

## "PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY IN SELECTED MSME CLUSTERS IN INDIA"

To develop and promote a market environment for introducing energy efficiency and enhanced use of renewable energy technologies in process applications in the selected energy-intensive MSME clusters, United Nations Industrial Development Organization (UNIDO) in collaboration with Bureau of Energy Efficiency (BEE) is implementing a project titled "Promoting Energy Efficiency and Renewable Energy in selected MSME clusters in India" funded by Global Environment Facility (GEF) and co-financed by Ministry of Micro, Small and Medium Enterprises (MoMSME) and Ministry of New and Renewable Energy (MNRE).

### Reduced specific energy consumption by installing correct size/capacity motor in a forging unit

#### Objective

To reduce the specific energy consumption of the forging unit by installing correct size/capacity motor for the 0.5 T hammer in forging section there by improving the motor loading and efficiency.

#### Implementation

Installed a 30 kW motors in place of 37 kW motor used in 0.5 T hammer in forging section to reduce the energy consumption. Capacity reduction was 7 kW.

#### Principle

In the forging unit, rated capacity of the hammer motor was higher than the actual required capacity, resulting in low loading of the motor. At low loads, motor efficiency decreases resulting in higher power consumption. Installing adequate capacity of motor for the hammer in place of high capacity motor will improve the loading of the motor. This in turn improves the efficiency of motor and reduces the energy consumption.



Savings

₹ 1,61,100



Investment

₹ 85,000



Pay Back

7 months

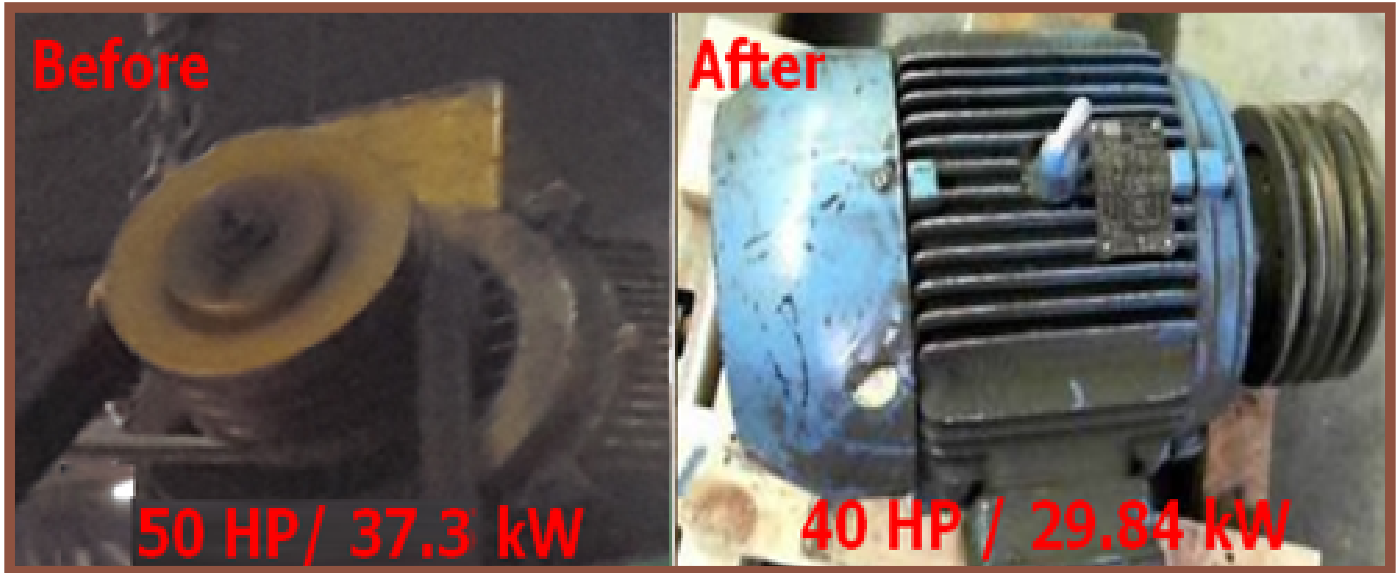


## Unit Profile

G B Tools & Forgings Ltd. is a hand tool manufacturing unit established in the year 1977 at Jalandhar. They manufacture spanner, wrench, jack plane, plier, vices, hammer, hacksaw, screw driver and tools kit, etc.

## Benefits

- Improved efficiency of motors
- Reduced energy consumption
- Reduced energy costs



## Outcomes



21,480 kWh of annual energy saving



₹ 1,61,100 of annual cost saving



17.6 T of CO<sub>2</sub> reduction per year (0.82 kg/kWh)

## Cost Economics

Energy savings per month	1,790 kWh
Energy saving per annum	21,480 kWh
Cost savings per year (₹ 7.5/kWh)	₹ 1,61,100
Investment cost	₹ 85,000
Simple Payback period	7 months



## Replication Potential

In all the forging units with low loading of motors.



## Calculation

Energy savings per annum (kWh/year) = (Energy consumption before implementation - after implementation, kWh/month) \* 12

### Contact details :

#### Unit

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#### Cluster Leader

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