THE CUTTING EDGE

June 2018

HONDA

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THE CUTTING EDGE

AHM Announces Organizational Changes

The Power Equipment group (CBU) just closed its fiscal year in March of 2018 with another record setting year.

CBU Industrial sales, which includes generators and water pumps, set all-time sales records for the fiscal year. Honda Generators were up 22%, with total industrial sales growing 18%.

Regarding Lawn and Garden (consumer), a cold late spring hindered growth in this category.

Combining Industrial and Consumer, the Power Equipment Group set an all-time sales record for the fiscal year.

Thanks to all the dealers and accounts that supported Honda Power Equipment products throughout the year. Your loyalty and efforts are much appreciated.

As we begin our new fiscal year, I am pleased to announce a number of organizational changes at American Honda Power Equipment effective April 1, 2018. These moves will further expand, strengthen and prepare our business for the future.

The new roles for our leadership team are as follow:

- William Walton is now Assistant Vice President Power Equipment Division Sales, and is responsible for our Engine, CBU, and Marine Business groups. Will reports to Mike Rudolph, VP Power Equipment.
- Robert Klaft, now Assistant Vice President Engines and Export, reporting to Will Walton.
- Mike Rickey, now Sr. Manager Marine, reporting to Will Walton.
- Dan Sherlock, Sr. Manager CBU, now reports to Will Walton.
- Chris Young, now Sr. Manager Finance, Administration and Logistics, reporting to Mike Rudolph.

We also have changes to our management team in a number of departments as follow:

- Brian Darr now Manager Engine Operations and Export, reporting to Robert Klaft.
- Eric Queen now Manager Transportation, reporting Chris Young.
- Kevin Ramirez now Manager CBU National Accounts, reporting to Dan Sherlock.
- John Lunde now Manager CBU Western Region, reporting to Dan Sherlock.
- Billy Hammons now Manager CBU Central Region, reporting to Dan Sherlock.
- Kurama Fukuda, Manager and Asst. to VP replaces Takahiro Ueda who returned to Japan.

Again, these changes will further strengthen and prepare us for our future. In advance, thank you for your support of these individuals in their new roles supporting you.

I hope all of you have a great spring season and continue to grow and support our many Honda customers with great products and service.

Thanks,

Daniel Sherlock
Senior Manager, Power Equipment Group

Honda Mows Through the Competition

Honda's walk-behind gas-powered lawn mowers once again mowed through the competition. A leading consumer publication recently released annual performance rankings with Honda securing the top four spots and six of the top 10 overall—the most of any company.

The below rankings show how Honda (in red)—and Honda-powered—lawn mowers fared in 2017 and 2018.

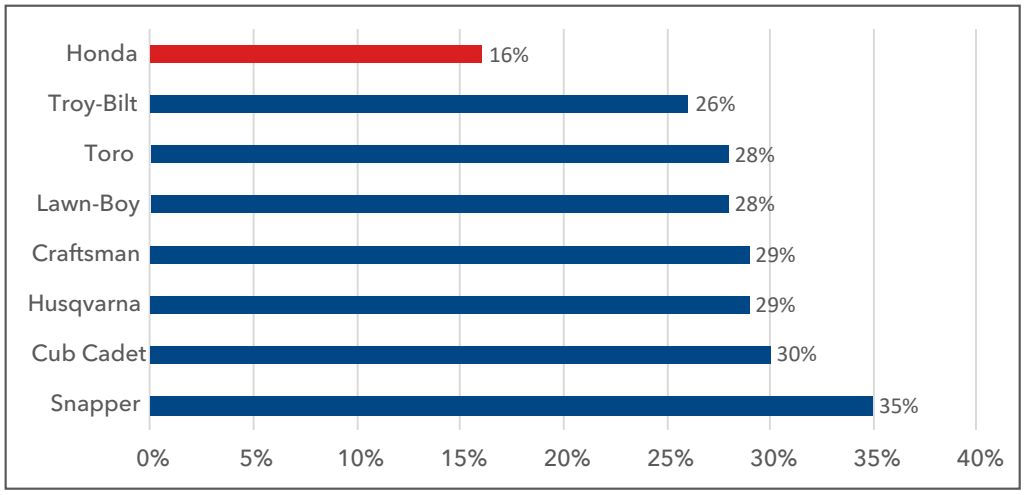
2017			2018	
Ranking	**Model**	**#**	**Model**	**Ranking**
86	HRX2175VYA	**1**	HRX2175VYA	86
84	HRX2175VKA	**2**	HRX2175VKA	84
81	HRX2175VLA	**3**	HRX2175VLA	81
79	HRR216VYA	**4**	HRR216VYA	79
77	HRR216VLA	**5**	21381 (New)	78
77	20381	**6**	HRR216VLA	77
77	20382*	**7**	20382*	77
77	HRR216VKA	**8**	20355 (New)	77
73	20340	**9**	HRR216VKA	77
73	20333	**10**	HU800AWDX/BBC*	74

**Powered by Honda*

Honda's HRR216VKA was the only mower in the top 10 to receive the designation of "Best Buy."

Notably, in this year's rankings, eight of the top 10 mowers were powered by Honda engines, the others being Toro and Husqvarna models. The former's new 21381 MMC took the fifth spot from Honda, by just one point. Still, for customers, Honda lawn mowers stand "head and shoulders above the competition" on reliability, according to a leading consumer publications analysis of more than 19,400 pieces of customer feedback (see figure below).

Estimate Breakage Rate by the 4th Year of Ownership



Source: 2016 Fall Product Reliability Survey, Consumer Reports National Research Center.

Communicating the 'Why Honda?' Story to Consumers

Each year, our Public Relations and Marketing teams work with various publications throughout the year to keep our products in front of consumers and to promote the 'Why Honda?' message. In this issue, we are sharing two of those articles with you.

You'll notice the articles:

Picking the Right Pump and **Buying Landscape Equipment?** are written as information for end consumers. These articles will be submitted to several publications to create awareness about Honda products. Feel free to use these in your sales efforts, or dealership publications.

Picking the Right Pump

A Guide to the Correct Selection for the Job at Hand

You need a pump, and you need one quickly. Now what? Honda Power Equipment offers the following tips to make sure you get the most for your investment.

The Starting Point

Determining what materials need to be pumped—e.g., clear water, chemical or dirty water—is the starting point for choosing the right model pump for the application. Honda offers pumps in four main categories: general purpose/de-watering pumps, construction/trash pumps, multi-purpose pumps, and submersible pumps. Most general purpose/de-watering pumps are for moving relatively clear water. Construction—or trash—pumps are used for pumping water contaminated with sticks, leaves, stones and other high solid content. The solids-handling capability of trash pumps allows large-hole-size strainers that are less prone to clogging, to be used. Multi-purpose pumps move water as well as a variety of approved agricultural and industrial chemicals. Finally, submersible pumps are used for a wide range of residential and commercial sump applications.

