

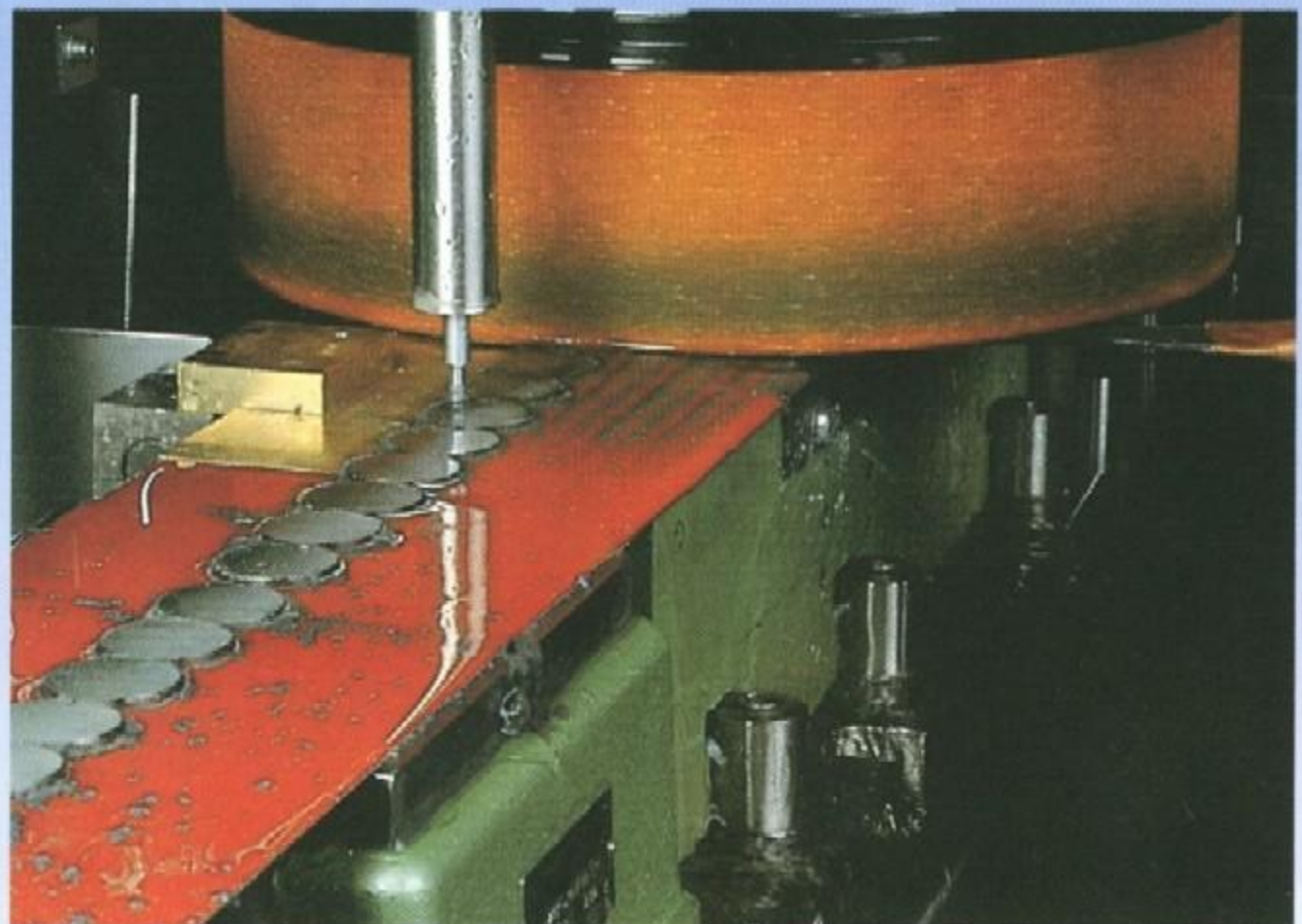
**ITG**

**IMATEC**

## **Continuous Flow Grinding