

# Doimak

## EXTERNAL CYLINDRICAL HEAVY RANGE GRINDING MACHINE: RCN-SP



### DESCRIPTION

DOIMAK machine model RCN is a universal grinding machine adequate for unitary parts and for large series. The main characteristics of this model are its high reliability, accuracy and production.

Model *RCN for large series* has been specifically designed for heavy parts (for example: steel rolls). Its mechanical design has been focused in the machine stiffness, in order to obtain high accuracy with heavy parts. Also, the machine incorporates the latest technology in digital NC and drives. Operator interface is made by means of iconographic self-teaching masks, so no programming knowledge is required for its use.

The grinding machine has a wheelhead for external diameters and faces, the table has an angular movement of  $\pm 4^\circ$  in order to grind taper surfaces. Finally, tailstock is motorised and it incorporates a force cell to control tailstock pressure.

### TECHNICAL FEATURES

- Distance between centers: 3.000/4.000/5.000/6.000 mm.
- Maximum workpiece diameter: 1.000 mm.
- Maximum weight between centers: 4.000 kg.
- Wheelhead of 37 kw running on hydrostatic bearings.
- Maximum wheel size: 1.060 mm.
- Peripheral wheel speed: 45/60 m/s.
- Control Sinumerik 840 D.



### GRINDING WHEEL HEAD

- Peripheral wheel speed: 45 m/s.
- The main shaft is made of special steel, ground and lapped. It runs on hydrostatic bearings, which means that the system can respond to the highest demands in roughness, geometrical accuracy and precise tolerance on workpieces.
- The bearings are lubricated via an independent hydraulic unit with safety devices capable of protecting the shaft/bearing clearance.
- The main shaft is driven by a dynamically balanced A/C 20 kW powered motor with pulley and V-belts.
- Speed variator of 20 kW to keep constant peripheral speed on grinding wheel.

### TAILSTOCK

- Once locked in position, clamping force is obtained through an automatic device.
- Inside taper of sleeve: MT-5.
- Stroke of 100 mm.

### DRESSER.

- Mounted on the work head.
- Single point diamond blade.
- Dressing cycle is programmable through CNC control and can be integrated into the grinding cycle.
- Full guarding.
- Teleservice.

### CNC CONTROL SIEMENS SINUMERIK 840-D

### ACCESSORIES

- The device for internal grinding disposes of a mandrel of 7 kw and 12.000 rpm.
- It is possible to attach different tips allowing to grind holes of up to Ø 450 mm and 550 mm deep.

### **DOIMAK - 20870 ELGOIBAR-GUIPUZCOA-SPAIN**

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### BASE

- Amply sized perlitic cast iron with the internal ribs necessary to ensure good machine rigidity and vibration-free running.

### WHEEL HEAD SLIDE - "Z" AXIS

- Mounted on the machine base.
- Slide driven by digital type A.C. servomotor and ball screw.
- Stroke reading by encoder.
- Positioning resolution: 0,001 mm.
- Max. travel speed: 12.000 mm/min.

### WHEEL HEAD SLIDE -"X" AXIS-

- Mounted on the "Z" axis.
- Slide driven by digital type A.C. servomotor and precision ball screw.
- Slide stroke reading by glass scale.
- Slide positioning resolution: 0,001 mm.
- Max. travel speed: 6.000 mm/min.

### WORKHEAD

- Workhead is clamped to the table of the machine.
- The main shaft of special steel is ground and lapped and runs on precision roller bearings.
- The shaft is driven by a brushless type A.C. 5 kW powered motor with pulleys and gear-tooth belt.
- Infinitely variable spindle speed between 3 and 150 rpm.
- Spindle nose as DIN 55.021, AL.6 rules.



### GRINDING CYCLES AVAILABLE

- Right plunge grinding.
- Right plunge with oscillatory stroke.
- Table reciprocating grinding.
- Dressing of the wheel.
- Automatic wheel wear compensation.