Tabel. Data pengujian viskositas oli MPX2 pertama

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	MPX Temp Kamar	1	3	4,9	28,5	98
			9	10,2	28,5	102
			12	20,9	28,5	104,5
			30	52,8	28,5	105,6
			60	-	-	-
2	MPX Temp ± 30°c	1	3	3,7	33,6	74
			9	8,5	33,5	85
			12	16,4	33,3	82
			30	41,5	33,2	83
			60	83,6	33,2	83,6
3	MPX Temp ± 40°c	1	3	2,5	43,6	50
			9	5,7	43,3	57
			12	10,2	43,1	51
			30	25,8	43	51,6
			60	52,6	43	52,6
4	MPX Temp ± 50°c	1	3	2,3	52,1	46
			9	4,2	52,2	42
			12	7	51,9	35
			30	18,4	51,6	35
			60	37,9	51,5	36,9
5	MPX Temp ± 60°c	1	3	1,8	60,2	37,9
			9	2,6	60,3	26
			12	5,2	60,2	26
			30	13,4	60,1	26,8
			60	27,8	60,1	27,8

Tabel. Data pengujian viskositas oli MPX2 kedua

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	MPX Temp Kamar	1	3	5	29,1	100
			6	10,1	29,3	101
			12	20,5	29,4	102,5
			30	51,6	29,5	103,2
			60	-	-	-
2	MPX Temp ± 30°c	1	3	3,3	34,5	66
			6	8	34,4	80
			12	15,9	34,1	79,5
			30	39,9	33,9	79,9
			60	79,6	33,9	79,6
3	MPX Temp ± 40°c	1	3	2,5	43,7	50
			6	5,9	43,5	59
			12	11	43,3	55
			30	26,3	43	52,6
			60	54,2	43	54,2
4	MPX Temp ± 50°c	1	3	2,5	52,5	50
			6	4,3	52,4	43
			12	7,2	51,5	36
			30	19,3	51	38,6
			60	39,8	51	39,8
5	MPX Temp ± 60°c	1	3	1,9	61,7	36
			6	3,3	61,5	33
			12	4,8	61,2	24
			30	13,2	60,9	26,4
			60	26,8	60,9	26,8

Tabel. Data pengujian viskositas oli MPX2 ketiga

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	MPX Temp Kamar	1	3	4,7	29,8	96
			6	9,9	29,7	99
			12	19,9	29,8	99,5
			30	50,1	29,9	102,2
			60	-	-	-
2	MPX Temp ± 30°c	1	3	4,4	33,7	88
			6	7,8	33,7	78
			12	16,2	33,6	81
			30	40,8	33,5	81,6
			60	81,2	33,5	81,2
3	MPX Temp ± 40°c	1	3	2,9	42,6	58
			6	6	42,4	60
			12	11,3	42,2	56,5
			30	28,2	42	56,4
			60	57,8	41,8	57,8
4	MPX Temp ± 50°c	1	3	2,1	53,8	42
			6	3,9	53,6	39
			12	6,8	53,5	34
			30	17,5	53,3	35
			60	34,9	53,3	34,9
5	MPX Temp ± 60°c	1	3	2,1	62,6	42
			6	3,5	62	35
			12	4,5	61,7	22,5
			30	12,8	61,6	25,6
			60	29	61,6	26

Tabel. Data pengujian viskositas oli Motul 3100 pertama

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	Motul Temp Kamar	1	3	6,8	29,6	136
			9	14,1	29,6	141
			12	28,9	29,6	144,5
			30	73	29,6	146
			60	-	-	-
2	Motul Temp ± 30°c	1	3	5,4	33,8	108
			9	11,4	33,7	114
			12	23,8	33,6	119
			30	60,8	33,6	121,6
			60	11,9	33,4	119
3	Motul Temp ± 40°c	1	3	3,9	41,5	78
			9	8,6	41,1	86
			12	17,1	41	85,5
			30	42,9	40,9	85,8
			60	38,6	40,9	86
4	Motul Temp ± 50°c	1	3	3,7	53,1	74
			9	6,3	53,1	63
			12	11	53	55
			30	26,6	52,5	53,2
			60	53,8	52,3	53,8
5	Motul Temp ± 60°c	1	3	2,7	61,6	54
			9	4,9	61,2	49
			12	7,6	60,9	38
			30	19,3	60,6	38,6
			60	39,7	60,4	39,7

Tabel. Data pengujian viskositas oli Motul 3100 kedua

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	Motul Temp Kamar	1	3	7	29,1	140
			6	14,5	29,1	145
			12	29,9	29,1	149,5
			30	75,7	29,1	151,4
			60	-	-	-
2	Motul Temp ± 30°c	1	3	6,5	31,2	130
			6	13,2	31,2	132
			12	26,7	31,2	133,5
			30	67,4	31,2	134,8
			60	-	-	-
3	Motul Temp ± 40°c	1	3	4	43,7	80
			6	8,3	43,7	83
			12	15,7	43,5	78,5
			30	39	43,3	78
			60	79,7	42,9	79,7
4	Motul Temp ± 50°c	1	3	3,2	53	64
			6	6,1	52,3	61
			12	10,8	51,9	54
			30	27,8	51,6	55,8
			60	57,8	51,4	57,8
5	Motul Temp ± 60°c	1	3	3,6	60,8	72
			6	7,7	60,5	77
			12	12,9	61,3	64,5
			30	32,4	61	64,6
			60	51,9	60,5	51,9

Tabel. Data pengujian viskositas oli Motul 3100 ketiga

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	Motul Temp Kamar	1	3	7,4	29,1	148
			6	14,9	29,1	149
			12	30,1	29,1	150,5
			30	75,7	29,1	151,7
			60	-	-	-
2	Motul Temp ± 30°c	1	3	6,6	31,5	132
			6	13	31,5	130
			12	26,6	31,5	133
			30	67,3	31,5	134,6
			60	-	-	-
3	Motul Temp ± 40°c	1	3	3,7	42,7	74
			6	8,1	42,5	81
			12	16,2	42,5	81
			30	40,6	42,3	81,4
			60	83	42	83,1
4	Motul Temp ± 50°c	1	3	3,1	53,8	62
			6	5,6	53,6	56
			12	10,2	53,5	51
			30	25,3	53,1	50,6
			60	53,1	53	53,1
5	Motul Temp ± 60°c	1	3	2,5	62,8	50
			6	4,5	62	45
			12	7,3	61,4	36,5
			30	18,9	61,1	37,8
			60	39	60,8	39,1

Tabel. Data pengujian viskositas oli BM1 pertama

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	BM 1 Temp Kamar	1	3	7,7	28,7	154
			9	15,9	28,7	159
			12	32,1	28,7	160,5
			30	80,6	28,7	161,2
			60	-	-	-
2	BM 1 Temp ± 30°c	1	3	5,5	33,9	110
			9	11,4	33,7	114
			12	23,8	33,6	119
			30	60,9	33,5	121,8
			60	-	-	-
3	BM 1 Temp ± 40°c	1	3	4,7	40,9	93
			9	9,3	40,5	94
			12	14,8	43,3	74
			30	37,9	43,1	75,8
			60	77,7	43,1	77,7
4	BM 1 Temp ± 50°c	1	3	2,9	50,7	58
			9	6,4	50,4	64
			12	11,5	50,2	57,5
			30	28,6	50,1	57,2
			60	58,4	50,2	58,4
5	BM 1 Temp ± 60°c	1	3	2,3	61,5	46
			9	4,1	61	41
			12	7,3	60,6	36,5
			30	18	60,6	37,6
			60	38,5	60,4	38,5

Tabel. Data pengujian viskositas oli BM1 kedua

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	BM 1 Temp Kamar	1	3	7,4	29,5	148
			6	15,1	29,5	151
			12	30,7	29,5	153,5
			30	77,3	29,5	153,5
			60	-	-	-
2	BM 1 Temp ± 30°c	1	3	6,1	34,6	122
			6	12,3	34,5	123
			12	24,8	34,5	124
			30	62,4	33,4	124,8
			60	-	-	-
3	BM 1 Temp ± 40°c	1	3	3,7	43,2	74
			6	8	43,2	80
			12	15,9	43,1	79,5
			30	40,2	43,1	80,4
			60	80,6	42,9	80,6
4	BM 1 Temp ± 50°c	1	3	2,8	54	56
			6	5,4	53,7	54
			12	10,1	53,4	50,5
			30	26,1	53,2	52,2
			60	53,8	53,2	53,8
5	BM 1 Temp ± 60°c	1	3	2,4	62,4	48
			6	4,1	62,2	41
			12	7,2	61,9	36
			30	18,2	61,5	37,4
			60	38,1	61,7	38,1

