# HONDA

# **V-Twin Series Engines**



### Built like no other.

How do you earn people's trust? You do it by building fuel efficient, reliable products, exceeding customer's expectations, earning a great reputation, but never resting on your laurels. This simple philosophy has helped make Honda the world's largest engine manufacturer. Our name stands for outstanding performance, cutting edge technology, and overall value. It seamlessly transcends from jets to automobiles, motorcycles to ATVs, marine engines to power equipment like lawn mowers and generators, and of course, to our general purpose engines.

In fact, Honda's V-Twin engines are infused with racing technologies we've perfected on blacktops and dirt trails throughout the world. The result is a 688cc engine that delivers remarkable power and torque when and where you need it. They offer improved horsepower but come in a compact frame increasing their versatility. Our racing heritage also means extra features and precision engineering you just won't find anywhere else. As you're about to discover, Honda V-Twins really are built like no other.



#### **Net Power**

The SAE J1349 standard measures net horsepower with the manufacturer's production muffler and air cleaner in place. Net horsepower more closely correlates with the power the operator will experience when using a Honda Engine powered product. The power rating of the engines indicated in this document is the net power output tested on a production engine for the model noted and measured at the rpm specified. Mass production engines may vary from this value. Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operation speed of the engine in application, environmental conditions, maintenance and other variables.



Honda Accord Touring



HondaJet



Honda CRF450R



Honda BF250 Outboard



Honda Advanced Robotics — Asimo

## We raised the bar on everything.

Honda's V-Twins have been redesigned from the ground up.

The result is a highly advanced style of engine that not only looks different, but works harder than ever and offers exceptional versatility.

Honda Engines already have a legendary reputation for toughness, reliability, quiet operation and fuel efficiency. Our V-Twins also offer higher horsepower, improved adaptability, greater compactness, convenient controls, greater fuel economy and a 3-year engine warranty.

Plus, customers notice Honda Engines. Honda adds value to your product and speaks volumes about quality, attention to detail, and jobs well done.



### **Our 3-Year Warranty**



Honda V-Twin Series engines come with a 3-year warranty. This warranty applies to GX series engines 100cc or larger purchased at retail or put into rental service after January 1st, 2009.

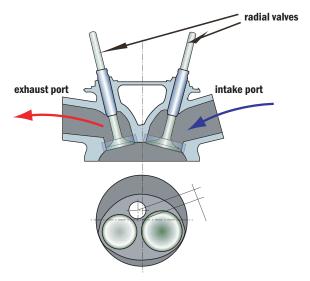
## Why they're the best.

#### **More Power**

Our Hemispherical Combustion Chamber was inspired by Honda's racing technology and offers the highest V-Twin compression ratio on the market. The power is transmitted through forged-steel connecting rods and a forged-steel crankshaft, supported by a full-pressure lubrication system. This means increased engine efficiency and more thorough transfer of power to your application.

#### **More Compact**

Our V-Twin engines provide extraordinary applied technology and power output. Add in exceptional compactness and the result is more net horsepower you can truly use.

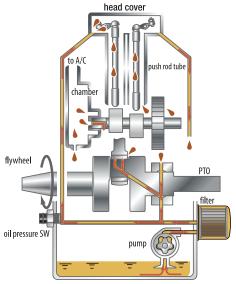


The hemispherical combustion chamber and nearly-centered spark plug layout delivers rapid and efficient combustion.

#### **Proven Fuel Economy**

We've always been known for fuel efficiency, but these V-Twins have raised the bar again. A Two Barrel Inner-vent Carburetor provides more precise fuel metering for optimal air/fuel ratio. Meanwhile, our Multi-Layer Density Gradient Air Filter captures dirt better which offers a higher degree of engine protection, improved fuel economy and cuts down on maintenance intervals. The bottom line is fuel economy comparable to fuel injection with the simplicity of carburetion.

#### **Improved Lubrication and Cooling**



The lubrication system uses a high capacity pump with discrete chambers to facilitate consistent oil delivery thus reducing friction and extending engine life.