Machines**

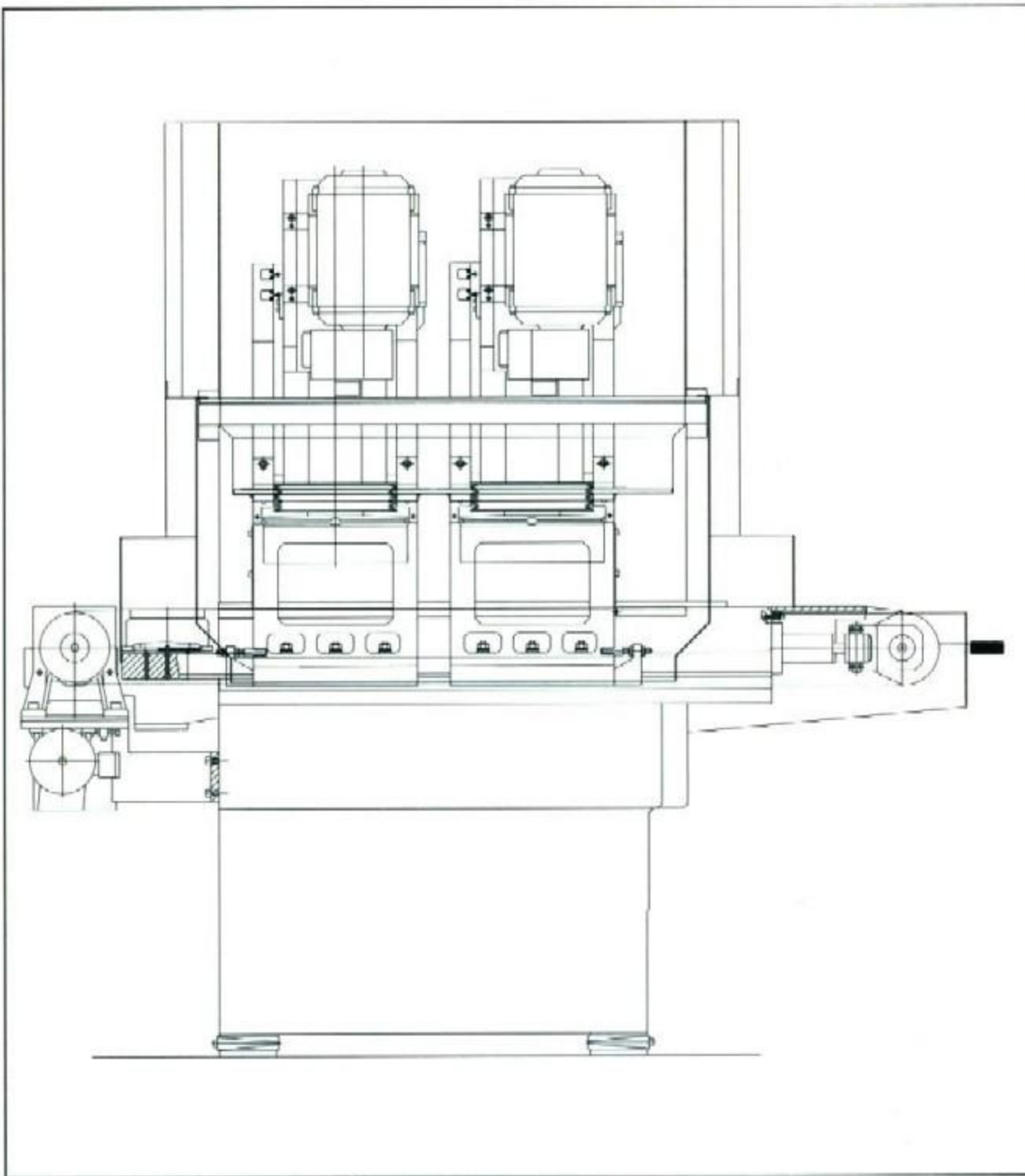
Models ITG

(Through-Feed with Conveyor Belt)



