



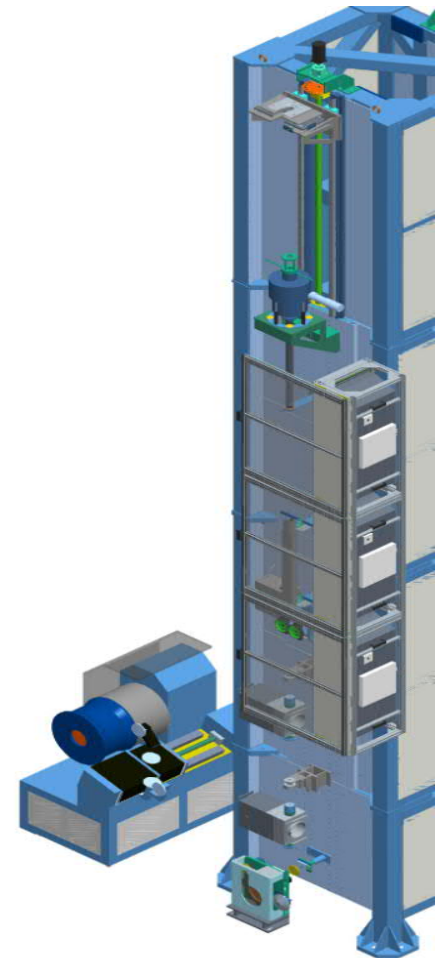
BIMESPRO & PLASIL Special Purpose Optical Fiber Draw Towers

Introduction

FDT special purpose draw tower are custom developed systems, supplied to known customers, for fabrication of specific optical fiber products. FDT towers are supplied to companies working in industrial sensing, geothermal, oil, biomedical, aerospace, and high-power laser areas. FDT special optical fiber draw tower designs provide the required functionality, combined with high-grade components and instruments and advanced OptiFACT control system, for optimized and repeatable drawing process.

Applications

FDT draw towers are used in drawing of optical fibers form with special coatings, geometry, or other physical and optical characteristics. Some of such fiber types are:



- Modified refractive index fibers with standard and special coatings
- Fibers with changed geometry (non-circular)
- Holey and photonic crystal fibers
- Polarization maintaining fibers
- Low birefringence fibers
- Core rod fibers for microstructured fibers, silica glass capillaries
- Active fibers with standard and low refractive index coatings
- Photosensitive fibers for Bragg grating applications
- Harsh environment and hermetic coating fibers (metal, polyimide, hard clad, silicone, ...)

Each FDT draw tower design can be adapted to one or several specific products or customer's fiber fabrication technologies.

FDT Description

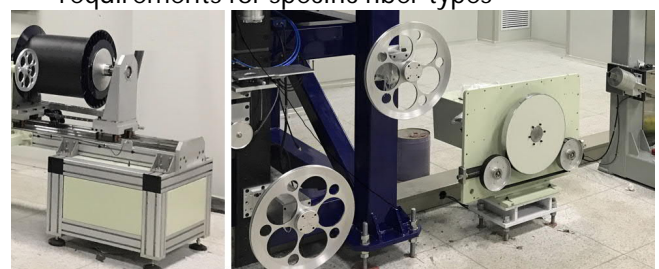
FDT draw towers are installed on low to medium height (from 4 to 15 meters) frames. Like all draw towers, they are assembled from OEM components and measurement instruments, in-house developed devices, and advanced control system that connects all devices together and provides process controls. Main tower components are:

- Preform feed with X-Y position control
- Draw furnaces (different sizes and constructions)
- Bare and coated fiber diameter gauges
- Fiber cooling tubes
- Auxiliary capstan or caterpillar
- Coating application systems with coating curing devices
- Main capstan and fiber take-up unit
- Electrical cabinets, power supplies, and OptiFACT control system.

