Clamping Module

Overview

Clamping module with locking function | AMF Online ShopMechanical zero point clamping system with detent function for set-up-time-optimised clamping during.

Key Takeaways

Clamping modules are compact, versatile actuators designed for precise and reliable workpiece clamping in industrial applications.

Overview

Clamping modules are specialized actuators, often extremely flat diaphragm or short-stroke modules, designed to securely hold workpieces in place during machining or assembly operations. They are particularly useful in narrow gaps or challenging environments where conventional clamp cylinders may not fit or perform effectively. These modules can provide clamping forces up to 1640 N, ensuring robust performance even under demanding conditions.

Types and Designs

Round Clamping Modules: Provide uniform clamping pressure over a surface, ideal for applications requiring even force distribution. Elongated Clamping Modules: Designed for linear clamping along a specific axis, suitable for tasks requiring directional force. Base and Stacking Modules: Used in modular systems like SCHUNK WDM-5X, allowing adjustable clamping pillar heights and flexible configurations for different workpiece sizes.

Threaded or Pneumatic Modules: Such as Jergens ZPS K5, which offer mechanical locking and low installation height, suitable for high-precision machining and vibration-prone operations.

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Mounting and Operation

Clamping modules can be mounted on T-slot tables, grid plates, or base plates, either via screw connections or vacuum suction systems. Some modules are hermetically sealed, making them suitable for dusty or harsh environments, maintaining performance and longevity. Pneumatic or hydraulic actuation is common, with some modules mechanically locking in the clamped position to prevent vibration or accidental release.

Advantages

High precision and repeatability: Some systems achieve clamping accuracy within a few hundredths of a millimeter. Quick setup and changeover: Modular designs allow fast replacement or adjustment of clamping modules, reducing downtime. Versatility: Suitable for a wide range of industrial applications, including machining, assembly, and automated production lines.

Adaptability: Can compensate for uneven surfaces or dimensional deviations, ensuring secure holding of irregular workpieces.

Applications

Clamping modules are widely used in CNC machining, milling, drilling, and automated assembly, as well as in food, pharmaceutical, and chemical industries where hygiene and oil-free operation are critical. Their compact design and modularity make them ideal for customized workholding solutions in both small and large-scale production environments. By selecting the appropriate module type, clamping force, and mounting method, users can optimize precision, efficiency, and reliability in their clamping tasks.

Article Content

Clamping module with locking function | AMF Online Shop

Mechanical zero point clamping system with detent function for set-up-time-optimised clamping during non-cutting machining. Very suitable for clamping

Installation clamping module | AMF Online Shop

Zero-point clamping system for set-up-time-optimised clamping during cutting and non-cutting machining. The installation clamping module has high holding, pull-in and locking forces. This is

Mechanical Clamping Systems | DATRON AG

DATRON mechanical clamping devices offer precision and flexibility for a broad range of applications in CNC machining. Positively secure your work piece, with

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Buy Clamping modules online | Festo USA

Clamping modules Clamping modules are extremely flat diaphragm actuators with short strokes for clamping tasks. Considering these extraordinary properties, there are many possibilities for clamping

Clamping modules | Base and stacking modules | SCHUNK

Clamping modules as a basis for the different clamping pillars in the modular system for direct workpiece clamping WDM-5X. These are available as basic and stacking modules.

Modular Workholding & Clamping Systems

High-precision modular workholding and clamping systems for CNC machining. Discover our centering vices, clamping jaws, and zero-point systems – Swissmade.

Mechanical Zero Point

Quick locating and clamping reduce fixture set up time by eliminating operations such as positioning, centering and fixing with screws. This mechanical zero point

Buy AMF Mechanical clamping module

The mechanical surface-mounted clamping module with 90° indexing slots has high retention, pull-in and locking forces. The clamping module can be positioned on the machine table using the clamping rim

Clamping module

Low maintenance Clamping modules are hermetically sealed, eliminating maintenance and increasing machine availability.

Integrated clamping modules

AMF 6172LA-10 clamping module with flange KP10.3, flange version 1 Piece Add to basket

Intermediate clamp for PV module mounting, free-standing system

Connection clamp for fastening photovoltaic modules on support profiles of free-standing systems. Lockable pre-fastening of the module frames on the support profile. Suitable for slot width 10 mm.

Innoclamp

INNOCLICKER - Clamp all workpieces from your production automatically and flexibly with our modular clamping system.

5-axis module clamping system 80

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The 5-axis module system can be mounted on T slot tables, grid systems or directly to machine tables. Moreover, the basic modules can be adapted to most common zero-point clamping systems.

Electromechanical Clamping Systems

Electromechanical Clamping Systems Process stability through communication By implementing a sensor system for data acquisition and transmission, the electromechanical clamping devices from

Modular Clamping Technology

HEINRICH KIPP WERK is your reliable partner when it comes to clamping Technology, standard elements and operating parts.

ZPS Clamping Modules with Sensors

ZPS Clamping Modules with Sensors have (2) inductive sensors (Connection Type: Plug S8, Cable Length: 150mm) for the status check (opened/locked). This is opened pneumatically and locked

Module Clamps for Secure Solar Mounting | Schletter Group

Mounting unframed or thin-film modules requires care and precision, and our laminate clamps are engineered to deliver exactly that. Designed for a wide range of laminate types and thicknesses, they

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