

Appendix

Table 1 Pilot and Main injection timings as well as pilot injection timing of the engine when running with diesel fuel for all 40 points that were tested [deg. CA after TDC]

Speed [rpm]	Torque [Nm]	Pilot injection timing 1 [deg. CA aTDC]	Pilot injection timing 2 [deg. CA aTDC]	Main injection timing [deg. CA aTDC]
1000	0	-15	0	-1
	35	-23	-9	0
	70	-29	-9	2
	94	-34	-10	2
1500	0	-	-13	-2
	35	-	-12	-1
	7	-	-13	0
	100	-	-17	-1
	140	-	-21	-4
	164	-	-22	-5
2000	3	-	-18	-4
	35	-	-17	-3
	70	-	-16	-1
	100	-	-20	-1
	140	-	-23	-3
	190	-	-27	-5
2500	5	-	-22	-6
	35	-	-22	-5
	70	-	-19	-2
	100	-	-20	-2
	140	-	-26	-4
	183	-	-31	-6
3000	5	-	-28	-10
	35	-	-25	-7
	70	-	-23	-4
	100	-	-24	-4
	140	-	-30	-7
	177	-	-34	-9
3500	6	-	-24	-11
	35	-	-24	-10
	70	-	-24	-10
	100	-	-27	-11
	140	-	-32	-12
	157	-	-32	-12
3800	6	-	-27	-12
	35	-	-26	-12
	70	-	-26	-12
	100	-	-30	-13
	140	-	-34	-16
	146	-	-34	-16

Table 2 EGR valve position [%] and EGR change [%] for all 40 points that were tested

Speed [rpm]	Torque [Nm]	Market diesel EGR valve position [%]	HVO EGR valve position [%]	EGR change [%]
1000	0	48.4	49.2	1.8
	35	41.5	42.3	1.9
	70	28.6	29.9	4.6
	94	0	0	0
1500	0	58.3	58.5	0.4
	35	51.0	52.3	2.6
	70	39.7	41.2	3.7
	100	34.2	36.3	6.2
	140	0	25.0	0
	164	0	0	0
2000	3	59.9	60.1	0.3
	35	54.0	54.2	0.3
	70	56.5	57.6	1.9
	100	48.8	55.3	13.3
	140	25.4	36.2	42.2
	190	0	0	0
2500	5	60.0	60.4	0.7
	35	65.4	64.5	-1.4
	70	68.4	70.6	3.3
	100	67.5	66.8	-1.0
	140	51.7	63.6	23.0
	183	0	0	0
3000	5	44.3	45.2	2.1
	35	53.8	53.7	-0.3
	70	67.5	65.4	-3.1
	100	66.2	64.9	-2.1
	140	46.7	55.0	17.8
	177	0	0	0
3500	6	0	0	0
	35	0	0	0
	70	0	0	0
	100	0	0	0
	140	0	0	0
	157	0	0	0
3800	6	0	0	0
	35	0	0	0
	70	0	0	0
	100	0	0	0
	140	0	0	0
	146	0	0	0