

# Measuring technology




3D measuring machine



FRATELLI  
ROTONDI



# Company profile

The company **FRATELLI ROTONDI**  began its activity in the 1943 with the planing and the construction of measuring and testing instruments for mechanical purpose. In the philosophy of improving quality since in the "50" years. The company had laboratory with controlled environmental condition (temperature humidity vibration) and extended its range of production with optic instruments and measuring systems for measuring equipment and machining tools. In this years began also the cooperation with National and International Institutes of Metrology. In the '60 years FRATELLI ROTONDI FARO began the production of the first bidimensional measu-

ring machines and in the next years tridimensional increasing the range and the performances. In the harmony with the construction philosophy coerent with the company policy the measuring machines of FRATELLI ROTONDI FARO are characterised by the research of solutions that can garantee high level of quality and reliability.

The company is present in every world markets with prestigious customers. The own technology is at disposal for the solution in co-operation with the Customer of every problem in the field of the metrology using the know how and the experiance of more of half century.



# Aster 30

## ASTER 3D

High precision tridimensional measuring machine for automatic or manual inspection of work pieces of small and middle size "C frame" (swan's neck) and "moving table" structure: only this structure permits to get independent the function of the probe head (axis Z ) from the movement of the two other axes. As to reach a better precision and reliability even if is involved the control of pieces whose size exceeds the strokes length.

### VERSION

- manual with micrometric displacements
- motorised with joy-stick
- automatic with CNC



MODEL	MEASURING RANGE (mm)		
	X	Y	Z
ASTER 400	400	350	300
ASTER 500	500	400	300
ASTER 650	650	550	500

ACCURACY:  $E = (2,8 + 3L/1000) \mu\text{m}$ . L = mm.

# Gemini

## GEMINI

Tridimensional high precision measuring machine for the control and digitalisation of middle and large size parts.

Structure with fixed bridge and moving table. The high rigidity of the construction is a guarantee of accuracy repeatability and performance stability for a long life. The design symmetry allows an easy loading of the work-piece from all sides.

### VERSION

- motorised with joy-stick
- automatic with CNC



MODEL	MEASURING RANGE (mm.)		
	X	Y	Z
<b>GEMINI 1</b>	1000	800	600
<b>GEMINI 2</b>	1200	1000	800
<b>GEMINI 3</b>	1500	1000	800
<b>GEMINI 4</b>	1800	1200	1000
<b>GEMINI 5</b>	2000	1500	1000

ACCURACY:  $E = (2,8+3L/1000) \mu\text{m}$ .

L= mm.

# Oxalis

## OXALIS

Tridimensional high precision measuring machine for the control and digitalisation of middle size parts.

Mobil bridge structure

### Versions:

- manual: with pneumatic locks
- motorised: with joy stick
- automatic: with CNC



MODEL	MEASURING RANGE (mm.)		
	X	Y	Z
<b>OXALIS 1</b>	600	500	400
<b>OXALIS 2</b>	1000	600	500
<b>OXALIS 3</b>	1000	800	600
<b>OXALIS 4</b>	1500	800	600

ACCURACY:  $E = ( 3 + 3,5 L/1000 ) \mu\text{m}$ . L = mm.

