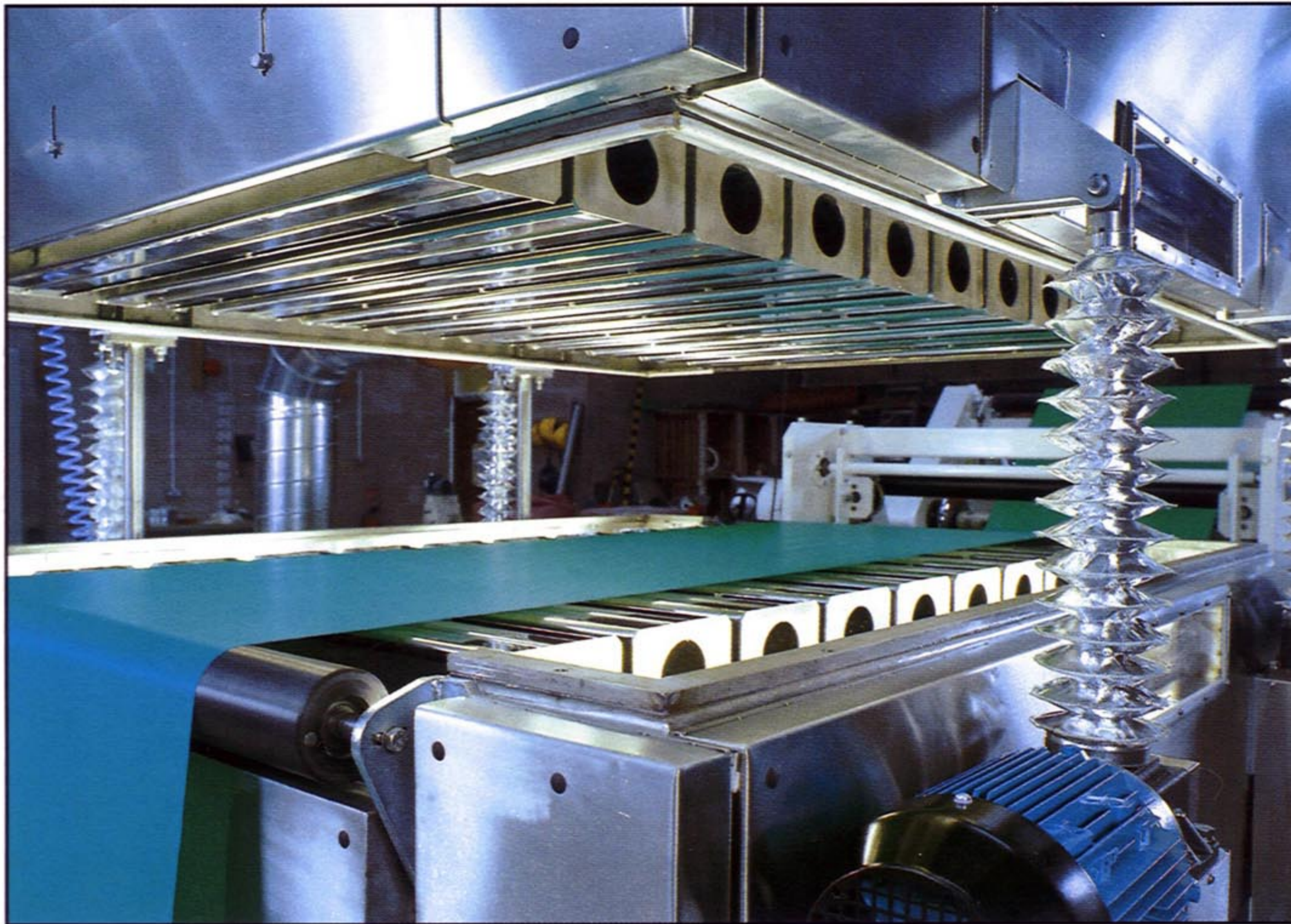


MODULAR AIR FLOTATION DRYING SYSTEMS



DELPRO POWERED FLOTATION DRYER presents a new dimension of EFFICIENCY with SENSITIVITY to the drying and curing of printed or coated continuous web materials.

