

LAMPIRAN



Dynamometer (Dynotest)





Proses Dynotest





Variasi Velocity 8°





Variasi velocity 12°



Tabel Data torsi standart

RPM	TES 1	TES 2	TES 3	Rata- rata
3000	17,96	17,35	16,19	17,16
3500	15,08	17,63	16,41	16,37
4000	18,02	17,48	16,97	17,49
4500	18,05	18,60	17,75	18,13
5000	19,77	20,63	19,66	20,02
5500	20,35	21,66	20,68	20,89
6000	20,54	21,65	21,33	21,17
6500	19,77	21,15	21,03	20,65
7000	19,20	20,52	20,33	20,01
7500	18,30	19,41	19,23	18,98
8000	16,71	17,55	17,86	17,37
8500	15,21	16,52	16,22	15,98
9000	13,88	15,22	14,88	14,66
9500	12,53	12,94	12,89	12,78
10000	10,32	11,16	10,78	10,75

Tabel data daya standart

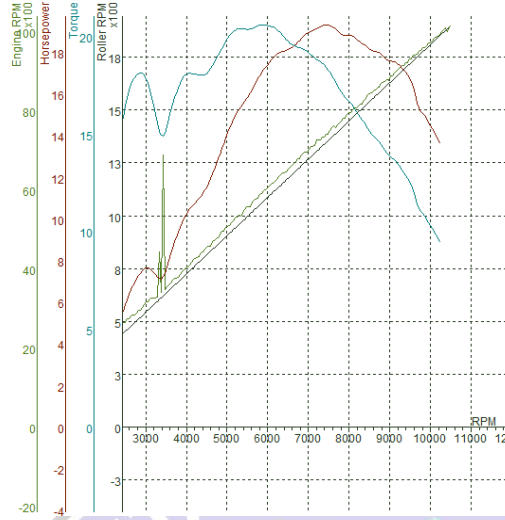
RPM	TES 1	TES 2	TES 3	Rata- rata
3000	7,06	7,03	6,09	6,72
3500	7,04	8,07	8,01	7,70
4000	10,02	9,08	9,05	9,38
4500	11,04	11,08	11,03	11,05
5000	14,00	14,06	13,09	13,71
5500	15,08	16,08	16,00	15,72
6000	17,04	18,03	18,00	17,69
6500	18,01	19,03	19,02	18,68
7000	18,09	20,02	20,00	19,37
7500	19,03	20,05	20,03	19,70
8000	18,08	19,07	20,01	19,05
8500	18,02	19,08	19,04	18,71
9000	17,06	19,03	18,08	18,05
9500	16,07	17,03	17,02	16,70
10000	14,05	15,07	15,01	14,71



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
STANDART 1	19.3 (19.3) / 7453	20.57 (20.57) / 5906	139.9	0.0	0	0.0	12/23/2022 10:17:3 0AM



DATA FOR TEST: STANDART 1

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)	
2500	5.8	16.27	1.10	10.05
3000	7.6	17.96	1.68	10.05
3500	7.4	15.08	2.34	10.05
4000	10.2	18.02	2.98	10.05
4500	11.4	18.05	3.56	10.05
5000	14.0	19.77	4.14	10.05
5500	15.8	20.35	4.66	10.05
5906	17.1	20.57	5.06	10.05
6000	17.4	20.54	5.18	10.05
6500	18.1	19.77	5.70	10.05
7000	18.9	19.20	6.24	10.05
7453	19.3	18.44	6.74	10.05
7500	19.3	18.30	6.80	10.05
8000	18.8	16.71	7.42	10.05
8500	18.2	15.21	8.08	10.05
9000	17.6	13.88	8.82	10.05
9500	16.7	12.53	9.62	10.05
10000	14.5	10.32	10.54	10.05
10500	0.0	0.00	11.68	10.05

