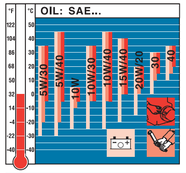
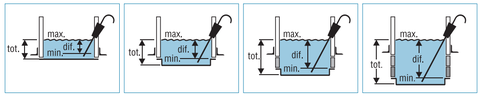
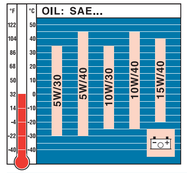


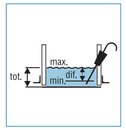


API: CD • CE • CF • CF-4 • CG-4
ACEA: B2 • E2

	tot. /	diff. /	tot. /	diff. /	tot. /	diff. /	tot. /	diff. /
1 B 20 (V) • 1 B 27 (V)	0.9	0.5	2.6	1.6	–	–	–	–
1 B 30 (V)	1.1	0.5	2.8	1.8	–	–	–	–
1 B 40 (V) • 1 B 50 (V)	1.5	0.8	3.2	2.2	–	–	–	–
E 572 • 672 • 573 • 673	1.0	0.6	–	–	–	–	–	–
E • ES 71 • 75 • 79	1.2	0.7	–	–	–	–	–	–
E • ES 780	2.0	1.0	–	–	–	–	–	–
E • ES 785 • 786	1.8	0.8	–	–	–	–	–	–
E 80 • 85 • 88 • 89	2.6	0.6	–	–	–	–	–	–
1 D 30 • 31 • 35 • 40 • 41	–	–	1.2	0.4	2.8	2.0	4.4	3.6
1 D 50	–	–	1.5	0.5	–	–	–	–
1 D 60 • 80 • 81 • 90	–	–	1.9	0.9	3.2	2.2	4.5	3.5
1 D 90 V	1.6	0.7	–	–	–	–	–	–
2 G 30 • 40	2.5	0.8	3.0	0.8	–	–	–	–
Z 788 • 789 • 790	–	–	4.2	2.5	5.5	3.8	–	–
2 L • M 30 • 31 • 40 • 41 S	1 5.5 A	2.5	8.5 C	5.0	–	–	–	–
2 L • M 30 • 31 • 40 • 41 C • Z	1 4.5 A	2.0	7.5 C	4.5	–	–	–	–
3 L • M 30 • 31 • 40 • 41 S	1 8.5 A	3.5	11.0 D	6.5	–	–	–	–
3 L • M 30 • 31 • 40 • 41 C • Z	1 8.0 A	3.0	10.5 D	6.0	–	–	–	–
4 L • M 30 • 31 • 40 • 41 S	1 –	–	14.0 D	9.0	–	–	–	–
4 L • M 30 • 31 • 40 • 41 C • Z	1 –	–	13.0 D	8.0	–	–	–	–
E 108	3.0	1.4	–	–	–	–	–	–
Z 108	5.5	2.0	5.8	3.0	–	–	–	–
D 108	7.5	3.0	9.0	4.8	–	–	–	–
V 108	9.0	4.0	11.5	5.8	–	–	–	–

2 • 3 • 4 W 35 (T)





	tot. /	diff. /
2 W 35	2.5	1.2
3 W 35 (T)	3.4	1.4
4 W 35 (T)	4.4	1.6

2 • 3 • 4 W 35:
API: CF • CF-4 • CG-4
ACEA: B2 • E2

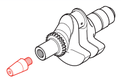
3 • 4 W 35 T:
API: CF • CF-4 • CG-4
ACEA: B3 • E2

Nm

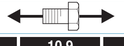
22 - 25

	85
1 B 20•27•30•40•50	30 - 35
1D 30•31•35•40•41 1D 50•81•90 • L/M 41	40 - 50
1 D 60•80	50 - 70
2 G 30•40	50 - 70

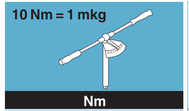
SW=19 mm	SW=22 mm
25	35
1 B 20•27•30•40•50	23-0-23-0-25

