Minfeng and Voith partnership

Mainly in the field of specialty papers, a customer needs not only an experienced machine builder, but also a technology partner who can contribute his know-how as early as in the planning phase and pave the way for a smooth start-up. In the optimization phase the customer receives further support in order to ensure a steep start-up curve.

Minfeng has recognized how important the qualification of the partner is for such a project and that two important factors decide on the success or not of a project.

- A well thought-out machine concept that represents the basis for an effective production process through innovative and at the same time well-proven components.
- Sound technological know-how, through which the possibilities of the optimal machine concept can fully come to bear.

If these two prerequisites come together, optimal quality and efficiency are achieved in paper production in order to be able to exist for a long time in the sales markets.

Voith has these prerequisites and, together with Minfeng, successfully implemented past projects. Minfeng, therefore, decided on purchasing this new machine again from Voith. Voith is not only a...
renowned supplier of large machines for the production of mass-produced papers, but also for specialty papers with references for the most important specialty paper grades.

The complete production line (PM 21) for label and inkjet papers ordered in March 2002 went into operation at the end of 2003 and has more than doubled the production capacity of Minfeng. With this, Minfeng has been able to further expand its market position as one of the most important producers of specialty papers in China. In the year in which the Minfeng Group celebrates its 80th anniversary, the new machine represents a wonderful anniversary present.

The scope of supply

Voith’s scope of supply and responsibility covered the complete production line from stock preparation to the reel, including an online coater, various ancillary units and broke preparation. In addition, Voith supplied a VariFlex winder.

System engineering, installation and start-up supervision as well as C&I hardware supplies and automation technology services completed the scope of supply.

In the stock preparation and approach flow systems, mainly proven components the customer was already familiar with from PM 18 have been installed:

- VS26 pulpers for the slushing of long and short fibre stock, TwinFlo refining and HCC high density cleaning.
- In the approach flow system, proven EcoMizer cleaner technology and Multi-Screen screening with C-bar screen baskets are used. Together with the ComMix and HydroMix components, a modern Wet End Process (WEP) is ensured. These components make sure that a very homogeneous stock suspension is fed to the paper machine.

The paper machine is based on the One Platform Concept.

The MasterJet headbox with ModuleJet dilution water technology ensures a uni-
form distribution of the stock across the machine width and enables the papermaker to make reliable CD basis weight profile corrections. In addition, fiber orientation can be controlled via the adjustable slice blade.

The wire section consists of a fourdrinier wire with the two proven components, DuoFormer D and DuoShake, with which the high demands regarding formation and MD/CD tensile ratio can be ensured. The DuoFormer D is regarded worldwide as a reference for excellent formation. The DuoShake, a reaction-free shake, which is unique on the market additionally improves fiber distribution.

The Combi-2 press with EcoNip roll and a closed web run after the wire section up to after the second press nip is familiar to Minfeng from PM 18. The succeeding bottom felted straight-through press is used to minimize two-sidedness and to increase the dryness.

The pre-dryer section in CombiDuoRun design, equipped with DuoStabi rolls and web stabilizers as well as the ropeless threading system contribute to improved machine efficiency.

Ahead of the SpeedSizer is a hard-nip calender with water-heated rolls to pre-treat the paper surface for improved coating quality. On the SpeedSizer, both size and coating colors of different rheology can be applied. It is precisely on different grades that the machine shows how flexible it is. After the SpeedSizer, an Airturn and a steam-heated air-float dryer are arranged.

Following the after-dryer group, equipped with a chrome-plated first dryer and a standard rope run, is a 2x2-roll EcoSoft calender with oil-heated rolls. On this calender, a roll stack can be reversed in order to be able to produce one-sided smooth label papers.

The proven horizontal reel ensures excellent rewind quality up to a diameter of 2,500 mm.

The reliable VariFlex winder at the end of the production line is a guarantor for excellent slitting and winding quality at high speeds.

In addition, Voith is responsible for the broke preparation system and various ancillary systems.

The project team

Besides the machine concept and technological know-how, the cooperation between the project teams of Minfeng and Voith was a decisive factor for the success of the PM 21 project. Putting to-
Technical specifications

<table>
<thead>
<tr>
<th>Paper grades</th>
<th>Label and inkjet papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis weight range</td>
<td>40-115 g/m²</td>
</tr>
<tr>
<td>Wire width</td>
<td>4,150 mm</td>
</tr>
<tr>
<td>Design speed</td>
<td>1,000 m/min</td>
</tr>
<tr>
<td>Production capacity</td>
<td>185 t/24 h (gross)</td>
</tr>
</tbody>
</table>

Installation and start-up

During the installation work, which lasted from March to October 2003 and with several weeks at temperatures of more than 50°C inside the paper machine room, cooperation with the customer and the customer’s contractors was exemplary.

Overlapping with the end phase of the installation, the individual checks began and the start-up phase followed seamlessly.

The customer’s own start-up team specially selected for this project, which was thoroughly trained by Voith both in Germany and on site, worked with our start-up specialists so effectively together that the agreed start-up date was met and the subsequent test run could be brought to a successful conclusion in February 2004.

Outlook

At present Minfeng is optimizing its production range in order to be able to make the demanded paper grades available on the market in first-class quality.

It is intended to carry out the warranty run by the end of June 2004. The handling of this PM 21 project followed seamlessly the well performing installation of the Voith supplied PM 18.

Figs. 4 and 5: PM 21.

Fig. 6: DuoFormer D.

Fig. 7: VariFlex RSM winder.

Fig. 8: Customer’s project team with both Voith project manager.