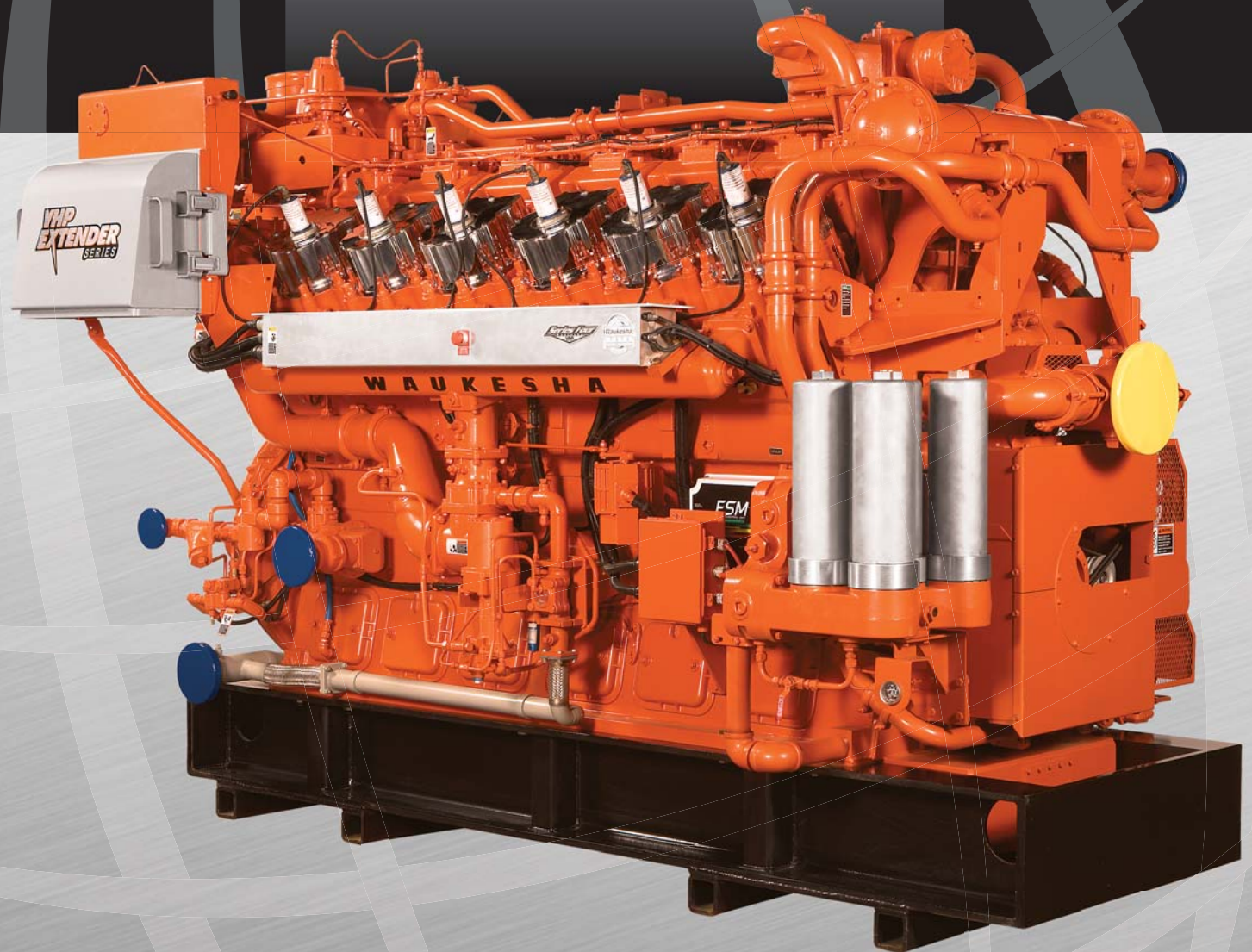


# 2007 Power Ratings



**W**aukesha® 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 kW).

*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).*

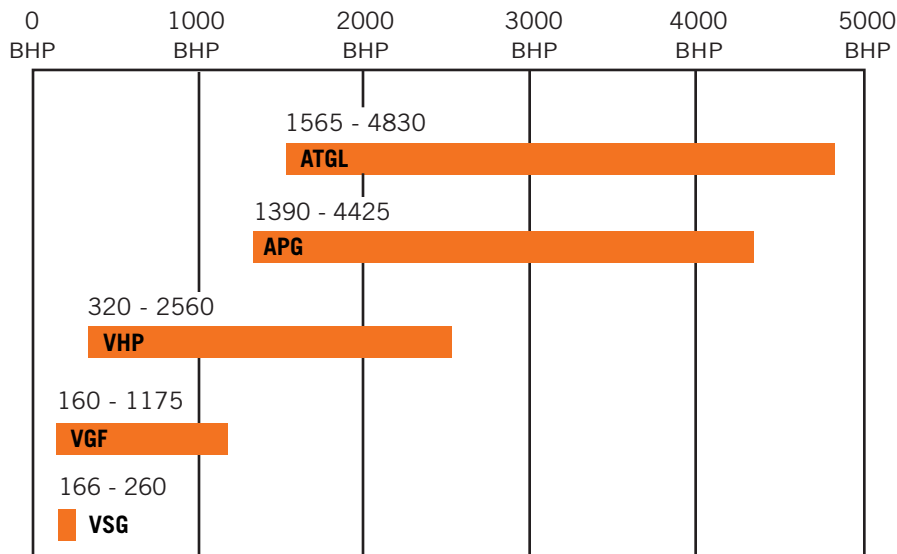
*With decades of experience in engine technology together with excellent engineering skills, Waukesha has found cost-effective solutions for many customer needs. Customers recognize that Waukesha engines can power all types of equipment and do it more cost effectively.*

*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



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### GENERAL INFORMATION

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## BASIC FORMULAS

### English

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

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

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

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

### Metric

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

$$\text{Torque (N}\cdot\text{m)} = \frac{\text{kW}_b \times 9550}{\text{rpm}}$$

$$\text{BMEP (bar)} = \frac{\text{kW}_b \times 1200}{\text{Displacement (liters)} \times \text{rpm}}$$

$$\text{kW}_b = \frac{\text{BMEP (bar)} \times \text{Displacement (liters)} \times \text{rpm}}{1200}$$

### Displacement

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

Where: Displacement = cubic inch.

D = Bore Dia. in. C = No. of cyl.

S = Stroke in. p = 3.1416

### Piston Speed

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

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

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

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

$$\text{kW} = \text{KVA} \times \text{PF}$$

$$\text{kW}_e = \text{kW}_B \times \text{Eff}$$

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

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

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

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

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

$$\text{Reactive KVA} = \text{KVA} \times \sqrt{1 - \text{PF}^2}$$

*This Power Ratings Bulletin supersedes all Power Ratings Bulletins prior to December, 2005. Waukesha, Enginator, VHP, VGF, ATGL, APG, WKI, and ESM are trademarks/registered trademarks of Waukesha Engine, Dresser, Inc.*

# 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-AT27GL 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 16V150LTD indicates a **152 millimeter bore**.
- The **VHP** series show a **displacement in cubic inches**. For example: the **VHP L7042GL** indicates a displacement of **7,040 in<sup>3</sup>**.
- The **VGf** and **VSG** series show a **displacement in liters**. For example: the **VGf P48GL** 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

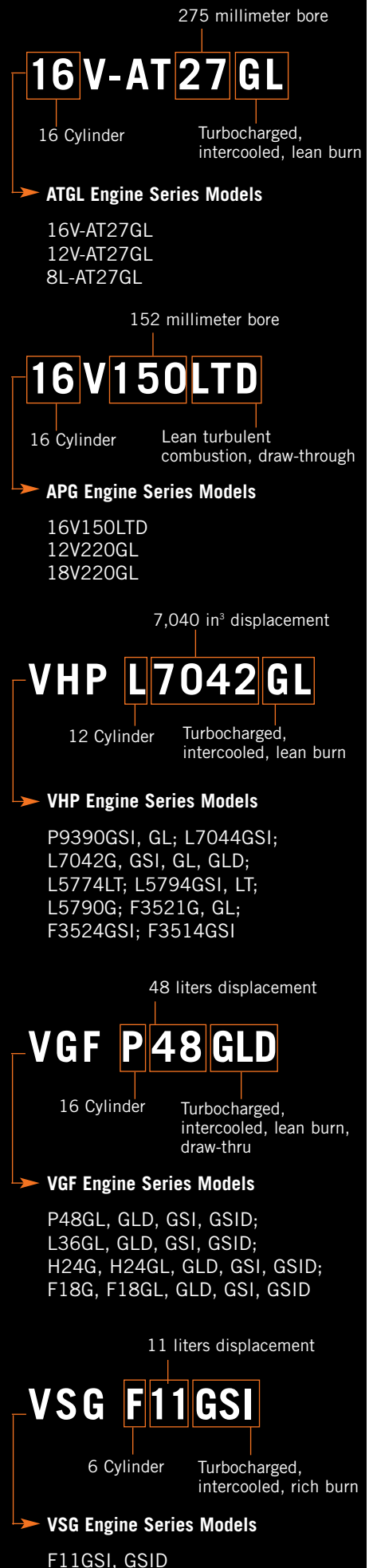
The Enginator is a Waukesha Engine registered trademark of an engine generator set packaged by Waukesha Power Systems. WPS also designs and assembles Engomatic® panels (switchgear control systems).

