



## Alfa Laval heat exchangers cut energy costs at India's largest specialty chemicals plant

Balaji Amines, BAL, Tamalwadi, Maharashtra, India

Case story

Balaji Amines Limited, BAL, India, operates in the niche market specialty chemicals and aliphatic amines. An Alfa Laval customer since 2002, BAL has 48 Compabloc compact heat exchangers installed for heat recovery duties in the production of amines. Managing Director Prathap Reddy is not only impressed with the role the Compablocs have played in reducing energy costs, he also appreciates the high level of process know-how and professional service his company gets from Alfa Laval.

BAL's first contact with Alfa Laval was when the company replaced its existing carbon steel shell-and-tube heat exchangers with compact heat exchangers. "We bought our first set of eight Compablocs for heat recovery duties in the production of amines," relates Prathap Reddy. "Alfa Laval then assisted us in fine-tuning the processes."

### Advantages over shell-and-tube

"It seemed risky at the time because Compabloc was more expensive than alternative products. But I'm happy we took the risk. The Compabloc is a reliable

### Fast Facts: about Balaji Amines

#### BAL, India's largest producer of specialty chemicals and aliphatic amines

Balaji Amines Limited, BAL, is the largest producer of methyl amines in India, with a capacity of 70 tonnes per day, and the second largest producer of ethyl amines. It also leads the market by being the only manufacturer of NMP (N-methyl 2-pyrrolidone) and Morpholine in India. BAL serves a range of chemical industries in the Indian and global markets



The first installation of eight Compablocs laid the foundation for savings of around USD 700,000 per year.

and efficient product. Furthermore, it can withstand aggressive media and high temperature and pressure. It is also almost maintenance free and can be cleaned in a few hours instead of days, two more advantages over shell-and-tube

models. In addition, payback period for a Compabloc is shorter due to the huge energy savings it provides. We have now replaced nearly all our old shell-and-tubes with Compablocs from Alfa Laval."

### Steam consumption reduced 40%

The central challenge facing BAL is to reduce production costs, while maintaining its world-class technology. "Alfa Laval's energy efficient heat exchangers have helped us achieve this," says Prathap Reddy. When we installed Alfa Laval's Compabloc the steam consumption was reduced by 40%, giving major savings in energy costs."

This first installation of eight Compablocs alone laid the foundation for savings of around USD 700,000 per year.

Today, BAL has 48 Compablocs, 20 spiral heat exchangers, six semi-welded heat exchangers and 12 gasketed heat exchangers from Alfa Laval in its plants. The heat exchangers are used as condensers, reboilers, vaporizers and coolers.



Compabloc compact heat exchangers replaced shell-and-tube units for heat recovery duties in the production of amines at BAL in India. A 40% reduction in steam consumption was achieved



### Process know-how

"Alfa Laval also has a high level of process know-how," continues Prathap Reddy. "We just state our requirements and they provide suitable solutions. They also make suggestions for improving our processes."

When it comes to customer support Prathap Reddy is equally satisfied. "We get excellent back-up from

Alfa Laval. With other suppliers the response time differs if there is a low requirement. But with Alfa Laval, whether you need one heat exchanger or 20, you get a similar response. We can contact Alfa Laval with our inquiries and get a quality response from them within 24 hours. This is what we call a professional attitude. We look forward to growing with Alfa Laval."

### Key Facts:



**Design temperature**  
400°C (752°F), down to -100 °C (-148°F)  
**Design pressure**  
From full vacuum to 42 barg (600 psig)

**Maximum heat transfer area**  
840 m<sup>2</sup> (8,985 ft<sup>2</sup>)

**Material of construction**  
316L, SMO254, 904L (UB6), Titanium, C-276/C-22/C-2000

### Duties

Heat recovery, cooling, heating, condensation, partial condensation, reboiling, evaporation and gas cooling.

### Unique features

Compabloc is the champion of heat exchange thanks to unique Alfa Laval innovations that enable reliable, efficient performance, letting you save energy and improve sustainability.



### SmartClean

Fast and efficient flushing of fouling material



### C-Weld

Superior cleaning and extended performance



### XCore

Advanced design for higher pressures



### ALOnsite

Qualified support at your facility

Learn more at [www.alfalaval.com/compabloc](http://www.alfalaval.com/compabloc)

### How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com).