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3D FLEXIBLE AND MODULAR CLAMPING SYSTEM D28 / D16 / D22

- Smart solution for every application
- Modular welding table, fixture and jig design and manufacturing
- Flexible and automatic Robot welding workstation



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COMPANY PROFILE

Focus
3D FLEXIBLE AND
MODULAR CLAMPING
SYSTEM

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- Smart solution for every application
- Modular welding table, fixture and jig design and manufacturing
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Dongguan Sanwei Flexible Automation Equipment Co., Ltd, founded in August, 2012, with 10 million registered capital. Located in Wanjiang street , Dongguan City, which have the reputation of "International Manufacturing City" in China. It is near Guangzhou-Shenzhen Expressway (G15), 65 kilometers away from Shenzhen Baoan Airport and Guangzhou Baiyun International Airport, therefore the traffic is very convenient, which provides a geographical advantage for SANWZB to serve the customers more quickly and directly.

SANWZB is committed to providing full-set solutions concerning flexible and modular 3D welding fixture, flexible and automatic welding machines, as well as automatic robot welding system, becoming one of China's most professional operating teams in producing intelligent welding equipment currently. The Company is a modern high-tech enterprise, with an integration of research, design, production, sale and service.

SANWZB will unswervingly adhere to the enterprise purpose 'integrity and honesty, cooperation and win-win result', strive to develop through innovation, and grasp opportunities in competitions. The Company has a group of engineering and technical staff, who are the earliest Chinese people engaged in research, develop, design and manufacture flexible and modular 3D welding fixture together with robot automatic assembly, which provides a strong technical assurance and a better way to design, process and manufacture products, as well as serve customers .

Main products of SANWZB are: flexible and modular 3D welding clamping system, and

flexible and automatic robot welding workstation. Flexible and modular 3D welding clamping system is a new technology in the world, which is designed in order to adapt to modern enterprises' demands for precision, rigidity and remanufacturing. It is a new fast and modular welding equipment after slotted modular fixture of machine tool, and its main features are: simple structure, hole location and bolt connection, high precision, good rigidity, less variety, reusability, convenient assembly, and large economic benefit. It is widely used in engineering machinery, rail transportation, auto (motorcycle) manufacturing, ship manufacturing, sheet metal(chassis, cabinet), pressure vessel, aerospace, tobacco textile machinery, loadometer, truss (arm) group welding, building template welding, steel structure production, etc.. Our products not only sell well all over the country, but also export to Singapore, Australia, European and American countries and regions, which are deeply welcomed by our customers at home and abroad.

SANWZB has already had sale and service centers in many areas of China, to ensure that our customers get better and faster service. The Company is committed to the path of continuous technological innovation, constantly provides high-end welding equipment, and takes customers as the core, quality as life and service as a link to provide users with high-quality welding products and high-standard service; at the same time, the Company has established perfect cooperative relations with a number of world-class enterprises so as to sell fixture system and robots, and we are sparing no efforts to be a well-known Chinese brand in flexible automation equipment industry!

INTEGRITY、 INNOVATION AND SUPERIOR QUALITY

CORPORATE CULTURE

To be China's top brand
Pursue world boutique quality.



3D FLEXIBLE AND MODULAR CLAMPING SYSTEM

D28 / D16 / D22

- Smart solution for every application
- Modular welding table, fixture and jig design and manufacturing
- Flexible and automatic Robot welding workstation

Corporate culture

Integrity, Innovation and superior quality.

Company goals

To be China's top brand, pursue world boutique quality.

Business philosophy

Strive for excellent, move with the times for the future development.

Business objection

Reputation first, customers first, delivery in time, we will sincerely cooperate with clients to make the constant improvement and create a brilliant future together.

Quality objection

Strictly comply with the standard that higher than both in domestic and abroad.

Service purpose

We warmly welcome new and repeat customers, learning customers' requirements exactly and adopting a strict quality control of the whole production process to ensure the lead time.

ENTERPRISE QUALIFICATION



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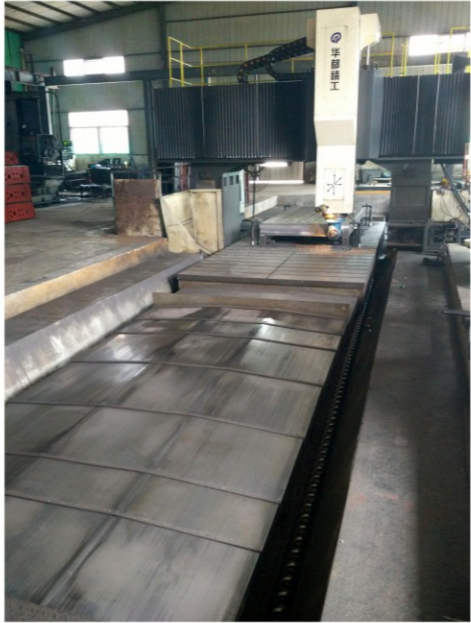
Partners

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Processing
capacity

The internationalization of products and services, as well as the progress of the company towards sustainable development, is the biggest vision of all colleagues at Sanwei in the “new era” . Based on this, the company has introduced advanced equipment, recruited talents to participate, and established a broader sales and service channel. To create a top quality attitude, improve production technology and pre-sale service work. For the future, we will win the trust of our customers with a pragmatic and win-win attitude.

The Company possesses a strong production capacity, and has purchased a batch of advanced processing equipment successively from home and abroad; Main equipment including 6000 x3200 and a 4000 x2800 CNC gantry processing center, a 6000 x3200 and a 4000 x1600 gantry miller, many sets of high precision CNC processing center, CNC lathes and other advanced manufacturing equipment. At the same time, the company owns matching welding plant and foundry, which can provide customers with comprehensive technical services and guarantees.



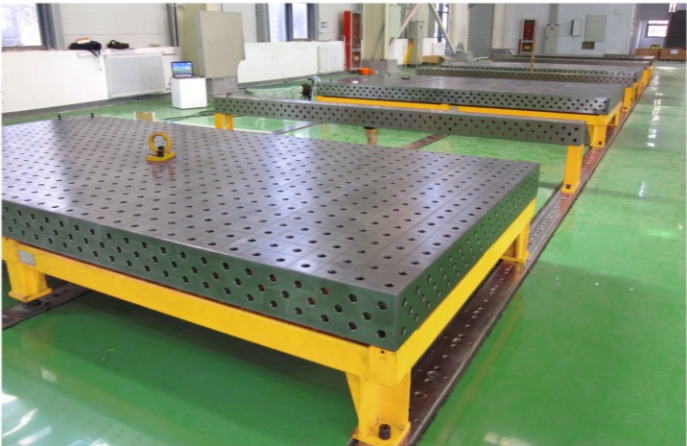
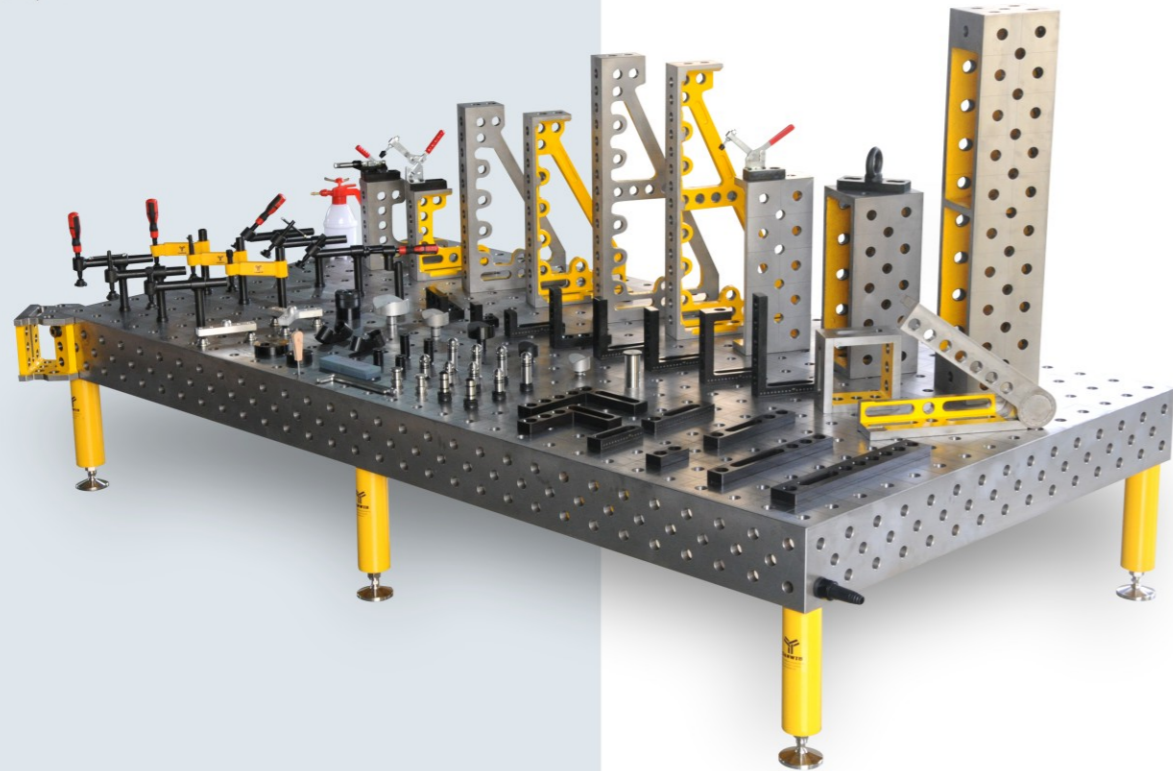
3 D flexible and modular clamping system introduction

In the context of the new round of scientific and technological revolutions and industrial changes, the two important strategic measures of “German Industry 4.0” and “Made in China 2025” for the development of manufacturing industries meaning a individualized demand for manufacturing and customization in small batches, which will become a trend and a new business model. Manufacturing entrepreneurs need to increase the added value of products in the manufacturing process as much as possible, expand more and more abundant services, propose better and more complete solutions to meet the customers’ needs of consumers, and take a flexible manufacturing + Customized roads. The production and processing production mode is also trend to be lean, intelligent, flexible, multi-species and small-batch. The traditional assembly line processing method is no longer adapted to the current new intelligent manufacturing production and processing mode.

