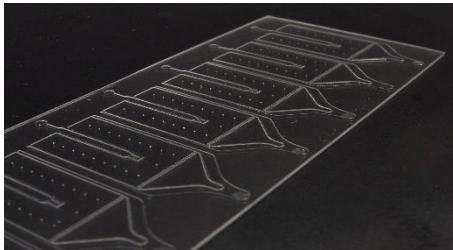


Hot Embossing Machine

The SIMTech Microfluidics Foundry (SMF) has developed a hot embossing unit which can be used to perform hot embossing of micro-structures on polymer chips. This machine is the best method for prototyping usage & low volume production as compared to conventional injection moulding. Its product quality is comparable to parts produced by an injection machine, but the running costs are significantly lower.



Microfluidic polymer chip produced by hot embossing process.

The SMF hot embossing unit consist of an automatic hydraulic press, hot embossing tool, chill water unit and a de-molding unit. Pre-cut polymer blank chip, prepared by laser or milling machine is used for hot embossing. SMF offers blank chip supply, fabrication services of customize hot embossing tool and hot embossing nickel mold.



Hot
Embossing
Press



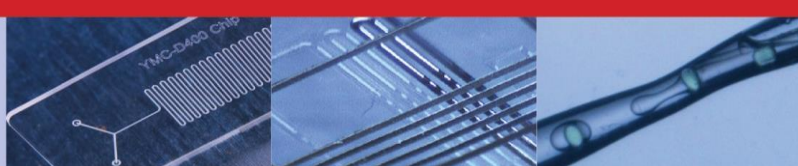
Water Chiller



Hot
Embossing
Tool



De-molding Unit



General Specifications

Hardware	
Hot embossing press: 1. Dimension 2. Weight 3. Max. clamp force 4. Platen size 5. Daylight opening 6. Voltage supply	1270 mm (W) x 743 mm (D) x 1168 mm (H) 545 Kg 15 Tons 300 mm x 300mm AC 230 volts, 28 AMPS, Single phase
Water chiller: 1. Operating temperature 2. Tank capacity 3. Voltage supply	20°C 20 liters AC 400 volts, 5.6 AMPS, 3 phase
Hot embossing tool: 1. Dimension 2. Embossing chip size	220 mm (W) x 145 mm (D) x 135 mm (H) Not larger than 75 mm x 50mm x 4mm
De-molding unit: 1. Dimension 2. Voltage supply 3. Compress air supply	250 mm (W) x 350 mm (D) x 300 mm (H) AC 230 volts, single phase ~ 80 PSI
Process Parameters	
Processing segments per cycle	20
Max. force	13,608 Kg
Max. temperature	650°C
Max. dwell time per segment	9 hours
Polymer chip thickness	0.8mm – 4mm

Contact Us

SIMTech Microfluidics Foundry
 2 Fusionpolis Way, #08-04, Innovis,
 Singapore 138634
 Tel: +65 6501 1800 | Fax: +65 6250 3659
 Email: smf@SIMTech.a-star.edu.sg
 Website: <http://www.SIMTech.a-star.edu.sg>