



## CNC Enhancement Accessories



Zero Point System  
Self Centering Vise

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## Modular clamping system Maximize the efficiency of your machine tool

### SilverCNC mechanical zero point system

When machining in small quantities parts and frequently replacing fixtures, it is necessary for you to know the clamping solutions and services provided by SilverCNC.

Zero point base plate, pneumatic plate, self-centering vise, riser, tombstone, pyramid, dovetail fixture and customized solutions for global customers.

With SilverCNC rotary solution, probing system, to help you to optimize processing technology, to improve machine tool efficiency and increase your competitive edge

## Contents

Industrial applications	page 6	Dovetail fixture	page 21
Zero point base plate	page 12	Collet fixture	page 22
Self centering vise	page 16	Chuck fixture	page 22
Adapters and risers	page 17	Accessories	page 23
Tombstones and pyramid	page 19		



52mm plate



96mm plate



Multi-station plate



Studs



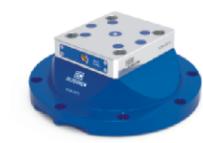
Self centering vise



Pneumatic vise



Angle plate



Riser



Three sided tombstone



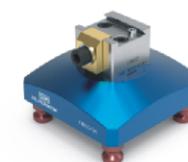
Four sided tombstone



Pyramid



Dovetail



Dovetail fixture



Collet



Chuck



Accessories

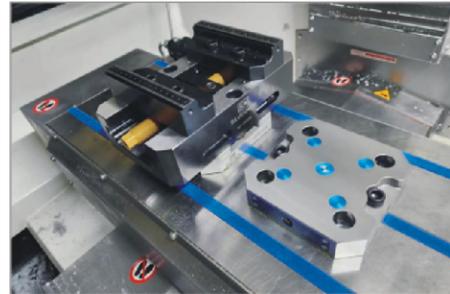
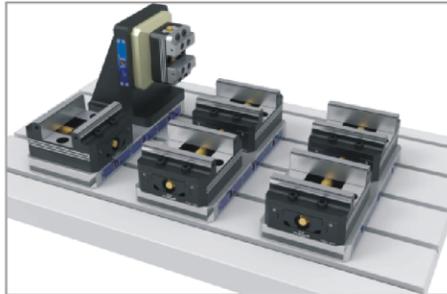
## Various Applications of Mechanical Zero Point System

### Application 1 (zero point base plate, self-centering vise, right angle plate)

Zero point base plate and self centering vise fixed on machine tool table are the most commonly used scenarios

Double station plate can improve machine tool usage and clamping efficiency further

If without a rotary table, when using a right angle plate, 5 surfaces can be machined to ensure machining accuracy

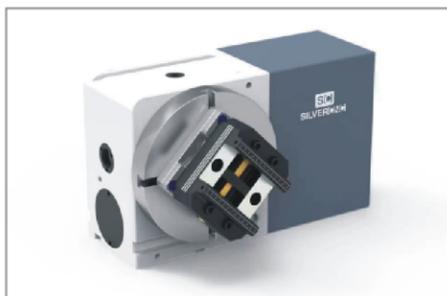


### Application 2 (on 4th axis rotary table)

Fixing the zero point base plate on the flange of the 4-axis, combined with various types of fixtures to ensure that the coordinate origin remains unchanged, which can achieve efficient clamping and machining

For C170 and small 4axis models, please use 52mm plate, for bigger 4axis models, please choose 96mm type zero plate and self centering vise.

please use the positioning hole on the zero plate to calibrate the center without purchasing a center calibration plate



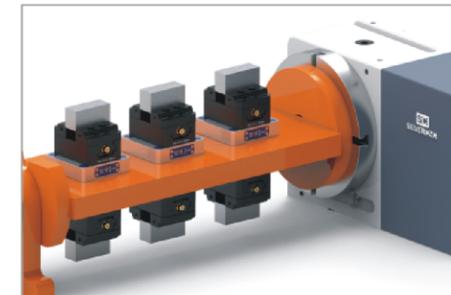
## Various Applications of Mechanical Zero Point System

### Application 3 (trunnion table)

"The trunnion table and zero point plate are also the most common application."

4axis rotary, tailstock, 2/3/4 multiple sides in one bridge plate, 2/3/4 sets of zero point, vise, chuck combination

Pneumatic zero point plate can also be selected to achieve automated upper and lower workpiece for machining.

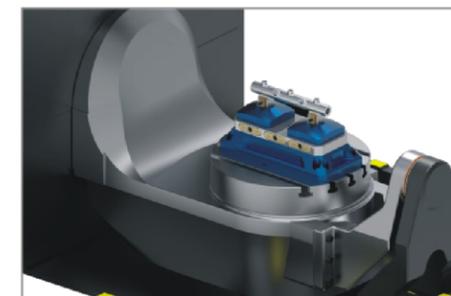


### Application 2 (dovetail fixtures)

Dovetail fixtures can be mounted on four and five-axis CNC machines for milling applications. It offers superior clamping strength and part access

Dovetail and zero point plate combined, which can reduce clamping time, improve the efficiency of machine tool, and also improve machining accuracy. Ideal for small parts that need a lot of clearance

Three models of dovetails for you to choose. all of which has been improved to have the ability to mount to 52 and 96mm base plates



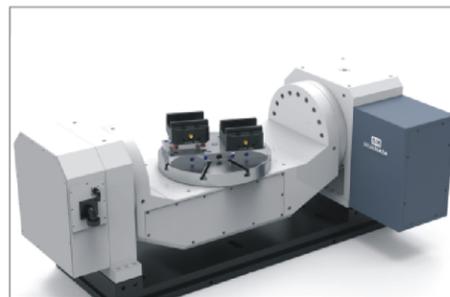
## Various Applications of Mechanical Zero Point System

### Application 3 (on 5th axis machine tool)

Five axis machine tools and five axis turntables are the most commonly used scenarios for zero point products and self centering vise.

