

CMT TUBERTINI

srl

SPECIAL
CLAMPING
SOLUTIONS



CLAMPING DEVICES
FOR MACHINE TOOLS

AUTOMATIC QUICK CHANGE CARRIER WITH LOCATORS AND RECOVERING ROTATING ARMS

Suitable for hard turning and grinding of hole and OD of gears



MCR-ST radial and front clamping

The gear is loaded manually or automatically presetted through the prelocators than clamped by the locators. After the arms close down with rotating and axial movement clamping in very rigid way the gear to allow hard machining. Mechanism driving the arms is swivelling to have a correct stirrup effect. Carrier mechanism and stirrup one are driven separately therefore needing a double cylinder. The machine is able to machine with such a sequence the gear hole. When machining the taper gear the carrier is still clamping the workpiece.

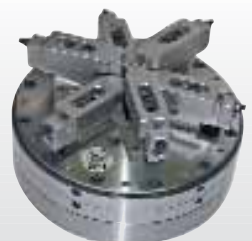
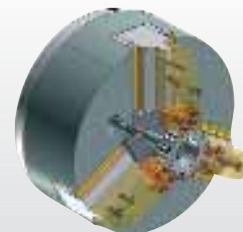
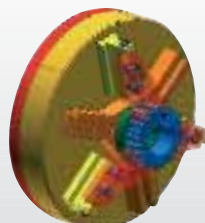
MAIN FEATURES

- » high rigidity during machining
- » repeatability accuracy within 0,01 mm
- » quick change without any further adjustment
- » high centering accuracy on primitive gear diameter
- » high roundness accuracy in hole execution
- » high rotation speed
- » high cutting on hard turning
- » suitable to machine outer taper by means of recovering arms
- » manual or automatic loading
- » gear presence check (PEL)
- » balanced system
- » suitable to work with external dressing wheel holders (for grinding)



MCR - radial clamping

The gear is loaded on the carrier, presetted through the prelocators than clamped by means of locators. The mechanism is driven by one only rotary cylinder. With such a sequence the machine can machine the gear hole and taper.

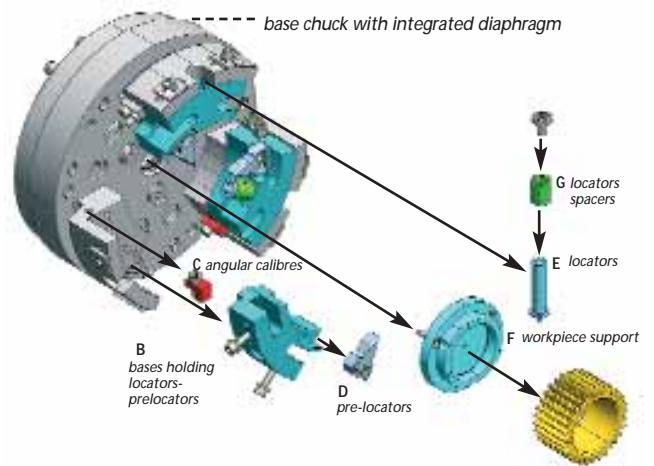


FLEXIBILITY FOR SMALL LOTS WITH AUTOMATIC LOADING

Automatic carrier for gear hole grinding
Modular system for small production lots



M-MOD



BASIC FEATURES

- » absolute modularity by means of angular adjustment of the bases holding locators and prelocators in short time
- » very high repeatability accuracy (within 0,005 mm)
- » loading both manual or automatic
- » predisposition for workpiece presence check
- » predisposition for coolant passage

MAIN FEATURES

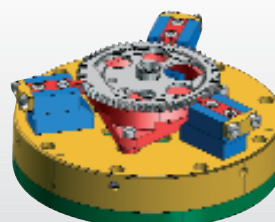
- » high accuracy granting a repeatability lower than 0,005 mm.
The use of presetted angular calibres allows the clamping of a wide range of gears with different teeth No. This always granting a presetting accuracy lower than 0,01 mm.
- » quick change : long adjustment times of gear to find machine centering are eliminated by using angular calibres who bring in position the system automatically.
- » modularity : you can get the desired modularity for clamping different gears with different OD and teeth No just moving the angular bases and replacing locators E and prelocators D locator spacers G and angular calibres C.

How it works

When the system is open (loading) the robot or the operator put the gear to be oriented by the prelocators.
After the gear is supported against its stop. Driving back the mid shaft by means of the rear rotary cylinder, for the elastic return effect of the carrier body you get the gear clamping through the locators.