Shorter Drying Length

6 modules; 12 metres* will dry up to 12gsm coatweight from 55% solids at 500m/min....

Lower Running Costs

.... for £6 per hour gas cost + £2.10 for electric power; less than 3p/m² in total.*

Materials Sensitivity

Temperature, air velocity and humidity (or solvent content) top and bottom, independently controlled at each 2 metre module.

Flexible Assemblies

Can offer impingement jets, powered air flotation and tendency driven roll supports in any combination for those special drying needs.

Ease of Maintenance

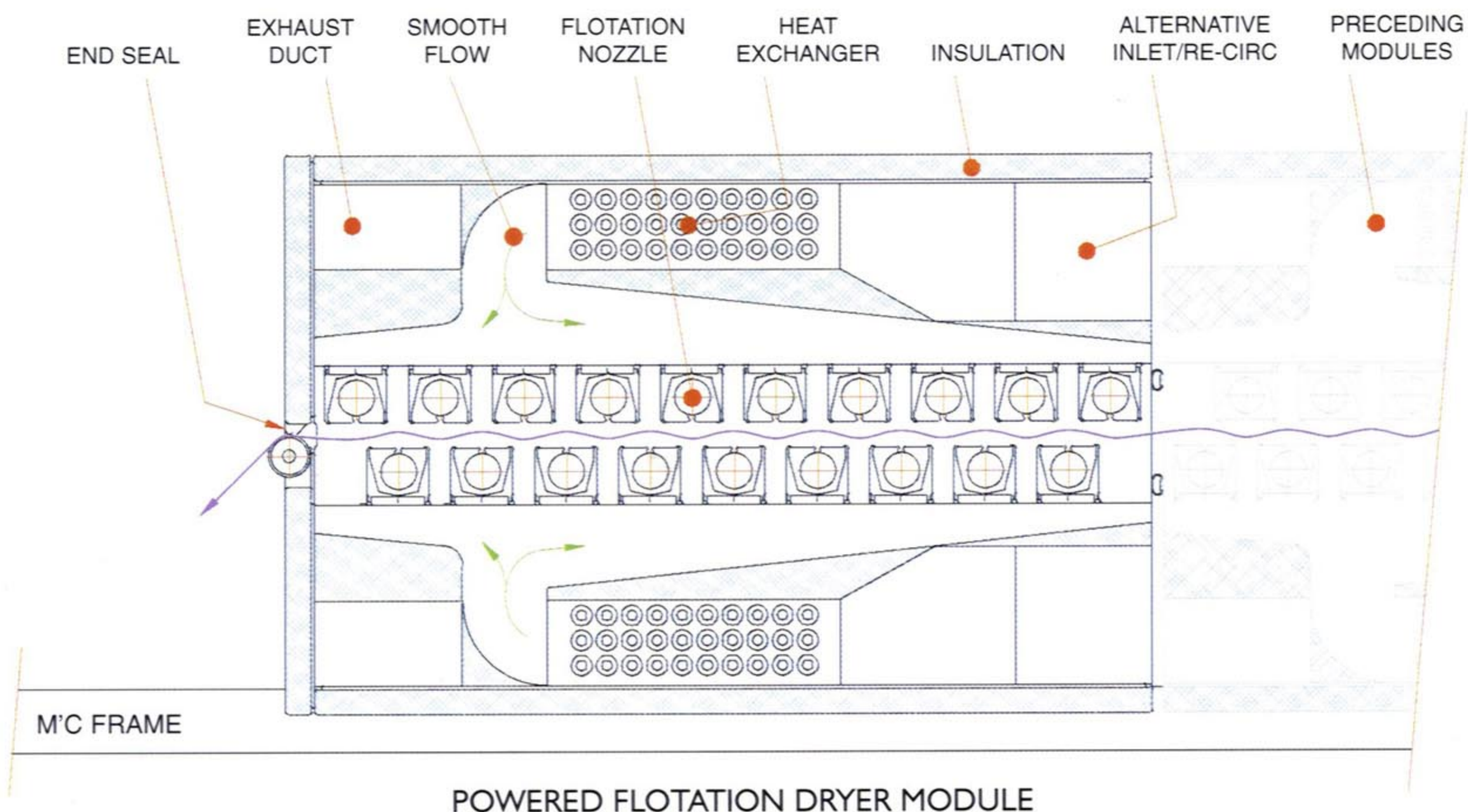
Stainless steel construction, interchangeable parts and de-rated fan motors ensure long life, less spares and reduced down-time for cleaning and maintenance.