- **Flexible Machine Concept Due to Modular Design**
- **Adaptable to Current and Future Applications**
- **Powerful, High Production Oriented System**
- **High Production Provides Quick Return on Investment**
- **Years of Experience and Manufacturing Knowledge in Continuous Flow Grinding Applications**



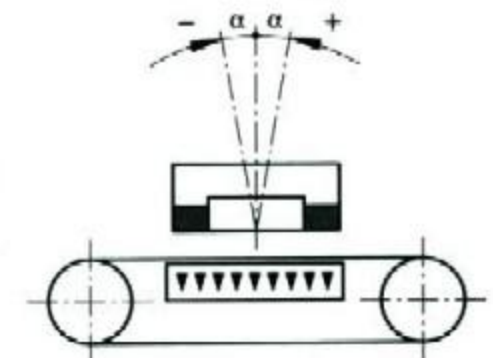


## Grinding Stations

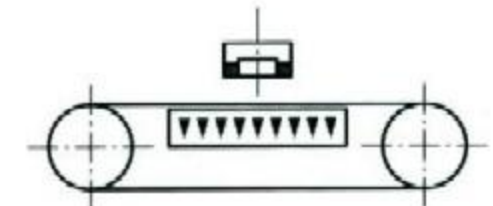
On a single machine base 1 or 2 stations may be mounted.

Combine any of our standard vertical (4 model) or horizontal (1 model) stations to suit your application needs.

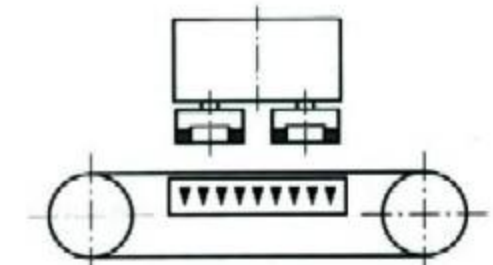
### Vertical Grinding Stations:



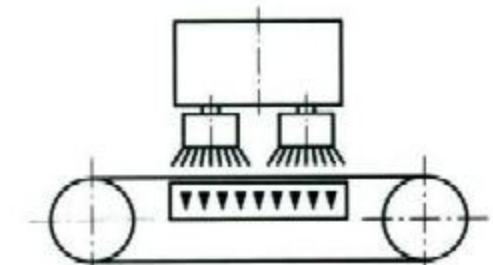
Vertical grinding station G  
(Option: Longitudinal axis inclination)



Vertical airgap grinding station HF

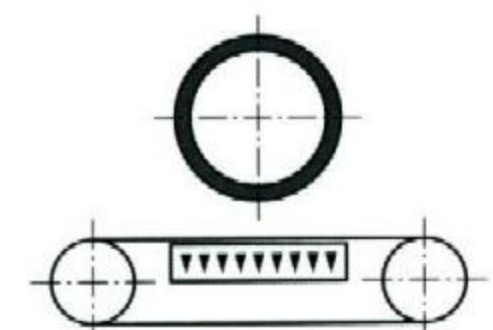


Vertical planetary fine grinding station PG



Vertical planetary deburring station PD

### Horizontal Grinding Station:



Horizontal airgap or slotting station H

## Principles of Operation

A highly accurate feed belt conveys work pieces under the grinding wheel.

A magnetic chuck (grinding support) hold the parts down, while a side guide rail provides lateral support.

Therefore, the continuous flow grinding method is used primarily with the cup wheels mounted to a vertical grinding axis to allow high

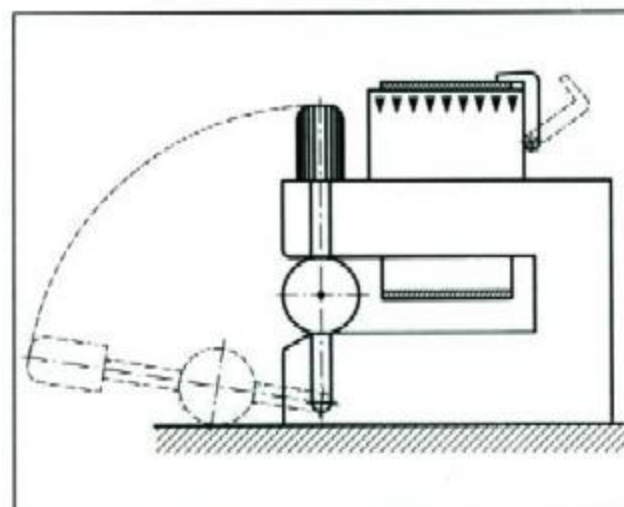
stock removal rates at high feed rates.

