innovatiQ

MEMBER OF THE ARBURG FAMILY

# TiQ 2

## THE MULTITOOL IN THE COMPACT CLASS FOR INDUSTRIAL 3D PRINTERS

## VERSATILE - BEST FOR FIBER-REINFORCED MATERIALS!


3D-PRINTER MADE IN GERMANY: WWW.INNOVATIQ.COM

# EXTENSIVE STANDARD EQUIPMENT.

**The TiQ 2 is equipped with all the important functions for successful additive manufactoring of functional parts.**

Material selection samples - operating lever with inserted screw thread

PA CF – Polyamide

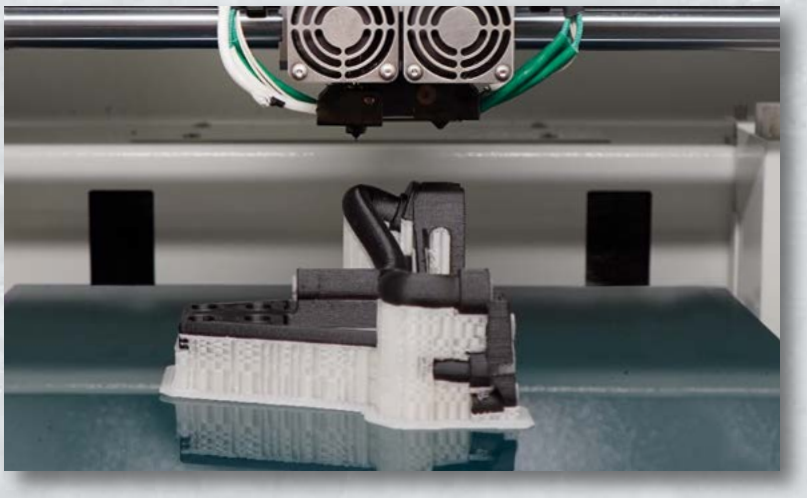
TPU – Thermoplastic polyurethane

PP GF – Polypropylene

PET – Polyethylene terephthalate

**Standard features include:**

- Manufacturing integrated SmartFunctions
- QuadDrive dual printhead up to 300 °C for hard and soft materials up to 95 A
- MonoLift extruder for collision-free operation
- Proprietary nozzle technology for long-term prints with abrasive material
- Automatic mesh bed leveling and nozzle calibration
- Slicer-Software included



## EOAT AS WELL AS JIGS & FIXTURES.

EOAT vacuum gripper made of fiber-reinforced material (iQNylon CF 15).

Unique geometries for End of ArmTools (EOAT) and a variety of new functions for in-house production of jigs and fixtures can now be realized quickly and cost-effectively. **This makes you flexible and independent!**

The new TiQ 2 with its large print volume opens up completely new application possibilities for the in-house production of grippers, for your automation or for your robotics.

## FOCUS ON RELIABILITY.

**At innovatiQ, we give process reliability the highest priority.**

Process reliability is one of the most important factors in manufacturing. Production machines with long-running manufacturing orders must deliver a predictable result. All those involved in production are counting on these results.
At innovatiQ, we recognize the great importance to this requirement.
Special solutions, such as SmartSpeed, have been developed by innovatiQ to increase reliability during 3D printing. You can rely on that!

## EFFICIENT SERVICE CONCEPT.

**We are here for you.** With our service we promise to help you quickly. Whether remote diagnosis for troubleshooting or service checklists for your maintenance Team. Our scope of services is tailored to your needs.

If your machine breaks down, we offer a quick solution with our service program. This minimizes downtime in your production.

## HIGHLIGHT FEATURES TiQ 2.


Drive technology - closed loop - **for continuous operation**

Dual iQ extruder with nozzle technology out of **Tungsten Copper**

Machine housing according to **Industrial Standard**

Powerful and **vibration dampened** industrial motors

Intelligent 2-fold **Filament feed** and **Storage** with vision panel
Optional:
Material dry keeping unit

Intuitive GestiQ-Pro **CNC control** with Smart Functions

**Build chamber** for components up to 330 x 330 x 300 mm with solid **Glass Door**

**Passive Build chamber** temperature control for stable & homogeneous printing environment

## INTUITIVE CONTROL & OPERATING CONCEPT.

The intuitive GestiQ-Pro CNC control simplifies the daily use of the industrial printer. All relevant functions of the TiQ 2 can be operated via a 7-inch touch display.
The clear menu navigation shows you all applications at a glance and helps you step by step with program execution. Stay informed about the current status of the printing process at all times.


