

# The HIGH SPEED *EAGLE* V-SERIES

New design – innovative technology – more performance



HSC



OPS  INGERSOLL  
Fly with the eagle!

# Visionary and innovative Machine concept on Gantry-basis



The Top-Level of OPS-INGERSOLL High-Speed-Cutting machines:  
In spite of the compact design, the new HIGH SPEED *EAGLE*V5/V9 features a maximum working area with best possible dynamics and rigidity. Our innovation is build up with the worldwide patented 3-/5-axis concept and can also be used automated for big workpieces.

## Compact solution V5

### Floor space:

95.3" x 108.0" :  
2,421 x 2,743 mm

**Height:** 96.5" : 2,450 mm

### Axis-travel: X x Y x Z

21.6" x 15.7" x 15.7"  
550 x 400 x 400 mm

### Table-size: X x Y

25.6" x 19.7"  
650 x 500 mm



*Without competition: The Benchmark  
for professional High-Speed-Cutting*

## Compact solution V9

### Floor space:

132.6" x 120.6" :  
3,368 x 3,064 mm

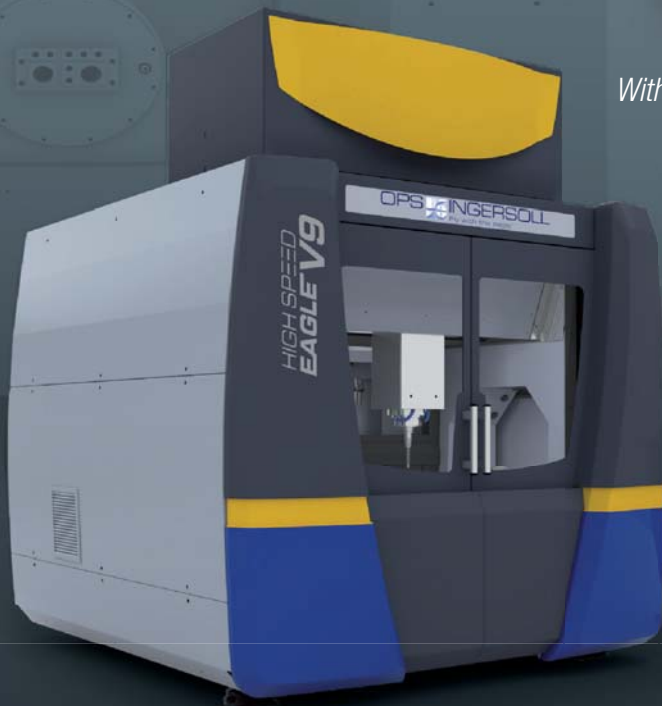
**Height:** 112.2" : 2,850 mm

### Axis-travel: X x Y x Z

31.5" x 23.6" x 19.7"  
800 x 600 x 500 mm

### Table-size: X x Y

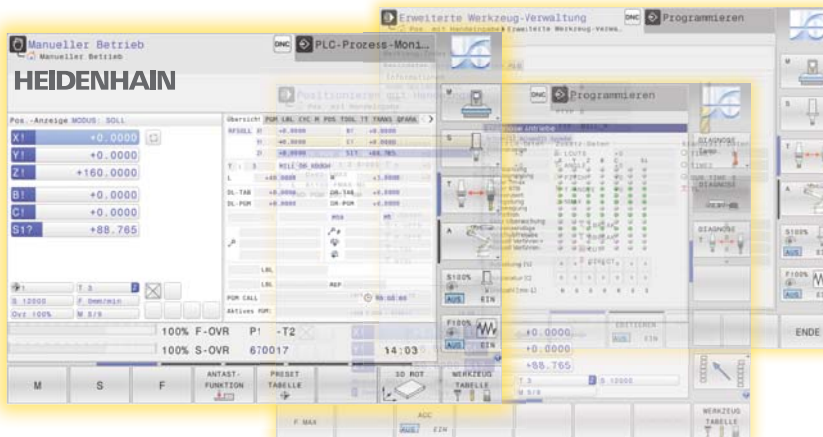
39.4" x 26.0"  
1,000 x 660 mm



*We are the experts for more efficiency with guaranteed results.*



## EAGLE-advantages secure your success!



### HEIDENHAIN-control TNC 640

optional software-package

dynamic **+** efficiency

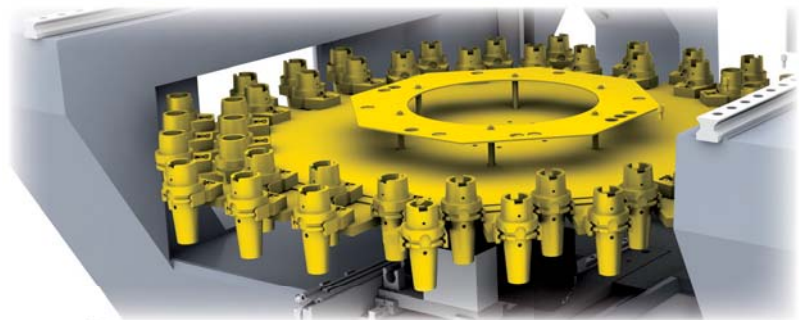
for efficient cutting

- AFC-adaptive feed control
- vortex milling
- ACC active chatter control

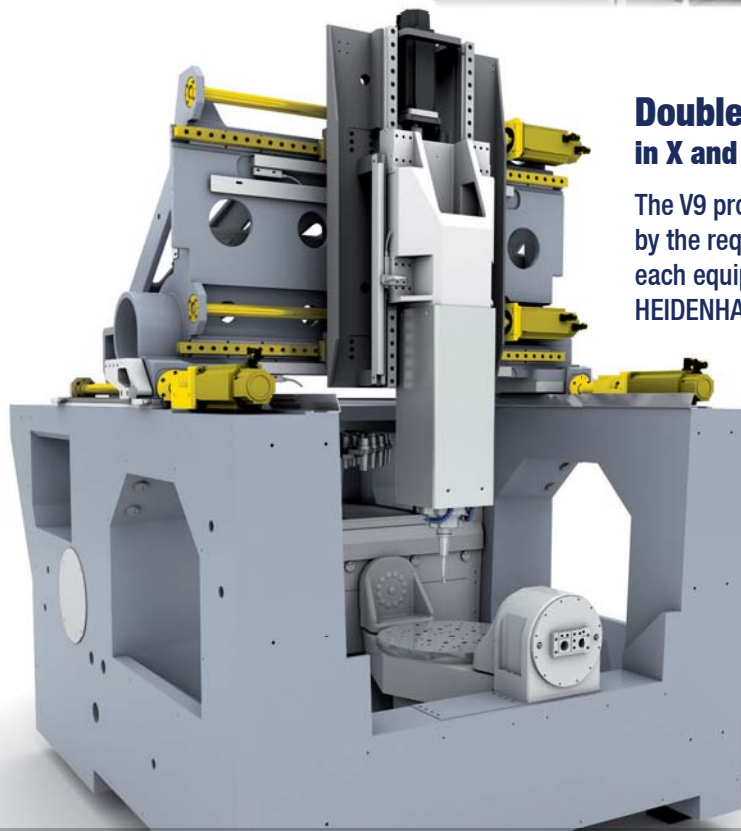
### Integrated tool changer

V9: accommodates 48, 72 or 88 tools depending on the selected spindle.

V5: accommodates 32 tools standard with an 80 or 100 tool option depending on the spindle selection.



