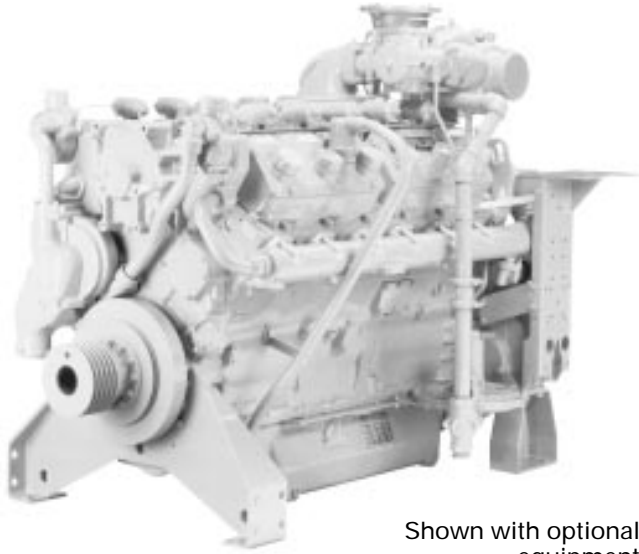




# Gas Industrial Engine

# G3412

235-675 hp



Shown with optional equipment

## SPECIFICATIONS

V-12, 4-Stroke-Cycle Gas

Bore—in (mm) ..... 5.4 (137)

Stroke—in (mm)..... 6.0 (152)

Displacement—cu in (L)..... 1,649 (27)

Compression ratio

    HCR ..... 10:1

    LCR ..... 8.5:1

Jacket Water System

    Capacity without radiator — gal (L)..... 20 (75)

Gas Pressure Requirements — psi (bar)

    TA..... 20 (1.4)

    NA ..... 1.5 (.1)

Lube Oil Capacity—gal (L) ..... 50 (189)

Aspiration..... Naturally Aspirated (NA) or Turbocharged-Aftercooled (TA)

## FEATURES

### ■ DIESEL STRENGTH BUILT IN

All Caterpillar® Gas Engines are built on diesel frames which means greater service life. Caterpillar® Gas Engines inherit more from their diesel counterparts than just strength. They are backed by the same support system recognized as one of the most sophisticated and dependable in the world.

### ■ APPLICATION FLEXIBILITY

Constant torque over a large operating speed range and ability to burn a wide spectrum of gaseous fuels.

### ■ GAS ENGINES

Represent the latest technology in engine design and efficiency. Engines are offered in both naturally aspirated (NA) and turbocharged/aftercooled (TA) configurations with both high and low compression ratios.

- High energy ignition systems for consistent firing with many fuels.
- State-of-the-art combustion technology for improved fuel consumption.
- Modern componentry, designed and rigorously tested to provide excellent performance, reliability, and durability.

## CONTINUOUS RATINGS (bhp)

| Aspiration | 1800 rpm* | 1400 rpm |
|------------|-----------|----------|
| TA-90 HCR  | 675       | 525      |
| TA-130 HCR | 600       | 465      |
| TA-90 LCR  | 625       | 495      |
| TA-130 LCR | 565       | 450      |
| NA HCR     | 365       | 315      |

\* Catalyst Ratings – approximately 10% less bhp than continuous ratings. Contact your Caterpillar dealer.



## STANDARD EQUIPMENT

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|  |   |
|--|---|
| Air cleaners<br>two stage, with rain<br>cap and service<br>indicator | Paint, Caterpillar<br>yellow                          |
| Breather, crankcase  | Pumps<br>auxiliary water, gear<br>driven, centrifugal |
| Carburetor, natural gas  | non-self-priming<br>(TA only)                         |
| Cooler, lubricating oil  | jacket water, gear<br>driven                          |
| Elbow, exhaust, dry  | Regulator, gas<br>pressure                            |
| Filter, lubricating oil,<br>bypass (TA only)                         | SAE standard rotation                                 |
| Flywheel housing,<br>SAE No. 0                                       | Service meter   |
| Governor,<br>Woodward PSG  | Supports, engine                                      |
| Ignition system<br>Altronic III                                      | Thermostats and<br>housing                            |
| Lifting eyes   | Torsional vibration<br>damper                         |
| Manifold, exhaust,<br>watercooled                                    |   |

## OPTIONAL EQUIPMENT

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|   |   |
|---|---|
| Air cleaners and<br>accessories   | Protection devices<br>oil pressure and<br>coolant temperature<br>contactors |
| Bases and foundations   | Power takeoffs  |
| Controls and governors  | Starting systems  |
| Cooling systems,<br>heat exchangers<br>aftercooler groups<br>expansion tank |   |
| CSA ignition (Class 1,<br>Div 2, Gp D)                                      |   |
| Dual timing magneto   |   |
| Exhaust fittings  |   |
| Fuel systems  |   |
| Gauges & instrument<br>panels   |   |
| Mufflers  |   |