Therefore, how to shorten the design and manufacturing cycle of the process equipment and the continuation of the original fixture after changed work pieces has become the most important thing. The precision manufacturing industry must adapt to this change, and its process equipment must have high flexibility and versatility.

3D Flexible and modular clamping system

This is a set of modular clamping system, consisting of basic tables, supporting parts, locating parts, clamping parts and locking parts. On 3D welding table, any system accessories can be located and clamped in a variety of ways by "rapid locking bolt"; at the same time, several 3D welding tables can be directly linked together in any five faces, and can also be linked as a whole through laying tracks on the ground. The whole modular system demonstrates its general function perfectly in installing, adjusting and clamping. Because of its simple structure and such advantages as hole location, bolt connection, high precision, good rigidity, less variety, reusability, convenient assembly and large economic benefits, it is known as “building block in the workshop” .



Product Features



Modularity : All components are digitalized, standardized, serialized and matched to each other; users can easily use the existing modules for simulation assembly by CAD software, and make accurately and quickly selection for practical use and operation.



Flexibility: Positioning elements can assembly in various ways to meet different requirements of work pieces. The 3D welding table can be extended according to the needs of the work piece shape and size, and can be adjusted in three directions of X, Y, Z; the grid line and the design of the millimeter scale on the table allow the user quickly and accurately select components they needed accordingly.



High-precision: D16 or D28 series holes are provided every 25mm/ 50mm/ 100mm on the work surface. Tolerance between bores is $\pm 0.05\text{mm}$. Supporting parts, positioning parts, connecting parts, clamps, etc. can accurately position the work piece, and various work pieces can be firmly fixed at each positioning point or positioning surface during the transfer or welding process. Even if the size of the work piece is inaccurate, it can be quickly detected. Therefore, users also use it as an inspection platform.



Economy: This is a kind of universal combination fixture that can be freely combined. Uncertain angles and odd shapes, all can be solved modularly . Applies to various working conditions without the need of any modification . The economic efficiency is particularly evident under the background of present small-volume, multi-species customized, fast-changing production. Foreign data shows the cost of more than 9 sets of special welding fixtures (5-6 sets in China)will exceeds one set of flexible fixtures. Using a set of flexible modular clamping system saving much space and minimize production costs instead of reserving a lot of complicated and expensive traditional fixtures.)

Application Fields

Full-loading frame chassis framework welding

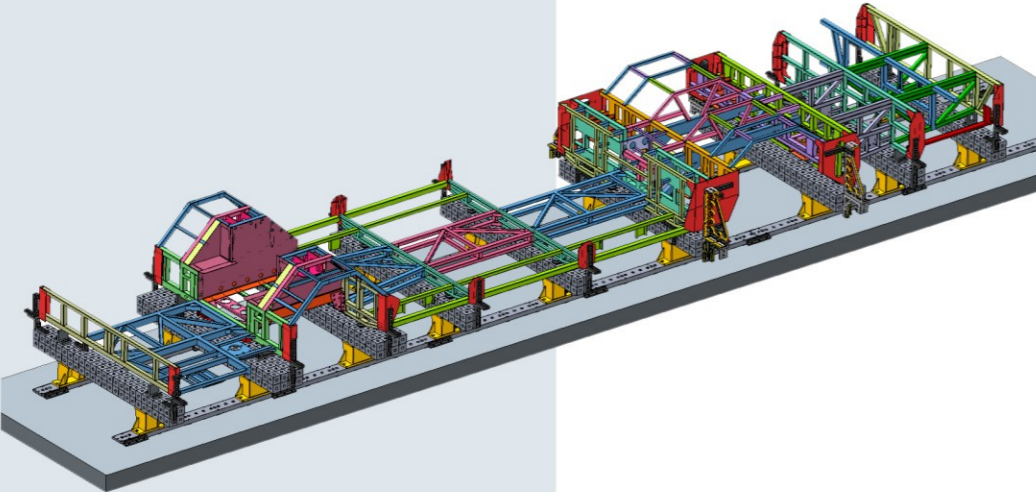
Full-loading frame chassis welded by rectangular tubes, is now recognized as one of the safest structural technologies. However, problems that appears in full-loading frame chassis framework welding like deformation control and rapid changing frames, have been besetting the manufacturing of new energy buses for a long time. When 3D flexible and modular clamping system applies to full-loading frame welding, it meets multiple production demands with one flexible fixture; on one hand, it guarantees the precision of frame welding and deformation control, on the other hand it can adapt to different types of cars; it can respond to customers' different needs actively, realize quick adaptation and provide diversified choices for customers. Meanwhile, using flexible 3D fixture effectively decreases costs and shortens time in developing new models.



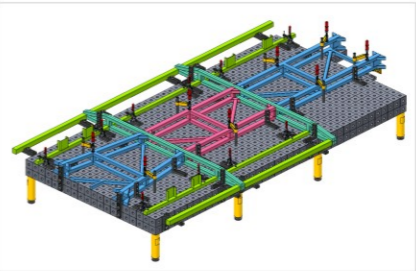
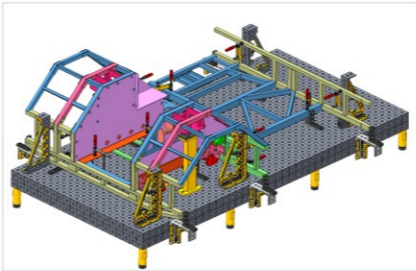
Whole full-loading frame chassis welding



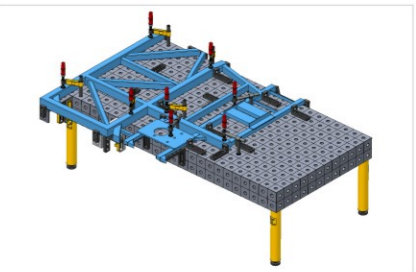
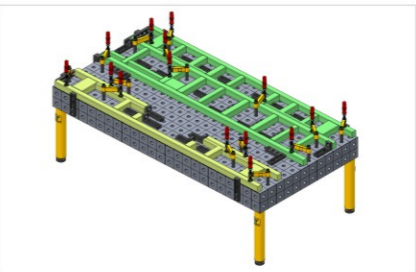
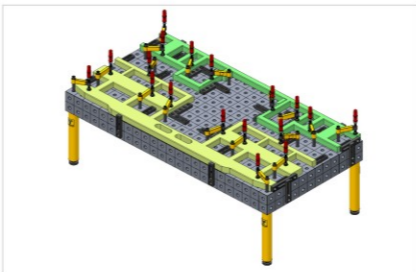
This solution consists of two perforated rails and seven square box modules to form a large flexible worktable. Seven square box modules can be moved on the rails in 100 increments, and the modules spacing will be adjusted according to the span and shape of the truck to meet the required size of work piece.



Semi- finished full-loading frame chassis welding



Full-loading frame chassis partial Welding



Body Side And Roof Bracket Of Vehicle(Aluminum Alloy)



Application Fields

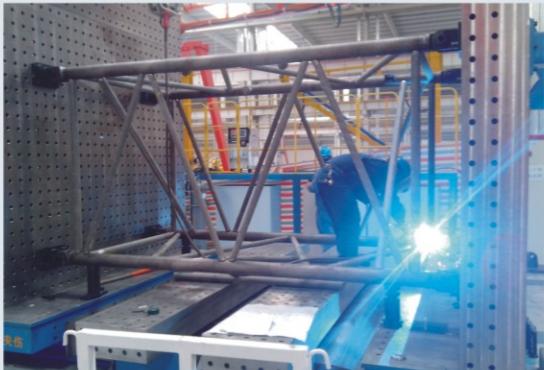
Group welding of crawler crane's truss arm

Typical production processes of truss arm are as follows: cutting materials – main tube of truss arm – welding of main tube and the joints – truss arm fan – body of truss arm – machining. Crane is a special operation equipment, quality of which cannot be ignored. Particularly, welding quality of the truss arm will directly affect the quality of the whole machine. In the process of mass production, welding fixture with high precision and general utility is necessary to ensure the welding quality, such as perpendicularity, parallelism, interchangeability, etc..

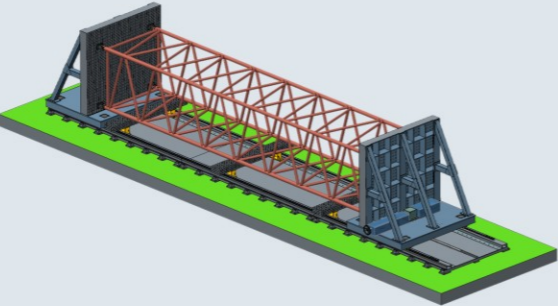
The characteristics of 3D flexible and modular clamping system in group welding of truss arm are as follows:

- (1) Wide applicability: due to the high precision of flexible welding fixture system, truss arms of various tonnages, lengths and sizes can be welded through one system; Cooperated with the corresponding joint support, it will be much easier for the production and management personnel to operate.
- (2) Space saving: knuckle truss arm belongs to large welding product, which often needs a huge space to weld. After using flexible fixture system, one position can be used repeatedly, so it decreases demand on space and indirectly reduces production costs.
- (3) Quickest response to market's requirements: the group model with wide utility quickly responds to market's needs, trial-production and process improvement without later investments.

Group welding of insert jib section

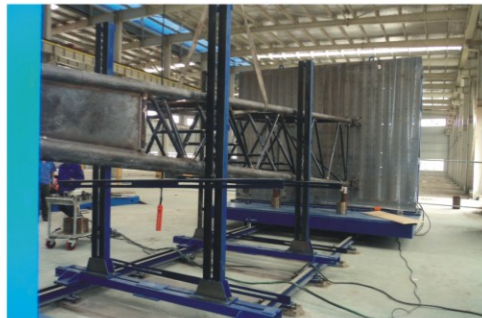


The insert jib section welding system applies to 3-12M crane jib of any length by its extended function. It can expand the work platform to meet larger size of insert jib's weld by connected other accessories (such as: U-shaped square cases). The left and right positioning base plates can be moved back and forth in a certain range, which facilitates the adjustment of the weld seam between the crane jibs. At the same time, it is conveniently lift work pieces and allow an ease operating space. The positioning base board is driven by motor or hand-wheel-operated to move forward and backward do not interfere with each other. For the motor, it can be moved quickly ; For the hand wheel, it can be fine-tuned precisely.



