

High productivity systems for wind rotor blade manufacturers

In-line Degassing

Resin Infusion

Gluing and bonding

Balancing and pore filler



Proven machines for composite
manufacturing of small to large wind blades ►



25
YEARS OF
EXCELLENCE

Serving 20+ Wind Blade manufacturing facilities in India



KEY CUSTOMERS



ABOUT TWIN



Over 25 years of expertise in resin mixing and dispensing technology



2500+ Systems in market; Some of the world's largest companies as clients



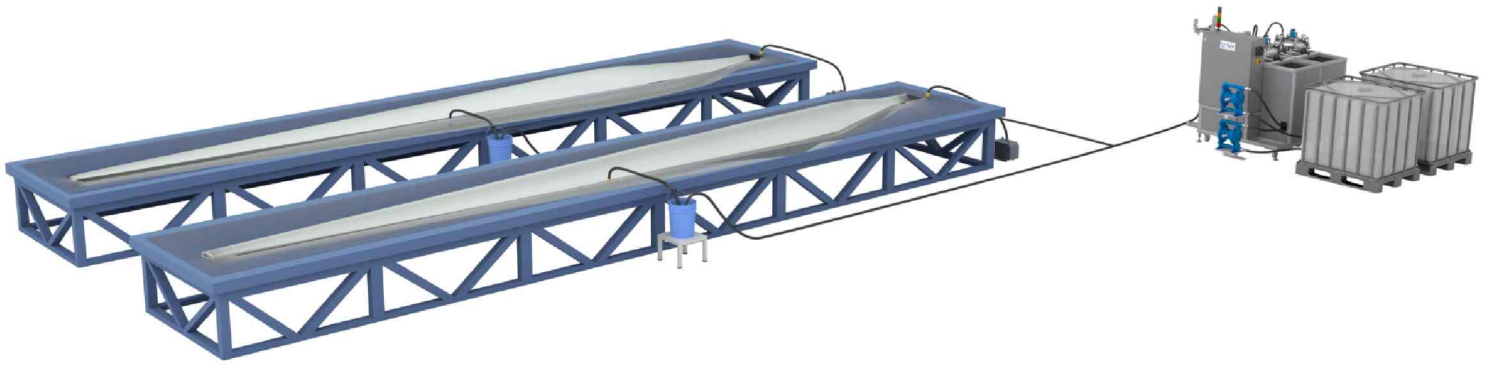
State-of-the-art manufacturing plant in Pune, India



Team of 120+ Technicians and Engineers

Improve productivity

Smart systems for
wind rotor blade manufacturing



Minimise
mould cycle time
with high flow rate



Ensure **high quality**
and error free
production with fully
automated systems



Get **reliable** large
volume dispensing for
rotor blades
with long length and
large diameters



**Optimise time
and manpower**
with innovative remote
controls for
dispensing processes



**Monitor
productivity**
with complete process
traceability;
Easily export data to
MS-Excel



**Single point
solution**
partner for all your
requirements in resin
infusion as you scale-up

Total solution for wind rotor blade manufacturing



Inline Degasser

Output: 40 LPM



Meter Mix Dispensing System for Resin Infusion

Output: 30 LPM



Pore Filler Machine

Output: 2 kg/min

Key Features

Intelligent Electronic Controls



Highly advanced PLC control panel with touch based HMI Controller enables ease of operations. Data logging facility for advanced reporting can be configured as per need.

Smart mobile app



Production monitoring and maintenance support

- Maintenance Pop-ups
- Smart Data Logging and Reports
- Built-in E-Manual and Videos
- Instant Service App



Glue Pasting Machine

Output: Up to 20 LPM



Glue Dispensing for Blade Balancing

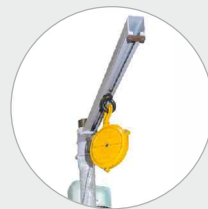
Output: 3 kg/min

Wireless Remote Control



The wireless remote allows the operator to easily switch-on & switch-off the material flow, or increase & decrease the flow rate even when he/she has moved away from the system while working at the mould.