## 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



**NATURAL GAS FUELED  
CONTINUOUS DUTY**

# Gas Compression & Mechanical Drives

**CONTINUOUS DUTY**

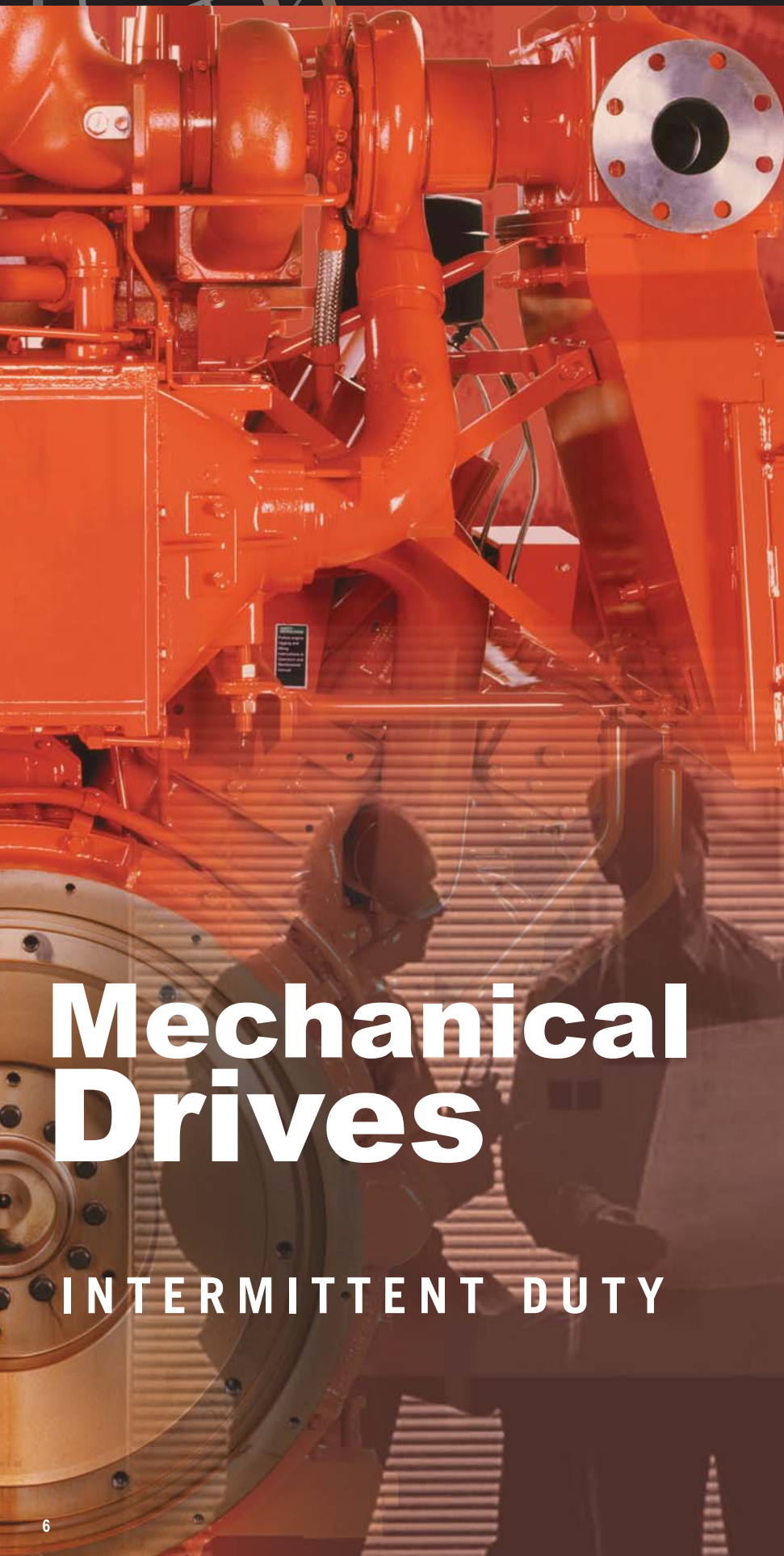
## Engine Family

|  | Model                         | Displacement                      | Bore/Stroke                      |
|--|-------------------------------|-----------------------------------|----------------------------------|
| <b>ATGL®</b>   | <b>16V-AT27GL</b>             | 17,398 in <sup>3</sup><br>(285 L) | 10.83 x 11.81"<br>(275 x 300 mm) |
|  | <b>12V-AT27GL</b>             | 13,048 in <sup>3</sup><br>(214 L) | 10.83 x 11.81"<br>(275 x 300 mm) |
|  | <b>8L-AT27GL</b>              | 8699 in <sup>3</sup><br>(143 L)   | 10.83 x 11.81"<br>(275 x 300 mm) |
| <b>VHP®</b><br><sup>1</sup> Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.<br><br><sup>2</sup> Engine ratings are 700-1000 rpm for low speed turbocharger operation and 1000-1200 rpm for high speed turbocharger operation.   | <b>P9390</b>                  | 9388 in <sup>3</sup><br>(154 L)   | 9.375 x 8.5"<br>(238 x 216 mm)   |
|  | <b>L7042/L7044</b>            | 7040 in <sup>3</sup><br>(116 L)   | 9.375 x 8.5"<br>(238 x 216 mm)   |
|  | <b>L5790/L5794/<br/>L5774</b> | 5788 in <sup>3</sup><br>(95 L)    | 8.5 x 8.5"<br>(216 x 216 mm)     |
|  | <b>F3514/F3521/<br/>F3524</b> | 3520 in <sup>3</sup><br>(58 L)    | 9.375 x 8.5"<br>(238 x 216 mm)   |
| <b>VGf®</b><br><sup>3</sup> These power ratings require pricebook 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.<br><br><sup>4</sup> 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. | <b>P48</b>                    | 2924 in <sup>3</sup><br>(48 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
|  | <b>L36</b>                    | 2193 in <sup>3</sup><br>(36 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
|  | <b>H24</b>                    | 1462 in <sup>3</sup><br>(24 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
|  | <b>F18</b>                    | 1096 in <sup>3</sup><br>(18 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
| <b>VSG</b>   | <b>F11</b>                    | 673 in <sup>3</sup><br>(11 L)     | 5.5 x 5.71"<br>(127 x 145 mm)    |

