

**CUBIC**  
MACHINERY



# GTV

**GANG TOOL LATHES**

**EXTREME PRECISION**

**HIGH PERFORMANCE**

# GTV

## CNC gang tool lathe that combines precision, speed and flexibility in a space saving design

GTV is a super high precision, high speed gang tool lathe built for the demanding requirements of small parts production. With a 50 millionths of an inch resolution, paired with 787 inches per minute (ipm) rapids, GTV proves that precision and speed can go hand in hand.

GTV can easily adapt to different machining jobs. To start with machine's mechanical structures are built for 'hard turning' as a standard feature, while mill-turn, grinding and in-process gauging capabilities can be achieved with optional attachments.

A wide array work holding, live tool and automation accessories help customers respond to ever changing needs now and in the future.

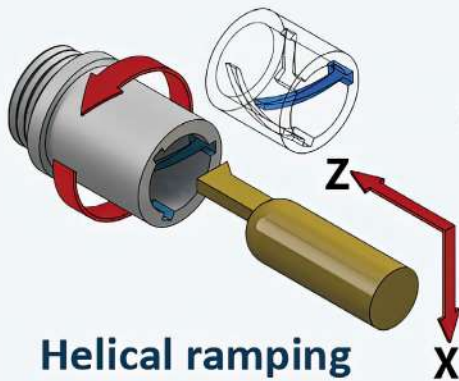




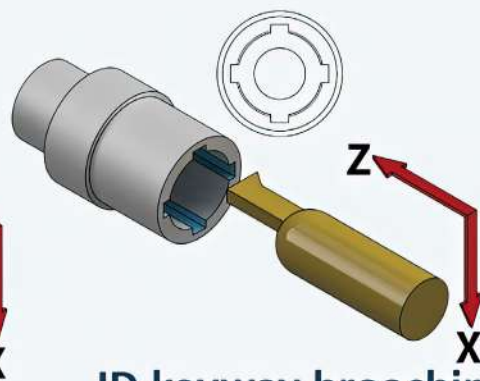
**GTV-27**  
**GTV-42**



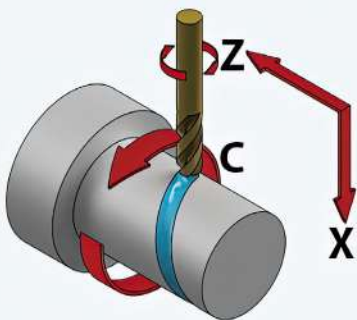
**GTV-27L**  
**GTV-42L**



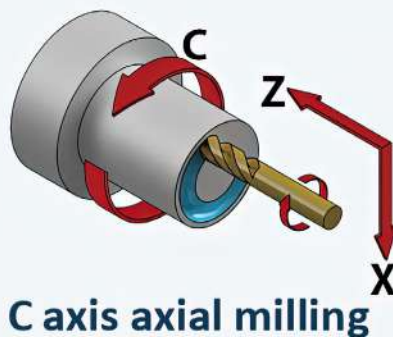
**Helical ramping**



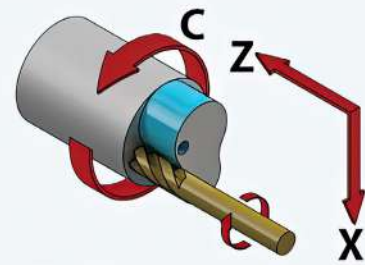
**ID keyway broaching**



**C axis radial milling**



**C axis axial milling**



**Off-center  
drilling / milling**



## **EXTREME ACCURACY**

### *Taking precision to the next level*

The most significant feature of GTV is the extreme level of accuracy that it can maintain. Even at its maximum traverse speed, GTV maintains a 0.00005" positioning accuracy.

This precision is due to GTV's construction. The pre-loaded NSK ballscrews are supported with NSK angular contact P4-class bearings and matched to NSK Super-Rigid linear roller rails. The machine sits on Meehanite casting based foundation which offers both rigidity and excellent vibration dampening. An automatic system keeps the slide component lubricated at timed intervals to maintain accuracy throughout the machine's life.

When accuracy counts, turn to GTV.





## BLISTERING SPEED

*GTV doesn't get bogged down*

At 787 inches per minute rapids on the X and Z axes, GTV minimizes non-cutting time. Taking advantage of GTV's gang tool layout, tool changes can happen faster than turret-based lathes. Also, the spindle can accelerate from 0 to the 6000 RPM top speed in 0.5 seconds\*. When performing simultaneous X, Z, and C axes movements, the C-axis is able to maintain an extraordinary 500 RPM.

All this speed results in short cycle times that translate directly into money in your pocket.

0 to 6000 rpm in  
**0.5** sec.\*

Rapid traverse  
**787** ipm



## **VERTICAL DESIGN**

*A vertical design leads to cleaner and easier parts production*

GTV's unique vertical plate design offers numerous benefits. First, metal chips and coolant drop directly downward, away from the cutting tools allowing faster and more efficient parts production and improved cooling efficiency.

