

# Efforts for Consumer Products, including Motorcycles and Personal Watercraft



In fields such as motorcycles and personal watercraft, we set clear targets for environmental conservation, namely cleaning exhaust gas, 3R, elimination, reduction, and management of environmental substances of concern, and we continue our efforts to fulfill those targets.

## Cleaning Exhaust Gas

In FY2007, continuing from the previous year, we installed computerized fuel injection systems in three of our light motorcycle models—the Ninja 250R, the KLX250 and the D-TRACKER X—and took other measures to achieve much cleaner exhaust. After fully complying with the Japanese motorcycle emission regulations, which became stricter in FY2006, these models were shown at the 2007 Fall Tokyo Motor Show and began to be sold in FY2008.

In these 3 models, we have adopted atomization injectors in order to achieve maximum performance, and we have realized extremely smooth engine characteristics, particularly in the rotational range of ordinary use. In addition, not only is exhaust purified, this feature also contributes to improved start-up performance and high fuel efficiency.



KLX250



D-TRACKER X

Moreover, in the Ninja 250R, we have also utilized dual throttle valves to realize power with good response in the entire rotational range while achieving high environmental performance that meets Japan's new emission regulations. Moreover, honeycomb catalyzers have been installed in two locations\* near the exhaust port and in the silencer of the Ninja 250R. Not only does this meet Japan's strict new emission regulations, it also meets the European regulatory values for motorcycle emissions (EURO-III), which were greatly strengthened in 2006. We have also begun sales in Europe.

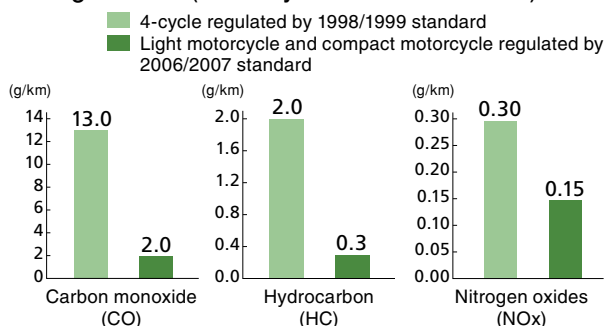
\* Efficiency is maximized by placing the first honeycomb catalyzer as close as possible to the exhaust port. The second honeycomb catalyzer is used inside the silencer to minimize power loss while meeting strict emission regulations.



Ninja 250R

We will continue to increase the lineup of models that use fuel injection systems and increase the application of the new technologies to continue to make exhaust cleaner.

## Comparison of Japanese Motorcycle Emission Regulations (Motorcycle Mode Standard)



## Start of the 2006/2007 Regulation for Japanese Motorcycle Emissions

Motorcycle Category	New Products	Existing Products
126 - 250 cc category	Oct. 2006	Sept. 2007
251 cc and up category	Oct. 2007	Sept. 2008

## Promotion of 3R

We have been steadily operating an autonomous motorcycle recycling system in cooperation with three other motorcycle manufacturers and 12 importers in Japan. This effort has had no structural trouble related to receiving motorcycles for disposal.

Using this system, which began in October 2004, we have achieved a recycling rate of 87.2% in its 4th fiscal year (April 1, 2007–March 31, 2008).

Moreover, we are participating in an FRP boat recycling system that began operation in 2005 as a voluntary effort of the Japan Boating Industry Association. Since 2007, this system, which accepts the disposal of personal watercraft, has been expanded from 29 prefectures in FY2006 to now include every prefecture.

In addition to these recycling efforts, by adopting easily-recycled materials and the use of material identifying labels on resin parts, for example, we have

manufactured the new motorcycle models that we began to sell in FY2007 to be at least 90% recyclable by weight.

Furthermore, by designing personal watercraft, general-purpose gasoline engines and other products based on the same design approach to motorcycles, we are manufacturing them to increase their rates of recyclability.

Moreover, to reduce weight, we have included the same high capacity dual radiators that we use in Motocross KX



KLX250 radiator

models in the KLX250 and D-TRACKER X above. These radiators have slim and tight cores and fins that realize weight reduction while providing excellent cooling performance.

## Elimination, Reduction and Management of Environmental Substances of Concern

With regard to motorcycles, we tackle the challenge of the elimination and reduction of environmental substances of concern to fulfill the goals voluntarily set by the Japan Automobile Manufacturers Association, Inc. (JAMA). We apply the approach to environmental conservation we take toward motorcycles to personal watercraft and general-purpose gasoline engines, in order to eliminate and reduce environmental substances of concern.

For lead, we completed the elimination program at the end of December 2005 except for solder used in electronic

boards, electric parts and bearings in motorcycles. We also completed the replacement of coatings that contain lead with lead-free ones before the end of March 2006 in general-purpose gasoline engines and are working on further lead reduction.

Except for a very minute amount used in parts that are indispensable for motorcycle traffic safety, we eliminated the use of mercury before the end of September 2004. Moreover, a small amount of cadmium had been used in some electric and electronic parts, but we also eliminated its use in motorcycles, personal watercraft and general-purpose gasoline engines by the end of December 2006.

Hexavalent chromium had also been used in metal parts, bolts and nuts, for example, as a rust-preventive treatment for many parts. Beginning in FY2005, however, we began conversion of some parts to hexavalent chromium-free parts for the mass-produced parts of motorcycles sold in Japan. Since then, we steadily expanded this sequential shift and completed conversion to hexavalent chromium-free parts by January 2008, which was the target set by JAMA in its voluntary efforts to reduce environmental substances of concern.

Moreover, substituting replacements for the hexavalent chromium contained in the chemical conversion coating agents used in rust-preventive treatment and the coating base preparation treatment of aluminum parts for personal watercraft and other products was completed by end of 2006.

We are also working in coordination with part manufacturers to steadily convert to hexavalent chromium-free bolts, nuts and similar parts for personal watercraft, general-purpose gasoline engines and for-export motorcycles, for example.

## Schedule for Reduction and Elimination of Environmental Substances of Concern in Motorcycles

■ Kawasaki's achievements    ▼ Goals of Japan Automobile Manufacturers Association

Substance	2004	2005	2006	2007	2008
Lead		Completed reduction plan at end of December	Completed reduction at end of December	(not more than 60 g/210 kg vehicle weight; battery excluded)	
				(except for solder on electronic boards and electric parts, bearings, etc.)	
Mercury	Banned as of October 2004	Completed elimination at end of September			(except for the use of a very minute amount in parts that are essential for motorcycle traffic safety)
Hexavalent chromium				Banned as of January 2008	Completed elimination at end of December
Cadmium			Banned as of January 2007	Completed elimination at end of December	