

Environmental considerations at the design and development stages

At Kubota, we are promoting the introduction of products assessment, in which we evaluate the environmental load of the products in their all life cycle such as design, development, procurement of raw materials and parts, manufacturing, distribution, using, and disposal, and the LCA (Life Cycle Assessment) that was internationally standardized in ISO14000 series.

We are making an effort to reduce the load to environment.



製品アセスメントガイドライン

The guideline of products assessment

Examples of LCA implementation

Small-sized gasoline engine

(a comparison of GR130 with GH130)

We calculated the environmental load of the newly developed inclined-cylinder engine (GR130) and conventional vertical-cylinder engine (GH130), which are small-sized general-purpose

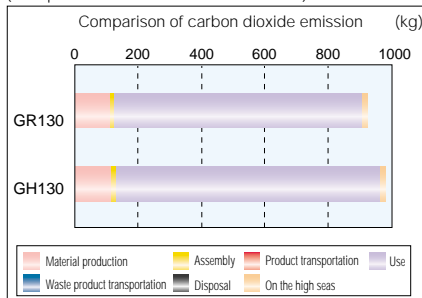
OHV gasoline engines.

As a result of inventory analysis, carbon dioxide emission of new GR130 is less than that of conventional GH130 by about 6%.

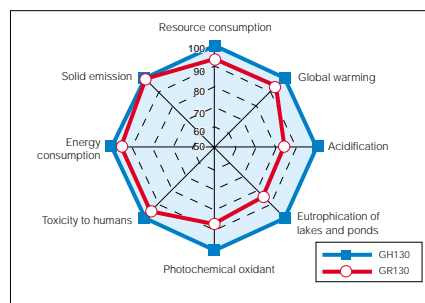
And as a result of environmental assessment, environmental load is reduced in all environmental influence items in new GR130, compared with conventional GH130.

Inventory analysis results

(comparison of carbon dioxide emission)



Results of environmental assessment



GR130

Rice transplanter

(comparison of SPJ450-I and SPA45-I)

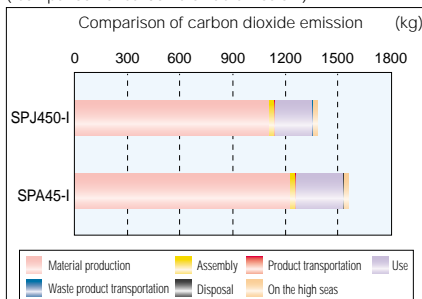
We conducted LCA analysis of the newly developed four-line rice transplanter (SPJ450-I) and the conventional four-line rice transplanter (SPA45-I). Since the new SPJ450-I is lighter than conven-

tional SPA45-I by about 20%, the carbon dioxide emission of new SPJ450-I is less than that of conventional SPA45-I by about 11%, as a result of inventory analysis.

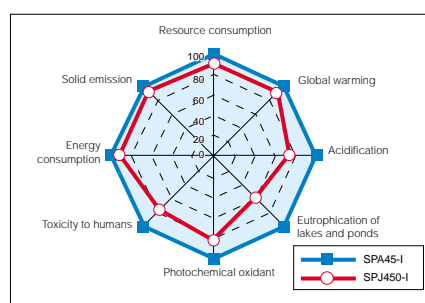
And as a result of environmental assessment, environmental load is reduced in all environmental influence items in new SPJ450-I, compared with conventional SPA45-I.

Inventory analysis results

(comparison of carbon dioxide emission)



Results of environmental assessment



SPJ450-I

An example of design for the reduction of disposal amount of industrial waste, and for saving energy (Centrifugal dehydrator S-CM type)

The water content in dewatered sludge decreased using Kubota's original discharge structure. The volume of dewatered sludge decreased by about 20%, compared with that in conventional products.

And in a operation in which the water content would be the same as that of conventional products, it is possible for the operator to reduce electric power consumption (about 30%) or chemical consumption (about 20 to 50%).

Moreover electric power consumption reduced by about 9%, improving treatment efficiency, blower and so on.



S-CM type centrifugal dehydrator

An example of design for decreasing weight, and for saving energy (Stationary LPG packing machine)

	Conventional type	New model	Improvement rate	New technologies for improvement
Name of type	SEA-50 type	SER-M-50 type	—————	—————
Product weight	210kg	125kg	Reduction by 40.5%	Explosion proof structure Intrinsicly safe explosion proof structure
Reduction of electric work Number of cable / unit	Power source cable Telecommunication cable Two cables / unit	Share one cable for power source and telecommunication One cable / unit	Reduction by 50%	Telecommunication technology superimposing power source
Reduction of electric power consumption	100 W	10 W	Reduction by 90%	Explosion proof structure Intrinsicly safe explosion proof structure



SEA-50 type



SER-M-50 type

Collection and recycle of products

Collected amount of products at the disposal stage are shown in right table.

An example of collection of vinyl pipes

We accept waste vinyl pipes at collection stations all over the country. The waste vinyl pipes are pulverized in recycle-cooperation companies, and turned into the raw material of vinyl pipes. Actual value of recycling rate was 46% in this industry in fiscal 2001. The goal of recycling rate is set up 80% at the end of fiscal 2005.

We installed the manufacturing equipment for Foam-UPVC-core pipes in Odawara plant. In this plant, we intend to purchase pulverized raw material, and manufacture Foam-UPVC-core pipes for drainage in the buildings and for sewage from now on, using recycled material.

The name of products	Collected amount (ton)
Cast iron pipes	4,761
Roofing material	490
Wall material	131
Vinyl pipes	10



Odawara plant