



# WELDING AUTOMATION

*Make Your Welding More Efficient*

# Product Catalog

◆ Wind Turbine Welding	-----	3
◆ Welding Manipulator	-----	5
◆ Welding Rotator	-----	8
◆ Conventional Rotator	-----	10
◆ Self-aligning Rotator	-----	13
◆ Fit Up Welding Rotator	-----	15
◆ Lead Screw Rotator	-----	17
◆ Anti-drift Turning Rolls	-----	19
◆ Welding Positioner	-----	21
◆ 2-axis Positioner	-----	25
◆ 3-axis Positioner	-----	27
◆ Skyhook Positioner	-----	29
◆ Horizontal Turntable	-----	31
◆ Headstock Tailstock Positioner	-----	33



# ***Wind Turbine Welding Automation***

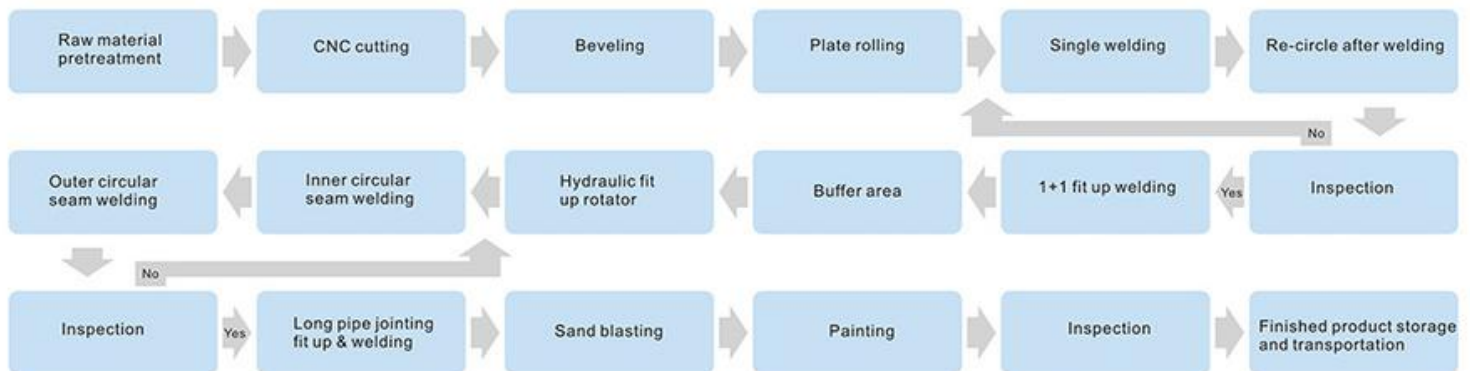


# Wind Turbine Welding

The welding automation line is a very central part of the production process of wind turbines.

A good welding automation production line can improve production efficiency and ensure the quality of the wind turbine while reducing manpower and production safety.

The production process mainly includes single pipe welding, 1+1 pipe-to-pipe connection welding, several pipes connection welding, inspection for the whole wind turbine can, sandblasting and painting, and completion of re-inspection.







# ***Welding Manipulator***

- *Romar Heavy-duty Type*
- *PLC Automatic Control*

# Welding Manipulator

Welding manipulator (column and boom) achieves the ideal welding position by lifting and telescoping the boom.

The size can be from 1x1m to 10x10m, more than 10m can be customized.

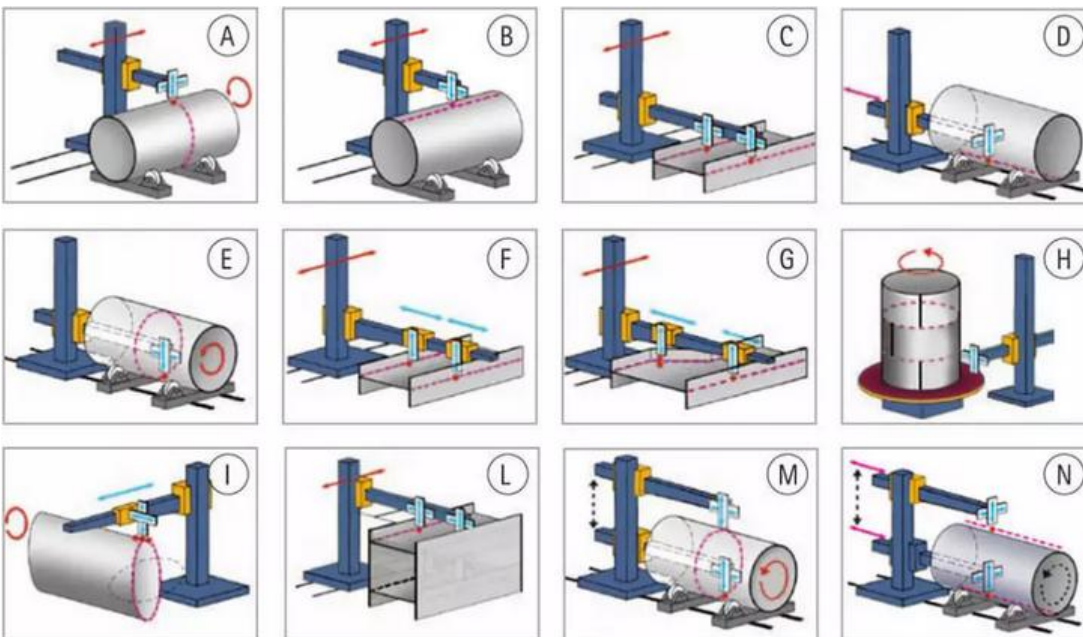
Usually matched with welding rotator or welding positioner for automated welding center.



## ◆ Technical Parameters

BLM Model	Boom					Column		Traveling Cart			Power (kw)	Package	
	Vertical Stroke A (mm)	Horizontal Stroke B (mm)	Elevation Speed (m/min)	Traverse Speed (m/min)	Max Load At Extremity (kg)	Rotation Angle (±180°)	Total Height C (m)	Dimensions (D)x(E)xH (m)	Rail C To C (F) (m)	Speed (m/min)		Dim. (B&C) LxWxH (m)	Gross Weight (tons)
C&B15x15	1.5	1.5	0.3	0.12~1.2	100	Manual	2.9	1.25x1.2x0.2	1052	Manual Or 1.0	0.91	3.0x0.5x0.7	1.0
C&B2x2	2.0	2.0	0.3		100		3.4	1.25x1.2x0.2	1052		0.91	3.2x0.6x0.7	1.5
C&B3x3	3.0	3.0	1.0		200	Manual Or Motorized	5.5	2.4x1.9x0.4	1600	1.5/3	2.75	5.4x1.2x1.1	4.6
C&B3x4	3.0	4.0	1.0		200		5.5	2.4x1.9x0.4	1600		2.75	6.0x1.2x1.1	5.1
C&B4x4	4.0	4.0	1.0		200		6.5	2.4x1.9x0.4	1600		2.75	6.5x1.3x0.9	5.5
C&B4x5	4.0	5.0	1.0		200		6.5	2.4x1.9x0.4	1600		2.75	7.0x1.3x0.9	6.0
C&B5x5	5.0	5.0	0.9		300		7.8	2.6x2.1x0.5	1798		3.5	7.8x1.5x1.0	6.5
C&B5x6	5.0	6.0	0.9		300		7.8	2.6x2.1x0.5	1798		3.5	8.3x1.5x1.0	7.0
C&B6x6	6.0	6.0	0.9		300		9.7	2.6x2.1x0.5	1798		3.5	9.8x1.5x1.0	7.5
C&B6x6	7.0	6.0	0.9		300		10.7	2.8x2.3x0.5	1998		4.25	10.8x1.5x1.0	8.5
C&B8x6	8.0	6.0	0.9		300		11.7	2.8x2.3x0.5	1998		4.25	11.8x1.7x1.2	10.0
C&B8x10	8.0	10.0	0.9		300		11.7	3.2x2.4x0.5	2200		5.0	11.8x1.7x1.2	12.0