M-MOD-X



AUTOMATIC DEVICE FOR SMALL SIZE TAPS (M3-M30) DRIVING ON A GRINDING MACHINE ON CENTERS

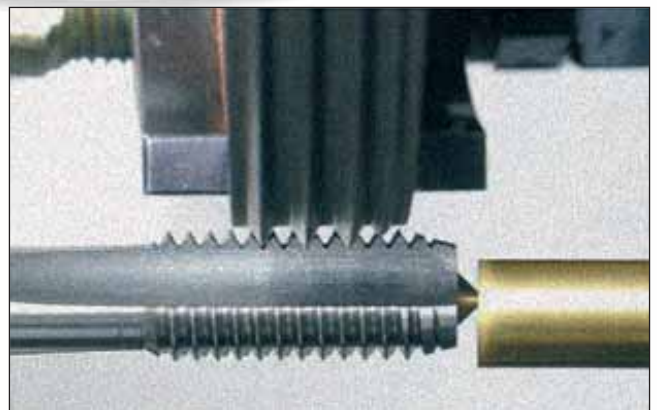


MAIN FEATURES

- » driving by means of clamping without influencing the positioning got by centers
- » quick set-up
- » feeding both pneumatic and hydraulic
- » loading both manual and automatic
- » specific sizing to allow passage of grinding wheels for multidirectional machining
- » centrifugal force balancing
- » protections against dirt

Device in the picture: diameter mm 120 with jaws sizing to allow grinding wheels passage. System realized to clamp a tap range from M3 up to M30, suitable also for bigger size taps.

Device is provided with built-in cylinder for automatic movement of the jaws, feeded by rear distributor.



AUTOMATIC CHUCKS FOR ALLOY WHEELS CLAMPING

Automatic axial bracket chuck for 5 arm wheels
Mechanic antivibrating system



» Automatic carbon fiber bike wheels clamping chuck.



» Automatic chuck for alloy wheels clamping, centering by means of 3 radial jaws, clamping by means of 3 axial arms.



» Automatic long jaw stroke for soft clamping and centrifugal force compensation.



» No distortion automatic radial clamping chuck, centrifugal force compensation.



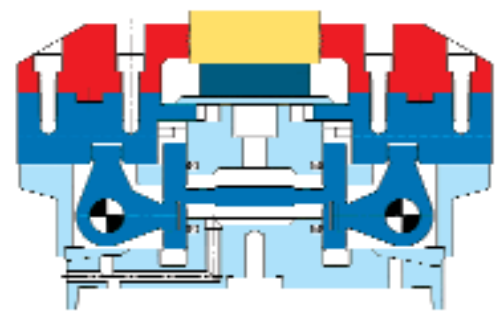
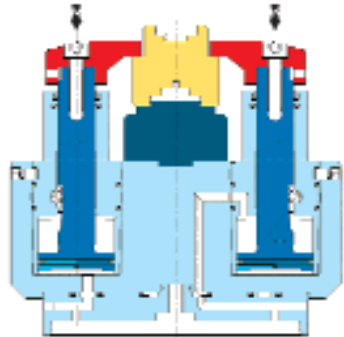
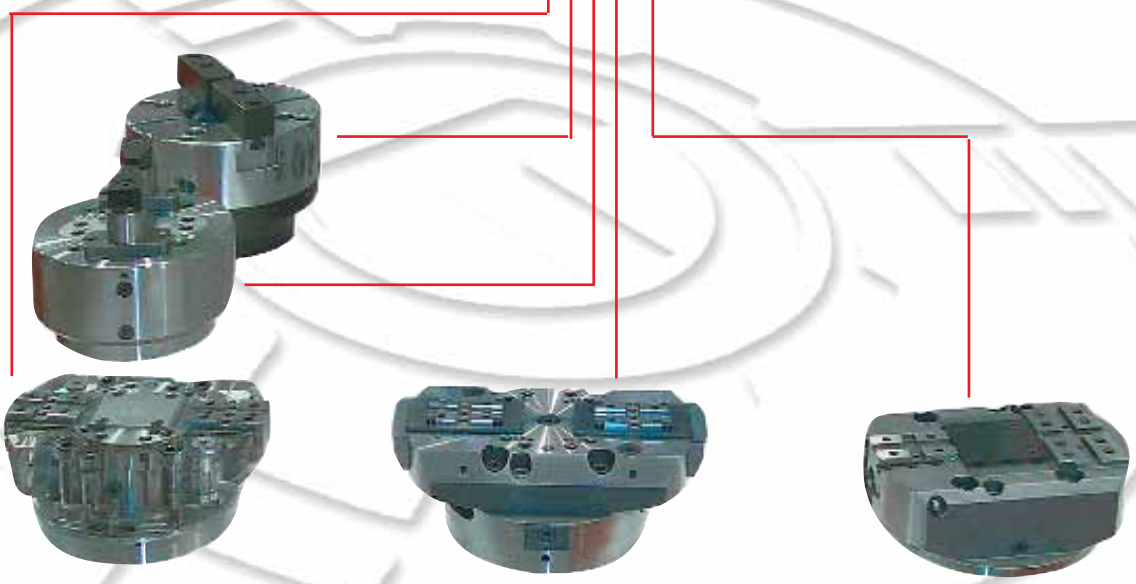
» Automatic axial bracket chuck for 3-5 arm wheels, mechanic antivibrating system.



