i-Tech
Innovative Technology

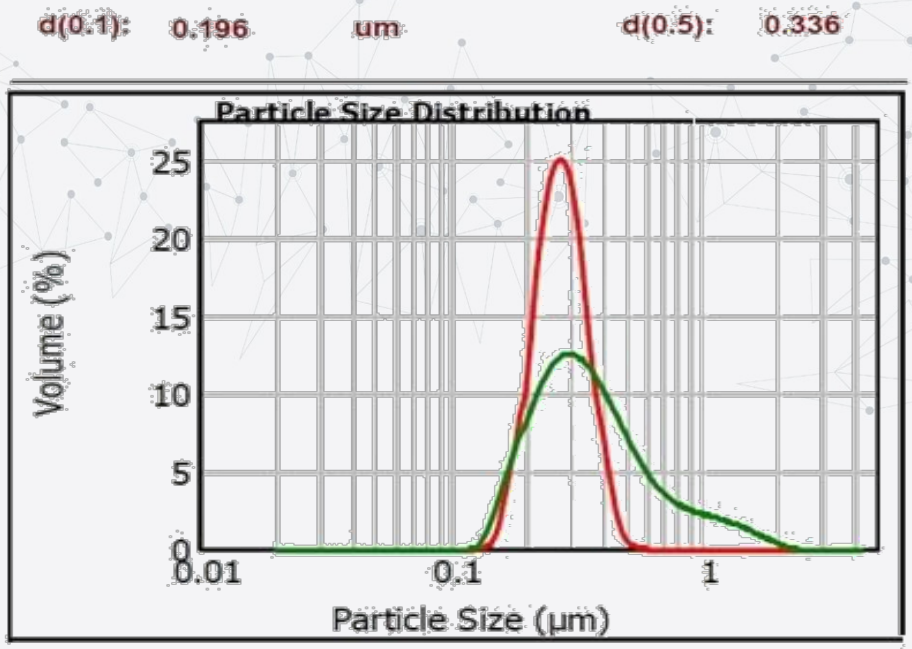
Innovative solutions since **1997**

20 years

We support every customer through a technological innovation process by improving the efficiency and the production quality of every plant

Better particle curve distribution (narrowest)

(Measure was took at 80% of the grinding process timing)



Thanks to the action (fluid forces) generated by our grinding agitators (disks) , the final particle curve will be more narrow

I-MILL disks

Other agitators type “pins”

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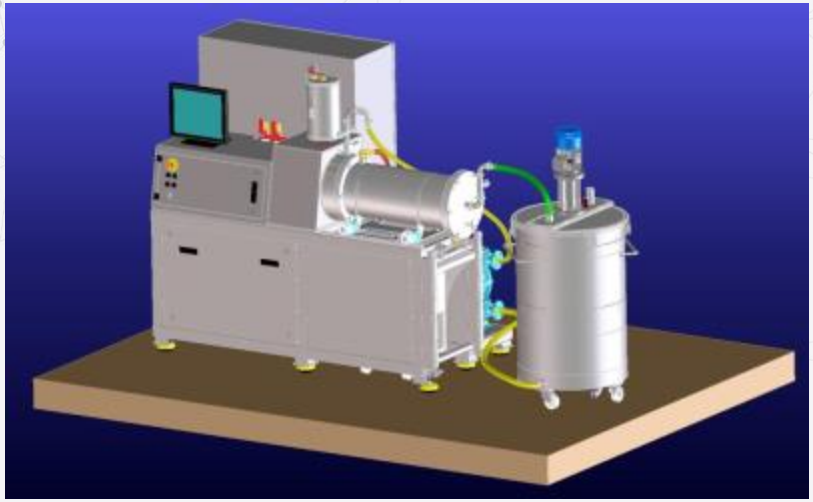
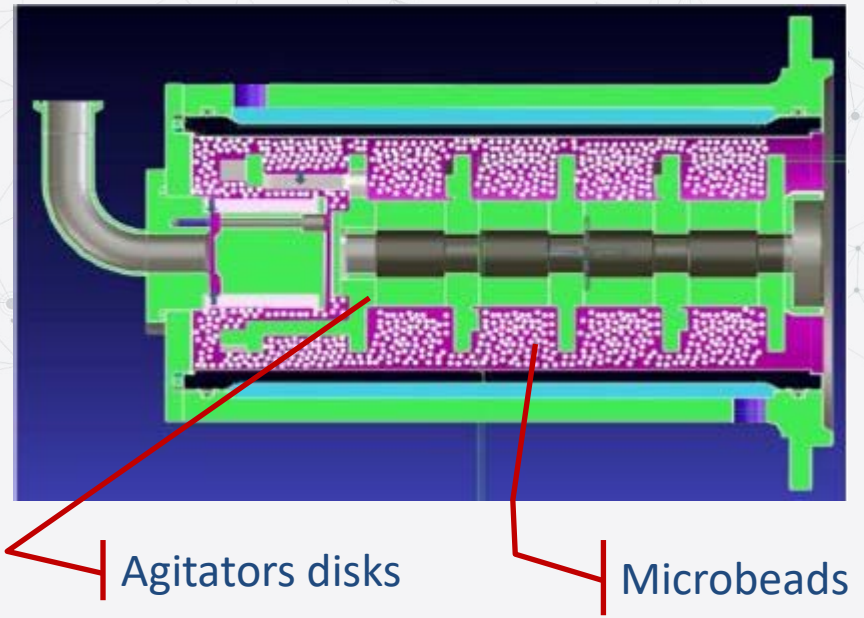
Fine grinding

I-MILL 40 - “3D view”



Milling chamber section



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Fine grinding

Optimal conditions:

- Starting particle size :	< 3 µm.
- Electrical conducibility	< 800 µS.
- Milling beads material :	YTZ
- Milling beads average size:	0,35 mm.
- Beads quantity	80%. (of the net working volume)
- Periferical speed (agitators)	from 10 to 15 m/sec
- Working pressure (inside chamber)	0,4 Bar.
- Pump flow rate	around 500 l/hr

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The grinding chamber is equipped with cooling jacket and is fully covered in SiC (Silicon Carbide) in our top version.
The horizontal agitator is realized with a performance design (not subject to wear) and the disks are provided with the most suitable special material (in order to guarantee fully compatibility with the product*).
The state-of-the-art technology adopted in I-MILL systems insures high efficiency and high productivity in whatever production.

