

Thiene li, 12/08/2014

From: Timbertools  
11 Church Street  
Brampton, ON L6Y 0J5  
Canada

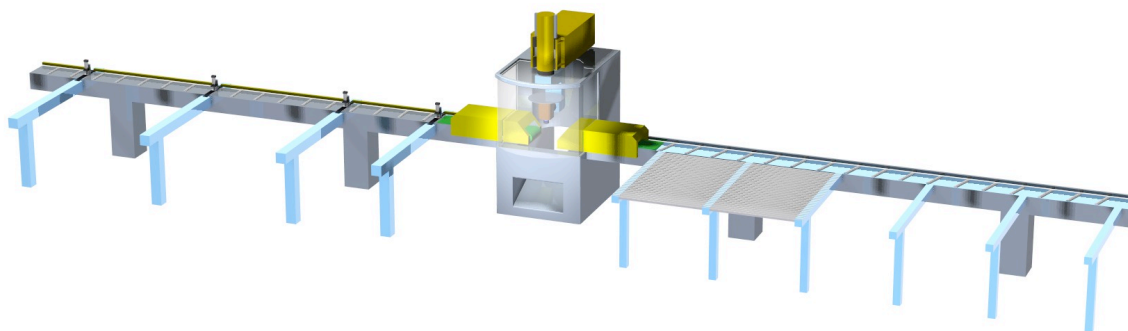
To: University of Northern British  
Columbia  
Att: Maik Gehloff

Prot. Nr. VL/2014/0102/V.01

Subj: Specification of Techno Saw +

## **NR. 1 TECHNO SAW +**

WORKING CENTRE WITH NO. 5 INTERPOLATING AXIS IN CONTINUOUS, FIXED PORTAL FRAME AND A 5- AXIS DOUBLE MILLING HEAD FOR CUTTING AND PROCESSING TRUSS AND BEAMS ELEMENTS.  
AUTOMATIC INFEDING/OUTFEEDING AND LOADING DIRECTION FROM THE LEFT TO THE RIGHT.



## **BASIC DESCRIPTION:**

### **THE STRUCTURE**

Consisting of a structure mechanically designed for high resistance and stability.

### **AXIS MOTORS**

X-Y-Z-B-C axis movement by means of brushless motors operated by inverter, maintenance free.

### **AXIS MOVEMENT**

The movement of the X,Y and Z-axes is by means of pinion on a hardened rack with grinded inclined teeth.

### **SLIDING GUIDES**

Sliding guides with preloaded recirculating roller slides with a very low friction coefficient and a very high precision, automatically lubricated.

### **ELECTROSPINDLE**

Electro-spindle designed and manufactured by Essetre. High power, double exit for installation of saw blade and other tool. manually, or optional automatic tool exchanger.

## **PLANT ENGINEERING**

### **ELECTRIC PLANT**

According to the CE norms with equipment installed in airtight cabinet complete with conditioner inside the fixed portal frame for air recirculation inside the cabinet itself and consequent cooling of the equipment contained in it.

All electric, electronic, pneumatic and electro-pneumatic components are first-choice products supplied by Companies having an international importance, so that the spare parts can be easily found on the various markets.

### **HIGH FREQUENCY INSTALLATION**

High frequency system realized for the use of the inverter with spindle revolutions programmable from 1000 to 5000 rpm by means of the NC. The inverter, electronic frequency converter, has been studied, designed and manufactured in cooperation with a company specialized in electronic equipment for our electro-spindle in order to assure the optimum usage of the power of the head according to the diameter of tools used, to the peripheral speed of these latter, to the sharpening state, to the axis feed speed and to the power torque in relation to the required rpm.

### **LUBRICATION SYSTEM OF THE SLIDING GUIDES**

Grease centralized lubrication system for the automatic lubrication of the sliding guides by means of electro-pump controlled by the NC. When the lubricant reaches the minimum level in the tank, an alarm signal is generated and displayed on the screen.

