

# LAMPIRAN

**Lampiran 1.**

Hasil Pengujian Torsi					
rpm	Celah 0,6 mm	Celah 0,7 mm	Celah 0,8 mm	Celah 0,9 mm	Celah 1,0 mm
3500	8,02	8,82	8,51	8,73	8,10
3750	10,16	10,32	9,62	9,92	9,48
3992					12,57
4000	11,77	11,58	11,32	11,72	12,31
4060					12,41
4064					12,57
4117					12,30
4250	12,07	11,95	11,94	12,29	12,15
4290			12,73		
4306				12,53	
4349				12,66	
4417		11,97			
4439	12,27				
4444		12,47			
4454					12,11
4457	11,97				
4460				12,34	
4482		12,23			
4499	12,14				
4500	12,01	12,10	12,10	12,37	12,02
4516				12,22	
4528	12,62				
4542		12,07			
4546				12,33	
4551	12,23				
4564			12,12		
4570			12,00		
4584			11,96		
4629		11,85			
4641			12,04		
4750	11,96	11,93	11,98	12,05	11,72
4808				12,00	
4938					11,55
4962					11,55
5000	11,51	11,51	11,57	11,52	11,29
5023					11,32

5099			11,54		
5117	11,59				
5224					10,88
5250	10,99	11,00	11,08	11,00	10,76
5265				11,05	
5353				10,92	
5379		10,90			
5433				10,72	
5457	10,65				
5479			10,75		
5485	10,66				
5500	10,52	10,57	10,61	10,44	10,27
5502	10,46				
5507					10,23
5529		10,50			
5538	10,34				
5539			10,55		
5546		10,53			
5553		10,47			
5600		10,44			
5607			10,41		
5662			10,33		
5701				10,22	
5750	9,95	9,98	10,08	9,99	9,74
6000	9,30	9,28	9,46	9,39	9,15
6250	8,78	8,79	8,91	8,79	8,64
6500	8,34	8,38	8,42	8,32	8,15
6750	7,87	7,88	8,05	7,87	7,65
7000	7,22	7,22	7,38	7,28	7,12
7250	6,77	6,79	6,86	6,75	6,60
7500	6,54	6,56	6,71	6,51	6,33
7750	6,28	6,32	6,45	6,32	6,13
8000	6,01	6,03	6,11	5,98	5,78
8250	5,69	5,65	5,77	5,66	5,48
8500	5,39	5,37	5,45	5,31	5,19
8750	5,05	5,03	5,12	4,98	4,84
9000	4,73	4,68	4,78	4,64	4,53
9250	4,35	4,29	4,39	4,25	4,14

Hasil Pengujian Torsi, (Lanjutan)

**Lampiran 2.**

Hasil Pengujian Daya					
rpm	Celah 0,6 mm	Celah 0,7 mm	Celah 0,8 mm	Celah 0,9 mm	Celah 1,0 mm
3500	4,1	4,62	4,3	4,48	4,2
3750	5,34	5,48	5,12	5,22	4,98
3992					7
4000	6,6	6,52	6,36	6,56	6,94
4060					7
4064					7,1
4117					7,1
4250	7,18	7,14	7,12	7,34	7,24
4290			7,6		
4306				7,5	
4349				7,7	
4417		7,4			
4439	7,4				
4444		7,7			
4454					7,5
4457	7,5				
4460				7,7	
4482		7,7			
4499	7,6				
4500	7,7	7,62	7,66	7,82	7,6
4516				7,7	
4528	8				
4542		7,7			
4546				7,8	
4551	7,8				
4564			7,7		
4570			7,7		
4584			7,7		
4629		7,7			
4641			7,8		
4750	7,98	7,94	7,98	8,06	7,82
4808				8,1	
4938					8
4962					8
5000	8,1	8,08	8,12	8,1	7,94
5023					8

