

LAMPIRAN



Pengambilan data dyno test



Pembongkaran koponen *Camshaft*



Camshaft modifikasi 0,5mm, 1mm, 1,5mm

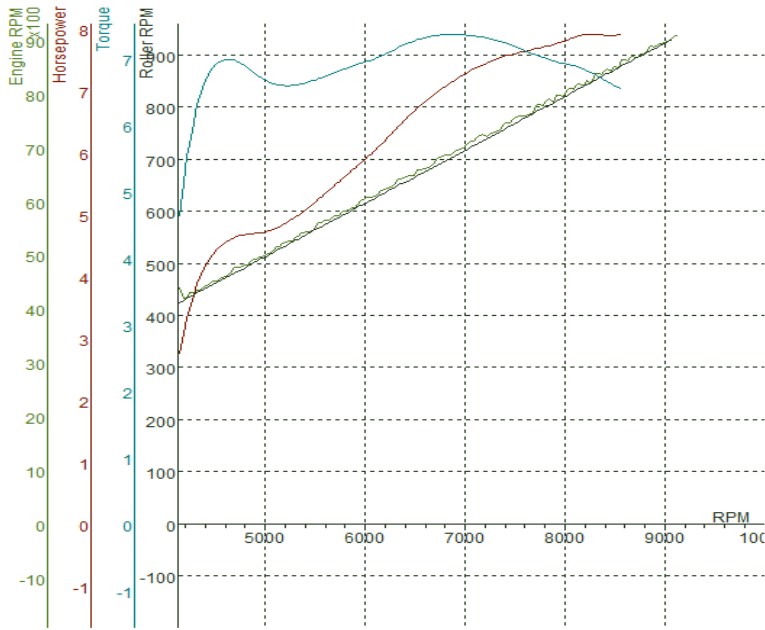


pengimputan hasil dyno test



Tool Set

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
STD1	7.9 (7.9) / 8309	7.37 (7.37) / 6936	69.1	25.0	60	1000.0	1/19/2021 11:08:02 AM

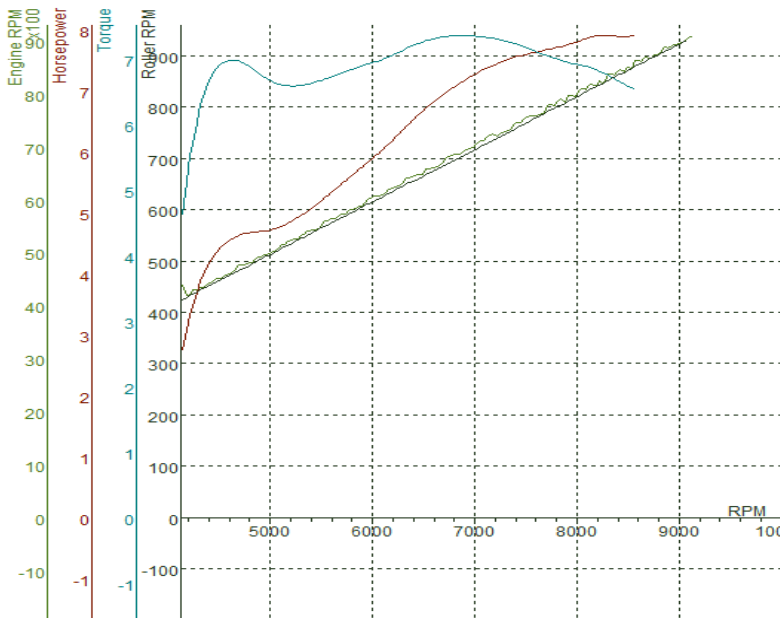


DATA FOR TEST: STD1

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	4.4	6.86	1.38
5000	4.7	6.69	1.88
5500	5.2	6.67	2.40
6000	5.9	6.93	2.90
6500	6.6	7.26	3.38
6936	7.2	7.37	3.78
7000	7.2	7.36	3.84
7500	7.6	7.20	4.32
8000	7.8	6.93	4.80
8309	7.9	6.79	5.10
8500	7.9	6.61	5.32
9000	0.0	0.00	5.86

WHEEL 7.9 HP 7.4 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 7.9 HP 7.37 N*M

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
STD1	7.9 (7.9) / 8309	7.37 (7.37) / 6936	69.1	25.0	60	1000.0	1/19/2021 11:08:02 AM