Group welding for the roof and bottom section of crane's jib

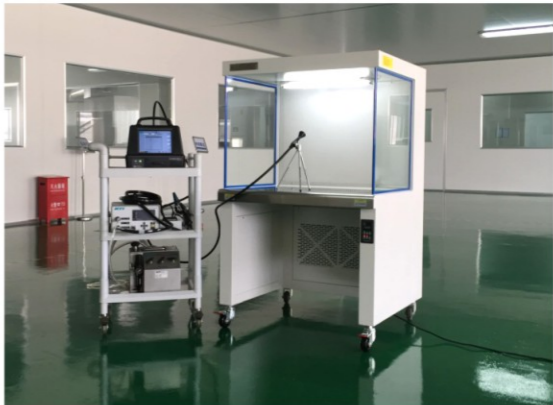
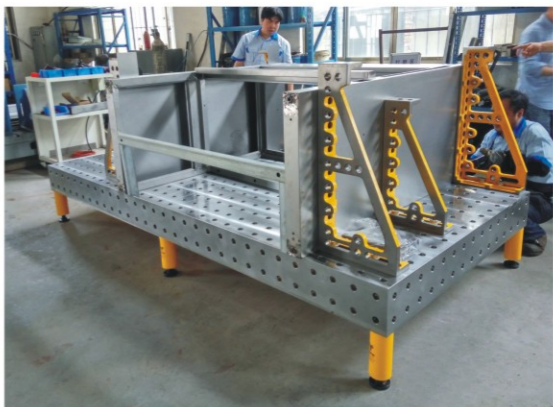
This welding solution mainly used for crawler crane and dynamic compactor. The main structure of welding system is same as that of the insert jib section. This welding system adopts left and right two workstations to dock respectively, the frame butt joint and joint butt joint can be completed on the same system by changed according positioning joint parts.



Application Fields

Sheet metal welding

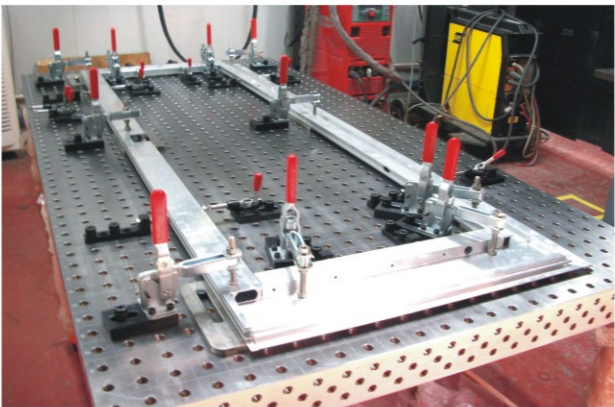
Sheet metal bending parts welding, box welding; such as electric controller, container box, communication cabinet, machine shell, etc.



Application Fields

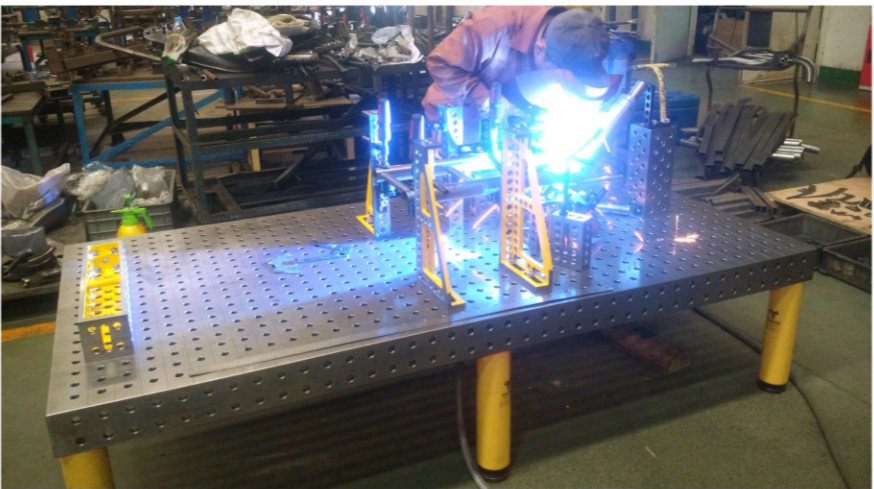
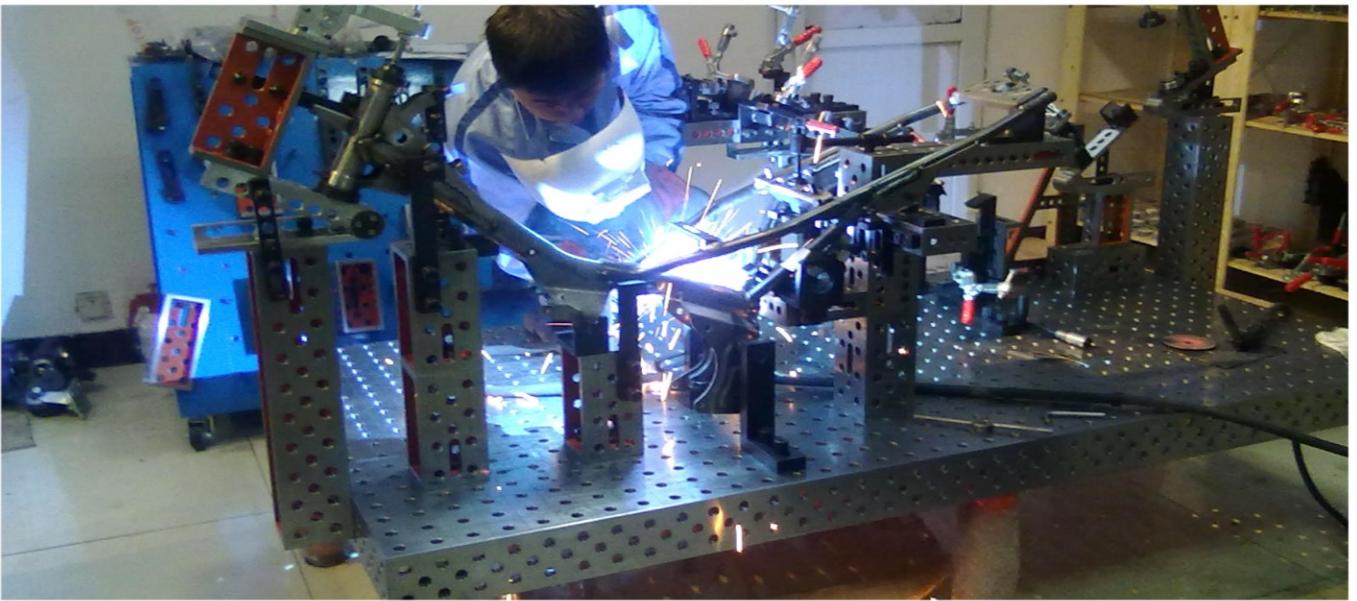
Rail transportation

Door of high-speed rail, seat welding, electric cabinet and electric controller welding, electric heater welding, welding of equipment in cab, etc.



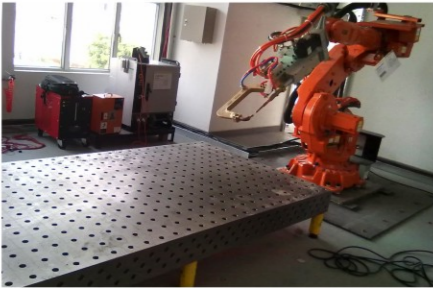
Motorcycle frame welding

3D Flexible and modular clamping system is mainly used in developing and producing new motorcycle frames. Frame updates fast, so it puts a high demand on the change and development time of fixture; flexible 3D fixture is a set of standardized products, known as "building blocks in the workshop". Through a series of standardized fixture accessories, welding fixture can be built quickly, which can effectively shorten time in producing new frames and reduce later investments in fixture.