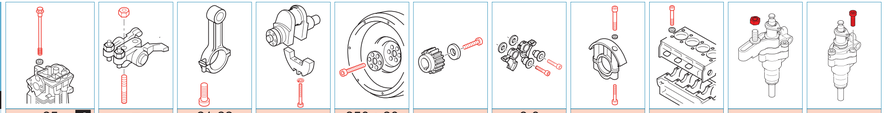


1 B 20•27•30•40•50	80 - 100



	8.8	10.9	12.9
M 4	2.8	3.9	4.7
M 5	5.5	7.8	9.3
M 6	9.5	13.0	16.0
M 8	23.0	33.0	39.0
M 10	46.0	65.0	78.0
M 12	80.0	110.0	140.0
M 14	130.0	180.0	220.0
M 16	190.0	270.0	330.0
M 18	270.0	380.0	450.0
M 20	380.0	530.0	640.0
M 22	510.0	720.0	860.0

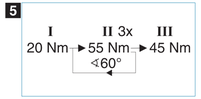




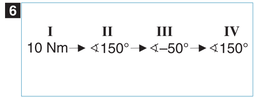
1 B 20 • 1 B 20 V	25 4	–	21-22	–	350 + 20	–	9.6	–	–	–	–
1 B 27 • 1 B 27 V	10+∢180°	–	21-22	–	350 + 20	–	9.6	–	–	–	–
1 B 30 • 1 B 30 V	45 5	–	29	–	350 + 20	–	9.6	–	–	–	–
1 B 40 • 1 B 40 V	45 5	–	40-42	–	40 + 2	–	9.6	–	–	–	–
1 B 50 • 1 B 50 V	10+∢250° 6	–	40-42	–	40 + 2	–	9.6	–	–	–	–
E 572 • 672 • 573 • 673	35	35	40	22	70	–	–	–	–	–	–
E • ES 71 • 75 • 79 • 780	50	–	60	65	300-350	60	60	–	–	–	–
E • ES 785 • 786	60	–	60	65	300-350	60	60	–	–	–	–
E 80 • 85 • 88 • 89	65	–	60	65	300-350	–	–	–	–	–	–
1 D 30 • 31 • 35 • 40 • 41 • 50	50	–	40	40	68	–	11	–	–	–	–
1 D 60 • 80 • 81 • 90 V	80	–	85	75	M12(6x):115 M14(5x):190	–	11	–	–	–	–
E 950	80	–	60	65	145	90	–	–	–	–	–
2 G 30 • 40	55	23	40	–	280	–	–	–	10	–	–
Z 788 • 789 • 790	50	M8:25 M9:50	60	65	145	190	–	110	–	–	–
2 • 3 • 4 L 30	50	–	60	65	135	30	–	–	90	–	–
2 • 3 • 4 L • M 31 • 40 • 41	65	–	M10:60 M11:115	65	200	30	–	–	90	–	–
E • Z • D • V 108	50	45	75	110	145	360	–	110	–	–	–
2 • 3 • 4 W 35 (T)	–	9 + 1	21,4 ± 1	–	65 ± 5	–	–	–	–	9.5 ± 1	3.5 + 0.5

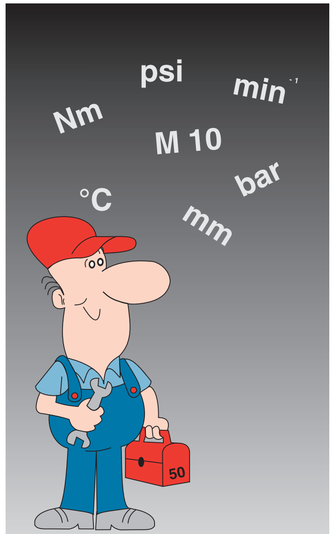
4

5



6





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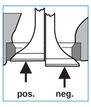
04 / 2007