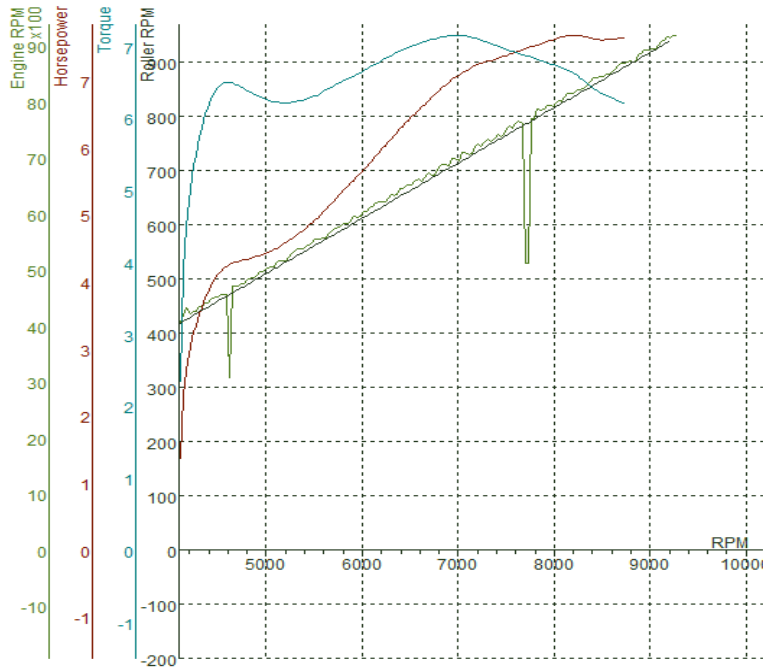
DATA FOR TEST: STD1

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	4.4	6.86	1.38
5000	4.7	6.69	1.88
5500	5.2	6.67	2.40
6000	5.9	6.93	2.90
6500	6.6	7.26	3.38
6936	7.2	7.37	3.78
7000	7.2	7.36	3.84
7500	7.6	7.20	4.32
8000	7.8	6.93	4.80
8309	7.9	6.79	5.10
8500	7.9	6.61	5.32
9000	0.0	0.00	5.86

WHEEL 7.9 HP 7.4 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 7.9 HP 7.37 N*M

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mba r)	Date/Time
CAMA 1	7.7 (7.7) / 8251	7.15 (7.15) / 6983	69.8	25.0	60	1000.0	1/19/2021 11:37:30 AM

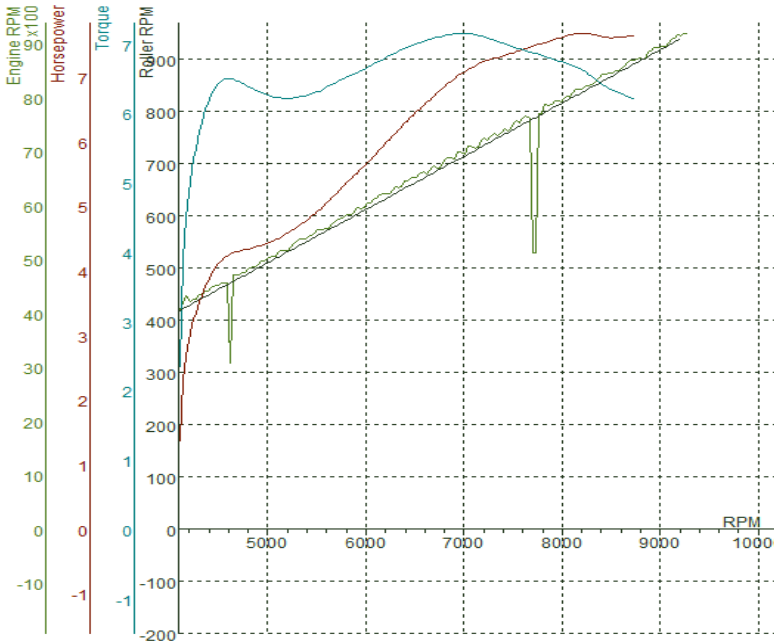

DATA FOR TEST: CAMA 1

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	4.0	6.36	1.60
5000	4.4	6.26	2.14
5500	4.9	6.28	2.68
6000	5.6	6.64	3.22
6500	6.4	6.97	3.70
6983	7.0	7.15	4.18
7000	7.1	7.15	4.20
7500	7.3	6.97	4.66
8000	7.6	6.75	5.16
8251	7.7	6.61	5.42
8500	7.6	6.36	5.68
9000	0.0	0.00	6.24

WHEEL 7.7 HP 7.1 N*M
LOSSES 0.0 HP 0.0 N*M
TOTAL ENGINE: 7.7 HP 7.15 N*M

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mba r)	Date/Time
CAMA 1	7.7 (7.7) / 8251	7.15 (7.15) / 6983	69.8	25.0	60	1000.0	1/19/2021 11:37:30 AM


DATA FOR TEST: CAMA 1

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	4.0	6.36	1.60
5000	4.4	6.26	2.14
5500	4.9	6.28	2.68
6000	5.6	6.64	3.22
6500	6.4	6.97	3.70
6983	7.0	7.15	4.18
7000	7.1	7.15	4.20
7500	7.3	6.97	4.66
8000	7.6	6.75	5.16
8251	7.7	6.61	5.42
8500	7.6	6.36	5.68
9000	0.0	0.00	6.24

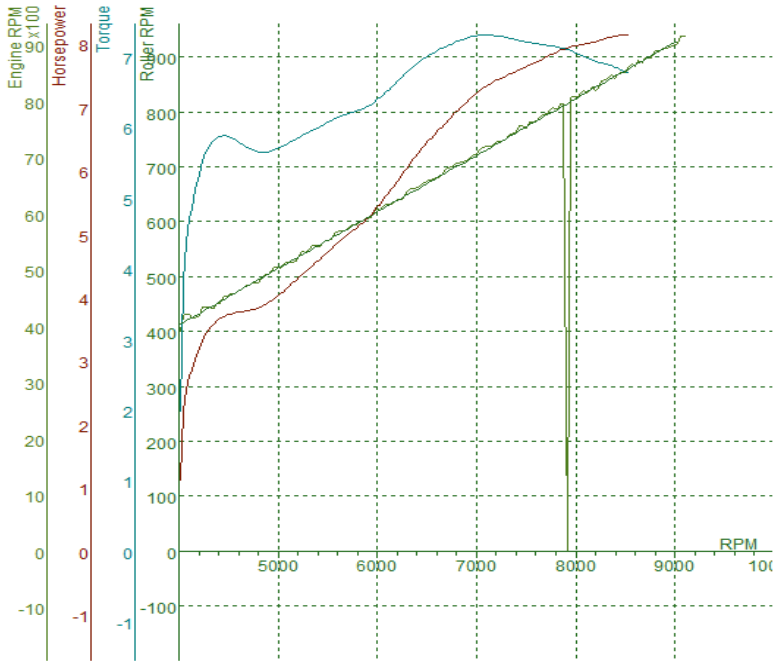
WHEEL 7.7 HP 7.1 N*M
LOSSES 0.0 HP 0.0 N*M
TOTAL ENGINE: 7.7 HP 7.15 N*M