# Oxalis HD

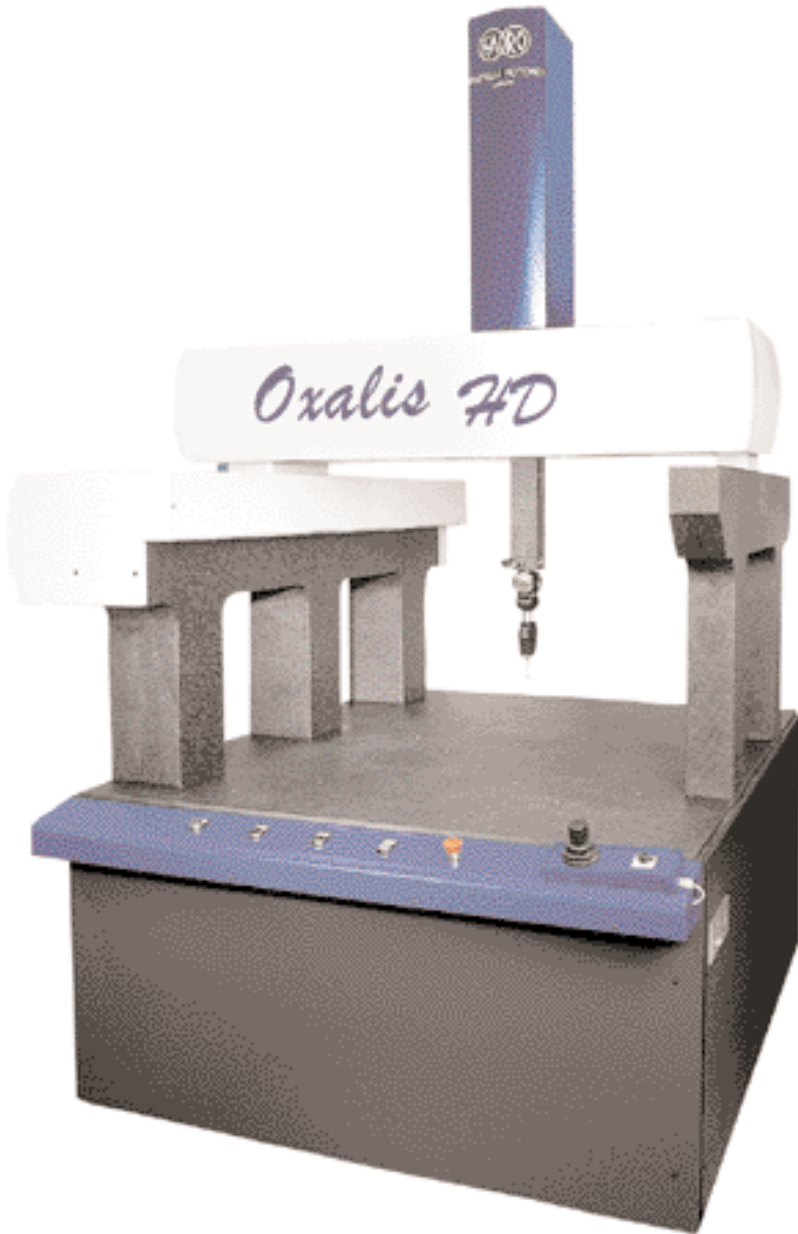
## OXALIS HD

Tridimensional high precision measuring machine for the control and digitalisation of middle size parts

Mobil traverse structure

### VERSION

- motorised with joy-stick
- automatic with CNC



MODEL	MEASURING RANGE ( mm )		
	X	Y	Z
OXALIS HD 1	1000	800	600
OXALIS HD 2	1500	800	600
OXALIS HD 3	1500	1000	800
OXALIS HD 4	2000	1000	800
OXALIS HD 5	3000	1200	1000

ACCURACY:  $E = (3+3,5 L/1000) \mu\text{m}$ . L = mm.

