# GASEOUS FUEL 14, 20 AND 25HP OHV VERTICAL/HORIZONTAL

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KOHILER

COMMAND PRO



# C G14, 20 AND 25 HP OHV VERTICAL/HORIZONTAL SHAFT O

## COMMAND PRO<sup>™</sup> GASEOUS FUEL ENGINES

- Ideal for industrial, construction, rental, commercial and other outdoor power equipment
- LPG, LPG/NG, LPG/Gasoline choices
- Open loop and closed loop systems
- Vapor and liquid withdrawal
- · Ready to use, right out of the box
- Factory installed, two stage regulator
- Factory-installed, lock-off solenoid
- CARB/EPA certified
- Two-year commercial warranty
- Kohler application assistance available

### **STANDARD FEATURES**

Whether you choose gaseous fuel or gasoline, these important features are standard on all Command PRO engines:

### **OVERHEAD VALVE EFFICIENCY**



Overhead valve design increases power, boosts fuel economy, reduces oil consumption and virtually eliminates carbon build-up to keep your Command PRO engine running cleaner, stronger and longer.

### HYDRAULIC VALVE SMOOTHNESS

Oil-pressurized valve lifters keep push rods in constant contact with rocker arms, eliminating valve adjustments. So you avoid expensive downtime and increase equipment productivity.

### **QUIET PERFORMANCE**

Equipment operators and the environment benefit with Kohler quiet-plus features: hydraulic valve lifters, cam-ground pistons, helical gears and engineered-material blower housing.

### **RELIABLE ELECTRONIC IGNITION**

With breakerless, inductive ignition, you get excellent all-weather starts even in temperatures as low as 10° F. Response is quick and stable.



CH25 LPG/Gasoline, closed loop

Compared to a gasoline engine, LPG and natural gas (NG) offer many advantages:

- Less Carbon Monoxide (CO) emissions.
- Compliant with ozone non-attainment days in many cities.
- No evaporative fumes that are present during gasoline fills or spillage.
- Leaves no lead, carbon or sludge in the engine that means less engine wear and lower maintenance costs.
- No gasoline vapor lock.
- Higher octane rating.
- Won't "spoil" over time especially crucial for standby generator sets.
- Stable prices not affected by oil supplies or market conditions.
- Adapts easily to mobile applications (LPG only).

### **OTHER CONSIDERATIONS**

Before deciding on gaseous fuel, consider these other factors:

Lower horsepower and torque. Simply stated, gaseous fuel replaces a portion of the air normally drawn for combustion. That means less power compared to gasoline—about 10% less for LPG; about 20% less for natural gas or dual fuel.

 $\pmb{\text{Cost.}}$  Gaseous fuel components add cost to a spec. Prices can be 15% to 50% higher than a gasoline engine.

**Emissions.** Regardless of fuel type, equipment operators should avoid inhaling exhaust fumes. Engines should not be run in a closed building or a confined area.

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#### COMMAND PRO<sup>™</sup> - GASEOUS FUEL OPTIONS

KOHLER Command PRO engines are available with the following gaseous fuel options:

#### LPG Only

- Closed loop: CH14, CV14
- Open loop: CH20, CH25

#### LPG/Natural Gas Dual Fuel

• Open loop: CH25

#### LPG/Gasoline Dual Fuel

- Closed loop: CH25
- Open loop: CH25

(More models to follow)

#### **CLOSED VS. OPEN LOOP SYSTEMS**

Gaseous fuel systems are either closed loop or open loop. These terms refer to whether the engine's air-to-fuel ratio is electronically monitored (closed loop) or not (open loop).

#### Closed Loop (see diagram below)

This system relies upon two critical parts: an analog Electronic Control Unit (ECU) and an oxygen sensor. The system's fuel metering valve, installed in the fuel line, is activated by the ECU to provide either less or more fuel. The ECU engages when the oxygen sensor, installed in the exhaust, signals a change in oxygen levels. In this way, the ECU maintains a consistent air-to-fuel ratio at all loads and speeds.

#### **CLOSED LOOP**



With a closed loop system, you can rely on a consistent air-to-fuel ratio regardless of fuel composition, air filter condition, ambient temperature, altitude or engine wear.

The advantages: enhanced engine performance and lower exhaust emissions. Emissions are reduced even further with a catalytic muffler, as featured on the CH14/CV14 LPG closed loop specs (not available on Twins).

#### **Open Loop**

An open loop system has the same components as closed loop, except the ECU and oxygen sensor are not included.