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_862	8.1 (8.1) / 8532	7.31 (7.31) / 7143	69.1	25.0	60	1000.0	1/19/2021 12:45:04 PM

DATA FOR TEST: TEST_862

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	3.7	5.87	1.74
5000	4.0	5.69	2.34
5500	4.7	6.05	2.94
6000	5.4	6.37	3.50
6500	6.4	6.98	4.02
7000	7.2	7.29	4.50
7143	7.3	7.31	4.62
7500	7.6	7.21	4.98
8000	8.0	7.07	5.46
8500	8.1	6.80	5.96
8532	8.1	6.79	5.98
9000	0.0	0.00	6.48

WHEEL 8.1 HP 7.3 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 8.1 HP 7.31 N*M

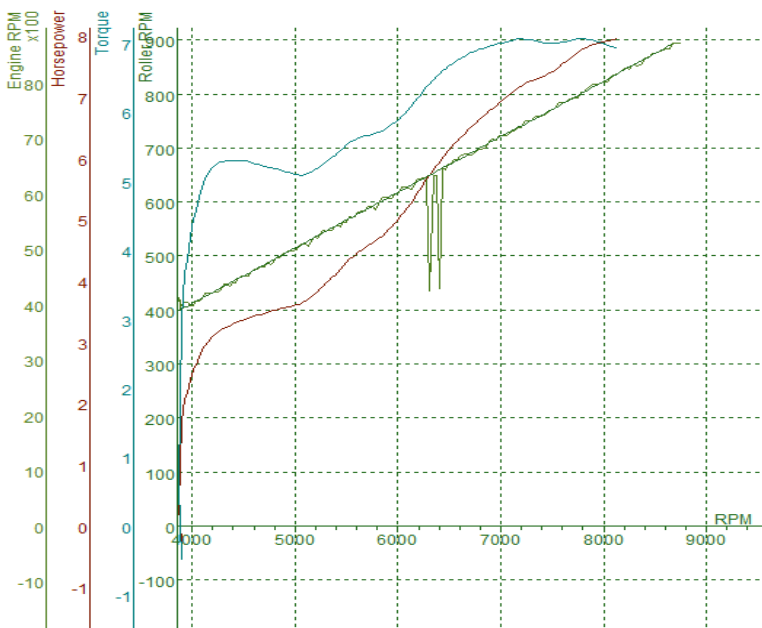


Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_866	8.0 (8.0) / 8189	7.07 (7.07) / 7809	66.4	25.0	60	1000.0	1/19/2021 1:12:06 PM

DATA FOR TEST: TEST_866

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4000	2.3	4.01	1.36
4500	3.4	5.29	2.02
5000	3.6	5.10	2.68
5500	4.3	5.50	3.36
6000	4.9	5.85	3.96
6500	6.0	6.62	4.50
7000	6.9	6.99	5.02
7500	7.4	6.99	5.50
7809	7.8	7.07	5.82
8000	7.9	7.01	6.00
8189	8.0	6.91	6.18
8500	0.0	0.00	6.52

WHEEL 8.0 HP 7.1 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 8.0 HP 7.07 N*M

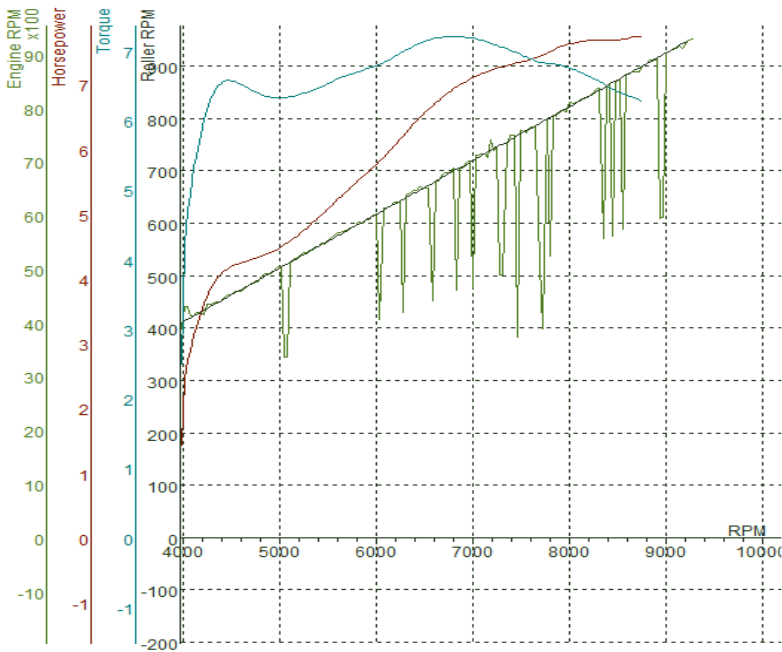


Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
CAMA 2	7.7 (7.7) / 8745	7.20 (7.20) / 6822	70.3	25.0	60	1000.0	1/19/2021 11:37:55 AM

