



## UPSETTING

Upset forging, also called hot heading, is a process by which the cross-sectional size of a bar is increased, either at an end or at some point along its length. It is done on specially designed upsetting machines, using closed dies to control size and shape. Typically, dies have several stations, and the parts are formed progressively by moving the parts from one die station or cavity to another until the forging is complete.

Heads of bolts, valves, single and cluster gear blanks, artillery shells, and cylinders for radial engines are examples of parts made by upset forging.

This same process, when performed cold, is called cold heading. Cold heading makes possible the economical mass production of fasteners; such as nails, screws, bolts, hinge pins, and rivets.

The following lubricants are recommended for Upsetting applications.

Water Base							
PRODUCT	Specific Gravity (gms/cc)	Lubricant	Particle size Microns	Viscosity (CPS at 25°C)	Diluent	Application	Packing (Kgs)
LUBRICOTE-Z 12	1.15-1.20	Graphite	10-15	Creamy Paste	Water	Hot closed die forging / upsetting. Apply with proper spray system	200
LUBRICOTE-Z 29	1.15-1.20	Graphite	3 - 5	Paste	Water	Closed die hot forging of intricate and high quality precision forgings. Apply with proper spray system	200
LUBRICOTE-Z 31	1.04-1.10	Graphite	15-20	Paste	Water	General forging lubricant for steel & alloys. Apply with proper spray system	200