Small size, strong clamping force, advantages in avoiding travel restrictions, preventing interference, etc

SilverCNC can customize various solution according your five axis worktable. Please send rotary table or machine dimension to us, we will send the simulated 3D model for confirmation



### Application 4 (riser+ zero point base plate +self centering vise)

For some small parts machining on 5axis machine tools, you have to increase the height of the parts to improve flexibility and prevent interference.

Riser and zero point plate is a very popular and cheap solution. The material for the raised is aluminum, and the bolt holes at the bottom are determined based on the machine tool work table T-slot distance.

SilverCNC can customize various types of riser based on your machine tool size and zero point plate. Please contact our sales manager to know more.



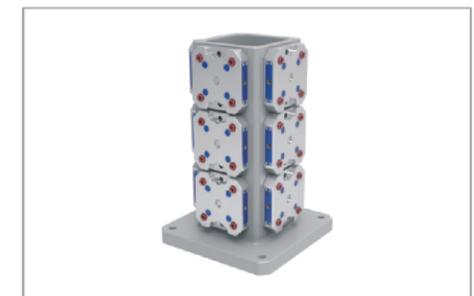
## Various Applications of Mechanical Zero Point System

### Application 5 (tombstone)

Tombstone often used on VMC and HMC, which is efficient, and effective workholding solutions for CNC machining operations

Many type of fixture can fixed on the tombstom, such as zero point plate, self centering vise, OK vise. to meet your processing requirements.

Tombstome can also be integrated with 5th axis rotary table for processing multiple surfaces at one time, improving machining efficiency.

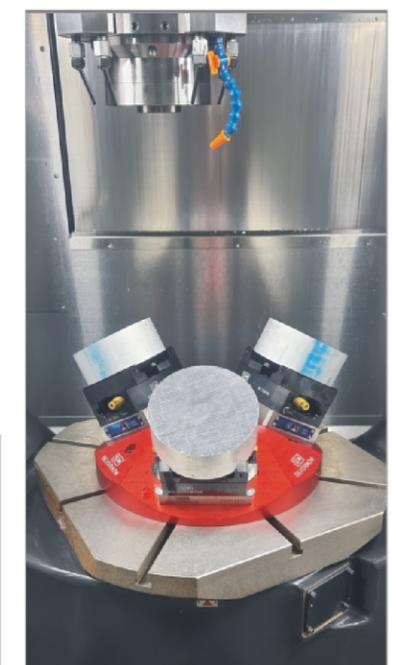


### Application 6 ( pyramid)

SilverCNC pyramid design provides maximum access to all machined surfaces and allows or enhanced spindle and cutting tool clearance

SilverCNC pyramid compatible with SC96-S195 zero point plate, various of dovetail, vise, chuck and serrated jaw options are available.

Noted: Please inform us of the model and specifications of the machine tool before ordering, or send us the drawings of the worktable. We will design the fixing holes according to the drawings



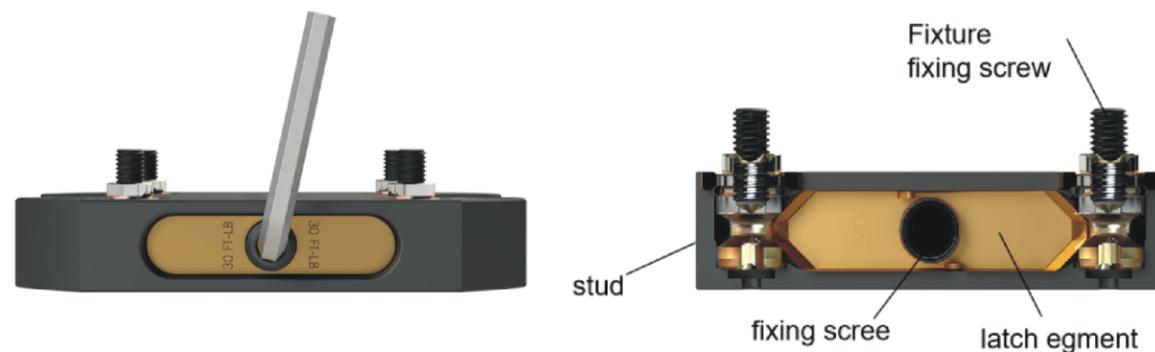
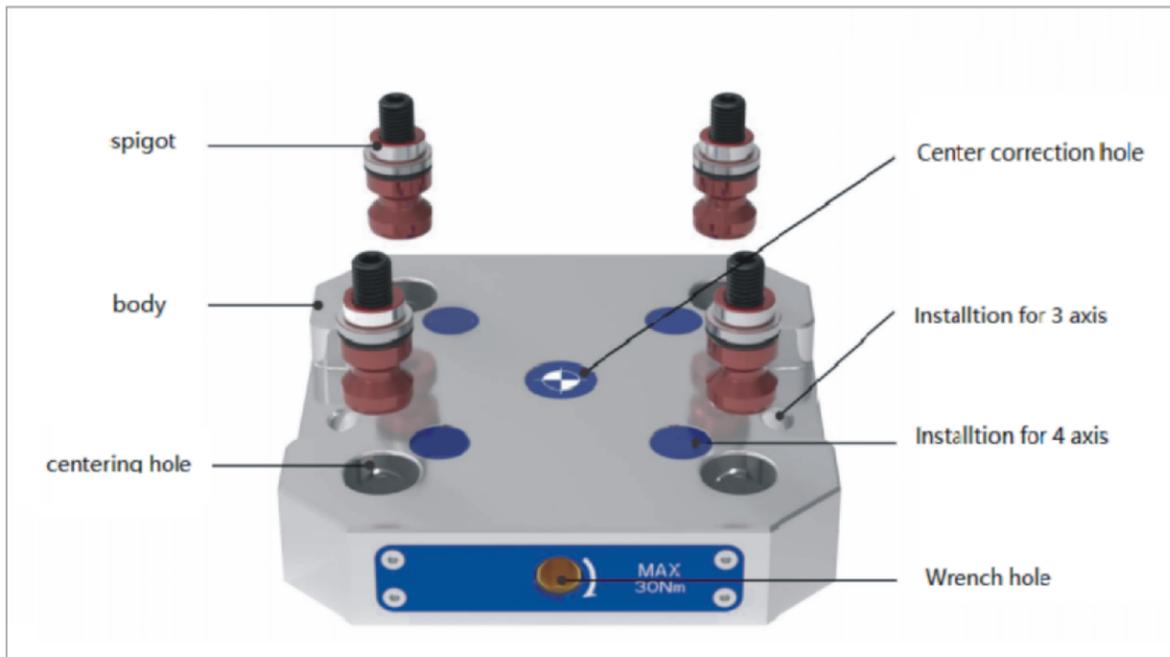
## Mechanical zero point basic

