Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

April 22, 2008

Mr. Nickolas Tucker
Church of Scientology Flag
Service Organization
503 Cleveland Street
Clearwater, Florida 33755

Dear Mr. Tucker:

This is to acknowledge that your notification of intent to use the authority of Rule 62-210.310 to operate your facility was received on March 21, 2008. We have assigned ARMS No. 1030492-002 to this facility.

As you know, pursuant to Florida Statutes section 403.814, authority to operate under general permits commences thirty days after receipt of the registration form unless you have been notified by this office that your facility has not shown entitlement to operate pursuant to the rule provisions.

For your information, authority to operate pursuant to Rule 62-210.310 expires after 5 years. Therefore, a new registration form must be received no later than 5 years after the date your notice was received as indicated above. If your general permit rule conditions require testing, such testing must be completed within the time frame specified in the rule.

If you have any additional questions, please contact Dickson Dibble at 850/921-9586.

Sincerely,

Sandra F. Veazey, Chief
Bureau of Air Monitoring
and Mobile Sources

SFV/pg

cc: Mr. Gary Robbins, Pinellas County

481437 MAR21 2008

RECIPROCATING INTERNAL COMBUSTION ENGINES
AIR GENERAL PERMIT REGISTRATION FORM

Part II. Notification to Permitting Office

(Detach and submit to appropriate permitting office; keep copy onsite)

Instructions: To give notice to the Department of an eligible facility's intent to use this air general permit, the owner or operator of the facility must detach and complete this part of the Air General Permit Registration Form and submit it to the appropriate Department of Environmental Protection or local air pollution control program office which has permitting authority. Please type or print clearly all information, and enclose the appropriate air general permit registration processing fee pursuant to Rule 62-4.050, F.A.C. *($100 as of the effective date of this form)*

1030492-002

RECEIVED MAR 25 2008 Bureau of Air Monitoring & Mobile Sources

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- ☐ Construct and operate a proposed new facility.
- ☐ Operate an existing facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit).

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

- ☒ Continue operating the facility after expiration of the current term of air general permit use.
- ☐ Continue operating the facility after a change of ownership.
- ☐ Make an equipment change requiring re-registration pursuant to Rule 62-210.310(2)(e), F.A.C., or any other change not considered an administrative correction under Rule 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only

If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. In such case, check the first box, and indicate the operation permits being surrendered. If no air operation permits are held by the facility, check the second box.

- ☒ All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s): 1030492-001-AG
- ☐ No air operation permits currently exist for this facility.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)

Church of Scientology Religious Trust

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)

Central Energy Plant

Facility Location (Provide the physical location of the facility, not necessarily the mailing address.)

Street Address: 652 Court Street

City: Clearwater County: Pinellas Zip Code: 33756

Facility Start-Up Date (Estimated start-up date of proposed new facility.)(N/A for existing facility)

October 2002

Owner/Authorized Representative

Name and Position Title (Person who, by signing this form below, certifies that the facility is eligible to use this air general permit.)
Print Name and Title: Glen E. Stilo - Trustee

Owner/Authorized Representative Mailing Address
Organization/Firm: Church of Scientology Religious Trust
Street Address: 319 South Garden Avenue
City: Clearwater County: Pinellas Zip Code: 33756

Owner/Authorized Representative Telephone Numbers
Telephone: (727) 445-4338 Fax: (727) 467-6875
Cell phone (optional):

Facility Contact (If different from Owner/Authorized Representative)

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.)
Print Name and Title: Nickolas Tucker - Chief Engineer

Facility Contact Mailing Address
Organization/Firm: Church of Scientology Flag Service Organization
Street Address: 503 Cleveland Street
City: Clearwater County: Pinellas Zip Code: 33755

Facility Contact Telephone Numbers
Telephone: (727) 445-4338 Fax: (727) 467-6875
Cell phone (optional): (727) 638-8777

Owner/Authorized Representative Statement

This statement must be signed and dated by the person named above as owner or authorized representative

I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Registration Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the facility addressed in this registration form is eligible for use of this air general permit and that the statements made in this registration form are true, accurate and complete. Further, I agree to operate and maintain the facility described in this registration form so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof.

I will promptly notify the Department of any changes to the information contained in this registration form.

Signature

20 March '08
Date

Fuel Consumption

If this is an **initial registration** for reciprocating internal combustion engine operations, provide an estimate of the total amount of fuel expected to be consumed over a 12-month period. Note: the general permit limits fuel consumption by all reciprocating internal combustion engines at the facility to 20,000 gallons per year of gasoline, 250,000 gallons per year of diesel fuel, 1.15 million gallons per year of propane, 40 million standard cubic feet per year of natural gas, or an equivalent prorated amount if multiple fuels are used

If this is a **re-registration** for reciprocating internal combustion engine operations, provide the highest 12-month total fuel consumption amount, in appropriate units, for the last five years. Indicate the 12-month period over which this fuel consumption occurred.

During the last five year period, the highest fuel consumption has been 15,430 cu ft of natural gas. This was for the 12 month period from January 2004 - January 2005.

Description of Facility

Below, or as an attachment to this form, provide a description of the reciprocating internal combustion engine operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

The Central Energy Plant will provide heating and cooling for three downtown Clearwater buildings of the Church of Scientology: the Fort Harrison Hotel, the Flag Building and the L. Ron Hubband Hall.

The facility contains 2 natural gas generators as follows:

1 Each - 550 KW Lean Burn Waukesha Enginator
1 Each - 250 KW Lean Burn Waukesha Enginator

SHOULD BE:
- 436 KW &
- 298 KW

Please see the attached manufacturer's brochure concerning technical specifications

3/27/08
CALLED FACILITY TO VERIFY AS THESE DID NOT MATCH ARMS DATABASE. O/AR VERIFIED THAT APPLICATION INFO WAS INCORRECT. MR. STILO WILL SEND CORRECT INFO VIA E-MAIL.

D. Dittle

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Please see the attached manufacturer's brochure concerning technical specifications

Dibble, Dickson

From: Public Affairs [osaflag@verizon.net]
Sent: Friday, March 28, 2008 10:21 PM
To: Dibble, Dickson
Subject: Page 7 of Air General Permit

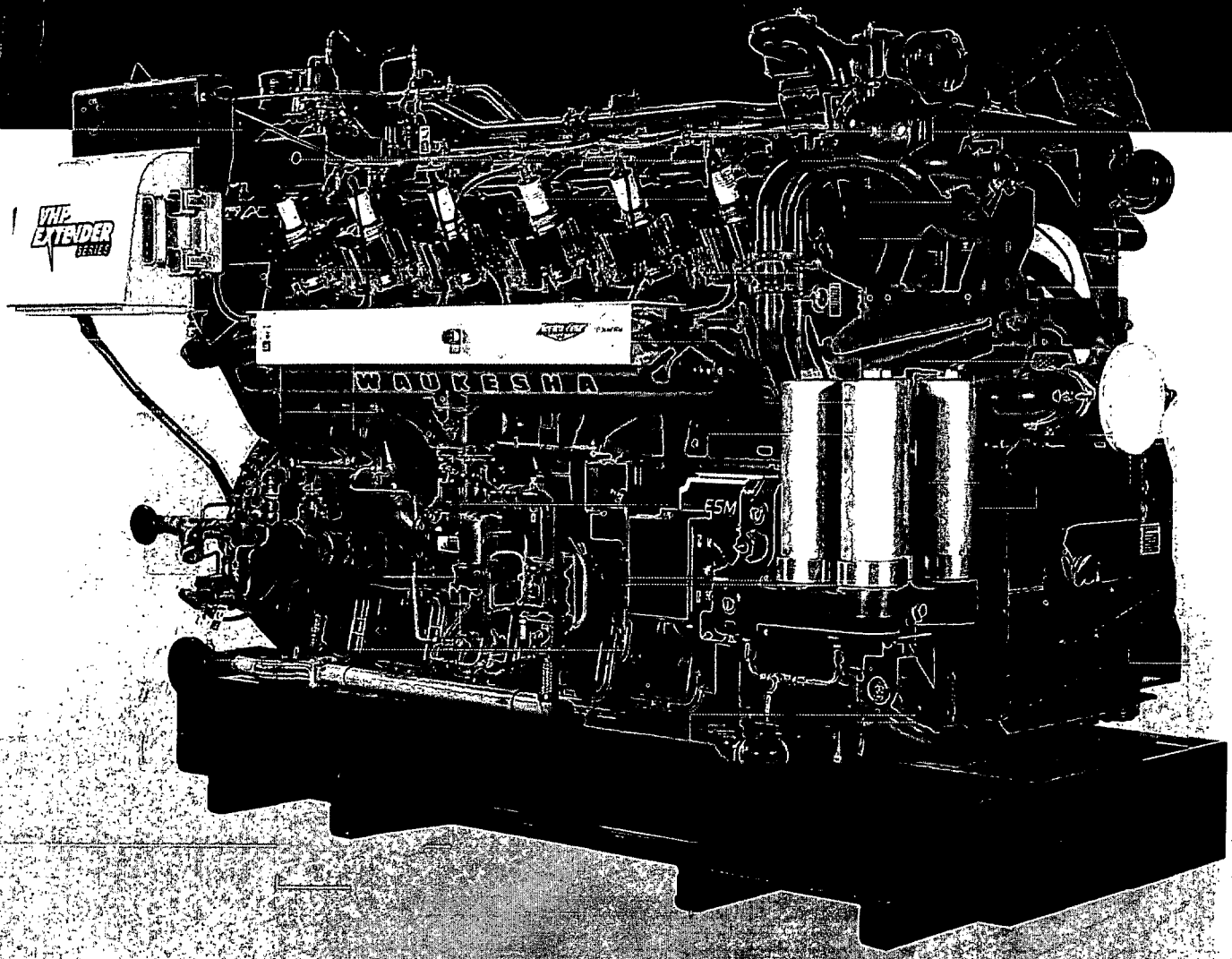
Attachments: Page 7.pdf; ATT788102.txt

Page 7.pdf (48 KB) ATT788102.txt (228 B)

Dear Mr. Dibble, Here's the corrected page that we spoke of yesterday. - Glen Stilo

Waukesha

Power Ratings



Waukesha

WAUKESHA ENGINE

Waukesha® Engine manufactures spark ignited gaseous fueled engines and Enginator® systems for gas compression, electric power generation, cogeneration and mechanical drive applications — ranging in output from 160 to 4830 bhp (40-3430 kWe).

Waukesha Engine's many years of experience have shown that natural gas engines can power or drive just about anything. Waukesha offers a full line of heavy-duty, gaseous-fueled engines that can be put to work in a variety of markets including gas compression, electric power generation, cogeneration, and general mechanical drive applications (pumps, air compressors, chillers, blowers).

