

# Technical Data for Engine OM 636

Job No.
0-1

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## A. General Technical Data on Vehicle and Built-in Engines OM 636

Principle .....	Diesel pre-combustion chamber, end-to-end scavenging
Operation .....	four-stroke
Number of cylinders .....	4
Firing order (cylinder 4 at flywheel) .....	1—3—4—2
Direction of rotation .....	counter-clockwise, viewed from output end
Cylinder bore* .....	75 mm
Stroke .....	100 mm
Total displacement* .....	1767 cm <sup>3</sup>
Compression ratio .....	19:1
Compression pressure at 200 to 250 rpm	
normal .....	22 to 23 kg/cm <sup>2</sup>
minimum .....	17 kg/cm <sup>2</sup>
Mean piston speed	
at engine speed 3000 rpm .....	10 m/sec
Permiss. output torque at crankshaft front up to .....	2 mkg
Valve arrangement .....	overhead in cylinder head, camshaft below
Inlet valve clearance with engine cold .....	0.20 mm
Exhaust valve clearance with engine cold .....	0.15 mm
Feed begin for engines <b>with</b> injection timing device and built-in engines for fork lifts <b>without</b> injection timing device .....	26° BTDC
Feed begin for engines <b>without</b> injection timing device excluding built-in engines for fork lifts .....	32° BTDC
Valve timing for test measurements with 0.4 mm test valve clearance	

For the camshaft 181 051 00 01 installed in the engines type 636.912, 914, 915 and 636.916 up to engine end number 03 445

For the camshaft 181 051 03 01 installed in the engines type 636.914, 915, and 916 starting engine end No. 03 446 and in all engines type 636.917, 918, 919, 930, 931, 932, 933, 934, and 936

Inlet valves open (start) .....	6° 30' BTDC	6° 30' BTDC
Inlet valves close (end) .....	41° 30' ABDC	41° 30' ABDC
Exhaust valves open (start) .....	38° 30' BBDC	41° BBDC
Exhaust valves close (end) .....	5° 30' ATDC	8° ATDC

Opening pressure of injection nozzles { for new nozzles ..... 110 to 120 kg/cm<sup>2</sup>  
for used nozzles minimum ..... 100 kg/cm<sup>2</sup>

\* For model 170 D type 636.915 the cylinder bore is 73.5 mm, the total displacement 1,697 cm<sup>3</sup>.

Injection nozzles .....	Bosch DNO SD 211 or Bosch DNO SD 2110
Injection nozzle holders .....	Bosch KCA 30 SD 2/4
Glow plugs for the engine of all types, excepting 636.915 .....	Bosch KE/GA 1/8-0.9 Volt Beru 214 Ge-0.9 Volt or Beru 214 GK-0.9 Volt
Glow plugs for the engines of the type 636.915 .....	Bosch KE/GA 2/2-1.4 Volt Beru 202 Ge-1.4 Volt
Crankshaft bearings .....	3 Multi-material bearings
Big-end bearings .....	Multi-material bearings

**Cooling:** Water circulation through pump, thermostat with by-pass line, fan (ventilator)

Cooling water, operating temperature .....	70 to 95° C
Operating temperature of lub oil .....	60 to 120° C

Max. permissible pressure in cooling system

for the types 636.912, 914, 915, 916, 918, and 931 .....	0.25 kg/cm <sup>2</sup>
for the types 636.917, 919, 930, 932, 933, and 936 .....	0.40 kg/cm <sup>2</sup>

**Lubrication:** Forced-feed lubrication by means of gear-type pump. The permissible lub oil pressure at normal operating temperature and depending on oil viscosity and engine speed amounts to .....

2 to 8 kg/cm<sup>2</sup>

#### Lubricating oil consumption

in engines for passenger cars and L or O 319 D

with the type identification 636.915, 916, 918, 919, 930, 931, and 636.934 .....

approx. 0.15 lit./100 km

in engines for Unimog with the type identification 636.912 and 636.914 .....

approx. 0.12 kg/h

in built-in engines with the type identification 636.917, 636.932, 933, and 936 .....

approx. 0.12 kg/h  
(for continuous output B)

**Total weight of engine,** standard delivery approx 176 kg dry.

#### Engine dimensions

Length with fan	approx. 725 mm
without fan	approx. 682 mm
Width	approx. 520 mm
Height	approx. 755 mm
Height above crankshaft center	approx. 538 mm

**Generator optional**  
(also see page 15-11/3)

90 watt 12 volt	Bosch LJ/GEH	90/12-2300 R 15
130 watt 12 volt	Bosch RJH	130/12-2000 R 1
150 watt 12 volt	Bosch LJ/RJH	150/12-2100 BR 1
160 watt 12 volt	Bosch LJ/GEG	160/12-2500 R 10

**Starter** (also see page 15-1/2)

12 volt	Bosch EJD 1,8/12 R 29
12 volt	Bosch EJD 1,8/12 R 56
12 volt	Bosch EJD 1,8/12 R 70
12 volt	Bosch EJD 1,8/12 R 82
24 volt	Bosch EJD 1,8/24 R

**Battery capacity** of the starting battery to be used 12 volt 70 to 135 ah.