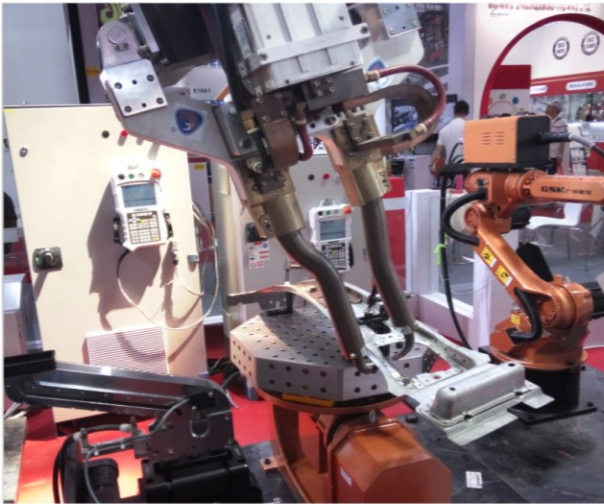


Application Fields

Flexible and automatic robot welding workstation

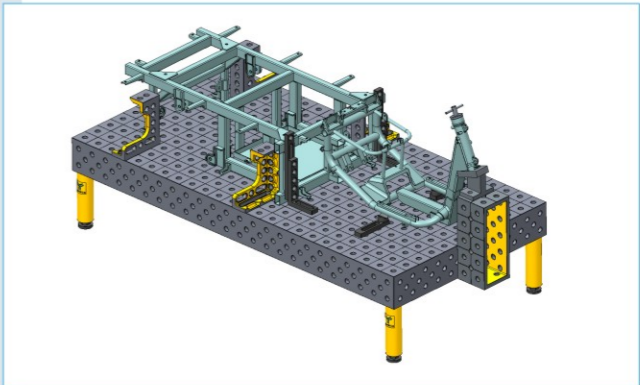
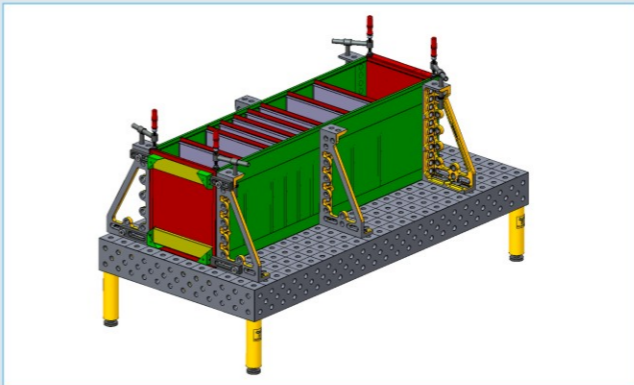
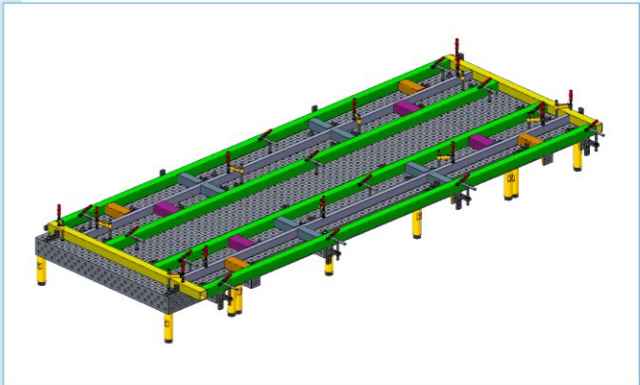
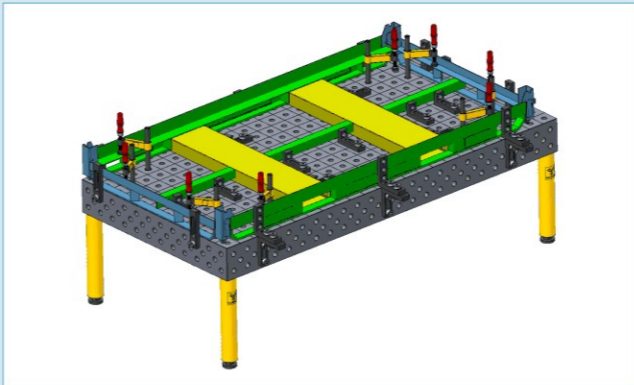
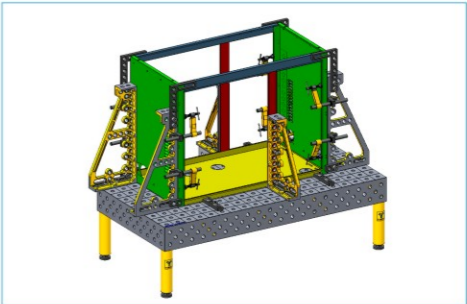
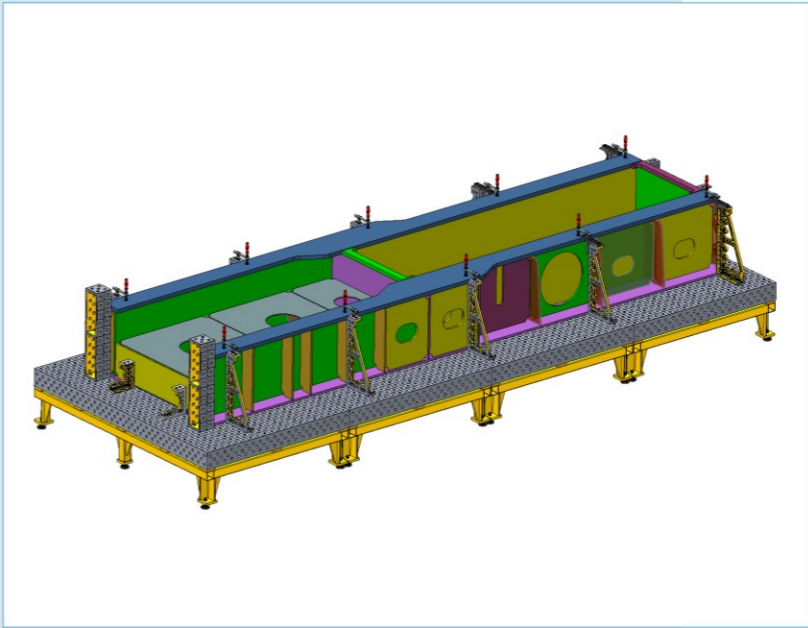


Application Fields

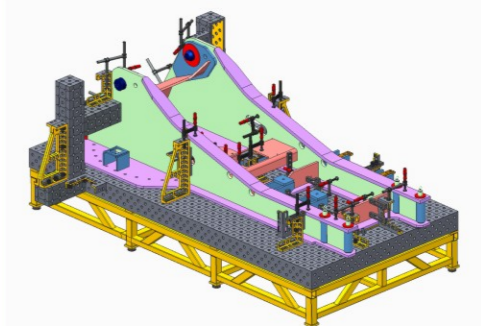
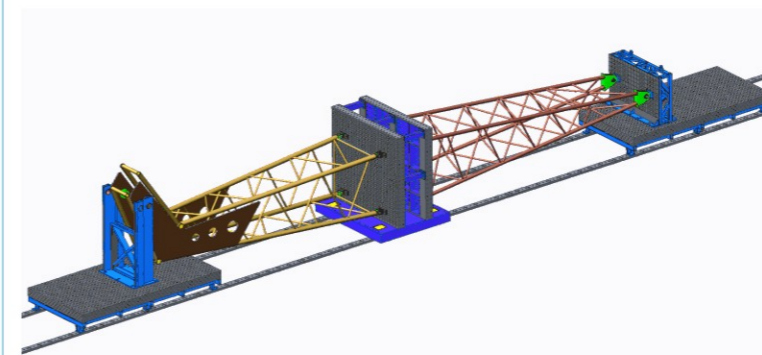
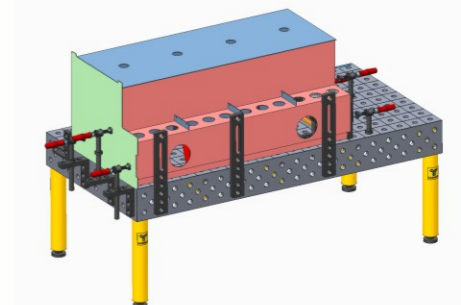
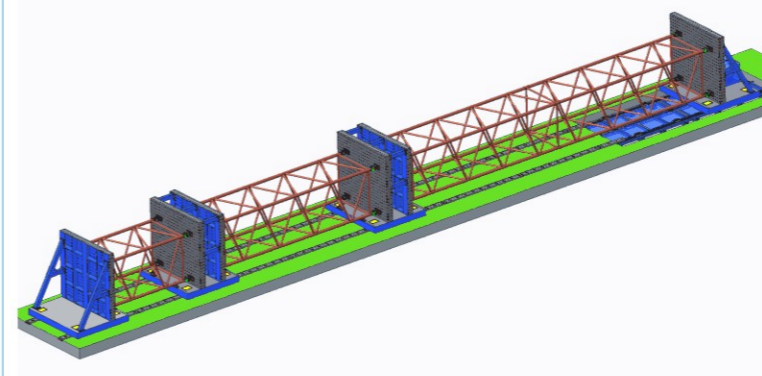
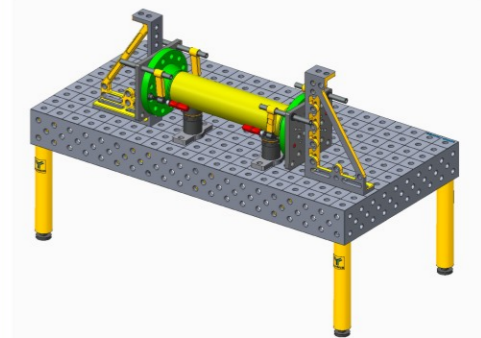
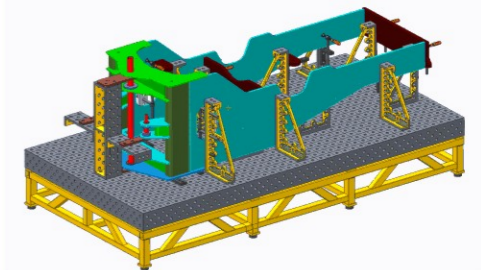
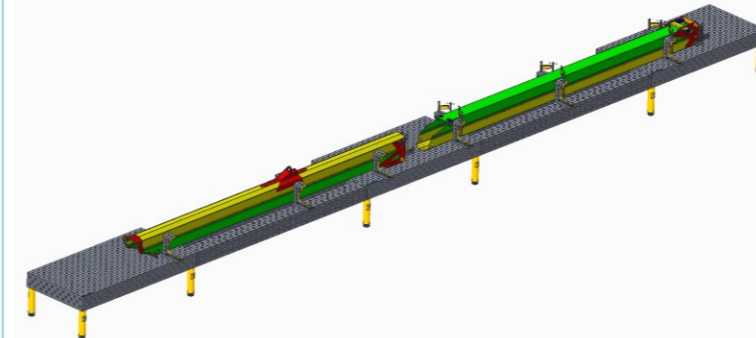
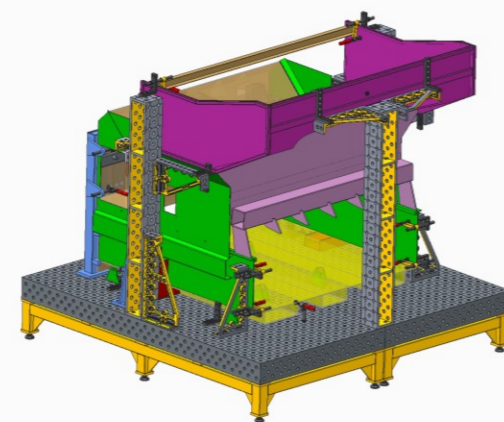
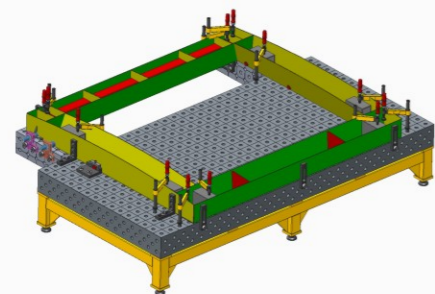
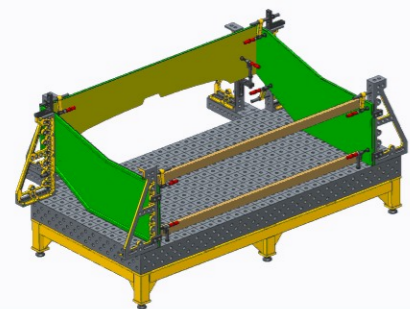
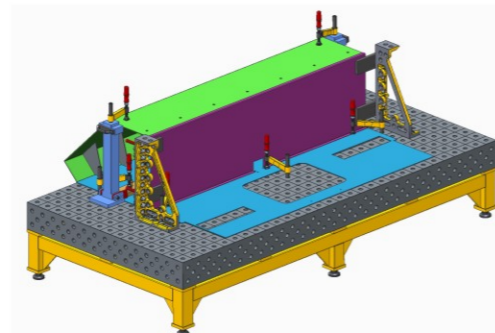
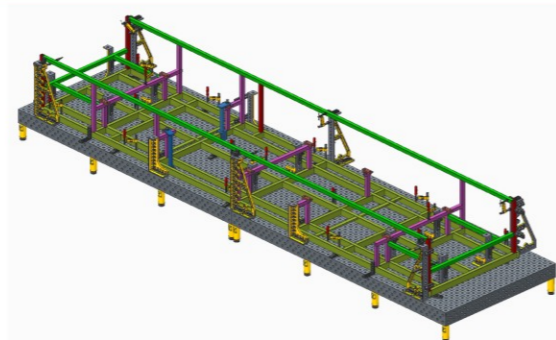
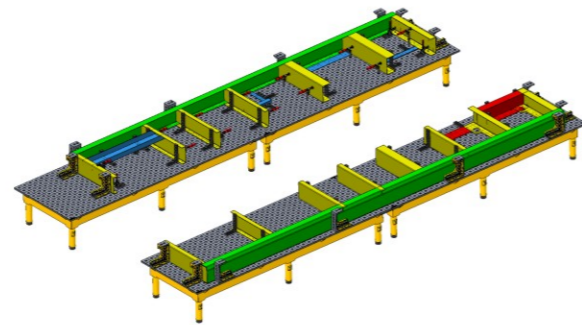
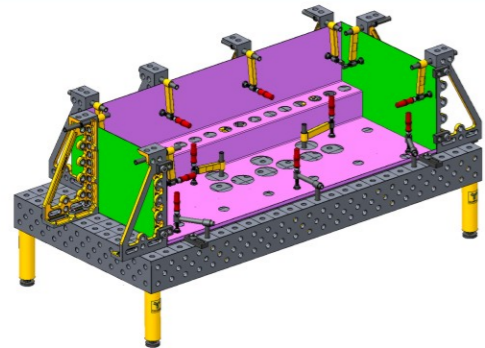