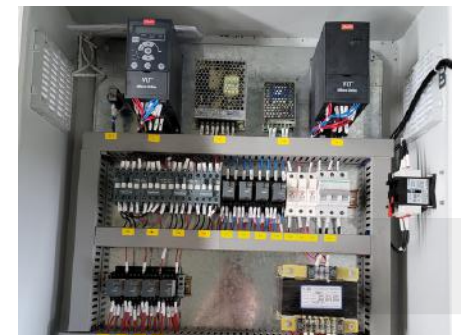
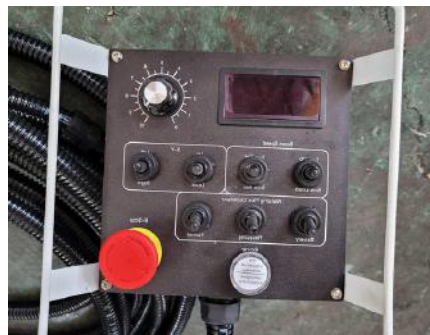
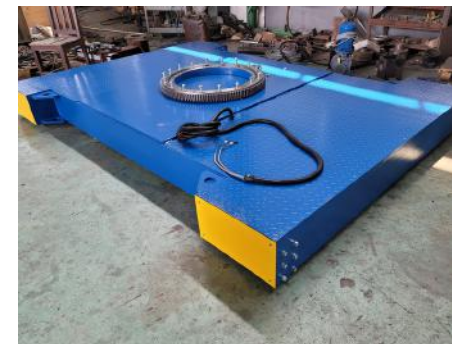
## ◆ Welding Automation Center





# Welding Manipulator

## Images







# ***Welding Rotator***

- ***Conventional Rotator***
- ***Self-aligning Rotator***
- ***Fit-up Welding Rotator***
- ***Lead Screw Rotator***
- ***Anti-drift Turning Rolls***



# Welding Rotator

Welding Rotator is used for cylindrical workpieces of different diameters for welding, assembling, grinding, and other processes by rotation and the adjustment of the distance between the rollers.



Load range can be from 1 ton to 2000 tons, and customized according to requests.

The main welding rotators are:

★ Conventional Rotator ★ Self-aligning Rotator ★ Fit Up Rotator ★ Lead Screw Rotator ★ Anti-drift Turning Rolls.

It can be controlled by PLC. Operating with welding manipulator or welding robot to realize automatic welding, which improves welding efficiency, reduces labor, and is safer.



Conventional Rotator  
Fixed Type



Conventional Rotator  
Motorized Travel



Self-aligning Rotator  
Fixed Type



Self-aligning Rotator  
Motorized Travel



Lead Screw Rotator  
Hand Control



Lead Screw Rotator  
Electric Control



Fit Up Rotator  
Manual Travel

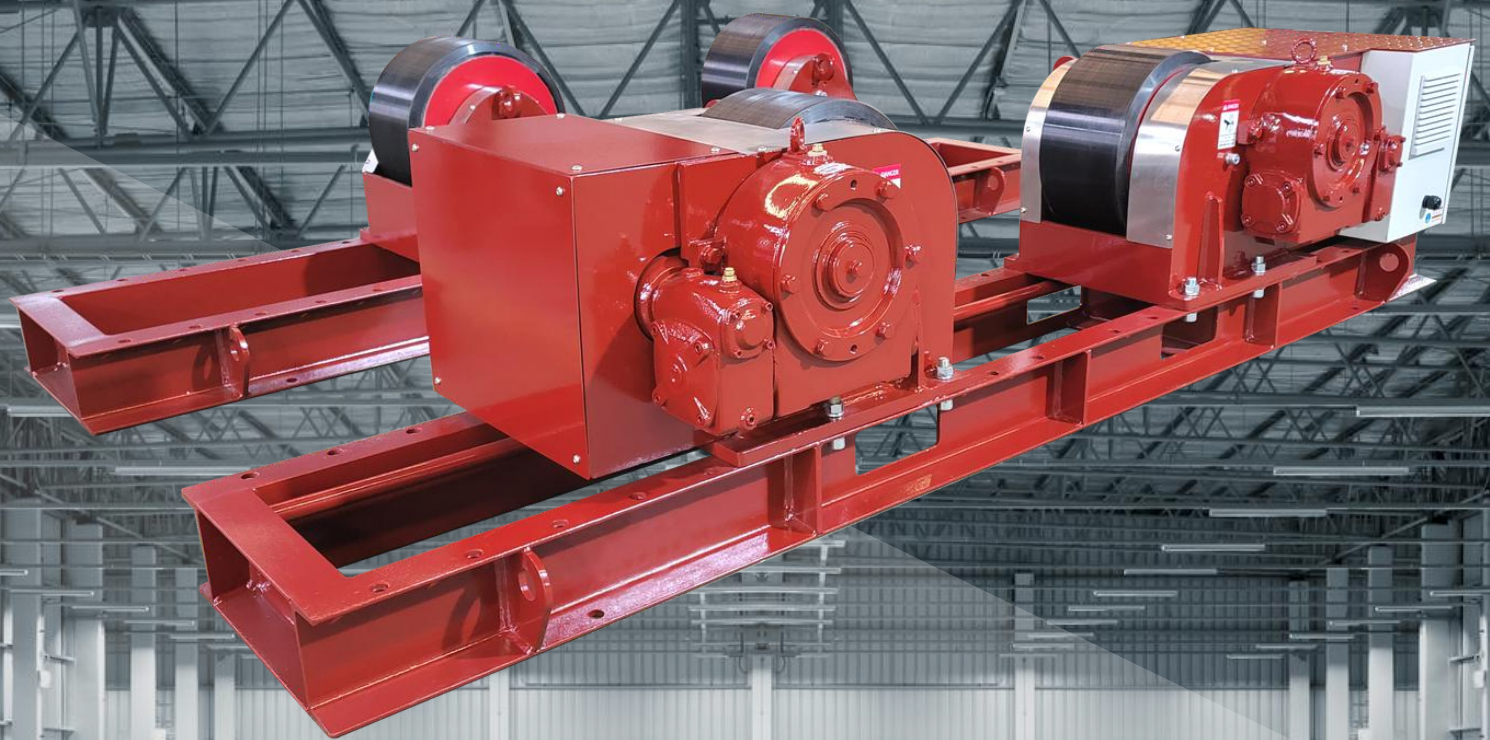


Anti-drift Turning Rolls  
Fixed Type



Light-duty Rotator  
One Phase





# ***Conventional Rotator***

- ***Chenta Warm Gear Reducer***
- ***Normal Type Reducer***



# Conventional Rotator

Conventional rotator adjusts the distance between the rollers by bolts, thus adapting to workpieces of different diameters. The adjustable range is large and the structure is stable.



