

**HEAVY CUTTING  
CNC LATHES**

**TC**

**SINGLE SPINDLE/ SINGLE TURRET**



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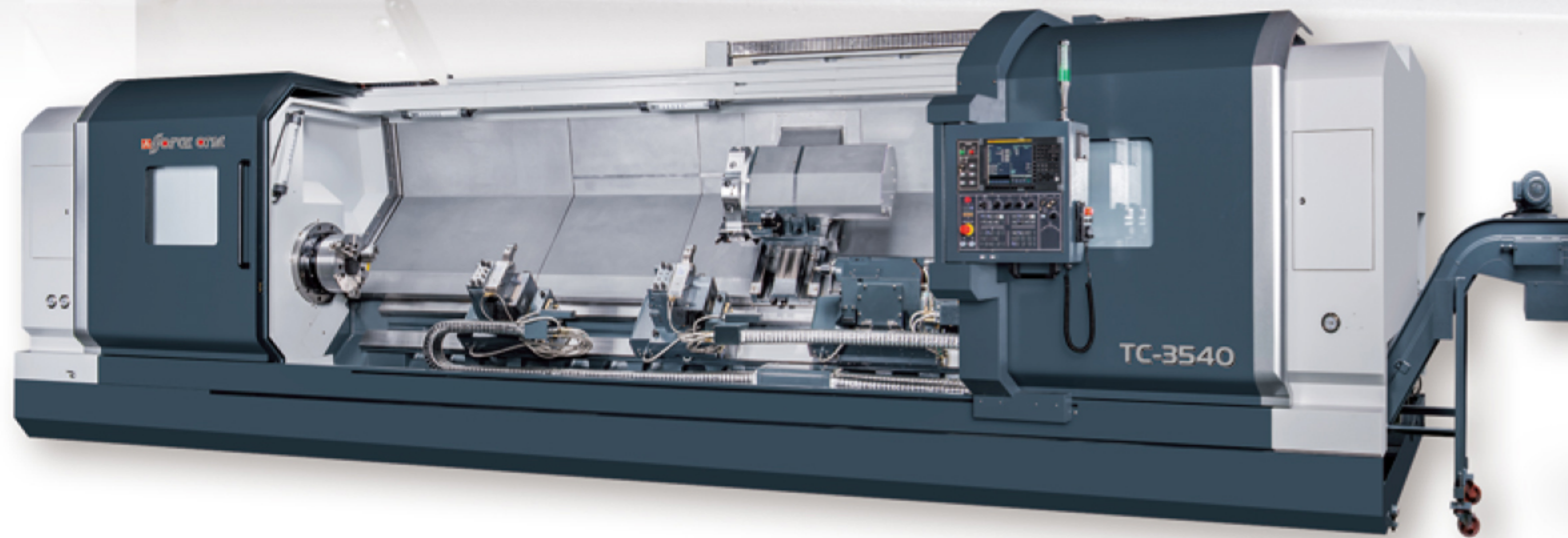
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# FORCE ONE Heavy-Duty CNC Lathe

Provide users with significantly greater cutting capabilities, better cut quality and increased accuracy.

The design concept of **TC-35/40/45/50 series** services of CNC lathes is to enhance their heavy cutting capability high efficiency. With 500 – 1200 diameter of cutting, these machines are applicable for cutting large pipes and shafts in traffic and energy industries, etc.



## TC-35 series Features:

- Swing over bed  $\phi$  660 mm.
- Swing over saddle  $\phi$  480 mm.
- Max. turning diameter  $\phi$  500 mm
- Range of working length 760 - 3,040 mm
- 10-station hydraulic turret
- 2-speed gearbox
- Programmable tailstock

## TC-40 series Features:

- Swing over bed  $\phi$  850 mm.
- Swing over saddle  $\phi$  640 mm.
- Max. turning diameter  $\phi$  710 mm
- Range of working length 760 - 3,040 mm
- 10-station hydraulic turret
- 2-speed gearbox
- Programmable tailstock



## TC-45 series Features:

- Swing over bed  $\phi$  970 mm.
- Swing over saddle  $\phi$  720 mm.
- Max. turning diameter  $\phi$  850 mm
- Distance between center 1,130 - 3,090 mm
- 12-station hydraulic turret
- 3-speed heavy duty gear head
- Programmable tailstock

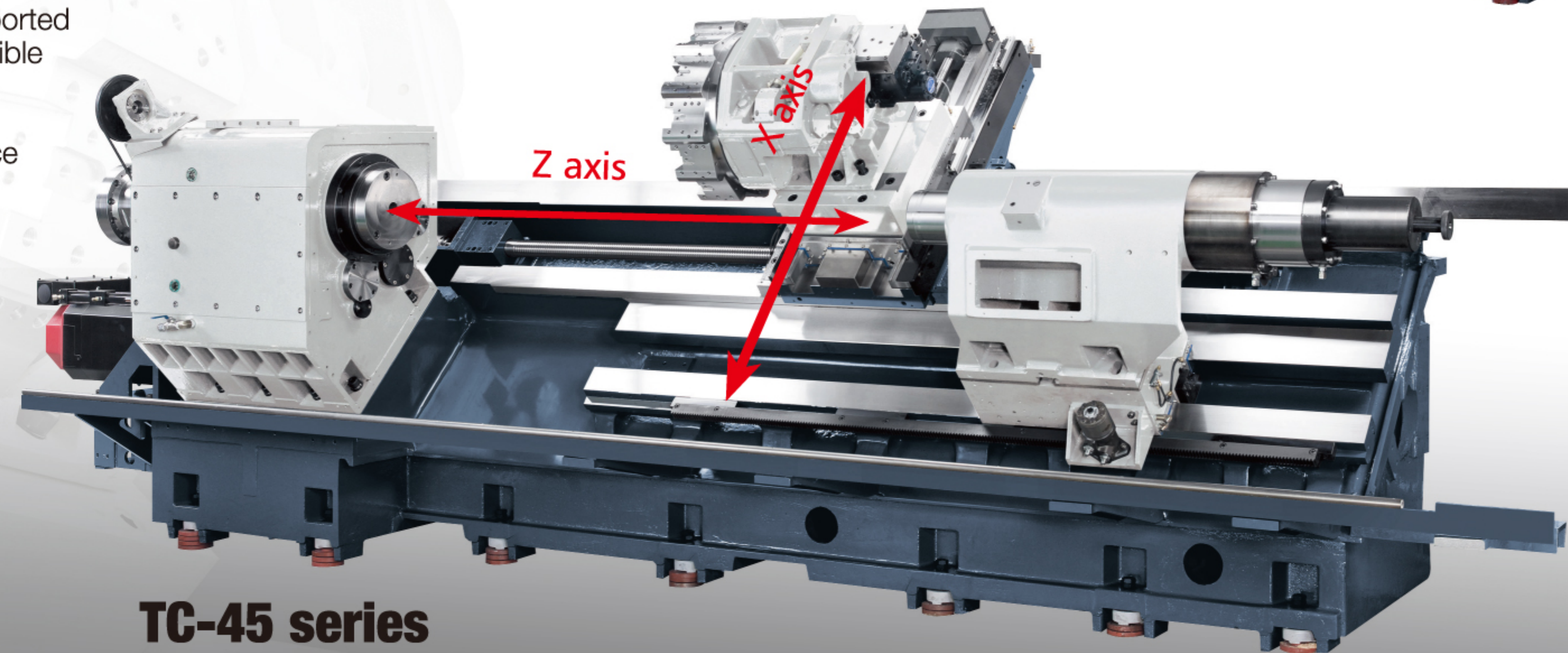
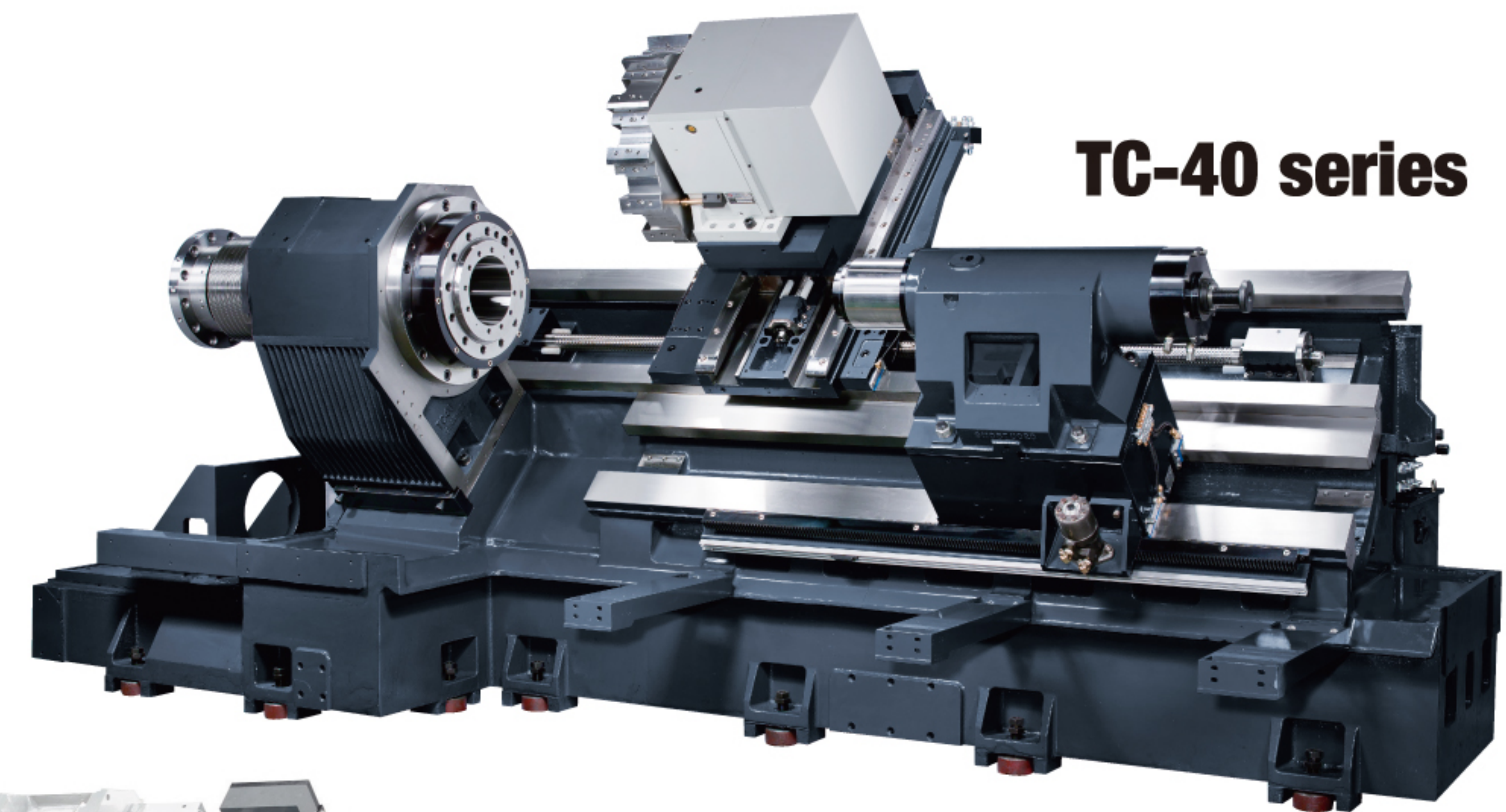
## TC-50 series Features:

- Swing over bed  $\phi$  1100 mm.
- Swing over saddle  $\phi$  940 mm.
- Max. turning diameter  $\phi$  1020 mm
- Distance between center 2,200 - 5,110 mm
- 12-station hydraulic turret
- 4-speed heavy duty gear head
- Programmable tailstock

# RIGID AND PRECISELY CONSTRUCTED THROUGHOUT

- Box ways on X, Z axis exhibit outstanding accuracy and load-resistance capacity
- Rigid and stable construction throughout
- One-piece constructed bed offers the optimal bending-resistance and torsion-resistance capabilities especially when performing heavy cutting on extra large workpiece
- The spindles on TC-35/40 series are driven by an imported gearbox with 1:4 gear ratio. Full power output is possible when spindle speeds range 208 - 2,500 rpm
- The heavy duty headstock on TC 45/50 is of one piece casting, and it is with 3 or 4 speed gear head, providing extra large torque output and making the machine ideal for heavy cutting.