Highlights



### Double-gantry-drive in X and Y-axis

The V9 provides highest dynamics by the required drive rigidity each equipped with two HEIDENHAIN-glass-scales



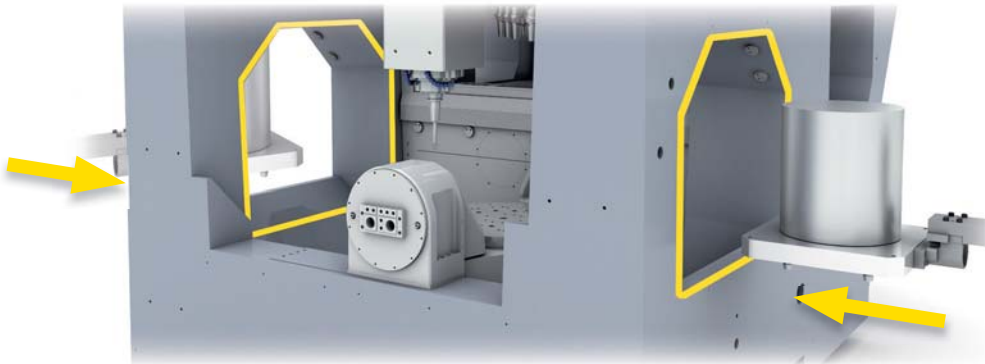
**The 4 success factors for profitable process-organization:**

- 1 EAGLE technologies
- 2 Automation solutions
- 3 Process experts
- 4 Application know-how



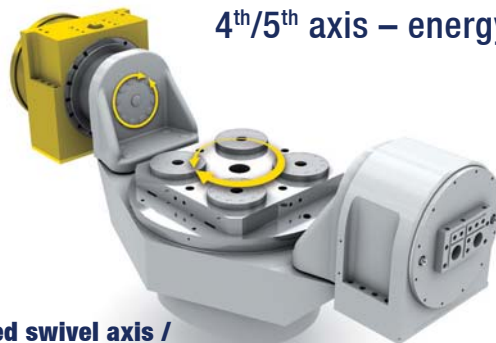
# The **EXPERT** Principle

Complete process performance



## Automation Integration possible at any time

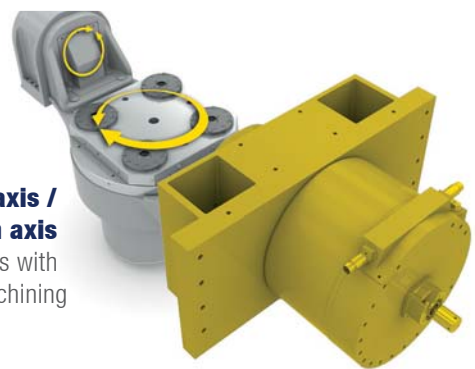
automatic load:  
optional from right side on the V5  
or right & left side on the V9.  
Pallets up to 15.7" x 15.7" (400 x 400 mm) on the V5 and 19.7" x 19.7" (500 x 500 mm) on the V9.



**Geared swivel axis /  
Torque rotation axis**  
for high-precision machining

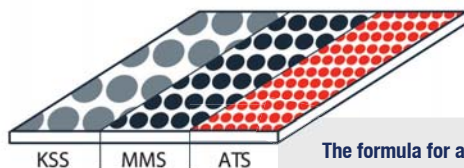
4<sup>th</sup>/5<sup>th</sup> axis – energy efficient force transmission

## Optional gear or torque drive



**Torque swivel axis /  
Torque rotation axis**  
for high feed rates with  
simultaneous machining

Options



Comparison lubricant application

**The formula for aerosol dry lubrication (ATS):  
Preventing instead of fighting heat**

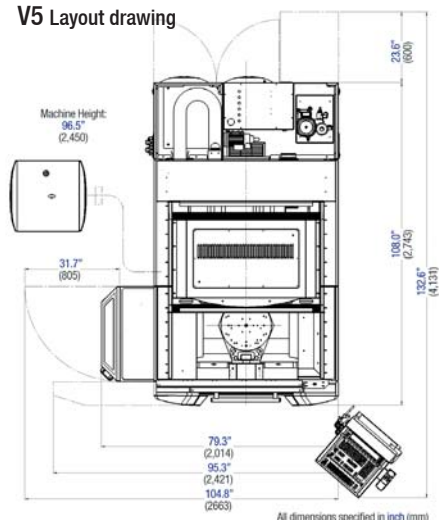
Small lubrication quantities create a very fine aerosol which is feed constantly controlled to the tool's cutting edge. An optimum layer of lubricant particles effectively reduce the development of frictional heat.