However, some applications require a horizontal grinding axis with peripheral wheels. In this case, the grinding force is in the length axis (the conveyor belt feed), and must be absorbed by the magnetic chuck or with a part pallet. Non-fixtured horizontal axis applications are limited to specific processes (i.e. airgap and slot grinding).

## Closed Frame Conveyor System

The ITG models have a closed frame conveyor system providing maximum rigidity to the grinding support.

The frame can be opened from the front for easy conveyor belt change.





# The Compact In-Line Continuous Flow Surface Grinders



② ITG with 2 main vertical grinding stations and a work piece return conveyor system (machine hood open).

## Machine Concept

### Machine Frame and Base

The machine base is cast iron and fixed to a separate welded steel frame filled with polymer concrete.

This combination provides a low height profile for transport and allows for the adaptation of conveyor height to meet with other in-line equipment.

### Conveyor Belt System

The conveyor belt is tensioned pneumatically. This provides constant tension during grinding operations and allows for easy release during non-operation.

The side guide rails systems can be hinged to provide easy access for belt and protection wear strip changes from the front side.

### Electrical Cabinet and Controls

The electrical cabinet has been placed on the upper rear side of the machine base in order to achieve a compact design.

As an option the machine can be equipped with a swing-arm pendant operator's panel which allows optimal system control from any suitable position.



## Main Grinding Station

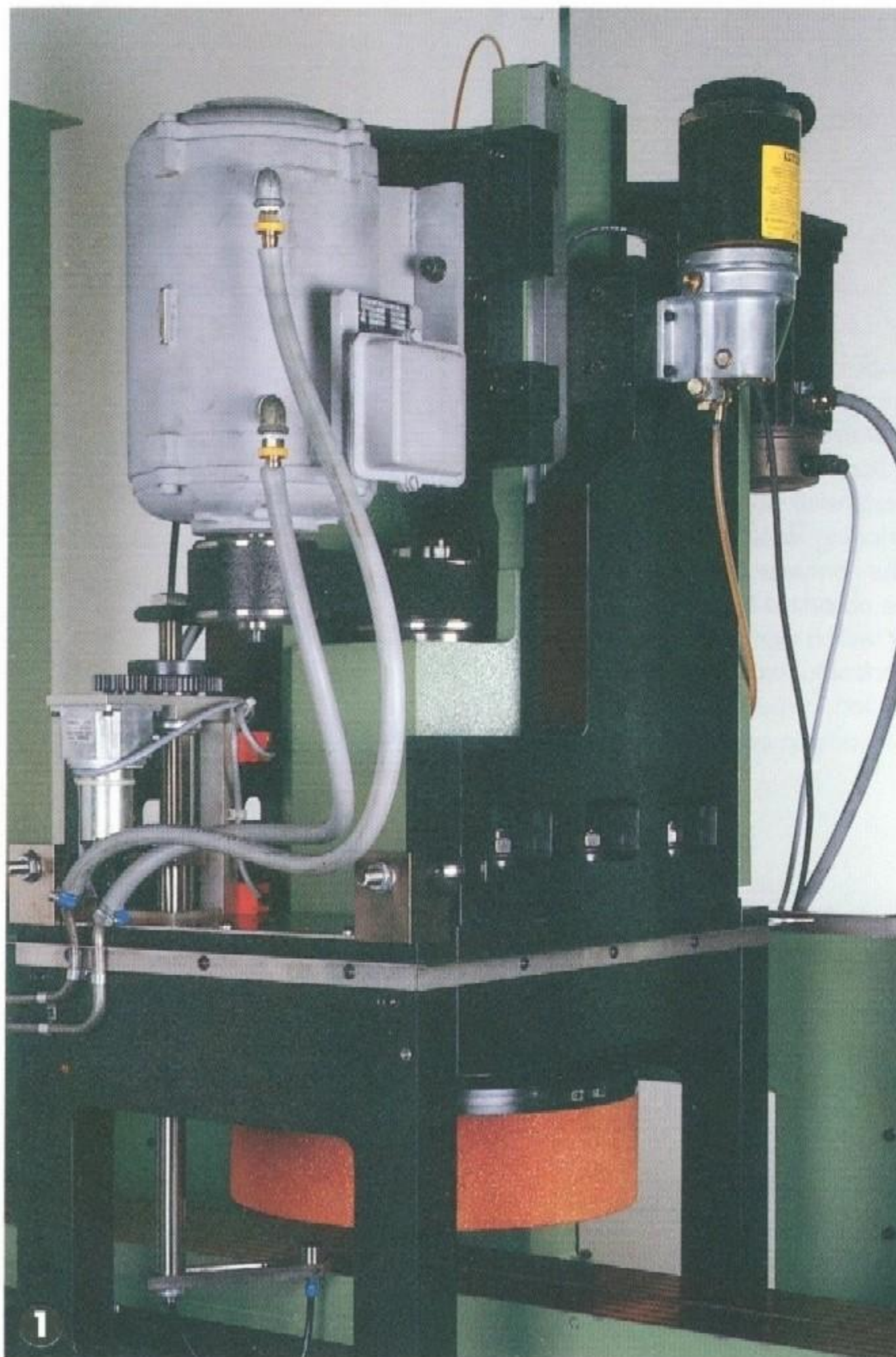
The main grinding station is divided into 2 separate environments or zones.

