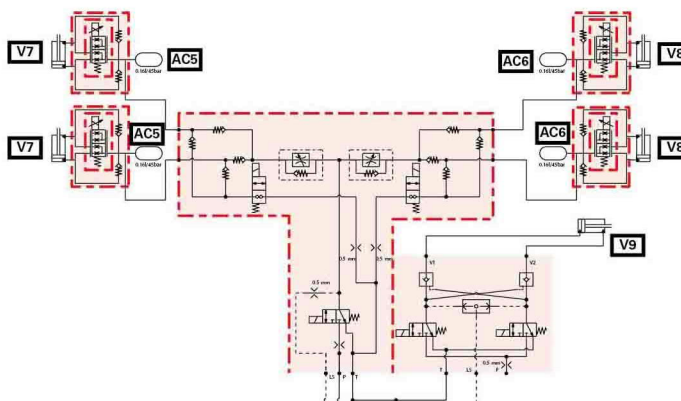
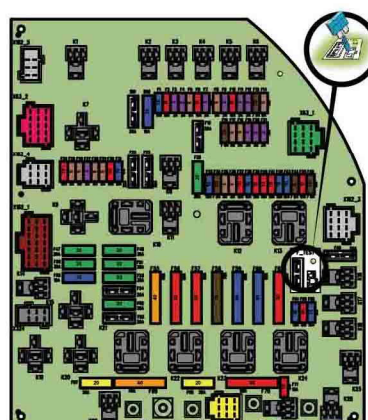


Technician Service Book - MF 8700 series tractors

Schémas électriques et hydrauliques



Technician Service Book - MF 8700 series tractors

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1.1 Specifications

1.1.1 Models MF 8700

Engine						
Model	MF 8727	MF 8730	MF 8732	MF 8735	MF 8737	MF 8740
Brand	AGCO Power					
Type	84 AWF					
Rated power hp ISO (kW) at an engine speed of 2150 rpm	240 (176)	265 (195)	290 (213)	320 (235)	340 (250)	370 (272)
Maximum power hp ISO (kW) at an engine speed of 1950 rpm	270 (199)	295 (217)	320 (235)	350 (257)	370 (272)	400 (294)
Maximum EPM power hp ISO (kW) at an engine speed of 2100 rpm	300 (221)	325 (239)	350 (257)	380 (279)	400 (294)	405 (302)
Maximum torque (Nm) at an engine speed of 1500 rpm	1220	1300	1390	1530	1540	1540 Nm
Maximum EPM torque (Nm)	1300	1390	1500	1590	1600	1600 Nm
Idle speed with ParkLock engaged	750 rpm					
Idle speed with ParkLock disengaged	1000 rpm					
Maximum speed	2160 rpm					
Engine weight	1000 kg					
Number of cylinders	6					
Engine displacement (in liters)	8.4					
Piston travel	145 mm					
Piston diameter	111 mm					
Compression ratio	16,7 bar ± 0,5 bar					
Compression pressure	24 bar					
Injection pump brand	Bosch					
Fuel injection type	Common rail HFR20					
Firing order	1-5-3-6-2-4					
Maximum pressure in the high-pressure system	2000 bar					
Injector brand	Bosch					
Injector type	CRIN 3.20					
Charge pump type	Manual					
Fuel prefilter filtration capacity	10 μ					
Main fuel filter filtration capacity	5 μ					

