PowerMix Datasheet

DLG TEST REPORT **7547**

	Boost	Standard	
Rated power*	165	-	kW
Maximum power*	165	-	kW
According to*	ECE-R120		

	Boost	Standard	
Rated power	147	-	kW
Maximum power	150	-	kW
According to	OECD Code 2		

	Diesel	AdBlue	
Energy efficiency	245	29.3	g/kWh
Consumption per hectare	5.6	0.5	l/ha
Area output	7.5		ha/h

	Diesel	AdBlue	
Energy efficiency	309	34.9	g/kWh
Consumption per 100 kilometre per ton	3.6	0.3	l/100tkm
Haul capacity (40km/h)		972	tkm/h

* Manufacturer information

Assessment in brief

The DLG PowerMix is a standardized test procedure in which the German Agricultural Society (DLG) measures the energy efficiency of tractors under conditions that replicate real-life field and transport operations. Testing is carried out on the DLG roller test bench. The resulting data provide a transparent basis for evaluating tractor performance and overall efficiency under consistent and repeatable conditions. The scatter plots below illustrate the results in fuel consumption and productivity.

Field work:
The DLG PowerMix test results for tractors in the power class of 165 kW +/- 20 kW indicate a specific fuel consumption range of 263 g/kWh to 295 g/kWh under standardized field load conditions. The tractor evaluated in this test showed a specific fuel consumption of 245 g/kWh.

Transport work:
In the DLG transport test, tractors within the same power range have achieved specific fuel consumption values between 349 g/kWh and 430 g/kWh. The tested machine showed a fuel consumption of 309 g/kWh.

The green scatter plots show the results of all machines tested on the roller test bench according to PowerMix 2 (period 2018 – present).

Performance and fuel consumption during field and transport operations

Performance and fuel consumption during exemplary field work		Engine speed	Driving speed	Delivered net power	Diesel consumption		Ratio AdBlue to Diesel	Specific consumption	
								Diesel	AdBlue
		1/min	km/h	kW	kg/h	l/h	Vol-%	g/kWh	
Z1P[1]	ploughing, heavy tine cultivator	1468	7.7	110	27.9	33.4	9.6	253	31.4
Z1G[1]	cultivator, disc harrow	1712	9.5	114	29.6	35.5	8.5	261	28.9
Z2P[1]	mech. seed drill, planter	1225	8.7	75	18.5	22.2	9.4	246	30.3
Z2G[1]	stubble working, seed bed combination	1244	11.5	84	21.0	25.1	9.6	248	31.2
Z3K	milling, rotary harrows seeding combination	1583	5.5	122	27.9	33.4	9.1	229	27.0
Z3M	cut 1. step, cultivator-rotary harrows-seeding combination	1568	14.0	123	29.2	35.0	8.9	237	27.6
Z4K	pneumatic seeding drill, milling as plant care, mulch	1277	5.9	88	19.8	23.7	9.5	225	28.0
Z4M	cut 2. step, direct seeding machine	1251	15.1	90	21.2	25.3	9.4	235	28.8
Z5K	plant protector, mineral fertiliser, tedder, swather	1295	5.9	51	12.8	15.4	8.2	251	26.9
Z5M	cut 3. step, airseeder	1292	15.7	54	14.1	16.9	8.5	263	29.3
Z6MS	self-loading wagon, manure spreading	1420	5.5	90	22.1	26.5	9.8	244	31.2
Z7PR	high pressure baler, round baler or square baler	1423	8.3	81	20.5	24.5	9.3	253	31.1
								245	**29.3**

[1] scaled with PTO Power 141.3 KW

	Energy efficiency		Consumption per hectare		Area output
	Diesel	AdBlue	Diesel	AdBlue	
	g/kWh	g/kWh	l/ha	l/ha	ha/h
Heavy pulling work[1]	257	30.2	12.0	1.1	3.3
Medium-duty pulling work[1]	247	30.7	7.1	0.7	3.9
Heavy PTO work	233	27.3	5.0	0.5	9.8
Medium-duty PTO work	230	28.4	3.4	0.3	10.5
Light PTO work	257	28.1	2.2	0.2	10.8
Traction+PTO+hydraulic work	249	31.2	4.0	0.4	6.5

Test conditions fieldwork	Ballasting		Axle load distribution				Total weight	Tire pressure		PTO shaft
	Front	Rear	Front		Rear			Front	Rear	
	kg	kg	kg	%	kg	%	kg	bar	bar	1000/1000E
Heavy pulling work	1250	2161	4490	40	6750	60	11240	1.2	1.2	
Medium-duty pulling work	0	0	3065	39	4764	61	7829	1.2	1.2	
Heavy PTO work	0	0	3065	39	4764	61	7829	1.2	1.2	1000
Medium-duty PTO work	0	0	3065	39	4764	61	7829	1.2	1.2	1000E
Light PTO work	0	0	3065	39	4764	61	7829	1.2	1.2	1000E
Traction+PTO+hydraulic work	0	0	3065	39	4764	61	7829	1.2	1.2	1000E