Tabel. Data pengujian viskositas oli BM1 ketiga

No	Fluida	Rotor	Speed (Rpm)	Percent (%)	Temperatur (°C)	Viskositas (mPas)
1	BM 1 Temp Kamar	1	3	7,4	29,6	148
			6	15,1	29,6	151
			12	30,7	29,6	153,5
			30	77,2	29,6	154,4
			60	-	-	-
2	BM 1 Temp ± 30°c	1	3	6	33,3	120
			6	12,2	33,2	122
			12	24,8	33,2	124
			30	62,6	33,2	125,2
			60	-	-	-
3	BM 1 Temp ± 40°c	1	3	3,9	42,8	78
			6	8,2	42,6	82
			12	16,4	42,4	82
			30	41,6	42,2	83,4
			60	84,8	42,1	84,8
4	BM 1 Temp ± 50°c	1	3	2,9	51,9	58
			6	5,7	51,5	57
			12	10,9	51,3	54,5
			30	28,1	51,1	54,6
			60	58	51,1	58
5	BM 1 Temp ± 60°c	1	3	2	60	46
			6	3,7	62	39
			12	6,3	62,6	36,7
			30	13,6	62,5	37
			60	38,3	61,4	38,3

Nomor Pengujian MPX 2	T1 (°C)	T2 (°C)	Tegangan Heater (Volt)	Arus Heater (A)	Daya, Qe, (Watt)	T1-T2 (°C)	Qi (Watt)	Qc (Watt)	Tebal Spesimen (m)	Luas Permukaan (m2)	K Eksperimen	Temperatur Rata-rata Spesimen (°C)
1	28,7	28,3	36	0,061	2,196	0,4	0,058621	2,137379	0,00034	0,0133	0,13659943	28,5
	30,3	28,6	74	0,124	9,176	1,7	0,249138	8,926862	0,00034	0,0133	0,13423853	29,45
	35,8	30,2	124	0,243	30,132	5,6	0,82069	29,31131	0,00034	0,0133	0,13380566	33
	41,9	32	162	0,317	51,354	9,9	1,450862	49,90314	0,00034	0,0133	0,12886054	36,95
	49,7	33	210	0,375	78,75	16,7	2,447414	76,30259	0,00034	0,0133	0,11680194	41,35
2	27,5	27,1	40	0,055	2,2	0,4	0,058621	2,141379	0,00034	0,0133	0,13685507	27,3
	29,8	28	75	0,129	9,675	1,8	0,263793	9,411207	0,00034	0,0133	0,13365958	28,9
	35,3	30,6	111	0,227	25,197	4,7	0,688793	24,50821	0,00034	0,0133	0,13330332	32,95
	42,1	33,2	152	0,303	46,056	8,9	1,30431	44,75169	0,00034	0,0133	0,12854249	37,65
	50,5	33,4	205	0,362	74,21	17,1	2,506034	71,70397	0,00034	0,0133	0,10719495	41,95
3	29	28,7	33	0,05	1,65	0,3	0,043966	1,606034	0,00034	0,0133	0,13685507	28,85
	30,9	29,4	64	0,128	8,192	1,5	0,219828	7,972172	0,00034	0,0133	0,1358666	30,15
	36,2	31,3	112	0,235	26,32	4,9	0,718103	25,6019	0,00034	0,0133	0,13356828	33,75
	43,2	33,1	163	0,308	50,204	10,1	1,480172	48,72383	0,00034	0,0133	0,12332391	38,15
	50,8	34	204	0,363	74,052	16,8	2,462069	71,58993	0,00034	0,0133	0,10893563	42,4

Tabel. Data pengukuran konduktivitas termal sampel oli MPX2

Tabel. Data pengukuran konduktivitas termal sampel oli Motul 3100

Nomor Pengujian Motul 3100	T1 (°C)	T2 (°C)	Tegangan Heater (Volt)	Arus Heater (A)	Daya, Qe, (Watt)	T1-T2 (°C)	Qi (Watt)	Qc (Watt)	Tebal Spesimen (m)	Luas Permukaan (m2)	K Eksperimen	Temperatur Rata-rata Spesimen (°C)
1	26,7	26,5	23	0,052	1,196	0,2	0,02931	1,16669	0,00034	0,0133	0,14912575	26,6
	28,9	27,4	63	0,135	8,505	1,5	0,219828	8,285172	0,00034	0,0133	0,14120093	28,15
	33,4	28,8	112	0,232	25,984	4,6	0,674138	25,30986	0,00034	0,0133	0,14065631	31,1
	39,9	31,1	155	0,305	47,275	8,8	1,289655	45,98534	0,00034	0,0133	0,13358696	35,5
	47,7	33	200	0,36	72	14,7	2,15431	69,84569	0,00034	0,0133	0,12146455	40,35
2	27,1	27	20	0,03	0,6	0,1	0,014655	0,585345	0,00034	0,0133	0,14963702	27,05
	29,2	27,6	65	0,142	9,23	1,6	0,234483	8,995517	0,00034	0,0133	0,14372537	28,4
	33,5	29	116	0,22	25,52	4,5	0,659483	24,86052	0,00034	0,0133	0,14122934	31,25
	40	30,9	160	0,301	48,16	9,1	1,333621	46,82638	0,00034	0,0133	0,13154564	35,45
	48	33,3	204	0,36	73,44	14,7	2,15431	71,28569	0,00034	0,0133	0,12396877	40,65
3	27,5	27,3	22	0,054	1,188	0,2	0,02931	1,15869	0,00034	0,0133	0,14810319	27,4
	29,6	28	70	0,129	9,03	1,6	0,234483	8,795517	0,00034	0,0133	0,14052988	28,8
	34,4	29,6	119	0,227	27,013	4,8	0,703448	26,30955	0,00034	0,0133	0,14011979	32
	40,7	32	158	0,299	47,242	8,7	1,275	45,967	0,00034	0,0133	0,13506853	36,35
	48,4	33,8	200	0,356	71,2	14,6	2,139655	69,06034	0,00034	0,0133	0,1209214	41,1

Tabel. Data pengukuran konduktivitas termal sampel oli BM1

Nomor Pengujian BM 1	T1 (°C)	T2 (°C)	Tegangan Heater (Volt)	Arus Heater (A)	Daya, Qe, (Watt)	T1-T2 (°C)	Qi (Watt)	Qc (Watt)	Tebal Spesimen (m)	Luas Permukaan (m2)	K Eksperimen	Temperatur Rata-rata Spesimen (°C)
1	27,7	27,5	21	0,057	1,197	0,2	0,02931	1,16769	0,00034	0,0133	0,149253565	27,6
	29,8	28,1	74	0,135	9,99	1,7	0,249138	9,740862	0,00034	0,0133	0,146479129	28,95
	34,9	29,9	125	0,232	29	5	0,732759	28,26724	0,00034	0,0133	0,144524242	32,4
	41,2	32,1	161	0,305	49,105	9,1	1,333621	47,77138	0,00034	0,0133	0,134200355	36,65
	48,8	33,8	209	0,356	74,404	15	2,198276	72,20572	0,00034	0,0133	0,123057374	41,3
2	27,8	27,6	23	0,052	1,196	0,2	0,02931	1,16669	0,00034	0,0133	0,149125745	27,7
	30,1	28,4	76	0,13	9,88	1,7	0,249138	9,630862	0,00034	0,0133	0,144824994	29,25
	34,4	29,8	119	0,223	26,537	4,6	0,674138	25,86286	0,00034	0,0133	0,143729537	32,1
	40,8	32,1	158	0,298	47,084	8,7	1,275	45,809	0,00034	0,0133	0,134604269	36,45
	49,1	33,9	213	0,359	76,467	15,2	2,227586	74,23941	0,00034	0,0133	0,124858531	41,5
3	27,8	27,6	23	0,051	1,173	0,2	0,02931	1,14369	0,00034	0,0133	0,146185896	27,7
	30,7	29	72	0,137	9,864	1,7	0,249138	9,614862	0,00034	0,0133	0,144584392	29,85
	35,2	30,3	122	0,228	27,816	4,9	0,718103	27,0979	0,00034	0,0133	0,141373098	32,75
	41,7	32,6	161	0,304	48,944	9,1	1,333621	47,61038	0,00034	0,0133	0,13374807	37,15
	49,8	34	210	0,363	76,23	15,8	2,315517	73,91448	0,00034	0,0133	0,11959134	41,9

Tabel. Hasil Konsumsi Bahan Bakar

oli	jarak	waktu (menit)	KBB (ml)	KBB (ltr)	KBB KM/liter	KBB rata-rata (liter)
motul	4	7:45	88	0,088	45,45454545	45,46
	4	7:49	89	0,089	44,94382022	
	4	7:40	86	0,086	46,51162791	
	4	7:50	89	0,089	44,94382022	
	4	7:48	88	0,088	45,45454545	
BM 1	4	7:50	85	0,085	47,05882353	47,98
	4	7:47	81	0,081	49,38271605	
	4	7:43	82	0,082	48,7804878	
	4	7:49	86	0,086	46,51162791	
	4	7:51	83	0,083	48,19277108	
MPX 2	4	7:52	95	0,095	42,10526316	43,30
	4	7:50	91	0,091	43,95604396	
	4	7:54	93	0,093	43,01075269	
	4	7:49	91	0,091	43,95604396	
	4	7:47	92	0,092	43,47826087	