The four hole mechanical zero point clamping is a positioning tool that can quickly exchange fixtures and centering fixtures. The standard installation ways enables the rapid and repeatable conversion of vice, pallet, chuck and other tools between machine tools, and ensures the accuracy without disassembly and alignment time

### Benefits used zero point clamping system

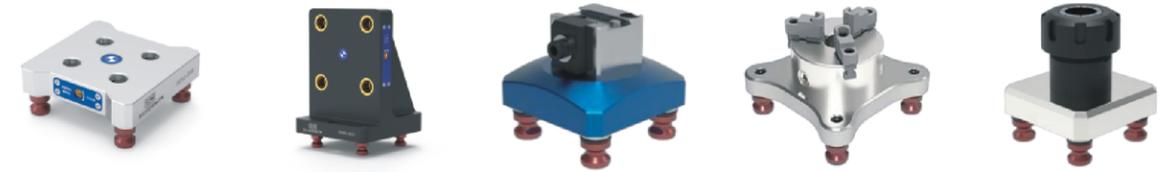
- Repetition accuracy is within 0.005mm
- Large bearing area, suitable for heavy cutting
- Reduce fixture replacement and adjustment time by more than 80%
- Fixtures can be standardized
- Numerous combinations of tooling and fixtures can be designed"

### Mechanical zero point structure:

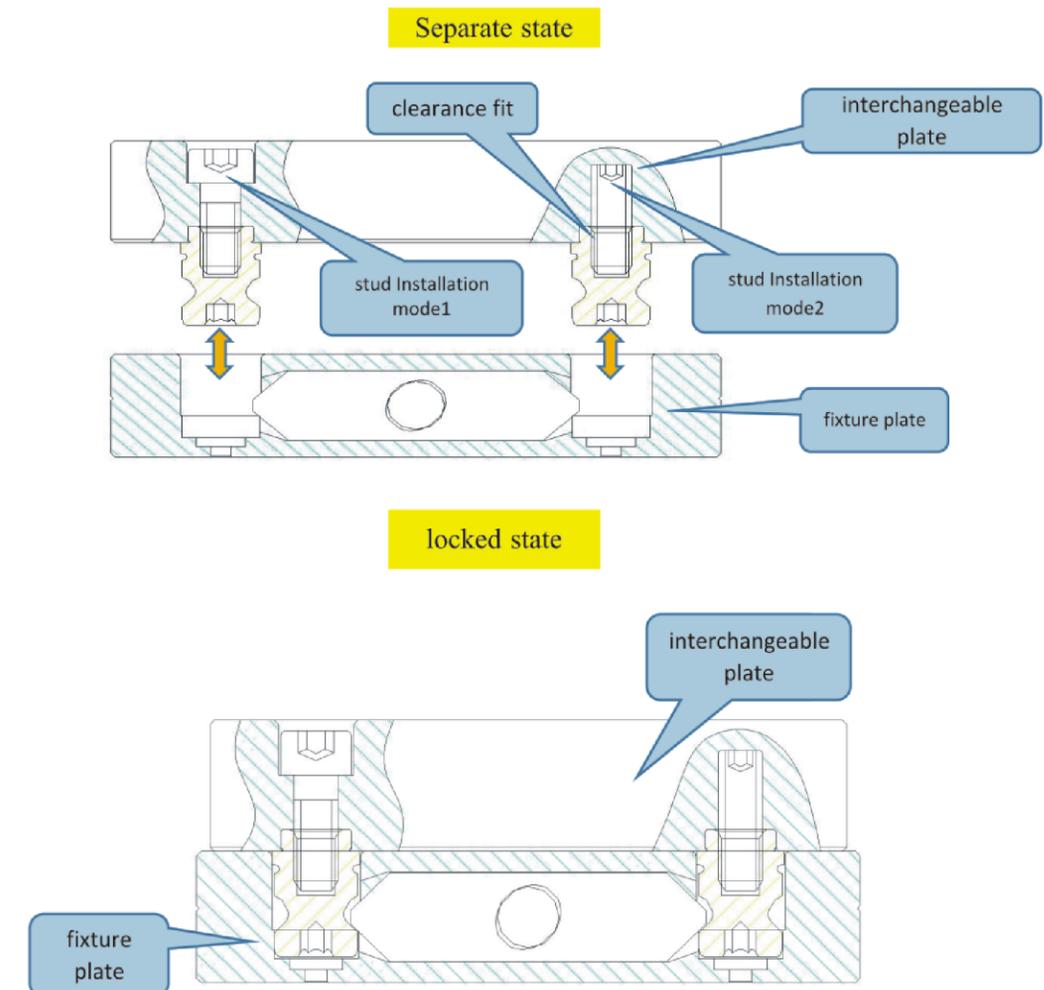


## Various fixture combination

With the mechanical zero point plate, you can design various tooling fixtures flexibly, and exchange them among three-axis, four axis and five axis machine tools quickly to reduce the downtime of the machine tool.



