TRIPET TST 201 CNC TST 300 CNC

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A selection of interesting applications (single chucking only).



TST 201 CNC TST 300 CNC High-Precision Internal Grinding Centres

The Tripet TST CNC high precision internal grinding centre designed to incorporate the latest advances in grinding technology.

- Programmable working, dressing and reversing positions, with detection by rotary transducer.
- Interactive CNC system with screen diagnostics, for programming procedures to ISO, DIN 66025 and VSM 76120 recommendations.
 Five 32 KB microprocessors for axis monitoring and coordination, with possibilities for dedicated programs such as specific set-ups.
 All electronic and electrical control equipment easily accessible in separate cabinet.
 Manual remote control of all machine functions by means of servo handwheel.
 Unlimited subroutines available in standard program.
 All programs fully or partially repeatable as required.

Main features:

- A heavy, ribbed cast-iron base, designed to allow full-length support of all slides over their entire travel.
- All slideways with greased-for-life roller bearings.
- High-precision workspindle bearings for guaranteed form tolerances of less than 0.5 μm.
- 4 kW variable speed wheelspindle motor, with solid-state frequency-convertor.
- High-speed table oscillation, programmable up to 10 m/min. Hydraulic linear amplifier, rollermounted slideways.
- Workpiece infeed for grinding and wheel dressing given by D.C. motors and ballscrews.

Technical data

Grinding diameter range (production) (on request up to diameter 225 mm – 8.9") Grinding length Centre height above table Max. table travel Workhead angular setting Workhead spindle bore diameter Max. weight on spindle nose (on request up to 100 kg – 220 lbs) Workspindle speed range, stepless Workhead fixed speed for setting Wheelspindle speed range Dimensions

Net weight Required power

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TST 201 CNC

3 – 150 mm (.12" – 6")

200 mm (7.9") 162 mm (6.3") 480 mm (18.9") +45° to -30° 40 mm (1.57") approx. 50 kg (110 lbs)

75 – 1300 r.p.m. 75 r.p.m. 8000 – 150 000 r.p.m. 4770 \times 3175 \times 2155 mm (188" \times 125" \times 85") approx. 4000 kg 10 – 15 kW

TST 300 CNC

3-225 mm (.12"-8.86")

200 mm (7.9") 162 mm (6.3") 630 mm (24.8") +45° to -30° 40 mm (1.57") approx. 50 kg (110 lbs)

75 – 1300 r.p.m. 75 r.p.m. 8000 – 150 000 r.p.m. 5210 \times 3200 \times 2155 mm (205" \times 126" \times 84") approx. 5000 kg 10 – 15 kW

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Used on all versions of internal grinders. TST 201 ČNC TST 300 CNC



off machine programming

may be utilized, which includes

- PC with 2 floppy disks
- RS 232 C and keyboard
- Colour monitor
- Graphic printer
- Graphic simulation of program.

Series 2000, CNC Control system, with 3 basic axis

Basic version: point to point

Program

Programming essentially complies with programming require-

The control system controls all machine functions, in particular the three main axes X, Z and U. The X axis and U axis are electric servo control circuits whilst the Z axis is an electrohydraulic servo control circuit. Each servo control circuit has its own microprocessor as a watchdog and for controlling all functions specific to the axes (speed, travel, ramp, limits, etc.).

A host computer is responsible for coordinating the servo control circuits, control of machine functions (ON/OFF) and communication with the control unit. The control unit also has its own microprocessor for controlling the display screen, push-button, lamps and interface for reader/punch.

Extended version:

2 D for the axis: X and Z for grinding, U and Z for dressing Grinding operation



ments of Standard DIN 66025 or VSM 76120. In addition, numerous machine commands, subroutines, travel conditions, etc. are provided specific to the TST.

Axis feed increments

«X» axis: 0,00025 mm, «U» axis: 0,0005 mm, «Z» axis: 0,001 mm RS 232 C (24 V) interface data entry and ouput. Transfer speed: 600 baud, enabling transferred data display.

Diagnosis

The CNC 2000 control system features advanced diagnostics.



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1450 Automatic face grinding attachment, programmable by CNC control system. Longitudinal «W» axis driven by a stepping motor allows automatic grinding and dressing sequence.



Series 1570 peripheral grinding attachments,

on two axes «P» and «R», driven by DC motors. These attachments are mainly used for face and external grinding.



Automatic workhead angular setting 300/500

«B» axis, enables automatic grinding of bores and tapers in one chucking.



1110 3-jaw steady rest

mounted on the workhead slide. Maximum passage diameter: Device No 1: 120 mm (4.72") Device No 2: 250 mm (9.84")

PLM pneumatic clamping unit This type of clamping system is indispensable in order to avoid distortion on thin wall section components.



Electro-magnetic chucks with shoes Capacities: (workpiece exterior diameter) Device 310: diameter 10 to 70 mm (0.39" to 2.76") Device 340: diameter 40 to 230 mm (1.57" to 9")



1800 Borazon wheel dressing device Using a diamond cup wheel for dressing will considerably improve surface conditions when using a Borazon wheel.



1630 Radius dressing device can be programmed to grind several radii in the same work cycle.



1700 Dressing devices for 2 or 3 wheel faces

Subject to modifications.

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TRIPET TST 201 CNC-R TST 300 CNC-R



Turret head configuration

Turret head dimensions are 500×500 mm. Radial guidance of the rotary table is provided by a high-precision ball bearing. Whilst rotating the rotary table is lifted on an air cushion. In the corresponding OFF position the table is automatically positioned and clamped mechanically. Table drive is provided by DC servomotor via toothed belt gearing. The necessary control lines are provided as travelling cables.

The grinding spindles are high frequency spindles with a max. diameter of 120 mm. An electronic 3-phase frequency converter provides the power for the grinding spindles and permits speed selection by the machine control system. The supply cables connecting the grinding spindles are provided overhead to the turret.

Automatic 4 spindle turret fitted to TST models 201 CNC and 300 CNC

The 4-spindle turret head is used (instead of the standard grinding spindle) on the grinding spindle slide for costeffective grinding of problem workpieces involving exceptionally differing diameters, recesses, radii, etc and for most convenient production method as required.

Space requirement and axis strokes





- 1) Workheadstock longitudinal movement
- 2) Swing diameter over workheadstock slide
- ³⁾ Swing diameter over longitudinal table

Subject to modifications.

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Quality control

A remote gauging station fitted to the grinding unit monitors production consistency. Depending upon the system, severals diameters, varying lengths and heigths can be monitored as well as evaluating roundness and cylindricity. Based on measured results, an output signal is transmitted to the grinding machine logic for automatic correction of diameter and lengths.

Type «G» high precision internal grinding cell

zine. A special software enables data on each wheel to be stored with

This grinding cell is equipped with an automatic wheel and arbor changer, a robot for work handling and a postprocess gauging station. The cell specification is arranged to suit specific application requirements and offers maximum flexibility.

2000 Automatic wheel and arbor changer,

with a magazine of 12 or 18 wheels. A separate program enables dressing cycles for initial use of a wheel or successive dressings to be programmed.

Wheel coding is included in the CNC control system, which enables different wheels to be loaded in the magautilisation features, e.g.:

- wheel operating life
- Peripheral speed
- Dressing cycles,

etc.



Subject to modifications.



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