Boom Structure (optional)

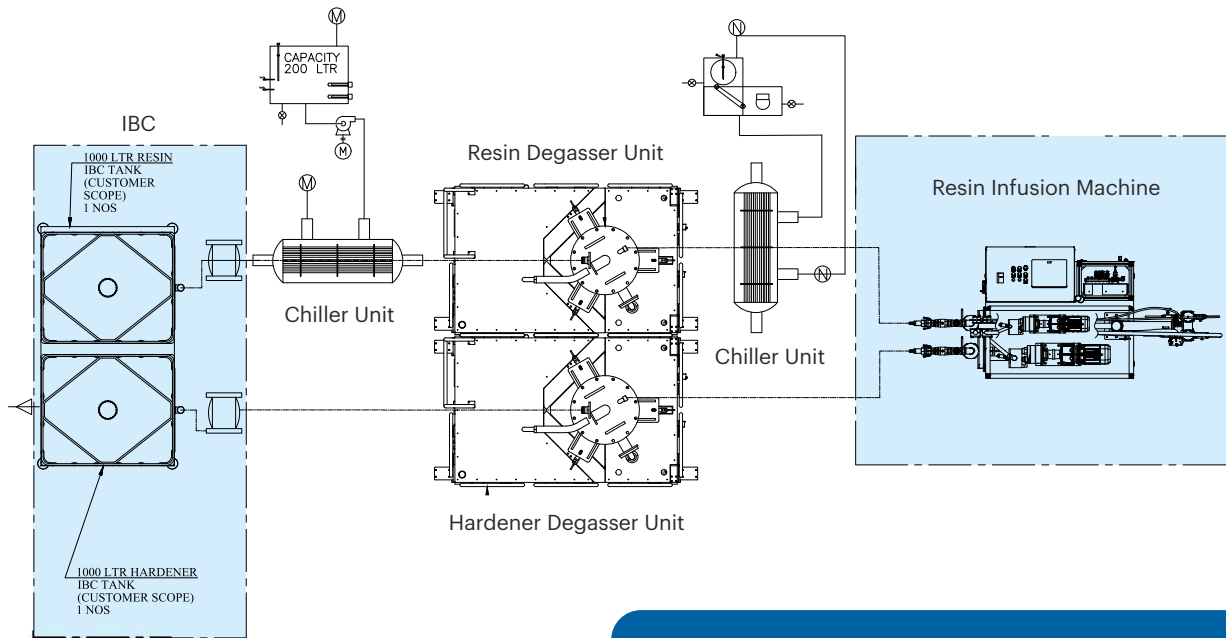


Boom structure with strong base and super wheels enables easy dispensing of the glue directly on the blades. In this case entire machine can move along the length of the Wind blade.

Inline Degasser

Enhance degassing quality, reduce cycle time

Inline degasser is used to degas the resin to get moisture-free and bubble-free material. The degasser is ideal in large-scale preparation processes of epoxy and polyester resins.



- Enhances the degassing quality by 20 to 30 % compared to conventional degassing methods
- The inline system eliminates the need for multiple re-circulation of the resin as the degassed resin is directly fed to the Infusion Machines
- Hassle-free continuous production; no need to work in batch mode
- Minimal start-up time enables quick start for production
- Saves space and eliminates wastage of materials in transfers/handling
- Auto-adjustment of the output flowrate of degassed resin

SPECIFICATION

Maximum degassing capacity
2400 l/h

Vacuum level
< 15 mbar abs

Control
Siemens PLC control with 7" HMI screen
18 Kw, 3Ph, 440 VAC

Equipment
2000 X 1300 X 2530 mm

Other Features
Variable output flow based on the consumption of resin
200 litre buffer tank with automatic filling

Resin Infusion Machine

Get the best efficiency with total control over mixing ratio

Twin has developed specialized systems for infusion of two component resin used in fiber matting process in manufacturing of windmill rotor blades. These systems allow accurate ratio control throughout the infusion process and thus ensure the best efficiency in wind blade production.



- > Flow meter to measure the resin flow rate
- > Adjustable output
- > Auto-calibrated level sensor to show exact material level in the tank (optional)
- > Material re-circulation facility

**Flow Rate
Up to
60 LPM**



Variable Ratio Pump

Allows highly accurate control over the mixing ratio throughout the course of process.