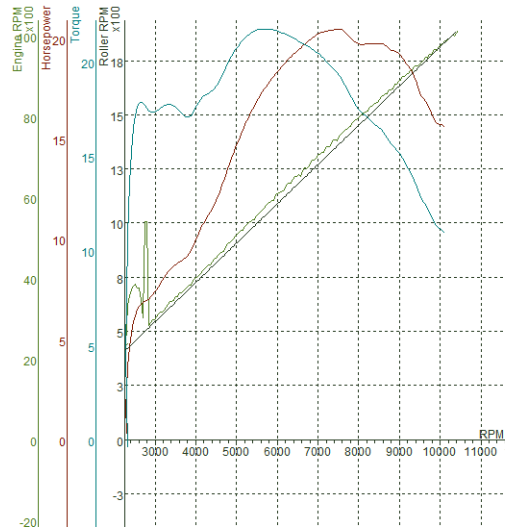
WHEEL 19.3 HP 20.6 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 19.3 HP 20.57 N*M



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
STANDART 2	20.5 (20.5) / 7517	21.72 (21.72) / 5762	139.3	0.0	0	0.0	12/23/2022 10:18:5 3AM



DATA FOR TEST: STANDART 2

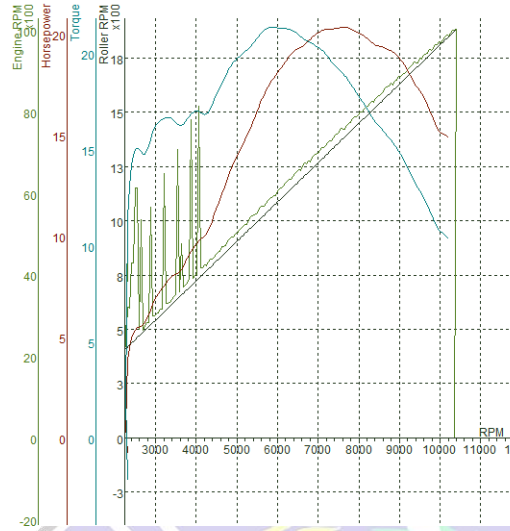
RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)	
2500	5.9	16.55	1.66	10.05
3000	7.3	17.35	2.24	10.05
3500	8.7	17.63	2.84	10.05
4000	9.8	17.48	3.46	10.05
4500	11.8	18.60	4.04	10.05
5000	14.6	20.63	4.60	10.05
5500	16.8	21.66	5.10	10.05
5762	17.6	21.72	5.34	10.05
6000	18.3	21.65	5.58	10.05
6500	19.3	21.15	6.08	10.05
7000	20.2	20.52	6.58	10.05
7500	20.5	19.41	7.12	10.05
7517	20.5	19.37	7.14	10.05
8000	19.7	17.55	7.70	10.05
8500	19.8	16.52	8.34	10.05
9000	19.3	15.22	9.00	10.05
9500	17.3	12.94	9.78	10.05
10000	15.7	11.16	10.66	10.05

WHEEL 20.5 HP 21.7 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 20.5 HP 21.72 N*M



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6
 Displacement Correction
 Correction Factor: ISO 1585
 NOTE: Load Cell Included.

Name	HP/rpm	N*M/rpm	KMH	Temp. (C)	Humidity (%)	Pressure (mbar)	Date/Time
STANDART 3	20.3 (20.3) / 7635	21.35 (21.35) / 5903	139.1	0.0	0	0.0	12/23/2022 10:22:08 AM



DATA FOR TEST: STANDART 3

RPM	HP (HP)	TQ (N*M)	LAMBDA 1	LAMBDA 2 (Vol)
2500	5.3	14.93	1.58	10.05
3000	6.9	16.19	2.28	10.05
3500	8.1	16.41	2.90	10.05
4000	9.5	16.97	3.54	10.05
4500	11.3	17.75	4.18	10.05
5000	13.9	19.66	4.74	10.05
5500	16.0	20.68	5.26	10.05
5903	17.7	21.35	5.66	10.05
6000	18.0	21.33	5.76	10.05
6500	19.2	21.03	6.26	10.05
7000	20.0	20.33	6.78	10.05
7500	20.3	19.23	7.32	10.05
7635	20.3	18.95	7.46	10.05
8000	20.1	17.86	7.88	10.05
8500	19.4	16.22	8.52	10.05
9000	18.8	14.88	9.20	10.05
9500	17.2	12.89	9.96	10.05
10000	15.1	10.78	10.86	10.05