TC-40 series



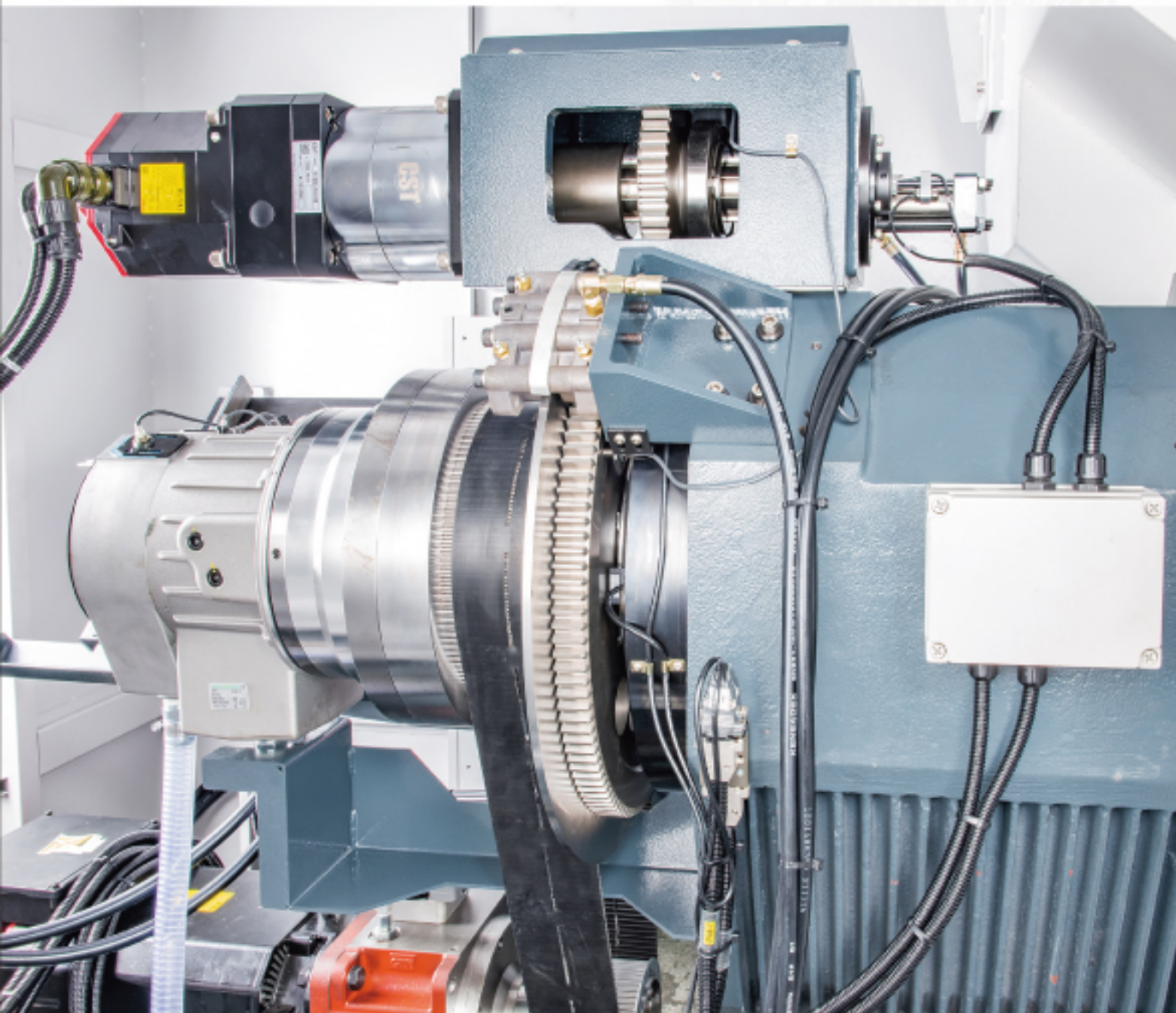
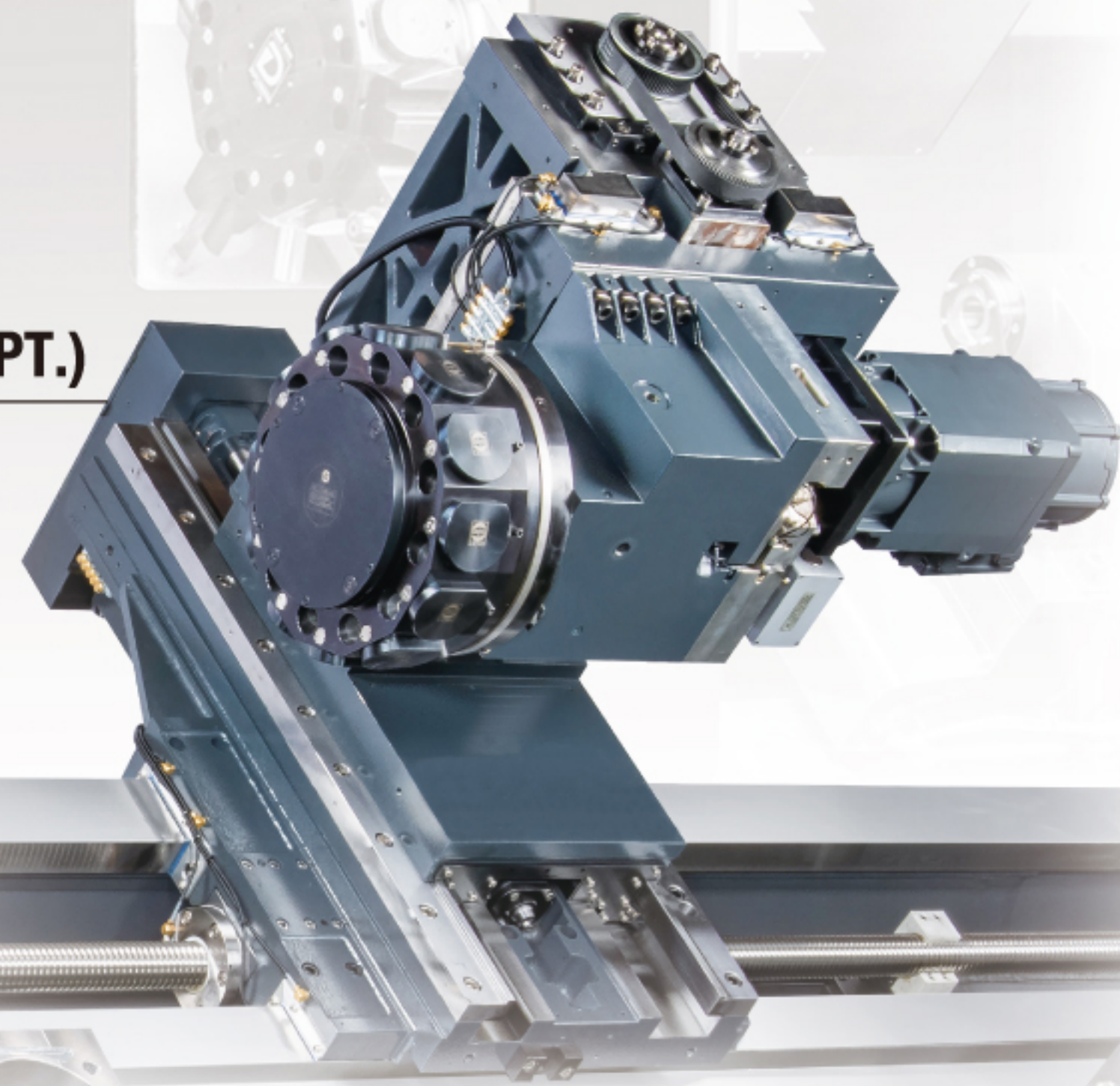
TC-45 series

**45** degrees slant bed construction features efficient chip removal and firm support.

The major machine parts, such as the base, saddle, headstock, slide and tailstock are made of **Meehanite** cast iron and tempered to relieve stress thereby ensuring lifetime accuracy.

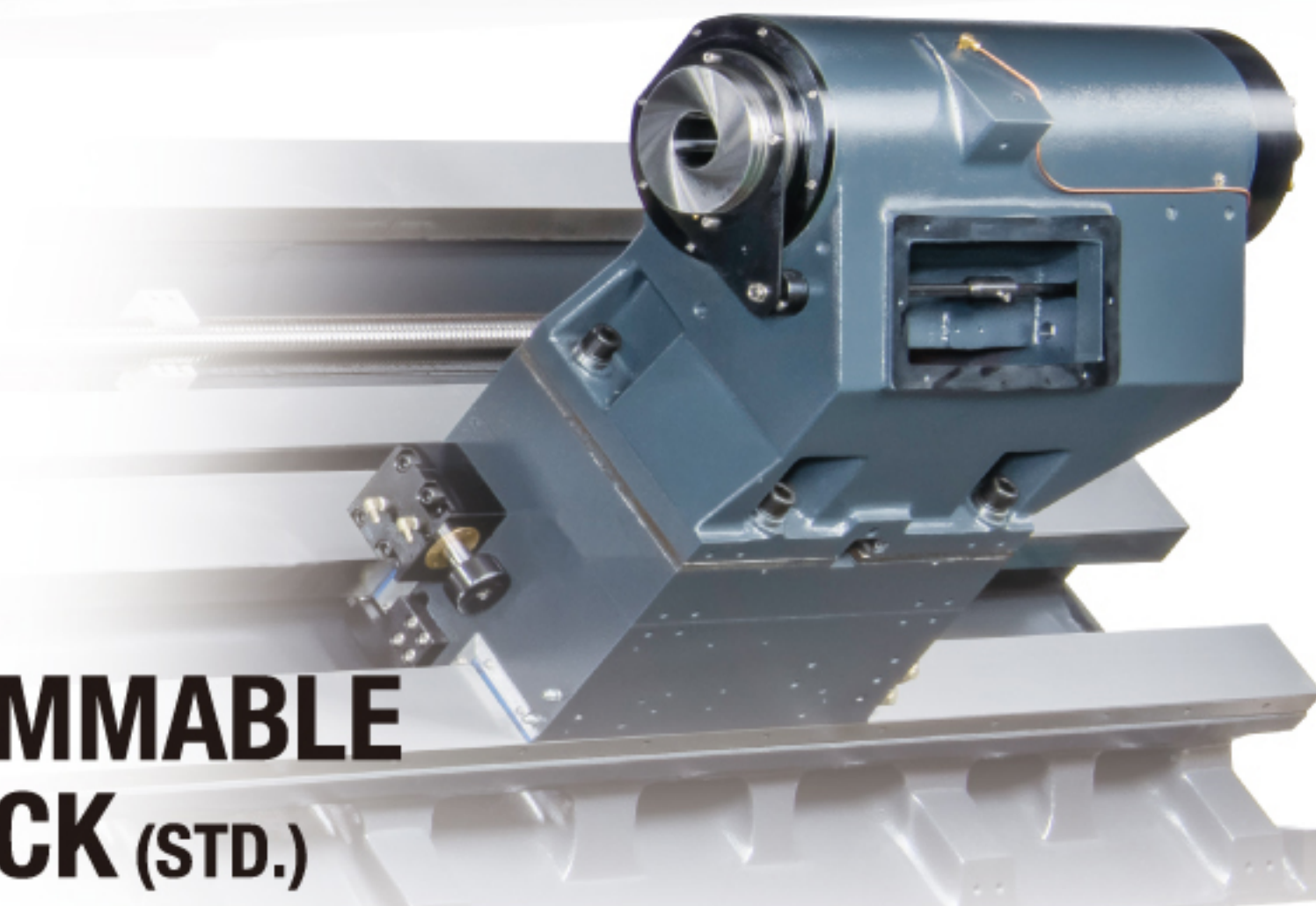
# Machine Features:

## Y AXIS (OPT.)



## CF AXIS (OPT.)

## PROGRAMMABLE TAILSTOCK (STD.)

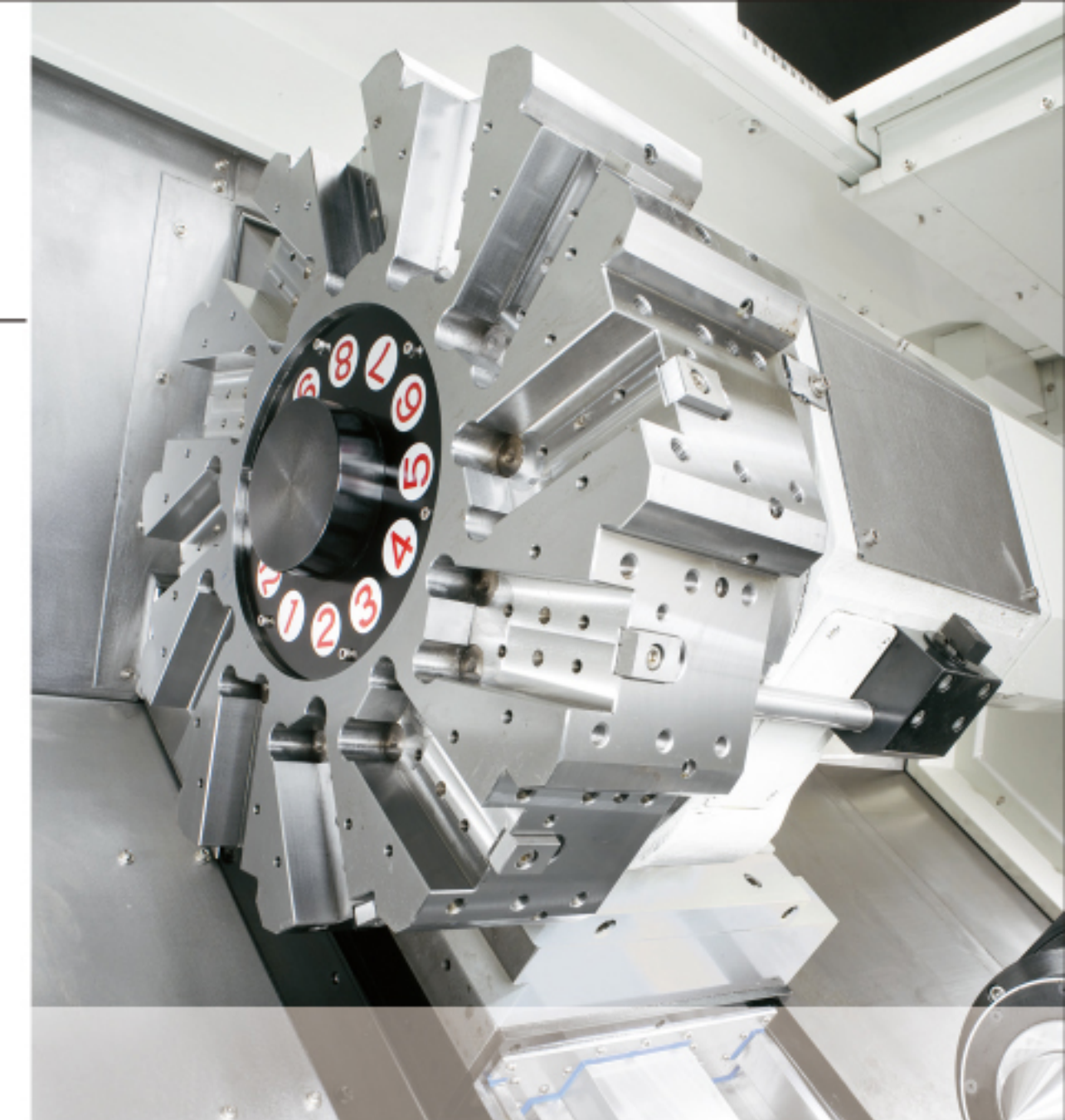


## FRONT AND REAR CHUCK (OPT.)



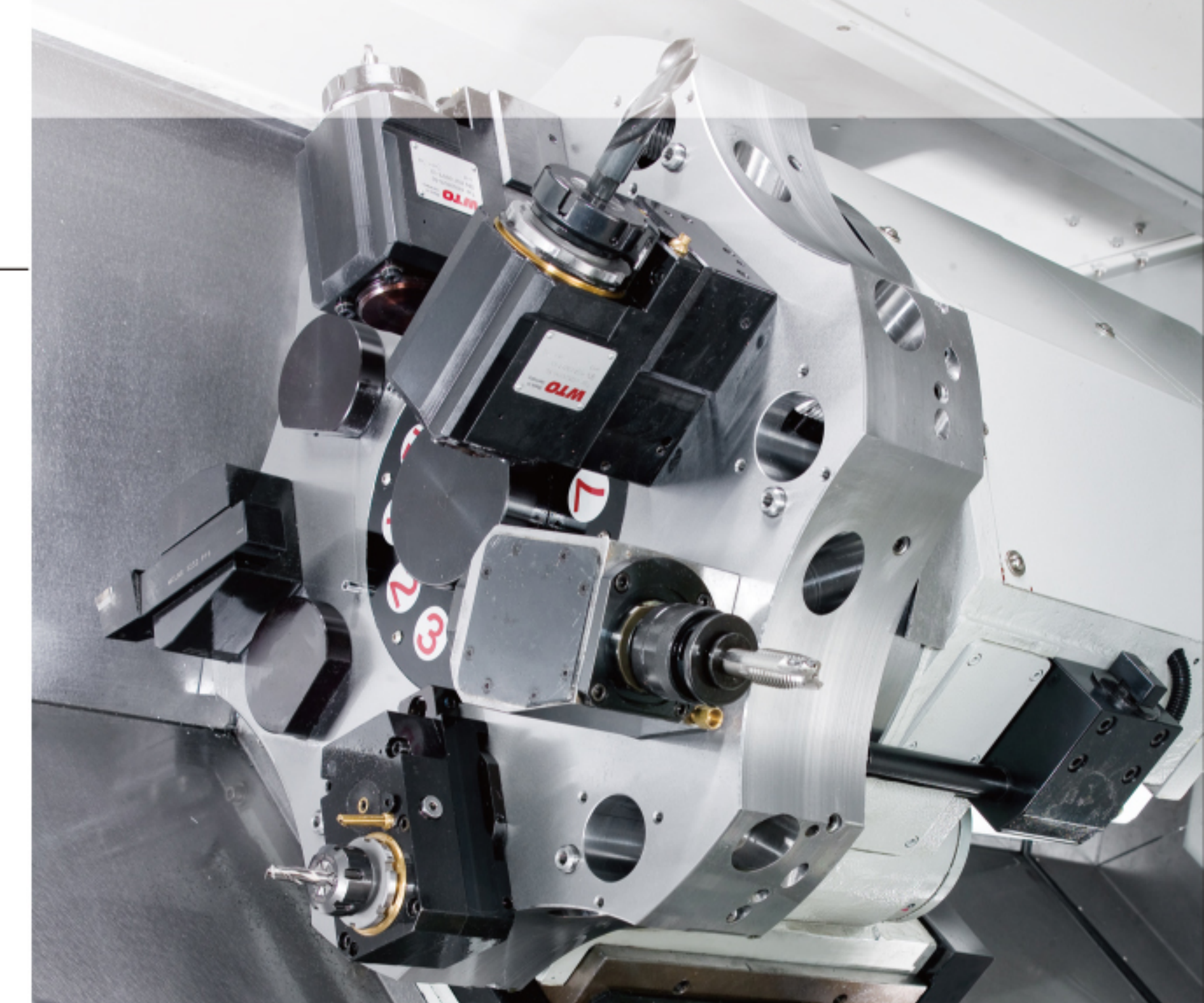
## SERVO TURRET INDEXING (STD.)

- A. Heavy-duty station tool turret is driven by low noise, high torque servo indexing motor.
- B. It's high accuracy positioning and features bidirectional random selection to shortest path, achieves high productivity.

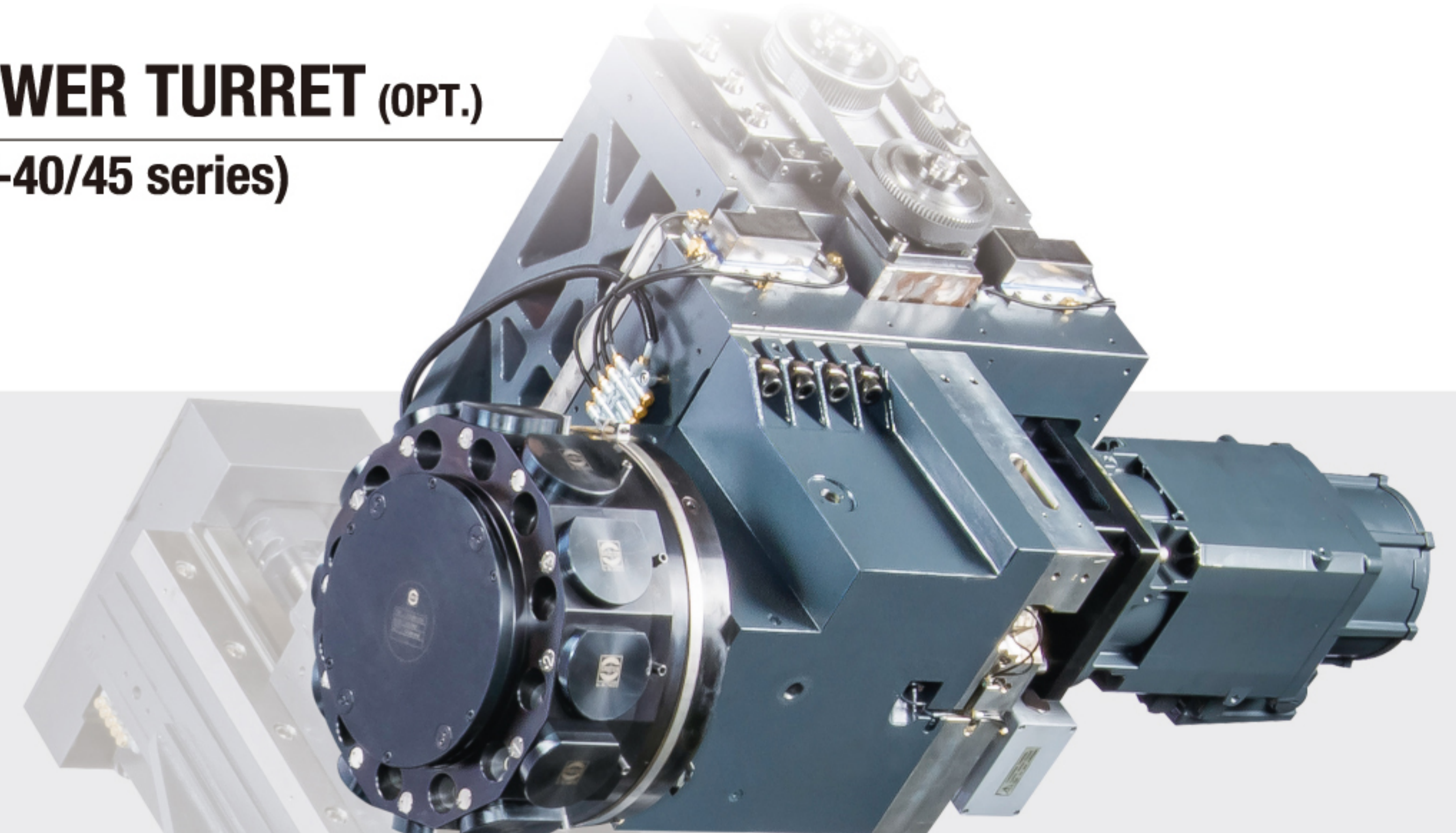


## POWER TURRET (OPT.) (TC-35 series)

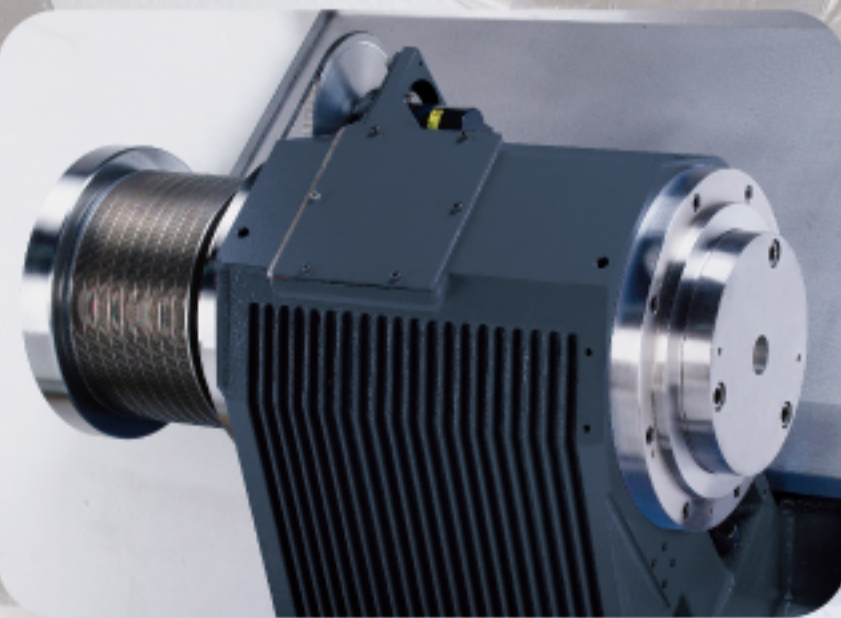
- A. Employs VDI 50 axial turret disk, 12 position power turret. (Two PCD - Inner PCD has 6 stations for milling. Outer PCD has 6 stations for turning.)
- B. High indexing resolution for contour/index control.
- C. Hydraulic disk brake locking provides maximum stability during milling and contouring.



## POWER TURRET (OPT.) (TC-40/45 series)

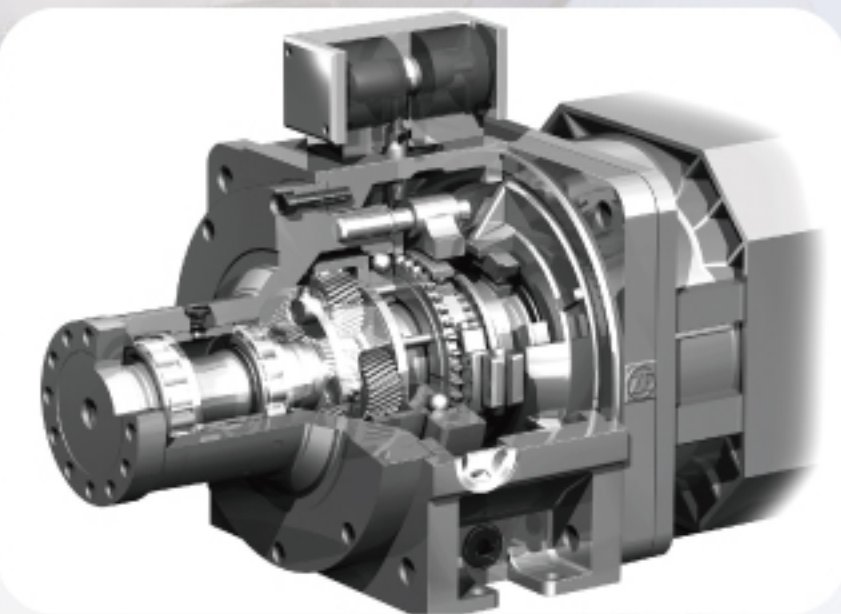


# Machine Features:



## POWERFUL HI-SPEED AND HI-RIGID SPINDLE (TC-35/40 series)

Spindle supported by cylindrical roller bearings and hi-speed angular thrust bearings marks the spindle faultless and ideal for heavy-duty and high-speed turning.



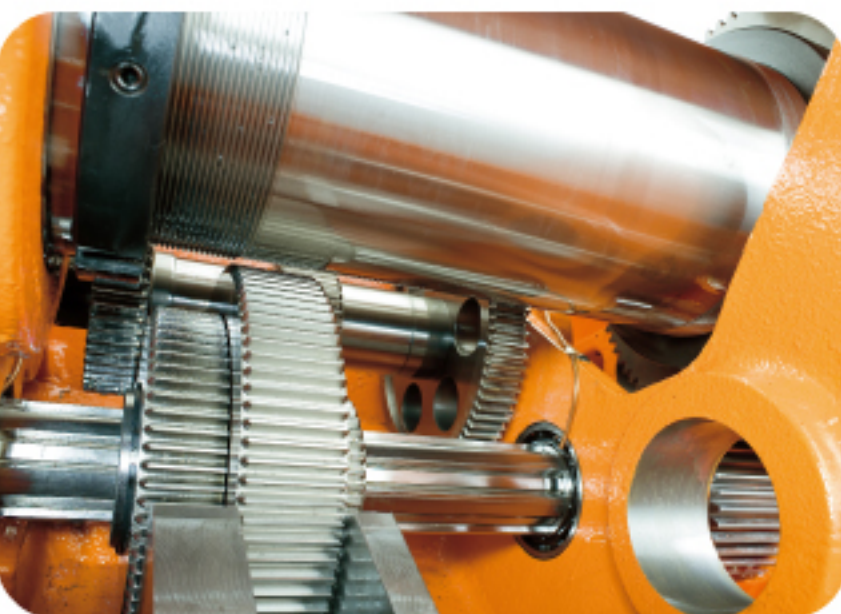
## 2-STAGES SPEED GEARBOX (TC-35/40 series)

TC-35/TC-40 series equipped with "high precision" stages gearbox (gear ratio 1:4) provides full horsepower cutting from 208-2,500rpm. The maximum cutting torque is 660 N-m.



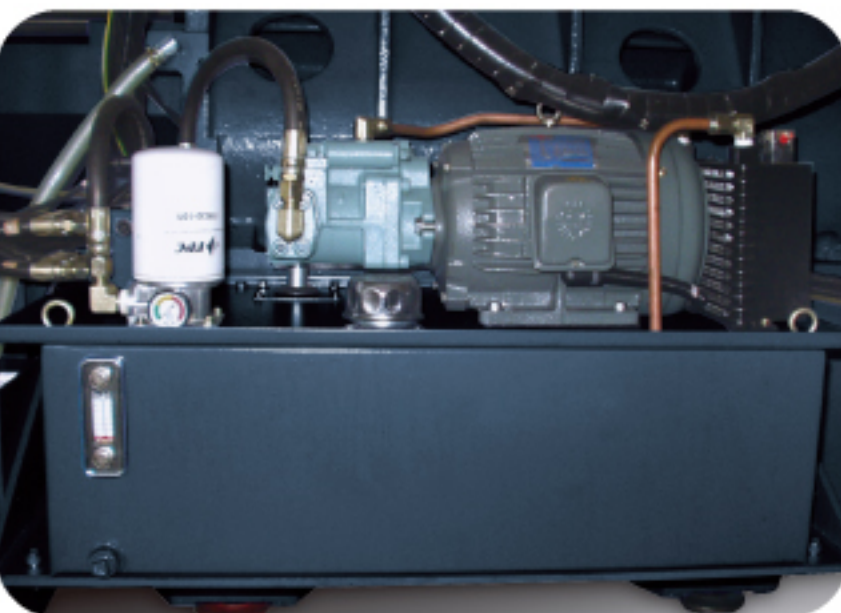
## FANUC CNC CONTROLLER

User-friendly operations are designed and more convenient for users.



## GEARBOX (TC-45/50 series)

The headstock is with 3 or 4 speed gear head. Gears are precision ground for quiet running.