DATA FOR TEST: CAMA 2

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4000	2.3	3.96	1.10
4500	4.2	6.57	1.56
5000	4.5	6.31	2.12
5500	5.0	6.50	2.66
6000	5.7	6.77	3.18
6500	6.5	7.11	3.68
6822	6.9	7.20	3.98
7000	7.1	7.18	4.16
7500	7.3	6.94	4.66
8000	7.6	6.76	5.14
8500	7.7	6.42	5.68
8745	7.7	6.29	5.94
9000	0.0	0.00	6.22

WHEEL 7.7 HP 7.2 N*M
LOSSES 0.0 HP 0.0 N*M
TOTAL ENGINE: 7.7 HP 7.20 N*M

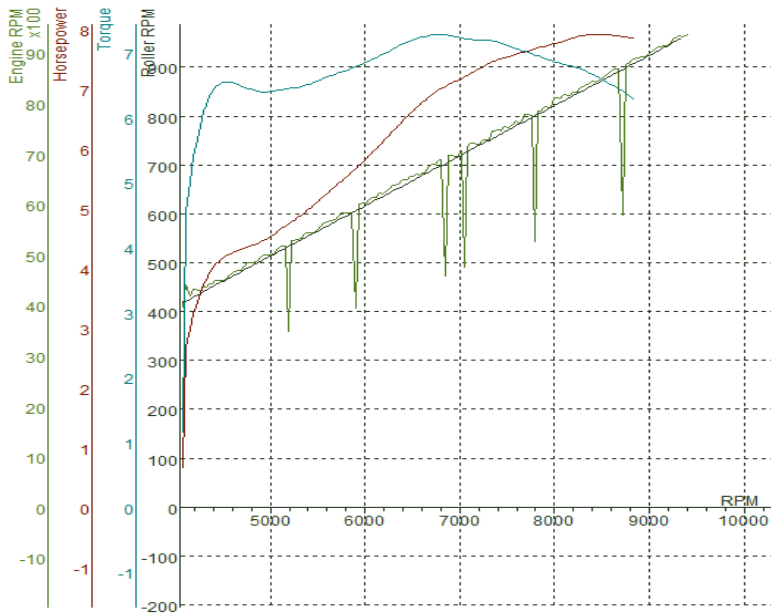


Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
CAMA 3	7.9 (7.9) / 8481	7.28 (7.28) / 6844	71.1	25.0	60	1000.0	1/19/2021 11:38:16 AM

DATA FOR TEST: CAMA 3

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	4.1	6.52	1.58
5000	4.5	6.39	2.12
5500	5.1	6.55	2.66
6000	5.8	6.82	3.18
6500	6.6	7.17	3.66
6844	7.0	7.28	3.98
7000	7.1	7.24	4.14
7500	7.5	7.12	4.62
8000	7.7	6.88	5.10
8481	7.9	6.64	5.58
8500	7.9	6.61	5.62
9000	0.0	0.00	6.16

WHEEL 7.9 HP 7.3 N*M
LOSSES 0.0 HP 0.0 N*M
TOTAL ENGINE: 7.9 HP 7.28 N*M

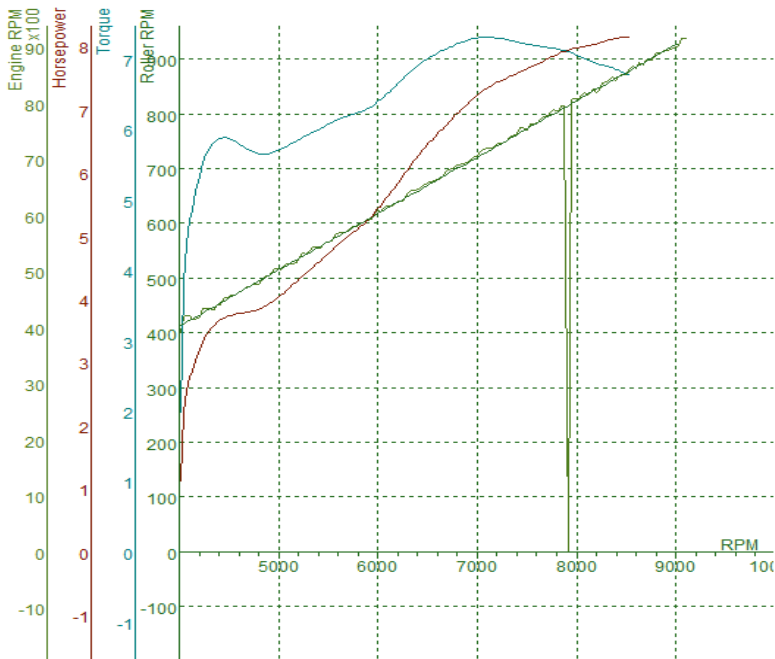


Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_862	8.1 (8.1) / 8532	7.31 (7.31) / 7143	69.1	25.0	60	1000.0	1/19/2021 12:45:04 PM