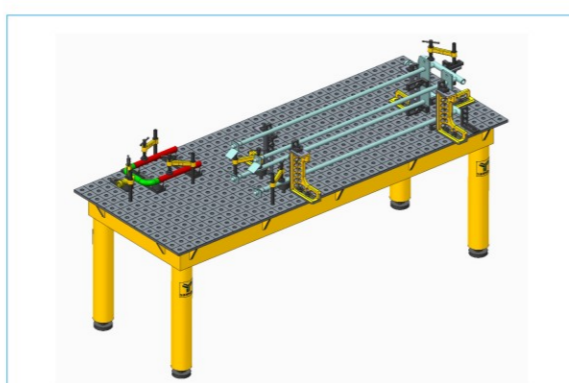
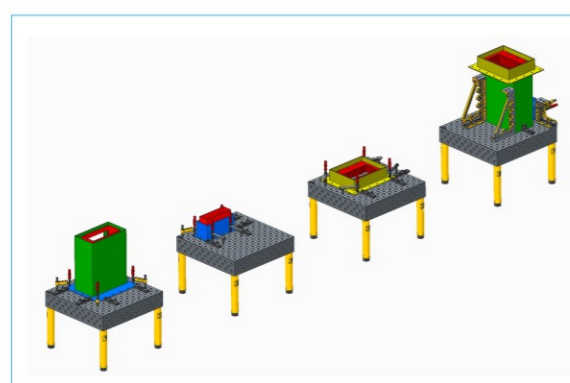
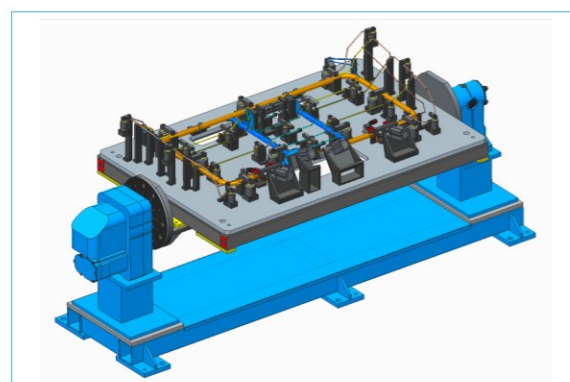
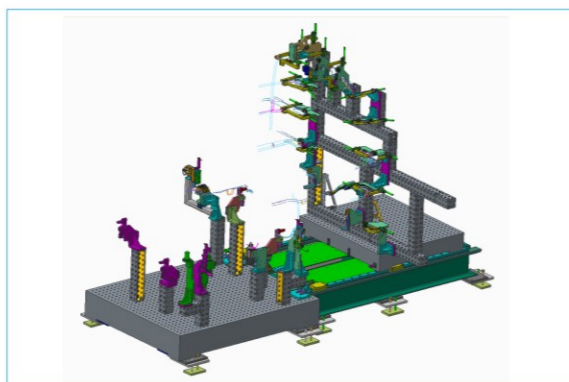
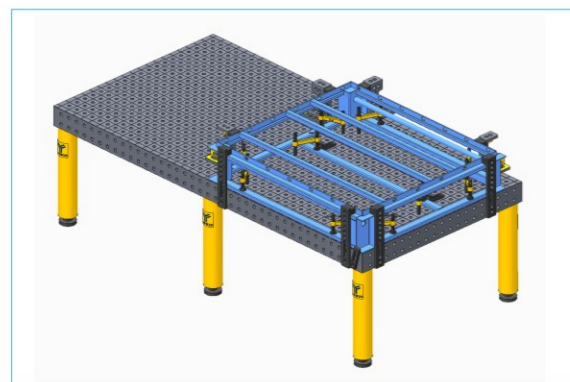
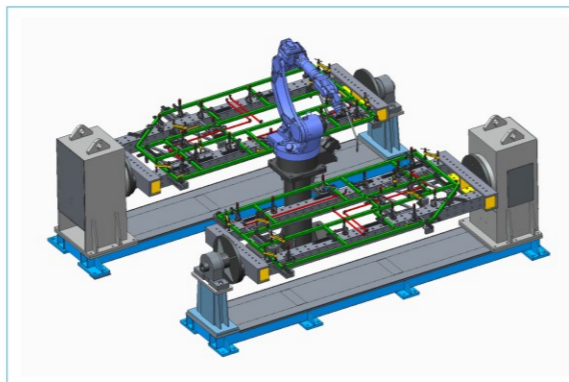
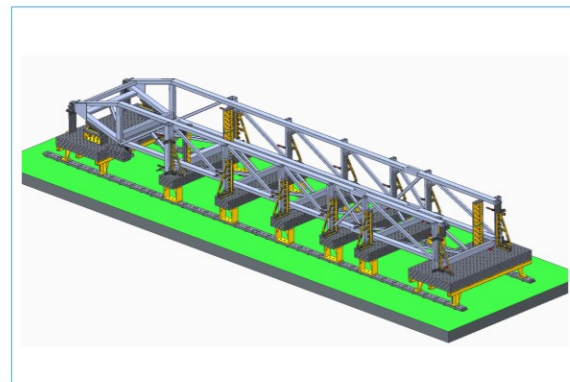
SANWEI EQUIPMENT

Simulation program



Simulation program





Catalogue

- 5.1-Basic tables
- 5.2-Supporting parts
- 5.3-Locating parts
- 5.4-Adjusting parts
- 5.5-Compounds
- 5.6-Clamping parts
- 5.7-Locking parts
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- 5.12-Simple welding table



Basic table

Basic tables include: 3D table series, 2D table series and octagonal table series, each series having a variety of different sizes, suitable for welding products of different sizes. There are three types of tables made by different materials, high-quality alloy steel, gray cast iron (HT300) and 304 stainless steel. They can also be made according to special requirements. Flatness and parallelism of all basic tables reach $\pm 0.1/1000$, and vertical degree between side face and surface reaches level-7 precision ($\pm 0.05/200$); basic tables have good performances in impact resistance, abrasion resistance, splash proof and creep-deformation resistance. There are 100 x100mm (D28 series) or 50 x50mm grid lines (D16 series) on the surface of basic tables; the tables can be jointed and adjusted freely through modular so as to make a larger fixture table in vertical or horizontal form. An advantage of the larger fixture table lies in group welding of large work pieces.

| 3D table | 2D table | Octagonal table |
|--|--|--|
|  |  |  |




Parameters of D28 basic tables

| D28 series | 3D table | | 2D table | | Octagonal table | |
|---------------|---------------|----------------|---------------|-------------|-----------------|-------------|
| Dimension | (steel)Number | (cast l)Number | Dimension | Number | Dimension | Number |
| 1000x1000x200 | swk28-10001 | swk28-10101 | 1000x1000x150 | swk28-11001 | 800x800x200 | swk28-12001 |
| 1200x1200x200 | swk28-10002 | swk28-10102 | 1200x1200x150 | swk28-11002 | 1000x1000x200 | swk28-12002 |
| 1500x1000x200 | swk28-10003 | swk28-10103 | 1500x1000x150 | swk28-11003 | 1200x1200x200 | swk28-12003 |
| 1500x1500x200 | swk28-10004 | swk28-10104 | 1500x1500x150 | swk28-11004 | 1500x1500x200 | swk28-12004 |
| 2000x1000x200 | swk28-10005 | swk28-10105 | 2000x1000x150 | swk28-11005 | 2000x2000x200 | swk28-12005 |
| 2000x1500x200 | swk28-10006 | swk28-10106 | 2000x1500x150 | swk28-11006 | 2400x2400x200 | swk28-12006 |
| 2400x1200x200 | swk28-10007 | swk28-10107 | 2400x1200x150 | swk28-11007 | | |
| 3000x1500x200 | swk28-10008 | swk28-10108 | 3000x1500x150 | swk28-11008 | | |
| 4000x2000x200 | swk28-10009 | swk28-10109 | 4000x2000x200 | swk28-11009 | | |
| 6000x2000x200 | swk28-10010 | swk28-10110 | 6000x2000x200 | swk28-11010 | | |
| 8000x2400x300 | swk28-10011 | swk28-10111 | 8000x2400x300 | swk28-11011 | | |

