Geometric Measures – Itageo6

Itageo 6$^{\copyright}$ is the most innovative software for the management of the automatic control station for the dynamic measurement of objects put in rotation on its axis. It allows the control of dimensional and geometric characteristics with results which are comparable to the measurements obtained with a roundness measuring instrument in a laboratory.

Itageo 6$^{\copyright}$ is used for the dynamic control of objects put in rotation, and it's normally used for the control of brake discs, brake drums, hubs, stubs, flywheels, friction discs, shafts, shafts for electric motors, etc… Itageo 6$^{\copyright}$ is optimized for the dynamical controls and allows to control diameters with a single probe for each section. The result is the simplicity of the mechanical configuration and type change.

To guarantee the highest precision and reliability of the measurement, Itageo 6$^{\copyright}$ works on the same measurement principles as laboratory roundness measuring instruments: a piece is put on rotation on a precision mandrel, angular control via encoder, a contact probe on each section to be measured, acquisition of at least 7.200 points/rotation for each section analysed, reconstruction and analysis of the obtained profile.
This technology allows:

- Visualization in real time of real profiles, big help in order to individuate possible causes of technical problems due to the production of the same pieces.
- Compensation of the rotation errors generated by the mandrel.
- Fourier Analysis, with decomposition of the form errors in single components, with the possibility of manage different tolerances for each error.
- Analysis of interrupted surfaces (fixing holes, ventilation holes, etc...).
- Possibility to implement harmonic filters and dirty filters for each section of the control plan, with different parameters.
- Possibility to analyse for sections of circumference : ex. Roundness each 30°.

The characteristics to be measured can be related to a single section (bar-to-bar, linearity, roundness, etc..) or resulted from the comparison of more sections (cylindricity, concentricity, Stack-Commutator Angle, etc..).
The use of the electronics of latest generation iDaq4Geo by TQM Itaca Technology allows the perfect synchronization between the probes and the encoder, optimizing the measuring performances.
Itageo 6$^{\copyright}$ is able to manage the following functions:

1. Control of the production process.
2. Management of the cycle of Master Verification and automatic Master Resetting.
3. Data saving in SQL database, with fully network functionality.
4. Saving in the database of measures + profiles + Piece ID, to guarantee the traceability one by one.
5. Possibility to make a remote real time monitoring.
6. Management of remote tele-assistance.
7. Dialogue with external devices (load robot, frequencies control, cracks control, marking machines, processing machines, etc…).
8. Management of the marking of pieces.

The graphic interface simplifies the activities of the operators:

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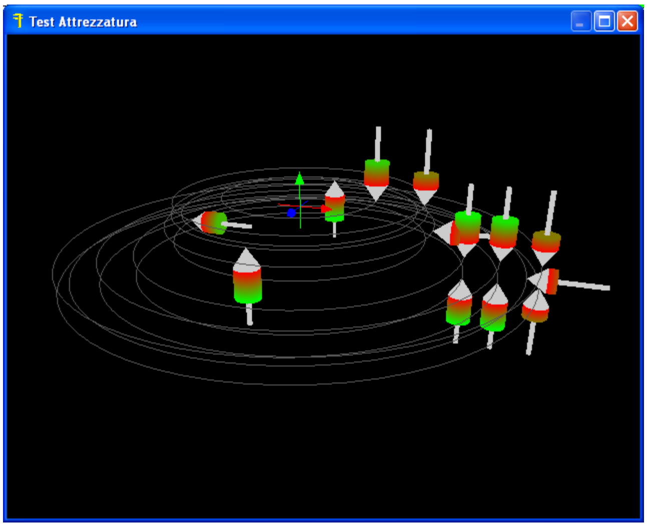
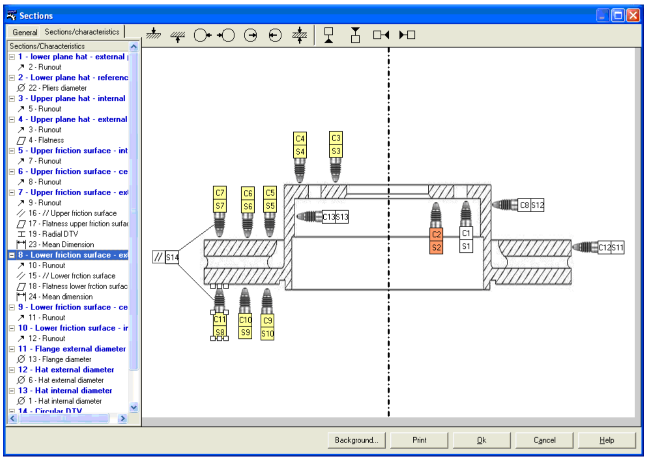
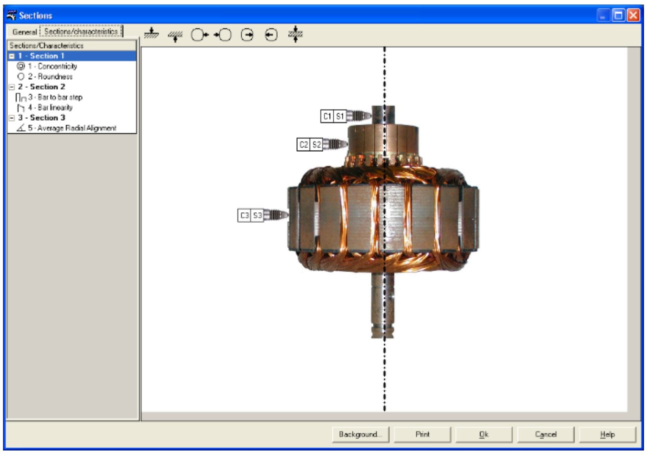

Test Attrezzatura

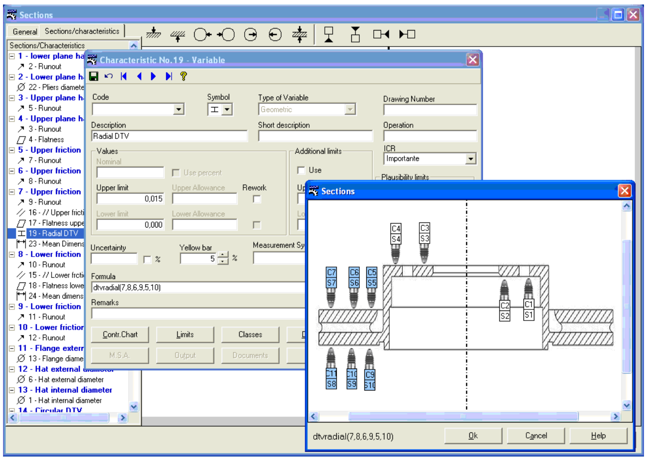
Immediate and visual configuration of the station.


Sections
General
Sections/characteristics
Sections/Characteristics
1 - lower plane hat - external
2 - Runout
2 - Lower plane hat - referenc
22 - Pliers diameter
3 - Upper plane hat - internal
5 - Runout
4 - Upper plane hat - external
3 - Runout
4 - Flatness
5 - Upper friction surface - int
7 - Runout
6 - Upper friction surface - ce
8 - Runout
7 - Upper friction surface - ext
9 - Runout
16 - // Upper friction surface
17 - Flatness upper friction surfac
19 - Radial DTV
23 - Mean Dimension
8 - Lower friction surface - ext
10 - Runout
15 - // Lower frction surface
18 - Flatness lower frction surfac
24 - Mean dimension
9 - Lower friction surface - ce
11 - Runout
10 - Lower friction surface - ir
12 - Runout
11 - Flange external diameter
13 - Flange diameter
12 - Hat external diameter
6 - Hat external diameter
13 - Hat internal diameter
1 - Hat internal diameter
14 - Circular DTV
C4 S4
C3 S3
C7 S7
C6 S6
C5 S5
C13 S13
C2 S2
C1 S1
C8 S12
C12 S11
S14
C11 S8
C10 S9
C9 S10
Background...
Print
Ok
Cancel
Help

Creation of control plans with rapid and intuitive graphic support.

