

# CARB-Approved Federal Engine Families for the Hug Engineering, Inc.

## Mobiclean R System

Relating to Executive Order Series DE-12-001

**Effective Date: May 28, 2020**

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**Notes:** Exhaust temperature criterion depends on the engine family. The numbers in the "Temp Criterion" column correspond to the criteria below:

1. Over 240 °C at least 50 percent of the time.
2. Over 200 °C at least 15 percent of the time.
3. Over 200 °C at least 30 percent of the time.

Model Year	Manufacturer	Engine Family	Displacement (L)		Temp Criterion
			1	2	
1991	International	MNV0466EPA2	7.6	*	1
1991	International	MNV0466EPB3	7.6	*	1
1991	International	MNV0466FPA5	7.6	*	1
1991	Mack Trucks	MMT0728FAA7	11.9	*	1
1991	Mack Trucks	MMT0728FAB8	11.9	*	1
1991	Mack Trucks	MMT0728FAC9	11.9	*	1
1991	Mack Trucks	MMT0728FADX	11.9	*	1
1991	Mack Trucks	MMT0728FAE0	11.9	*	1
1991	Perkins	MPE0364FAB9	6.0	*	1
1992	Cummins	NCE0611FZC3	10.0	*	1
1992	Cummins	NCE0855FZE9	14.0	*	1
1992	International	NNV0466FPA4	7.6	*	1
1992	Mack Trucks	NMT0728FAJ6	11.9	*	1
1992	Mack Trucks	NMT0728FANX	11.9	*	1
1992	Saab Scania	NSS0673FPA2	11.0	*	1
1993	Cummins	PCE0611FZC1	10.0	*	1
1993	Cummins	PCE0855FZE7	14.0	*	1
1993	International	PNV0360FPA5	5.9	*	1
1993	International	PNV0466FPA2	7.6	*	1
1993	International	PNV07.3DABX	7.3	*	1
1994	Caterpillar	RCP403DZDARW	6.6	*	2
1994	Caterpillar	RCP403DZDASW	6.6	*	2
1994	Caterpillar	RCP893EZDASW	14.6	*	2
1994	Cummins	RCE359D6DARW	5.9	*	2
1994	Cummins	RCE359D6DASW	5.9	*	2
1994	Cummins	RCE505D6DARW	8.3	*	2
1994	Cummins	RCE505F6DABW	8.3	*	2
1994	Cummins	RCE855EGDARW	14.0	*	2
1994	Cummins	RCE855EGDASW	14.0	*	2
1994	Detroit Diesel Corporation	RDD12.EJDASW	12.7	*	2
1994	Detroit Diesel Corporation	RDD8.5FJDARW	8.5	*	2
1994	Hino Motors	RHM3.8C6DARW	3.8	*	2
1994	Hino Motors	RHM6.5D6DARW	6.5	*	2
1994	International	RNV408D6DARW	6.7	*	2
1994	International	RNV408D6DASW	6.7	*	2
1994	International	RNV444C8DARA	7.3	*	2
1994	International	RNV466D6DATW	7.6	*	2
1994	International	RNV530D6DARW	8.7	*	2
1994	International	RNV7.3C6DARW	7.3	*	2
1994	International	RNV7.3C6DASW	7.3	*	2
1994	International	RNV7.3C6DATW	7.3	*	2
1994	Mack Trucks	RMK12.EJDARW	12.0	*	2