5099			8,3		
5117	8,3				
5224					8
5250	8,1	8,14	8,18	8,12	7,94
5265				8,2	
5353				8,2	
5379		8,2			
5433				8,2	
5457	8,2				
5479			8,3		
5485	8,2				
5500	8,14	8,2	8,22	8,06	7,96
5502	8,1				
5507					7,9
5529		8,2			
5538	8				
5539			8,2		
5546		8,2			
5553		8,2			
5600		8,2			
5607			8,2		
5662			8,2		
5701				8,2	
5750	8,06	8,1	8,16	8,1	7,92
6000	7,88	7,86	8,02	7,96	7,76
6250	7,76	7,74	7,86	7,76	7,6
6500	7,68	7,72	7,76	7,64	7,5
6750	7,54	7,5	7,7	7,5	7,32
7000	7,14	7,14	7,3	7,2	7,04
7250	6,92	6,96	7,04	6,92	6,78
7500	6,94	6,94	7,12	6,9	6,72
7750	6,88	6,94	7,08	6,92	6,72
8000	6,8	6,84	6,9	6,76	6,56
8250	6,62	6,6	6,74	6,62	6,4
8500	6,5	6,46	6,56	6,38	6,26
8750	6,24	6,22	6,36	6,16	6,02
9000	6	5,96	6,1	5,92	5,78
9250	5,7	5,6	5,78	5,58	5,42

Hasil Pengujian Daya, (Lanjutan)

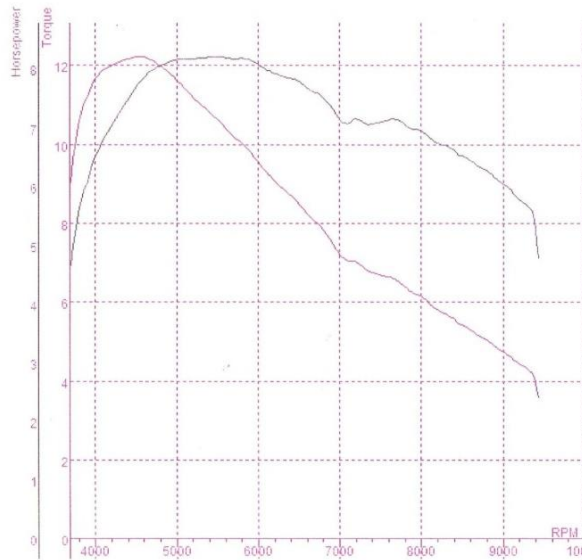
### Lampiran 3. CELAH BUSI 0,6 mm



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
BEAT 110 T035	8.2 (11.2) / 5485	12.23 (12.23) / 4551	31.1 °C	48 %	1000.0 mbar	89.5	20/05/2017 10:40:24



DATA FOR TEST: BEAT 110 T035

Comments  
CELAH BUSI 0.6 (NGK STD)

RPM	HP (H/PQ (N*M*M))	T
3500	5.0	9.61
3750	5.3	10.09
4000	6.6	11.73
4250	7.2	12.06
4500	7.7	12.23
4551	7.8	12.23
4750	8.0	12.02
5000	8.2	11.59
5250	8.2	11.08
5485	8.2	10.66
5500	8.2	10.60
5750	8.2	10.11
6000	8.1	9.49
6250	7.9	8.94
6500	7.8	8.46
6750	7.6	7.91
7000	7.1	7.18
7250	7.1	6.94
7500	7.1	6.68
7750	7.1	6.47
8000	6.9	6.14
8250	6.7	5.75
8500	6.5	5.43
8750	6.3	5.08
9000	6.0	4.73
9250	5.7	4.36

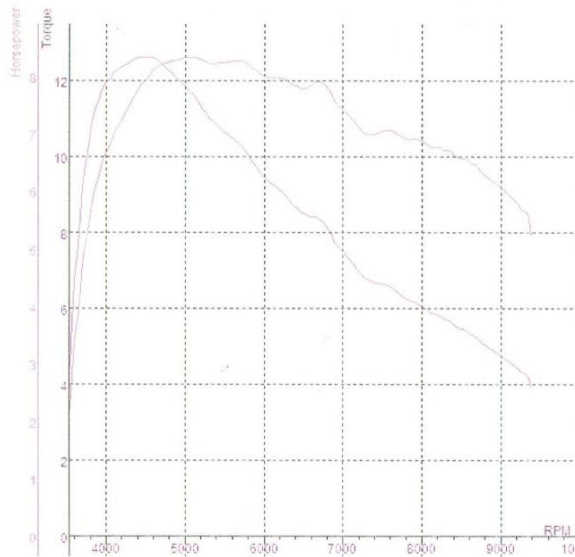
LOSSES: 0.0 HP 0.0N\*M\*M  
TOTAL ENGINE: 8.2HP 12.23N\*M\*M



