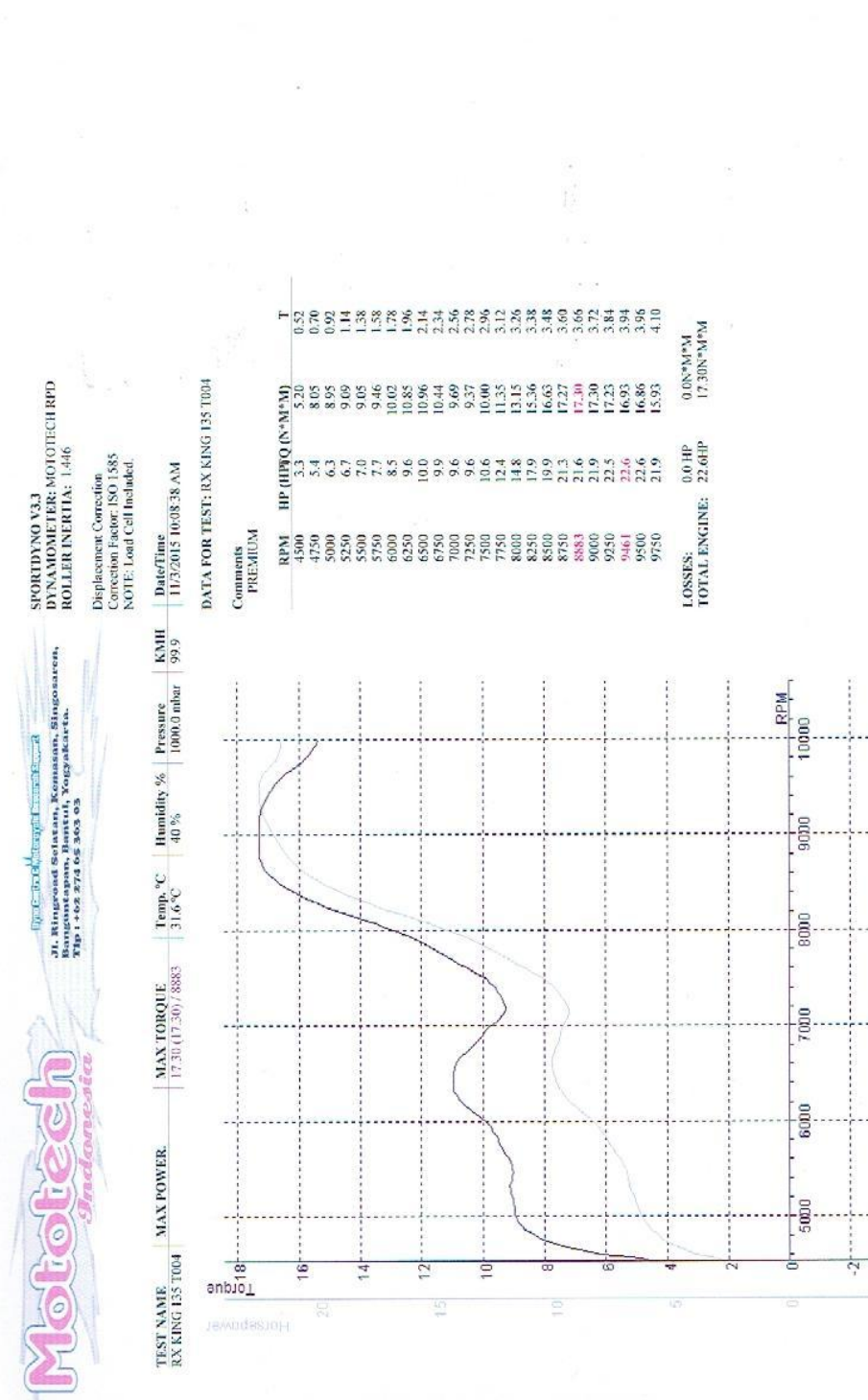
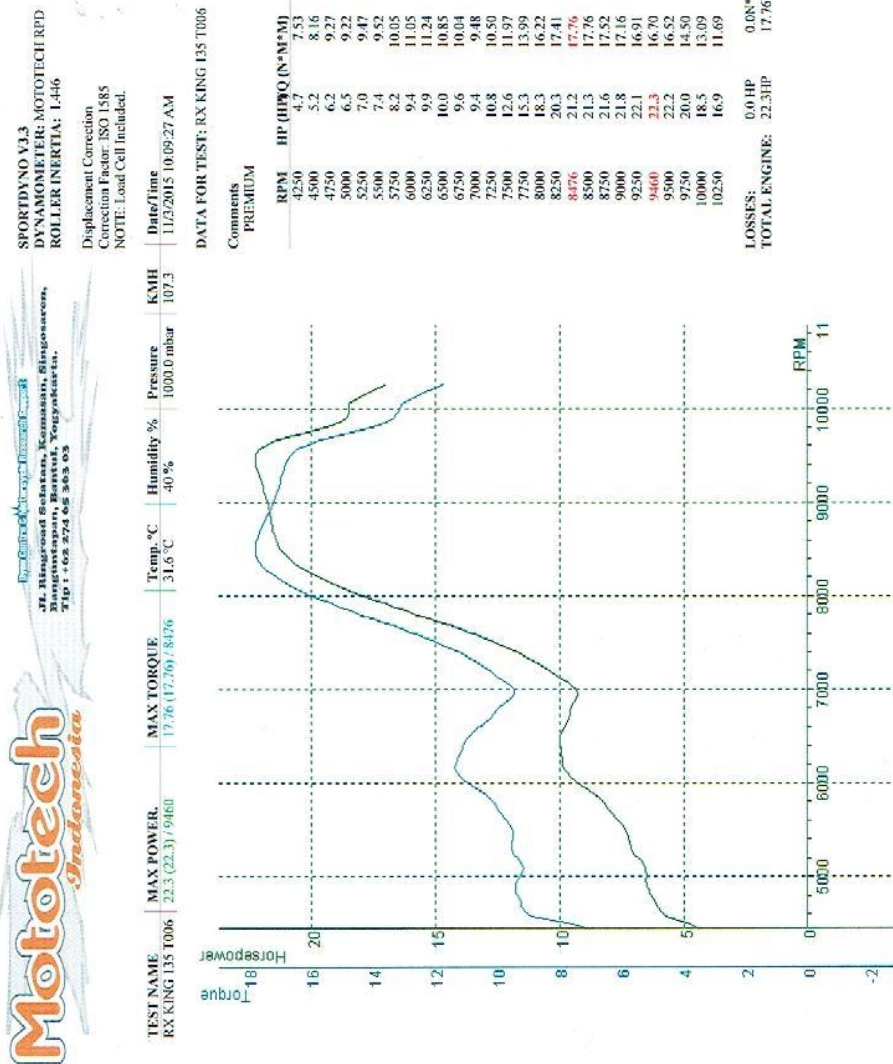