Consumers should evaluate the site where the pump will be operated. Factors to consider in the evaluation include: the vertical distance from the surface of the liquid being pumped to the highest point of the discharge hose, the length and material of the hose or pipe, whether a nozzle or sprinklers will be used, and how much discharge volume is needed. Higher elevations also can be a factor in limiting pump performance.

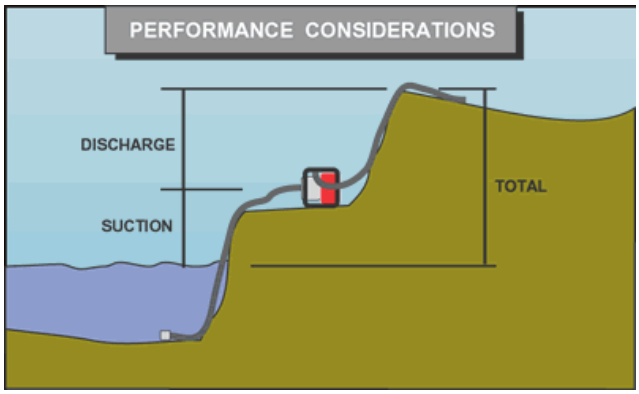
All pumps use basic forces of nature to move a liquid. As the moving pump part (impeller, vane, pistons, diaphragm, etc.) begins to move, air is pushed out of the way. The movement of air creates a partial vacuum (low pressure) which can be filled up by more air or, in the case of water pumps, water. This is similar to sucking on a straw where the mouth creates a partial vacuum. The liquid is pushed up the straw because of the pressure differences between the inside of the mouth and the atmosphere.

It's important to keep in mind that engine performance of the operating pump decreases as elevation increases. The higher the elevation, the less air there is available to support combustion. Maximum engine power decreases approximately 3.5 percent per 1,000 feet of elevation gain and, in certain instances, can result in reduced discharge capacity. Additionally, the maximum available suction head will be reduced at higher elevations.

Next Steps

Picking the Right Pump

The following questions and answers serve as guidelines for the proper pump selection.



1. What is total head and how is it determined?

The best predictor of the performance of a centrifugal pump in a specific application is the total dynamic head (or total head), which is the sum of the static suction head, static discharge head, and all additional losses in the system. Losses that should be calculated include, but are not limited to, friction losses due to pipe size, length and material, and losses from sprinklers or a nozzle. The total dynamic head is the actual head on the pump during operation.

Selecting the proper pump can be a challenge. Pump manufacturers typically calculate performance curves using a vacuum gauge on the suction port and a pressure gauge and flow meter connected to the discharge port. For many different total head values, the corresponding discharge capacity is measured. A series of measured data points are then graphed and connected to create the performance curve.

Often times the user will only consider total static head when selecting a pump, but if frictional losses aren't included in the calculations, it's possible that pump performance will not meet expectations. The actual discharge performance may be significantly less than predicted by using static head alone due to friction losses in the system.

Performance curves are useful in selecting a particular water pump. When a question regarding the performance of a specific pump must be answered, refer to the pump specifications for the particular model.

Determine how high the pump will sit above the water surface (static suction head). Determine how high the discharge end will be elevated above the pump (static discharge head). Determine what the discharge capacity (gallons per minute) of the pump must be.

Given the total head (suction + discharge), the discharge capacity can be estimated by referring to the performance curve for the specific model of pump.

Pressure can be calculated for total head by multiplying total head by 0.433. Pressure available at the end of the hose at zero flow for a given total head (less than the maximum total head) can be calculated by multiplying the total head by 0.433 then subtracting it from the maximum pressure specification.

Example:

The maximum pressure for a WH20X is 64 psi (0.433 x 148 total head in feet). The maximum available pressure at a total head of 100 feet is 64 - 43 = 21 psi at zero flow, where the 43 is determined by multiplying the total head, 100, by 0.433.

The Honda Power Equipment website at http://www.hondapowerequipment.com/products/pumps/ offers pump select software that can take the guesswork out of calculating the pump performance in a given application using any Honda centrifugal or submersible pump. Visit Pump Select Help under Tools and Resources to help choose the right pump for the job at hand.

2. How much fluid needs to be pumped and how fast? Where is the discharge going?

Picking the Right Pump

Volume and speed are critical factors when selecting and operating a pump. At sea level, Mother Nature exerts a pressure of 14.7 psi all around us. If one end of a tube is placed in water and a perfect vacuum is applied to the other end, that 14.7 psi could hold a column of water 33.9 feet high. This is only obtainable at sea level and with a perfect vacuum. In reality, ALL centrifugal pumps can lift water no more than 26 feet at sea level. This drops off approximately two feet for each 1,000 feet of altitude of altitude above sea level. In addition, engine power will be reduced roughly 3.5 percent for each 1,000 feet of altitude above sea level. In addition, the loss of about 3.5 percent engine power for each 1,000 feet of altitude reduces pump performance even more. Pump performance (capacity or pressure) is highest when the pump is operated close to the water's surface. Increasing the suction head will decrease the total head. (If the suction head increases [within the maximum suction head limitation], and the discharge head decreases by the same amount, the total head remains the same—so discharge capacity is not affected). Most important, suction head should be kept to the smallest value possible to reduce the likelihood of cavitation (the sudden formation and collapse of low-pressure vapor [bubbles] across the vanes of the impeller).

Mother Nature also plays an important role in how high water can be pushed. At approximately 8.3 lbs. per gallon, water is heavy and tends to flow back down to its original source. The mechanical energy of the impeller transmits its force against the water coming in contact with it. This force can be measured in psi at the pump discharge. As the pump discharge head increases in height, the pump capacity (GPM) decreases, and the available pressure at the end of the discharge hose (if the flow is stopped or a sprinkler/nozzle is used) also will decrease. At maximum head, the capacity (GPM) will drop to zero, and there will be no pressure available at the end of the hose to run a sprinkler or nozzle.

3. What piping material is going to be used?

A liquid moving through a hose creates heat due to the friction of the two surfaces (water against hose). Steel pipe will produce more friction than smooth PVC or vinyl pipe. As the length of the discharge hose increases, the water comes into contact with more hose surface and the inner wall of the discharge hose (in contact with the rushing water) will cause friction to build up. The increase in friction will slow the water, decreasing the discharge capacity.

4. How long will the pump be running and will it be monitored constantly?

No matter the job at hand, it is important to purchase a pump that will be reliable day in and day out. All Honda pumps are extremely reliable and designed to keep on going, year after year, regardless of how long you intend to operate it. It is always a good idea to monitor any pump you use for best results.

5. Are there any noise constraints on site?

Honda four-stroke engines are quiet and powerful, allowing for confident use within varied environments. Consumers should check local ordinances to determine if there are any

restrictions on where tools or machines, such as pumps, may be used.

6. What are other items to look for when selecting and operating a pump?

- Make sure you understand all the terminology and the basic pump features (see pump terminology list below).
- Use the proper size hoses and fittings.