Grafik 1 Kalibrasi Q_i

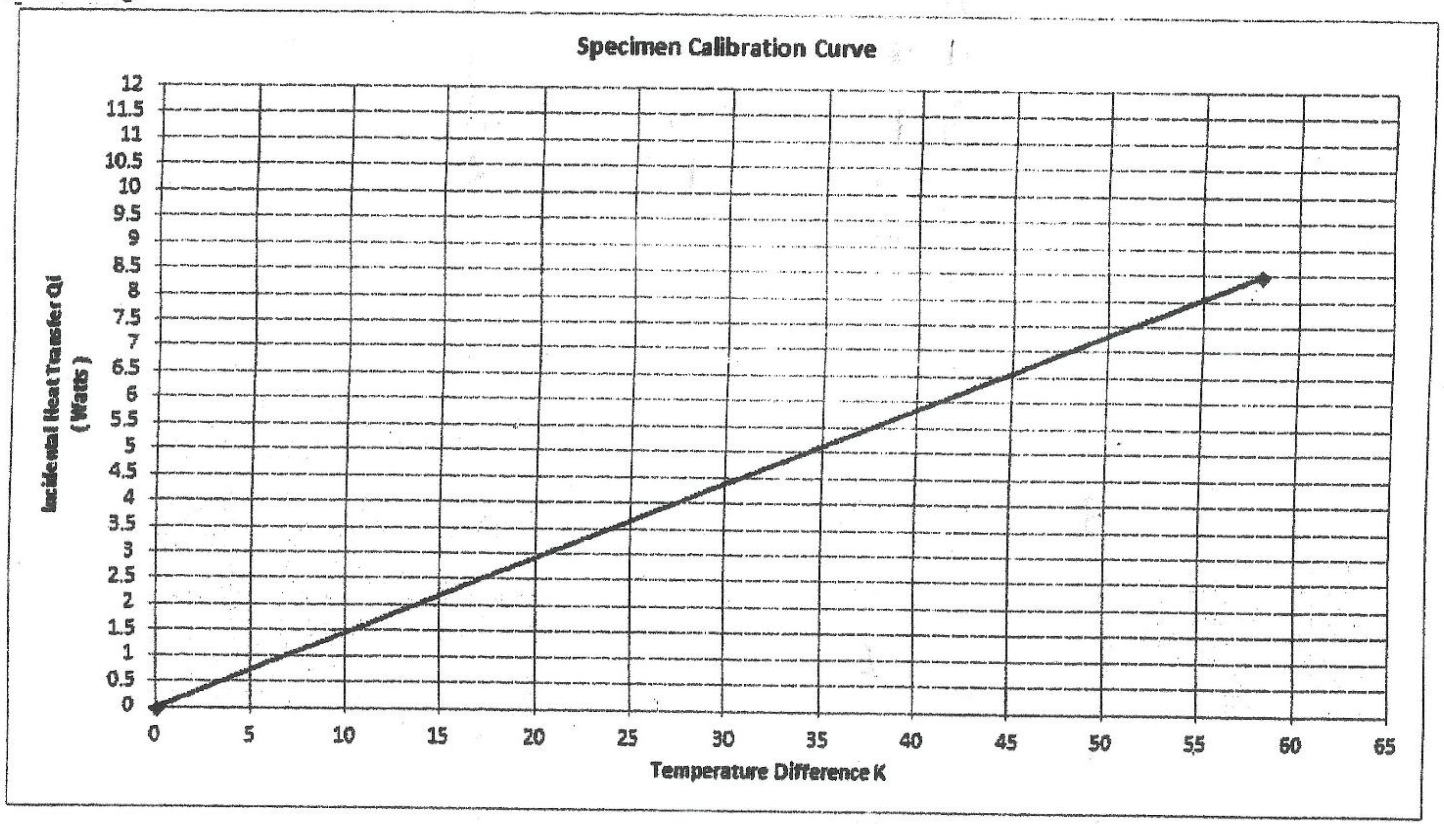

TABLE A–13

Properties of liquids

Temp. T, °C	Density ρ, kg/m³	Specific Heat c_p, J/kg·K	Thermal Conductivity k, W/m·K	Thermal Diffusivity α, m²/s	Dynamic Viscosity μ, kg/m·s	Kinematic Viscosity ν, m²/s	Prandtl Number Pr	Volume Expansion Coeff. β, 1/K
				Methane (CH_4)				
−160	420.2	3492	0.1863	1.270×10^{-7}	1.133×10^{-4}	2.699×10^{-7}	2.126	0.00952
−150	405.0	3580	0.1703	1.174×10^{-7}	9.169×10^{-5}	2.264×10^{-7}	1.927	0.00391
−140	388.8	3700	0.1550	1.077×10^{-7}	7.551×10^{-5}	1.942×10^{-7}	1.803	0.00444
−130	371.1	3875	0.1402	9.749×10^{-8}	6.288×10^{-5}	1.694×10^{-7}	1.738	0.00520
−120	351.4	4146	0.1258	8.634×10^{-8}	5.257×10^{-5}	1.496×10^{-7}	1.732	0.00637
−110	328.8	4611	0.1115	7.356×10^{-8}	4.377×10^{-5}	1.331×10^{-7}	1.810	0.00841
−100	301.0	5578	0.0967	5.761×10^{-8}	3.577×10^{-5}	1.188×10^{-7}	2.063	0.01282
−90	261.7	8902	0.0797	3.423×10^{-8}	2.761×10^{-5}	1.056×10^{-7}	3.082	0.02922
				Methanol ($CH_3(OH)$)				
20	788.4	2515	0.1987	1.002×10^{-7}	5.857×10^{-4}	7.429×10^{-7}	7.414	0.00118
30	779.1	2577	0.1980	9.862×10^{-8}	5.088×10^{-4}	6.531×10^{-7}	6.622	0.00120
40	769.6	2644	0.1972	9.690×10^{-8}	4.460×10^{-4}	5.795×10^{-7}	5.980	0.00123
50	760.1	2718	0.1965	9.509×10^{-8}	3.942×10^{-4}	5.185×10^{-7}	5.453	0.00127
60	750.4	2798	0.1957	9.320×10^{-8}	3.510×10^{-4}	4.677×10^{-7}	5.018	0.00132
70	740.4	2885	0.1950	9.128×10^{-8}	3.146×10^{-4}	4.250×10^{-7}	4.655	0.00137
				Isobutane (R600a)				
−100	683.8	1881	0.1383	1.075×10^{-7}	9.305×10^{-4}	1.360×10^{-6}	12.65	0.00142
−75	659.3	1970	0.1957	1.044×10^{-7}	5.624×10^{-4}	8.531×10^{-7}	8.167	0.00150
−50	634.3	2069	0.1283	9.773×10^{-8}	3.769×10^{-4}	5.942×10^{-7}	6.079	0.00161
−25	608.2	2180	0.1181	8.906×10^{-8}	2.688×10^{-4}	4.420×10^{-7}	4.963	0.00177
0	580.6	2306	0.1068	7.974×10^{-8}	1.993×10^{-4}	3.432×10^{-7}	4.304	0.00199
25	550.7	2455	0.0956	7.069×10^{-8}	1.510×10^{-4}	2.743×10^{-7}	3.880	0.00232
50	517.3	2640	0.0851	6.233×10^{-8}	1.155×10^{-4}	2.233×10^{-7}	3.582	0.00286
75	478.5	2896	0.0757	5.460×10^{-8}	8.785×10^{-5}	1.836×10^{-7}	3.363	0.00385
100	429.6	3361	0.0669	4.634×10^{-8}	6.483×10^{-5}	1.509×10^{-7}	3.256	0.00628
				Glycerin				
0	1276	2262	0.2820	9.773×10^{-8}	10.49	8.219×10^{-3}	84,101	
5	1273	2288	0.2835	9.732×10^{-8}	6.730	5.287×10^{-3}	54,327	
10	1270	2320	0.2846	9.662×10^{-8}	4.241	3.339×10^{-3}	34,561	
15	1267	2354	0.2856	9.576×10^{-8}	2.496	1.970×10^{-3}	20,570	
20	1264	2386	0.2860	9.484×10^{-8}	1.519	1.201×10^{-3}	12,671	
25	1261	2416	0.2860	9.388×10^{-8}	0.9934	7.878×10^{-4}	8,392	
30	1258	2447	0.2860	9.291×10^{-8}	0.6582	5.232×10^{-4}	5,631	
35	1255	2478	0.2860	9.195×10^{-8}	0.4347	3.464×10^{-4}	3,767	
40	1252	2513	0.2863	9.101×10^{-8}	0.3073	2.455×10^{-4}	2,697	
				Engine Oil (unused)				
0	899.0	1797	0.1469	9.097×10^{-8}	3.814	4.242×10^{-3}	46,636	0.00070
20	888.1	1881	0.1450	8.680×10^{-8}	0.8374	9.429×10^{-4}	10,863	0.00070
40	876.0	1964	0.1444	8.391×10^{-8}	0.2177	2.485×10^{-4}	2,962	0.00070
60	863.9	2048	0.1404	7.934×10^{-8}	0.07399	8.565×10^{-5}	1,080	0.00070
80	852.0	2132	0.1380	7.599×10^{-8}	0.03232	3.794×10^{-5}	499.3	0.00070
100	840.0	2220	0.1367	7.330×10^{-8}	0.01718	2.046×10^{-5}	279.1	0.00070
120	828.9	2308	0.1347	7.042×10^{-8}	0.01029	1.241×10^{-5}	176.3	0.00070
140	816.8	2395	0.1330	6.798×10^{-8}	0.006558	8.029×10^{-6}	118.1	0.00070
150	810.3	2441	0.1327	6.708×10^{-8}	0.005344	6.595×10^{-6}	98.31	0.00070

Source: Data generated from the EES software developed by S. A. Klein and F. L. Alvarado. Originally based on various sources.

