

Press Release

TRAUB TNL 32 (P) Sliding/Fixed Headstock Automatic Lathe

One Turret, Two Drives – Zero Time Loss

TRAUB Drehmaschinen GmbH & Co. KG, based in Reichenbach, Germany, announces the addition of a larger model to its extremely successful Sliding/Fixed Headstock Series TNL18 and unveiled it at the EMO Hannover 2011 trade show. The new member of the family is called TNL32P or TNL32 and comes with a multitude of innovative features that will set new standards on the market for sliding/fixed headstock machining, including an even larger work space, ten-station turrets, higher performance data and, as its highlight, the so-called “dual drive” – a turret, with two integrated drivetrains that considerably reduces secondary processing times.



TRAUB engineers kept the basic conceptual design, they only enlarged the dimensions, extended the performance data, and piled on new machining features. The new TNL32 sliding/fixed headstock automatic lathe is based on the reliable features of the TNL18 family and, with a maximum bar clearance of 32 mm, has driven the series, already extremely well received on the market, up to the next level.

Simple change-over between fixed and sliding headstock turning

It takes just a few steps to convert the lathe with sliding headstock to fixed headstock turning mode and vice versa. The extremely long Z-travel of the headstock ensures proper positioning of the main spindle, either for sliding headstock turning or fixed headstock turning.



Generous work area with innovative inner values

The most noticeable feature of the new development is the considerably enlarged, generous, and user-friendly work area. Instead of the proven eight-station turrets in the TNL18, a ten-station turret is now being used. Turret indexing is performed using an NC rotary axis that controls movement via an internally meshing planetary gear. This allows the turret to be indexed to any preferred position without a mechanical locking mechanism being necessary. The free positioning of the turret makes multiple-tool assignment possible on each station so that the top tool carrier can be equipped with up to 30 tools. Since mechanical locking is no longer necessary, chip-to-chip times of 0.3 sec are realized.

The innovative highlight is the "Dual Drive" – two drives integrated into one turret. This smart and patented drive solution with two separate drivetrains in one turret reduces the auxiliary processing times and also keeps the cycle times to a minimum. The ingeniously simple idea: While one tool is in use, the tool intended for the next work step can be accelerated up to the desired speed during main time and is immediately available at full speed after the turret indexing operation. Jerky accelerations and delays that were previously unavoidable when reducing auxiliary processing times are now a thing of the past.

In addition, the user benefits specifically from the fact that tool holder wear is drastically reduced due to the low acceleration values. The chip-to-chip times in the case of live tools are under 0.3 seconds.

Improved tool mountings

The tool holder product line is completely compatible with the TNL18 series, only the drive wheels in the live tool holders have to be replaced if necessary. Both variants make use of the new TRAUB compact shank system: an improved system for high-precision mounting of tool holders in the turret. The tool holders are seated deeper in the turret, which results in less leverage effect and, thus, higher stiffness. For live tool holders, the large shaft diameter allows for the installation of roller bearings with large diameters. A quick-change system enables high-precision, smooth exchange of tools without removing the tool holder. The compact shank system verifiably increases the tool life and also contributes to improved surface quality.

For complete and complex machining operations

Simultaneous machining with multiple tools ensures high productivity levels with both machines. In this process, up to three tools are used simultaneously on two spindles. The TNL32P production machine differs from the TNL32 variant in that the Y-axis motion of the upper turret is affected by interpolation of the X/C/H axes. This allows



milling contours to be created by entering values in the standard Cartesian X/Y/Z coordinate system. Reliable off-center, parallel axial drilling is thus also possible using this method. A powerful, swiveling counter spindle is fitted onto an X/Y/Z cross-slide that simultaneously also carries the lower tool turret. This slide is characterized by large axis travel distances. The travel for three-axis rear end machining, even for geometrically complex workpieces, can be freely configured.

Rear end machining

Both the TNL32 and the TNL32P feature the extremely solid back working attachment that is typical on TRAUB machines. It accommodates 7 tool holders of which three can be live. A total of 4 stations are provided with an internal coolant supply. Each station can be controlled individually so that cutting oil is supplied selectively. The large travel distances of the counter spindles enable stations to be occupied by more than one tool (e.g., dual drill holder). Another innovation is the refined drive scheme for the utilized tool holders that deliver either high speeds or high torques. The integrated workpiece removal allows the workpiece to be rinsed out or, optionally, picked up and deposited for positioning purposes.

Tried-and-tested control family

The TNL32 is equipped with the TRAUB TX8i-s control and the TX8i-p for the TNL32P. Both controls are based on the CNC control from a worldwide leading control manufacturer while the user interface software – like all models developed in the last 30 years – is a one hundred percent TRAUB development.

The benefits are obvious: Customers need not rely on standardized software products; rather customer and application needs can be implemented and integrated optimally into the development.

Of course, the control is compatible with all previous TRAUB controls so that existing programs can be used.

Features that speak in favor of the control:

- Reduced set-up time due to higher NC performance,
- Two-way programming, optimization and simulation in interactive or in NC mode possible, (TX8i-s integrated, TX8i-p via external CNC client application)
- Error avoidance and setup time reduction through object-oriented interactive guidance,
- sensitive tool break and wear monitoring,
- compatible with all previous TRAUB controls,



- high availability
- optimal support because the machine, control and drive are from a single source.

Small footprint and easy access

The vertical machine bed design results not only in a favorable chip flow but also an extremely compact footprint. This is also made possible by integrating the control cabinet in the upper part of the machine. This enables space-saving integration of the automatic lathe into existing machine groups. The work area is easily accessed by the operator through its remarkably high and wide sliding door. This provides a lot of room for setup and changeover activities. A generously dimensioned inspection window allows the operator to keep a close eye on the machining process. Another plus: For servicing, only a few manipulations are needed to remove the back cover to allow full access to the mechanical assemblies. The hydraulic and pneumatic components are also arranged with full accessibility to the rear of the machine and can be easily checked at a glance.