Parameters of D16 basic tables

| D16 series | 3D table | | 2D table | Octagonal table | |
|---------------|---------------|----------------|-------------|-----------------|-------------|
| Dimension | (steel)Number | (castl) Number | Number | Dimension | Number |
| 1000x500x100 | swk16-10001 | swk16-10101 | swk16-11001 | 600x600x100 | swk16-12001 |
| 1000x1000x100 | swk16-10002 | swk16-10102 | swk16-11002 | 800x800x100 | swk16-12002 |
| 1200x800x100 | swk16-10003 | swk16-10103 | swk16-11003 | 1000x1000x100 | swk16-12003 |
| 1200x1200x100 | swk16-10004 | swk16-10104 | swk16-11004 | 1200x1200x100 | swk16-12004 |
| 1500x1000x100 | swk16-10005 | swk16-10105 | swk16-11005 | 1500x1500x100 | swk16-12005 |
| 1500x1500x100 | swk16-10006 | swk16-10106 | swk16-11006 | 2000x2000x100 | swk16-12006 |
| 2000x1000x100 | swk16-10007 | swk16-10107 | swk16-11007 | | |
| 2400x1200x120 | swk16-10008 | swk16-10108 | swk16-11008 | | |

Parameters of supporting parts

|  | |  | |  | |
|--|----------------|--|----------------|--|----------------|
| Standard leg (D28/D16) | | Fixable leg (D28/D16) | | With guide pulleys (D28/D16) | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| Φ88×200+50 | swk28/16-71001 | Φ88×200+50 | swk28/16-71101 | Φ88×200+150 | swk28/16-71201 |
| Φ88×300+50 | swk28/16-71002 | Φ88×300+50 | swk28/16-71102 | Φ88×300+150 | swk28/16-71202 |
| Φ88×400+50 | swk28/16-71003 | Φ88×400+50 | swk28/16-71103 | Φ88×400+150 | swk28/16-71203 |
| Φ88×500+50 | swk28/16-71004 | Φ88×500+50 | swk28/16-71104 | Φ88×500+150 | swk28/16-71204 |
| Φ88×600+50 | swk28/16-71005 | Φ88×600+50 | swk28/16-71105 | Φ88×600+150 | swk28/16-71205 |

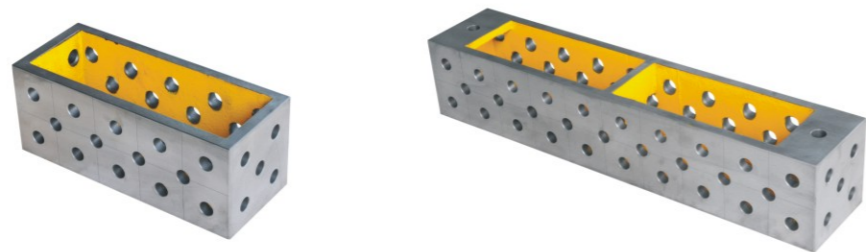
| | | | | | |
|---|----------------|---|----------------|---|-------------|
|  | |  | |  | |
| Holding frame (D28/D16) | | Scissor lift (D28/D16) | | 3D flexible rail | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| 1500x1000x400 | swk28/16-71301 | 1500x1000 | swk28/16-71401 | 2000x120x40 | swk28-71501 |
| 1500x1500x400 | swk28/16-71302 | 1500x1500 | swk28/16-71402 | 2000x140x50 | swk28-71502 |
| 2000x1000x400 | swk28/16-71303 | 2000x1000 | swk28/16-71403 | 3000x120x40 | swk28-71503 |
| 2400x1200x400 | swk28/16-71304 | 2400x1200 | swk28/16-71404 | 3000x140x50 | swk28-71504 |
| 3000x1500x400 | swk28-71305 | 3000x1500 | swk28-71405 | | |
| 4000x2000x400 | swk28-71306 | 4000x2000 | swk28-71406 | | |

Supporting parts

U-shaped case, L-shaped case, supporting angle, Corner module, frame bracket.

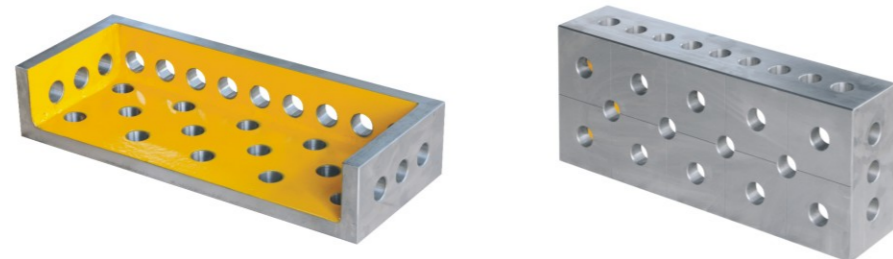
Supporting parts are mainly applied to connect tables, extend surfaces of tables, support and locate large welding products.

Parameters of U-shaped cases



| D28 series | | | D16 series | |
|--------------|----------------|----------------|--------------|-------------|
| Dimension | (steel) Number | (cast) Number | Dimension | Number |
| 500x200x200 | swk28-20001 | swk28-20101 | 150x100x50 | swk16-20001 |
| 1000x200x200 | swk28-20002 | swk28-20102 | 250x100x50 | swk16-20002 |
| 1200x200x200 | swk28-20003 | swk28-20103 | 350x100x50 | swk16-20003 |
| 1500x200x200 | swk28-20004 | swk28-20104 | 150x100x100 | swk16-20004 |
| 2000x200x200 | swk28-20005 | swk28-20105 | 250x100x100 | swk16-20005 |
| 2400x200x200 | swk28-20006 | swk28-20106 | 350x100x100 | swk16-20006 |
| 3000x200x200 | swk28-20007 | swk28-20107 | 500x100x100 | swk16-20007 |
| 4000x200x200 | swk28-20008 | swk28-20108 | 800x100x100 | swk16-20008 |
| 1200x400x200 | swk28-20009 | swk28-20109 | 1000x100x100 | swk16-20009 |
| 1500x400x200 | swk28-20010 | swk28-20110 | 1200x200x100 | swk16-20010 |
| 2000x400x200 | swk28-20011 | swk28-20111 | 1500x200x100 | swk16-20011 |
| 2400x400x200 | swk28-20012 | swk28-20112 | 2000x200x100 | swk16-20012 |

Parameters of L-shaped cases



| D28 series | | D16 series | |
|--------------|-------------|------------|-------------|
| Dimension | Number | Dimension | Number |
| 500x200x100 | swk28-21001 | 150x100x50 | swk16-21001 |
| 1000x200x100 | swk28-21002 | 250x100x50 | swk16-21002 |
| 1200x200x100 | swk28-21003 | 350x100x50 | swk16-21003 |
| 1500x200x100 | swk28-21004 | 500x100x50 | swk16-21004 |

Parameters of supporting angles



| D28 series | | D16 series | |
|---------------|-------------|--------------|-------------|
| Dimension | Number | Dimension | Number |
| 275x100x300-L | swk28-22101 | 150x50x200-L | swk16-22101 |
| 275x100x300-R | swk28-22102 | 150x50x200-R | swk16-22102 |
| 325x100x600-L | swk28-22103 | 200x50x400-L | swk16-22103 |
| 325x100x600-R | swk28-22104 | 200x50x400-R | swk16-22104 |
| 375x100x800-L | swk28-22105 | 200x50x600-L | swk16-22105 |
| 375x100x800-R | swk28-22106 | 200x50x600-R | swk16-22106 |

Parameters of Corner module and frame bracket



| Corner module | | | Frame bracket | | |
|---------------|-------------|-------------|---------------|-------------|-------------|
| Series | Dimension | Number | Series | Dimension | Number |
| D28 series | 200x200x175 | swk28-23001 | D28 series | 200x200x100 | swk28-24001 |
| D16 series | 100x100x75 | swk16-23001 | D16 series | 100x100x50 | swk16-24001 |

Locating parts

Locating angle, locating square, square angle, V-shaped locating part, eccentric locating plate.

Locating parts, made by high-quality alloy steel, after corresponding heat treatment, have such functions as welding slag prevention and abrasion resistance. Locating parts can be fixed on table quickly and accurately through rapid locking bolt, and are able to locate and support all kinds of welding products efficiently and quickly. Different series of locating parts have a variety of dimensions, meeting the complicated needs of welding processes.

Parameters of locating angles

|  | | | |
|--|-------------|-------------|-------------|
| D28 series | | D16 series | |
| Dimension | Number | Dimension | Number |
| 75x50x75 | swk28-30001 | 40x25x40 | swk16-30001 |
| 175x50x75 | swk28-30002 | 90x25x40 | swk16-30002 |
| 175x50x175-kk | swk28-30003 | 90x25x90-kk | swk16-30003 |
| 175x50x175-cc | swk28-30004 | 90x25x90-cc | swk16-30004 |
| 175x50x175-kc | swk28-30005 | 90x25x90-kc | swk16-30005 |
| 175x50x275 | swk28-30006 | 90x25x140 | swk16-30006 |
| 175x50x200 | swk28-30007 | 90x40x40 | swk16-30007 |
| 175x75x75 | swk28-30008 | | |

Parameters of locating squares

|  | | | |
|--|-------------|------------|-------------|
| D28 series | | D16 series | |
| Dimension | Number | Dimension | Number |
| 100x50x25 | swk28-31001 | 55x30x12 | swk16-31001 |
| 150x50x25 | swk28-31002 | 90x30x12 | swk16-31002 |
| 225x50x25 | swk28-31003 | 110x30x12 | swk16-31003 |
| 300x50x25 | swk28-31004 | 150x30x12 | swk16-31004 |
| 400x50x25 | swk28-31005 | 190x30x12 | swk16-31005 |
| 500x75x25 | swk28-31006 | 240x50x12 | swk16-31006 |
| 800x100x25 | swk28-31007 | 300x50x12 | swk16-31007 |
| 1000x100x25 | swk28-31008 | 400x50x12 | swk16-31008 |