LAMPIRAN

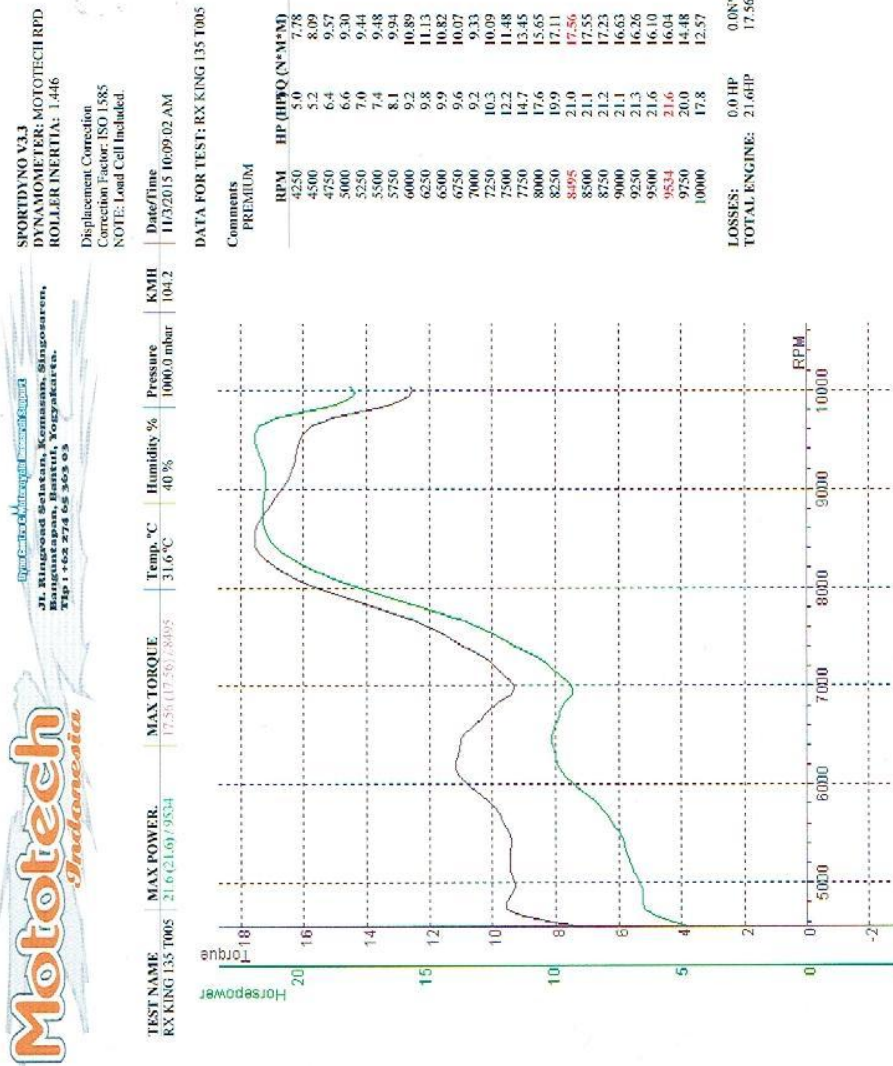
Grafik Hasil Pengujian Daya dan Torsi Penggunaan Bahan Bakar Premium, Pertalite dan Pertamina



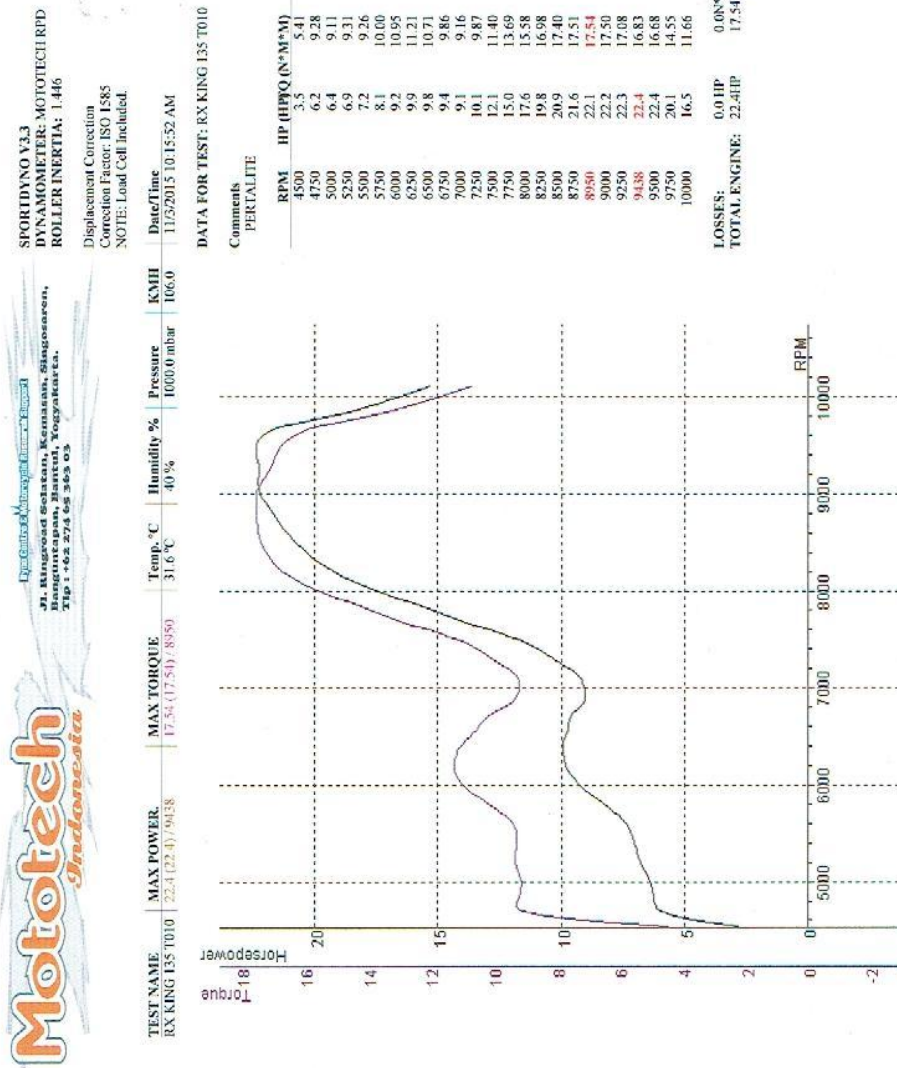
Gambar 1. Grafik torsi dan daya dengan bahan bakar premium pengujian 1