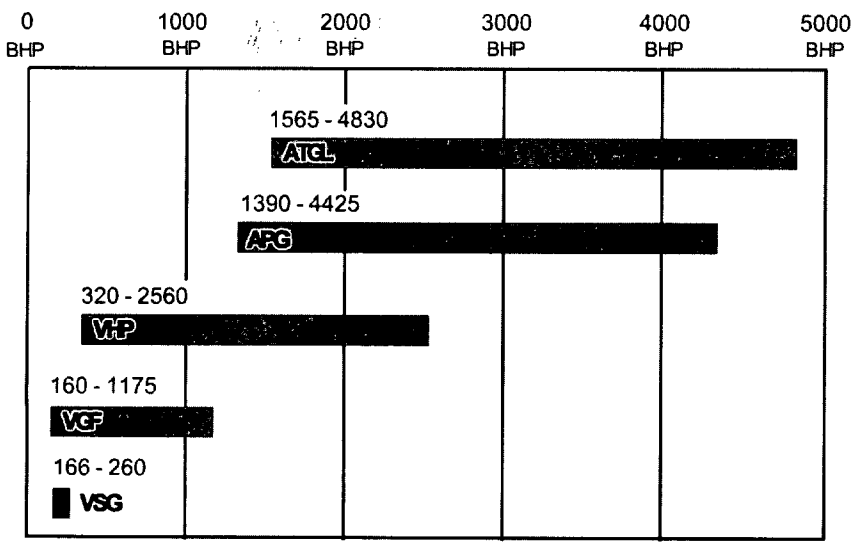
With decades of experience in engine technology together with excellent engineering skills, Waukesha has found cost-effective solutions for many customer needs. Customers recognize that Waukesha engines can power all types of equipment and do it more cost effectively.

Waukesha's manufacturing facility (Waukesha, Wisconsin) is certified by the world's leading registrar, Lloyd's Register Quality Assurance (LQRA), to the ISO 9001:2000 Quality Management Standard. Regional sales offices stand ready to serve our customers, distributors, and OEMs.

With a global distribution network, Waukesha services all major marketing areas. Waukesha distributors are on call 24 hours a day, with the parts and service personnel to provide quick responsive solutions to customers' needs.

Waukesha Engine has found solutions to almost any customer concern and need. Our innovative product design improvements keep pace with customers' ever-increasing standards. From demands for higher loads and speeds, to simple, long-term reliability, Waukesha understands those needs and continues to design, build, and service the best engines in the marketplace.

Waukesha Engine Family Ranges



BASIC FORMULAS

English

$°F = (\text{Degrees } C \times 1.8) + 32$

$$\text{Torque lb-ft} = \frac{5250 \times BHP}{rpm}$$

$$BMEP_{(psi)} = \frac{792{,}000 \times BHP}{\text{Displacement (cubic inches)} \times rpm}$$

$$BHP = \frac{BMEP \times \text{Displacement (cubic inches)} \times rpm}{792{,}000}$$

Metric

$$°C = \frac{(\text{Degrees } F - 32)}{1.8}$$

$$\text{Torque (N·m)} = \frac{kW_b \times 9550}{rpm}$$

$$BMEP_{(bar)} = \frac{kW_b \times 1200}{\text{Displacement (liters)} \times rpm}$$

$$kW_b = \frac{BMEP_{(bar)} \times \text{Displacement (liters)} \times rpm}{1200}$$

Displacement

$$\text{Displacement} = \frac{pD^2}{4} \times S \times C = 0.7854\, D^2 SC$$

Where: Displacement = cubic inch.
D = Bore Dia. in. C = No. of cyl.
S = Stroke in. p = 3.1416

Piston Speed

$$\text{Piston Speed} = P = \frac{NS}{6}$$

Where: P = Ft. per Min.
N = rpm
S = Stroke in

Formulas To Determine kW, KVA, Reactive KVA, BHP And Amperes (for three phase AC)

$$KVA = \frac{1.73 \times \text{Volts} \times \text{Amps}}{1000}$$

$$kW = KVA \times PF$$

$$kW_B = kW_B \times Eff$$

$$BHP = \frac{1.73 \times \text{Volts} \times \text{Amps} \times PF}{.746 \times 1000 \times Eff}$$

$$BHP = \frac{kW}{.746 \times Eff}$$

$$AMPS = \frac{BHP \times .746 \times 1000 \times Eff}{1.73 \times \text{Volts} \times PF}$$

$$AMPS = \frac{kW \times 1000}{1.73 \times \text{Volts} \times PF}$$

$$AMPS = \frac{KVA \times 1000}{1.73 \times \text{Volts}}$$

$$\text{Reactive KVA} = KVA \times$$

This Power Ratings Bulletin supersedes all Power Ratings Bulletins prior to December, 2005.

Product Designations

Engine Series

Waukesha manufactures five engine families — the **ATGL, APG, VHP, VGF,** and **VSG**

Prefix Designations

The prefix attached to an engine model indicates the number of cylinders (except ATGL and APG which states actual number): **P = 16, L = 12, H = 8, F = 6.**

- VHP L7042GL engine is a 12 cylinder engine
- VGF P48 GL is a 16 cylinder engine
- 16V-AT27GL is a 16 cylinder engine

Numeric Designations

The numeric designation in each engine model name indicates the displacement of the engine model in either English units of cubic inches or metric units of liters.

- The **ATGL** series is designated by a **numeric indicator of the bore size in millimeters**. For example: the **"27"** of the 16V-AT **27**GL indicates a **275 millimeter bore**.
- The **APG** series is designated by a **numeric indicator of the bore size in millimeters**. For example: the **"150"** of the 16V **150**LTD indicates a **152 millimeter bore**.
- The **VHP** series show a **displacement in cubic inches**. For example: the **VHP L7042** GL indicates a displacement of **7,040 in³**.
- The **VGF** and **VSG** series show a **displacement in liters**. For example: the **VGF P48** GL indicates a displacement of **48 liters**.
- The **VSG F11GSI** indicates a displacement of **11 liters**.

Suffix Designations

G = Naturally aspirated
GSI = Turbocharged, intercooled
GSID = Turbocharged, intercooled, draw-through
LT = Lean combustion turbulence
LTD = Lean combustion turbulence, draw-through
GL = Turbocharged, intercooled, lean burn
GLD = Turbocharged, intercooled, lean burn, draw-through

Other Waukesha Engine Products

Waukesha Power Systems Enginator® Series

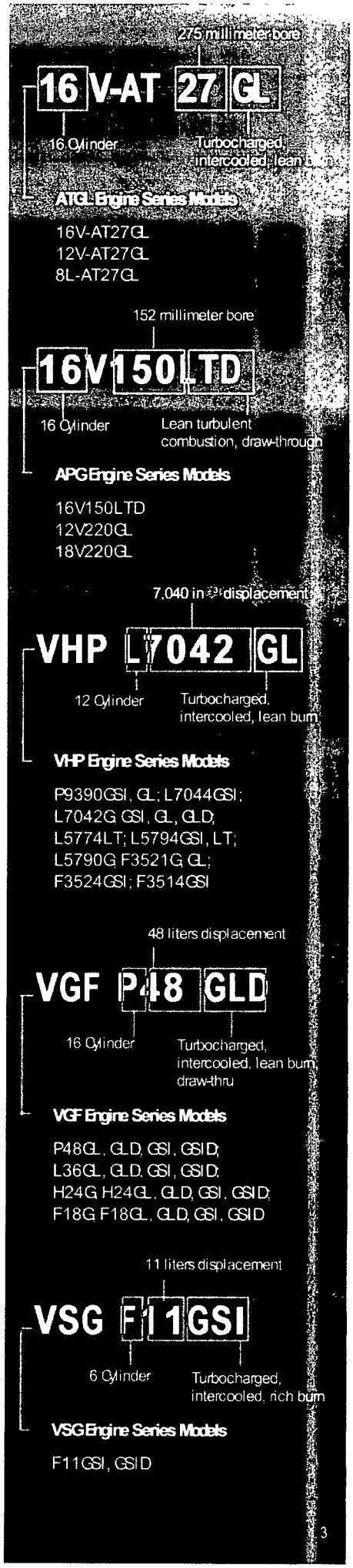
The Enginator is a Waukesha Engine registered trademark of an engine generator set packaged by Waukesha Power Systems. WPS also designs and assembles Engomatic® panels (switchgear control systems).

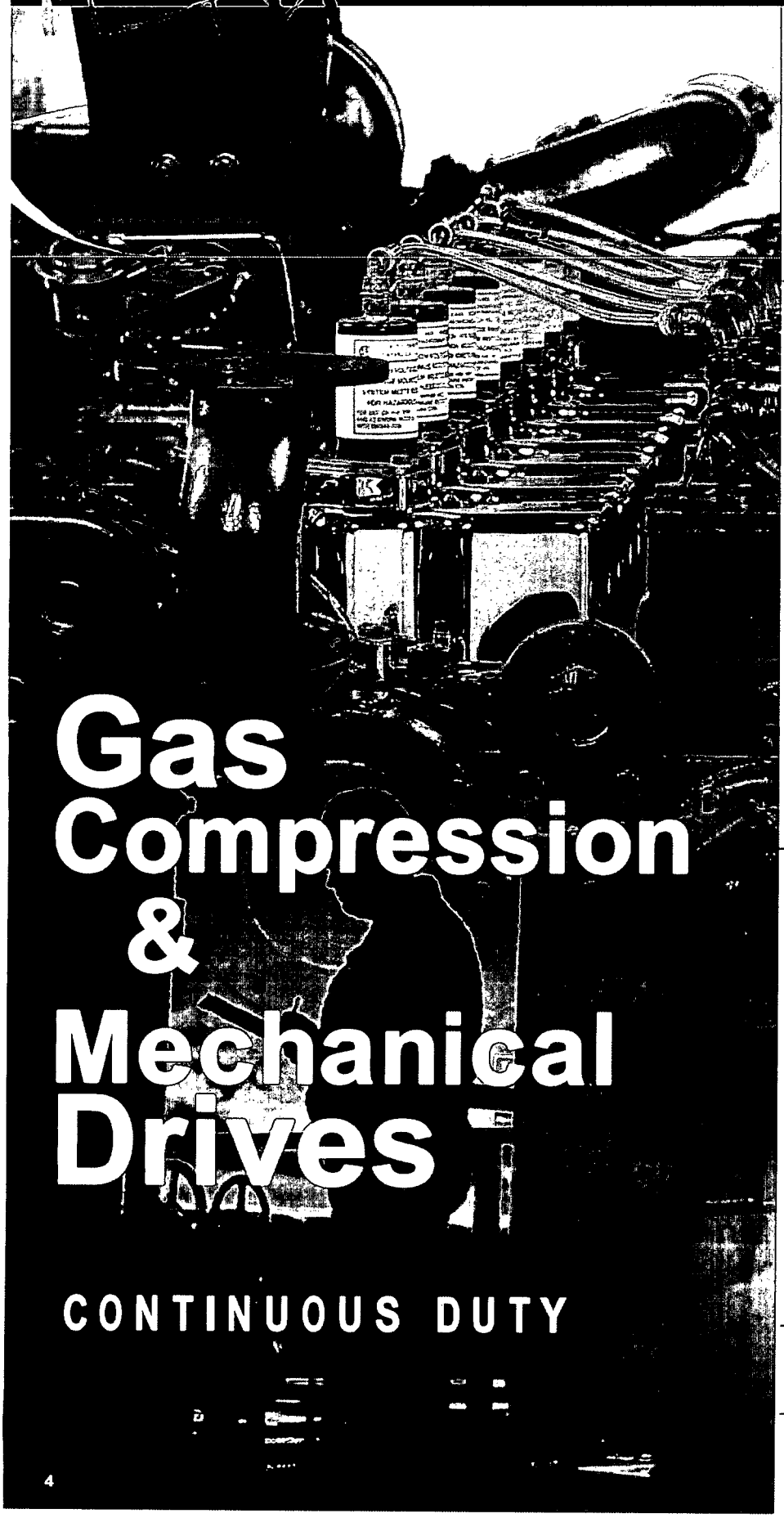
Custom Engine Controls (CEC) Series

AFM = Air/Fuel Module
DSM = Detonation Sensing Module
IM = Ignition Module
TCM = Turbocharger Control Module
KDM = Knock Detection Module