## HYDRAULIC POWER UNIT

The hydraulic power unit employs high quality components for long service life and stable motions. The unit delivers high pressure to the turret, Cs Brake and 3-jaw chuck.



## Steady Rest (Opt.)

Designed for support long workpiece.



## OIL COOLER OF SPINDLE (TC-45/50 series) (Std.)

Control the oil temperature in spindle gearbox.



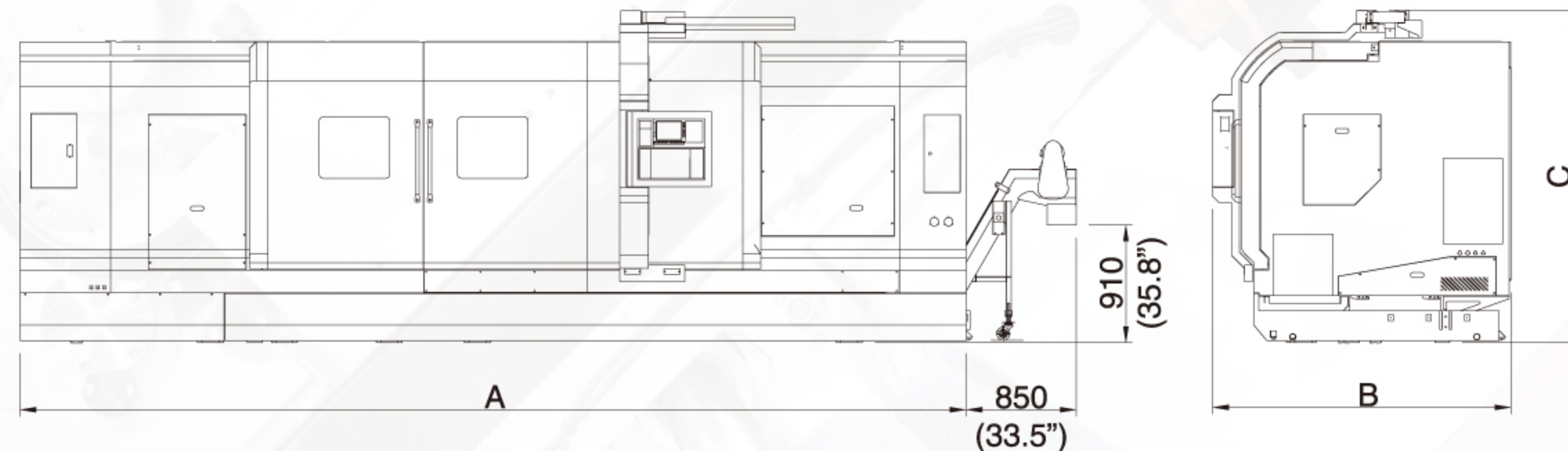
## WELL-PLANNED ELECTRICAL CABINET

The entire control circuit in the electrical cabinet is well planned for easy maintenance. Top quality electronic components assure extra stable control performance and long service life.

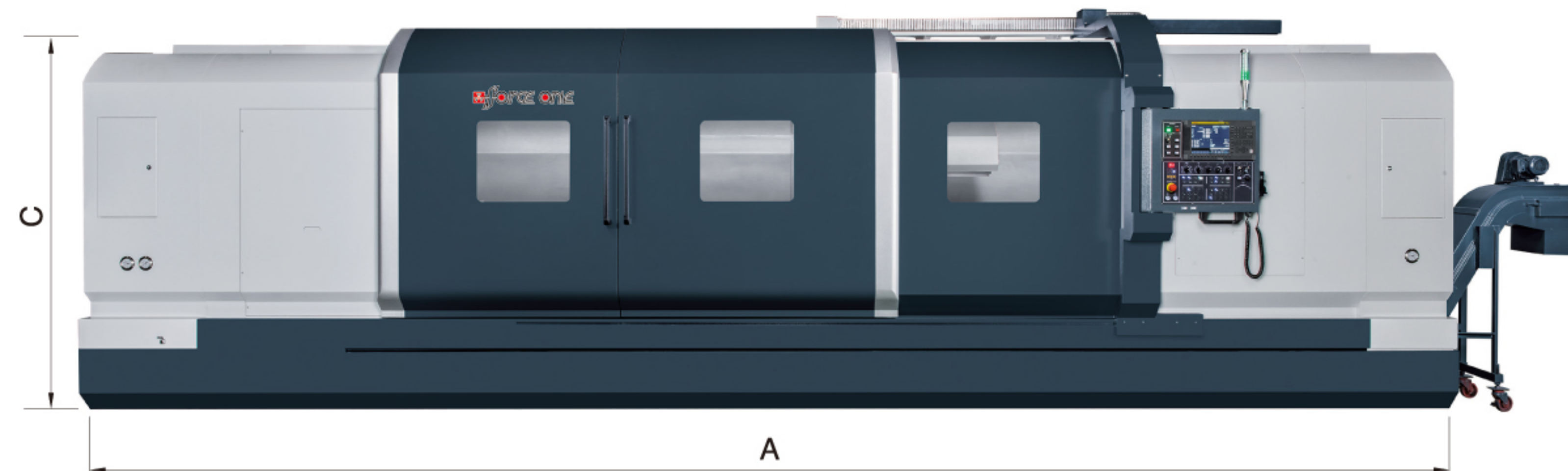
# Machine Dimension:

## ● TC Series

Unit: mm(inch)

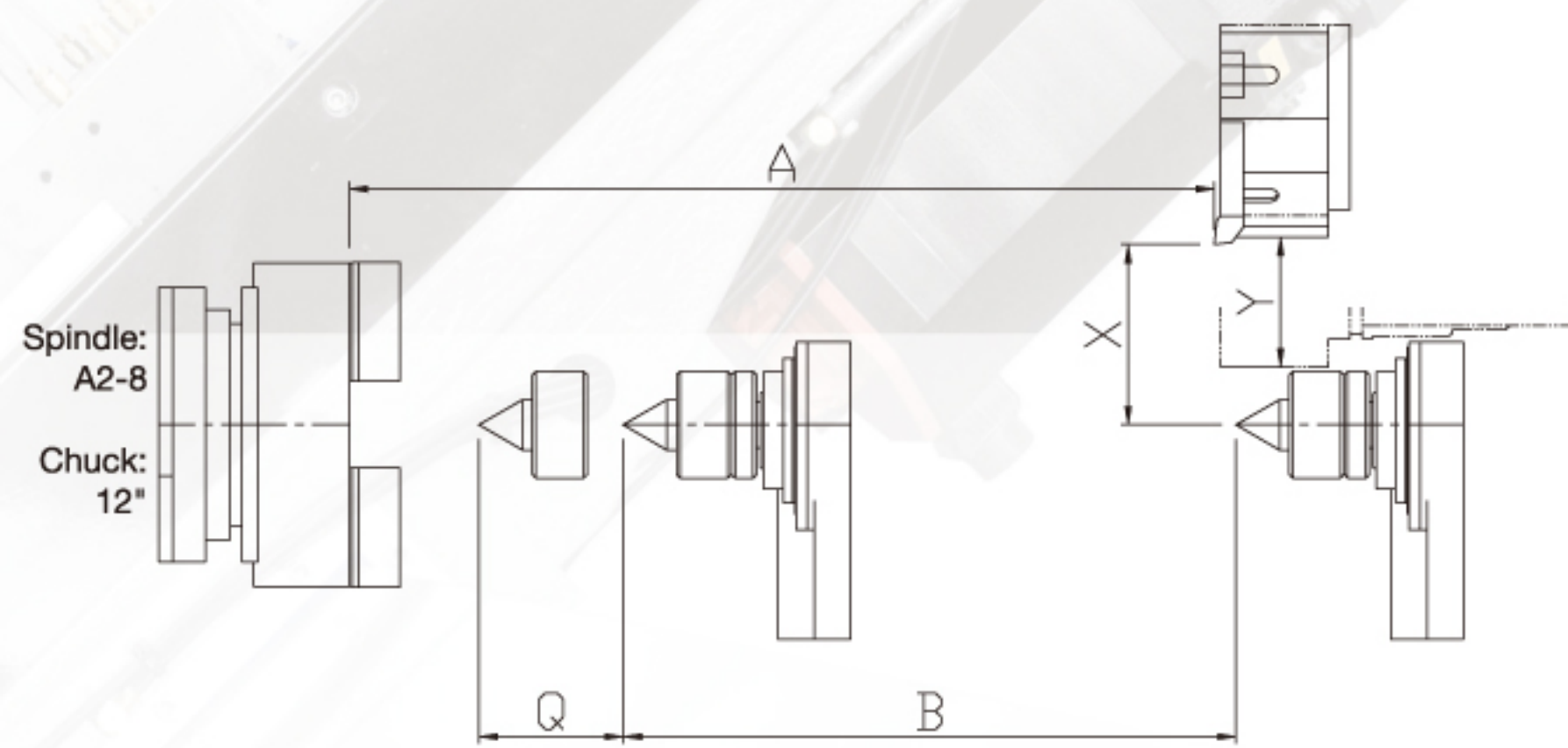
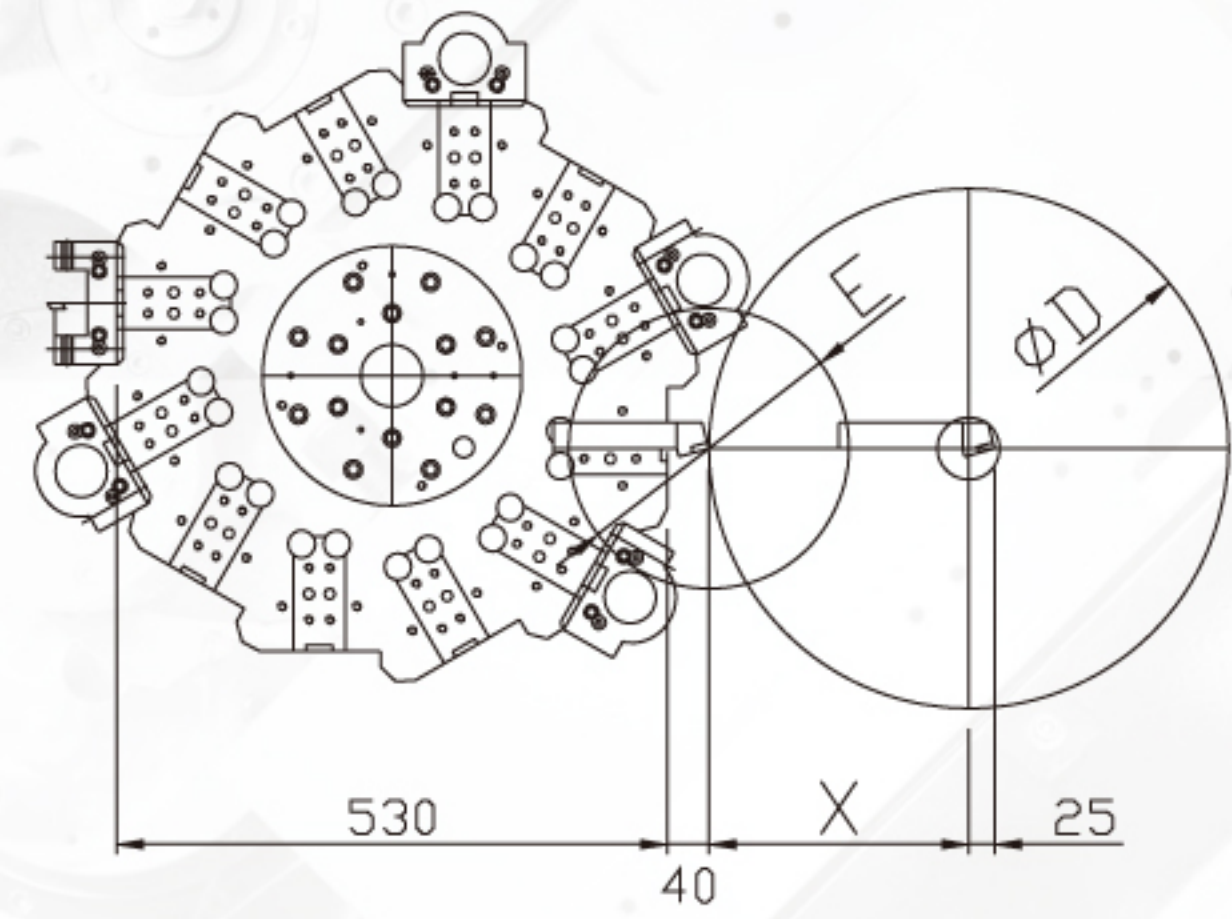


MODEL	LENGTH: A	B	C
TC-3508	5304 (208.81")	2130 (83.85")	2235 (88")
TC-3515	6064 (238.74")		
TC-3523	6824 (268.66")		
TC-3530	7584 (298.58")	2290 (90.16")	2565 (100.98")
TC-4008	5304 (208.81")	2130 (83.85")	2235 (88")
TC-4015	6064 (238.74")		
TC-4023	6824 (268.66")		
TC-4030	7584 (298.58")	2290 (90.16")	2565 (100.98")
TC-4512	6160 (242.5")	2230 (87.8")	2445 (96.2")
TC-4517	6660 (262.2")		
TC-4522	7160 (281.8")		
TC-4532	8160 (321")	2390 (94.09")	2775 (109.25")
TC-5022	8700 (342.51")	3158 (124.33")	3050 (124.01")
TC-5032	9700 (381.88")	3318 (130.63")	3380 (133.07")
TC-5042	10700 (421.25")		
TC-5052	11700 (460.62")		



