

Summary of study: Energy efficient belt in a chemicals unit: Unit - 1

Industry : Chemicals

Unit profile : A chemicals unit located in Ankleshwar (Gujarat) manufacturing organic chemicals

Technology :

- Cogged V-belt, with pulley where necessary

Application : Centrifugal fans, blower, air compressor systems



Year of investigation: 2018

Key features:

- Cogged V-belt, with pulleys as required, to replace existing belt(s) for better transmission and consequent energy saving in centrifugal fans, blowers and air compressors
- Stress relieved fabric that stretches up to 176% more than ordinary bias-cut fabric, which improves tension section stretch as the belt bends
- Up to 20% more belt cord, made of Hi Modulus synthetic fibre, which carries high loads with minimal stretch
- Compression section of rubber compounds with precision-moulded cogs that increase flexibility while maintaining even cord support
- Raw edge belt sidewalls that grip better, minimizing belt slip

Energy and cost saving

| Details | Recommended | Energy saving |
|------------------|---|---------------|
| Centrifugal fans | Replacing existing belt by cogged V-belt (1 unit) | 28.5 Kw/hour |
| Blower | Replacing existing belt by cogged V-belt + pulley (1 unit) | 20 Kw/hour |
| Air compressor | Replacing existing belt by cogged V-belt + pulley (4 units) | 18 Kw/hour |