



**Machine working by interpolation between the cutting tool radius and spindle axis. The single point cutting tool generates the profile of the valve seat through an integrated design system, using radius and straight segments.**

**Machine specifically appropriate for machining of racing engines, or engine prototyping.**



**Single point seat cutting machine with Z and U axes CNC digitally controlled.**

**U axis carriage controlled by induction motor can reach a cutting feed rate up to 300 mm/min.**

**4 kW built-in spindle motor, variable speed from 0 to 3000 RPM. High machining accuracy even at low speed due to total lack of mechanical transmission.**

**Intake and exhaust seats can be performed simultaneously without tool holder changes.**

**Machining capacity from 20mm to 163mm / 0.78" to 6.42".**

**Patented lightweight workhead : built-in spindle motor and triple air-float centering system. Minimal workhead inertia and maximal floatation for unmatched centering sensitivity.**

**Vacuum clamping of the work head on the machine bed.**

**Modern modular machine bed design for improved rigidity. Computer enhanced static and dynamic characteristics provide the latest in machining technology.**

PCT Patent 2011/147770  
Patent U.S.A. N° 5,769,576  
European Patent N° 0833711

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**SERVICE QUALITY RELIABILITY**

**World Class Technology**





# SERDI

## SPINDLE SPECIFICATIONS

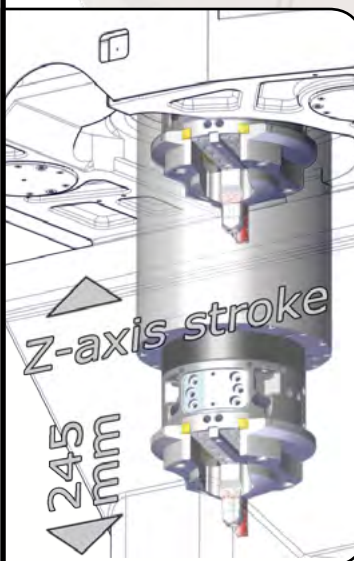


Built-in motor-spindle with maximum torque from 0 to 3000 rpm and a maximum speed of 5000 rpm generated by a CNC spindle machine tool type with rotor «rare earth» magnets.

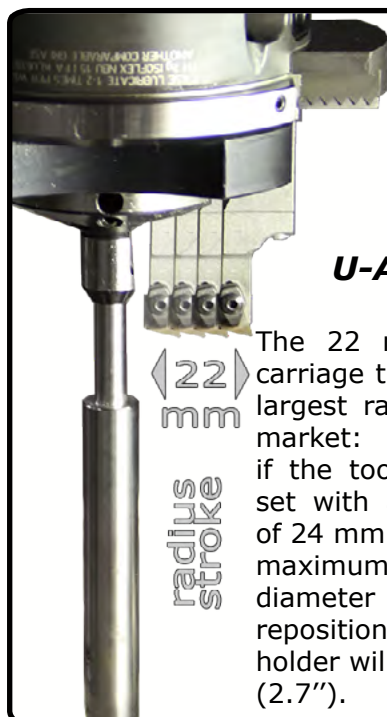
This spindle includes the U axis Komtronic system by Komet, powered by a induction driven brushless motor with no backlash and minimum temperature rise. The whole system is only 7.2 kgs (15Lbs) and the weight is equally divided above and below the sphere, which keeps the self-centering light and accurate.

The 245 mm (9.64") stroke allows the combined machining of the seat and guide with lengths exceeding 100mm.

The most powerful single point spindle on the market (4 KW - 5.5 HP) allows both rough (cutting depth up to 0.5 mm) and finishing machining.



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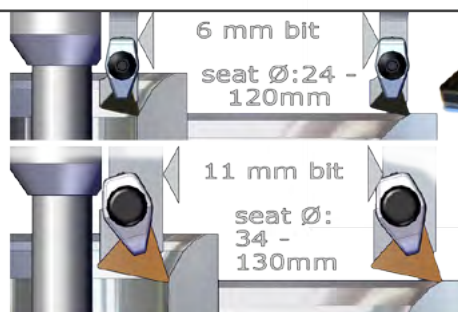


## U-AXIS

The 22 mm (.86") carriage travel is the largest range in the market:  
if the tool holder is set with a diameter of 24 mm (.95"), the maximum machining diameter without repositioning the tip holder will be 68 mm (2.7").