Waukesha ESM®

ESM® = Engine System Manager
AFR = Air/Fuel Ratio Controller





Gas Compression & Mechanical Drives

CONTINUOUS DUTY

Engine Family

	Model	Displacement	Bore/Stroke
ATGL ®	**16V-AT27GL**	17,398 in³ (285 L)	10.83 x 11.81" (275 x 300 mm)
	12V-AT27GL	13,048 in³ (214 L)	10.83 x 11.81" (275 x 300 mm)
	8L-AT27GL	8699 in³ (143 L)	10.83 x 11.81" (275 x 300 mm)
VHP ®	**P9390**	9388 in³ (154 L)	9.375 x 8.5" (238 x 216 mm)
	L7042/L7044	7040 in³ (116 L)	9.375 x 8.5" (238 x 216 mm)
	L5790/L5794/ L5774	5788 in³ (95 L)	8.5 x 8.5" (216 x 216 mm)
	F3514/F3521/ F3524	3520 in³ (58 L)	9.375 x 8.5" (238 x 216 mm)
VGF ®	**P48**	2924 in³ (48 L)	5.98 x 6.5" (152 x 165 mm)
	L36	2193 in³ (36 L)	5.98 x 6.5" (152 x 165 mm)
	H24	1462 in³ (24 L)	5.98 x 6.5" (152 x 165 mm)
	P18	1096 in³ (18 L)	5.98 x 6.5" (152 x 165 mm)
VSG	**P11**	673 in³ (11 L)	5.5 x 5.71" (127 x 145 mm)

[1] Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.

[2] Engine ratings are 700-1000 rpm for low speed turbocharger operation and 1000-1200 rpm for high speed turbocharger operation.

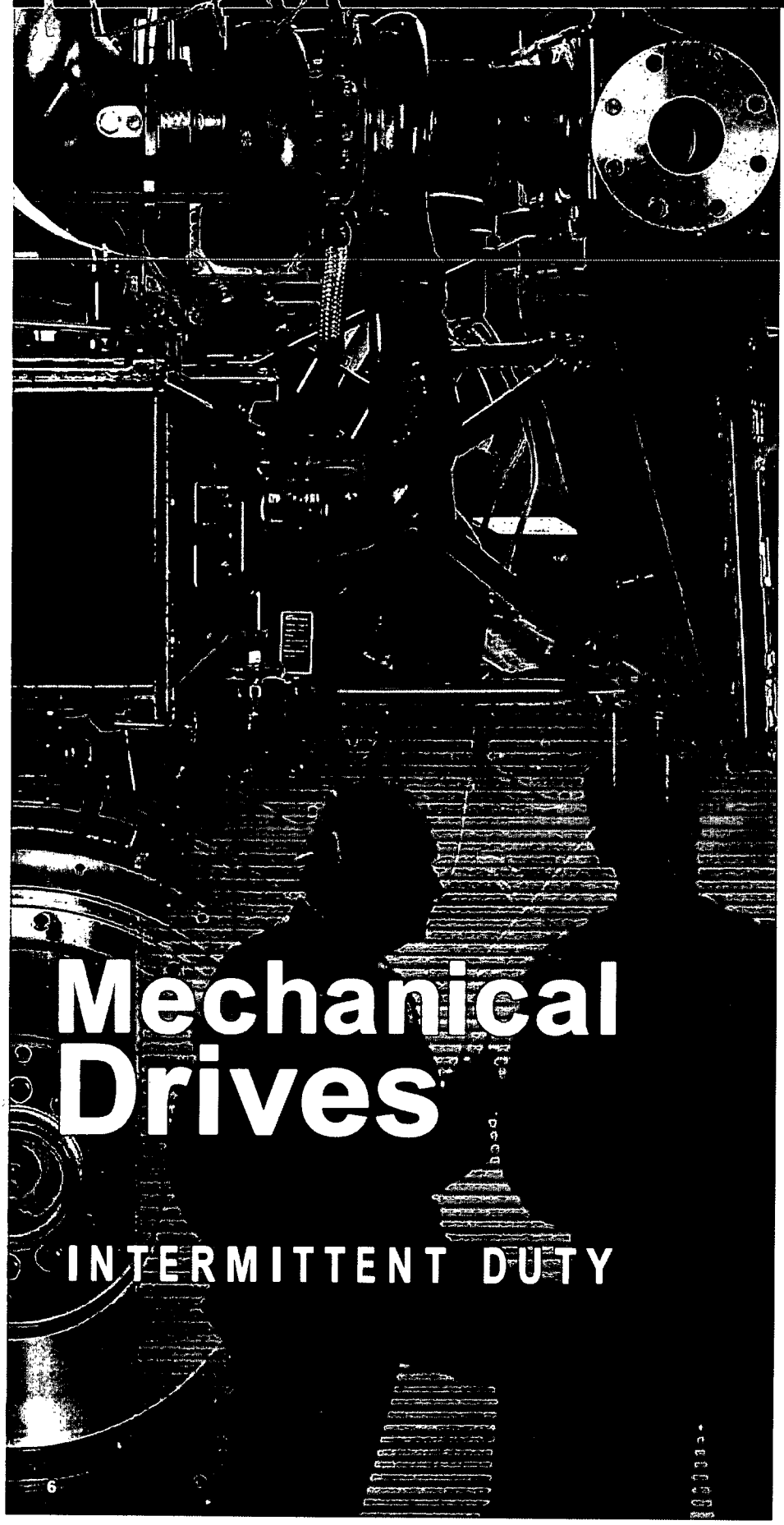
[3] These power ratings require price book option Code 1100 (176 BMEP) and DSM. They are available continuously when applied per WKI® Power and Timing Curve S7079-19. It is permissible to operate at up to 5% overload for two hours in each 24 hour period.

[4] In line engine ratings are 1200-1400 rpm for low speed turbocharger operation and 1400-1800 rpm for high speed turbocharger operation. Vee engine ratings are 1100-1600 rpm for low speed turbocharger operation and 1400-1800 rpm for high speed turbocharger operation.

Continuous Duty

Model	I.C. Water Temp. (Tcra)	C.R. (compression ratio)	800 rpm		900 rpm		1000 rpm		1200 rpm		1400 rpm		1500 rpm		1600 rpm		1800 rpm	
	°F °C		bhp	kWb	bhp	kWb	bhp	kWb	bhp	kWb	bhp	kWb	bhp	kWb	bhp	kWb	bhp	kWb
16V-ATZ7GL	90° 32°	9:1	3600	2686	4050	3020	4500	3356	—	—	—	—	—	—	—	—	—	—
16V-ATZ7GL	130° 54°	9:1	3600	2686	4050	3020	4500	3356	—	—	—	—	—	—	—	—	—	—
12V-ATZ7GL	90° 32°	9:1	2640	1967	2970	2216	3295	2458	—	—	—	—	—	—	—	—	—	—
12V-ATZ7GL	130° 54°	9:1	2508	1871	2820	2104	3130	2335	—	—	—	—	—	—	—	—	—	—
8L-ATZ7GL	90° 32°	9:1	1760	1312	1980	1477	2200	1641	—	—	—	—	—	—	—	—	—	
8L-ATZ7GL	130° 54°	9:1	1670	1246	1880	1405	2090	1560	—	—	—	—	—	—	—	—	—	—
P9390GSI	85° 29°	8:1	1375	1026	1547	1154	1719	1282	2063	1538	—	—	—	—	—	—	—	—
P9390GSI	130° 54°	8:1	1320	984	1485	1107	1650	1230	1980	1476	—	—	—	—	—	—	—	—
P9390GL	85° 29°	10.5:1	1375[2]	1026[2]	1547[2]	1154[2]	1719[2]	1282[2]	2063[2]	1538[2]	—	—	—	—	—	—	—	—
P9390GL	130° 54°	10.5:1	1320[2]	984[2]	1485[2]	1107[2]	1650[2]	1230[2]	1980[2]	1476[2]	—	—	—	—	—	—	—	—
L7044GSI	130° 54°	8:1	1120[1]	835[1]	1260[1]	940[1]	1400[1]	1044[1]	1680[1]	1253[1]	—	—	—	—	—	—	—	—
L7042GSI	85° 29°	8:1	1031[1]	769[1]	1160[1]	865[1]	1289[1]	961[1]	1547[1]	1154[1]	—	—	—	—	—	—	—	—
L7042GSI	130° 54°	8:1	987[1]	736[1]	1110[1]	828[1]	1233[1]	920[1]	1480[1]	1104[1]	—	—	—	—	—	—	—	—
L7042GL	85° 29°	10.5:1	1031[2]	769[2]	1160[2]	865[2]	1289[2]	961[2]	1547[2]	1154[2]	—	—	—	—	—	—	—	—
L7042GL	130° 54°	10.5:1	987[2]	736[2]	1110[2]	830[2]	1233[2]	920[2]	1480[2]	1104[2]	—	—	—	—	—	—	—	—
L7042GL	85° 29°	10.5:1	—	—	—	—	1289[1]	961[1]	1408[1]	1050[1]	—	—	—	—	—	—	—	—
L7042GL	130° 54°	10.5:1	—	—	—	—	1233[1]	920[1]	1408[1]	1050[1]	—	—	—	—	—	—	—	—
L7042G	— —	10:1	732	546	818	610	896	668	1025	764	—	—	—	—	—	—	—	—
L5794GSI	130° 54°	8.2:1	920[1]	686[1]	1035[1]	772[1]	1150[1]	858[1]	1380[1]	1029[1]	—	—	—	—	—	—	—	—
L5794LT	85° 29°	10.2:1	—	—	—	—	1263[1]	941[1]	1515[1]	1130[1]	—	—	—	—	—	—	—	—
L5794LT	130° 54°	10.2:1	—	—	—	—	1208[1]	901[1]	1450[1]	1081[1]	—	—	—	—	—	—	—	—
L5774LT	130° 54°	10.2:1	—	—	—	—	1067	795	1280	954	—	—	—	—	—	—	—	—
L5790G	— —	10:1	604	450	672	501	738	550	845	630	—	—	—	—	—	—	—	—
F3524GSI	130° 54°	8:1	560[1]	418[1]	630[1]	470[1]	700[1]	522[1]	840[1]	626[1]	—	—	—	—	—	—	—	—
F3514GSI	130° 54°	8:1	493[1]	368[1]	555[1]	414[1]	617[1]	460[1]	740[1]	552[1]	—	—	—	—	—	—	—	—
F3521GL	85° 29°	10.5:1	516	385	580	433	644	480	773	577	—	—	—	—	—	—	—	—
F3521GL	130° 54°	10.5:1	492	367	554	413	615	459	738	550	—	—	—	—	—	—	—	—
F3521G	— —	10:1	366	273	409	305	448	334	515	384	—	—	—	—	—	—	—	—
P48GSI/GSID	130° 54°	8.6:1	—	—	—	—	—	—	—	—	830	620	885	660	945	705	1065	800
P48GL/GLD	130° 54°	11:1	—	—	—	—	—	—	710[4]	530[4]	830[4]	620[4]	885[4]	660[4]	945[4]	705[4]	1065	800[4]
P48GL/GLD	130° 54°	11:1	—	—	—	—	—	—	—	—	910[3]	680[3]	975[3]	730[3]	1040[3]	775[3]	1175	880[3]
L36GSI/GSID	130° 54°	8.6:1	—	—	—	—	—	—	—	—	620	460	670	500	710	530	800	600
L36GL/GLD	130° 54°	11:1	—	—	—	—	—	—	530[4]	400[4]	620[4]	460[4]	670[4]	500[4]	710[4]	530[4]	800[4]	600[4]
L36GL	130° 54°	8.7:1	—	—	—	—	—	—	—	—	620	460	670	500	710	530	800	600
L36GL/GLD	130° 54°	11:1	—	—	—	—	—	—	—	—	685[3]	510[3]	735[3]	550[3]	780[3]	580[3]	880[3]	660[3]
H24GSI/GSID	130° 54°	8.6:1	—	—	—	—	—	—	—	—	415	310	445	330	475	355	530	400
H24GL/GLD	130° 54°	11:1	—	—	—	—	—	—	355[4]	265[4]	415[4]	310[4]	445[4]	330[4]	475[4]	355[4]	530[4]	400[4]
H24GL	130° 54°	8.7:1	—	—	—	—	—	—	—	—	415	310	445	330	475	355	530	400
H24GL/GLD	130° 54°	11:1	—	—	—	—	—	—	—	—	455[3]	340[3]	490[3]	365[3]	520[3]	390[3]	585[3]	440[3]
H24G	— —	11:1	—	—	—	—	—	—	215	160	250	186	265	198	285	213	320	239
P18GSI/GSID	130° 54°	8.6:1	—	—	—	—	—	—	—	—	310	230	335	250	355	265	400	300
P18GL/GLD	130° 54°	11:1	—	—	—	—	—	—	265[4]	200[4]	310[4]	230[4]	335[4]	250[4]	355[4]	265[4]	400[4]	300[4]
P18GL	130° 54°	8.7:1	—	—	—	—	—	—	—	—	310	230	335	250	355	265	400	300
P18GL/GLD	130° 54°	11:1	—	—	—	—	—	—	—	—	340[3]	255[3]	365[3]	275[3]	390[3]	290[3]	440[3]	330[3]
P18G	— —	11:1	—	—	—	—	—	—	160	119	185	138	200	149	215	160	240	179
P11GSI/GSID	85° 29°	10:1	—	—	—	—	—	—	166	124	194	145	208	155	222	165	250	186
P11GSI/GSID	130° 54°	10:1	—	—	—	—	—	—	166	124	194	145	208	155	222	165	250	186

