
23.	**14 cm³/rev** (**0.9 in³/rev**) pump	**Fixed displacement pump - Static description (35.104)** **Pump - Technical Data - Tandem gear pump (35.104)** **Fixed displacement pump - Static description - Fixed displacement pumps (35.104)**
24.	Steering control valve / Orbitrol	**Power steering control valve - Component localization (41.200)** **Power steering control valve - Technical Data - Steering motor (41.200)**
25.	4WD clutch	
26.	Low pressure control valve	**Low pressure valve - Component localization (35.322)**
27.	Ground speed PTO	**Two-speed rear Power Take-Off (PTO) - Overview Ground speed (31.114)**

High pressure line

Low pressure **18 bar** (**261 psi**)

Steering line

Return/discharge line

Brake fluid line

Lubrication

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