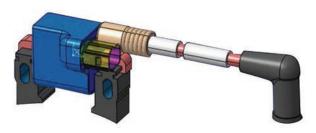
Cooling performance is improved while noise is reduced with the large diameter air intake, optimized 36-blade cooling fan and smooth scroll-shaped resin shroud.

#### **Fewer Parts That Add Up To More**

While we're talking about all the things that go into our V-Twins, let's mention a few things that don't: like catalytic converters, head gaskets and head bolts. They're not necessary. In fact, our V-Twins have fewer parts but this means a lot of benefits. Like better cooling and a lot less to go wrong, providing more overall durability. Fewer parts also mean a quieter running engine with unprecedented performance.

#### **Variable Timing Digital CDI**

Another impressive feature is our Variable Timing Digital CDI ignition. It allows optimal ignition timing based on engine speed. This provides for excellent starting, high power output, and reduced fuel consumption for outstanding emissions performance. An engine rev limiter is also incorporated to prevent over-revving.



Digital CDI Ignition Coil

#### **Low Emissions**

Honda Engines are certified to comply with both CARB (the California Air Resources Board) and the EPA (Environmental Protection Agency) emission regulations. Our V-Twin engines meet the current emission requirements set by both CARB and the EPA — with no need for a catalytic converter.

#### **Convenient Controls and Higher Capacity Charging System**



The V-Twin control box, depending on model, includes the start/stop switch, choke and throttle controls, an Oil Alert® LED and a built-in hour meter.



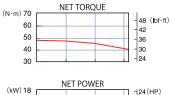
High-power multi-pole charge coil system

## **Horizontal Shaft**

#### **GX630**



Engine Type	Air-cooled, 4-Stroke, OHV Horizontal
Bore x Stroke	3.1" x 2.8" (78 x 72 mm)
Displacement	42 cu in (688 cm3)
Compression Ratio	9.3 : 1
Net Power*	20.8 hp (15.5 kW)
Net Torque*	35.6 lbs ft (48.3 Nm)
PTO Shaft Rotation	Counterclockwise (from PTO shaft side)
Ignition System	Digital CDI with variable ignition timing
Starting System	Shift Type
Carburetor	2-barrel, fuel cut solenoid, inner vent
Lubrication System	Full Pressure
Connecting Rod	Forged Steel
Governor System	Mechanical
Air Cleaner	Dual Element Type/Cylindrical
Exhaust Emissions	Certified for use in all 50 states
Evaporative Emissions	Low permeation hose and purge joint provided
Oil Capacity	2.1 US qt (2.0 L)
Oil Filter	Automotive Spin-On Style
Dimensions (L x W x H)	15.9" (405 mm) x 16.1" (410 mm) x 17.2" (438 mm)
Dry Weight	98 lbs (44.4 kg)

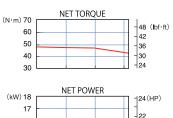


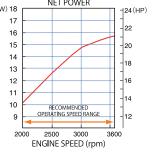


#### **GX660**

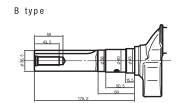


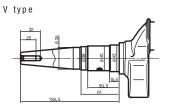
Engine Type	Air-cooled, 4-Stroke, OHV Horizontal
Bore x Stroke	3.1" x 2.8" (78 x 72 mm)
Displacement	42 cu in (688 cm3)
Compression Ratio	9.3 : 1
Net Power*	21.5 hp (16.0 kW)
Net Torque*	35.6 lbs ft (48.3 Nm)
PTO Shaft Rotation	Counterclockwise (from PTO shaft side)
Ignition System	Digital CDI with variable ignition timing
Starting System	Shift Type
Carburetor	2-barrel, fuel cut solenoid, inner vent
Lubrication System	Full Pressure
Connecting Rod	Forged Steel
Governor System	Mechanical
Air Cleaner	Dual Element Type/Cylindrical
Exhaust Emissions	Certified for use in all 50 states
Evaporative Emissions	Low permeation hose and purge joint provided
Oil Capacity	2.0 US qt (1.9 L)
Oil Filter	Automotive Spin-On Style
Dimensions (L x W x H)	15.9" (405 mm) x 16.1" (410 mm) x 17.2" (438 mm)
Dry Weight	98 lbs (44.4 kg)