## THE SPECIALIST FOR FIBER-REINFORCED MATERIALS.

The TiQ 2 was developed to produce robust and durable components in 3D printing, preferably from fiber-reinforced filaments. Carbon or glass fibers improve the strength in 3D printing, especially for thin-walled components or ribs.
However, the fibers are abrasive and quickly wear out the printing technology. The DualExtruder in the TiQ 2 has been specially developed by innovatiQ for such printing tasks with long printing times. It is also equally suitable for soft materials up to Shore 95 A. You have the choice.
**You have the choice.**

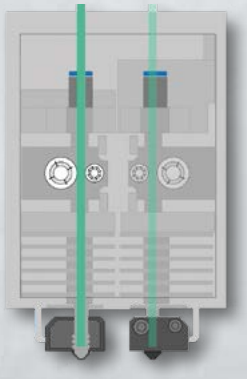
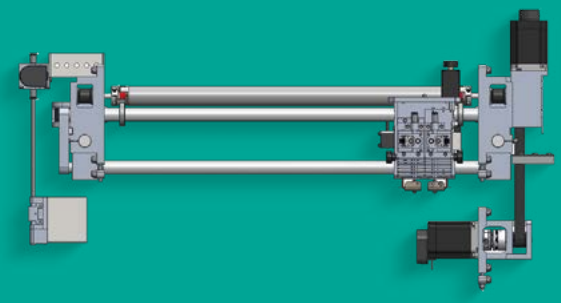


Illustration
Printhead TiQ 2

## HIGH END ENGINEERING.



The TiQ 2 sets new standards in durability and mechanical engineering.
Its extruder technology is made of specially manufactured tungsten-copper components. Precise linear rails and powerful motors ensure high repeatability over the entire operating life. Embedded in a solid machine frame and equipped with a CNC control, the TiQ 2 meets all the requirements you would expect from a production machine - **Made in Germany!**

# OPTIMAL PERFORMANCE THROUGH SMARTFUNCTIONS OF THE TiQ 2.

The SmartFunctions integrated in the printer support the TiQ 2 throughout the entire printing process. They operate as programmed sequences that link various functional steps together and thus contribute to effective use.


## MAXI-OPTI-PRINCIPLE.

**SmartSpeed** is the unique adaptive adjustment of the printing speed without compromising the quality of the printed result. Smart Speed automatically adjusts the print speed (Vmax) depending on how optimal the extrusion is. This is done by an algorithm which processes the previously collected data of the filament feeder and the extrusion in the print head. The printing process can thus be dynamically controlled. The result of the MaxiOpti principle: maximum printing speed with optimal feeding

## REDUCED SETUP TIME.

**SmartStart** enables meshbed leveling utilizing a laser measurement system. Additionally nozzle leveling is as easy as pushing a button. The best combination for a quick setup time and reliable 3D printing.

## PROCESS-SAFE MATERIAL FEEDING.

**SmartTrack** measures the filament feedrate with the help of sensors. The material demand is continually tracked and the feedrate data is sent to the controller.

## PROGRAMMABLE PAUSE.

**SmartInsert** puts the TiQ 2 into a programmed pause mode after a defined layer height. This allows fasteners to be added to the part. The TiQ 2 waits and, for example, a threaded nut can be inserted into the 3D component. After the insertion, the TiQ 2 completes the print job.

## THE „EVERYTHING IN SIGHT“ OPTION.

**SmartMonitoring** is used at the workstation to keep track of all your innovatiQ printing systems. All operating states are recorded and reported to the monitoring workstation in real time.


## INVISIBLE CHANGE OF MATERIAL.

**SmartChange** plans the material change within an infill structure and which avoids any surface blemishes. The result is high-quality, consistent surfaces.

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## OVERVIEW TECHNICAL DATA.

| | |
|---|---|
| Print Space (X/Y/Z): | 330 x 330 x 300 mm |
| HMI/CNC-Controller: | GestiQPro with 7 ZollTouchDisplay, closed loop |
| Printing Speed*: | 10 – 250 mm/s |
| Travel speed *: | 10 – 300 mm/s |
| Positioning accuracy (X/Y): | +/- 0,02 mm |
| Layer thickness *: | 0,1 – 0,6 mm, depending on nozzle |
| Filament-Diameter: | 1,75 mm |
| Material: | Open Material Platform |
| Standard Nozzle: | 0,40 mm, optional: 0,25 / 0,60 / 0,80 mm |
| Extruder: | QuadDrive with MonoLift |
| Temperature Extruder: | up to 300°C |
| Temperatur Printbed: | 140 °C |
| Nozzle calibration: | yes |
| Mesh-Bed-Leveling: | yes, automatically |
| Data exchange: | Stand-alone printing or network enabled |
| Slicer-Software: | included |
| Power consumption (max.): | 1,2 kW, ca. 30 % in continuous operation |
| Electrical Connection: | 230 V, 6 A (EU); 110 V, 10 A (US) |
| Status lamp: | integrated light bar with message status |
| Dimensions (W/H/D): | 920 x 689 x 908 mm |
| Weight: | ca. 165 kg |
| Technology: | FFF (Fused Filament Fabrication) |
| Optional: | Material Dry Keeping Unit, OPCUA, SmartMonitoringSystem, Build Chamber Camera, High Temperature Extruder Package (for printing with PPS CF up to 350° C) |


The TiQ 2 is a 3D printer developed for individual or customized mass production. The integrated operating software commands (SmartFunctions) contribute to effective and easy handling. This makes the TiQ 2 your reliable production companion.

* Deviations depending on Geometry/Material/Process