Grafik Dynotest Oli MPX 2

Mototech

Dyno Centre & Motorcycle Research Support

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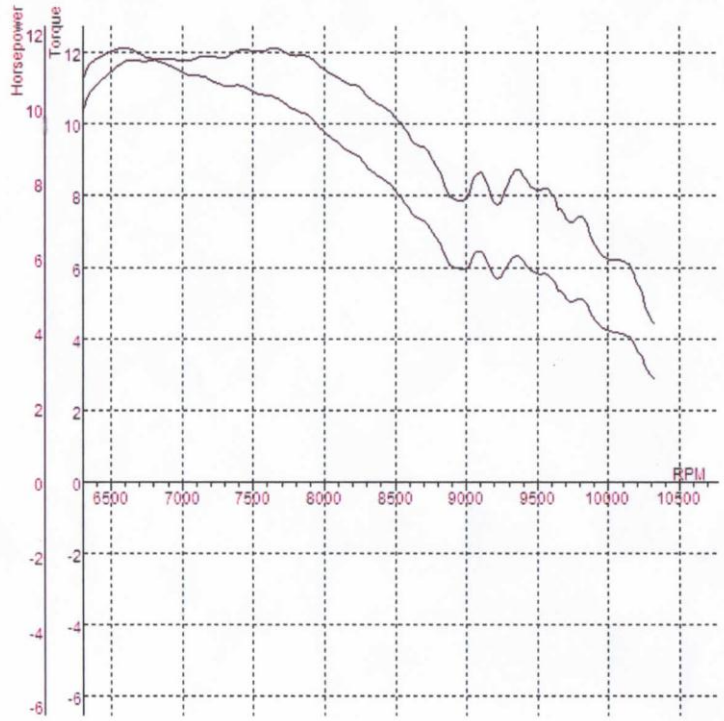
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T016	11.6 (11.6) / 7643	12.11 (12.11) / 6591	31.9 °C	62 %	1000.0 mbar	109.2	06/04/2017 16:02:38



DATA FOR TEST: MEGA PRO 160 T016

Comments
STD MPX 2

RPM	HP (HP)	TQ (N*M*M)	T
6000	10.3	11.53	0.52
6250	10.5	11.68	0.54
6500	11.0	12.03	0.66
6591	11.2	12.11	0.72
6750	11.3	11.83	0.86
7000	11.3	11.40	1.06
7250	11.4	11.12	1.26
7500	11.5	10.89	1.48
7643	11.6	10.77	1.60
7750	11.4	10.45	1.70
8000	11.0	9.74	1.94
8250	10.6	9.05	2.20
8500	9.8	8.12	2.48
8750	8.8	7.08	2.84
9000	7.6	5.99	3.22
9250	7.6	5.81	3.62
9500	7.8	5.83	4.02
9750	7.0	5.05	4.48
10000	6.0	4.23	5.06
10250	4.7	3.26	5.80

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	11.6HP	12.11N*M*M

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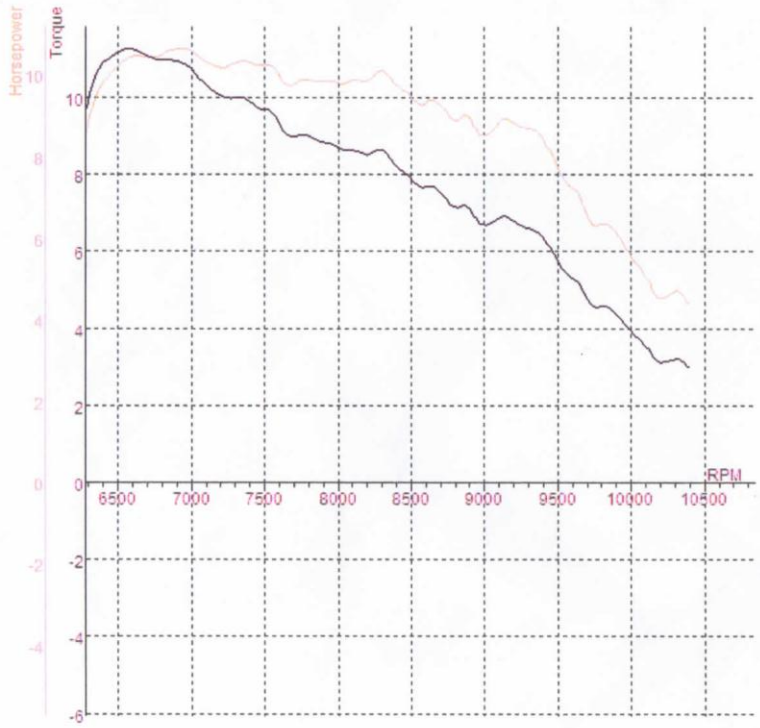
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T012	[illegible]	11.24 (11.24) / 6575	31.9 °C	62 %	1000.0 mbar	109.9	06/04/2017 16:01:34



DATA FOR TEST: MEGA PRO 160 T012

Comments
STD MPX 2

RPM	HP (HP)	TQ (N*M*M)	T
6250	9.0	10.10	0.52
6500	10.3	11.19	0.70
6575	10.4	11.24	0.74
6750	10.5	10.96	0.90
6947	10.6	10.86	1.06
7000	10.6	10.67	1.12
7250	10.2	9.97	1.36
7500	10.2	9.65	1.60
7750	9.9	9.02	1.86
8000	9.8	8.65	2.12
8250	10.0	8.57	2.38
8500	9.4	7.80	2.70
8750	8.9	7.21	3.02
9000	8.5	6.69	3.34
9250	8.7	6.64	3.70
9500	7.7	5.75	4.10
9750	6.3	4.55	4.64
10000	5.5	3.89	5.24
10250	4.6	3.16	5.96

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	10.6HP	11.24N*M*M

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Dyno Control & Motorcycle Research Support

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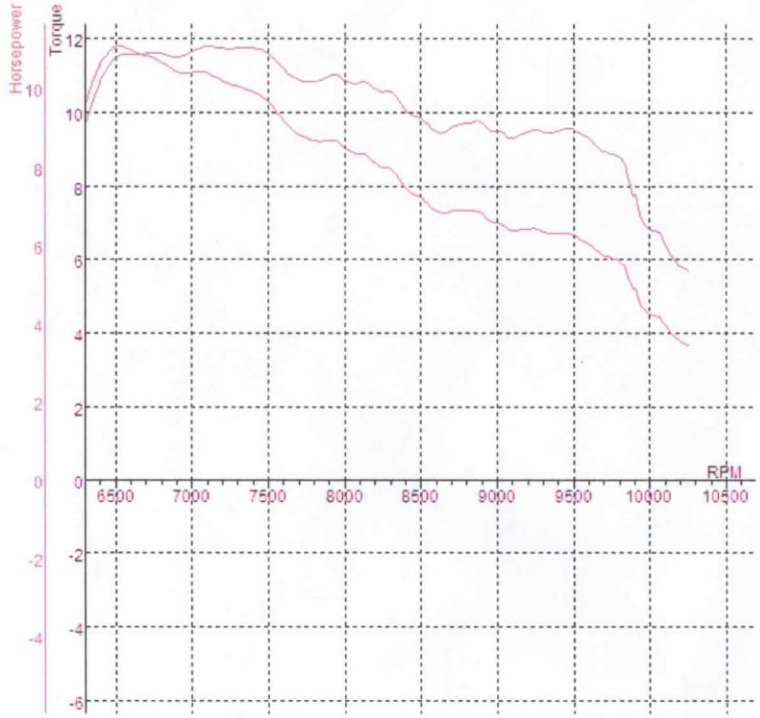
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T013	11.1 (11.1) / 7111	11.79 (11.79) / 6536	31.9 °C	62 %	1000.0 mbar	108.4	06/04/2017 16:01:51