Geometric Measures – Itageo6


Sections
General
Sections/characteristics
Sections/Characteristics
1 - Section 1
1 - Concentricity
2 - Roundness
2 - Section 2
3 - Bar to bar step
4 - Bar linearity
3 - Section 3
5 - Average Radial Alignment
C1 S1
C2 S2
C3 S3
Background...
Print
Ok
Cancel
Help


Sections
General
Sections/characteristics
Sections/Characteristics
1 - lower plane ha
2 - Runout
2 - Lower plane h
22 - Pliers diamete
3 - Upper plane h
5 - Runout
4 - Upper plane h
3 - Runout
4 - Flatness
5 - Upper friction
7 - Runout
6 - Upper friction
8 - Runout
7 - Upper friction
9 - Runout
16 - // Upper fricti
17 - Flatness uppe
19 - Radial DTV
23 - Mean Dimens
8 - Lower friction
10 - Runout
15 - // Lower frcti
18 - Flatness lowe
24 - Mean dimens
9 - Lower friction
11 - Runout
10 - Lower friction
12 - Runout
11 - Flange extern
13 - Flange diame
12 - Hat external diameter
6 - Hat external diameter
13 - Hat internal diameter
1 - Hat internal diameter
14 - Circular DTV
Characteristic No.19 - Variable
Code
Symbol
Type of Variable
Drawing Number
Short description
Operation
Values
Nominal
Use percent
Upper Allowance
Rework
Lower Allowance
Additional limits
Use
Plausibility limits
Uncertainty
%
Measurement Sy
Remarks
Contr.Chart
Limits
Classes
M.S.A.
Output
Documents
Sections
C4 S4
C3 S3
C7 S7
C6 S6
C5 S5
C2 S2
C1 S1
C11 S8
C10 S9
C9 S10
Ok
Cancel
Help

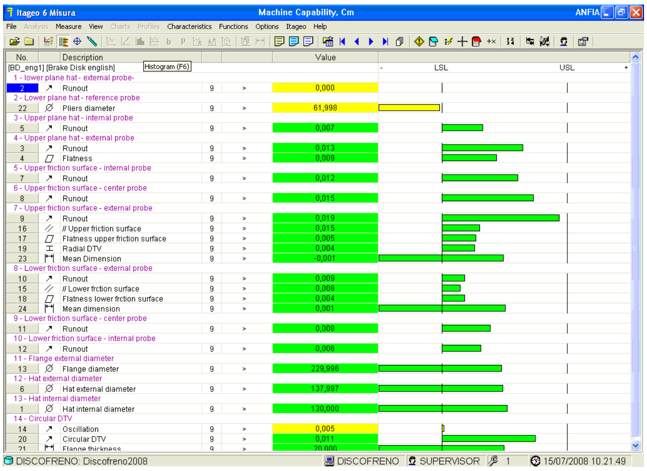
Type of Variable: Geometric
Description: Radial DTV
ICR: Importante
Upper limit: 0,015
Lower limit: 0,000
Yellow bar: 5 %
Formula: dtvradial(7,8,6,9,5,10)

dtvradial(7,8,6,9,5,10)

Definition of complex characteristics using the selection of the probes from the picture.

