MOVING COLUMN VERTICAL MACHINING CENTER

ROMI **DCM 3000**

ROMI Industrial Complex, in
Santa Bárbara d'Oeste - SP, Brazil

INNOVATION + QUALITY

ROMI: Since 1930 producing high technology.
Since its foundation, the company is recognized by its focus on creating products and innovative solutions which guarantees its technological leadership among big manufacturers of machine tools market. ROMI industrial complex is among the most modern and productive ones in the segments of machine tools, plastic processing machines and cast iron parts of high quality.

Continuous investments in Research & Development result in products with state-of-the-art technology.
The high technology applied to Romi machines offer highly reliable products, with high accuracy, efficiency and great flexibility for several types of machining processes.
Romi R&D is focused on increasing competitiveness for its customers.

Present throughout Brazil and in over 60 countries.
Romi covers all domestic territory through its sales subsidiaries network fully prepared to support customers supplying an extensive range of services from marketing to after sales.
International market is covered by its subsidiaries located in United States, Mexico and Europe and also by its dealers network located in strategic logistic centers around the globe completely capable for serving customers in 5 continents.

Plant 16

ROMI **DCM 3000**

ROMI DCM 3000

Flexibility for machining long and heavy parts with high geometric precision.

The moving column vertical machining center ROMI DCM 3000 provides an efficient answer for a wide range of manufacture requirements.

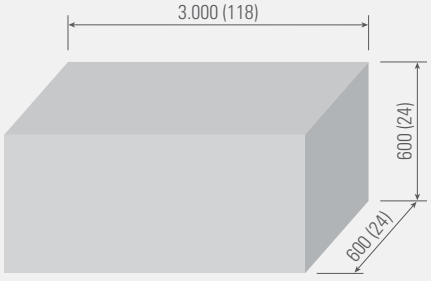
Equipped with fixed working table, allows machining long and heavy parts without any changes of machine geometrical accuracy, due to robust structure that offers excellent efforts and vibrations absorption. Thanks to the concept of fixed bed the machine provides great ease for hydraulic and pneumatic devices applying.

Flexibility for machining aerospace and railway components, large machines structures, etc.

- Headstock: 10.000 rpm
- Spindle taper: ISO 40
- Main motor: 30 hp / 22 kW
- 40 tools capacity magazine
- Fixed table: 3.200 x 840 mm (126 x 33")
- CNC: Siemens Sinumerik 828D