WHEEL 20.3 HP 21.4 N*M
 LOSSES 0.0 HP 0.0 N*M
 TOTAL ENGINE: 20.3 HP 21.35 N*M



Tabel Data torsi variasi *Velocity stack intake 8°*

RPM	TES 1	TES 2	TES 3	Rata- rata
3000	17,02	15,35	16,81	16,39
3500	16,89	13,38	16,44	15,57
4000	16,08	15,33	16,75	16,05
4500	16,62	15,23	17,28	16,37
5000	18,14	16,95	17,26	17,45
5500	18,69	18,69	17,36	18,24
6000	18,93	19,05	17,03	18,34
6500	17,72	19,54	16,09	17,78
7000	16,41	17,74	14,49	16,21
7500	15,81	17,54	13,90	15,72
8000	14,83	16,46	13,94	15,07
8500	12,80	14,53	13,72	13,68
9000	11,98	12,51	11,51	12,00
9500	10,59	8,69	10,31	9,86
10000	8,85	9,41	9,06	9,10

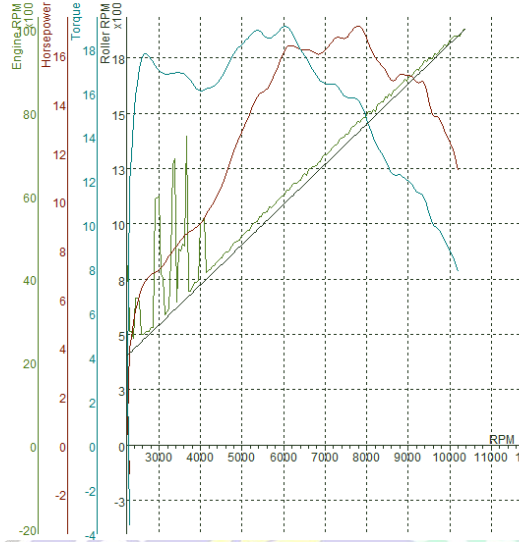
Tabel data daya *velocity* dengan variasi sudut dinding 8°

RPM	TES 1	TES 2	TES 3	Rata- rata
3000	7,02	6,05	7,01	6,69
3500	8,03	6,06	8,01	7,36
4000	9,00	8,06	9,05	8,70
4500	10,05	9,06	11,00	10,03
5000	12,07	11,09	12,02	11,72
5500	14,05	14,05	13,05	13,71
6000	16,00	16,01	14,04	15,35
6500	16,02	17,08	14,07	15,72
7000	16,02	17,05	14,03	15,07
7500	16,07	18,05	14,07	16,06
8000	16,07	18,05	15,07	16,39
8500	15,03	17,04	16,04	16,03
9000	15,02	15,08	14,06	14,72
9500	14,01	11,06	13,08	12,71
10000	12,05	13,02	12,07	12,38



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6
 Displacement Correction
 Correction Factor: ISO 1585
 NOTE: Load Cell Included.

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mb ar)	Date/Time
VELOCITY SUDUT 8 DERAJAT	17.2 (17.2) / 7822	19.01 (19.01) / 6086	139.2	0.0	0	0.0	12/23/2022 10:3 2:15 AM



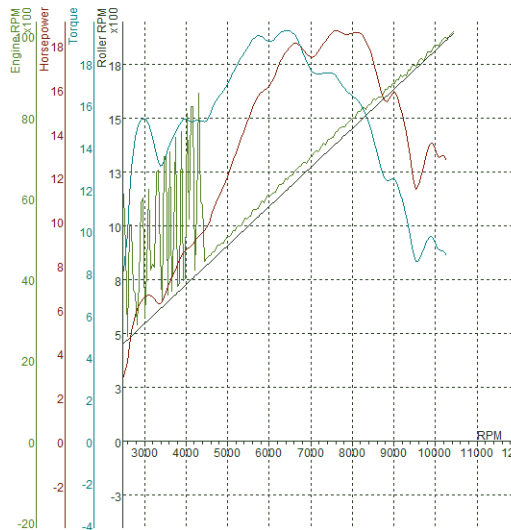
DATA FOR TEST: VELOCITY SUDUT 8 DERAJAT

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Val)
2500	5.9	16.70	1.70
3000	7.2	17.02	2.28
3500	8.3	16.89	2.92
4000	9.0	16.08	3.56
4500	10.5	16.62	4.22
5000	12.7	18.14	4.82
5500	14.5	18.69	5.40
6000	16.0	18.93	5.96
6086	16.3	19.01	6.06
6500	16.2	17.72	6.56
7000	16.2	16.41	7.18
7500	16.7	15.81	7.84
7822	17.2	15.64	8.26
8000	16.7	14.83	8.54
8500	15.3	12.80	9.30
9000	15.2	11.98	10.18
9500	14.1	10.59	11.10
10000	12.5	8.85	12.22
WHEEL 17.2 HP 19.0 N*M			
LOSSES 0.0 HP 0.0 N*M			
TOTAL ENGINE: 17.2 HP 19.01 N*M			