Loads up to 2000 tons or more. It is the most widely used type of welding rotator.

can supply Chenta warm gear reducers, or Panasonic motors. Higher quality and standard to serve more customers.

## Technical Parameters

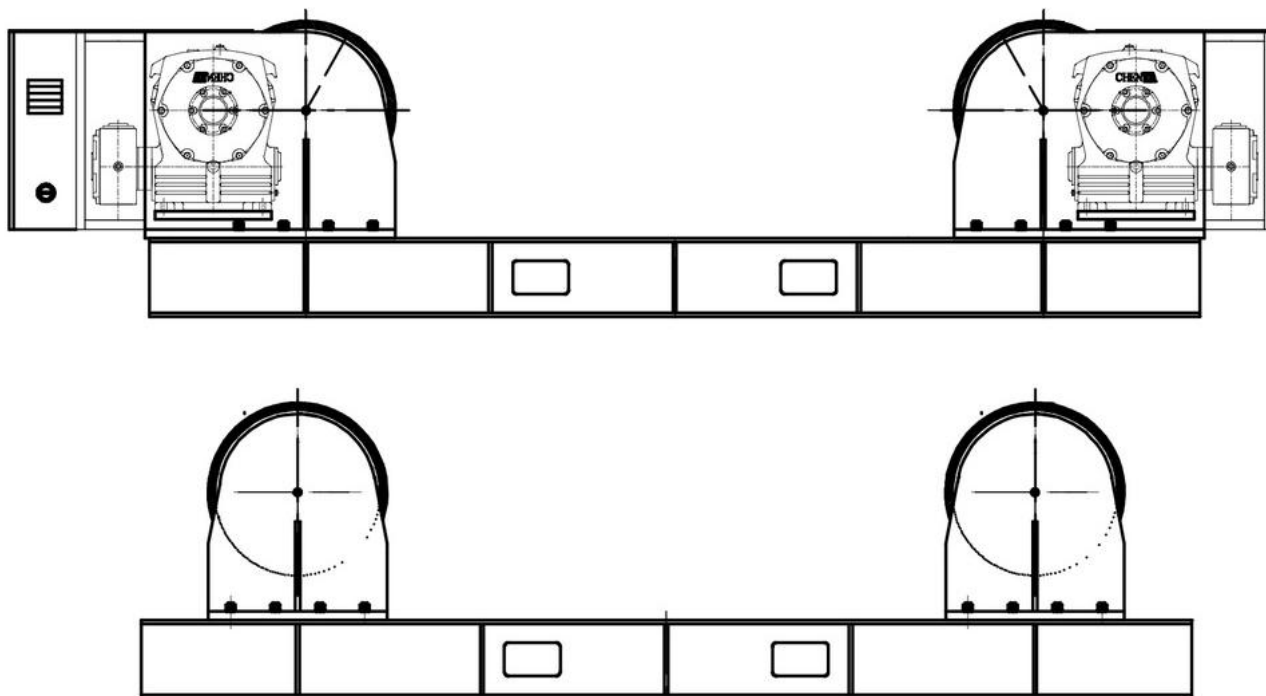
Model		HGK-2	HGK-5	HGK-10	HGK-20	HGK-30	HGK-40	HGK-60	HGK-80	HGK-100	HGK-160	HGK-200	HGK-250	HGK-300	HGK-400	HGK-500	HGK-630	HGK-800	
Loading Capacity (T)		2	5	10	20	30	40	60	80	100	160	200	250	300	400	500	630	800	
Workpiece Diameter	Min Diameter (mm)	200	250	320	500	550	600	700	700	700	1000	1000	1000	1000	1000	1000	1000	1500	
	Max Diameter (mm)	1800	2300	2800	3500	3800	4200	5000	5500	6000	6000	6000	7500	7500	7500	8000	8500	9000	
Rubber Roller	Diameter (mm)	200	250	300	350	350	400	450	500	500	—	—	—	—	—	—	—	—	
	Width (mm)	80	100	120	120	120	120	120	120	120	—	—	—	—	—	—	—	—	
Metal Roller	Width (mm)	190	240	290	340	340	390	440	490	490	550	550	700	700	800	800	850	1000	
	Width (mm)	15	20	25	30	35	45	60	70	80	260	260	260	260	300	300	350	350	
Linear Speed (m/h)		6-60																	
Speed Control		VFD Speed Control																	
Motor Power (KW)		2x0.18	2x0.37	2x0.55	2x0.75	2x1.1	2x1.5	2x2.2	2x3	2x3	2x4	2x4	2x5.5	2x5.5	2x5.5	2x5.5	2x7.5	2x7.5	
Dimension	Drive Roller	Length (mm)	1950	2090	2770	3150	3150	3300	4170	4370	4670	4900	4950	6500	6550	6600	6850	7200	7700
		Width (mm)	460	500	670	680	680	710	870	900	960	1000	1000	1000	1200	1280	1280	1450	1500
	Idler Roller	Length (mm)	1460	1800	2300	2450	2450	2900	3500	3700	4000	4000	4100	5500	5500	5500	5800	6000	6500
		Width (mm)	280	300	400	520	520	530	650	700	760	800	800	920	950	1000	1000	1260	1260
	Height (mm)		350	430	510	680	680	680	830	890	960	1060	1080	1100	1300	1350	1350	1350	1550