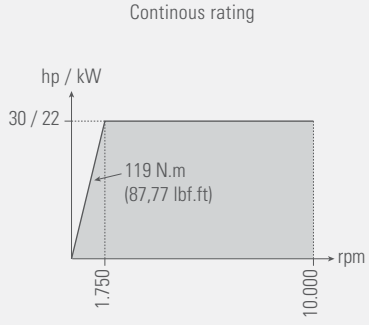
ROMI **DCM 3000**

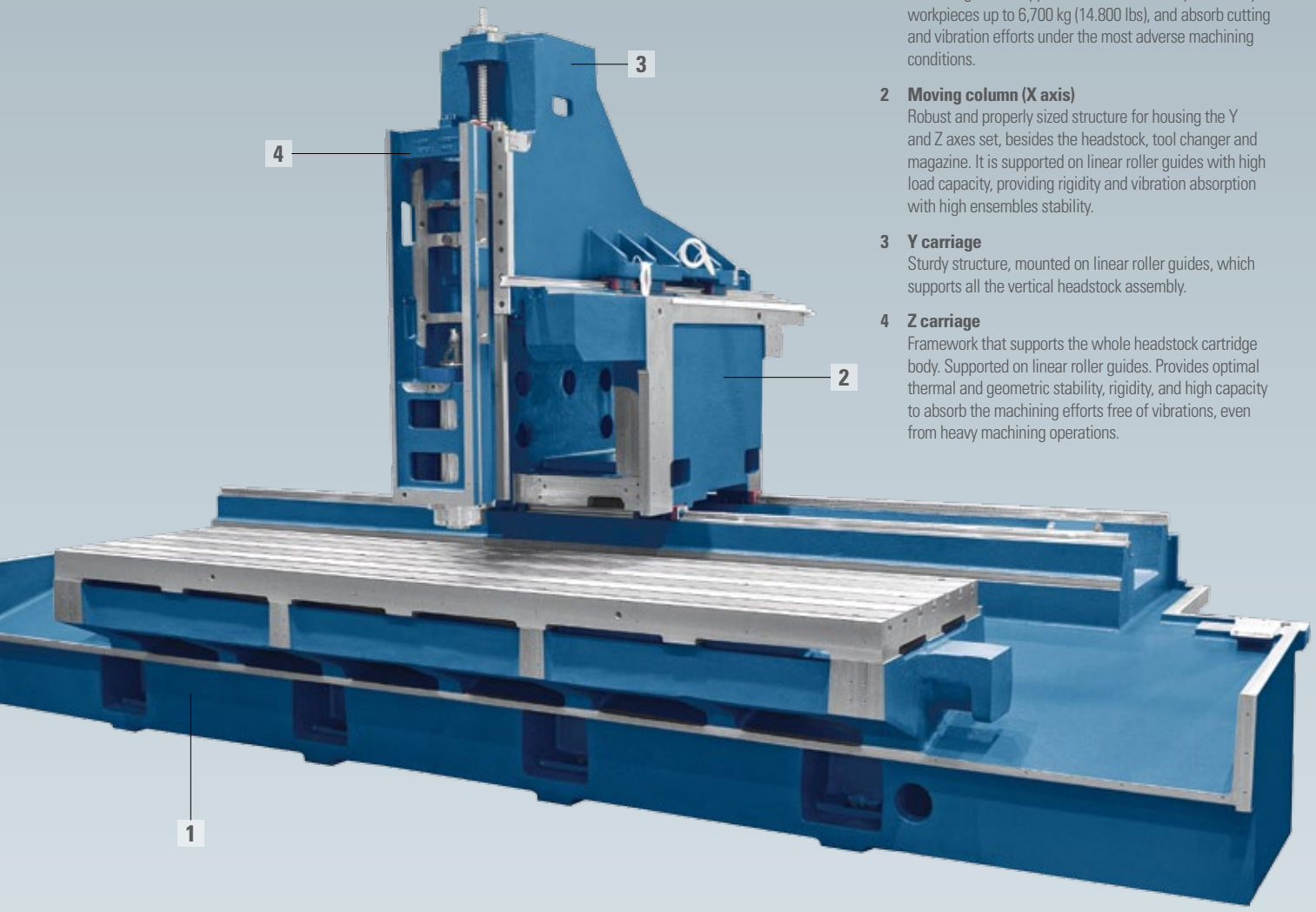
Travels



Dimensions in mm (in)

Power Graphs





1 **Base with fixed table**
Wide monobloc structure, cast iron constructed, that houses the table and the moving column set. Its structure was designed to support the fixed table body and heavy workpieces up to 6,700 kg (14.800 lbs), and absorb cutting and vibration efforts under the most adverse machining conditions.

2 **Moving column (X axis)**
Robust and properly sized structure for housing the Y and Z axes set, besides the headstock, tool changer and magazine. It is supported on linear roller guides with high load capacity, providing rigidity and vibration absorption with high ensembles stability.

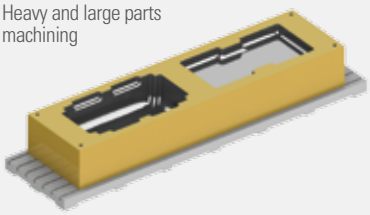
3 **Y carriage**
Sturdy structure, mounted on linear roller guides, which supports all the vertical headstock assembly.

4 **Z carriage**
Framework that supports the whole headstock cartridge body. Supported on linear roller guides. Provides optimal thermal and geometric stability, rigidity, and high capacity to absorb the machining efforts free of vibrations, even from heavy machining operations.

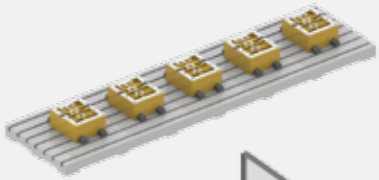
STRUCTURE

Machined parts examples

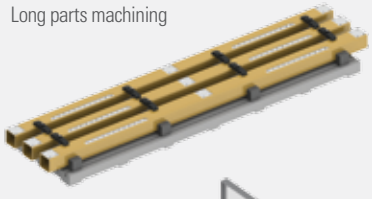
Heavy and large parts machining



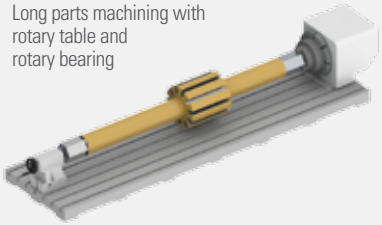
Various parts machining



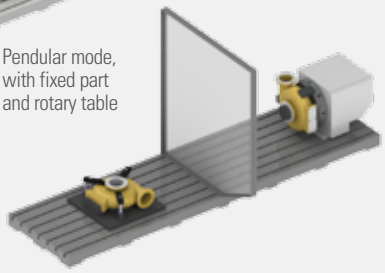
Long parts machining



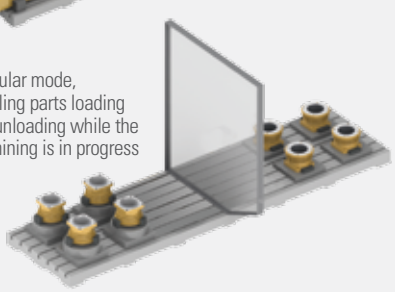
Long parts machining with rotary table and rotary bearing



Pendular mode, with fixed part and rotary table



Pendular mode, enabling parts loading and unloading while the machining is in progress



Headstock

Robust cartridge with spindle supported on high-precision bearing. Allows high speeds, ensuring performance even under severe cutting conditions. Shows excellent running accuracy, with minimum temperature rise of bearings, even when operating in continuous regime at high rpm.