# 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           | bhp kWb          | bhp kWb          | bhp kWb           | bhp kWb          | bhp kWb           | bhp kWb          | bhp kWb           |                  |
| 16V-AT27GL  | 90° 32°                 | 9:1                      | 3600              | 2686              | 4050              | 3020              | 4500              | 3356              | —                 | —                 | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 16V-AT27GL  | 130° 54°                | 9:1                      | 3600              | 2686              | 4050              | 3020              | 4500              | 3356              | —                 | —                 | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 12V-AT27GL  | 90° 32°                 | 9:1                      | 2640              | 1967              | 2970              | 2216              | 3295              | 2458              | —                 | —                 | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 12V-AT27GL  | 130° 54°                | 9:1                      | 2508              | 1871              | 2820              | 2104              | 3130              | 2335              | —                 | —                 | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 8L-AT27GL   | 90° 32°                 | 9:1                      | 1760              | 1312              | 1980              | 1477              | 2200              | 1641              | —                 | —                 | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 8L-AT27GL   | 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 <sup>2</sup> | 1026 <sup>2</sup> | 1547 <sup>2</sup> | 1154 <sup>2</sup> | 1719 <sup>2</sup> | 1282 <sup>2</sup> | 2063 <sup>2</sup> | 1538 <sup>2</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| P9390GL     | 130° 54°                | 10.5:1                   | 1320 <sup>2</sup> | 984 <sup>2</sup>  | 1485 <sup>2</sup> | 1107 <sup>2</sup> | 1650 <sup>2</sup> | 1230 <sup>2</sup> | 1980 <sup>2</sup> | 1476 <sup>2</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7044GSI    | 130° 54°                | 8:1                      | 1120 <sup>1</sup> | 835 <sup>1</sup>  | 1260 <sup>1</sup> | 940 <sup>1</sup>  | 1400 <sup>1</sup> | 1044 <sup>1</sup> | 1680 <sup>1</sup> | 1253 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042GSI    | 85° 29°                 | 8:1                      | 1031 <sup>1</sup> | 769 <sup>1</sup>  | 1160 <sup>1</sup> | 865 <sup>1</sup>  | 1289 <sup>1</sup> | 961 <sup>1</sup>  | 1547 <sup>1</sup> | 1154 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042GSI    | 130° 54°                | 8:1                      | 987 <sup>1</sup>  | 736 <sup>1</sup>  | 1110 <sup>1</sup> | 828 <sup>1</sup>  | 1233 <sup>1</sup> | 920 <sup>1</sup>  | 1480 <sup>1</sup> | 1104 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042GL     | 85° 29°                 | 10.5:1                   | 1031 <sup>2</sup> | 769 <sup>2</sup>  | 1160 <sup>2</sup> | 865 <sup>2</sup>  | 1289 <sup>2</sup> | 961 <sup>2</sup>  | 1547 <sup>2</sup> | 1154 <sup>2</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042GL     | 130° 54°                | 10.5:1                   | 987 <sup>2</sup>  | 736 <sup>2</sup>  | 1110 <sup>2</sup> | 830 <sup>2</sup>  | 1233 <sup>2</sup> | 920 <sup>2</sup>  | 1480 <sup>2</sup> | 1104 <sup>2</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042GL     | 85° 29°                 | 10.5:1                   | —                 | —                 | —                 | —                 | 1289 <sup>1</sup> | 961 <sup>1</sup>  | 1408 <sup>1</sup> | 1050 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042GL     | 130° 54°                | 10.5:1                   | —                 | —                 | —                 | —                 | 1233 <sup>1</sup> | 920 <sup>1</sup>  | 1408 <sup>1</sup> | 1050 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L7042G      | —                       | 10:1                     | 732               | 546               | 818               | 610               | 896               | 668               | 1025              | 764               | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L5794GSI    | 130° 54°                | 8.2:1                    | 920 <sup>1</sup>  | 686 <sup>1</sup>  | 1035 <sup>1</sup> | 772 <sup>1</sup>  | 1150 <sup>1</sup> | 858 <sup>1</sup>  | 1380 <sup>1</sup> | 1029 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L5794LT     | 85° 29°                 | 10.2:1                   | —                 | —                 | —                 | —                 | 1263 <sup>1</sup> | 941 <sup>1</sup>  | 1515 <sup>1</sup> | 1130 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| L5794LT     | 130° 54°                | 10.2:1                   | —                 | —                 | —                 | —                 | 1208 <sup>1</sup> | 901 <sup>1</sup>  | 1450 <sup>1</sup> | 1081 <sup>1</sup> | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 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 <sup>1</sup>  | 418 <sup>1</sup>  | 630 <sup>1</sup>  | 470 <sup>1</sup>  | 700 <sup>1</sup>  | 522 <sup>1</sup>  | 840 <sup>1</sup>  | 626 <sup>1</sup>  | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| F3514GSI    | 130° 54°                | 8:1                      | 493 <sup>1</sup>  | 368 <sup>1</sup>  | 555 <sup>1</sup>  | 414 <sup>1</sup>  | 617 <sup>1</sup>  | 460 <sup>1</sup>  | 740 <sup>1</sup>  | 552 <sup>1</sup>  | —                | —                | —                 | —                | —                 | —                | —                 | —                |
| 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 <sup>4</sup>  | 530 <sup>4</sup>  | 830 <sup>4</sup> | 620 <sup>4</sup> | 885 <sup>4</sup>  | 660 <sup>4</sup> | 945 <sup>4</sup>  | 705 <sup>4</sup> | 1065 <sup>4</sup> | 800 <sup>4</sup> |
| P48GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 910 <sup>3</sup>  | 680 <sup>3</sup>  | 975 <sup>3</sup> | 730 <sup>3</sup> | 1040 <sup>3</sup> | 775 <sup>3</sup> | 1175 <sup>3</sup> | 880 <sup>3</sup> | —                 | —                |
| L36GSI/GSID | 130° 54°                | 8.6:1                    | —                 | —                 | —                 | —                 | —                 | —                 | 620               | 460               | 670              | 500              | 710               | 530              | 800               | 600              | —                 | —                |
| L36GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 530 <sup>4</sup>  | 400 <sup>4</sup>  | 620 <sup>4</sup> | 460 <sup>4</sup> | 670 <sup>4</sup>  | 500 <sup>4</sup> | 710 <sup>4</sup>  | 530 <sup>4</sup> | 800 <sup>4</sup>  | 600 <sup>4</sup> |
| L36GL       | 130° 54°                | 8.7:1                    | —                 | —                 | —                 | —                 | —                 | —                 | 620               | 460               | 670              | 500              | 710               | 530              | 800               | 600              | —                 | —                |
| L36GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 685 <sup>3</sup>  | 510 <sup>3</sup>  | 735 <sup>3</sup> | 550 <sup>3</sup> | 780 <sup>3</sup>  | 580 <sup>3</sup> | 880 <sup>3</sup>  | 660 <sup>3</sup> | —                 | —                |
| H24GSI/GSID | 130° 54°                | 8.6:1                    | —                 | —                 | —                 | —                 | —                 | —                 | 415               | 310               | 445              | 330              | 475               | 355              | 530               | 400              | —                 | —                |
| H24GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 355 <sup>4</sup>  | 265 <sup>4</sup>  | 415 <sup>4</sup> | 310 <sup>4</sup> | 445 <sup>4</sup>  | 330 <sup>4</sup> | 475 <sup>4</sup>  | 355 <sup>4</sup> | 530 <sup>4</sup>  | 400 <sup>4</sup> |
| H24GL       | 130° 54°                | 8.7:1                    | —                 | —                 | —                 | —                 | —                 | —                 | 415               | 310               | 445              | 330              | 475               | 355              | 530               | 400              | —                 | —                |
| H24GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 455 <sup>3</sup>  | 340 <sup>3</sup>  | 490 <sup>3</sup> | 365 <sup>3</sup> | 520 <sup>3</sup>  | 390 <sup>3</sup> | 585 <sup>3</sup>  | 440 <sup>3</sup> | —                 | —                |
| H24G        | —                       | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 215               | 160               | 250              | 186              | 265               | 198              | 285               | 213              | 320               | 239              |
| F18GSI/GSID | 130° 54°                | 8.6:1                    | —                 | —                 | —                 | —                 | —                 | —                 | 310               | 230               | 335              | 250              | 355               | 265              | 400               | 300              | —                 | —                |
| F18GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 265 <sup>4</sup>  | 200 <sup>4</sup>  | 310 <sup>4</sup> | 230 <sup>4</sup> | 335 <sup>4</sup>  | 250 <sup>4</sup> | 355 <sup>4</sup>  | 265 <sup>4</sup> | 400 <sup>4</sup>  | 300 <sup>4</sup> |
| F18GL       | 130° 54°                | 8.7:1                    | —                 | —                 | —                 | —                 | —                 | —                 | 310               | 230               | 335              | 250              | 355               | 265              | 400               | 300              | —                 | —                |
| F18GL/GLD   | 130° 54°                | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 340 <sup>3</sup>  | 255 <sup>3</sup>  | 365 <sup>3</sup> | 275 <sup>3</sup> | 390 <sup>3</sup>  | 290 <sup>3</sup> | 440 <sup>3</sup>  | 330 <sup>3</sup> | —                 | —                |
| F18G        | —                       | 11:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 160               | 119               | 185              | 138              | 200               | 149              | 215               | 160              | 240               | 179              |
| F11GSI/GSID | 85° 29°                 | 10:1                     | —                 | —                 | —                 | —                 | —                 | —                 | 166               | 124               | 194              | 145              | 208               | 155              | 222               | 165              | 250               | 186              |
| F11GSI/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                      |
|---|---------------------------------------|-----------------------------------|----------------------------------|
| <b>ATGL®</b>  | 16V-AT27GL                            | 17,398 in <sup>3</sup><br>(285 L) | 10.83 x 11.81"<br>(275 x 300 mm) |
|   | 12V-AT27GL                            | 13,048 in <sup>3</sup><br>(214 L) | 10.83 x 11.81"<br>(275 x 300 mm) |
|   | 8L-AT27GL                             | 8699 in <sup>3</sup><br>(143 L)   | 10.83 x 11.81"<br>(275 x 300 mm) |
| <b>VHP®</b><br><i><sup>1</sup> Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.</i>   | P9390                                 | 9388 in <sup>3</sup><br>(154 L)   | 9.375 x 8.5"<br>(238 x 216 mm)   |
|   | L7042/L7044                           | 7040 in <sup>3</sup><br>(116 L)   | 9.375 x 8.5"<br>(238 x 216 mm)   |
|   | L5790/L5794/<br>F3514/F3521/<br>F3524 | 5788 in <sup>3</sup><br>(95 L)    | 8.5 x 8.5"<br>(216 x 216 mm)     |
|   | F3514/F3521/<br>F3524                 | 3520 in <sup>3</sup><br>(58 L)    | 9.375 x 8.5"<br>(238 x 216 mm)   |
| <b>VGF®</b><br><i><sup>1</sup> 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.</i> | P48                                   | 2924 in <sup>3</sup><br>(48 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
|   | L36                                   | 2193 in <sup>3</sup><br>(36 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
|   | H24                                   | 1462 in <sup>3</sup><br>(24 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
|   | F18                                   | 1096 in <sup>3</sup><br>(18 L)    | 5.98 x 6.5"<br>(152 x 165 mm)    |
| <b>VSG</b>  | F11                                   | 673 in <sup>3</sup><br>(11 L)     | 5.5 x 5.71"<br>(127 x 145 mm)    |