*subject to conditions of coating, heat and power costs

Delpro

MANUFACTURING & DESIGN ENGINEERS TO THE CONVERTING INDUSTRIES.

DELPRO POWERED FLOTATION



Construction

- DRYER INTERIOR and mainframe 100% stainless steel
- AIR JET ASSEMBLIES fully interchangeable and easily removed by operator for cleaning or replacement.
- AIR CIRCULATION FANS external to dryer in cool side air stream.
- DRYER OPENS VERTICALLY 400mm by four motorised jacks.
- AIR JET VELOCITY controlled independently by AC inverters.
- HEATING by steam, hot water or thermal oil via integral heat exchangers or direct by hot air from gas heater or heat recovery.
- MOTORISED DAMPERS control percentage recirculation and exhaust.

Features

- TEMPERATURE, AIR VELOCITY & HUMIDITY independently controllable from zero to maximum in top and bottom sections at each module.
- WEB SUPPORTED & HEATED from bottom side only, if required for initial drying of coatings sensitive to "skinning" or solvent entrapment.
- EMULSION based coatings can be hit with maximum heat and air immediately after application to minimise migration and print mottle.
- EXHAUST AIR VOLUME controllable to dew point or solvent burden (LEL) for maximum efficiency and economic solvent recovery or incineration.

SPECIFICATION

Web Width	250-2350mm.	Width of Module (excl.fans)	Web + 1250mm.
Jet Velocity	Infinitely variable 0-30m/sec.	Length of Module	2000mm overall
Heat Energy Flux.	8 Watts/sq.cm.max.	Evaporative capacity (water)	900g/m.width/min.

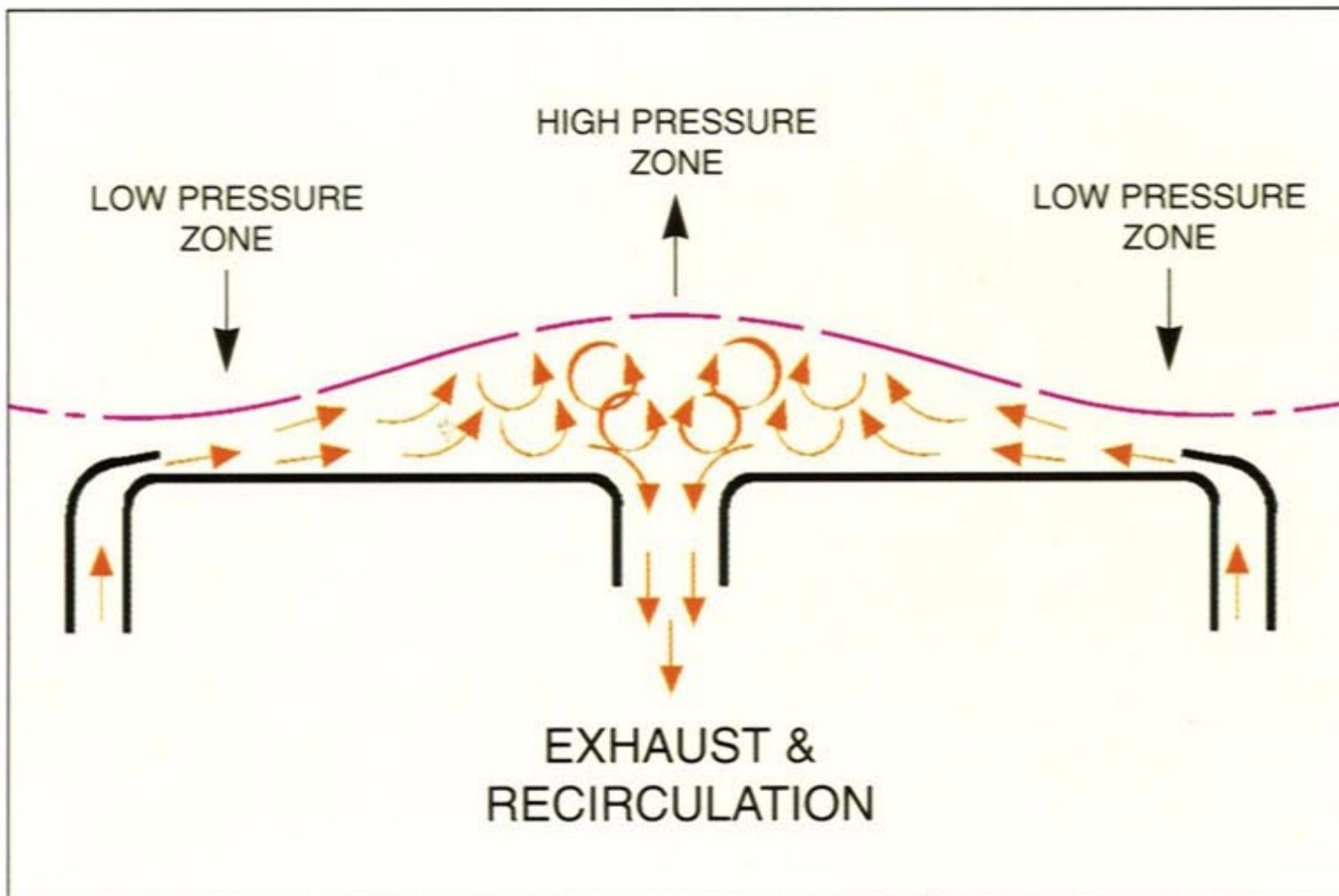
*Performance, illustrations and descriptions are typical, not specific, subject to change without notice as a result of continuing development.