FDT Options

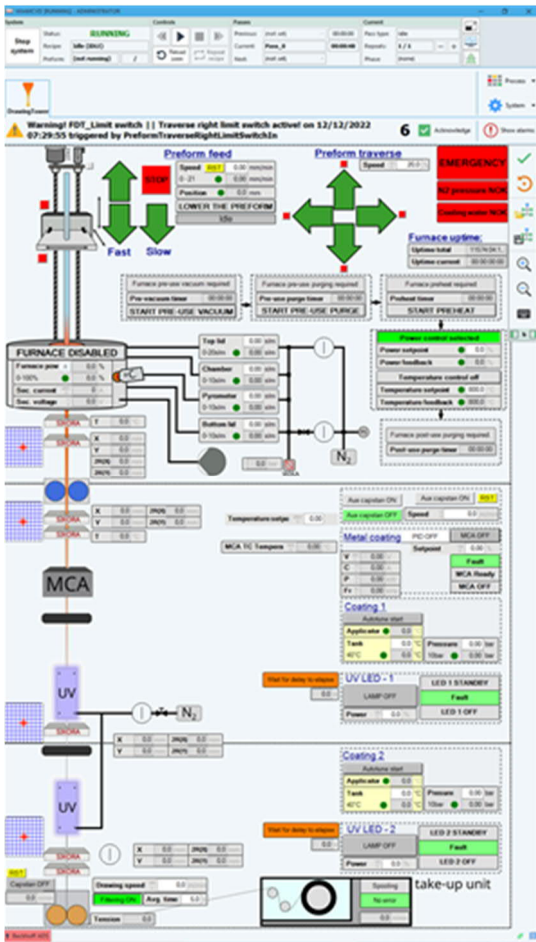
A number of specially constructed devices and units can be added to the basic draw tower structure:

- Preform pressure and/or spinning control units
- Hermetic and thermally cured coating application systems and curing devices
- Fiber cooling tubes
- Other devices and systems based on customer's requirements for specific fiber types



FDT OptiFACT Control System

Bimes pro d.o.o., Podsmreka 3d, 1356 Dobrova

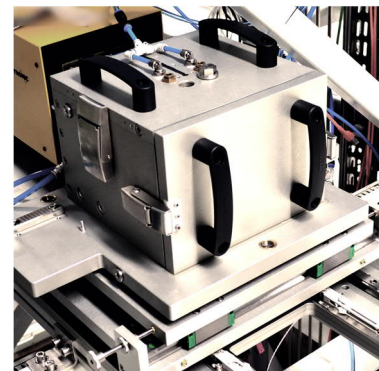


OptiFACT control system has been developed for control of special fiber draw towers and to offer complete control of draw process, as an adaptable and expandable system with intuitive GUI interface, fast operation, reliable PLC components by Beckhoff Automation, seamless Windows 10/11 integration, with high speed I/O devices and peripheral equipment interfaces based on EtherCAT or other digital interfaces.

Control software has a built-in recipe system, which can automatically execute fiber draw procedures, including draw start and stop operations with minimal manual control operations required. Recipe system guarantees repeatable and precise process control for optimum fiber quality. FDT can also be operated in fully manual mode, over the touch screen monitors, installed on different levels of draw tower platforms, to monitor and operate specific draw tower devices (i.e. draw furnace, coating application systems, winding, etc.).

Furthermore, OptiFACT control systems allow customers to add devices and functions to the software and the GUI interface, providing

flexibility and the possibility to upgrade and modify the FDT draw tower to new technology or product portfolio with minimal cost and down time.



FDT services

FDT draw tower design and construction details based on customer's requirements and needs. During ordering process, documentation is provided with equipment design parameters, assembly drawings, proposed GUI interface design, and most importantly, infrastructure and ancillary service requirements.

For newcomer fiber makers, support is provided for tower installation and assembly, including basic theoretical and practical training. Bimes and Plasil can offer process support and know-how transfer for selected optical fiber products and fabrication processes.

Servicing and support are provided from supplier's headquarters in Slovenia, where a service desk and software support are offered. Due to design of the OptiFACT control system, many preventive or corrective maintenance actions can be conducted over on-line services, reducing customer's down time and maintenance cost. Programmer's services are also available if changes to control system software or GUI interface are required.

For more information and quotes please write to sales@bimespro.com or info@bimespro.com