	ChongQing Cummins Engine Company, Inc. Engine Data Sheet			ENGINE SERIES	D19	
				ENGINE MODEL	KTAA19-G5	
	PERFORMANCE CURVE	C-CQ402	CPL NUMBER	Dry manifold N/A	DATA SHEET	DS-CQ402
	CONFIGURATION NUMBER	D193091DX02		wet manifold CQ406	DATE 9/28/03	BY LIWEI

INSTALLATION DIAGRAM

- Engine:
- Engine With Radiator :

GENERAL ENGINE DATA

Type 4 Cycle; In-line; 6 Cylinder
 Diesel
 Aspiration..... Turbocharged and Air to Air Aftercooled
 Bore x Stroke..... — in x in (mm x mm) 6.25 x 6.25 (159 x 159)
 Displacement — in 3 (liter) 1150 (18.9)
 Compression Ratio..... 13.5 : 1
 Dry Weight
 Engine(with wet manifold)..... — lb (kg) 4195 (1905)
 Wet Weight
 Engine(with wet manifold)..... — lb (kg) 4355 (1977)
 Moment of Inertia of Rotating Components
 • with FW 4001 Flywheel — lb m • ft 2 (kg • m 2) 170 (7.2)
 • with FW 4006 Flywheel — lb m • ft 2 (kg • m 2) 199 (8.4)
 Center of Gravity from Rear Face of Flywheel Housing (FH 4018) — in (mm) 28.4 (721)
 Center of Gravity above Crankshaft Centerline..... — in (mm) 9.0 (229)
 Firing Order..... — 1-5-3-6-2-4

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block — lb • ft (N • m) 1000 (1356)

EXHAUST SYSTEM


Maximum Back Pressure at Standby Power Rating — in Hg (mm Hg) 3 (76)

AIR INDUCTION SYSTEM

Maximum Intake Air Restriction
 • with Dirty Filter Element — in H 2 O (mm H 2 O) 25 (635)
 • with Normal Duty Air Cleaner and Clean Filter Element..... — in H 2 O (mm H 2 O) 10 (254)
 • with Heavy Duty Air Cleaner and Clean Filter Element..... — in H 2 O (mm H 2 O) 15 (381)

CHARGE AIR COOLING SYSTEM

• Maximum intake manifold temperature at 25 deg C (F) ambient.....— 120 (deg F) 49 (deg C)
 • Maximum allowable pressure drop across charge air cooler and OEM CAC piping (IMPD)— 4 (inHg) 14(kPa)

	ChongQing Cummins Engine Company, Inc. Engine Data Sheet			ENGINE SERIES	D19	
				ENGINE MODEL	KTAA19-G5	
	PERFORMANCE CURVE	C-CQ402	CPL NUMBER	Dry manifold N/A	DATA SHEET	DS-CQ402
	CONFIGURATION NUMBER	D193091DX02		wet manifold CQ406	DATE 9/28/03	BY LIWEI

COOLING SYSTEM

Coolant Capacity — Engine Only(with wet manifold) — US gal (liter) 8.0 (30)
Maximum Coolant Friction Head External to Engine — 1800 rpm..... — psi (kPa) 10 (69)
— 1500 rpm..... — psi (kPa) 8 (55)
Maximum Static Head of Coolant Above Engine Crank Centerline..... — ft (m) 60 (18.3)
Standard Thermostat (Modulating) Range..... — °F (°C) 180 - 200 (82 - 93)
Minimum Pressure Cap..... — psi (kPa) 10 (69)
Maximum Top Tank Temperature for Standby / Prime Power — °F (°C) 220 / 212 (104 / 100)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed..... — psi (kPa) 20 (138)
@ Governed Speed — psi (kPa) 50 - 70 (345 - 483)
Maximum Oil Temperature..... — °F (°C) 250 (121)
Oil Capacity with OP 4019 Oil Pan : High - Low — US gal (liter) 10 - 8.5 (38 - 32)
Total System Capacity (Including Bypass Filter)..... — US gal (liter) 13.2 (50)
Angularity of OP 4019 Oil Pan — Front Down
30°
— Front Up
30°
— Side to Side.....
30°

