OMICRON IGR - IGU

INTERNAL GRINDING MACHINES

- PLC
- CNC

GK Werkzeugmaschinen GmbH Hotline: 0049/(0)6158/84772 info@gk-werkzeugmaschinen.de

OMICRON IGR 250

WORKING CAPACITY

Internal grinding diameter capacity	max.	250		mm
Height of centers over table		180	230[1]	mm
Cantilever weight[2]	max.	80		kg
Workpiece length[3]	max.	1200		mm
Diameter of internal grinding spindle	max.	120		mm
Table swivel		+8°		
		-4°		
Table speed		0-4000		mm/min
Workhead rotation speed		0-400		rpm
Workhead internal centre taper		5		CM
Self centering chuck diameter [1]		250		mm

[1] *On Request*
[2] *150 mm from workhead spindle nose*
[3] *Maximum distance between headstock plate and grinding spindle attachment*

FACE GRINDING DEVICE

Grinding diameter	355 mm
Grinding wheel diameter	125 mm
Maximum swivel	10°

MOTORS (KW)

Wheel Head	4,0
Work Head	4,0
Coolant pump	2,2

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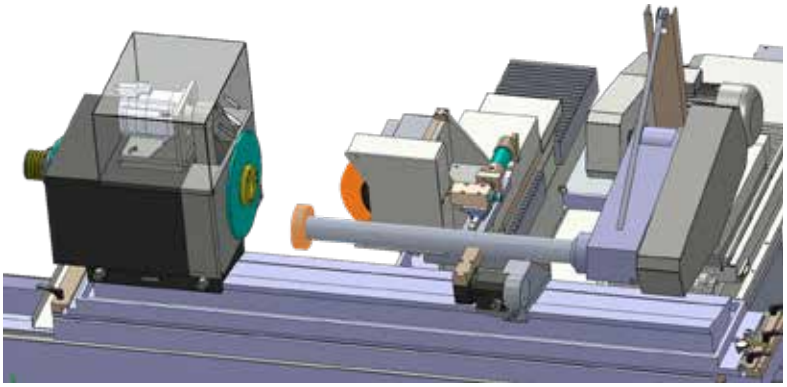
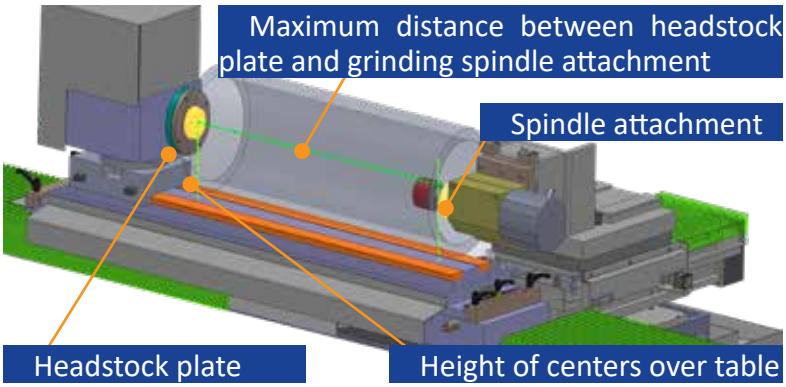
OMICRON IGR 600





WORKING CAPACITY

Internal grinding diameter capacity	max.	300	mm
Height of centers over table		300 350[1]	mm
Cantilever weight[2]	max.	400	kg
Workpiece length[3]	max.	2300	mm
Diameter of internal grinding spindle	max.	120	mm
Table swivel		+6°	
		-2°	
Table speed		0-4000	mm/min
Workhead rotation speed		0-400	rpm
Workhead internal centre taper		6	CM
Self centering chuck diameter[1]		250	mm

[1] *On Request*
[2] *150 mm from workhead spindle nose*
[3] *Maximum distance between headstock plate and grinding spindle attachment*

FACE GRINDING DEVICE

Grinding diameter	355 mm
Grinding wheel diameter	125 mm
Maximum swivel	10°

MOTORS (KW)

Wheel Head	11,0
Work Head	4,0
Coolant pump	2,2

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OMICRON IGU

GRANITE BASE

- Low thermal expansion
- Excellent rigidity
- Absorption of the vibrations

INCREMENTAL LINEAR ENCODER ON BOTH AXIS

- Maximun positioning accuracy and repeatability
- Excellent performance during the working in interpolation

ROLLER LINEAR GUIDES

- Maximum rigidity
- Speed and acceleration over the very low speed
- Elimination of stick slip.