TOOL CHANGER

Efficiency and productivity

Double arm automatic tool changer, fast, accurate and reliable, which increases productivity and gives machining efficiency.
Magazine prepared for tool shanks BT / BBT 40, up to 40 tools capacity, where all the mechanical assembly is built into the column, near the spindle, bringing as benefit minimized changing times.

CNC

Technology, performance and reliability

The moving column vertical machining center ROMI DCM 3000 is equipped with CNC Siemens Sinumerik 828D, which offers the user great facilities for programming.

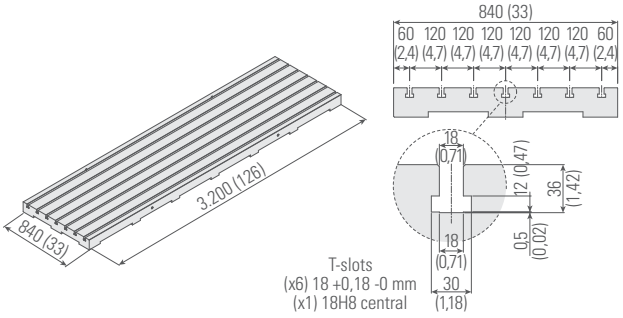
CNC Siemens Sinumerik 828D

- 10,4" LCD color monitor
- Interfaces: drive for compact Flash card, USB port and ethernet interface
- Function Advanced Surface that allows the machine work with precision and smooth motion at high feed rates in the axes, allowing a better surface finishing of machined parts, in shorter time and with high finish machining quality in comparison to conventional machining processes.

Technical specifications		ROMI DCM 3000
Vertical headstock		
Spindle taper	ISO	40
Speed ranges	rpm	10.000
Feeds		
Rapid traverse (X / Y axes)	m/min (in/min)	30 (1.181)
Rapid traverse (Z axis)	m/min (in/min)	24 (945)
Max. programmable cutting feed	mm/min (in/min)	15 (0,59)
Travels		
Superior table travel (X axis)	mm (in)	3.000 (118)
Inferior table travel (Y axis)	mm (in)	840 (33)
Headstock travel (Z axis)	mm (in)	600 (24)
Distance from spindle nose to table	mm (in)	120 to 720 (4,7 to 28)
Table		
Surface	mm (in)	3.200 x 840 (126 x 33)
T-slot width x distance	mm (in)	18 x 120 (0,71 x 4,7)
Number of T-slots	un	7
Max. admissible weight on table for square meter	kg/m²	2.500
Max. weight on table (uniformly distributed)	kg (lbs)	6.720 (14.800)
Automatic Tool Changer		
Tools capacity	un	40
Max. tool diameter	mm (in)	80 (3,1)
Max. tool diameter when adjacent stations are empty	mm (in)	120 (4,7)
Max. tool lenght	mm (in)	300 (11,8)
Tool holder type	type	BBT / BT / CAT / DIN
Max. tool weight	kg (lbs)	8 (18)
Max. tool weight on magazine	kg (lbs)	160 (353)
Installed power		
AC main motor (continous rating)	hp / kW	30 / 22
Total installed power	kVA	50
Dimension and weight (approx.) (*)		
Height	mm (in)	3.345 (132)
Area (front x side)	mm (in)	6.060 x 3.345 (239 x 132)
Net weight	kg (lbs)	20.000 (44.093)

(*) Without chip conveyor

Table dimensions - dimensions in mm (in)