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			1	2	
1994	Mack Trucks	RMK728EGDARW	11.9	*	2
1994	Mack Trucks	RMK728EGDASW	11.9	*	2
1994	Mack Trucks	RMK728EGDATW	11.9	*	2
1994	Mack Trucks	RMK728EJDARW	11.9	*	2
1994	Mack Trucks	RMK728EJDASW	11.9	*	2
1994	Mack Trucks	RMK728EJDATW	11.9	*	2
1994	Mercedes Benz	RMB10.E6DARA	10.0	*	2
1994	Mercedes Benz	RMB12.E6DARA	12.0	*	2
1994	Mercedes Benz	RMB4.0D6DARA	4.0	*	2
1994	Perkins	RPK365DGDAAA	6.0	*	2
1994	Renault	RR3377D6DARW	6.2	*	2
1994	Renault	RR3377D8DARW	6.2	*	2
1994	Renault	RR3377D8DASW	6.2	*	2
1994	Saab Scania	RSA673E6DARA	11.0	*	2
1995	Caterpillar	SCP403DZDARW	6.6	*	2
1995	Caterpillar	SCP893EZDARW	14.6	*	2
1995	Caterpillar	SCP893EZDASW	14.6	*	2
1995	Cummins	SCE359D6DARW	5.9	*	2
1995	Cummins	SCE505D6DARW	8.3	*	2
1995	Cummins	SCE505F6DABW	8.3	*	2
1995	Cummins	SCE855EGDARW	14.0	*	2
1995	Detroit Diesel Corporation	SDD12.EJDASW	12.7	*	2
1995	General Motors	SGM6.5C6DABW	6.5	*	2
1995	International	SNV444C8DAAA	7.3	*	2
1995	International	SNV444C8DARW	7.3	*	2
1995	International	SNV444C8DASW	7.3	*	2
1995	Isuzu Motors	SSZ7.1D6DARW	7.1	*	2
1995	Mack Trucks	SMK12.EJDARW	11.9	*	2
1995	Mack Trucks	SMK12.EJDASW	11.9	*	2
1995	Mack Trucks	SMK728EGDARW	11.9	*	2
1995	Mack Trucks	SMK728EGDASW	11.9	*	2
1995	Mack Trucks	SMK728EGDATW	11.9	*	2
1995	Mack Trucks	SMK728EJDARW	11.9	*	2
1995	Mack Trucks	SMK728EJDASW	11.9	*	2
1995	Mack Trucks	SMK728EJDATW	11.9	*	2
1995	Mercedes Benz	SMB10.E6DARA	10.0	*	2
1995	Mercedes Benz	SMB12.E6DARA	12.0	*	2
1995	Mitsubishi Motor	SMT238B7DAAA	3.9	*	2
1995	Mitsubishi Motor	SMT302C7DARW	4.9	*	2
1995	Mitsubishi Motor	SMT460D7DARW	7.5	*	2
1995	Renault	SR3377D8DARW	6.2	*	2
1995	Renault	SR3377D8DASW	6.2	*	2
1996	Caterpillar	TCP893EZDARW	14.6	*	2
1996	Cummins	TCE359D6DAAW	5.9	*	2
1996	Cummins	TCE359D6DARW	5.9	*	2
1996	Cummins	TCE359DJDARW	5.9	*	2
1996	Cummins	TCE505D6DARW	8.3	*	2
1996	Cummins	TCE505F6DAAW	8.3	*	2
1996	Cummins	TCE505F6DABW	8.3	*	2
1996	Cummins	TCE611EGDARW	10.0	*	2

