

TEST REPORT



Stihl MS 391

OWNER OF TEST CERTIFICATE:

Test no.: 5304

Andreas Stihl AG & Co. KG
Andreas-Stihl-Str. 4
D – 71336 Waiblingen
www.stihl.de





Test results and evaluations

Andreas Stihl AG & Co. KG, Badstrasse 115, D – 71336 Waiblingen

Chainsaw tested with 45 cm cutting set.

Application field

Petrol chainsaw in the power range up to 4 kW for semiprofessional use.

Operation, maintenance and product safety		
Operability / Handling / Ergonomics		
Control elements	Easy to reach and operate.	+
Starting the engine	Decompression valve.	o
Engine control	Manual carburettor adjustment with set screws.	o
Mounting of the saw chain	Easy to access and use.	o
Chain tensioning	Simple. Tensioner on the side of the machine.	o
Refilling	No tools required for removing fuel tank caps. Easy access.	o
Maintenance		
Engine-, airfilter- and spark plug cover	One-piece cover. Dismantling difficult. Tool required (3 screws).	o
Airfilter		
Cleaning	No tools required.	+
Soiling	Low	+
Reliability	No noticeable problems in the course of the tests.	o
Safety and user information		
Instruction manual	Clearly, well illustrated.	+
Work safety		
EG-type examination	DPLF K-EG-2009/5143	w/o r.
GS-type examination	DPLF K-GS-2009/5142	

Technical data**Main dimensions and weights**

Length	Including cutting set 45 cm	890 mm
	Engine unit w/o bumper spike	443 mm
Width	Engine unit	197 mm
	w/ handle	254 mm
Height	Engine unit	218 mm
	w/ handguard	296 mm
Stump height	Sprocket cover	20 mm
	Handle	24 mm
Tank volumes	Fuel	600 ml
	Chain oil	300 ml
Empty weight	Including cutting set 45 cm	7,6 kg
	w/o cutting set	6,3 kg

Cutting set

- Clutch bell w/ external sprocket
- Guide bar Rollomatic E with sprocket nose.
- Semi- or full chisel chain
- Pitch 3/8" with gauge 1,6 mm
- Further guide bar lengths and chain types fitting the saw type available

Engine data

- Air-cooled single-cylinder two-stroke engine
- Displacement: 64,1 cm³; cylinder bore: 49,0 mm; piston stroke: 34,0 mm
- Spark plug: Bosch WSR-6F or NGK BPMR 7A
- Idle speed: 2.800 min⁻¹; racing speed: 13.000 min⁻¹

Fuel: minimum octane index 90 ROZ (mixture ratio 1:50) or two-stroke alkylate gasoline with „KWF-Test“. Manufacturer's recommendation: Stihl MotoMix

Power / torque at P _{max} = 3,3 kW, M = 3,2 Nm M _{max} = 3,5 Nm, P = 2,6 kW	revolutions 10.000 min ⁻¹ 7.000 min ⁻¹		Power / displacement 52 kW/l 41 kW/l		w/o r.
Power to weight ratio MS 311	w/ cutting set 45 cm 0,4 kW/kg		w/o cutting set 0,5 kW/kg		
Fuel consumption	at max. power output		at max. torque output		+
absolute / specific	1,7 l/h	378 g/kWh	1,5 l/h	414 g/kWh	
Chain oil consumption	at 5.000 min ⁻¹		at 9.000 min ⁻¹		o
min / max	4 ml/min	9 ml/min	7 ml/min	16 ml/min	

Exhaust emissions

Comply with stage V of engine category NRSh-v-1a of EU-directive (EU) 2016/1628.
Approval no. given on the type plate.

	Limits according to EU regulation 2016/1628	Manufacturer's information		w/o r.
CO	805 g/kWh	- g/kWh		
HC + NO _x	50,0 g/kWh	- g/kWh		
Noise emissions (maximum values according to manufacturer)				
Max. noise emissions (Cutting set 45 cm)	Idle	Full throttle	Full load	-
At the operator's ear	85 dB(A)	108 dB(A)	105 dB(A)	
Equivalent sound pressure level according to DIN EN ISO 22868: 105 dB(A)				
Equivalent sound power level according to DIN EN ISO 22868: 118 dB(A) (Mix: idle / full throttle)				
Vibration (maximum values according to manufacturer)				
Max. vibrations (Cutting set 45 cm)	Idle	Full throttle	Full load	o
Front handle	3,0 m/s ²	4,2 m/s ²	5,2 m/s ²	
Rear handle	2,5 m/s ²	4,1 m/s ²	5,3 m/s ²	
Equivalent total vibration value according to DIN EN ISO 22867				
Front handle: 4,2 m/s ²				
Rear handle: 4,1m/s ²				
Rating: ++ / + / o / - / -- ; o = standard ; w/o r. = w/o rating ; – compliance with threshold value				

In the field of measurement tolerances, the Stihl MS 391 is still manufactured unchanged.

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Test committee equipment and tools

**Chairman: Dr. Johannes Windisch,
Regensburg**

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Practical work with professional users

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