SPINDLE TURRET POSITIONING

Number of spindles	max.	4 num
Turret spindle diameter	max.	120 mm
Swiveling range		-5° +275°
Repetition accuracy		< 1"
Swiveling time for 180 deg		< 10 sec
Resolution		0,001 gradi

WORK HEAD

Spindle speed	1—800 rpm
Spindle taper	6 ASA 5 CM
Spindle bore diameter	35.5 mm
Driving power	1,6 kW
cantilever weight[1]	80 kg

[1]*-150 mm from workhead spindle nose*

DIMENSION

Height	1700 mm
Lenght	2600 mm
Width	1600 mm
Weight	2600 kg

WORKING CAPACITY

Height of centres over table		325 mm
Rotating diameter	max.	650 mm
Workpiece length	max.	300 mm
Internal grinding depth	max.	200 mm
External grinding diameter	max.	200 mm

Z AXIS

Travel	max.	650 mm
Speed	max.	10. 000 mm /min
Resolution		0.0001 mm

X AXIS

Travel	max.	450 mm
Speed	max.	10.000 mm/min
Resolution		0.0001 mm

B AXIS

Swivelling range	+30°	-20°
Repetition accuracy	< 1"	
Resolution	0.001	

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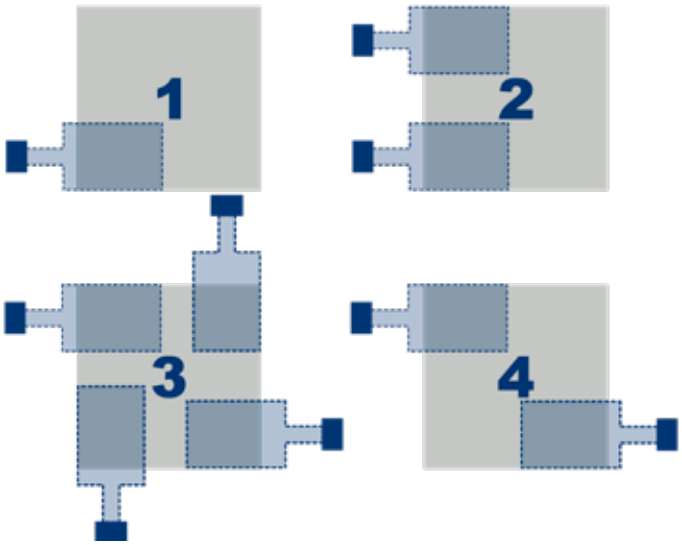
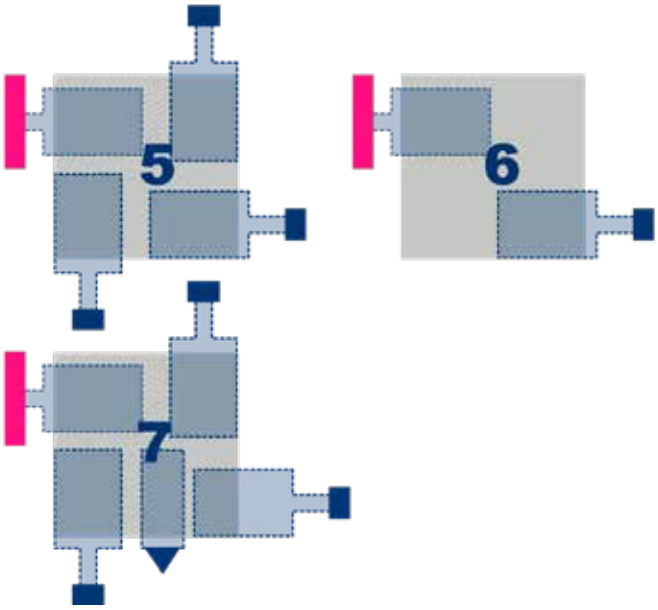
Omicron IGU

Internal Grinding



External Internal Grinding



Internal Grinding Wheel

External Grinding Wheel

Tailstock

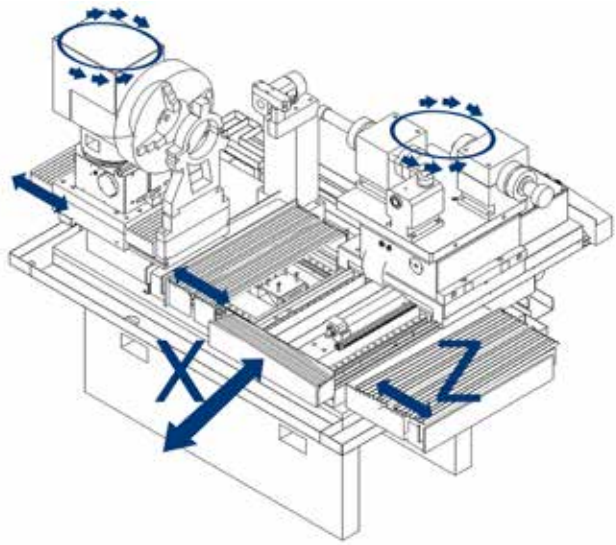
Up to 4 grinding spindles on Rotating Turret

An important component of the IGU 400 is represented by the spindle turret that, in the maximum configuration, can be equipped with:

- 4 spindles (one of which for external)
- 4-spindles for internal grinding
- tailstock to facilitate the grinding borecentering

The tower has an integrated swivel axis that runs automatically and allows you to use up to 4 grinding spindles.
The rotation of the turret is automatic and the positioning is accurate and precise (the turret do not rotates in the versions numer 1 and 2)