## ICS-spindle with ATS

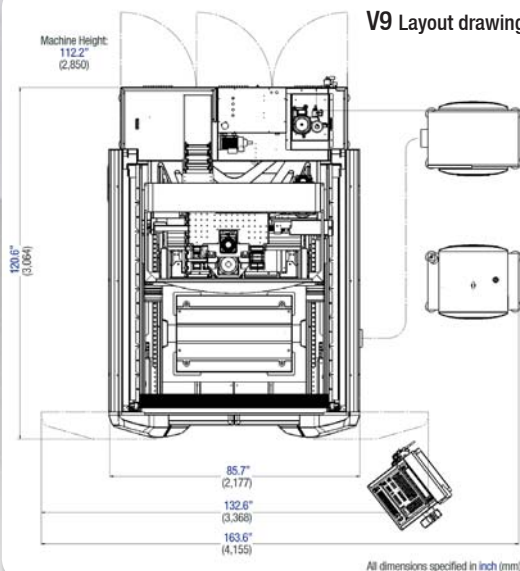
for optimum cutting  
with best surface quality  
(ICS-spindles up to  
42.000 rpm)

# Facts

**V5 Layout drawing**



**V9 Layout drawing**



## Technical data

|                                         | <b>V5 Specifications</b>                                                                                                                                                                                                                                                                                                             | <b>V9 Specifications</b>                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Axis-travel                             | X 21.6" x Y 15.7" x Z 15.7"<br>X 550 mm x Y 400 mm x Z 400 mm                                                                                                                                                                                                                                                                        | X 31.5" x Y 23.6" x Z 19.7"<br>X 800 mm x Y 600 mm x Z 500 mm                                                                                                                                                                                                                                                                        |
| Feedrates                               | max. 1,181"/min. : 30 m/min                                                                                                                                                                                                                                                                                                          | max. 1,181"/min. : 30 m/min                                                                                                                                                                                                                                                                                                          |
| Acceleration                            | max. 590.5"/s <sup>2</sup> : 15m/s <sup>2</sup>                                                                                                                                                                                                                                                                                      | max. 590.5"/s <sup>2</sup> : 15m/s <sup>2</sup>                                                                                                                                                                                                                                                                                      |
| 3-Axis T-slot table (option)            | T-slot-table can be build over 4 <sup>th</sup> /5 <sup>th</sup> -axis                                                                                                                                                                                                                                                                | T-slot-table can be build over 4 <sup>th</sup> /5 <sup>th</sup> -axis                                                                                                                                                                                                                                                                |
| Max. load: T-slot-table                 | up to 1,102 lb. : 500 kg                                                                                                                                                                                                                                                                                                             | up to 4,400 lb. : 2,000 kg                                                                                                                                                                                                                                                                                                           |
| 3-Axis table clamping surface           | X 25.6" x Y 19.7":<br>X 650 mm x Y 500 mm                                                                                                                                                                                                                                                                                            | X 39.4" x Y 26.0":<br>X 1,000 mm x Y 660 mm                                                                                                                                                                                                                                                                                          |
| T-slots                                 | 5 x 14 mm H12                                                                                                                                                                                                                                                                                                                        | 4 x 18 mm H12                                                                                                                                                                                                                                                                                                                        |
| Distance spindle nose – table min./max. | 2.0" / 17.7" : 50 / 450 mm                                                                                                                                                                                                                                                                                                           | 2.7" / 22.4" : 70 / 570 mm                                                                                                                                                                                                                                                                                                           |
| Workpiece size 3-axis                   | X 21.6" x Y 15.7" x Z 15.7"<br>X 550 x Y 400 x Z 400 mm                                                                                                                                                                                                                                                                              | X 31.5" x Y 23.6" x Z 19.7"<br>X 800 x Y 600 x Z 500 mm                                                                                                                                                                                                                                                                              |
