

# DUGARD

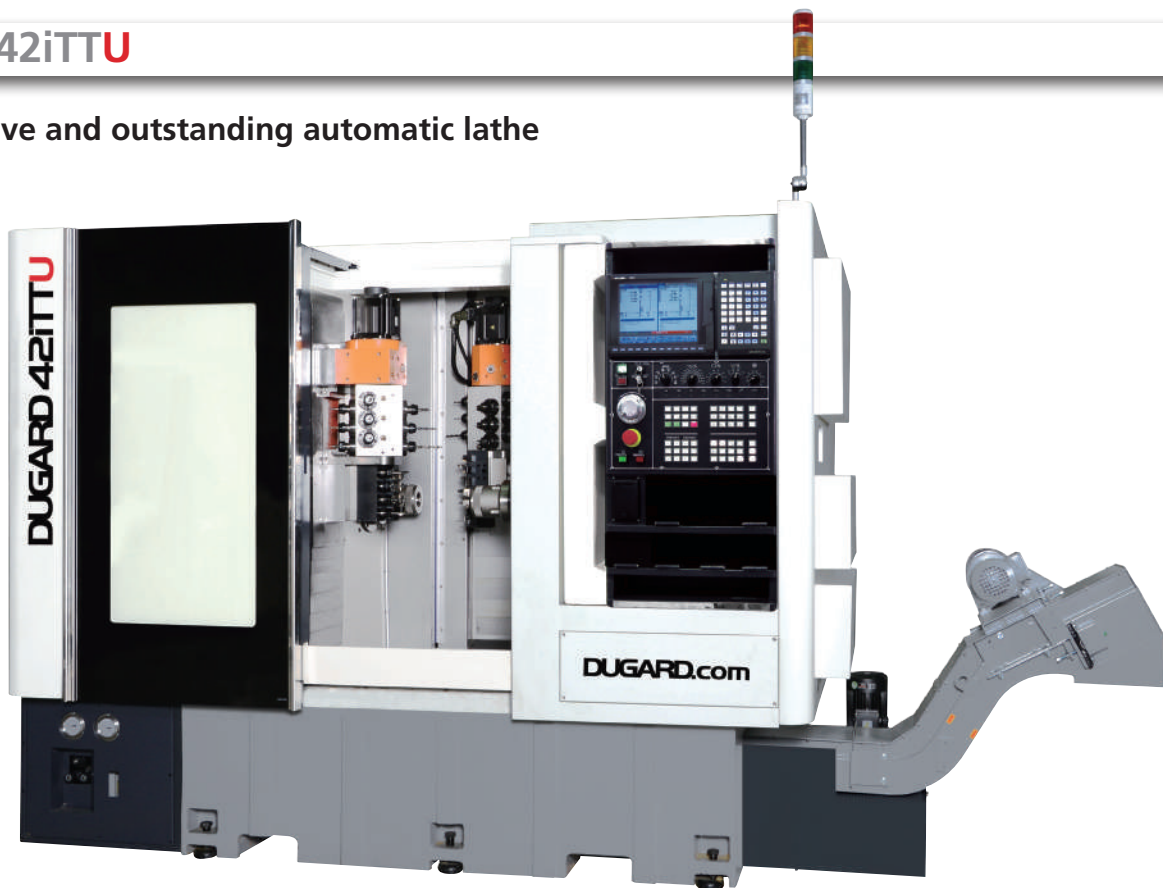
Machine Tools That Create Solutions Since 1939