Picking the Right Pump

- Use a strainer with the proper hole sizes. The holes must be equal to or smaller than the original strainer included with the pump.
- Inspect hoses for leaks, weaknesses and kinks. Fittings should be checked to ensure proper suction.
- Never let a centrifugal pump run dry; this action could damage some types of pumps and/or seals.
- Make sure the pump has proper mounting or frame protection.
- Check the engine's oil or monitor the Oil Alert® indicator featured on some models.
- Check individual manufacturer recommendations for approved chemical applications. Honda pumps are designed to pump non-consumable water only. The only exception is the WMP20X model, and this pump can only be used to pump approved chemicals, a list of which is available at http://powerequipment.honda.com/pumps. The WMP20X model cannot pump any liquids intended for human consumption.
- While initial cost is important, also consider operating cost and the lifecycle of the pump. When comparing fuel efficiency, be sure to compare running time and tank size among models.

7. What does self-priming mean?

Self-priming is a term that describes the ability of a pump to create a partial vacuum by purging air from the intake hose and pump casing. Self-priming pumps still require water to be added to the pump casing first to start the priming process. All Honda centrifugal pumps are self-priming pumps.

8. What are good priming tips and practices?

- Always be sure to use a strainer on the end of the suction hose—not using a strainer can result in catastrophic failure (Honda pumps are shipped with strainers). And, if using a different strainer, make sure the holes in the strainer are the same size or smaller than the holes on the strainer included with the pump. Place the pump as close to the water surface as possible. The less lift required reduces priming time.
- Fill the pump case completely with water (never operate a centrifugal pump without water in the pump casing).
- Start the pump engine.
- Place the throttle lever in the fastest position to reduce priming time.
- Make sure there are no air leaks in the suction hose or fittings.
- Shutting off a pump will allow water to flow out of the suction hose. The pump contains a one-way flapper valve, so water will remain in the pump after shutting off. However, the suction hose will have to re-prime each time the pump is restarted.
- The use of a foot valve on the end of the suction hose will prevent water from flowing out of the suction hose if the pump is stopped, reducing the time required for the pump to regain its prime. If you do use a foot valve, make sure it includes a strainer with holes equal to or smaller than the original strainer included with the pump.
- Pump performance and increased time required to prime the pump can occur when the volute and impeller wear out. Regular inspection and maintenance of a pump will maintain

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peak performance.

9. What operational tips help keep pumps running in top shape?

- As a rule of thumb, always follow the maintenance schedule in the owner's manual.
- Never operate a centrifugal pump dry, since water is needed to prevent the mechanical seal from overheating.
- If possible, avoid pumping water containing abrasives.
- Always drain the pump housing after use—allowing water to freeze in the pump will cause pump case failure.
- When pumping salt water or water containing silt and mud, flush the pump housing with clean water after each use.
    - o If you plan to pump salt water, be sure to choose a multipurpose or stainless submersible pump and not a pump with an aluminum housing.
- Also, avoid driving over and collapsing the discharge hose when the pump is operating and/or the hose is full of water (damage can even occur with the pump off, if a nozzle is shut off and the discharge hose is full of water).
    - o Doing so can force water and/or a shock wave (water hammer) back to the pump, causing damage to the pump.
    - o If you must place the hose across a roadway, position boards on each side of the hose to prevent it from collapsing when a vehicle drives over it.

10. Are there routine steps an owner should take after operating a pump or when preparing a pump for storage?

After use, the operator should turn off the fuel valve and drain the pump case (flush if pumping salt water or water containing mud or silt). If the pump is going to be stored, refer to the storage procedure in the owner's manual. It is especially important to add gasoline stabilizer and/or drain the carburetor to prevent fuel system damage due to deteriorated gasoline.

11. Can the flow out of the pump be stopped without shutting off the engine?

All centrifugal pumps can be deadheaded for a brief period (as a general rule, no more than about five minutes). During this period, the pump pressure will increase to the pump's maximum rated pressure. However, deadheading the pump for an extended period of time will cause the water or liquid in the pump to eventually heat up and cause damage to the mechanical seal. Never deadhead a positive displacement pump, such as Honda's WDP diaphragm pump. This practice can cause severe damage to the pump.

PUMP TERMINOLOGY

Cavitation

The sudden formation and collapse of low-pressure vapor (bubbles) across the vanes of the impeller. When the surface pressure on a liquid becomes low enough, the liquid will begin to boil (even at room temperature). With centrifugal pumps, cavitation can occur when the suction vacuum becomes great enough to allow water vapor or bubbles to begin forming at the impeller. When this water vapor travels through the rapid pressure increase across the impeller, a large amount of energy is released which can cause impeller damage. Minimizing suction head and using the largest practical suction hose diameter will reduce the likelihood of cavitation. Pump operators should never use a suction hose with a diameter smaller than the pump's suction port.

Picking the Right Pump

Centrifugal Pump

A pump that uses centrifugal force to discharge fluid into a pipe, typically by mechanical means such as a rotating impeller held within a volute and pump housing.

Diaphragm Pump

A pump that uses positive displacement to discharge a fluid into a pipe by means of a combination of a reciprocating diaphragm and check valve system.

Dynamic Discharge Head

The static discharge head plus the additional discharge head created by friction or resistance (usually referred to as losses) from the liquid flowing through the hoses, fittings, sprinklers, nozzle, etc.

Dynamic Suction Head

The static suction head plus the additional suction head created by friction from the liquid flowing through the hoses, fittings, etc. Atmospheric pressure enables pumps to lift water. As a result, an atmospheric pressure of 14.7 psi at sea level limits practical dynamic suction head lift to less than approximately 26 feet for any pump (with the amount of head lift decreasing as altitude increases).

Friction Losses

The additional pressure or head created at the pump due to the friction of the liquid flowing through the hoses, pipes, fittings, etc. Friction losses always occur when a liquid is flowing through pipes and becomes greater as the length of pipe increases and/or the diameter decreases. Friction losses result in reduced pump output and can be minimized by using the largest and shortest hoses possible. Friction losses are included in dynamic suction and dynamic discharge head.

Head

Refers to the height of a column of water that can be supported by the pressure or vacuum exerted at the pump.

Impeller

An impeller is a rotating disk containing vanes coupled to the engine's crankshaft. All centrifugal pumps contain an impeller. The impeller vanes sling liquid outward through centrifugal force, causing a pressure change. This pressure change results in liquid flowing through the pump.

Mechanical seal

This is a spring-loaded seal, consisting of several parts, that seals the rotating impeller in the pump case and prevents water from leaking into and damaging the engine. Mechanical seals are subject to wear when pumping water that contains abrasives. They will quickly overheat if the pump is run without filling the pump chamber with water before starting the engine. Also, deadheading the pump for an extended period of time will cause the water or liquid in the pump to eventually heat up and cause damage to the mechanical seal. Honda WT and WB series pumps contain silicon carbide mechanical seals, designed to last longer under abrasive conditions.

Pressure

Pressure is force per unit area and is usually listed in psi (pounds per square inch). Pressure often is included in pump performance curves. Pressure and head are directly related when referring to pump performance. The pressure exerted (in psi) at the base of a column of water is 0.433 x head (in feet). If you attach a pressure gauge at the base of a pipe measuring 100 feet tall filled with

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clear water, you would measure 43.3 psi. The maximum pressure (at zero discharge) of any pump can be determined by multiplying the maximum head by 0.433.