# Intermittent Duty

| Model       | I.C. Water Temp. (Tcra) |     | C.R.<br>(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-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 <sup>2</sup> | 1128 <sup>2</sup> | 1702 <sup>2</sup> | 1269 <sup>2</sup> | 1891 <sup>1</sup> | 1410 <sup>2</sup> | 2270 <sup>2</sup> | 1693 <sup>2</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| P9390GL     | 130°                    | 54° | 10.5:1                      | 1445 <sup>2</sup> | 1078 <sup>2</sup> | 1626 <sup>2</sup> | 1213 <sup>2</sup> | 1806 <sup>2</sup> | 1347 <sup>2</sup> | 2167 <sup>2</sup> | 1616 <sup>2</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7044GSI    | 130°                    | 54° | 8:1                         | 1120              | 836               | 1260              | 940               | 1400              | 1044              | 1680              | 1253              | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042GSI    | 85°                     | 29° | 8:1                         | 1280 <sup>1</sup> | 954 <sup>1</sup>  | 1440 <sup>1</sup> | 1074 <sup>1</sup> | 1600 <sup>1</sup> | 1193 <sup>1</sup> | 1920 <sup>1</sup> | 1432 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042GSI    | 130°                    | 54° | 8:1                         | 1223 <sup>1</sup> | 912 <sup>1</sup>  | 1376 <sup>1</sup> | 1026 <sup>1</sup> | 1528 <sup>1</sup> | 1139 <sup>1</sup> | 1834 <sup>1</sup> | 1368 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042GL     | 85°                     | 29° | 10.5:1                      | 1134 <sup>2</sup> | 846 <sup>2</sup>  | 1276 <sup>2</sup> | 952 <sup>2</sup>  | 1418 <sup>2</sup> | 1057 <sup>2</sup> | 1702 <sup>2</sup> | 1269 <sup>2</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042GL     | 130°                    | 54° | 10.5:1                      | 1084 <sup>2</sup> | 808 <sup>2</sup>  | 1219 <sup>2</sup> | 909 <sup>2</sup>  | 1355 <sup>2</sup> | 1010 <sup>2</sup> | 1626 <sup>2</sup> | 1213 <sup>2</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042GL     | 85°                     | 29° | 10.5:1                      | —                 | —                 | —                 | —                 | 1418 <sup>1</sup> | 1057 <sup>1</sup> | 1408 <sup>1</sup> | 1050 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042GL     | 130°                    | 54° | 10.5:1                      | —                 | —                 | —                 | —                 | 1355 <sup>1</sup> | 1010 <sup>1</sup> | 1408 <sup>1</sup> | 1050 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L7042G      | —                       | —   | 10:1                        | 824               | 614               | 920               | 686               | 1008              | 752               | 1152              | 859               | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L5794GSI    | 130°                    | 54° | 8.2:1                       | 920 <sup>1</sup>  | 686 <sup>1</sup>  | 1035 <sup>1</sup> | 772 <sup>1</sup>  | 1150 <sup>1</sup> | 858 <sup>1</sup>  | 1380 <sup>1</sup> | 1029 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L5794LT     | 85°                     | 29° | 10.2:1                      | —                 | —                 | —                 | —                 | 1315 <sup>1</sup> | 981 <sup>1</sup>  | 1580 <sup>1</sup> | 1178 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L5794LT     | 130°                    | 54° | 10.2:1                      | —                 | —                 | —                 | —                 | 1315 <sup>1</sup> | 981 <sup>1</sup>  | 1580 <sup>1</sup> | 1178 <sup>1</sup> | —                | —                | —                | —                | —                 | —                | —                 | —                |
| L5790G      | —                       | —   | 10:1                        | 678               | 506               | 756               | 564               | 830               | 619               | 946               | 705               | —                | —                | —                | —                | —                 | —                | —                 | —                |
| F3524GSI    | 130°                    | 54° | 8:1                         | 560 <sup>1</sup>  | 418 <sup>1</sup>  | 630 <sup>1</sup>  | 470 <sup>1</sup>  | 700 <sup>1</sup>  | 522 <sup>1</sup>  | 840 <sup>1</sup>  | 627 <sup>1</sup>  | —                | —                | —                | —                | —                 | —                | —                 | —                |
| F3514GSI    | 130°                    | 54° | 8:1                         | 495 <sup>1</sup>  | 367 <sup>1</sup>  | 555 <sup>1</sup>  | 413 <sup>1</sup>  | 615 <sup>1</sup>  | 459 <sup>1</sup>  | 740 <sup>1</sup>  | 550 <sup>1</sup>  | —                | —                | —                | —                | —                 | —                | —                 | —                |
| 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 <sup>4</sup>  | 585 <sup>4</sup>  | 910 <sup>4</sup> | 680 <sup>4</sup> | 975 <sup>4</sup> | 730 <sup>4</sup> | 1040 <sup>4</sup> | 775 <sup>4</sup> | 1175 <sup>4</sup> | 880 <sup>4</sup> |
| L36GSI/GSID | 130°                    | 54° | 8.6:1                       | —                 | —                 | —                 | —                 | —                 | —                 | —                 | —                 | 685              | 510              | 735              | 550              | 780               | 580              | 880               | 660              |
| L36GL/GLD   | 130°                    | 54° | 11:1                        | —                 | —                 | —                 | —                 | —                 | —                 | 585 <sup>4</sup>  | 440 <sup>4</sup>  | 685 <sup>4</sup> | 510 <sup>4</sup> | 735 <sup>4</sup> | 550 <sup>4</sup> | 780 <sup>4</sup>  | 580 <sup>4</sup> | 880 <sup>4</sup>  | 660 <sup>4</sup> |
| 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 <sup>4</sup>  | 290 <sup>4</sup>  | 455 <sup>4</sup> | 340 <sup>4</sup> | 490 <sup>4</sup> | 365 <sup>4</sup> | 520 <sup>4</sup>  | 390 <sup>4</sup> | 585 <sup>4</sup>  | 440 <sup>4</sup> |
| 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              |
| F18GSI/GSID | 130°                    | 54° | 8.6:1                       | —                 | —                 | —                 | —                 | —                 | —                 | —                 | —                 | 340              | 255              | 365              | 275              | 390               | 290              | 440               | 330              |
| F18GL/GLD   | 130°                    | 54° | 11:1                        | —                 | —                 | —                 | —                 | —                 | —                 | 295 <sup>4</sup>  | 220 <sup>4</sup>  | 340 <sup>4</sup> | 255 <sup>4</sup> | 365 <sup>4</sup> | 275 <sup>4</sup> | 390 <sup>4</sup>  | 290 <sup>4</sup> | 440 <sup>4</sup>  | 330 <sup>4</sup> |
| F18GL       | 130°                    | 54° | 8.7:1                       | —                 | —                 | —                 | —                 | —                 | —                 | —                 | —                 | 340              | 255              | 365              | 275              | 390               | 290              | 440               | 330              |
| F18G        | —                       | —   | 11:1                        | —                 | —                 | —                 | —                 | —                 | —                 | 180               | 130               | 205              | 155              | 220              | 165              | 240               | 180              | 265               | 195              |
| F11GSI/GSID | 85°                     | 29° | 10:1                        | —                 | —                 | —                 | —                 | —                 | —                 | 173               | 129               | 202              | 151              | 217              | 162              | 231               | 172              | 260               | 194              |
| F11GSI/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®**

130°F (54°C)  
I.C. Water Temp. (T<sub>cr</sub>)

<sup>5</sup>10% overload not available.

## Engine Family

**APG™**

130°F (54°C)  
I.C. Water Temp. (T<sub>cr</sub>)

<sup>7</sup>No overload allowed.

113°F (45°C)  
I.C. Water Temp. (T<sub>cr</sub>)

## Engine Family

**VHP®**

130°F (54°C)  
I.C. Water Temp. (T<sub>cr</sub>)

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

<sup>3</sup>No overload allowed.

## Engine Family

**VGF®**

130°F (54°C)  
I.C. Water Temp. (T<sub>cr</sub>)

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

<sup>9</sup> Rating is for high compression ratio pistons only.

## Engine Family

**VSG**

130°F (54°C)  
I.C. Water Temp. (T<sub>cr</sub>)