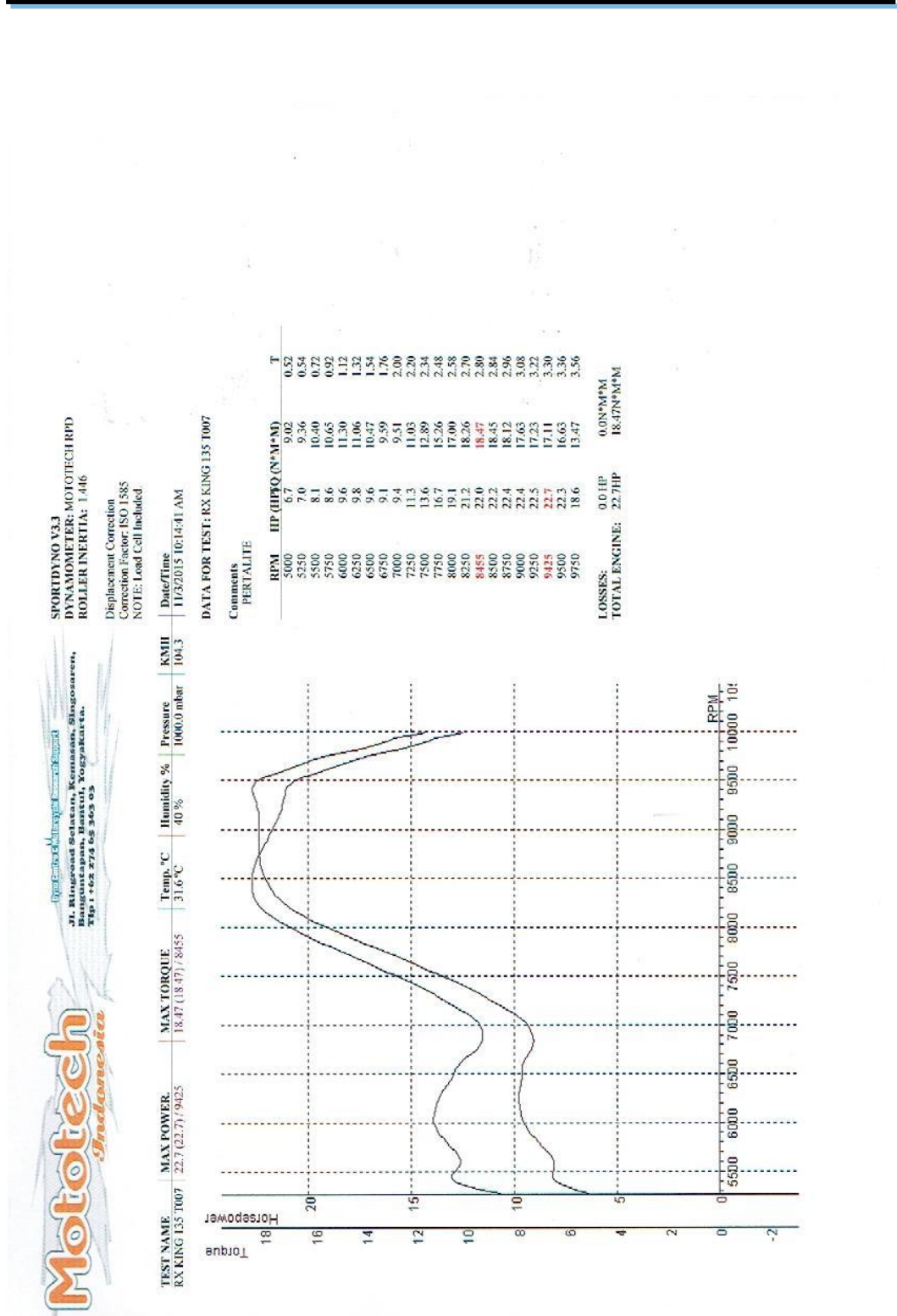
Gambar 2. Grafik torsi dan daya dengan bahan bakar premium pengujian 2



