



SAVING IS VIRTUE.

TRIPACK FLIMS LIMITED- CASE STUDY



BROAD A/C



Background

Tri-Pack Films Limited (Tri-Pack) – a joint venture between Mitsubishi Corporation of Japan and Packages Limited of Pakistan – was incorporated as a Public Limited Company on April 29, 1993 to produce Biaxially Orientated Polypropylene (BOPP) Films in Pakistan. Its head office is based in Karachi and regional offices are located in Karachi, Lahore and Hattar.

Since inception, the Company has been on a growth trajectory and has come a long way from one BOPP Line of 5,400 tons to four BOPP Lines of 66,800 tons and two CPP Lines of over 17,000 tons.

Products include, Low Sealing Temperature Films, Broad Seal High Barrier, Matt Film, Perforation Films, In Mould Labels, Anti-Fog Films, Low Sealing Temperature Films, Tobacco, Non-Coated Transparent Wrap, High Gloss Label, Ultra High Barrier Metallized Film, & Labellene

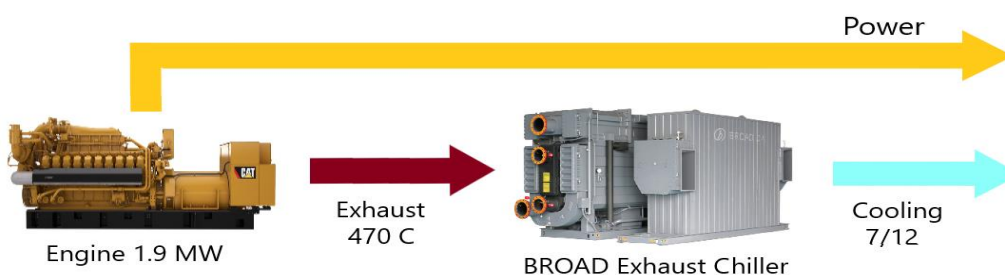
BROAD New Member Inclusion: Multi-Energy Chiller.

Besides 7 units of BROAD Exhaust Exhaust fired chillers, a new addition has been made to ensure the stability of critical production line.

The chiller uses multi-energies (Exhaust and Natural gas) to produce uninterrupted cooling.

With BROAD, advanced technology adopted, separate chambers for each energy source, the reliability of chiller will reach at its optimum level.

- BZE100X
- Energy Resource: Natural Gas and Engine Exhaust.
- Capacity: 330Rt (1161kW_{th})
- Main Fuel: Exhaust Gases
- Backup Fuel: Natural Gas
- Backup Rating: 100%
- Engine: CAT
- Exhaust Temperature: 440-450 °C



400-677-6666

Total Existing Waste Recovery systems by BROAD

Project Name: Tripack Films Limited
 Location: Karachi, Pakistan
 Chiller model: BE125 x 7 units
 Cooling Capacity: 1,453 kW / unit
 Heat Source: 440-450 °C Exhaust gas
 Installation: 2006
 Yearly Saving: 214.3 Million PKR.



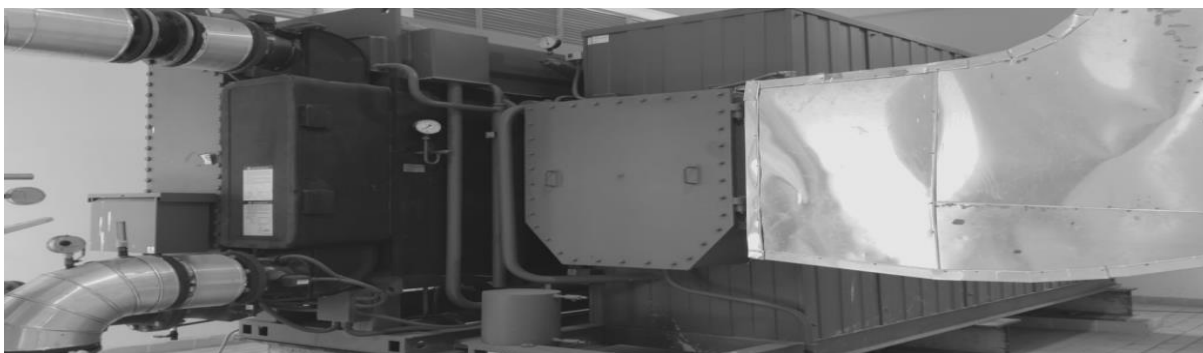
Why BROAD System Selected

Significant reliable targets were defined as the outset for the company by itself; in relation to the reduction of energy consumption, carbon dioxide and reliable use. This strategy ensures that the power house significantly raises the sustainability bar to supply the utilities to the production.

Advantages

Apart from others energy source, the waste heat of engine exhaust can be directly input to the chillers. BROAD has developed world's first exhaust fired chiller in 1999 and world 1st multi-energy chiller in 2001. With the expertise of more than 2 decades, BROAD systems are the most reliable, efficient and maintenance free in the world.

The waste heat when directly drive chiller then heat energy loss is negligible. The fire tube structure plays a vital role in sustainable and efficient operation and enhances lifespan of chiller.



Current Installed System

Electricity Part

The power generation arrangement as follows:

Model	Quantity	Capacity
Gas-fired engine Brand: CAT 3520C Origin: USA	7 units	1,900 kW/each

The system fulfills production department and offices electrical demand. Each generator is equipped with waste heat recovery unit by utilizing exhaust gasses.

Absorption Chiller Part

The chillers arrangement is as follows:

Model	Quantity	Capacity
BE125	7 units	413 Rt /each
BZE100* (New)	1 unit	330Rt
Brand: BROAD Origin: China Heat input: 440-450 °C exhaust and Natural Gas *		
Yearly 214.3 Million Saving.		

The system is planned to supply chilled water air conditioning and chilled water to the production machines.

The generation of approximately 13000 kW electricity and 2755 USRT of cooling is of critical importance to their packaging production facility. If there is a hindrance in the power / cooling generation even for a small period of time then this will cause them a financial loss amounting to millions. Therefore BROAD has been satisfying their cooling demands with quality product and services since the year 2006.