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
BEAT 110 T053	8.3 (11.2) / 4528	12.23 (12.23) / 4528	32.2 °C	42 %	1000.0 mbar	89.1	20/05/2017 11:34:27



DATA FOR TEST: BEAT 110 T053

Comments  
CELAH BUSI 0.6 (NGK STD)

RPM	HP (H/PQ (N*M*M))	T
3500	2.8	5.66
3750	3.4	10.28
4000	6.7	11.94
4250	7.4	12.46
4500	8.0	12.62
4528	8.0	12.62
4750	8.2	12.31
5000	8.3	11.80
5117	8.3	11.59
5250	8.2	11.16
5500	8.2	10.62
5750	8.2	10.10
6000	8.0	9.45
6250	7.9	8.98
6500	7.8	8.47
6750	7.9	8.23
7000	7.4	7.49
7250	7.0	6.84
7500	7.0	6.64
7750	6.9	6.31
8000	6.9	6.06
8250	6.7	5.76
8500	6.6	5.45
8750	6.3	5.10
9000	6.0	4.74
9250	5.7	4.35

LOSSES: 0.0 HP 0.0N\*M\*M  
TOTAL ENGINE: 8.3HP 12.62N\*M\*M

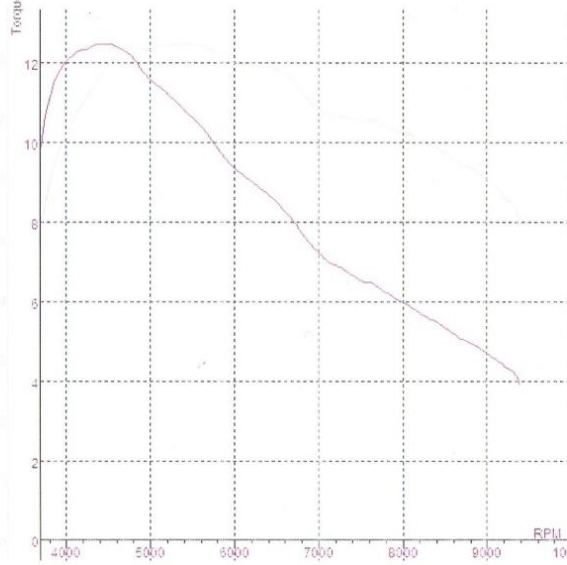
# Lampiran 4. CELAH 0,7 mm



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
BEAT 110 T022		12.17 (12.47) 11.11	30.2 °C	51 %	1000.0 mbar	89.2	20/05/2017 10:18:48



DATA FOR TEST: BEAT 110 T022

Comments

CELAH BUSI 0.7 (NGK STD)

RPM	HP (HP/Q)	N*M*M	T
3500	5.4	10.30	0.52
3750	5.6	10.66	0.54
4000	6.8	12.10	0.70
4250	7.4	12.36	0.84
4444	7.7	12.47	0.94
4500	7.8	12.46	0.98
4750	8.1	12.19	1.14
5000	8.1	11.57	1.30
5250	8.2	11.08	1.48
5500	8.2	10.58	1.66
5546	8.2	10.53	1.68
5750	8.1	9.98	1.84
6000	7.9	9.32	2.04
6250	7.9	8.89	2.26
6500	7.8	8.45	2.48
6750	7.5	7.81	2.72
7000	7.1	7.19	2.98
7250	7.0	6.85	3.24
7500	6.9	6.51	3.52
7750	6.9	6.27	3.82
8000	6.8	5.97	4.12
8250	6.6	5.63	4.46
8500	6.4	5.33	4.80
8750	6.2	5.00	5.18
9000	6.0	4.67	5.58
9250	5.6	4.29	6.02