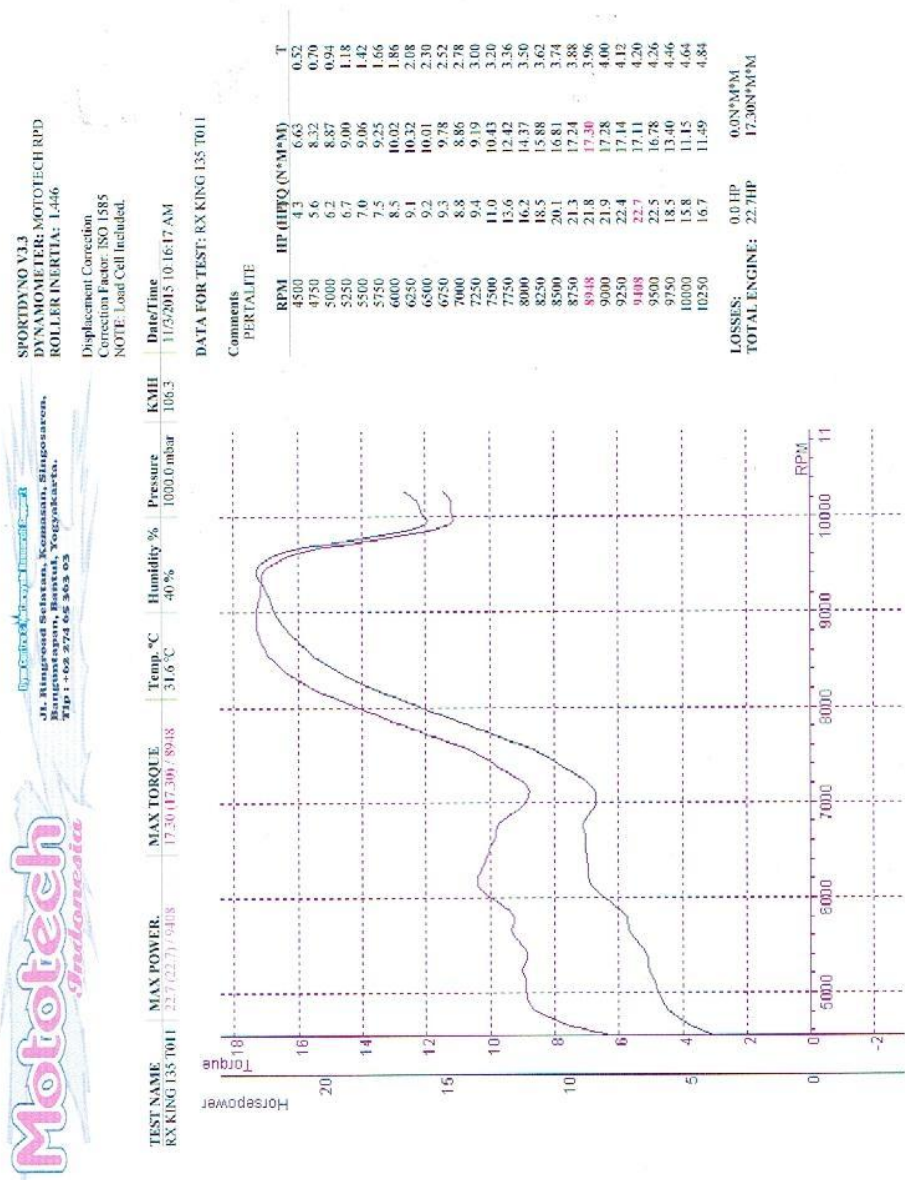
Gambar 3. Grafik torsi dan daya dengan bahan bakar premium pengujian 3



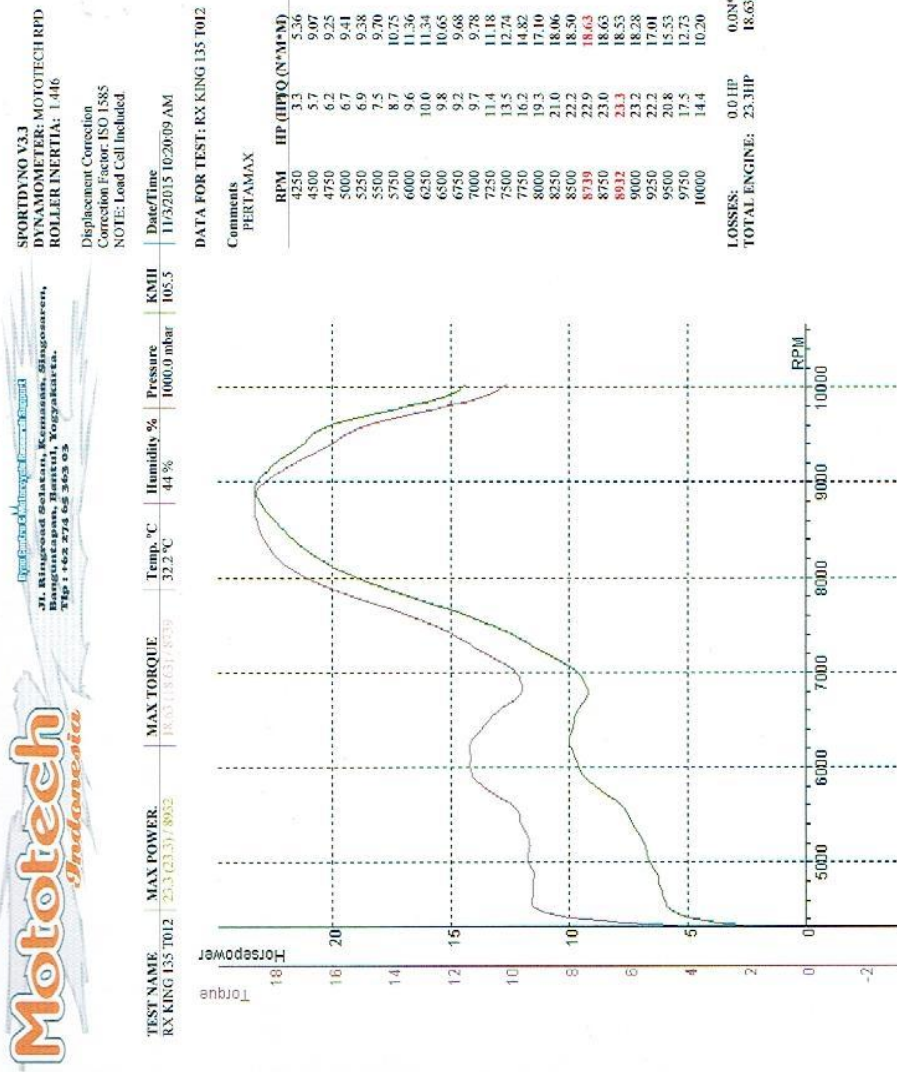
Gambar 4. Grafik torsi dan daya dengan bahan bakar pertalite pengujian 1



