

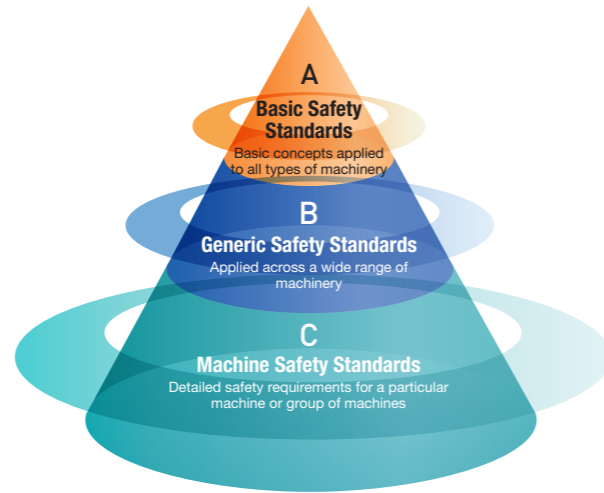
Emphasis on Product Safety

Reassessment of internal regulations for product safety in all business segments is encouraged to ensure compliance with international standards for machinery safety. This practice serves to promote consistent risk assessment at design stages and implementation of risk reduction measures appropriate to the magnitude of the risks discovered.

Paralleling these reassessment activities, we hold information meetings on machinery safety and risk assessment seminars so that the idea of product safety is firmly planted in the minds of everyone involved in design operations and meticulously put into practice.



Risk assessment seminar



A	ISO12100	Safety of machinery - General principles for design - Risk assessment and risk reduction
B	ISO13849-1 IEC62061 IEC60204-1 IEC61000-6-4 IEC61000-6-2	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design Safety of machinery - Functional safety of electrical, electronic and programmable electronic control systems Safety of machinery - Electrical equipment of machines - Part 1: General requirements Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
C	ISO10218-1	Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots

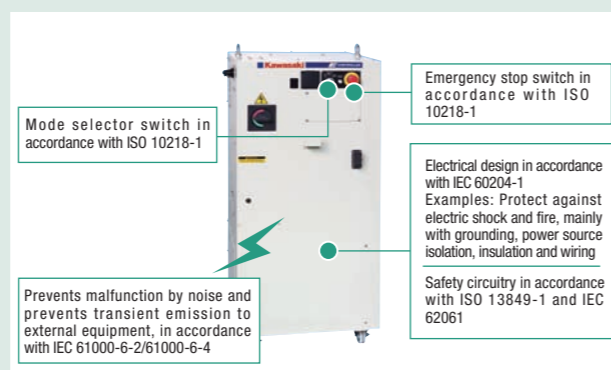
Precision Machinery Company/ Robot Business Division

As illustrated above, international standards for machinery safety* comprise a three-level structure: Basic Safety Standards (A), Generic Safety Standards (B) and Machine Safety Standards (C). If we take industrial robots as an example, once a design satisfies established safety criteria for Machine Safety Standards, a risk assessment is performed in accordance with Basic Safety Standards.

At this point, the following three steps are taken to reduce risk to a permissible level:

- 1 Identify hazards that occur during the robot's life cycle.
- 2 Evaluate risk stemming from each identified hazard.
- 3 Reduce risk to the permissible level.

When a control system is used to reduce risk, design reliability—that is, careful attention to safety functions and performance—based on Generic Safety Standards for control systems is essential for meeting safety performance appropriate to risk level. For example, risk can be reduced with safety devices, such as an emergency stop switch that immediately shuts down a robot, a safety switch that maintains safety during teaching—method for creating the program that industrial robots require to execute operations—and a mode selector switch that changes operating mode. To achieve safety performance in robots,



safety circuits are duplicated and highly reliable parts are used. In addition, failure mode analysis is run to verify safety performance.

We provide classes on design and risk assessment pursuant to these international standards and strive to raise awareness of safety design. We also take steps to reduce risk by reflecting on the design of existing products.

* Machinery safety: Ensuring the safety of machine operators through the implementation of risk-reducing measures based on risk assessment

Boosting Customer Satisfaction

The KHI Group provides an extensive base of customers in Japan and around the world with a diverse assortment of products, including transportation systems, such as ships, railway rolling stock and aircraft, and industrial equipment, such as gas turbines, engines, robots and production plants, in addition to leisure products, such as motorcycles. The ability to swiftly reflect customer requests in the products we offer is of paramount importance.

Our seven internal companies have established structures matched to respective operations. They share pertinent information within respective business segments and apply such knowledge to design and after-service activities.

In this issue of the CSR Report, the spotlight is on the customer-oriented measures taken by the Rolling Stock and Motorcycle & Engine Companies.

Rolling Stock Company

The Rolling Stock Company manufactures high-quality rolling stock that meets all sorts of transportation requirements, from Shinkansen bullet trains to express trains, commuter trains, subway trains, locomotives and new transit systems, for customers in Japan and around the world, especially in the United States and Asia.

The technological capabilities accumulated since KHI began manufacturing railway rolling stock back in 1906 have earned the company high marks from customers.



E5 Series Shinkansen for East Japan Railway Company

Raising Rolling Stock Customer Satisfaction



Customer Satisfaction Design Discussion Group

Questionnaire results, complaints and other comments from customers are shared internally and quickly reflected in after-sales service for delivered rolling stock and in the development of new train cars currently in production, as well as new models for the future, through a campaign dubbed "Love & Affection. Put your Heart and Soul to Rolling Stock Manufacturing." These efforts help to improve customer satisfaction levels and instill greater confidence in KHI.

Motorcycle & Engine Company

The Motorcycle & Engine Company is the only KHI business segment that deals directly with general consumers. Back in 1953, we began making motorcycle engines, marking our entry in the motorcycle business. Since then, we have developed products geared to customer needs, establishing a high profile for the Kawasaki brand, exemplified by several historically renowned motorcycles, including the H1, Z1 and GPz900R.



Ninja ZX-10R

To ascertain an accurate picture of customer needs, we draw on the results of surveys collected from customers who have purchased our motorcycles as well as information collected from other sources, including our website. We complement these sources, mainly with comments from motorcycle magazine readers and motor show visitors, and opinions presented at dealer meetings, and share the remarks in quality assurance meetings. This helps us draft measures to boost the quality of services on delivered products and also enables us to quickly fine-tune new products for a better market reception.



JET SKI ULTRA 300X, in the JET SKI® watercraft series



All-terrain vehicle BRUTE FORCE 750 4x4i EPS