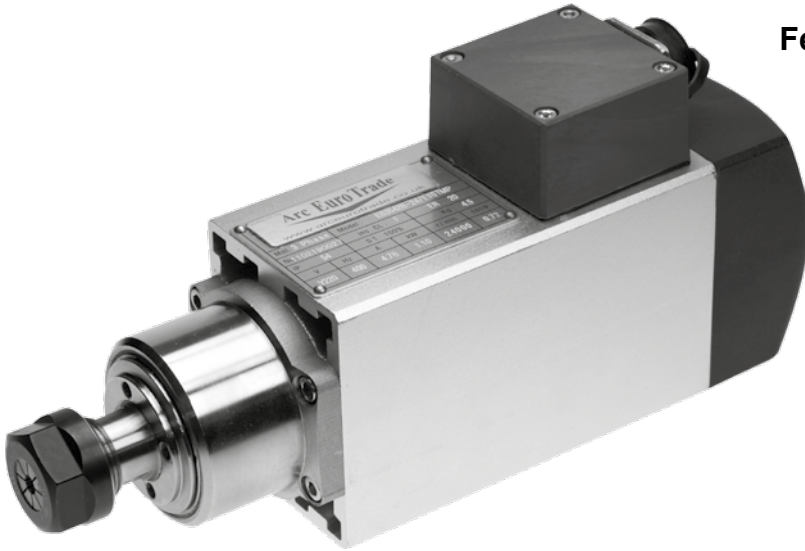


# Product Data Sheet

## ER20 High Speed Spindle (165-010-01800)



### Features:

- 3 Phase Squirrel Cage Induction Motor
- Totally Enclosed, Fan Cooled (TEFC)
- High quality ceramic angular contact front and rear bearings ensure ultra high axial and radial load capabilities.
- Run Out Accuracy: 0.005mm Max
- ISO 1940 Balance Quality Grade G2.5
- Positive Temperature Coefficient (PTC) thermistor fitted as standard\*
- IP54 Protection
- Insulation Class F
- Uses standard ER20 Collets

### Key advantage of buying a Fuji Frenic Mini Inverter with a spindle from Arc Euro Trade Ltd.

If a high speed spindle and a Fuji Frenic Mini inverter are purchased from us at the same time, we will program the inverter with the settings for the spindle **FREE OF CHARGE**. Normally, programming an inverter can take some time even for an experienced user, anywhere from 1 hour upwards depending on the inverter. We regret we are unable to provide any advice on program settings for use with this spindle for any inverter not purchased from us.

### Specifications:

Input Voltage	220V AC
Max Power	1.1kW (1.48HP)
Current	4.78A
Frequency	400Hz
Max Speed	24,000 rpm
Front Bearings	Ceramic Angular Contact Bearings
Rear Bearings	Ceramic Angular Contact Bearings
Weight	4.25kg
Collet Type	ER20

### Wiring the Spindle

For wiring the Fuji Frenic Mini 5A inverter (our code 165-020-00400), we suggest the use of 4 core 1mm<sup>2</sup> screened CY cable to connect the motor plug to the inverter 3 phase supply and Earth. When using screened cable, connect the screen to earth at one end only (connecting both ends will cause an earth loop). Ensure the screen is properly insulated and cannot short circuit any other terminal. Connect the screen to an earth terminal on the inverter or to the motor plug outer shell.

After completing all wiring and correctly setting the inverter parameters according to the spindle specifications, run the spindle at low speed to check the rotation direction is correct (CCW when viewed from the collet end). If the spindle runs in a clockwise direction, stop the spindle, disconnect the inverter from the electricity supply and wait for it to power down. Swap over any two of the 3 phase supply connections on the inverter (say V and W) and test the spindle direction again.

\* The PTC thermistor may also be connected to the inverter if required and supported by the inverter but wiring should be kept separate from the 3 phase feed to avoid interference.

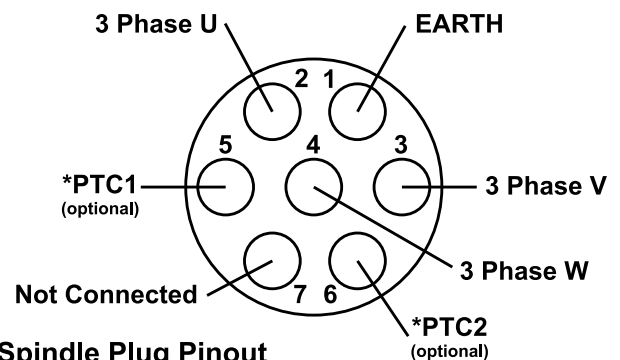


Fig.1 Spindle Plug Pinout

## Running-In the Spindle Bearings

With a new spindle, the bearings should be run-in according to the schedule shown in Fig.2, allowing the spindle to cool to ambient temperature between each run.

It is quite normal for the spindle casing to become hot during use.

## Maintenance

- To keep the bearings in good condition, the spindle must be run for at least 30 minutes every month.
- To prevent the spindle overheating, the cooling fan and air ducts should not be covered and any accumulation of dust should be cleaned out regularly.
- Keep the collet, collet taper and collet nut clean when changing cutters.

