



Ref. No.	2008-H-06
Total Pages	26

TEST REPORT

Product Name: Car Care Products (Oil System Cleaner,
Oil System Care, Fuel System Cleaner)

Type: _____

Test Category: Commissioned Test

Client: PERFECT(CHINA)CO.,LTD.

Send Date: 5th-Aug-2008

Important Notes

1. This report shall be invalid without the official seal of the Test Center.
 2. The duplicated report shall be invalid without the official seal of the Test Center.
 3. This report shall be invalid without all signatures from the chief technician, the assessor and the ratifier.
 4. Any unauthorized alternations of the content or appearance of the report is unlawful.
 5. In the event of any objections, the client must inform the Test Center within 15 days of receipt of the test report.
 6. The Test Center is only reliable for the samples tested unless otherwise stated.
-

Test Organization: Automobile Parts Test Center (Guangzhou)

Add: 828 MaoGang, Rd, Huangpu District, Guangzhou, China
Postcode: 510700
Tel: 020-32385315
Fax: 020-32389592
Web: <http://www.chinaaptc.com>

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Product Name	Car Care Products ¹ (Oil System Cleaner, Oil System Care, Fuel System Cleaner)	Brand	PERFECT
Sample No.	H08072801		
Type	—	Sample quantity	1 set
Date of production	9 th -Aug-2008	Sampling form	<input checked="" type="checkbox"/> By client <input type="checkbox"/> By center
Product No.	—	Sample base	—
Test Category	Commissioned Test	Receiving date	28 th -Jul-2008
Testing Site	Engine test laboratory	Consignor	PERFECT(CHINA)CO.,LTD.
Client	PERFECT(CHINA)CO.,LTD.		
Address	Civil Science & Technology Park, Dongming North Road, Shiqi District, Zhongshan City, Guangdong P.R.China		
Manufacture	PERFECT(CHINA)CO.,LTD.		
Address	Civil Science & Technology Park, Dongming North Road, Shiqi District, Zhongshan City, Guangdong P.R.China		
Test Environment	Temperature: 26~28℃; Relative humidity: 34~36%; Atmospheric pressure: 101kPa		
Testing items	Engine test rig comparison: Constant speed characteristics Full-load performance (power)		
Testing methods	GB /T 18297-2001 “Performance test code for road vehicle engines”		
Conclusions	<p>Test results:</p> <p>The comparison of performances with and without installing:</p> <p>1.Rate of change of power: Max increased 4.22%, Average increased 2.96%</p> <p>2.Rate of change of fuel consumption:</p> <p>Max decreased 15.17%, Average decreased 16.61% (Driving Model conditions: 2000r/min)</p> <p>Max decreased 19.11%, Average decreased 12.82% (Driving Model conditions: 2200r/min)</p> <p>Max decreased 11.42%, Average decreased 10.19% (Driving Model conditions: 2400r/min)</p>		
Notes	<p>1. For convenience, Car Care Products is abbreviated as CCP in the following text</p> <p>2. The test results are only referred to the samples received.</p>		

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Authorizer:

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Product parameters:

- 1) Engine model: HD491Q gasoline engine, Rated Power: 75kW, Rated Speed :4500r/min
- 2) Engine manufacturer : ShenYang Dongji huaxin Power Machine Manufacture Ltd
- 3) Lubricating oil model: Great Wall H588 SF/CD 15W/40 general engine oil
- 4) Fuel type: 93# gasoline
- 5) Other parameters: ——

Test conditions:

According to test requirements, please refer to Appendix for details.

Test devices:

JinBei Engine HD491Q

Testing Site & date

Testing site: Automobile Parts Test Center (Guangzhou) Engine Test Lab

Testing date: 26th - Jun - 2008

Test operators

Testing Technician: Qiang Xin, Dingxiao Zhong

Responsible engineer: Qiang Xin

Editor:

Verifier:

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Appendix:

Comparison of the full-load performance test results							
Testing method: GB /T 18297-2001 “Performance test code for road vehicle engines”							
Rotational speed r/min	4500	4000	3500	3000	2500	2000	Average
Original torque N.m	154.00	159.73	166.80	170.70	169.20	157.20	162.94
Torque with CCP installed N.m	157.47	166.30	172.17	173.90	172.80	161.53	167.36
Change of torque N.m	0.30	6.57	5.37	0.93	0.23	4.33	4.42
Rate of change of torque %	0.19%	4.11%	3.22%	0.54%	0.14%	2.76%	2.71%
Comparison of torque with and without installing CCP: average change of torque: +4.42 N.m, average rate of change of torque: +2.71%							
Original power kW	72.56	66.83	61.07	53.52	44.21	32.89	55.18
Power with CCP installed kW	74.25	69.65	63.08	54.65	45.33	33.90	56.81
Change of power kW	0.10	2.82	2.01	0.21	1.12	1.02	1.63
Rate of change of power %	0.14%	4.22%	3.29%	0.39%	2.53%	3.09%	2.96%
Comparison of power with and without installing CCP: average change of power: +1.63kW, average rate of change of power: +2.96%							
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Comparison of the Constant speed characteristic test results (2000r/min)									
Testing method: GB /T 18297-2001 “Performance test code for road vehicle engines”									
No.	1	2	3	4	5	6	7	8	Average
Original rate of fuel consumption g/kW.h	1266.67	1055.30	862.17	686.20	634.20	587.47	502.80	438.73	754.19
fuel consumption with CCP installed g /kW.h	1160.30	919.63	758.07	589.00	561.77	520.70	426.53	396.87	666.61
Change g /kW.h	-106.37	-135.67	-104.10	-97.20	-72.43	-66.77	-76.27	-41.87	-87.58
Rate of change %	-8.40%	-12.86%	-12.07%	-14.16%	-11.42%	-11.37%	-15.17%	-9.54%	-11.61%
Comparison of fuel consumption with and without installing CCP: average change of fuel consumption: -87.58g/kW.h, average rate of change of fuel consumption: -11.61%									
Notes: ——									

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Appendix:

Comparison of the Constant speed characteristic test results (2200r/min)									
Testing method: GB /T 18297-2001 “Performance test code for road vehicle engines”									
No.	1	2	3	4	5	6	7	8	Average
Original rate of fuel consumption g/kW.h	1254.33	1050.50	819.33	642.10	596.57	527.97	471.90	412.07	721.85
Fuel consumption with CCP installed g /kW.h	1014.63	895.47	700.40	585.40	536.93	476.23	428.30	397.27	629.33
Change g /kW.h	-239.70	-155.03	-118.93	-56.70	-59.63	-51.73	-43.60	-14.80	-92.52
Rate of change %	-19.11%	-14.76%	-14.52%	-8.83%	-10.00%	-9.80%	-9.24%	-3.59%	-12.82%
Comparison of fuel consumption with and without installing CCP: average change of fuel consumption: - 92.52g/kW.h, average rate of change of fuel consumption: -12.82%									
Notes: ——									

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Appendix:

Comparison of the Constant speed characteristic test results (2400r/min)									
Testing method: GB /T 18297-2001 “Performance test code for road vehicle engines”									
No.	1	2	3	4	5	6	7	8	Average
Original rate of fuel consumption g/kW.h	1177.43	1015.73	781.40	682.70	612.63	522.50	458.47	414.87	708.22
Fuel consumption with CCP installed g /kW.h	1042.97	901.43	708.27	621.27	551.93	465.70	422.97	373.87	636.05
Change g /kW.h	-134.47	-114.30	-73.13	-61.43	-60.70	-56.80	-35.50	-41.00	-72.17
Rate of change %	-11.42%	-11.25%	-9.36%	-9.00%	-9.91%	-10.87%	-7.74%	-9.88%	-10.19%
Comparison of fuel consumption with and without installing CCP: average change of fuel consumption: -72.17g/kW.h, average rate of change of fuel consumption: -10.19%									
Notes: ——									

