



VERTICAL MACHINING CENTER

# **ROMI D 1500**



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

## INNOVATION + QUALITY

### **Romi: Producing high quality technology since 1930.**

Since the beginning, Romi has been recognized for its focus on creating products and innovative solutions which has guaranteed its technological leadership among large manufacturers of machine tools. Romi's industrial complex is among the most modern and productive sites in the fields of machine tools, plastic processing machines, and high quality cast iron parts.

### **Continuous investments in Research & Development result in products with state-of-the-art technology.**

The technology applied to Romi machines offers 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 sale subsidiaries network fully prepared to support customers by supplying an extensive range of services from marketing to after sales assistance. The international market is covered by Romi's subsidiaries which are located in the United States, Mexico, Europe, and by its many dealers located in strategic logistic centers around the globe that are capable of serving customers in 5 continents.



Plant 16



| ROMI D 1500

## ROMI D 1500



Examples of machined parts



### Robust and powerful machining of big parts

The vertical machining center ROMI D 1500 is extremely versatile to work with several machining applications: designed to operate in high production sites as well as in tool rooms.

It offers high rigidity even under severe machining conditions and present thermal and geometric stability ensuring great performance, precision and productivity.



Robust and powerful machining of big parts in environments of production, maintenance and tool rooms.



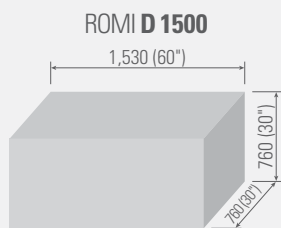
- Headstock 6,000 rpm (ISO 50)
- Headstock 8,000, 10,000 or 12,000 rpm (ISO 40)
- Spindle taper: ISO 40 or ISO 50
- Automatic tool changer - 30 tools capacity (ISO 40) or 24 tools capacity (ISO 50)
- Table: 1,700 x 750 mm (67"x 30")
- CNC Siemens Sinumerik 828D

Machines present robust structure, rigidity and vibrations absorption in heavy machining operations. They are equipped with powerful motorization enabling high metal removal rates. Superior and inferior tables supported on linear guides with high loading

capacity are designed to support heavy parts with excellent stability, high speed, great movement accuracy and axes positioning. ROMI D 1500 inferior table is supported on four linear guides giving to the set of tables the possibility to withstand parts of up to 1,800 kg (4,000 lbs).