Performance and fuel consumption in transport operations

PowerMix - Transport work	Motor speed	Delivered effective power	Specific consumption		Consumption per 100 km and per ton		Transport performance
			Diesel	AdBlue	Diesel	AdBlue	
	min^{-1}	kW	g/kWh		l/100tkm		tkm/h
Heavy transportation work	1691	108	298	33.8	5.9	0.5	658
Light transport work at 40 km/h	1176	34	388	43.8	1.2	0.1	1287
Light transport work at 50 km/h	1358	46	399	49.9	1.4	0.1	1610
Light transport work at 60 km/h	-	-	-	-	-	-	-
Overall result transportation work 40 km/h			**309**	**34.9**	**3.6**	**0.3**	**972**
Overall result transportation work 50 km/h			**311**	**35.8**	**3.6**	**0.3**	**1134**
Overall result transportation work 60 km/h			**-**	**-**	**-**	**-**	**-**
Idle consumption	**1.6**	**l/h**					
Trailer weight	**32150**	**kg**					

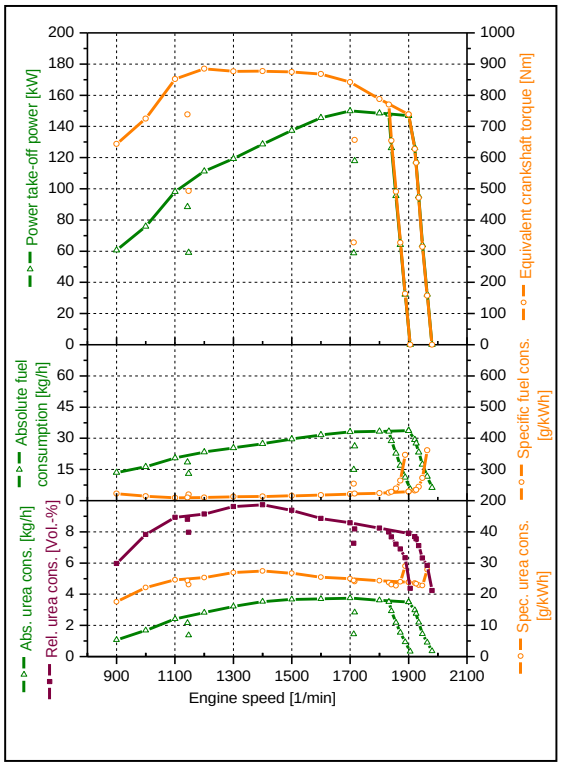
Test conditions Transport use	Ballasting		Axle load distribution				Total weight	Tire pressure	
	Front	Rear	Front		Rear			Front	Rear
	kg	kg	kg	%	kg	%	kg	bar	bar
Transportation work	-	-	3065	39	4764	61	7829	1.6	1.6

Tires	Front	Rear
Manufacturer/Type	Nokian Soilking	Nokian Soilking
Tire size	VF600/60R30	VF650/65R42
Equipment		
Pressureless return		**Yes**
A/C		**Yes**
Compressor		**Yes**
Front power lift		**Yes**
Front PTO (can be disengaged)		**No**

Power Take-Off Power according to OECD Code 2

Measuring point	Engine speed	PTO power	Equiv. Torque	Absolute consumption				Ratio AdBlue to Diesel	specific consumption	
				Diesel		AdBlue			Diesel	AdBlue
	1/min	kW	Nm	kg/h	l/h	kg/h	l/h	Vol-%	g/kWh	
Rated power										
Boost	1900	146.9	739	33.6	40.3	3.5	3.2	7.9	229	23.8
Standard	-	-	-	-	-	-	-	-	-	-
Maximum power										
Boost	1700	149.9	842	33.1	39.8	3.8	3.4	8.6	221	25.0
Standard	-	-	-	-	-	-	-	-	-	-
Maximum torque										
Boost	1200	111.3	885	23.4	28.1	2.8	2.6	9.1	210	25.3
Standard	-	-	-	-	-	-	-	-	-	-
1000 PTO shaft rotation										
Boost	1833	147.8	770	33.3	40.0	3.5	3.2	8.0	225	23.7
Standard	-	-	-	-	-	-	-	-	-	-
Part loads at full throttle										
80 % of boost rated pw.	1926	117.6	583	27.6	33.1	2.7	2.5	7.5	235	23.3
80 % of standard rated pw.	-	-	-	-	-	-	-	-	-	-
Part loads with governor control set to 90% of rated engine speed										
80 % of boost rated pw.	1715	117.9	657	26.3	31.5	2.8	2.6	8.2	223	24.0
80 % of standard rated pw.	-	-	-	-	-	-	-	-	-	-
40 % of boost rated pw.	1712	58.8	328	15.0	18.0	1.4	1.3	7.3	254	24.4
40 % of standard rated pw.	-	-	-	-	-	-	-	-	-	-
Part loads with governor control set to 60% of rated engine speed										
60 % of boost rated pw.	1147	88.4	493	13.0	15.6	1.4	1.2	8.0	220	23.1
60 % of standard rated pw.	-	-	-	-	-	-	-	-	-	-
40 % of boost rated pw.	1143	58.8	738	18.6	22.3	2.2	2.0	8.8	210	24.4
40 % of standard rated pw.	-	-	-	-	-	-	-	-	-	-

