CASE IH MAXXUM 140 SPS

Datasheet DLG PowerMix

Applicant
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Test performed by
DLG e.V.
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Test No.

2012-524



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Specifications

Engine

Manufacturer	**FPT**		
Stage of emission	**III B**		
Exhaust aftertreatment device			
Nitrous gaseous emission	Selective Catalytic Reduction (SCR)		
Particulate matter emission	-		
Time for regeneration DPF (average)	-**	min	
Time between regeneration:			
- maximum*	-**	h	
- under PowerMix conditions*	-**	h	
- checked	-**		
Exhaust gas recuperation	**-**		
Number of cylinders*	**6**		
Bore*	**104**	**mm**	
Stroke*	**132**	**mm**	
Displacement*	**6728**	**cm³**	
Rated speed	**2200**	**min^{-1}**	

Power by ISO TR 14396	**standard**		**boost**	
Rated power	103	kW	122	kW
Maximum power	113	kW	129	kW
at engine speed	1800	min^{-1}	1800	min^{-1}
Loss of power during regeneration	-**			
Main fan				
Diameter	550	mm		
Number of fan blades	9			

Transmission

Manufacturer	**CNH**	
Type of construction	**Semi-Powershift (SPS)**	
Ranges	**2**	
Gears		
Forward	17	
Reverse	16	
Design speed	**50**	**km/h**

Power take off

Profile	**Form 3: 20 tooth (1 ¾")**			
Transmission ratio*				
Standard pto speed	540	540E	1000	1000E
Engine speed [min^{-1}]	-	1592	1893	1621

Chassis

Front axle		
Manufacturer	CNH	
Type	Rigid axle, suspended	

Tires	**front**	**rear**
Manufacturer	Michelin MultiBIB	Michelin MultiBIB
Tire size	480/65R28	600/65R38

Axle load	**front**	**rear**	**total**
Permissible*	4900 kg	7300 kg	9000 kg
Empty weight	2560 kg	4070 kg	6630 kg

Hydraulic

System*	**Load Sensing PFC (Pressure and Flow Compensated)**	
Supply of oil	**Common with transmission oil**	
Fluid type*	**CIH AXCELA NEXPLORE 10W-30 (MAT 3525)**	
Capacity*	**78**	**l**
Extractable*	**33**	**l**
Auxiliary valves		
Number	3	
Max. flowrate*	113	l/min
Max. pressure*	**210**	**bar**

Fitted options

Free return flow	**Yes**
Air condition	**Yes**
Air compressor	**Yes**
Front hydraulic power lift	**Yes**
Front pto	**No**
	-
	-

Test conditions

Axle load	**front**	**rear**
With ballast	**3010 kg**	**5095 kg**
Ballast		
on frame	450 kg	1025 kg
on axle	- kg	- kg
Axle load distribution	**37 %**	**63 %**
Tire pressure	**front**	**rear**
	1,2 **bar**	1,2 **bar**

Remarks

* Manufacturer´s data

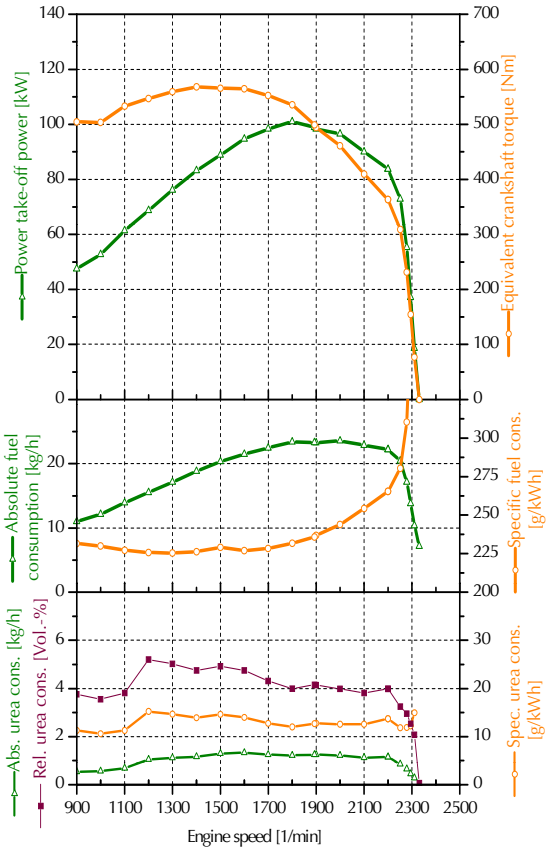
** No Diesel-Particulate-Filter (DPF)