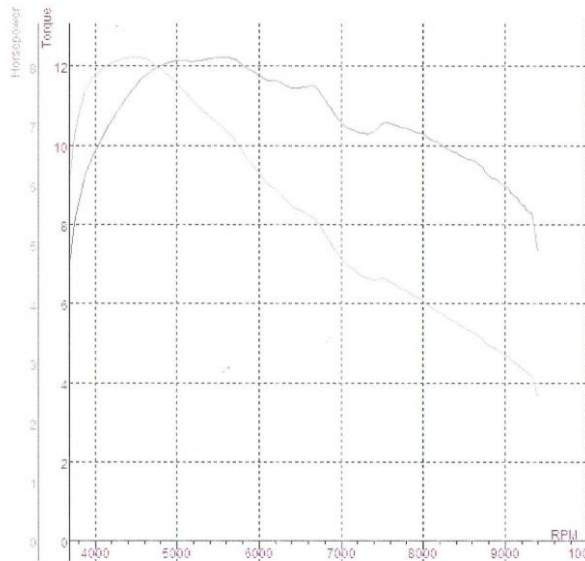
LOSSES: 0.0 HP 0.0N\*M\*M  
TOTAL ENGINE: 8.2HP 12.47N\*M\*M



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
BEAT 110 T023			30.2 °C	51 %	1000.0 mbar	89.2	20/05/2017 10:19:04



DATA FOR TEST: BEAT 110 T023

Comments

CELAH BUSI 0.7 (NGK STD)

RPM	HP (HP/Q)	N*M*M	T
3500	5.1	9.79	0.52
3750	5.4	10.24	0.54
4000	6.6	11.80	0.70
4250	7.2	12.10	0.84
4482	7.7	12.23	0.98
4500	7.7	12.22	1.00
4750	8.0	11.96	1.16
5000	8.1	11.52	1.32
5250	8.1	10.94	1.50
5500	8.2	10.55	1.66
5529	8.2	10.50	1.68
5750	8.1	9.95	1.86
6000	7.8	9.26	2.06
6250	7.7	8.76	2.28
6500	7.7	8.33	2.50
6750	7.5	7.88	2.74
7000	7.0	7.10	3.00
7250	6.9	6.71	3.26
7500	7.0	6.64	3.54
7750	7.0	6.36	3.84
8000	6.9	6.07	4.14
8250	6.7	5.70	4.46
8500	6.5	5.36	4.82
8750	6.2	5.01	5.20
9000	6.0	4.69	5.60
9250	5.6	4.28	6.04

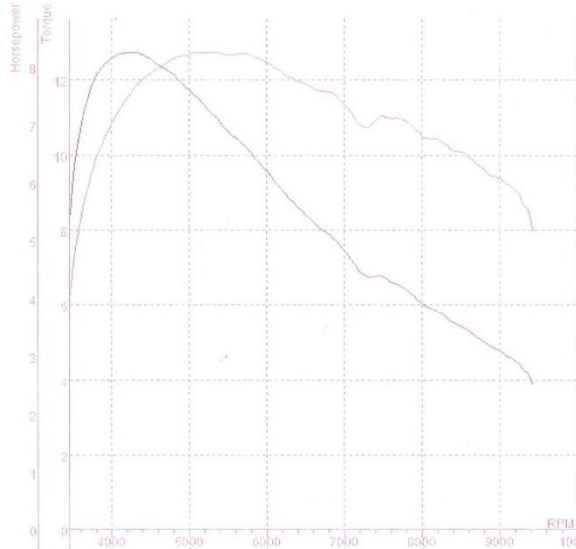
LOSSES: 0.0 HP 0.0N\*M\*M  
TOTAL ENGINE: 8.2HP 12.23N\*M\*M

# Lampiran 5. CELAH 0,8 mm



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
BEAT 110 T018	8.23 (8.23) / 4599	12.73 (12.73) / 4380	29.8 °C	57 %	1000.0 mbar	89.0	20/05/2017 10:11:34

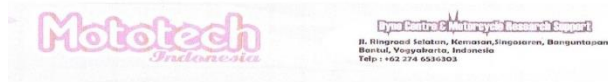


DATA FOR TEST: BEAT 110 T018

Comments  
CELAH BUSI 0.8 (NGK STD)