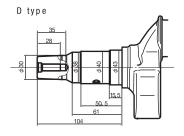


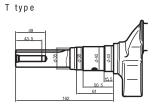


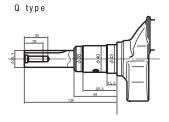
#### HORIZONTAL PTO SHAFT OPTIONS









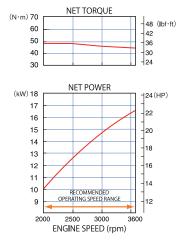


\* The power rating of the engines indicated in this document measures the net power output at 3600 rpm (7000 rpm for model GXH50, GXV50, GXV5 and GX35) and net torque at 2500 rpm, as tested on a production engine. Mass production engines may vary from this value. Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance and other variables.

# Horizontal Shaft



Engine Type	Air-cooled, 4-Stroke, OHV Horizontal
Bore x Stroke	3.1" x 2.8" (78 x 72 mm)
Displacement	42 cu in (688 cm3)
Compression Ratio	9.3 : 1
Net Power*	22.1 hp (16.5 kW)
Net Torque*	35.6 lbs ft (48.3 Nm)
PTO Shaft Rotation	Counterclockwise (from PTO shaft side)
Ignition System	Digital CDI with variable ignition timing
Starting System	Shift Type
Carburetor	2-barrel, fuel cut solenoid, inner vent
Lubrication System	Full Pressure
Connecting Rod	Forged Steel
Governor System	Mechanical
Air Cleaner	Dual Element Type/Cylindrical
Exhaust Emissions	Certified for use in all 50 states
Evaporative Emissions	Low permeation hose and purge joint provided
Oil Capacity	2.1 US qt (2.0 L)
Oil Filter	Automotive Spin-On Style
Dimensions (L x W x H)	15.9" (405 mm) x 16.1" (410 mm) x 17.2" (438 mm)
Dry Weight	98 lbs (44.4 kg)

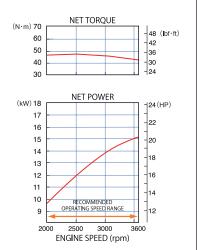


### **Vertical Shaft**

#### **GXV630**



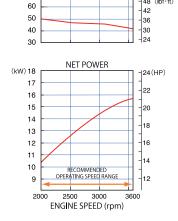
Engine Type	Air-cooled, 4-Stroke, OHV Vertical
Bore x Stroke	3.1" x 2.8" (78 x 72 mm)
Displacement	42 cu in (688.1 cm3)
Compression Ratio	9.3 : 1
Net Power*	20.8 hp (15.5 kW)
Net Torque*	35.6 lbs ft (48.3 Nm)
PTO Shaft Rotation	Counterclockwise (from PTO shaft side)
Ignition System	Digital CDI with variable ignition timing
Starting System	Shift Type
Carburetor	2-barrel, fuel cut solenoid, inner vent
Lubrication System	Full Pressure
Connecting Rod	Forged Steel
Governor System	Mechanical
Air Cleaner	Dual Element Type/Panel
Exhaust Emissions	Certified for use in all 50 states
Evaporative Emissions	Low permeation hose and purge joint provided
Oil Capacity	2.3 US qt (2.2 L)
Oil Filter	Automotive Spin-On Style
Dimensions (L x W x H)	17.4" (443 mm) x 16.6" (421 mm) x 17.6" (447 mm)
Dry Weight	101 lbs (45.7 kg)