## Pictures

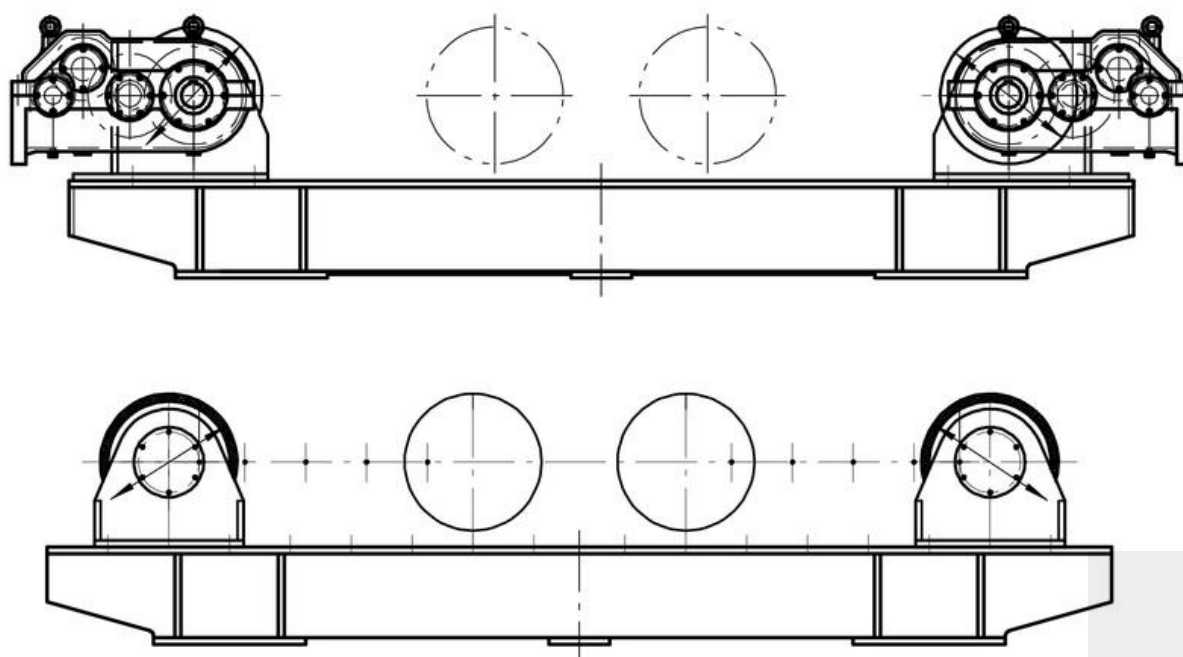


# Conventional Rotator

## ◆ Chenta Warm Gear Reducer Drawing



## ◆ Normal Type Reducer Drawing







# ***Self-aligning Rotator***

- ***Motorized Travel***
- ***Fixed Type***

**SENIS  
WELD**  
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# Self-aligning Rotator

Self-aligning rotator for different diameter workpieces by automatic adjustment. The drive unit and idler unit wheels have 2 rollers on one side.



Loads up to 800 tons or more. Four wheels will be more stable and safe, while reducing the time to adjust and easy to operate.

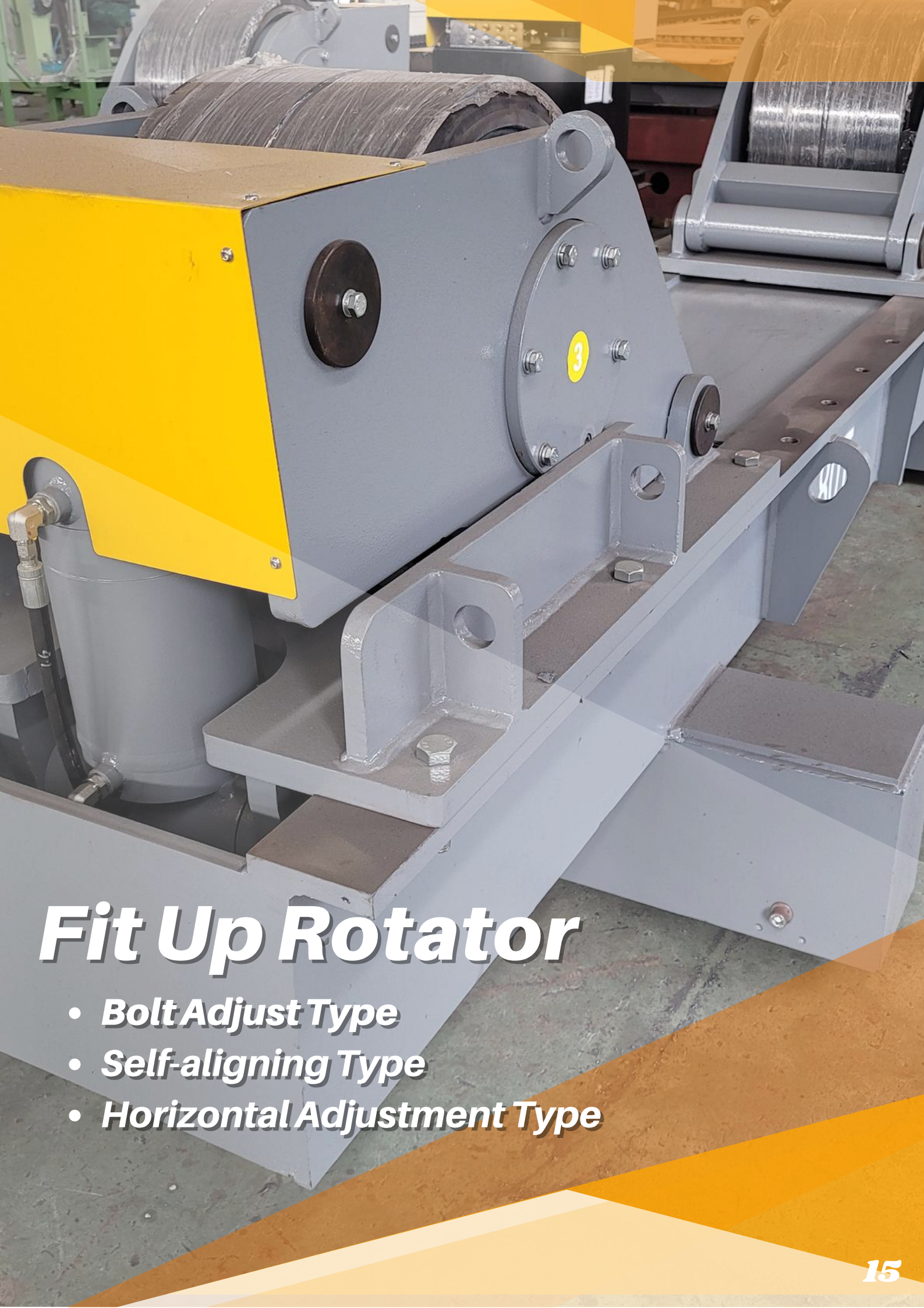
## Technical Parameters

Model			HGZ-5	HGZ-10	HGZ-20	HGZ-30	HGZ-40	HGZ-60	HGZ-80	HGZ-100	HGZ-150	HGZ-200
Loading Capacity (T)			5	10	20	30	40	60	80	100	150	200
Workpiece Diameter	Min Diameter (mm)		250	320	450	450	600	750	850	1000	1200	1500
	Max Diameter (mm)		2300	2800	3500	3500	4200	4800	5000	5500	6500	8000
Rubber Roller	Diameter (mm)		250	300	350	350	400	450	500	500	—	—
	Width (mm)		100	120	120	120	120	120	120	120	—	—
Metal Roller	Diameter (mm)		240	290	340	340	390	440	490	490	500	550
	Width (mm)		15	25	30	30	40	50	60	70	260	260
Linear Speed (m/h)			6-60									
Speed Control			VFD Speed Control									
Motor Power (KW)			0.75	1.5	1.5	2.2	3	4	4	5.5	5.5	7.5
Dimension	Drive Roller	Length (mm)	1500	1800	2180	2180	2500	2780	3040	3450	3950	4300
		Width (mm)	800	830	960	960	1150	1240	1170	1400	1700	1800
	Idler Roller	Length (mm)	1350	160	1910	1910	2170	2400	2670	2930	3480	3800
		Length (mm)	420	420	490	490	530	590	620	730	900	930
	Height (mm)			650	800	940	940	1030	1140	1200	1320	1550

