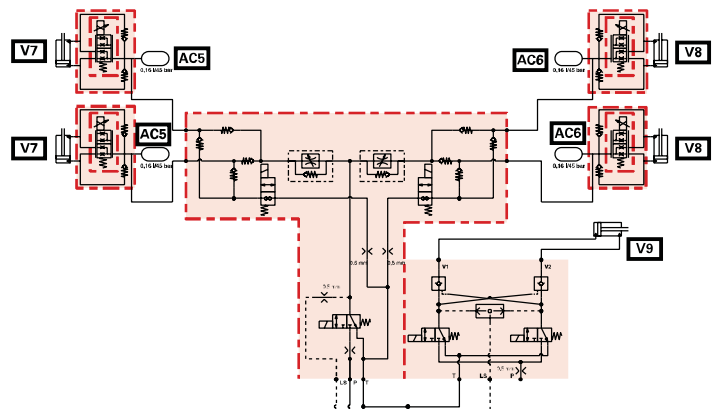
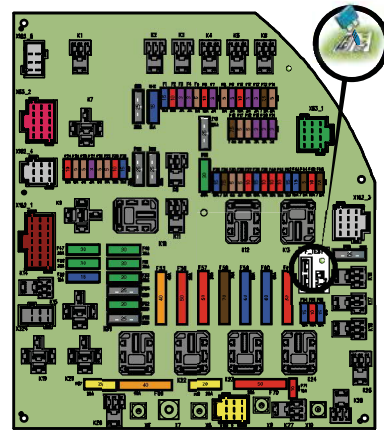


# Workshop Service Manual

# Technician Service Book -

# 7400 series tractors

El- og hydraulikdiagrammer



# Technician Service Book - 7400 series tractors

- 1        General**
- 2        Error codes**
- 3        Electrical and hydraulics diagrams**
- 4        Adjustments, bleeding and calibrations**



# 1 General

<b>A</b>	<b>General specifications . . . . .</b>	<b>3</b>
<b>B</b>	<b>Forward speeds . . . . .</b>	<b>45</b>
<b>C</b>	<b>Dimensions . . . . .</b>	<b>49</b>
<b>D</b>	<b>Capacities . . . . .</b>	<b>59</b>
<b>E</b>	<b>Retaining compounds and sealing products . . . . .</b>	<b>65</b>



## A General specifications

1	Model 7465 .....	5
2	Model 7475 .....	10
3	Model 7480 .....	15
4	Model 7485 .....	20
5	Model 7490 .....	25
6	Model 7495 .....	30
7	Model 7497 .....	35
8	Model 7499 .....	40



**1 Model 7465**

Engine	
Brand	SISU
Type	66CTA
Nominal power in ISO hp <sup>(1)</sup> (kW) at an engine speed of 2200 rpm	125 (92)
Maximum power in ISO hp <sup>(1)</sup> (kW) at 2000 rpm	135 (99)
Maximum torque (ISO TR14396)	585 Nm (431 lbf ft)
Maximum power take-off power in ISO hp <sup>(1)</sup> at PTO 1000 rpm	115 (85)
Idle speed	800 rpm
Maximum speed	2260 rpm
Engine weight	515 kg (1135 lb)
Number of cylinders	6
Engine displacement in litres	6,6
Engine displacement in cm <sup>3</sup>	6600 cm <sup>3</sup> (402.73 in <sup>3</sup> )
Piston travel	120 mm (4.7 in)
Piston diameter	108 mm (4.3 in)
Compression ratio	-
Compression pressure	-
Injection pump brand	Bosch
Injection pump type	CP1
Firing order	1-5-3-6-2-4
Maximum pressure in the high-pressure system	1400 bar (20306 psi)
Injector brand	Bosch
Injector type	CRIN 2/8 holes
Charge pump type	electric
Fuel prefilter filtration capacity	30 μ
Main fuel filter filtration capacity	5 μ
Low-pressure system pressure at minimum speed	0,75 bar (11 psi)
Low-pressure system pressure at maximum speed	0,75 bar (11 psi)
Recommended oil:	API CI-4 or ACEA E7
Maximum operating tilt (precautions)	-
Oil/fuel consumption	-
Lubrication system	Gear pump at the bottom of the timing
Oil pressure at minimum speed	1 bar (15 psi)
Oil pressure at maximum speed	2,5 bar (36 psi) at 5 bar (73 psi) depending on the temperature
Relief valve adjustment pressure	5 bar (73 psi) (spring pressure)
Air suction type	Turbocharged with air/air intercooler
Air preheating type	Grid Heater
Number of valves	24
Valve clearance value	0,35 mm (0.01 in) (inlet and exhaust)
Engine cooling system	Water cooling
Fan type	Vistronic fan
Thermostat begins to open at	83 °C (181 °F)
Liquid temperature from - to	-35 °C (-31 °F) to 108 °C (226 °F)