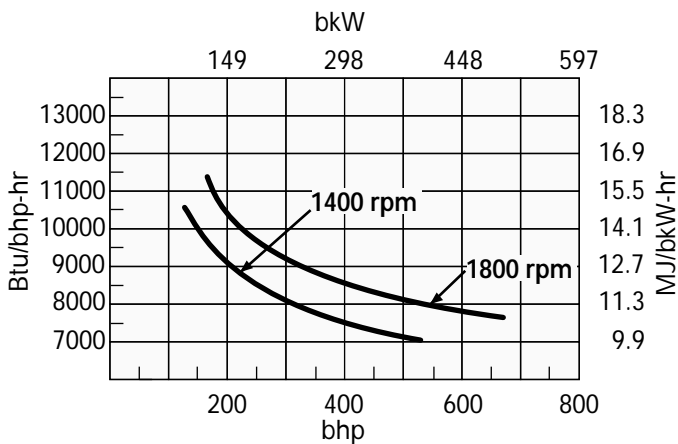
## PHYSICAL FACTORS

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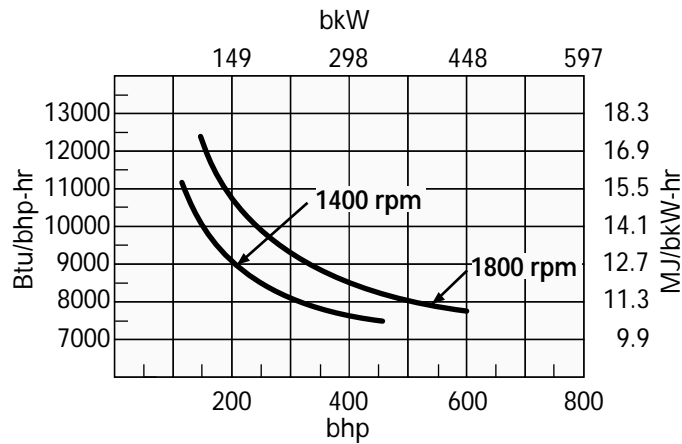
|        | Length |      | Height |      | Width |      | Weight |      |
|--------|--------|------|--------|------|-------|------|--------|------|
|        | in     | mm   | in     | mm   | in    | mm   | lb     | kg   |
| TA     | 80.7   | 2049 | 68.3   | 1734 | 63.1  | 1603 | 4720   | 2143 |
| STD NA | 76.3   | 1938 | 64.2   | 1631 | 49.8  | 1265 | 4420   | 2007 |