### Plate installation



## 52mm type zero point base plate

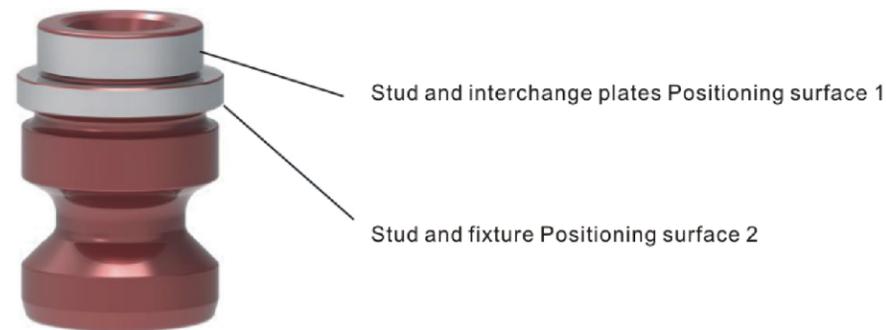
## 96mm type zero point base plate

	<p><b>SC52-S120</b>          Dimension: 106*106*25          Repeatability: 0.005          Clamping force: 18KN          Material: steel          Weight/Kg: 2KG</p>	
	<p><b>SC52-S145</b>          Dimension: 106*106*25          Repeatability: 0.005          Clamping force: 18KN          Material: steel          Weight/Kg: 2KG</p>	
	<p><b>SC52-S150</b>          Dimension: 120*106*25          Repeatability: 0.005          Clamping force: 18KN          Material: steel          Weight/Kg: 2KG</p>	
	<p><b>SC52-S96</b>          Dimension: 121*121*25          Repeatability: 0.005          Clamping force: 18KN          Material: steel          Weight/Kg: 2.5KG</p>	

	<p><b>SC96-S190</b>          Dimension: 150*150*30          Repeatability: 0.005          Clamping force: 22KN          Material: steel          Weight/Kg: 4KG</p>	
	<p><b>SC96-S195</b>          Dimension: 150*128*30          Repeatability: 0.005          Clamping force: 22KN          Material: steel          Weight/Kg: 4KG</p>	
	<p><b>SC96-S200</b>          Dimension: 168*150*30          Repeatability: 0.005          Clamping force: 22KN          Material: steel          Weight/Kg: 5KG</p>	
	<p><b>SC96-S205</b>          Dimension: 150*150*30          Repeatability: 0.005          Clamping force: 22KN          Material: steel          Weight/Kg: 4KG</p>	



## Studs



☆ Note: the stud and the exchange plate should be interstitial. When installing stud, lubricate the cylinder surface to prevent straining the surface

	<p><b>LD12-16</b> Dimension: <math>\phi 16 \times 34</math> Material: steel Weight/Kg: 0.04KG</p>	
	<p><b>LD16-20</b> Dimension: <math>\phi 20 \times 40</math> Material: steel Weight/Kg: 0.05KG</p>	

### Studs locking



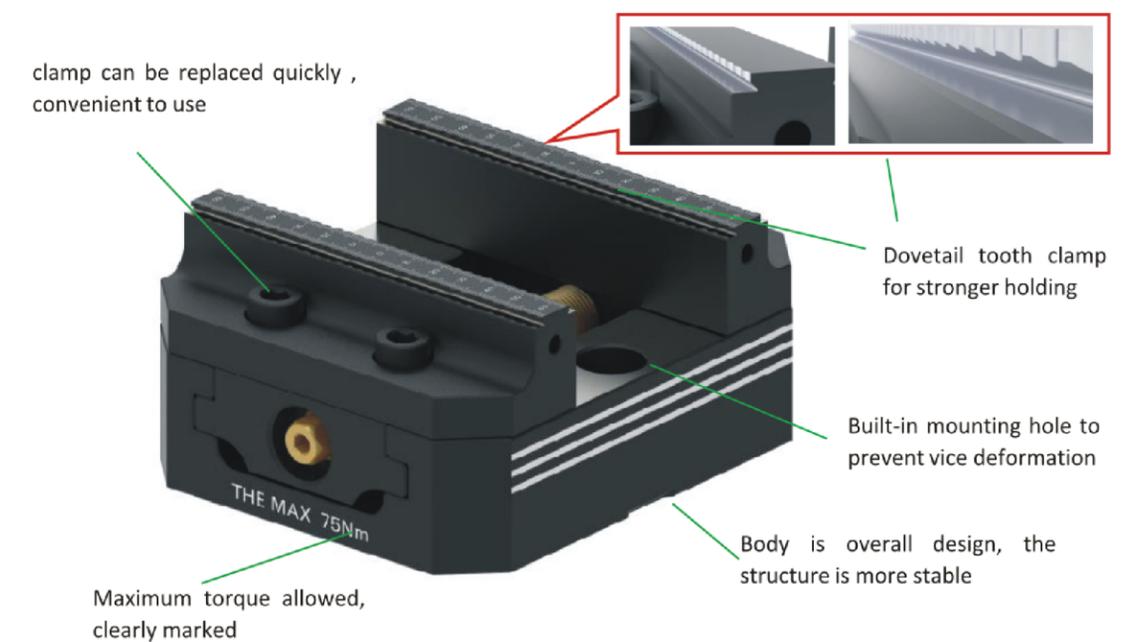
## Self-centering vise

SILVERCNC Self centering vise is applicable to various CNC processing fields. It has the characteristics of high precision, light weight, large clamping range and flexible operation. It can realize positioning and clamping in one step, and its claw can hold the work piece with complex contour. The work piece with different contour can be processed by simply changing the claw. The accuracy of repeated positioning is within 0.02mm. Vises can be connected and replaced with major foreign brands, such as Lang brand, 5th, Jaggens, Schunk, etc.