50/598-04.07-5.0 vme/haag

	nom. mm	max. mm	mm		mm	mm	In. nom. mm	In. max. mm	Ex. nom. mm	Ex. max. mm	mm	I nom. mm	I max. mm	II nom. mm	II max. mm	III nom. mm	III max. mm	r.p.m. ± 10 % 850 nom.	850 min.	1500 nom.	1500 min.	2300 nom.	2300 min.	3000 nom.	3000 min.
1B 20 / 1B 20V	69.00	69.11	62			0.55-0.65	0±0.10	0.40	0±0.10	0.40															
					EPA II:	0.45-0.55	EPA II: 0.5 neg. 2		EPA II: 0.5 neg. 2																
1B 27 / 1B 27V	74.00	74.11	62		0.1	0.45-0.55	0±0.10	0.40	0±0.10	0.40	–	0.25-0.45	0.8	0.25-0.45	1.4	0.20-0.45	1.2								
1B 30 / 1B 30V	80.00	80.11	69		3	0.50-0.55																		2.5	
1B 40 / 1B 40V	88.00	88.13	76			0.55-0.60	0±0.10	0.40	0±0.10	0.40															
1B 50 / 1B 50V	93.00	93.11	76			0.55-0.60	EPA II: 0.6 neg. 2		EPA II: 0.6 neg. 2																
						0.55-0.60																			
E 572	71.00	71.11	57		0.1	0.55-0.65	0.45-0.90	1.1	0.45-0.90	1.1	0.30-0.80	0.25-0.45	0.7	0.25-0.45	1.2	0.20-0.45	1.0	–	–	–	–	–	–	–	–
E 672			67																						
E 573 / E 673	73.00	73.11																							
E • ES 71 / 75	75.00	75.11	80			0.65-0.75	0.25-0.55 neg. 2	0.0	0.25-0.55 neg. 2	0.0	0.1- 0.3														
E • ES 79	82.00	82.11			0.1							0.3-0.5	0.8	0.3-0.5	1.0	0.25-0.5	1.2	–	–	–	–	–	–	–	–
E • ES 780			100			0.80-0.90					0.1- 0.8														
E • ES 785	85.00	85.13	110			0.85-0.95	0.7-0.2neg.	0.0	0.7-0.2neg.	0.0															
E • ES 786							0.1-0.6	0.9	0.7-1.2	1.5															
1D 30	86.00	86.13	65		in.01 ex.0.2 3	0.65-0.75	0.90-1.45	1.80	0.90-1.45	1.80	0.10-0.40	0.30-0.45	0.8	0.30-0.45	1.4	0.25-0.40	1.2	0.8-1.9	0.6	1.5-2.5	1.2	2.5-3.5	1.8	3.5-4.5	2.5
1D 31							0.50-0.70	1.00	0.50-0.70	1.00															
1D 35							0.90-1.45	1.80	0.90-1.45	1.80															
1D 40																									
1D 41	90.00	90.13			0.2	0.60-0.65	0.6 ±0.1	0.2	0.6 ± 0.1	0.2															
							EPA II: 0.6±0.1 neg. 2		EPA II: 0.6±0.1 neg.																
1D 50	97.00	97.16	70		in.01 ex.0.2		1.0 ± 0.1	1.40	1.0 ± 0.1	1.40		0.30-0.45	1.0	0.30-0.45	1.6		1.4								