#### ENGINES ARE READY TO USE

Command PRO gaseous fuel engines are ready to use, right out of the box. All gaseous fuel components are engine-mounted and factory-tested before delivery. They provide reliable starts, dependable performance and maximum power when you need them, every time you need them.

Kohler's two-year commercial warranty applies to the entire engine, including the following gaseous fuel components:



#### **AIR VAPORIZER**

Converts liquefied fuel to vapor before reaching the two-stage regulator. (Not needed on vapor withdrawal gaseous fuel specs.)



#### **TWO-STAGE REGULATOR**

Reduces fuel tank pressure, regulates and maintains that pressure in its **primary** chamber, then reduces it again in a **secondary** chamber to nearly atmospheric pressure to prevent excess fuel from flowing.



#### LOCK-OFF SOLENOID

Automatically shuts off fuel when engine stops as required by U.L. Also includes internal, replaceable fuel filter.

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## **CH14 AND CV14 ENGINES**





CLOSED LOOP - HORIZONTAL CH14 LPG: Special Order

STANDARD FEATURES	POPULAR FACTORY OPTIONS		
<ul> <li>Lock - off solenoid w/filter</li> <li>Two - stage regulator</li> <li>Full pressure lubrication</li> <li>Electronic Control Unit (ECU)</li> <li>System</li> <li>Catalytic pillow muffler</li> <li>Dverhead valve design</li> <li>Electronic ignition</li> <li>Electronic ignition</li> <li>Hydraulic valve lifters</li> <li>Steel intake valve</li> <li>Stellite exhaust valve</li> <li>Dual element air cleaner</li> <li>Balance system</li> <li>Spin - on oil filter</li> <li>Overhead valve design</li> <li>Stellite exhaust valve</li> <li>Metal blower housing (CH)</li> <li>Hardened crankshaft</li> </ul>	<ul> <li>Exhaust deflectors</li> <li>Spark arrestors</li> <li>Crankshaft choices</li> <li>Separate choke/throttle (CV)</li> <li>Recoil housing and foam filter (CV)</li> </ul>		

Kohler Co. reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligation.



#### **ENGINE PERFORMANCE**

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## CH14 AND CV14

CH14 LPG, CLOSED LOOP

![](_page_4_Figure_3.jpeg)

#### CV14 LPG, CLOSED LOOP

![](_page_4_Figure_5.jpeg)

NOTE: All equipment applications using gaseous fuels must be reviewed by Kohler application engineering. This will help assure compliance with all environmental regulations, as well as provide assistance with other application-related issues. Contact your Kohler sales representative to begin the review process.

# C 14, 20 AND 25 HP OHV VERTICAL/HORIZONTAL SHAFT C

## **CH20 AND CH25 ENGINES**

![](_page_5_Picture_2.jpeg)

Kohler Co. reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligation.

#### **ENGINE PERFORMANCE**

![](_page_5_Figure_5.jpeg)

A - CH20 LPG, open loop B - CH25 LPG, open loop C - CH25 LPG, closed loop (when a dual fuel with Gasoline) D - CH25 LPG, open loop (when a dual fuel with Gasoline) E - CH25 LPG, open loop (when a dual fuel with NG) (Generator spec @ 3000/3600 rpm) F - CH25 NG, open loop (when a dual fuel with LPG) (Generator spec @ 3000/3600 rpm)

![](_page_5_Figure_7.jpeg)

• CH25 Gasoline, closed loop (when a dual fuel with LPG) • CH25 Gasoline, open loop (when a dual fuel with LPG)

![](_page_6_Picture_0.jpeg)

## **CH20 AND CH25**

CH20 LPG, OPEN LOOP

![](_page_6_Figure_3.jpeg)

#### CH25 LPG/GASOLINE, CLOSED LOOP

![](_page_6_Figure_5.jpeg)

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## **MODEL SPECIFICATIONS**

ENGINE TYPE		4-cycle, air-cooled, gasoline, horizontal and vertical shaft, single-cylinder, overhead valve, cast iron cylinder liner, LPG fuel system.			
MODEL		CH14	CV14		
SPEC		Special Order	PA-14106		
FUEL SYSTEM		LPG, closed loop	LPG, closed loop		
TYPE OF FUEL WITHDRAWAL		Vapor	Vapor		
MUFFLER		Catalytic pillow, w/guard	Catalytic pillow, w/guard		
BORE	in. (mm)	3.43 (87)	3.43 (87)		
STROKE	in. (mm)	2.64 (67)	2.64 (67)		
DISPLACEMENT	cu. in. (cc)	24.3 (398)	24.3 (398)		
POWER (@3600 RPM)*	hp (kW)	10.27 (7.66)	10.27 (7.66)		
MAX TORQUE (@ RPM)	lbs. ft	17.29 (@ 1800)	17.29 (@ 1800)		
COMPRESSION RATIO		8.5:1	8.5:1		
DRY WEIGHT	lbs. (kg)	89.3 (40.5)	89.0 (40.4)		
OIL CAPACITY	U.S. pints (litre)	4 (1.9)	4 (1.9)		
DIMENSIONS L x W x H	in. (mm)	**13.74" x 22.52" x 18.58" **349 x 572 x 472	***18.46" x 18.43" x 13.66" ***469 x 468 x 347		

\* Horsepower ratings (shown as NET) are in accordance with Society of Automotive Engineers - Small Engine Test Code J1349.

\*\* Length is mounting face to recoil start. (Subtract 2.35" if no recoil start.) Width is throttle lever to LPG regulator. Height is mounting feet to muffler.

\*\*\*\* Length is muffler to crankcase. Width is muffler to LPG regulator. Height is mounting face to recoil start. (Subtract 1.36" if no recoil start.)

ENGINE TYPE		4-cycle, air-cooled, gasoline, horizontal shaft, twin cylinder, overhead valve, cast iron cylinder liners (CH20), plated cylinders (CH25), various fuel systems.				
MODEL		CH20	CH25	CH25	CH25	CH25
SPEC		PA-64570	PA-68640	Special Order	Special Order	Special Order
FUEL SYSTEM		LPG, open loop	LPG, open loop	Dual, closed loop	Dual, open loop	LPG/NG, open loop
TYPE OF FUEL WITHDRAW	/AL	Liquid	Liquid	Liquid	Liquid	Liquid
MUFFLER		Canister	Canister	Canister	Canister	Canister
BORE	in. (mm)	3.03 (77)	3.27 (83)	3.27 (83)	3.27 (83)	3.27 (83)
STROKE	in. (mm)	2.64 (67)	2.64 (67)	2.64 (67)	2.64 (67)	2.64 (67)
DISPLACEMENT	cu. in. (cc)	38 (624)	44 (725)	44 (725)	44 (725)	44 (725)
POWER (@3600 RPM)*	LPG	17.1 (12.8)	20.0 (14.9)	18.2 (13.6)	18.8 (14.0)	19.9 (14.8)
hp (kW)	Gasoline	-	-	21.5 (16.1)	21.5 (16.1)	-
	NG	-	-	-	-	17.4 (12.9)
MAX TORQUE (@ RPM)	LPG	28.6 (@ 2400)	34.3 (@ 2400)	31.1 (@ 1800)	31.4 (@ 2400)	32.0 (@ 3000)
lbs. ft	Gasoline	-	-	33.7 (@ 2400)	33.7 (@ 2400)	-
	NG	-	-	-	-	28.7 (@ 3000)
COMPRESSION RATIO		8.5:1	9:1	9:1	9:1	9:1
DRY WEIGHT	lbs. (kg)	92 (41.7)	96 (43.5)	97.5 (44.2)	97.5 (44.2)	96 (43.5)
OIL CAPACITY	U.S. pints (litre)	4 (1.9)	4.2 (2)	4.2 (2)	4.2 (2)	4.2 (2)
DIMENSIONS L x W x H	in.	See #1 below	See #2 below	See #3 below	See #4 below	See #5 below
	(mm)	See #1 below	See #2 below	See #3 below	See #4 below	See #5 below

\*Horsepower ratings (shown as NET) are in accordance with Society of Automotive Engineers - Small Engine Test Code J1349.

#1 · 14.19(360) x 18.5(470) x 19(483) Length is grass screen to vaporizer (or 19/482 to muffler). Width is to vaporizer hose.

#2 - 15(381) x 21(533) x 19.75(502) Length is grass screen to vaporizer (or 19.5/495 to muffler). Width is to lock-off solenoid. Height is to air cleaner.

#3 - 15(381) x 21(533) x 20.75(527) Length is grass screen to vaporizer (or 19.5/495 to muffler). Width is to lock-off solenoid. Height is to air cleaner.

#4 - Same as #3.

#5 - 14(356) x 19.25(489) x 20.5(521) Length is grass screen to mounting surface (or 19.5/495 to muffler). Width is to regulator. Height is to air cleaner.

![](_page_7_Picture_13.jpeg)

Certification #US97/0977

FOR MORE INFORMATION, CONTACT YOUR KOHLER SOURCE OF SUPPLY, OR CALL 1-800-544-2444

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![](_page_7_Picture_18.jpeg)