Its compact structure and practical design make it the most popular choice for most machining plants in the world.

It is more flexible when used with four hole mechanic zero point system.

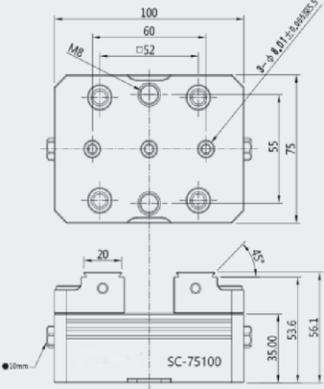
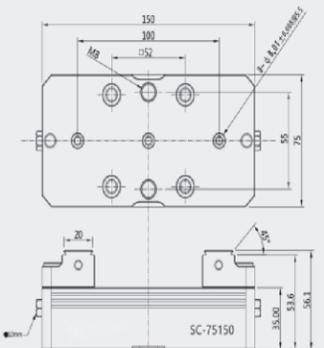
SILVERCNC self centering vise is a good choice for flexible production!



## Small size vise

SC-75100 and SC-75150 are small size vise.

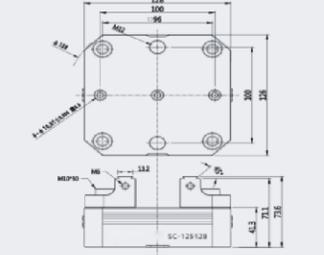
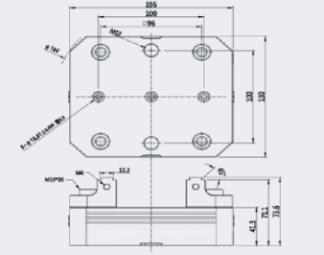
They are suitable for clamping small products and can be used with 52 type four hole zero point base to realize rapid clamping and positioning and improve production efficiency.

	<p><b>SC-75100</b>                  Dimensions: 75*100*56mm                  Repeatability: 0.01mm                  Forward jaw clamping range: 0-40mm                  Reverse jaw clamping range:38-76mm                  Jaw width: 75mm                  maximum torque: 60Nm                  Weight: 2.5KG</p>	
		
	<p><b>SC-75150</b>                  Dimensions: 75*150*56mm                  Repeatability: 0.01mm                  Forward jaw clamping range: 0-90mm                  Reverse jaw clamping range:38-126mm                  Jaw width: 75mm                  maximum torque: 60Nm                  Weight: 3KG</p>	
		

## Medium size vise

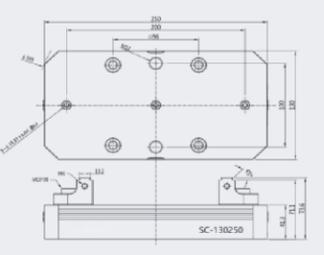
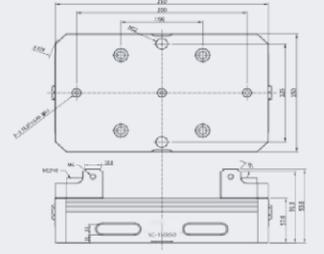
### Large size centering vise

SC-130155 and SC125-128 are medium size self centering vise, they are the most widely used and are most loved by the majority of users. It can be used with 96 type four hole zero point base, which is more convenient and fast, and can quickly improve the production efficiency.

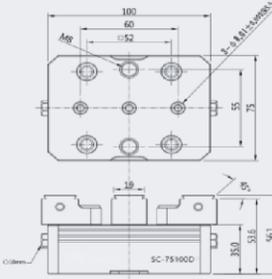
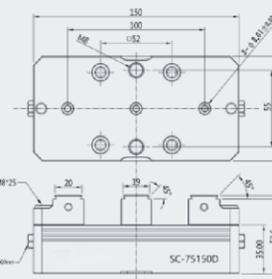
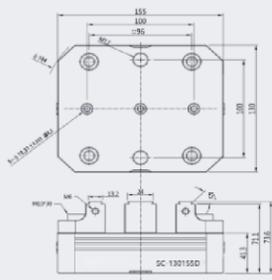
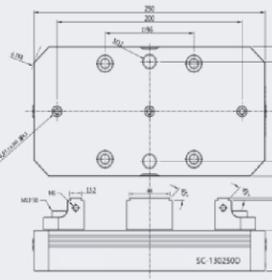
	<p><b>SC-125128</b>                  Dimensions: 125*128*73.5mm                  Repeatability: 0.02mm                  Forward jaw clamping range: 0-56mm                  Reverse jaw clamping range:78-128mm                  Jaw width:125mm                  maximum torque: 75Nm                  Weight: 6KG</p>	
	<p><b>SC-130155</b>                  Dimensions: 130*155*73.5mm                  Repeatability: 0.02mm                  Forward jaw clamping range: 0-82mm                  Reverse jaw clamping range:78-150mm                  Jaw width:130mm                  maximum torque: 75Nm                  Weight: 7KG</p>	

### Large size centering vise

SC-130250 and SC-150250 are large size self centering vise, they are used for clamping large parts. It can be used with 96 type four hole zero point base, which is more convenient and fast, and can quickly improve the production efficiency.