- Heavy-Duty supporting frame, made with painted steel
- 42lt grinding chamber made in Silicon Carbide with cooling jacket
- Milling shaft made in 304 stainless steel.
- Fluidizer milling disc made in special composite polymer with nylon shaft spacers
- Inlet housing made in special composite polymer
- Outlet plate made in special composite polymer
- Beads filtering system with special separating filter
- Mill motor 45Kw (controlled by frequency converter)
- Electrical control panel with PLC and Monitor Touch Screen
- Product feeding peristaltic pump (controlled by inverter)

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1- Product inlet
2- Cooling liquid outlet
3- Grinding disks
4- Agitator shaft
5- Internal chamber
6- Cooling chamber
7- Separator screen
8- Bead separating rotor
9- Product outlet
10- Drain plug
11- Cooling liquid inlet
12- Seal Cartridge

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1- Flush tank
2- Product Outlet
3- Product Inlet
4- Touch Screen control
5- Manual Control
6- Grinding chamber
7- Drain plug
8- Grinding media collection trolley
9- Main Control Panel
10- Grinding disks
11- Grinding chamber removal accessory

I-MILL40: 100% FOR CERAMIC

MILLING CHAMBER

- Fully made in sintered Silicon Carbide
- External jacket made in Aisi stainless steel
- internal coil for cooling liquid's recirculating
  it keeps the ΔT (Tin-Tout very low)

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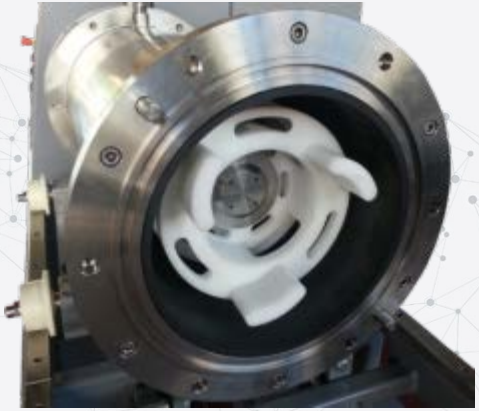
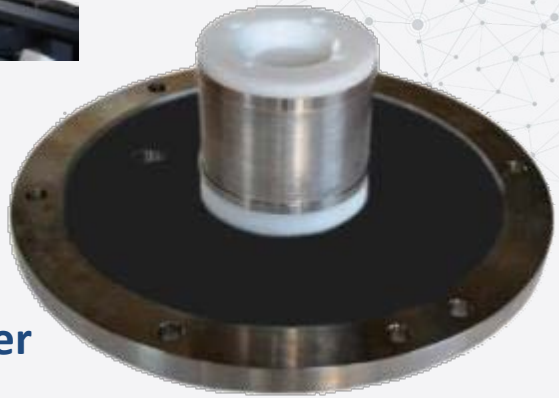
Milling devices

Milling agitators (disks) are made in special **composite polymer**
Disks spacers are made in high density resin.
Average working life = **4.000** hours





Beads filter

Final disk (cup) it is used to move out the beads from the filter

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Easy to be maintained.
Fast disks removing system.

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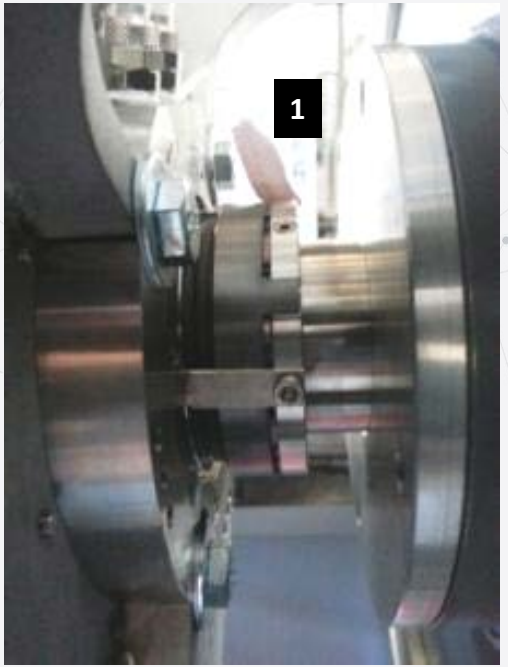
Milling shaft seal cartridge group



Milling shaft's seal cartidge group (1) with double barriers in SSiC

Cooloing reservoir (2) with relative level indicator (3).

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Mechanical transmission group

Motor (1): three-phase asynchronous electric motor 45kW, controlled by frequency converter.

