# Neos

**SUITABLE FOR FIXED-HEADSTOCK CNC LATHES WITH SPINDLE CAPACITY FROM 8 mm TO 65 mm***

PROGRAMMABLE BAR LOADING MANAGEMENT VIA PLC

*The minimum and maximum values are set according to the lathe model.

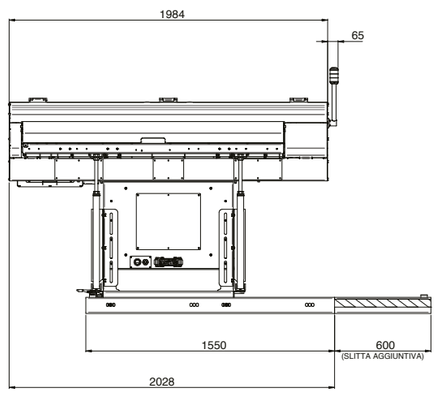
**ATTENTION:**
The maximum workable lenght of the bar is equal to the lathe spindle length

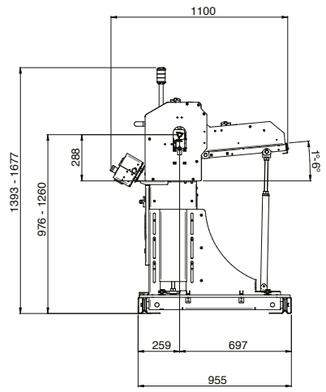
i4.0

Scansiona il QR CODE
per vedere la macchina in funzione

Top AUTOMAZIONI


## BAR FEEDER LAYOUT




| TECHNICAL DATA | | MAGIC |
|---|---|---|
| | ROUND BARS | 8 mm - 65 mm / 0.31" - 2,56" |
| | HEXAGONAL BARS | 7 mm - 56 mm / 0,28" – 2,20" |
| | SQUARE BARS | 7 mm - 46 mm / 0,28" – 1,81" |
| | BAR LENGTH | 100 mm - 1550 mm / 3,94" - 61" |
| | MAX FEED SPEED | 150 m/min / 492,13'/min |
| | MAX REMNANT LENGTH | not available |
| | AIR PRESSURE REQUIRED | 6.5 - 7.5 bar |

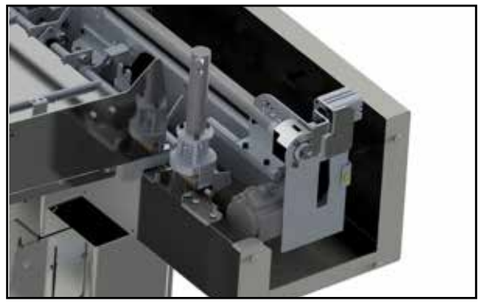
## TOTAL FEED CONTROL

NEOS is equipped with a two-stage V-shaped guide channel. The lower guide section is dedicated to receiving the bar from the bar storage system. The upper guide section manages the feeding operation via the bar pusher. This configuration guarantees linear bar movement, high stability and constant control throughout the entire feeding cycle. The bar feeder is equipped with bar presence sensors and bar measurement sensors, ensuring continuous monitoring of the loading process and automatic alarm management. The integrated encoder stores the exact position of the pusher even in the event of power-off or blackout, allowing the bar feeder to restart without executing the homing procedure.

## TWO-STAGE FEEDING SYSTEM

Bar feeding is managed through two dedicated movements. The two-stage feeding system allows: the introductor (pilot rod) to push the bar into the guide channel; the secondary pusher to align and feed the bar toward the spindle axis during bar change operations.

The motorized introductor guides the bar along the internal guide channel, while the main pusher continues the feeding motion toward the lathe spindle. This system ensures continuous and reliable bar feeding, even when the remaining bar length is minimal, maintaining a smooth and uninterrupted machining cycle.



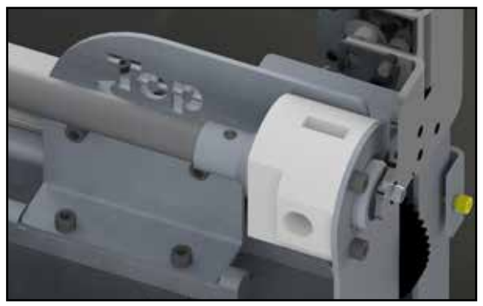
## QUICK-CHANGE PUSHER

NEOS is equipped with a quick-change pusher, which can be replaced without the use of tools.

Three pusher diameters are available to cover the entire working range:

6 mm per Ø 8–15 mm
12 mm per Ø 15–25 mm
20 mm per Ø ≥ 25 mm

Selecting the appropriate pusher guarantees optimal thrust force according to the bar diameter being machined.






## BAR END MANAGEMENT AND SERVO TRANSMISSION

The bar feeder automatically manages the bar end and remnant, calculating the remaining bar length and automatically starting the reload cycle. The bar end is positioned close to the lathe collet, minimizing unmachined remnant length.

The servo-driven transmission system also controls the retraction distance between the pusher and the bar, eliminating contact vibrations during machining and ensuring stable operation.

## HMI CONTROL AND INTEGRATED SAFETY

La gestione del caricatore è affidata a HMI con diverse modalità operative:

- bar advancement controlled by the bar feeder;
- bar advancement with stop on the lathe fixed stop tool;
- sub-spindle operating mode.

The software includes different user profiles (Operator / Maintenance) for managing production parameters and configuration settings.

Radial and/or axial repositioning solutions are available to simplify installation and maintenance operations. The system is designed with permanently active safety devices and interlocks, fully compliant with integrated safety principles adopted by Top Automazioni.


## BAR STORAGE SYSTEM

NEOS is equipped with a high-capacity bar storage system with adjustable inclination, depending on the bar diameter and profile (round, square or hexagonal bars).

Inclination adjustment ensures controlled bar descent during the loading phase, improving feeding reliability and operational safety.

The storage capacity of up to 640 mm per column allows extended machining cycles without frequent material replenishment, ensuring production continuity and optimized workflow.