Results of measurement at pto dynamometer – standard

Full load	
Rated speed	
Pto power	83,7 kW
Absolute fuel consumption	22,2 kg/h
Specific fuel consumption	265 g/kWh
Specific urea consumption	13,7 g/kWh
Ratio urea to fuel	4,0 Vol-%
Maximum power	
Engine speed	1800 min^{-1}
Pto power	101,0 kW
Absolute fuel consumption	23,4 kg/h
Specific fuel consumption	232 g/kWh
Specific urea consumption	12,0 g/kWh
Ratio urea to fuel	4,0 Vol-%
Maximum torque	
Engine speed	1400 min^{-1}
Pto power	83,3 kW
Absolute fuel consumption	18,8 kg/h
Specific fuel consumption	226 g/kWh
Specific urea consumption	14,0 g/kWh
Ratio urea to fuel	4,7 Vol-%
1000 rpm at pto	
Engine speed	1893 min^{-1}
Pto power	99,0 kW
Absolute fuel consumption	23,3 kg/h
Specific fuel consumption	236 g/kWh
Specific urea consumption	12,7 g/kWh
Ratio urea to fuel	4,1 Vol-%

Part load	
Full throttle, 80 % of power at rated speed	
Absolute fuel consumption	19,3 kg/h
Specific fuel consumption	288 g/kWh
Specific urea consumption	11,7 g/kWh
Ratio urea to fuel	3,1 Vol-%
90 % of rated speed, 80 % of power at rated speed	
Absolute fuel consumption	17,7 kg/h
Specific fuel consumption	265 g/kWh
Specific urea consumption	12,0 g/kWh
Ratio urea to fuel	3,5 Vol-%
90 % of rated speed, 40 % of power at rated speed	
Absolute fuel consumption	11,3 kg/h
Specific fuel consumption	339 g/kWh
Specific urea consumption	12,4 g/kWh
Ratio urea to fuel	2,8 Vol-%
60 % of rated speed, 40 % of power at rated speed	
Absolute fuel consumption	8,8 kg/h
Specific fuel consumption	263 g/kWh
Specific urea consumption	11,1 g/kWh
Ratio urea to fuel	3,3 Vol-%
60 % of rated speed, 60 % of power at rated speed	
Absolute fuel consumption	11,9 kg/h
Specific fuel consumption	238 g/kWh
Specific urea consumption	12,6 g/kWh
Ratio urea to fuel	4,1 Vol-%

Graphical analysis



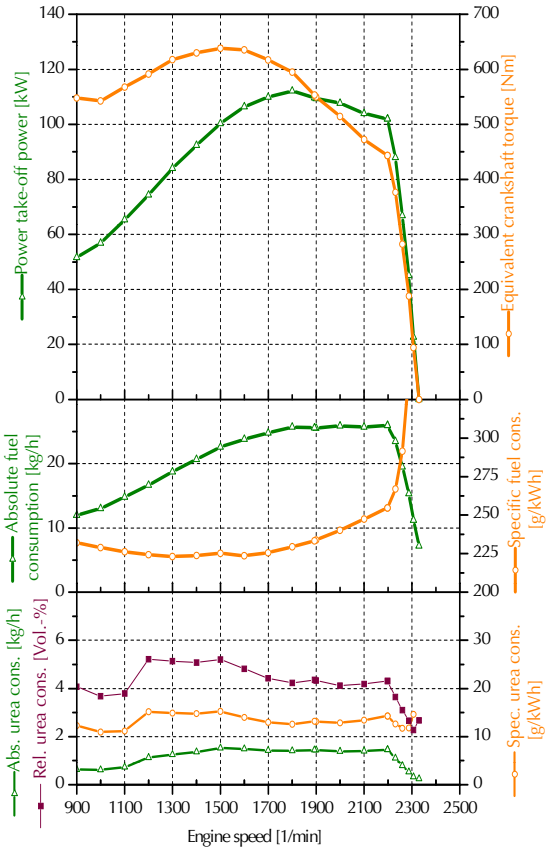
Torque rise	56 %
Engine speed drop	36 %
Pulling off torque	139 %

