

# Consideration for the Environment in our products

## Main Efforts of the KHI Group

The KHI Group believes that one of the pillars of our Group Mission is to contribute to the environment through our products. We will make thorough efforts in implementing product assessments and complying to overseas laws and regulations and voluntary regulations in industry, and will continue to promote consideration for the environment in our products in the entire KHI Group.

### Product Assessment

For newly developed and designed products, as well as for particularly important products, we assess products according to such criteria as resource- and energy-savings and recycling potential, with the goal of reducing the environmental impact of our products during their life cycles. Because specific evaluation techniques vary depending on the type of product, each business segment draws up product assessment rules appropriate to the characteristics of respective products.

Main evaluation items of product assessment are as shown right.

- 1 Product weight reduction
- 2 Product energy saving
- 3 Longer product life
- 4 Product safety and environmental conservation effectiveness
- 5 Measures for product disposal and recycling
- 6 Environmental impacts when problems or other extraordinary circumstances occur
- 7 Provision of information for use and maintenance
- 8 Compliance with regulations

### Responding to the ELV Directive<sup>\*1</sup>, the RoHS Directive<sup>\*2</sup>, and the REACH Regulation<sup>\*3</sup>

Since 2000, laws and regulations related to chemical substances have been strengthened in the European Union by the establishment of such controls as the ELV Directive, the RoHS Directive, and the REACH Regulation. The RoHS Directive covers electric and electronic products, and some of the products made by the Precision Machinery Company and the Robot Division comply with this Directive. The ELV Directive focuses on automobiles, and while motorcycles are not subject to the content of this directive, the Motorcycle & Engine Company has embraced the voluntary actions espoused by the Japan Automobile Manufacturers Association (JAMA). We also apply this directive to some Precision Machinery Company products.

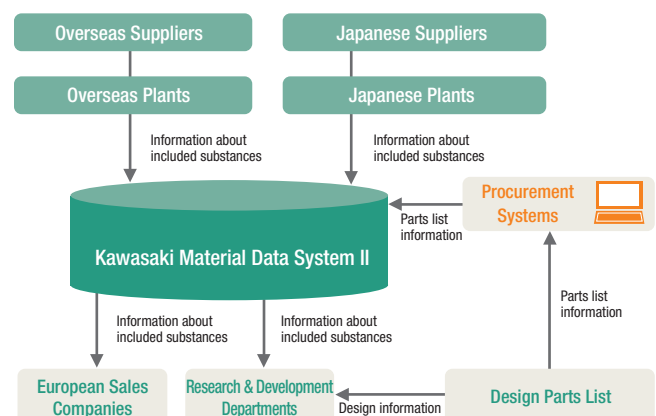
The REACH Regulation went into effect in June 2007 and applies to all chemical substances manufactured in and imported to the European Union. Businesses that manufacture or import chemical substances in quantities of one ton or more must register those substances. The products made by KHI are primarily articles and not all of them need to be registered. However, all substances that are released intentionally, and substances of very high concern, such as those with carcinogenic properties, require registration with or notification to the appropriate authorities. Regulations also exist for the evaluation, authorization, restriction, and communication of information regarding chemical substances, necessitating a system to identify information about the chemical substances in products throughout our entire supply chain.

Laws and regulations related to chemical substances have been strengthened not only in the EU but in many countries around the world. Since legal requirements (such as controlled substances and products) are different from one country to

another, we think it is important to understand laws and regulations and take necessary approaches.

The Rolling Stock Company, Motorcycle & Engine Company, Precision Machinery Company and Robot Division practice “green procurement” (see p. 24 of booklet version) and respond to requests from customers to gather chemical substance information. Besides that, the Motorcycle & Engine Company has created the Kawasaki Material Data System II to collect data about chemical substances and respond to REACH and other chemical substance regulations.

#### Response to REACH in the Motorcycle & Engine Company



\*1 ELV Directive: End of Life Vehicles Directive

\*2 RoHS Directive: Directive on Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

\*3 REACH Regulation: Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals

## Efforts by the Motorcycle & Engine Company

### Cleaner Exhaust Gas

In fiscal 2011, we maintained the focus from previous fiscal years—achieve cleaner exhaust from motorcycles sold in the domestic market—and launched the W800 with superior environmental performance and improved intake and exhaust systems that ensure levels conforming to 2007 Japanese emissions regulations. The W800 is the result of a committed pursuit to recreate the riding feel and beauty of a vintage motorcycle.

Boasting precise fuel metering, thanks to an electronically controlled fuel injection system using throttle body with sub-throttle<sup>\*4</sup>, and a muffler with large honeycomb catalysers and optimized inner construction and shape, the W800 not only contributes to cleaner exhaust gas but also clears noise regulations as well.

We also launched the Ninja 400R, an authentic all-round sport motorcycle, and the ER-4n, a stylish naked sport motorcycle. Both motorcycles are equipped with fuel-injection system using throttle body with sub-throttle, and three-way catalytic converter. Thanks to them, both motorcycles achieve high-level environmental performance conforming to 2007 Japanese emissions regulations.



W800

<sup>\*4</sup> Throttle body with sub-throttle: A device equipped with both a manually controlled throttle and an electronically controlled throttle for the purpose of optimizing the control of intake air mass.

### Promoting the 3Rs

Since October 2004, we have operated an independent motorcycle recycling system in cooperation with three other motorcycle manufacturers and 12 importers in Japan. In fiscal 2011, we achieved a recycling rate of 89.1%. From October 2011, we plan to eliminate the user burden of recycling costs.

For new-model motorcycles, we emphasize environmentally conscious designs highlighting reduced materials and more recycling, right from the development phase. We conduct preliminary evaluations of efforts related to the three Rs—

reduce, reuse and recycle—before commencing design, prototyping, and mass-production phases. In particular, we seek to increase recyclability through greater use of materials that are easy to recycle and have achieved a potential recycling rate exceeding 90% on every model, with most models exceeding 95%. This potential recycling rate was calculated based on The Guidelines for Definition and Calculation Method on the Recyclability Rate for New Vehicles (1998 JAMA).

### Reducing and Eliminating Environmental Substances of Concern

For new-model motorcycles sold in Japan, we already meet the voluntary targets of reduced environmental substances of concern (lead, mercury, hexavalent chromium and cadmium) set by the Japan Automobile Manufacturers Association, and we have also achieved voluntary targets for older models still being sold.

For general purpose engines and JET SKI® watercrafts, there are no Japanese regulations like the JAMA voluntary reduction targets, but we are making elimination and reduction efforts that follow those applied for motorcycles, and we had achieved voluntary reduction targets for lead, mercury and cadmium by fiscal 2008. Hexavalent chromium had been contained in a very small amount of parts, but we completed its elimination in fiscal 2009.

Japan Automobile Manufacturers Association “Reduction targets for environmental substances of concern” for new vehicles

Substance	Reduction target
Lead <sup>*5</sup>	Use 60 g or less in and after January 2006 (for 210 kg weight vehicle)
Mercury	Use prohibited in and after October 2004 (Exception for the use of minute quantities in parts that are necessary for traffic safety <sup>*6</sup> )
Hexavalent chromium	Use prohibited in and after January 2008
Cadmium	Use prohibited in and after January 2007

<sup>\*5</sup> Used batteries are already recycled and excluded from the target values

<sup>\*6</sup> Combination lamps, discharge headlamps, etc.