## Remote Radiator Cooling (kWe)

## Engines Only (kWb)

| Remote Radiator Cooling (kWe) |                    |                    |                   |                     | Engines Only (kWb) |             |                    |                     |
|-------------------------------|--------------------|--------------------|-------------------|---------------------|--------------------|-------------|--------------------|---------------------|
| 60Hz                          |                    |                    | 50Hz              |                     |                    | 60Hz        | 50Hz               |                     |
| Continuous                    | Peak Shave*        | Standby            | Continuous        | Standby             |                    | Continuous  | Continuous         |                     |
| Model                         | 900 rpm            | 900 rpm            | 900 rpm           | 1000 rpm            | 1000 rpm           | Model       | 900 rpm            | 1000 rpm            |
| 16V-AT27GL                    | 2960 <sup>5</sup>  | 2960               | 2960              | 3250 <sup>5</sup>   | 3250               | 16V-AT27GL  | 3110 <sup>5</sup>  | 3356 <sup>5</sup>   |
| 12V-AT27GL                    | 2000               | 2140               | 2200              | 2220                | 2440               | 12V-AT27GL  | 2104               | 2335                |
| 8L-AT27GL                     | 1330               | 1425               | 1460              | 1480                | 1630               | 8L-AT27GL   | 1405               | 1560                |
| Model                         | 1800 rpm           | —                  | —                 | 1500 rpm            | —                  | Model       | 1800 rpm           | 1500 rpm            |
| APG1000                       | 1100 <sup>7</sup>  | —                  | —                 | 1000 <sup>7</sup>   | —                  | 16V150LTD   | 1142 <sup>7</sup>  | 1038 <sup>7</sup>   |
| Model                         | 1200 rpm           | —                  | —                 | 1500 rpm            | —                  | Model       | 1200 rpm           | 1500 rpm            |
| APG2000                       | 1860 <sup>7</sup>  | —                  | —                 | 2100 <sup>7</sup>   | —                  | 12V220GL    | 1950 <sup>7</sup>  | 2200 <sup>7</sup>   |
| APG3000                       | 2800 <sup>7</sup>  | —                  | —                 | 3200 <sup>7</sup>   | —                  | 18V220GL    | 2925 <sup>7</sup>  | 3300 <sup>7</sup>   |
| Model                         | 1200 rpm           | 1200 rpm           | 1200 rpm          | 1000 rpm            | 1000 rpm           | Model       | 1200 rpm           | 1000 rpm            |
| VHP9500GSI                    | 1400               | 1500               | 1750              | 1175                | 1450               | P9390GSI    | 1469               | 1224                |
| VHP9500GL                     | 1400               | 1490               | 1540              | 1175                | 1295               | P9390GL     | 1469               | 1224                |
| VHP7104GSI                    | 1200               | 1250               | 1300              | 1100 <sup>7</sup>   | 1100               | L7044GSI    | 1253               | 1153 <sup>7</sup>   |
| VHP7104GSID                   | 1200 <sup>1</sup>  | 1250 <sup>1</sup>  | 1300 <sup>1</sup> | 1100 <sup>1,7</sup> | 1100 <sup>1</sup>  | L7044GSI    | 1253 <sup>1</sup>  | 1153 <sup>1,7</sup> |
| VHP7100GSI                    | 1050               | 1180               | 1300              | 875                 | 1075               | L7042GSI    | 1102               | 919                 |
| VHP7100GSID                   | 1050 <sup>1</sup>  | 1180 <sup>1</sup>  | 1300 <sup>1</sup> | 875 <sup>1</sup>    | 1075 <sup>1</sup>  | L7042GSI    | 1102 <sup>1</sup>  | 919 <sup>1</sup>    |
| VHP7100GL                     | 1050               | 1100               | 1155              | 875                 | 965                | L7042GL     | 1102               | 919                 |
| VHP7100G                      | 725                | 725                | 810               | 635                 | 710                | L7042G      | 764                | 668                 |
| VHP5904LT                     | 1025               | 1080               | 1125              | 900 <sup>7</sup>    | 940                | L5794LT     | 1078               | 947 <sup>7</sup>    |
| VHP5904LTD                    | 1025 <sup>1</sup>  | 1025 <sup>1</sup>  | 1025 <sup>1</sup> | 900 <sup>1,7</sup>  | 900 <sup>1</sup>   | L5794LT     | 1078 <sup>1</sup>  | 947 <sup>1,7</sup>  |
| VHP5904GSI                    | 980                | 1035               | 1080              | 900 <sup>7</sup>    | 900                | L5794GSI    | 1029               | 947 <sup>7</sup>    |
| VHP5904GSID                   | 980 <sup>1</sup>   | 1035 <sup>1</sup>  | 1080 <sup>1</sup> | 900 <sup>1,7</sup>  | 900 <sup>1</sup>   | L5794GSI    | 1029 <sup>1</sup>  | 947 <sup>1,7</sup>  |
| VHP5900G                      | 595                | 595                | 665               | 475                 | 525                | L5790G      | 628                | 550                 |
| VHP3604GSI                    | 600                | 630                | 650               | 540 <sup>7</sup>    | 540                | F3524GSI    | 627                | 573 <sup>7</sup>    |
| VHP3604GSID                   | 600 <sup>1</sup>   | 630 <sup>1</sup>   | 650 <sup>1</sup>  | 540 <sup>1,7</sup>  | 540 <sup>1</sup>   | F3524GSI    | 627 <sup>1</sup>   | 573 <sup>1,7</sup>  |
| VHP3600G                      | 360                | 360                | 400               | 315                 | 350                | F3521G      | 382                | 340                 |
| Model                         | 1800 rpm           | 1800 rpm           | 1800 rpm          | 1500 rpm            | 1500 rpm           | Model       | 1800 rpm           | 1500 rpm            |
| VGf48GL                       | 830 <sup>3</sup>   | 830 <sup>3</sup>   | 860               | 685 <sup>3</sup>    | 715                | P48GL       | 880 <sup>3</sup>   | 730 <sup>3</sup>    |
| VGf48GLD                      | 830 <sup>3</sup>   | 830 <sup>3</sup>   | 860               | 685 <sup>3</sup>    | 715                | P48GLD      | 880 <sup>3</sup>   | 730 <sup>3</sup>    |
| VGf48GLD/2                    | —                  | —                  | —                 | —                   | —                  | P48GLD/2    | —                  | 830                 |
| VGf48GSI/GSID                 | 750                | 750                | 825               | 625                 | 685                | P48GSI/GSID | 800                | 660                 |
| VGf36GL                       | 620 <sup>3,9</sup> | 620 <sup>3,9</sup> | 645 <sup>9</sup>  | 515 <sup>3,9</sup>  | 535 <sup>9</sup>   | L36GL       | 660 <sup>3,9</sup> | 550 <sup>3,9</sup>  |
| VGf36GLD                      | 620 <sup>3</sup>   | 620 <sup>3</sup>   | 645               | 515 <sup>3</sup>    | 535                | L36GLD      | 660 <sup>3</sup>   | 550 <sup>3</sup>    |
| VGf36GSI/GSID                 | 560                | 560                | 620               | 475                 | 515                | L36GSI/GSID | 600                | 500                 |
| VGf24GL                       | 415 <sup>3,9</sup> | 415 <sup>3,9</sup> | 425 <sup>9</sup>  | 340 <sup>3,9</sup>  | 355 <sup>9</sup>   | H24GL       | 440 <sup>3,9</sup> | 365 <sup>3,9</sup>  |
| VGf24GLD                      | 415 <sup>3</sup>   | 415 <sup>3</sup>   | 425               | 340 <sup>3</sup>    | 355                | H24GLD      | 440 <sup>3</sup>   | 365 <sup>3</sup>    |
| VGf24GLD/2                    | —                  | —                  | —                 | —                   | —                  | H24GLD/2    | —                  | 414                 |
| VGf24GSI/GSID                 | 375                | 375                | 410               | 310                 | 340                | H24GSI/GSID | 400                | 330                 |
| VGf18GL                       | 310 <sup>3,9</sup> | 310 <sup>3,9</sup> | 315 <sup>9</sup>  | 250 <sup>3,9</sup>  | 260 <sup>9</sup>   | F18GL       | 330 <sup>3,9</sup> | 275 <sup>3,9</sup>  |
| VGf18GLD                      | 310 <sup>3</sup>   | 310 <sup>3</sup>   | 315               | 250 <sup>3</sup>    | 260                | F18GLD      | 330 <sup>3</sup>   | 275 <sup>3</sup>    |
| VGf18GSI/GSID                 | 280                | 280                | 310               | 230                 | 255                | F18GSI/GSID | 300                | 250                 |
| Model                         | 1800 rpm           | 1800 rpm           | 1800 rpm          | 1500 rpm            | 1500 rpm           | Model       | 1800 rpm           | 1500 rpm            |
| VSG11GSI/GSID                 | 165                | 165                | 175               | 140                 | 150                | F11GSI/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 reduce lifecycle intervals.

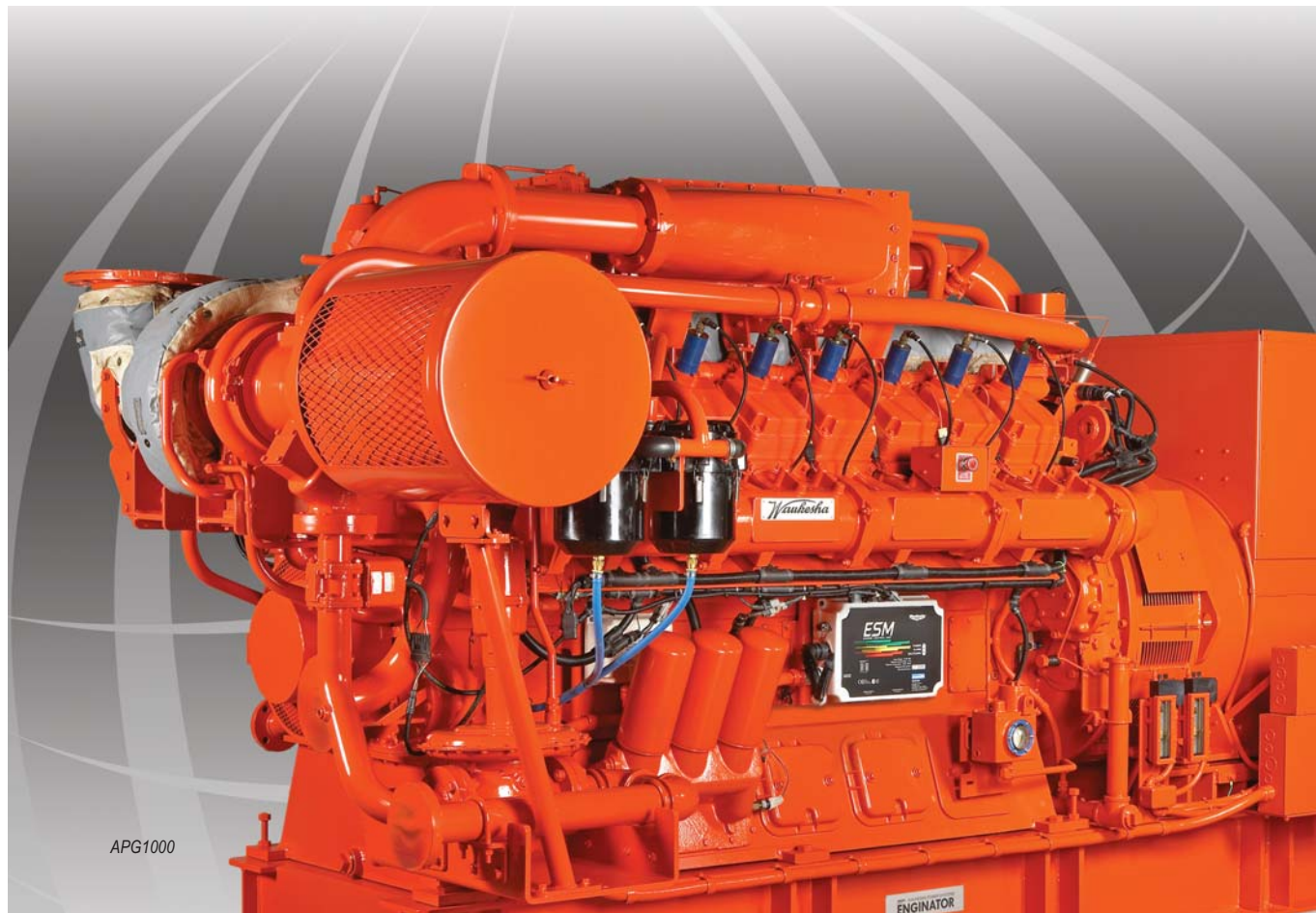
**NOTE:** kWe output is based on 0.8 Power Factor Enginator® efficiency.

