

# DUGARD

Machine Tools That Create Solutions Since 1939

## Dugard E Range of Cost Effective Vertical Machining Centres



# Incredible value for money with a comprehensive choice of bed sizes, compact footprint and heavy cast iron construction

**Dugard 760E**



- X/Y/Z travel - 762/410/460mm
- 5.5/7.5kW spindle drive
- 20~11,000rpm speed range
- 36/36/30 m/min rapids
- 20 station twin arm ATC
- BT40 spindle
- 2100 x 1935mm footprint

**Dugard 1600E**



- X/Y/Z travel - 1630/850/850mm
- 11/15kW spindle drive
- 20~10,000rpm speed range
- 24/24/18 m/min rapids
- 24 station drum type ATC (up to 28 station twin arm ATC opt)
- BT40 spindle
- 4300 x 3580mm footprint

**Dugard 1000E**

- X/Y/Z travel - 1050/540/560mm
- 11/15kW spindle drive
- 20~10,000rpm speed range
- 32/32/24 m/min rapids
- 24 station carousel ATC (up to 28 station twin arm ATC opt)
- BT40 spindle
- 3300 x 2280mm footprint



**Dugard 2000E**



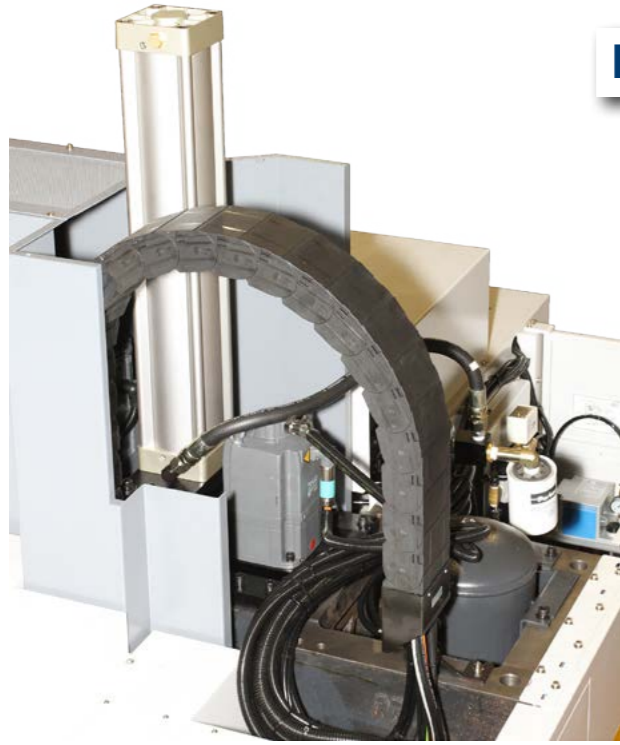
- X/Y/Z travel - 2060/850/815mm
- 11/15kW spindle drive
- 20~10,000rpm speed range
- 24/24/18 m/min rapids
- 24 station drum type ATC (up to 28 station twin arm ATC opt)
- BT40 spindle
- 5300 x 3580mm footprint

**Dugard 1350E**



- X/Y/Z travel - 1350/640/660mm
- 11/15kW spindle drive
- 20~10,000rpm speed range
- 30/30/25 m/min rapids
- 24 station drum type ATC (up to 28 station twin arm ATC opt)
- BT40 spindle
- 3800 x 2495mm footprint

### Pneumatic Counter Balanced Head



Z-Axis Pneumatic counter balance system, replacing the more common counter balance weight system. These pneumatic cylinders are directly mounted to the column and vertically moving head casting, this simple and directly mounted system reduces the need for weights and chains within the column, and can react to the machines vertical movements quickly with lower friction and vibration levels.

### Cartridge Belt Drive Spindle

Simple design giving high torque and durability through a timing belt suitable for most machining applications.

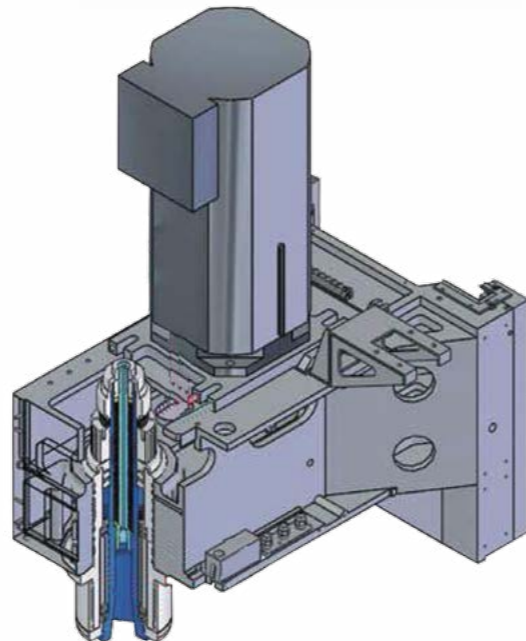
Impressive spindle speeds with low friction design for efficient acceleration and deceleration. High tool clamping force secures tool holder for high speed rotation. Labyrinth seal with positive air pressure prevents spindle contamination



### Stable Thermal Control

Both spindle cartridge and head casting are cooled to maintain thermal stability and spindle life. Physical rigidity is guaranteed by the use of digital FEA (Finite Element Analysis).