## Pictures







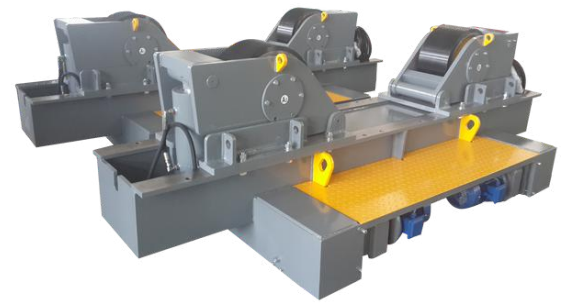
# ***Fit Up Rotator***

- ***Bolt Adjust Type***
- ***Self-aligning Type***
- ***Horizontal Adjustment Type***



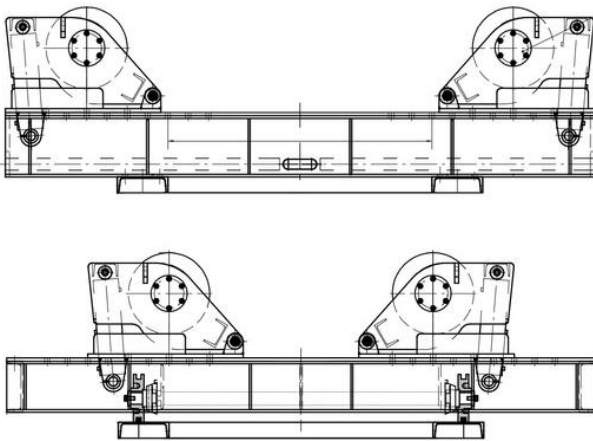
# Fit Up Rotator

Fit up rotator adjusts the position of the workpiece by lifting up the rollers with vertical or horizontal hydraulics on both sides, in conjunction with conventional or self-aligning rotators to pipe connection welding.

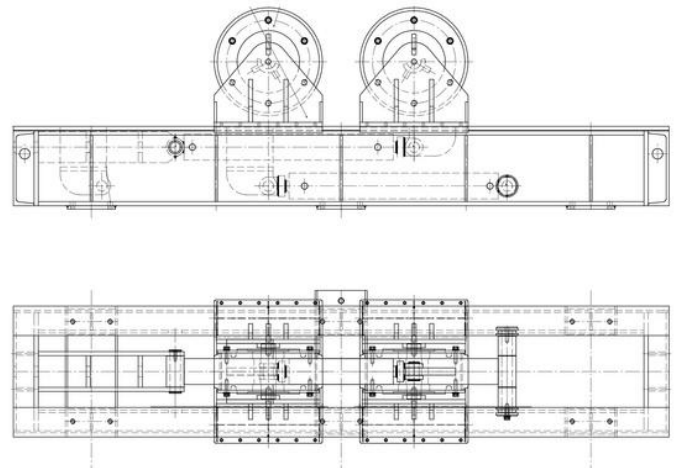


According to the customer's needs, supplies bolts adjustment to adjust the roller center distance, self-adjusting automatic adjustment, or horizontal hydraulic system translation to adjust.

## ◆ Drawing



Vertical Hydraulic



Horizontal Hydraulic

## ◆ Pictures







# ***Lead Screw Rotator***

- ***Manual Control***
- ***Electric Control***



# Lead Screw Rotator

Lead screw rotator is to adjust the center distance of the roller by screw, so as to adapt to different diameters of the workpiece.

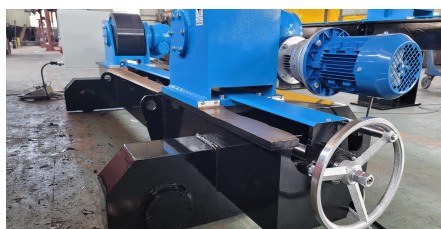


The screw can be adjusted manually or electrically by motor drive. We recommend a maximum load of 80 tons, the load is too large to cause damage to the screw.

## ◆ Technical Parameters

Model			HGKS-2	HGKS-5	HGKS-10	HGKS-20	HGKS-30	HGKS-40	HGKS-60
Loading Capacity (T)			2	5	10	20	30	40	60
Workpiece Diameter	Min Diameter (mm)	200	250	320	500	550	600	700	
	Max Diameter (mm)	1800	2300	2800	3500	3800	4200	5000	
Rubber Roller	Diameter (mm)	200	250	300	350	350	400	450	
	Width (mm)	80	100	120	120	120	120	120	
Metal Roller	Width (mm)	190	240	290	340	340	390	440	
	Width (mm)	15	20	25	30	35	45	60	
Linear Speed (m/h)			6-60						
Speed Control			VFD Speed Control						
Motor Power (KW)			2x0.18	2x0.37	2x0.55	2x0.75	2x1.1	2x1.5	2x2.2
Dimension	Drive Roller	Length (mm)	1500	2200	2500	2400	2500	3000	3500
		Width (mm)	420	500	570	620	650	740	850
	Idler Roller	Length (mm)	1500	2200	2500	2400	2500	3000	3500
		Width (mm)	350	380	400	520	520	530	650
	Height (mm)		460	480	590	680	700	750	830
Roller Center Distance (mm)			280-950	400-1300	480-1400	600-1800	600-1800	800-2200	900-2100

## ◆ Pictures







# ***Anti-drift Turning Rolls***

- ***Chenta Warm Gear Reducer***
- ***Normal Type Reducer***



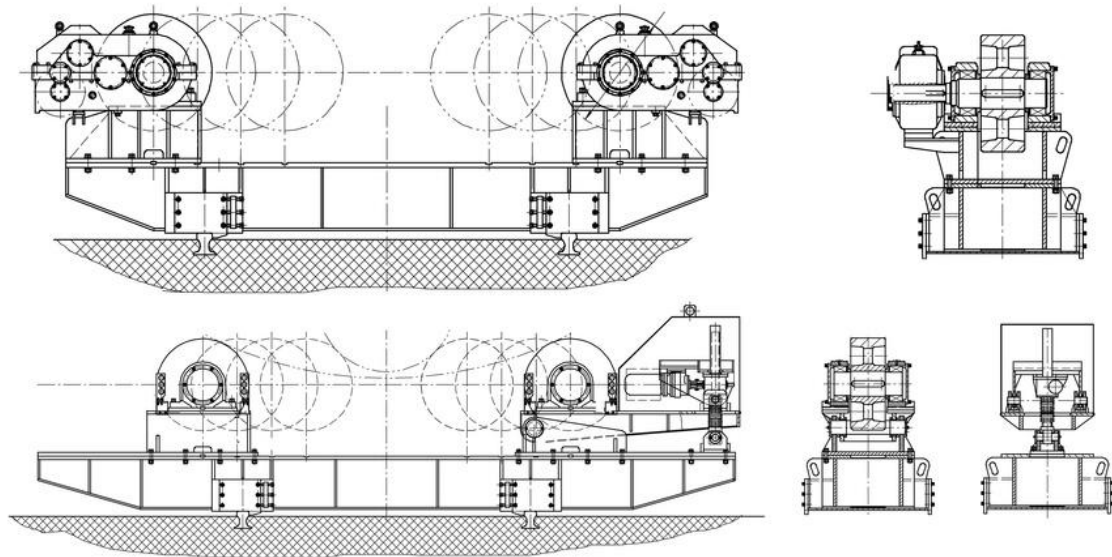
# Anti-drift Turning Roller

Anti-drift turning rolls use the detection device to achieve the purpose of anti-drift, high-precision linear displacement sensor to transmit the movement of information to the control system in the electronic control box.