## FUEL CONSUMPTION

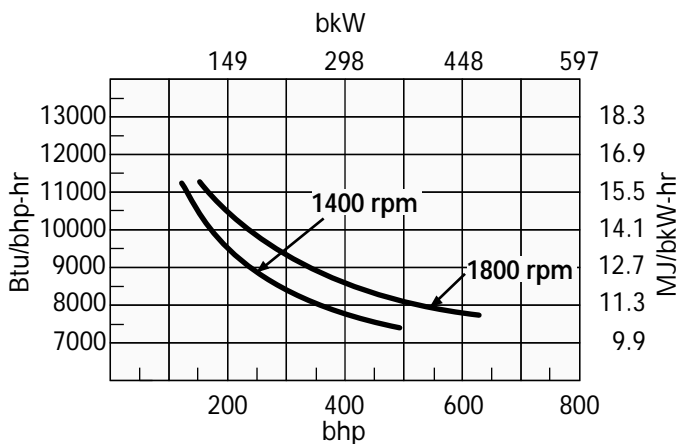
**HCR TA-90**



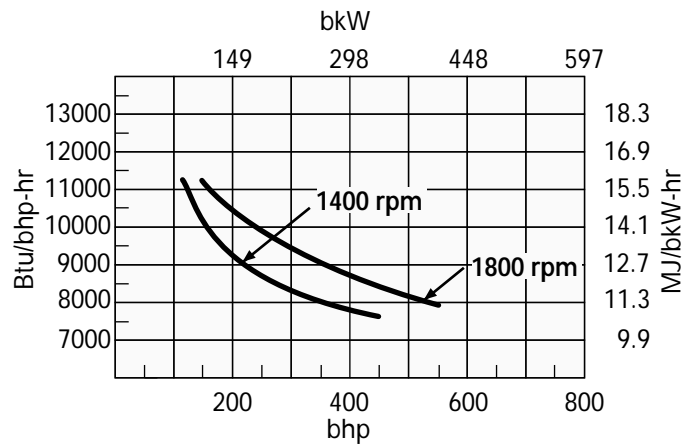
**HCR TA-130**



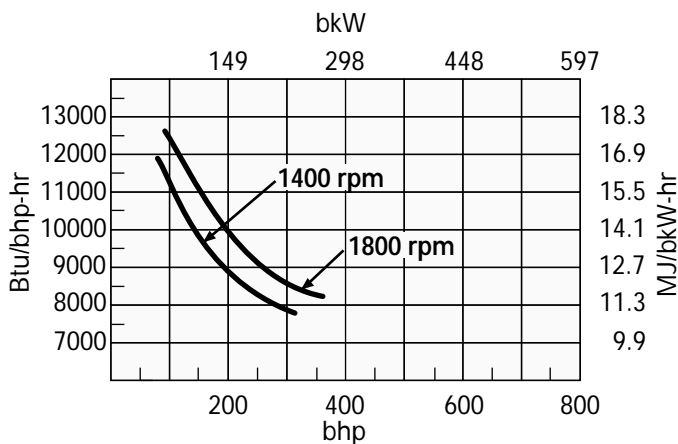
**LCR TA-90**



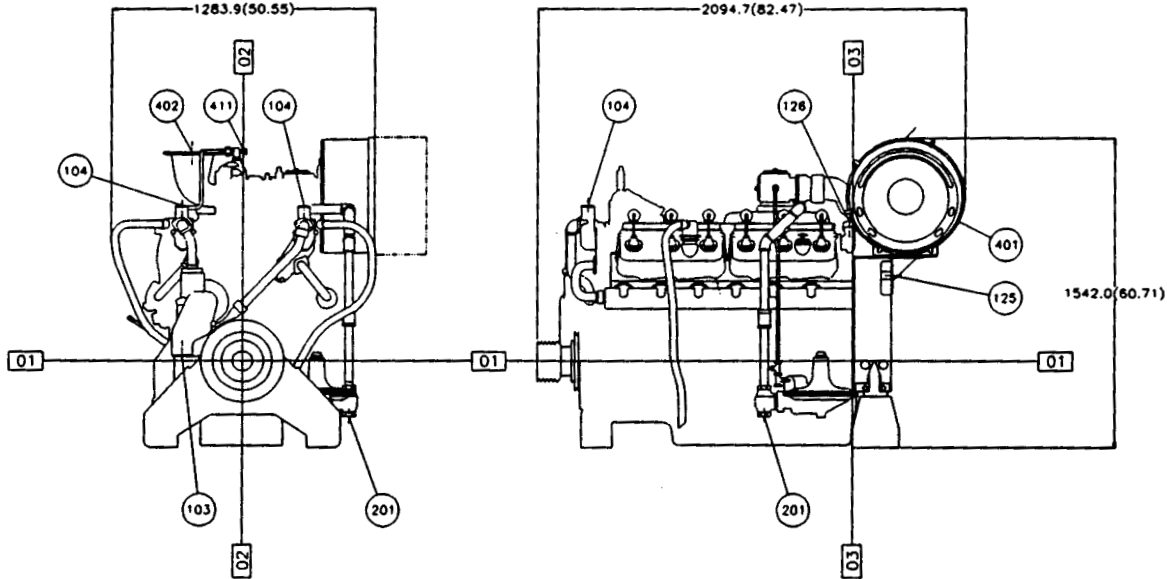
**LCR TA-130**



**3412 NA**



**GAS INDUSTRIAL ENGINE**



- |     |                             |     |                          |     |                          |
|-----|-----------------------------|-----|--------------------------|-----|--------------------------|
| 01  | Centerline of Crankshaft    | 104 | Jacket Water Outlet      | 401 | Air Inlet                |
| 02  | Centerline of Engine        | 125 | Aftercooler Water Inlet  | 402 | Exhaust                  |
| 03  | Rear Face of Cylinder Block | 126 | Aftercooler Water Outlet | 411 | Air Bleed Cooling System |
| 103 | Jacket Water Inlet          | 201 | Fuel Inlet               |     |                          |

TA configuration shown. See General Dimension Drawing 7W0103 for additional detail.

Note: General configuration not to be used for installation.

**RATING CONDITIONS AND DEFINITIONS**

**Ratings** are based on SAE J1349 standard conditions of 29.61 in Hg (100 kPa) and 77° F (25° C). These ratings also apply at ISO3046, DIN6271, BS5514 standard conditions of 29.61 in Hg (100 kPa) 81° F (27° C); and API 7B-11C standard conditions of 29.38 in Hg (99 kPa) and 85° F (29° C) also apply.

**Ratings** are based on dry natural gas having an LHV (low heat valve) of 905 btu/cu ft (35.54 MJ/N m³). Variations in altitude, temperature, and gas composition from standard conditions may require a reduction in engine horsepower.

**Turbocharged-aftercooled ratings** apply to 5,000 ft (1525 m) and 77° F (25° C).

**Naturally aspirated engines** apply to 500 ft (150 m) and 77° F (25° C). For applications which exceed these limits contact your Caterpillar dealer.

90 refers to aftercooler water inlet temperature in 90° F (32° C).

130 refers to aftercooler water inlet temperature in 130° F (54° C).

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for details.