## INTEGRATED VACUUM TESTER

For a fast valve sealing check before removing the cylinder head.

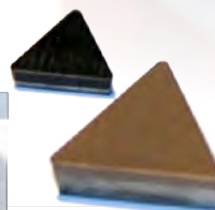


6 mm bit

seat Ø: 24 - 120mm

11 mm bit

seat Ø: 34 - 130mm



Our standard tool diameter machining mm (.95") to 130

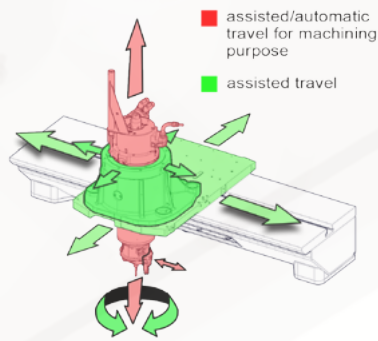
Seats with hardne can be easily mach CBN cutting bits.

## TRIPLE AIR CUSHION

Triple air cushion and built-in motor spindle reduces dramatically the free floating parts height during centering which improves speed and accuracy.

Automatically aligns each valve guide regardless of any misalignment or angular section.

Leveling spindle into head guide.



## MACHINING DEPTH MEASUREMENT

Depth measurement made by a analogic LVDT gauge to guarantee the same accurate machining depth on all the seats of the cylinder head.



## CONVERSATIONAL CNC

Z and U axes are digitally controlled by a standard CNC Siemens 828D. Single point cutting allows to machine any profile you want. The collaboration between Serdi and Siemens will ensure a continuous development of the product and a worldwide customer service.

## EFFICIENT MANUAL APPROACH

Manual Z spindle is controlled by an electronic wheel located on the head. Head displacement and spindle approach speed controlled through ergonomic and sophisticated handles, no more pedal needed.

## SUPPORT TABLE

The two parallel bars are mounted on two manually lockable guiding rails. Accommodates a single or dual axis rollover fixture.

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**STronik**  
INTERPOLATION TECHNOLOGY  
co-developed with **KOMET**  
driven by **SIEMENS**

## Applications:

### Marine:



### Racing:



### Motorcycle:



### Automotive:





## TECHNICAL FEATURES

### Space requirements

Length	mm / inch	2200/86
Width	mm / inch	1050/45.3
Height	mm / inch	2320/91.4

### Max cylinder head dimensions on parallels

Length	mm / inch	unlimited
Width	mm / inch	500/19.7
Height	mm / inch	820/32.2

### Max cylinder head dimensions on roll over fixture

Length	mm / inch	1050/41.3
Width	mm / inch	300/11.8
Height	mm / inch	190/7.5

### Parallel bars travel

mm/inch	160/6.3
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### Machining capacity Ø min - max

mm	20 to 163
inch	0.78 to 6.42

### Workhead travel

Lengthwise	mm / inch	930/36.6
Crosswise	mm / inch	50/1.97
Sphere-cylinder travel	mm / inch	14/0.5

### Spindle

Max. spindle inclination	degrees	5
Spindle travel	mm / inch	245/9.64
Machining feed	mm / min	300
Spindle motor power	KW / HP	4 / 5.5
Spindle rotation speed	RPM	0 to 3000
Max spindle rotation speed	RPM	5000

### U-axis (carriage)

Stroke (radius)	mm / inch	22/0.86
Machining feed	mm / min	300

### Connections

Power supply	6.3kVA-3x400V-N+PE-50/60 Hz
Pneumatic supply	bar / psi 6/87
Max. air flow	l/mn -CFM 400/15
Net weight approx.	kg / lbs 1500/3307



## MACHINES SERDI S.A.

23, avenue des vieux moulins  
B.P. 380  
74012 Annecy Cedex  
France



00 33 4 50 65 63 00

Fax: 00 33 4 50 52 99 92

www.serdi.com

Email: export@serdi.com

## SERDI CORP.

1526 Litton Drive  
Stone Mountain  
Georgia 30083  
USA



(770) 493 82 20

Fax: (770) 493 83 23

Your distributor: