



ZHONGDA · CHINA



# TOWER INTERNALS & PACKING

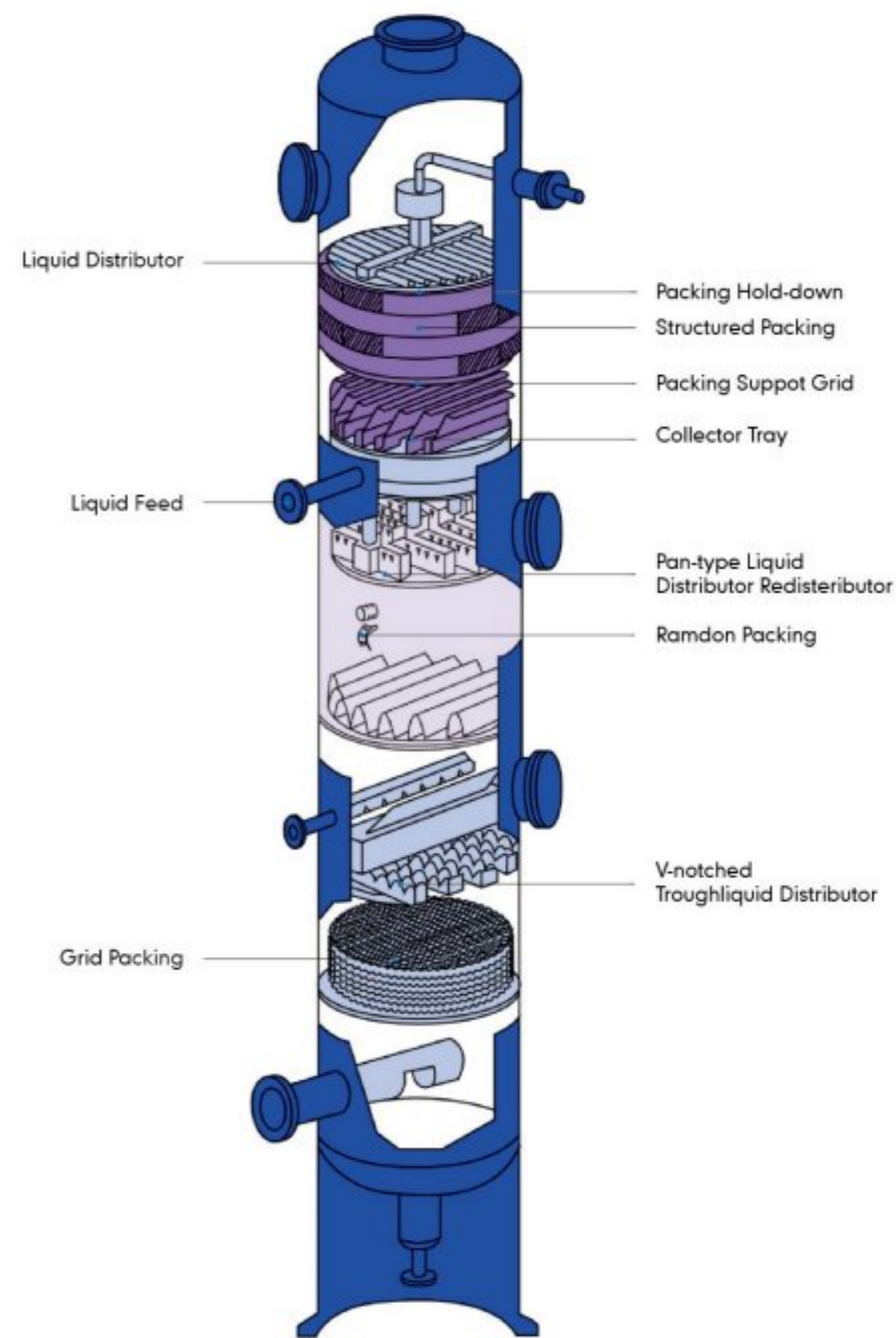
## ZHEJIANG ZHONGDA SPECIAL STEEL CO., LTD