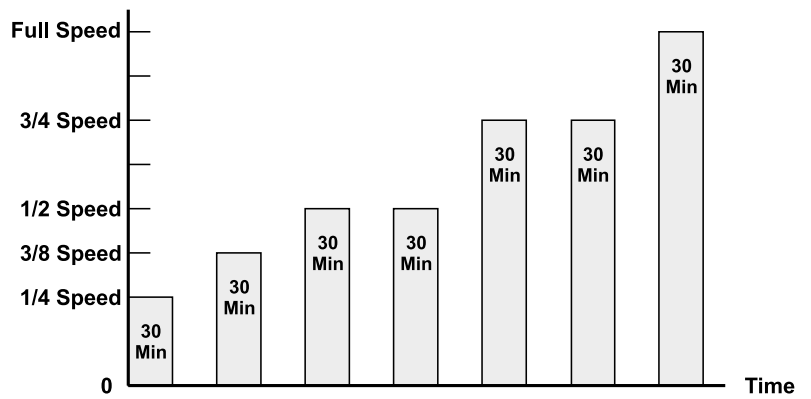


Fig.2 Running-In Schedule

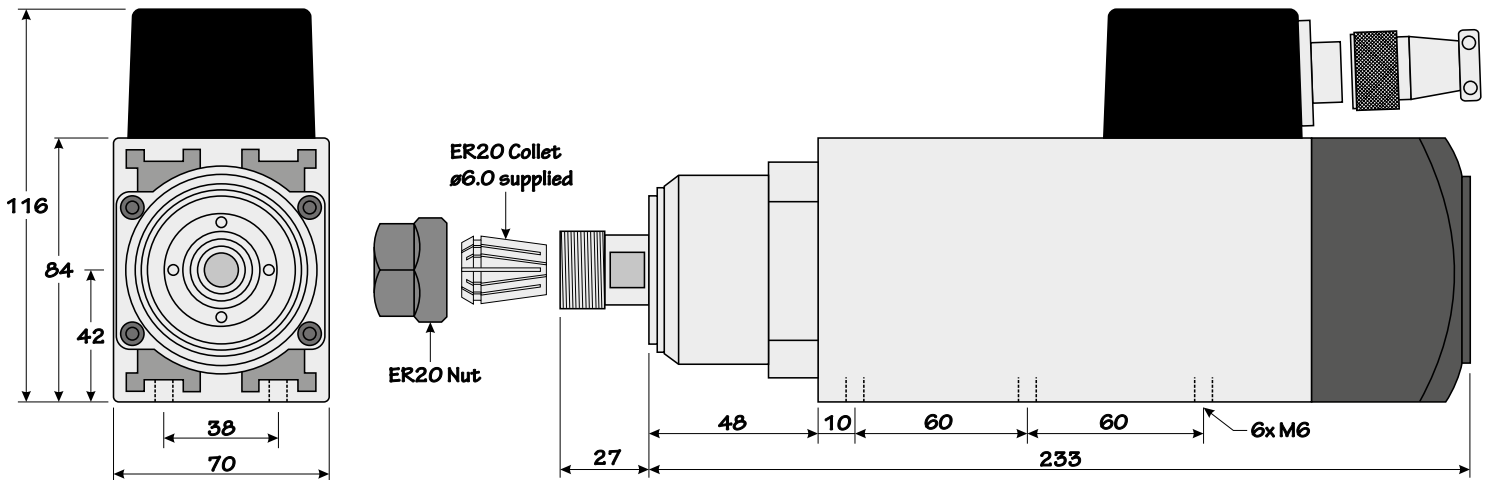
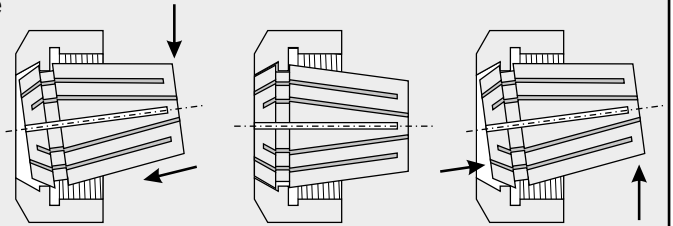
## ER Collets

Inspecting the inside of our ER collet nuts reveals an internal flange that has been machined eccentric to the main axis of the nut. This is not a machining error but is designed that way to lock onto the groove of the collet and aid its release from the chuck body.

For this feature to work properly, the collet must be mounted in the nut first before fitting the assembly into the chuck body. To mount the collet in the nut, insert it on an angle, turn slightly and push it into the nut until it clicks into place on the eccentric flange. The cutter may now be fitted and the assembly tightened hard into the chuck body.

To remove the cutter, slacken and undo the nut until resistance is felt. Then, using a collet wrench, further undo the nut until the collet is released from the chuck body.

Removal of the collet from the nut is the reverse of the mounting procedure.



## Notes

- This is the maximum information we can provide for this product. We are unable to provide technical support or guidance for the proposed use of this product.
- Wiring and installation should be carried out by a competent person and should be inspected and approved by a qualified electrician before use.
- If you feel this work is outside the scope of your experience and ability, then we would request that you return the product to us unused and in its original packing within 7 days of receipt of goods.