

Foreword

Toward Higher Level of Motor Operation in Construction Machinery

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2011 witnessed a string of one major event after another, including the Great East Japan Earthquake and tsunami on March 11, as well as subsequent accidents at a nuclear power plant in Fukushima, the “Spring of Arab World” democratization trend that started in the outset of last year and the Euro crisis, triggered by the economic crisis in Greece. All these events make us reconsider what we previously took for granted and spark certain changes in our thinking.

Likewise, in the world of technology, hybrid vehicles (HVs) and electric vehicles (EVs) have become continuously commercialized, making the environment a keyword. Indeed contemporary trends show a clear move away from vehicles with an engine to motor-driven vehicles. More than 70% or so of 1-ton class forklifts in Japan, North America and Europe are already motor-driven and this trend is expected to certainly expand to medium-class machines, where the rate of motor-driven machines remains low, pending stricter emission regulations. This trend has also become prominent with mini hydraulic excavators.

As the infrastructure technology is transformed and the global framework also changes, we must pause and think what we should continuously safeguard and what we need to change.

The basic development policies of Komatsu which has been its cornerstone include: 1) A fundamental development strategy of “selection and concentration” and a focus on machine models and applicable technologies after clarifying priorities, 2) The in-house development and production of principal components and building in “dantotsu” (only one) performance through continuous refinement, 3) Jointly integrating quality and cost in a single location by unifying production and development, and 4) Keywords of “safety, the environment, ICT and economic efficiency”. These elements are not expected to change in future.

Conversely, however, change to and reinforcement of a technology to be based around power electronics will become necessary, in place of that based on a combination of an engine, transmission and hydraulics that was previously the Komatsu forte, as the transition from engine-driven to motor-driven vehicles gathers pace. In addition, electricity has to be supplied in place of kerosene or gasoline and the way people do business will also inevitably change. For Komatsu to remain an indispensable supplier for users, product development anticipating these trends will be necessary.

It is only natural to think that opportunities for product development that will change the previous rules of competition have arisen in utility machines exposed repeatedly to price competition and that have shown low profitability amid the evolving motorization of small machines. Komatsu has opened up new business channels by launching KOMTRAX, autonomous dump trucks, hybrid hydraulic excavators and other revolutionary products. Komatsu is determined to open up a new world, one in which a total contribution to its users is also made in the utility field by setting high targets and developing DANTOTSU products.