Transmission devices (2)

- Special reinforced belt.
- No maintenance
- Long life

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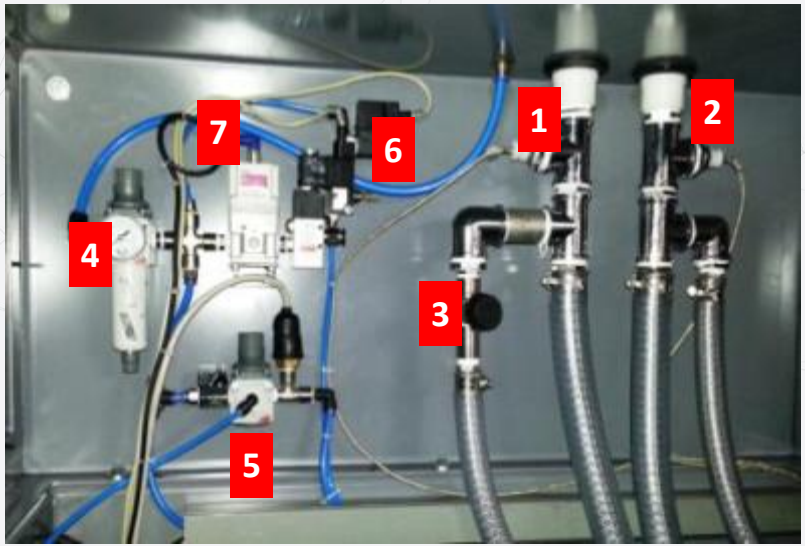
Peumatic and hydraulic panel



1- Cooling liquid inlet circuit
2- Cooling liquid recycling circuit.
3- Reservoir cooling liquid flow regulator
4- Compressed air filtration and regulation group
5- Reservoir cooling liquid pressure regulator
6- Reservoir cooling liquid pump electrovalve
7- optional
8- Reservoir cooling liquid pump

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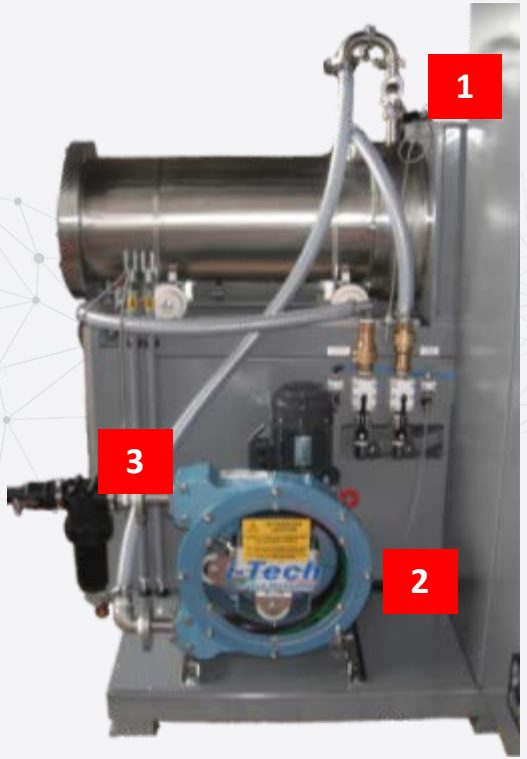
Peumatic and hydraulic devices

1- Quick fittings
2- Peristaltic pump with hose braking sensor
3- Product inlet filter’s group



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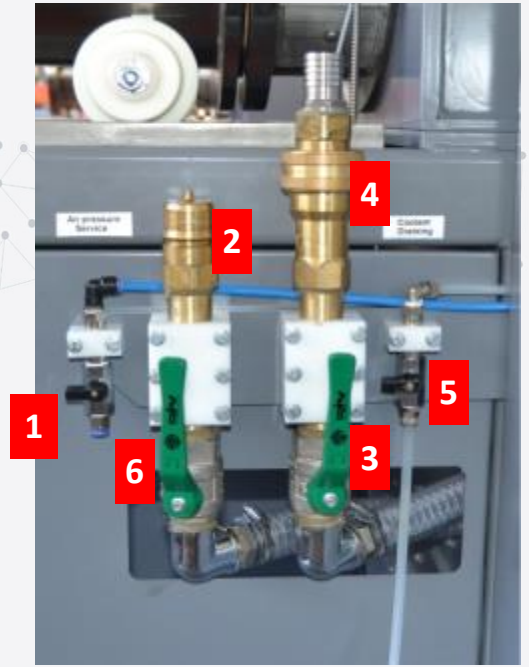
Peumatic and hydraulic devices



1- Compressed air service valve
2- Quick fitting cooling circuit (inlet)
3- Cooling circuit service valve (outlet)
4- Quick fitting cooling circuit (outlet)
5- Reservoir's drain valve.
6- Cooling circuit service valve (inlet)

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Technical Details

- Heavy-Duty supporting frame, made with painted steel
- 0,5 lt grinding chamber made in SSiC with cooling jacket
- Milling shaft made in 304 stainless steel.
- Fluidizer milling disc made in special composite polymer with nylon shaft spacers
- Inlet housing made in special composite polymer
- Outlet plate made in special composite polymer
- Beads filtering system with special separating filter
- Milling media made in hard material (long life)
- Mill motor 4 Kw (controlled by frequency converter)
- Electrical control panel with control device, PC and touch screen monitor
- Product feeding peristaltic pump (controlled by inverter)