# Working capacity:

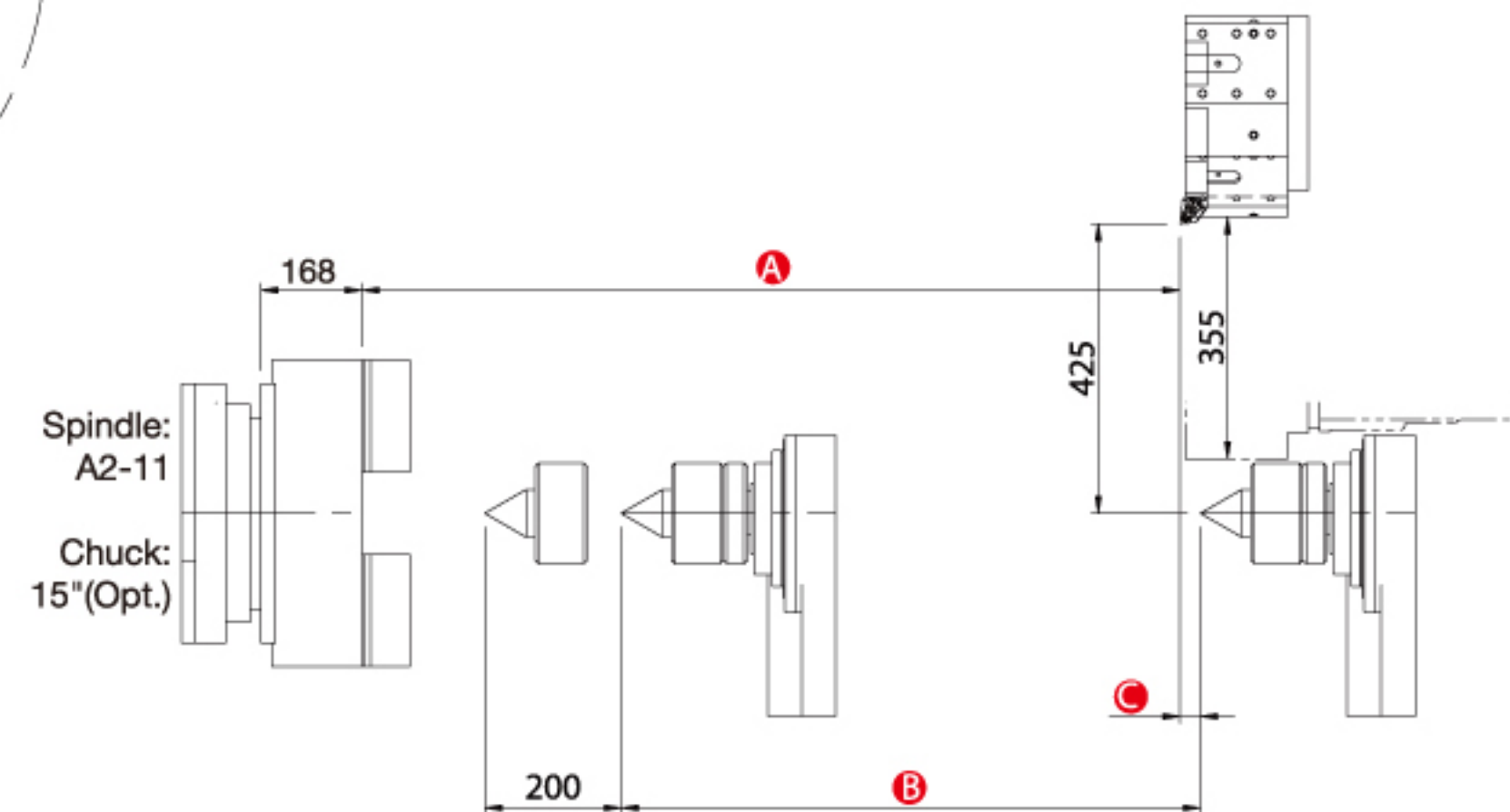
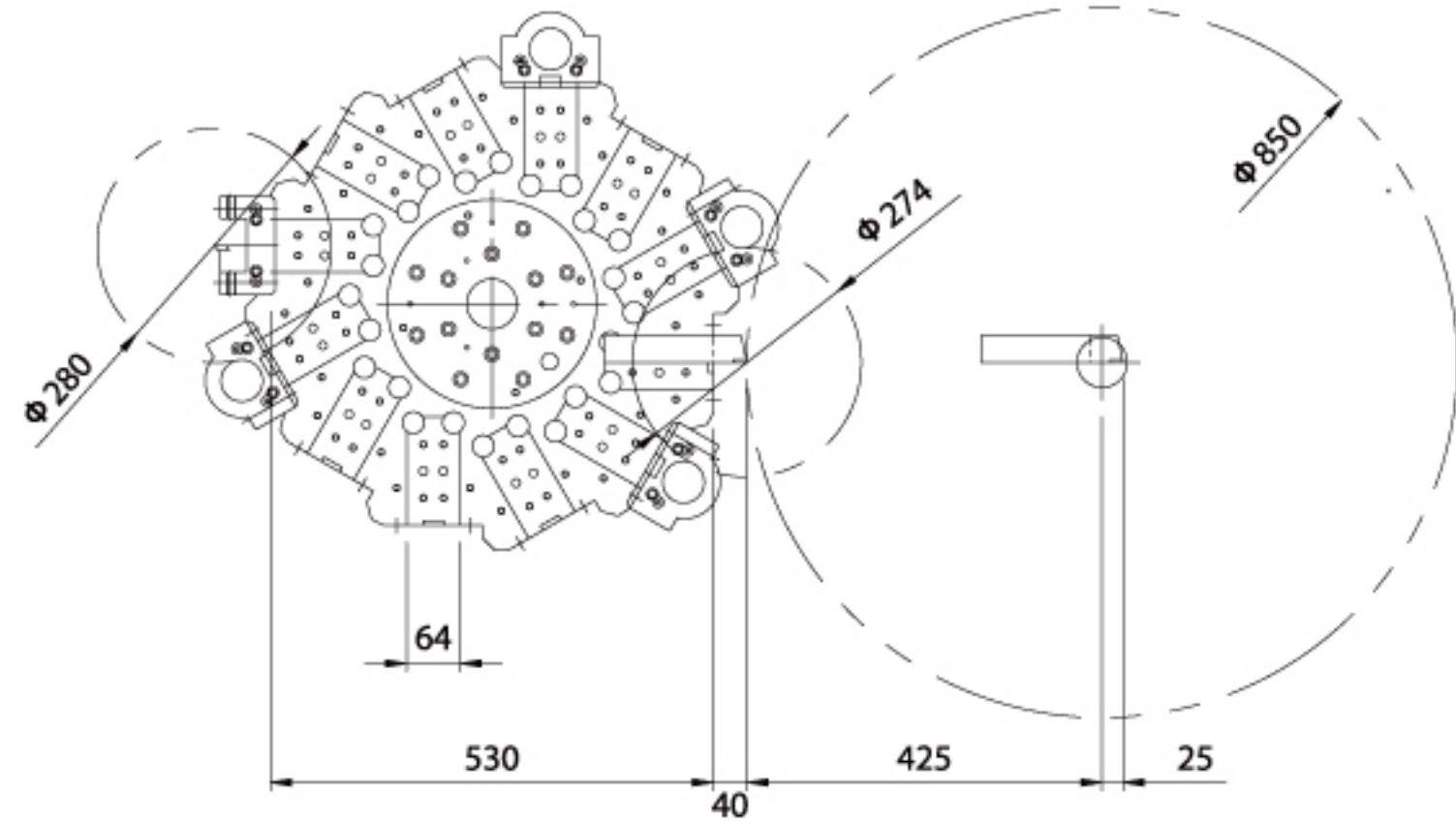
## ● TC - 35 / 40 Series



Spec.	D Turning Dia.	X	E (I.D. 40 mm)		E (I.D. 50 mm)	
			10T	12T	10T	12T
TC-35	500	250	345	280	335	270
TC-40	710	355	345	280	335	270

Spec.	A	B	X	Y	Q (Stable Quill + Live Center MT5)
TC-3508	810	650	250	180	100
TC-3515	1570	1410	250	180	100
TC-3523	2330	2170	250	180	100
TC-3530	3090	2930	250	180	100
TC-4008	810	650	355	290	100
TC-4015	1570	1410	355	290	100
TC-4023	2330	2170	355	290	100
TC-4030	3090	2930	355	290	100

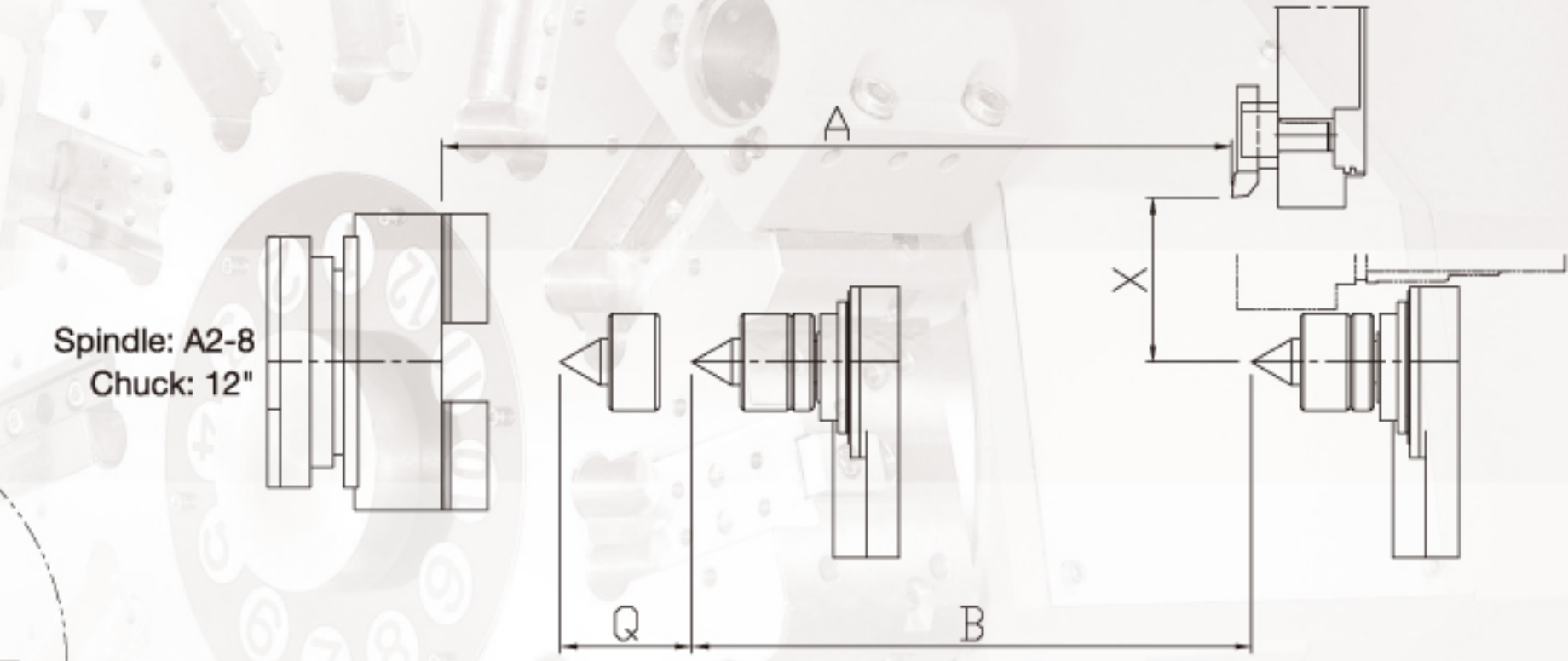
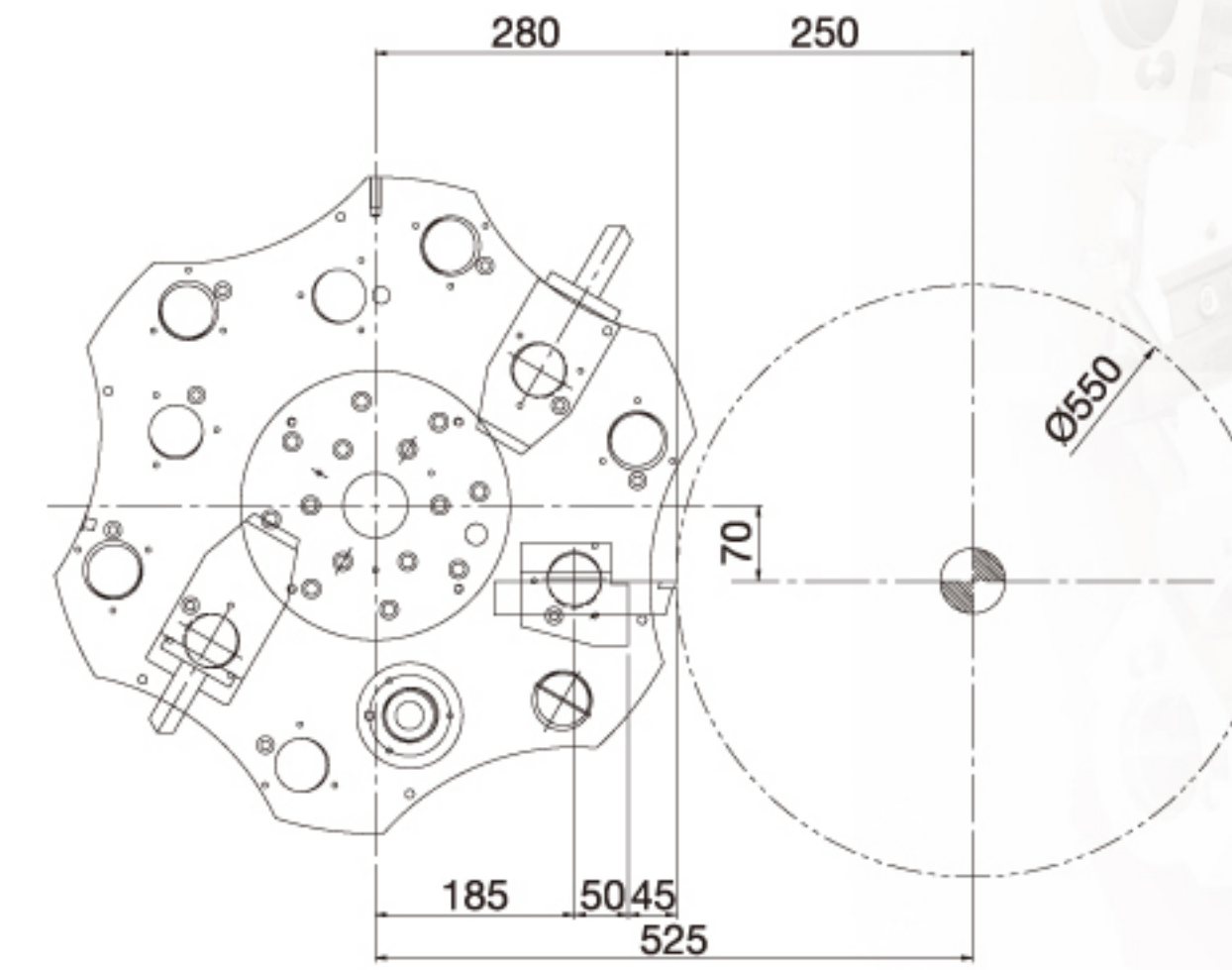
## ● TC - 45 Series



