Technical Data for Engine OM 621

Job No. 0–2

Change: Type 621.912, 913 and 914 added

Engine model or model identification		OM 621.I	OM 621.III	OM 621.II	OM 621.IV
Engine type identification		621.910	621.912	621.913	621.914
Engine built into vehicle model		190 D 190 Db	190 Dc	L and O 319 D	180 Dc
Principle		4-stroke Diesel DB prechamber direct-flow system with multi-hole burner			
Number of cylinders		4			
Firing order (cylinder 4 at flywheel)		1–3–4–2			
Direction of rotation		counter-clockwise, when seen from output end			
Cylinder bore	mm	85	87		
Stroke	mm	83.6			
Total piston displacement	cm^3	1897	1988		
Compression ratio		21 : 1			
Compression pressure at starting speed and 8 rotations in kg/cm^2	normal	22–24			
	min.	18			
	perm. deviation	3			
Max. speed at full load	r. p. m.	4000	4350	3700	3800
Max. speed, unloaded	r. p. m.	4300–4400	5000–5200	4200–4300	4300–4400
Idling speed	r. p. m.	700–800			
Engine power	DIN rating [1]) PS at r. p. m.	50/4000	55/4300	50/3700	48/3800
	SAE rating gr. HP at r. p. m.	55/4000	60/4200	55/4000	52.4/3800
Max. torque, mkg at r. p. m.	acc. to Din	11.0/2200	11.5/2400	11.5/2200	11.0/2200
	acc. to SAE	11.5/2200	12.0/2400	12.0/2200	11.4/2200
Mean piston speed	m/sec. at r. p. m.	11.1/4000	11.7/4300	11.1/4000	11.1/4000
Valve arrangement		overhead in cylinder head, o. h. c.			
Camshaft drive		by noiseless Duplex chain with automatic re-adjustment			
Valve clearance with cold engine	Intake	0.15			
	Exhaust	0.30	0.35		0.30
Valve timing for test measurements with 0.4 mm test valve clearance	Intake Valve opens BTDC	11°	12½°		
	Intake Valve closes ABDC	40°	41½°		
	Exhaust Valve opens BBDC	43½°	45°		
	Exhaust Valve closes ATDC	7½°	9°		
Min. space between valve disk and piston head at crankshaft position	Intake	1.5 mm at 5° ATDC			
	Exhaust	2.3 mm at 5° BTDC			

[1]) The specified output in PS is effectively available at the clutch for driving the vehicle, since all power requirements for auxiliary drives are already deducted.

Model			190 D 190 Db	190 Dc	L and O 319 D	180 Dc
Begin of delivery of injection pump at crankshaft pos.	Basic adjustm.		26° BTDC			
	End of injection advance		38° BTDC			
Opening pressure of inj. nozzles	for new nozzles		110–120 kg/cm²			
	for used nozzles		min. 100 kg/cm²			
Type identification of	injection nozzles		Bosch DNO SD 151			
	injection nozzle holder		Bosch KCA 30 SD 2/4			
Injection pump Bosch	PES 4 M 50/320		R 3	RS 14		
	PES 4 M 50 A 320		RS 3			
Pneumatic governor Bosch EP/MN 60 M			4 d	15 d [2]	14 d	11 d
Feed pump FP/K 22 M			2/8	7	3/8	6
Glow plugs		Bosch	KE/GA 1/8	KE/GA 1/21		KE/GA 1/8
		Beru	214 GK	381 GK		214 GK
Crankshaft bearings			3 component anti-friction bearings with liners			
Big end bearings			component anti-friction bearings with liners			
Cooling			water circulation by pump, thermostat with by-pass line, fan			
Operating temperature	of cooling water		70–95° C			
	of lube oil					
Max. permissible pressure in cooling system		kg/cm²	1		0.8	1
Oil cooling			oil/water heat exchanger			
Lubrication			forced-feed lubrication by gear pump			
Permissible lube oil pressure at normal operating temperature, depending on oil viscosity and engine speed			2–5 kg/cm² When idling min. 0.5 kg/cm²			
Lube oil consumption ltr/100 km			approx. 0.15			
Fuel consumption ltr./100 km	acc. to Din 70 030 (measured at km/h)		7.1 (90)	7.6 (93)	10.2 (67.5)	7.1 (82.5)
	Average cons. on highways		5.7–8.0	6.5–8.5	9–11.5	6–8
Generator Bosch LJ/GEG 160/12–2500			R 9	R 8		R 9
Generator output			160/240 Watt max. output			
Starter motor Bosch EJD 1.8/12			R 88	R 104		R 88
Battery voltage (V) and capacity (Ah)			12/84	12/66		
Capacities		max.	4.0	4.0		4.0
Engine without oil filter		min.	2.5	2.5		2.5
Oil filter		ltr.	0.5	1.3		0.5
Water pump			10 cm³ (hypoid oil SAE 90)			
Cooling system	total	ltr.	9.3	10.1	8.2 | 9.7	10.3
	Engine only	ltr.	5.2	5.2	5.2	5.2
	Radiator only	ltr.	3.0	3.8	3.0	4.0
	Heating system only	ltr.	1.1	1.1	— | 1.5	1.1