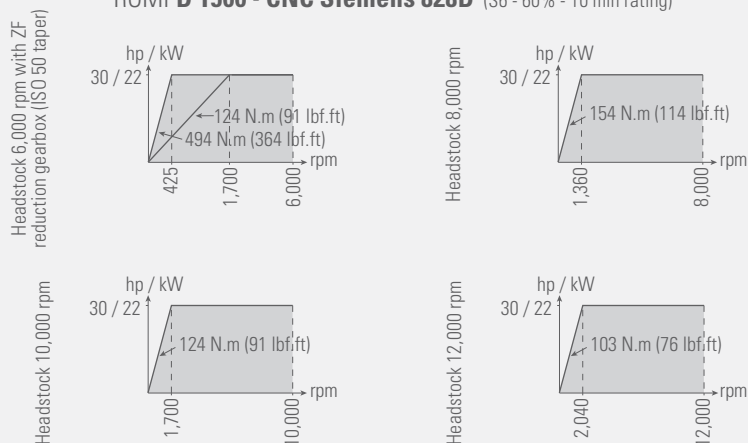
## ROMI D 1500

### Travels

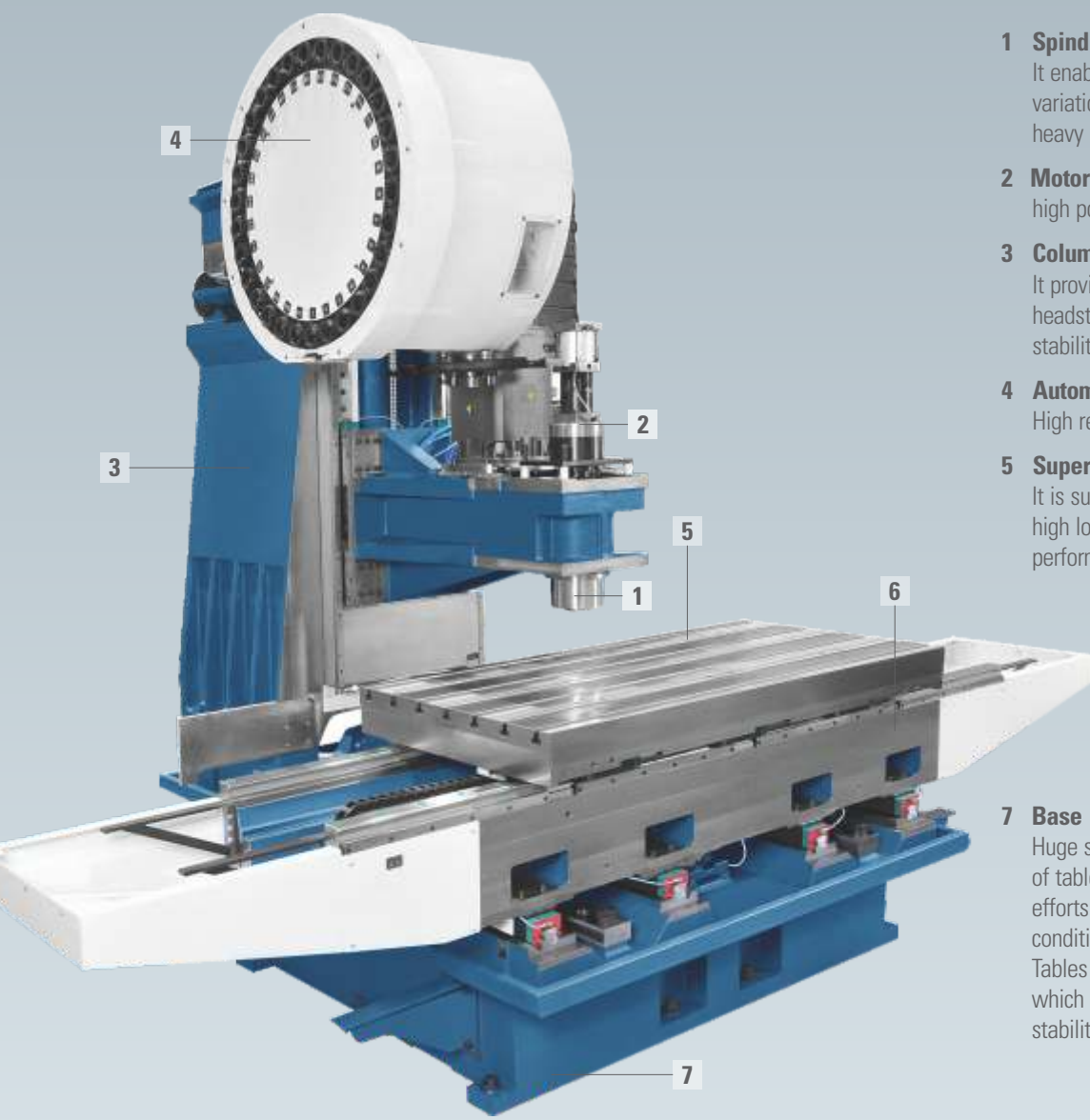


### Power Graphs

ROMI D 1500 - CNC Siemens 828D (S6 - 60% - 10 min rating)



Drawings are not in scale.



### 1 Spindle

It enables high speed with continuous variation assuring excellent performance in heavy machining condition at full power.

### 2 Motor

high power and high torque spindle drive unit.

### 3 Column

It provides excellent support of the headstock assembly with high geometric stability.

### 4 Automatic tool changer

High reliability and less maintenance.

### 5 Superior table (X axis)

It is supported on linear guides to hold high loads with great positioning performance.