	<p><b>SC-130250</b>                  Dimensions: 130*250*73.5mm                  Repeatability: 0.02mm                  Forward jaw clamping range: 0-180mm                  Reverse jaw clamping range:78-254mm                  Jaw width:130mm                  maximum torque: 75N/m                  Weight: 10KG</p>	
	<p><b>SC-150250</b>                  Dimensions: 150*250*94mm                  Repeatability: 0.02mm                  Forward jaw clamping range: 0-155mm                  Reverse jaw clamping range:94-243mm                  Jaw width:150mm                  maximum torque: 100N/m                  Weight: 16KG</p>	

## Double station vise

	<p><b>SC-75100D</b>  Dimensions: 75*100*56mm  Repeatability: 0.01mm  Forward jaw clamping range: 0-10mm  Reverse jaw clamping range: 17.5-25mm  Jaw width: 75mm  maximum torque: 60Nm  Weight: 2.5KG</p>	
	<p><b>SC-75150D</b>  Dimensions: 75*150*56mm  Repeatability: 0.01mm  Forward jaw clamping range: 0-37mm  Reverse jaw clamping range: 17.5-55mm  Jaw width: 75mm  maximum torque: 60Nm  Weight: 3KG</p>	
	<p><b>SC-130155D</b>  Dimensions: 130*155*73.5mm  Repeatability: 0.02mm  Forward jaw clamping range: 0-28.5mm  Reverse jaw clamping range: 32-62mm  Jaw width: 130mm  maximum torque: 75Nm  Weight: 8KG</p>	
	<p><b>SC-130250D</b>  Dimensions: 130*250*73.5mm  Repeatability: 0.02mm  Forward jaw clamping range: 0-63mm  Reverse jaw clamping range: 32-99mm  Jaw width: 130mm  maximum torque: 75N/m  Weight: 11KG</p>	

## Pneumatic self centering vise

### Product Features

Pneumatic mechanical self-locking design "air unlocking, air locking" to ensure the stability of the clamping force in production.

Large-capacity power piston chamber structure design provides multiplier clamping force.

Structural S-shaped oil lubrication system design, to enhance the use of product precision and life

The jaws are fitted with a guide rail toothed strip fitting structure, which allows the jaws to be flexibly adjusted to obtain the required clamping range.

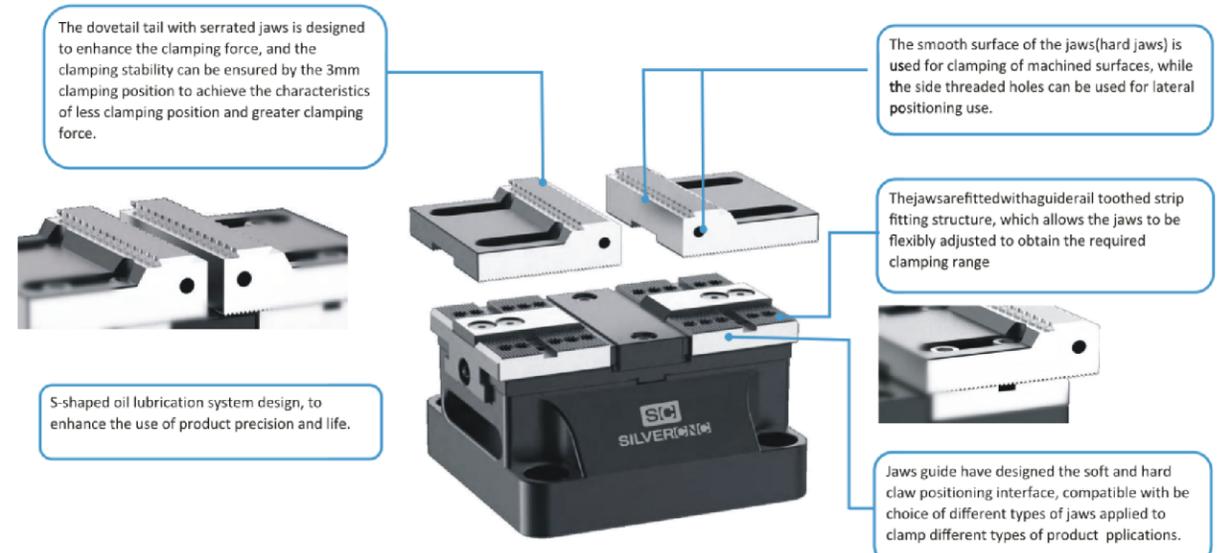


Jaw guide design of soft and hard claw positioning interface, compatible with the choice of different types of jaws applied to clamp different types of product applications.

The smooth surface of the jaws (hard jaws) is used for clamping of machined surface, while the side threaded holes can be used for lateral positioning.

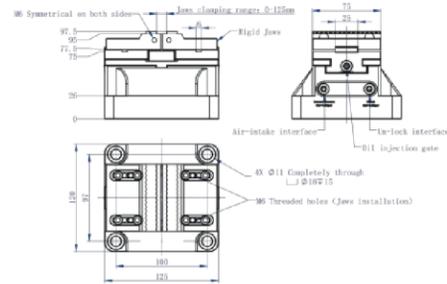
Dovetail with serrated jaws designed to enhance the clamping to be reasonable, 3mm clamping position to ensure the stability of the clamping to achieve less clamping, larger clamping force.

## Pneumatic self centering vise

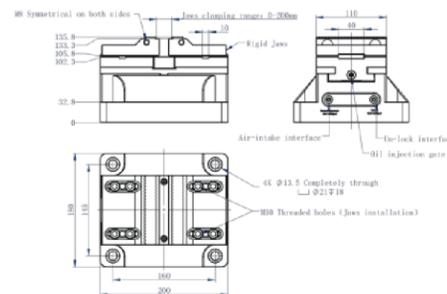


## Pneumatic self centering specification

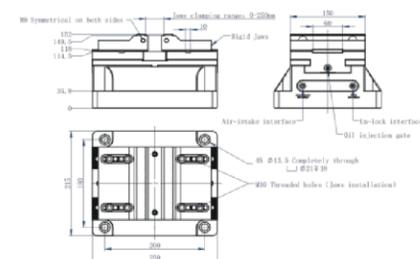
## Pneumatic self centering -Positive and negative use the hard jaws



Vise models	Unlock way	Work pressure	Repeatability	Clamping force	Single jaw stroke	Clamping range	Weight	Remark
SPV-P75	Pneumatic	0.5-0.8Mpa	<0.01mm	4200(N)	2.5mm	0-125mm	7KG	Customizable soft jaws
SPV-H75	Hydraulic	6Mpa	<0.01mm	9000(N)	2.5mm	0-125mm	7KG	Customizable soft jaws