#### **GXV660**



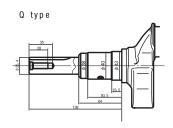
Engine Type	Air-cooled, 4-Stroke, OHV Vertical
Bore x Stroke	3.1" x 2.8" (78 x 72 mm)
Displacement	42 cu in (688 cm3)
Compression Ratio	9.3 : 1
Net Power*	21.5 hp (16.0 kW)
Net Torque*	35.6 lbs ft (48.3 Nm)
PTO Shaft Rotation	Counterclockwise (from PTO shaft side)
Ignition System	Digital CDI with variable ignition timing
Starting System	Shift Type
Carburetor	2-barrel, fuel cut solenoid, inner vent
Lubrication System	Full Pressure
Connecting Rod	Forged Steel
Governor System	Mechanical
Air Cleaner	Dual Element Type/Panel
Exhaust Emissions	Certified for use in all 50 states
<b>Evaporative Emissions</b>	Low permeation hose and purge joint provided
Oil Capacity	2.3 US qt (2.2 L)
Oil Filter	Automotive Spin-On Style
Dimensions (L x W x H)	17.4" (443 mm) x 16.6" (421 mm) x 17.6" (447 mm)
Dry Weight	101 lbs (45.7 kg)

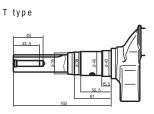


**NET TORQUE** 

(N·m) 70

#### **VERTICAL PTO SHAFT OPTIONS**



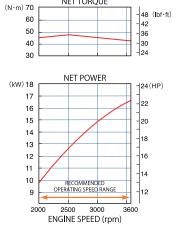


<sup>\*</sup> The power rating of the engines indicated in this document measures the net power output at 3600 rpm (7000 rpm for model GXH50, GXV50, GX25 and GX35) and net torque at 2500 rpm, as tested on a production engine. Mass production engines may vary from this value. Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance and other variables.

# **Vertical Shaft GXV690**



Engine Type	Air-cooled, 4-Stroke, OHV Vertical
Bore x Stroke	3.1" x 2.8" (78 x 72 mm)
Displacement	42 cu in (688.1 cm3)
Compression Ratio	9.3 : 1
Net Power*	22.1 hp (16.5 kW)
Net Torque*	35.6 lbs ft (48.3 Nm)
PTO Shaft Rotation	Counterclockwise (from PTO shaft side)
Ignition System	Digital CDI with variable ignition timing
Starting System	Shift Type
Carburetor	2-barrel, fuel cut solenoid, inner vent
Lubrication System	Full Pressure
Connecting Rod	Forged Steel
Governor System	Mechanical
Air Cleaner	Dual Element Type/Panel
Exhaust Emissions	Certified for use in all 50 states
<b>Evaporative Emissions</b>	Low permeation hose and purge joint provided
Oil Capacity	2.3 US qt (2.2 L)
Oil Filter	Automotive Spin-On Style
Dimensions (L x W x H)	17.4" (443 mm) x 16.6" (421 mm) x 17.6" (447 mm)
Dry Weight	101 lbs (45.7 kg)



NET TORQUE

# An integrated cylinder & head mean better performance.

The idea of integrating the cylinder & head into one unit is radical. Radically smart. It eliminates the head gasket, head bolts and allows for more airflow and better cooling. Speaking of cooling, improved cooling means better combustion management. Cooling is also improved by each of the lightweight aluminum pushrods being housed in a separate tube to enhance airflow. When you put it all together (with fewer parts) you get an engine with reduced emissions and greater-than-ever durability. All of which is backed with a 3-year warranty.



Integrated cylinder and head structure

## Service made easy.

Our V-Twins are engineered with easy maintenance in mind. No cylinder head gasket and fewer overall parts make the engine more durable. Our Multi-Layer Density Gradient Air Filter helps to extend the period of time between service intervals. An automotive-style spin-on oil filter provides excellent filtering capacity and easy replacement. There's even an optional oil alert and digital hour meter to provide quick access to information for the owner and technician. Then, of course, there's our 3-year warranty and the proven Honda service network made up of thousands of dealers from coast-to-coast.

When you compare all the benefits, we're sure you'll agree, Honda gives you the best overall product value.

#### **Improved Air Cleaning**



High density filter media



Duel cylindrical filter



Duel panel filter

Air cleaning upgrades include new high-density multi-gradient media, a dual cylindrical filter on the horizontals and a dual panel-type filter on the verticals.

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