Delpro

COATERS • LAMINATORS • DRYERS • CONDITIONERS
FULLY AUTOMATED REEL STANDS • ZERO SPEED SPLICERS
LIQUID HANDLING SYSTEMS • CUSTOM DESIGNED MACHINE REBUILDS & RETROFITS
TURN-KEY COATING & LAMINATING PRODUCTION LINES.

DELPRO POWERED FLOTATION

PERFORMANCE



Heated air leaving twin jets of each nozzle creates a low pressure zone in front of each jet.

Air streams break up into turbulence which increases as collision of two opposed air streams is approached.

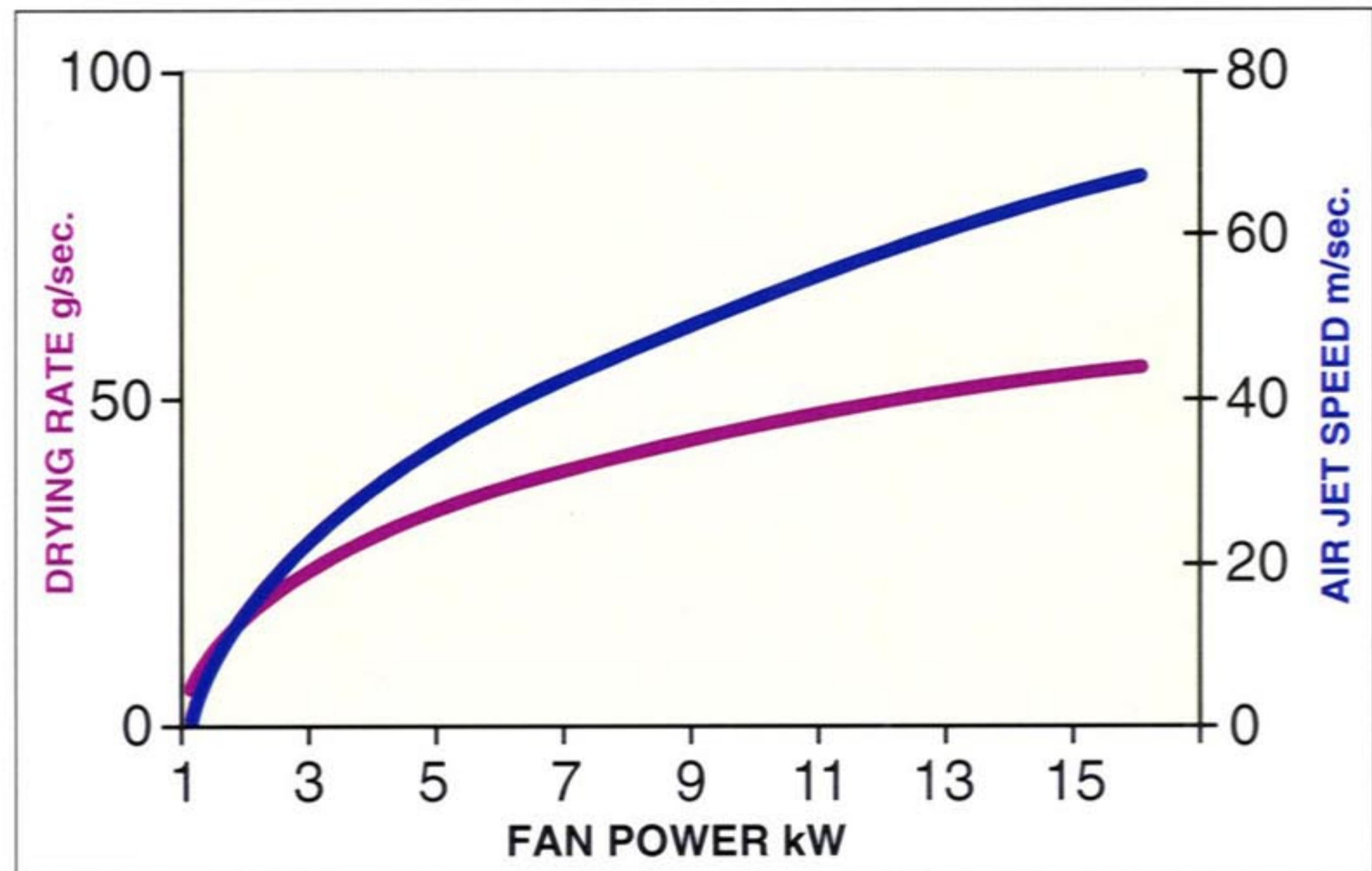
Air streams reflected between drying web and heated nozzle surface remove saturated boundary air layer from the surfaces and transfer heat energy from nozzle to replace latent heat of evaporation.

