In addition to our UK headquarters and USA facilities, Winbro Group Technologies has a number of partner companies strategically located to provide local sales and service support.

UK, Europe and ROW
Winbro Group Technologies
Whitwick Business Park
Coalville, Leicestershire
LE67 4JP
UK
Tel: +44 1530.516.000
Fax: +44 1530.516.001
Email: sales@winbrogroup.com

USA, Canada and Mexico
Winbro Group Technologies
3049 Southcross Boulevard, Suite 105
Rock Hill, South Carolina 29730
USA
Tel: +1 803.985.9481 (Sales)
Tel: +1 888.948.6400 (Service)
Email: sales.na@winbrogroup.com
Winbro’s FGC 2 delivers levels of productivity and profitability considerably greater than can be obtained from conventional creep-feed grinding machines.

The FGC 2, with its 4 and 5 axis capability allows complex components and forms to be manufactured simply and quickly. Performance benefits include reduced set up time, high part accuracy and fast cycle times.

Diamond Roll Wheel Dressing
The FGC 2 machine features both profiled diamond roll and rotary diameter disk dressing capability, providing quick and efficient set up. The machine can also be supplied with a double dresser capability for multiple and extended machining operations, providing even greater productivity levels. The dressing facility enables the economic and precise dressing of complex fir tree root forms and shroud end features - from initial profile dressing through to in-cycle wheel dressing.

High-Pressure / High Coolant Application
Coolant is supplied by a unique, fully programmable / steerable twin nozzle arrangement. This assures that coolant is continually supplied as near to the cut as possible and that the wheel is always clean and sharp. Results suggest a saving of 30% on wheel life compared to a standard, single nozzle type machine.

Coolant Filtration System
The FGC 2 grinding centre can be supplied with a unique media-free coolant filtration system. This system is both environmentally friendly, highly efficient and helps reduce operational and overhead costs. This media-free option totally eliminates filter paper consumption.

Automatic Wheel Change
We understand the need to maximise productivity in a high pressure manufacturing environment. The FGC 2 machine therefore has an automatic wheel change capability which keeps productivity high and wheel change related downtime low.

Unique Grinding Software
Easy to use, operator friendly and simple to program 3, 4 and even 5 axis simultaneous machining of components using on screen graphics. This also includes the positioning of the programmable twin coolant nozzle system.

Applications in the Aero and Medium Sized IGT Industries
- Turbine Blades - Shrouded and Shroudless
- Compressor Blades
- Nozzle Guide Vanes
- Heat Shields

Machine Specification

<table>
<thead>
<tr>
<th>Axis Travel</th>
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</thead>
<tbody>
<tr>
<td>X Axis</td>
</tr>
<tr>
<td>Y Axis</td>
</tr>
<tr>
<td>Z Axis</td>
</tr>
<tr>
<td>A Axis (rotary)</td>
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<tr>
<td>B Axis (tilt)</td>
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</tbody>
</table>

Feedrate
- Rapid Traverse (X,Y and Z axes): 32m/min (1,260ipm)
- Acceleration (X,Y and Z axes): 5m/sec² (196 in/sec²)

Accuracy - ISO 230-2
- Positioning (X,Y and Z axes): A 0.005mm (0.00019”) R 0.003mm (0.00012”)

Table
- Working Surface: 1400 x 650mm (55.0 x 25.5”)
- Slots: 7 on 100mm centres (3.937”)

Spindle
- Maximum Speed: 8,000 rpm
- Motor HP Rating (50-60%): 50hp / 38kW
- Spindle Taper: BBT40

Control
- Heidenhain: iTNC 530

Automatic Tool Changer (ATC)
- Type of Tool Shank: BT40 Supplied
- Tool Storage Capacity: 12 x 250mm (10”) dia Wheels, 16 x 250mm (8.6”) dia Wheels
- Maximum Tool Diameter (milling): 75mm (2.5 inches)
- Maximum Tool Diameter (grinding): 250mm (9.8 inches)
- Maximum Tool Length (milling): 300mm (11.8 inches)
- Maximum Tool Weight: 7.0 kg (15.6lbs)
- Maximum Weight (all tools): 200 kg (529lbs)
- Random Change Time: Tool to Tool: 3.5 seconds Chip to Chip: 5.0 seconds

Coolant and Chip Management
- Pressure
  - Grinding: 40 bar (580 psi)
  - Wheel Cleaning: 70 bar (1,015 psi)
- Coolant Flow
  - Grinding: 120l / min (31.7 gal/min)
  - Wheel Cleaning: 100l / min (26.4 gal/min)