Engine						
Model	MF 8727	MF 8730	MF 8732	MF 8735	MF 8737	MF 8740
Low-pressure system pressure at minimum speed	0,5 bar to 8,5 bar					
Low-pressure system pressure at maximum speed	0,5 bar to 8,5 bar					
Recommended oil:	API CJ4 or ACEA E9					
Maximum operating tilt (precautions)	25° pitch					
	20° roll					
Oil/fuel consumption	Maximum 0.1%					
Lubrication system	Gear pump at the bottom of the timing					
Oil cooling system	Cooler integrated into the engine (left side)					
Oil pressure at minimum speed	1 bar					
Oil pressure at maximum speed	2,5 bar at 5 bar depending on the temperature					
Relief valve adjustment pressure	5 bar (spring pressure)					
Air suction type	Bi-turbocharged with air/air intercooler and air/water intercooler					
Air preheating type	Grid heater with relay controlled by the ECU					
Number of valves	24					
Valve clearance value	0,35 mm (inlet and exhaust)					
Engine cooling system	Coolant					
Fan type	Vistronic fan					
Thermostat begins to open at	82 °C					
Coolant temperature	-35 °C to 108 °C					
Air compressor brand for the brake system	Knorr Bremse					
Type of compressor	Piston					
Pressure range:	6,5 bar to 8 bar					
Block preheater	110 or 220 volts					
Fuel preheater	Not available					
Preheater DEF or AdBlue™	Tank and gage: coolant					
	Pump module and supply lines: electric					
Exhaust fumes recirculation system	DOC + SCR + EGR system					
DOC + SCR system (injection of DEF or AdBlue™)	DOC with metal substrate (exhaust fumes oxidation catalyzer)					
	SCR with two ceramic substrates (exhaust fume treatment)					
Safety system	NOx sensors at exhaust inlet and outlet					
Device brand	Bosch Denox 2.2+					
Type of control	Engine controller EEM4					

Engine						
Model	MF 8727	MF 8730	MF 8732	MF 8735	MF 8737	MF 8740
Urea solidification temperature	-11 °C					
Oil vapor recirculation system	Closed system breather (CCV)					
Belt: Air conditioning compressor/left-hand alternator	Poly V belt					
Belt: Fan/right-hand alternator	Poly V belt					
Belt: Air compressor	Poly V belt					

Rear axle transmission	
Model	MF 8700
Gearbox type	Continuous variation
Transmission type	ML 260
Number of ranges	2 ranges (high speed range (Hare) and low speed range (Tortoise))
Maximum speed	40 km/h or 50 km/h
Number of creeper gears	No creeper gears
Rear axle type	HA260 F
Number of pinion/crown wheel teeth	12/43
Rear axle ratio (crownwheel and pinion)	32.967
4WD ratio	0.68
Final drive type	Epicyclic
Final drive reduction ratio	9.2 (123+15/15)
Maximum 4WD clutch torque	350 daNm
Number of 4WD disks	7 disks
Main brake type	10" oil-immersed disk
Number of disks per side	6 disks
Braking pressure	0 to 60 bar
Parking brake type	ParkLock (electrical/hydraulic)
Trailer brake type	Hydraulic and pneumatic with built-in antifreeze pump
Pneumatic trailer braking pressure	6,5 bar to 8 bar
Hydraulic trailer braking pressure	0 to 150 bar
Maximum operating tilt	25° pitch (front/rear) 20° roll (right/left) 17° combined
Total loaded weight supported by rear axle	11500 kg

Front axle	
Model	MF 8700
Front axle brand	DANA
Axle type	Suspended or fixed
Supplier reference	Fixed: <ul style="list-style-type: none"> • 770/517 • 770/518 Suspended: <ul style="list-style-type: none"> • 770/638 • 770/639
Rotational direction	Clockwise
Front axle weight	Fixed: <ul style="list-style-type: none"> • 770/517: 770 kg • 770/518: 830 kg Suspended: <ul style="list-style-type: none"> • 770/638: 1077 kg • 770/639: 1230 kg
Total loaded weight supported by front axle	9000 kg
Recommended oil type (beam and final drive)	SAE 85 W 90 (API GL4)
Total ratio for front axle	16.862
Number of teeth on final drive	14 x 35 x 85
Final drive ratio	7.071
Number of pinion/crown wheel teeth	13/31
Number of differential disks	15 disks
Maximum steering angle	55°
Oscillation angle	± 9°
Type of oscillation stop	Mechanical
Steering ram diameter	90 mm x 45 mm (front axles 770/517 and 770/638) 110 mm x 60 mm (front axles 770/518 and 770/639)
Steering ram stroke	2 x 143,5 mm (front axles 770/517 and 770/638) 2 x 146 mm (front axles 770/518 and 770/639)
Suspension type	Hydraulics
Suspension ram diameter	90 mm x 100 mm
Suspension ram stroke	97 mm
Hydraulic control unit brand	Husco
Hydraulic control unit nominal pressure	200 bar
Number of accumulators	2
Accumulator pressure	Left 1 l : 10 bar