FUEL SYSTEM


Type Injection System..... Direct Injection Cummins
PT
Maximum Restriction at PT Fuel Injection Pump
— with Clean Fuel Filter — in Hg (mm Hg) 4.0
(102)
— with Dirty Fuel Filter — in Hg (mm Hg) 8.0
(203)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head).....
— in Hg (mm Hg) 6.5 (165)
Maximum Fuel Flow to Injection Pump..... — US gph (liter / hr) 64 (242)

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement) — volt 24
Battery Charging System, Negative Ground — ampere 35
Maximum Allowable Resistance of Cranking Circuit..... — ohm 0.002
Minimum Recommended Battery Capacity
• Cold Soak @ 50 °F (10 °C) and Above..... — 0°F CCA 600
• Cold Soak @ 32 °F to 50 °F (0 °C to 10 °C)..... — 0°F CCA 640
• Cold Soak @ 0 °F to 32 °F (-18 °C to 0 °C)..... — 0°F CCA 900

PERFORMANCE DATA

Steady State Stability Band at any Constant Load — % +/- 0.25
Estimated Free Field Sound Pressure Level of a Typical Generator Set;
Excludes Exhaust Noise; at Rated Load and 7.5 m (25 ft); 1800 rpm / 1500 rpm — dBA
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°; — dBA

	ChongQing Cummins Engine Company, Inc. Engine Data Sheet			ENGINE SERIES	D19	
				ENGINE MODEL	KTAA19-G5	
	PERFORMANCE CURVE	C-CQ402	CPL NUMBER	Dry manifold N/A	DATA SHEET	DS-CQ402
	CONFIGURATION NUMBER	D193091DX02		wet manifold CQ406	DATE 9/28/03	BY LIWEI

All data is based on:

- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
- ISO 3046, Part 1, Standard Reference Conditions of:


Barometric Pressure : 100 kPa (29.53 in Hg)

Air Temperature : 25 °C (77 °F)

Altitude : 110 m (361 ft)

Relative Humidity : 30%

Engine Performance Data	STANDBY POWER		PRIME POWER	
	60 hz	50 hz	60 hz	50 hz
Governed Engine Speed—rpm	1800	1500	1800	1500
Engine Idle Speed—rpm	675-775	675-775	675-775	675-775
Gross Engine Power Output—kWm(BHP)	605(811)	555(744)	533(714)	470(630)
Brake Mean Effective Pressure—kPa(PSI)	2179(316)	2353(341)	1881(273)	1989(289)
Piston Speed—m/s (ft/min)	9.5(1875)	7.9(1562)	9.5(1875)	7.9(1562)
Friction Horsepower—kWm(BHP)	63(85)	45(60)	63(85)	45(60)
Engine Water Flow at Stated Friction Head External to Engine:				
• 3 psi Friction Head—L/min(U.S.GPM)	12.4(196)	10.2(162)	12.4(196)	10.2(162)
•Maximum Friction Head — L/min(U.S.GPM)	11.0(175)	9.1(145)	11.0(175)	9.1(145)
Engine Data with Dry Type Exhaust Manifold				
Intake Air Flow—L/s(CFM)				
Exhaust Gas Temperature— (° F)				
Exhaust Gas Flow—L/s(CFM)				
Radiated Heat to Ambient—kW(BTU/min)				
Heat Rejection to Coolant—kW(BTU/min)				
Heat Rejection to Exhaust—kW(BTU/min)				
Fan coolant Air Flow—L/s(CFM)				
Engine Data with Wet Type Exhaust Manifold				

