# 3 SPECIFICATIONS

## 3.1 Standard Machine Specifications

| Model | RX7/GX7 | | | | |
|---|---|---|---|---|---|
| CNC System | ANCA 5DX | | | | |
| Processor | Pentium 4 2.6GHz | | or higher | | |
| Memory | 512Mb | Or higher | | | |
| Hard Disk | 40 Gbyte | Or higher | | | |
| DVD-R/CD-RW | 52x Speed | | | | |
| Display | 15" LCD | | | | |
| Touch Screen | | | | | |
| Modem | 56K BPS | | | | |
| RS232 | 2 Channels | | | | |
| Parallel | 1 Channel | | | | |
| Expansion | 8 USB ports | | | | |
| | 3 PCI Slots | | | | |
| | Sercos | | | | |
| | 1 AGP | | | | |
| Working Range | | | Hard Axes | | |
| | X-axis | Y-axis | Z-axis | A-axis | C-axis |
| Pitch | 10mm | 10mm | 5mm | 360deg | 360deg |
| Travel | 439mm | 464mm | 274mm | | 307deg |
| Position Feedback Resolution | 0.0001mm | 0.0001mm | 0.0001mm | 0.0001deg | 0.0001deg |
| Programming Resolution | 0.001mm | 0.001mm | 0.001mm | 0.001deg | 0.001deg |
| Maximum Feedrate | 18m/min | 18m/min | 9m/min | 600 RPM | 36000deg/min |
| Lube System | Auto | Auto | Auto | | |
| Drive System | Sercos Digital closed loop ANCA Digital Drives | | | | |
| | | | | | |
| | | | Soft Axes | | |
| | B-axis | U-axis | V-axis | W-axis | A`-axis |
| Programming Resolution | 0.001deg | 0.001mm | 0.001mm | 0.001mm | 0.001deg |
| Drive System | Software driven | | | | |
| | | | | | |

| | | | |
|---|---|---|---|
| Workhead | | | |
| Workpiece Taper | ISO 50 Pull stud retention ready | | |
| Speed Range | 0-600rpm | | |
| Max Swing | 220mm | 9.4" | |
| Max Part Weight | 20Kg | 44lbs | |
| Sealing | Continuous Air Purge | | |
| Cooling | Water Cooled | | |
| Chuck System | | | |
| Capacity (tool size) | 1 - 40mm | | |
| System Type | Pneumatic Precision Collet Chuck | | |
| | | | |
| Internal Lights | 1 off | | |
| Air Conditioner | optional | | |
| | | | |
| Grinding Spindle | | | |
| Drive | Integral direct drive | | |
| Power RX7 | 19kW @6000rpm | 25Hp | |
| Power GX7 | 7.2kW @8500rpm | 10Hp | |
| Speed | 1800-10000rpm CW & CCW | | |
| Sealing | Continuous Air Purge | | |
| Cooling | Water Cooled | | |
| Taper | ISO 30 nose taper | | |
| Wheel Bore | 31.75mm (1.25")max. | | |
| Wheel Packs | 2 | | |
| Wheels per Pack | 4 | | |
| | | | |
| Max. Wheel Diameter | 200 mm (8") | | |
| Max.Wheel Speed | Refer to Wheel Manufacture specifications | | |
| Max. Wheel Arbor Length | 78 mm (3") | | |
| Max. Wheel Pack Weight(total Wheel Pack Assembly) | 8 kg | | |
| Grinding Wheel Material | No restrictions | | |
| | | | |
| Probe | | | |
| Type | Renishaw Probe LP2 | | |

| | | |
|---|---|---|
| Tip Construction | Replaceable Carbide | |
| | | |
| Machine | | |
| Colour | RAL7035/RAL5014 | |
| Electrical Power | 20 kVA @ 380 to 480Volts | |
| Air Pressure | 6.0 Bar | 88 Psi |
| Weight | 4500 Kg | 12,056 Lb |
| Base Material | "ANCACRETE" Polymer Concrete | |
| LxWxH | 2.5m x 2.0m x 1.9m | 99"x 79" x 75" |
| | | |

### 3.2.4 Motorized Spindle

The grinding spindle manufactured by ANCA also incorporates direct drive technology, therefore eliminating the need for another additional motor, pulleys and belt. This gives the spindle a super quiet operation. The variable speed spindle can be run in both CW and CCW directions from 1800 to 10,000 RPM. The spindle is liquid-cooled for stability, accuracy and reliability.

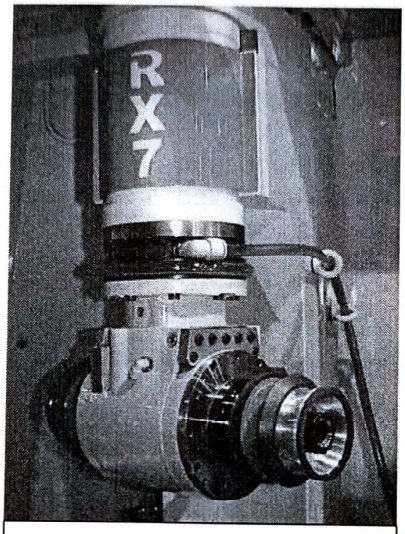


**Figure 3, Motorised Spindle**

### 3.2.5 Coolant Manifolds

Three programmable coolant solenoids are provided; one for the headstock and the other two for the grinding spindle.