## Dugard 42 Range of High Production Multi Axis CNC Turning Centres

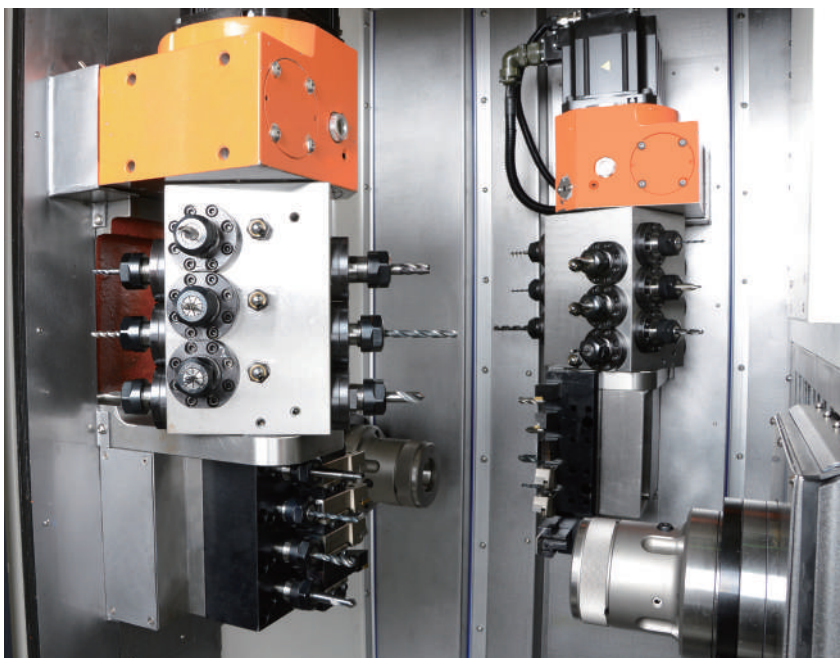
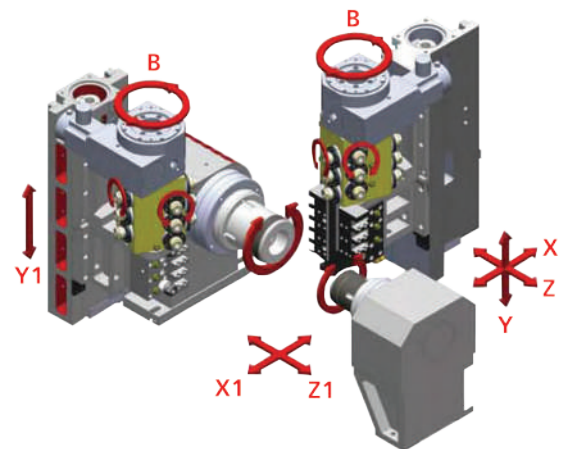


## Dugard 42iTTU

An innovative and outstanding automatic lathe



The 42iTTU has been designed with 10 axes and 2 spindles which includes a sub spindle with both X and Z positioning. It also has driven tools and the option of a powerful B axis milling for simultaneous and efficient machining. This means the tools application becomes faster and more flexible for complicated part production



### Tooling System

The milling head comprises of 12 motorised tools for 360° continuous leads for even greater flexible tool arrangement and significantly efficient production for small and medium lot sizes

## Dugard 42TT

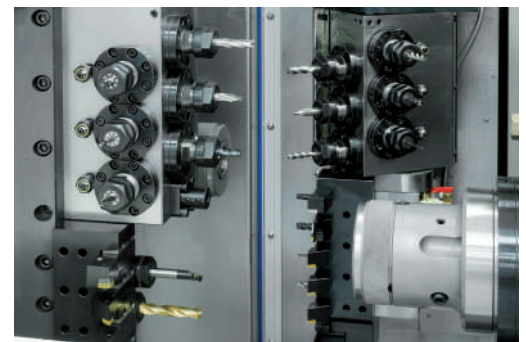
**8 axis and 2 spindles which includes a sub-spindle with both X and Z positioning.**

A compact footprint, as well as impressive machining capabilities and cutting capacity. Large linear guideways are used to increase stability and accuracy. High torque Mitsubishi servo motors are directly coupled to the precision ballscrews to give heavy duty cutting with superior accuracy and



### Tooling System

Extremely flexible and unique 3 axis gang tooling. Standard tooling system allows for 10 external tools, 9 internal and 12 live (6 axial, 6 radial). Gear driven ER20 spindles with rigid tapping as standard.



## Dugard i42Twin

**The i42Twin combines heavy duty construction with the highest quality components resulting in a versatile and robust machine. This machine gives you exceptional performance while reducing your costs.**



### Tooling System

The flexible tooling system comes with 9 standard external tools, 8 internal tools and 12 live tools. The unique tooling system can be changed easily, saving valuable seconds on site. Its versatile tooling system allows complex components to be finished completely in one operation