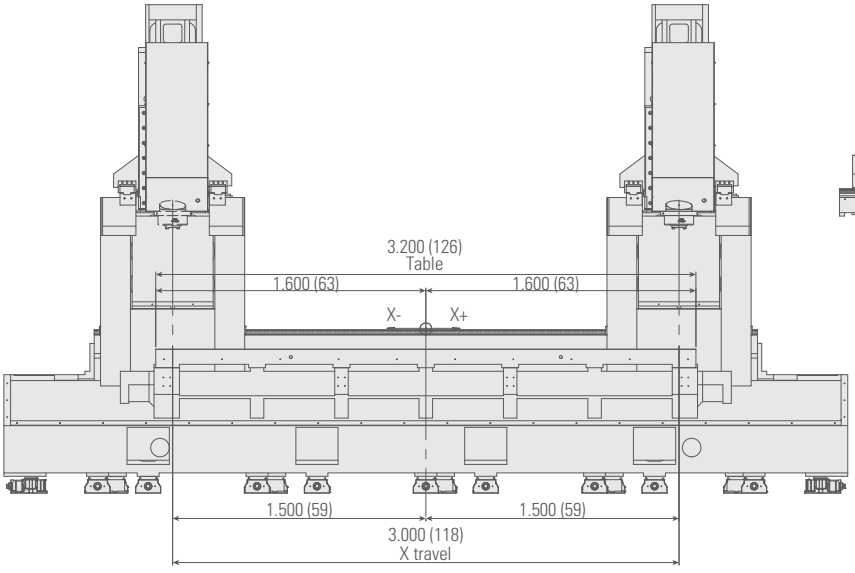
Standard equipment

- Automatic lubrication system with line filter and oil level sensor
- CNC Siemens 828D with 10,4" color screen
- Complete documentation on CD
- Cooling system for external cutting (by eyelet and flexible terminal) with 7 bar pump (10 lpm, 1,5 kW)
- Double arm automatic tool changer for BT-40 standard tools, 40 tools capacity on magazine
- Electrical installation for 380 Vca / 50-60Hz
- Fully enclosed splash guard
- Headstock with BT40 / BBT40 interface
- Hydraulic and pneumatic systems
- Locking tool system (high retention tool clamping force) of 10 kN
- Main and maintenance doors with electrical safety switch
- Pendant type MPG and JOG function control
- Preparation for thru spindle coolant system (no pump included)
- Protections cleaning system
- Sealed worklight
- Set of leveling screws
- Set of wrenches for machine operation
- Standard colors: Texturized Epoxy Enamel Munsell Blue 10B-3/4 and Texturized Epoxy Gray RAL 7035

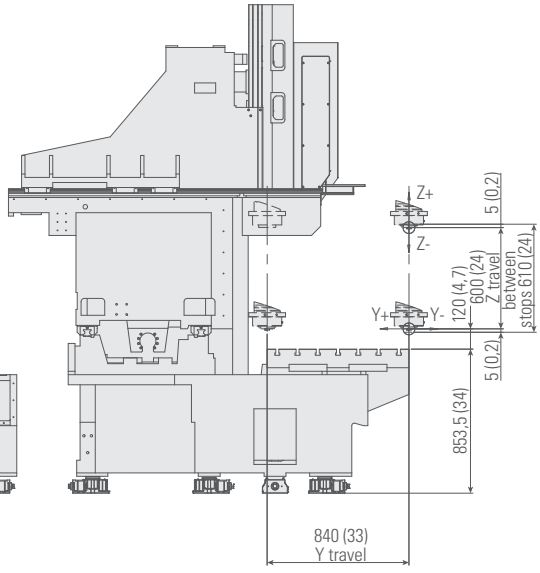
Optional equipment

- 6 M codes for external automation interface
- Air conditioning for electrical cabinet
- Anchor bolt (anchor bolt, leveling screws, nuts and washers)
- Auto power off
- Automatic door with electronic sensor security system
- Autotransformer - 200 to 250 Vca or 360 to 480 Vca, 50 kVA, 50/60Hz
- Central division for double workspace
- Cycle start button out from HMI
- Double arm automatic tool changer (ATC) for CAT-40 or DIN 40 standard tools, with 40 tools magazine capacity
- Double filter for smoke (according the large workspace)
- Double mist exhausting system with filter for smoke
- Ethernet interface
- Hinged belt external chip conveyor (TCE) or drag belt external chip conveyor (TCA), with 750 liters capacity coolant tank integrated (madatory choice)
- Hydraulic interface for clamping device (max. pressure 50 or 100 Bar)
- Indexing table
  - Ø 400 mm (15,7") universal chuck
- Indexing tables interface
- Kit spindle taper BT40, CAT 40 or DIN 40
- Linear scale for X, Y and Z axis
- Manual tailstock for rotary table or indexing table
- MT-3 center for rotary table
- Oil skimmer
- Pneumatic chip cleaning system during machining process
- Rotary table MGR 400
  - Ø 250 mm (9,8") universal chuck
  - Ø 400 mm (15,7") universal chuck
- Rotary table MGR 400 interface
- Status light indicator
- System for parts measurement and inspection with probe
- Thru spindle coolant system, 20 bar or 70 bar with filtering system
- Tools preset system
- Wash gun

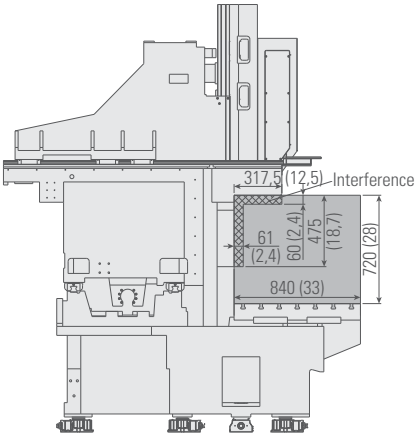
Work area layout - dimensions in mm (in)