NOZZLE JET DETAIL SHOWING LAMINAR AND TURBULENT FLOW ZONES

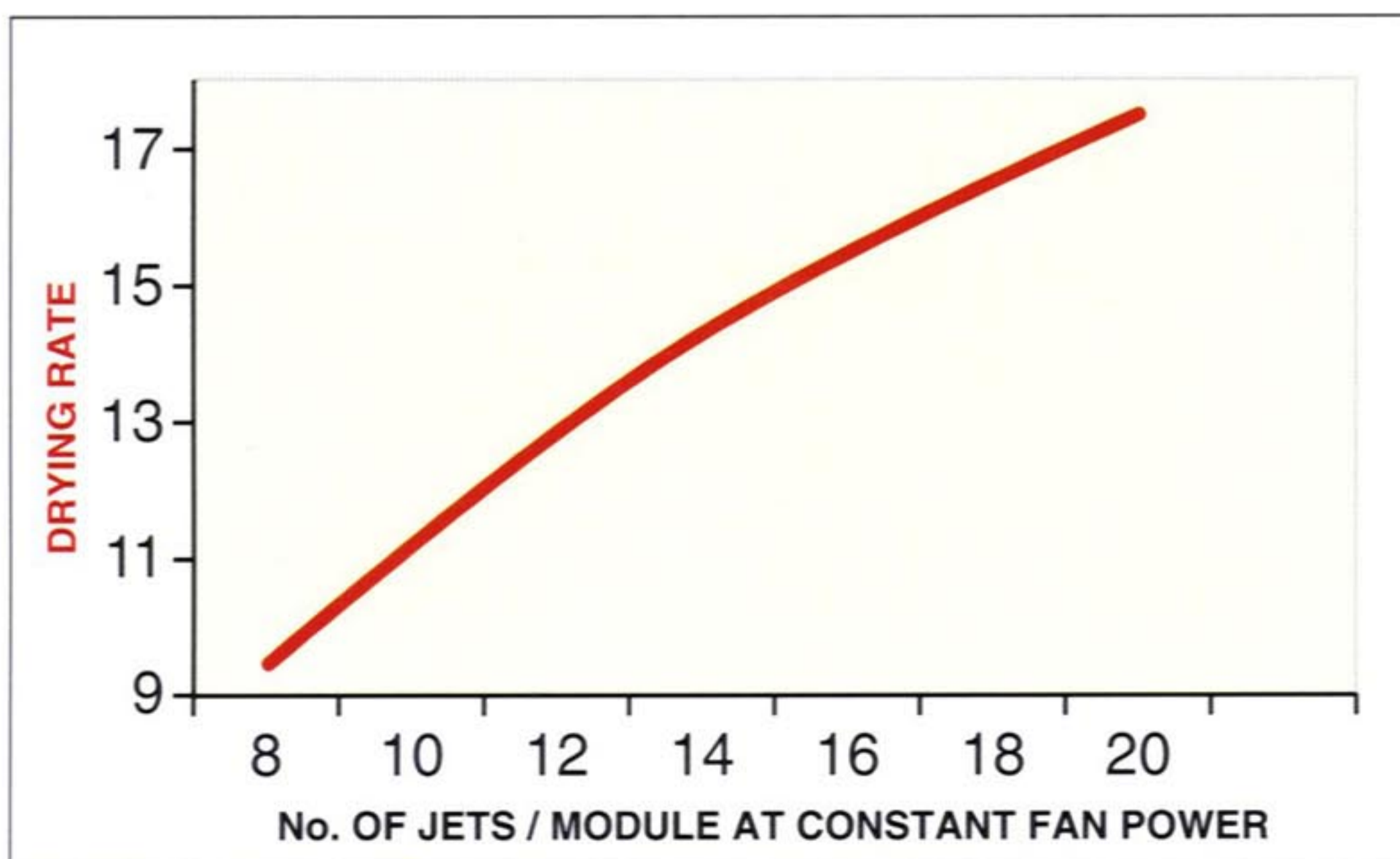
First increments of fan power produces rapid rises in air jet velocity and in corresponding drying rate.

To double the air velocity from that produced by 3kW needs 3 times the power.

The increased drying rate is even lower - 3 times fan power produces only 70% increased drying.



