

D 0834, D 0836

Euro4 vehicle diesel engines
110 – 240 kW (150 – 326 hp)



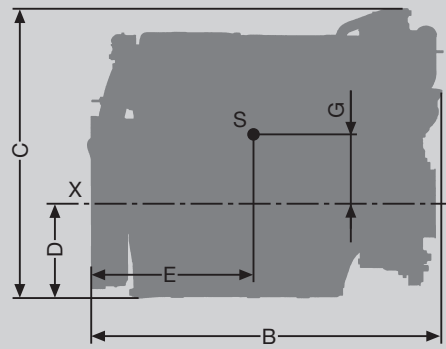
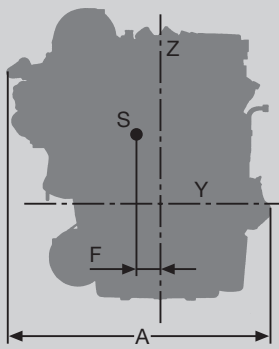
<http://www.barringtondieselclub.co.za/>



Technical data (all power outputs)

Type	Inline engine
Number of cylinders	D 0834: 4 D 0836: 6
Layout	LFL and LOH: vertical
Operating cycle	with turbocharger and charge-air intercooler
Number of valves	4 per cylinder
Combustion process	4-stroke, direct injection with centrally located injectors
Exhaust gas recirculation (EGR)	external
Turbocharger:	at side, compressor at V-belt end 2-stage compression Except LFL: least powerful 4- and 6-cylinder versions have single-stage turbocharging
Exhaust emission control	PM-KAT (catalytic converter)
Exhaust emission limit	Euro 4 with OBD 1
Fuel injection system	Common rail
Fuel injection management	EDC 7 (on engine) and FFR (on vehicle)
Firing order	D 0834: 1-3-4-2 D 0836: 1-5-3-6-2-4
Cooling system	Forced circulation, thermostat-controlled
Water pump drive ratio ¹⁾	1.35 (step-up)
Direction of engine rotation, looking at flywheel	counter-clockwise
Flywheel housing	D 0834: SAE 2 or 3/D 0836: SAE 1 or 2
Flywheel	SAE 1, 2 or 3 versions for customary manual gearboxes and automatic transmissions
Fan	D 0834 LFL: ø 654, 8 blades, on crankshaft D 0836 LFL: ø 725, 8 blades, on crankshaft on request
Power steering pump	
Fuel filter	with and without heating, mounted on engine
Air compressor ¹⁾	34 LFL, LOH: and 36 LFL: 238 or 352 cc 36 LOH: 352 or 600 cc
Alternator ¹⁾	LFL: NCB1 28V/80A or NCB2 28V/110A, i = 4.0 LOH: 1x or 2x LE10 28V/120A, i = 4.0
Starter motor	4.0kW/24 V
Starter cable	see installation directive
Coolant overheat warning	Separate sensor: 106° C ±3° C or evaluation of CAN message: 106° C (hysteresis 1° C)
Oil pressure warning	Separate sensor: 0.25 +0.15 bar or evaluation
CAN message:	0.36 bar (hysteresis 0.118 bar)
Permissible output torques, e.g. front of crankshaft, air compressor,	PTO on request
Oil content incl. full-flow filter	D 0834 LOH with red dipstick: 16.5 litres, incl. 1.0 litre in filter D 0836 LOH with red dipstick: 27.5 litres, incl. 1.5 litres in filter D 0834 LFL with green dipstick: 16.0 litres, incl. 1.0 litre in filter D 0836 LFL with green dipstick: 27.0 litres, incl. 1.5 litres in filter
Oil refill quantity between Min and Max marks	D 0834 LOH with red dipstick: 4 litres D 0836 LOH with red dipstick: 5 litres D 0834 LFL with green dipstick: 4 litres D 0836 LFL with green dipstick: 5 litres
Automatic oil level correction	on request
Oil consumption	max. 0.5% of fuel consumption, after running-in period and in normal operating conditions, bus and truck
Cold-start temperature limit	without flame start system: -20° C with flame start system: -32° C

¹⁾ Charts/graphs can be requested from MAN.



LOH

Technical data Bus and coach diesel engines

Engine type		D0834 LOH 50	D0834 LOH 51	D0836 LOH 52	D0836 LOH 51
Nominal power output	kW/hp	132/180	151/206	177/240	206/280
Nominal engine speed	1/min	2400	2400	2300	2300
Nominal torque acc. to ISO 1585, 88/195 EWG	Nm	700	830	925	1100
at engine speed	1/min	1400	1400	1200-1800	1200-1650
Bore/stroke	mm	108/125	108/125	108/125	108/125
Displacement	litres	4.580	4.580	6.871	6.871
Compression ratio		17.3:1	17.3:1	17.4:1	17.4:1
Torque increase	%	33	38	27	29
Mean effective pressure at nominal torque	bar	19,2	22,8	17,0	20,1
Minimum specific fuel consumption	g/kwh	203	202	200	198
Minimum engine idle speed (off-load)	1/min	700	700	570	570
Maximum engine idle speed (off-load)	1/min	2650	2650	2650	2650
Governed engine speed limit (on-load)	1/min	2430	2430	2320	2320
Exhaust emission control		PM-KAT	PM-KAT	PM-KAT ¹⁾	PM-KAT ¹⁾

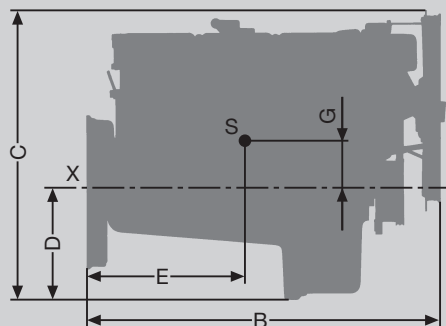
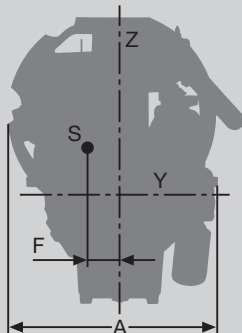
¹⁾ With CRT filter on request

Technical data For bus and coach installation

Engine type		D0834 LOH 50	D0834 LOH 51	D0836 LOH 52	D0836 LOH 51
Nominal power output	kW/hp	132/180	151/206	177/240	206/280
Width A	mm	805	805	851	851
Length B	mm	878	878	1136	1136
Height C	mm	933	933	933	933
Crankshaft centreline to lower edge of sump D	mm	311	311	308	308
Centre of gravity S in x direction E	mm	390	390	520	520
Centre of gravity S in y direction F	mm	34	34	35	35
Centre of gravity S in z direction G	mm	153	153	155	155
Dry weight (standard specification)	kg	508	510	649	649
Moment of inertia about the x-axis	kgm ²	19	19	25	25
Moment of inertia about the y-axis	kgm ²	32	32	62	62
Moment of inertia about the z-axis	kgm ²	25	25	49	49
Max. airflow	kg/h	800	800	1090	1172
Max. perm. intake depression, clean/contaminated	mbar	30/60	30/60	30/60	30/60
Max. boost pressure ahead of intercooler	bar	2.20	2.40	3.40	2.30
Max. permissible pressure drop in intercooler system	mbar	80	80	120	120
Max. charge-air temperature ahead of/behind intercooler (outside temperature 25° C)	° C	185/40	185/40	200/40	200/40
Heat to be dissipated at charge-air intercooler	kW	27	27	48	53
Min. coolant circuit volume needed at nominal engine speed	L/min	230	230	310	310
Heat to be dissipated by radiator	kW	80	92	100	112
Max. perm. coolant temp., continuous/short-period	° C	90/105	90/105	95/105	95/105
Max. exhaust temp. ahead of/after turbocharger	° C	660/540	700/560	560/480	600/425
Mass flow of exhaust gas at nominal engine speed	Kg/h	800	830	1145	1203
Max. permissible exhaust back-pressure at nominal power output	mbar	120	120	120	100
Max. continuous performance without exhaust brake	kW	40	40	48	50
ditto, with engine brake but without rocker-arm brake	kW	80	80	125	138
ditto, with engine brake and rocker-arm brake	kW	110	110	182	190
Max. perm. engine speed with exhaust brake in use	1/min	2800	2800	2800	2800
Max. intake depression ahead of delivery pump	bar	0.5	0.5	0.5	0.5
Max. permissible fuel temperature	° C	70	70	70	70
Max. sump inclination, longitudinal/transverse ²⁾	° of angle	17/17	17/17	15/15	15/15
Max. perm. engine inclination (installed), longitudinal/transverse ³⁾	° of angle	7.0/0	7.0/0	7.0/0	7.0/0