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6
 Displacement Correction
 Correction Factor: ISO 1585
 NOTE: Load Cell Included.

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mb ar)	Date/Time
VELOCITY SUDUT 8 DERAJAT 2	18.7 (18.7) / 7640	19.55 (19.55) / 6419	140.0	0.0	0	0.0	12/23/2022 10:3 6:05 AM



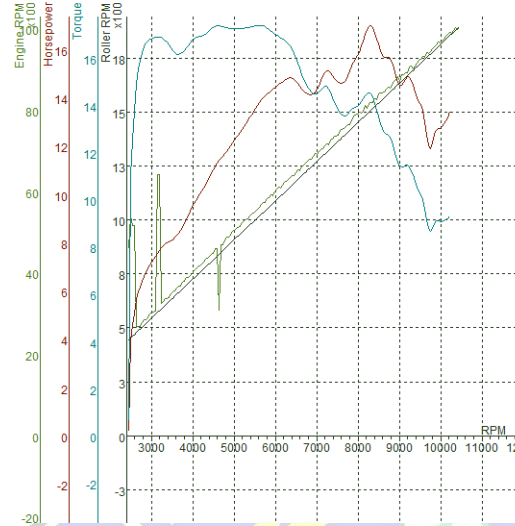
DATA FOR TEST: VELOCITY SUDUT 8 DERAJAT 2

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Val)
2500	2.8	7.77	1.02
3000	6.5	15.35	1.80
3500	6.6	13.38	2.56
4000	8.6	15.33	3.30
4500	9.6	15.23	3.98
5000	11.9	16.95	4.66
5500	14.5	18.69	5.24
6000	16.1	19.05	5.80
6419	17.6	19.55	6.26
6500	17.8	19.54	6.34
7000	17.5	17.74	6.92
7500	18.5	17.54	7.52
7640	18.7	17.37	7.70
8000	18.5	16.46	8.16
8500	17.4	14.53	8.84
9000	15.8	12.51	9.66
9500	11.6	8.69	10.64
10000	13.2	9.41	11.82
WHEEL 18.7 HP 19.6 N*M			
LOSSES 0.0 HP 0.0 N*M			
TOTAL ENGINE: 18.7 HP 19.55 N*M			



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6
 Displacement Correction
 Correction Factor: ISO 1585
 NOTE: Load Cell Included.

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mb ap)	Date/Time
VELOCITY SUDUT 8 DERAJAT 3	17.0 (17.0), 8321	17.38 (17.38), 8632	139.7	0.0	0	0.0	12/23/2022 10:37:24 AM



DATA FOR TEST: VELOCITY SUDUT 8 DERAJAT 3

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Val)
2500	3.7	10.44	1.28
3000	7.1	16.81	1.92
3500	8.1	16.44	2.54
4000	9.5	16.75	3.22
4500	11.0	17.28	3.84
5000	12.2	17.26	4.46
5500	13.5	17.36	5.08
6000	13.8	17.38	5.22
6500	14.4	17.05	5.68
7000	14.7	16.09	6.32
7500	14.3	14.49	7.04
8000	14.7	13.90	7.78
8500	15.7	13.94	8.54
8321	17.0	14.52	9.02
9000	16.4	13.72	9.26
9500	14.6	11.51	10.14
10000	13.8	10.31	11.10
10500	12.7	9.06	12.26