The RX7/GX7 coolant manifold system allows for rapid coolant configuration changes.

Two manifolds can be set separately - one for each wheel. Each manifold is fixed in position by means of two captive M8 screws that can be undone in a matter of seconds with a battery operated drill. (Please refer to Figure 3 above).

Therefore, operators can build up a magazine of manifolds with coolant pipe setups for different operations. Of course, the position of coolant tubing needs to be verified to prevent collision during operation, but this only needs to be done once for each type of wheel pack – not every time the wheel pack is changed.

### 3.2.6 Direct Drive Axes

All axes on the RX7/GX7 are direct drive. There are no gearboxes, gears, pulleys or belts. The rotor shaft of the motor is directly coupled to the ball screw of the X-, Y- and Z-axis. On the C and A axes, the rotor is built around the center hollow of the spindle. This totally eliminates backlash on all axes. Resolution of the A- and C-axes is 0.0001 degrees, far more accurate than our competitors. Using this technology allows us to index the headstock 300 degrees in 0.5 of a second.

All motors are also internally pressurized with air.

Each axis has automatic oil lubrication and is fully protected with bellows over ballscrews and rails, and fixed metal guards over the assemblies when required.

### 3.2.7 Wheelpack

A Wheel pack is made up of several wheels (see Figure 4, Wheel Pack Assembly).
The wheel sleeve supplied allows a maximum wheel hub width of 78mm (3″). A wheel hub longer than this can impede C axis rotation and tool loading. A smaller size is available for single or double wheel packs; it can also be replaced when worn.

All parts should be clean when first assembled and when fastened to the grinding spindle.

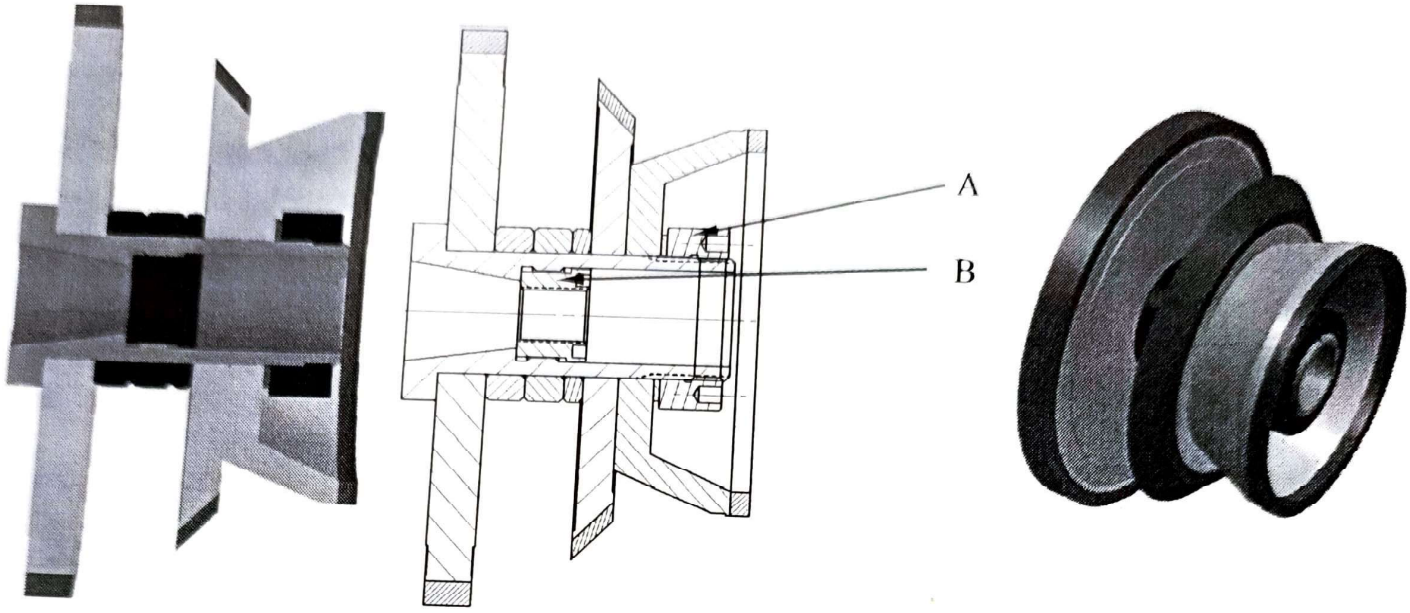


**Figure 4, Wheel Pack Assembly**

- Use locknut A with tab washer only. The minimum torque to tighten locknut A and B must be 20Nm.
- When using a cup wheel always ensure enough clearance with the C-axis column.
- All parts should be clean when first assembled and when fastened to the grinding spindle.