Self-Priming

Most centrifugal pumps require the pump casing to be filled with water before starting. Self-priming is a term often used to describe pumps that have the ability to purge air from the case and create a partial vacuum, allowing water to begin flowing through the suction hose. All Honda pumps are defined as self-priming.

Static Discharge Head

The vertical distance between the pump's discharge port and the point of discharge, which is the liquid surface if the hose is submerged or pumping into the bottom of a tank.

Static Suction Head

The vertical distance between the pump impeller and the surface of the liquid on the suction side of the pump.

Total Head

The dynamic suction head plus the dynamic discharge head.

Volute

The volute is the stationary housing enclosing the impeller. The volute collects and directs the flow of liquid from the impeller and increases the pressure of the high velocity water flowing from the vanes of the impeller.

Water Hammer

Water hammer is energy transmitted back to the pump due to the sudden stoppage of water flowing from the pump. Water hammer is more likely to occur when using a very long discharge hose. The most common cause of water hammer discharge damage is driving over the discharge hose when the pump is running. If the flow of water at the end of the discharge hose is shut off in less than the critical time, energy is transmitted back to the pump causing a large pressure spike in the pump housing. Water hammer often results in damage to the pump casing. Water hammering can be avoided by (slowly) closing a valve located at the end of the discharge hose.

Buying Landscape Equipment?

Start Smart and Finish in the Green

When it comes to landscaping, a little green can go a long way to make residential environments beautiful. Smart lawn care enthusiasts know that the right tools help save time and money. So, how to stock an outdoor power products arsenal with the right landscaping equipment is the first order of business.

According to the experts at Honda Power Equipment, manufacturer of a complete range of power equipment for consumer and rental applications, today's outdoor power products are stronger, lighter, quieter with less vibration, more fuel efficient, and safer to handle than ever before.

"Consumers should concentrate on investing in three fundamental outdoor power equipment types: the tiller, the trimmer and the lawn mower," says Elisha Lipscomb, Senior Marketing Strategist, Lawn & Garden for Honda Power Equipment. "Achieving a beautiful landscape starts with the sensible and informed purchase of outdoor power equipment. Buyers should do some homework, knowing that there are many makes and models available with a broad range of features and benefits."

The Tilling Kind

A tiller acts like a power shovel, but unlike a shovel, this piece of power equipment quickly breaks up compacted soil or preps holes for planting. When it comes to blazing paths, especially for new landscape installations where the ground can be hard or rocky, the job usually starts with tilling.

"Tillers work well for home garden cultivating—ideal for pre-planting ground preparation," explains Lipscomb. "Today's models come in three main types—handheld lightweight and portable mini-cultivators, mid-tine machines for medium-sized areas, and rear-tine tillers for heavier-duty jobs."

Choosing the right tiller depends on a number of factors. In short, the size and type of job are directly proportional to the size and power of the tiller. Start by measuring the square footage of the area to be tilled as well as the grade and hardness of the soil. For instance, if you're cultivating small beds or plots close to plants and other structures, choose a lightweight, maneuverable tiller with a tilling width of approximately nine inches. Bigger jobs, such as prepping soil to lay sod or creating a bed for first time, require a reliable, powerful earth-churning machine with extra size, durability and strength.

"The advanced, heavy-duty design of a rear-tine tiller with a tilling swath of 20 inches, for example, meets the extreme durability requirements of commercial and rental consumers," says Lipscomb.

Different tiller models come with a range of features and benefits that are useful for various aspects of a job. Many rear, mid and front tine tillers are designed with multi-speed transmissions and have drag bar operation as well as adjustable tilling heights or depth stakes that help the operator adjust to the level of earth. In addition, tillers often incorporate borders/edgers, aerator tines, dethatchers, tine extensions and furrow attachments. Each of these items can alter the depth, appearance and width of the sections of earth being cultivated or cleared.

"A tiller is an investment, and consumers should select carefully to make the most of their purchases," says Lipscomb. "Consider ease of starting, low emissions, high fuel efficiency and simple, quiet operation." For example, the Honda tiller product line consists of four tiller models in three series (Mini, Mid-Tine and Rear-Tine) ranging from 25 lbs. to 275 lbs.

Finally, before leaving the dealer or retail outlet with any new earth-moving companion in tow, be sure to purchase the correct safety equipment. When operating a tiller, it's essential to wear eye

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protection and gloves for safety and heavy duty boots if you are using a mid-tine or rear-tine tiller," adds Lipscomb.

The Right Cuts for the Right Lines

Every green space looks better with manicured borders and clean lines. That's why string trimmers for residential applications are an integral part of any landscape artisan's power equipment collection.

String trimmers are most often used to clear thick grass or brush. "Trimmers are ideal for horizontal cutting challenges presented by grasses and weeds that grow around walls, fences, shrubs, trees, and mailbox posts where lawn mowers can't reach," Lipscomb explains.

It's also important to know that the engine powering a trimmer actually drives most of the differences in technology among models. "The ability of an engine to operate in a 360° inclinable orientation is very important to the overall ease of the trimmer's operation," says Lipscomb. "A trimmer incorporating a four-stroke engine design is inherently quieter, virtually smokeless, more fuel-efficient and produces considerably less vibration than most two-stroke engines."

Getting the right cut also starts with selecting a trimmer offering features that contribute to ease of use and dependability. For example, many trimmers incorporate multi bearing-supported hardened steel shafts for durability; and advanced anti-vibration systems that isolate controls from engine vibration. Three Honda trimmer models offer the latest in innovation and technology–the HHT25SLTAT, HHT35SLTAT and HHT35SUKAT feature semi-matic feed or manual feed nylon cutting heads or available brush cutting blades.

Lipscomb also points out that while most trimmers come fully equipped with all the necessary tools for operation, buyers should check to be sure that the model is sold with the proper safety equipment for operation. "The use of a safety harness and eye goggles are key to safe and efficient trimmer operation."

And Then There's the Mowing

Where there's green space, there's usually grass and where there's grass, a walk-behind lawn mower usually isn't far behind. For the average consumer, the right lawn mower plays a significant role in lawn upkeep, so it's important to select the right model for the job.

Today's walk-behind mowers offer a variety of choices to suit residential mowing needs. Walk behind mowers are manufactured with a variety of transmissions, drive trains and mulching technologies that differentiate one model from another.

Selecting the right lawn mower starts with sizing up the lawn. "There's a direct correlation between the square footage to be mowed and the cutting width required in a lawn mower," says Lipscomb. "For example, for a lawn that's less than ½ acre, select a lawn mower with a 20-22 inch cutting width. If the area is greater than ½ acre, start with a model with a cutting width that's at least 21 inches."