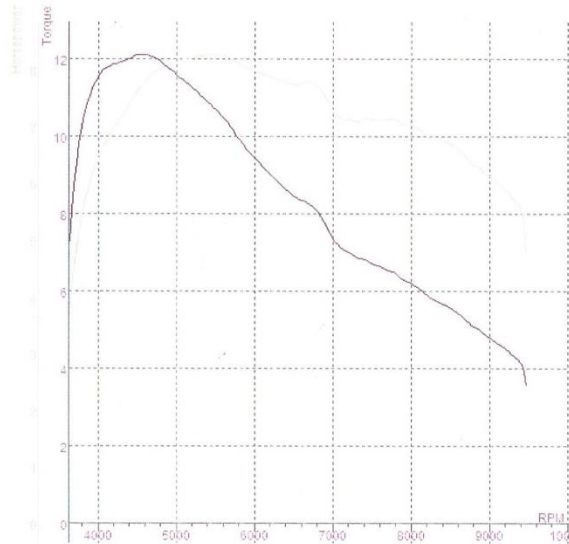
RPM	HP (HP/Q)	(N°M°M)	T
3250	4.4	9.12	0.52
3500	4.8	9.72	0.54
3750	6.3	11.97	0.68
4000	7.1	12.60	0.82
4250	7.6	12.73	0.96
4290	7.6	12.73	0.98
4500	7.9	12.51	1.12
4750	8.1	12.19	1.26
5000	8.2	11.70	1.42
5099	8.3	11.54	1.48
5250	8.2	11.13	1.60
5500	8.2	10.61	1.76
5750	8.2	10.16	1.94
6000	8.1	9.55	2.14
6250	7.9	8.93	2.34
6500	7.7	8.37	2.58
6750	7.6	7.95	2.80
7000	7.3	7.38	3.06
7250	7.0	6.79	3.32
7500	7.1	6.72	3.60
7750	7.1	6.45	3.88
8000	6.8	6.00	4.18
8250	6.7	5.75	4.48
8500	6.5	5.41	4.84
8750	6.3	5.06	5.20
9000	6.1	4.77	5.60
9250	5.8	4.40	6.04

LOSSES: 0.0 HP 0.0 N°M°M  
TOTAL ENGINE: 8.3 HP 12.73 N°M°M



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
BEAT 110 T020	8.33 (8.33) / 4564	12.12 (12.12) / 4564	29.8 °C	57 %	1000.0 mbar	89.1	20/05/2017 10:12:06



DATA FOR TEST: BEAT 110 T020

Comments  
CELAH BUSI 0.8 (NGK STD)

RPM	HP (HP/Q)	(N°M°M)	T
3500	4.1	8.08	0.52
3750	5.2	9.82	0.58
4000	6.4	11.53	0.72
4250	7.1	11.91	0.88
4500	7.6	12.10	1.02
4564	7.7	12.12	1.06
4750	8.0	12.00	1.18
5000	8.1	11.60	1.34
5250	8.2	11.13	1.52
5479	8.3	10.75	1.66
5500	8.3	10.69	1.68
5750	8.1	10.01	1.88
6000	8.0	9.45	2.06
6250	7.8	8.88	2.28
6500	7.8	8.46	2.48
6750	7.8	8.15	2.72
7000	7.3	7.38	2.96
7250	7.1	6.96	3.22
7500	7.1	6.71	3.50
7750	7.1	6.51	3.78
8000	7.0	6.20	4.08
8250	6.8	5.82	4.38
8500	6.7	5.56	4.72
8750	6.4	5.16	5.08
9000	6.1	4.81	5.48
9250	5.8	4.41	5.90

LOSSES: 0.0 HP 0.0 N°M°M  
TOTAL ENGINE: 8.3 HP 12.12 N°M°M



# Lampiran 6.

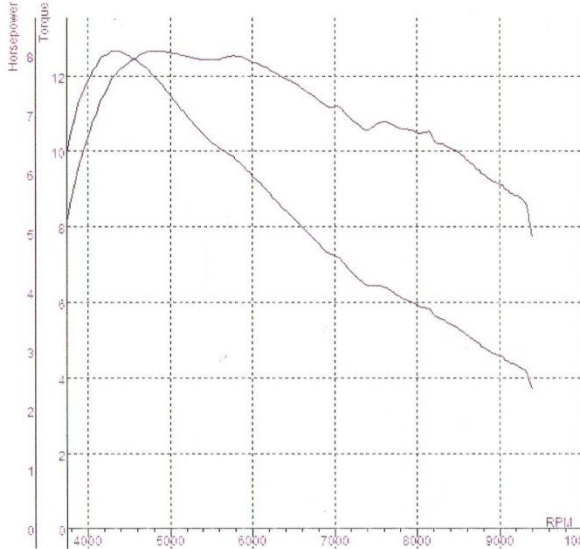
## CELAH 0,9 mm



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
BEAT 110 T008	8.1 (8.1)/4808	12.66 (12.66)/4349	29.5 °C	57 %	1000.0 mbar	88.5	20/05/2017 10:03:08