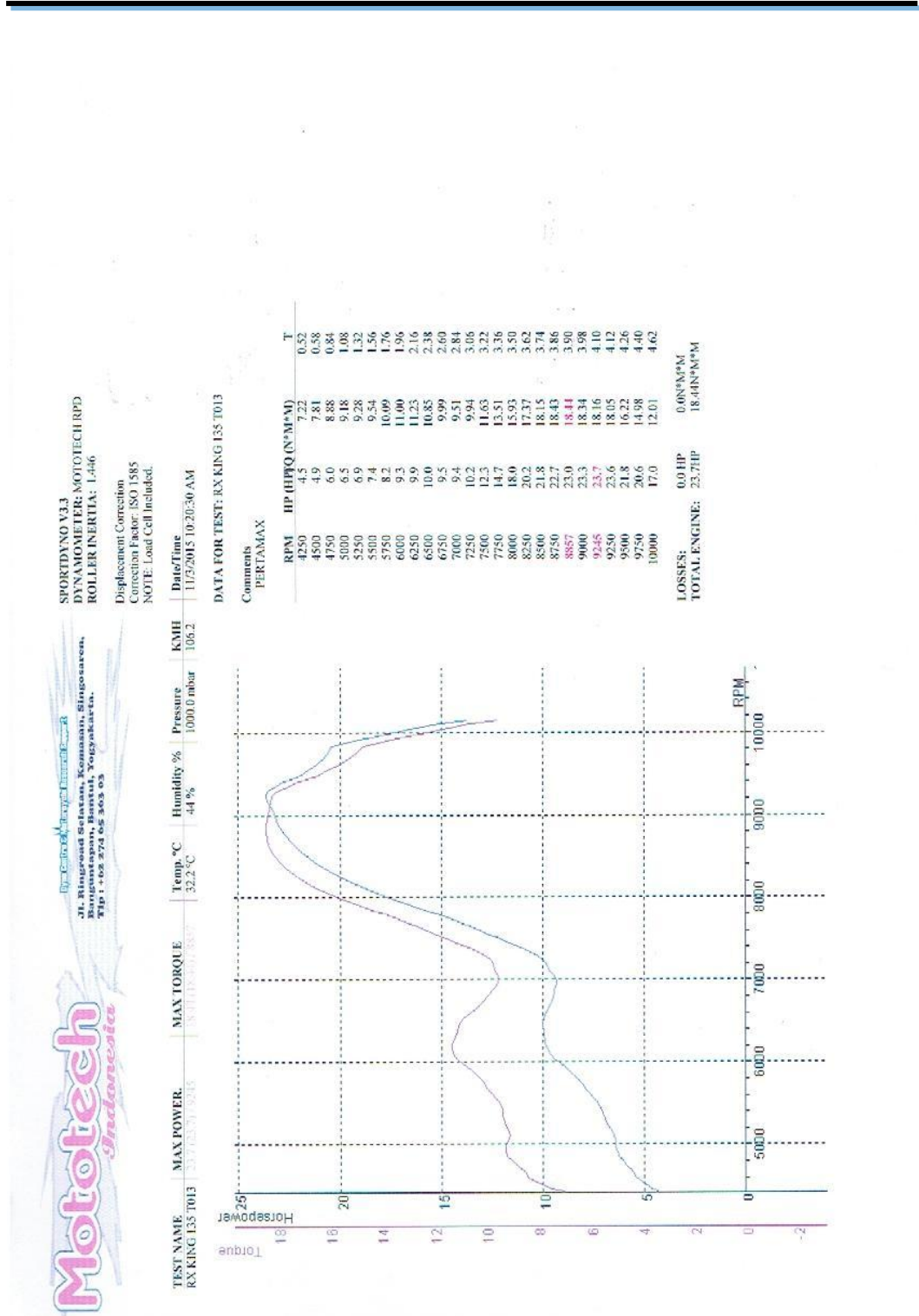
Gambar 5. Grafik torsi dan daya dengan bahan bakar pertalite pengujian 2



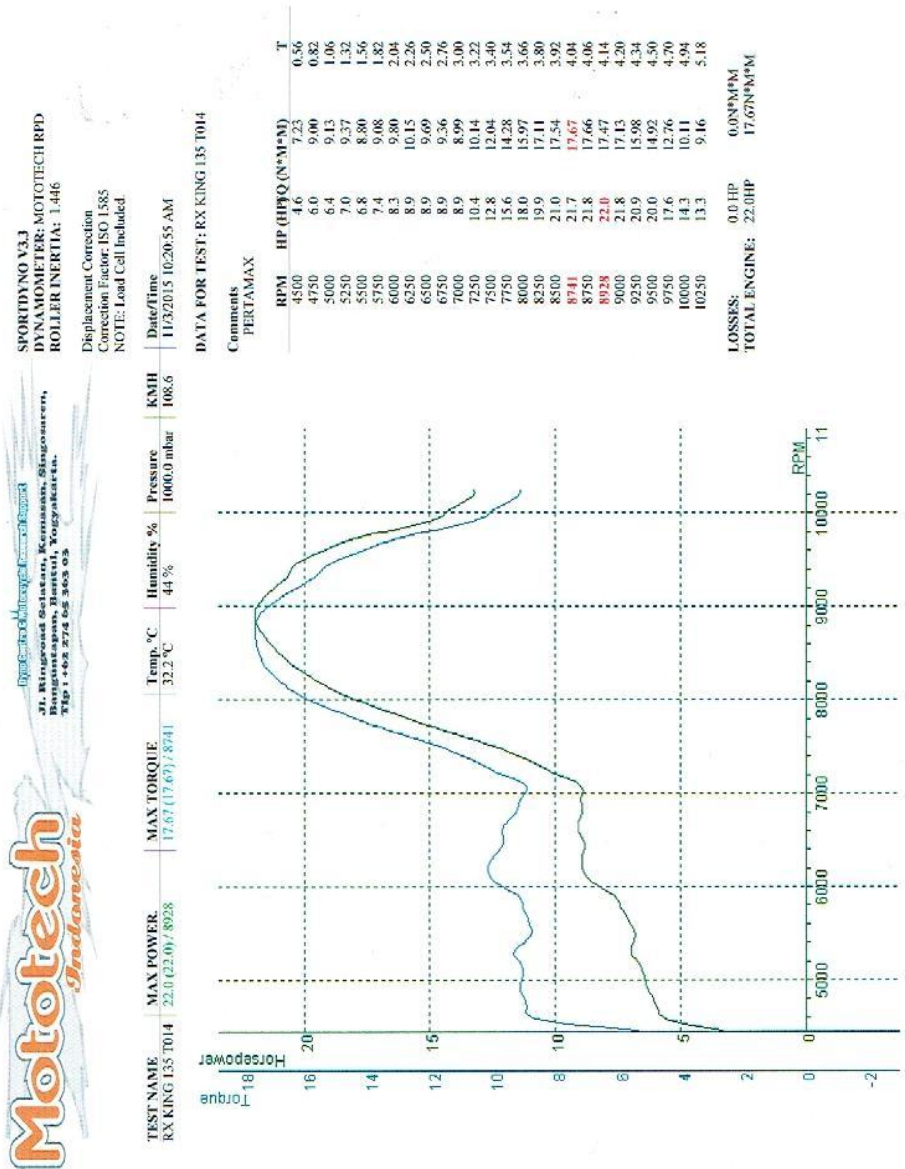
Gambar 6. Grafik torsi dan daya dengan bahan bakar pertalite pengujian 3