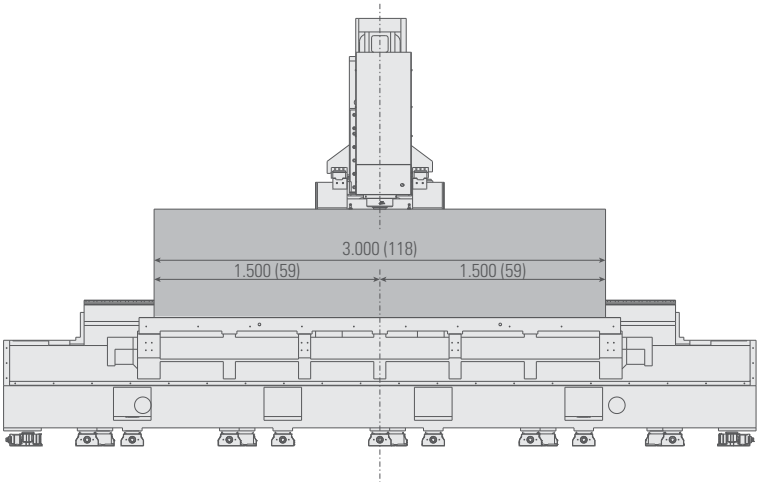
Front view



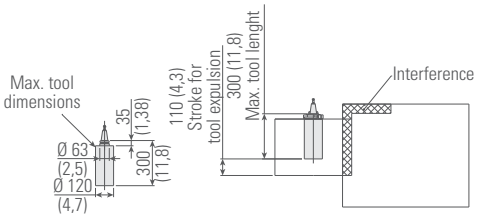
Side view

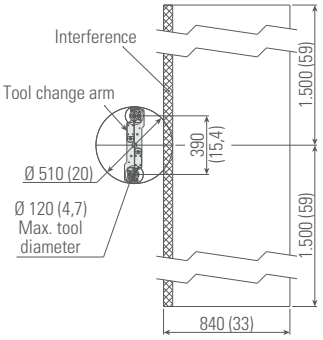


Side view



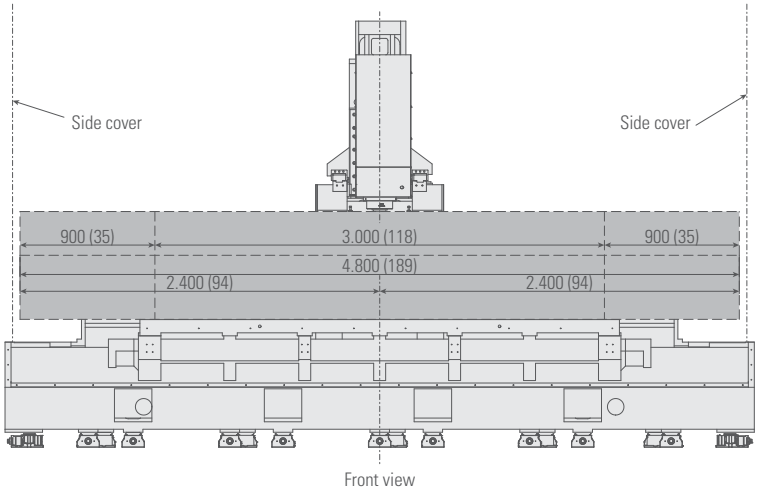
Front view



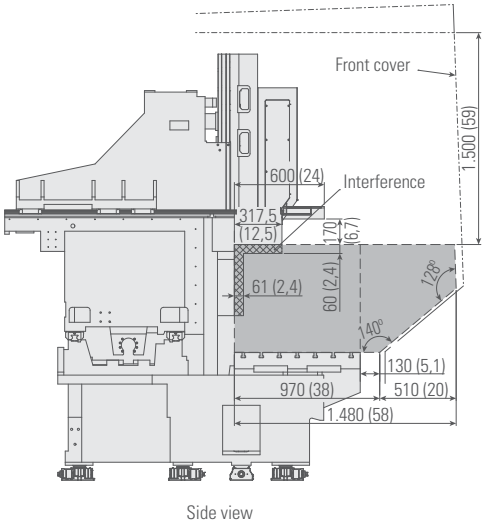


Drawings are not in scale.

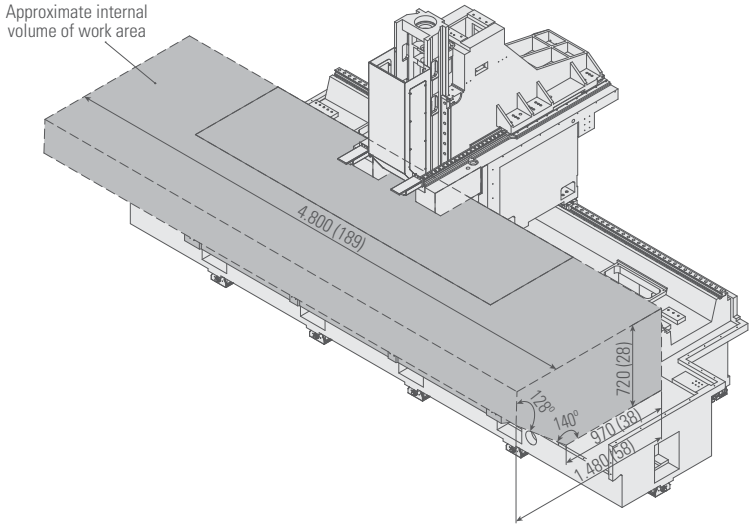
Work area layout - dimensions in mm (in) (A)