[2]) For vehicles with right-hand drive etc., refer to page 07–2/24.

Output Diagrams

For vehicle engines acc. to DIN 70 020
Output acc. to DIN Ne, acc. to SAE HP
Torque Md

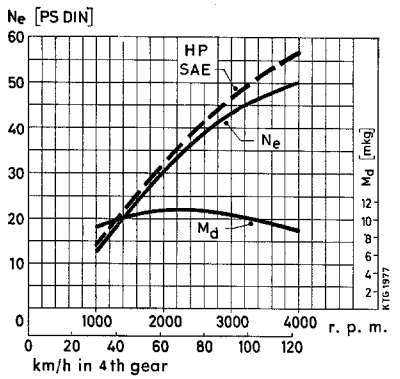


Figure 0–2/1

Model 190 D and 190 Db

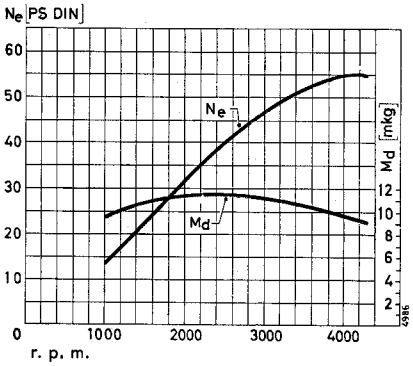
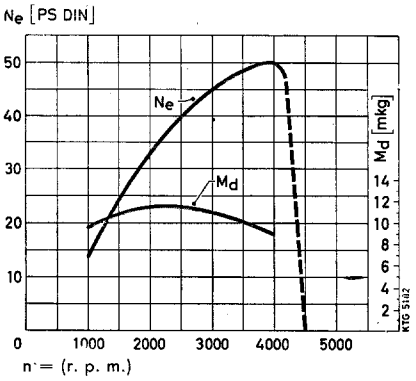


Figure 0–2/2

Model 190 Dc



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Model L and O 319 D

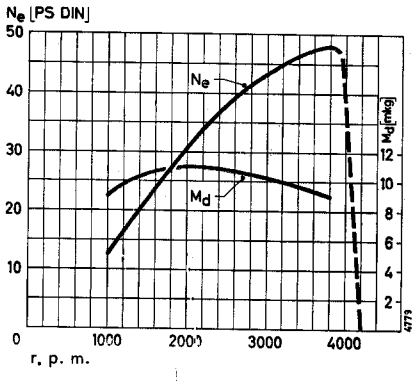

Figure 0–2/4

Model 180 Dc