ISO Standard Power (Continuous Power Rating): *The highest load and speed which can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance. It is permissible to operate the engine at up to 10% overload or the maximum load indicated by the intermittent rating, whichever is lower, for two hours in every 24 hour period.*



Mechanical Drives

INTERMITTENT DUTY

Engine Family

	Model	Displacement	Bore/Stroke
ATGL ®	**16V-AT27GL**	17,398 in³ (285 L)	10.83 x 11.81" (275 x 300 mm)
	12V-AT27GL	13,048 in³ (214 L)	10.83 x 11.81" (275 x 300 mm)
	8L-AT27GL	8699 in³ (143 L)	10.83 x 11.81" (275 x 300 mm)
VHP ®	**P9390**	9388 in³ (154 L)	9.375 x 8.5" (238 x 216 mm)
	L7042/L7044	7040 in³ (116 L)	9.375 x 8.5" (238 x 216 mm)
	L5790/L5794/	5788 in³ (95 L)	8.5 x 8.5" (216 x 216 mm)
	F3514/F3521/ F3524	3520 in³ (58 L)	9.375 x 8.5" (238 x 216 mm)
VGF ®	**P48**	2924 in³ (48 L)	5.98 x 6.5" (152 x 165 mm)
	L36	2193 in³ (36 L)	5.98 x 6.5" (152 x 165 mm)
	H24	1462 in³ (24 L)	5.98 x 6.5" (152 x 165 mm)
	P18	1096 in³ (18 L)	5.98 x 6.5" (152 x 165 mm)
VSG	**P11**	673 in³ (11 L)	5.5 x 5.71" (127 x 145 mm)

[1] Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.

[2] Engine ratings are 700-1000 rpm for low speed turbocharger operation and 1000-1200 rpm for high speed turbocharger operation.

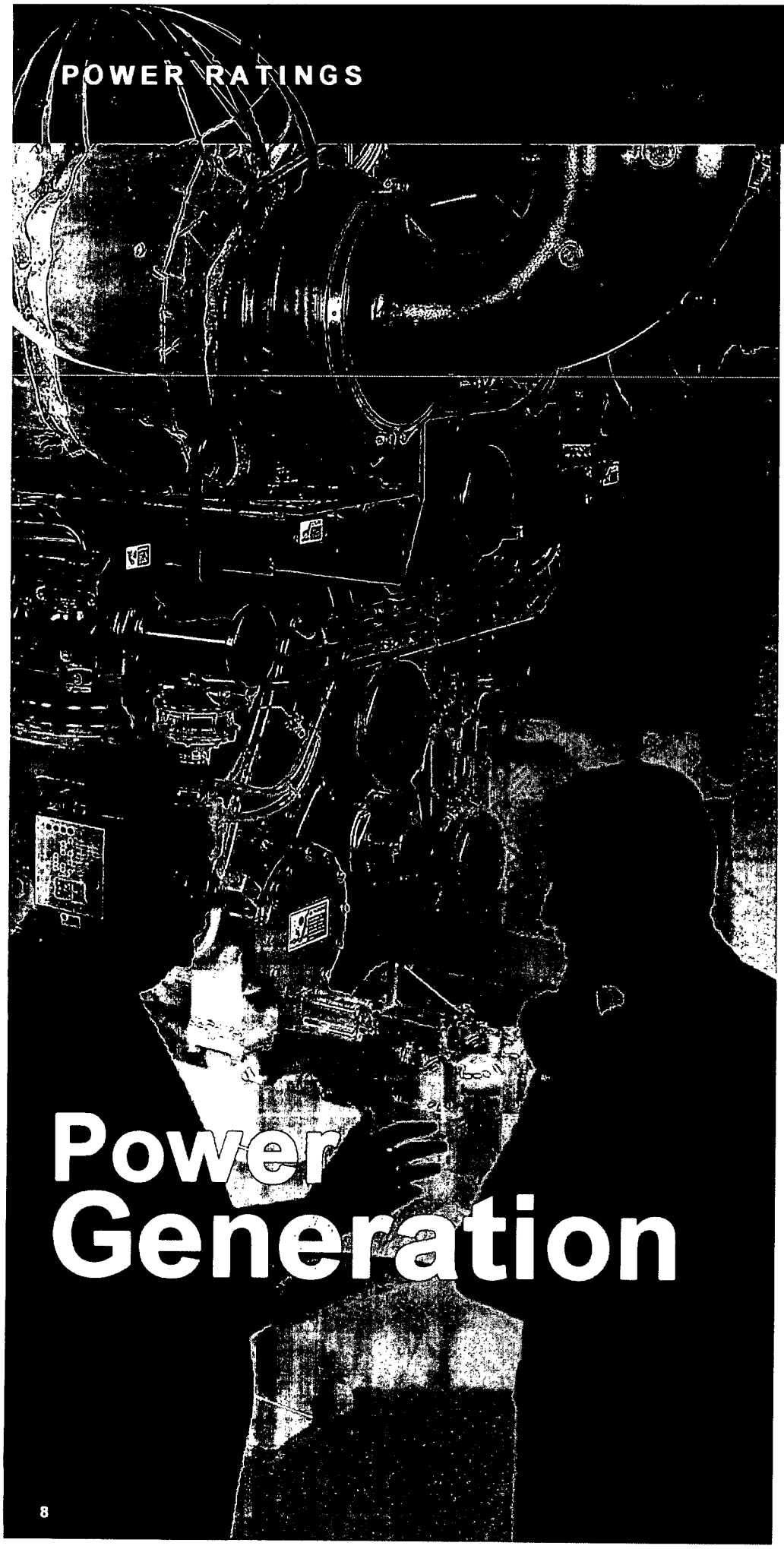
[4] Inline engine ratings are 1200-1400 rpm for low speed turbocharger operation and 1400-1800 rpm for high speed turbocharger operation. Vee engine ratings are 1100-1600 rpm for low speed turbocharger operation and 1400-1800 rpm for high speed turbocharger operation.

