

Usage of Reduce Roll Process in Hot forgings for Input material weight optimization (S.Ganesh, Deputy Manager – Forge Shop)

Reduce rolling is a longitudinal rolling process to reduce the cross-sectional area of heated billets by leading them between two contrary rotating roll segments. The process is mainly used to provide optimized material distribution for subsequent die forging processes.

Owing to this a better material utilization, lower process forces and better surface quality of parts can be achieved in die forging processes.

Input material weight reduction reduces the power consumption for heating and due to the lesser mechanical loads on the tooling and improvement in die life is also observed and other indirect savings in terms of material handling and inventory reduction.

Coupled with automation, reduce roll machines can achieve significant improvement in productivity and also optimization of man power requirement. Automated reduce rolls can provide high degree of repeatability.

With advancement in design software, reduce roll simulation and CAM, reduce roll dies can now be designed with continuously varying profiles based on the material demand on the specific area and profile formation is also achievable in reduce rolls tools which can significantly reduce the die wear out due to mechanical stress.