Vise models	Unlock way	Work pressure	Repeatability	Clamping force	Single jaw stroke	Clamping range	Weight	Remark
SPV-P110	Pneumatic	0.5-0.8Mpa	<0.01mm	12000(N)	2.5mm	0-210mm	25KG	Customizable soft jaws
SPV-H110	Hydraulic	6Mpa	<0.01mm	30000(N)	2.5mm	0-210mm	25KG	Customizable soft jaws



Vise models	Unlock way	Work pressure	Repeatability	Clamping force	Single jaw stroke	Clamping range	Weight	Remark
SPV-P150	Pneumatic	0.5-0.8Mpa	<0.01mm	20000(N)	2.5mm	0-250mm	42KG	Customizable soft jaws
SPV-H150	Hydraulic	6Mpa	<0.01mm	45000(N)	2.5mm	0-250mm	42KG	Customizable soft jaws



Vise hard jaw front and reverse side use



Front clamping schematic of hard jaws



Hard jaw reverse clamping schematic



Allen wrench to disassemble the left and right jaws from the jaw holder



Reverse the direction of the disassembled left and right jaws to install or adjust the jaw clamping range.



Installation completed



## Pneumatic self centering -How to use soft jaws



Pneumatic vise house



Soft jaw clamping schematic



Modeling positioning clamping schematic

## How to installation



Prepare the required soft jaws and corresponding pneumatic vise



Installation of soft jaws or adjustment of the clamping range of the jaws by means of the screw locking



Installation completed



## Risers

### SC96-80L



Dimensions: 130\*150\*104mm  
 Repeatability: 0.005mm  
 Clamping force: 22KN  
 Material: steel  
 Weight/Kg: 8.5KG

This riser a very flexible design, with 4 studs at the bottom that can be installed on various forms of 96mm base plates, and multiple risers can be used simultaneously to solve travel troubles.

Repeatability in 0.005mm, 4pcs studs for free.

### SC96-S275



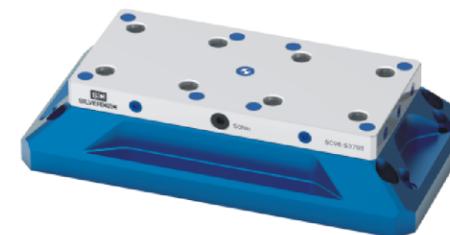
Dimensions:  $\varnothing 275 \times 100$   
 Repeatability: 0.005mm  
 Clamping force: 22KN  
 Material: steel  
 Weight/Kg: 10KG

The S96-S275 raised zero point plate designed for five axis machine tools specially, which can avoid interference during machining.

The fixing hole can be customized according to the T-slot of the machine tool.

SC96-S195 base plate installed on the riser to ensure repeatability in 0.005mm, with 4pcs studs for free.

### S96-S379T



Repeatability: 0.005mm  
 Clamping force: 22KN  
 Material: steel  
 Weight/Kg: 12KG

The S96-S379T raiser double-station zero point plate designed for five axis machine tools specially, which can avoid interference during machining.

SC96-S379 base plate installed on the riser to ensure repeatability in 0.005mm, with 8pcs studs for free.

SC96-379T riser has grooves around it. If the T-slot of the machine tool does not fit the SC96-S379T standard holes, you can directly use the pressure block.

Noted: Please inform us of the model and specifications of the machine tool before ordering if u want to customize the bottom's holes.

## Three sided tombstone

### SC52-S160

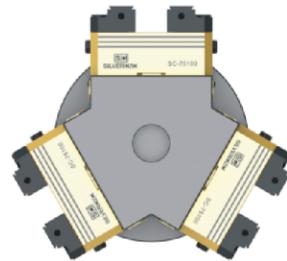
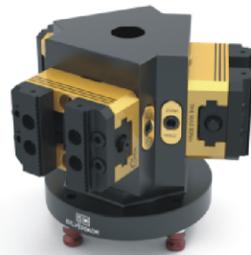


Dimensions:  $\phi 160 \times 167$ mm  
 Material: steel+aluminum  
 Weight: 7KG

This three side tombstone integrates the 52 type zero pint base plate, the compact design can add 3 small size vise SC-75100.

The unit features pull studs on the bottom so that it can be mounted onto any 96mm base plate.

It's perfect fit for SilverCNC C180 and C200 4th axis rotary table



## Three sided pyramid

Pyramid give users the ability to increase the productivity of 5 axis machining centres. The angled faces permit multipart loads while still providing the increased part access needed in 5 axis machining centres.

The flexible design ties together many of zero point base plate and top tooling options.



Dimensions:  $\phi 395 \times 115$ mm  
 Material: Aluminum  
 Weight: 35KG  
 30° angle. For use machines with 120° or more tilt.

## Four sided tombstone

### 75-A96

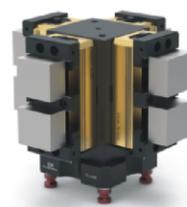
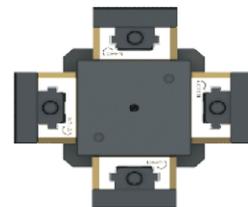
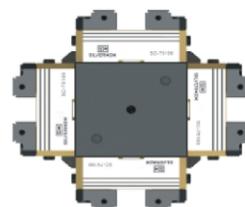


Dimensions: 126\*\*126\*200mm  
 Material: aluminum  
 Weight: 7KG

The 75-A96 is an ultra compact 4 sided mini tombstone designed to work with smaller 4 and 5 Axis machines. The goal was to increase productivity.

The entire tombstone will quick change onto any 96mm zero point base plates. With a maximum of 12 vises on the tombstone, the machine can run unattended.