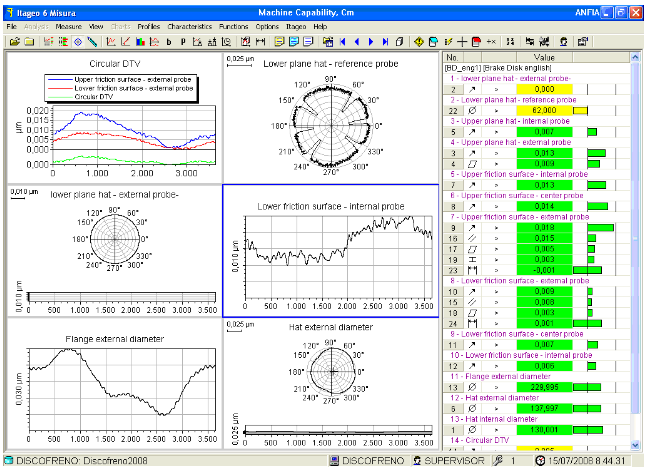
Geometric Measures – Itageo6

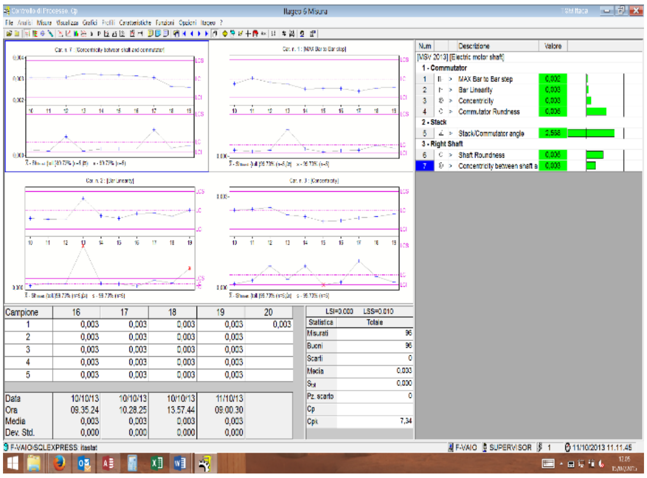
User interface totally configurable: simple and immediate, with the global result of the test (green for good, red for reject and yellow for uncertain), punctual values for each characteristic of the control plan and possibility to display up to 6 graphics for the critical sections.


Itageo 6 Misura
Machine Capability, Cm
ANFIA
File Analysis Measure View Charts Profiles Characteristics Functions Options Itageo Help
Histogram (F6)
LSL
USL

No.		Description			Value
[BD_eng1] [Brake Disk english]					
1 - lower plane hat - external probe-					
2	↗	Runout	9	>	0,000
2 - Lower plane hat - reference probe					
22	⌀	Pliers diameter	9	>	61,998
3 - Upper plane hat - internal probe					
5	↗	Runout	9	>	0,007
4 - Upper plane hat - external probe					
3	↗	Runout	9	>	0,013
4	▱	Flatness	9	>	0,009
5 - Upper friction surface - internal probe					
7	↗	Runout	9	>	0,012
6 - Upper friction surface - center probe					
8	↗	Runout	9	>	0,015
7 - Upper friction surface - external probe					
9	↗	Runout	9	>	0,019
16	//	// Upper friction surface	9	>	0,015
17	▱	Flatness upper friction surface	9	>	0,005
19	⌶	Radial DTV	9	>	0,004
23	↔	Mean Dimension	9	>	-0,001
8 - Lower friction surface - external probe					
10	↗	Runout	9	>	0,009
15	//	// Lower frction surface	9	>	0,008
18	▱	Flatness lower frction surface	9	>	0,004
24	↔	Mean dimension	9	>	0,001
9 - Lower friction surface - center probe					
11	↗	Runout	9	>	0,008
10 - Lower friction surface - internal probe					
12	↗	Runout	9	>	0,006
11 - Flange external diameter					
13	⌀	Flange diameter	9	>	229,996
12 - Hat external diameter					
6	⌀	Hat external diameter	9	>	137,997
13 - Hat internal diameter					
1	⌀	Hat internal diameter	9	>	130,000
14 - Circular DTV					
14	↗	Oscillation	9	>	0,005
20	↗	Circular DTV	9	>	0,011
21	↔	Flange thickness	9	>	20,000