Engine	
Block preheater	110 or 220 volts
Fuel preheater	Accessory kit available
Gas recycling system	Internal EGR
Internal EGR system	Additional exhaust cam

1. Metric unit

Rear axle transmission	
Gearbox type	Continuous variation
Transmission type	ML 130
Number of ranges	2 ranges (high speed range (Hare) and low speed range (Tortoise))
Maximum speed	40 km/h (25 mile/h) or 50 km/h (31 mile/h)
Number of creeper gears	No creeper gears
Rear axle type	HA 130
Number of pinion/ring gear teeth	11/46
Rear axle ratio (crownwheel and pinion)	34.291
4WD ratio	0.54
Final drive type	Epicyclic
Final drive reduction ratio	8.2 [(108 + 15) / 15]
Maximum 4WD clutch torque	300 daNm (2213 lbf ft)
Number of 4WD discs	7 discs
Main brake type	Oil-immersed discs
Number of discs	5 223,5 mm (8.8 in) discs
Braking pressure	0 to 60 bar (870 psi)
Parking brake type	Standard/optional (electric/hydraulic) ParkLock
Trailer brake type	Hydraulics
Hydraulic trailer braking pressure	0 to 150 bar (2175,60 lbf/in <sup>2</sup> (PSI))
Maximum operating tilt - pitch (front/rear)	25°
Maximum operating tilt - roll (right/left)	25°
Maximum operating tilt - combined	17°
Transmission preheater	110 volts/150 watt
Total loaded weight supported by rear axle - 40 km/h (24,86 mile/h (mph))	8100 kg (17857 lb)
Total loaded weight supported by rear axle - 50 km/h (31,07 mile/h (mph))	8100 kg (17857 lb)

Front axle	
Front axle brand	DANA
Axle type	Suspended or fixed
Supplier reference - fixed front axle	735/523
Supplier reference - suspended front axle	735/606
Rotational direction	Clockwise
Fixed front axle weight	312 kg (688 lb)
Suspended front axle weight	600 kg (1323 lb)
Total loaded weight supported by front axle - 40 km/h (25 mile/h (mph))	4700 kg (10362 lb)
Total loaded weight supported by front axle - 50 km/h (31 mile/h (mph))	4700 kg (10362 lb)

Front axle	
Recommended oil type (beam and final drive)	SAE 85 W 90 (API GL5)
Total ratio for front axle	13.846
Number of teeth on final drive	14 x 27 x 70
Final drive ratio	6
Number of pinion/ring gear teeth	13/30
Number of differential discs	12 discs
Maximum steering angle	55°
Oscillation angle	-
Type of oscillation stop	Mechanical
Steering ram diameter	32 mm (1.3 in) x 68 mm (2.7 in)
Steering ram stroke	2 x 129 mm (5.1 in)
Suspension type	Hydraulics
Suspension ram diameter	65 mm (2.6 in) x 60 mm (2.4 in)
Suspension ram stroke	97 mm (3.8 in)
Hydraulic control unit brand	Husco
Hydraulic control unit nominal pressure	200 bar (2901 psi)
Number of accumulators	1
Accumulator pressure	1.4 l/24 bar (348 psi)
Suspension sensor type	Angular potentiometer.
Steering sensor type	Angular potentiometer.
Factor K	1.327