# ENGINEATOR® UNIT MOUNTED RADIATOR COOLING



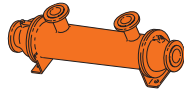
| Engine Family  | Model           | 60Hz               |                   | 50Hz                |                   |
|--|-----------------|--------------------|-------------------|---------------------|-------------------|
|  |                 | Continuous (kWe)   | Standby (kWe)     | Continuous (kWe)    | Standby (kWe)     |
| <b>VHP®</b><br>130°F (54°C) I.C. Water Temp.<br>(Tcra)<br><sup>1</sup> Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.<br><sup>2</sup> No overload allowed.   | VHP7104GSI/GSID | 1150 <sup>1</sup>  | 1260 <sup>1</sup> | 1050 <sup>1,7</sup> | 1050 <sup>1</sup> |
|  | VHP7100GSI/GSID | 1000 <sup>1</sup>  | 1260 <sup>1</sup> | 840 <sup>1,7</sup>  | 1050 <sup>1</sup> |
|  | VHP7100GL       | 1025               | 1130              | 845                 | 930               |
|  | VHP5904LT       | 990                | 1090              | 860 <sup>1,7</sup>  | 900               |
|  | VHP5904LTD      | 990                | 1090              | 860 <sup>1,7</sup>  | 860 <sup>1</sup>  |
|  | VHP5904GSI/GSID | 940 <sup>1</sup>   | 1030 <sup>1</sup> | 860 <sup>1,7</sup>  | 860 <sup>1</sup>  |
|  | VHP7100G        | 700                | 800               | 610                 | 685               |
|  | VHP3604GSI/GSID | 560 <sup>1</sup>   | 615 <sup>1</sup>  | 500 <sup>1,7</sup>  | 500 <sup>1</sup>  |
|  | VHP5900G        | 575                | 645               | 455                 | 505               |
|  | VHP3600G        | 345                | 385               | 300                 | 335               |
| <b>VGf®</b><br>130°F (54°C) I.C. Water Temp.<br>(Tcra)<br><sup>3</sup> 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.<br><sup>9</sup> Rating is for high compression ratio pistons only. | VGF48GL/GLD     | 810 <sup>3</sup>   | 825               | 670 <sup>3</sup>    | 700               |
|  | VGF48GSID       | 730                | 800               | 610                 | 650               |
|  | VGF36GL/GLD     | 590 <sup>3,9</sup> | 625 <sup>9</sup>  | 500 <sup>3,9</sup>  | 525 <sup>9</sup>  |
|  | VGF36GSID       | 530                | 600               | 450                 | 490               |
|  | VGF24GL/GLD     | 390 <sup>3,9</sup> | 405 <sup>9</sup>  | 325 <sup>3,9</sup>  | 350 <sup>9</sup>  |
|  | VGF24GSID       | 350                | 395               | 295                 | 325               |
|  | VGF18GL/GLD     | 295 <sup>3,9</sup> | 300 <sup>9</sup>  | 240 <sup>3,9</sup>  | 250 <sup>9</sup>  |
|  | VGF18GSID       | 265                | 300               | 220                 | 240               |
| <b>VSG</b><br>130°F (54°C) I.C. Water Temp.<br>(Tcra)  | VSG11GSI/GSID   | 150                | 160               | 125                 | 145               |

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



APG1000

# ENGINEATOR® HEAT EXCHANGER COOLING



|   |                      | 60Hz                                   |                     | 50Hz                                   |                     |
|---|----------------------|--|---------------------|--|---------------------|
|   |                      | Continuous (kWe)                       | Standby (kWe)       | Continuous (kWe)                       | Standby (kWe)       |
| <b>Engine Family</b>  | <b>Model</b>         | <b>900 rpm</b>                         | <b>900 rpm</b>      | <b>1000 rpm</b>                        | <b>1000 rpm</b>     |
| <b>ATGL®</b><br>90°F (32°C) I.C. Water Temp. (Tcra)<br>5 10% overload not available.  | 16V-AT27GL           | 2960 <sup>5</sup>                      | 3100                | 3250 <sup>5</sup>                      | 3430                |
|   | 12V-AT27GL           | 2100                                   | 2310                | 2340                                   | 2570                |
|   | 8L-AT27GL            | 1400                                   | 1540                | 1550                                   | 1710                |
| <b>Engine Family</b>  | <b>Model</b>         | <b>1800 rpm</b>                        | —                   | <b>1500 rpm</b>                        | —                   |
| <b>APG™</b><br>130°F (54°C) I.C. Water Temp. (Tcra)<br>7 No overload allowed.<br>113°F (45°C) I.C. Water Temp. (Tcra)<br>7 No overload allowed.   | APG1000              | 1100 <sup>7</sup>                      | —                   | 1000 <sup>7</sup>                      | —                   |
|   | <b>Model</b>         | <b>1200 rpm</b>                        | —                   | <b>1500 rpm</b>                        | —                   |
|   | APG2000<br>APG3000   | 1860 <sup>7</sup><br>2800 <sup>7</sup> | —<br>—              | 2100 <sup>7</sup><br>3200 <sup>7</sup> | —<br>—              |
| <b>Engine Family</b>  | <b>Model</b>         | <b>1200 rpm</b>                        | <b>1200 rpm</b>     | <b>1000 rpm</b>                        | <b>1000 rpm</b>     |
| <b>VHP®</b><br>85°F (29°C) I.C. Water Temp. (Tcra)<br>1 Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.<br>6 5% overload allowed.<br>7 No overload allowed.<br>8 130°F (54°C) I.C. Water Temp. (Tcra)  | VHP9500GSI           | 1475                                   | 1825                | 1225                                   | 1520                |
|   | VHP9500GL            | 1475                                   | 1625                | 1225                                   | 1350                |
|   | VHP7104GSI/GSID      | 1200 <sup>1,8</sup>                    | 1300 <sup>1,8</sup> | 1100 <sup>1,7,8</sup>                  | 1100 <sup>1,8</sup> |
|   | VHP7100GSI/GSID      | 1100 <sup>1</sup>                      | 1350 <sup>1</sup>   | 920 <sup>1</sup>                       | 1125 <sup>1</sup>   |
|   | VHP7100GL            | 1100                                   | 1210                | 920                                    | 1015                |
|   | VHP5904LT            | 1075                                   | 1175                | 900 <sup>6</sup>                       | 975                 |
|   | VHP5904LTD           | 1075 <sup>1</sup>                      | 1075 <sup>1</sup>   | 900 <sup>1,7</sup>                     | 900 <sup>1</sup>    |
|   | VHP5904GSI/GSID      | 980 <sup>1,8</sup>                     | 1080 <sup>1,8</sup> | 900 <sup>1,7,8</sup>                   | 900 <sup>1,8</sup>  |
|   | VHP7100G             | 725                                    | 810                 | 635                                    | 710                 |
|   | VHP3604GSI/GSID      | 600 <sup>1,8</sup>                     | 650 <sup>1,8</sup>  | 540 <sup>1,7,8</sup>                   | 540 <sup>1,8</sup>  |
|   | VHP5900G             | 595                                    | 665                 | 475                                    | 525                 |
|   | VHP3600G             | 360                                    | 400                 | 315                                    | 350                 |
|   | <b>Engine Family</b> | <b>Model</b>                           | <b>1800 rpm</b>     | <b>1800 rpm</b>                        | <b>1500 rpm</b>     |
| <b>VGf®</b><br>130°F (54°C) I.C. Water Temp. (Tcra)<br>3 These power ratings require pricebook 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.<br>9 Rating is for high compression ratio pistons only. | VGf48GL/GLD          | 830 <sup>3</sup>                       | 860                 | 685 <sup>3</sup>                       | 720                 |
|   | VGf48GSID            | 750                                    | 825                 | 625                                    | 685                 |
|   | VGf36GL/GLD          | 615 <sup>3,9</sup>                     | 645 <sup>9</sup>    | 515 <sup>3,9</sup>                     | 535 <sup>9</sup>    |
|   | VGf36GSID            | 560                                    | 620                 | 475                                    | 515                 |
|   | VGf24GL/GLD          | 415 <sup>3,9</sup>                     | 425 <sup>9</sup>    | 340 <sup>3,9</sup>                     | 360 <sup>9</sup>    |
|   | VGf24GSID            | 375                                    | 410                 | 310                                    | 340                 |
|   | VGf18GL/GLD          | 310 <sup>3,9</sup>                     | 315 <sup>9</sup>    | 250 <sup>3,9</sup>                     | 260 <sup>9</sup>    |
|   | VGf18GSID            | 280                                    | 310                 | 230                                    | 255                 |
| <b>Engine Family</b>  | <b>Model</b>         | <b>1800 rpm</b>                        | <b>1800 rpm</b>     | <b>1500 rpm</b>                        | <b>1500 rpm</b>     |
| <b>VSG</b><br>85°F (29°C) I.C. Water Temp. (Tcra)   | VSG11GSI/GSID        | 165                                    | 175                 | 140                                    | 150                 |