Spec.	A	B	C
TC-4512	1196	950	206
TC-4517	1696	1450	206
TC-4522	2196	1950	206
TC-4532	3156	2910	206
TC-5022	2200	2000	30
TC-5032	3200	3000	30
TC-5042	4200	4000	30
TC-5052	5200	5000	30

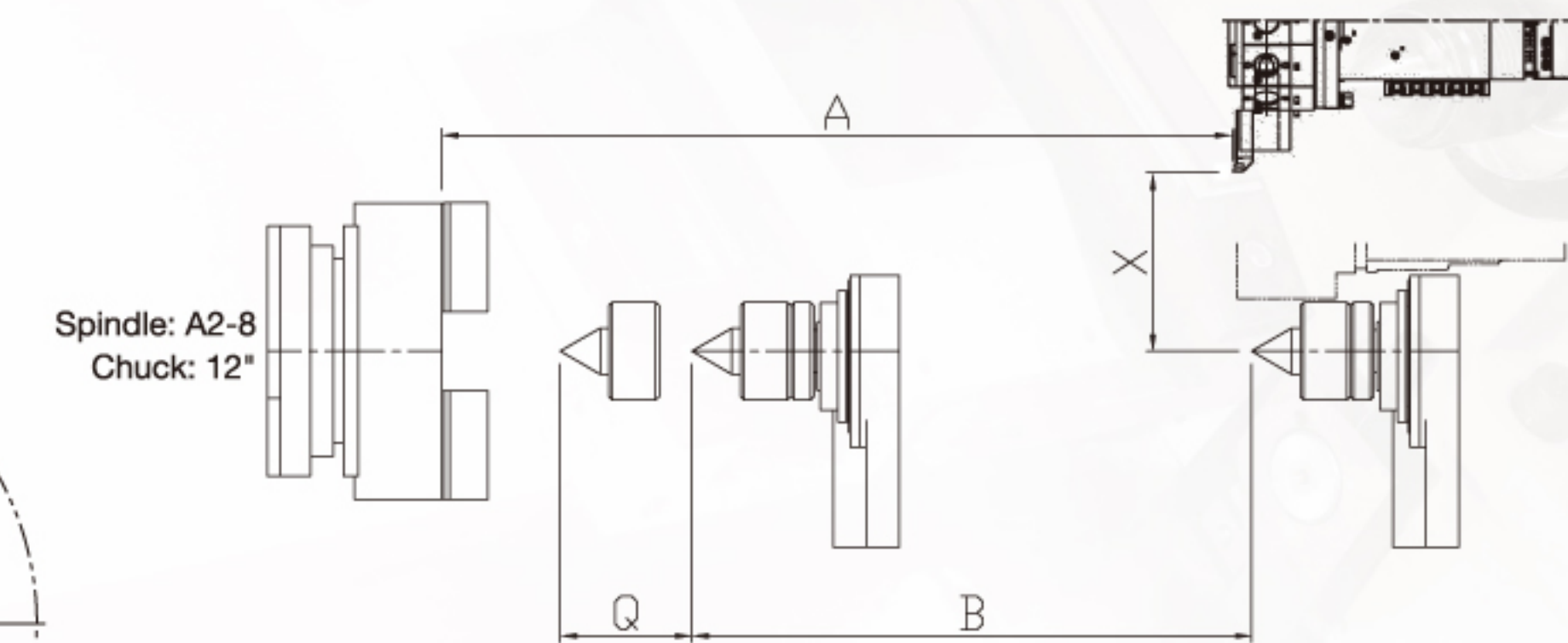
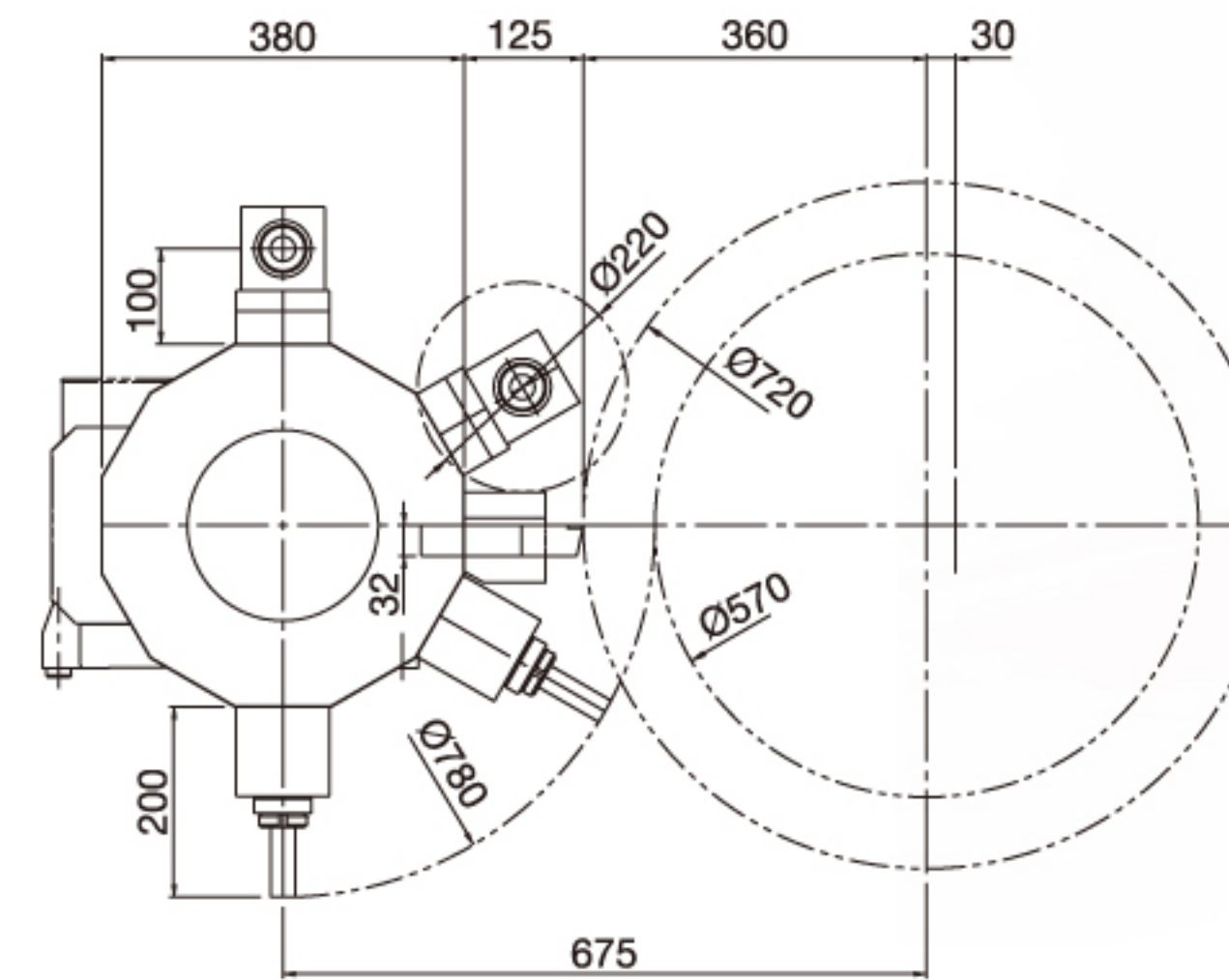
# Working capacity:

## ● TC - 35 with power turret



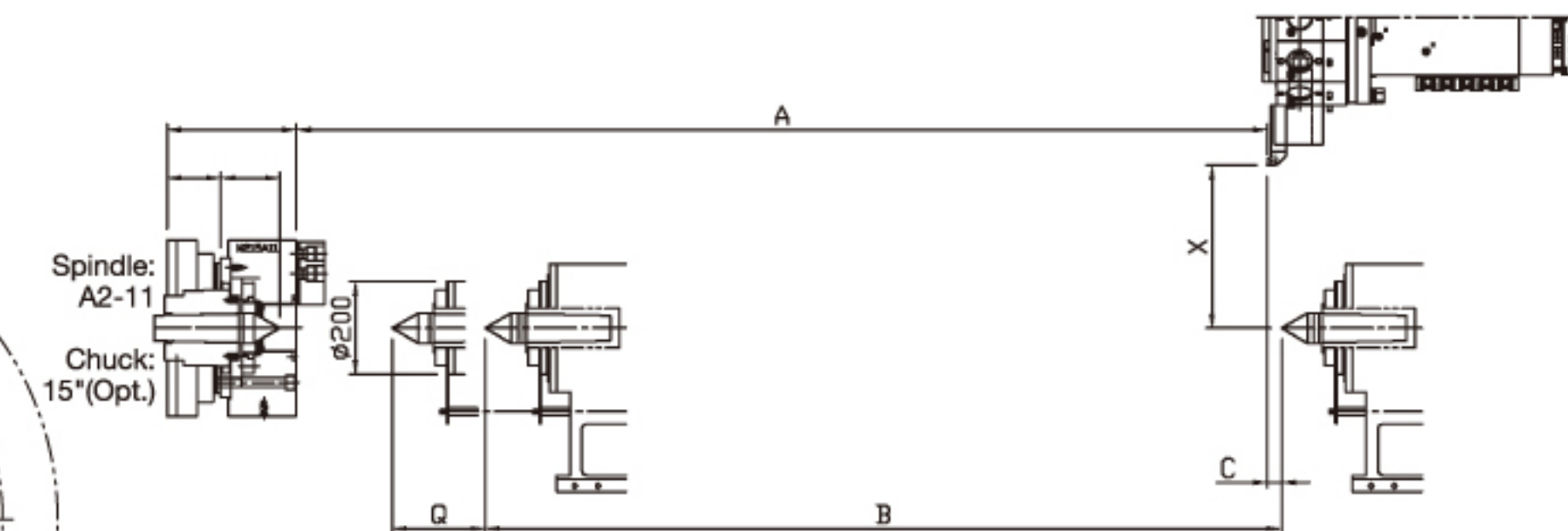
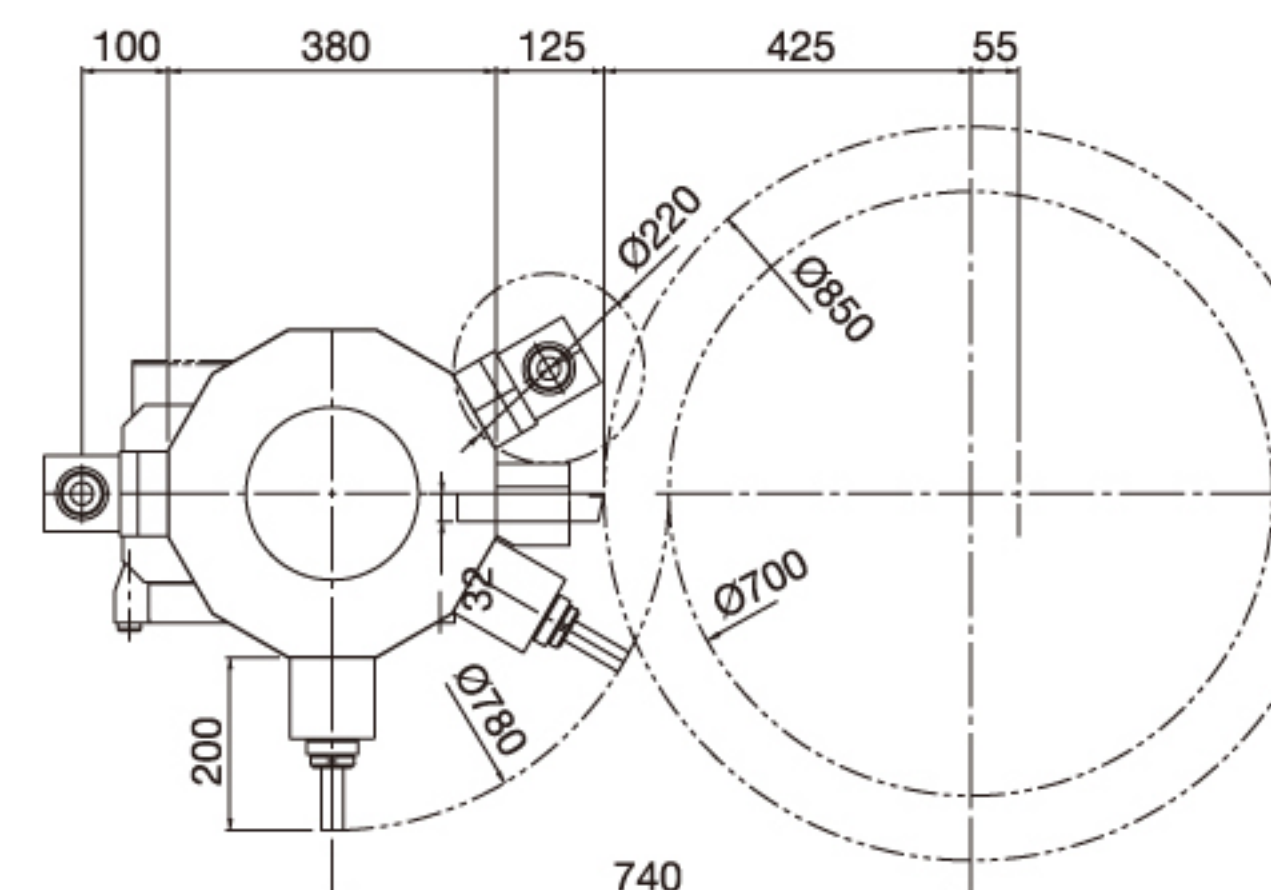
Spec.	A	B	X	Q (Stable Quill + Live Center MT5)	Max. turning dia.	Max. milling dia.
TC-3508	770	600	250	100	550	440
TC-3515	1530	1360	250	100	550	440
TC-3523	2290	2120	250	100	550	440
TC-3530	3050	2880	250	100	550	440

## ● TC - 40 with power turret



Spec.	A	B	X	Q (Stable Quill + Live Center MT5)	Max. turning dia.	Max. milling dia.
TC-4008	780	650	360	100	720	570
TC-4015	1540	1410	360	100	720	570
TC-4023	2300	2170	360	100	720	570
TC-4030	3060	2930	360	100	720	570