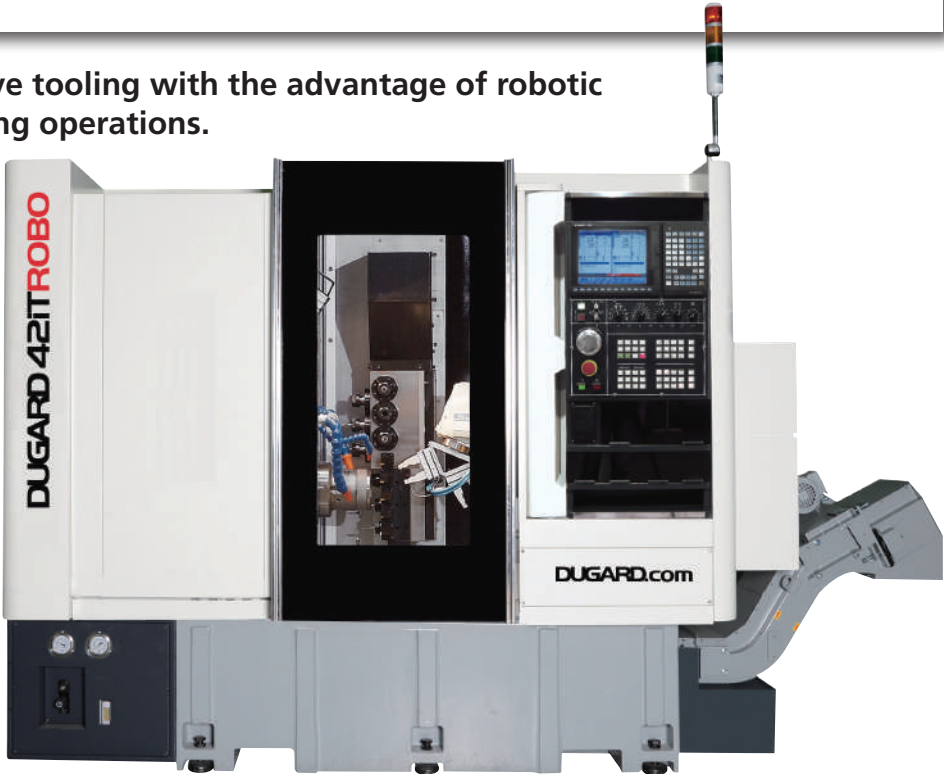


Dugard 42iT/**S Robo**

**4 axis lathe with C axis and live tooling with the advantage of robotic loading for unmanned chucking operations.**

The Dugard 42iT Robo is a modified version of the 42iT with an integrated Mitsubishi 6 axis articulated robot. This requires no additional floor space and is positioned so it will not hinder the machine operator while setting the machine or operating the Mitsubishi M70 control system.

It can be fitted with a 42B or 60B collet chuck or a 6" hydraulic chuck and can be used for billets, castings or processing forged parts.



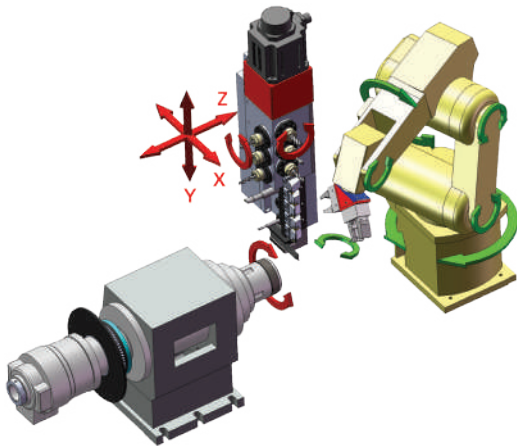
Intelligent **Robot**

**Complimenting the standard 42iT lathe is a fully integrated, high speed, high precision 6 axis robot.**

This intelligent robot has a total of 88 programmes and can easily manouver around tooling and other obstacles within the work area.

It can handle work pieces of up to 6kg and is ideal for billets, castings and forgings.

Robot Arm		42iT <b>Robo</b>
Mitsubishi S series		6 axis articulated
Drive system		AC servo motor (brake provided on all axes)
Position detection method		Absolute Encoder
Load	Max	6kg
	Rating	5kg
Position repeatability		± 0.02mm
Air supply pressure		0.49 ± 10% M Pa



**Tooling System**

Gang tooling for fast chip to chip times. Tooling block consists of 6 turning tools, 4 boring tools and 6 live tools (16 in total). Y axis for complex and off centre milling operations, combined with full C axis control for machining complex contours.