Intermittent Duty

Model	I.C. Water Temp. (Tcra) °F	°C	C.R. (compression ratio)	800 rpm bhp	kWb	900 rpm bhp	kWb	1000 rpm bhp	kWb	1200 rpm bhp	kWb	1400 rpm bhp	kWb	1500 rpm bhp	kWb	1600 rpm bhp	kWb	1800 rpm bhp	kWb
16V-AT27GL	90°	32°	9:1	—	—	4350	3244	4830	3602	—	—	—	—	—	—	—	—	—	
16V-AT27GL	130°	54°	9:1	—	—	4130	3080	4590	3423	—	—	—	—	—	—	—	—	—	
12V-AT27GL	90°	32°	9:1	—	—	3267	2437	3625	2704	—	—	—	—	—	—	—	—	—	
12V-AT27GL	130°	54°	9:1	—	—	3102	2314	3443	2569	—	—	—	—	—	—	—	—	—	
8L-AT27GL	90°	32°	9:1	—	—	2178	1625	2420	1805	—	—	—	—	—	—	—	—	—	
8L-AT27GL	130°	54°	9:1	—	—	2068	1542	2299	1716	—	—	—	—	—	—	—	—	—	
P9390GSI	85°	29°	8:1	1707	1273	1920	1432	2134	1591	2560	1909	—	—	—	—	—	—	—	
P9390GSI	130°	54°	8:1	1631	1216	1835	1368	2039	1520	2447	1825	—	—	—	—	—	—	—	
P9390GL	85°	29°	10.5:1	1513[2]	1128[2]	1702[2]	1269[2]	1891[2]	1410[2]	2270[2]	1693[2]	—	—	—	—	—	—	—	
P9390GL	130°	54°	10.5:1	1445[2]	1078[2]	1626[2]	1213[2]	1806[2]	1347[2]	2167[2]	1616[2]	—	—	—	—	—	—	—	
L7044GSI	130°	54°	8:1	1120	836	1260	940	1400	1044	1680	1253	—	—	—	—	—	—	—	
L7042GSI	85°	29°	8:1	1280[1]	954[1]	1440[1]	1074[1]	1600[1]	1193[1]	1920[1]	1432[1]	—	—	—	—	—	—	—	
L7042GSI	130°	54°	8:1	1223[1]	912[1]	1376[1]	1026[1]	1528[1]	1139[1]	1834[1]	1368[1]	—	—	—	—	—	—	—	
L7042GL	85°	29°	10.5:1	1134[2]	846[2]	1276[2]	952[2]	1418[2]	1057[2]	1702[2]	1269[2]	—	—	—	—	—	—	—	
L7042GL	130°	54°	10.5:1	1084[2]	808[2]	1219[2]	909[2]	1355[2]	1010[2]	1626[2]	1213[2]	—	—	—	—	—	—	—	
L7042GL	85°	29°	10.5:1	—	—	—	—	1418[1]	1057[1]	1408[1]	1050[1]	—	—	—	—	—	—	—	
L7042GL	130°	54°	10.5:1	—	—	—	—	1355[1]	1010[1]	1408[1]	1050[1]	—	—	—	—	—	—	—	
L7042G	—	—	10:1	824	614	920	686	1008	752	1152	859	—	—	—	—	—	—	—	
L5794GSI	130°	54°	8.2:1	920[1]	686[1]	1035[1]	772[1]	1150[1]	858[1]	1380[1]	1029[1]	—	—	—	—	—	—	—	
L5794LT	85°	29°	10.2:1	—	—	—	—	1315[1]	981[1]	1580[1]	1178[1]	—	—	—	—	—	—	—	
L5794LT	130°	54°	10.2:1	—	—	—	—	1315[1]	981[1]	1580[1]	1178[1]	—	—	—	—	—	—	—	
L5790G	—	—	10:1	678	506	756	564	830	619	946	705	—	—	—	—	—	—	—	—
F3524GSI	130°	54°	8:1	560[1]	418[1]	630[1]	470[1]	700[1]	522[1]	840[1]	627[1]	—	—	—	—	—	—	—	
F3514GSI	130°	54°	8:1	495[1]	367[1]	555[1]	413[1]	615[1]	459[1]	740[1]	550[1]	—	—	—	—	—	—	—	—
F3521G	—	—	10:1	412	307	460	343	504	376	576	430	—	—	—	—	—	—	—	—
P48GSI/GSID	130°	54°	8.6:1	—	—	—	—	—	—	—	—	910	680	975	730	1040	775	1175	880
P48GL/GLD	130°	54°	11:1	—	—	—	—	—	—	785[4]	585[4]	910[4]	680[4]	975[4]	730[4]	1040[4]	775[4]	1175[4]	880[4]
L36GSI/GSID	130°	54°	8.6:1	—	—	—	—	—	—	—	—	685	510	735	550	780	580	880	660
L36GL/GLD	130°	54°	11:1	—	—	—	—	—	—	585[4]	440[4]	685[4]	510[4]	735[4]	550[4]	780[4]	580[4]	880[4]	660[4]
L36GL	130°	54°	8.7:1	—	—	—	—	—	—	—	—	685	510	735	550	780	580	880	660
H24GSI/GSID	130°	54°	8.6:1	—	—	—	—	—	—	—	—	455	340	490	365	520	390	585	440
H24GL/GLD	130°	54°	11:1	—	—	—	—	—	—	395[4]	290[4]	455[4]	340[4]	490[4]	365[4]	520[4]	390[4]	585[4]	440[4]
H24GL	130°	54°	8.7:1	—	—	—	—	—	—	—	—	455	340	490	365	520	390	585	440
H24G	—	—	11:1	—	—	—	—	—	—	240	180	275	205	295	220	315	235	355	265
P18GSI/GSID	130°	54°	8.6:1	—	—	—	—	—	—	—	—	340	255	365	275	390	290	440	330
P18GL/GLD	130°	54°	11:1	—	—	—	—	—	—	295[4]	220[4]	340[4]	255[4]	365[4]	275[4]	390[4]	290[4]	440[4]	330[4]
P18GL	130°	54°	8.7:1	—	—	—	—	—	—	—	—	340	255	365	275	390	290	440	330
P18G	—	—	11:1	—	—	—	—	—	—	180	130	205	155	220	165	240	180	265	195
P11GSI/GSID	85°	29°	10:1	—	—	—	—	—	—	173	129	202	151	217	162	231	172	260	194
P11GSI/GSID	130°	54°	10:1	—	—	—	—	—	—	166	124	194	145	208	155	222	165	250	186

Intermittent Power Rating: *The highest load and speed that can be applied in variable speed mechanical system applications only. Operation at this rating is limited to a maximum of 3500 hours per year.*

NOTE: For continuous duty power ratings for mechanical drives, please see pages 4 and 5.



Power Generation

Engine Family

ATGL®

[1] 10% overload not available.

130°F (54°C)
I.C. Water Temp. (Tcra)

Engine Family

APG™

[1] No overload allowed.

130°F (54°C)
I.C. Water Temp. (Tcra)

113°F (45°C)
I.C. Water Temp. (Tcra)

Engine Family

VHP®

[1] Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.

[2] No overload allowed.

130°F (54°C)
I.C. Water Temp. (Tcra)

Engine Family

VGF®

[1] These power ratings require pricebook option Code 1100 (176 BMEP) and DSM. They are available continuously when applied per WAI™ Power and Timing Curve S7079-19. It is permissible to operate at up to 5% overload for two hours in each 24 hour period.

[2] Rating is for high compression ratio pistons only.

130°F (54°C)
I.C. Water Temp. (Tcra)

Engine Family

VSG

130°F (54°C)
I.C. Water Temp. (Tcra)

Remote Radiator Cooling (kWe)

	60Hz			50Hz	
	Continuous	Peak Shave*	Standby	Continuous	Standby
Model	**900 rpm**	**900 rpm**	**900 rpm**	**1000 rpm**	**1000 rpm**
16V-ATZ7GL	2960[5]	2960	2960	3250[5]	3250
12V-ATZ7GL	2000	2140	2200	2220	2440
8L-ATZ7GL	1330	1425	1460	1480	1630
Model	**1800 rpm**	—	—	**1500 rpm**	—
AFGI1000	1100[7]	—	—	1000[7]	—
Model	**1200 rpm**	—	—	**1500 rpm**	—
AFG2000	1860[7]	—	—	2100[7]	—
AFG3000	2800[7]	—	—	3200[7]	—
Model	**1200 rpm**	**1200 rpm**	**1200 rpm**	**1000 rpm**	**1000 rpm**
V-F9500GSI	1400	1500	1750	1175	1450
V-F9500GL	1400	1490	1540	1175	1295
V-F7104GSI	1200	1250	1300	1100[7]	1100
V-F7104GSID	1200[1]	1250[1]	1300[1]	1100[1,7]	1100[1]
V-F7100GSI	1050	1180	1300	875	1075
V-F7100GSID	1050[1]	1180[1]	1300[1]	875[1]	1075[1]
V-F7100GL	1050	1100	1155	875	965
V-F7100G	725	725	810	635	710
V-F5804LT	1025	1080	1125	900[7]	940
V-F5804LTD	1025[1]	1025[1]	1025[1]	900[1,7]	900[1]
V-F5804GSI	980	1035	1080	900[7]	900
V-F5804GSID	980[1]	1035[1]	1080[1]	900[1,7]	900[1]
V-F5800G	595	595	665	475	525
V-F3804GSI	600	630	650	540[7]	540
V-F3804GSID	600[1]	630[1]	650[1]	540[1,7]	540[1]
V-F3800G	360	360	400	315	350
Model	**1800 rpm**	**1800 rpm**	**1800 rpm**	**1500 rpm**	**1500 rpm**
VGF48GL	830[3]	830[3]	860	685[3]	715
VGF48GLD	830[3]	830[3]	860	685[3]	715
VGF48GLD/2	—	—	—	—	—
VGF48GSI/GSID	750	750	825	625	685
VGF36GL	620[3,9]	620[3,9]	645[9]	515[3,9]	535[9]
VGF36GLD	620[3]	620[3]	645	515[3]	535
VGF36GSI/GSID	560	560	620	475	515
VGF24GL	415[3,9]	415[3,9]	425[9]	340[3,9]	355[9]
VGF24GLD	415[3]	415[3]	425	340[3]	355
VGF24GLD/2	—	—	—	—	—
VGF24GSI/GSID	375	375	410	310	340
VGP18GL	310[3,9]	310[3,9]	315[9]	250[3,9]	260[9]
VGP18GLD	310[3]	310[3]	315	250[3]	260
VGP18GSI/GSID	280	280	310	230	255
Model	**1800 rpm**	**1800 rpm**	**1800 rpm**	**1500 rpm**	**1500 rpm**
VSGI1GSI/GSID	165	165	175	140	150

Engines Only (kWb)

	60Hz	50Hz
	Continuous	Continuous
Model	**900 rpm**	**1000 rpm**
16V-ATZ7GL	3110[5]	3356[5]
12V-ATZ7GL	2104	2335
8L-ATZ7GL	1405	1560
Model	**1800 rpm**	**1500 rpm**
16V150LTD	1142[7]	1038[7]
Model	**1200 rpm**	**1500 rpm**
12V220GL	1950[7]	2200[7]
18V220GL	2925[7]	3300[7]
Model	**1200 rpm**	**1000 rpm**
F9390GSI	1469	1224
F9390GL	1469	1224
L7044GSI	1253	1153[7]
L7044GSI	1253[1]	1153[1,7]
L7042GSI	1102	919
L7042GSI	1102[1]	919[1]
L7042GL	1102	919
L7042G	764	668
L5794LT	1078	947[7]
L5794LT	1078[1]	947[1,7]
L5794GSI	1029	947[7]
L5794GSI	1029[1]	947[1,7]
L5790G	628	550
F3524GSI	627	573[7]
F3524GSI	627[1]	573[1,7]
F3521G	382	340
Model	**1800 rpm**	**1500 rpm**
P48GL	880[3]	730[3]
P48GLD	880[3]	730[3]
P48GLD/2	—	830
P48GSI/GSID	800	660
L36GL	660[3,9]	550[3,9]
L36GLD	660[3]	550[3]
L36GSI/GSID	600	500
H24GL	440[3,9]	365[3,9]
H24GLD	440[3]	365[3]
H24GLD/2	—	414
H24GSI/GSID	400	330
P18GL	330[3,9]	275[3,9]
P18GLD	330[3]	275[3]
P18GSI/GSID	300	250
Model	**1800 rpm**	**1500 rpm**
P11GSI/GSID	186	155

Generator Standby Power Rating (kWe): This rating applies to those systems used as a secondary source of electrical power. This rating is the output the system will produce continuously (no overload), 24 hours per day for the duration of the prime power source outage.

**Peak Shave: These ratings are based on 3400 hours per year at ISO Standard reference conditions. Peak shaving and standby ratings may reduc e life cycle intervals.*

NOTE: kVA outputs based on 0.8 Power Factor Engine/Alternator efficiency.