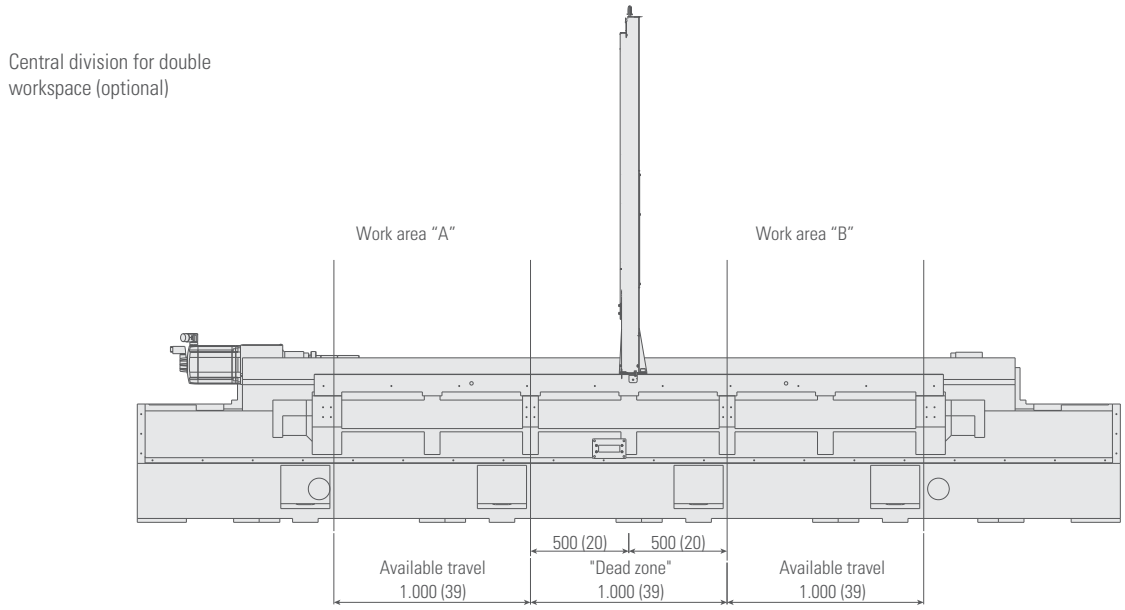
Front view



Side view



Work area layout - dimensions in mm (in)

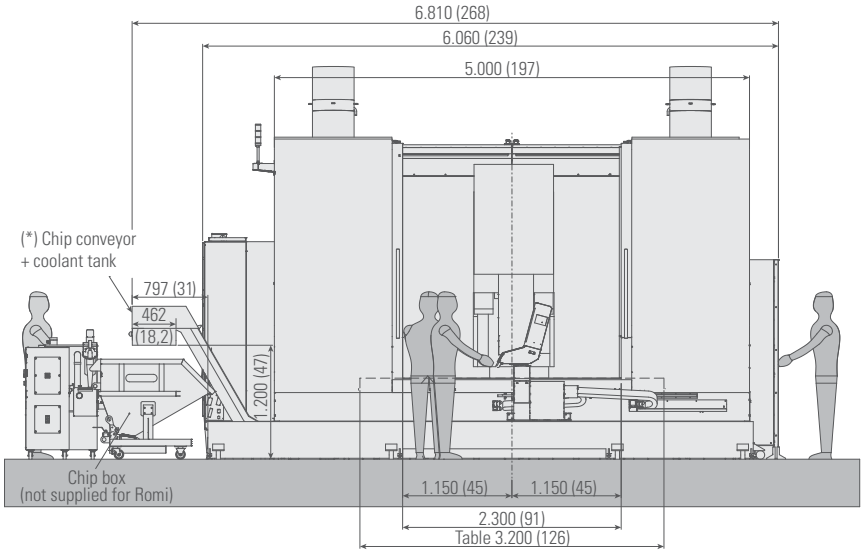


(A) This layout is valid only for machines without options.