ADD: NO.88, HUYAN ROAD, BAIBU TOWN, HAIYAN COUNTY, ZHEJIANG PROVINCE, CHINA  
TEL: (+86) 573 8677 0879  
FAX: (+86) 573 8677 9598  
Http: // www.zhongdasteel.com  
E-mail: zzy@zhongdasteel.com wgf@zhongdasteel.com



[www.zhongdasteel.com](http://www.zhongdasteel.com)

ZHEJIANG ZHONGDA SPECIAL STEEL CO., LTD







## COMPANY PROFILE

Zhejiang Zhongda Special Steel Co., Ltd, one branch company of Zhongda United Holding Group Corp., has been established since 1992. After twenty years' operation, Zhongda Special Steel has evolved into a comprehensive enterprise, extending its business product of from Tube & Pipe to Welding Consumables, Tower Internals & Packing, Electronic Material & Element and Piping Spools.

Tube & Pipe is a core business product of Zhongda Special Steel. Zhongda Special Steel has successfully supplied seamless stainless steel tube & pipe with a variety of international projects.

As the leading supplier of strip cladding in China, Zhongda Special Steel boasts sound market reputation and strong market competitiveness. Through the continuous optimization and innovation, Zhongda Special Steel is engaging in Nuclear Power Industry and Military Industry. Together with our partner HWI and Harbin Well Welding, we are supplying total welding consumables with our clients, including welding rod, welding wire, strip cladding, the application flux and technical service.

The product line of Tower Internals & Packing was established in 1996, under the technical supporting of Tsinghua University.



Zhongda Special Steel can provide the technical, design and fabrication of variety kinds of pipe spools as weld type or non-weld type, including High Pressure Pipeline 4130 for offshore, Hydraulic Pipeline, Pipeline for Power Station (Thermal & Nuclear) and Pipeline for Chemical & Petrochemical Industry.

Besides conventional field, Zhongda Special Steel is supplying Electronic Material & Element for Electronic Industry and Semi-conductor Industry. The product includes Bimetal Strips Laterally Welded (Stainless Material and Mu-Cu Material), Ni36 Strip, Ni42 Strip, Ni99.9 Strip, BA Tubing and the relevant Elements.

As a subsidiary company of Zhongda Special Steel, Jiaying Zhongda Import & Export Co., Ltd are looking forward to forming successful business relationships with new clients around the world in near future.





## RANDOM PACKINGS



### Pall Ring

Pall ring has made great improvement on Raschig ring. It can improve the gas and liquid distribution, make full use of the inside surface of the ring. Compared with Raschig ring, it can improve processing load and reduce the pressure by 50%.



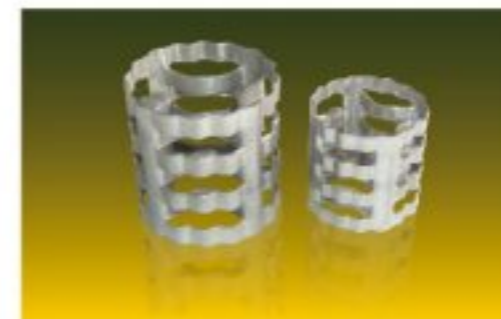
### Step Ring

Step Ring absorbs advantages of short Raschig and improves Pall ring. Height to diameter ratio of the ring is 1:2 and a tapered edge is added to one end. It reduces resistance when the gas goes through the machine bed and increases flow rate. The intensity of the filling is quite high. Due to its structural characteristics, gas and liquid are distributed evenly and the contact area of gas and liquid is increased, thus improving mass transfer efficiency.



### Intalox Saddle Ring

The shape of Intalox saddle is between ring and saddle, and therefore has advantages of both. This structure helps distribution of the liquid and increases gas channels. It has smaller resistance, larger flow rate, higher efficiency, better filling intensity and rigidity than Pall ring. It's a kind of bulky filling used most widely at present.