# Alternative Fuels

- Bio-Gas
- Landfill
- Digester

## Engine Family

|   | Model        | Displacement                    | Bore/Stroke                    |
|---|--------------|---------------------------------|--------------------------------|
| <b>VHP®</b><br><small><sup>1</sup> Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to page 15 for LFPS ambient and altitude adjustments.<br/><sup>6</sup> 5% overload allowed.<br/><sup>7</sup> No overload allowed.</small> | <b>P9390</b> | 9388 in <sup>3</sup><br>(154 L) | 9.375 x 8.5"<br>(238 x 216 mm) |
|   | <b>L7042</b> | 7040 in <sup>3</sup><br>(116 L) | 9.375 x 8.5"<br>(238 x 216 mm) |
|   | <b>L5794</b> | 5788 in <sup>3</sup><br>(95 L)  | 8.5 x 8.5"<br>(216 x 216 mm)   |
| <b>VGF®</b><br><small><sup>11</sup> Engine operation using 400 - 500 Btu/ft<sup>3</sup> (15.7 - 19.7 MJ/m<sup>3</sup>). Landfill fuel requires 175°F (80°C) ICW.</small>  | <b>P48</b>   | 2924 in <sup>3</sup><br>(48 L)  | 5.98 x 6.5"<br>(152 x 165 mm)  |
|   | <b>L36</b>   | 2193 in <sup>3</sup><br>(36 L)  | 5.98 x 6.5"<br>(152 x 165 mm)  |
|   | <b>H24</b>   | 1462 in <sup>3</sup><br>(24 L)  | 5.98 x 6.5"<br>(152 x 165 mm)  |
|   | <b>F18</b>   | 1096 in <sup>3</sup><br>(18 L)  | 5.98 x 6.5"<br>(152 x 165 mm)  |
| <b>VSG</b>  | <b>F11</b>   | 673 in <sup>3</sup><br>(11 L)   | 5.5 x 5.71"<br>(127 x 145 mm)  |

# 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 <sup>1.7</sup> | 947 <sup>1.7</sup> | 900 <sup>1.7</sup> | 1408 <sup>1</sup> | 1050 <sup>1</sup> | 1000 <sup>1</sup> | —                 | —                 | —                 | —                  | —                 | —                 |
| L7042GL | 130°                    | 54° | 10.5:1                   | 1270 <sup>6</sup>   | 947 <sup>6</sup>   | 900 <sup>6</sup>   | 1478              | 1102              | 1050              | —                 | —                 | —                 | —                  | —                 | —                 |
| L5794LT | 130°                    | 54° | 10.2:1                   | 1270 <sup>1.7</sup> | 947 <sup>1.7</sup> | 900 <sup>1.7</sup> | 1445 <sup>1</sup> | 1078 <sup>1</sup> | 1025 <sup>1</sup> | —                 | —                 | —                 | —                  | —                 | —                 |
| P48GLD  | 130°                    | 54° | 11:1                     | —                   | —                  | —                  | —                 | —                 | —                 | 885 <sup>11</sup> | 660 <sup>11</sup> | 625 <sup>11</sup> | 1060 <sup>11</sup> | 800 <sup>11</sup> | 750 <sup>11</sup> |
| L36GLD  | 130°                    | 54° | 11:1                     | —                   | —                  | —                  | —                 | —                 | —                 | 670 <sup>11</sup> | 500 <sup>11</sup> | 475 <sup>11</sup> | 800 <sup>11</sup>  | 600 <sup>11</sup> | 560 <sup>11</sup> |
| H24GLD  | 130°                    | 54° | 11:1                     | —                   | —                  | —                  | —                 | —                 | —                 | 445 <sup>11</sup> | 330 <sup>11</sup> | 310 <sup>11</sup> | 530 <sup>11</sup>  | 400 <sup>11</sup> | 375 <sup>11</sup> |
| F18GLD  | 130°                    | 54° | 11:1                     | —                   | —                  | —                  | —                 | —                 | —                 | 335 <sup>11</sup> | 250 <sup>11</sup> | 230 <sup>11</sup> | 400 <sup>11</sup>  | 300 <sup>11</sup> | 280 <sup>11</sup> |
| F11GSID | 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/ft<sup>3</sup> (15.7 MJ/m<sup>3</sup>) 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" H<sub>2</sub>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.

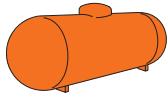
**NOTE:** For low Btu Intermittent Duty application ratings, consult Waukesha Application Engineering.

**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                            |         |
|-------------|-------------|-------------------------|--------------------------|----------|-----------|-------------------------------------|-------------------------------------|-------------------------------------|---------|
| Model       |             | °F °C                   |                          | bhp kWb  | bhp kWb   | bhp kWb                             | bhp kWb                             | bhp kWb                             |         |
| <b>VHP®</b> | P9390GSI    | 85° 29°                 | 8:1                      | 1237 923 | 1327 990  | 1479 1103                           | — —                                 | — —                                 |         |
|             | P9390GSI    | 130° 54°                | 8:1                      | 1162 867 | 1244 928  | 1379 1029                           | — —                                 | — —                                 |         |
|             | P9390GL     | 85° 29°                 | 10.5:1                   | 1237 923 | 1374 1025 | 1649 1230                           | — —                                 | — —                                 |         |
|             | P9390GL     | 130° 54°                | 10.5:1                   | 1184 883 | 1315 981  | 1578 1177                           | — —                                 | — —                                 |         |
|             | L7044GSI    | 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                             | — —                                 | — —                                 |         |
|             | <b>VGf®</b> | P48GSID                 | 130° 54°                 | 8.7:1    | — —       | — —                                 | — —                                 | 609 454                             | 731 545 |
|             |             | P48GL/GLD               | 130° 54°                 | 11:1     | — —       | — —                                 | — —                                 | 496 370                             | 604 450 |
|             |             | L36GSID                 | 130° 54°                 | 8.7:1    | — —       | — —                                 | — —                                 | 457 341                             | 548 409 |
| L36GL/GLD   |             | 130° 54°                | 11:1                     | — —      | — —       | — —                                 | 376 280                             | 442 330                             |         |
| L36GL       |             | 130° 54°                | 8.7:1                    | — —      | — —       | — —                                 | 670 <sup>19</sup> 500 <sup>19</sup> | 800 <sup>19</sup> 600 <sup>19</sup> |         |
| H24GSID     |             | 130° 54°                | 8.7:1                    | — —      | — —       | — —                                 | 305 197                             | 366 273                             |         |
| H24GL/GLD   |             | 130° 54°                | 11:1                     | — —      | — —       | — —                                 | 248 185                             | 302 225                             |         |
| H24GL       |             | 130° 54°                | 8.7:1                    | — —      | — —       | — —                                 | 445 <sup>19</sup> 330 <sup>19</sup> | 530 <sup>19</sup> 400 <sup>19</sup> |         |
| F18GSID     |             | 130° 54°                | 8.7:1                    | — —      | — —       | — —                                 | 228 170                             | 274 204                             |         |
| F18GL/GLD   |             | 130° 54°                | 11:1                     | — —      | — —       | — —                                 | 188 140                             | 221 165                             |         |
| F18GL       | 130° 54°    | 8.7:1                   | — —                      | — —      | — —       | 335 <sup>19</sup> 250 <sup>19</sup> | 400 <sup>19</sup> 300 <sup>19</sup> |                                     |         |
| <b>VSG</b>  | F11GSI      | 85° 29°                 | 10:1                     | — —      | — —       | 102 76                              | 127 95                              | 153 114                             |         |
|             | F11GSI      | 130° 54°                | 10:1                     | — —      | — —       | 102 76                              | 127 95                              | 153 114                             |         |