The type of terrain is another important factor. Knowing whether the area is flat or hilly, rough or smooth dictates whether or not the lawn mower model should be self-propelled, should have adjustable wheel height, or should have a rear or side bagger. And, no matter how you cut it, properly maintaining a lawn has everything to do with environmental responsibility. As regulations continue to tighten on disposal of grass clippings, homeowners know that a lawn mower's performance is just as important as deciding when to bag or mulch.

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"Mulching is a cost effective and environmentally sound part of mowing. Because mulched clippings return natural nutrients to the lawn, they reduce the need for expensive chemical fertilizers," says Lipscomb. "Mulching also helps maintain moisture in the soil, extends time between waterings, and diverts valuable grass clippings from landfills to reduce the volume of waste."

However, bagging sometimes is necessary, particularly when grass is too wet or high. The most economical choice is a model that can both mulch or bag, or even mulch or bag simultaneously. And where bagging is concerned, blade configuration has everything to do with how tightly grass clippings can be packed in a single bag.

Lawn mowers also offer other technologically advanced features that can help consumers make quicker and safer work of cutting grass. "Honda, for example, offers a Roto-Stop® Blade Stop System on many of its residential mower models, allowing the operator to quickly stop blade operation without stopping the mower," says Lipscomb. "A clutch system like this allows the user to pass over sidewalks, driveways and even empty the grass clipping bag without wasting time to stop and restart the mower."

How about ergonomic design? Increasingly, ergonomic industrial designers are creating functional, comfortable and easy-to-use products—inclusive of outdoor power equipment. "Lawn mowing should be as productive and effortless as possible. Productivity suffers when the operator has to constantly grip the handlebars to increase speed, or adjust a jerking mower on an incline, or wrestle to maneuver it onto a truck or into storage," says Lipscomb. "With ergonomics in mind, be sure to take a close look at the lawn mower's transmission and how easy it is to operate the model at a variety of speeds."

And, for those who find lawn mowing more of a chore than anything else, a robotic lawn mower may be worth considering. Many robotic lawn mowers, such as the Honda Miimo, use microcomputers, timers and 360-degree awareness sensors to provide automated, unattended grass cutting within a defined lawn area. Robotic models are also known for quiet operation, quick rechargeability, and, depending on the model, different programmable cutting patterns and programmable timer settings. "For customers who want to be on the cutting edge of technology, have busy lifestyles and don't have the time for lawn care, or for customers who don't enjoy cutting the grass, a robotic lawn mower like the Honda Miimo is the high-tech approach to achieving a beautiful yard."

Did You Know?

Want to get your outdoors in shape quickly and without a garage full of equipment? It all starts with versatile power equipment that lets you spend less time caring for tools and more time getting creative about what grows where. Now, you can use just one power shaft with interchangeable attachments to carry out a range of finishing touches, including edging, trimming, blowing, pruning and cultivating.

"In addition to comprehensive lines of tillers, trimmers and lawn mowers, Honda Power Equipment also offers lawn care enthusiasts the Honda VersAttach™ Multi-Purpose System," says Lipscomb. "Featuring two powerhead options and six different attachments, the VersAttach™ System combines the power and reliability of legendary Honda four-stroke engines with a robust lineup of tools to fit a wide range of lawn and garden needs."

Honda Dealer Survey Recap

Thanks to all of you who completed this year's Honda Power Equipment Dealer Survey. We had a good response and received some very constructive feedback that we will work to address over the coming two years. Honda management appreciates the time and consideration that you put into your responses, so we thought you might like to know some of what we found.

Nearly three-quarters of you said that Honda Power Equipment does a better job, overall, than other manufacturers when doing business with you. Another third said Honda is the same, leaving very few "dissatisfied" dealers. So, what is driving this satisfaction?

Much of it is due to Honda's people and their relationships with you and your staff. From order desk assistance to help from your District Sales and Service Managers, to Techline and Parts support, you consistently rate Honda Power Equipment personnel as better and improving. This is encouraging testimony to our associate's commitment to your satisfaction and success.

You also rated Honda Power Equipment product quality as being better or much better than our competition. We could not have achieved this without your help and feedback throughout the years and we look forward to working with you in the future to continuously improve our products.

Obviously though, nobody is perfect. You also shared with us areas where we can improve and we are systematically working through your responses to develop plans to address your suggestions and concerns.

For example, one of the most important things you told us to improve is overall communication with the dealer body, and we agree. Effective two-way communication is the foundation for all of our success because it touches every aspect of our business relationship. This is an ongoing effort on many fronts, from sales and advertising support, to Honda's policies and programs. Your feedback from the Dealer Survey is helping us to zero in on the specific parts of our business relationship where communication can be improved for maximum effect.

Future editions of the Cutting Edge will detail some of the work we are doing to improve communication. If you have other suggestions for how Honda Power Equipment can improve in this area, please do not wait for the next survey – let us know today so we can keep this conversation going!

Thank you again for your feedback, and thank you for being a Honda Power Equipment dealer.

Get the Most from your Dealer Site Program Website

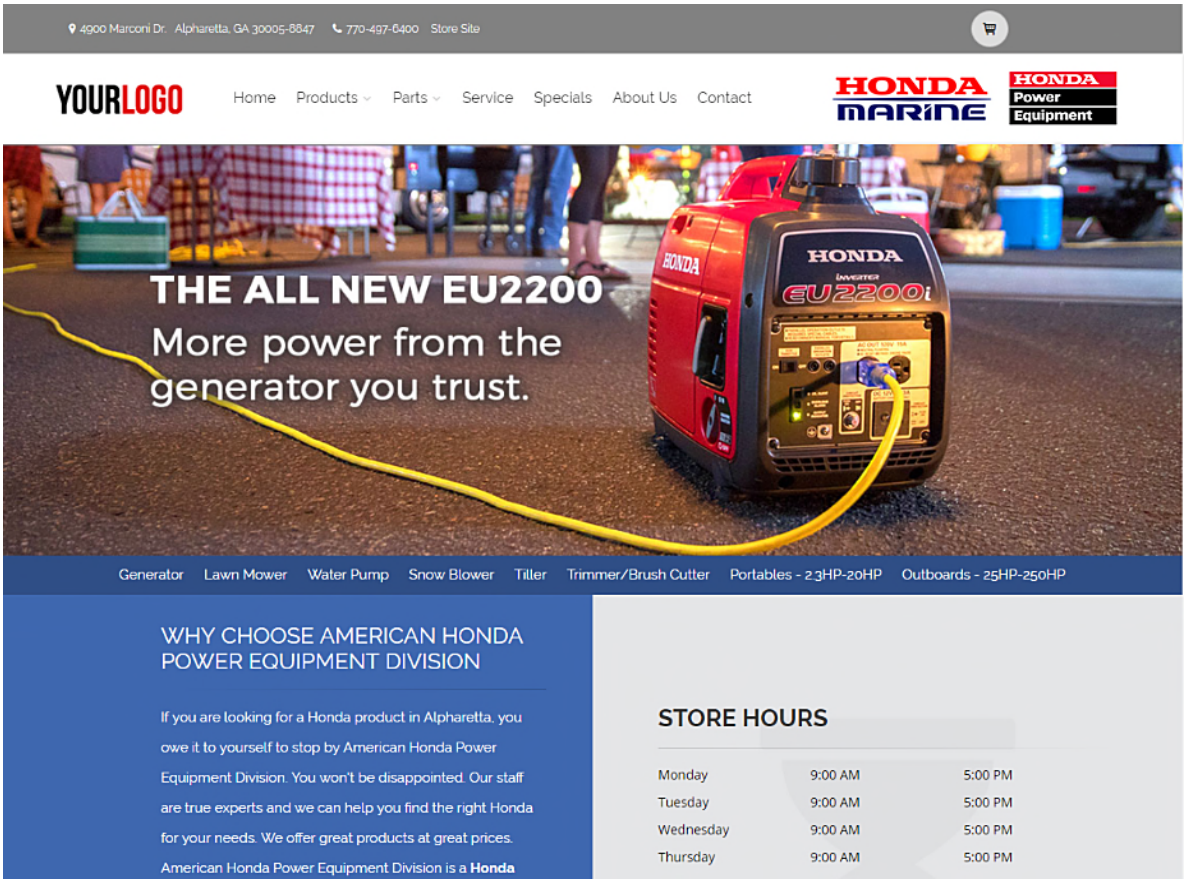
Honda's Dealer Site Program (DSP) was introduced in 2016 as an inexpensive, low maintenance site designed to bring more Honda customers into your showroom. Since then, over 900 dealers have signed up to participate.