### **LUBRICATION SYSTEM OF THE PNEUMATIC DEVICES**

Through fog nozzle filter group for electro-valves, pneumatic cylinders and any other foreseen pneumatic device.

### **CONDITIONING GROUP:**

to keep the electric cabinet and the equipment contained in it at the optimum and constant temperature.

### **NUMERICAL CONTROL**

Our machine is equipped with numeric control NUM. The typology and the model to be installed are decided according to the processing requirements and the machine type.

## MACHINE EQUIPMENT

- No.1 Fixed portal frame on which are installed the following components:
- No.1 5 axis Milling head provided with:
- Special electro-spindle with no. 2 independent outputs (A-B)
  - **A Output:** provided with **ERG40** tool connection for the manual tool changing. Turn programming from 1000 up to 5000 R.p.M. As option, it is possible to install also the automatic tool changing managed by the NC (see option).
  - **B Output:** flange connection for the blade with max. Ø 480mm and with motor turn programming from 1000 up to 4000 R.p.M.
  - Electro-spindle of 7,5 kW at 4000 rpm
  - Motor tool programming from 1000 up to 5000 R.p.M.
  - B-axis rotation of 450°
  - C-axis rotation of 540°
  - Z Axis Stroke 550 mm
  - X Axis stroke 750 mm.
- No.1 Special device, connected with the machine frame, to in-feed the piece in the processing area and equipped with controlled belt conveyor.
- No.1 Special device, connected with the machine frame, to out-feed the piece from the processing area and equipped with controlled belt conveyor.
- No.1 Inverter of 11 kW to program the spindle's rpm from 1000 to 5000.
- No.1 Tool kit including:
- N° 1 Helicoidal milling cutter diameter 20 x 100 mm RH (installed on the A Output of electro-spindle)
  - N° 1 Blade Diameter 480mm (installed on the B Output of electro-spindle)

- No.1 Entry plan of the machine provided with:
- Set of supports provided with chains for the automatic loading of the piece.
  - Special device composed by pneumatic clamps for the loading of the piece on the loose rollers of the machine's plan.
  - Structure with loose rollers for the beam's sliding.
- No. 1 Exit plan of the machine provided with:
- Set of supports for the automatic unloading of the piece. Some supports are inclined to allows the correct movement of the piece.
  - Structure with loose rollers for the beam's sliding.
- No. 1 Device for unloading the chips and the small recovery pieces installed in the bottom part of the machine. Chips and small pieces have 2 different exit.
- Possible additional devices for a subsequent canalization of chips, shavings and/or external collection tanks are not included in this offer.
- No. 1 Perimeter protections with metallic structure and walls made of shatter-proof polycarbonate to reduce the coming out of noises, dusts and shavings.
- The machine's protection on the side facing the wall is at buyer's charge.
- No.1 Electric cabinet integral with the fixed portal frame containing the electric and electronic devices.
- No.1 Fixed control console containing 17" TFT colour monitor, keyboard, push-buttons, warning lights, CNC and PC with the following features:
- Windows interface
  - Pentium processor I Intel Core i3 (or superior)
  - Memory RAM 2Gb (or bigger)
  - Hard Disk 100 Gb (or bigger)
  - CD-Rom reader
  - USB port
- No.1 Remote push-button control unit for the manual control of the axes, START, STOP and RESET of the program.
- No. 1 Grease centralized lubrication system for the automatic lubrication of the sliding guides by means of electro-pump controlled by the NC. When the lubricant reaches the minimum level in the tank, an alarm signal is generated and displayed on the screen.

