

## Engine Specifications

### Engine

Engine Type	- Tiptronic	M 64/24
	- Manual transmission	M 64/23
Number of cylinders		6
Bore	mm (in.)	100 (3.94)
Stroke	mm (in.)	76.4 (3.01)
Displacement	cm <sup>3</sup> (cu.in.)	3600 (219.7)
Compression ratio		11.3 - 1
max. Engine performance	kW (PS)	210 (285)
at engine speed	1/min	6300
max. torque	Nm	340
at engine speed	1/min	6300
max. Liter performance	kW/l (PS / l)	58.3 (79.2)
Engine speed limiter		
through		fuel interruption
at	1/min	6700
Engine speed at idle	1/min	800 ± 40
	with A/C	880 ± 20
	Tiptronic	800 ± 40 in P and N
		750 ± 40 in all running steps

**Engine design**

Design		6-cylinder-4 stroke-Otto-Engine with 2 opposing cylinder banks (boxer engine) Bi-Turbo
Engine case		two-part light alloy engine case
Crankshaft		forged
Crankshaft bearings		friction bearings
Connecting rods		forged
Connecting rod bearings		friction bearings
Pistons		light alloy, compression molded
Cylinder		light alloy singular cylinder (compression molded)
Cylinder head		light alloy singular cylinder heads with ceramic exhaust port liner
Valve guides		pressed in
Arrangement of valves		1 intake, 1 exhaust, V-shaped, hanging
Valve train		right and left each one overhead camshaft
Camshaft		cast
Camshaft drive		twin chain
Valve gap		hydraulic valve gap compensation
Valve timing at 1 mm valve lift and no play	Intake opens Intake closes at Exhaust opens Exhaust closes	0 Degrees before TDC 239 Degrees after TDC 227 degrees before TDC 5 Degrees after TDC
Intake air system		with resonance volume and controlled resonance flap (Varioram)

**Engine cooling**

Type	air cooled
Fan drive	from crankshaft via V-belt
Ratio: crankshaft/fan	approximately 1 : 1.6
Air mass supply	1010 l / sec at 6100 1/min of crankshaft

**Engine lubrication**

Type	Dry-sump lubrication with separate oil reservoir
Oil cooling	thermostatically controlled, front oil cooler in right wheel well 2-stage electric fan
Oil filter	in return line and oil pressure circuit
Oil pressure at n = 5000 1/min	approx. 6.5 bar at 90 Grad C
Oil pressure warning light	0 - 5 bar electric and oil pressure control light
Oil consumption	approx.. 1.0 l / 1000 km

**Exhaust system**

Separate exhaust lines left/right: each 1  
heat exchanger with joined cylindrical pipes  
outside of  
heat exchanger trays,  
three way catalytic converter  
with oxygen sensing  
Silencer

**Exhaust emission control**

Oxygen sensing and three way  
catalytic converter  
(metal carrier) separate for both  
cylinder banks

Special engine noise damping

Engine shroud world-wide

**Heating**

Engine dependent warm air heating with Fresh-air intake (with additional elektrical fan and automatic temperature regulation)

**Fuel system**

Fuel injection

DME  
(Digital-Motor-Electronic)  
Triggering of injection sequential

Fuel supply

1 electr. roller cell pump

**Required fuel**

Engine type

fuel quality (ROZ / MOZ)

M 64/23 M 60/24

98 / 88 unleaded

**Elektrical equipment**

Suppression range

ECE-R 10 and 72 / 245 / EWG

Specified voltage

V

12

Battery capacity

Ah

75

Generator output

W

1610 (DC generator)

Ignition

Double ignition, knock sensor, DME

Firing order

1 - 6 - 2 - 4 - 3 - 5

Timing control

via ECM

Spark plugs

Bosch	ww	Beru
FR6 LDC		14 FR6 LDU
FR5 DTC		14 FR - 5 DTU

Electrode gap

mm (in)

0.7 + 0.1  
(0.026 + 0.004)

**Load values**

	Air mass ML in kg/h	CLV in %
Idle	15 - 27	0.7 - 1.9
No load, n=2 500 1/min	34 - 64	2.3 - 3.9

CLV = Calculated load value:

$CLV = ML/MLMAX * 100$ , with  $MLMAX = 1536$  kg/h

**Test conditions**

- Engine at operating temperature
- Engine temperature higher than 120 °C
- Ambient temperature 20 °C
- No electrical consumers switched on