DIMINISHING RETURNS FROM INCREASED FAN POWER DISSIPATION



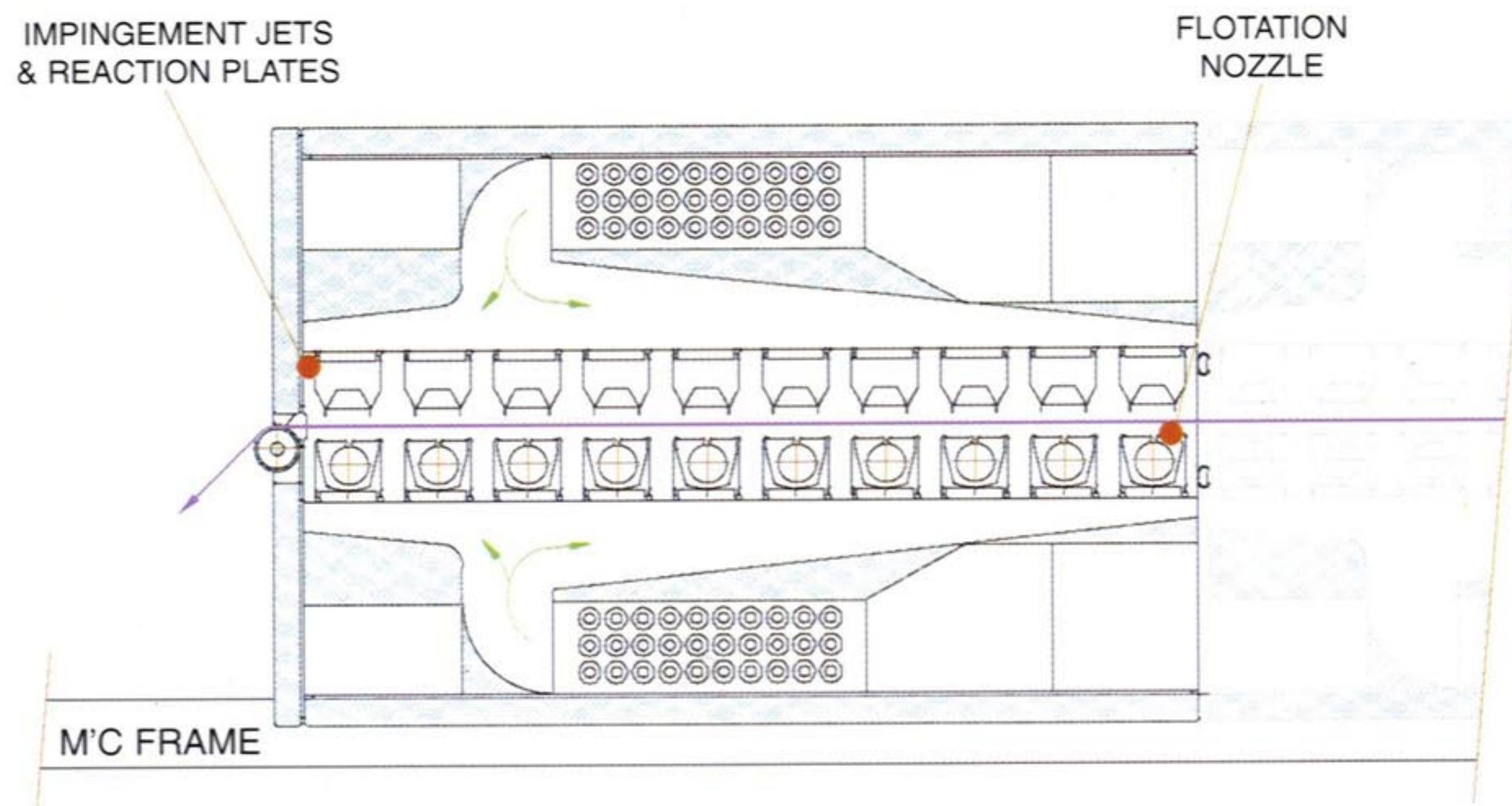
INCREASED RETURNS FROM INCREASED JET COVERAGE

Increasing the number of jets for equal power of fan has an approaching linear relationship to drying rate.

In flotation dryers this is also equivalent to increase of area of web surface exposed to the air jet streams.

By the use of long nozzles on relatively close centres increased heat transfer and drying rate is achieved with minimal power and noise levels.