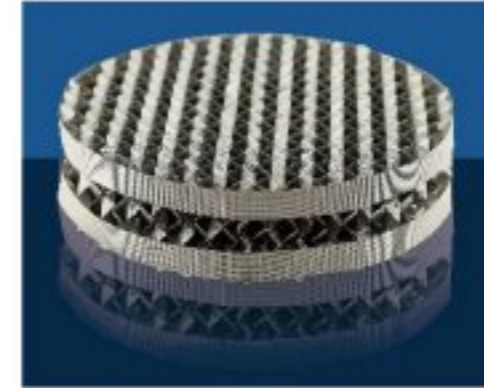
### Retrofit Inner Arc Ring

It has appropriate geometric symmetry, good tectonic uniformity and high void ratio. Flux can increase 15-30 percent and pressure drop can reduce 20-30 percent.



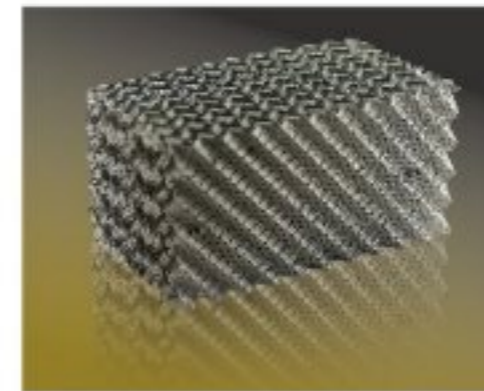
# STRUCTURE PACKINGS

- Orifice Corrugated Packing
- Web Corrugated Packing
- Rolled Pore Plate Corrugated Packing
- Mesh Corrugated Packing



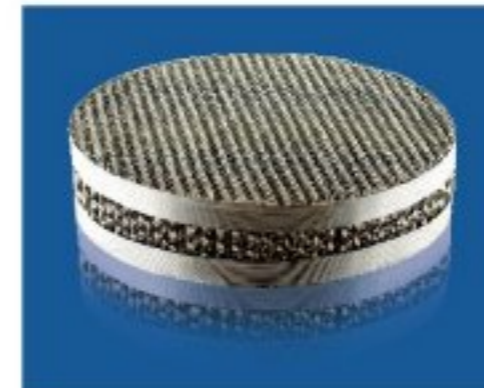
## Orifice Corrugated Packing

Orifice corrugated packing is clear and neat filling assembled and small and large corrugation rolled on basis thin board surficial holes. It has characteristics such as small resistance, even gas and liquid distribution, high efficiency, large flow rate and unremarkable magnifying effects etc. It's applied to negative pressure, normal pressure and pressurization operation.



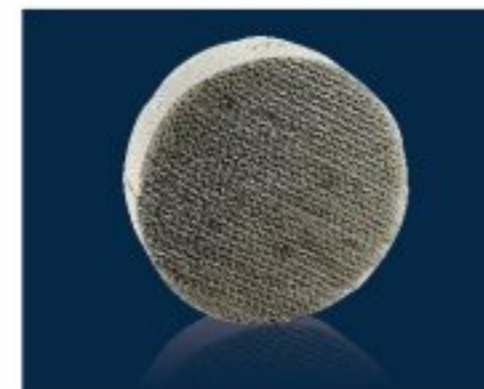
## Mesh Corrugated Packing

Mesh corrugated packing is punched lot of diamond-shaped tiny holes at metal thin slab. It keeps the properties of web corrugated packing and Orifice corrugated packing.



## Rolled Pore Plate Corrugated Packing

Rolled pore plate corrugated packing can improve the wet ability of packing and keep the properties of web corrugated packing.



## Web Corrugated Packing

Web corrugated packing is an important milestone of the development of clear and neat filling. this kind of filling consists of arranged web pieces pressed into corrugation. Obliquity of corrugation is 30 or 45 and the neighbor two pieces are of opposite directions. When filling into the column, upper and lower filling trays cross by 90. It has advantages of high effectiveness, low pressure drop and large flow rate. this product includes BX.CY types, generally used in vacuum distillation, normal pressure distillation and absorption processes of matters hard to separate or thermal sensitive.





■ We can do OEM or make design based on your requirements



## TOWER TRAY



Bubble cap tray is featured with high flexibility and capacity. Its best to used for low liquid load and high turn down ratio.