Static Mixer

The static mixing elements divide and recombine the feed materials through millions of stirrations giving a homogeneous mix.

SPECIFICATION

System
Modular

Mixing Ratio
100:20 to 100:70

Viscosity
1500 Pa.s at 25°C (Resin)
50 Pa.s at 25°C (Hardener)

Electrical Load
4.5 KW

Glue Pasting Machine

Reliable mixing quality for high-viscous pastes at high volumes

Twin's meter mix dispensing systems for two component epoxy resin ensure accurate mixing ratio for the adhesives and are specially designed for high volume dispensing of the glue in stipulated time for bonding of shells and large composite structure.



- > Well proven for highly viscous, paste-like adhesives
- > Ideal for high volume dispensing of glue
- > 2 component system with standby feeding and metering system available for auto changeover of material (Optional)



Advanced Feeding and Pumping Systems

Progressive cavity feeding systems linked to precision metering gear pumps.

Options:
Stationary or Portable
(2/3 barrels)

SPECIFICATION

System
Modular & easily movable

Flow Rate
5-12 LPM / 8 to 20 LPM

Mixing Ratio
100:20 to 100:100

Viscosity
Up to 1 million cps at 25°C

Electrical Load
26 KW

Glue Dispensing for Blade Balancing

Meter mix and dispensing of glue for balancing wind turbine blades



- > Programmable recipes
- > Drum press with metering pump
- > Variable ratio, precision gear metering pump
- > Stirrers to maintain material properties
- > Extended boom structure with handheld dispensing gun (optional)

SPECIFICATION

Flow Rate
1.5 to 3 kg/min (adjustable)

Pore Filler Machine

Portable Epoxy dispensing machine for filling the defective or repaired areas after de-moulding of wind blade components



- > Inching mode for dispensing Programmable recipes
- > Convenient Dispensing Gun
- > Variable ratio, precision gear metering pump
- > Compact and Portable design for easy movement
- > Heated hoses with material re-circulation
- > Band heaters, stirrers to maintain exact resin properties

SPECIFICATION

Hose Length 10 Meters	Flow Rate Up to 2 kg/min.	Mixing Ratio Variable
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Gel coating machines

Precision gear mixing for accurate material properties in wind rotor blade protection



- > Smart machine with HMI, and advanced controls for automated dispensing
- > Easy to operate; Requires low maintenance

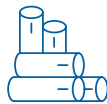
SPECIFICATION

Flow Rate
up to 3 Kg/min

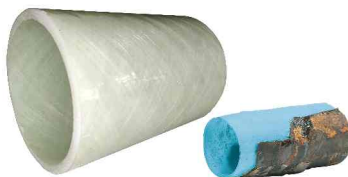
Wide ranging solutions for composite applications



WINDBLADES



PIPES



MARINE & SPORTS



CONSTRUCTION



DEFENCE



TANKS & CYLINDERS



Quick Support

Efficient support team with fastest possible turn around for service request

We understand the importance of reliability and availability of equipment and strive hard to ensure that your machine is always operational. Keeping this thought at center Twin offers two key services health check-up assessment and AMC's. In-house maintenance teams rely on Twin's systematic and expert services to achieve highest reliability and consistency for critical applications.



Twin smart factory apps

One Click Service

Order No. 6612-07210-89

- ✓ Online Support
- ✓ Book Site Visit
- ✓ Request Spare Part
- ✓ Get Expert Support
- ✓ Talk to an Engineer
- ✓ Report Issue

Health Check-up Assessment

Preventive health check-ups are important for a high performance and long life of the equipment. They also reduce the future risks of failure or breakdown.

Services we offer

- End-to-end commissioning with equipment proving at the site
- Equipment breakdown or repetitive break-downs
- Deep study with root cause analysis, diagnostic approach
- Corrects spares with proper availability
- Process failures, cycle time issues

Annual Maintenance Contracts

In addition to regular health checks, your equipment require a structured preventive maintenance plan. This will ensure that they remain in service for as long as possible & remain reliable throughout their life.

What you get

- Service at your doorstep through a single point of contact
- Instant service app with real time updates
- Consultative approach to problem solving
- Lifetime relationships through personalized attention

Truly Global

Customer base and service support spanning across the globe.



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