RADIATOR COOLING

Engine Family	Model	60Hz Continuous (kWe) 1200 rpm	60Hz Standby (kWe) 1200 rpm	50Hz Continuous (kWe) 1000 rpm	50Hz Standby (kWe) 1000 rpm
VHP ®	VHP7104GSI/GSID	1150[1]	1260[1]	1050[1,7]	1050[1]
	VHP7100GSI/GSID	1000[1]	1260[1]	840[1,7]	1050[1]
	VHP7100GL	1025	1130	845	930
	VHP5904LT	990	1090	860[1,7]	900
	VHP5904LTD	990	1090	860[1,7]	860[1]
	VHP5904GSI/GSID	940[1]	1030[1]	860[1,7]	860[1]
	VHP7100G	700	800	610	685
	VHP3604GSI/GSID	560[1]	615[1]	500[1,7]	500[1]
	VHP5900G	575	645	455	505
	VHP3600G	345	385	300	335
Engine Family	**Model**	**1800 rpm**	**1800 rpm**	**1500 rpm**	**1500 rpm**
VGF ®	VGF48GL/GLD	810[3]	825	670[3]	700
	VGF48GSID	730	800	610	650
	VGF36GL/GLD	590[3,9]	625[9]	500[3,9]	525[9]
	VGF36GSID	530	600	450	490
	VGF24GL/GLD	390[3,9]	405[9]	325[3,9]	350[9]
	VGF24GSID	350	395	295	325
	VGF18GL/GLD	295[3,9]	300[9]	240[3,9]	250[9]
	VGF18GSID	265	300	220	240
VSG	VSG11GSI/GSID	150	160	125	145

130°F (54°C) I.C. Water Temp. (Tcra)

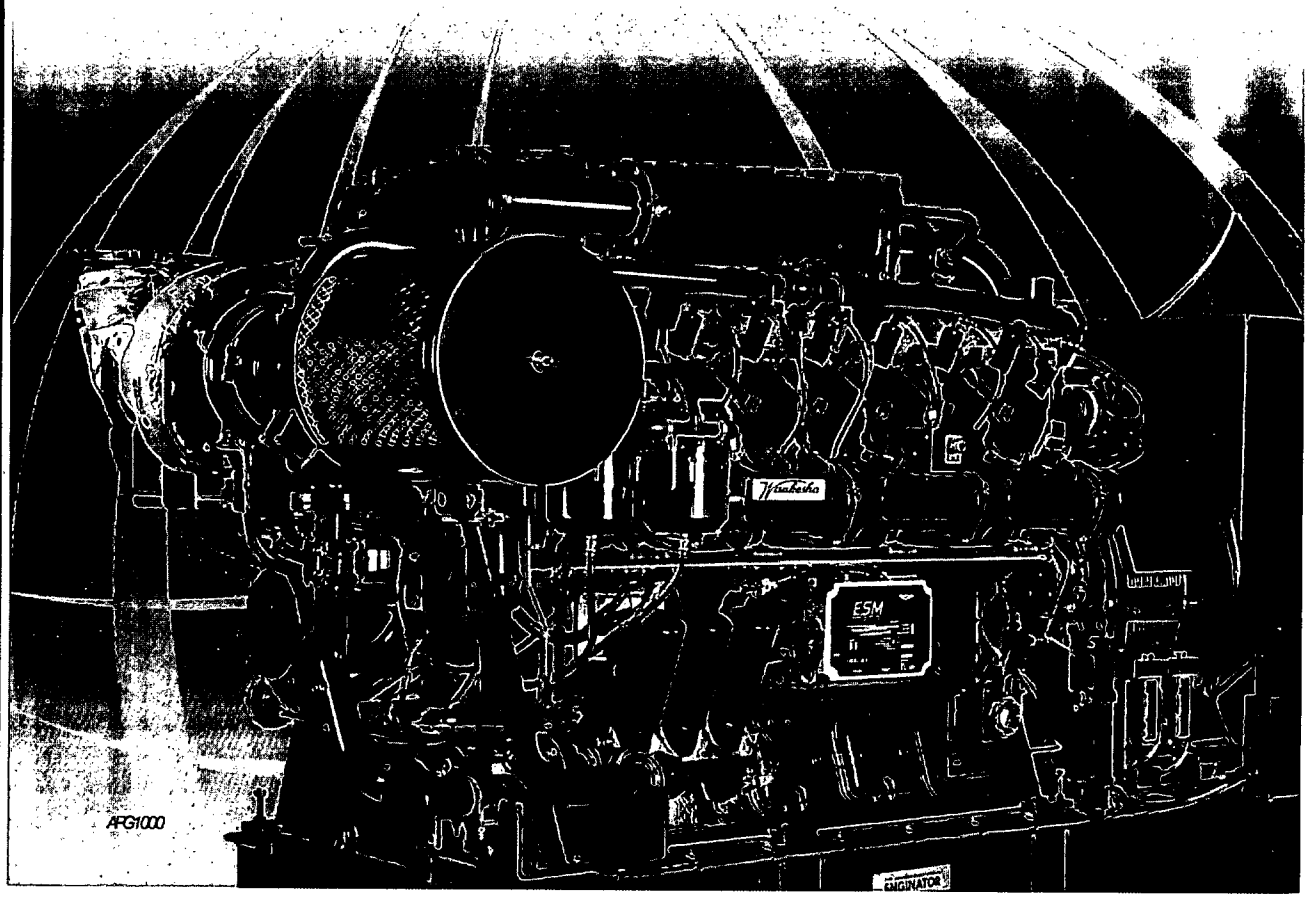
[1] Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.

[7] No overload allowed.

[3] These power ratings require price-book option Code 1100 (176 BMEP) and DSM. They are available continuously when applied per WK™ Power and Timing Curve S7079-19. It is permissible to operate at up to 5% overload for two hours in each 24 hour period.

[9] Rating is for high compression ratio pistons only.

For Power Unit ratings, please contact Waukesha Application Engineering or refer to the Waukesha Price Book.



AFG1000

HEAT EXCHANGER COOLING

		60Hz		50Hz	
		Continuous (kWe)	Standby (kWe)	Continuous (kWe)	Standby (kWe)
Engine Family	**Model**	**900 rpm**	**900 rpm**	**1000 rpm**	**1000 rpm**
ATGL®	16V-ATZ7GL	2960[5]	3100	3250[5]	3430
90°F (32°C) I.C. Water T emp. (T cra)	12V-ATZ7GL	2100	2310	2340	2570
[5] 10% overload not available.	8L-ATZ7GL	1400	1540	1550	1710
Engine Family	**Model**	**1800 rpm**	—	**1500 rpm**	—
APG™	AFG1000	1100[7]	—	1000[7]	—
130°F (54°C) I.C. Water T emp. (T cra) *[7] No overload allowed*					
113°F (45°C) I.C. Water T emp. (T cra) *[7] No overload allowed*	**Model**	**1200 rpm**	—	**1500 rpm**	—
	AFG2000	1860[7]	—	2100[7]	—
	AFG3000	2800[7]	—	3200[7]	—
Engine Family	**Model**	**1200 rpm**	**1200 rpm**	**1000 rpm**	**1000 rpm**
VHP®	VHP9500GSI	1475	1825	1225	1520
85°F (29°C) I.C. Water T emp. (T cra)	VHP9500GL	1475	1625	1225	1350
[1] Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.	VHP7104GSI/GSID	1200[1,8]	1300[1,8]	1100[1,7,8]	1100[1,8]
[6] 5% overload allowed.	VHP7100GSI/GSID	1100[1]	1350[1]	920[1]	1125[1]
[7] No overload allowed.	VHP7100GL	1100	1210	920	1015
[8] 130°F (54°C) I.C. Water T emp. (T cra)	VHP5904LT	1075	1175	900[6]	975
	VHP5904LTD	1075[1]	1075[1]	900[1,7]	900[1]
	VHP5904GSI/GSID	980[1,8]	1080[1,8]	900[1,7,8]	900[1,8]
	VHP7100G	725	810	635	710
	VHP3604GSI/GSID	600[1,8]	650[1,8]	540[1,7,8]	540[1,8]
	VHP5900G	595	665	475	525
	VHP3600G	360	400	315	350
Engine Family	**Model**	**1800 rpm**	**1800 rpm**	**1500 rpm**	**1500 rpm**
VGF®	VGF48GL/GLD	830[3]	860	685[3]	720
130°F (54°C) I.C. Water T emp. (T cra)	VGF48GSID	750	825	625	685
[3] These power ratings require pricebook option Code 1100 (176 BMEP) and DSM. They are available continuously when applied per WAB Power and Timing Curve S7079-19. It is permissible to operate at up to 5% overload for two hours in each 24 hour period.	VGF36GL/GLD	615[3,9]	645[9]	515[3,9]	535[9]
[9] Rating is for high compression ratio pistons only.	VGF36GSID	560	620	475	515
	VGF24GL/GLD	415[3,9]	425[9]	340[3,9]	360[9]
	VGF24GSID	375	410	310	340
	VGP18GL/GLD	310[3,9]	315[9]	250[3,9]	260[9]
	VGP18GSID	280	310	230	255
Engine Family	**Model**	**1800 rpm**	**1800 rpm**	**1500 rpm**	**1500 rpm**
VSG	VSG11GSI/GSID	165	175	140	150
85°F (29°C) I.C. Water T emp. (T cra)					

Engine Family

	Model	Displacement	Bore/Stroke
VHP ®	P9390	9388 in³ (154 L)	9.375 x 8.5" (238 x 216 mm)
	L7042	7040 in³ (116 L)	9.375 x 8.5" (238 x 216 mm)
	L5794	5788 in³ (95 L)	8.5 x 8.5" (216 x 216 mm)
VGF ®	P48	2924 in³ (48 L)	5.98 x 6.5" (152 x 165 mm)
	L36	2193 in³ (36 L)	5.98 x 6.5" (152 x 165 mm)
	P24	1462 in³ (24 L)	5.98 x 6.5" (152 x 165 mm)
	P18	1096 in³ (18 L)	5.98 x 6.5" (152 x 165 mm)
VSG	P11	673 in³ (11 L)	5.5 x 5.71" (127 x 145 mm)

[5] Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.
[6] 5% overload allowed.
[7] No overload allowed.

[14] Engine operation using 400-500 Btu/ft³ (15.7-19.7 MJ/m³). Landfill fuel requires 175°F (80°C) ICW.

Alternative Fuels

- Bio-Gas
- Landfill
- Digester

Continuous Duty

Model	I.C. Water Temp. (Tcra)		C.R. (compression ratio)	1000 rpm			1200 rpm			1500 rpm			1800 rpm		
	°F	°C		bhp	kWb	kWe*	bhp	kWb	kWe*	bhp	kWb	kWe*	bhp	kWb	kWe*
P9390GL	130°	54°	10.5:1	1642	1224	1163	1970	1469	1400	—	—	—	—	—	—
L7042GL	130°	54°	10.5:1	1270[1,7]	947[1,7]	900[1,7]	1408[1]	1050[1]	1000[1]	—	—	—	—	—	—
L7042GL	130°	54°	10.5:1	1270[5]	947[6]	900[6]	1478	1102	1050	—	—	—	—	—	—
L5794LT	130°	54°	10.2:1	1270[1,7]	947[1,7]	900[1,7]	1445[1]	1078[1]	1025[1]	—	—	—	—	—	—
P48GLD	130°	54°	11:1	—	—	—	—	—	—	885[11]	660[11]	625[11]	1060[11]	800[11]	750[11]
L36GLD	130°	54°	11:1	—	—	—	—	—	—	670[11]	500[11]	475[11]	800[11]	600[11]	560[11]
H24GLD	130°	54°	11:1	—	—	—	—	—	—	445[11]	330[11]	310[11]	530[11]	400[11]	375[11]
P18GLD	130°	54°	11:1	—	—	—	—	—	—	335[11]	250[11]	230[11]	400[11]	300[11]	280[11]
P11GSID	130°	54°	10:1	—	—	—	166	124	115	208	155	144	250	186	150

NOTE: Low Btu (calorific value) fueled engines operate on fuel with 400 Btu/ft³ (15.7 MJ/m³) or greater saturated low heat (net calorific value) and are equipped with special low Btu (calorific value) fuel system.

NOTE: VGF GLD - Gas lean combustion with draw-thru carburetion. Minimum regulated gas supply pressure is 8" H2 O (12.44 mbar).

NOTE: For complete information regarding operation on Low Btu Fuel, see the S3955 series (latest version) Technical Data Sheets. See Price Book for proper hardware requirements.

NOTE: For low Btu Intermittent Duty application ratings, consult Waukesha Application Engineering.

NOTE: Generator efficiencies are typical values. Please consult with your packager.

kWe ratings are based on Waukesha Power Systems generator efficiencies.