## Dugard 42iT

### 4 axis gang tooling lathe - an affordable alternative to a turret type C axis lathe.

The tooling system consists of 6 turning, 4 boring and 6 live milling tools giving a capacity of 16 tools. Its unique design allows for rapid chip to chip times, which will generally out perform turret type machines, enabling a reduction in cycle times.

Its rigid design allows heavy duty cutting to be performed. The 6 live tooling spindles with both C axis and Y axis can complete the most complex of work pieces in one operation.



### Mitsubishi M700 Control

- 64 bit high power control
- Colour graphics
- Dual channel programming



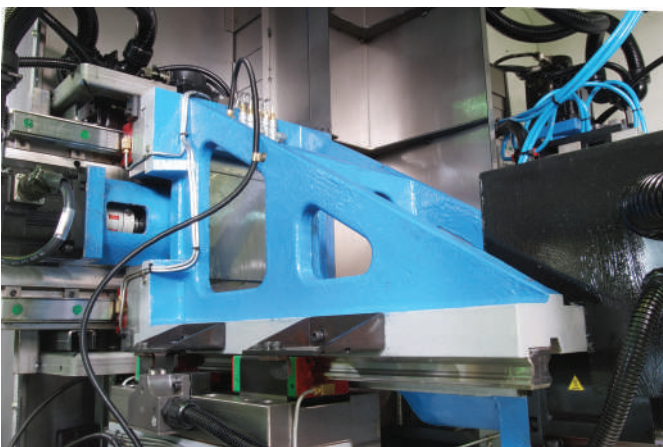
Various interfaces for programme saving, loading and software updating



- CF memory card
- RS-232C

### Linear Guideways

- Equipped with high precision HIWIN linear guideways
- 35mm rails throughout the machines increase stability and accuracy allowing heavier cutting.



### Standard Equipment

- 42mm capacity 3m hydrostatic magazine barfeed including interface
- 42mm capacity collet chuck
- Automatic parts catcher and conveyor
- Swarf conveyor and bin
- Coolant tank and pumps

### Options

- 6000rpm spindle speed
- 60mm main spindle bar capacity including collet chuck and 11kW drive
- Oil mist removal

Machine Type		42iTTU	42iTTU
Control		Mitsubishi M720	Mitsubishi M720
Spindle Capacity	Max bar working dia	42mm (60mm opt)	42mm (60mm opt)
	Max turning length	250mm	150mm
	Spindle collet chuck type	CNC	
	Spindle nose	CNC	
	Speed range	3000/4000rpm (4000/6000rpm opt)	3000/4000rpm
Sub-Spindle Capacity	Max turning dia	100mm	100mm
	Max bar working dia	42mm	42mm
	Max turning length	100mm	100mm
	Collet chuck type	KK5-173E/42B	
	Nose	ISO (DIN) A2-5	
	Through bore	30mm	30mm
	Seed range	4000rpm (6000rpm opt)	4000rpm
C axis	Positioning accuracy	0.001°	0.001°
Travel and Feed	X/Y/Z axis travel	150/415/250mm	140/415/250mm
	X-1/Y-1/Z-1 axis travel	410/410/300mm	410/410/300mm
ATC System	OD Tools main spindle	6	6
	ID tools main spindle	4	4
	OD tools sub spindle	4	4
	ID tools sub spindle	4	4
	Tool shank size	20mm	20mm
	Boring bar main	ER-20/20mm	ER-20/20mm
	Boring bar sub	ER-20/20mm	ER-20/20mm
Motorised Tool	Index time	0.3 sec (one)/0.6 sec (full)	0.3 sec (one)
	Number of tools	\$1 - 12 tools, \$2 - 12 tools	6 tools (3 a/c)
	B axis	360°	360°
	Speed	4000rpm (max)	4000rpm
	Size	ER-20	ER-20
	Max drilling dia	12mm	12mm
	Max tapping capacity	M10 x P1.25	M10 x P1.25
Mitsubishi Motor	Main spindle	AC spindle 7.5kW (11kW opt)	AC spindle 7.5kW (11kW opt)
	Sub spindle	AC spindle 3.7kW	AC spindle 3.7kW
	X/Z axis spindle	AC servo 1.0kW	AC servo 1.0kW
	X-1/Z-1 axis	AC servo 1.0kW (X1, Z1)	AC servo 1.0kW (X1, Z1)
	Motorised tool	AC servo 1.0kW (1.5kW opt)	AC servo 1.0kW (1.5kW opt)
Hydraulic system	Hydraulic motor	0.75kW	0.75kW
	Max pressure	50kg/cm <sup>2</sup>	50kg/cm <sup>2</sup>
	Tank Capacity	60 litres	60 litres
Lubrication	Lubricant motor	25W	25W
	Max pressure	15kg/cm <sup>2</sup>	15kg/cm <sup>2</sup>
	Tank capacity	2 litres	2 litres
Coolant system	Coolant motor type	2HP coolant : 4T5-5 high pressure coolant	2HP coolant : 4T5-5 high pressure coolant
	Coolant tank capacity	240 litres	240 litres
Machine Size	Length x width x height	3500 (2900) x 1900 x 1900mm	2500 x 1900 x 1900mm
	Weight	4350kg	4250kg