**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 Enginotor Systems For High Altitude And High Temperature<sup>12, 15</sup> For Natural Gas, Low BTU and HD-5 Propane Fuels

|  |  | Turbocharged and Intercooled   | Continuous/<br>Prime Power*  | Intermittent/<br>Standby   |
|--|--|--|--|--|
| All VSG  | Altitude:<br>Temperature <sup>17</sup> :                           | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:   | 3000 ft. 914 m<br>100°F 38°C                                       | 1500 ft. 457 m<br>100°F 38°C                                       |
| VSG F11 (Generator Standby Power Rating)                           | Altitude:<br>Temperature <sup>17</sup> :                           | Deduct 4% for each 1000 ft. (305 m) above:<br>Deduct 2% for each 10°F (5.5°C) above:   | — —<br>— —   | 1000 ft. 305 m<br>90°F 32°C  |
| VSG GSI <sup>16</sup> Propane                                      | Altitude:<br>Temperature <sup>17</sup> :<br>Jacket Water Temp.:    | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:<br>Deduct 2.5% for each 10°F (5.5°C) above:   | — —<br>— —<br>— —  | 1500 ft. 457 m<br>85°F 29°C<br>180°F 82°C                          |
| All VGf GL/GLD/GSI/GSID  | Altitude:<br>Altitude:<br>Altitude:<br>Temperature <sup>17</sup> : | Deduct 2% for each 1000 ft. (305 m) above: (except L36GL LCR)<br>Deduct 6% for each 1000 ft. (305 m) above: (F18GL LCR only)<br>Deduct 5% for each 1000 ft. (305 m) above: (H24GL LCR only)<br>Deduct 1% for each 10°F (5.5°C) above:                                    | 1500 ft. 457 m<br>5000 ft. 1524 m<br>3500 ft. 1067 m<br>100°F 38°C | 1500 ft. 457 m<br>5000 ft. 1524 m<br>3500 ft. 1067 m<br>100°F 38°C |
| VGf F18GL/H24GL/L36GL Code 1105 <sup>14</sup>                      | Altitude:<br>Temperature <sup>17</sup> :                           | Deduct 8% for each 1000 ft. (305 m) above:<br>Deduct 3% for each 10°F (5.5°C) above:   | 5500 ft. 1676 m<br>100°F 38°C                                      | — —<br>— —   |
| VGf GL (Generator Standby Power Rating)                            | Altitude:<br>Temperature <sup>17</sup> :                           | Deduct 3% for each 1000 ft. (305 m) above:<br>Deduct 1.5% for each 10°F (5.5°C) above:   | — —<br>— —   | 1500 ft. 457 m<br>100°F 38°C                                       |
| All VGf GSID/GSID and VGf GL/GLD with HCR on Propane <sup>16</sup> | Altitude:<br>Temperature <sup>17</sup> :<br>Jacket Water Temp.:    | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:<br>Deduct 2.5% for each 10°F (5.5°C) above:<br>[210°F (99°C) maximum Jacket Water Temperature for GSID]   | 5000 ft. 1524 m<br>100°F 38°C<br>180°F 82°C                        | — —<br>— —<br>— —  |
| All VGf GL with LCR only Propane <sup>16</sup>                     | Altitude:<br>Temperature <sup>17</sup> :<br>Jacket Water Temp.:    | Deduct 6% for each 1000 ft. (305 m) above: (F18GL LCR only)<br>Deduct 5% for each 1000 ft. (305 m) above: (H24GL LCR only)<br>Deduct 1% for each 10°F (5.5°C) above:<br>Retard spark timing 2° above:<br>[210°F (99°C) maximum Jacket Water Temperature for GL with LCR] | 5000 ft. 1524 m<br>3500 ft. 1067 m<br>100°F 38°C<br>180°F 82°C     | — —<br>— —<br>— —<br>— —   |
|  | Intercooler Water Temp.  | Retard spark timing 2° for each 10°F (5.5°C) above:  | 130°F 54°C   | — —  |

# Adjustments To Engine And Enginotor Systems For High Altitude And High Temperature<sup>12, 15</sup> For Natural Gas, Low BTU and HD-5 Propane Fuels Continued

|   |   | Turbocharged and Intercooled   | Continuous/<br>Prime Power*  | Intermittent/<br>Standby        |
|---|---|--|--|---------------------------------|
| VHP F3521/L5790<br>L7042/P9390GSI   | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:   | 6000 ft. 1828 m<br>100°F 38°C  | 1500 ft. 457 m<br>100°F 38°C    |
| VHP F3514/F3524/L5794/L7044GSI <sup>13</sup>                                | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:   | 8000 ft. 2438 m<br>100°F 38°C  | 4000 ft. 1219 m<br>100°F 38°C   |
| VHP GL  | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:   | 1500 ft. 457 m<br>100°F 38°C   | 1500 ft. 457 m<br>85°F 29°C     |
| VHP L5774LT <sup>14</sup>   | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2.4% for each 1000 ft. (305 m) above:<br>Deduct 2.4% for each 10°F (5.5°C) above:   | 5000 ft. 1524 m<br>100°F 38°C  | — —<br>— —                      |
| VHP L5794LT   | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2.4% for each 1000 ft. (305 m) above:<br>Deduct 2.4% for each 10°F (5.5°C) above:   | 5000 ft. 1524 m<br>100°F 38°C  | 1500 ft. 457 m<br>85°F 29°C     |
| VHP F3521/L5790/L7042GL with<br>Low Fuel Pressure System Option             | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 4% for each 10°F (5.5°C) above:   | 1500 ft. 457 m<br>100°F 38°C   | 1500 ft. 457 m<br>85°F 29°C     |
| VHP F3521/L5790/L7042GSI with<br>Low Fuel Pressure System Option            | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 4% for each 10°F (5.5°C) above:   | 3000 ft. 914 m<br>100°F 38°C   | 1500 ft. 457 m<br>85°F 29°C     |
| VHP F3524/L5794/L7044GSI with<br>Low Fuel Pressure System Option            | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 2% for each 1000 ft. (305 m) above:<br>Deduct 4% for each 10°F (5.5°C) above:   | 3000 ft. 914 m<br>100°F 38°C   | 1500 ft. 457 m<br>85°F 29°C     |
| VHP L5794LT with Low Fuel<br>Pressure System Option                         | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 4.8% for each 1000 ft. (305 m) above:<br>Deduct 4.8% for each 10°F (5.5°C) above:   | 1500 ft. 457 m<br>100°F 38°C   | 1500 ft. 457 m<br>85°F 29°C     |
| VHP GSI and GL HD-5/Propane<br>(Including 3524/5794/7044GSI <sup>13</sup> ) | Altitude:<br>Altitude:<br>Altitude:<br>Temperature <sup>17</sup> :<br>Jacket Water Temp.: | Deduct 2% for each 1000 ft. (305 m) above (GL only):<br>Deduct 2% for each 1000 ft. (305 m) above (GSI only):<br>Deduct 2% for each 1000 ft. (305 m) above (Series Four GSI only):<br>Deduct 1% for each 10°F (5.5°C) above:<br>Deduct 2.5% for each 10°F (5.5°C) above: | 1500 ft. 457 m<br>6000 ft. 1828 m<br>8000 ft. 2438 m<br>100°F 38°C<br>180°F 82°C | — —<br>— —<br>— —<br>— —<br>— — |
| APG 16V150LTD   | Altitude:<br>Temperature <sup>17</sup> :  | Contact Waukesha Application Engineering above:<br>Contact Waukesha Application Engineering above:   | 1500 ft. 457 m<br>100°F 38°C   | — —<br>— —                      |
| APG 12V220GL<br>APG 18V220GL  | Altitude:<br>Temperature <sup>17</sup> :  | Contact Waukesha Application Engineering<br>Contact Waukesha Application Engineering   | — —<br>— —   | — —<br>— —                      |
| 8L-AT27GL<br>12V-AT27GL   | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 3.3% for each 1000 ft. (305 m) above:<br>Deduct 2% for each 10°F (5.5°C) above:   | 3000 ft. 914 m<br>100°F 38°C   | 800 ft. 244 m<br>100°F 38°C     |
| 16V-AT27GL GC   | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 4% for each 1000 ft. (305 m) above:<br>Deduct 2% for each 10°F (5.5°C) above:   | 6000 ft. 1828 m<br>100°F 38°C  | 6000 ft. 1828 m<br>100°F 38°C   |
| 16V-AT27GL EPG  | Altitude:<br>Temperature <sup>17</sup> :  | Contact Waukesha Application Engineering above:<br>Contact Waukesha Application Engineering above:   | 1000 ft. 305 m<br>100°F 38°C   | 800 ft. 244 m<br>100°F 38°C     |
| <b>Naturally Aspirated</b>  |   |  |  |                                 |
| All VHP, VGF and VSG<br>Natural Gas   | Altitude:<br>Temperature <sup>17</sup> :  | Deduct 3% for each 1000 ft. (305 m) above:<br>Deduct 1% for each 10°F (5.5°C) above:   | 1500 ft. 457 m<br>100°F 38°C   | 500 ft. 152 m<br>85°F 29°C      |
| All VHP, VGF, VSG<br>HD-5/Propane   | Altitude:<br>Temperature <sup>17</sup> :<br>Jacket Water Temp.:                           | Deduct 3% for each 1000 ft. (305 m) above:<br>Deduct 5.5% for each 10°F (5.5°C) above:<br>Deduct 2.5% for each 10°F (5.5°C) above:   | 1500 ft. 457 m<br>100°F 38°C<br>180°F 82°C                                       | — —<br>— —<br>— —               |

## NOTES:

**Rating Standard:** All models: Ratings conform to ISO 3046/1 (latest version) with a mechanical efficiency of 90% and auxiliary water temperature, T<sub>ra</sub>, 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, BS 5514, DIN 6271 and API 7B-11C standard atmospheric reference conditions.

**Fuel Standard:** All natural gas engine ratings are based on 900 BTU/ft<sup>3</sup> (35.38 MJ/m<sup>3</sup> [25, V(0; 101.325)]) SLHV, 91 WK1™ 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 permitted 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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