## ● TC - 45 with power turret



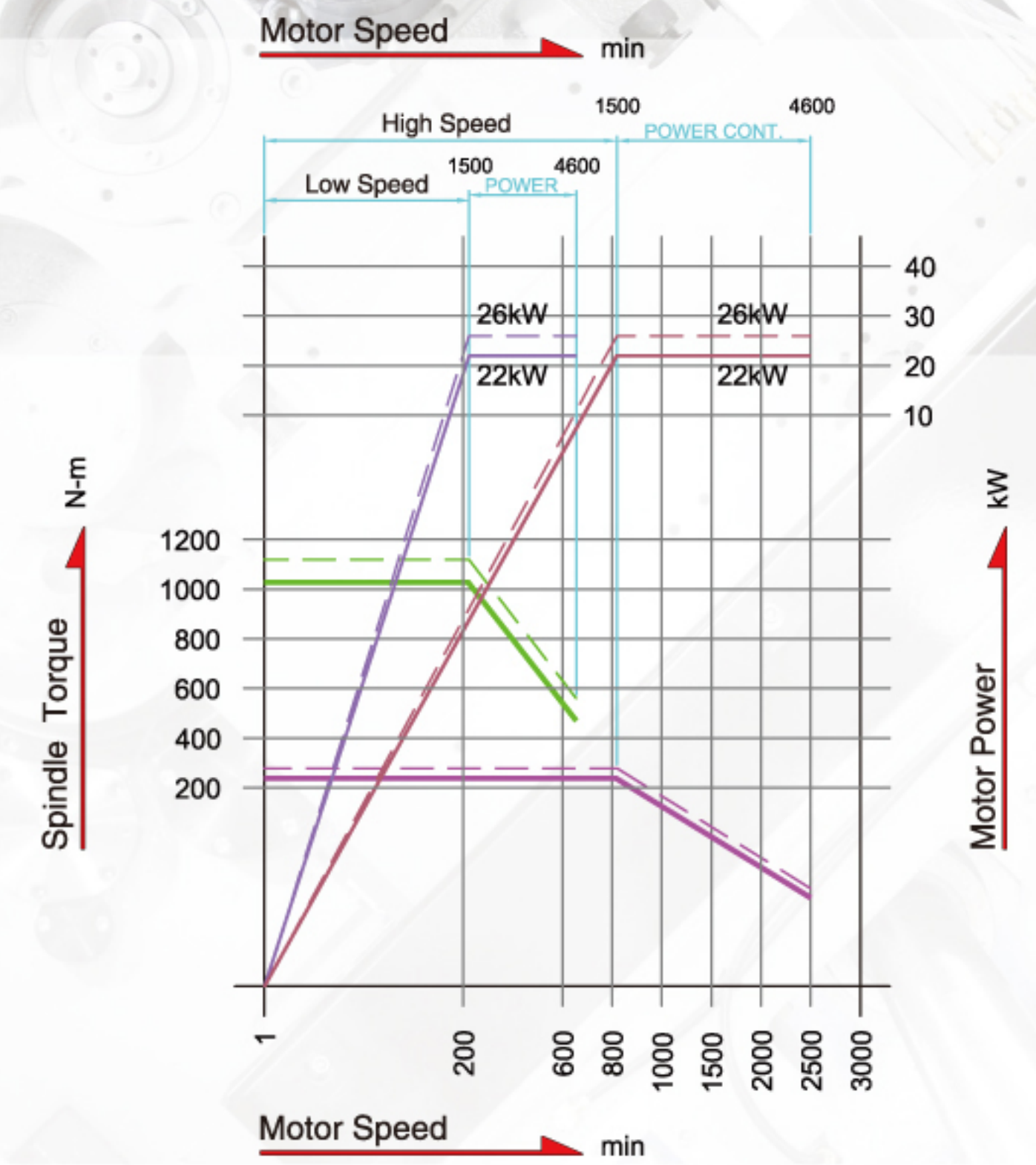
Spec.	A	B	X	Q (Stable Quill + Live Center MT5)	C	Max. turning dia.	Max. milling dia.
TC-4512	1115	765	425	200	100	850	700
TC-4517	1615	1265	425	200	100	850	700
TC-4522	2115	1765	425	200	100	850	700
TC-4532	3075	2725	425	200	100	850	700

✘ We reserve the right to change above information without prior notice.

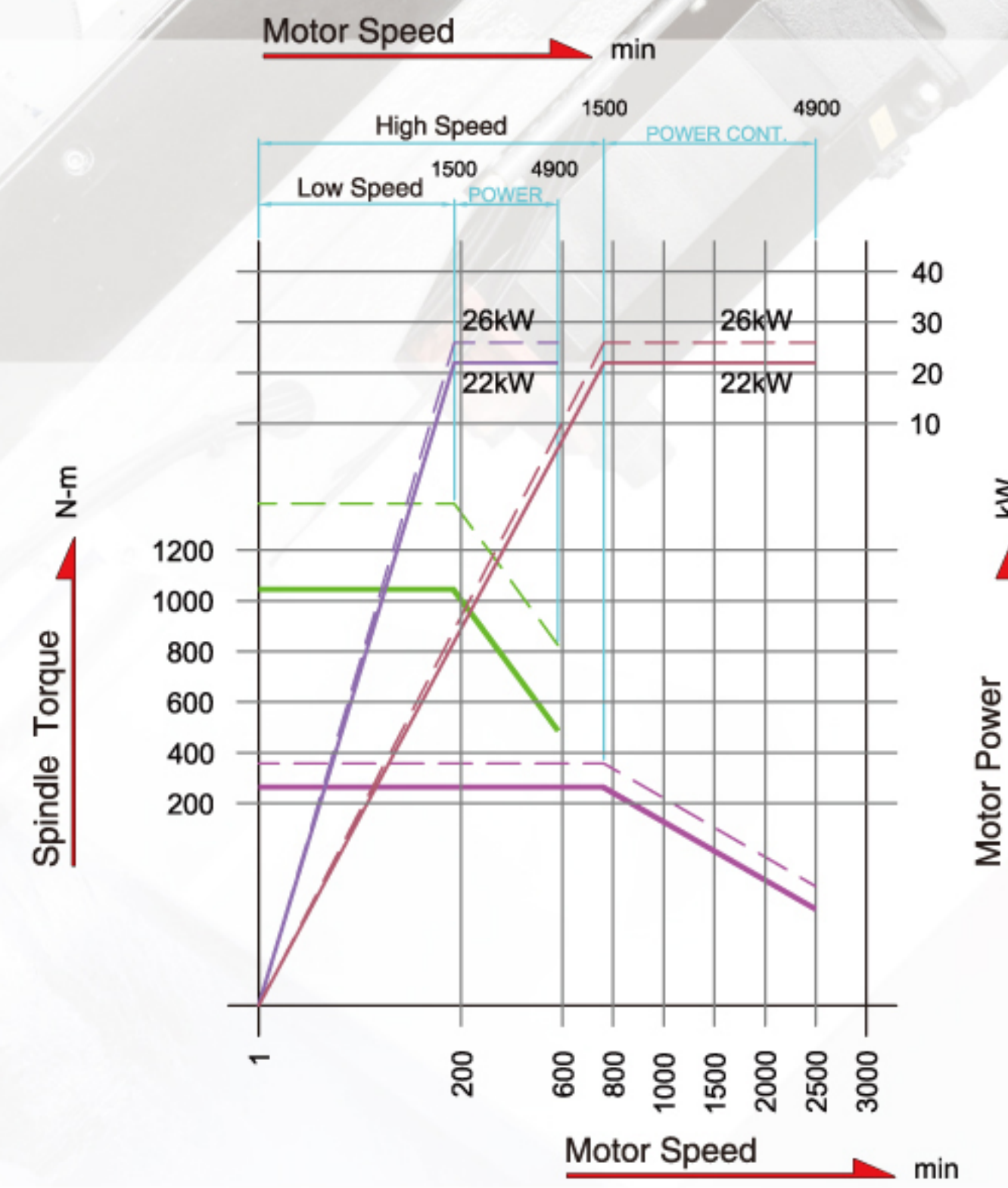
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# Spindle Output / Torque Diagram:

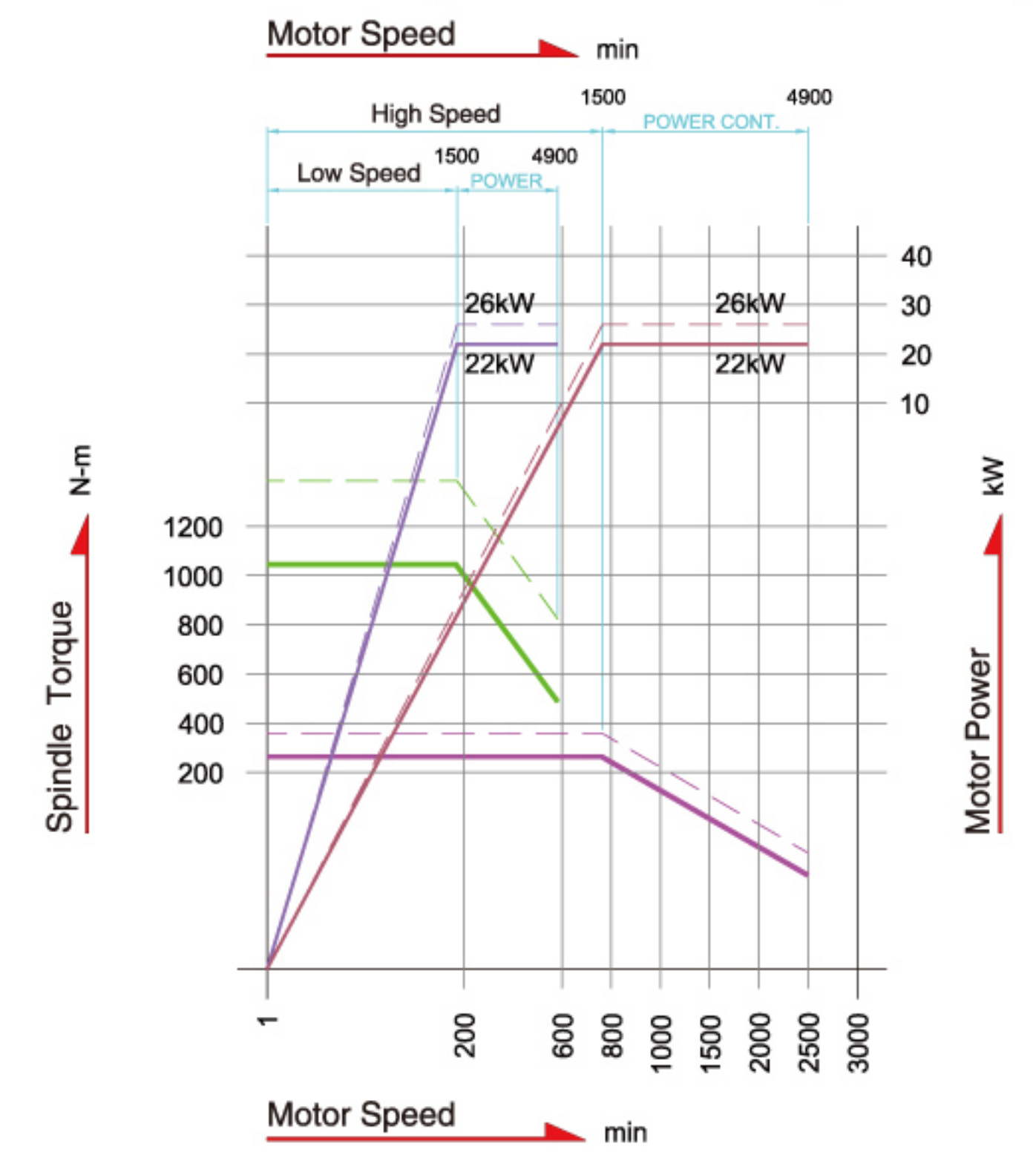
● **TC - 35 / 40** Spindle: A2-8  
 Spindle bore:  $\varnothing 105\text{mm}$   
 Spindle gearbox: 2-speed  
 Spindle motor:  $\alpha$  22i (22/26kW)



Spindle: A2-11  
 Spindle bore:  $\varnothing 131\text{mm}$   
 Spindle gearbox: 2-speed  
 Spindle motor:  $\alpha$  22i (22/26kW)



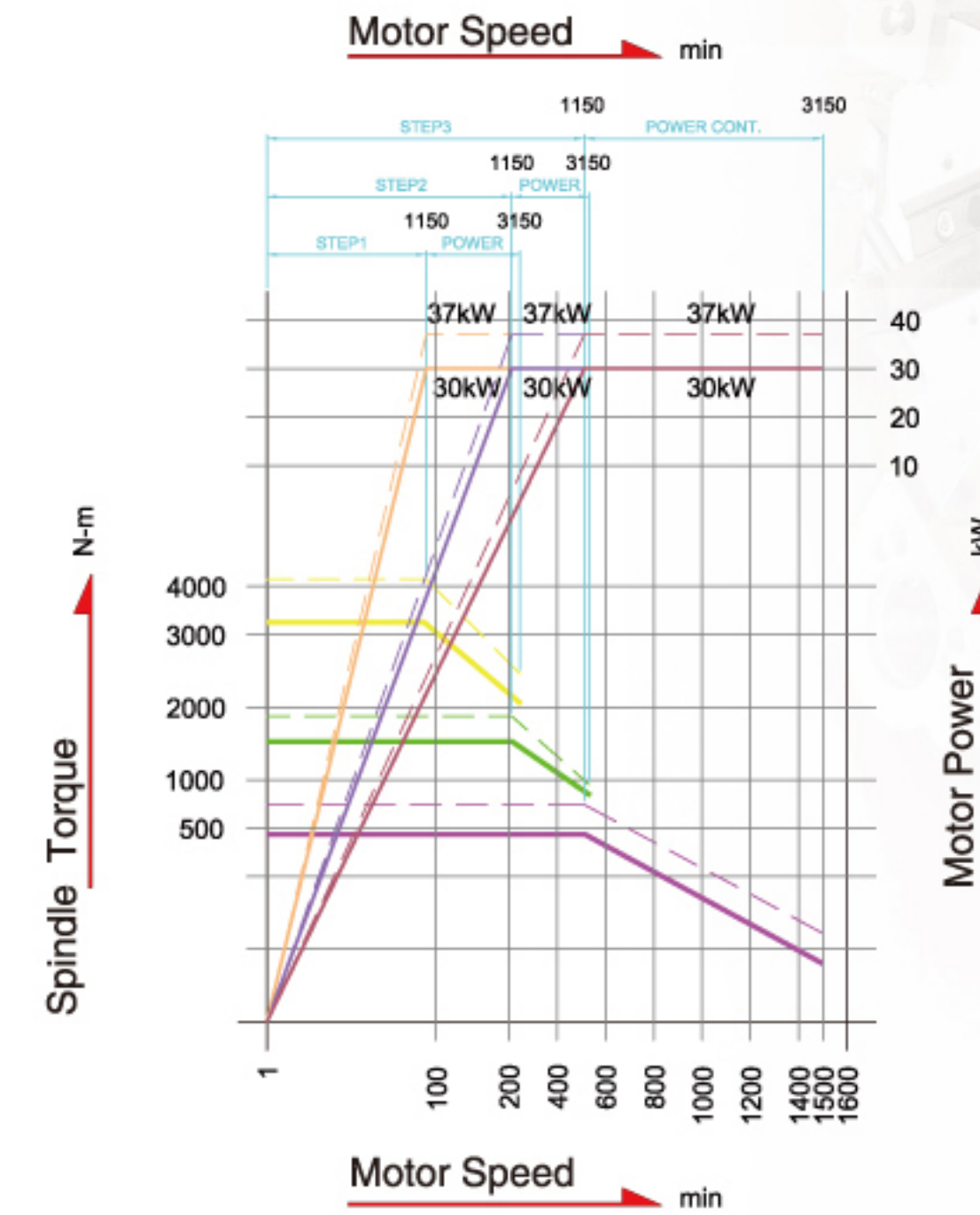
Spindle: A2-15  
 Spindle bore:  $\varnothing 180\text{mm}$   
 Spindle gearbox: 2-speed  
 Spindle motor:  $\alpha$  22i (22/26kW)