DATA FOR TEST: MEGA PRO 160 T013

Comments
STD MPX 2

RPM	HP (HP)	TQ (N*M*M)	T
6250	9.5	10.66	0.52
6500	10.8	11.78	0.66
6536	10.9	11.79	0.68
6750	10.9	11.46	0.86
7000	11.0	11.08	1.08
7111	11.1	11.04	1.16
7250	11.0	10.74	1.30
7500	10.9	10.25	1.52
7750	10.2	9.27	1.78
8000	10.2	8.98	2.04
8250	9.9	8.49	2.30
8500	9.2	7.68	2.60
8750	9.1	7.33	2.92
9000	8.9	7.00	3.26
9250	8.9	6.83	3.60
9500	9.0	6.66	3.94
9750	8.3	6.02	4.34
10000	6.4	4.49	4.88
10250	5.3	3.66	5.52

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	11.1HP	11.79N*M*M

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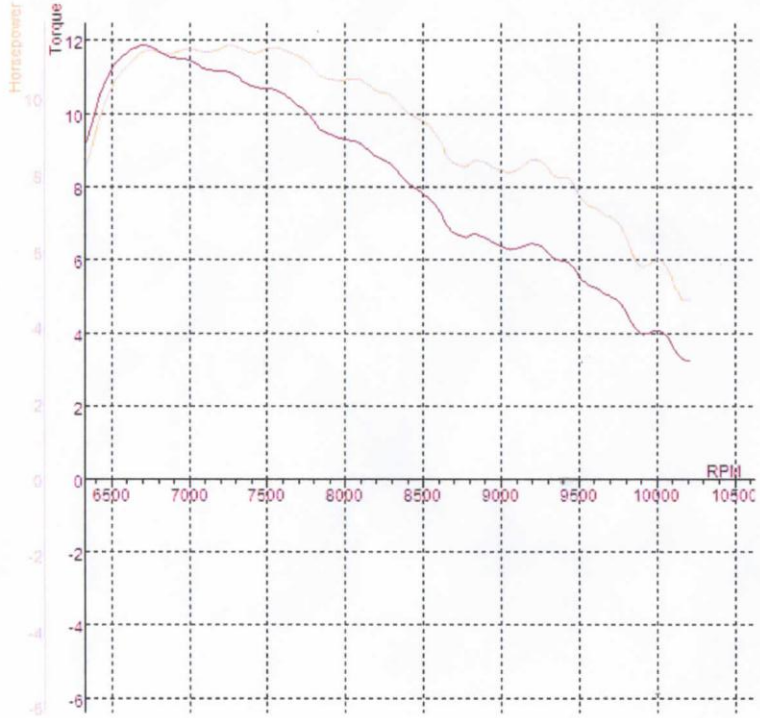
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T014	[illegible]	11.87 (11.87) / 6721	31.9 °C	62 %	1000.0 mbar	107.9	06/04/2017 16:02:06



DATA FOR TEST: MEGA PRO 160 T014

Comments
STD MPX 2

RPM	HP (HP)	TQ (N*M*M)	T
6250	8.7	9.70	0.52
6500	10.4	11.36	0.64
6721	11.2	11.87	0.80
6750	11.2	11.78	0.84
7000	11.3	11.42	1.04
7249	11.4	11.14	1.24
7250	11.4	11.11	1.26
7500	11.3	10.69	1.46
7750	10.9	9.99	1.70
8000	10.5	9.29	1.94
8250	10.1	8.66	2.24
8500	9.4	7.79	2.52
8750	8.2	6.62	2.88
9000	8.1	6.35	3.26
9250	8.4	6.38	3.62
9500	7.3	5.46	4.08
9750	6.7	4.87	4.56
10000	5.8	4.08	5.16

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	11.4HP	11.87N*M*M

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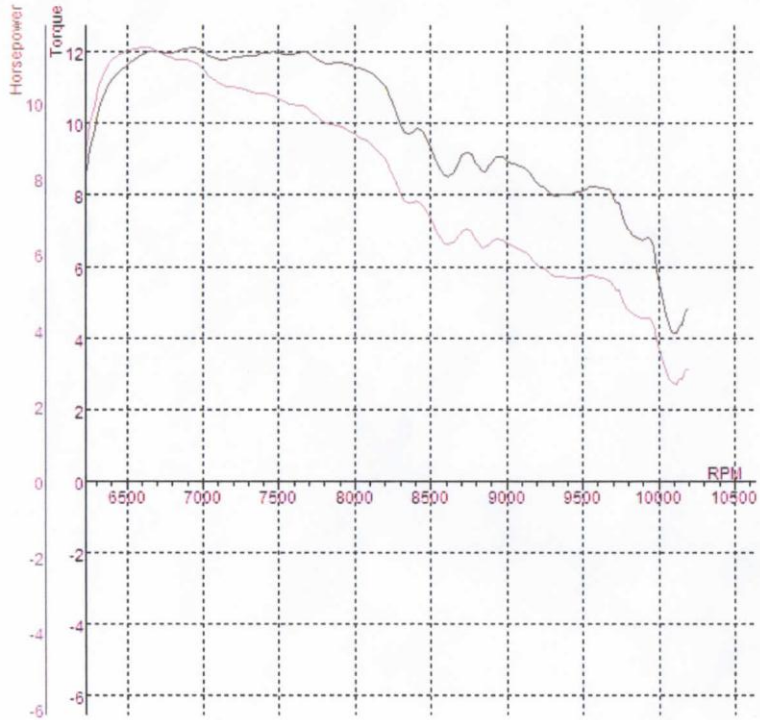
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T015	11.4 (11.4) 6924		31.9 °C	62 %	1000.0 mbar	107.9	06/04/2017 16:02:21



DATA FOR TEST: MEGA PRO 160 T015

Comments
STD MPX 2

RPM	HP (HP)	TQ (N*M*M)	T
6000	8.8	9.99	0.52
6250	9.3	10.50	0.54
6500	11.0	12.02	0.72
6625	11.3	12.11	0.80
6750	11.3	11.83	0.92
6924	11.4	11.73	1.04
7000	11.3	11.43	1.12
7250	11.2	10.96	1.32
7500	11.3	10.67	1.54
7750	11.1	10.12	1.78
8000	10.9	9.65	2.02
8250	9.9	8.49	2.30
8500	8.7	7.24	2.62
8750	8.6	6.97	2.98
9000	8.4	6.61	3.32
9250	7.7	5.89	3.72
9500	7.7	5.70	4.14
9750	7.0	5.03	4.64
10000	5.3	3.70	5.34

LOSSES: 0.0 HP 0.0N*M*M
TOTAL ENGINE: 11.4HP 12.11N*M*M

Grafik Dynotest Oli Motul

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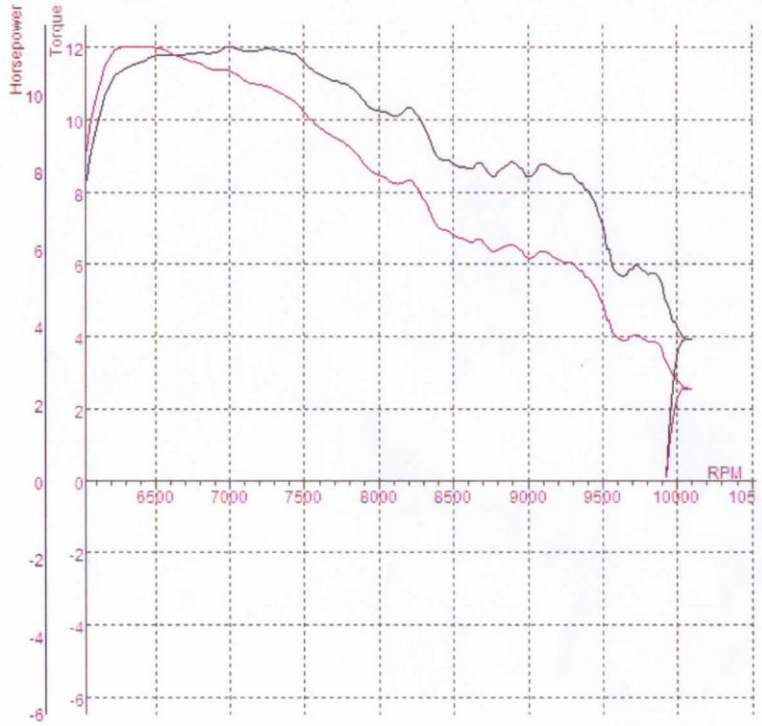
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T011	11.2 (13.0) / 6999	12.02 (13.29) / 6310	31.9 °C	59 %	1000.0 mbar	109.0	06/04/2017 15:47:33



DATA FOR TEST: MEGA PRO 160 T011

Comments
STD MOTUL

RPM	HP (HP)	TQ (N*M*M)	T
6000	8.3	9.77	0.52
6250	10.6	11.98	0.68
6310	10.7	12.02	0.72
6500	11.0	11.99	0.88
6750	11.1	11.59	1.10
6999	11.2	11.36	1.30
7000	11.2	11.32	1.32
7250	11.2	10.89	1.54
7500	10.8	10.14	1.78
7750	10.3	9.36	2.04
8000	9.6	8.45	2.32
8250	9.5	8.13	2.62
8500	8.2	6.81	2.98
8750	7.9	6.36	3.36
9000	7.9	6.17	3.74
9250	7.9	6.06	4.14
9500	6.5	4.83	4.70
9750	5.5	4.00	5.30
10000	3.9	2.77	6.18