Valve tray is featured with:

1. High capacity, 20~40% over bubble cap tray due to vapor blows horizontal and reduce the entrainment, also valve tray gives higher open rate.
2. Higher operation flexibility compared with bubble cap tray.
3. Higher separation efficiency as no barrier on the tray deck, thus little liquid gradient and vapor spread evenly.
4. Lower pressure drop. The vapor tunnel is much simple than bubble cap.
5. Simple design in structure and easy for fabrication.



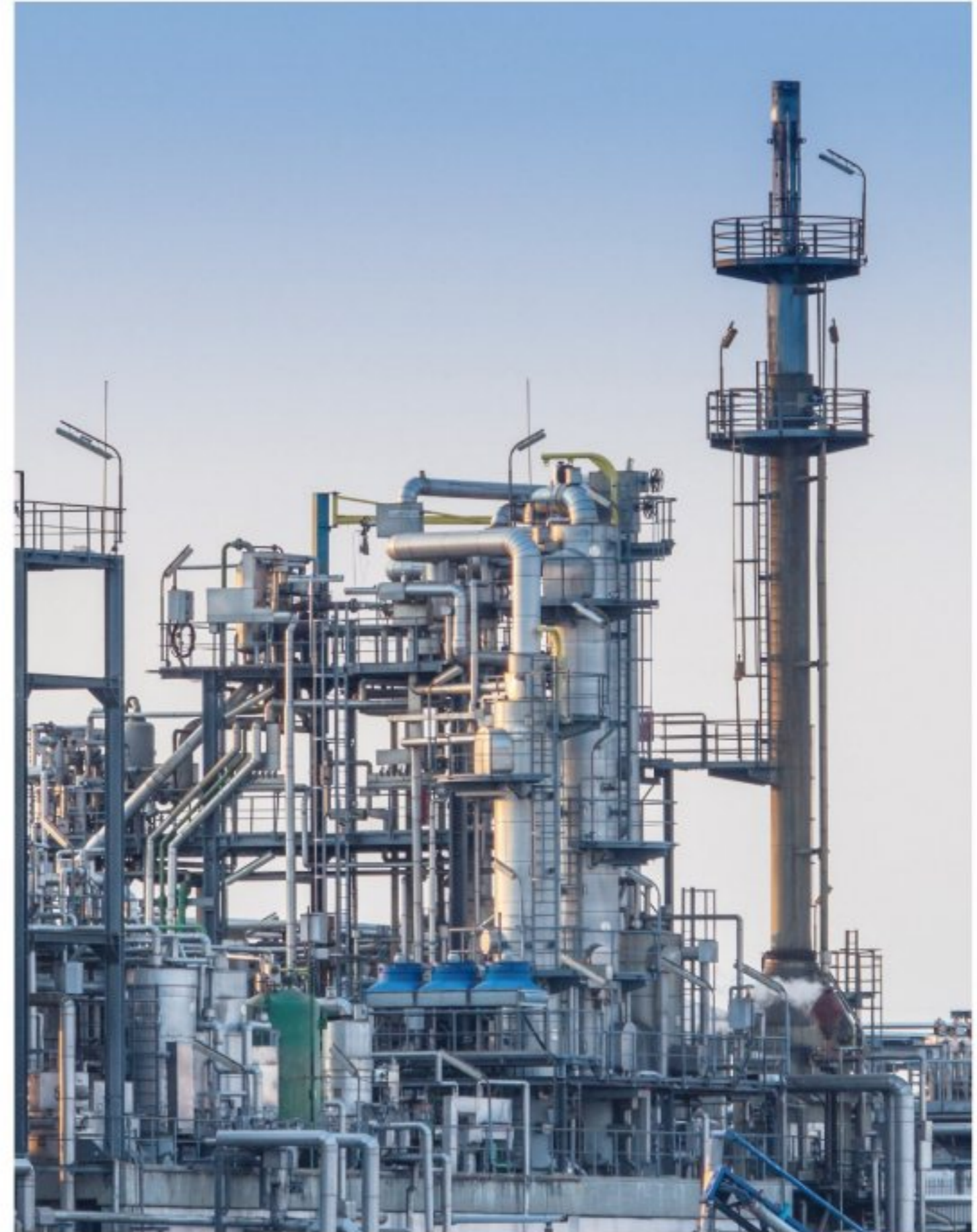
Sieve tray was invented in early days to apply in which high turndown ratio is not required. Yet gives very low fabrication cost. Xiesheng provides all the ordinary sieve tray. Includes small holes for improved vapor capacity and Venturi holes for low pressure drop.

