

KAWASAKI STEEL TECHNICAL REPORT

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*Special Issue on 'H-Shapes with
Fixed Outer Dimension' and 'Steel Pipe'*

Manufacturing Method and Equipment for Hot Rolled H-Shapes with Fixed Outer Dimension

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Synopsis :

Newly developed techniques are described that eliminate the constraint of fixed inner dimensions, which is unavoidable when rolling H-shapes by a conventional universal mill. These techniques involve (1) web inner width reduction by a universal finishing mill, which has variable-width horizontal rolls and a vertical through-roll guide to from fixed web height, (2) special rolling by a new universal method to produce a fixed flange width, (3) straightening by a variable-width roller, and (4) a measurement control system that utilizes a high accuracy laser measurement method. These techniques allow the manufacture of H-shapes to accurate fixed outer dimensions, which cannot be achieved by conventional rolling methods.

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The body can be viewed from the next page.

Manufacturing Method and Equipment for Hot Rolled

H-Shapes with Fixed Outer Dimension*

Synopsis:

Newly developed techniques are described that eliminate

size group.

Figure 2 shows technical aspects involved in the rolling of H-shapes with fixed outer dimensions by the web inner width reduction method, which has been developed and patented by the U.S. Steel Corporation.

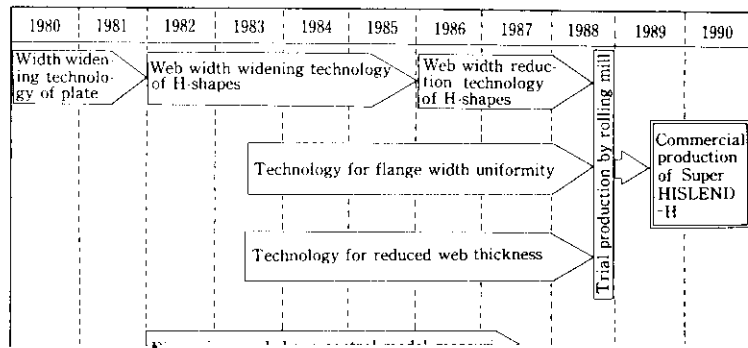
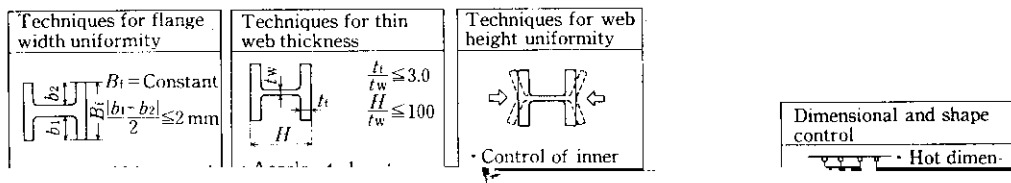
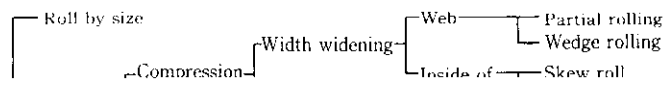
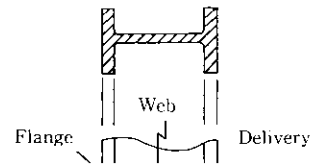
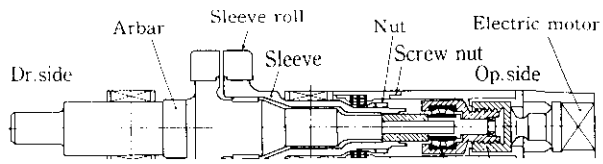


Fig. 3 Progress of technical development at Kawasaki Steel







(caliber type)

(E)

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the temperature of flange water-cooling.

However, it was impossible to achieve the high

Laser
distance
meters

rollers for constraining the upper and lower flange

Kawasaki Steel has developed new techniques to con

tips were set in the roughing mill. This setting took
into consideration flange width spread so that the

trol the web height and flange width of hot-rolled H-
shapes that allow these H shapes to be produced to high