Parameters of square angles

|  | | | |
|---|-------------|------------|-------------|
| D28 series | | D16 series | |
| Dimension | Number | Dimension | Number |
| 175x200x25 | swk28-32001 | 105x105x12 | swk16-32001 |
| 225x250x25 | swk28-32002 | 130x130x12 | swk16-32002 |
| 225x300x25 | swk28-32003 | 155x180x12 | swk16-32003 |
| 375x500x25 | swk28-32004 | 200x275x12 | swk16-32004 |

Parameters of V-shaped locating parts

|  | | | |
|--|-------------|------------------------|-------------|
| D28 series | | D16 series | |
| Dimension | Number | Dimension | Number |
| Φ58/130°carbon steel | swk28-33001 | Φ50/130°carbon steel | swk16-33001 |
| Φ58/130°aluminum alloy | swk28-33101 | Φ50/130°aluminum alloy | swk16-33101 |
| Φ80/130°carbon steel | swk28-33002 | Φ65/130°carbon steel | swk16-33002 |
| Φ80/130°aluminum alloy | swk28-33102 | Φ65/130°aluminum alloy | swk16-33102 |
| Φ110/130°carbon steel | swk28-33003 | Φ80/130°carbon steel | swk16-33003 |
| Φ110/130°aluminum alloy | swk28-33103 | Φ80/130°aluminum alloy | swk16-33103 |

Eccentric locating plates

|  | | | |
|---|-------------|------------|-------------|
| D28 series | | D16 series | |
| Dimension | Number | Dimension | Number |
| 50-Φ75x25 | swk28-34001 | 25-Φ50x12 | swk16-34001 |
| 75-Φ100x25 | swk28-34002 | 50-Φ75x12 | swk16-34002 |

Adjusting parts

Height adjuster, adjusting spacer

Adjusting parts are mainly used to fine-tune the location, and can be used together with V-shaped locating block in hole-axis way, in order to meet more complicated needs of welding processes. Both adjusting block and adjusting spacer are made by high-quality alloy steel, which are abrasion resistance after special heat treatment and splash-preventing treatment. Thus, the repeated installation precision of each adjusting part is reassured.

Parameters of height adjuster and adjusting spacer


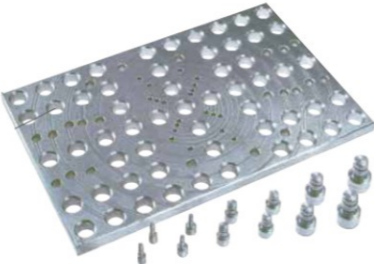
|  | | |  | |
|---|------------|-------------|--|-------------|
| Height adjuster | | | Adjusting spacer | |
| Series | Dimension | Number | Dimension | Number |
| D28 series | Φ78-75x100 | swk28-40001 | 1、2、2.5、3、4、5、10、20、40、+L125mm | swk28-40101 |
| D16 series | Φ58-75x100 | swk16-40001 | 1、2、2.5、3、4、5、10、20、40、+L75mm | swk16-40101 |

Compounds

Angle compound(angle adjuster), supporting compound (supporting leg, supporting frame, hydraulic lifter, hole trajectory), flange locating component, etc..

Angle adjuster can be produced with hydraulic damping coefficient and high precision calibration, which is convenient, fast and accurate to adjust angles. Its adjustment range is 0-225 ° , with difference of any adjacent holes no more than 0.05 mm. Adapter plates for flanges is a set of multi-functional locating system, which allows European steel-pipe flange or American steel-pipe flange of different series and specifications to be located and welded on the same fixture .

Parameters of compounds

|  | | |  | | |
|---|-------------|-------------|--|------------|-------------|
| Angle adjuster | | | Adapter plates for flanges | | |
| Series | Dimension | Number | Series | Dimension | Number |
| D28 series | 500x100x100 | swk28-70001 | D28 series | 360x360x25 | swk28-72001 |
| D16 series | 250x50x50 | Swk16-70001 | | 550x450x25 | swk28-72002 |

Clamping parts

Fixed clamping device, 180° elastic clamping device, 45° elastic clamping device, 90° clamping device, elbow rapid clamping device.

According to different clamping ways and directions, clamping devices can be divided into fixed clamping device, 180° elastic clamping device, 45° elastic clamping device, 90° clamping device and rapid clamping device; meanwhile, according to different operating handles, each kind of clamping device is divided into rubber-handle clamping device, mobile-handle clamping device and hexagon-bolt clamping device.

Clamping device is used on the fixed workpiece, fasten it in the corresponding position and prevent it from shifting, as well as prevent welding deformation. In selecting clamping devices, locating space and angle must be taken into consideration, and clamping devices with different operating handles and different clamping directions can be chosen to ensure flexibility and reliability. Because all the clamping spacers on different clamping devices are interchangeable, so you can choose spacers made by different materials (alloy steel, aluminum alloy, stainless steel, nylon, etc.) according to the welding occasion.

Parameters of D28/D16 series clamping devices

| | | | | | |
|--|--|--|-------------|-----------|-------------|
|  |  |  | | | |
| Fixed clamping device-rubber-handle | Fixed clamping device-mobile-handle | Fixed clamping device-hexagon-bolt | | | |
| D28 series | | | | | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| 150x320 | swk28-50001 | 150x320 | swk28-50101 | 150x320 | swk28-50201 |
| 200x320 | swk28-50002 | 200x320 | swk28-50102 | 200x320 | swk28-50202 |
| D16 series | | | | | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| 120x200 | swk16-50001 | 120x200 | swk16-50101 | 120x200 | swk16-50201 |



180° elastic clamping device-
rubber-handle



180° elastic clamping device-
mobile-handle



180° elastic clamping device-
hexagon-bolt

D28 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| 220x220 | swk28-51001 | 220x220 | swk28-51101 | 220x220 | swk28-51201 |
| 220x320 | swk28-51002 | 220x320 | swk28-51102 | 220x320 | swk28-51202 |

D16 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| 160x200 | swk16-51001 | 160x200 | swk16-51101 | 160x200 | swk16-51201 |



45° elastic clamping device-
rubber-handle



45° elastic clamping device-
mobile-handle



45° elastic clamping device-
hexagon-bolt

D28 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| 220x220 | swk28-52001 | 220x220 | swk28-52101 | 220x220 | swk28-52201 |
| 220x320 | swk28-52002 | 220x320 | swk28-52102 | 220x320 | swk28-52202 |

D16 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| 160x200 | swk16-52001 | 160x200 | swk16-52101 | 160x200 | swk16-52201 |



90° clamping device-
rubber-handle



Round-base-
rapid clamping device



Square-base-
rapid clamping device

D28 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| 220x320 | swk28-53001 | sw-12265 | swk28-54001 | sw-304EM | swk28-54101 |

D16 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| 160x200 | swk16-53001 | sw-12132 | swk16-54001 | sw-304CM | swk16-54101 |



Square-base-
rapid clamping device



Round-base-
rapid clamping device



Square-base-
rapid clamping device

D28 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| sw-12265 | swk28-54201 | sw-304EM | swk28-54301 | sw-203FL | swk28-54401 |

D16 series

| Dimension | Number | Dimension | Number | Dimension | Number |
|-----------|-------------|-----------|-------------|-----------|-------------|
| sw-12130 | Swk16-54201 | sw-304CM | Swk16-54301 | sw-203FL | swk16-54401 |


Locking parts

Rapid locking bolt, countersunk rapid locking bolt, handle-type locking bolt, countersunk locking bolt, handle locking bolt, rapid locating bolt, magnetic bolt.

All the locating components in 3D flexible and modular clamping system need to be fixed by locking bolts which have the locating precision of $\phi 28h6$. Locking bolt is made by high-quality alloy tool steel after quenching treatment, with surface hardness up to 45 HRC. Rapid locking bolt uses five bearing steel ball to locate, so it has the following advantages: large contact area, accurate locating precision, convenient to assemble and disassemble, durability, etc..

Parameters of locking parts

| | | | | | |
|---|-------------|---|-------------|---|-------------|
|  | |  | |  | |
| Rapid locking bolt | | Countersunk rapid locking bolt | | Countersunk locking bolt | |
| D28 series | | | | | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| Φ28x50 | swk28-60001 | Φ28x50 | swk28-60101 | Φ28x50 | swk28-60201 |
| Φ28x75 | swk28-60002 | Φ28x75 | swk28-60102 | Φ28x75 | swk28-60202 |
| D16 series | | | | | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| Φ16x24 | swk16-60001 | Φ16x24 | swk16-60101 | Φ16x24 | swk16-60201 |
| Φ16x36 | swk16-60002 | Φ16x36 | swk16-60102 | Φ16x36 | swk16-60202 |

| | | | | | |
|---|-------------|---|-------------|---|-------------|
|  | |  | |  | |
| Handle locking bolt | | Locating bolt | | Magnetic bolt | |
| D28 series | | | | | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| Φ28x50 | swk28-60301 | Φ28x50 | swk28-60401 | Φ28x25 | swk28-60501 |
| D16 series | | | | | |
| Dimension | Number | Dimension | Number | Dimension | Number |
| Φ16x24 | swk16-60301 | Φ16x24 | swk16-60401 | Φ16x12 | swk16-60501 |

Other parts

| | | | | | |
|---|---------------------------|-------------|---|---------------------------|-------------|
|  | | |  | | |
| 90° corner cover | | | 45° corner cover | | |
| Series | Dimension | Number | Series | Dimension | Number |
| D28 series | $\Phi 28 \times 90^\circ$ | swk28-80001 | D28 series | $\Phi 28 \times 45^\circ$ | swk28-80101 |
| D16 series | $\Phi 16 \times 90^\circ$ | swk16-80001 | D16 series | $\Phi 16 \times 45^\circ$ | swk16-80101 |
|  | | |  | | |
| Two-point clamping bridge | | | Three-point clamping bridge | | |
| Series | Dimension | Number | Series | Dimension | Number |
| D28 series | 170x35x20 | swk28-81001 | D28 series | 170x35x20 | swk28-81101 |
| D16 series | 110x20x12 | swk16-81001 | D16 series | 110x20x12 | swk16-81101 |
|  | | |  | | |
| Transport ring | | | Accessory cart | | |
| Series | Dimension | Number | Series | Dimension | Number |
| D28 series | 190x130x160 | swk28-82001 | D28 series | 1000x600x1100 | swk28-83001 |
| D16 series | 140x140x100 | swk16-82001 | D16 series | 1000x600x1100 | swk16-83001 |