It's perfect fit for SilverCNC C180 and C200 4th axis rotary table



Pyramid compatible with SC96-S195 zero point plate, all kinds of top tooling can be mounted on plate. such as self centering vise, dovetail fixtures



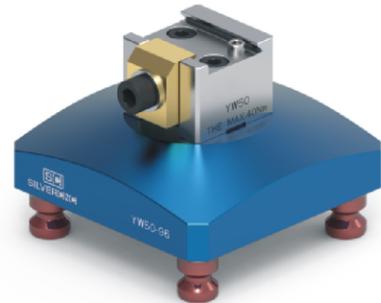
Vise mounted in vertical orientation

Noted: Please inform us of the model and specifications of the machine tool before ordering, or send us the drawings of the worktable. We will design the fixing holes according to the drawings



Vise mounted in horizontal orientation

## Dovetail Fixtures



Locating pins for precise repeatability  
 "45° dovetail for increased clamping force"  
 Compatible with 52 and 96 zero point system

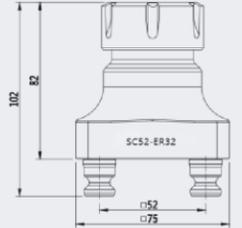
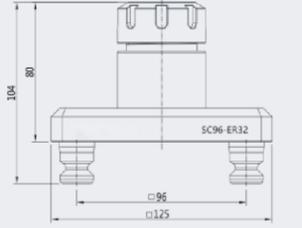
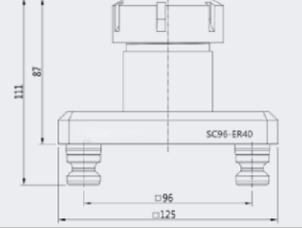
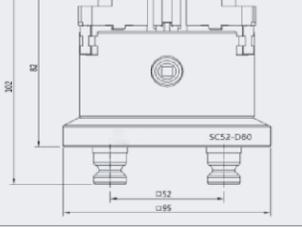
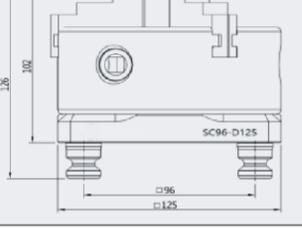
The dovetail is made of integral stainless steel grind to ensure accuracy and stability

## Dovetail Fixtures

YW12	YW25	YW50
Dimension: 21*32*19mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 8Nm Weight/Kg: 0.15KG	Dimension: 38*38*27mm Dovetail depth: 2.54mm Clamping range: 25-70mm Material: stainless steel Max. torque: 10Nm Weight/Kg: 0.25KG	Dimension: 50*50*38mm Dovetail depth: 2.54mm Clamping range: above 50mm Material: stainless steel Max. torque: 40Nm Weight/Kg: 0.65KG

	<b>SC52-YW12</b> Dimension: 21*32*19mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 8Nm Weight/Kg: 0.15KG	
	<b>SC52-YW25</b> Dimension: 38*38*27mm Dovetail depth: 2.54mm Clamping range: 25-70mm Material: stainless steel Max. torque: 10Nm Weight/Kg: 0.25KG	
	<b>SC52-YW50</b> Dimension: 50*50*38mm Dovetail depth: 2.54mm Clamping range: above 50mm Material: stainless steel Max. torque: 40Nm Weight/Kg: 0.65KG	
	<b>SC96-YW12</b> Dimension: 126*126*85mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 8Nm Weight/Kg: 2KG	
	<b>SC96-YW25</b> Dimension: 126*126*89mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 10Nm Weight/Kg: 2.5KG	
	<b>SC96-YW50</b> Dimension: 126*126*98mm Dovetail depth: 5.05mm Clamping range: above 50mm Material: stainless steel Max. torque: 40Nm Weight/Kg: 2.8KG	

## Chuck and collet

	<p><b>SC52-ER32</b>            Dimension: 75*75*83mm            Clamping range: 3-25mm            Material: stainless steel            Weight/Kg: 1.4KG</p>	
	<p><b>SC52-ER50</b>            Dimension: 75*75*92mm            Clamping range: 6-40mm            Material: stainless steel            Weight/Kg: 3KG</p>	
	<p><b>SC96-ER32</b>            Dimension: 125*125*104mm            Clamping range: 3-25mm            Material: stainless steel            Weight/Kg: 2.6KG</p>	
	<p><b>SC96-ER40</b>            Dimension: 125*125*111mm            Clamping range: 3-32mm            Material: stainless steel            Weight/Kg: 3KG</p>	
	<p><b>SC52-D80</b>            Dimensions: <math>\phi 95 \times 100</math>mm            Material: Hardened steel+            surface anti rust            Weight: 2.5KG</p>	
	<p><b>SC96-D125</b>            Dimensions: 125*125*130mm            Material: Hardened steel+            surface anti rust            Weight: 8KG</p>	

## Accessories



### 6061 Aluminum Jaws

**AL75-75\*44\*24** Compatible with SC-75100/SC-75150"  
**AL130-130\*49\*33** Compatible with SC-125128/SC-130155/SC-130250"  
**AL150-150\*56\*37** Compatible with SC-150250"



### 1018 Steel Jaws

**SL75-75\*44\*24** Compatible with SC-75100/SC-75150"  
**SL130-130\*49\*33** Compatible with SC-125128/SC-130155/SC-130250"  
**SL150-150\*56\*37** Compatible with SC-150250"

## Self centering vise jaws



### Standard Steel Jaws

**SSD75-75\*37\*21** Compatible with SC-75100/SC-75150"  
**SSD130-130\*45\*32** Compatible with SC-125128/SC-130155/SC-130250"  
**SSD150-150\*56\*36.8** Compatible with SC-150250"



Centering Pins



Threaded Locating Pins



Vise positioning ruler

## Zero Point System Application