HD-5 PROPANE FUELED ENGINES

Continuous Duty

		I.C. Water Temp. (Tcra)	C.R. (compression ratio)	900 rpm	1000 rpm	1200 rpm	1500 rpm	1800 rpm
		°F °C		bhp kWb	bhp kWb	bhp kWb	bhp kWb	bhp kWb
VHP®	[redacted]	85° 29°	8:1	1237 923	1327 990	1479 1103	— —	—
	[redacted]	130° 54°	8:1	1162 867	1244 928	1379 1029	— —	—
	[redacted]	85° 29°	10.5:1	1237 923	1374 1025	1649 1230	— —	—
	[redacted]	130° 54°	10.5:1	1184 883	1315 981	1578 1177	— —	—
	L7042GSI	130° 54°	8:1	944 704	1049 782	1259 939	— —	—
	L7042GSI	85° 29°	8:1	928 692	996 743	1109 827	— —	—
	L7042GSI	130° 54°	8:1	871 650	933 696	1035 772	— —	—
	L7042GL	85° 29°	10.5:1	928 692	1031 769	1237 923	— —	—
	L7042GL	130° 54°	10.5:1	888 662	987 736	1184 883	— —	—
	L5794GSI	130° 54°	8.2:1	868 647	965 719	1158 863	— —	—
	F3524GSI	130° 54°	8:1	472 352	524 391	629 469	— —	—
VGF®	P48GSID	130° 54°	8.7:1	— —	— —	— —	609 454	731 [illegible]
NOTE: Requires KDMon F18 and H24 GL/GLD/GSID models or DSMon L36 and P48 GL/GLD/GSID models	P48GL/GLD	130° 54°	11:1	— —	— —	— —	496 370	604 [illegible]
	L36GSID	130° 54°	8.7:1	— —	— —	— —	457 341	548 [illegible]
	L36GL/GLD	130° 54°	11:1	— —	— —	— —	376 280	442 [illegible]
	L36GL	130° 54°	8.7:1	— —	— —	— —	670[*] 500[*]	800[*] 600[*]
[*] Contact Application Engineering regarding stability in Power Generation applications.	H24GSID	130° 54°	8.7:1	— —	— —	— —	305 197	366 [illegible]
	H24GL/GLD	130° 54°	11:1	— —	— —	— —	248 185	302 [illegible]
	H24GL	130° 54°	8.7:1	— —	— —	— —	445[*] 330[*]	530[*] 400[*]
	P18GSID	130° 54°	8.7:1	— —	— —	— —	228 170	274 [illegible]
	P18GL/GLD	130° 54°	11:1	— —	— —	— —	188 140	221 [illegible]
	P18GL	130° 54°	8.7:1	— —	— —	— —	335[*] 250[*]	400[*] 300[*]
VSG	P11GSI	85° 29°	10:1	— —	— —	102 76	127 95	153 [illegible]
	P11GSI	130° 54°	10:1	— —	— —	102 76	127 95	153 [illegible]

NOTE: These engines have HD-5 propane as a secondary fuel option: VHP GL Series, VHP GSI Series, VSG GSI Series.

NOTE: No overload allowed on all HD-5 propane ratings.

Adjustments To Engine And Enginator Systems For High Altitude And High Temperature For Natural Gas, Low BTU and HD-5 Propane Fuels

		Turbocharged and Intercooled	Continuous/ Prime Power*	Intermittent/ Standby
All VSG	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	3000 ft 914 m	1500 ft 457 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F 38°C	100°F 38°C
VSGP11 (Generator Standby Power Rating)	Altitude:	Deduct 4% for each 1000 ft (305 m) above:	— —	1000 ft 305 m
	Temperature [17]:	Deduct 2% for each 10°F (5.5°C) above:	— —	90°F 32°C
VSGGSI [18] Propane	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	— —	1500 ft 457 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	— —	85°F 29°C
	Jacket Water Temp.:	Deduct 2.5% for each 10°F (5.5°C) above:	— —	180°F 82°C
All VGF GL/GLD/GSI/GSID	Altitude:	Deduct 2% for each 1000 ft (305 m) above: (except L36GL LCR)	1500 ft 457 m	1500 ft 457 m
	Altitude:	Deduct 6% for each 1000 ft (305 m) above: (*P18GL LCR only*)	5000 ft 1524 m	5000 ft 1524 m
	Altitude:	Deduct 5% for each 1000 ft (305 m) above: (*H24GL LCR only*)	3500 ft 1067 m	3500 ft 1067 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F 38°C	100°F 38°C
VGF P18GL/H24GL/L36GL Code 1105 [18]	Altitude:	Deduct 8% for each 1000 ft (305 m) above:	5500 ft 1676 m	— —
	Temperature [17]:	Deduct 3% for each 10°F (5.5°C) above:	100°F 38°C	— —
VGF GL (Generator Standby Power Rating)	Altitude:	Deduct 3% for each 1000 ft (305 m) above:	— —	1500 ft 457 m
	Temperature [17]:	Deduct 1.5% for each 10°F (5.5°C) above:	— —	100°F 38°C
All VGF GSI/GSID and VGF GL/GLD with LCR on Propane [18]	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	5000 ft 1524 m	— —
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F 38°C	— —
	Jacket Water Temp.:	Deduct 2.5% for each 10°F (5.5°C) above:	180°F 82°C	— —
		[210°F (99°C) maximum Jacket Water Temperature for GSID]		
All VGF GL with LCR only Propane [18]	Altitude:	Deduct 6% for each 1000 ft (305 m) above: (*P18GL LCR only*)	5000 ft 1524 m	— —
		Deduct 5% for each 1000 ft (305 m) above: (*H24GL LCR only*)	3500 ft 1067 m	— —
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F 38°C	— —
	Jacket Water Temp.:	Retard spark timing 2° above:	180°F 82°C	— —
		[210°F (99°C) maximum Jacket Water Temperature for GL with LCR]		
	Intercooler Water Temp.	Retard spark timing 2° for each 10°F (5.5°C) above:	130°F 54°C	— —

Adjustments To Engine And Enginator Systems For High Altitude And High Temperature For Natural Gas, Low BTU and HD-5 Propane Fuels Continued

		Turbocharged and Intercooled	Continuous/ Prime Power*		Intermittent/ Standby	
VHP F3521/L5790 L7042F3980GSI	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	6000 ft	1828 m	1500 ft	457 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F	38°C	100°F	38°C
VHP F3514/F3524/L5794/L7044GSI [13]	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	8000 ft	2438 m	4000 ft	1219 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F	38°C	100°F	38°C
VHP GL	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	1500 ft	457 m	1500 ft	457 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
VHP L5774LT [14]	Altitude:	Deduct 2.4% for each 1000 ft (305 m) above:	5000 ft	1524 m	—	—
	Temperature [17]:	Deduct 2.4% for each 10°F (5.5°C) above:	100°F	38°C	—	—
VHP L5794LT	Altitude:	Deduct 2.4% for each 1000 ft (305 m) above:	5000 ft	1524 m	1500 ft	457 m
	Temperature [17]:	Deduct 2.4% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
VHP F3521/L5790/L7042GL with Low Fuel Pressure System Option	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	1500 ft	457 m	1500 ft	457 m
	Temperature [17]:	Deduct 4% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
VHP F3521/L5790/L7042GSI with Low Fuel Pressure System Option	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	3000 ft	914 m	1500 ft	457 m
	Temperature [17]:	Deduct 4% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
VHP F3524/L5794/L7044GSI with Low Fuel Pressure System Option	Altitude:	Deduct 2% for each 1000 ft (305 m) above:	3000 ft	914 m	1500 ft	457 m
	Temperature [17]:	Deduct 4% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
VHP L5794LT with Low Fuel Pressure System Option	Altitude:	Deduct 4.8% for each 1000 ft (305 m) above:	1500 ft	457 m	1500 ft	457 m
	Temperature [17]:	Deduct 4.8% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
VHP GSI and GL HD-5 Propane (Including 3524/5794/7044GSI [16])	Altitude:	Deduct 2% for each 1000 ft (305 m) above *(GL only)*:	1500 ft	457 m	—	—
	Altitude:	Deduct 2% for each 1000 ft (305 m) above *(GSI only)*:	6000 ft	1828 m	—	—
	Altitude:	Deduct 2% for each 1000 ft (305 m) above *(Series Four GSI only)*:	8000 ft	2438 m	—	—
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F	38°C	—	—
	Jacket Water Temp.:	Deduct 2.5% for each 10°F (5.5°C) above:	180°F	82°C	—	—
AFG 16V150LTD	Altitude:	Contact Waukesha Application Engineering above:	1500 ft	457 m	—	—
	Temperature [17]:	Contact Waukesha Application Engineering above:	100°F	38°C	—	—
AFG 12V220GL	Altitude:	Contact Waukesha Application Engineering	—	—	—	—
AFG 16V220GL	Temperature [17]:	Contact Waukesha Application Engineering	—	—	—	—
8L-ATZ7GL	Altitude:	Deduct 3.3% for each 1000 ft (305 m) above:	3000 ft	914 m	800 ft	244 m
12V-ATZ7GL	Temperature [17]:	Deduct 2% for each 10°F (5.5°C) above:	100°F	38°C	100°F	38°C
16V-ATZ7GL GC	Altitude:	Deduct 4% for each 1000 ft (305 m) above:	6000 ft	1828 m	6000 ft	1828 m
	Temperature [17]:	Deduct 2% for each 10°F (5.5°C) above:	100°F	38°C	100°F	38°C
16V-ATZ7GL EFG	Altitude:	Contact Waukesha Application Engineering above:	1000 ft	305 m	800 ft	244 m
	Temperature [17]:	Contact Waukesha Application Engineering above:	100°F	38°C	100°F	38°C
		Naturally Aspirated				
All VHP, VGF and VSG Natural Gas	Altitude:	Deduct 3% for each 1000 ft (305 m) above:	1500 ft	457 m	500 ft	152 m
	Temperature [17]:	Deduct 1% for each 10°F (5.5°C) above:	100°F	38°C	85°F	29°C
All VHP, VGF, VSG HD-5 Propane	Altitude:	Deduct 3% for each 1000 ft (305 m) above:	1500 ft	457 m	—	—
	Temperature [17]:	Deduct 5.5% for each 10°F (5.5°C) above:	100°F	38°C	—	—
	Jacket Water Temp.:	Deduct 2.5% for each 10°F (5.5°C) above:	180°F	82°C	—	—

NOTES

Rating Standard: All models: Ratings conform to ISO 3046/1 (latest version) with a mechanical efficiency of 90% and auxiliary water temperature, Tcra, as specified in the Power Rating Chart, Bulletin 1079 (latest version) limited to ±10° F (±5.5° C). Ratings are also valid for SAE J1349, BS5514, DIN 6271 and API 7B-11C standard atmospheric reference conditions.

Fuel Standard: All natural gas engine ratings are based on 900 BTU/ft³ (35.38 MJ/m³ [25, V(0; 101.325)]) SLHV, 91 WKI™ minimum, commercial quality natural gas. Refer to S-7884-7 (latest version) for full gaseous fuel specifications.

ISO Standard Power (Continuous Power Rating): The highest load and speed that can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance at ISO standard ambient reference conditions. At ISO standard ambient reference conditions, it is permissible to operate the engine at up to 110% of the ISO Standard Power or the maximum power indicated by the intermittent rating, whichever is lower, for two hours in every 24 hour period.

ISO Service Power (Site Continuous Power Rating): The highest load and speed that can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance at the operating and ambient conditions of the site application. Unless otherwise stated, it is permissible to operate the engine at up to 110% of the ISO Service Power (see the Overload Power definition) or the intermittent power rating available at the site operating and ambient conditions, whichever is lower, for two hours in every 24 hour period.