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Full-load performance test (original engine)															
Engine model		HD491Q				Fuel type		93# gasoline		Testing method: GB /T 18297-2001			Note:		
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—		“Performance test code for road vehicle engines”			used original engine		
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		℃	℃	℃	kPa	℃	℃	%
1	4500	155.20	154.00	73.14	72.6	79.10	86.73	30.60	294	767.0	31.8	20.3	4500	155.20	154.00
2	3995	161.03	159.73	67.36	66.8	76.50	84.23	30.60	279	787.3	32.0	20.4	3995	161.03	159.73
3	3496	168.10	166.80	61.55	61.1	74.73	85.30	30.60	256	789.0	32.2	20.8	3496	168.10	166.80
4	2994	172.00	170.70	53.93	53.5	76.60	85.07	30.60	215	786.3	32.4	21.0	2994	172.00	170.70
5	2495	170.57	169.20	44.57	44.2	76.27	85.37	30.60	179	769.7	32.7	20.2	2495	170.57	169.20
6	1998	158.50	157.20	33.16	32.9	75.73	85.07	30.60	140	723.0	32.8	19.5	1998	158.50	157.20
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Full-load performance test (with CCP installed)															
Engine model		HD491Q				Fuel type		93# gasoline		Testing method: GB /T 18297-2001				Note:	
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—		“Performance test code for road vehicle engines”				with CCP installed	
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	4502	157.57	157.47	74.28	74.3	77.93	86.33	27.43	300	777.0	30.0	39.9	4502	157.57	157.47
2	4000	166.30	166.30	69.65	69.7	72.90	81.97	27.50	289	800.0	30.1	40.9	4000	166.30	166.30
3	3498	172.13	172.17	63.06	63.1	72.33	82.23	27.50	272	799.0	30.3	41.8	3498	172.13	172.17
4	3002	173.90	173.90	54.66	54.7	69.07	80.03	27.50	228	784.7	30.6	40.5	3002	173.90	173.90
5	2506	172.90	172.80	45.37	45.3	68.13	81.57	27.50	186	767.0	30.8	39.2	2506	172.90	172.80
6	2004	161.73	161.53	33.94	33.9	66.53	78.17	27.50	143	721.7	31.1	38.2	2004	161.73	161.53
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Constant speed characteristic test (original engine)

Engine model		HD491Q				Fuel type		93# gasoline				Testing method: GB /T 18297-2001		Note: used original engine	
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—				“Performance test code for road vehicle engines”			
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	2001	33.40	33.20	7.00	6.96	8.82	1259.79	1266.67	76.20	81.40	29.40	186	488	30.5	26.8
2	1999	40.00	39.80	8.37	8.33	8.79	1049.80	1055.30	75.57	81.57	29.30	178	557	30.4	27.3
3	2008	50.13	49.83	10.54	10.48	9.04	857.31	862.17	78.20	84.20	29.30	180	580	30.6	26.2
4	2000	66.60	66.20	13.95	13.87	9.51	682.09	686.20	74.07	80.47	29.30	177	615	30.7	25.3
5	1995	75.00	74.60	15.67	15.58	9.88	630.44	634.20	77.27	84.23	29.30	175	649	30.9	25.5
6	1973	83.57	83.07	17.27	17.16	10.08	583.86	587.47	72.40	82.27	29.30	169	661	31.1	24.9
7	2007	100.30	99.70	21.08	20.95	10.53	499.68	502.80	76.15	83.50	29.30	169	654	31.2	24.6
8	1997	117.07	116.27	24.49	24.32	10.67	435.84	438.73	73.70	82.43	29.33	165	660	31.4	23.7

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Constant speed characteristic test (with CCP installed)

Engine model		HD491Q				Fuel type		93# gasoline				Testing method: GB /T 18297-2001		Note: with CCP installed	
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—				“Performance test code for road vehicle engines”			
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	2000	33.37	33.27	6.99	6.98	8.09	1158.36	1160.30	77.70	85.60	27.63	159	608	31.3	36.6
2	1999	40.00	39.90	8.37	8.35	7.68	917.85	919.63	74.40	81.60	28.00	181	617	31.3	36.0
3	1999	50.07	49.97	10.48	10.46	7.93	756.73	758.07	75.90	83.07	28.13	184	619	31.3	36.4
4	2004	66.90	66.80	14.04	14.02	8.26	588.23	589.00	75.90	83.27	28.37	184	617	31.5	37.5
5	2001	75.07	74.97	15.73	15.71	8.82	561.15	561.77	75.23	82.70	28.57	182	626	31.5	38.1
6	2002	83.73	83.67	17.56	17.55	9.14	520.37	520.70	73.40	81.17	28.70	181	624	31.5	39.4
7	2004	100.13	100.03	21.02	21.00	8.96	426.25	426.53	75.33	83.67	28.80	175	639	31.6	39.3
8	2004	116.90	116.80	24.54	24.52	9.73	396.62	396.87	73.30	81.87	28.90	170	654	31.8	39.4

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Constant speed characteristic test (original engine)

Engine model		HD491Q				Fuel type		93# gasoline				Testing method: GB /T 18297-2001		Note: used original engine	
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—				“Performance test code for road vehicle engines”			
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	2202	34.73	34.53	8.01	7.95	9.98	1245.65	1254.33	77.10	82.60	31.20	228	581	31.7	22.9
2	2194	40.00	39.70	9.19	9.12	9.59	1043.01	1050.50	74.93	80.83	31.07	200	612	31.7	22.3
3	2196	52.10	51.70	11.98	11.90	9.75	813.59	819.33	76.27	82.27	31.00	194	625	31.6	22.7
4	2200	69.47	68.97	16.01	15.89	10.20	637.51	642.10	72.90	82.17	30.93	188	626	31.7	22.3
5	2197	75.00	74.47	17.25	17.13	10.22	592.20	596.57	77.07	85.10	30.80	187	631	31.7	21.9
6	2202	86.80	86.20	20.02	19.87	10.49	524.13	527.97	71.27	80.60	30.80	185	640	31.8	21.8
7	2198	104.23	103.43	24.00	23.81	11.24	468.35	471.90	73.47	81.83	30.80	181	650	32.0	21.2
8	2192	121.50	120.60	27.89	27.68	11.40	408.94	412.07	77.70	85.17	30.80	177	670	32.0	21.3

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Constant speed characteristic test (with CCP installed)															
Engine model		HD491Q				Fuel type		93# gasoline		Testing method: GB /T 18297-2001			Note:		
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—		“Performance test code for road vehicle engines”			with CCP installed		
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	2196	34.63	34.63	7.97	7.96	8.08	1013.78	1014.63	73.20	80.03	29.27	195	600	32.0	38.8
2	2198	40.00	40.00	9.21	9.20	8.24	894.63	895.47	77.03	83.97	29.17	201	609	31.9	38.7
3	2205	52.13	52.13	12.04	12.03	8.42	699.79	700.40	74.77	81.90	29.27	201	621	31.9	38.6
4	2197	69.33	69.23	15.95	15.94	9.33	584.85	585.40	75.37	82.60	29.33	199	622	31.9	38.5
5	2203	75.10	75.00	17.33	17.31	9.29	536.36	536.93	70.20	79.23	29.40	198	623	31.9	38.2
6	2200	86.90	89.50	20.02	20.62	9.80	489.74	476.23	73.47	81.10	29.43	195	629	31.9	39.0
7	2199	104.37	107.43	24.03	24.75	10.58	440.27	428.30	74.80	83.97	29.50	191	647	31.9	38.9
8	2201	121.77	121.67	28.06	28.04	11.14	396.98	397.27	74.03	84.17	29.60	182	667	32.1	39.1
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Constant speed characteristic test (original engine)