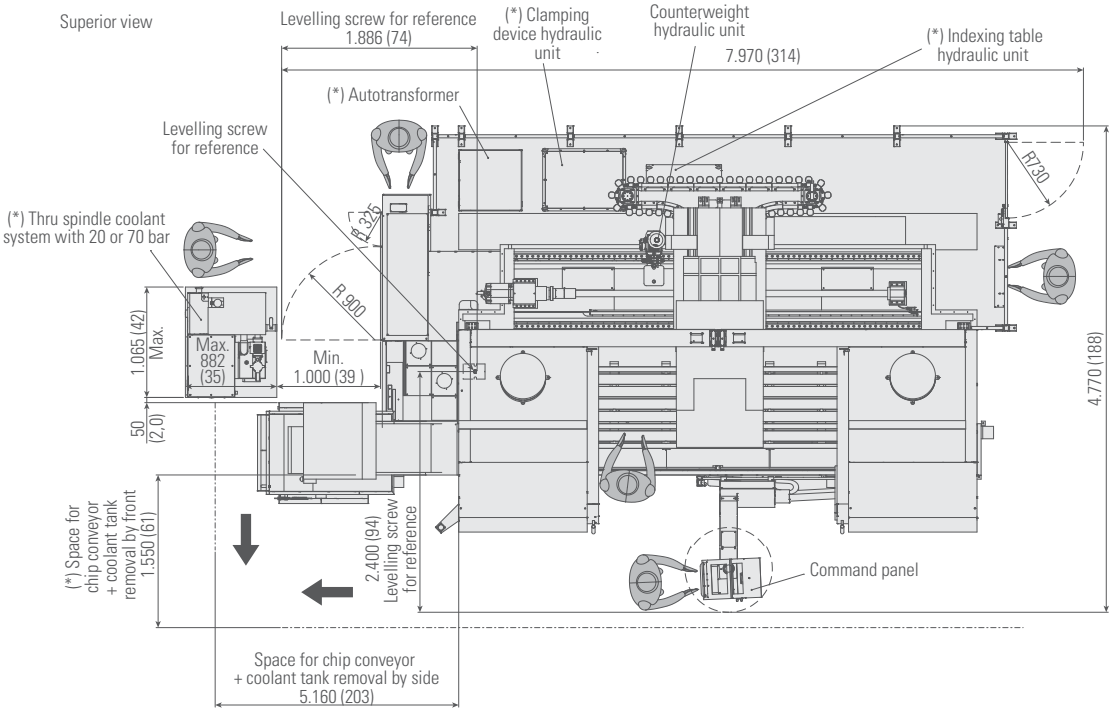
Drawings are not in scale.

Machine dimensions - dimensions in mm (in)