DATA FOR TEST: BEAT 110 T008

Comments  
 CELAH BUSI 0.9 (NGK STD)

RPM	HP (HP/Q (N*M/M))	T
3500	5.5	10.39
3750	5.7	10.70
4000	6.6	11.83
4250	7.5	12.57
4349	7.7	12.66
4500	7.9	12.50
4750	8.1	12.07
4808	8.1	12.00
5000	8.0	11.43
5250	8.0	10.81
5500	7.9	10.21
5750	8.0	9.86
6000	7.9	9.31
6250	7.7	8.76
6500	7.5	8.20
6750	7.3	7.64
7000	7.1	7.20
7250	6.9	6.70
7500	6.8	6.45
7750	6.8	6.20
8000	6.7	5.91
8250	6.5	5.59
8500	6.3	5.27
8750	6.1	4.90
9000	5.8	4.56
9250	5.6	4.25

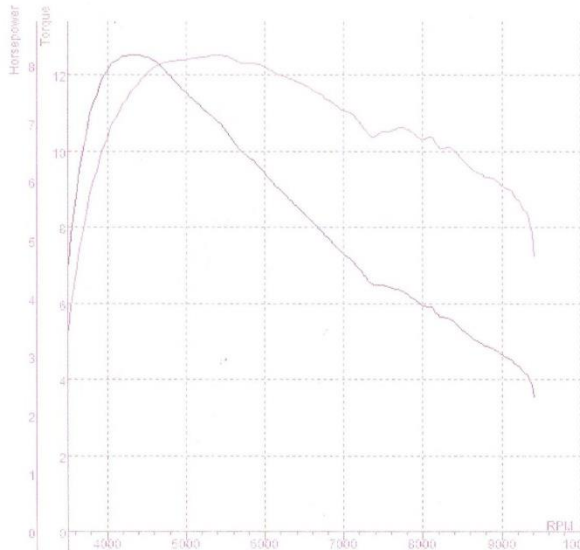
LOSSES: 0.0 HP 0.0N\*M/M  
 TOTAL ENGINE: 8.1HP 12.66N\*M/M



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
BEAT 110 T010	8.2 (8.2)/5433	12.53 (12.53)/4306	29.5 °C	57 %	1000.0 mbar	88.6	20/05/2017 10:03:38



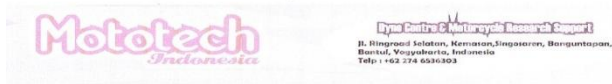
DATA FOR TEST: BEAT 110 T010

Comments  
 CELAH BUSI 0.9 (NGK STD)

RPM	HP (HP/Q (N*M/M))	T
3500	3.9	7.79
3750	5.6	10.68
4000	6.8	12.12
4250	7.5	12.52
4306	7.5	12.53
4500	7.9	13.46
4750	8.0	12.04
5000	8.1	11.51
5250	8.1	11.03
5433	8.2	10.72
5500	8.1	10.52
5750	8.0	9.88
6000	8.0	9.41
6250	7.8	8.83
6500	7.7	8.37
6750	7.4	7.78
7000	7.2	7.28
7250	6.9	6.74
7500	6.9	6.48
7750	6.9	6.32
8000	6.7	5.94
8250	6.6	5.63
8500	6.4	5.30
8750	6.1	4.94
9000	5.9	4.64
9250	5.6	4.24

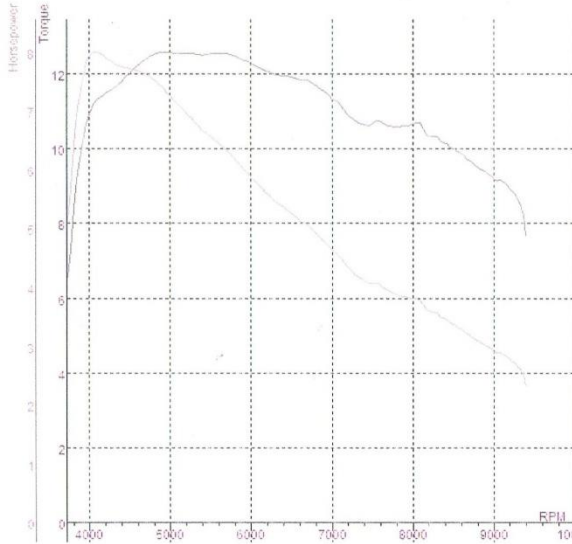
LOSSES: 0.0 HP 0.0N\*M/M  
 TOTAL ENGINE: 8.2HP 12.53N\*M/M

