

## Cast Wheels

RWF is successfully meeting the requirement of wheels of wagon builders and loose wheels required for ROH/POH of wagons/coaches. **A wheel is cast every 2 minutes.** Wheels are cast by controlled pressure pouring process. The technology for this was obtained from M/s. Griffin Wheel Co., USA. In this process, the raw material used is pedigree scrap (old used Wheelsets, axles etc, rejected as unfit for use by the Railways). The scrap steel is melted in Electric Arc furnace. The correct chemistry of molten metal steel is ensured through a Spectrometer. The wheels are eventually cast in the graphite moulds, which are pre-heated and sprayed. After allowing for a pre-determined setting time the mould is split and the risers are automatically separated from the cast wheel.



The wheel then undergoes the process of heat treatment, Cleaning, Magnaglo testing, Ultrasonic testing, Peening and various stages of inspection. The wheel produced by this process requires no machining except the precision boring of central hole (hub) where the axle has to be fitted.

## Axles

**RWF produces an axle every 4 minutes.** The Plant converts steel blooms to axles through a series of forging, heat treatment and machining processes. Blooms cut to the required sizes are heated in Rotary Hearth Furnace up to 1200 degree C. These are carried to the precision Long Forging machine where the hammers convert billets into the required shapes through computerized control programmes. The Forging Machine having multiple hammers are used to get required sizes of forgings. After end cutting, the rough forged axles are subjected to heat treatment in normalizing and tempering furnaces. Rail Wheel Factory is having three axle machining lines out of which 2 are CNC machines to convert these forgings to the axle. RWF converts BOX N, Coaching and Container Axles to wheel sets. Loco axles are generally sent in rough turned condition to the Production Units and Railways workshops for converting to wheel sets.



## Wheel Sets

RWF is having a highly automated wheel set assembly complex supplied by M/s. Simmons Machine Tool Corporation, USA. Wheel seat sizes of machined axles are measured and wheels received from wheel shop are bored according to this size. The precision borers ensure that the final bores have required interference with the individual axles. After boring, the wheels are carried through automated conveyors to the assembly complex along with axles and wheels are pressed one after another. The force required in pressing the wheels is recorded automatically to ensure that the pressing force is within the laid down limits.