LOSSES: -1.8 HP -1.3N*M*M
TOTAL ENGINE: 13.0HP 13.29N*M*M

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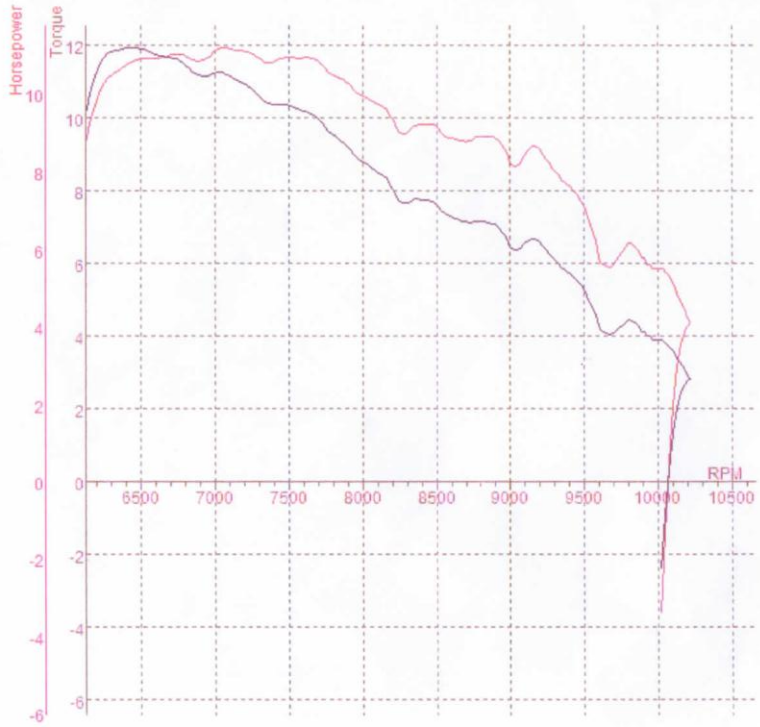
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T010	11.2 (16.8) / 7062	11.92 (15.82) / 6457	31.9 °C	59 %	1000.0 mbar	110.4	06/04/2017 15:47:14



DATA FOR TEST: MEGA PRO 160 T010

Comments
STD MOTUL

RPM	HP (HP)	TQ (N*M*M)	T
6000	9.3	10.67	0.52
6250	10.3	11.67	0.60
6457	10.8	11.92	0.76
6500	10.9	11.89	0.80
6750	11.0	11.57	1.02
7000	11.1	11.26	1.24
7062	11.2	11.24	1.28
7250	11.0	10.76	1.46
7500	10.9	10.32	1.70
7750	10.6	9.64	1.96
8000	9.9	8.78	2.22
8250	9.0	7.68	2.54
8500	9.1	7.55	2.86
8750	8.9	7.15	3.20
9000	8.2	6.39	3.58
9250	8.2	6.27	3.96
9500	7.0	5.24	4.44
9750	5.9	4.30	5.06
10000	5.5	3.88	5.70

LOSSES:	-5.6 HP	-3.9N*M*M
TOTAL ENGINE:	16.8HP	15.82N*M*M

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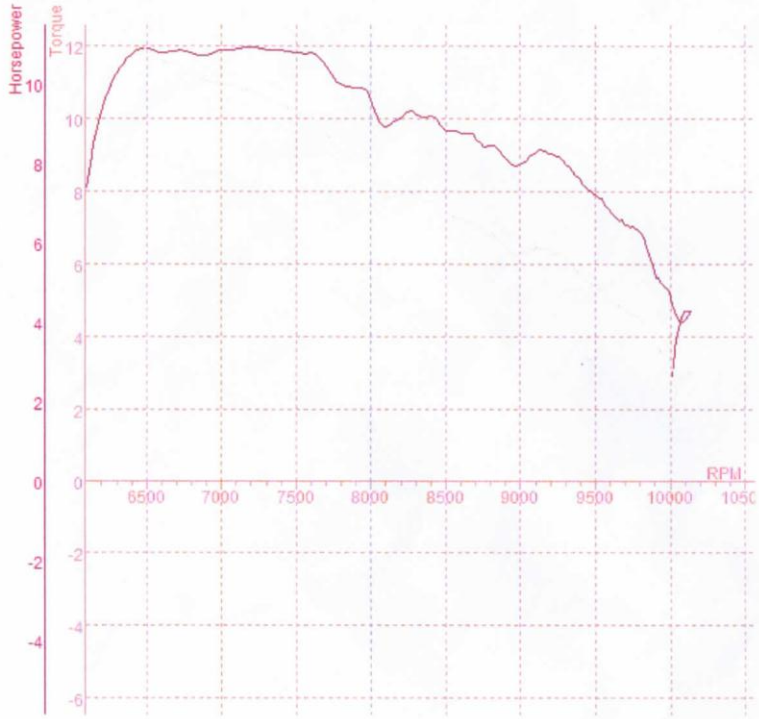
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T009	10.9 (10.9) / 7190		31.9 °C	59 %	1000.0 mbar	109.5	06/04/2017 15:46:58



DATA FOR TEST: MEGA PRO 160 T009

Comments
STD MOTUL

RPM	HP (HP)	TQ (N*M*M)	T
6000	8.0	9.23	0.52
6250	10.1	11.41	0.64
6443	10.8	11.95	0.78
6500	10.9	11.83	0.84
6750	10.8	11.32	1.06
7000	10.8	10.95	1.28
7190	10.9	10.75	1.44
7250	10.9	10.63	1.50
7500	10.8	10.16	1.74
7750	10.1	9.23	2.00
8000	9.5	8.39	2.30
8250	9.3	7.96	2.62
8500	8.8	7.30	2.94
8750	8.4	6.78	3.28
9000	8.0	6.28	3.68
9250	8.2	6.24	4.08
9500	7.2	5.38	4.54
9750	6.4	4.63	5.06
10000	4.6	3.26	5.88

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	10.9HP	11.95N*M*M

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Jl. Ringroad Selatan, Kemasan,Singosaren, Banguntapan,
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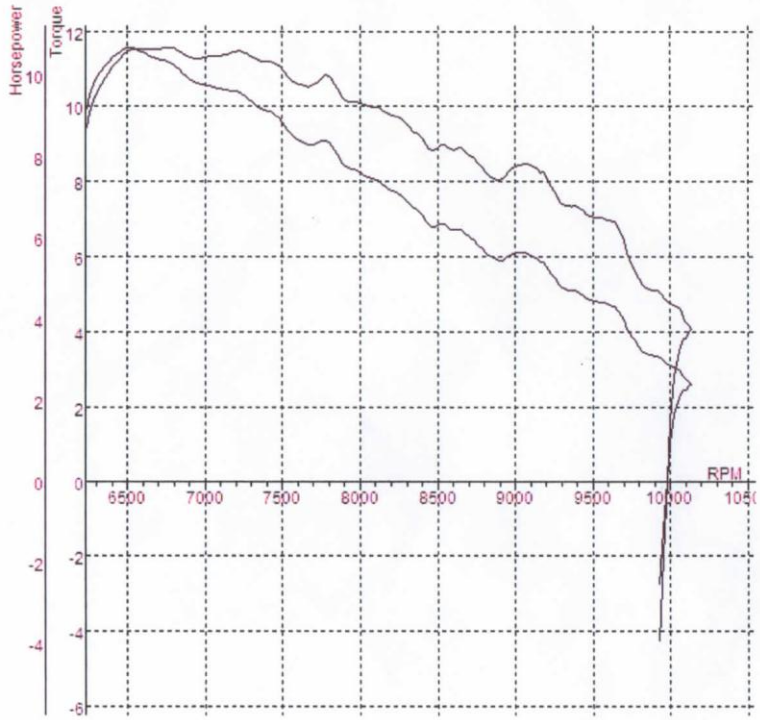
Telp : +62 274 6536303

SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T008	10.7 (16.7) / 6771	11.56 (15.85) / 6522	31.9 °C	59 %	1000.0 mbar	109.5	06/04/2017 15:46:42



DATA FOR TEST: MEGA PRO 160 T008

Comments
STD MOTUL

RPM	HP (HP)	TQ (N*M*M)	T
6000	9.1	10.30	0.52
6250	9.4	10.58	0.54
6500	10.6	11.56	0.74
6522	10.6	11.56	0.74
6750	10.7	11.20	0.94
6771	10.7	11.17	0.96
7000	10.4	10.56	1.18
7250	10.5	10.28	1.42
7500	10.1	9.48	1.68
7750	9.9	9.07	1.94
8000	9.3	8.21	2.24
8250	8.9	7.66	2.56
8500	8.2	6.82	2.90
8750	7.9	6.36	3.30
9000	7.8	6.09	3.70
9250	7.1	5.44	4.18
9500	6.5	4.82	4.68
9750	5.3	3.87	5.30
10000	4.3	3.05	6.08