| Workpiece size 5-axis                   | Ø 15.7" / H 15.0" (550 lb.)<br>Ø 400 mm / H 380 mm (250 kg)                                                                                                                                                                                                                                                                          | Ø 23.6" / H 21.6" (1,102 lb.)<br>Ø 600 mm / H 550 mm (500 kg)                                                                                                                                                                                                                                                                        |
| Power requirements                      | 32 kVA                                                                                                                                                                                                                                                                                                                               | 32 kVA                                                                                                                                                                                                                                                                                                                               |
| High-frequency spindle – selection      | HSK E40: 1-42,000 rpm - 20 HP (15kW)*<br>HSK E50: 1-36,000 rpm - 23 HP (17kW)                                                                                                                                                                                                                                                        | HSK E40: 1-42,000 rpm - 20 HP (15kW)<br>HSK E50: 1-36,000 rpm - 23 HP (17kW)*<br>HSK A63: 1-26,000 rpm - 34 HP (25kW)<br>HSK A63: 1-18,000 rpm - 34 HP (25kW)                                                                                                                                                                        |
| * standard equipment                    |                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |
| Tool changer – selection Std / Optional | 32 / 100 positions (HSK E40)<br>32 / 80 positions (HSK E50)                                                                                                                                                                                                                                                                          | 88 positions (HSK E40)<br>72 positions (HSK E50)<br>48 positions (HSK A63)                                                                                                                                                                                                                                                           |
| Minimal quantity lubrication            | included                                                                                                                                                                                                                                                                                                                             | included                                                                                                                                                                                                                                                                                                                             |
| CNC-control                             | HEIDENHAIN TNC 640                                                                                                                                                                                                                                                                                                                   | HEIDENHAIN TNC 640                                                                                                                                                                                                                                                                                                                   |
| Machine dimensions                      | W 79.5" x D 110.2" x H 96.5"<br>W 2,020 mm x D 2,800 mm x H 2,450 mm                                                                                                                                                                                                                                                                 | W 85.7" x D 120.6" x H 112.2"<br>W 2,177 mm x D 3,064 mm x H 2,850 mm                                                                                                                                                                                                                                                                |
| Total weight                            | 15,873 lb. : 7,200 kg                                                                                                                                                                                                                                                                                                                | 25,353 lb. : 11,500 kg                                                                                                                                                                                                                                                                                                               |
| 5-Axis rotary table                     | B-axis -120 degree / +60 degree<br>C-axis 40 rpm<br>workpiece weight: 550 lb. : 250 kg                                                                                                                                                                                                                                               | B-axis +140 degree / -60 degree<br>C-axis 100 rpm<br>workpiece weight: 1,102 lb. : 500 kg                                                                                                                                                                                                                                            |
| Options                                 | Laser system for tool measuring<br>Automatic cutter cleaning station<br>Infrared measuring probe<br>PowerInspect - 3D-measuring<br>Graphite exhaust sysyem<br>Oil mist exhaust unit<br>Wet machining<br>ATS - Aerosol dry lubrication<br>Chip conveyor<br>SMS alarm<br>Ready for automation<br>HEIDENHAIN software options<br>EcoTec | Laser system for tool measuring<br>Automatic cutter cleaning station<br>Infrared measuring probe<br>PowerInspect - 3D-measuring<br>Graphite exhaust sysyem<br>Oil mist exhaust unit<br>Wet machining<br>ATS - Aerosol dry lubrication<br>Chip conveyor<br>SMS alarm<br>Ready for automation<br>HEIDENHAIN software options<br>EcoTec |

## Workpiece dimensions

### 3-AXIS

optional table



V5: X x Y x Z: 21.6" x 15.7" x 15.7"  
V9: X x Y x Z: 31.5" x 23.6" x 19.7"  
V5: max. 1102 lb  
V9: max. 4,400 lb

### 5-AXIS



V5: Ø 15.7" / H 15.0" max. 550 lb.  
V9: Ø 23.6" / H 21.6"  
max. 1,102 lb.





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to secure the future

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