

## STRESS-FREE CLAMPING

The ice cube tray solidly stuck in the freezer or frost sticking to the windshields on winter mornings, are examples of the strong adhesive power of ice. This excellent adhesive<sup>1</sup> can link practically any material, whether rigid (metal, plastic, ceramic, graphite...) or flexible (rubber, neoprene, cloth...). It has the additional advantage, when it melts, of being reversible and leaving no residues.

Using these properties we have designed and developed a highly effective clamping system: **GF series icing plates**.

No more costly, specific assemblies. No more distortion and breakage due to clamping or unclamping... Whatever their shape, fragile parts are held firmly in place and without stress!



Plate cooling is achieved by means of a compressed-air heat exchanger<sup>2</sup>. On some of our plates, the assembly is driven by a pneumatic control system<sup>2</sup>. By utilizing the thermal inertia of the icing plate, this control system also saves compressed air. For long machining cycles the air consumption time is half the operating time.

Originally designed to meet the exacting demands in the space industry, the icing plates have since become a necessity in all fields involving the manufacture of delicate parts (medical, electronics, watchmaking, jewelry...).

## DATA SHEET :

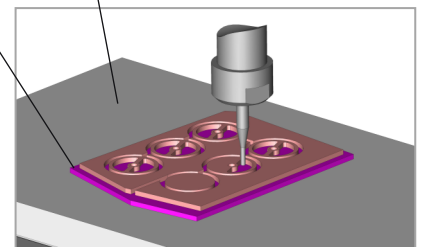
Compact and monobloc, the **GF-250-M** icing plates are very quickly implemented:



Connect the device to the compressed air network<sup>3</sup>, spray water on the freezer plate and set down the workpiece. Then actuate the dispenser lever in the gel position . In a few seconds the water freezes and the part is clamped. Unclamping, just as fast, is carried out by tilting the lever to thaw .

### Non-removable freezing

### Martyr plate



By using a martyr plate between the workpiece and the freezing plate, a sandwich bonded by ice is obtained. The milling tool emerging in full material, the milling of the part can then be carried out without parasitic vibrations or chipping of the profile.

As there is no water thickness under the part, Z-axis repeatability depends only on the referential.

Because the plate evacuates the calories generated by machining, standard lubrication is no longer necessary. Freezing increases the rigidity of a number of materials (plastics, raw ceramics, neoprene,...) thus improving surface condition.

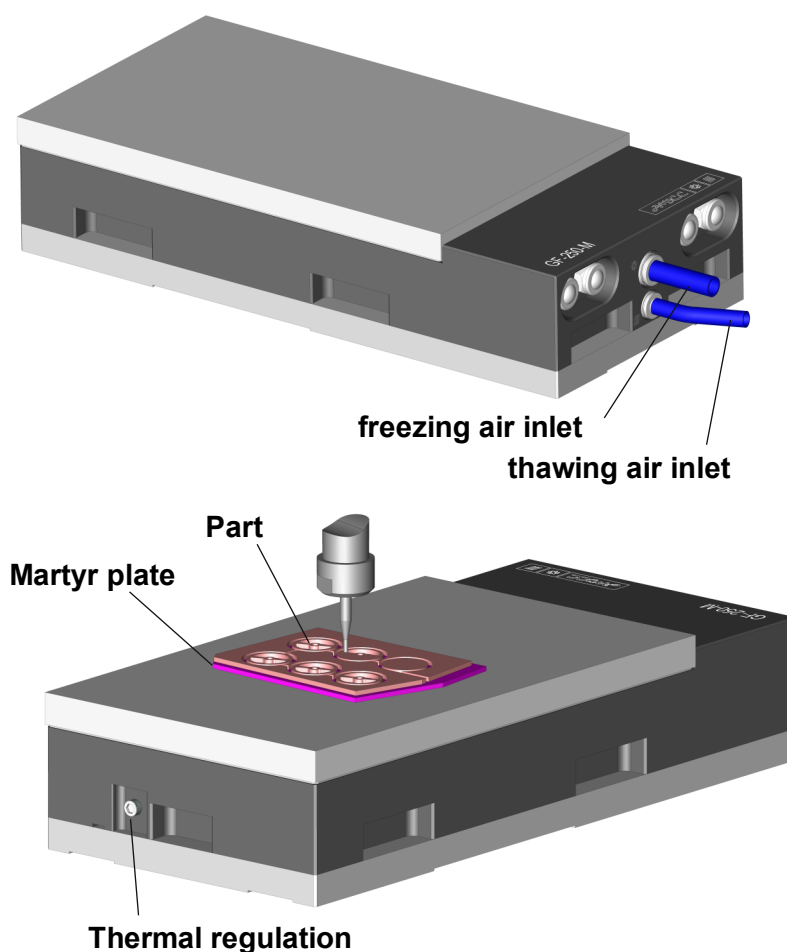
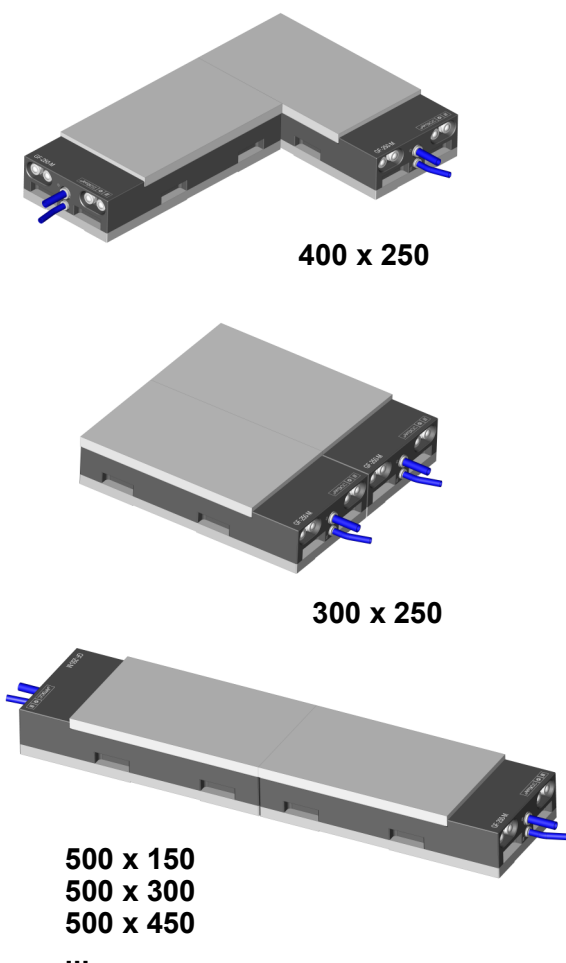
<sup>(1)</sup> Tensile strength : ice = **214 lbs./sq. in.** (15 kg/cm<sup>2</sup>)

magnetization = 170 lbs./sq. in. (12 kg/cm<sup>2</sup>) , for vacuum = 14 lbs./sq. in. (1 kg/cm<sup>2</sup>)

<sup>(2)</sup> Patented systems

<sup>(3)</sup> Clean, dry compressed air (3.2.2. per AFNOR E 51.301)

**GF-250** plates are used in milling, grinding and diamond dressing operations. They are equipped with fixed freezing plates and they can join together to form continuous surfaces



Our **GF-250-M** plates are supplied with carrying case, filter, wetting agent, airblast sprayer and pipette.

Operation with dry, clean compressed air :  
3.2.2. suivant AFNOR E 51.301

## GF-250-M options :

- **GF-250-R T°** : Thermal regulation. Compressed air savings of up to 2/3 of the machining time.
- **GF-PM-250** : 2 steel shims for securing on grinder magnetic plate.
- **GFS-250** : Additional silent

référence	clamping	overall dimensions	instant
<b>GF-250-M</b>	9.84 x 5.90 inch	12.52 x 5.92 x 2.71 inch (318 x 150.5 x 69 mm)	29.17 CFM (49.3 m <sup>3</sup> /h)

Dimensions in mm :