Front axle	
Model	MF 8700
	Right 1,4 l : 50 bar
Suspension sensor type	Angular potentiometer.
Steering sensor type	Angular potentiometer.
Brake type	Combined with the rear brake
Factor K	1.331

Spool valve	
Model	MF 8700
System type	Load Sensing
Flow rate	205 l/min
High-pressure pump type	Bosch piston pump
High-pressure pump displacement	85 cm ³
High-pressure pump rotational speed	2500 rpm
High-pressure pump maximum flow rate	205 l/min
High-pressure pump maximum pressure	200 bar
Maximum quantity of oil	120 l
Maximum exportable oil quantity (without adding oil)	40 l continuous
	60 l temporary (example: emptying a bucket)
Charge pump type	Suction
Main relief valve adjustment pressure	200 bar ± 10 bar
Number of spool valves (maximum)	8
Number of front "push-pull" connectors	4 connectors i.e. 2 spool valves
Number of rear "push-pull" connectors	12 connectors i.e. 6 spool valves
Maximum flow rate per spool valve	100 l/min ± 10
Spool valve control type	Electric
Recommended oil:	According to MF CMS M1145 specification

Steering	
Model	MF 8700
Steering type	Hydrostatic
Type of control	Steering wheel (standard)
	Steering wheel + electrohydraulic spool valve (SpeedSteer and Auto-Guide™ options)
Orbitrol displacement	315 cm ³ (front axles 770/517 and 770/638)
	400 cm ³ (front axles 770/518 and 770/639)
Steering ram diameter	90 mm x 45 mm (front axles 770/517 and 770/638)

Steering	
Model	MF 8700
	110 mm x 60 mm (front axles 770/518 and 770/639)
Steering ram stroke	2 x 143,5 mm (front axles 770/517 and 770/638)
	2 x 146 mm (front axles 770/518 and 770/639)
Working pressure	175 bar ± 5 bar
Pressure relief valve adjustment pressure	175 bar ± 5 bar
Shock valve adjustment pressure	235 bar ± 10 bar
Oil recommended for steering	According to MF CMS M1145 specification

Linkage	
Model	MF 8700
Rear lift ram diameter	105 mm
Rear linkage travel	788 mm or 860 mm
Maximum lifting capacity at ball joints (rear)	12000 kg
Operating pressure (rear)	180 bar
3-point linkage category (rear)	3
Front lift ram diameter	100 mm x 50 mm
Front linkage travel	826 mm
Maximum lifting capacity at ball joints (front)	5000 kg
Operating pressure (front)	190 bar
3-point linkage category (front)	2 or 3

Live PTO	
Model	MF 8700
Number of selections possible for rear PTO	540E/1000 - 1000/1000E
Maximum permissible power 540E in 1"3/8 (21 splines)	100 hp
Maximum permissible power 540E in 1"3/4 (20 splines)	160 hp
Maximum permissible power 1000/1000E in 1"3/8 (6 and 21 splines)	180 hp
Maximum permissible power 1000/1000E in 1"3/4 (20 splines)	MF 8727: 239 hp MF 8730: 262 hp MF 8732: 283 hp MF 8735: 300 hp MF 8737: 300 hp MF 8740: 300 hp
Engine speed for 540E PTO	1577 rpm

Live PTO	
Model	MF 8700
Engine speed for 1000E PTO	1605 rpm
Engine speed for 1000 PTO	1970 rpm
Rotational direction	Clockwise
Clutch type	Hydraulics
Number of clutch disks	8 disks
Control pressure	18 bar
Splined shaft type	6 and 21 in 1"3/8 and 20 in 1"3/4

Front power take-off	
Model	MF 8700
Number of selections possible for front PTO	1000 rpm
Maximum permissible power	Clockwise: 147 hp
	Anti-clockwise: 221 hp
Maximum permissible input-output torque	Clockwise: 507 Nm - 1032 Nm
	Anti-clockwise: 762 Nm - 1551 Nm
Rotational direction	2 directions of rotation
Engine speed if PTO 1000	2040 rpm
Ratio	2.04
Clutch type	Hydraulics
Splined shaft type	6 and 21 in 1"3/8