# MINITRICOORD TRICOORD 2000

## TRICOORD 3000

### MINITRICOORD - TRICOORD 2000 TRICOORD 3000

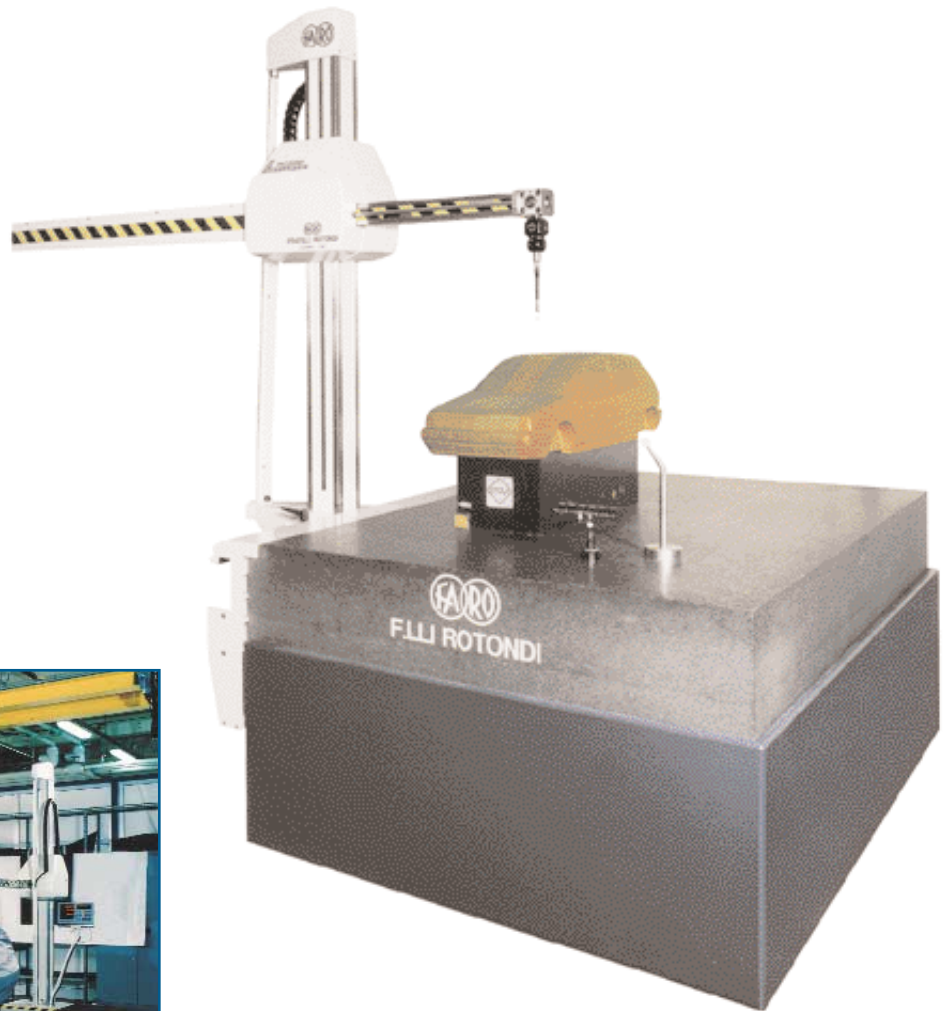
Tridimensional machine for measuring, marking-out and digitising for work pieces of small middle and big dimensions.

Open structure on all sides and horizontal axis type. High performance standard.

Many and different configuration. All the models may be intended as a machine composed of two separate systems (double arm) working opposed at the same time of sigularly

#### VERSION

- manual with handwheels
- automatic with CNC
- motorised with joy-stick
- manual/motorised with disconnection of driving units



MODEL	MEASURING RANGE ( mm )		
	X	Y *	Z
MINITRICOORD "A" "C" "SFE"	1000/2500	500/600/800	500/600/800/1000
TRICOORD 2000 "GIP" "GIV" "BS"	on request	1000/1200/1500	1200/1500/1800/2000
TRICOORD 2000 "SFE"	on request	1000/1200/1500	1200/1500/1800/2000
TRICOORD 3000 "GIP" "GIV" "BS"	on request	1600/1800/2000	2200/2500/3000/3500/4000
TRICOORD 3000 "SFE"	on request	1600/1800	2200/2500

\* Double range with double arm  
ACCURACY:  $E = (25 + 30 L / 1000) \mu\text{m}$ . L = mm.

# Matracoord

## MATRACOORD

Tridimensional machine for measuring marking-out and digitising machine for work pieces of middle and large dimensions.

"Cantilever" structure opened on three sides-vertical axis type. High performance standard.

### Versions :

- manual: with handwheels and fine movements
- motorised: with joy stick
- automatic : with CNC



MODEL	MEASURING RANGE (mm.)		
	X	Y	Z
MATRACOORD 1	2000	1000	800
MATRACOORD 2	2500	1200	900
MATRACOORD 3	3000	1400	1000
MATRACOORD 4	3500	1400	1000
MATRACOORD 5	4000	1600	1000

ACCURACY :  $E = (30 + 2L / 100) \mu\text{m}$ .

L= mm.

# Arm 2

## ARM

Articulated arm manual measuring machine.

Machine with high flexibility allows measuring work pieces like molds casting bodies etc. where it is impossible with the conventional equipment.

### Versions:

- portable
- fixed
- 6 axes
- 8 axes



MODEL	MEASURING RANGE (mm.)		
	X	Y	Z
<b>ARM 2</b>	3500	2900	2500
<b>ARM 2 Plus</b>	on request	2900	3500

ACCURACY : +/- 0,15 mm. /mt.

# Aster 3D view



## ASTER 3D VIEW

Tridimensional high precision measuring machine without contact for small and middle size pieces.