Spindle Torque Motor Power  
 - - - Low speed 30min. operation zone  
 - - - High speed 30min. operation zone  
 - - - Low speed continuous operation zone  
 - - - High speed continuous operation zone

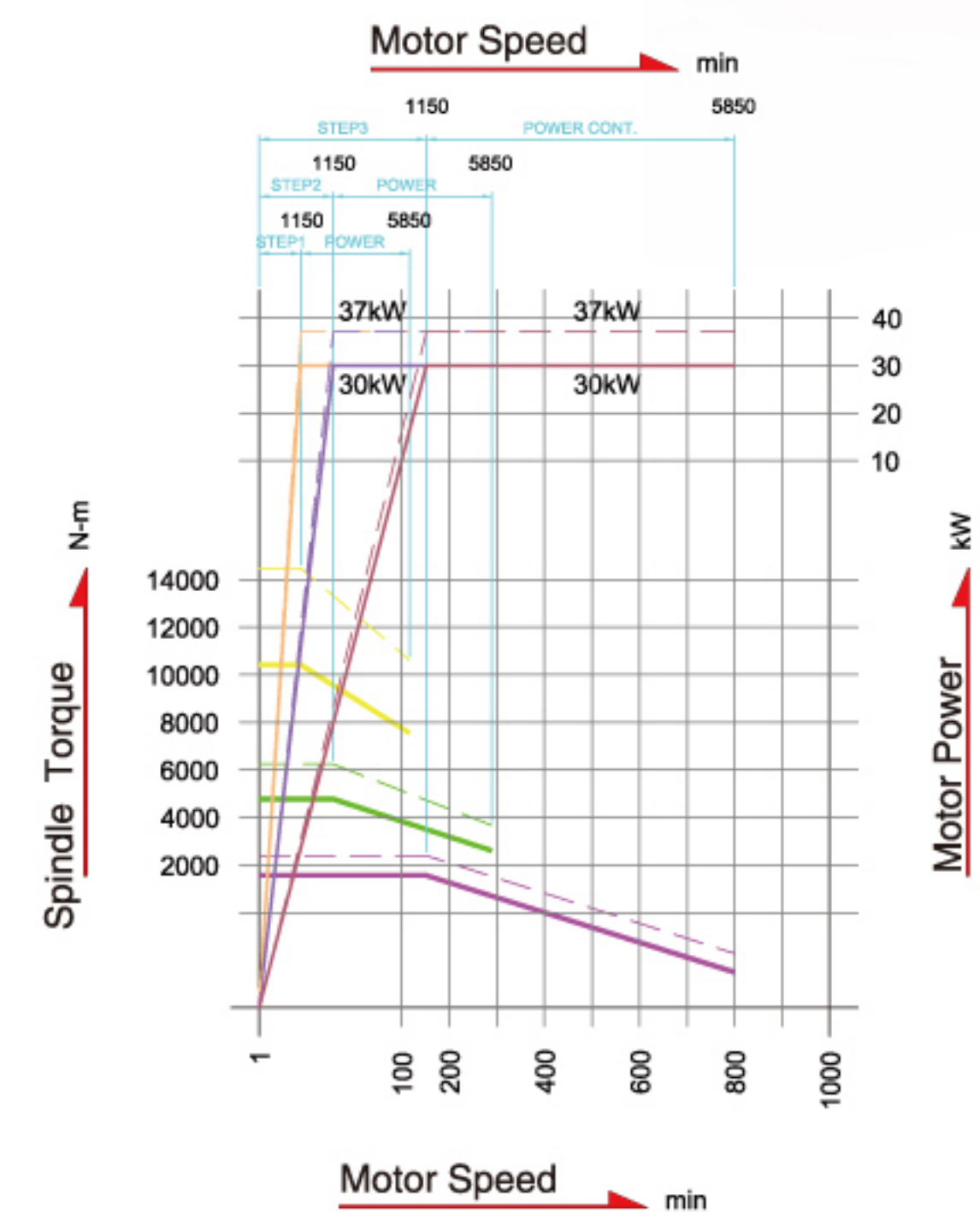
# Spindle Output / Torque Diagram:

● **TC - 45** Spindle: A2-11  
 Spindle bore:  $\varnothing 160\text{mm}$   
 Spindle gear head: 3-speed  
 Spindle motor:  $\alpha$  30i (30/37kW)



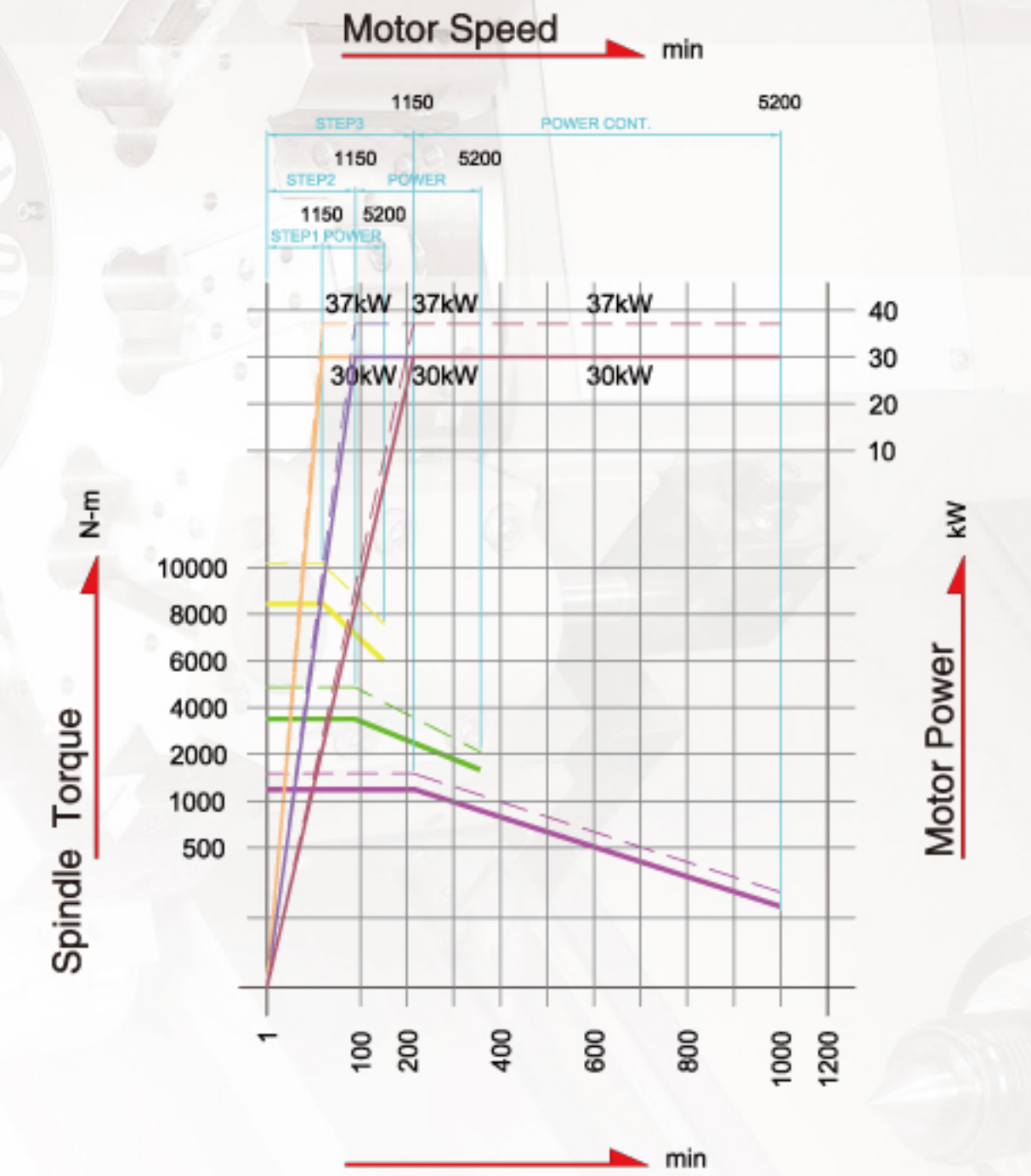
Spindle Torque Motor Power  
 - - - STEP1-30min. operation zone  
 - - - STEP2-30min. operation zone  
 - - - STEP3-30min. operation zone  
 - - - STEP1-Continuous  
 - - - STEP2-Continuous  
 - - - STEP3-Continuous

● **TC - 45** Spindle: A2-20  
 Spindle bore:  $\varnothing 320\text{mm}$   
 Spindle gear head: 3-speed  
 Spindle motor:  $\alpha$  30i (30/37kW)



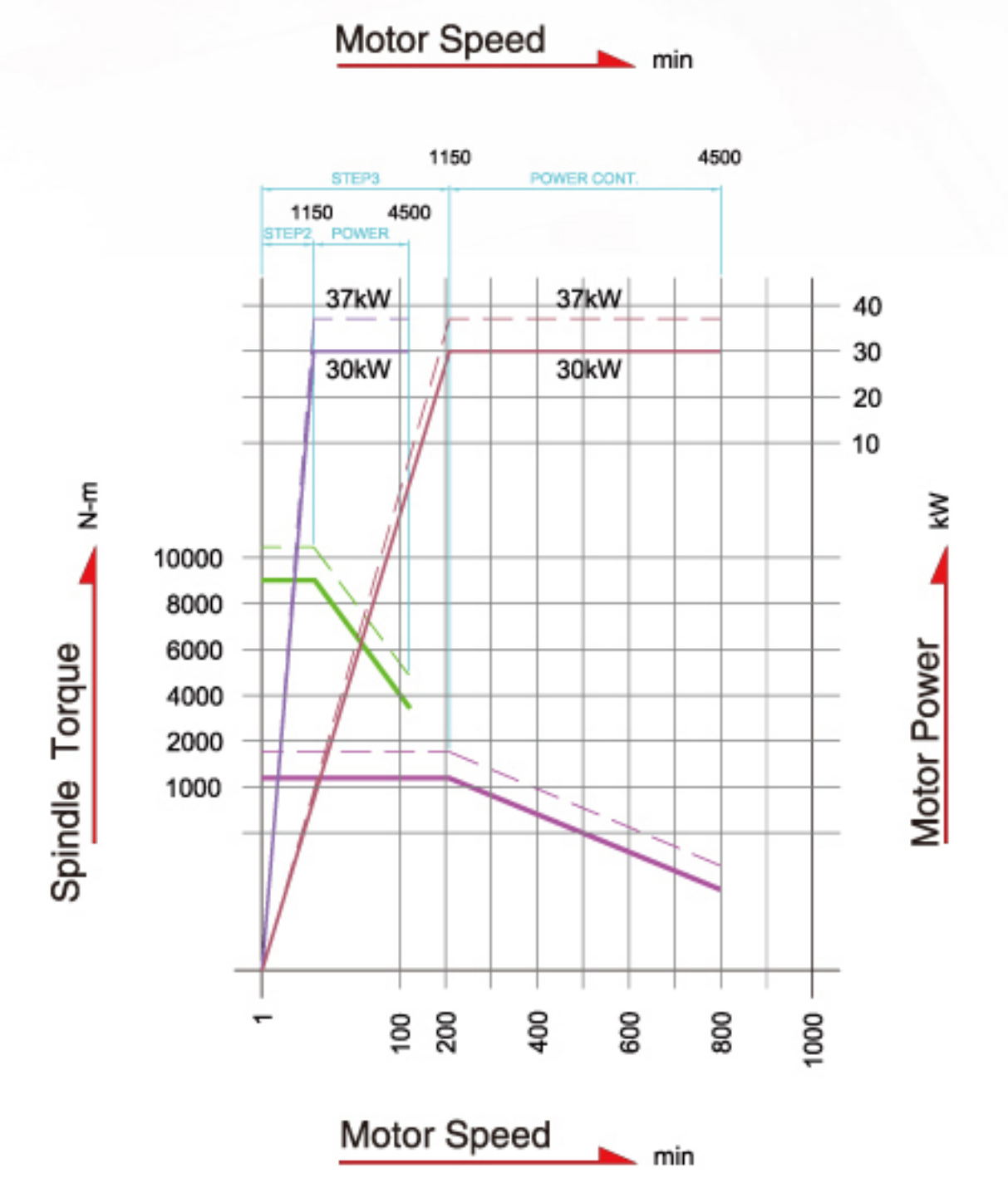
Spindle Torque Motor Power  
 - - - STEP1-30min. operation zone  
 - - - STEP2-30min. operation zone  
 - - - STEP3-30min. operation zone  
 - - - STEP1-Continuous  
 - - - STEP2-Continuous  
 - - - STEP3-Continuous

Spindle: A2-15  
 Spindle bore:  $\varnothing 230\text{mm}$   
 Spindle gear head: 3-speed  
 Spindle motor:  $\alpha$  30i (30/37kW)



Spindle Torque Motor Power  
 - - - STEP1-30min. operation zone  
 - - - STEP2-30min. operation zone  
 - - - STEP3-30min. operation zone  
 - - - STEP1-Continuous  
 - - - STEP2-Continuous  
 - - - STEP3-Continuous

Spindle: A2-20  
 Spindle bore:  $\varnothing 360\text{mm}$   
 Spindle gear head: 2-speed  
 Spindle motor:  $\alpha$  30i (30/37kW)



Spindle Torque Motor Power  
 - - - STEP1-30min. operation zone  
 - - - STEP2-30min. operation zone  
 - - - STEP1-Continuous  
 - - - STEP2-Continuous

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