42TT	42iT	42iTRobo	i42Twin
Mitsubishi M700	Mitsubishi M70		
2mm (60mm opt)	42mm (60mm opt)		42mm (60mm opt)
150mm	200mm		300mm
KK5-173E/42B (KK6-185E/60B opt)			
ISO (DIN) A2-5 / A2-6			
00rpm (4000/6000rpm opt)	3000/4000rpm (4000/6000rpm opt)	3000/4000rpm (4000/6000rpm opt)	3000/4000rpm (4000/6000rpm opt)
100mm	-	-	100mm
42mm	-	-	42mm
100mm	-	-	155mm
	-	-	KK5-173E/42B
	-	-	ISO (DIN) A2-5
30mm	-	-	30mm
0rpm (6000rpm opt)	-	-	4000rpm (6000rpm opt)
0.001°	0.001°	0.001°	0.001°
140/410/230mm	150/415/230mm	150/415/230mm	150/415/300mm
110/410/360mm	-	-	Z1 - 450mm
6	6	6	9
4	4	4	8
4	-	-	-
4	-	-	4
20mm	20mm	20mm	20mm
ER-20/20mm	ER-20/20mm	ER-20/20mm	ER-20/20mm
ER-20/20mm	-	-	ER-20/20mm
0.3 sec (one)/0.6 sec (full)	0.3 sec (one)/0.6 sec (full)	0.3 sec (one)/0.6 sec (full)	0.3 sec (one)/0.6 sec (full)
6 tools (3 axial, 3 radial)	6 tools (3 axial, 3 radial)	6 tools (3 axial, 3 radial)	12 tools
-	-	-	360°
4000rpm (max)	4000rpm (max)	4000rpm (max)	4000rpm (max)
ER-20	ER-20	ER-20	ER-20
12mm	12mm	12mm	12mm
M10 x P1.25	M10 x P1.25	M10 x P1.25	M10 x P1.25
AC spindle 7.5kW (11kW opt)	AC spindle 7.5kW (11kW opt)	AC spindle 7.5kW (11kW opt)	AC spindle 7.5kW (11kW opt)
AC spindle 3.7kW	-	-	AC spindle 3.7kW
AC servo 1.0kW	AC servo 1.0kW	AC servo 1.0kW	AC servo 1.0kW
AC servo 1.0kW	-	-	AC servo 1.0kW (Z1)
AC servo 1.0kW (1.5kW opt)	AC servo 1.0kW (1.5kW opt)	AC servo 1.0kW (1.5kW opt)	AC servo 1.0kW (1.5kW opt)
0.75kW	0.75kW	0.75kW	0.75kW
50kg/cm <sup>2</sup>	50kg/cm <sup>2</sup>	50kg/cm <sup>2</sup>	50kg/cm <sup>2</sup>
60 litres	50 litres	50 litres	50 litres
25W	25W	25W	25W
15kg/cm <sup>2</sup>	15kg/cm <sup>2</sup>	15kg/cm <sup>2</sup>	15kg/cm <sup>2</sup>
2 litres	2 litres	2 litres	2 litres
2HP coolant : 4T5-5 high pressure coolant	2HP coolant : 4T3-3 high pressure coolant	2HP coolant : 4T3-3 high pressure coolant	2HP coolant : 4T5-5 high pressure coolant
240 litres	160 litres	160 litres	240 litres
2000 x 1700 x 1900mm	2000 x 1500 x 1900mm		3500 (2900) x 1800 x 1900mm
4200kg	2750kg	2850kg	3800kg

\*Specifications are subject to change without prior notice



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