

▶ Reach the top



*GANTRY  
EAGLE 400 | 500 | 800 | 1200*

> EDM at the highest stage

OPS  INGERSOLL  
Fly with the eagle!

# Looking forward!

Profitable Perspectives  
**With the OPS-INGERSOLL road to success  
you reach absolute top positions  
in the market!**

To the top of efficiency!  
**The eagle strategy  
revolutionises the market**



OPS-INGERSOLL, located in Burbach/Germany, operates world-wide as a leading technology partner for the mould- and die-industry at the highest stage.

**Our eagle principles are:**

Our home is the top of success. We lead our customers there and give them the **secureness**, that they reach absolute best positions in the market with our support.

As a market leader we have the **freedom** to set magnificent trends. Our customers can choose between outstanding technologies and service for future benefit.

We use our **supremacy**, which is shown by professional knowledge and experience, to target the profit of our customers.

This results in extraordinary efficiency concepts with the needed overview.

**„The peak is the home of success.“**



*„You can only learn to fly,  
when you leave the nest!“*

**GANTRY  
EAGLE 400 | 500 | 800 | 1200**

## To grow corporately in future-markets **Gain profit – with Graphite!**

Due to an unique development from OPS-INGERSOLL, the leading specialist of raising efficiency in dies and molds, there is now no reason any more to lock up "Graphite" by Sink-EDM-Machining. It is the opposite: With EAGLE POWERTEC it is possible, to offer a kind of safety at the EDM-process never known before. Specially by the usage of graphite, the full abilities can be valued.

The drastic reduction of electrode-wear could be reached by increasing the removal. At the same time, the spark gap was minimised considerably. No user of EDM-Technology can get away without the use of high-profitable graphite-electrodes.



### **Tremendous cost-savings, 50% and more...**

- less machining-time
- less program- and set-up-complexity
- lower door to door time
- reduction of manual-work

### **Reduction of required number of electrodes**

- absolute small cost of manufacturing
- low material usage
- less "down-time" due to absence of cycle-times
- additional value of the tool-change-capacity

### **Increasing accuracy**

- fewer electrodes
- machining-time without manual "warping"
- reduction of work-steps increases the process-steadiness



## New OPS-INGERSOLL-Generator-Technology "EAGLE POWERTEC"

### Doubling of discharge-power (stock-removal-rate)

Due to extreme high process-reliability, coming from the combination of adaptive current-shape, the extra efficient process-monitoring, and the drastically improved power of the jump-flushing, the stock-removal-rate could be practically doubled by rough-machining, when using graphite.

At the same time the electrode-wear could be extensive eliminated, as resulted that a great number of machinings can be done with only one electrode. Furthermore the "adaptive current-shape" is leading to a reduction of the spark-gap, this gives you a better achievement of mapping-quality.

The quality of the process-control, allows the EDM-machining of carbide-material, without additional flushing, resulting in significant improvement of stock-removal-rate and mapping-quality.

- Little electrode-wear
- Fast erosion
- Increased process-stability
- Better mapping-quality



The world-wide exclusive  
generator with  
"adaptive current-shape"  
upgraded!

Due to the new OPS-INGERSOLL-generator EAGLE POWERTEC first time implemented adaptive current-shape, each discharge-impulse obtains the ideal current-shape for the discharge-requirements. Due to this, a process-quality with higher stock-removal-rate, smaller under-size and drastically reduced electrode wear could be reached.

By further optimisation of the adaptive current-shape it was possible to improve once more the already outstanding performance especially in the critical scope of small undersizes.

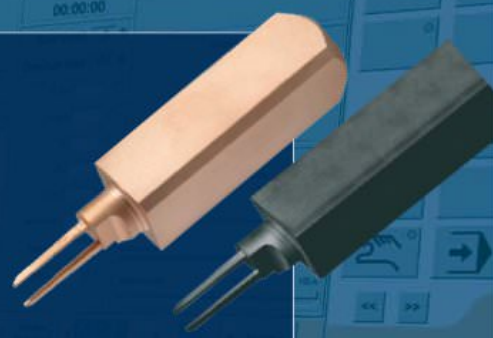
# EAGLE POWERTEC-Control State of the art for Trendsetters

Also with the EDM-control, time does not stand still. OPS-INGERSOLL sets new standards with the second generation of the EAGLE POWERTEC-control. The operation by the new 22" touch-screen is another highlight in the user-friendliness.

Now, the outstanding performance can also be used with up to 6 erosion axes at the same time. New set-up cycles have been created, which set new dimensions for the OPS-INGERSOLL database in combination with the accuracy of automatic EDM applications.