DATA FOR TEST: TEST_862

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)	
4500	3.7	5.87	1.74	10.05
5000	4.0	5.69	2.34	10.05
5500	4.7	6.05	2.94	10.05
6000	5.4	6.37	3.50	10.05
6500	6.4	6.98	4.02	10.05
7000	7.2	7.29	4.50	10.05
7143	7.3	7.31	4.62	10.05
7500	7.6	7.21	4.98	10.05
8000	8.0	7.07	5.46	10.05
8500	8.1	6.80	5.96	10.05
8532	8.1	6.79	5.98	10.05
9000	0.0	0.00	6.48	10.05

WHEEL	8.1 HP	7.3 N*M
LOSSES	0.0 HP	0.0 N*M
TOTAL ENGINE:	8.1 HP	7.31 N*M

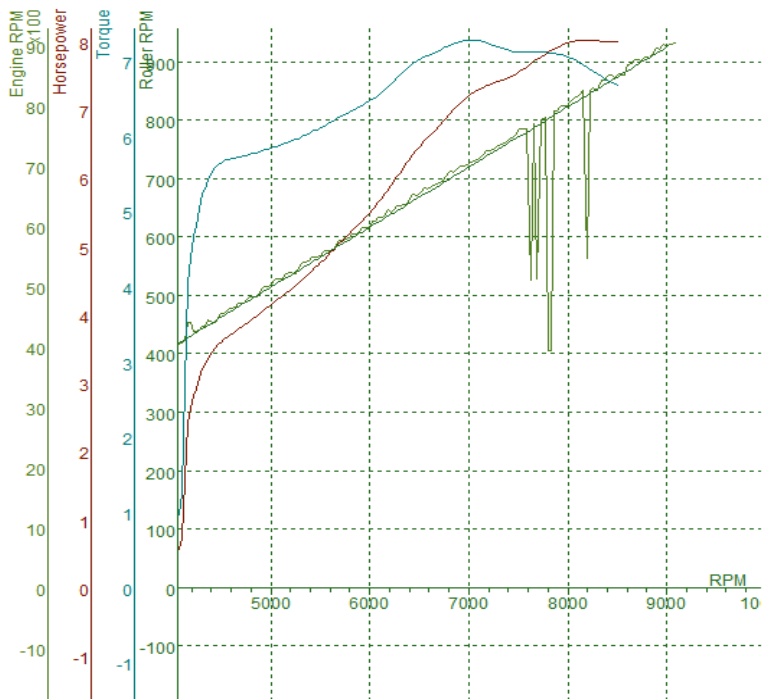


Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_863	8.0 (8.0) / 8208	7.28 (7.28) / 7057	68.8	25.0	60	1000.0	1/19/2021 12:45:25 PM

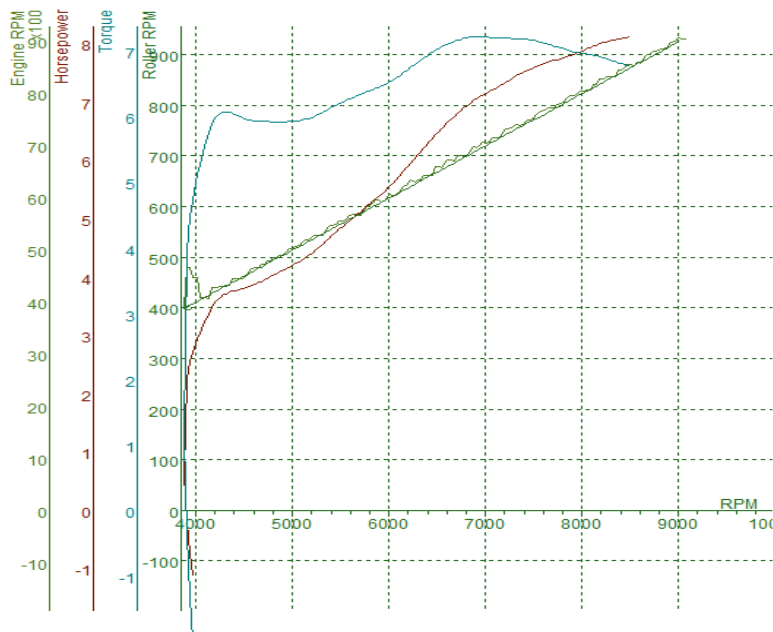
DATA FOR TEST: TEST_863

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)	
4500	3.6	5.63	1.96	10.05
5000	4.1	5.83	2.56	10.05
5500	4.7	6.09	3.14	10.05
6000	5.5	6.45	3.70	10.05
6500	6.4	6.99	4.20	10.05
7000	7.2	7.27	4.70	10.05
7057	7.2	7.28	4.74	10.05
7500	7.5	7.12	5.18	10.05
8000	8.0	7.07	5.66	10.05
8208	8.0	6.94	5.86	10.05
8500	8.0	6.68	6.18	10.05
9000	0.0	0.00	6.70	10.05

WHEEL	8.0 HP	7.3 N*M
LOSSES	0.0 HP	0.0 N*M
TOTAL ENGINE:	8.0 HP	7.28 N*M



Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_864	8.1 (8.1) / 8530	7.23 (7.23) / 6938	68.7	25.0	60	1000.0	1/19/2021 12:45:50 PM