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			1	2	
1996	Cummins	TCE661FJDAAA	10.8	*	2
1996	Detroit Diesel Corporation	TDD12.EJDASW	12.7	*	2
1996	Detroit Diesel Corporation	TDD3.8C8DASW	3.8	*	2
1996	General Motors	TGM6.5C6DAAW	6.5	*	2
1996	General Motors	TGM6.5C6DARW	6.5	*	2
1996	Hino Motors	THM6.5D6DARW	6.5	*	2
1996	International	TNV444C8DARW	7.3	*	2
1996	International	TNV444C8DASW	7.3	*	2
1996	International	TNV530F6DATA	8.7	*	2
1996	Mack Trucks	TMK12.EJDARW	11.9	*	2
1996	Mack Trucks	TMK12.EJDASW	11.9	*	2
1996	Mack Trucks	TMK12.EJDATW	11.9	*	2
1996	Mack Trucks	TMK728EGDARW	11.9	*	2
1996	Mack Trucks	TMK728EGDASW	11.9	*	2
1996	Mack Trucks	TMK728EGDATW	11.9	*	2
1996	Mack Trucks	TMK728EJDARW	11.9	*	2
1996	Mack Trucks	TMK728EJDASW	11.9	*	2
1996	Mack Trucks	TMK728EJDATW	11.9	*	2
1996	Mercedes Benz	TMB6.0D6DAAA	6.0	*	2
1996	Mercedes Benz	TMB6.0D6DARA	6.0	*	2
1996	Renault	TR3377D8DARW	6.2	*	2
1996	Renault	TR3377D8DASW	6.2	*	2
1996	Scania	TY912.EGDARA	11.7	*	2
1997	Cummins	VCE239D6DAA	3.9	*	2
1997	Cummins	VCE359D6DAAW	5.9	*	2
1997	Cummins	VCE359D6DARW	5.9	*	2
1997	Cummins	VCE505D6DARW	8.3	*	2
1997	Cummins	VCE505F6DAAW	8.3	*	2
1997	Cummins	VCE505F6DABW	8.3	*	2
1997	Cummins	VCE611EGDARW	10.0	*	2
1997	Cummins	VCE661FJDAAA	10.8	*	2
1997	General Motors	VGM6.5C6DAAC	6.5	*	2
1997	General Motors	VGM6.5C6DAAW	6.5	*	2
1997	International	VNV466F8DAAA	7.6	*	2
1997	International	VNV530F8DAAA	8.7	*	2
1997	Mack Trucks	VMK12.EJDARW	11.9	*	2
1997	Mack Trucks	VMK12.EJDASW	11.9	*	2
1997	Mack Trucks	VMK12.EJDATW	11.9	*	2
1997	Mack Trucks	VMK602E6DARW	9.9	*	2
1997	Mack Trucks	VMK728EGDARW	11.9	*	2
1997	Mack Trucks	VMK728EGDASW	11.9	*	2
1997	Mack Trucks	VMK728EGDATW	11.9	*	2
1997	Mack Trucks	VMK728EJDARW	11.9	*	2
1997	Mack Trucks	VMK728EJDASW	11.9	*	2
1997	Mack Trucks	VMK728EJDATW	11.9	*	2
1997	Mack Trucks	VMK728EJDAZW	11.9	*	2
1997	Mercedes Benz	VMB12.EJDARA	12.0	*	2
1997	Mercedes Benz	VMB6.0D6DAAA	6.0	*	2
1997	Mercedes Benz	VMB6.0D6DARA	6.0	*	2
1997	Perkins	VPK365D6DAAA	6.0	*	2