	ChongQing Cummins Engine Company, Inc. Engine Data Sheet			ENGINE SERIES	D19	
				ENGINE MODEL	KTAA19-G5	
	PERFORMANCE CURVE	C-CQ402	CPL NUMBER	Dry manifold N/A	DATA SHEET	DS-CQ402
CONFIGURATION NUMBER	D193091DX02	wet manifold CQ406		DATE 9/28/03	BY LIWEI	

Intake Air Flow—L/s(CFM)	732(1552)		692(1466)	
Exhaust Gas Temperature— (° F)	480(896)		450(842)	
Exhaust Gas Flow—L/s(CFM)	1992(4220)		1855(3929)	
Radiated Heat to Ambient—kW(BTU/min)	80(4522)		71(4050)	
Heat Rejection to Coolant—kW(BTU/min)	287(16350)		252(14350)	
Heat Rejection to Exhaust—kW(BTU/min)	402(22830)		366(20824)	

ENGINE MODEL : KTAA19-G5

DATA SHEET : DS-CQ402

DATE : 28Sep03

CHONGQING CUMMINS ENGINE COMPANY, INC.

Lieshimu Shapingba, Chongqing, The People's Republic of China


CURVE NO. : C-CQ402

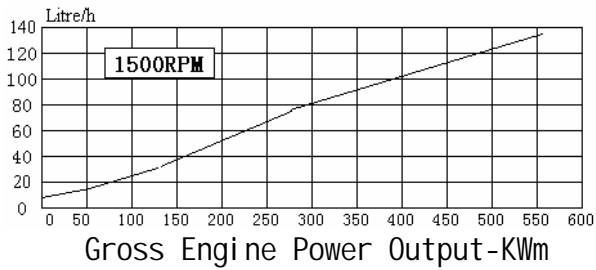
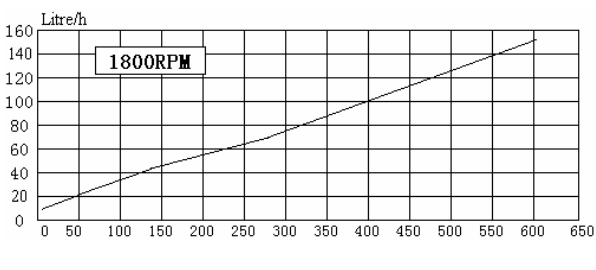
kWm BHP kWm BHP

504 675 448 600 355 475

563 755 507 680 429 575

Engine Speed RPM	Standby Power		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
1500	555	744	502	673		
1800	605	811				

	ChongQing Cummins Engine Company, Inc. Engine Data Sheet		ENGINE SERIES	D19		
			ENGINE MODEL	KTAA19-G5		
	PERFORMANCE CURVE	C-CQ402	CPL NUMBER	Dry manifold N/A	DATA SHEET	DS-CQ402
	CONFIGURATION NUMBER	D193091DX02		wet manifold CQ406	DATE 9/28/03	BY LIWEI

FUEL CONSUMPTION							
Engine Performance Data @ 1500 RPM 			OUTPUT POWER		FUEL CONSUMPTION		
			%	BHP	kWm	U. S. gal. /hr	Li ter/hr
			STANDBY POWER				
			100	744	555	36	135
			PRIME POWER				
			100	630	470	30	113
			75	473	353	23	91
			50	315	235	16	61
			25	158	118	8	31
			0	0	0		
<hr/>							
Engine Performance Data @ 1800 RPM 			OUTPUT POWER		FUEL CONSUMPTION		
			%	BHP	kWm	U. S. gal. /hr	Li ter/hr
			STANDBY POWER				
			100	811	605	41.0	155
			PRIME POWER				
			100	714	533	35.5	134
			75	536	400	26.7	101
			50	357	267	19.1	72
			25	179	133	11.6	44
			0	0	0		

CONVERSIONS: (Litres = U.S. Gal x 3.785) (Engine kWm = BHP x 0.746) (U.S. Gal = Litres x 0.2642) (Engine BHP = Engine kWm x 1.34)

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2. See reverse side for application rating guidelines.

The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/litre (7.1 lbs/U.S. gal). Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.