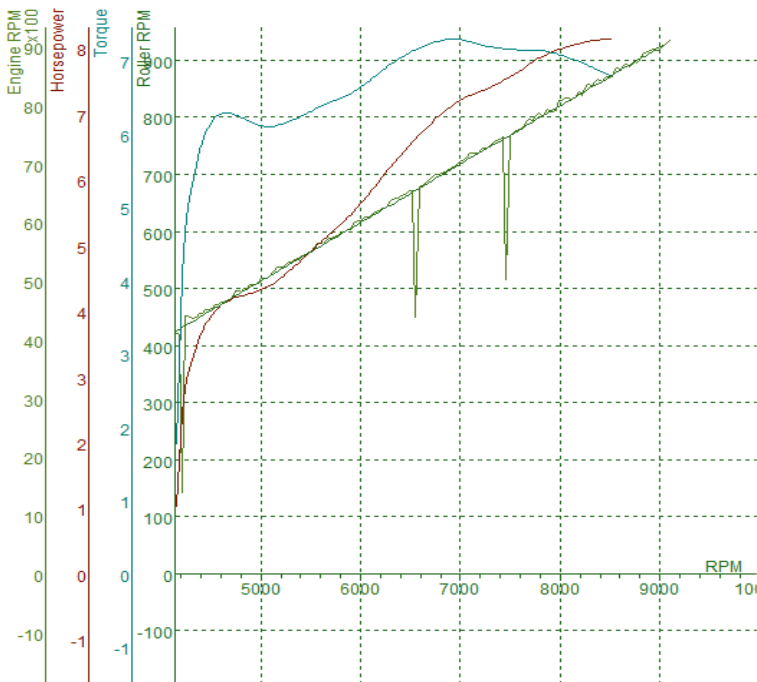


DATA FOR TEST: TEST_864

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4000	2.7	4.73	1.42
4500	3.8	5.99	1.94
5000	4.2	5.93	2.54
5500	4.8	6.20	3.10
6000	5.5	6.51	3.66
6500	6.4	7.00	4.16
6938	7.1	7.23	4.58
7000	7.1	7.22	4.66
7500	7.6	7.17	5.12
8000	7.9	6.98	5.62
8500	8.1	6.78	6.12
8530	8.1	6.77	6.14
9000	0.0	0.00	6.64

WHEEL 8.1 HP 7.2 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 8.1 HP 7.23 N*M

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_865	8.1 (8.1) / 8538	7.29 (7.29) / 6973	68.9	25.0	60	1000.0	1/19/2021 12:46:08 PM



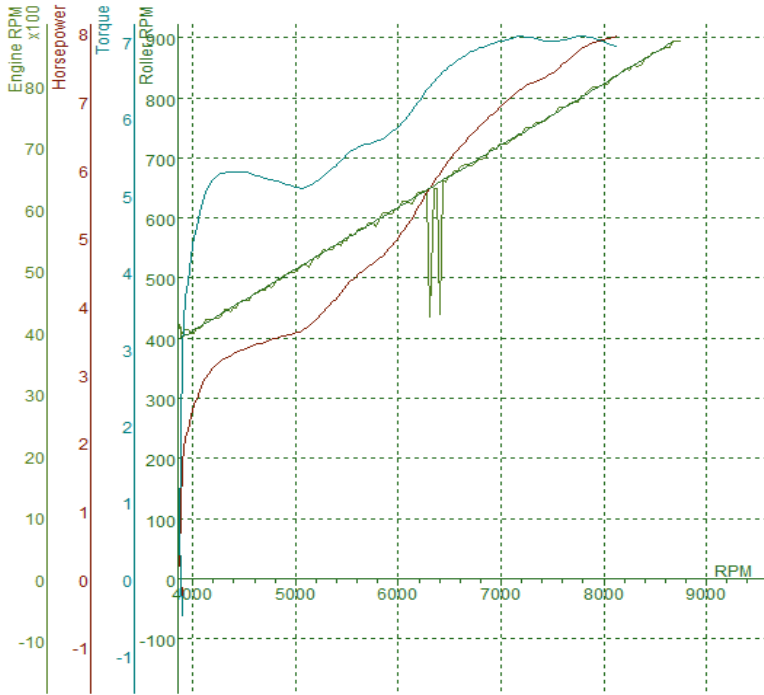
DATA FOR TEST: TEST_865

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4500	3.9	6.07	1.64
5000	4.3	6.12	2.18
5500	4.9	6.28	2.74
6000	5.6	6.62	3.30
6500	6.5	7.08	3.78
6973	7.1	7.29	4.22
7000	7.2	7.29	4.26
7500	7.6	7.15	4.74
8000	8.0	7.09	5.22
8500	8.1	6.80	5.72
8538	8.1	6.79	5.74
9000	0.0	0.00	6.24

WHEEL 8.1 HP 7.3 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 8.1 HP 7.29 N*M

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_866	8.0 (8.0) / 8189	7.07 (7.07) / 7809	66.4	25.0	60	1000.0	1/19/2021 1:12:06 P M



