

# Chapter 2

## Design and Construction of Rolling Mills for Long Products

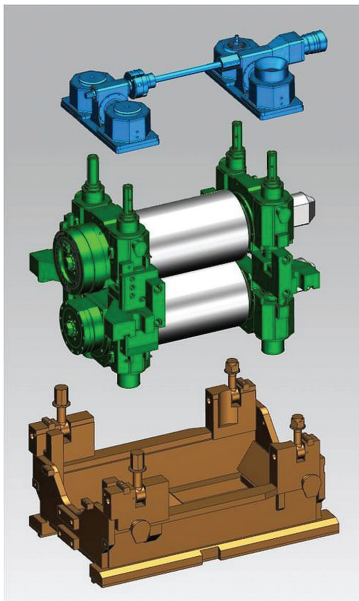
### 2.1 Roll Stands

#### 2.1.1 Housingless Rolling Stands for Long Products

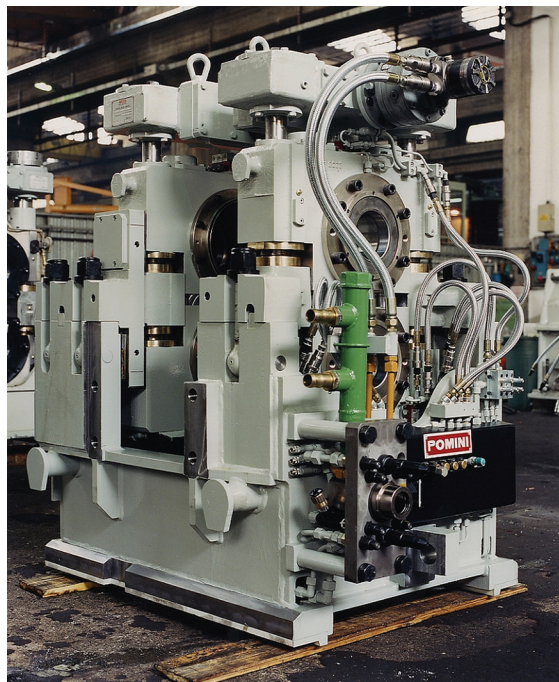
The request for accurate dimensional accuracy, efficient and flexible operation, and metallurgical and surface finishing quality has driven the development of housingless stands, which nowadays represent the vast majority of rolling mills for small and medium products.<sup>1</sup>

Compared to the old housing-type design, the housingless design allows a smaller equipment size, higher rigidity, and better load and speed performances.

The main structure of a housingless stand is composed of an inner assembly with chocks where the rolls are inserted, a screwdown system with tie rods to adjust the rolling gap, and a holding container (Fig. 2.1).<sup>2</sup>



**Fig. 2.1**—The main structure of a housingless stand includes (top to bottom): an inner assembly, a screwdown system and a holding container. (Courtesy of Primetals Technologies.)



**Fig. 2.2**—The original Red Ring housingless stands as developed by Pomini. (Courtesy of Primetals Technologies.)