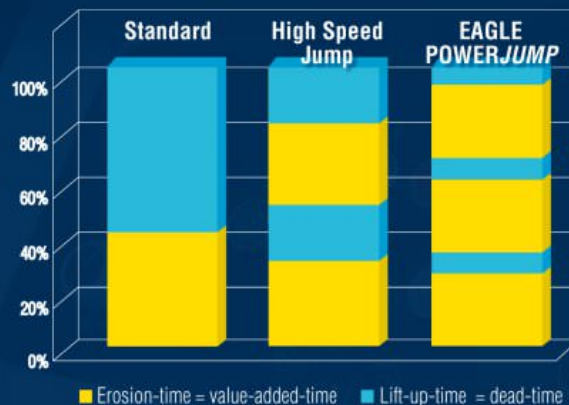
## "EAGLE POWERJUMP"

- **Enhancement of effectiveness** due to an essential upgraded ratio between erosion-time to lift-off-time
- **shortening of processing-time up to 50%**
- **higher jump-speed: up to 18 m/min.**  
(until now 12 m/min.) = **50% more**



### Share in time for processing

The part of "eroding-time" in the process is increasing. The shortening of the single "erosion-cycle-periods" tend to a higher process-stability during difficult process-terms.





# Practical application Maximum cost-savings by EAGLE POWERTEC-Technology

## Multi-cavity-machining with graphite



Multi-cavity-machining with 8 cavities

When a large number of electrodes are required, the costs to manufacture these are often higher than the costs of the EDM-process itself.

Thanks to EAGLE POWERTEC in a lot of cases it is possible to eliminate the "finish-electrode" and the total work can be managed with one single electrode!

### High profitable time- and cost-savings

Due to the omission of the manufacturing-cost for the second electrode, you save tremendous costs. In addition the "non-production-times" for measuring and set-up, do not apply.



So far:  
**2 cavities** per electrode



Standard

With EAGLE POWERTEC  
**4 cavities** per electrode



EAGLE POWERTEC

Customer excerpt:

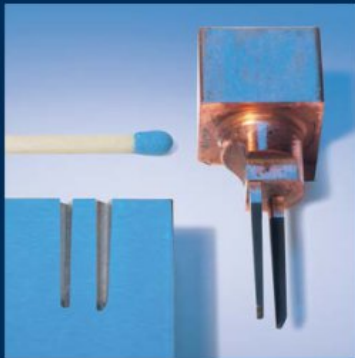
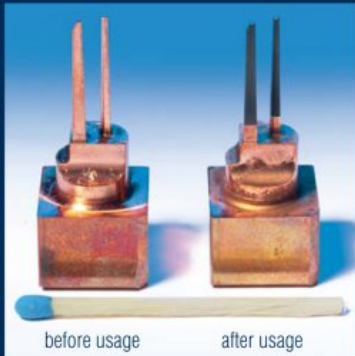
*"These results were unimaginable until now!"*

Perfect geometry by means of minimum electrode-wear.



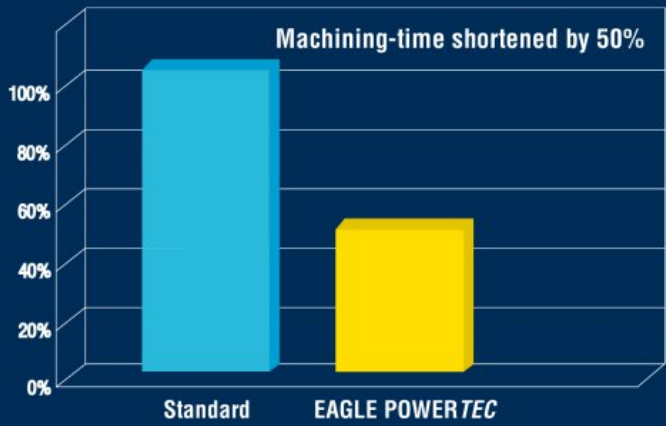
## Copper-machining

Also for copper applications, the EAGLE POWERTEC inspires with formidable capability.