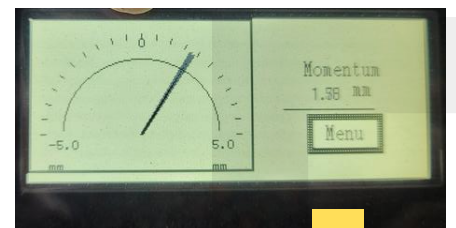


By adjusting the lifting stroke and lifting speed of the driven roller to achieve the purpose of anti-drift. The anti-drift accuracy of the workpiece can be controlled within  $\pm 2\text{mm}$ .

## ◆ Drawing



## ◆ Pictures







# ***Welding Positioner***

- ***2-axis Positioner***
- ***3-axis Positioner***
- ***Skyhook Positioner***
- ***Horizontal Turntable***
- ***Headstock Tailstock Positioner***



# Welding Positioner

Welding positioner achieves the ideal welding position by rotating, lifting, and tilting. It is suitable for various shapes and sizes of workpieces.

The loading capacity can be from 10kg to 50 tons or even larger, and customized according to the size and weight of the workpiece.

The main welding positioners are:

★ 2-axis Positioner ★ 3-axis Positioner ★ Skyhook Positioner ★ Horizontal Turntable ★ Headstock Tailstock Positioner.

The welding positioner can be PLC controlled automatically with other welding equipment or welding robots. Efficient and safe.



Light-duty 2-axis Positioner



2-axis Positioner



3-axis Positioner



Skyhook Positioner



Horizontal Turntable

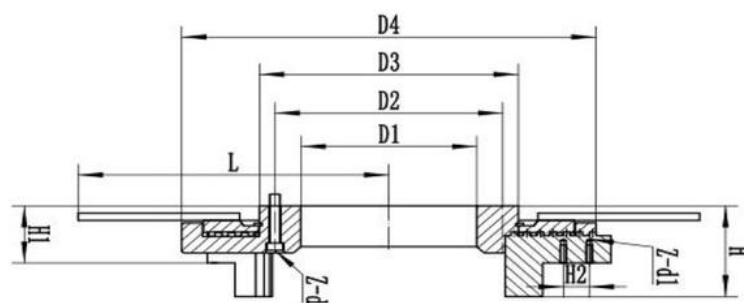
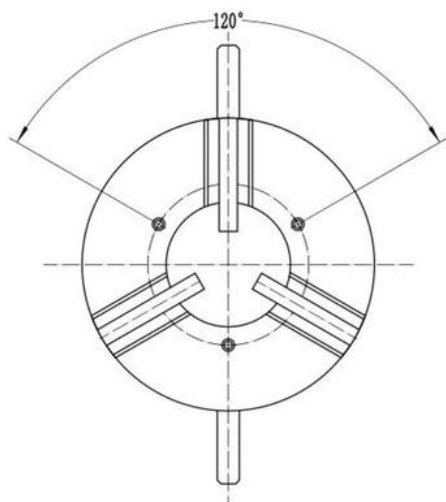
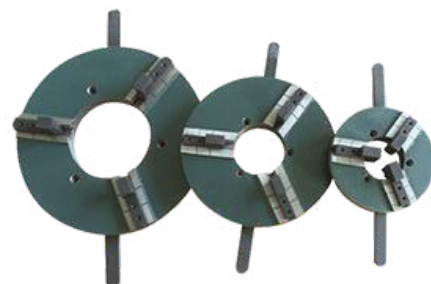
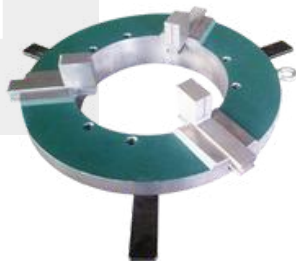