							EPA II: 0.6±0.1 neg. 2		EPA II: 0.6±0.1 neg.																
1D 60	88.00	88.13				0.65-0.75	0.90-1.45	1.80	0.90-1.45	1.80															
1D 80	100.00	100.16	85		3							0.35-0.55	1.2	0.35-0.55	1.8		1.6								
1D 81																									
1D 90 / 1D90V	104.00	104.16			0.3	0.75-0.85	0 ± 0.10	0.40	0 ± 0.10	0.40	1D90 V/W: 0.05-0.10	0.40-0.60	1.2	0.40-0.60	1.8	0.25-0.45	1.6								
E 80	80.00	80.13	100		0.1	0.80-0.90	0.30-1.10	1.40	0.30-1.10	1.40	0.10-0.50	0.30-0.50	0.8	0.30-0.50	1.4	0.25-0.50	1.2	1.1-1.6	0.6	1.8-2.6	1.2	3.3-4.0	2.2	–	–
E 85	85.00	85.13																							
E 88 / 89	90.00	90.13	105				0.50-1.50	1.80	0.50-1.50	1.80		0.40-0.65	1.0	0.40-0.65	1.6	0.30-0.60	1.4								
E 950	95.00	95.13	105		0.1	0.90-1.10	1.20-2.00	2.40	1.20-2.00	2.40	0.20-0.60	0.40-0.65	1.0	0.40-0.65	1.6	0.30-0.60	1.4	0.9-1.6	0.6	1.2-2.2	1.0	1.8-3.0	1.4	2.3-4.0	1.8
2 G 30	88.00	88.13	75		0.1	0.60-0.65	0.90-1.50	1.80	0.90-1.50	1.80	0.10-0.20	0.40-0.65	1.0	0.40-0.65	1.6	0.30-0.60	1.4	1.3-2.6	0.6	1.6-4.0	1.0	2.6-5.0	1.6	3.4-5.0	2.2
2 G 40	92.00	92.13				0.65-0.70	EPA II: 0 ± 0.10 2		EPA II: 0 ± 0.10 2																
Z 788	90.00	90.13	90		0.1	0.85-0.95	0.50-0.90	1.20	0.50-0.90	1.20	0.30-0.50	0.40-0.65	1.0	0.40-0.65	1.6	0.30-0.60	1.4	1.5-2.8	0.6	2.5-4.5	1.4	3.5-5.2	2.0	4.0-5.8	2.5
Z 789																									
Z 790			100																						
E • Z • D • V 108	108.00	108.16	110		0.1	1.10-1.30	0.70-1.50	1.9	0.70-1.50	1.9	0.20-0.40	0.40-0.65	1.2	0.40-0.65	1.8	0.30-0.60	1.6	0.9-1.5	0.6	1.5-2.8	1.0	2.0-3.5	1.4	2.2-3.8	1.6
2 • 3 • 4 L 30	95.00	95.16	100		0.1	1.00-1.10	0.85-1.70	2.1	0.85-1.70	2.1	0.15-0.65	0.40-0.65	1.0	0.40-0.65	1.6	0.30-0.60	1.4	1.0-1.8	0.6	1.6-2.5	1.2	2.0-2.8	1.6	2.3-3.0	1.8
2 • 3 • 4 L • M 31	102.00	102.17	90										1.2		1.8		1.6								
2 • 3 • 4 L • M 40			105			0.85-0.95	0.15-0.00	–	0.15-0.00	–															
2 • 3 • 4 L • M 41																									
2 • 3 • 4 W 35 (T)	70.00	70.11	90		0.1	0.55-0.65	0 ± 0.10	–	0 ± 0.10	–	–	0.25-0.45	0.8	0.25-0.45	1.4	0.20-0.45	1.2							3.5	