DELPRO POWERED FLOTATION



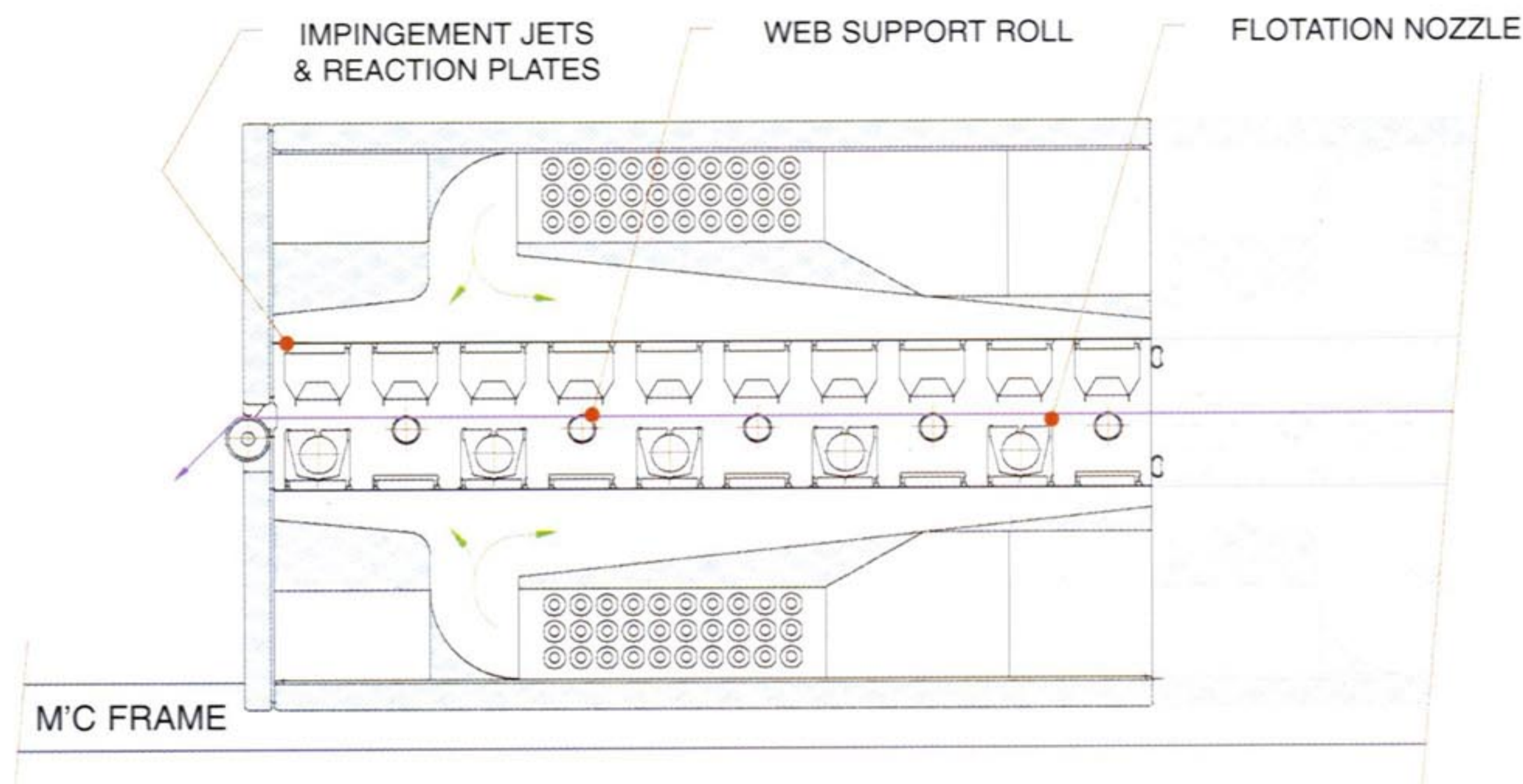
AIR FLOTATION BOTTOM SUPPORT WITH IMPINGEMENT JETS ABOVE

Construction

- TWIN IMPINGEMENT JET NOZZLES interchange with flotation nozzles on equal centres and fixings
- INTER JET REACTION PLATES enhance energy and mass transfers.
- AIR VELOCITY AND TEMPERATURE CONTROLS are unchanged.

Features

- WEB TRANSPORT remains contact-free throughout dryer module.
- GREATEST EFFICIENCY of use of heat and power.



TENDENCY DRIVEN SUPPORT ROLLS WITH FLOTATION NOZZLES

Construction

- TENDENCY DRIVEN ROLLS alternate with flotation nozzles on lower side for additional web support.
- ROLLS PTFE SLEEVED for ease of cleaning and absence of over dried/over cured edges.

Features

- HEAVY GAUGE metal foils even with wavy edge transported scratch-free.
- RETAINS TWO SIDED DRYING with flotation nozzles or impingement jets above.

DELPRO POWERED FLOTATION DRYING SYSTEMS CAN MEET ALL DRYING DEMANDS WITH MAXIMUM EFFICIENCY AND AT LOWEST COST IN CAPITAL, HEAT & POWER AND AT LEAST COST TO THE ENVIRONMENT.

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