Gambar 7. Grafik torsi dan daya dengan bahan bakar pertamax pengujian 1



Gambar 8. Grafik torsi dan daya dengan bahan bakar pertamax pengujian 2



Gambar 9. Grafik torsi dan daya dengan bahan bakar pertamax pengujian 3

Hasil Pengujian Emisi Gas Buang Terhadap Pengaruh Penggunaan Penggunaan Pada Bahan Bakar Premium, Pertalite dan Pertamina

Parameter	Premium (4000 RPM)	Pertalite (5000 RPM)	Pertamax (6000 RPM)
RPM	4000 [1/min]	5000 [1/min]	6000 [1/min]
CO	2.936 [% vol]	3.382 [% vol]	3.779 [% vol]
CO2	2.94 [% vol]	1.94 [% vol]	2.28 [% vol]
H C	0722 [ppm vol]	9961 [ppm vol]	10417 [ppm vol]
O2	13.58 [% vol]	14.41 [% vol]	13.74 [% vol]
N O	---- [ppm vol]	---- [ppm vol]	---- [ppm vol]
CO cor	---- [% vol]	---- [% vol]	---- [% vol]
λ	1.072	1.185	1.094
TEMP.	---	---	---
ENVIRONMENT CONDITIONS	Temperature 26 [°C] Pressure 995 [hPa] Rel. Humidity 5 [%RH]	Temperature 26 [°C] Pressure 995 [hPa] Rel. Humidity 5 [%RH]	Temperature 26 [°C] Pressure 995 [hPa] Rel. Humidity 5 [%RH]
DATE:	19/12/2015	19/12/2015	19/12/2015
TIME:	19:49	19:47	19:48
CAR DATA	FUEL: GASOLINE BRAND: MODEL: LIC. PLATE: CHASSIS: Km:	FUEL: GASOLINE BRAND: MODEL: LIC. PLATE: CHASSIS: Km:	FUEL: GASOLINE BRAND: MODEL: LIC. PLATE: CHASSIS: Km:
WORKSHOP	OTOROTIF PT UNY YOGYAKARTA BB Y	OTOROTIF PT UNY YOGYAKARTA BB Y	OTOROTIF PT UNY YOGYAKARTA BB Y
EXAMINER:			

Gambar 10. Hasil pengujian emisi gas buang premium rpm 4000, 5000, dan 6000

EXHAUST GAS ANALYSIS	EXHAUST GAS ANALYSIS	EXHAUST GAS ANALYSIS
Serial no. 11111111	Serial no. 11111111	Serial no. 11111111
OTC TYPE STAR GAS 898 DINL CLASS 0 REPORT N 545/DINL/04/RM 10/07/2004	OTC TYPE STAR GAS 898 DINL CLASS 0 REPORT N 545/DINL/04/RM 10/07/2004	OTC TYPE STAR GAS 898 DINL CLASS 0 REPORT N 545/DINL/04/RM 10/07/2004
R P M 7000 [1/min]	R P M 8000 [1/min]	R P M 9000 [1/min]
CO 3.893 [% vol]	CO 2.253 [% vol]	CO 3.781 [% vol]
CO 2 2.18 [% vol]	CO 2 1.89 [% vol]	CO 2 1.84 [% vol]
H C 11390 [ppm vol]	H C 9722 [ppm vol]	H C 11250 [ppm vol]
O 2 13.77 [% vol]	O 2 16.50 [% vol]	O 2 14.28 [% vol]
N O ---- [ppm vol]	N O ---- [ppm vol]	N O ---- [ppm vol]
CO cor ---- [% vol]	CO cor ---- [% vol]	CO cor ---- [% vol]
x 1.040 E-3	x 1.450 E-3	x 1.003 E-3
TEMP. --- C° C	TEMP. --- C° C	TEMP. --- C° C
ENVIRONMENT CONDITIONS	ENVIRONMENT CONDITIONS	ENVIRONMENT CONDITIONS
Temperature 26 C° C	Temperature 26 C° C	Temperature 26 C° C
Pressure 995 [hPa]	Pressure 995 [hPa]	Pressure 995 [hPa]
Rel. Humidity 5 [%RH]	Rel. Humidity 5 [%RH]	Rel. Humidity 5 [%RH]
DATE: 19/12/2011	DATE: 19/12/2011	DATE: 19/12/2011
TIME : 19:48	TIME : 19:49	TIME : 19:50
CAR DATA	CAR DATA	CAR DATA
FUEL: GASOLINE	FUEL: GASOLINE	FUEL: GASOLINE
BRAND:	BRAND:	BRAND:
MODEL:	MODEL:	MODEL:
LIC. PLATE:	LIC. PLATE:	LIC. PLATE:
CHASSIS:	CHASSIS:	CHASSIS:
Km:	Km:	Km:
WORKSHOP	WORKSHOP	WORKSHOP
OTOMOTIF	OTOMOTIF	OTOMOTIF
FT UNY	FT UNY	FT UNY
YOGYAKARTA	YOGYAKARTA	YOGYAKARTA
BB	BB	BB
Y	Y	Y
EXAMINER :	EXAMINER :	EXAMINER :