Electrohydraulic	
System type	Load Sensing
Flow rate	110 l/min (29.1 gal/min (US))
High-pressure pump type	Sauer Danfoss piston pump
High-pressure pump displacement	45 cm <sup>3</sup> (2.75 in <sup>3</sup> )
High-pressure pump rotational speed	2200 rpm
High-pressure pump maximum flow rate	110 l/min (29.1 gal/min (US))
High-pressure pump maximum pressure	200 bar (2901 psi)
Maximum quantity of oil to add for heavy implements	-
Maximum exportable oil quantity (without adding oil)	40 l (10.6 gal (US))
Maximum exportable oil quantity (adding oil)	-
Charge pump type	Gravity
Main relief valve adjustment pressure	200 bar (2901 psi) ± 10 bar (145 psi)
Number of spool valves (maximum)	5
Number of front "push-pull" connectors	4 connectors i.e. 2 spool valves
Number of rear "push-pull" connectors	10 connectors i.e. 5 spool valves
Maximum flow rate per spool valve	100 l/min (26.4 gal/min (US))
Spool valve control type	Electric
Recommended oil:	According to MF CMS M1145 specification

Steering	
Steering type	Hydrostatic
Type of control	Steering wheel or steering wheel + electrohydraulic spool valves
Orbitrol displacement	160 cm <sup>3</sup> (9.76 in <sup>3</sup> )
Steering ram diameter	68 mm (2.7 in) x 32 mm (1.3 in)
Steering ram stroke	2 x 129 mm (5.1 in)
Working pressure	175 bar (2538 psi) ± 5 bar (73 psi)
Pressure relief valve adjustment pressure	175 bar (2538 psi) ± 5 bar (73 psi)
Shock valve adjustment pressure	240 bar (3481 psi)
Oil recommended for steering	According to MF CMS M1145 specification

Linkage	
Rear lift ram diameter	90 mm (3.5 in) or 100 mm (3.9 in)
Rear linkage travel	755 mm (29.7 in)
Maximum lifting capacity at ball joints (rear)	7194 kg (15860 lb)
Operating pressure (rear)	180 bar (2611 psi)
3-point linkage category (rear)	3
Front lift ram diameter	-
Front linkage travel	-
Maximum lifting capacity at ball joints (front)	5000 kg (11023 lb)
Operating pressure (front)	180 bar (2611 psi)
3-point linkage category (front)	3

Rear power take-off (PTO)	
Number of selections possible for rear PTO	540/540ECO/1000
Maximum permissible power 540/540E in 1"3/8 (6 and 21 splines)	100 hp
Maximum permissible power 540/540E in 1"3/4 (20 splines)	121 hp
Maximum permissible power 1000 in 1"3/8 (6 and 21 splines)	121 hp
Maximum permissible power 1000 in 1"3/4 (20 splines)	121 hp
Engine speed if PTO 540	2065 rpm
Engine speed if PTO 540 eco	1590 rpm
Engine speed if PTO 1000	2034 rpm
Rotational direction	Clockwise
Clutch type	Hydraulics
Number of clutch discs	8 discs
Control pressure	18 bar (261 psi)
Splined shaft type	6 and 21 in 1"3/8 and 20 in 1"3/4

Front power take-off	
Number of selections possible for front PTO	1000 rpm
Maximum permissible power - clockwise	136 hp
Maximum permissible power - anti-clockwise	150 hp
Maximum permissible torque - clockwise	955 Nm (704 lbf ft)

Front power take-off	
Maximum permissible torque - anti-clockwise	1054 Nm (777 lbf ft)
Rotational direction	2 directions of rotation
Engine speed if PTO 1000	1920 rpm
Ratio	1.92
Clutch type	Hydraulics
Splined shaft type	6 and 21 in 1 <sup>3</sup> / <sub>8</sub>