Headstock Tailstock Positioner



# Welding Positioner

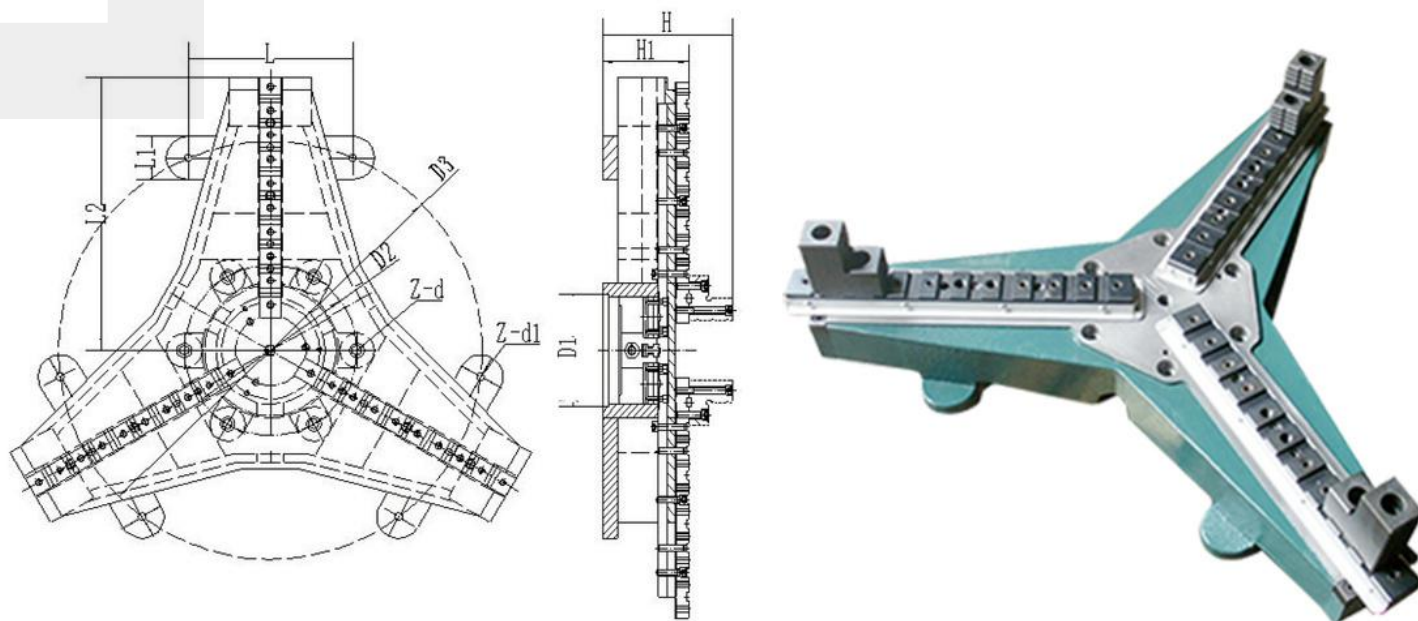
## WP Series Welding Chuck



Connection Size Parameter										
Model	D1	D2	D3	D4	H	H1	H2	L	Z-d1	Z-d
WP200	Φ80	Φ100	Φ120	Φ200	67.5	39	21	200	6-M6	3-M8 × 35
WP300	Φ100	Φ120	Φ150	Φ300	67.5	39	21	240	6-M6	3-M8 × 35
WP400	Φ170	Φ220	Φ250	Φ400	95	45	25	300	6-M6	3-M8 × 40
WP500	Φ240	Φ280	Φ320	Φ500	110	60	25	350	6-M6	3-M12 × 55
WP600	Φ365	Φ400	Φ425	Φ600	170	105	40	425	6-M12	6-M12 × 110
WP750	Φ490	Φ530	Φ570	Φ750	170	105	40	500	6-M12	6-M12 × 110
WP900	Φ600	Φ650	Φ690	Φ900	170	105	40	600	6-M12	6-M12 × 110
Parameter 2										
Model	Clamp Force	Loading Capacity	Extanal Jaws Clamp Range A	Internal Jaws Clamp Range B	Remark					
WP200	200 kg	30 kg	Φ110--210	Φ20--130	1. The extended jaw can be customized, and the clamping range can be increased accordingly 2. Four-jaw, six-jaw and irregular multi-jaw chucks can be customized 3. When the workpiece clamping part exceeds the chuck body, the clamping capacity will be weakened.					
WP300	250 kg	120 kg	Φ170--300	Φ20--190						
WP400	350 kg	240 kg	Φ250-400	Φ120--250						
WP500	600 kg	600 kg	Φ360--500	Φ200--340						
WP600	1200 kg	1000 kg	Φ400--620	Φ150--410						
WP750	1400 kg	1000 kg	Φ550--800	Φ380--580						
WP900	1500 kg	1000 kg	Φ650--950	Φ500--700						

# Welding Positioner

## ◆ WPT Series Welding Chuck



Connection Size Parameters

Model	D1	D2	D3	H1	H	L2	L1	L	Z-d1	Z-d
WPT600		Φ250		175	260	345	60	175	6-M12×150	
WPT1000	Φ254*10	Φ350	Φ775	175	260	558	80	175	6-M16×150	6-M16×50
WPT1200	Φ254*10	Φ350	Φ775	175	260	658	80	175	6-M16×150	6-M16×50
WPT1500	Φ405*10	Φ515	Φ1216	230	350	800	120	520	6-M20×200	6-M20×60
WPT1600	Φ405*10	Φ515	Φ1216	230	350	850	120	520	6-M20×200	6-M20×60
WPT1800	Φ405*10	Φ515	Φ1216	230	350	900	120	520	6-M20×200	6-M20×60

Performance Parameter

Model	Max. Input Torque	Max. Clamp Force	Loading Capacity	Clamp Range	Remark
WPT600	250Nm	35KN	1000 kg	Φ100-600	The safety factor of workpiece weight and clamping force is 0.1-0.2 to avoid danger. In the case of turning over, the clamping capacity will be weakened due to the change of the center of gravity.
WPT1000	300Nm	45KN	1500 kg	Φ200-1000	
WPT1200	300Nm	45KN	1500 kg	Φ200-1200	
WPT1500	400Nm	65KN	2000 kg	Φ300-1500	
WPT1600	500Nm	65KN	2000 kg	Φ300-1600	
WPT1800	500Nm	65KN	2000 kg	Φ300-1800	



A large, blue industrial 2-axis positioner is shown in a factory setting. The machine has a robust, blue-painted metal frame with a wide base. A large, dark grey, curved arm extends from the top, holding a long, cylindrical metal component. The background shows a large industrial building with a corrugated metal roof and several windows. The floor is a light-colored concrete. The overall scene is brightly lit, with natural light coming from the windows.

# ***2-axis Positioner***

- ***Light-duty Type***
- ***Heavy-duty Type***



## 2-axis Positioner

2-axis positioner reaches the welding position by rotating and tilting the worktable. The workpiece is fixed to the table by welding chuck.



Loading capacity from 100kg to 50 tons, Larger loads can be customized.

It usually has to be customized according to the workpiece, eccentricity, size, and weight.

### ◆ Technical Parameters

Model	HBJ-1	HBJ-3	HBJ-6	HBJ-10	HBJ-20	HBJ-30	HBJ-50	HBJ-80	HBJ-100	HBJ-150	HBJ-200	HBJ-300	HBJ-500
Loading Capacity (kg)	100	300	600	1000	2000	3000	5000	8000	10000	15000	20000	30000	50000
Revolving Speed (rpm)	0.3-3	0.15-1.5	0.1-1	0.1-1	0.1-1	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	0.04-0.4	0.04-0.4
Tilting Speed (rpm)	Manual		0.7	1	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Workbench Diameter (mm)	Φ400	Φ600	Φ1000	Φ1200	Φ1300	Φ1400	Φ1500	Φ1800	Φ2000	Φ2500	Φ2500	Φ3000	Φ4000
Max Eccentricity Distance (mm)	100	100	150	150	150	200	200	200	200	200	200	200	200
Max Gravity Center Distance (mm)	150	150	200	200	250	300	300	400	400	400	630	630	800
Workbench Tilting Angle (°)	0-90	0-90	0-90	0-105	0-105	0-120	0-120	0-120	0-120	0-120	0-120	0-120	0-120
Revolving Motor Power (KW)	0.09	0.18	0.37	0.75	0.75	1.5	2.2	2.2	3	3	4	7.5	11
Tilting Motor Power (KW)	—	—	0.37	0.75	1.5	1.5	1.5	3	4	5.5	7.5	11	18.5
Revolving Diameter At 90° (KW)	≤600	≤1000	≤1200	≤1500	≤1500	≤1600	≤1800	≤2200	≤2500	≤3400	≤3400	≤4200	≤5700
Speed Control	VFD Control For Rotation Speed												
Tilting Center Height (mm)	370	560	720	835	832	1037	1185	1100	1550	1800	2000	2600	2250
Dimension	Length (mm)	750	860	1200	1300	1570	1920	2200	2280	2660	2780	2900	5600
	Height (mm)	500	700	900	1000	1000	1240	1400	1500	1850	2100	2350	3600
	Width (mm)	430	670	860	1040	1090	1300	1430	1430	2000	1910	1960	4400

### ◆ Pictures







# ***3-axis Positioner***

- ***Normal Type***
- ***PLC Automatic Control***



## 3-axis Positioner

3-axis positioner is a widely used welding positioner that rotates, tilts, and lifts to achieve the desired welding position.

Loads can range from 500kg to 10 tons, or customize for larger loads.



PLC control can realize the memory of welding position, and automation to reach the welding position with one key.