### 6 Inferior table (Y axis)

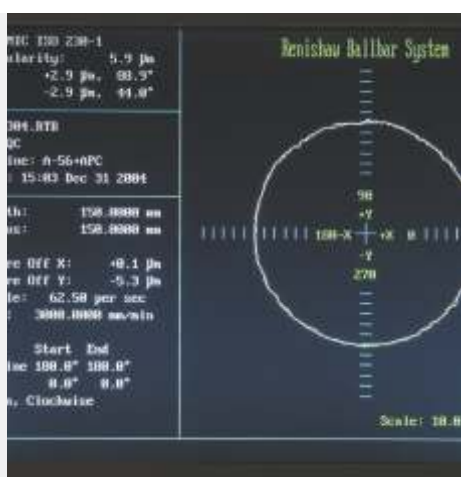
Robust structure supported on four linear guides offering excellent rigidity, stability and the possibility to hold parts up to 1,800 kg (4,000lbs).

### 7 Base

Huge structure designed to give support to set of tables and heavy parts, to absorb cutting efforts and vibrations under severe machining conditions.

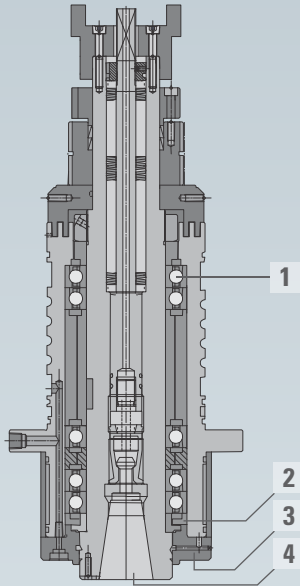
Tables are supported on four linear guides which contributes for machine outstanding stability.

## STRUCTURE



### QUALITY + TECHNOLOGY

Manufacturing process quality grants reliability and operational efficiency of ROMI machines. All machines are inspected with laser system for positioning measurement and repeatability. Axes alignment inspection is performed with ballbar system ensuring perfect interpolation of X, Y and Z axis.



- 1 Ultra precision angular contact ball bearings, P4 class, with permanent lubrication.
- 2 Bearing sealing by labyrinth.
- 3 Pressurized system - pneumatic seal: has the purpose to avoid the bearing against contamination by cutting coolant and particles
- 4 Pneumatic system for spindle taper cleaning, preventing the entry of chips and avoiding damages on the tool shanks.

- Spindle taper ISO-40 or ISO-50.
- Cutting coolant adjustable nozzles.
- Cartridge prepared for cooling system (optional). For headstocks with 12,000 rpm, the cooling system is standard contributing for thermal and geometric stability of the assembly.



Robust spindle cartridge with ultra precision bearings. It enables excellent run out precision, with low temperature elevation of bearings even when operating continuously in high rotations.

## HEADSTOCK

### TABLE, BALLSCREWS AND GUIDES

#### Ballscrews

Hardened and ground with pre-loaded nuts provide high rigidity and high accuracy on positioning and repeatability of axes. together with servomotors they offer precision and fast displacements, high speeds and accelerations.

#### Linear guides

Enable fast displacements with precision and high accelerations due to low friction coefficient between rails and blocks.

#### Servomotors

Elements of high technology (Fanuc or Siemens) offers high performance and reliability. Servomotors of three axes are directly coupled to ballscrews bringing higher accuracy to the positioning and repeatability of axes when compared with systems of pulleys and belts.

#### Linear guides benefits

- Feed rates up to 30 m/min
- Fast positioning of axes minimizing idle times and increasing productivity
- High rates of acceleration (up to 1g)
- Low lubrication oil consumption
- Easy maintenance
- High rigidity and long durability



Automatic Tool changer

**Efficiency and productivity**

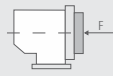

ROMI D Series machining centers are equipped with fast, accurate, and reliable automatic tool changers, helping to increase productivity and machining efficiency. They have double arm automatic tool changer with 30 tools capacity - ISO 40 or 24 tools capacity - ISO 50

## TOOL CHANGER

### 4<sup>th</sup> axis circular indexing table ROMI MGR

This optional allows the machining of parts at any angle and with continuous interpolation. It provides excellent positioning and repeatability. Its heavy duty construction and rigidity offers excellent vibration dampening. For machining of long parts it can be supplied with the optional tailstock.