Electric	
Model	MF 8700
Battery brand	TAB
Battery specifications (2 batteries)	12 V - 105 Ah
Maximum current at start-up (IEC standard)	1010 A
Starter type	12 V noseless
Starter power	4.2 kW
Alternator type	2 x 14 V/120 A (240 A)
Current available on ISOBUS connector	50 A

Electronics	
Model	MF 8700
SRC14-34/31	Transmission and ParkLock function
3 Autotronic 5 DC	Linkage/Electrohydraulic spool valves/Armrest/ Semi-active cab/Front axle suspension
PVG 32 valves	Electrohydraulic spool valves
Lighting/linkage controller	Management of the lighting and of the rear linkage
1 EEM4 (ECM Tier 4f AGCO Power)	Engine and SCR Denox system
1 Orbitrol Danfoss valve	Orbitrol for the Auto-Guide™/ functionSpeedSteer
Datatronic 5	Onboard computer
Air conditioning module	Automatic air conditioning
CAN switches key pad	Controls for several tractor functions, such as 4WD, differential lock, suspension, Auto-Guide™ etc.
AM50 unit	AgCommand™ (telemetry)

Cab and fittings	
Model	MF 8700
Type of cab suspension available	Semi-active
Type of rear-view mirror control available	Manual or automatic
Type of air conditioning control available	Manual or automatic
Type and brand of air conditioning compressor	DENSO with axial pistons
Compressor displacement	188 cm ³ /rev.
Refrigerant	R134a
Cab noise level	71 dB(A)
Roof type	Standard High-visibility (optional)

1.2 Forward speeds

1.2.1 Forward speed for all models with Dyna-VT transmission

50 kph version* tractors

*depending on country legislation.

For the 40 kph version, the speed is electronically controlled. For the 40 kph version, the tractor reaches maximum speed at 1600 rpm. For the 50 kph version, the tractor reaches maximum speed at 1900 rpm.

Continuous variation mode		
	Forward	Reverse
Slow speed range (Tortoise)	0.03 kph to 28 kph	0.03 kph to 16 kph
High speed range (Hare)	0.03 kph to 40 kph or 50 kph depending on version	0.03 kph to 38 kph

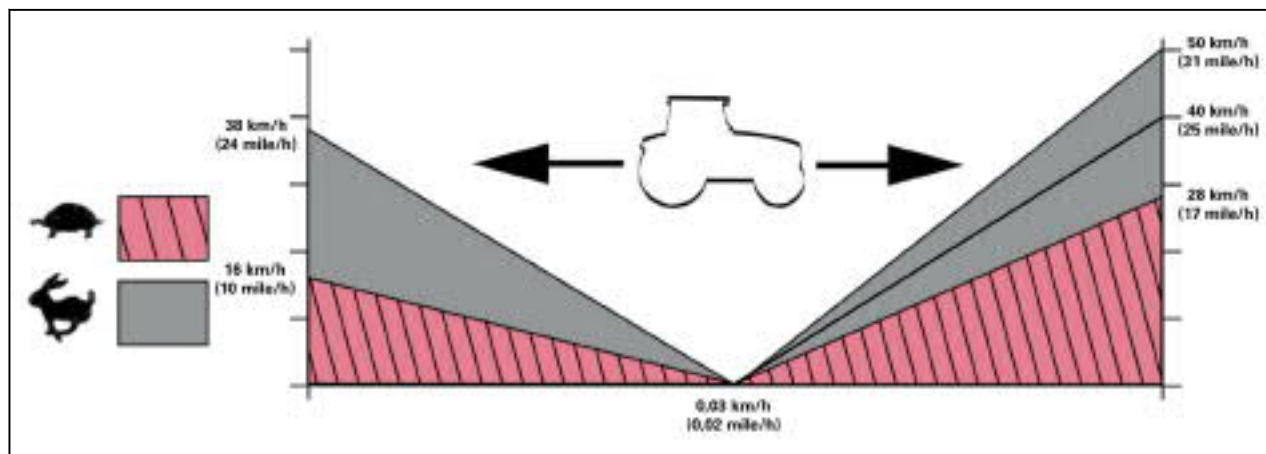


Fig. 1

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