Farm and Industrial Machinery Consolidated Division

Automatic vending machines

The automatic vending machines for beverages were appointed to the specified machinery in the amended energy conservation law in December 2002. The machines were forced to save energy by around 34% on average in the industry in fiscal 2005, compared with fiscal 2001.
We have actively tackled the development of saving energy technologies such as improvement of cooling system, increasing thermal-insulating function, improvement of control technology and so on. So in our fiscal 2003 models, four models including “30 Selection model”, our main model, exceeded the goal of fiscal 2005, which is the top level in the industry.

Mini-excavator

A mini-excavator is one of the construction machines used at sites such as urban or residential area, and contributing to save labor.
Especially “load sensing” hydraulic system we adopt for four to five tons class machine is effective very much to save energy. It works for more effective operation but less hydraulic power loss.
And newly developed engine, NEW E-TVCS is installed to minimize hazardous substances in exhaust gas from the viewpoint of environmental preservation. This engine meets the emission regulations of the U.S. EPA, European Community as well as Japanese ministry of land, infrastructure and transport. Moreover, the ultra-low noise specifications and auto-idle function are very helpful for noise reduction and kind for residential environment. Our mini excavator is friendly to human beings and environments.

Herbicide duster with rice transplanting “Komaki Chan”

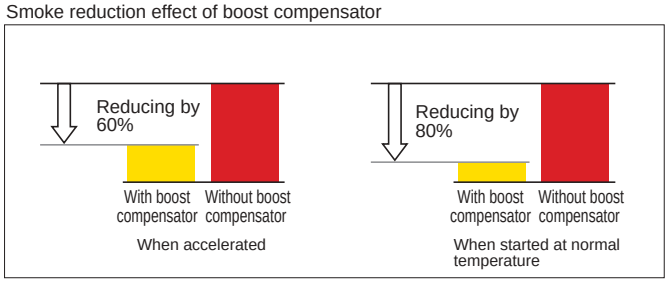
In conventional herbicide dusting by hand or power-driven duster, herbicide could not be dusted uniformly and appropriately. In such cases, it might be dusted again. This action causes one of environmental pollutions in agriculture.
Our newly developed Herbicide duster with rice transplanting “Komaki Chan” is the machine which can dust herbicide simultaneously with rice transplanting. In this machine, compounding and dusting are controlled by the micro-computers without missing the timely dusting. Moreover, high-precision dusting is assured by setting the amount in proportion to the running speed of the machine. Since high weeding effect is expected with minimum dusting amount, and wasteful operation can be avoided, the machine attracts the attention of people as the one contributing to environmental conservation.

High power engine meeting exhaust gas regulations “03M turbo diesel engine”

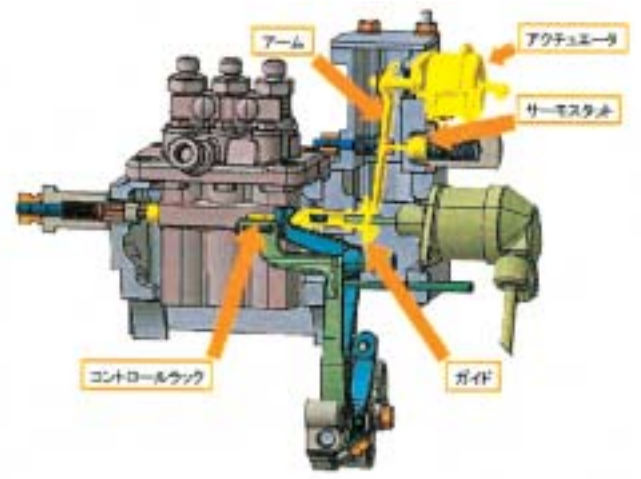
Recently in the agricultural, constructional and industrial machinery, the well-applicable, compact and high-power engines are increasingly required, in order to realize low noise by noise insulation and obtaining space for another use as well as high power because of increasing general engine performance, and because of increasing the load by air conditioner attachment for comfortable operation and other auxiliaries.

“03M turbo diesel engine” accomplished high power and meeting exhaust gas regulations excessively to meet demand of high power and compact engine, by attaching turbocharger, and Kubota’s original temperature-sensing boost compensator which can reduce the amount of smoke largely when accelerated and started at normal temperature, in addition to good potentiality of exhaust gas performance of turbo diesel engine.

Smoke reduction effect of boost compensator



Boost compensator
The mechanism restraining smoke generation by excessive fuel supply, controlling the amount of fuel supply when rapidly accelerated, using boost pressure of turbocharger



Structure of boost compensator

The engine complying with the U.S. EPA’s tier 2 exhaust gas standards “03M-DI diesel engine”

TThe U.S. EPA will enforce the tier 2 exhaust emission standards on off-road engines of 25 to 100 HP from January 2004, which is severer than current standards. The severer regulations will be also enforced both in Europe and in Japan at almost the same time as in the U.S. The social demand to engine business for global environmental conservation is increasing year by year. On the other hand, it is requested intensively by customers that our products should be low-noise, low-fuel-consumption, and exchangeable with current models. Our 03M-DI engines comply with the U.S. EPA’s tier 2 exhaust emission standards, the severest regulation in the world, by the improvement of fuel injection rate control and new combustion chamber, realizing low noise and low fuel consumption without changing major dimension and layout of them, in order to meet the social demand and customers’ request.

We started mass-producing the products since the summer of 2003. The products will be supplied to the manufactures of constructional and industrial machinery and generators in the world including Kubota’s agricultural and constructional machinery.

Exhaust emission reduction level (V2203 engine)