The wet machining zone is where the grinding occurs. The dry and clean zone houses the guide ways, controls, drive motor and measuring scale.

A centralized lubrication system is accessible from the exterior of the machine, providing grease to the ways.

The result of years of experience and manufacturing knowledge in continuous flow grinding.

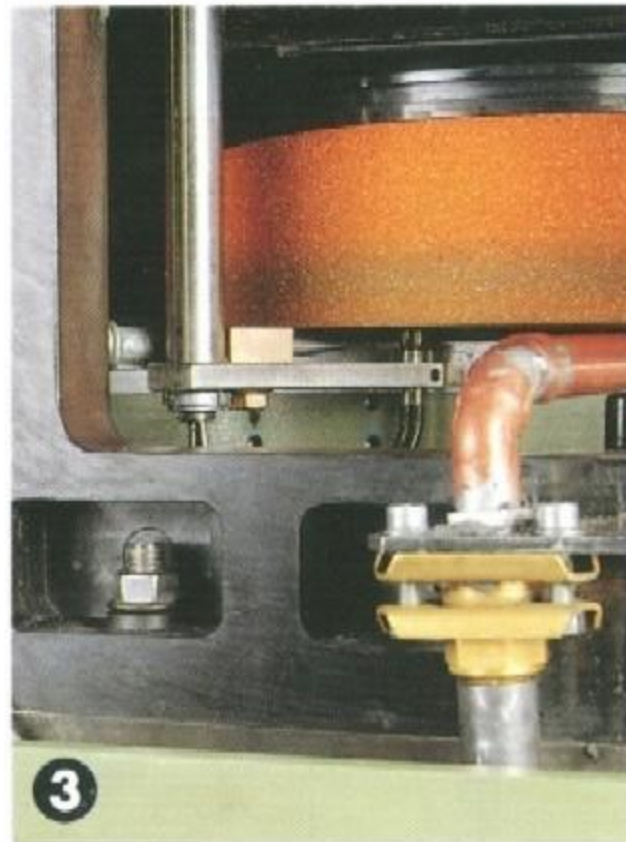
- ❶ Vertical grinding station G, open, without cover, with In Process measuring system





## Wheel Wear Compensation

The continuous flow grinding process works properly if the grinding wheel resharpsens itself as it wears. With most applications (excluding CBN or diamond wheels and some special applications) automatic wheel compensation is required.