Flexible X and Z Axis



Simple Human-Machine Interface

PLC

- Wheelhead and table position visualized on operator panel
- Possibily to program up to 12 different diameters, on the same grinding cycle
- Possibility to update the operator panel, with the correction of each diameter
- Semi automatic grinding cycle, with stop of the grinding wheel feed once the programmed diameter has been reached
- Automatic grinding wheel dressing cycle with compensation of all the grinding dimensions

Axis		Automatic	Manual
X	Movement of wheel head	√	√
Z	Movement of table	√	√

Selection of the electronic handwheel division

Working Cycles with Easy parameters

Pass	√
Plunge	√
Facing	√
Multi Diameter	√

- stock removal - rough and finish
- dwell - table inversion
- sparkout time
- sparkout pass

Pass Grinding Cycles
Automatic increments - rough and finish

Plunge Grinding Cycles
Automatic feeds - rough and finish

Touch screen operator panel SIEMENS TP700 for easy programming of grinding cycles

IGR GRINDING MACHINES ARE AVAILABLE IN 2 VERSIONS:

- PLC
- CNC

Simple Human-Machine Interface

CNC

Easy programming

The machine operator may create a program, even complex, without ISO programming knowledge.

Guided Compilation

The compilation of the parameters is guided by a series of messages and icons that explain step by step the meaning of the various parameters.
The programming of the working cycles is done by filling the same parametric working cycle.
Once the working cycle has been programmed, it is also possible to modify the execution sequence of the various cycles, simply and intuitively.

Errors Control

To eliminate errors in the execution of a program, there is available a summary page to control the main geometric parameters of every single working cycles.

Standard Programs Supplied with the Machine

Pass	√
Plunge	√
Facing	√
Multi Diameter	√
Angular Plunge	√
Taper Grinding	√

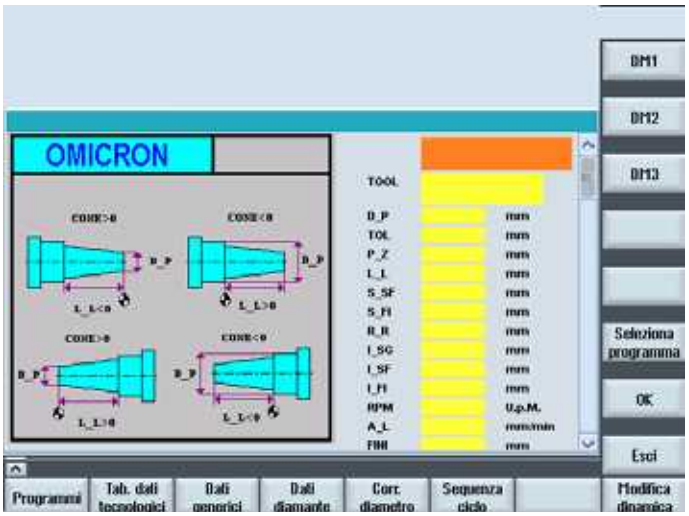
Wheel Dressing Programming

It is possible to program all the automatic grinding wheel dressing cycle parameters.
The dressing operation may be executed:

- outside the grinding cycle
- automatically inside the grinding cycle (beginning before finishing or end of cycle)
- automatically using a cycle counter
- on demand, during the grinding cycle

Accurate Geometric results

In each cycle it is possible to correct eventual taper errors, interpolating the two axis X and Z.
This permits, in a short time, to obtain very accurate geometric results.



Shoulder Grinding in 3 Modes

In each cycle, it is possible to insert the shoulder grinding operation:

Manually

The machine stops before the finishing operation, permitting the operator to execute the shoulder grinding operation with the electronic handwheel.

Automatically

The machine executes, before the finishing operation, the shoulder grinding operation, up to the programmed quote.

Automatically with Gap control

The machine executes, before the finishing operation, an automatic research of the shoulder to be ground by using the gap control. After the contact, the cycle automatically removes the quantity of programmed material . After the shoulder grinding operation it is possible, to execute a zero setting of the Z axis.
In this way it is possible to execute other shoulder grinding operations on the same workpiece with high precision and reduction in cycle time

IGR grinding machines are available in 2 versions:

- PLC
- CNC

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At Your Service Since 1936

our supplier has operated in the machine tool market since 1936 and specialise in the manufacture of machines tailored to meet the more demanding needs of the customer's complexed and more specialised demands.

Whilst maintaining competitive prices, we have ensured our machines have stability and precision.

Our grinding machines, use the best technology and the most robust and reliable components available on the market in their build programme.

We have a commitment to assist and help, proactively, its customers to ensure they maximise the efficiency of the machine.

Our supplier, in fact, offers various service solutions, including the:

- *development of manufacturing processes;*
- *replacement parts spare part programme,*
- *making parts available for older models,*
- *tailored operational training programs*
- *and maintenance training to maximise the features of grinding machines and maintain the Grinders longevity.*

Understanding the needs of our customers we are offer the best solutions and services that increase their return on productivity thus improving our customers return on his investment.

Ideas that may improve our business are always appreciated from customers.

If there's anything we can do to improve your experience with our grinders, please let us know.

We have a commitment to ensure all customers are completely satisfied.

Choose us for precision for increased productivity and a faster return on your investment.

Call us today,we've have a solution for your grinding application.