²⁾ Taking installed engine inclination into account

³⁾ Flywheel end down



LFL

Technical data Diesel engines for trucks

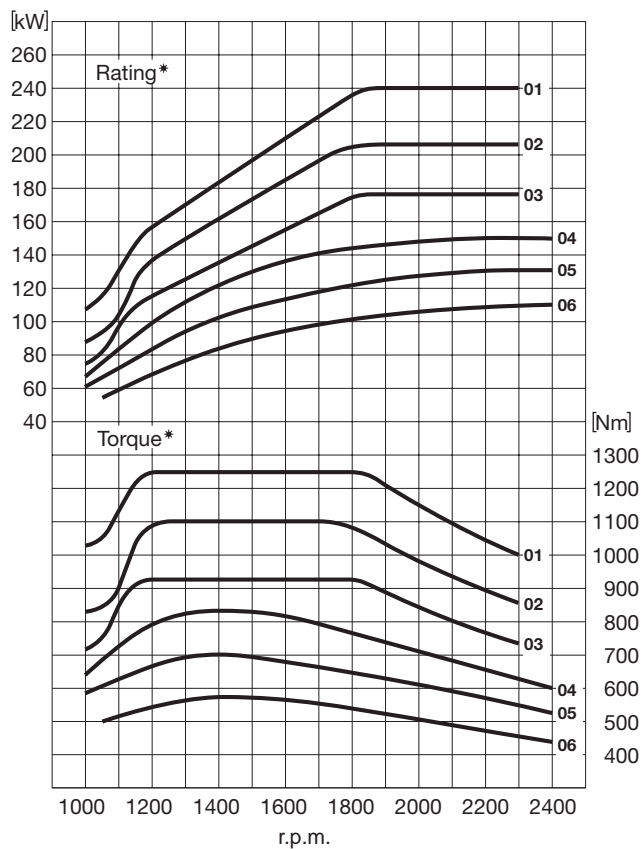
Engine type		D0834 LFL 50	D0834 LFL 51	D0834 LFL 52	D0836 LFL 50	D0836 LFL 51	D0836 LFL 52
Nominal power output	kW/hp	110/150	132/180	151/206	177/240	206/280	240/326
Nominal engine speed	1/min	2400	2400	2400	2400	2300	2300
Nominal torque acc. to ISO 1585, 88/195 EWG	Nm	570	700	830	925	1100	1250
at engine speed	1/min	1400	1400	1400	1200-1800	1200-1800	1200-1800
Bore/stroke	mm	108/125	108/125	108/125	108/125	108/125	108/125
Displacement	litres	4.580	4.580	4.580	6.871	6.871	6.871
Compression ratio		17.3:1	17.3:1	17.3:1	18.0:1	18.0:1	18.0:1
Torque increase	%	30	33	38	27	28	25
Mean effective pressure at nominal torque	bar	15.6	19.2	22.8	17.2	20.0	23.0
Minimum specific fuel consumption	g/kwh	203	203	202	203	198	199
Minimum engine idle speed (off-load)	1/min	700	700	700	570	570	570
Maximum engine idle speed (off-load)	1/min	2650	2650	2650	2650	2600	2600
Governed engine speed limit (on-load)	1/min	2430	2430	2430	2320	2320	2320
Exhaust emission control		PM-KAT	PM-KAT	PM-KAT	PM-KAT	PM-KAT	PM-KAT