### In Process Gauging

By dynamic air pressure measurement against the face of the grinding wheel.



### Post Process Gauging

By mechanical/electronic feeler measurement against the ground work pieces.

## Protection Hood

During operation the grinding environment is completely enclosed and interlocked. The hood is counterbalanced and can be easily opened providing best access.



5 Machine, protection hood closed, without work piece return conveyor system.

## Swarf Removal (rear of machine)

Direct evacuation of the swarf behind the grinding wheel zone.



6 Magnetic separator (option)



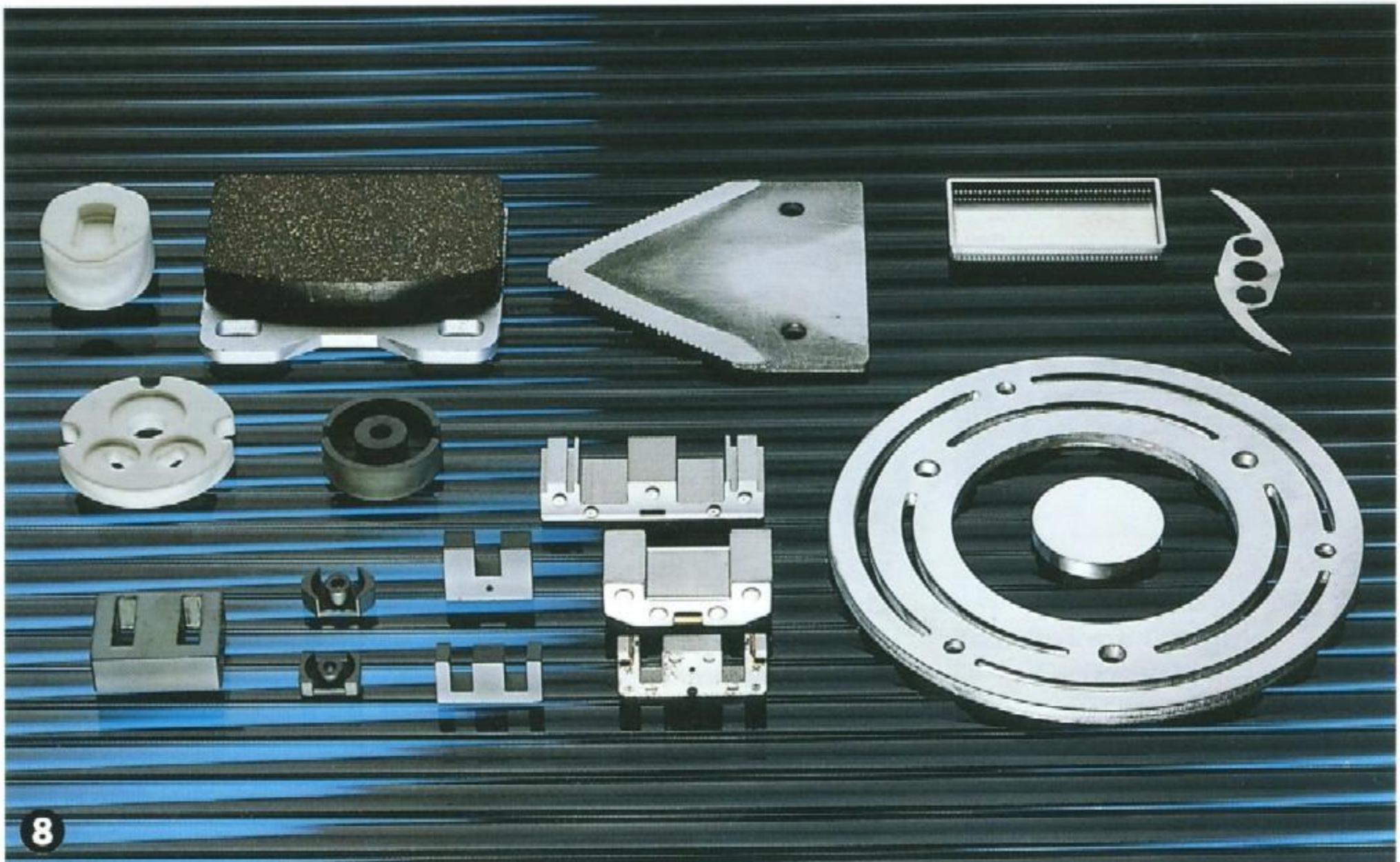
## From a Stand-Alone Grinding Cell to a Complete Product Line from One Source

