

Engine specifications

Engine specifications	997 Turbo (MA.170)	997 Turbo S (MA.170 S)
Engine type	MA.170	MA.170S
No. of cylinders	6	6
Displacement	3,800 cm ³	3,800 cm ³
Bore	97.0 mm	102.0 mm
Stroke	81.5 mm	77.5 mm
Compression ratio	9.8: 1 (-0.5)	9.8: 1 (-0.5)
Max. engine power (EU)	368 kW (500 hp)	390 kW (530 hp)
At engine speed	6,000 – 6,500 rpm	6,250 – 6,750 rpm
Max. torque (EU)	650 Nm	700 Nm
At engine speed	1,950 – 5,000 rpm	2,100 – 4,250 rpm
Max. output per litre	96.8 kW/l (131.6 hp/l)	102.6 kW/l (139.5 hp/l)
rpm limitation	Electronic throttle and injection suppression	
At engine speed	7,000 rpm	7,000 rpm
Idle speed	680 ± 40 rpm	680 ± 40 rpm
Engine weight according to DIN 70020 A	Manual transmission: 223.1 kg	— —
	PDK: 219.2 kg	PDK: 219.2 kg

Engine design

Designation	997 Turbo (MA.170)	997 Turbo S (MA.170 S)
Type	Aluminium flat-six engine, water-cooled, twin-turbo with variable turbine geometry	

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Crankcase	Vertically split light alloy cylinder housing (Alusil) with integrated cylinders and thrust blocks	
Crankshaft	Forged, supported by 8 bearings	
Crankshaft bearings	Plain bearings	
Connecting rods	Forged, cracked (L = 140 mm)	
Con-rod bearings	Plain bearings, sputter bearings on rod side	
Pistons	Light alloy, forged	
Cylinders	Aluminium silicon cylinder liner surface	
Cylinder head	One-piece light alloy cylinder head	
Valve arrangement	2 valves, suspended in parallel V arrangement	
Diameter of inlet valve	39.5 mm	
Diameter of exhaust valve	32 mm	

Engine control

Designation	997 Turbo (MA.170)	997 Turbo S (MA.170 S)
Valve lift of inlet	Large lift: 10.5 mm	
	Small lift: 3.6 mm	
Valve lift of outlet	10.35 mm	
Camshaft	Camshafts driven directly by the crankshaft via one 8-mm duplex bush chain drive per cylinder bank	
Camshaft adjustment	Porsche VarioCam Plus with continuous 40° adjustment	
Valve clearance	Hydraulic valve-clearance compensation	
Timing*: Inlet opens,	17.6° after TDC	17.6° after TDC

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large lift		
Timing*: inlet closes, large lift	55.3° after BDC	55.3° after BDC
Timing*: inlet opens, small lift	38.5° after TDC	38.5° after TDC
Timing*: inlet closes, small lift	18.7° before BDC	18.7° before BDC
Timing*: outlet opens	38.3° before BDC	38.3° before BDC
Timing*: Outlet closes	6.3° before TDC	6.3° before TDC
Engine control unit	Siemens SDI 3.1	
Ignition	DME, individual ignition modules, knock control	
Firing order	1-6-2-4-3-5	
Spark plugs	Bosch FR6 NPP 332 S	
Electrode gap	0.7 + 0.1 mm	
Electronic throttle	Electronic throttle actuator control via DME	
USA LEV II version	On-Board Diagnosis II (OBDII)/LEV II	
Euro 4	Euro-On Board Diagnosis (EOBD)	
Euro 5	Euro-On Board Diagnosis (EOBD)	

* Timing in late position with 1 mm valve lift and zero clearance

Engine lubrication

Designation	997 Turbo (MA.170)	997 Turbo S (MA.170 S)
Type	Pressure-fed lubrication, integrated dry sump, demand-controlled oil pump with 4 extraction stages in the cylinder heads and 2 in the turbochargers	
Oil cooling	Via oil-water heat exchanger	

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Installation position of oil filter	On pressure side behind oil pump ahead of feed to engine	
Oil pressure at 5,000 rpm and 90°	Controlled according to load from 3.5 to 4.5 bar	
Oil pressure indicator	Oil pressure indicator with oil pressure warning light and oil temperature gauge	
Consumption of oil over 1,000 km	Max. 1,000 cm ³	
Quantity of oil for new engine	10.4 litres	
Oil change quantity	7.50 l	
Engine oil level check	Checked continuously while engine is on via thermally compensated oil level sensor, even while driving Display in instrument cluster and function in the PIWIS Tester	

Engine cooling

Designation	997 Turbo (MA.170)	997 Turbo S (MA.170 S)
Cooling type/installation position	Water-cooled, 2 radiators ahead of front wheels, 1 radiator centred at the front	
No. of radiators	Three radiators	
Fans	One continuously controlled electric fan for each side radiator	
Coolant filling quantity (depending on equipment)	25 – 27 litres	