Electric	
Battery brand	TAB
Battery specifications (2 batteries)	12 V - 105 A/H
Maximum current at start-up (IEC standard)	840 A
Starter type	12 V noseless
Starter power	4.2 kW
Alternator type	14 V/120 A or 14 V/150 A
Current available on ISOBUS connector	50 A

Electronics	
Controller	Function of each controller
DCC2	Instrument panel
AUTOTRONIC 4	Transmission
AUTOTRONIC 5	Linkage/ParkLock/suspended front axle
EHR 23 Bosch valves	Electrohydraulic spool valves
Engine controller	Engine
1 Orbitrol Danfoss valve	Orbitrol for the Auto-Guide function
Datatronic 3	Onboard computer
Automatic air conditioning module	Air conditioning

Cab and fittings	
Type of cab suspension available	Fixed Suspended
Type of rear-view mirror control available	Manual or electric
Type of air conditioning control available	Manual or automatic
Type and brand of air conditioning compressor	SANDEN with axial pistons
Compressor displacement	154.9 cm <sup>3</sup> /rev.
Refrigerant	R134a
Cab noise level	71 DBA
Roof type	Standard or with window

## 2 Model 7475

Engine	
Brand	SISU
Type	66CTA
Nominal power in ISO hp <sup>(1)</sup> (kW) at an engine speed of 2200 rpm	140 (103)
Maximum power in ISO hp <sup>(1)</sup> (kW) at 2000 rpm	150 (110)
Maximum torque (ISO TR14396)	681 Nm (502 lbf ft)
Maximum power take-off power in ISO hp <sup>(1)</sup> at PTO 1000 rpm	130 (96)
Idle speed	800 rpm
Maximum speed	2260 rpm
Engine weight	515 kg (1135 lb)
Number of cylinders	6
Engine displacement in litres	6,6
Engine displacement in cm <sup>3</sup>	6600 cm <sup>3</sup> (402.73 in <sup>3</sup> )
Piston travel	120 mm (4.7 in)
Piston diameter	108 mm (4.3 in)
Compression ratio	-
Compression pressure	-
Injection pump brand	Bosch
Injection pump type	CP1
Firing order	1-5-3-6-2-4
Maximum pressure in the high-pressure system	1400 bar (20306 psi)
Injector brand	Bosch
Injector type	CRIN 2/8 holes
Charge pump type	Electric
Fuel prefilter filtration capacity	30 µ
Main fuel filter filtration capacity	5 µ
Low-pressure system pressure at minimum speed	0,75 bar (11 psi)
Low-pressure system pressure at maximum speed	0,75 bar (11 psi)
Recommended oil:	API CI-4 or ACEA E7
Maximum operating tilt (precautions)	-
Oil/fuel consumption	-
Lubrication system	Gear pump at the bottom of the timing
Oil pressure at minimum speed	1 bar (15 psi)
Oil pressure at maximum speed	2,5 bar (36 psi) at 5 bar (73 psi) depending on the temperature
Relief valve adjustment pressure	5 bar (73 psi) (spring pressure)
Air suction type	Turbocharged with air/air intercooler
Air preheating type	Grid Heater
Number of valves	24
Valve clearance value	0,35 mm (0.01 in) (inlet and exhaust)
Engine cooling system	Water cooling
Fan type	Vistronic fan
Thermostat begins to open at	83 °C (181 °F)
Liquid temperature from - to	-35 °C (-31 °F) to 108 °C (226 °F)

Engine	
Block preheater	110 or 220 volts
Fuel preheater	Accessory kit available
Gas recycling system	Internal EGR
Internal EGR system	Additional exhaust cam