LOSSES:	-6.1 HP	-4.3N*M*M
TOTAL ENGINE:	16.7HP	15.85N*M*M

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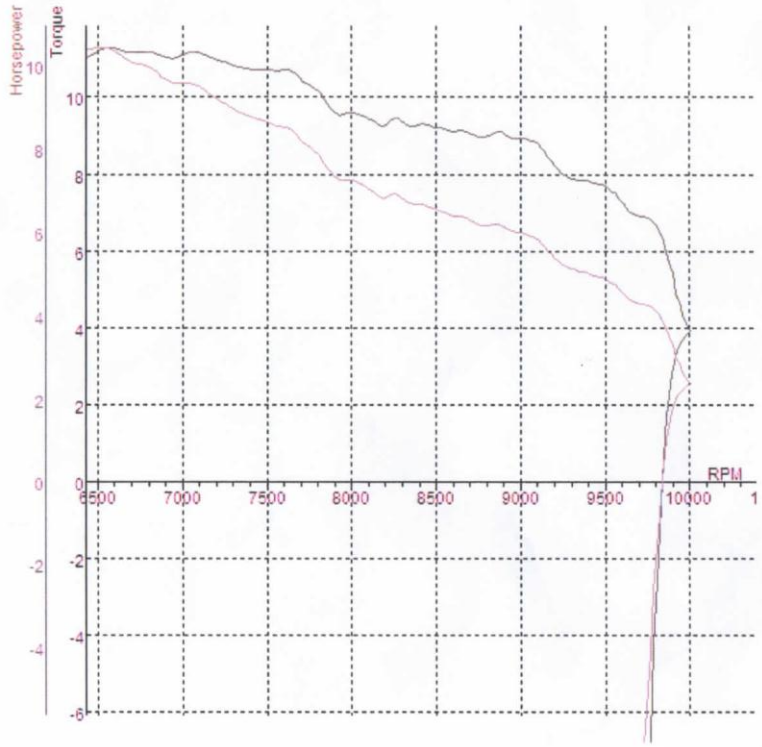
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T007	10.4 (6568 rpm)	11.27 (6527 rpm)	31.9 °C	59 %	1000.0 mbar	108.1	06/04/2017 15:46:27



DATA FOR TEST: MEGA PRO 160 T007

Comments
STD MOTUL

RPM	HP (HP)	TQ (N*M*M)	T
6250	10.2	11.23	0.52
6500	10.3	11.26	0.56
6527	10.4	11.27	0.58
6568	10.4	11.23	0.62
6750	10.3	10.81	0.80
7000	10.2	10.36	1.02
7250	10.0	9.79	1.28
7500	9.9	9.30	1.54
7750	9.5	8.64	1.82
8000	8.9	7.83	2.12
8250	8.7	7.49	2.44
8500	8.5	7.08	2.80
8750	8.3	6.66	3.18
9000	8.2	6.47	3.54
9250	7.4	5.61	4.00
9500	7.1	5.24	4.46
9750	6.3	4.58	5.00
10000	3.6	2.56	5.94

LOSSES:	-13.8 HP	-10.0N*M*M
TOTAL ENGINE:	24.2HP	21.27N*M*M

Grafik Dynotest Oli BM 1

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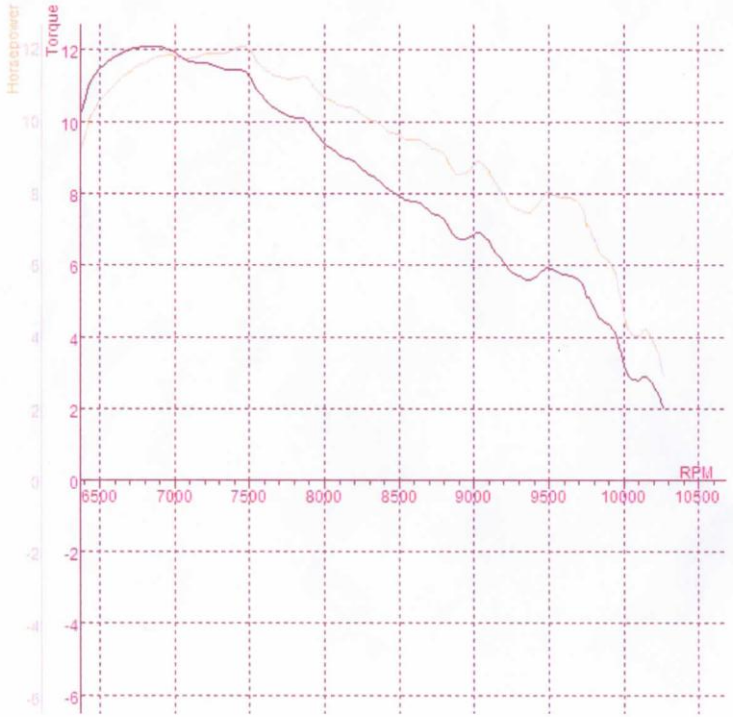
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T006		12.08 (12.08) / 6856	31.9 °C	55 %	1000.0 mbar	110.9	06/04/2017 15:00:11



DATA FOR TEST: MEGA PRO 160 T006

Comments
STD BM 1

RPM	HP (HP)	TQ (N*M*M)	T
6250	9.6	10.65	0.52
6500	10.5	11.47	0.60
6750	11.5	12.06	0.80
6856	11.7	12.08	0.88
7000	11.8	11.91	1.00
7250	11.8	11.56	1.22
7438	12.0	11.44	1.38
7500	11.9	11.19	1.44
7750	11.1	10.15	1.68
8000	10.6	9.36	1.94
8250	10.1	8.64	2.22
8500	9.5	7.93	2.52
8750	9.2	7.39	2.86
9000	8.8	6.89	3.22
9250	7.6	5.78	3.64
9500	8.0	5.91	4.10
9750	7.1	5.11	4.60
10000	4.5	3.19	5.36
10250	3.1	2.11	6.72

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	12.0HP	12.08N*M*M

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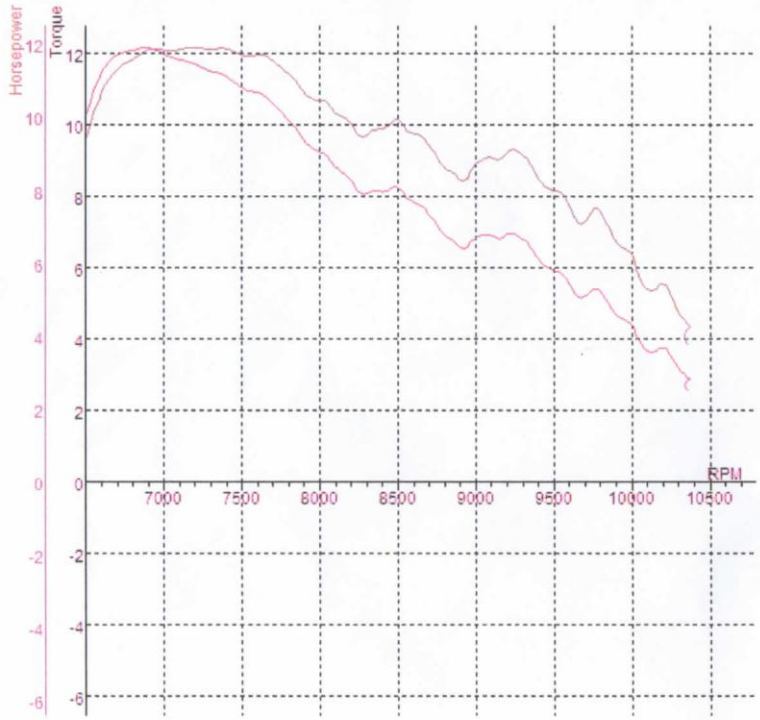
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T005	11.9 (11.9) - 7195	12.17 (12.17) - 6881	31.9 °C	55 %	1000.0 mbar	112.1	06/04/2017 14:59:35



DATA FOR TEST: MEGA PRO 160 T005

Comments
STD BM 1

RPM	HP (HP)	TQ (N*M*M)	T
6250	9.8	10.67	0.52
6500	10.1	10.98	0.54
6750	11.5	12.05	0.70
6881	11.8	12.17	0.80
7000	11.8	11.98	0.90
7195	11.9	11.72	1.06
7250	11.9	11.58	1.12
7500	11.7	11.02	1.34
7750	11.3	10.30	1.58
8000	10.5	9.24	1.84
8250	9.5	8.10	2.14
8500	9.9	8.20	2.44
8750	8.8	7.13	2.78
9000	8.7	6.84	3.12
9250	9.1	6.94	3.48
9500	8.0	5.92	3.90
9750	7.5	5.41	4.38
10000	6.2	4.36	4.98
10250	5.2	3.57	5.72