Overload Power: The power that an engine is permited to supply, with a duration and frequency of use depending upon the service application, at stated ambient conditions, immediately after operating at its ISO Service Power rating. Unless otherwise stated, it is permissible to operate the engine at up to 110% of the ISO Service Power or the intermittent power rating available at the site operating and ambient conditions, whichever is lower, for two hours in every 24 hour period. For situations without a defined intermittent power, the allowable 10% overload power is reduced from ISO standard ambient reference conditions by the applicable rating adjustments listed in the Intermittent/Standby Power column.

Intermittent Power Rating: The highest load and speed that can be applied in variable speed mechanical system applications only. Operation at this rating is limited to a maximum of 3500 hours per year.

Generator Continuous Power Rating (kWe): The highest load and speed which can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance. Unless otherwise stated, it is permissible to operate the engine at up to 110% of the generator continuous power rating for two hours in every 24 hour period.

Generator Standby Power Rating (kWe): This rating applies to those systems used as a secondary source of electrical power. This rating is the output the system will produce continuously 24 hours per day for the duration of the prime power source outage. No overload is allowed. This rating may reduce the lifecycle intervals.

Generator Peak Shaving Application Rating (kWe) For VHP Models Only: This rating is based on the number of horsepower-hours available per year in a constant speed application at site conditions. This rating allows for limited engine operation above the published ISO Standard Power rating for VHP models only. This rating class requires a Special Application Approval. Contact Waukesha's Sales Engineering Department. This rating may reduce the lifecycle intervals.

12 These altitude and temperature adjustments are meant to be a guide only and cannot be applied without limit. Contact Waukesha's Sales Engineering Department for additional information.

13 The F3514GSI/F3524GSI, L5794GSI, and L7044GSI models are limited to 180°F maximum jacket water temperature.

14 The L5774LT is rated for 130°F intercooler water temperature only.

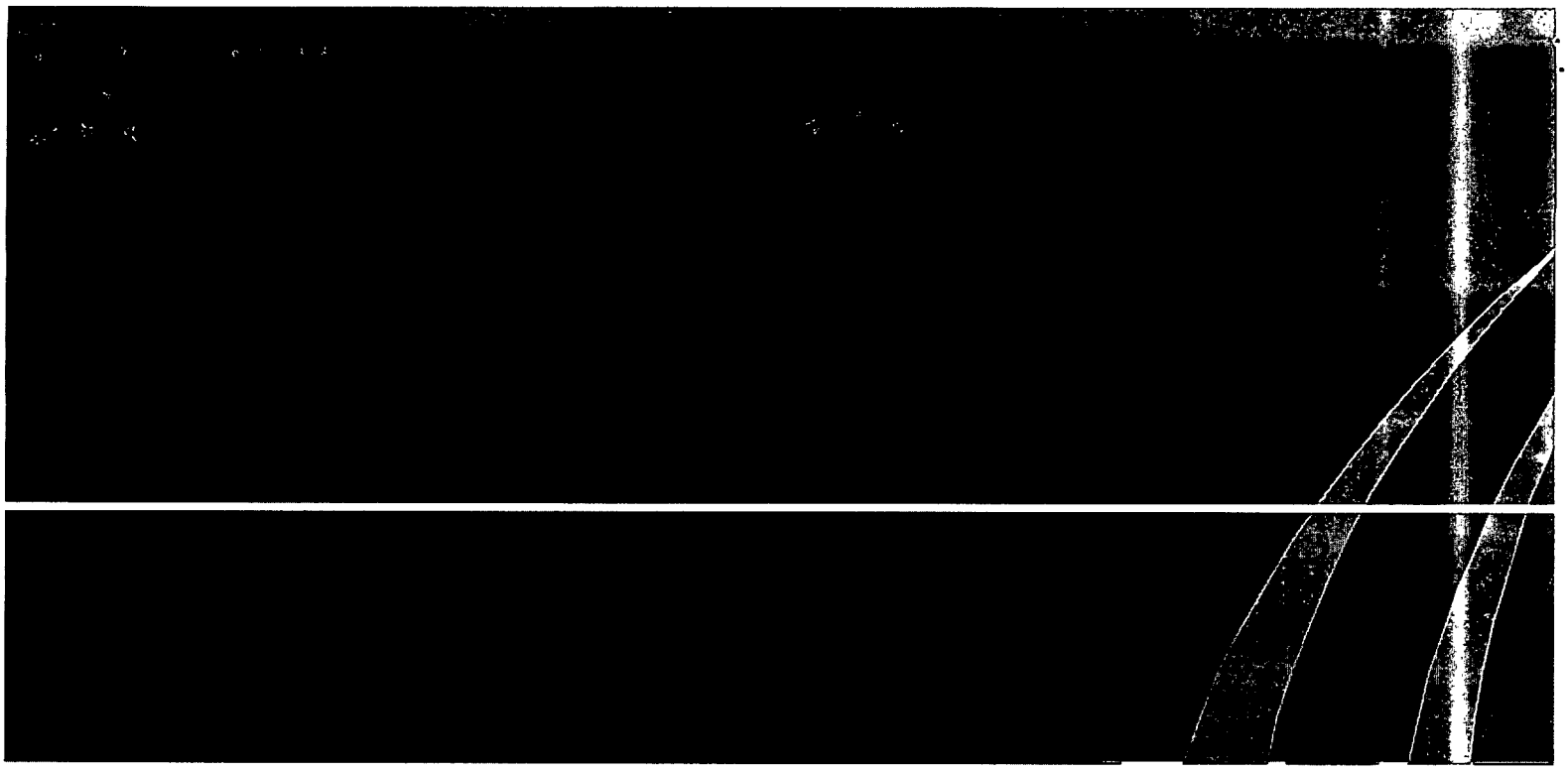
15 Unless otherwise specified, overload power is available for two hours in every 24 hour period at a level specified in the Notes section (above) or on a Special Application Approval.

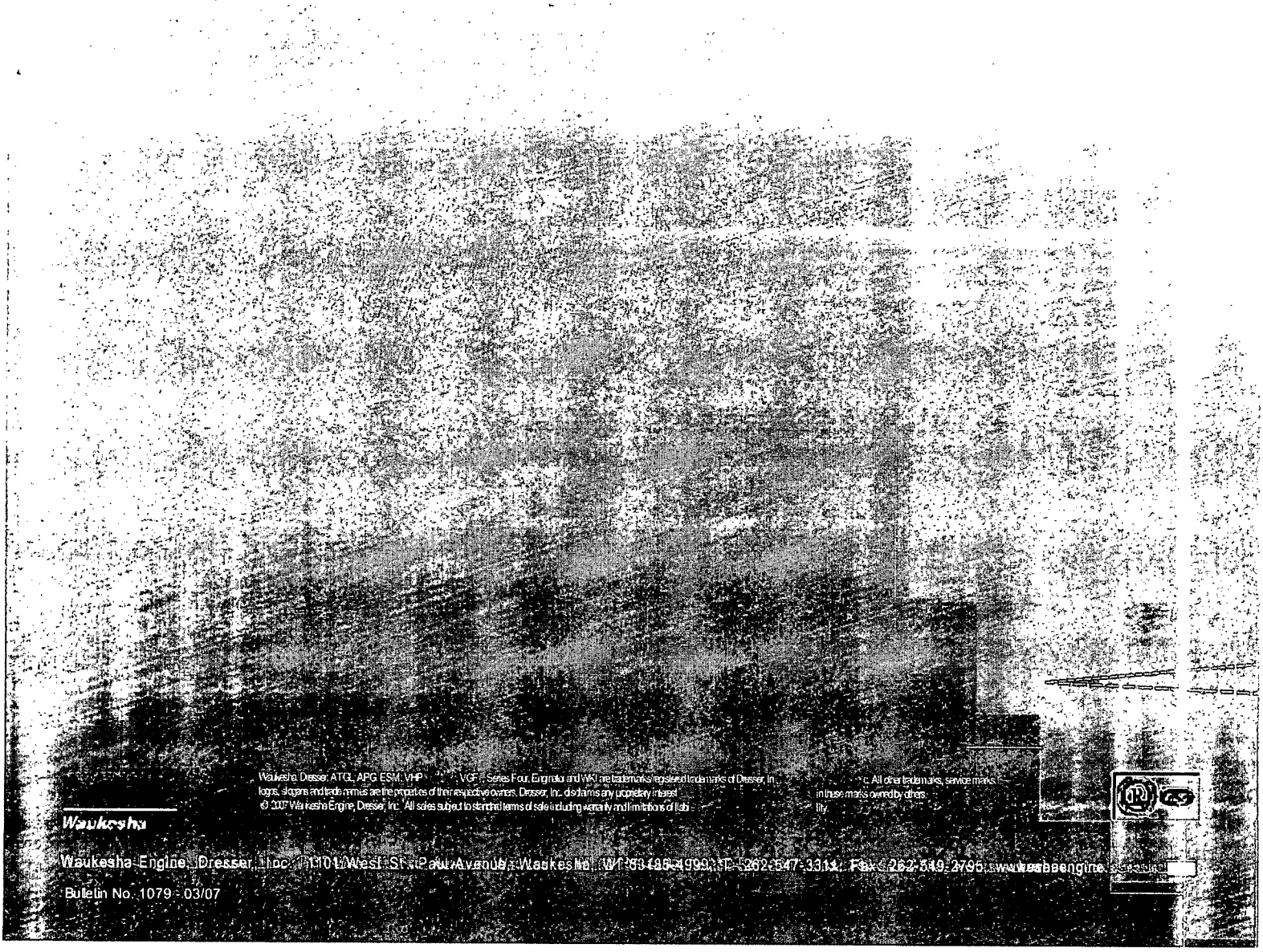
16 For complete information regarding operation on propane and other fuels, including proper ignition timing, see the most current, model specific S-07079 series Technical Data Sheets.

17 Temperature is defined as the engine combustion air inlet temperature.

18 Gas compression application only. Applies to 160 BMEP rating.

*For Peak Shaving derates, contact the Waukesha Sales Engineering Department.





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Bulletin No. 1079 - 03/07

Florida Department of Environmental Protection
Cash Receiving Application (CRA)
Cashlisting by Deposit #: 281538 thru 281538
Printed: 3/21/2008 4:42:32 PM - Page 7

Cashlisting: **67452** Cashlist Area: **3755** Description: **DIV OF AIR RESOURCES MGMT.**
Deposit No: **281538** Date Deposited: **03/21/2008** Contact: **E. WALKER**

Object	Transmittal	Dep DDN	Receipt Number	Pre-Numbered Receipt	Name	Check Number	Payment Amount	Reference Account	Payment Number	Remittance Number	Fund
002272	47560	481437	619487		FLAG CREW	209282	$100.00	1030492-002 3/31/2008 -IC	866364	769655	PFTF
					Object Code 002272 Subtotal:		$100.00				
002273	47560	481420	619470		PERSONAL TOUCH CLEANERS	6460	$50.00	571211	866345	769638	APCTF
					Object Code 002273 Subtotal:		$50.00				
002278	47560	481419	619469		EARTH FRIENDLY CONTRACTING LLC	2061	$200.00	47951	866344	769637	APCTF
					Object Code 002278 Subtotal:		$200.00				
					Cashlisting 67452 Total:		$350.00				

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