2



3

	Serial-No.	1/min	◁*	◁*	bar	psi
1B 20	[10 - 22]		15.0+1		200+12	2900+175
1B 20V	[10 - 12]					
1B 20	[23 - 29]	3000≤n≤3600	14.0+1		250+12	3600+175
1B 20V	[13 - 19]	2000≤n<3000	10.0+1			
		1500≤n<2000	8.0+1			
1B 20	[30]	3300<n≤3600	12		200+10	2900+145
EPA II		3000<n≤3300	11			
		2700<n≤3000	10			
		2400<n≤2700	9			
		2100<n≤2400	8			
		2000<n≤2100	7			
1B 20	[30]	3300<n≤3600	14		200+10	2900+145
1B 20V		3000<n≤3300	13			
NON EPA		2700<n≤3000	12			
		2400<n≤2700	11			
		2100<n≤2400	10			
		1500≤n≤2100	9			
1B 27	[10]	3000<n≤3600	12		200+10	2900+145
EPA II		2300<n≤3000	10			
		1500≤n≤2300	8			
1B 30	[10 - 16]		15.0+1		180+8	2600+110
1B 30	[17 - 24]	2400<n≤3600	13.0+1		220+12	3170+175
1B 30V	[10 - 15]	1500≤n≤2400	10.0+1			
1B 30	[25]	3400<n≤3600	18±0.5		200+10	2900+145
1B 30V	[16]	2800<n≤3400	16±0.5			
EPA II		2300<n≤2800	14±0.5			
		2000≤n≤2300	12±0.5			
1B 30	[25]	3000<n≤3600	18±0.5		200+10	2900+145
1B 30V	[16]	2300<n≤3000	16±0.5			
NON EPA		1500≤n≤2300	14±0.5			
1B 40	[10 - 13]	3000<n≤3600	18.0+1		220+12	3170+175
1B 40V	[10 - 13]	2500<n≤3000	16.0+1			
		2000≤n≤2500	14.0+1			
		1500≤n<2000	12.0+1			
1B 40	[14]	3300<n≤3600	18±0.5		200+10	2900+145
1B 40V	[14]	2800<n≤3300	16±0.5			
EPA II		2300<n≤2800	14±0.5			
		2000≤n≤2300	12±0.5			
1B 40	[14]	3000<n≤3600	18±0.5		200+10	2900+145
1B 40V	[14]	2300<n≤3000	16±0.5			
NON EPA		1500≤n≤2300	14±0.5			
1B 50	[00]	2600<n≤3000	15±0.5		200+10	2900+145
1B 50V	[00]	2300<n≤2600	14±0.5			
EPA II		2000≤n≤2300	12±0.5			
1B 50	[00]	2600<n≤3000	15±0.5		200+10	2900+145
1B 50V	[00]	1500≤n≤2600	14±0.5			
NON EPA						
E 572 / 672				12.0+1	135+8	1950+110
E 573 / 673						
E • ES 71 / 75			10.0+1		110+8	1600+110
E • ES 79		n>2500	13.0+1		110+8	1600+110
E • ES 780 / 785		n≤2500	11.0+1			
E • ES 786			18.0+1		250+8	3600+110
1D 30 S,Z,T,U,C	[10 - 18]	n>3000	23.0+1		200+8	2900+110
1D 31 S,Z,T,U,C	[10 - 17]					
1D 40 S,Z,T,U,C	[10 - 19]	n≤3000	20.0+1			
1D 41 S,Z,T,U,C	[10 - 17]					
1D 35 S,Z	[10 - 16]	n≤3000	16.0+1		200+8	2900+110
1D 41 S,Z,T,U,C	[18 - 20]	1500≤n≤1900	10.0+1		225+12	3250+175
		1900<n≤2400	12.5+1			
		2400<n≤3000	14.0+1			
		n>3000	17.5+1			
		C: n>3000	15.0+1			
1D 41 S,Z,C	[21]	2000≤n≤2250	7.0±0.5		225+12	3250+175
EPA II		2250<n≤2550	8.5±0.5			
		2550<n≤2900	10.0±0.5			
		2900<n≤3300	12.5±0.5			
1D 41 S,Z,C	[21]	1500≤n≤2300	10.0±0.5		225+12	3250+175
NON EPA		2300<n≤3000	12.0±0.5			
		3000<n≤3600	14.0±0.5			
1D 50 S,Z,T,U	[10 - 15]	1500≤n≤1700	10.0+1		225+12	3250+175
		1700<n≤2300	12.5+1			
		2300<n≤3000	15.0+1			
		n>3000	17.5+1			
1D 50 S,Z	[16]	2000≤n≤2300	6.0±0.5		225+12	3250+175
EPA II		2300<n≤2600	8.0±0.5			
		2600<n≤3300	10.0±0.5			
1D 50 S,Z	[16]	1500≤n≤2300	10.0±0.5		225+12	3250+175
NON EPA		2300<n≤3000	12.0±0.5			
		3000<n≤3600	14.0±0.5			