1. Metric unit
2. US unit

Rear axle transmission	
Gearbox type	Continuous variation
Transmission type	ML 130
Number of ranges	2 ranges (high speed range (Hare) and low speed range (Tortoise))
Maximum speed	40 km/h (25 mile/h) or 50 km/h (31 mile/h) <sup>(1)</sup>
Number of creeper gears	No creeper gears
Rear axle type	HA 130
Number of pinion/ring gear teeth	11/46
Rear axle ratio (crownwheel and pinion)	34.291
4WD ratio	0.54
Final drive type	Epicyclic
Final drive reduction ratio	8.2 [(108 + 15) / 15]
Maximum 4WD clutch torque	300 daNm (2213 lbf ft)
Number of 4WD discs	7 discs
Main brake type	Oil-immersed discs
Number of discs	5 223,5 mm (8.8 in) discs
Braking pressure	0 to 60 bar (870 psi)
Parking brake type	Standard/optional (electric/hydraulic) ParkLock
Trailer brake type	Hydraulics
Hydraulic trailer braking pressure	0 to 150 bar (2176 psi)
Maximum operating tilt - pitch (front/rear)	25°
Maximum operating tilt - roll (right/left)	25°
Maximum operating tilt - combined	17°
Transmission preheater	110 volts/150 watt
Total loaded weight supported by rear axle - 40 km/h (24,86 mile/h (mph))	8100 kg (17857 lb)
Total loaded weight supported by rear axle - 50 km/h (31,07 mile/h (mph))	8100 kg (17857 lb)

1. depending on the market or legislation

Front axle	
Front axle brand	DANA
Axle type	Suspended or fixed
Supplier reference - fixed front axle	735/523
Supplier reference - suspended front axle	735/606
Rotational direction	Clockwise
Fixed front axle weight	312 kg (688 lb)
Suspended front axle weight	600 kg (1323 lb)
Total loaded weight supported by front axle - 40 km/h (25 mile/h (mph))	4700 kg (10362 lb)

Front axle	
Total loaded weight supported by front axle - 50 km/h (31 mile/h (mph))	4700 kg (10362 lb)
Recommended oil type (beam and final drive)	SAE 85 W 90 (API GL5)
Total ratio for front axle	13.846
Number of teeth on final drive	14 x 27 x 70
Final drive ratio	6
Number of pinion/ring gear teeth	13/30
Number of differential discs	12 discs
Maximum steering angle	55°
Oscillation angle	-
Type of oscillation stop	Mechanical
Steering ram diameter	32 mm (1.3 in) x 68 mm (2.7 in)
Steering ram stroke	2 x 129 mm (5.1 in)
Suspension type	Hydraulics
Suspension ram diameter	65 mm (2.6 in) x 60 mm (2.4 in)
Suspension ram stroke	97 mm (3.8 in)
Hydraulic control unit brand	Husco
Hydraulic control unit nominal pressure	200 bar (2901 psi)
Number of accumulators	1
Accumulator pressure	1,4 l (0.4 gal (US))/24 bar (348 psi)
Suspension sensor type	Angular potentiometer.
Steering sensor type	Angular potentiometer.
Factor K	1.327

Electrohydraulic	
System type	Load Sensing
Flow rate	110 l/min (29.1 gal/min (US))
High-pressure pump type	Sauer Danfoss piston pump
High-pressure pump displacement	45 cm <sup>3</sup> (2.75 in <sup>3</sup> )
High-pressure pump rotational speed	2200 rpm
High-pressure pump maximum flow rate	110 l/min (29.1 gal/min (US))
High-pressure pump maximum pressure	200 bar (2901 psi)
Maximum quantity of oil to add for heavy implements	-
Maximum exportable oil quantity (without adding oil)	40 l (10.6 gal (US))
Maximum exportable oil quantity (adding oil)	-
Charge pump type	Gravity
Main relief valve adjustment pressure	200 bar (2901 psi) ± 10 bar (145,04 lbf/in <sup>2</sup> (PSI))
Number of spool valves (maximum)	5
Number of front "push-pull" connectors	4 connectors i.e. 2 spool valves
Number of rear "push-pull" connectors	10 connectors i.e. 5 spool valves
Maximum flow rate per spool valve	100 l/min (26.4 gal/min (US))
Spool valve control type	Electric
Recommended oil:	According to MF CMS M1145 specification