How are the DSP sites performing?

We have seen very positive results and are very pleased with the DSP sites' overall performance.

- Average 200-300 visits per month, per dealer
- Averaging about 1000 page views per month, per dealer
- Nearly $2 million in total equipment orders since Jan 2017

We have seen traffic particularly pick up in the last 6 months. The Honda DSP sites have seen increased performance in Google, resulting in better local results and more traffic. We expect this to continue.

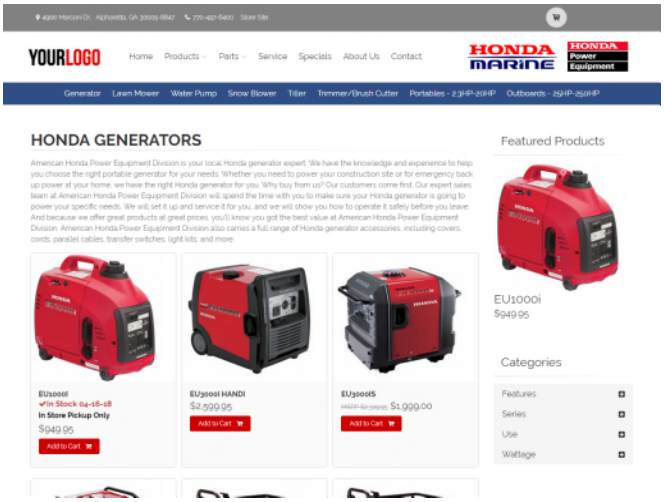


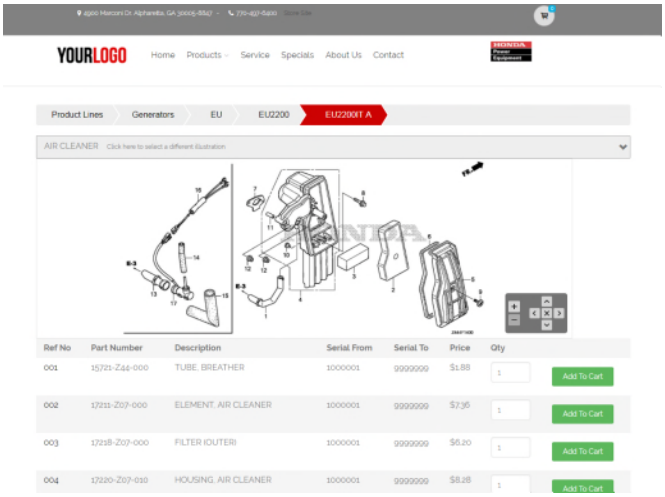
How can I see my site's results?

You can access the Google Analytics for your DSP site at any time. Just send the DSP support team your Gmail address, and they will add you with your site's Google Analytics account. Email support @hondadealersites.com

Custom analytics scripts can also be added, if desired.

Get the Most from your Dealer Site Program Website





How can I improve my site's performance in Google?

Most DSP sites are performing very well, but there are many simple things you can do to make them even better. Here are some quick tips:

1. **Add several links from your main site to your DSP site.** For example, many dealers have opted to remove their Honda content from their main site and just link to their DSP site. This is a good way to reduce site maintenance as well.
2. **Add some custom content on your site.** For example, add a little information to the About Us, Contact Us, and Service pages. Making them unique will also resonate well with customers.
3. **Add links from your social media pages to your DSP site.** A few Facebook posts linking to your DSP site can really benefit your site's performance.
4. **Review and update your site content every few weeks.** This doesn't need to be time consuming! Schedule 10 minutes, twice a month, to look over your site and make a few updates. For example, update your inventory, store hours, and special offers. These small changes on your site's content signal to Google that your site is being maintained properly, and Google will give it more precedence as a result.

The DSP Support Team will be putting out a new monthly newsletter to help support you and answer questions like these. Look for this and other positive enhancements in the near future!

Questions about the Dealer Site Program? Contact support@hondadealersites.com for assistance, or sales@hondadealersites.com to learn more and sign up!

Honda Power Equipment Credit Card by Citi

You asked for a better commercial credit program, we listened!

The Honda Power Equipment Commercial Credit Card Program just launched some big changes in April to benefit both you and your customers – because you asked for it!

With merchant rates now at all-time lows (lower than bank cards!), the commercial credit program is now the perfect sales tool for your dealership. It provides you with increased loyalty, higher average tickets than other tender types and special credit promotions throughout the year. At the same time, your customers can take advantage of special rebate offers, special financing, a dedicated line of credit at your store, as well as 24/7 online account management.

As technology enhances productivity for the ever-expanding commercial market, your customers are looking for increased power – not only in new equipment but also in financial flexibility. So, be sure to tell every commercial customer about the flexibility and power of The Honda Power Equipment Commercial Credit Card, then watch your sales grow!

HONDA

Honda Power Equipment Dealer Pricing

Type	Promotion	Code	Purchase Amount	Dealer Merchant Fee	Offer Period	Product Restrictions
Consumer						
Revolve	N/A	0100	N/A	0.50%	**Every day**	None
Deferred Interest	**6 Months***	0660	$250 or more	1.67%		
	12 Months*	1260	$500 or more	1.00%		Up to 10% of non-Honda product within one transaction
	18 Months*	1866	$249 or more	**+ 1.50%†** Wow!	**Valid 3/12/18–6/30/18**	
Major Purchase Plan	**0%–36 Payments***	3670	on Miimo products and services	0.00%	**Valid 1/26/18–12/31/18**	
Commercial						
Revolve	N/A	0100	N/A	0.50%	**Every day**	None
New! **Deferred Interest**	**12 Months***	1250	$250 or more	**+ 0.50%†** Wow!	**Valid 4/9/18–12/31/18**	Up to 10% of non-Honda product within one transaction
	24 Months*	2450	$500 or more	**0.50%** Wow!		
Major Purchase Plan	**0%–36 Payments***	3679	$1,500 or more	**1.00%** Wow!		
	0%–36 Payments*	3677	on Miimo products and services	0.00%	**Valid 1/26/18–12/31/18**	
	0%–48 Payments*	4876	$2,000 or more	**2.00%** Wow!	**Valid 4/9/18–12/31/18**	

Questions about the program? Call 1-877-215-8756 for assistance.

