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July 29, 2020

PROMINENT FIXTURE & GAUGE LTD.
5455 Roscon Industrial Drive
Oldcastle, Ontario N0R 1L0

Attention: Mr. Phil Hatton

EUMACH UMC-1600 5-AXIS MACHINING CENTRE

Dear Phil,

Thank you for the opportunity to quote the **EUMACH UMC-1600 5-AXIS MACHINING CENTRE** for your Oldcastle, Ontario facilities.

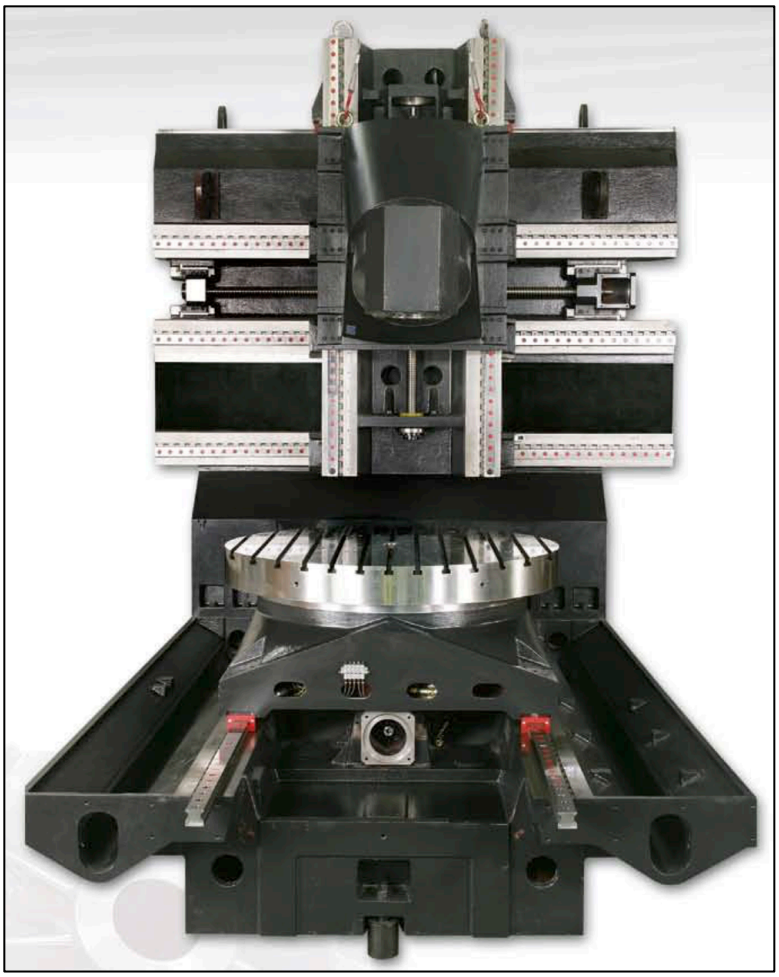
The Eumach UMC-1600 5-axis machining centre offers the most efficient & intelligent machining concept for multi-sided high performance machining to increase productivity, flexibility and repeatability.

This machine includes the following features:

- latest innovation of combination bridge type traveling column design advantage
- large 1620 x 1260 x 1050mm linear axes travel
- 1320mm diameter CNC rotary table with 4000kg load capacity
- 0.001 degree swivel milling head with torque motor
- powerful HSK-A63 18,000 rpm or HSK-A100 8000 rpm spindle
- patented X-axis 4 slide way design with maximum rigidity to ensure heavy duty milling

DOORS

Sliding front and side doors with super wide top opening for maximum access to the work area.

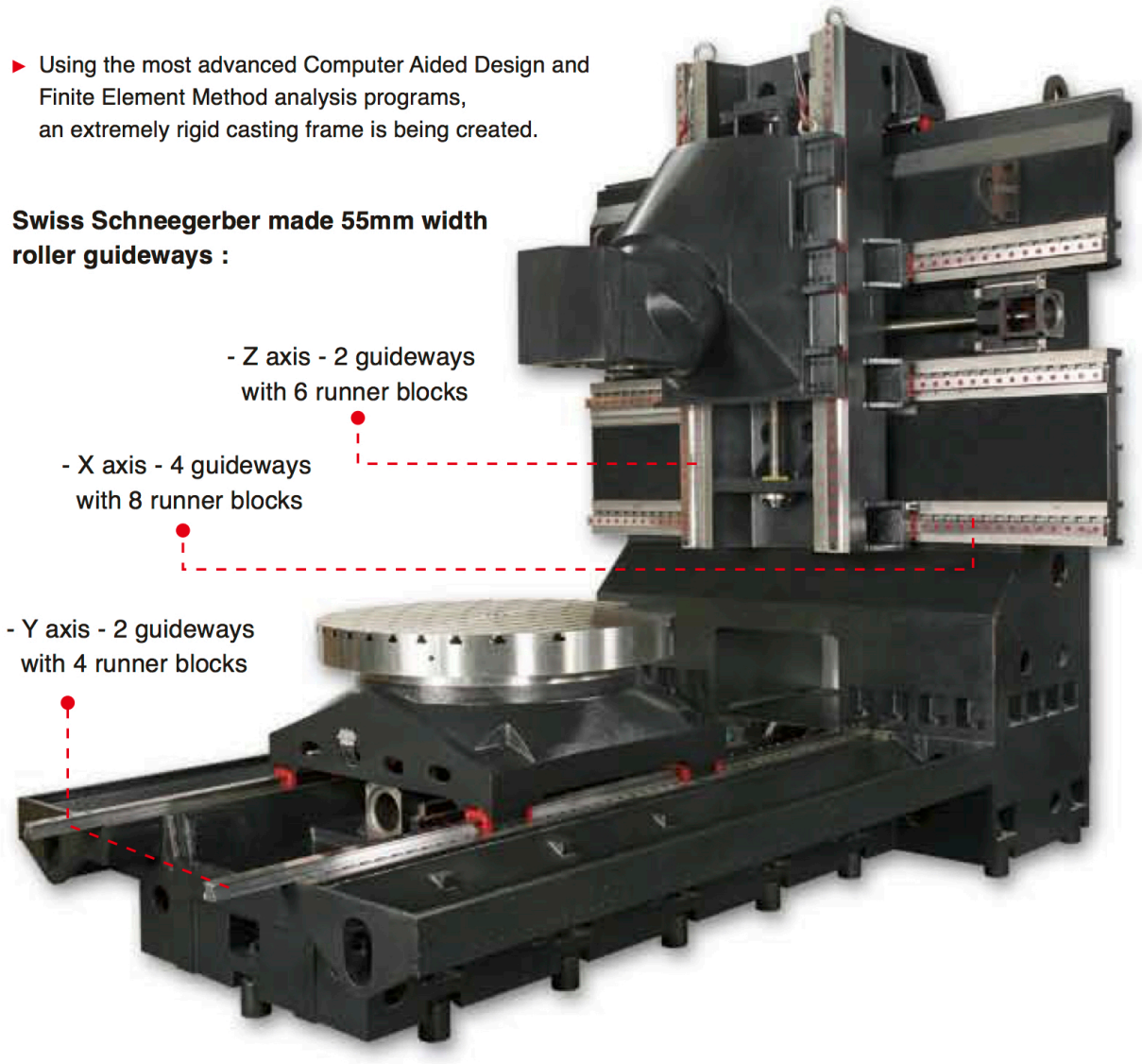


BALLSCREWS

High precision & rigid 55/55/63mm diameter ball screws on the X/Y/Z-axis driven by powerful AC servo motors which are directly coupled for high speed machining with very fine accuracy and finish.

ROLLER GUIDEWAYS

High rigid & heavy duty 55mm roller type linear guideways on the linear axes for low inertia, low friction and high acceleration movements to optimize the servo drives and ensure immediate machine response for high speed machining and high accuracy - specially for contouring.



RIGID CASTING FRAME

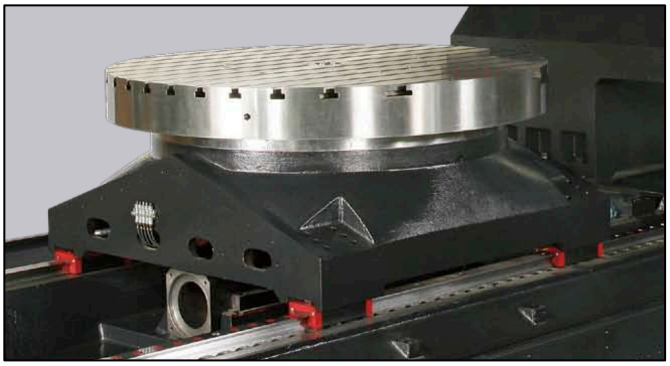
Using the most advanced computer aided design and finite element method analysis programs to offer an extremely rigid casting frame.

B-AXIS INNOVATIVE SWIVEL MILLING HEAD

The latest technology torque motor manages the B-axis continuous swivel milling head. It guarantees maximum movement dynamics and linearity. Thanks to the absence of traditional mechanical kinematics much higher performance on finishing surfaces is obtained. A direct reading system with a high precision angular encoder is integrated for maximum precision.