Technical specifications		MGR 400
Face	mm (in)	400 (15.7)
Height from table to center	mm (in)	250 (9.8)
Max weight on chuck (workpiece)	kg (lbs)	250 (550)
Brake locking torque	N.m (lbf.ft)	1,500 (1,106)
Positioning accuracy (A)	s	+/- 15
Repeatability (A)	s	+/- 10
Height	mm (in)	460 (18.1)
Area	mm (in)	470 x 480 (18.5 x 18.9)
Total weight (approx.)	kg (lbs)	300 (660)
Max. work load	 N	23.000
Max. work load	 N.m (lbf.ft) (F x L)	2.500 (1,844)

(A) Results obtained with a new MGR, properly installed in a controlled temperature facility, at 22°C (+/- 1°C).

Technical Specifications		ROMI D 1500	
<b>Vertical headstock</b>			
Spindle taper	ISO	40	50
Speed ranges (version 6,000 rpm)	rpm	-	6 to 6,000 (**)
Speed ranges (version 8,000 rpm)	rpm	8 to 8,000	-
Speed ranges (version 10,000 rpm)	rpm	10 to 10,000	-
Speed ranges (version 12,000 rpm)	rpm	12 to 12,000	-
<b>Feeds</b>			
Rapid traverse (X/Y axes)	m/min (in/min)	30 (1,181)	
Rapid traverse (Z axis)	m/min (in/min)	30 (1,181)	
Max. programmable cutting feed	m/min (in/min)	30 (1,181)	20 (787)
<b>Travels</b>			
Superior table travel (X axis)	mm (in)	1.530 (60)	
Inferior table travel (Y axis)	mm (in)	760 (30)	
Headstock travel (Z axis)	mm (in)	760 (30)	
Distance from spindle nose to table	mm (in)	150 to 910 (5.9 to 36)	
<b>Table</b>			
Surface	mm (in)	1,700 x 750 (67 x 30)	
T-slot width x distance	mm (in)	18 x 110 (0.71 x 4.3)	
Number of T-slots	un	7	
Max. Weight on table (uniformly distributed)	kg	1,800 (4,000)	
<b>Automatic Tool Changer</b>			
Type		automatic arm	automatic arm
Tools capacity	un	30	24
Max. tool diameter	mm (in)	80 (3.1)	110 (4.3)
Max. tool diameter when adjacent stations are empty	mm (in)	150 (5.9)	200 (7.9)
Max. tool length	mm (in)	300 (11.8)	350 (13.8)
Tool holder type	type	BT / BBT / CAT / DIN	BT / BBT / CAT / DIN
Max. tool weight	kg (lbs)	8 (18)	15 (33)
Max. tool weight on Atc	kg (lbs)	102 (225)	150 (331)
Tool change time (chip to chip)	s	4.8	4.8
<b>CNC</b>			
Model		Siemens 828D	
Main motor AC	hp / kW	30 / 22 (S6 - 40% - 10 min rating)	
Total installed power	kVA	45	
<b>Dimension and weight (approx.)</b>			
Height	mm (in)	3,280 (129)	
Area (front x side) (*)	mm (in)	4,300 x 3,055 (169 x 120)	
Net weight	kg (lbs)	13,000 (28,700)	

(\*) Without chip conveyor

(\*\*) With ZF reduction gearbox



## CNC

### Technology, performance and reliability

Vertical Machining centers from ROMI D Series can be equipped with cnc Fanuc Oi-MD or Siemens Sinumerik 828D, which offers the user great facilities for programming.

- 15" touchscreen color monitor
- USB and Ethernet interfaces
- 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.



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