



TC TECH OF SWEDEN AB

With 100% replications, submicron resolution and unrivaled quality. The TCP system makes it possible to produce the most advanced patterns in polymer films.

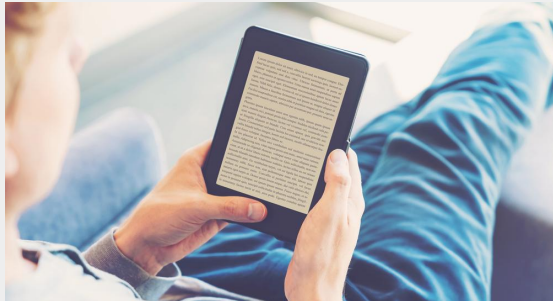
tctech.se

100% REPLICATION OF NANOSTRUCTURES

The method delivers superior results in the form of 100% replication of nanostructures from a stamper pair on both sides of a film, as thin as 0.1 mm.

In addition the unique heating and cooling of the polymer film allows the substrate to remain free from stress, has no yellowing, birefringence nor warpage.

TC TECH technology opens up for the creation and mass production of more advanced patterns than other technologies.



OPTICAL FILMS

With the TC TECH system you can produce high quality patterns for improving performance and appearance of the next generation of products.

Front light films for e-books, fresnell lenses for AR/VR devices and diffusers for mini/micro LED displays are just some of the potential applications.

MICROFLUIDICS AND BIOTECH

TC TECH technology is uniquely suited to improve the precision and quality of thin films used for microfluidic applications.



The TCP 170 RtS*

The TCP 170 is the ideal system to produce advanced double/single sided patterns in polymer films . With a submicron resolution and 100% replication the next generation of patterns can be produced efficiently.

- **Max quality area:** 370 x 235 mm 5"-17", screens with various aspect ratios and multi-cavity.
- **Pattern:** advanced double-sided patterns with alignment, optional taper/wedge
- **Thickness:** down to 0.10 mm
- **Cycle time:** down to 30 seconds depending on application and on thickness, pattern, and material
- **Substrate:** any thermal polymer, but most common are PC or PMMA.
- **Application dimension:** Up to 17"
- **Certification:** CE

Automatic input and output of plastic film. A roll of film substrate, with or without protective film, is placed in the system. Any protective film is automatically removed on both sides and the substrate film is deionized and vacuum cleaned. Film width of up to 450 mm is adapted for a 370 mm wide quality area.



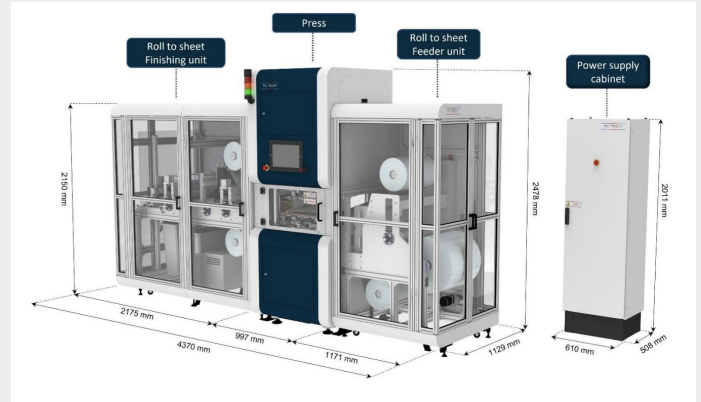
TC TECH technology is based on a unique induction heating process, where only the stamper is heated. The press and tool solution include several patented innovations that deliver full pressure uniformity to achieve 100% replication.

By leveraging years of experience in materials research, the TCP 170 provides the necessary freedom through a simplified design for volume production". TCP 170 will offer excellent precision and reproducibility for a wide spectrum of applications to industry and academia.

*stand alone unit or ready for integration are available as options.

PRODUCT SPECIFICATION TCP 170

Dimensions TCP 170	
Roll to Sheet and press	
Total Footprint	4370 x 1129 mm
Press Height	2478 mm
Roll to sheet height	2150 mm
Total Weight	3650 kg (Excluding fluids)
Power supply cabinet	
Footprint	610 x 508 mm
Height	2011 mm
Weight	165 kg (Excluding fluids)



Embossing tool	Stamper size	Embossing area (QA)	Recommended plastic width
T6	404 x 260	350 x 210	440 mm
T10	424 x 285	370 x 235	470 mm

Press	
Stand-alone compatible	Yes
Max force	750 kN
Max opening	2150 mm
Hydrostatic pressure distribution	6 MPa (typical)
Alignment control	Automatic

Electrical	
Rated voltage	400 VAC, 3-phase
Rated current	125 A fuse
Rated frequency	50/60 Hz
Heating power	2 x 35 kW
Average power consumption	7-8 kW (typical)

Roll to Sheet	
Plastic feed roll	ID 3" or 6"
Plastic roll width	Max 500 mm
Sheet cut	Automatic and adjustable

PRODUCT SPECIFICATION TCP 170

Cooling water *Provided by customer*

Temperature	15-20°C (No condensation on tool allowed)
Connection Press	1" hose connection x 4
Water flow Press	>60 l/min
Connection Power supply cabinet	3/4" hose connection x 2
Water flow Power supply cabinet	>5 l/min
Closed system	Inhibitor must be used to prevent corrosion e.g. Fernox FC1

Compressed air *Provided by customer*

Connection	41" hose connection
Free air delivery	At 7-10 bar: 1000 l/min, dew point below 3°C
ROil free meeting ISO8573-1 Class 3	

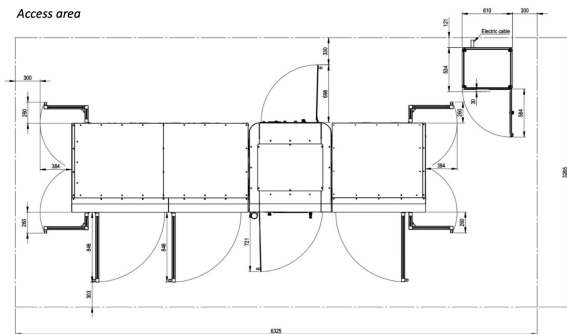
Vacuum *Provided by customer*

Connection	4 x PU12
Final pressure	Below 10 Pa
Vacuum pump	4 x 50 l/min (typical)

Facility *Provided by customer*

Clean room	Equal or better than ISO 6
Floor capability	Supporting 2000 kg/m2
Ceiling height	Minimum 2,7 m
Access area	6,3 x 3,3 m
Temperature	22-25°C
Humidity	No condensation on tool allowed (typical 40-50%)

Access area



MADE IN SWEDEN

TC TECH's systems are used for the production of optical films, such as diffusers for mini-LED, as well as biomedical products such as microfluidics. The technology is also well suited for other application areas and materials.

TC TECH's method allows the production of advanced films down to a thickness of 0.10 mm with 100% replication of nanostructures at high production speed, with minimal environmental impact.

TC TECH's registered office and headquarters is located in Stockholm, Sweden, where R&D also is conducted.

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TC TECH

HERMAL CYCLIC TECHNOLOGIES
OF SWEDEN