Standard **Boost**



Technical Data

Engine*			
Manufacturer		**AGCO Fendt**	
Stage of exhaust emission		**V**	
Rated engine speed		**1900**	**min^{-1}**
Motor power according to			
ECE-R120	**Standard**	**Boost**	
Rated power*	- kW	165	kW
Maximum power*	- kW	165	kW
at engine speed*	-	1700-1900	min^{-1}
Boost activation Prerequisites			
Variabel			
Exhaust aftertreatment device			
Nitrous gaseous emission	Selective Catalytic Reduction (SCR)		
Particulate emission	Diesel Particulate Filter (DPF), Diesel Oxidation Catalysator (DOC)		
Time for regeneration (average)		38	min
Regeneration interval:			
- maximum*		500	h
Replacement intervals		-	
Exhaust gas recuperation		**-**	
Exhaust-gas turbocharger		**el. Waste Gate**	
Number of cylinders		**4**	
Bore		**110**	**mm**
Stroke		**132**	**mm**
Displacement		**5018**	**cm³**
Main fan			
Diameter		620	mm
Number of fan blades		9	
Fan Type		Reversible fan	
Tank volume			
Diesel / AdBlue	347 l /	36 l	

Transmission			
Manufacturer		**Fendt**	
Type of contruction		**CVT, VarioDrive TA 150**	
Number of ranges		**1**	
Number of gears		**-**	
Forward		0,02 km/h till 50 km/h	
Reverse		0,02 km/h till 33 km/h	
Design-related maximum speed		**50**	**km/h**

Chassis*			
Front axle			
Manufacturer		Comer	
Type		planetary driven steering axle	
Axle load	**Front**	**Rear**	**Total**
Unladen masses	3065 kg	4764 kg	7829 kg
Permissible	6000 kg	10000 kg	13500 kg[2]
Technically permissable	6000 kg	10000 kg	13500 kg

Dimensions*				
Length w/o front linkage			**5197**	**mm**
Width			**2550**	**mm**
Height			**3076**	**mm**
Wheelbase			**2720**	**mm**
Distance hitch points to PTO shaft (lower links horizontal)	**Front**	**568 mm**	**Rear**	**675 mm**
Distance axle to hitch points (lower links horizontal)	**Front**	**1117 mm**	**Rear**	**1225 mm**
Turning circle			**10200**	**mm**

Rear PTO Shaft*				
Profile				**6 spline (1 ⅜")**
Transmission ratio				
PTO mode	540	540E	1000	1000E
Engine speed [min^{-1}]	1802	1432	1833	1457

Front PTO Shaft*				
Profile				**6 spline (1 ⅜")**
Transmission ratio				
PTO mode	540	540E	1000	1000E
Engine speed [min-1]	-	-	1647	-

Hydraulic power lift*	Front		Rear	
Categorie	3N		3N/3	
Lifting force at the hitch points exerted through full range	44.0	kN	97.9	kN

Hydraulic power*			
System	**CCLS (Closed Centre Load Sensing System)**		
Hydraulic oil		**hydraulic separate**	
Total capacity		**77**	**l**
Removable		**65**	**l**
Hydraulic flow			
Maximum delivery		152	l/min
Optional		205	l/min
Max. flow at one rear remote		140	l/min
Maximum pressure		**200**	**bar**

* Manufacturer data

[2] up to 50 km/h

Additional information

Applicant

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Germany

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DLG-Testframe
DLG-PowerMix_2.0 (Stand 01/2025)

Department
Vehicle technology

Testing expertise in agricultural technology and equipment

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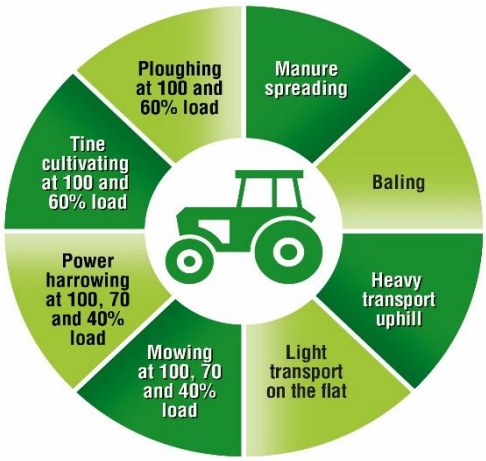

https://www.dlg.org/powermix

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