Technical data for truck installation

Engine type		D0834 LFL 50	D0834 LFL 51	D0834 LFL 52	D0836 LFL 50	D0836 LFL 51	D0836 LFL 52
Nominal power output	kW/hp	110/150	132/180	151/206	177/240	206/280	240/326
Width A	mm	878	882	882	878	877	877
Length B	mm	937	932	937	1180	1180	1180
Height C	mm	926	926	926	994	994	994
Crankshaft centreline to lower edge of sump D	mm	378	378	378	364	443	443
Centre of gravity S in x direction E	mm	384	380	380	517	510	510
Centre of gravity S in y direction F	mm	12	23	23	17	23	23
Centre of gravity S in z direction G	mm	156	163	163	159	162	162
Dry weight (standard specification)	kg	458	488	490	625	642	642
Moment of inertia about the x-axis	kgm ²	17	18	18	23	24	24
Moment of inertia about the y-axis	kgm ²	29	31	31	58	60	60
Moment of inertia about the z-axis	kgm ²	22	24	24	47	48	48
Max. airflow	kg/h	700	800	800	906	1100	1180
Max. permissible intake depression, clean/contaminated	mbar	30/60	30/60	30/60	30/60	30/60	30/60
Max. boost pressure ahead of intercooler	bar	1,60	2,20	2,40	2,70	3,40	3,40
Max. permissible pressure drop in intercooler system	mbar	80	80	80	120	120	120
Max. charge-air temperature ahead of/behind intercooler (outside temperature 25° C)	° C	170/40	185/40	185/40	170/40	200/40	200/40
Heat to be dissipated at charge-air intercooler	kW	23	27	27	27	49	49
Min. coolant circuit volume needed at nominal engine speed	L/min	200	230	230	310	310	310
Heat to be dissipated by radiator	kW	85	80	92	100	134	145
Max. perm. coolant temperature, continuous/short-period	° C	90/105	90/105	90/105	95/105	95/105	95/105
Max. exhaust temperature ahead of/after turbocharger	° C	620/520	660/540	700/560	635/525	610/430	690/510
Mass flow of exhaust gas at nominal engine speed	Kg/h	725	800	830	945	1130	1200
Max. perm. exhaust back-pressure at nominal power output	mbar	80	120	120	100	120	120
Max. continuous performance without exhaust brake	kW	40	40	40	48	48	48
ditto, with engine brake but without rocker-arm brake	kW	80	80	80	125	125	125
ditto, with engine brake and rocker-arm brake	kW	110	110	110	182	176	176
Max. permissible engine speed with exhaust brake in use	1/min	2800	2800	2800	2800	2800	2800
Max. intake depression ahead of delivery pump	bar	0,5	0,5	0,5	0,5	0,5	0,5
Max. permissible fuel temperature	° C	70	70	70	70	70	70
Max. sump inclination, longitudinal/transverse ⁴⁾	° of angle	17/17	17/17	17/17	15/15	15/15	15/15
Max. permissible engine inclination (installed), longitudinal/transverse ⁵⁾	° of angle	3,5/0	3,5/0	3,5/0	3,5/0	3,5/0	3,5/0

⁴⁾ Taking installed engine inclination into account

⁵⁾ Flywheel end down



* Data in accordance with ISO 1585 88/195 EEC

- 01 = D0836 LFL52
- 02 = D0836 LOH51/LFL51
- 03 = D0836 LOH52/LFL50
- 04 = D0834 LOH51/LFL52
- 05 = D0834 LOH50/LFL51
- 06 = D0834 LFL50

MAN Commercial Vehicles Group

Engines Business Unit

Department MVL

P.O. Box 44 02 58

90207 Nuremberg, Germany

Fax: +49 (0) 911 420 1932

engines.components@de.man-mn.com

www.man-mn.com/engines

An MAN Group company



<http://www.barringtondieselclub.co.za/>

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