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			1	2	
1997	Renault	VR3377D8DARW	6.2	*	2
1997	Renault	VR3377D8DASW	6.2	*	2
1998	Caterpillar	WCPXH0638MRW	10.5	*	2
1998	Caterpillar	WCPXH0893MRW	14.6	*	2
1998	Cummins	WCEXH0239BAA	3.9	*	2
1998	Cummins	WCEXH0359BAB	5.9	*	2
1998	Cummins	WCEXH0359BAC	5.9	*	2
1998	Cummins	WCEXH0359BAG	5.9	*	2
1998	Cummins	WCEXH0505CAA	8.3	*	2
1998	Cummins	WCEXH0611LAA	10.0	*	2
1998	Cummins	WCEXH0661MAF	10.8	*	2
1998	General Motors	WGMXH06.5525	6.5	*	2
1998	International	WNVXH0444FNA	7.3	*	2
1998	International	WNVXH0444FNC	7.3	*	2
1998	International	WNVXH0466ENE	7.6	*	2
1998	International	WNVXH0466FNA	7.6	*	2
1998	International	WNVXH0466FNC	7.6	*	2
1998	International	WNVXH0530FNA	8.7	*	2
1998	International	WNVXH0530FNC	8.7	*	2
1998	Mack Trucks	WMKXH0602M48	9.9	*	2
1998	Mack Trucks	WMKXH0728M44	11.9	*	2
1998	Mack Trucks	WMKXH0728V40	11.9	*	2
1998	Mack Trucks	WMKXH0728V41	11.9	*	2
1998	Mack Trucks	WMKXH0728V43	11.9	*	2
1998	Mack Trucks	WMKXH0998M10	16.4	*	2
1998	Renault	WR3XH0377BNF	6.2	*	2
1998	Scania	WY9XH11.7203	11.7	*	2
1999	Caterpillar	XCPXH0638MRW	10.5	*	2
1999	Caterpillar	XCPXH0893MRW	14.6	*	2
1999	Cummins	XCEXH0239BAA	3.9	*	2
1999	Cummins	XCEXH0359BAM	5.9	*	2
1999	Cummins	XCEXH0359BAQ	5.9	*	2
1999	Cummins	XCEXH0359BAR	5.9	*	2
1999	General Motors	XGMXH06.5522	6.5	*	2
1999	International	XNVXH0444ACC	7.3	*	2
1999	International	XNVXH07.3FCC	7.3	*	2
1999	International	XNVXH07.3FNH	7.3	*	2
1999	Renault	XR3XH0377BNF	6.2	*	2
1999	Renault	XR3XH0377BWF	6.2	*	2
1999	Cummins	YCEXH0239BAA	3.9	*	2
1999	Cummins	YCEXH0359BAA	5.9	*	2
2000	Cummins	YCEXH0359BAX	5.9	*	2
2000	Cummins	YCEXH0359BAY	5.9	*	2
2000	DaimlerChrysler	YMBXH12.0DJA	12.0	*	2
2000	General Engine Products	YGEPH06.5524	6.5	*	2
2000	General Motors	YGMXH06.5522	6.5	*	2
2000	General Motors	YGMXH06.5528	6.5	*	2
2000	General Motors	YGMXH06.5529	6.5	*	2
2000	International	YNVXH0444ACD	7.3	*	2
2000	International	YNVXH07.3FNB	7.3	*	2