The non contact measuring machine ASTER 3D View find its best application when inspecting items whose control can't be made through contact probes for ist. badly accessible bidimensional or tridimensional parts plastic flexible and soft items electronic cards etc.

### Versions

- manual
- automatic

MODEL	MEASURING RANGE (mm.)		
	X	Y	Z
<b>ASTER 400</b>	400	350	150
<b>ASTER 500</b>	500	400	200
<b>ASTER 650</b>	650	550	250
<b>ASTER 860</b>	800	600	300

ACCURACY:  $E = (4 + 5L / 1000) \mu\text{m}$ . L = mm.

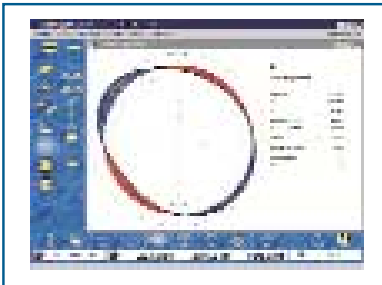
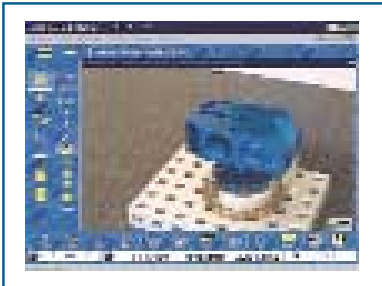
# MEASURING PROBES

All the measuring machines can be equipped with:

- electronic probes: point to point, continuous scanning with or without contact
- optic probes: laser, projectors, microscopes, tv camera
- probe heads: fixed, manual indexing, motorised indexing or continuous CNC controlled on two axes (rotation and slew)
- manual/automatic probes or stylus changer



# MEASURING SOFTWARE FOR POINT TO POINT AND CONTINUOUS MODE - DIGITISING SOFTWARE (REVERSE ENGINEERING)



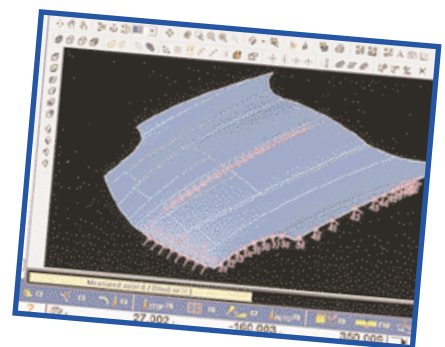
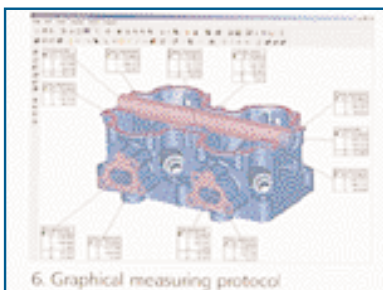
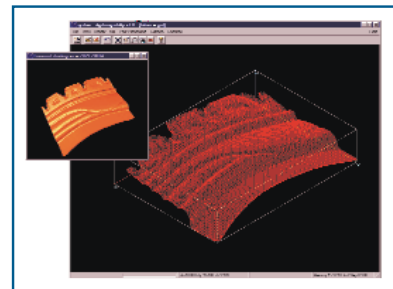
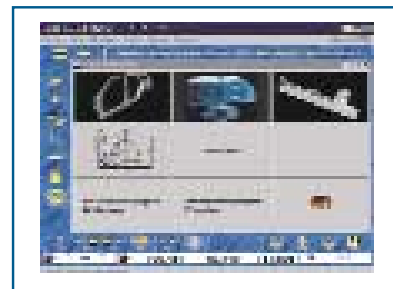
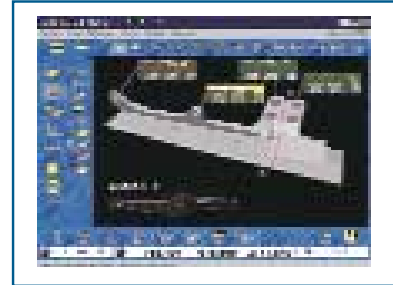
FLEXIBILITY FRIENDLY USE – GRAPHIC INTERFACE – SINGLE STRUCTURE in measuring geometry and freeform surfaces – COSTANTLY UPDATE – “WINDOW NT” OPERATING SYSTEM- REGRESSION ALGORITHMS CERTIFICATION by International Institute of Metrology – GRAPHIC DISPLAY REPRESENTATION OF THE MEASUREMENT –GRAPHICAL REPRESENTATION OF THE ERRORS – ON LINE UPDATE AND IMPLEMENTATION - MEASURING REPORTS AND MEASURING PROGRAMS WITH PICTURES AND DRAWINGS – USERS SCREEN DIALOGUE - INSPECTION REPORT IN DIFFERENT AND INDEPENDENT LANGUAGES – AUTOMATIC MEASUREMENT OF GEOMETRIC ELEMENTS AND PROFILES – ELEMENT SELECTION BY MOUSE CLICK – ETC