- **Flexible Modular Design**  
Conventional combinations for standard applications to custom designed production lines for special requirements.
- **Complete Range of Equipment**  
Several special operations can be combined in a linked production line - automatic loading, grinding with both horizontal and vertical axis spindles, deburring, cleaning, drying and unloading.
- **Effective Operation and Maintenance Through Machine Design**  
Optimal evacuation of coolant and swarf. Machine completely protected against coolant mist.
- **Efficient Conveyor Belt System**  
Accurate feed rate adjustments with constant pneumatic tensioning. Easy belt change and belt centering adjustment.
- **Fast Grinding Wheel Changes**  
As an option with the wheel support wagon.
- **Quick Release Guide Rail Systems**  
Guide rails can be hinged to prevent removal during belt and protection wear strip changes.
- **Powerful Magnetic Chucks for In-Line Grinding**  
With high power under the wheel holding requirements, adjustable permanent magnetic chucks are available.

7 Production line for grinding and deburring contactor armatures







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8 A small selection of typical applications

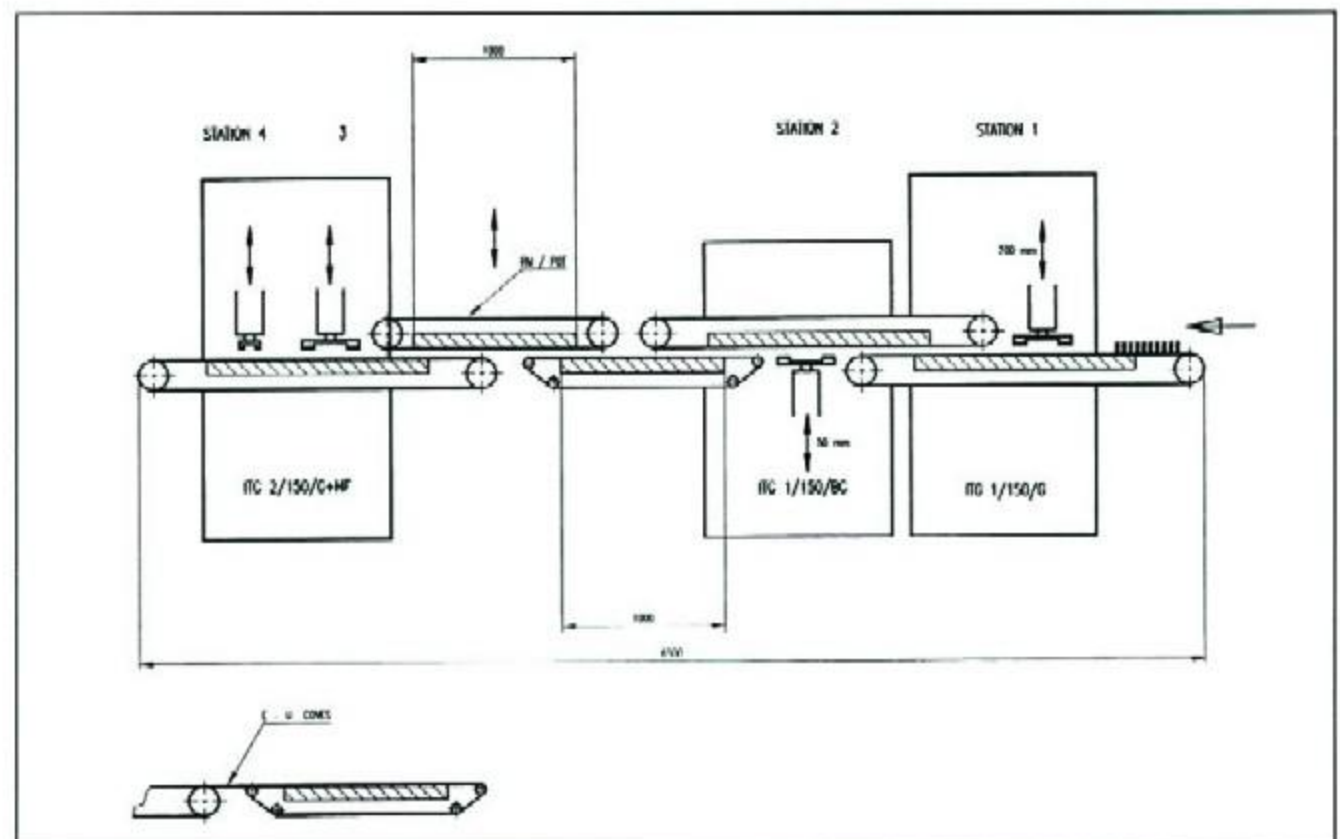
## Fields of Application

The ITG Continuous Flow Grinding method has a large and growing range of customers and applications.

Due to the use of a conveyORIZED feed system, the overall thickness tolerance variation with conventional wheels (excluding CBN and diamond) is generally limited to approximately 0.03 mm (.001") depending on the size and form of the work piece.

### Applications, e.g.

- **Automotive**  
Brake pads, fineblanked parts, gearbox components, motor components  
Valve spacers
- **Agricultural/Husbandry**  
Cutting blades, wear components
- **Hydraulic**  
Valve bodies, pump housings
- **Electro Hand tools**  
Hedge trimmer blades, housing components, cutting knives
- **Electric Industry**  
Contactor components
- **Electronic Industry**  
Ferrites
- **Mechanical Industry**  
Bearing cages, distance rings, housings, general components