# Lampiran 7. CELAH 1,0 mm



SPORTDINO 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
BEAT 110 T007			29.2 °C	56 %	1000.0 mbar	88.3	20/05/2017 9:55:47



DATA FOR TEST: BEAT 110 T007

Comments

CELAH BUSI 1.0 (NGK STD)

RPM	HP (HP@Q)	(N·M·M)	T
3500	4.7	8.90	0.52
3750	5.1	9.68	0.54
4000	7.1	12.54	0.68
4064	7.1	12.57	0.70
4250	7.3	12.33	0.82
4500	7.6	12.12	0.96
4750	7.9	11.86	1.14
4938	8.0	11.55	1.24
5000	8.0	11.39	1.28
5250	8.0	10.81	1.46
5500	8.0	10.29	1.64
5750	7.9	9.78	1.84
6000	7.8	9.18	2.04
6250	7.6	8.67	2.24
6500	7.6	8.21	2.48
6750	7.5	7.83	2.70
7000	7.2	7.27	2.96
7250	6.9	6.70	3.22
7500	6.8	6.40	3.52
7750	6.7	6.13	3.80
8000	6.8	5.99	4.10
8250	6.6	5.63	4.44
8500	6.4	5.28	4.80
8750	6.1	4.90	5.18
9000	5.8	4.58	5.56
9250	5.6	4.27	6.02

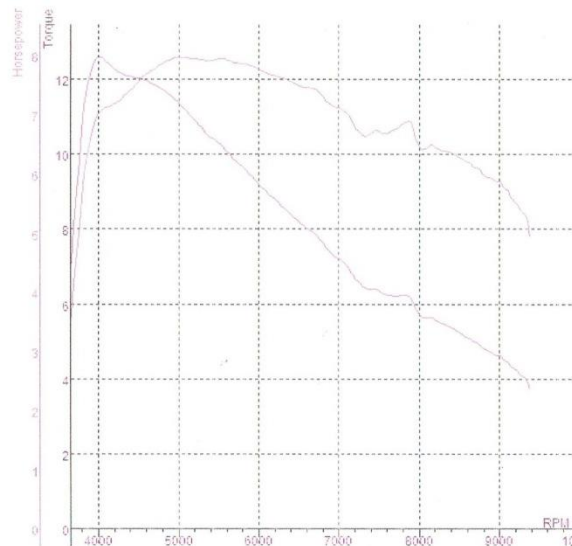
LOSSES: 0.0 HP 0.0N·M·M  
TOTAL ENGINE: 8.0HP 12.57N·M·M



SPORTDINO 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
BEAT 110 T005			29.2 °C	56 %	1000.0 mbar	88.4	20/05/2017 9:55:17



DATA FOR TEST: BEAT 110 T005

Comments

CELAH BUSI 1.0 (NGK STD)

RPM	HP (HP@Q)	(N·M·M)	T
3500	4.1	8.08	0.52
3750	5.2	9.84	0.56
3992	7.0	12.57	0.70
4000	7.1	12.56	0.72
4250	7.2	12.16	0.86
4500	7.6	12.01	1.02
4750	7.9	11.74	1.18
5000	8.0	11.32	1.34
5023	8.0	11.32	1.34
5250	7.9	10.77	1.50
5500	8.0	10.28	1.68
5750	7.9	9.71	1.88
6000	7.8	9.17	2.08
6250	7.6	8.65	2.30
6500	7.5	8.15	2.52
6750	7.4	7.71	2.76
7000	7.1	7.16	3.02
7250	6.7	6.55	3.28
7500	6.7	6.34	3.56
7750	6.8	6.22	3.88
8000	6.5	5.71	4.18
8250	6.4	5.49	4.52
8500	6.3	5.21	4.88
8750	6.1	4.91	5.26
9000	5.9	4.59	5.68
9250	5.4	4.13	6.12

LOSSES: 0.0 HP 0.0N·M·M  
TOTAL ENGINE: 8.0HP 12.57N·M·M