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	11.9HP	12.17N*M*M

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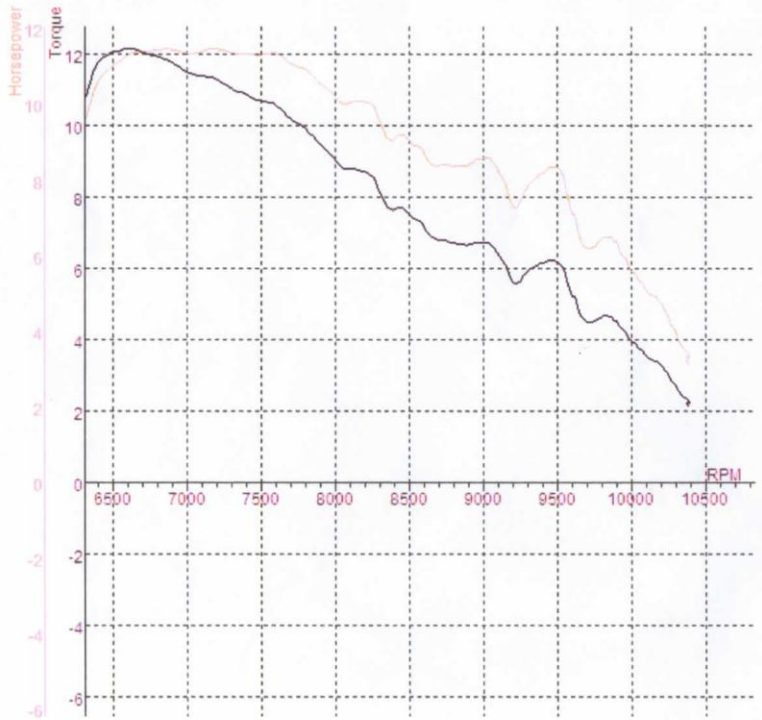
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T004	[illegible]	12.14 (12.14) / 6613	31.9 °C	55 %	1000.0 mbar	112.3	06/04/2017 14:58:29



DATA FOR TEST: MEGA PRO 160 T004

Comments
STD BM 1

RPM	HP (HP)	TQ (N*M*M)	T
6000	10.0	11.17	0.52
6250	10.3	11.45	0.54
6500	11.1	12.05	0.66
6613	11.3	12.14	0.74
6750	11.4	11.97	0.86
7000	11.3	11.45	1.08
7179	11.5	11.33	1.22
7250	11.4	11.11	1.30
7500	11.3	10.67	1.52
7750	11.0	10.03	1.76
8000	10.1	8.93	2.04
8250	10.0	8.52	2.32
8500	9.0	7.48	2.64
8750	8.4	6.78	3.00
9000	8.6	6.73	3.36
9250	7.5	5.73	3.80
9500	8.3	6.16	4.22
9750	6.3	4.53	4.74
10000	5.6	3.95	5.36
10250	4.3	2.96	6.18

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	11.5HP	12.14N*M*M

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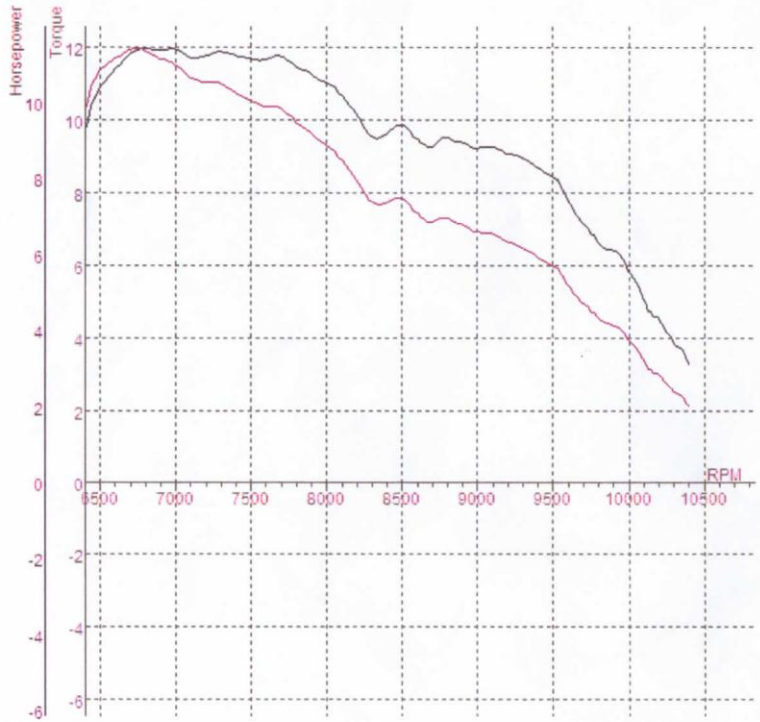
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T003	11.4 (11.4) / 6775	11.97 (11.97) / 6745	31.9 °C	55 %	1000.0 mbar	112.4	06/04/2017 14:57:51



DATA FOR TEST: MEGA PRO 160 T003

Comments
STD BM 1

RPM	HP (HP)	TQ (N*M*M)	T
6250	9.7	10.71	0.52
6500	10.5	11.47	0.60
6745	11.4	11.97	0.78
6750	11.4	11.95	0.80
6775	11.4	11.95	0.80
7000	11.4	11.50	1.00
7250	11.3	11.04	1.22
7500	11.1	10.47	1.46
7750	11.0	10.05	1.70
8000	10.5	9.26	1.96
8250	9.3	7.95	2.26
8500	9.4	7.81	2.58
8750	9.0	7.29	2.92
9000	8.8	6.90	3.26
9250	8.6	6.56	3.64
9500	8.0	5.96	4.08
9750	6.5	4.71	4.62
10000	5.6	3.94	5.22
10250	3.9	2.72	6.20

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	11.4HP	11.97N*M*M

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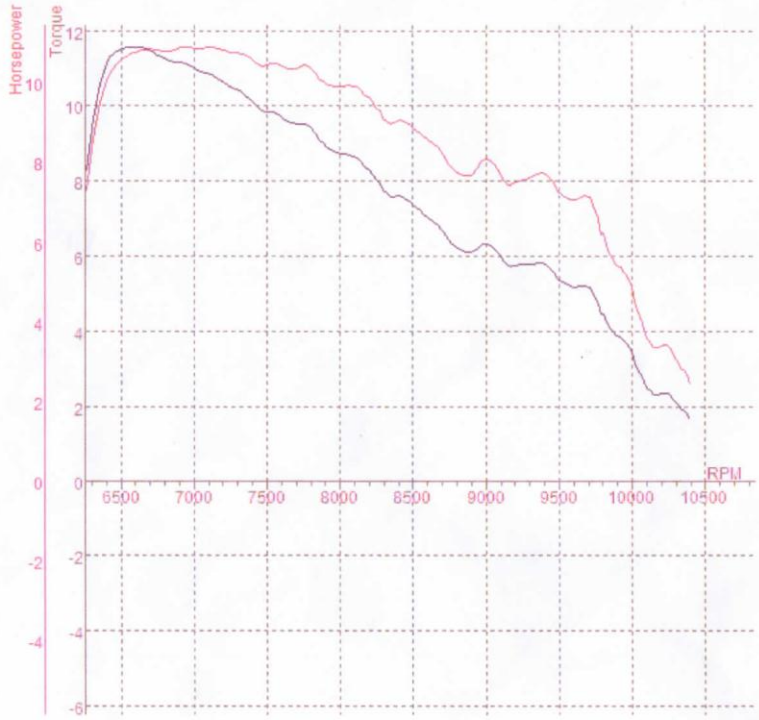
SPORTDYNO V3.3
DYNAMOMETER: MOTOTECH
ROLLER INERTIA: 1.446

Displacement Correction
Correction Factor: ISO 1585
NOTE: Load Cell Included.

TEST NAME	MAX POWER.	MAX TORQUE	Temp. °C	Humidity %	Pressure	KMH	Date/Time
MEGA PRO 160 T002	10.9 (10.9) / 7112	11.56 (11.56) / 6592	31.9 °C	55 %	1000.0 mbar	112.3	06/04/2017 14:57:01



DATA FOR TEST: MEGA PRO 160 T002

Comments
STD BM 1

RPM	HP (HP)	TQ (N*M*M)	T
6250	8.0	9.01	0.52
6500	10.6	11.53	0.72
6592	10.7	11.56	0.78
6750	10.8	11.29	0.94
7000	10.8	10.97	1.14
7112	10.9	10.84	1.24
7250	10.7	10.48	1.38
7500	10.4	9.84	1.62
7750	10.4	9.51	1.88
8000	9.9	8.73	2.16
8250	9.3	7.95	2.48
8500	8.8	7.34	2.80
8750	7.9	6.34	3.20
9000	8.1	6.33	3.58
9250	7.6	5.78	4.04
9500	7.2	5.34	4.50
9750	6.8	4.89	5.02
10000	4.7	3.30	5.78
10250	3.4	2.31	6.98

LOSSES:	0.0 HP	0.0N*M*M
TOTAL ENGINE:	10.9HP	11.56N*M*M