Successful copper-technology again improved

**Adaptive current-shape**  
**+ EAGLE POWERJUMP**  
**= Highest machining-speed at smallest undersize and minimum electrode-wear**

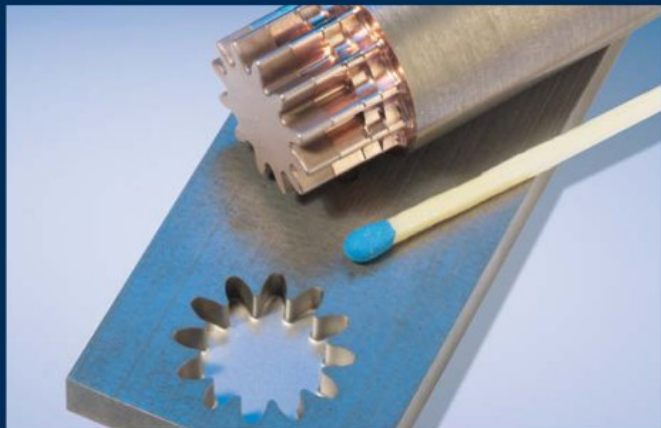


## Carbide-machining

The high process-reliability enables the removal of flushing without loss of performance. With this a high process-speed and process-accuracy can be achieved.

Customer excerpt:

*"I'm surprised, the power of GANTRY EAGLE even without flushing, creates these precise results in such a short time."*



# GANTRY *EAGLE* 400

# 400

Innovation for the high-precision-mold-shop



## Successful market entry assured **Precision in smallest space**

With our newest innovation GANTRY *EAGLE* 400 we place benchmarks for high-precision-mold-shops and offer more for the increased requirements in this field.

Highest precision with gantry-construction-method, increased profitability and the consistent utilisation of synergetic effects in machine-design-technics for HSC-milling and sink-EDM are making these product-highlights one of a kind.

Start up for automated erosion-machining

New high-end-sink-EDM-machine for small and high accuracy applications

Visionary machining-conception for best accessibility and ideal operator-friendliness



### Facts

**Axis-travel: X / Y / Z**  
420 / 300 / 400 mm

**Work-tank: W / D / H**  
650 / 500 / 340 mm

- Operator friendly concept
- Best accessibility
- Extremely compact



# GANTRY *EAGLE* 500

# 500

The top-seller now with even more power

## Technology which persuades **Assure yourself your competitive advantage**

Consistent quality improved. Our successful GANTRY-style is the foundation for the new GANTRY *EAGLE*, for highest dynamics and sophisticated requirements in the pioneering *EAGLE POWERTEC*-technology.

The GANTRY *EAGLE* 500 achieves the highest precision requirements

It reaches extremely good surface-qualities at extensive geometric shapes



### Facts

**Axis-travel: X / Y / Z**  
525 / 400 / 450 mm

**Work-tank: W / D / H**  
770 / 670 / 440 mm

- Flexible for automation
- Compact
- Fast & high-precision

# GANTRY *EAGLE* 800

# 800

Process stability by innovative technology



## The OPS-INGERSOLL-Solution for intricate tasks

The GANTRY *EAGLE* 800 is the symbiosis of great working-space at smallest footprint in combination with unbelievable productive efficiency – just to fulfil your market success.

Essential competitor-advantages are featured at the machining of middle-sized and bigger work pieces.



### Facts

Axis-travel: X / Y / Z  
550 / 850 / 450 mm

Work-tank: W / D / H  
800 / 1100 / 480 mm

- Top size- to axis-travel-ratio
- Highest dynamics
- Once more increased precision

# GANTRY *EAGLE* 1200

# 1200

Quality and flexibility guaranteed

## Ideal machine concept with manifold application possibilities

The GANTRY *EAGLE* 1200 has a unique potential. Due to high axis-travel-speed and *EAGLE POWERJUMP*, the machine moves dynamically in complex workpieces and at the same time is also designed for efficient applications in the big-mould-manufacturing.

Despite the fact of the different application possibilities, the GANTRY *EAGLE* 1200 works with remarkable speeds perfectly precise.



**BIGSIZE**

### Facts

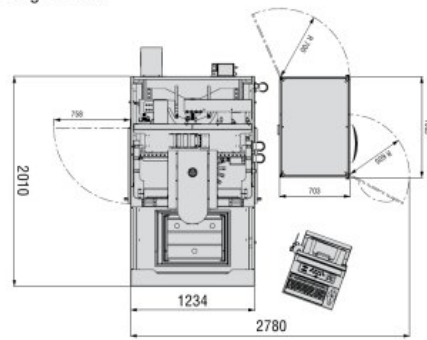
Axis-travel: X / Y / Z  
1000 / 1510 / 700 mm

Work-tank: W / D / H  
1270 / 1770 / 680 mm

- No fill- or drain-time
- Complete and partial machining
- Machine in GANTRY-style