Engine model		HD491Q				Fuel type		93# gasoline				Testing method: GB /T 18297-2001		Note:	
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—				“Performance test code for road vehicle engines”		used original engine	
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	2408	35.00	34.70	8.82	8.75	10.31	1168.25	1177.43	72.57	82.20	30.70	202	658	32.2	20.6
2	2397	40.00	39.70	10.04	9.96	10.12	1007.75	1015.73	74.07	80.07	30.70	206	654	32.3	20.5
3	2405	52.53	52.13	13.23	13.13	10.26	775.25	781.40	77.47	83.60	30.70	206	656	32.3	20.3
4	2401	60.03	59.53	15.09	14.98	10.22	677.29	682.70	73.67	80.70	30.67	209	655	32.3	20.2
5	2409	70.10	69.50	17.69	17.54	10.75	607.71	612.63	74.43	83.27	30.67	206	645	32.3	20.0
6	2403	87.50	86.80	22.02	21.84	11.41	518.35	522.50	71.00	81.77	30.63	202	646	32.3	20.0
7	2399	105.03	104.20	26.39	26.18	12.00	454.78	458.47	77.70	85.37	30.67	198	660	32.4	19.9
8	2401	122.40	121.40	30.77	30.52	12.66	411.44	414.87	70.77	83.00	30.70	187	685	32.5	19.5

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Constant speed characteristic test (with CCP installed)															
Engine model		HD491Q				Fuel type		93# gasoline		Testing method: GB /T 18297-2001			Note:		
Lubricating oil model		Great Wall engine oil				Fuel density g/cm ³		—		“Performance test code for road vehicle engines”			with CCP installed		
No.	Rotational speed	Torque		Power		Fuel consumption	Rate of fuel consumption		Water temperature		Engine oil		Exhaust temperature	Atmospheric environments	
		Measured	Corrected	Measured	Corrected		Measured	Corrected	Water inlet	Water outlet	Temperature	Pressure		Temperature	Relative humidity
	r/min	N.m		kW		kg/h	g/kW.h		°C	°C	°C	kPa	°C	°C	%
1	2409	35.07	35.07	8.85	8.85	9.23	1043.07	1042.97	74.63	80.83	30.63	269	628	29.9	41.3
2	2398	39.97	39.97	10.04	10.03	9.05	901.20	901.43	74.10	81.03	30.60	243	640	30.0	40.3
3	2397	52.50	52.50	13.18	13.17	9.33	707.93	708.27	77.23	83.80	30.50	229	649	30.0	39.7
4	2400	60.00	60.00	15.08	15.07	9.36	621.06	621.27	76.37	83.13	30.43	217	645	30.2	40.1
5	2399	70.00	70.00	17.59	17.58	9.70	551.60	551.93	76.67	83.70	30.37	210	638	30.2	39.5
6	2397	87.50	87.40	21.97	21.95	10.22	465.40	465.70	74.47	81.87	30.30	206	653	30.3	39.2
7	2396	104.93	104.83	26.33	26.31	11.13	422.68	422.97	75.83	83.90	30.20	199	672	30.3	39.2
8	2393	122.50	122.40	30.70	30.67	11.47	373.56	373.87	77.93	86.03	30.17	191	699	30.5	39.0

Editor:

Verifier:

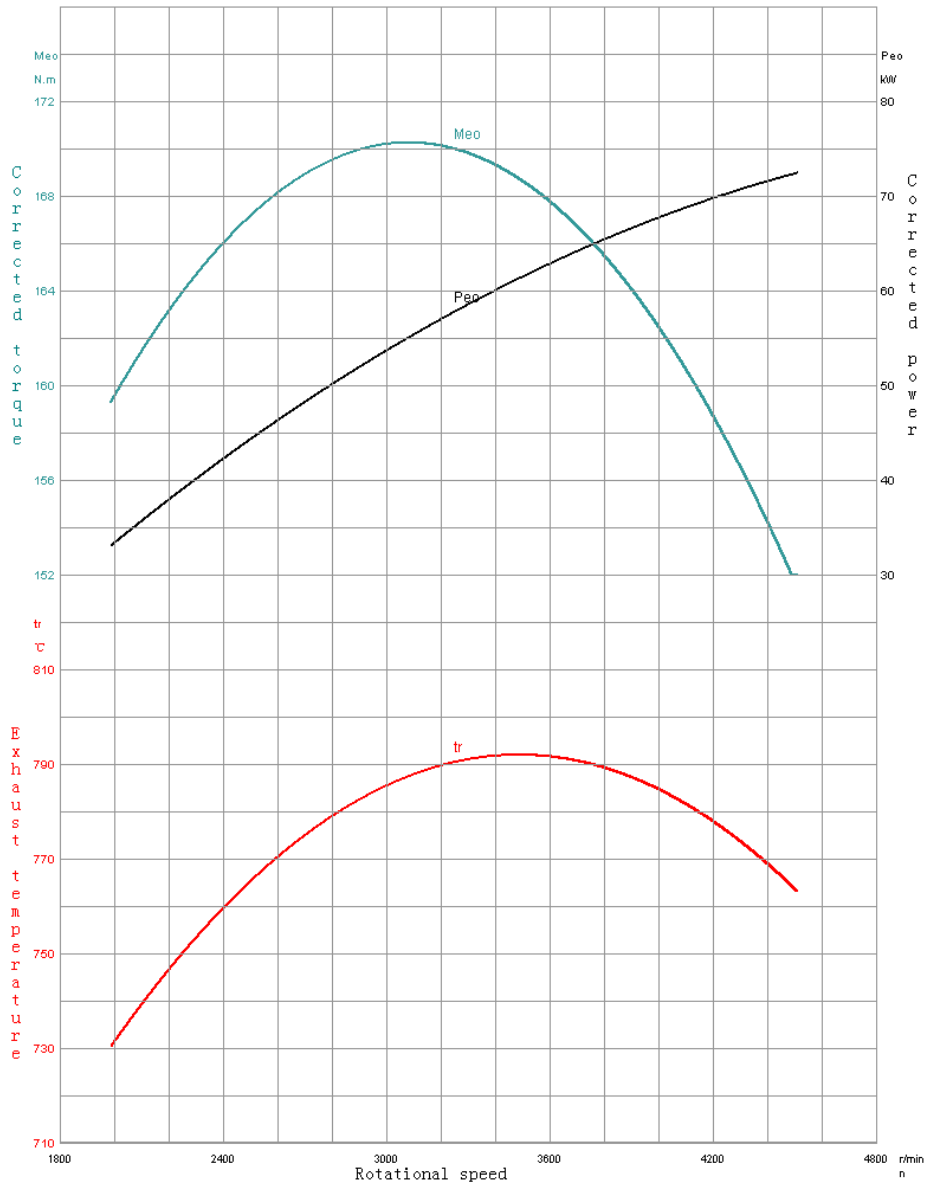
Test report

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Appendix:

A curve of full-load performance test on original engine



Editor:

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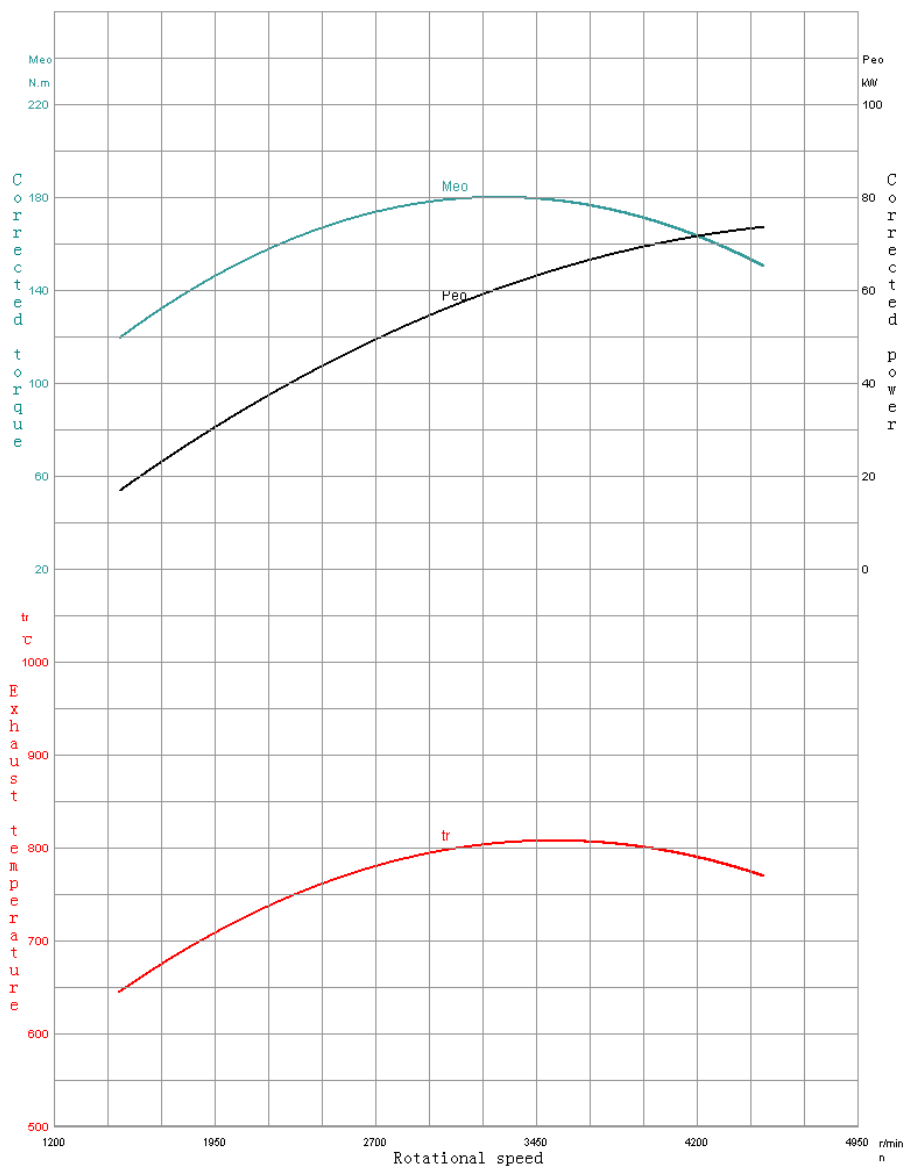
Test report

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Appendix:

A curve of full-load performance test on engine with CCP installed



Editor:

Verifier:

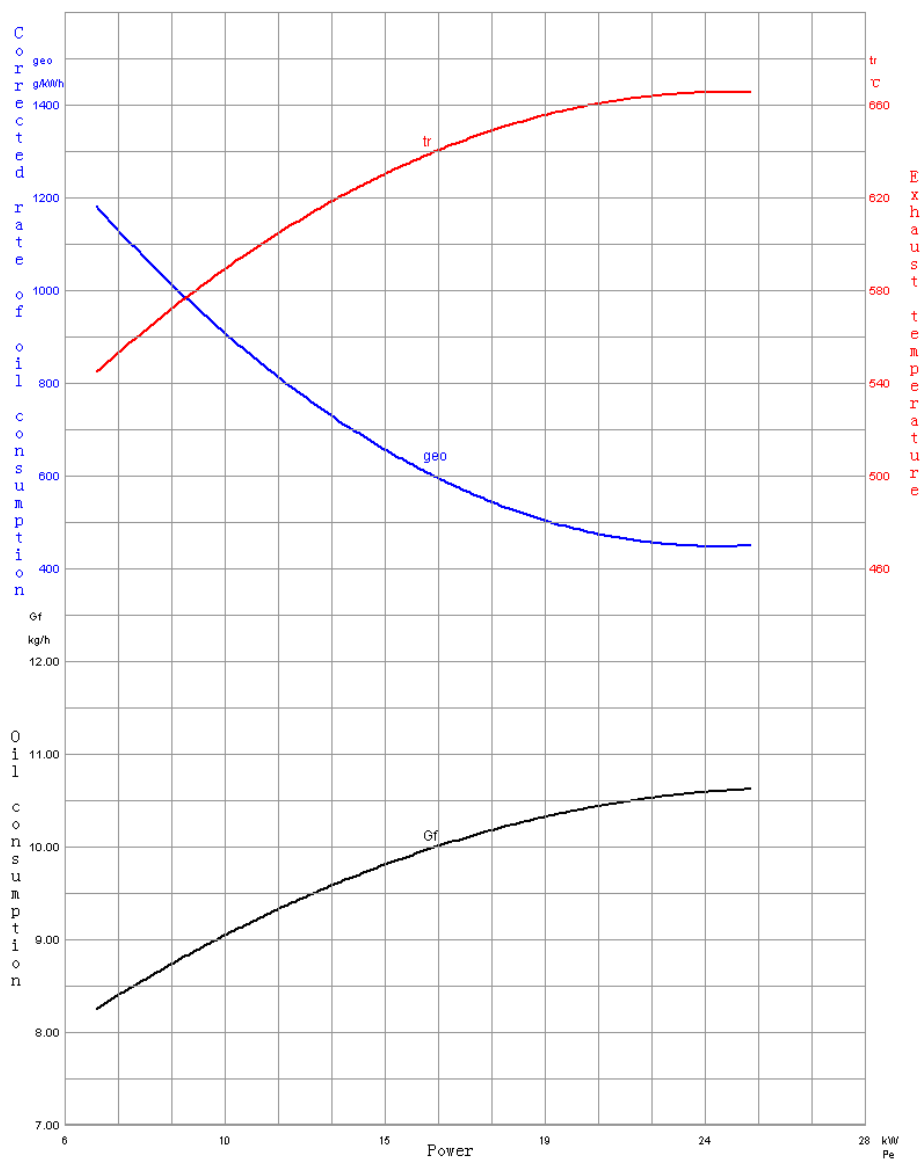
Test report

(Ref. No.): 2008-H-06

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Appendix:

A curve of constant speed characteristic test on original engine (2000r/min)



Editor:

Verifier:

Test report

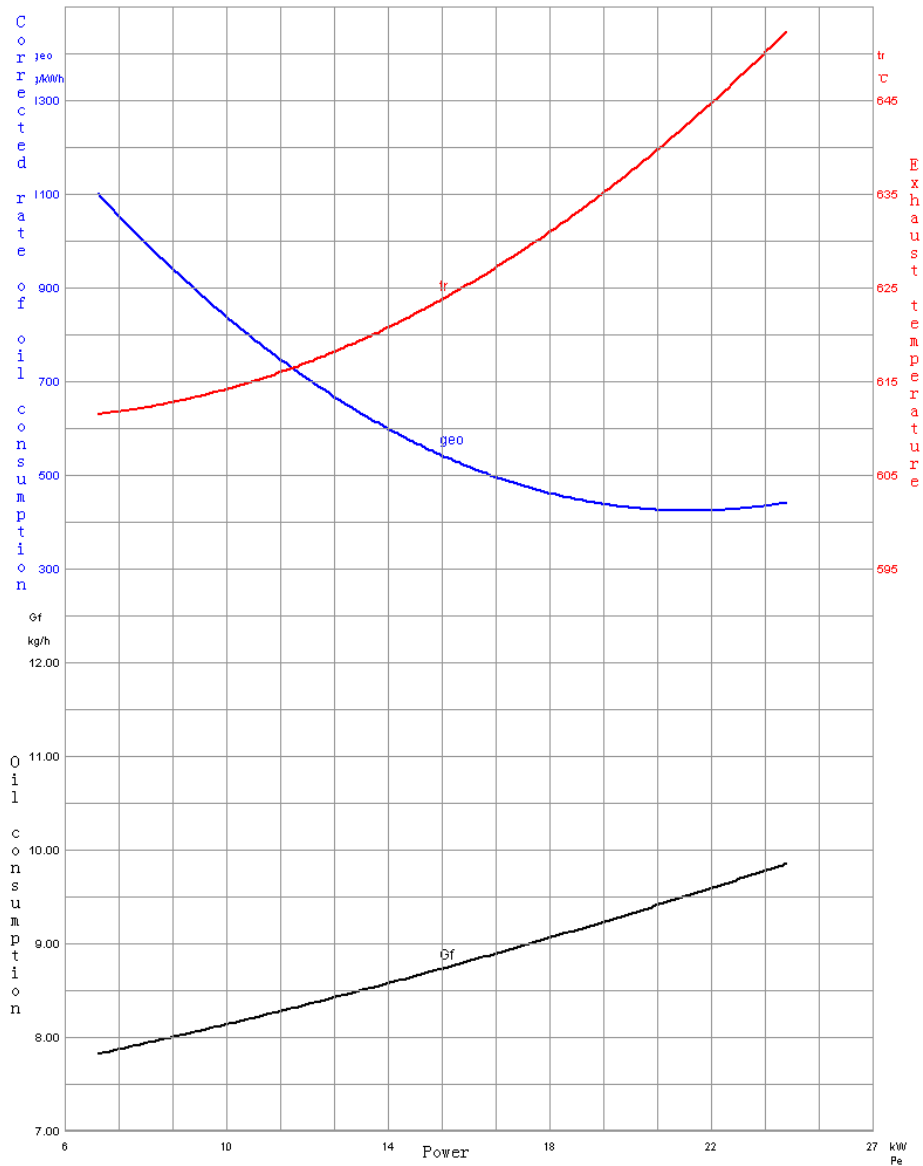
(Ref. No.): 2008-H-06

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Appendix:

A curve of constant speed characteristic test on engine with CCP installed

(2000r/min)



Editor:

Verifier:

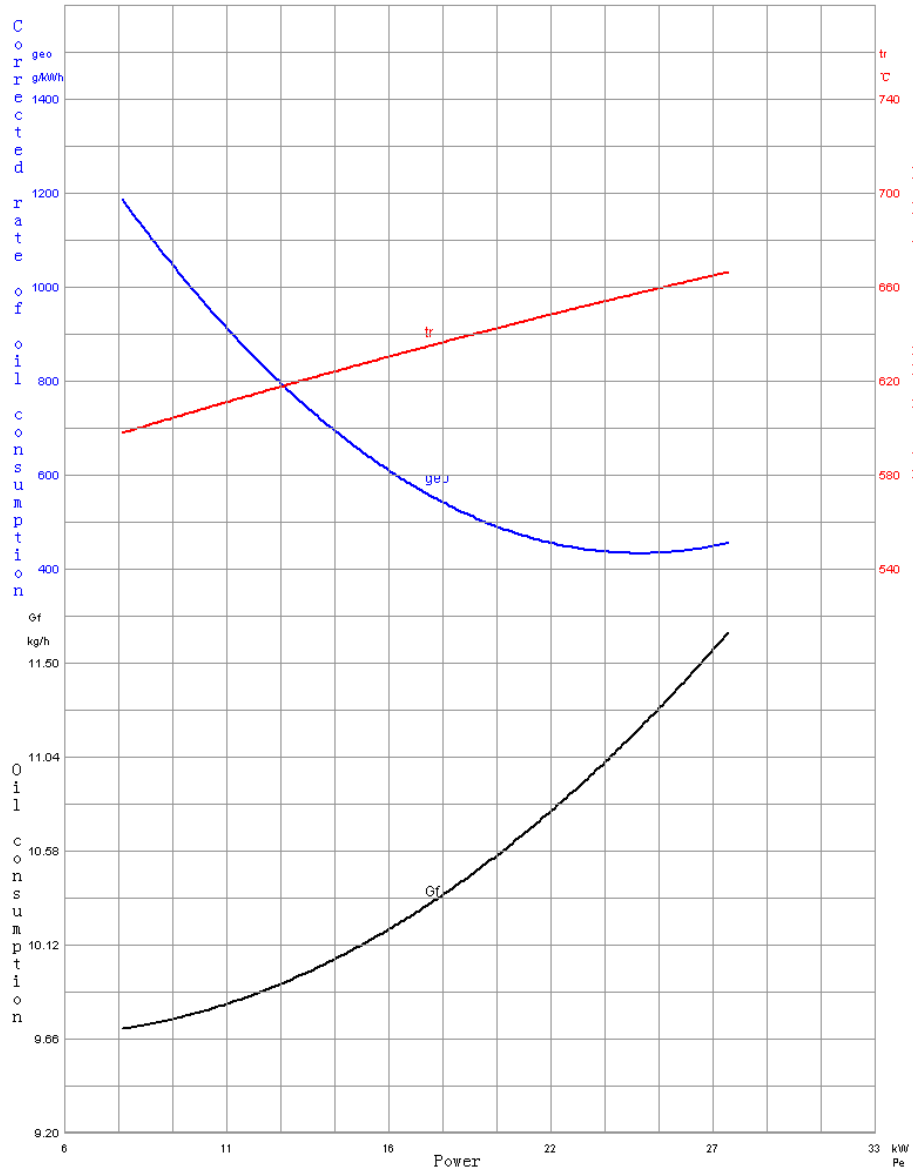
Test report

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Appendix:

A curve of constant speed characteristic test on original engine (2200r/min)



Editor:

Verifier:

Test report

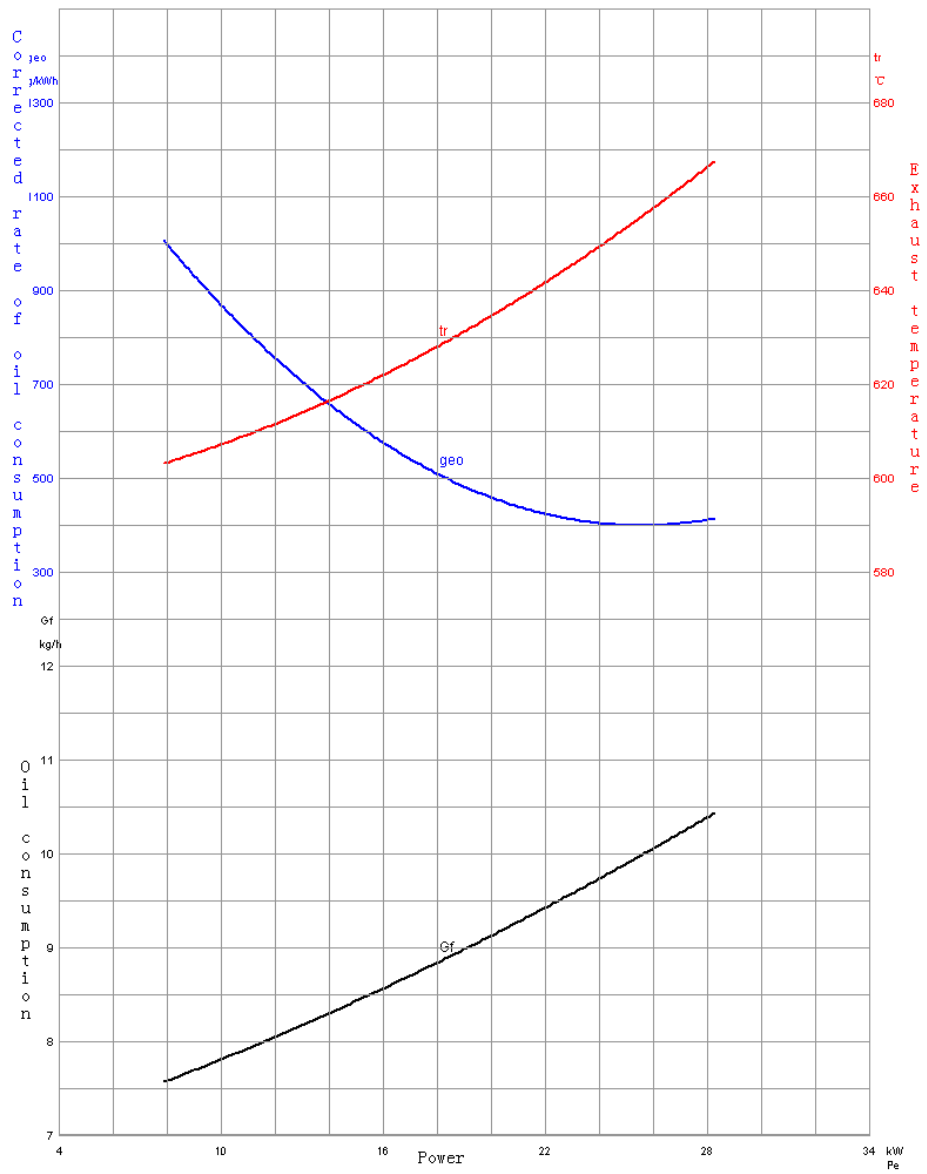
(Ref. No.): 2008-H-06

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Appendix:

A curve of constant speed characteristic test on engine with CCP installed

(2200r/min)



Editor:

Verifier:

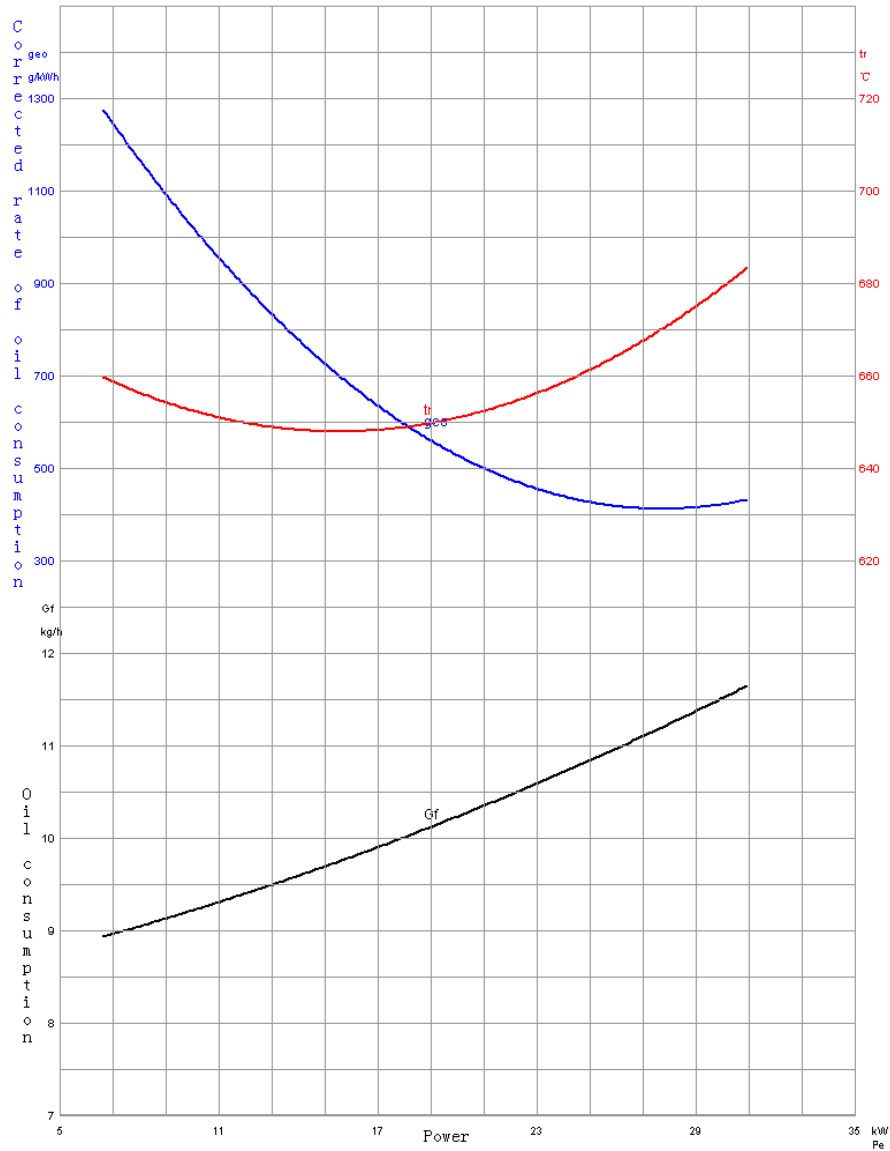
Test report

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Appendix:

A curve of constant speed characteristic test on original engine (2400r/min)



Editor:

Verifier:

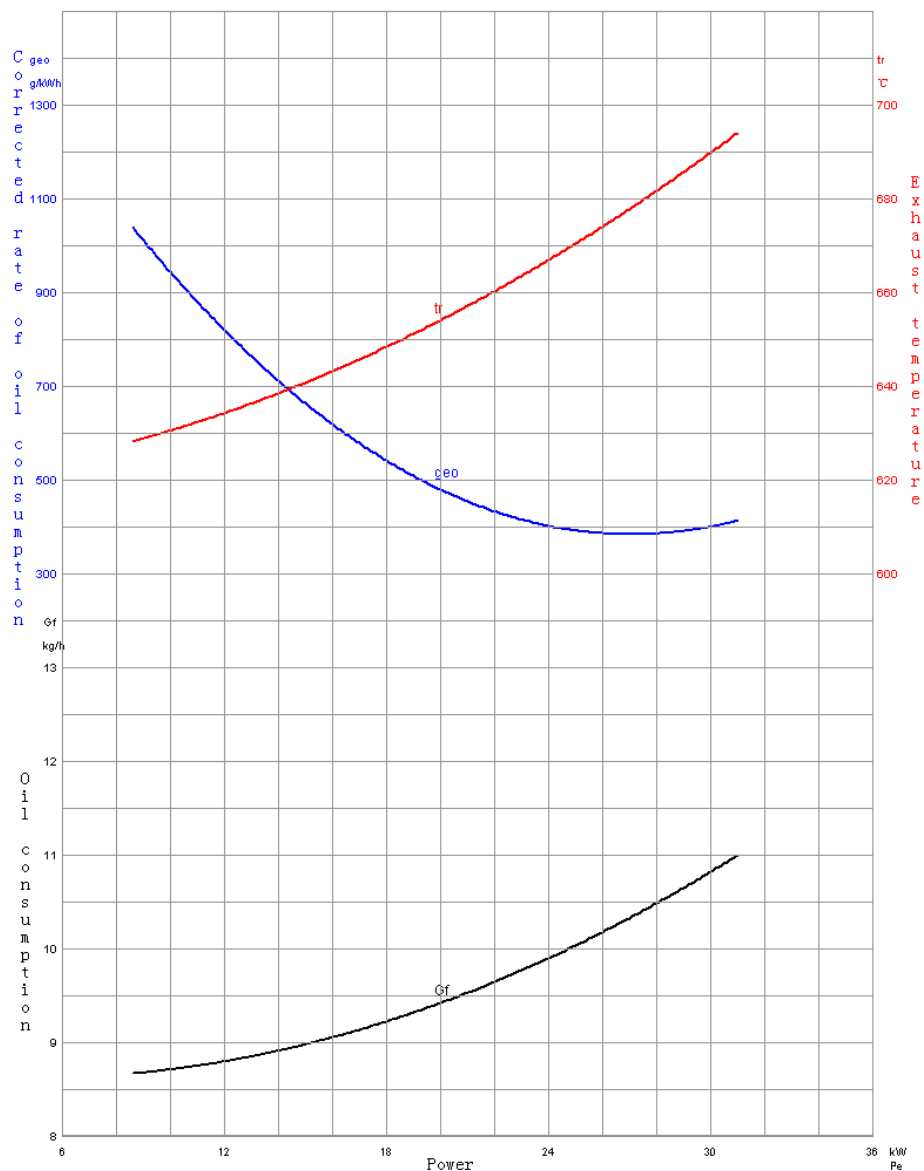
Test report

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Appendix:

A curve of constant speed characteristic test on engine with CCP installed (2400r/min)



Editor:

Verifier:

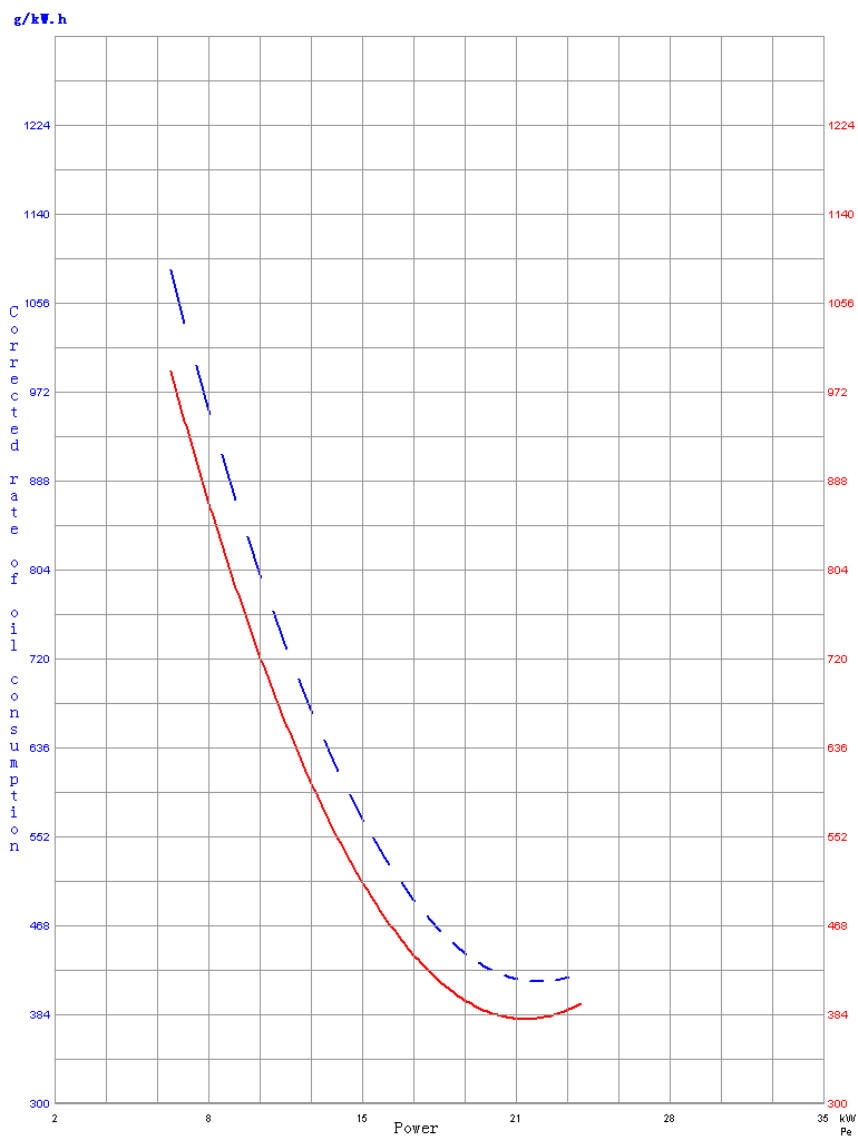
Test report

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Appendix:

A curve showing comparison of constant speed characteristic test (2000r/min)



..... Using original engine
—— Engine with CCP installed

Editor:

Verifier:

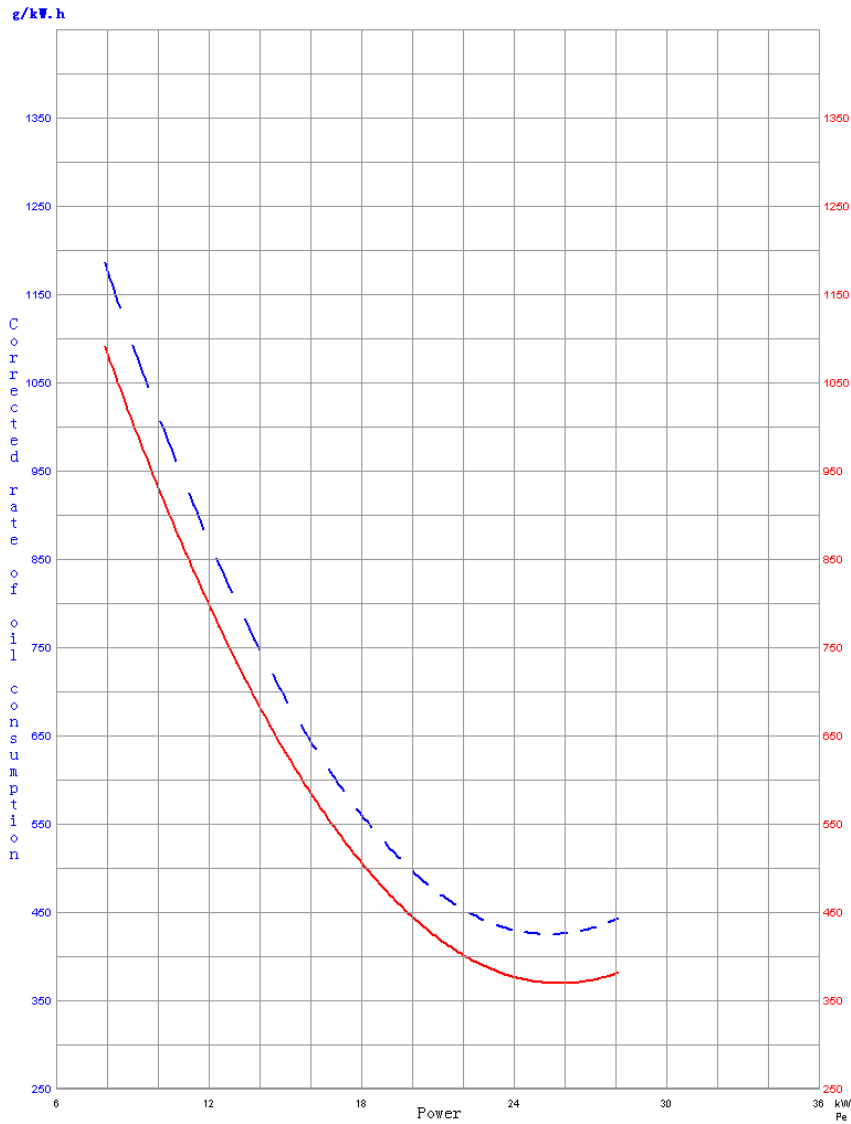
Test report

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Appendix:

A curve showing comparison of constant speed characteristic test (2200r/min)



- Using original engine
- Engine with CCP installed

Editor:

Verifier:

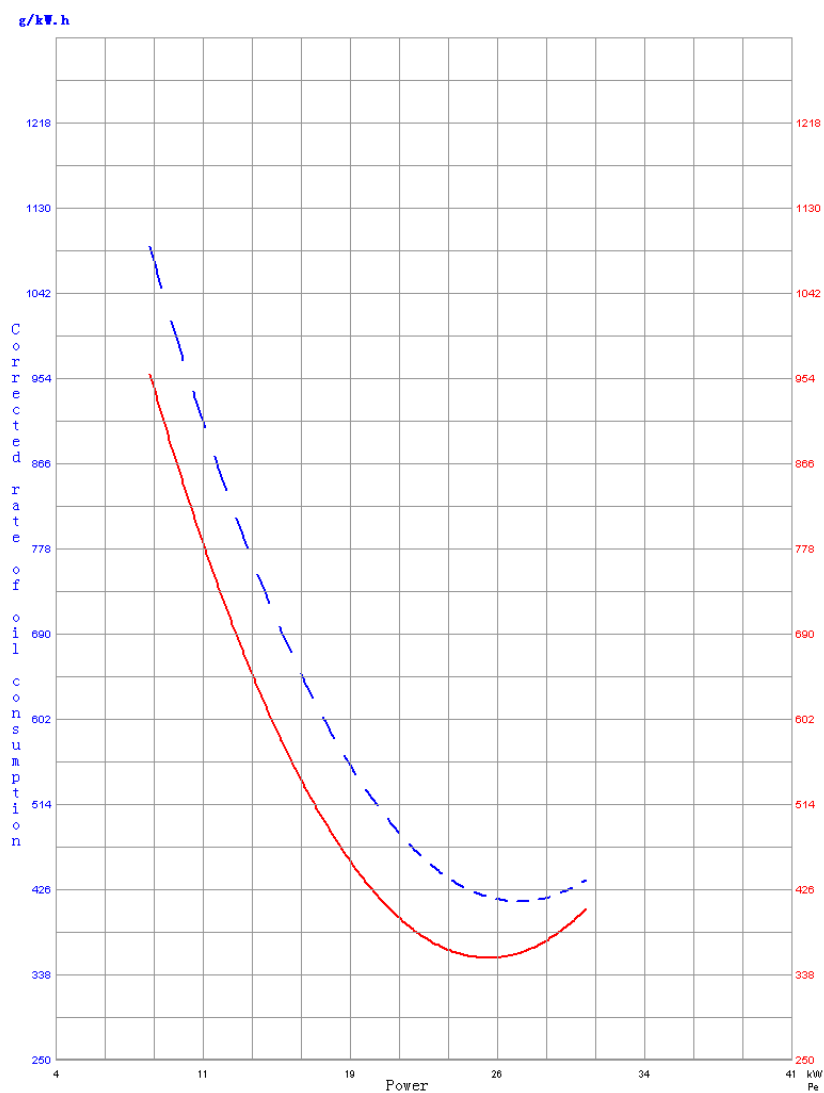
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Appendix:

A curve showing comparison of constant speed characteristic test (2400r/min)



..... Using original engine
—— Engine with CCP installed

Editor:

Verifier:

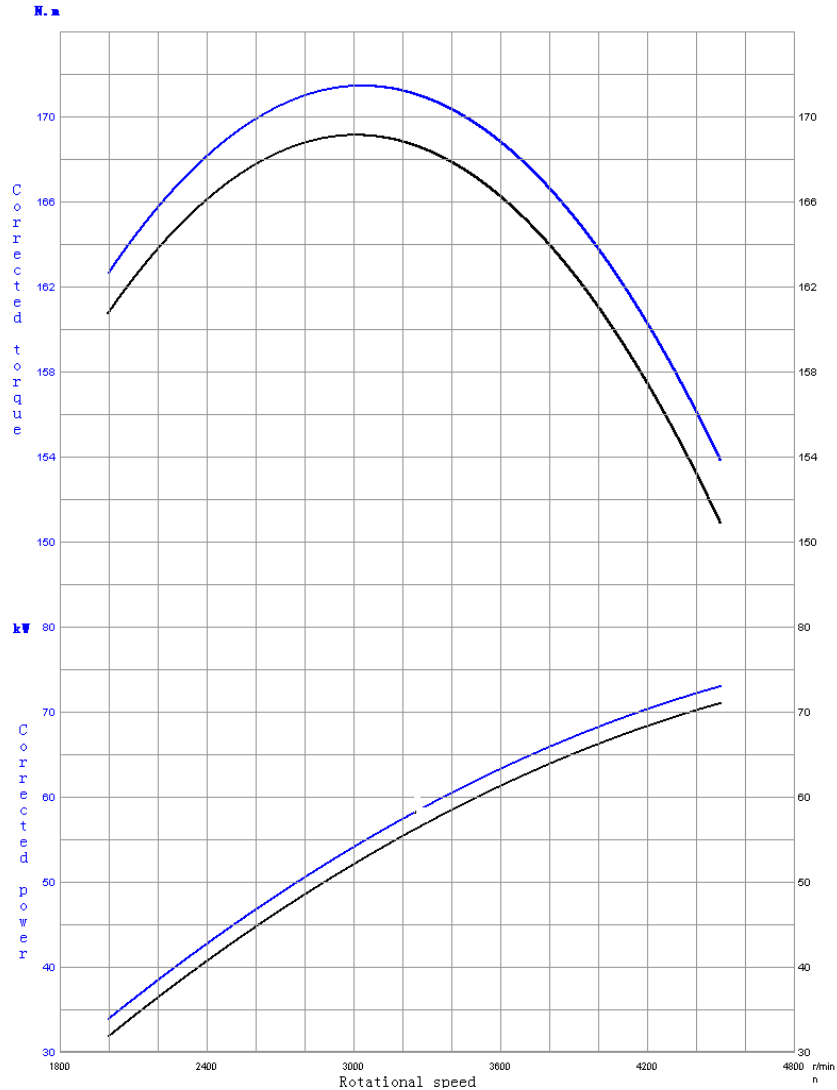
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Appendix:

A curve showing comparison of full-load performance test



— Using original engine
— Engine with CCP installed

Editor:

Verifier:

End of report