By laying out the X-axis vertically, the depth of the machine is greatly reduced. Despite being so compact, the wide open design actually significantly improves visibility and ergonomics. The operator has easy reach for tool setups and parts handling.

Cubic has in-house mechanical and tooling engineers to take advantage of this versatile gang tool platform on GTV so complete solutions can be created for customer's machining requirements.

## CONTROL SYSTEMS

*Reliable and easy to use*

**FANUC**

Both FANUC 0i-TF and FAGOR 8055iTB controls are available on GTV. FANUC is a technological leader with unsurpassed reliability and technical support. Cubic has worked with FANUC to tune the servo and



spindle motors to deliver fast C-axis response rate as well as fast spindle and linear axis acceleration.

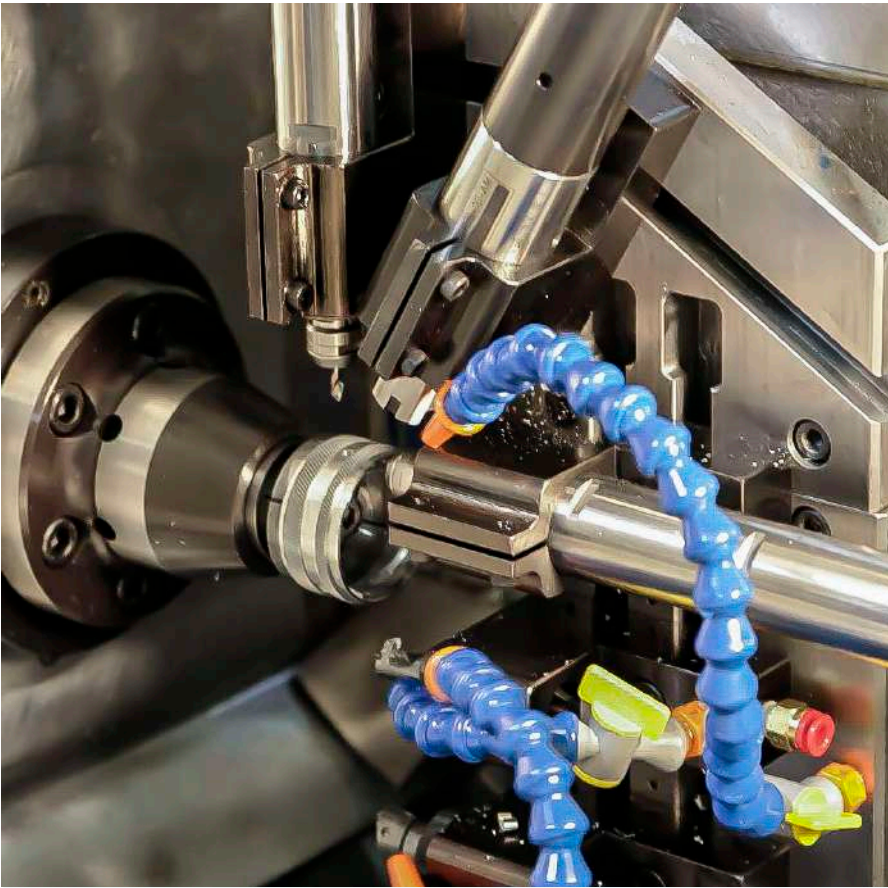
GTV is also available with FAGOR 8055iTB control. FAGOR control not only has the standard G-code programming mode it also has conversational programming where user can create part programs using visual prompts and tool path can be simulated on screen before actual cutting.

**FAGOR** 



With either control, Cubic has in-house PMC specialists and mechatronic engineers to integrate other automation components into the control as well as the ability to create new user interfaces tailored to user's machining requirements.





## GANG-TOOL ADVANTAGE

*Both faster and more accurate*

Gang-tool setups benefit from higher rigidity and positional accuracy than turret based solutions as well as faster tool changes.

Beyond the standard tool package, Cubic offers 3/8" and 1/2" center height tooling systems as well as air and electric live tools with speeds up to 60,000 RPM. Cubic has built many successful custom solutions based on GTV's gang-tool foundation.



1. 3 live tools with custom tool plate
2. Part-off tool with slide at the bottom
3. High speed spindle
4. Grinding spindle & high speed spindle
5. Large spindle bore option & 2 live-tools





## WORK HOLDING

*Wide range from 5C to 3-Jaw chuck*

Cubic offers collet spindle noses in the widely available 5C and 16C configurations for high accuracy chucking. Also available is dead-length B42 (DIN6343 173E-type) collet chuck. The dead-length design has zero z-axis movement and eliminates workpiece pull-back when the collet is closed. Besides collets, to run GTV as chucker, A2-4 or A2-5 3-jaw or 4-jaw chucks can also be used.

The GTV's hydraulically actuated chuck has stronger gripping force than air chucking allowing for heavier cuts.



