

## SPB Series CNC High-Speed Pipe Beveling Machine

### Introduction

SPB series CNC high speed pipe beveling machine is the ideal beveling equipment for thick wall pipe in petroleum, petro-chemical, nuclear power, thermal power, boiler and other industries.

It is an advanced and efficient beveling machine which can realize automatic bevel processing of various pipes by using three-axis CNC linkage control such as radial tool feed, axial tool feed and rotation of cutter head.

For the ASME B16.25 compound beveling, the control system will calculate the times of tool feed and back automatically, match the feed rate and feed speed according to the set parameters, and generate the machining program automatically. No matter the thickness of the wall and the type of beveling can realize the fool-type operation.

It adopts Germany Siemens or Japan Mitsubishi control system, to achieve the pipe beveling from extensive processing to fine processing.



### Standard Supply

Item	Description	Introduction
1	SPB CNC Pipe Beveling Machine	Consists of main equipment body, axial moving spindle box, rotary cutter head mechanism, radial moving cutter table, tool post mechanism and centering clamping mechanism
2	Hydraulic System	Drive the clamping system
3	CNC Control System	Germany Siemens or Japan Mitsubishi
4	Pipe Support	Support the pipe, height adjustable



### Optional supply

In order to meet the different working conditions, we provide a variety of auxiliary equipment and make the selection according to the following introduction.



#### Automatic Chip Removal Machine & Recycling Trolley

**Part No.: BH01**

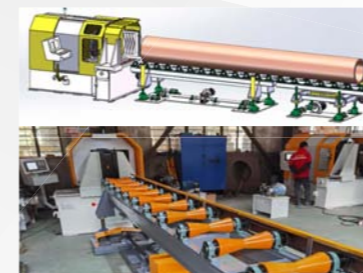
Mounted at the bottom of the machine, the iron scraps are discharged from the machine through the automatic chip removal machine to the iron scraps recovery car



#### Heavy-Duty Transport Vehicle System

**Part No.: BH02**

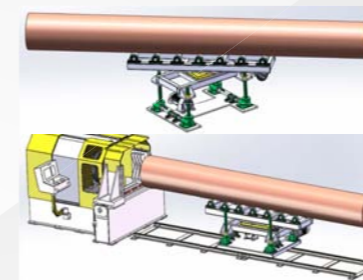
Application: It is used for pipe conveying/output automatically, and can adjust the height of the pipe, make the different size pipe is aligned with the cutter head. Including heavy-duty fixed front bracket, heavy-duty mobile rear bracket and heavy-duty rail track



#### Automatic lifting and conveying roller system

**Part No.:BH03**

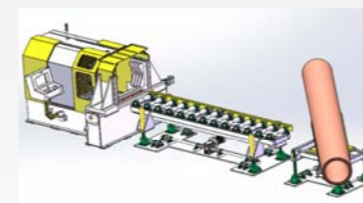
Application: It is used for pipe conveying/output automatically, and can adjust the height of the pipe, make the different size pipe is aligned with the cutter head. Including lifting system, roller conveyor system and frame



#### U-Turn conveying roller system

**Part No.: BH04**

Application: It is used for pipe conveying/output automatically, and can adjust the height of the pipe, make the different size pipe is aligned with the cutter head. After one end bevelled, the pipe can be turned around by 180° and then bevel another end. Can equip the rail as well.



#### Automatic lifting and conveying roller system

**Part No.:BH03 &**

#### U-Turn conveying roller system

**Part No.: BH04**

## Main Features

### Wide adaptability of the process

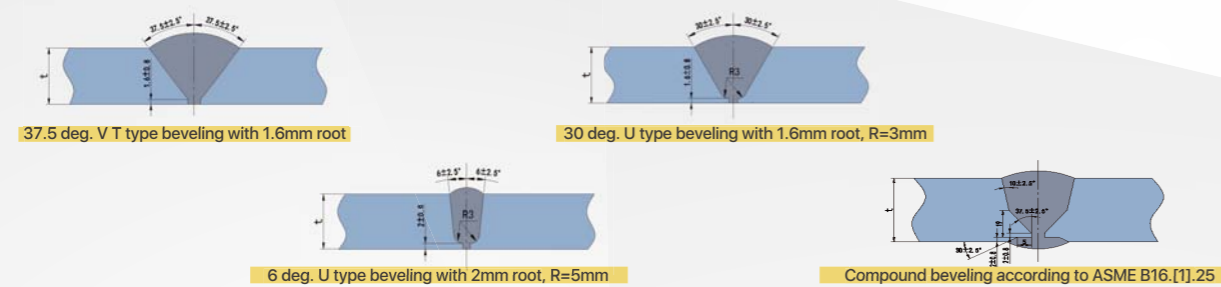
Cold beveling for various materials, kinds of carbon steel, stainless steel, nickel-based alloy steel, titanium alloy, heat resistant steel, low temperature steel, etc., can achieve efficient beveling, without affecting the material.