This, combined with high quality Meehanite castings and Japanese THK NR-Type high load linear ways, ensures accuracy and cutting performance.



### Pre-Tensioned Twin Nut Ballscrew



- Double-anchored ballscrews with twin pre-loaded ball nut giving superior high speed cutting rigidity and accuracy with high speed cutting
- Full laser calibration and ball bar testing to ensure squareness and accuracy

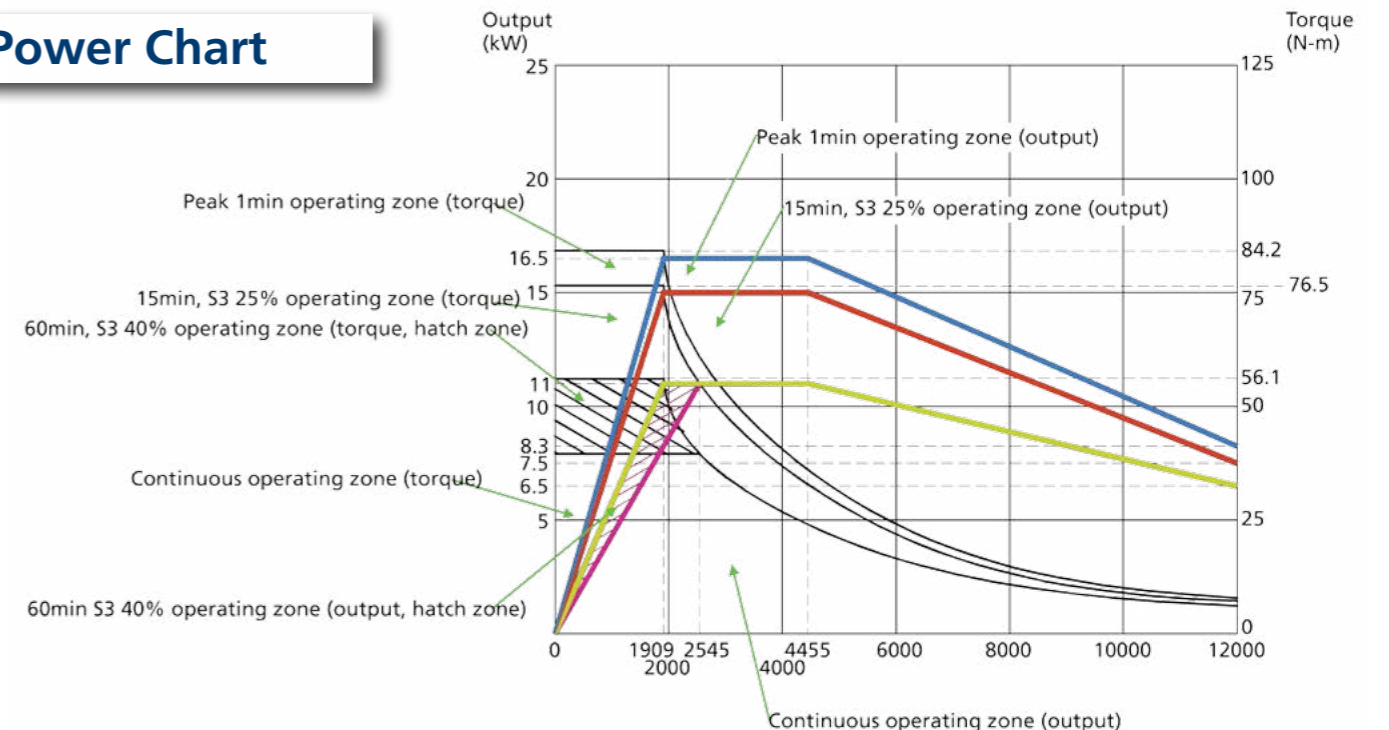
### Chip Removal

#### Built-in swarf auger

This standard feature makes swarf removal from the machine easy and automatic, it also helps coolant to drain from the swarf before leaving the machining area.



### Power Chart



| Specification             | Dugard 760E           | Dugard 1000E               | Dugard 1350E           | Dugard 1600E           | Dugard 2000E           |
|---------------------------|-----------------------|----------------------------|------------------------|------------------------|------------------------|
| <b>Travel</b>             |                       |                            |                        |                        |                        |
| X axis travel             | 762mm                 | 1050mm                     | 1350mm                 | 1630mm                 | 2060mm                 |
| Y axis travel             | 410mm                 | 540mm                      | 640mm                  | 850mm                  | 850mm                  |
| Z axis travel             | 460mm                 | 560mm                      | 660mm                  | 850mm                  | 815mm                  |
| Spindle nose to table     | 75~535mm              | 80~640mm                   | 105~765mm              | 105~920mm              | 105~920mm              |
| Spindle centre to column  | 420mm                 | 550mm                      | 670mm                  | 860mm                  | 860mm                  |
| <b>Table</b>              |                       |                            |                        |                        |                        |
| Table size                | 910 x 380mm           | 1200 x 480mm               | 1500 x 600mm           | 1750 x 800mm           | 2150 x 800mm           |
| T slot                    | 16 x 80 x 4 slots     | 18 x 80 x 5 slots          | 18 x 100 x 5 slots     | 18 x 125 x 6 slots     | 18 x 125 x 6 slots     |
| Table load                | 660kg                 | 1300kg                     | 2300kg                 | 3000kg                 | 4000kg                 |
| <b>Spindle</b>            |                       |                            |                        |                        |                        |
| Taper size                | BT40/CAT40            | BT40/CAT40                 | BT40/CAT40             | BT40/CAT40             | BT40/CAT40             |
| Speed                     | 20~11,000rpm          | 20~10,000rpm               | 20~10,000rpm           | 20~10,000rpm           | 20~10,000rpm           |
| Max motor power output    | 5.5/7.5kW Fanuc       | 11/15kW Fanuc              | 11/15kW Fanuc          | 11/15kW Fanuc          | 11/15kW Fanuc          |
| <b>Feed</b>               |                       |                            |                        |                        |                        |
| Rapid feed X/Y/Z          | 36/36/30 m/min        | 32/32/24 m/min             | 30/30/25 m/min         | 24/24/18 m/min         | 24/24/18 m/min         |
| Cutting feed X/Y/Z        | 10/10/10 m/min        | 10/10/10 m/min             | 10/10/10 m/min         | 10/10/10 m/min         | 10/10/10 m/min         |
| <b>Accuracy</b>           |                       |                            |                        |                        |                        |
| Positioning               | 0.01mm                | 0.01mm                     | 0.01mm                 | 0.01mm                 | 0.01mm                 |
| Repeatability             | ± 0.003mm             | ± 0.003mm                  | ± 0.003mm              | ± 0.003mm              | ± 0.003mm              |
| <b>ATC</b>                |                       |                            |                        |                        |                        |
| Tool storage capacity     | 20 station - twin arm | 24 station - carousel type | 24 station - drum type | 25 station - drum type | 24 station - drum type |
| Tool max diameter         | 75mm                  | 75mm                       | 75mm                   | 75mm                   | 75mm                   |
| Tool max length (mm)      | 210mm                 | 210mm                      | 210mm                  | 210mm                  | 210mm                  |
| Tool max weight (mm)      | 7kg                   | 7kg                        | 7kg                    | 7kg                    | 7kg                    |
| Tool to tool change time  | 2.2 sec               | 2.2 sec                    | 2.2 sec                | 2.2 sec                | 2.2 sec                |
| <b>General</b>            |                       |                            |                        |                        |                        |
| Tank capacity             | 150L                  | 350L                       | 400L                   | 640L                   | 700L                   |
| Chip disposal             | chip screw            | chip screw                 | chip screw             | Chip screw             | Chip screw             |
| Air source requirement    | 7kg                   | 7kg                        | 7kg                    | 7kg                    | 7kg                    |
| Power requirement         | 25KVA                 | 25KVA                      | 30KVA                  | 35KVA                  | 35KVA                  |
| Measurement space (W x L) | 2100 x 1935mm         | 3300 x 2280mm              | 3800 x 2495mm          | 4300 x 3580mm          | 5300 x 3580mm          |
| Weight                    | 3650kg                | 6600kg                     | 8110kg                 | 12,300kg               | 14,500kg               |

**Choice of digital controls** - meeting all your requirements, each one features user-friendly operation, powerful functions and maximum reliability



**Fanuc OiMD**

- 8.4" TFT LCD colour monitor
- New D series high speed
- PC flash card storage
- Industry standard programming



**Siemens 828D**

- 10.4" TFT LCD colour monitor
- Shopmill conversational programming
- Super high speed
- USB/PC card storage



**Mitsubishi M70**

- 10.4" TFT LCD colour monitor
- 64 bit processor
- 700M/L memory

Various interfaces for programme saving, loading and software updating including

- CF memory card
- Ethernet



**DUGARD** Machine  
Tools

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