Gambar 11. Hasil pengujian emisi gas buang premium rpm 7000, 8000, dan 9000

EXHAUST GAS ANALYSIS		EXHAUST GAS ANALYSIS		EXHAUST GAS ANALYSIS	
<i>Pertalite</i>					
Serial nr. 1711960		Serial nr. 1711960		Serial nr. 1711960	
TECNOTEST TYPE STARGAS 898 DIL. CLASS 0 REPORT N 545/DIL/04/RM 10/07/2004		TECNOTEST TYPE STARGAS 898 DIL. CLASS 0 REPORT N 545/DIL/04/RM 10/07/2004		TECNOTEST TYPE STARGAS 898 DIL. CLASS 0 REPORT N 545/DIL/04/RM 10/07/2004	
R P M	<i>4000</i> [1/min]	R P M	<i>5000</i> [1/min]	R P M	<i>6000</i> [1/min]
C O	7.846 [% vol]	C O	7.186 [% vol]	C O	7.464 [% vol]
C O 2	2.74 [% vol]	C O 2	2.60 [% vol]	C O 2	2.46 [% vol]
H C	11247 [ppm vol]	H C	9990 [ppm vol]	H C	10173 [ppm vol]
O 2	13.82 [% vol]	O 2	13.71 [% vol]	O 2	14.00 [% vol]
N O	---- [ppm vol]	N O	---- [ppm vol]	N O	---- [ppm vol]
CO cor	---- [% vol]	CO cor	---- [% vol]	CO cor	---- [% vol]
λ	0.929 [-]	λ	0.969 [-]	λ	0.987 [-]
TEMP.	--- [°C]	TEMP.	--- [°C]	TEMP.	--- [°C]
ENVIRONMENT CONDITIONS		ENVIRONMENT CONDITIONS		ENVIRONMENT CONDITIONS	
Temperature	32 [°C]	Temperature	32 [°C]	Temperature	33 [°C]
Pressure	988 [hPa]	Pressure	989 [hPa]	Pressure	988 [hPa]
Rel. Humidity	60 [%RH]	Rel. Humidity	59 [%RH]	Rel. Humidity	58 [%RH]
DATE:	19/12/2015	DATE:	19/12/2015	DATE:	19/12/2015
TIME :	13:48	TIME :	13:48	TIME :	13:49
CAR DATA		CAR DATA		CAR DATA	
FUEL:	GASOLINE	FUEL:	GASOLINE	FUEL:	GASOLINE
BRAND:		BRAND:		BRAND:	
MODEL:		MODEL:		MODEL:	
LIC. PLATE:		LIC. PLATE:		LIC. PLATE:	
CHASSIS:		CHASSIS:		CHASSIS:	
Km:		Km:		Km:	
WORKSHOP		WORKSHOP		WORKSHOP	
ROTMOTIF		ROTMOTIF		ROTMOTIF	
AFT-UNY		AFT-UNY		AFT-UNY	
VANDIKUOTO		VANDIKUOTO		VANDIKUOTO	
AA		AA		AA	
EXAMINER :		EXAMINER :		EXAMINER :	

Gambar 13. Hasil pengujian emisi gas buang pertalite rpm 4000, 5000, dan 6000

EXHAUST GAS ANALYSIS	EXHAUST GAS ANALYSIS	EXHAUST GAS ANALYSIS
Serial nr. 1711960	Serial nr. 1711960	Serial nr. 1711960
TECNOTEST TYPE STARGAS 898 OIML CLASS 0 REPORT N 545/DIPL/04/RM 10/07/2004	TECNOTEST TYPE STARGAS 898 OIML CLASS 0 REPORT N 545/DIPL/04/RM 10/07/2004	TECNOTEST TYPE STARGAS 898 OIML CLASS 0 REPORT N 545/DIPL/04/RM 10/07/2004
R P M 7000 [1/min]	R P M 8000 [1/min]	R P M 9000 [1/min]
CO 3.680 [% vol]	CO 4.089 [% vol]	CO 4.009 [% vol]
CO 2 1.99 [% vol]	CO 2 2.04 [% vol]	CO 2 1.94 [% vol]
H C 14202 [ppm vol]	H C 14525 [ppm vol]	H C 15080 [ppm vol]
O 2 14.22 [% vol]	O 2 13.37 [% vol]	O 2 14.24 [% vol]
N O ---- [ppm vol]	N O ---- [ppm vol]	N O ---- [ppm vol]
CO cor ---- [% vol]	CO cor ---- [% vol]	CO cor ---- [% vol]
x 1.051 [-]	x 0.881 [-]	x 0.962 [-]
TEMP. --- [°C]	TEMP. --- [°C]	TEMP. --- [°C]
ENVIRONMENT CONDITIONS	ENVIRONMENT CONDITIONS	ENVIRONMENT CONDITIONS
Temperature 34 [°C]	Temperature 34 [°C]	Temperature 35 [°C]
Pressure 988 [hPa]	Pressure 988 [hPa]	Pressure 988 [hPa]
Rel. Humidity 55 [%HR]	Rel. Humidity 55 [%HR]	Rel. Humidity 55 [%HR]
DATE: 19/12/2015	DATE: 19/12/2015	DATE: 19/12/2015
TIME : 13:57	TIME : 13:58	TIME : 13:59
CAR DATA	CAR DATA	CAR DATA
FUEL: GASOLINE	FUEL: GASOLINE	FUEL: GASOLINE
BRAND:	BRAND:	BRAND:
MODEL:	MODEL:	MODEL:
LIC. PLATE:	LIC. PLATE:	LIC. PLATE:
CHASSIS:	CHASSIS:	CHASSIS:
Km:	Km:	Km:
WORKSHOP	WORKSHOP	WORKSHOP
ROTMOTIF	ROTMOTIF	ROTMOTIF
AFT-UNY	AFT-UNY	AFT-UNY
VANDIKUOTO	VANDIKUOTO	VANDIKUOTO
AA	AA	AA
EXAMINER :	EXAMINER :	EXAMINER :

Gambar 14. Hasil pengujian emisi gas buang pertalite rpm 7000, 8000, dan 9000

EXHAUST GAS ANALYSIS

Serial nr. 1711960

TECNOTEST
TYPE STARAS 808
DIME CLASS 0
REPORT N.
545/DIML/04/RM
10/07/2004

R P M 10000 [1/min]
C O 3.963 [% vol]
C O 2 1.99 [% vol]
H C 13730 [ppm vol]
O 2 13.41 [% vol]
N D ---- [ppm vol]
CO cor ---- [% vol]
λ 0.859 [-]
TEMP. --- [°C]

ENVIRONMENT CONDITIONS

Temperature 35 [°C]
Pressure 989 [hPa]
Rel. Humidity 55 [%RH]
DATE: 19/12/2015
TIME: 14:00

CAR DATA

FUEL: GASOLINE
BRAND:
MODEL:
LIC. PLATE:
CHASSIS:
Km:

WORKSHOP

ROTMOTIF
AFT-UNY
VANDIKUOTO
AA

EXAMINER:

Gambar 15. Hasil pengujian emisi gas buang pertalite rpm 10000

EXHAUST GAS ANALYSIS	EXHAUST GAS ANALYSIS	EXHAUST GAS ANALYSIS
Pertamax Serial nr. 1711960	Serial nr. 1711960	Serial nr. 1711960
TECNOTEST TYPE STARGAS 898 DIL CLASS 0 REPORT N 545701AL/847RM 10/0772004	TECNOTEST TYPE STARGAS 898 DIL CLASS 0 REPORT N 545701AL/847RM 10/0772004	TECNOTEST TYPE STARGAS 898 DIL CLASS 0 REPORT N 545701AL/847RM 10/0772004
R P M 4.000 [1/min]	R P M 5.000 [1/min]	R P M 6.000 [1/min]
C O 3.675 [% vol]	C O 3.808 [% vol]	C O 3.981 [% vol]
C O 2 2.42 [% vol]	C O 2 2.26 [% vol]	C O 2 1.94 [% vol]
H C 14408 [ppm vol]	H C 15914 [ppm vol]	H C 16515 [ppm vol]
O 2 14.13 [% vol]	O 2 14.18 [% vol]	O 2 14.36 [% vol]
N O ---- [ppm vol]	N O ---- [ppm vol]	N O ---- [ppm vol]
CO cor ---- [% vol]	CO cor ---- [% vol]	CO cor ---- [% vol]
λ 0.977 [-]	λ 0.932 [-]	λ 0.878 [-]
TEMP. --- [°C]	TEMP. --- [°C]	TEMP. --- [°C]
ENVIRONMENT CONDITIONS	ENVIRONMENT CONDITIONS	ENVIRONMENT CONDITIONS
Temperature 36 [°C]	Temperature 36 [°C]	Temperature 36 [°C]
Pressure 988 [hPa]	Pressure 987 [hPa]	Pressure 988 [hPa]
Rel. Humidity 51 [%RH]	Rel. Humidity 51 [%RH]	Rel. Humidity 50 [%RH]
DATE: 19/12/2015	DATE: 19/12/2015	DATE: 19/12/2015
TIME : 14:20	TIME : 14:21	TIME : 14:22
CAR DATA	CAR DATA	CAR DATA
FUEL: GASOLINE	FUEL: GASOLINE	FUEL: GASOLINE
BRAND:	BRAND:	BRAND:
MODEL:	MODEL:	MODEL:
LIC. PLATE:	LIC. PLATE:	LIC. PLATE:
CHASSIS:	CHASSIS:	CHASSIS:
Km:	Km:	Km:
WORKSHOP	WORKSHOP	WORKSHOP
ROTMOTIF	ROTMOTIF	ROTMOTIF
AFT-UNY	AFT-UNY	AFT-UNY
VANDIKUOTO	VANDIKUOTO	VANDIKUOTO
RA	RA	RA
EXAMINER :	EXAMINER :	EXAMINER :

Gambar 16. Hasil pengujian emisi gas buang pretamax rpm 4000, 5000, dan 6000

EXHAUST GAS ANALYSIS		EXHAUST GAS ANALYSIS		EXHAUST GAS ANALYSIS	
Serial nr. 1711960		Serial nr. 1711960		Serial nr. 1711960	
TECNTEST TYPE STARGAS 898 OIL CLASS 0 REPORT N 545/OIL/04/RM 10/07/2004		TECNTEST TYPE STARGAS 898 OIL CLASS 0 REPORT N 545/OIL/04/RM 10/07/2004		TECNTEST TYPE STARGAS 898 OIL CLASS 0 REPORT N 545/OIL/04/RM 10/07/2004	
R P M	7000 [1/min]	R P M	8000 [1/min]	R P M	9000 [1/min]
C O	4.114 [% vol]	C O	3.725 [% vol]	C O	4.022 [% vol]
C O 2	1.98 [% vol]	C O 2	2.04 [% vol]	C O 2	1.83 [% vol]
H C	15710 [ppm vol]	H C	15333 [ppm vol]	H C	17288 [ppm vol]
O 2	13.97 [% vol]	O 2	13.45 [% vol]	O 2	14.37 [% vol]
N O	---- [ppm vol]	N O	---- [ppm vol]	N O	---- [ppm vol]
CO cor	---- [% vol]	CO cor	---- [% vol]	CO cor	---- [% vol]
λ	0.865 [-]	λ	0.844 [-]	λ	0.831 [-]
TEMP.	--- [°C]	TEMP.	--- [°C]	TEMP.	--- [°C]
ENVIRONMENT CONDITIONS		ENVIRONMENT CONDITIONS		ENVIRONMENT CONDITIONS	
Temperature	36 [°C]	Temperature	36 [°C]	Temperature	36 [°C]
Pressure	987 [hPa]	Pressure	987 [hPa]	Pressure	987 [hPa]
Rel. Humidity	50 [%HR]	Rel. Humidity	50 [%HR]	Rel. Humidity	50 [%HR]
DATE:	19/12/2015	DATE:	19/12/2015	DATE:	19/12/2015
TIME :	14:23	TIME :	14:23	TIME :	14:24
CAR DATA		CAR DATA		CAR DATA	
FUEL:	GASOLINE	FUEL:	GASOLINE	FUEL:	GASOLINE
BRAND:		BRAND:		BRAND:	
MODEL:		MODEL:		MODEL:	
LIC. PLATE:		LIC. PLATE:		LIC. PLATE:	
CHASSIS:		CHASSIS:		CHASSIS:	
Km:		Km:		Km:	
WORKSHOP		WORKSHOP		WORKSHOP	
RODMOTIF		RODMOTIF		RODMOTIF	
AFT-UNY		AFT-UNY		AFT-UNY	
VANDIKUOTO		VANDIKUOTO		VANDIKUOTO	
AA		AA		AA	
EXAMINER :		EXAMINER :		EXAMINER :	

Gambar 17. Hasil pengujian emisi gas buang pretamax rpm 7000, 8000, dan 9000

EXHAUST GAS ANALYSIS

Serial no. 1711960

TECNOTEST
TYPE STAR 898
DIM. CLASS 0
REPORT N
54570101/047RM
10/07/2004

R P M 10000 [1/min]
C O 1.221 [% vol]
C O 2 0.84 [% vol]
H C 14690 [ppm vol]
O 2 15.78 [% vol]
N O ---- [ppm vol]
CO cor ---- [% vol]
K 0.893 [-]
TEMP. --- [°C]

ENVIRONMENT CONDITIONS

Temperature 36 [°C]
Pressure 986 [hPa]
Rel. Humidity 50 [%RH]
DATE: 19/12/2015
TIME : 14:25

CAR DATA

FUEL: GASOLINE
BRAND:
MODEL:
LIC. PLATE:
CHASSIS:
Km:

WORKSHOP

AOTOMOTIF
AFT-UNY
MANDIKUOTO

AA

EXAMINER:

Gambar 18. Hasil pengujian emisi gas buang pretamax rpm 10000