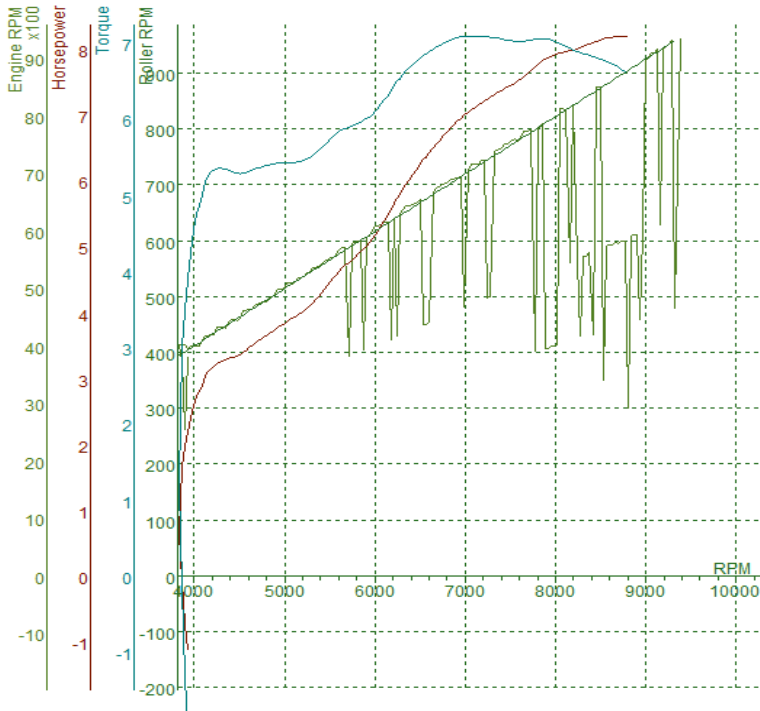
DATA FOR TEST: TEST_866

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4000	2.3	4.01	1.36
4500	3.4	5.29	2.02
5000	3.6	5.10	2.68
5500	4.3	5.50	3.36
6000	4.9	5.85	3.96
6500	6.0	6.62	4.50
7000	6.9	6.99	5.02
7500	7.4	6.99	5.50
7809	7.8	7.07	5.82
8000	7.9	7.01	6.00
8189	8.0	6.91	6.18
8500	0.0	0.00	6.52

WHEEL: 8.0 HP, 7.1 N*M
 LOSSES: 0.0 HP, 0.0 N*M
 TOTAL ENGINE: 8.0 HP, 7.07 N*M

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_867	8.2 (8.2) / 8774	7.09 (7.09) / 7108	71.0	25.0	60	1000.0	1/19/2021 1:12:24 P M



DATA FOR TEST: TEST_867

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4000	2.4	4.25	1.46
4500	3.3	5.28	2.10
5000	3.8	5.42	2.74
5500	4.4	5.69	3.38
6000	5.1	6.08	3.98
6500	6.2	6.76	4.50
7000	7.0	7.08	5.00
7108	7.1	7.09	5.10
7500	7.4	7.04	5.48
8000	7.9	7.02	5.98
8500	8.1	6.80	6.48
8774	8.2	6.66	6.74
9000	0.0	0.00	7.02

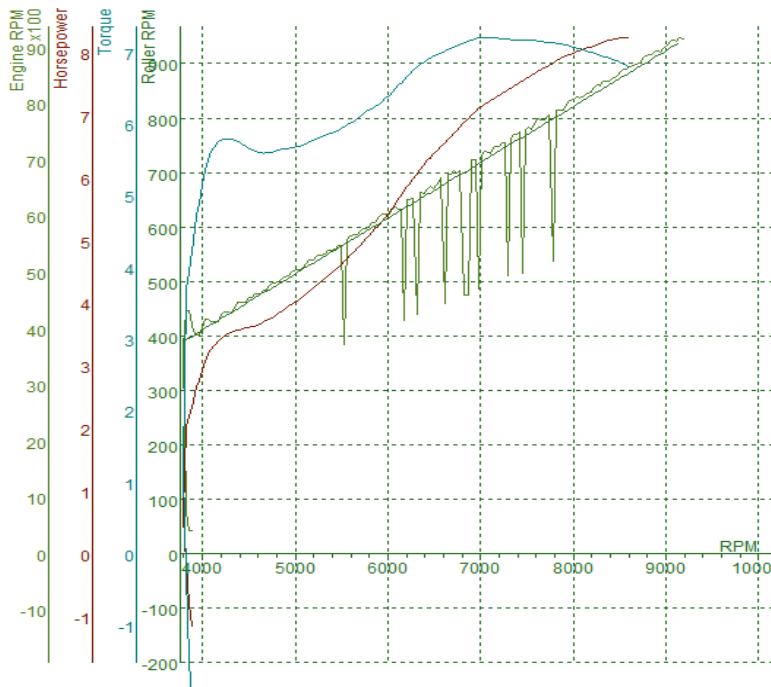
WHEEL: 8.2 HP, 7.1 N*M
 LOSSES: 0.0 HP, 0.0 N*M
 TOTAL ENGINE: 8.2 HP, 7.09 N*M

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_868	8.2 (8.2) / 8577	7.20 (7.20) / 7111	69.7	25.0	60	1000.0	1/19/2021 1:12:42 P M

DATA FOR TEST: TEST_868

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
4000	2.8	4.89	1.50
4500	3.6	5.68	2.10
5000	4.0	5.66	2.72
5500	4.6	5.92	3.32
6000	5.4	6.37	3.90
6500	6.3	6.93	4.40
7000	7.1	7.19	4.88
7111	7.2	7.20	4.98
7500	7.6	7.17	5.36
8000	8.0	7.08	5.86
8500	8.2	6.88	6.34
8577	8.2	6.82	6.42
9000	0.0	0.00	6.84