**Fast measuring in continuous mode with infinite quantity of points**

The measuring softwares are in a single system fully interactive with modular structure and selected in:

- module for elements with definite geometry
- module for elements with undefined geometry
- module for surface elements by a mathematical model (CAD DATA)
- module for data converter (IGES, VDA, CATIA, PRO-E, STEP, etc)
- module for continue digitalisation and reverse engineering
- module of statistics
- module for compensation of the geometrical errors and of environmental variables
- module for generating part programs in self-learning and off-line
- module for best-fit
- module for DMIS interface
- customized software
- and so on



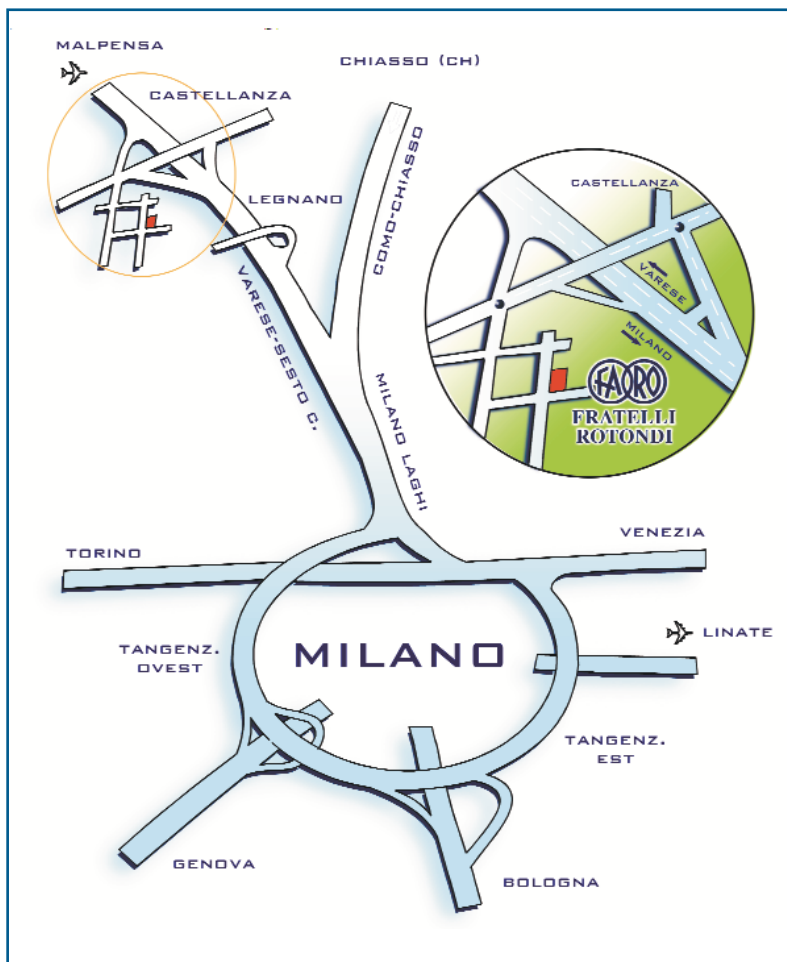
# Our customers in the world



- |              |                |
|--------------|----------------|
| Algeria      | Poland         |
| Argentina    | Czech Republic |
| Australia    | Russia         |
| Brasil       | Syria          |
| China        | Slovenia       |
| Croazia      | United States  |
| India        | Switzerland    |
| Jugoslavia   | South Africa   |
| Mexico       | South Korea    |
| Norway       | Taiwan         |
| E.U. Country | Turkey         |



**FRATELLI  
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