DISCOFRENO: Discofreno2008 | DISCOFRENO | SUPERVISOR | 1 | 15/07/2008 10.21.49


Itageo 6 Misura
Machine Capability, Cm
ANFIA
File Analysis Measure View Charts Profiles Characteristics Functions Options Itageo Help
Circular DTV
Upper friction surface - external probe
Lower friction surface - external probe
Circular DTV
Lower plane hat - reference probe
lower plane hat - external probe-
Lower friction surface - internal probe
Flange external diameter
Hat external diameter
DISCOFRENO: Discofreno2008
DISCOFRENO
SUPERVISOR
15/07/2008 8.44.31


Itageo 6 Misura
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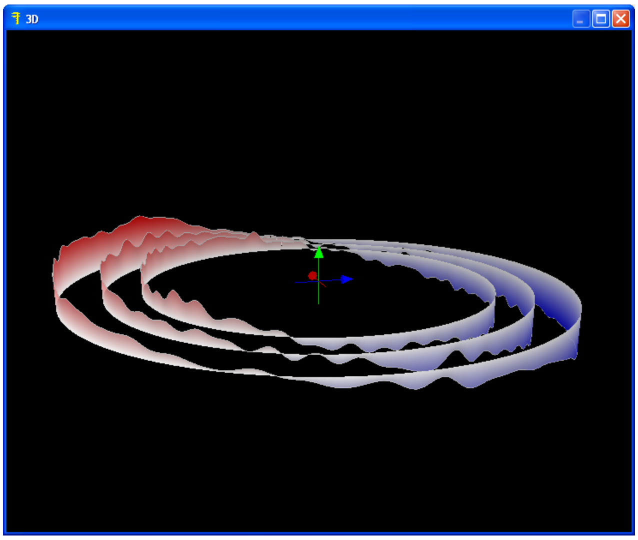
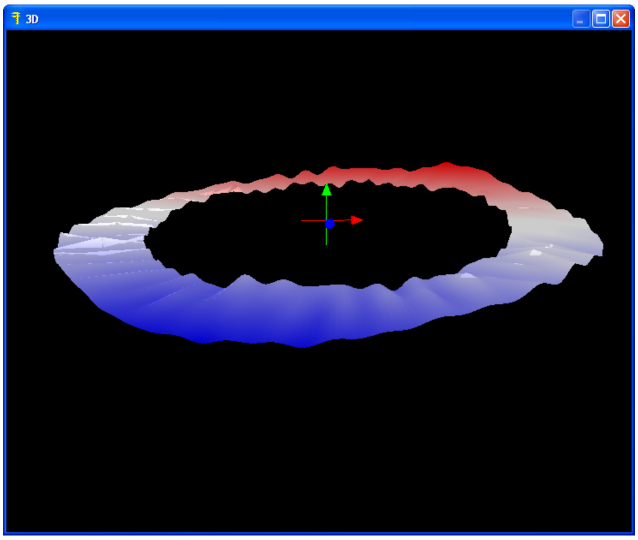
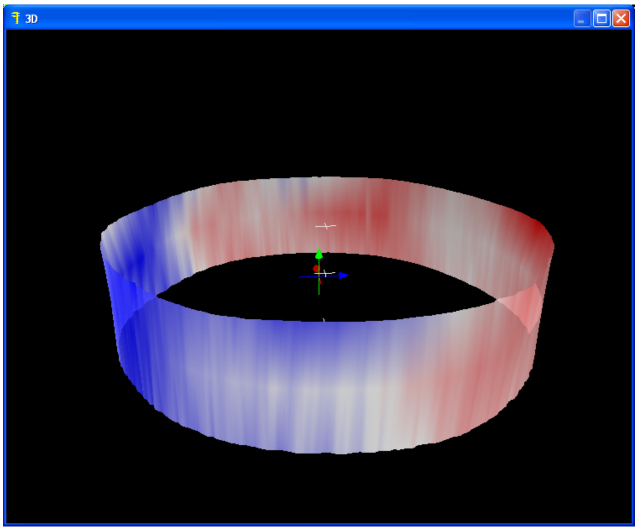
Geometric Measures – Itageo6



Display of complex geometrical characteristics in 3D mode.