WHEEL	8.2 HP	7.2 N*M
LOSSES	0.0 HP	0.0 N*M
TOTAL ENGINE:	8.2 HP	7.20 N*M

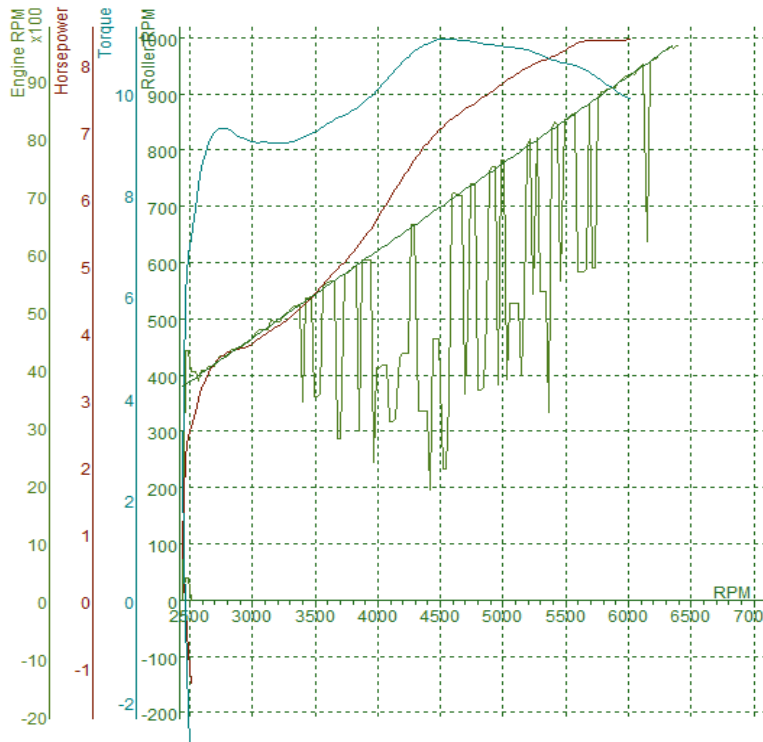


Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_871	8.4 (8.4) / 6056	11.07 (11.07) / 4572	73.3	25.0	60	1000.0	1/19/2021 1:13:34 P M

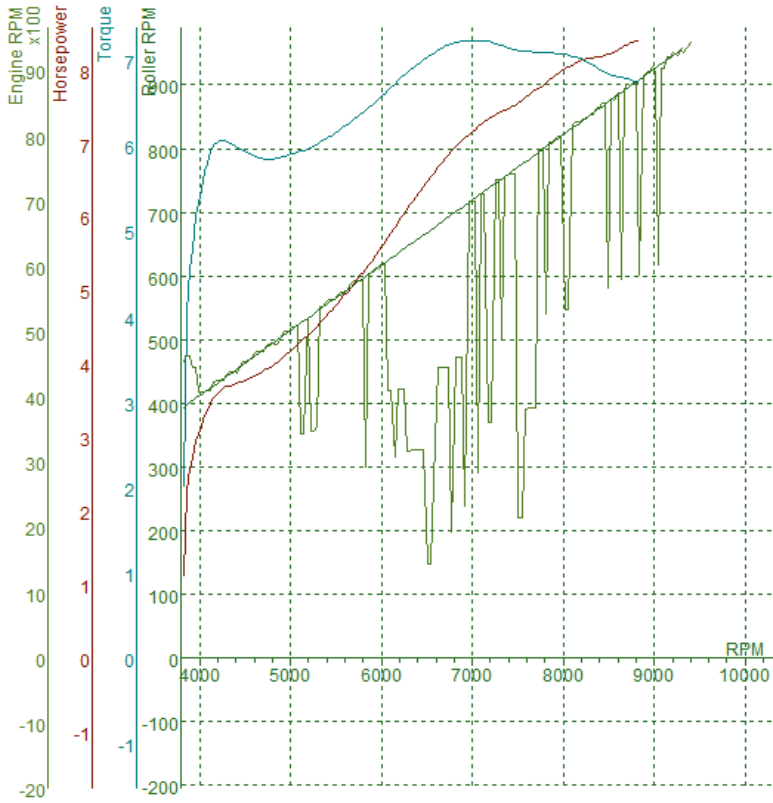
DATA FOR TEST: TEST_871

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
3000	3.8	9.04	2.24
3500	4.6	9.23	3.14
4000	5.6	10.01	3.94
4500	7.0	11.04	4.68
4572	7.1	11.07	4.78
5000	7.7	10.93	5.42
5500	8.2	10.60	6.12
6000	8.4	9.91	6.90
6056	8.4	9.85	6.98

WHEEL	8.4 HP	11.1 N*M
LOSSES	0.0 HP	0.0 N*M
TOTAL ENGINE:	8.4 HP	11.07 N*M



Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
TEST_870	8.4 (8.4) / 8872	7.23 (7.23) / 7085	71.3	25.0	60	1000.0	1/19/2021 1:13:16 P M



DATA FOR TEST: TEST_870

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)	
4000	2.9	5.18	1.22	10.05
4500	3.8	5.93	1.76	10.05
5000	4.1	5.89	2.36	10.05
5500	4.8	6.14	2.94	10.05
6000	5.5	6.55	3.48	10.05
6500	6.4	7.00	3.98	10.05
7000	7.1	7.22	4.46	10.05
7085	7.2	7.23	4.54	10.05
7500	7.5	7.12	4.94	10.05
8000	8.0	7.07	5.44	10.05
8500	8.2	6.84	5.94	10.05
8872	8.4	6.72	6.30	10.05
9000	0.0	0.00	6.46	10.05

WHEEL	8.4 HP	7.2 N*M
LOSSES	0.0 HP	0.0 N*M
TOTAL ENGINE:	8.4 HP	7.23 N*M