■ We can do OEM or make design based on your requirements



## VALVE & FASTENER

- The valves are the important parts for internals. We can make design or do OEM as per your requirements.
- The fasteners are used for connection when assembly the internals in tower. We can make design or do OEM as per your requirements.





# INSPECTION AND TEST

## Raw Material Inspection

1. Check the material supplier's mill test certificates
2. Check the material's quantity, size, surface condition
3. Conduct chemical analysis and mechanical property test



Mechanical Property Test

## Chemical Composition Analysis



Dimension Inspection

## Process Inspection

1. Inspect single work-piece's dimension, levelness, bend degree, hole size, hole location, etc.
2. Inspect the work-piece's welding result

## Cleaning Result Inspection

- After the work-piece pass the process inspection, then go to cleaning to wipe out its oil&grease, dust, and other contaminants. Inspection method:
1. Visual inspection
  2. Wipe test
  3. Black light test
  4. Mirror test (if need)



Black Light Test

## Water Test



## Assembly Inspection

After cleaning inspection is good, then assemble on set to inspect its overall levelness, dimension, etc.

## Water Test

Water test is a good way to check the distributor's working performance. The test items includes:

1. Liquid height in trough
2. Used time of one hole to fill the container
3. Calculate the coefficient variance(CV)

## Package Inspection

1. Check the small parts quantity according to packing list
2. Check the protect method of the internals



# WHY ZHONGDA

## ZHONGDA have advanced production equipment

1. Automated hole punching machine and bending machine. We can punch the 0.9mm holes on 1.5mm thickness plate. Our bend machine have maximum capacity of 2000ton.  
 2. One step to final products. From raw material to final products, only need one step. The machine is controlled by computer, production capacity is much higher.



## ZHONGDA have advanced cleaning equipment

We have two sets ultrasonic cleaning equipment. One set is 4.5M, the other set is 1M. Also, we have professional pickling trough for stainless steel.



## ZHONGDA have impeccable tracking manage system

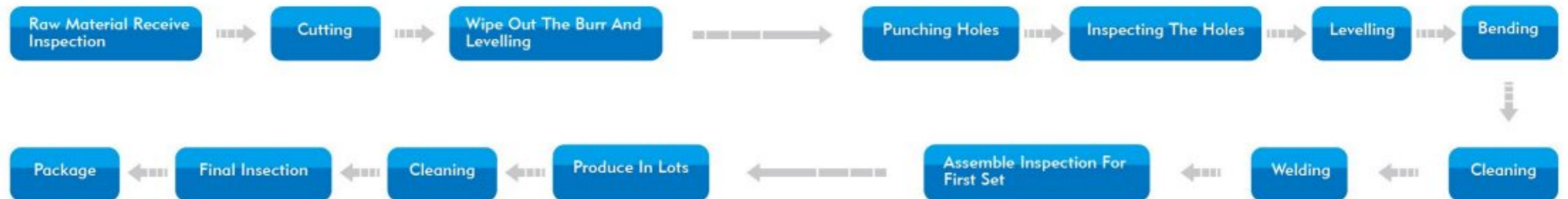
Each work-piece have one tracking number and relevant inspection records. It will help to find Non-confirm parts timely and all the inspection record will be kept 3 years at least.



## ZHONGDA have rich welding experience welders

We have participate in internals&packing manufacture more than 20years. Most welders have rich experience.

## Flow Chart





## MATERIAL

- S/S 300 Series
- S/S 400 Series
- S/S Duplex & Super Duplex
- S31254
- Monel 400
- Aluminum
- Titanium
- Zirconium



## APPLICATION INDUSTRY

- Petro-chemical
- Air Separation
- Refinery
- Coal-chemical Industry