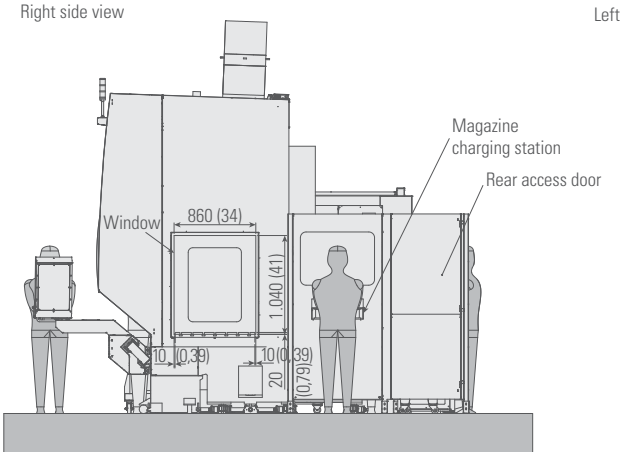
Front view



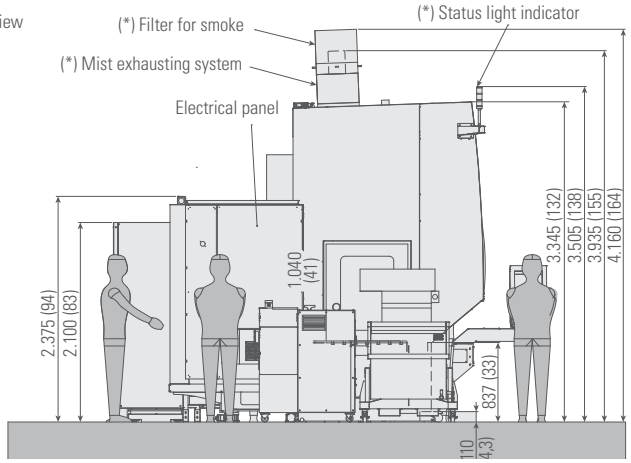
Superior view



Right side view



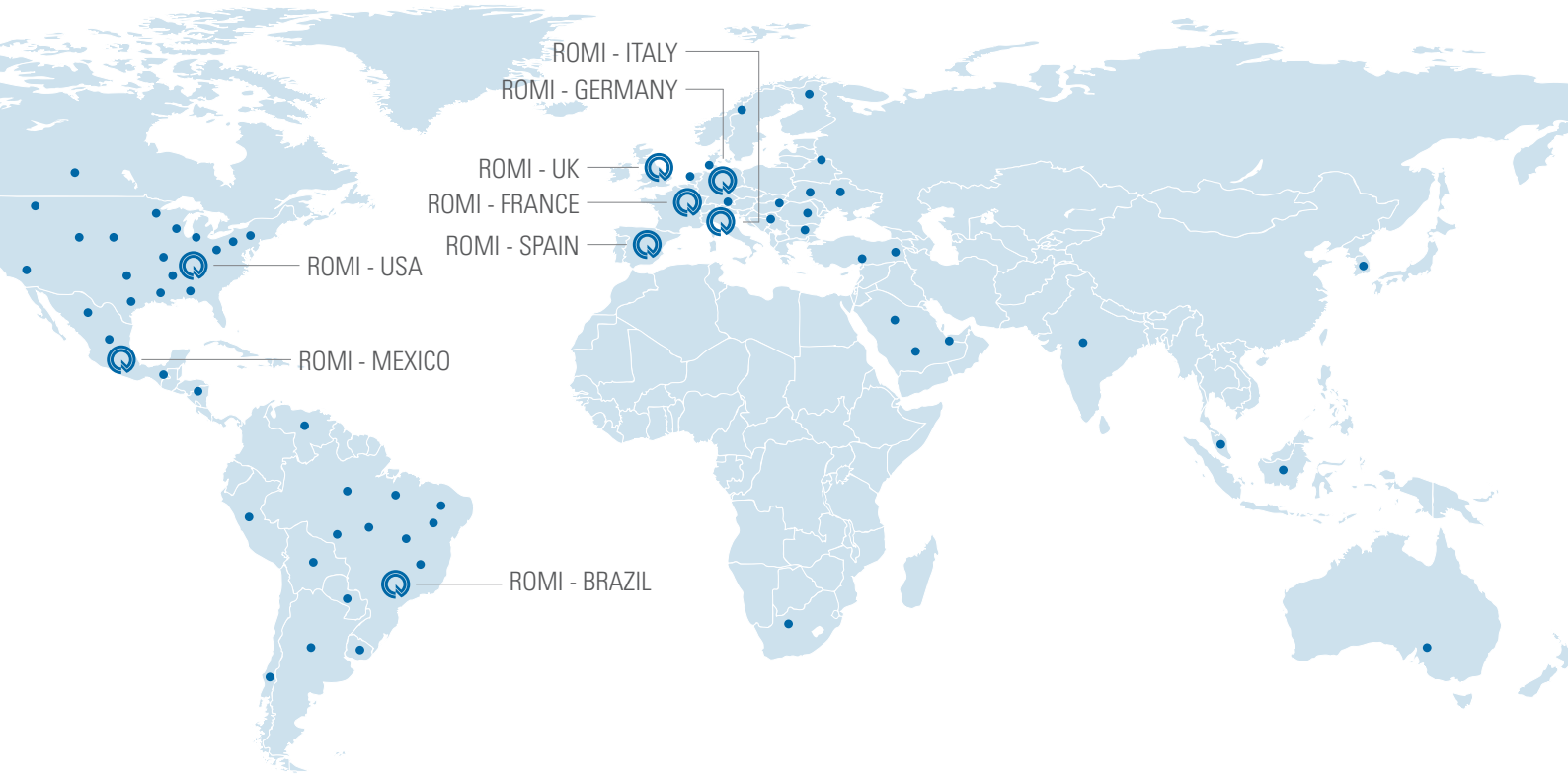
Left side view



Drawings are not in scale.

(*) Optional equipment

WORLDWIDE PRESENCE



Brazil

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ROMI | WWW.ROMI.COM

Indústrias Romi SA
Rod. SP 304, Km 141,5
Santa Bárbara d'Oeste SP
13453 900 Brazil
Phone +55 (19) 3455 9800
Fax +55 (19) 3455 1030
export-mf@romi.com

Burkhardt+Weber Fertigungssysteme GmbH
Burkhardt+Weber-Strasse 57
72760 Reutlingen, Germany
Phone +49 7121 315-0
Fax +49 7121 315-104
info@burkhardt-weber.de
www.burkhardt-weber.de

ROMI Machine Tools, Ltd
1845 Airport Exchange Blvd
Erlanger KY - 41018 USA
Phone +1 (859) 647 7566
Fax +1 (859) 647 9122
sales@romiusa.com

ROMI Europa GmbH
Wasserweg 19 D 64521
Gross Gerau Germany
Phone +49 (6152) 8055 0
Fax +49 (6152) 8055 50
sales@romi-europa.de

ROMI France SAS
Parc de Genève, 240
Rue Ferdinand Perrier 69800
ST Priest
Phone +33 4 37 25 60 70
Fax +33 4 37 25 60 71
infos@romifrance.fr

ROMI Machines UK Limited
Leigh Road
Swift Valley Industrial Estate
Rugby CV21 1DS
Phone +44 1788 544221
Fax +44 1788 542195
sales@romiuk.com

ROMI Máquinas España
Calle Comadrán, 15
Pol. Ind. Can Salvatela
C.P. 08210 - Barberà del Vallès
Phone +34 93 719 4926
Fax +34 93 718 7932
info@romi.es

ROMI in Mexico
Moliere 13, piso 10-B
Col. Chapultepec Polanco,
C.P. 11560
ventasmx@romi.com

ROMI Italia Srl
Via Morigi, 33 - 29020
Gossolengo, Piacenza - Italy
Phone +39 349 590 0474
macchineutensili@romi.com

CE safety regulation compliance available only for the European Community or under request.

CE

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ISO 14001:2004
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