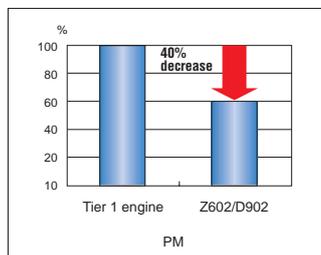
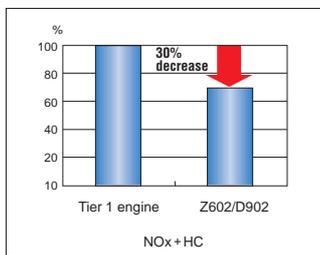


## Farm and Industrial Machinery Businesses

### High power and compact new diesel engines complying with exhaust gas regulations (Z602/D902)

Recently, in the industrial machinery including agricultural and constructional machinery, the demand for high power and compact engines with low noise and low vibration for working environment improvement is increasing, in order to improve basic operation performance, and meeting increasing load of auxiliary power requirement. On the other hand, as social needs, exhaust gas regulations were enforced in the United States, Europe and Japan. And these regulations are continued to be stringent.

We at Kubota have met our customers' needs of small size, high power, low noise and low vibration in Kubota's supreme engines Z602/D902, in SM series, with the same size as our current engine and with 25% more than that in displacement. Moreover, these engines have complied with the Tier 2



regulation of the U.S. that will be enforced in 2005, reducing exhaust gas largely compared with that of a current one by improving a combustion chamber using a simulation.

These engines have been introduced in Kubota's agricultural machinery, utility vehicles since the summer of 2002. And they have won popularity.

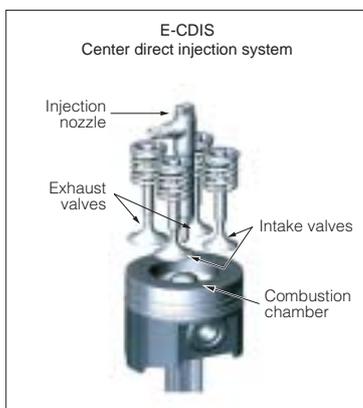


### Ultra-high power density engine (V3800DI series engines)

Regarding V3 series engines, we at Kubota developed V3300DI engine (swirl flow chamber type) with a displacement of 3.3 liter and adopting E-CDIS combustion method in 1997, and developed V3300DI (Direct injection) series engines with four valves and adopting E-CDIS (Center direct injection system) combustion method in 2000, as multi-purpose (Customers can choose whether side PTO and balancer are necessary or not, and also choose the fan height option.) clean engines with 50 to 100 horsepower class. In 2003, we also newly developed "V3800DI-E" and "V3800DI-TE" engines with displacements of 3.8 liter respectively which adopt V3300 in merits and maintained the same volume as V3300. The powers of these engines are higher by 10% than that of V3300DI.

At the same time, four-valve E-CDIS combustion method was incorporated. All the V3 series engines complied with the exhaust gas regulation of special vehicles and construction machinery of ministry of land, infrastructure and transport of Japan, the Tier 2 regulation of EPA of the U.S., and the stage 2 exhaust gas regulation of European Union, by high

pressure injection and newly optimized combustion chamber. These engines are highly accepted by our customers inside and outside of our company as the engines which complied with the exhaust gas regulations all over the world with the performance of compact, high power, low noise and low vibration as well as high reliability.



## Wheel loader ( R420D, R520D )

Wheel loader which is used in road construction in urban area, and used in various sites such as agriculture, stock farming and clearing snow is the construction machine contributing labor-saving. Last year, Kubota's three types of wheel loaders with a bucket of 0.4 to 0.6 m<sup>3</sup> in volume went through a model change. A limited slip differential was adopted for the first time in this class of wheel loader. This model change makes a working efficiency better, and contributes to save energy. And from a point of view of aerial environment conservation, we installed a clean engine which can minimize the amount of hazardous substances in exhaust gas in these wheel loaders. So these wheel loaders comply with the exhaust gas regulation of ministry of land, infrastructure and transport of Japan, the Tire 2 regulation of EPA of the U.S., and the stage 2 exhaust gas regulation of European Union. Moreover, these wheel loaders are "human- and environment-friendly" products which comply with the ultra-low noise standard of ministry of land, infrastructure and transport, adopting a ultra-low noise design considering working in the night and dwelling environment.



## Face-of-slope mower ( GC-S500 )

Mowing the grass around the levee of rice fields is heavy labor in a hot season. Especially, mowing the grass on a long face of slope with a couple of meters in length is hard labor. In addition to the conventional levee mower, we at Kubota have newly developed a face-of-slope mower with which we can mow the grass safely and efficiently. We can easily mow the grass on a face of slope from a toe of slope. So we need not use a large amount of herbicide and need not incinerate the grass in spite of hard labor of mowing the grass. As a result, we can reduce environmental load. And using amount of insecticide is expected to be reduced, since the grass where injurious insects such as Pentatomidae and so on exist is removed. Moreover, it can make rice fields landscape beautiful. So it is a machine contributing to environmental conservation totally.



## Spraying equipment of herbicide for a young rice plant box synchronizing with rice transplanting

Farmers are short on manpower, and farmers themselves are getting older in Japan recently. So they want to reduce spraying herbicide over the entire rice fields. Spraying herbicide for young rice plants box becomes popular instead of conventional spraying over the entire rice fields. This method is environment-friendly technology because herbicide is sprayed over young rice plants in boxes, and a few amount of herbicide scatters or flows in the rivers. However, they tend to spray the herbicide by hand roughly, because they are busy to prepare rice transplanting. Herbicide spraying equipment synchronizing with rice transplanting is installed in a rice transplanter. And they can spray herbicide more precisely than conventional spraying by hand. The merits of this machine are "Using amount of herbicide can be reduced because of uniform spraying," "Herbicide is effectively used because it is sprayed over young rice plants on a rice transplanter," "The appearance of injurious insects because of forgetting spraying herbicide can be avoided," and so on. We developed this equipment as a human- and environment-friendly machine aiming at saving energy and resources.