Results of measurement at pto dynamometer – boost

Full load		
Rated speed		
Pto power	102,0	kW
Absolute fuel consumption	26,0	kg/h
Specific fuel consumption	255	g/kWh
Specific urea consumption	13,2	g/kWh
Ratio urea to fuel	4,4	Vol-%
Maximum power		
Engine speed	1800	min^{-1}
Pto power	112,2	kW
Absolute fuel consumption	25,7	kg/h
Spec. Fuel consumption	229	g/kWh
Spec. urea consumption	12,6	g/kWh
Ratio urea to fuel	4,2	Vol-%
Additional fuel consump. during regeneration	-*	kg
Additional fuel consump. turned-over**	-*	%
Calculated spec. fuel consump. with reg.	-*	g/kWh
Maximum torque		
Engine speed	1500	min^{-1}
Pto power	100,3	kW
Absolute fuel consumption	22,6	kg/h
Spec. Fuel consumption	225	g/kWh
Spec. urea consumption	15,2	g/kWh
Ratio urea to fuel	5,2	Vol-%
1000 rpm at pto		
Engine speed	1893	min^{-1}
Pto power	109,7	kW
Absolute fuel consumption	25,6	kg/h
Spec. Fuel consumption	233	g/kWh
Spec. urea consumption	13,2	g/kWh
Ratio urea to fuel	4,4	Vol-%

Part load		
Full throttle, 80 % of power at rated speed		
Absolute fuel consumption	22,2	kg/h
Spec. Fuel consumption	272	g/kWh
Spec. urea consumption	12,4	g/kWh
Ratio urea to fuel	3,5	Vol-%
90 % of rated speed, 80 % of power at rated speed		
Absolute fuel consumption	20,7	kg/h
Spec. Fuel consumption	253	g/kWh
Spec. urea consumption	12,1	g/kWh
Ratio urea to fuel	3,7	Vol-%
90 % of rated speed, 40 % of power at rated speed		
Absolute fuel consumption	12,8	kg/h
Spec. Fuel consumption	313	g/kWh
Spec. urea consumption	14,2	g/kWh
Ratio urea to fuel	3,5	Vol-%
Additional fuel consump. during regeneration	-*	kg
Additional fuel consumption turned-over**	-*	%
Calculated spec. fuel consump. with reg.	-*	g/kWh
60 % of rated speed, 40 % of power at rated speed		
Absolute fuel consumption	10,3	kg/h
Spec. Fuel consumption	251	g/kWh
Spec. urea consumption	12,2	g/kWh
Ratio urea to fuel	3,7	Vol-%
60 % of rated speed, 60 % of power at rated speed		
Absolute fuel consumption	14,1	kg/h
Spec. Fuel consumption	230	g/kWh
Spec. urea consumption	13,4	g/kWh
Ratio urea to fuel	4,5	Vol-%
Additional fuel consump. during regeneration	-*	kg
Additional fuel consumption turned-over**	-*	%
Calculated spec. fuel consump. with reg.	-*	g/kWh