Grinding line for soft ferrites



		<b>ITG 100</b>		<b>ITG 150</b>	
Conveyor belt width		100/4	150/6	mm/"	
Work piece size	length	unlimited	unlimited	mm/"	
	width max.	90/3.5	140/5.5	mm/"	
	height max.	120/5	120/5	mm/"	
	height min.	1/0.040	1/0.040	mm/"	
Main spindle power	standard	7.5	10	kW	
	max.	18.5	18.5	kW	
Main spindle speed	max.	6000	6000	rpm	
Main grinding wheel	outside Ø	350/14	350/14	mm/"	
	inside Ø	200/8	200/8	mm/"	
	height max.	90/3.5	90/3.5	mm/"	
Approximate machine weight	1 station	~ 3200	~ 3500	kg	
	2 stations	~ 3800	~ 4100	kg	
Machine dimensions	length	2950/116	2950/116	mm/"	
	height	2500/100	2500/100	mm/"	
	width	1230/50	1230/50	mm/"	

## IRG Model (Rotary Table Grinding Machines)

If the tolerances are too demanding for the ITG Continuous Flow Grinders, the parts must be fixtured or stock removal rates are too large for single pass operations, our rotary grinders may be the solutions for your application. With the modular design concept used in all Imatec grinders, a solution to your grinding application is within reach. Please contact Imatec or one of our representatives for more information on IRG Rotary Table Grinders.

## Reliable Machine Components and Services

For the complete line of ITG Continuous Flow Grinders only internationally and well known components are used which guarantee fast replacement parts worldwide. ITG Continuous Flow Grinders are key machines in the production line. Imatec in conjunction with local representatives have available a complete service and spare parts network.

## We Are Your Application Consultants

In order to retain our competitive edge in Continuous Flow Grinding and continue to provide our customers the latest technology, Imatec is available to review your production surface grinding requirements. In addition to our line of standard grinders, Imatec designs and builds custom machines and full production lines specific to customers applications. Please contact us with your production surface grinding requirements and we will be happy to put our engineering staff to work in providing you a solution.

Represented by:



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