Steering	
Steering type	Hydrostatic
Type of control	Steering wheel or steering wheel + electrohydraulic spool valves
Orbitrol displacement	160 cm <sup>3</sup> (9.76 in <sup>3</sup> )
Steering ram diameter	68 mm (2.7 in) x 32 mm (1.3 in)
Steering ram stroke	2 x 129 mm (5.1 in)
Working pressure	175 bar (2538 psi) ± 5 bar (73 psi)
Pressure relief valve adjustment pressure	175 bar (2538 psi) ± 5 bar (73 psi)
Shock valve adjustment pressure	240 bar (3481 psi)
Oil recommended for steering	According to MF CMS M1145 specification

Linkage	
Rear lift ram diameter	90 mm (3.5 in) or 100 mm (3.9 in)
Rear linkage travel	755 mm (29.7 in)
Maximum lifting capacity at ball joints (rear)	7194 kg (15860 lb)
Operating pressure (rear)	180 bar (2611 psi)
3-point linkage category (rear)	3
Front lift ram diameter	-
Front linkage travel	-
Maximum lifting capacity at ball joints (front)	5000 kg (11023 lb)
Operating pressure (front)	180 bar (2611 psi)
3-point linkage category (front)	3

Rear power take-off (PTO)	
Number of selections possible for rear PTO	540/540ECO/1000
Maximum permissible power 540/540E in 1"3/8 (6 and 21 splines)	100 hp
Maximum permissible power 540/540E in 1"3/4 (20 splines)	121 hp
Maximum permissible power 1000 in 1"3/8 (6 and 21 splines)	121 hp
Maximum permissible power 1000 in 1"3/4 (20 splines)	121 hp
Engine speed if PTO 540	2065 rpm
Engine speed if PTO 540 eco	1590 rpm
Engine speed if PTO 1000	2034 rpm
Rotational direction	Clockwise
Clutch type	Hydraulics
Number of clutch discs	8 discs
Control pressure	18 bar (261 psi)
Splined shaft type	6 and 21 in 1"3/8 and 20 in 1"3/4

Front power take-off	
Number of selections possible for front PTO	1000 rpm
Maximum permissible power - clockwise	136 hp
Maximum permissible power - anti-clockwise	150 hp
Maximum permissible torque - clockwise	955 Nm (704 lbf ft)



Front power take-off	
Maximum permissible torque - anti-clockwise	1054 Nm (777 lbf ft)
Rotational direction	2 directions of rotation
Engine speed if PTO 1000	1920 rpm
Ratio	1.92
Clutch type	Hydraulics
Splined shaft type	6 and 21 in 1"3/8

Electric	
Battery brand	TAB
Battery specifications (2 batteries)	12 V - 105 A/H
Maximum current at start-up (IEC standard)	840 A
Starter type	12 V noseless
Starter power	4.2 kW
Alternator type	14 V/120 A or 14 V/150 A
Current available on ISOBUS connector	50 A

Electronics	
Controller	Function of each controller
DCC2	Instrument panel
AUTOTRONIC 4	Transmission
AUTOTRONIC 5	Linkage/ParkLock/suspended front axle
EHR 23 Bosch valves	Electrohydraulic spool valves
Engine controller	Engine
1 Orbitrol Danfoss valve	Orbitrol for the Auto-Guide function
Datatronic 3	Onboard computer
Automatic air conditioning module	Air conditioning

Cab and fittings	
Type of cab suspension available	Fixed Suspended
Type of rear-view mirror control available	Manual or electric
Type of air conditioning control available	Manual or automatic
Type and brand of air conditioning compressor	SANDEN with axial pistons
Compressor displacement	154.9 cm <sup>3</sup> /rev.
Refrigerant	R134a
Cab noise level	71 DBA
Roof type	Standard or with window

Thank you so much for reading.  
Please click the “Buy Now!”  
button below to download the  
complete manual.



After you pay.

You can download the most  
perfect and complete manual in  
the world immediately.

Our support email:

[ebooklibonline@outlook.com](mailto:ebooklibonline@outlook.com)