	Serial-No.	1/min	◁*	◁*	bar	psi
1D 60 S,Z,T,U	[10 - 15]	n≤3000	19.0+1		250+8	3600+110
1D 80 S,Z,T,U	[10 - 15]					
1D 60 C	[10 - 15]	n≤3000	21.0+1		250+8	3600+110
1D 80 C	[10 - 15]					
1D 60 S,Z,T,U,C	[16 - 26]	n≤3000	21.5+1		250+8	3600+110
1D 80 S,Z,T,U	[16 - 24]	n>3000	24.5+1			
1D 80 C	[16 - 24]	n≤3000	24.0+1		250+8	3600+110
		n>3000	25.0+1			
1D 81 S,Z,T,U,C	[10 - 19]	n≤3000	20.0+1		235+8	3400+110
1D 90 S,Z	[10 - 14]	n>3000	23.0+1			
1D 90 V,W	[10]					
1D 81 S,Z,C	[20 - 23]	1500≤n≤1800	8.0+1		270+12	3870+175
		1800<n≤2700	10.0+1			
		2700<n≤3000	13.0+1			
		3000<n≤3600	15.0+1			
1D 81 S,Z,C	[24]	1500≤n≤2200	8.0+1		250+8	3600+110
EPA II		2200≤n<2300	9.0+1			
		2300≤n<2500	10.0+1			
		2500≤n<2600	11.0+1			
		2600≤n<2800	12.0+1			
		2800≤n<2900	13.0+1			
		2900≤n≤3000	14.0+1			
1D 81 S,Z	[24]	3000<n≤3600	16±0.5		250+8	3600+110
NON EPA		2000<n≤3000	15±0.5			
		1500≤n≤2000	13±0.5			
1D 81 C	[24]	2000<n≤3000	15±0.5		250+8	3600+110
NON EPA		1500≤n≤2000	13±0.5			
1D 90 S,Z	[15 - 17]	1500≤n≤1800	8.0+1		270+12	3870+175
1D 90 V,W	[11 - 14]	1800<n≤2700	10.0+1			
		2700<n≤3000	13.0+1			
1D 90 S,Z	[18]	2000≤n≤2200	8.0+1		250+8	3600+110
1D 90 V,W	[15]	2200≤n<2300	9.0+1			
EPA II		2300≤n<2500	10.0+1			
		2500≤n<2600	11.0+1			
		2600≤n<2800	12.0+1			
		2800≤n<2900	13.0+1			
		2900≤n≤3000	14.0+1			
1D 90 S,Z	[18]	2000≤n≤3000	15±0.5		250+8	3600+110
1D 90 V,W	[15]	1500≤n≤2000	13±0.5			
NON EPA						
E 80			23.0+1		110+8	1600+110
E 85			24.0+1		110+8	1600+110
E 88 / 89			20.0+1		150+8	2150+110
E 950		n≤2000		11.0+1	250+8	3600+110
		n>2000		18.5+1		
2 G 30	[10 - 12]		26.0+1		250+12	3600+175
	[13 - 17]		23.0+1			
2 G 40	[10 - 13]		23.0+1		250+12	3600+175
	[14 - 18]	1500≤n<2250	6.0+1			
		2250≤n≤3000	10.0+1			
		3000<n≤3600	13.0+1			
2 G 40	[19]	3000<n≤3600	14		250+12	3600+175
EPA II		2000≤n≤3000	12			
2 G 40	[19]	3000<n≤3600	14		250+12	3600+175
NON EPA		2000≤n≤3000	12			
		1500≤n<2000	10			
Z 788 / 789			29.5+1		180+8	2600+110
Z 790		n≤2500		17.0+1	180+8	2600+110
		n>2500		20.5+1		
E • Z • D • V 108		n≤2000		12.0+1	180+8	2600+110
		n>2000		17.0+1		
2 • 3 • 4 L 30			17.5+1		250+8	3600+110
2 • 3 • 4 L • M 31			15.0+1			
2 L 40	[10 - 16]		18.0+1			
3 • 4 L 40	[10 - 15]					
2 • 3 • 4 M 40	[10 - 12]					
2 L 40	[17 - 22]		15.0+1			
3 • 4 L 40	[16 - 22]					
2 • 3 • 4 M 40	[13 - 19]					
2 • 3 • 4 L • M 41	[10 - 12]		10.0+1		230+12	3300+175
	[13 - 14]		6.0+1		240+12	3450+175
2 • 3 • 4 W 35 (T)	[10]		7.0		250+12	3600+175
ohne Spritzversteller, without timing device, sans variateur d'injection, sin variador de inyección						
2 • 3 • 4 W 35 (T)	[10]		-2.0		250+12	3600+175
mit Spritzversteller, with timing device, avec variateur d'injection, con variador de inyección						