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Model Year	Manufacturer	Engine Family	Displacement (L)		Temp Criterion
			1	2	
2000	Mack Trucks	YMKXH11.9H56	11.9	*	2
2000	Renault	YR3XH0377BWF	6.2	*	2
2000	Scania	YY9XH10.6106	10.6	*	2
2000	Scania	YY9XH11.7202	11.7	*	2
2001	Cummins	1CEXH0359BAA	5.9	*	2
2001	Cummins	1CEXH0359BAX	5.9	*	2
2001	Cummins	1CEXH0359BAY	5.9	*	2
2001	DaimlerChrysler	1MBXH2.69DJA	2.7	*	2
2001	General Engine Products	1GEPH06.5522	6.5	*	2
2001	General Engine Products	1GEPH06.5526	6.5	*	2
2001	General Motors	1GMXH06.5522	6.5	*	2
2001	General Motors	1GMXH06.5528	6.5	*	2
2001	General Motors	1GMXH06.5529	6.5	*	2
2001	International	1NVXH0444ACD	7.3	*	2
2001	International	1NVXH07.3FNB	7.3	*	2
2001	Isuzu Motors	1SZXH06.63RA	6.6	*	2
2001	Renault	1R3XH0377BWF	6.2	*	2
2001	Scania	1Y9XH10.6106	10.6	*	2
2001	Scania	1Y9XH11.7202	11.7	*	2
2002	Cummins	2CEXH0359BAD	5.9	*	2
2002	Cummins	2CEXH0359BAE	5.9	*	2
2002	Cummins	2CEXH0359BAX	5.9	*	2
2002	DaimlerChrysler	2MBXH2.69DJA	2.7	*	2
2002	DaimlerChrysler	2MBXH2.69DJB	2.7	*	2
2002	Detroit Diesel Corporation	2DDXH08.5FJN	8.5	*	2
2002	General Engine Products	2GEPH06.5526	6.5	*	2
2002	General Motors	2GMXH06.5528	6.5	*	2
2002	General Motors	2GMXH06.5529	6.5	*	2
2002	International	2NVXH0365FEB	6.0	*	2
2002	International	2NVXH0444ACD	7.3	*	2
2002	International	2NVXH07.3FNB	7.3	*	2
2002	Isuzu Motors	2SZXH06.63RA	6.6	*	2
2002	Scania	2Y9XH10.6106	10.6	*	2
2002	Scania	2Y9XH11.7202	11.7	*	2
2003	Cummins	3CEXH0359BAE	5.9	*	2
2003	Cummins	3CEXH0359BAI	5.9	*	2
2003	Cummins	3CEXH0359BAJ	5.9	*	2
2003	Cummins	3CEXH0359BAK	5.9	*	3
2003	Cummins	3CEXH0505CAM	8.3	*	2
2003	Cummins	3CEXH0540LAB	8.8	*	2
2003	DaimlerChrysler	3MBXH2.69DJB	2.7	*	2
2003	Detroit Diesel Corporation	3DDXH08.5FJR	8.5	*	2
2003	Detroit Diesel Corporation	3DDXH08.5FJY	8.5	*	2
2003	Detroit Diesel Corporation	3DDXH12.7FGY	12.7	*	3
2003	General Engine Products	3GEPH06.5526	6.5	*	2
2003	International	3NVXH0365FEB	6.0	*	2
2003	International	3NVXH0444ACD	7.3	*	2
2003	International	3NVXH0530ACT	8.7	*	2
2003	International	3NVXH07.3ACE	7.3	*	2
2003	International	3NVXH07.3ANA	7.3	*	2

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			1	2	
2003	International	3NVXH07.3FNB	7.3	*	2
2003	Isuzu Motors	3SZXH06.63RA	6.6	*	2
2003	Scania	3Y9XH10.6106	10.6	*	2
2003	Scania	3Y9XH11.7202	11.7	*	2
2004	Cummins	4CEXH0239BAD	3.9	*	2
2004	Cummins	4CEXH0359BAA	5.9	*	3
2004	Cummins	4CEXH0359BAD	5.9	*	3
2004	Cummins	4CEXH0505CAU	8.3	*	2
2004	Cummins	4CEXH0661MAV	10.8	*	3
2004	DaimlerChrysler	4MBXH2.69DJA	2.7	*	3
2004	Detroit Diesel Corporation	4DDXH08.5FJB	8.5	*	3
2004	Detroit Diesel Corporation	4DDXH08.5FJY	8.5	*	2
2004	General Engine Products	4GEPH06.5CRD	6.5	*	2
2004	International	4NVXH0365FEC	6.0	*	3
2004	International	4NVXH0466FEB	7.6	*	3
2004	Isuzu Motors	4SZXH06.63AA	6.6	*	3
2004	Isuzu Motors	4SZXH06.63AW	6.6	*	3
2005	Cummins	5CEXH0359BAA	5.9	*	3
2005	Cummins	5CEXH0359BAD	5.9	*	3
2005	Cummins	5CEXH0505CAW	8.3	*	2
2005	Cummins	5CEXH0661MAV	10.8	*	3
2005	Detroit Diesel Corporation	5DDXH08.5FJY	8.5	*	3
2005	General Engine Products	5GEPH06.5CRD	6.5	*	2
2006	Cummins	6CEXH0359BAA	5.9	*	3
2006	Cummins	6CEXH0359BAD	5.9	*	3
2006	Cummins	6CEXH0505CAW	8.3	*	2
2006	Cummins	6CEXH0661MAV	10.8	*	3
2006	Mitsubishi Fuso	6MFTH07.5M6B	7.5	*	3