Graphical analysis

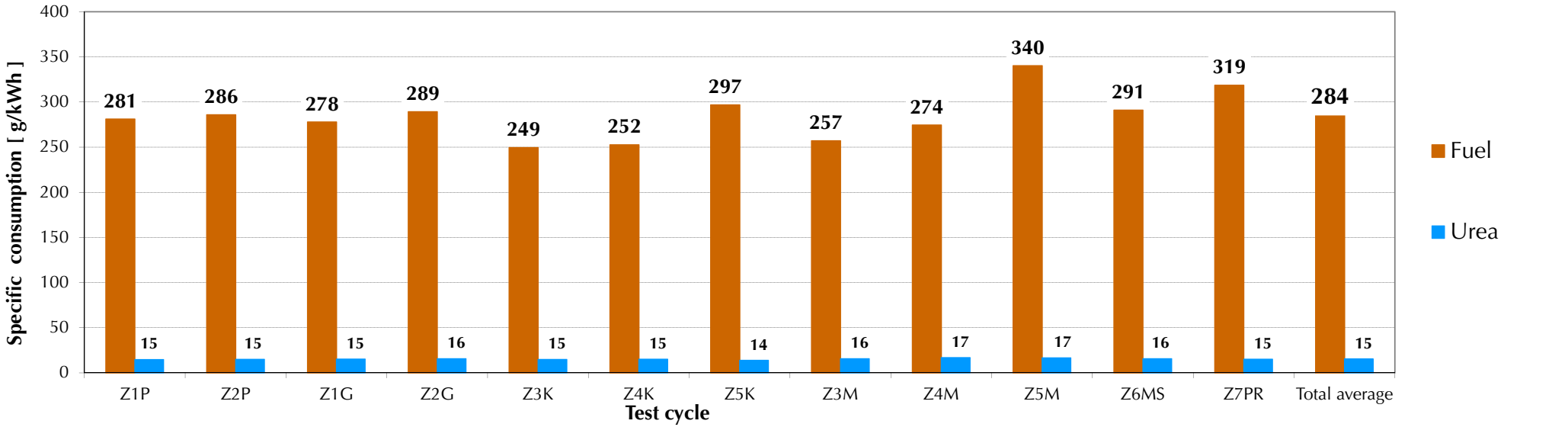


Torque rise	44 %
Engine speed drop	32 %

* No Diesel particulate filter

** Ratio of additional fuel for regeneration to total fuel consumption during two regenerations; calculated with maximum operating hours during regeneration (see Specification-Engine)

Results at DLG PowerMix



Load type	Test cycle		Engine speed [min^{-1}]	Driving speed [km/h]	Total power [kW]	Absolute fuel consumption [kg/h]	[l/h]	Average values Specific fuel consumption [g/kWh]	Spec. urea cons. [g/kWh]	Ratio urea to fuel [Vol-%]	Relative additional fuel for DPF regeneration* [%]	Calculated spec. Fuel cons. with DPF regeneration** [g/kWh]
Drawbar work	Plough 100 %	Z1P	1833	7,8	80	22,2	27,1	281	15	4,0	No DPF	No DPF
	Plough 60 %	Z2P	1445	8,6	54	15,3	18,5	286	15	4,0	No DPF	No DPF
	Cultivator 100 %	Z1G	1772	9,4	81	22,2	26,7	278	15	4,1	No DPF	No DPF
	Cultivator 60%	Z2G	1564	11,5	61	17,5	21,1	289	16	4,1	No DPF	No DPF
Drawbar + PTO work	Rotary harrow 100 %	Z3K	1640	5,1	88	21,6	26,2	249	15	4,5	No DPF	No DPF
	Rotary harrow 70 %	Z4K	1363	6,1	64	16,0	19,5	252	15	4,5	No DPF	No DPF
	Rotary harrow 40 %	Z5K	1408	6,3	38	11,0	13,4	297	14	3,5	No DPF	No DPF
	Mower 100 %	Z3M	1597	13,9	84	21,5	26,2	257	16	4,6	No DPF	No DPF
	Mower 70 %	Z4M	1454	17,0	67	18,2	22,2	274	17	4,7	No DPF	No DPF
	Mower 40 %	Z5M	1454	17,1	37	12,3	15,0	340	17	3,7	No DPF	No DPF
Drawbar- + PTO + Hydraulic work	Manure spreader	Z6MS	1784	6,4	72	20,3	24,7	291	16	4,1	No DPF	No DPF
	Baler	Z7PR	1843	9,2	61	18,4	22,5	319	15	3,7	No DPF	No DPF
Total average DLG PowerMix								**284**	**15**	**4,1**	**No DPF**	**No DPF**

* Ratio of additional fuel for regeneration to total fuel consumption during two regenerations; calculated with maximum operating hours during regeneration (see Specification-Engine)