Target group of the new TNL32 sliding/fixed headstock automatic lathe with ten-station turret and "dual drive" includes the entire machine manufacturing industry, automotive and hydraulics industry as well as medical technology. Its strengths are utilized primarily where both simple, small and geometrically highly complex parts from all industries, from medical technology to hydraulics and the automobile industry, are machined with a maximum bar clearance of 32 mm.

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Figure 1:
The TNL32 sliding/fixed
headstock automatic lathe

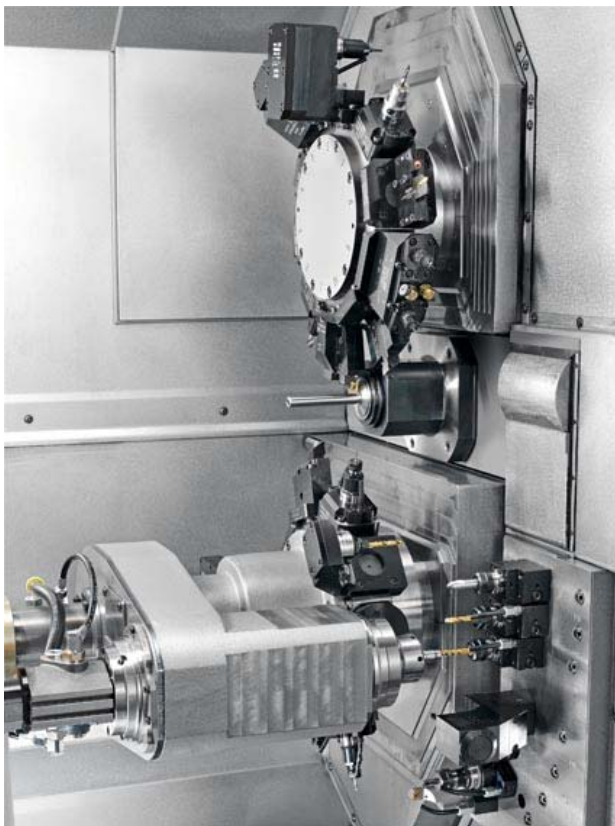


Figure 2:
Interaction of systems:
Main spindle, top turret, back
working attachment and
counter spindle with integrated
bottom turret

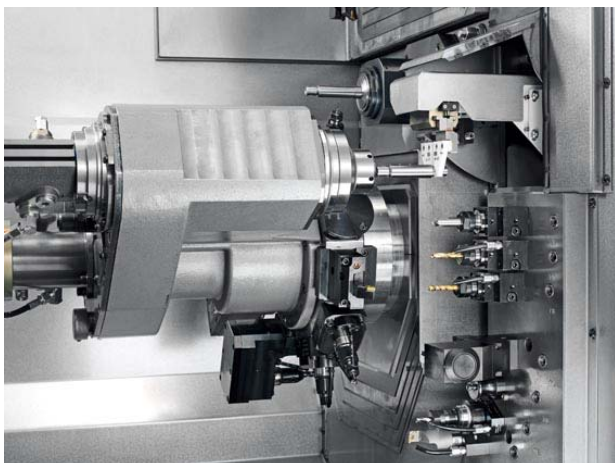


Figure 3:
Integrated workpiece removal:
Part is positioned to be picked up

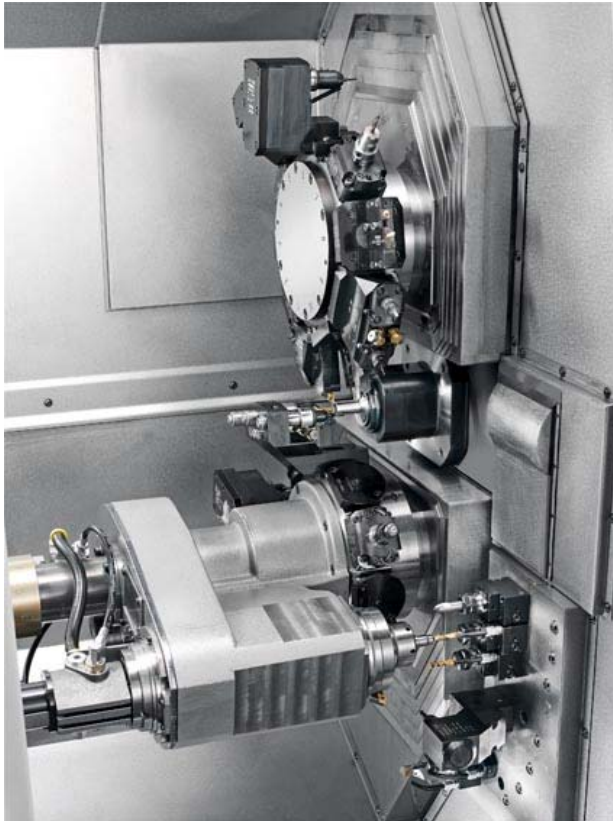


Figure 4:
Simultaneous machining with
three tools



Figure 5:
Parts spectrum of the TNL32

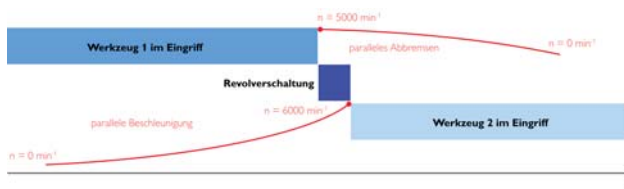


Figure 6:
DualDrive
The new tool drive system from
TRAUB which ramps up the
speed for the next tool during
main time