Assembly tools



Ecological anti-spatter spray

| Series | Dimension | Number |
|------------|-----------|-------------|
| D28 series | 5L | swk28-90001 |
| D16 series | | swk16-90001 |



Bench stone

| Series | Dimension | Number |
|------------|-----------|-------------|
| D28 series | 200x50x40 | swk28-90101 |
| D16 series | | swk16-90101 |



Pump bottle

| Series | Dimension | Number |
|------------|-----------|-------------|
| D28 series | 1L | swk28-90201 |
| D16 series | | swk16-90201 |



Internal hexagonal wrench

| Series | Dimension | Number |
|------------|-----------|-------------|
| D28 series | 14# 10# | swk28-90301 |
| D16 series | 14# 8# | swk16-90301 |



Steel brush

| Series | Dimension | Number |
|------------|-----------|-------------|
| D28 series | Φ30x150 | swk28-90401 |
| D16 series | Φ18x150 | swk16-90401 |



Ground connector

| Series | Dimension | Number |
|------------|-----------|-------------|
| D28 series | Φ28x500A | swk28-90501 |
| D16 series | Φ16x500A | swk16-90501 |

Flexible and automatic robot welding table

Flexible and automatic robot welding table mainly apply to: manufacturer's small batch product proofing and trial production, automatic integration manufacturer's product proofing, robot training and teaching and all kinds of exhibition live demonstration. Characteristics: light weight and easy to move, holes in per unit area is 4 times than D28 series welding table, more convenient to use and wider range of applications.



| Automatic robot welding table | Dimension(mm) | Number | Sets Number |
|-------------------------------|---------------|----------------------|-----------------------|
| | 1200x800x750 | SWK16-J1200G(steel) | SWK16-J1200G-T1/T2/T3 |
| | 1200x800x750 | SWK16-J1200Z(cast I) | SWK16-J1200Z-T1/T2/T3 |
| | 1500x800x750 | SWK16-J1500G(steel) | SWK16-J1500G-T1/T2/T3 |
| | 1500x800x750 | SWK16-J1500Z(cast I) | SWK16-J1500Z-T1/T2/T3 |

Parts list

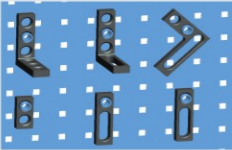
| Sets T1 | | | Sets T2 | | | Sets T3 | | |
|-------------------------------|--------------|-----|-------------------------------|--------------|-----|-------------------------------|--------------|-----|
| Name | Dimension | PCS | Name | Dimension | PCS | Name | Dimension | PCS |
| Welding Table | | 1 | Welding Table | | 1 | Welding Table | | 1 |
| Supporting Squares | 90x30x40mm | 4 | Supporting Squares | 150x50x200mm | 2 | Supporting Squares | 150x50x200mm | 4 |
| Parameters of locating angles | 90x30x90mm | 4 | Parameters of locating angles | 90x30x40mm | 4 | Parameters of locating angles | 90x30x40mm | 6 |
| Universal Stops | 115x30x12mm | 4 | Parameters of locating angles | 90x30x90mm | 4 | Parameters of locating angles | 90x30x90mm | 6 |
| Flat Squares | 105x105x12mm | 2 | Universal Stops | 90x30x12mm | 4 | Universal Stops | 90x30x12mm | 4 |
| Clamps | 160x200mm | 4 | Universal Stops | 115x30x12mm | 2 | Universal Stops | 115x30x12mm | 4 |
| Fixing Bolts | Φ16x24mm | 10 | Flat Squares | 130x130x12mm | 2 | Flat Squares | 130x130x12mm | 4 |
| Mold Assembling Tool | | 1 | V-Block | Φ48x130mm | 4 | V-Block | Φ48x130mm | 4 |
| | | | Clamps | 160x200mm | 6 | Clamps | 160x200mm | 8 |
| | | | Fixing Bolts | Φ16x24mm | 16 | | sw-12132 | 4 |
| | | | Mold Assembling Tool | | 1 | Fixing Bolts | Φ16x24mm | 20 |
| | | | | | | Mold Assembling Tool | | 1 |

SANWEI good welding table

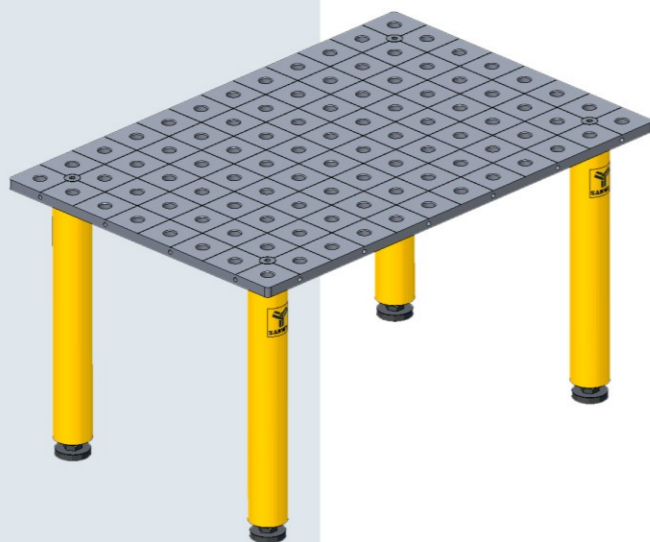
SANWEI good welding table is a new type of advanced and flexible process equipment with an integration of welding, assembling and inspection. It has the same applicability as 3D flexible and modular welding table. Thanks to the board with it to hang available tools, things can be quickly picked and put, which can improve the work efficiency of 50% –80% compared with traditional welding table. Use with standard 3D clamping fixtures during positioning processing leads your work to be simple and easier.

The surface flatness up to 0.05/1000mm while hardness up to 38–45HRC, which allow it used as a product inspection platform. Meanwhile, accurate positioning, convenient disassembly and high applicability, it also provides a standardized, green, and new concept in welding line, completely changes the face of traditional welding workshop. It is welder' s best useful friends, a symbol of environment-friendly and provides a strong guarantee for the company's 7S work.

| | Dimension | Sets Number | Material | Total Packages | Packaging size |
|-------------|---------------------------------|-------------|----------|----------------|----------------|
| 1200 series | 1200x800x750+900 (LxWxH1+H2) | SWH16-1200G | Q345B | 45pcs | 1240x840x500 |
| | | SWH16-1200Z | HT300 | | |
| | | SWH16-1200S | SUS304 | | |
| 1500 series | 1500x800x750+900 (LxWxH1+H2) | SWH16-1500G | Q345B | 55pcs | 1540x840x500 |
| | | SWH16-1500Z | HT300 | | |
| | | SWH16-1500S | SUS304 | | |



Basic table



| Dimension | Number | Dimension | Number | Remark |
|-----------|-------------|-----------|-------------|---|
| 1000x600 | swk28-13001 | 1200x1200 | swk28-13006 | Thickness: 24mm Hole diameter: Φ28mm Hole spacing: 100x100 Height: 750mm |
| 1000x800 | swk28-13002 | 1500x800 | swk28-13007 | |
| 1000x1000 | swk28-13003 | 1500x1000 | swk28-13008 | |
| 1200x800 | swk28-13004 | 1500x1500 | swk28-13009 | |
| 1200x1000 | swk28-13005 | 2000x1000 | swk28-13010 | |



Geometrical Product Specifications

Welding Table

| | |
|------|---|
| 1.1 | Material: Q345B, HT300, QT500, SUS304 material available, the overall annealing furnace heat treatment, while natural aging to eliminate internal stress. |
| 1.2 | Surface of worktable has no holes, blisters, cold septa, cracks, repair welding and other defects after proceeding; |
| 1.3 | Flatness of surface : 0.10/1000mm (Industry standard: 0.15/1000mm); |
| 1.4 | Verticality of the side face and upper surface : 0.05/200mm; |
| 1.5 | The parallelism and verticality of corresponding sides are equal to 0. 10/100mm; |
| 1.6 | Surface Finishment: 1.6-3.2μm ; |
| 1.7 | Grid line specification: 100x100±0.05mm, with X- and Y-directions millimeter tick marks on the table edge; |
| 1.8 | Hole diameter specification and accuracy: Φ28.10±0.05mm, hole spacing: 100±0.03mm; |
| 1.9 | Thickness of anti-rust painting (dark yellow) applied to the inner surface of the sanded worktable more than 60um; |
| 1.10 | Load Capacity: Support leg series: 3T/m²; Holding frame support series: 5T/m². |

U/L-Shaped Squares, Supporting Squares

| | |
|-----|---|
| 2.1 | Material: Q345B, HT300, QT500, the whole furnace annealing heat treatment to eliminate internal stress; |
| 2.2 | Any working face is free from holes, blisters, cold septa, cracks, repair welding and other defects after proceeding; |
| 2.3 | Positional tolerances between working surfaces: 0.1/1000mm; |
| 2.4 | Surface famishment: 1.6-3.2μm; (surface condition = no visible processing marks) |
| 2.5 | Hole diameter and accuracy: Φ28.10±0.05mm, spacing between holes: 100±0.03mm or 50±0.03mm. |

Locating parts (Locating angles, locating squares, squares angles, etc.)

| | |
|-----|--|
| 3.1 | The material is made of blackened 45# steel; |
| 3.2 | All locating parts are finished at once without weld to ensure its strength , hardness and anti-impact capacity; |
| 3.3 | Quenching and tempering, hardness: HRC30-38; |
| 3.4 | Hole diameter and accuracy: Φ28.10±0.05mm; |
| 3.5 | Workface Finishment: 1.6-3.2μm. |

Clamps

| | |
|-----|---|
| 4.1 | The Clamping device requires flexible operation and reliable clamping; |
| 4.2 | The head adopts split structure design, which is not easy to fall off and make maintain and replace easily; |
| 4.3 | The hand-held part is plastic made which can resist corrosion, wear, and slipping. |

Fixing Bolts

| | |
|-----|--|
| 5.1 | The rapid locking bolt adopt five steel balls positioning method to ensure its accuracy and its precision reach Φ28h7. |
| 5.2 | Locking force over 25KN; |
| 5.3 | Disassemble and clean it regularly to allow longer tool lives. |
| 5.4 | Strength, surface hardness: ≥ 590N/mm2, ≥ HRC40; |
| 5.5 | Cap of the locking bolt has intensive grid lines and circular shape design to make it non-slip and easy tighten. |