WHEEL: 17.0 HP, 17.4 N*M
 LOSSES: 0.0 HP, 0.0 N*M
 TOTAL ENGINE: 17.0 HP, 17.38 N*M



Tabel Data torsi variasi *Velocity stack intake 12°*

RPM	TES 1	TES 2	TES 3	Rata- rata
3000	17,29	17,31	17,32	17,30
3500	17,49	17,51	17,70	17,56
4000	17,92	17,84	17,72	17,82
4500	18,59	18,56	17,07	18,07
5000	15,60	17,03	15,81	16,14
5500	14,57	14,87	16,05	15,17
6000	17,51	18,49	19,98	18,66
6500	18,64	19,13	20,52	19,43
7000	18,89	19,59	20,15	19,54
7500	17,47	18,46	18,68	18,20
8000	15,28	16,66	16,80	16,24
8500	15,64	16,00	16,56	16,06
9000	13,84	14,73	14,84	14,47
9500	10,86	11,19	11,67	11,24
10000	9,92	10,61	10,57	10,36

Tabel data daya *velocity* dengan variasi sudut dinding 12°

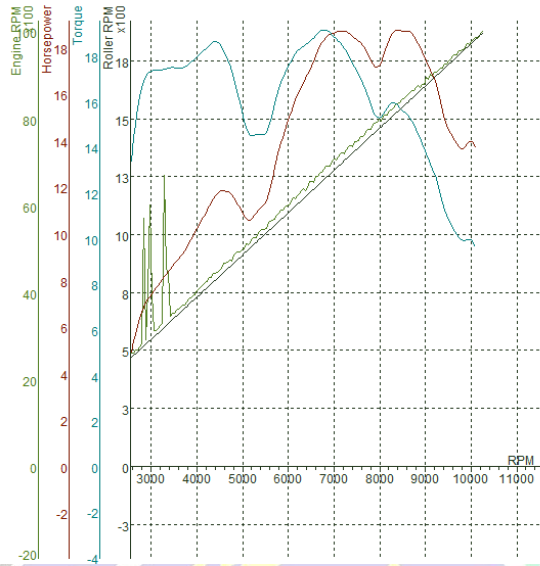
RPM	TES 1	TES 2	TES 3	Rata- rata
3000	7,03	7,03	7,03	7,03
3500	8,06	8,06	8,07	8,06
4000	10,01	10,01	10,00	10,00
4500	11,08	11,08	10,08	10,74
5000	11,00	12,00	11,01	11,33
5500	11,03	11,05	12,04	11,37
6000	14,08	15,06	16,07	15,07
6500	17,01	17,05	18,08	17,38
7000	18,06	19,03	19,08	18,72
7500	18,04	19,05	19,07	18,72
8000	17,02	18,07	19,09	18,06
8500	18,07	19,09	19,08	18,74
9000	17,05	18,06	18,08	17,73
9500	14,05	14,09	15,06	14,04
10000	14,00	14,09	14,09	14,06



SPORIDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mb ar)	Date/Time
VELOCITY SUDUT DINDING 12 DERAJAT	18.7 (18.7) / 8400	19.13 (19.13) / 6791	138.3	0.0	0	0.0	12/23/2022 10:4 7:52 AM



DATA FOR TEST: VELOCITY SUDUT DINDING 12 DERAJAT

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
3000	7.3	17.29	1.56
3500	8.6	17.49	2.20
4000	10.1	17.92	2.80
4500	11.8	18.59	3.38
5000	11.0	15.60	4.00
5500	11.3	14.57	4.74
6000	14.8	17.51	5.44
6500	17.1	18.64	6.02
6791	18.3	19.13	6.34
7000	18.6	18.89	6.58
7500	18.4	17.43	7.16
8000	17.2	15.28	7.84
8400	18.7	15.87	8.38
8500	18.7	15.64	8.52
9000	17.5	13.84	9.26
9500	14.5	10.86	10.12
10000	14.0	9.92	11.20

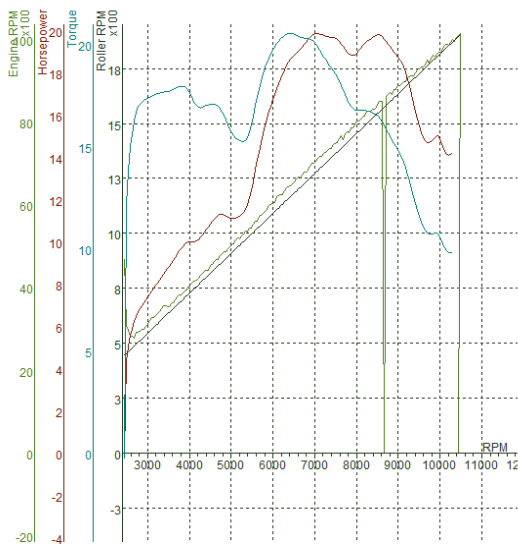
WHEEL: 18.7 HP 19.1 N*M
 LOSSES: 0.0 HP 0.0 N*M
 TOTAL ENGINE: 18.7 HP 19.13 N*M



SPORIDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mb ar)	Date/Time
VELOCITY SUDUT DINDING 12 DERAJAT 3	19.9 (19.9) / 7076	20.54 (20.54) / 6457	140.4	0.0	0	0.0	12/23/2022 10:4 8:46 AM



DATA FOR TEST: VELOCITY SUDUT DINDING 12 DERAJAT 3

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Volt)
2500	4.4	12.16	1.32
3000	7.3	17.32	1.90
3500	8.7	17.70	2.52
4000	10.0	17.72	3.12
4500	10.8	17.07	3.76
5000	11.1	15.81	4.38
5500	12.4	16.06	5.08
6000	16.7	19.68	5.68
6457	18.6	20.54	6.14
6500	18.8	20.52	6.20
7000	19.8	20.15	6.72
7076	19.9	20.02	6.78
7500	19.7	18.68	7.26
8000	18.9	16.80	7.88
8500	19.8	16.56	8.52
9000	18.8	14.84	9.20
9500	15.6	11.67	10.00
10000	14.9	10.57	11.00
10500	0.0	0.00	12.08

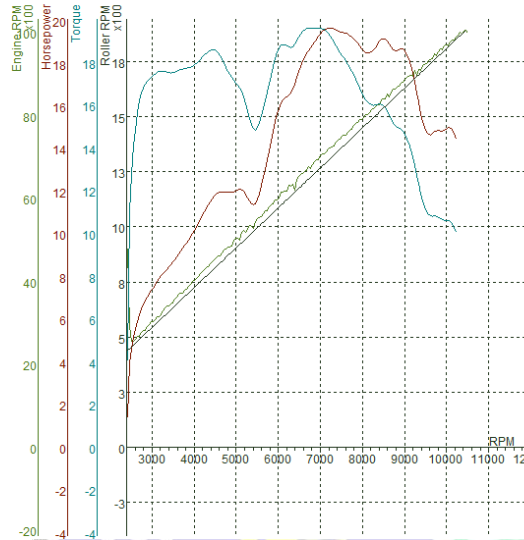
WHEEL: 19.9 HP 20.5 N*M
 LOSSES: 0.0 HP 0.0 N*M
 TOTAL ENGINE: 19.9 HP 20.54 N*M



SPORTDYNO-Ver date: 16-AUG-2017 (3.8.44)
 DYNAMOMETER: SD_325
 ROLLER INERTIA: 6

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

Name	HP/rpm	N*M/rpm	KMH	Temp. (°C)	Humidity (%)	Pressure (mb sea)	Date/Time
VELOCITY SUDUT DINDING 12 DERAJAT 2	19.6 (19.6) / 7234	19.59 (19.59) / 7016	139.9	0.0	0	0.0	12/23/2022 10:48:09 AM



DATA FOR TEST: VELOCITY SUDUT DINDING 12 DERAJAT 2

RPM	HP (HP)	TQ (N*M)	LAMBDA 2 (Vol)
2500	4.2	11.62	1.20
3000	7.3	17.31	1.82
3500	8.6	17.51	2.42
4000	10.1	17.84	3.02
4500	11.8	18.56	3.60
5000	12.0	17.03	4.20
5500	11.5	14.87	4.86
6000	15.6	18.49	5.52
6500	17.5	19.13	6.08
7000	19.3	19.59	6.62
7016	19.3	19.59	6.62
7234	19.6	19.52	6.86
7500	19.5	18.46	7.16
8000	18.7	16.66	7.76
8500	19.1	16.00	8.44
9000	18.6	14.73	9.12
9500	14.9	11.19	9.94
10000	14.9	10.61	10.94
10500	0.0	0.00	12.02
WHEEL LOSSES		19.6 HP	19.6 N*M
LOSSES		0.0 HP	0.0 N*M
TOTAL ENGINE:		19.6 HP	19.59 N*M