†Dealer will receive as part of settlement, 1.50% of sales purchased on the 18 month deferred financing plan on the Honda Power Equipment Consumer Credit Card.
‡Dealer will receive as part of settlement, 0.50% of sales purchased on the 12 month deferred financing plan on the Honda Power Equipment Commercial Credit Card.
*Subject to credit approval. See promotional plan disclosure for Full Terms and Conditions.

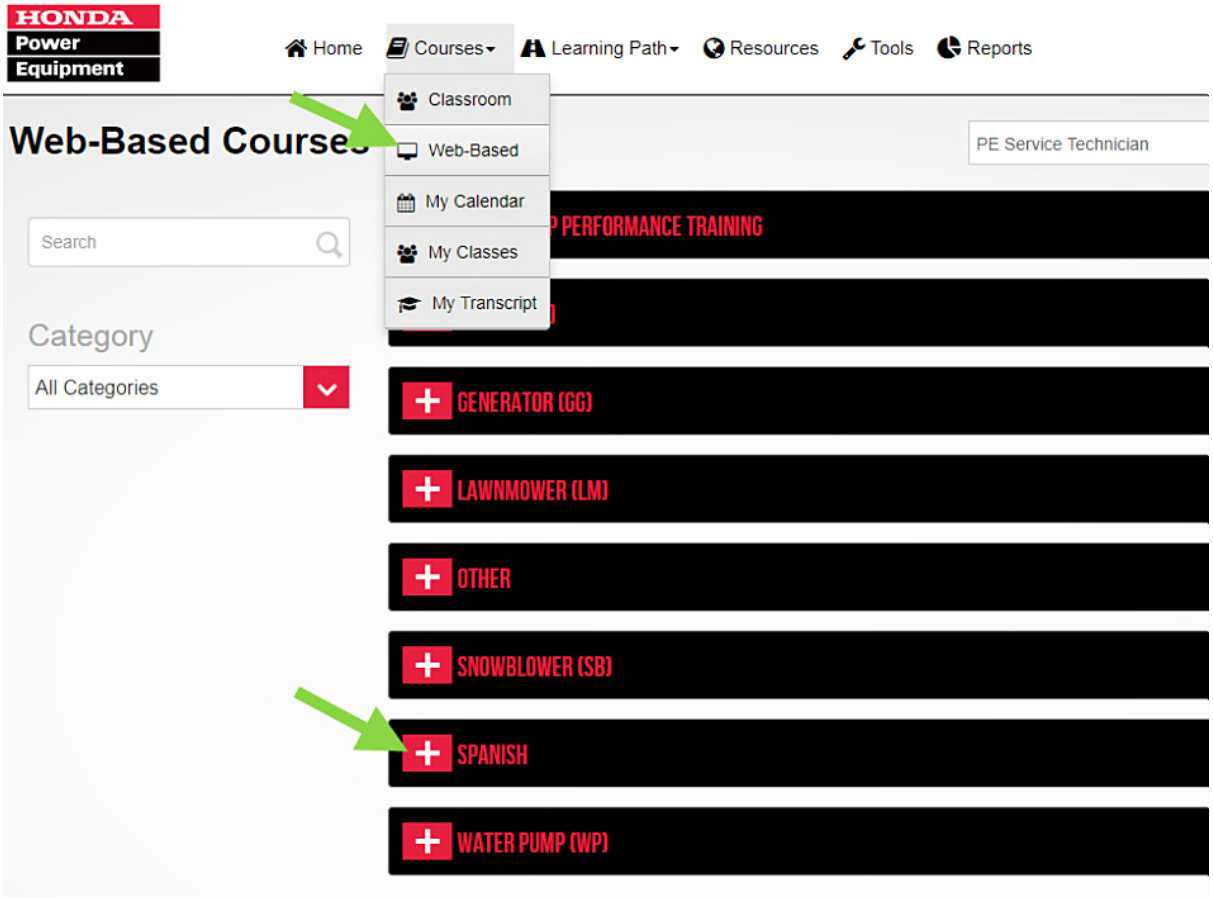
HPE-DLR-MDR-FLYR-0418

Honda Power Training (HPT) Courses Available in Spanish

Honda Power Equipment is pleased to offer web-based training in Spanish! We now offer nearly 40 courses for Service Technicians found in HPT.

Understanding a need to offer good training in both English and Spanish, we will continue to develop new courses in both languages. If you are a Power Equipment Service Technician and would like to view the Spanish courses:

- Log into **hondapetraining.com** with your user name and password (or if it is your first time, click on the green "new user creation" button
- Click on "COURSES" in the main menu, then "Web-Based"
- Open the SPANISH category



Honda Environmental Leadership Program

Participating in the Honda Environmental Leadership Program is Easy!

Honda provides free expert advice on energy efficiency and environmental best practices as part of its Honda Environmental Leadership Program ("Green Dealer Program"). Interested Power Equipment dealerships, Marine dealerships or Honda distributors can enroll by contacting their Honda representative or emailing greendealer@ahm.honda.com to receive the enrollment form.

As a participant of the Honda Environmental Leadership Program, dealerships and distributors can receive an environmental assessment and be assessed for award eligibility in as little as a week, with just a few simple steps:

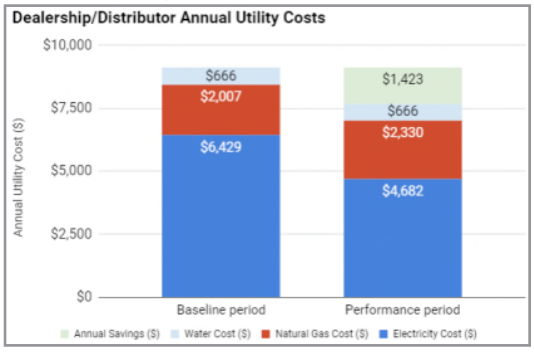
1. Schedule an assessment call or receive an environmental assessment and be reviewed for award.
2. Provide copies of your dealership or distributor's most recent utility data bills to your program representative. Honda provides an automated utility tracking program to assist with this process.
3. Submit verification items requested after completion of the assessment, such as photos, installation invoices, specs sheets, etc.
4. Receive a customized report with your dealership or distributor's energy savings and award eligibility status.