SOME UPDATES FOR TRANSFER MACHINES



- 1 Two jaws with high precision repeatability self-centering device, accuracy less than 0,005. Hydraulic built-in cylinder, high rotation speed, low impact of centrifugal force on the system, with internal passages for air pressurizing.
- 2 Two long stroke jaws compact self-centering device.
- 3 Two jaws self - centering device, high precision repeatability, high clamping force. Built-in cylinder.
- 4 Device with independent axial and rotating stirrups.
- 5 Long stroke compact self-centering device, technical features similar to no. 2 but water-proof.
- 6 Compact device with 1 fix and 1 moving jaw, with built-in hydraulic cylinder, palletized with jaw quick change.



SPECIAL CENTERING AND STIRRUPING CLAMPING SYSTEM FOR NC TURNING-GRINDING-MILLING MACHINE FOR AUTOMATIC LOADING.

Type CCL-ST

Automatic device allowing the centering of workpiece on hole, by means of long stroke expander (7mm on diameter) and moving stirrups



Chuck description

The system is complete with 2 independent mechanisms.

First one is moving the central expander having stroke mm 7 on diameter, centering the workpiece from the inside.

Second one is linked to a moving plate driving 3 rotating and stirruping shafts. These are clamping the workpiece granting stiffness during machining.

Both systems are driven by a double cylinder. There is a PEL detection system checking the right positioning of the workpiece by the robot.

The change of workpiece type is very fast thanks to quick coupling systems of different components.

MAIN FEATURES

- › Centering clamping on hole and stirrup
- › PEL workpiece detection system
- › Centering tolerance 7 mm on diameter
- › Repeatability accuracy lower than 0,005 mm
- › Quick change centering
- › Quick change stirrups
- › System driven by double cylinder
- › High rotation speed





HISTORICAL OUTLINE

The Company was founded in the late '50s by Mr. Oriano Tubertini. Since 1967, the Company has been dedicating to manufacture workholding devices for machine tool marked CMT. A generation shift took place in the '90s, but the Company keeps on being owned and directed by the members of the family Tubertini.

The present plant extends on a covered area of 4000 m², branching into production department, stock department, test department and offices. An experience of over 40 years, a complete manufacturing range together with a flexible assistance to the customers make CMT a partner extremely competent and technologically innovative.

INNOVATION, EXPERIMENTATION AND PROTOTYPE STUDY

Since its foundation, CMT (member of CAMSER since 1994) has got a leading position as careful partner to assist the customer in designing and manufacturing special devices able to meet any automatic workholding requirements on machine tool. Technologically innovative solutions allowed the Company to become a point of reference for the most demanding domestic and foreign customers, such as users, Original Equipment Manufacturers (OEMs), car and motorcycle manufacturers. A portfolio of over 3000 customers results to be the best reference for CMT on the market.

MANUFACTURING RANGE

- Self-centering hydraulically and pneumatically operated chucks with and without built-in cylinders
- Hydraulic and pneumatic actuating cylinders with and without bar passage
- Hydraulic and pneumatic actuating cylinders with coolant passage
- Self-centering hydraulically and pneumatically power operated stationary chucks
- Rotating platforms with pneumatic actuating built-in cylinder
- Rotating and stationary power collet carrying chucks with and without built-in cylinder
- Special workholding devices with grinding and/or anti-ovaling grip
- Power operated membranes and carriers with and without built-in cylinder
- Compensating, floating stirrup chucks with retractable centre
- Self-centering hydraulically operate devices for transfer lines
- Special chucking systems and special palletized stationary/rotating chucking systems
- Special stirrup clamping systems with long stroke.

QUALITY AND TESTS

The Company is dedicating great resources to develop the test department by checking and measuring instruments specific and suitable to the product. Moreover, the department has a special machine, appropriately studied and realised for a comprehensive testing of workholding devices and cylinders, able to check out revolving speed, gripping force, compensating response to centrifugal force, balancing, draining and hydraulic heat.

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