As a controlled B-axis the swivel head changes from vertical to horizontal machining in seconds.

The torque motor construction offers extra flexibility with the fully automatic 0.001 degree indexing from vertical to horizontal positions. This gives the operator multi-sided machining without resetting the work piece and manufacturing of complex components in a single set-up - including 5-sided machining - without additional fixture.



CNC ROTARY TABLE

The 1320mm diameter torque motor drive cnc rotary table offers maximum rotation speed at 30 rpm - with peak torque of 3940Nm and brake torque of 10000Nm - and 4000kg load capacity.

AUTOMATIC TOOL CHANGER

The automatic tool changer with the standard 60 station magazine holds up to 150mm diameter x 350mm long 20kg tool holders. Optional larger magazines are available (90, 120, 150 and 180 stations).

MACHINE SPECIFICATIONS

TRAVEL

X-axis	1620mm
Y-axis	1260mm
Z-axis	1050mm

B-AXIS SWIVEL HEAD

Minimum indexing increment	0.001 degree
B-axis drive system	torque motor with 2120Nm torque
Spindle interface	HSK-A63
Maximum spindle speed	24000 rpm
Spindle power	34/43kW
Spindle torque	72/91Nm

ROTARY TABLE: C-AXIS

Table diameter	1320mm
Minimum indexing increment	0.001 degree
Table to floor	1085mm
Maximum load capacity	4000kg
Maximum rotation speed	30 rpm
Transmission	DC torque motor
Indexing increment	0.001 degree
T-slots	13 x 18H x P100

DISTANCES

Vertical: spindle nose to table top	150 to 1200mm
Horizontal: spindle centre to table top	100 to 1150mm
Vertical: spindle nose to table centre	-300 to 960mm
Horizontal: spindle centre to table centre	-250 to 1010mm
Spindle centre to column	1105mm

BALL SCREWS

X/Y/Z axis diameter x pitch	55/55/63mm x 16/12/12mm

X/Y/Z AXIS ROLLER GUIDES

Number x width	4/2/2 slide ways x 55mm
Runner blocks number	8/4/6

FEED RATE

Rapid feed rate X/Y/Z axis	24/24/24m per minute
Cutting feed rate	20/20/20m per minute

AUTOMATIC TOOL CHANGER

Number of tool pockets	90
Maximum tool diameter	150mm
Maximum tool length	350mm
Maximum tool weight	20kg
Tool exchange position	horizontal

GENERAL

Machine weight	32000kg
Dimensions (width x depth x height)	4758 x 5099 x 4073mm
Floor space requirements	6800 x 7200mm

STANDARD & INCLUDED EQUIPMENT

- Heidenhain TNC 640 control
- Programmable coolant system
- Automatic lubrication system
- Spindle air blast system
- Work alarm, indication lights
- Spindle water cooler
- leveling bolts & pads
- RS-232 terminal interface port
- Machine + control manuals
- Tool box with spanners + wrenches
- Chain type chip conveyor + two screw chip augers
- 3-axis linear scale feed back system + 2-axis rotary encoders
- 20bar through the spindle coolant system
- Renishaw spindle part and tool probe system
- Heidenhain KinematicsOpt automatic machine calibration system

Package Price: US $752,800

TERMS AND CONDITIONS

The pricing
Pricing shown is in US funds.
The above pricing is F.O.B. Masteel in Oakville, Ontario.
Applicable taxes are extra.
CSA approval is included in the pricing.

The payment terms
30% with order, 60% before pick-up, 10% 30 days after delivery.

Warranty
Two (2) years on parts & labour.

Delivery
To be confirmed at the time of ordering.

***CUSTOMER'S RESPONSIBILITY**
- Pick-up the machine at Masteel in Oakville, Ontario.
- Off load the machine from the truck at the customer's site.
- Provide all lifting equipment to move the machine into place for assembly.
- Foundation per requirements.
- Power to the machine.
- Hydraulic + way lube oil plus coolant fluid for the machine.

***MASTEEL'S RESPONSIBILITY**
- Assemble / level the machine on the customer's shop floor and anchor the machine to the customer supplied foundation.
- Complete the machine installation and accuracy test.
- One day of basic machine operator training.

Pre-Start Health and Safety Review (PHSR) is the responsibility of the customer and is not included in the above pricing.

This proposal is valid for thirty (30) days.

We look forward to working with you on this project.

Sincerely,
MASTEEL AMERICA CORPORATION

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