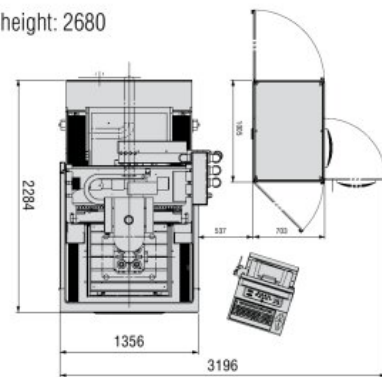
**GANTRY  
EAGLE 400**

Machine-height: 2550



**GANTRY  
EAGLE 500**

Machine-height: 2680

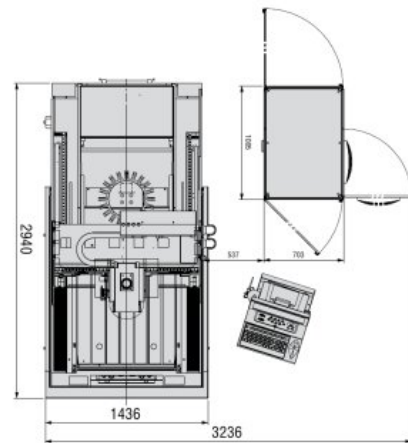


400

500

**GANTRY  
EAGLE 800**

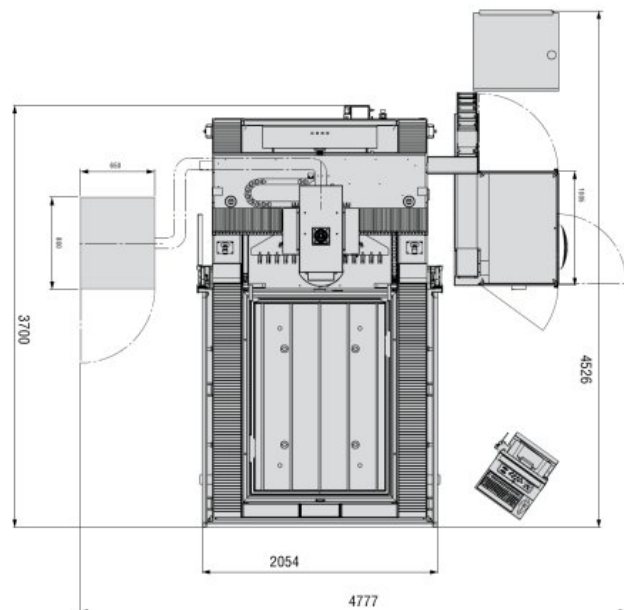
Machine-height: 2730



800

**GANTRY  
EAGLE 1200**

Machine-height: 3490



1200

All dimensions in mm

# Technical Data

		<i>GANTRY EAGLE 400</i>	<i>GANTRY EAGLE 500</i>	<i>GANTRY EAGLE 800</i>	<i>GANTRY EAGLE 1200</i>
<b>Machine</b>					
Machine weight	kg	3.500	4.360	6.200	12.000
Generator weight	kg	640	640	640	640
Power input	kVA	16	16	16	18
Fuse protection	A	32	32	32	32
Voltage/Frequency	V/Hz	400/50	400/50	400/50	400/50
<b>Work tank</b>					
Type		Rise and fall tank, filled moveable	Rise and fall tank, filled moveable	Rise and fall tank, filled moveable	Rise and fall tank, filled moveable
Clear dimensions (LxWxH)	mm	650 x 500 x 340	770 x 670 x 440	800 x 1.100 x 480	1.270 x 1.770 x 680 (1.140 x 1.640 x 1.040**)
Dielectric fluid level max. programmable/automatic	mm	300	395	450	640 (1.000**)
<b>Work head</b>					
max. head load	kg	100	100	200	300
Distance electrode-clamping chuck to work table min./max.	mm	135/535*	135/585*	135/585*	100/800* (440/1.140**)
<b>Integrated C-axis</b>					
RPM (adjustable)	1/min.	1 - 20	1 - 20	1 - 20	1 - 20
Angle positioning	degree	0,001	0,001	0,001	0,001
Loading capacity manual electrode change	kg	50*	50*	50*	50*
Loading capacity automatic electrode change	kg	15*	15*	15*	25*
Movement of inertia, max.	kg/m <sup>2</sup>	0,4*	0,4*	0,4*	0,4*
Torque	Nm	–	–	120	120
<b>Worktable</b>					
Surface (LxW)	mm	550 x 470	750 x 650	760 x 1.000	1.140 x 1.640 (1.110 x 1.610**)
Load capacity	kg	500	1.000	2.000	7.500
<b>Travel ways</b>					
X / Y / Z inside work tank	mm	420 x 300 x 400	525 x 400 x 450	550 x 850 x 450	1.000 x 1.510 x 700 (880 x 1.360 x 700**)
Y (by electrode changing position)	mm	580	675	1.180	1.955
<b>Control</b>					
PC-NC-dialog		2 x 32 bit	2 x 32 bit	2 x 32 bit	2 x 32 bit
Type of drive		digital AC-servo-drive	digital AC-servo-drive	digital AC-servo-drive	digital AC-servo-drive
X, Y, Z rapid traverse	mm/min.	max. 5.000	max. 5.000	max. 5.000	max. 5.000
High Speed Jump max.	mm/min.	18.000	18.000	18.000	18.000
<b>Dielectric-supply</b>					
Filter unit		Cartridge (integrated)	Cartridge (integrated)	Cartridge (integrated)	Cartridge (integrated)
Filter surface	m <sup>2</sup>	16	16	32	32
Dielectric fluid, total volume	litr	320	400	800	2.800 (4.800**)
<b>Electrode changer</b>					
Type		Pick-up rotary disk	Pick-up rotary disk	Pick-up rotary disk	Pick-up linear magazine
Positions (Option)		20 (30)	20 (30)	20 (30)	13 (30/48)
Combi-magazine positions optional					2/18
Electrode weight					
- Single electrode	kg	15*	15*	15*	25*
- Total weight	kg	60*	60*	60*	150* (200*)
<b>Generator</b>					
Type		adaptive current	adaptive current	adaptive current	adaptive current
Machining power, max. (Option)	A	60 (110)	60 (110)	60 (110)	60 (110)
<b>Additional features</b>					
Automatic lubrication		Standard	Standard	Standard	Standard
Chiller, cooling power	kW	3,9	3,9	3,9	3,9
CO <sub>2</sub> -fire extinguisher, DIN 14497, size	kg	6	6	8	16

\* Note: The values stated are maximum values, which may vary according to the clamping system used.

\*\* for version GANTRY EAGLE 1200 Plus - Detailed machine specification on request

Technical modifications reserved.



# Automation

## OPS-INGERSOLL-Handling systems **Automation of stand-alone machines and combined technology**

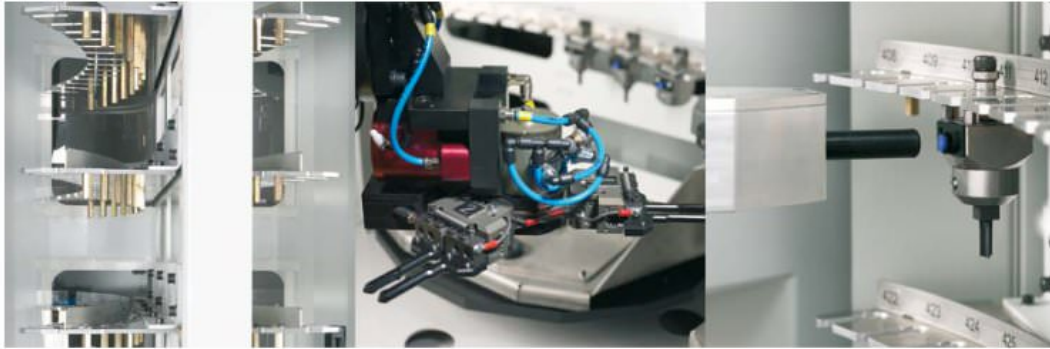
The requirements for shorter development times, wide interest for product variations and the huge pressure for costs and competitiveness define the market.

We offer solutions: For you, we have developed integrated machining-strategies, which include every process-level.

All of our machines are prepared for automation-engineering. This gives you the flexibility of the connection to a handling-system also at a later date with ease.

### Facts

- **Modular conception up-gradable to the MoldCenter**
- **Multi-Machine-Connections possible**
- **Significant savings at costs and processing-times**



## All from one source **The MoldCenter "EAGLE Professional"**

The combination of the two technologies, HSC and EDM provides a technology-interconnection with outstanding potentials and definite advantages for your manufacturing.

With the full automated MoldCenter you will reach an efficiency, which can never be accomplished with two separate systems.

One more positive potential: The new EAGLE-type-series is instantly compatible.



MoldCenter *EAGLE* Professional  
with GANTRY *EAGLE* 400 and SPEED *HAWK* 550

## The superior EAGLE-strategy: Market leader technologies with prey guarantee!



Efficiency is the key to success: Identifying potentials and controlling processes profitably – so you stay competitive with EDM and HSC.

Basic requirements are economic machining-conceptions. This makes a dramatic influence to the increase of productivity with minimal unit costs and maximum product quality.

**With OPS-INGERSOLL you can achieve.**

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