

FOREWORD

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A remarkable development has been realized recently not only in the performance of individual processes in iron and steel manufacturing, but also in quality and productivity, which has been achieved by synchronization and continuation between processes. In rolling, dramatic progress in synchronization and continuation has also been made as a result of innovations in rolling mill hardware and software technology, such as chance-free rolling, progress in process control and production control techniques accompanying the rapid advance of computer technology, and improvements in maintenance technology, which have enabled stable operation. Moreover, the endless hot rolling technology, which had yet to be realized, has now been put into practical use at the new hot strip mill at Kawasaki Steel's Chiba Works.

In recent years, Kawasaki Steel Technical Report has published reports on the related technologies developed in this company, such as the sizing press and one-side tapered work roll shift mill in hot rolling, MAS (Mizushima automatic plan view pattern control system) rolling and trimming-free rolling in plate rolling, continuous forging, caliber-less (groove-free) rolling, and fixed outer dimension H-shape rolling in blooming and section rolling, and fully continuous rolling of stainless and electrical steels and the multi-purpose continuous annealing line in cold rolling.

This special issue will first introduce the development and practical application of the 4-roll mill for wire rod and bar rolling, which makes possible both high quality and chance-free rolling. Next, development of centrifugal cast roll with high wear resistance for hot strip mill is presented. The second half of this issue introduces technologies for improving productivity with hard-to-roll materials such as electrical steel and ultra-thin materials in cold rolling.

It seems that progress in technology will continue without limits, as it responds to the strong needs of customers, keen competition with other companies in the same industry and with competing non-ferrous materials, and the goals of resource saving, protection of the global environment, and the betterment of human life and society. For these reasons, we believe in and are committed to the future of manufacturing industry.

This issue of Kawasaki Steel Technical Report presents some of the company's recent steel rolling technologies, and has been compiled to invite technical appraisals from our readers. I trust that the reader will find it useful, and ask for your continuing support and encouragement in the future.