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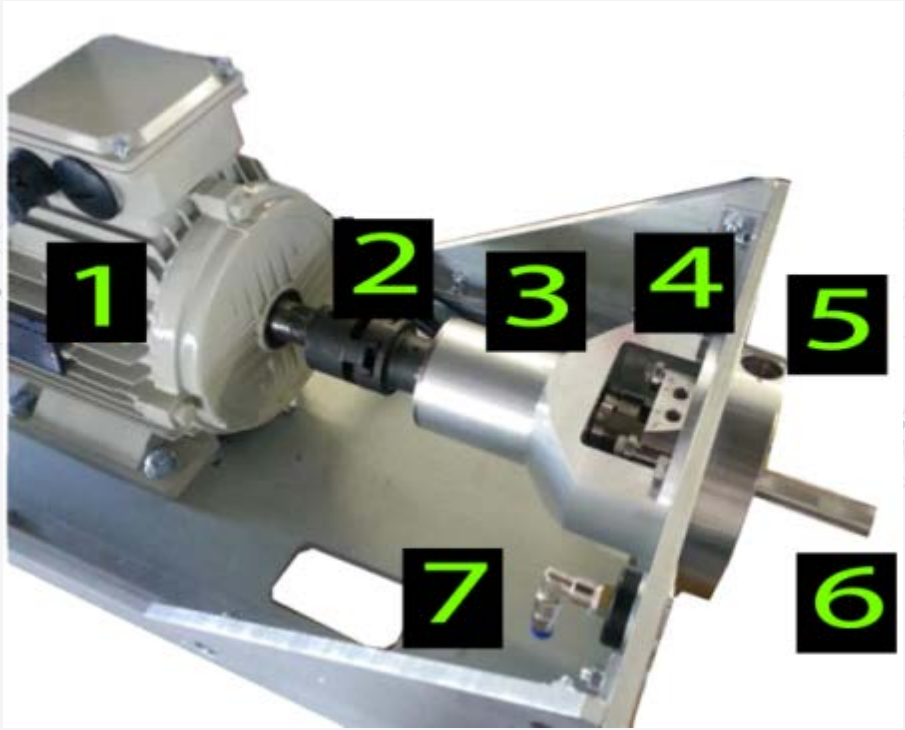
I-MILL05: 100% FOR CERAMIC



1- Motor (4 kW)
2- Shaft drive's junction
3- Shaft drive bell
4- Seal cartridge group
5- Milling chamber product inlet
6- Milling shaft
7- Supporting frame

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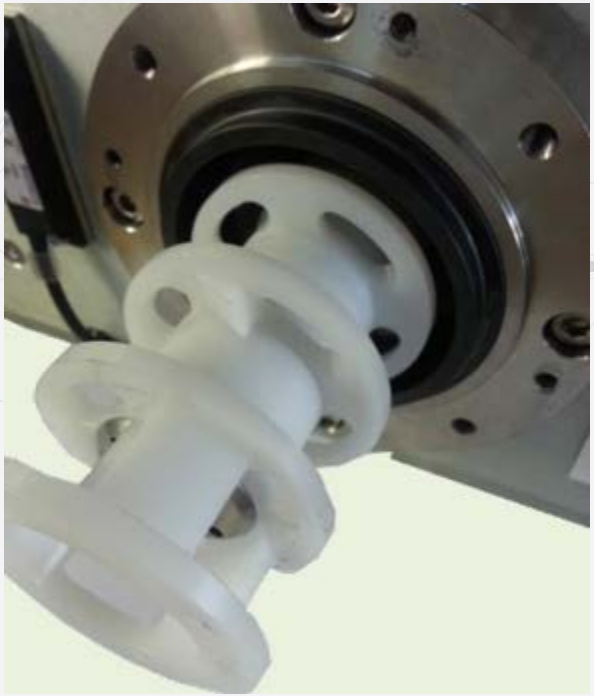
I-MILL05: 100% FOR CERAMIC



PROMILL

I-MILL SUPERVISORY SOFTWARE

Keep each parameter under control

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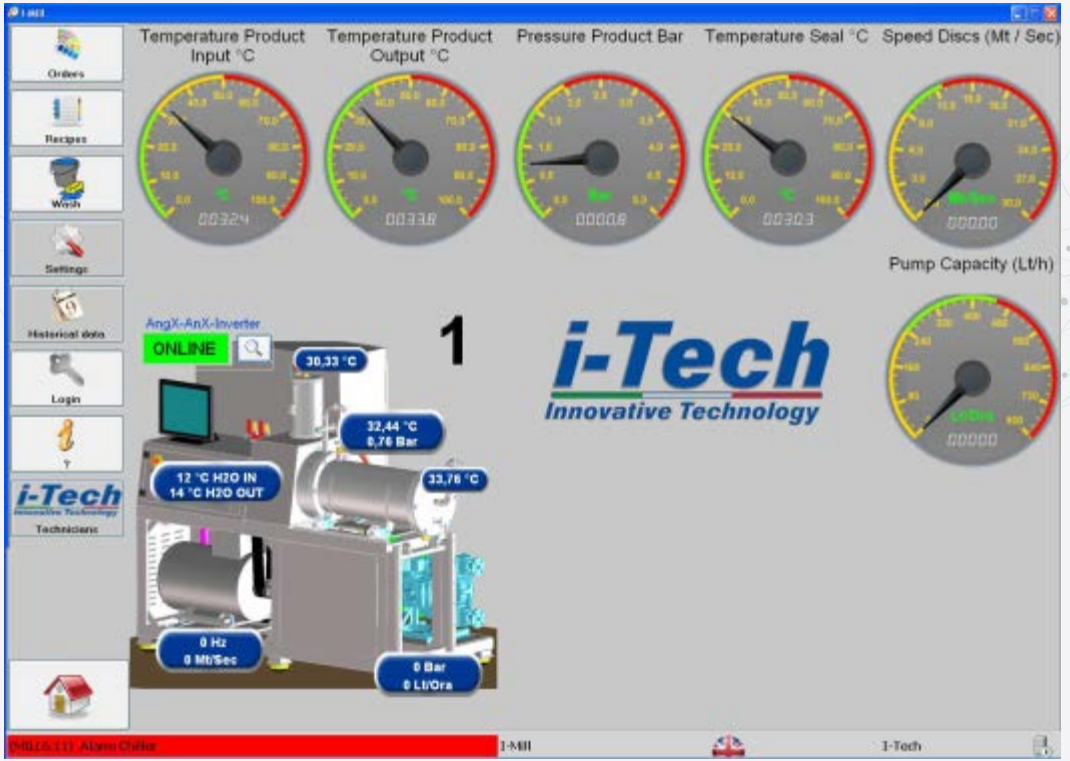
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL

I-MILL40
Main screen



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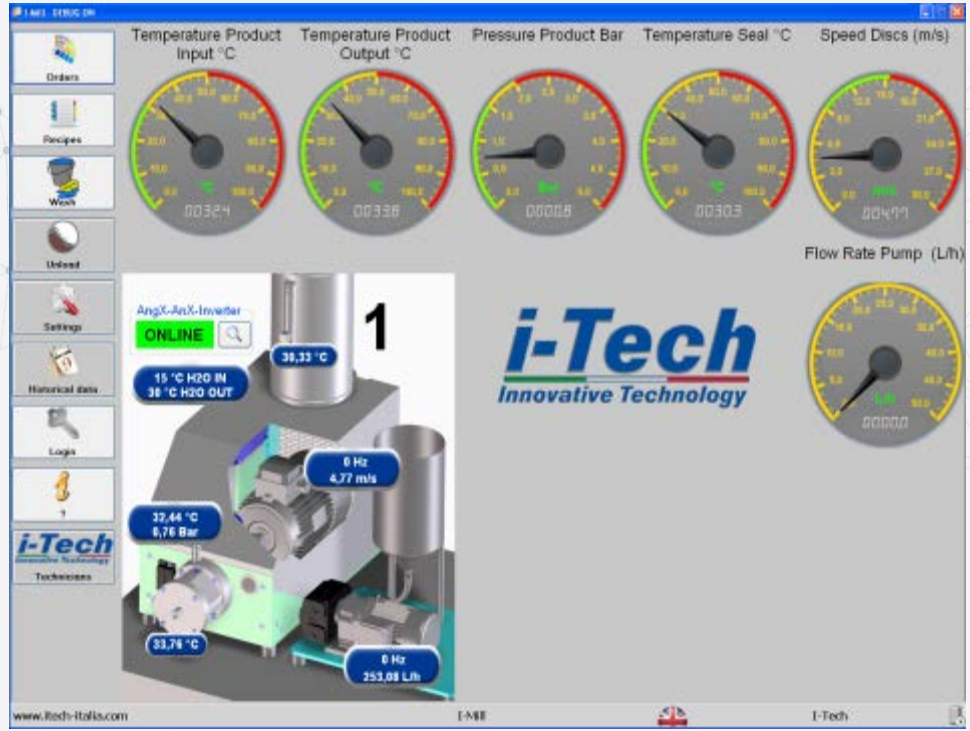
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL



I-MILL05
Main screen

i-MILL

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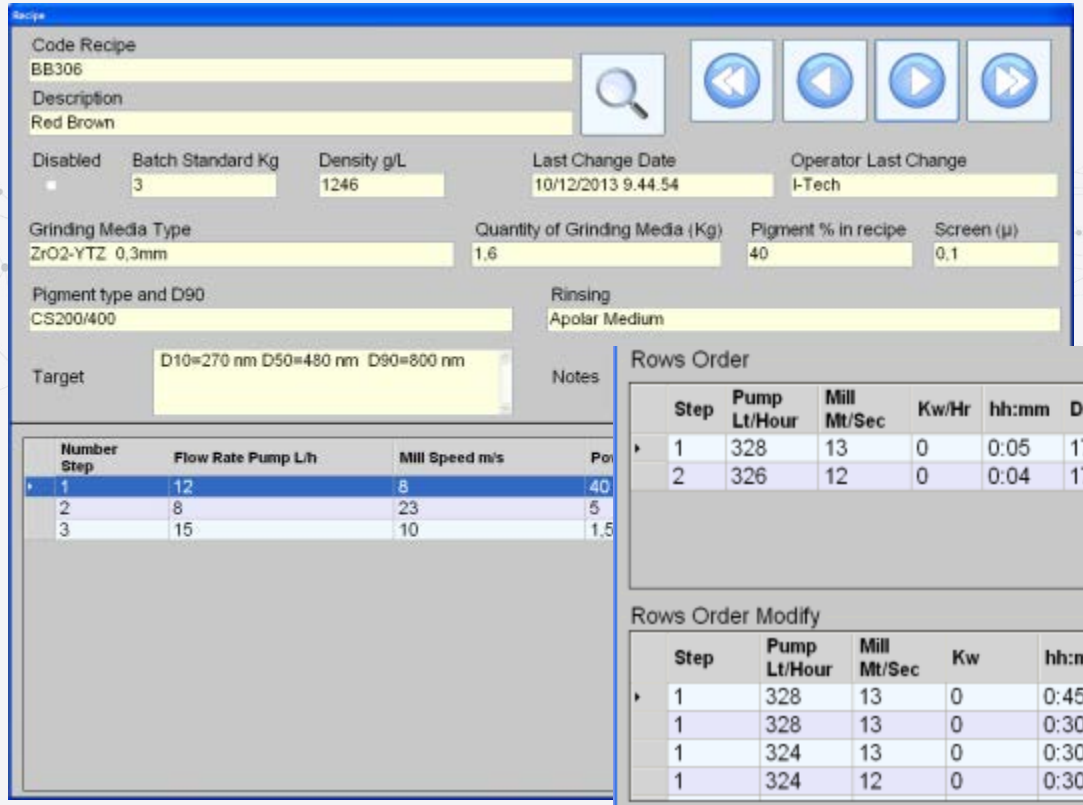
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL

Recipe management



Recipe

Code Recipe: BB306

Description: Red Brown

Disabled	Batch Standard Kg	Density g/L	Last Change Date	Operator Last Change
	3	1246	10/12/2013 9.44.54	I-Tech

Grinding Media Type	Quantity of Grinding Media (Kg)	Pigment % in recipe	Screen (µ)
ZrO2-YTZ 0,3mm	1,6	40	0,1

Pigment type and D90: CS200/400

Rinsing: Apolar Medium

Target: D10=270 nm D50=480 nm D90=800 nm

Notes

Number Step	Flow Rate Pump L/h	Mill Speed m/s	Po
1	12	8	40
2	8	23	5
3	15	10	1,5

Rows Order

Step	Pump Lt/Hour	Mill Mt/Sec	Kw/Hr	hh:mm	Data Start	Data End	Time	hh:mm Grind.	Kw/Hr Trasf.	Kw/Hr Tot.
1	328	13	0	0:05	17/09/2013...	17/09/2013 1...	00:10:04	0:10	0,41	0,51
2	326	12	0	0:04	17/09/2013...	17/09/2013 1...	00:03:14	0:03	0,13	0,17

Rows Order Modify

Step	Pump Lt/Hour	Mill Mt/Sec	Kw	hh:mm	Operator	Date
1	328	13	0	0:45	I-Tech	17/09/2013 10.29
1	328	13	0	0:30	I-Tech	17/09/2013 10.29
1	324	13	0	0:30	I-Tech	17/09/2013 10.29
1	324	12	0	0:30	I-Tech	17/09/2013 10.30

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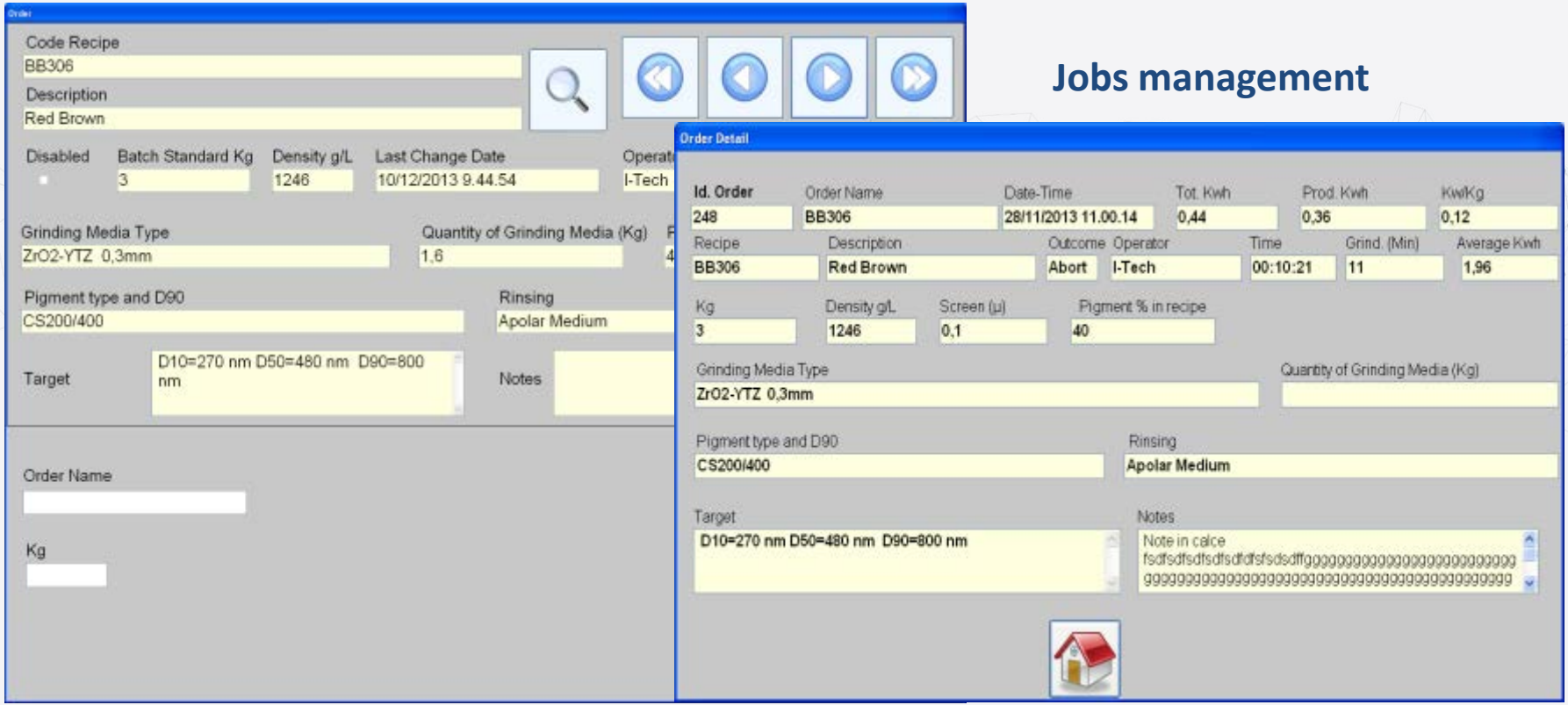
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL



Jobs management

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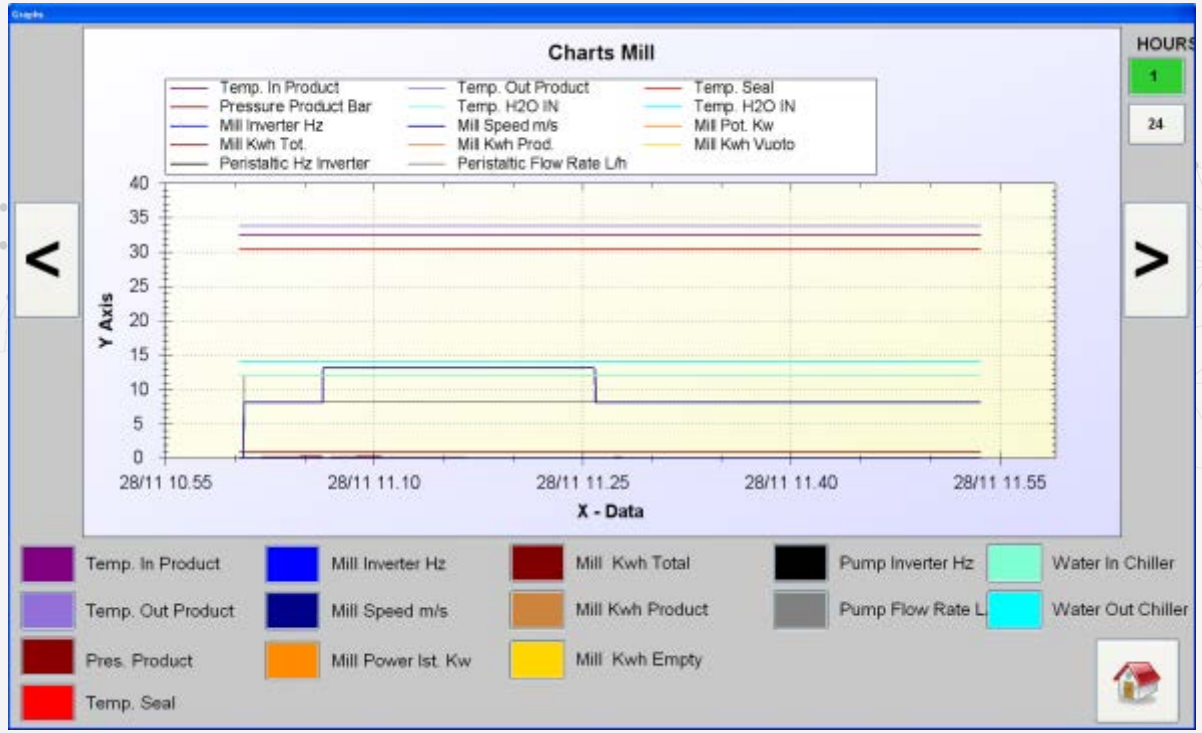
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL



Working parameters chart

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ALL WORKING PARAMETERS ALWAYS UNDER CONTROL

	Minutes	Temp. Prodotto In.	Temp. Prodotto Usc.	Prodotto Bar	Mill m/s	Pump L/h	Tot. KWh	Tot. KWh Prodotto	Potenza KW	PSD D10	PSD D50	PSD D90
▸	0	32,44	33,76	0,76	8	12	0	0	0			
	2	32,44	33,76	0,76	8	12	0,08	0,06	0			
	4	32,44	33,76	0,76	8	12	0,16	0,13	0			
	5	32,44	33,76	0,76	23	8	0,2	0,16	0			
	6	32,44	33,76	0,76	23	8	0,26	0,21	0			
	8	32,44	33,76	0,76	23	8	0,38	0,3	0			

Working parameters table

i-MILL

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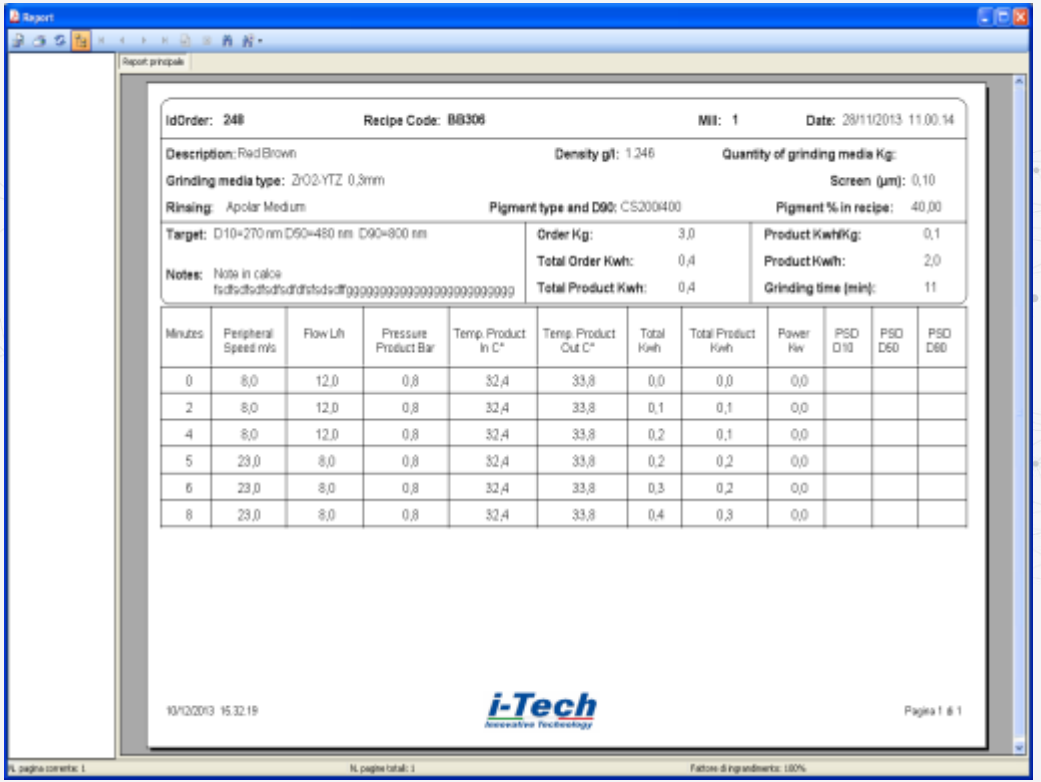
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL



IdOrder: 248 Recipe Code: BB306 Mill: 1 Date: 28/11/2013 11.00.14

Description: Red Brown Density g/l: 1,246 Quantity of grinding media Kg:

Grinding media type: ZrO2-YTZ 0,3mm Screen (µm): 0,10

Rinsing: Apolar Medium Pigment type and D90: CS200400 Pigment % in recipe: 40,00

Target: D10=270 nm D50=460 nm D90=800 nm

Notes: Note in calce fsdfsdfsdfsdfdfsfsdsdfffgggggggggggggggggggggggg

Order Kg:	3,0	Product Kwh/Kg:	0,1								
Total Order Kwh:	0,4	Product Kwh:	2,0								
Total Product Kwh:	0,4	Grinding time (min):	11								

Minutes	Peripheral Speed m/s	Flow L/h	Pressure Product Bar	Temp. Product In C°	Temp. Product Out C°	Total Kwh	Total Product Kwh	Power Kw	PSD D10	PSD D50	PSD D90
0	8,0	12,0	0,8	32,4	33,8	0,0	0,0	0,0			
2	8,0	12,0	0,8	32,4	33,8	0,1	0,1	0,0			
4	8,0	12,0	0,8	32,4	33,8	0,2	0,1	0,0			
5	23,0	8,0	0,8	32,4	33,8	0,2	0,2	0,0			
6	23,0	8,0	0,8	32,4	33,8	0,3	0,2	0,0			
8	23,0	8,0	0,8	32,4	33,8	0,4	0,3	0,0			

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Working parameters report

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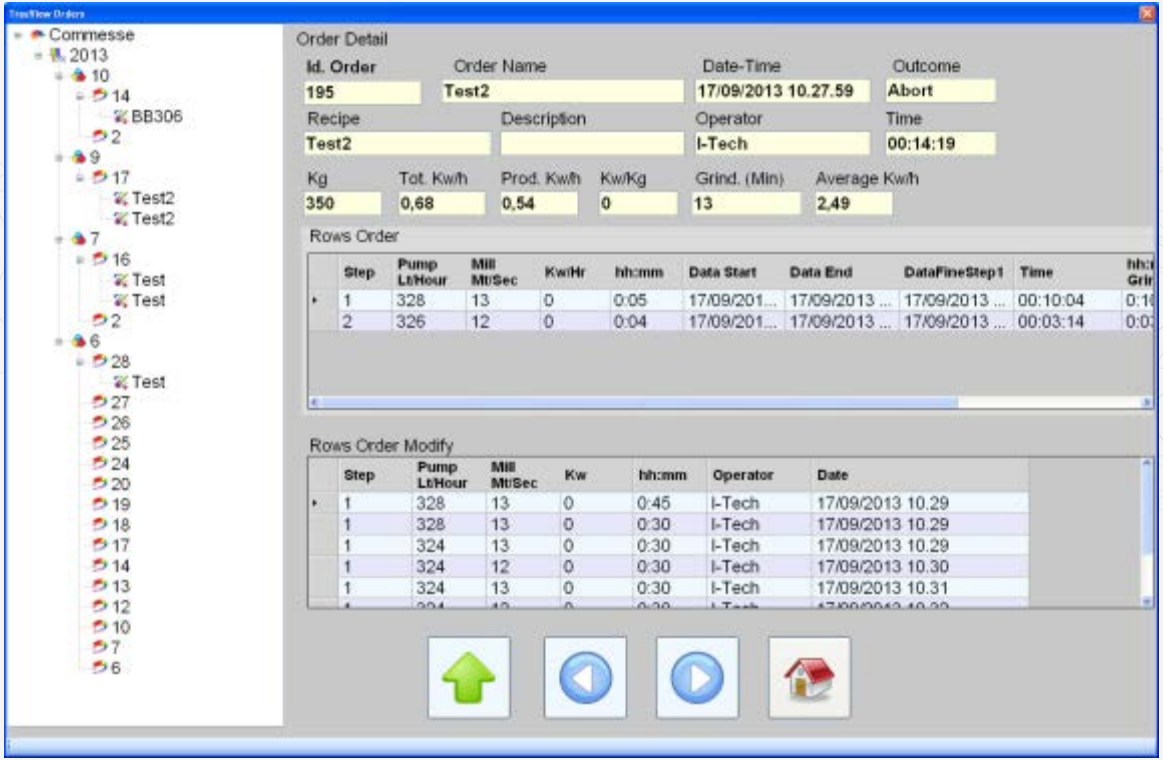
ALL WORKING PARAMETERS ALWAYS UNDER CONTROL



Production hystorical report

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