Short-Nose 5C Collet Chuck



Short-Nose 16C Collet Chuck



Dead-Length B42 (DIN6343 173E)  
Collet Chuck



3-Jaw Power Chuck



Northfield Air Chuck

# ACCESSORIES

*It's the details that count, and the GTV delivers.*

## CHOICE OF CONTROL /



Fanuc Oi-TF Control



Fagor Control

## STANDARD /



Hydraulic Chucking Cylinder



LED Worklight



Auto Lubrication System



On-Table Coolant Delivery



1/4HP Coolant Pump



OD Square Shank Holder



ID Round Shank Holder



Heat Exchanger for Electrical Cabinet



Outlet for Laptop



Pendant Style Handwheel (Fagor only)



Large Coolant Tank

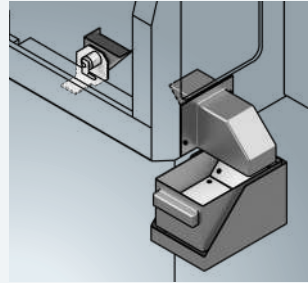
OPTIONAL /



Hydraulic Two-Stage Spindle Brake



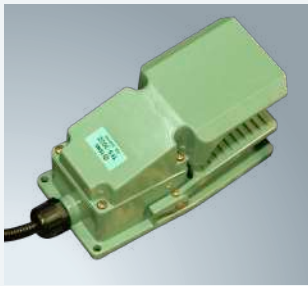
Chip Conveyor



Parts Catcher



NSK EM-3000 Live Tools



Collet Closer Foot Switch



Bar Feeder



Tool Probe



Fire Suppression



5C Collet Chuck Nose



16C Collet Chuck Nose



Dead-Length B42 (DIN6343 173E) Collet Chuck



3-Jaw Power Chuck



Northfield Air Chuck



Air Conditioner



Event Notification



Turn-Key Packages



# SPECIFICATION

ITEM		GTV 27		GTV 27L		GTV 42		GTV 42L		
Capacity	X Axis Travel	300 mm	11.8 in	400 mm	15.75 in	300 mm	11.8 in	400 mm	15.75 in	
	Z Axis Travel	165 mm	7 in	165 mm	6.5 in	165 mm	7 in	165 mm	6.5 in	
Working Holding	Bar Capacity	27 mm	1.062 in	27 mm	1.062 in	42 mm	1.654 in	42 mm	1.654 in	
	Spindle Length with Hydraulic Cylinder & Chuck	762 mm	30 in	762 mm	30 in	787 mm	31 in	787 mm	31 in	
	Collet Type	5C				5C, 16C, B42 (DIN6343 173E) Collet Chuck				
	3-Jaw Chuck Size	135 mm	5.3 in			152 mm	6 in			
	Spindle Configuration	A2-4				A2-5				
Precision	Positional Repeatability	0.00127mm		0.000050 in						
	Positional Accuracy	0.00127mm		0.000050 in						
	Spindle Runout	0.00127mm		0.000050 in						
	Simultaneous Axes	X-Z-C (3 Axes), X-C & Z-C Flat Plane Selection								
	CNC Control	FANUC 0i-TF or FAGOR 8055iTB Conversational		FANUC 0i-TF		FANUC 0i-TF or FAGOR 8055iTB Conversational		FANUC 0i-TF		
	Axis Control System	FANUC AC Digital (Fiber optic linked drives) or FAGOR Sercos digital		FANUC AC Digital (Fiber optic linked drives)		FANUC AC Digital (Fiber optic linked drives) or FAGOR Sercos digital		FANUC AC Digital (Fiber optic linked drives)		
Performance	Spindle Motor Power (15 minute)	7.5 kilowatt	10 HP							
	Spindle Motor Power (continuous)	5.5 kilowatt	7.3 HP							
	Spindle RPM	60~6000 rpm								
	Axes Rapid Travel (X, Z)	24 m/min	945 ipm							
	Axis Maximum Feed Rate	12.0 m/min	472 ipm							
	Servo Motor Torque	4.0 Nm cont. / 8.8 Nm max.				35.4 inch-lbs cont. / 77 inch-lbs max.				
Tooling	Tooling Center Height	42mm	1.653" (0.5" & 0.75" Opt.)							
Misc.	Coolant Capacity	95 liter	25 gallons							
	Coolant Pump Power	186 W	¼ HP							
	Chip Conveyor Type	Reversible Direction								
	Compressed Air Requirement	Only required if air live tools or part catcher are requested								
	Total Power Required	FANUC Control: 220VAC, 3 phase, 12 KVA   FAGOR Control: 440VAC, 3 phase, 12 KVA								
	Dimensions w/o options (L x D x H)	1549 x 1220 x 1828mm	61 x 48 x 72 in							
	Weight	1704 kg	3750 lb	1724 kg	3800 lb	1704 kg	3750 lb	1724 kg	3800 lb	



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