- No. 1 Lubrication system of the pneumatic devices through fog nozzle filter group for electro-valves, pneumatic cylinders and any other foreseen pneumatic device.
- No. 1 Conditioning group to keep the electric cabinet and the equipment contained in it at the optimum and constant temperature.
- No.1 Numerical control mod. NUM series 1000, with the following features:
- NC with processor CISC 32 bit
  - Integrated Programmable Controller (PLC)
  - Input/output in rack 32 I / 24 O.
    - RS232 Serial connection FOR personal Computer, Auto-Cad, Cad-Cam, Digitizer, etc.
  - Procam interpreter
  - Program memory PLC 64K RAM, part 128K RAM
  - Programs will be kept in memory RAM CMOS for 400 hours
  - Dynamic correction of the machine processor
    - PGP: Geometric Programming of Profiles with automatic calculation of connections, bevels, intersection and contacts circles-lines
    - Linear, circular and helicoidal interpolation commutable on the 3 planes
  - Scale factor
  - Acceleration and deceleration control
  - Loading of 32 couples of tools and tool correctors
  - Display on the monitor of alarm or failure messages
    - Videographic program for the display on the monitor of the drawings relevant to the programmed works.

### **SOFTWARE:**

- No.1 **NEW** Graphic software Essetre TRAVI specific for the machining of beams and able to display on the monitor both the piece and its relevant processings in 3D. This software allows a basic workpiece programming by using some machining macros (based on the BTL version 10.4) which are already pre-defined inside the program. The software is provided with simulation and anti collision system. The operator interface of the Essetre graphic software is based on Windows 7, therefore the machine operator must be able to use that operating system. On the contrary, the programming of the machine software is based on ISO language and it would be better for the operator to have already some knowledge of such programming system. Should it not be the case, we suggest you to consider a training course at NUM or at a specialized organization of your Country.  
The software uses the graphic technology OPENGL
- No.1 BTL 10.4 importer to interface your drawing program by Dietrich's, Sema, CadWorks, etc.....
- Nr. 1 Annual internet assistance contract for the Essetre graphic Software
- Nr. 1 License software Travi

**TECHNICAL DATA:**

|                                  |                         |
|----------------------------------|-------------------------|
| No. <b>6</b> controlled Axes     | X - 2Y – Z – B - C      |
| X-axis stroke                    | mm 750                  |
| Y1-axis stroke in entry          | Rotating No Limit       |
| Y2axis stroke in exit            | Rotating No Limit       |
| Z-axis stroke                    | mm 550                  |
| B-axis rotation                  | degrees 450             |
| C-axis rotation                  | degrees 540             |
| Max beam working dimensions (*)  | mm 6000 x 450 x 150 (h) |
| X-axis movement speed            | m/min 100               |
| Y-axis movement speed            | m/min 150               |
| Z-axis movement speed            | m/min 50                |
| Electric installation            | Volts 400/50Hz ± 5%     |
| Air consumption (7 Bar)          | NI/min 600              |
| (*) With standard infeed/outfeed |                         |

**MACHINE ACCORDING TO THE CE NORMS**

**OPTIONS:**

- No.1 Tool changer Optional provided with:
  - Rotating Tool-holding magazine for cones type HSK 63F installed on the frontal side of the machine's portal frame, with 8 positions. The Rotating Tool-holding magazine is a controlled axis.
  - Special Electrospindle provided (on the A output) with HSK 63F tool connection for the automatic tool changing managed by the NC. Motor turn programming from 1000 up to 5000 R.p.M. This electrospindle replace the standard one.
  
- No. 1 Manual printer complete with interface with our numerical control to print stickers during the unloading. Software for the automatic generation of the sticker included.





CNC MACHINING CENTRES

**ESSETRE S.p.A. A SOCIO UNICO**

Società soggetta a direzione e coordinamento di Essetre Holding S.p.A.  
Via della Repubblica Serenissima, 7 - 36016 THIENE (Vicenza) ITALIA  
Tel. +39 0445 365 999 Fax +39 0445 360195 - <http://www.essetre.com> - e-mail: [info@essetre.com](mailto:info@essetre.com)  
Cap.Soc. €1.500.000.0i.v. - P.I. - C.F. 02025470242 - Registro imprese n. 02025470242 R.E.A. n. 201220

**ESSETRE SPA**