Nearly 60 environmental assessments have been completed since the program's launch in 2013, with 25 participants nationwide earning an award. Dealerships and distributors who previously received an assessment can also be re-assessed for award eligibility after completing energy efficiency projects.

Awarded dealerships and distributors receive an award plaque, promotional materials, press release template, and additional marketing from Honda to demonstrate their environmental stewardship to customers.

Benefits of enrolling in the Honda Environmental Leadership Program:

- Ongoing facility recommendations provided by energy efficiency experts
- Easy access to current and historical utility consumption and cost data, as well as benchmarked performance relative to other dealerships/distributors
- Recommendations for easy, low-to-no cost measures to reduce utility consumption and costs
- Award recognition for outstanding performers



"We were able to reduce energy costs while being environmentally conscious, minimize our environmental footprint, and create a more sustainable future. The support we have received from our partnership with the Honda Environmental Leadership Program benefits not only us, but our customers and our community. We are proud of that partnership."

- Tim Baxley, Founder of Muddy Bay Marine

Enroll today! Contact the Honda Environmental Leadership Program at greendealer@ahm.honda.com or 877-658-0345.

Get Ready for Prop. 65 Regulations Starting August 30, 2018

There will be very significant changes coming to California's 1986 environmental law known as Proposition 65 (Prop. 65) and these regulatory changes will become effective on August 30 of this year.

The changes will affect all Honda Power Equipment, Honda Marine, and Honda Engines distributed to our Honda Dealers, Distributors and OEM's throughout the 50 states. This article will provide helpful Prop. 65 information to you, our Honda dealers and distributors about Honda's compliance to these regulatory changes and how the regulatory changes may affect your business.

What is Prop. 65? Well, that is a very important question so here is the answer from California's official Prop. 65 website:

"Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. These chemicals can be in the products that Californians purchase, in their homes or workplaces, or that are released into the environment. By requiring that this information be provided, Proposition 65 enables Californians to make informed decisions about their exposures to these chemicals.

Proposition 65 became law in November 1986. The official name of Proposition 65 is the Safe Drinking Water and Toxic Enforcement Act of 1986."

With that brief explanation and a little forethought, you can easily see that many of the products you buy for, and sell from your business, can and will be affected, which means Prop. 65 directly affects YOU and YOUR BUSINESS if you are in California or sell into California.

To date, Honda has complied with Prop. 65 requirements by use of product packaging labels and warnings in owner's manuals for power equipment, marine, and general purpose engines.

Although Prop. 65 only applies to sales in (or into) California, because Honda does not have state-specific manufacturing/distribution, the revised Prop. 65 warnings will be applied to all Honda Power Equipment, Honda Marine, and Honda Engines that we distribute to all 50 states.

Honda Marine, Honda Power Equipment, Honda Engines distributed an earlier Prop. 65 letter via the iN and Direct-To-Tech (dated 4/19/18) to our dealers, distributors and OEM's. In the letter was a basic outline and explanation of Prop. 65. Please go to the link to reference that letter.

Honda Prop. 65 April letter

The new Prop. 65 regulations will affect most of the products that Honda sells in the United States, not just Honda Marine, Honda Power Equipment, Honda Engines. The various Honda divisions, such as Auto, Motorcycle, Parts, etc., will be implementing their compliance plans over the coming months. They will be notifying their sales channels accordingly and, depending on your Honda business, you may get a similar Prop. 65 notice from them.

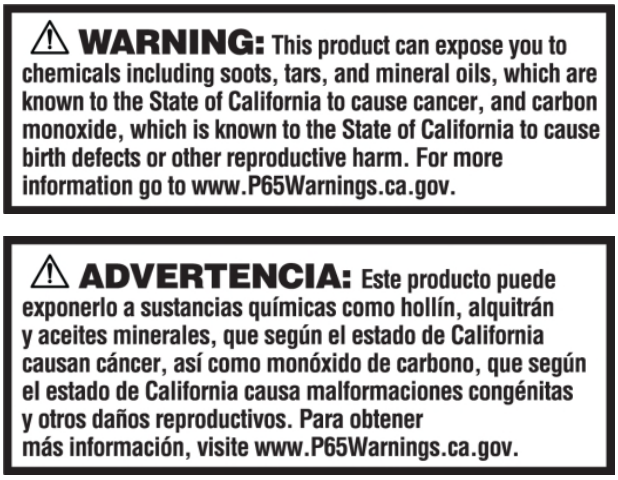
One of the most significant regulation changes that Prop. 65 will bring is the requirement to notify customers with a ⚠ **WARNING**, at some point in advance of their purchase.

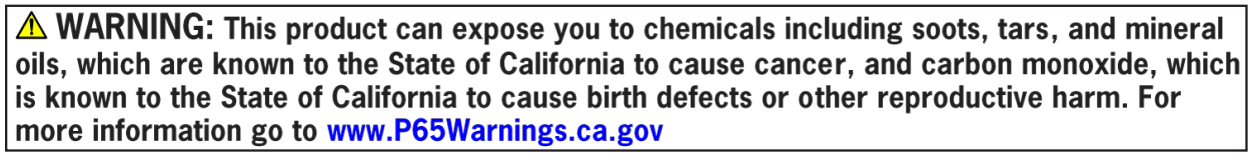
To meet that requirement, some changes from Honda that you may notice as the new Prop. 65 warnings are implemented include:

- Different warning text
- Prop. 65 warning hang tags on products
- Prop. 65 warning labels on products

Get Ready for Prop. 65 Regulations Starting August 30, 2018

- Revised Prop. 65 warning text in owner's manuals and other literature
- Prop. 65 warning language on product packaging/boxes
- Prop. 65 warnings incorporated into product brochures, websites, and other forms of product communication





Get Ready for Prop. 65 Regulations Starting August 30, 2018

A 2nd Prop. 65 letter with additional details will be provided to our Dealers, Distributors and OEM's prior to the August 30, 2018 implementation date.

The above paragraphs outline the regulations and what "Honda" is doing. If your business is in California or sells into California, you have important legal responsibilities to ensure you are in Prop 65 compliance. We encourage you to access the wealth of official information available for businesses at the California State Prop. 65 website.

ww.p65.warnings.co.gov

California dealers and dealers who sell **wholesale or retail** into California, **including internet sales**, should review www.p65warnings.ca.gov to ensure they comply with the new regulations. In addition to its consumer exposure warning requirements, Proposition 65 also includes requirements for occupational and environmental exposure warnings. California dealers may want to consult counsel or dealer associations for details and to determine if the regulations may affect their business.

Of course, many other business resources offer information on Prop. 65 compliance such as: trade organizations, national and local business groups, and various trade journals. Honda encourages you to access and utilize the various resources available.

For Honda, compliance with the August 30 Prop. 65 regulatory revisions are going to bring important and significant changes to the way Honda packages, labels, describes and promotes our products.

For our valued sales partners who comprise the many thousands of Honda dealers, distributors and OEM's throughout the United States that conduct business in California, there will also be important and significant responsibilities for you to ensure regulatory compliance.

Cordially,
Honda Marine
Honda Power Equipment
Honda Engines