### ◆ Technical Parameters

Model	GWP-10	GWP-20	GWP-30	GWP-50
Load Capacity	1000kg maximum	2000kg maximum	3000kg maximum	5000kg maximum
Table Diameter	1200mm	1300mm	1400mm	1500mm
Tilting Angle	0-120°	0-120°	0-120°	0-120°
Tilting Speed	0.3 rpm	0.23 rpm	0.2 rpm	0.2 rpm
Tilting Power	1.1 kw	1.5 kw	2.2 kw	4 kw
Rotation Speed	0.05-0.5 rpm	0.05-0.5 rpm	0.05-0.5 rpm	0.05-0.5 rpm
Rotation Power	0.75 kw	1.1 kw	1.5 kw	3 kw
Control Way	Remote hand control + Foot pedal			
Input Voltage	110V ~ 575V Single/3 Phase 50/60Hz			

### ◆ Pictures





A large, red industrial Skyhook Positioner is the central focus of the image. It is a tall, vertical machine with a complex structure of beams, chains, and a large circular base. The machine is situated in a large industrial workshop with high ceilings and large windows. In the background, there are metal racks filled with various materials and a ladder. The machine has a prominent red color and a yellow light on its side. The overall scene is industrial and well-lit.

# ***Skyhook Positioner***

- ***Normal Type***
- ***PLC Control***
- ***For Welding Robot***



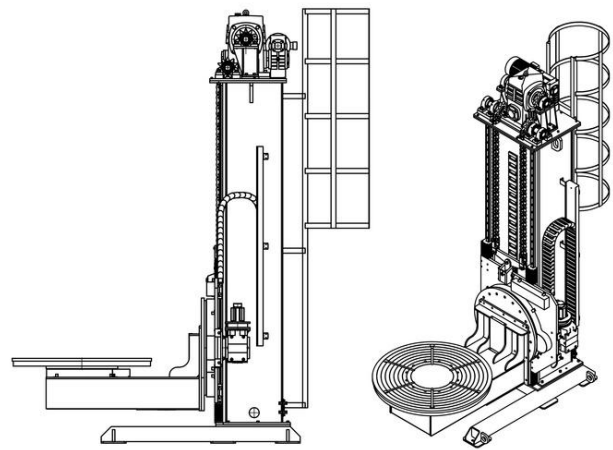
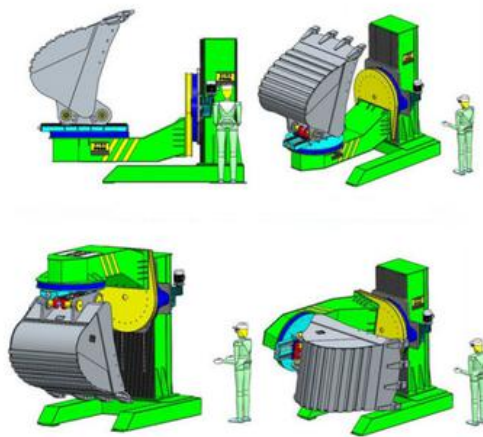
# Skyhook Positioner

Skyhook positioner is also a kind of 3-axis positioner with the function of rotation, tilt, and lift. But the structure is different, this model can be raised higher and the workpiece can face down 180° to achieve a better welding position. Load from 500kg to 15 tons or larger capacity.



PLC control allows automation to reach the welding position, or linkage with robots for automated welding.

## ◆ Application & Drawing



## ◆ Pictures







# ***Horizontal Turntable***

- ***Round Workbench***
- ***Customized Workbench***



# Horizontal Turntable

The main function of the horizontal turntable is that the workbench is rotating horizontally and can be set at different speeds according to the requirements.



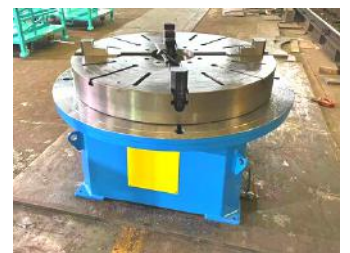
Loading capacity could range from 500kg to 100 tons. It can be made larger, also.

It is possible to automate welding with welding robots or other production needs.

## ◆ Technical Parameters

Technical Parameter	Model							
	HBT3	HBT5	HBT10	HBT20	HBT30	HBT50	HBT100	HBT200
Max Loading Capacity (kg)	300	500	1000	2000	3000	5000	10000	20000
Work Table Size (mm)	Φ600	Φ800	Φ1000	Φ1200	Φ1400	Φ1500	Φ1800	Φ2000
Max Eccentricity (mm)	100		200					
Swing Speed (rpm)	0.1~1		0.05~0.5					
Rotating Power (kw)	0.18	0.37	0.75			1.1		1.5
Speed Mode	Rotary frequency conversion stepless speed regulation							
Voltage	380V-50HZ-3PH(Other voltages can be customized)							

## ◆ Pictures







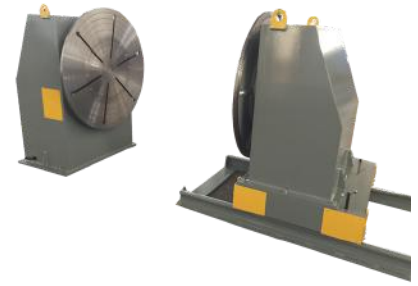
## ***Headstock Tailstock Positioner***

- ***Crossbar Bracket***
- ***Dual Side Drive***



# Headstock Tailstock Positioner

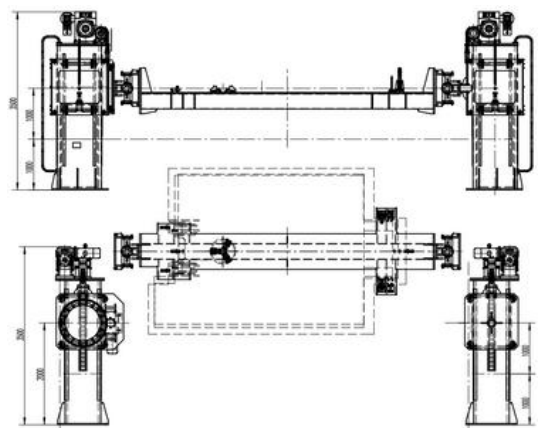
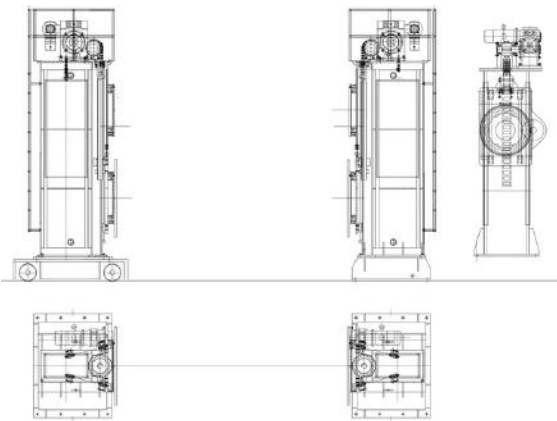
Headstock tailstock positioner brings the workpiece to the desired working position by lifting and lowering and rotating the workbench. The crossbar bracket could support the workpiece more stable.



The loading capacity: 500kg ~ 20 tons.

It could be controlled by PLC to realize automatic welding process and memorize the last working position and achieve one-touch reach.

## ◆ Drawings



## ◆ Pictures





# CONTACT

*Make Your Welding More Efficient*



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