### High intelligence and easy to operate

Operators do not need professional programming training and do not need to write their own CNC machining program, just choose the drawing of type beveling and fill in the beveling parameters, the operation is very simple. No matter the thickness of the pipe and type of beveling form, it can realize the automatic processing of one-key start, and the whole beveling process without intermediate shutdown, without tool change, without manual intervention.

### Strong Beveling capacity

Various beveling type can be completed with high efficiency, such as type I, U, X, V, compound beveling and counter boring and end facing.



### High machining accuracy

The feeding system of X and Y axes is driven by Siemens or Mitsubishi servo motors, through the high-precision planetary reducer transmission, to reach the three-axis linkage, then ensure the high machining accuracy of beveling.

### Beveling Process visualization

The whole beveling process can be dynamically displayed on the display screen, which can observe the beveling state at any time.

### Low operating cost

Use the normal carbide inserts, without special customization, low cost of cutting tips

### High processing efficiency

The following data are from the on-site measurement of Methanol Plant under the contract of China Chemical Engineering. Pipe size: 6-44", wall thickness: 17-56mm

Pipe size	Time take
20" * 28mm	30 mins
24" * 30mm	35 mins
30" * 40mm	43 mins
36" * 52mm	55 ins

## Specification

Model	SPB-16	SPB-24	SPB-32	SPB-40	SPB-48
Working Range	2"-16"	4"-24"	8"-32"	12"-40"	16"-48"
Wall Thickness	5-60mm	8-120mm	8-120mm	8-120mm	8-120mm
Pipe Length	>500mm	>500mm	>500mm	>500mm	>500mm
Power	4.0 Kw	7.5 Kw	11 Kw	11 Kw	11 Kw
Axial Travel	200mm	300mm	300mm	300mm	300mm
Beveling Material	Kinds of Steel, including Duplex, Nickel, Titanium Alloy				
Type of Beveling	Comply with ASME B16.25, U, V, X, compound beveling, Facing, Counter Boring				
Beveling Angle	0-90°				
CNC System	Germany Siemens or Japan Mitsubishi				
Method of Processing	X-axis: Axial Tool feed/back Y-axis: Radial Tool feed/back Z-axis: Cutter rotation				
Axial tool feed/back Speed / No-Load	0-400mm/min, Adjustable				
Axial tool feed/back Speed / Loaded	0-5mm/r, Adjustable				
Radial tool feed/back Speed / No-Load	0-250mm/min, Adjustable				
Radial tool feed/back Speed / Loaded	0-0.3mm/r, Adjustable				
Cutter Rotation Speed	0-150r/min, adjustable				
Clamping system	Hydraulic type, Left and Right, Self-Centering				
Cutting tips	Normal inserts				
Cooling system	Air cooling or spray cold cutting system				
Machining accuracy	Roughness: Ra12.5 Concentricity: <+/-0.5mm Angular deviation:<1°				
Power supply	380V 3PH 50/60HZ				

## Electrical Control Instructions

System control is based on Germany Siemens or Mitsubishi CNC system, combined with Siemens or Mitsubishi servo motor to complete the precise control of equipment beveling process, the whole system technology advanced, safe and reliable work.

Electrical control switches, buttons, relays, contactors, circuit breakers, limiter and other components using Schneider, Mitsubishi, Omron and other brands.



## Machine On-Site



## Introduction of the operation process

1. Turn on the main power
2. Lift the pipe to the pipe stand
3. Clamping the pipe by hydraulic clamping system
4. Rotate the cutter, check the centering of tips and pipe, and setting the starting point
5. Choose the beveling drawing, and input the beveling data
6. Adjust the tool position of X-axis and Y-axis, setting the starting point
7. Close the protective door and start processing
8. After processing, tool of X-axis /Y-axis will automatically return to position, the cutter head will stop rotating, transfer the finished pipe.

## Typical Beveling



End Facing

Beveling

Counter Boring and Beveling

Compound Beveling