

Fastener Machinery

arranged by Fastener World

Focus
This
Month

Large-size Economical "Gear-bush Type Large Former"
(Wuxi Zhengyao Machinery)

Roller-type Long Screw Straightening Machine
(Hung-Yin Enterprise)

RBF-84S Cold Former/RBP-206L(H) Cold Former
(Harbin Rainbow Technology)

The manufacturing procedures of fasteners generally can be divided into wire drawing, heading, threading, heat treatment, straightening, surface treatment, sorting & inspection, etc. Each will influence its following step. As a result, adopting the right processing machines in each step will greatly increase the "qualified" ratio of products and ensure the compliance of fastener manufacturers' finished products with the requirement of end-users for the optimal quality.

In this issue, we will have an in-depth understanding of how Wuxi Zhengyao Machinery could help users elevate their manufacturing efficiency and reduce their investment cost with its most recently modified former applicable for small-diameter materials; we will also get the opportunity to learn how Harbin Rainbow Technology could assist customers in improving both their capacity and capabilities; plus, we will see how Hung-Yin Enterprise, based in Taiwan and focusing on the global market, developed the world's first and unique roller-type long screw straightening machine. The mechanical performance of their machines does not only impress customers around the world a lot, but also reveal the strong R&D capabilities of Asian fastener manufacturing machine developers!

Customer-oriented Wuxi Zhengyao Machinery (of Qunfeng Machinery Group) Develops Large-size Economical "Gear-bush Type Large Former"

by Gang Hao Chang, Vice Editor-in-Chief of Fastener World

Wuxi Zhengyao Machinery Co., Ltd. (an affiliated company of Qunfeng Machinery Group) has decades of experience in fastener machinery manufacturing and specialized in offering gear-bush type large formers, multi-station bearing type nut formers, multi-station long stroke parts formers and powerful large formers for non-standard parts. In response to customers' increasing demand for large formers with a high C/P ratio, Wuxi Zhengyao has particularly developed 5-station and 6-station "Large Size Economical Gear-bush Type Large Formers," including patent pending models 33B, 41B and 50B.

Modified Operation with Enhanced Working Efficiency

Compared to many Taiwanese multi-station formers, this new model features 4 main differences in its mechanical design:

- Forming with small-diameter wire rods.
- Powered by double-reduction gears and the crank shaft is assembled with all copper alloy bush (instead of the belt-type single flywheel and the crank shaft assembled with bearings).



-Material cutting and the transfer system are driven separately, different from Taiwanese machines.

-Competitive price.

Applicable to Small-Diameter Materials, Reducing Customers' Manufacturing Cost and Investment Risk

With the small-diameter wire forming technology, customers could adopt small-diameter materials rather than other large-diameter materials that are at higher prices and difficult to be acquired, thus achieving lower usage, dies, wire and maintenance & repair cost. Moreover,

its comparatively cheaper machine with performance better than customers' expectations also acts as an alternative with shorter ROI period, lower cost and better effectiveness for customers who used to adopt expensive formers.

Vice general manager Meng said, "Manufacturing some large-size products (e.g., threaded sleeves for construction rebar (rebar connector) that weighs 630g per pcs, M36 stainless steel nuts or large ball valve fuses(the core of globe valve) will require bigger facilities to process them. Accordingly, if manufacturers could adopt our economical former applicable to small-diameter wire coil, they will be more competitive in strength! In addition to being widely adopted across the domestic market, our machines have been also designated by many overseas loyal customers to be used in their plants."

Meng added, "To Zhengyao, which sets sharing with customers, continuous innovation and customer satisfaction as its mission statement, the sense of achievement Qufeng Machinery Group and Zhengyao Machinery have gained from saving a lot of cost for customers by relentless effort in machine upgrade and renovation is more exciting than the revenue shown on the balance sheet."

Continuous Innovation and More New Machines to be Released



As a topnotch fastener former manufacturer in China, Zhengyao is aware of the growing and diversified demand in local Chinese market and has invested RMB 2 billion in setting up a 100 acres of smart factory installed with Korean intelligent automated manufacturing lines and developing two new machine series to offer customers more options. Meng said, "In order to extend the application of our products in manufacturing and create a win-win, we'll expect to provide more customers with better and more efficient products and welcome collaboration with more companies in the future."



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The Must-have for Manufacturers- Roller-type Screw Straightening Machines by Hung-Yin Enterprise

by Gang Hao Chang, Vice Editor-in-Chief of Fastener World

Headquartered in Gangshan (Taiwan) for nearly a decade, Hung-Yin Enterprise is the only one company in Taiwan as well as the whole world to introduce the idea of "rollers" into the development of screw straightening machines. In previous conversations with fastener companies, General manager Chang, who once dedicated himself to tooling processing, realized that the straightness of heat treated long screws had been a bothering issue for the fastener industry for so long. As a result, he devoted to the area with his wealth of machining knowledge and experience in R&D and successfully developed the world's first and CE approved roller-type straightening machine. Hung-Yin's products series include vertical/horizontal/low-platform vertical straightening machines. Aside

from its sales around the global market, Hung-Yin can also provide straightening service for Taiwanese clients. Its plant (approx. 925 sq m) is installed with 8 professional straightening machines, which can process around 200 tons of screws per month.

5 Times Processing Efficiency / 50 pcs Could be Straightened Per Min.

The industry adopting traditional hydraulic straightening machines used to face the problem of low processing efficiency, as those machines could only straighten 8-10 pcs of screws per min., which vexed fastener manufacturers who spared no effort to reduce their manufacturing cost. Hung-Yin's machine can completely solve this problem and its processing efficiency is more than 500% the efficiency of traditional ones (i.d., over 50 pcs of long screws per min.). Such surprising processing efficiency has made many leading fastener manufacturers from Europe, USA, Japan and Korea as well as Taiwanese-invested factories in China, Vietnam and other Southeast Asian countries switch their orders to Hung-Yin. Since the release of the new machine in the market, Hung-Yin has always maintained the output record of at least 5 sets per month, making it gain a leading solid base in the supply of roller-type straightening machines within only a few years.

Straightening by Section to Create Better Straightness

Besides fast operation, Hung-Yin's straightening machines can also help clients ensure the compliance of straightness of every pcs of screw within the tolerance. As for other long screws with higher safety requirements, they are particularly suitable to be treated by Hung-Yin's straightening machines. General manager Chang said, "The design of a hydraulic straightening machine is: the whole screw is put in and straightened by the hydraulic mechanism. However, carelessness in this procedure may result in shank or thread damage. Our self-developed roller-type straightening machine can straighten clients' screws section by section, avoid unnecessary damage, and achieve better screw straightness." Hung-Yin's machines can process various long screws, made of steel/iron/aluminum/copper, with the hardness below RC50 and in the length of 60mm-600mm. If clients need other specifications, Hung-Yin can also offer customizing service.

Vertically Integrated Automated Operation, Substantially Reducing Labor/Time Cost



Hung-Yin's machines are automatically controlled from feeding to straightening, which can save a lot of labor and time cost and create the advantage of "one man takes care of 3 sets of machines." When clients adopt Hung-Yin's machines, they can also use comparatively low-cost continuous furnaces (rather than other costlier furnaces) to do heat treatment, which can greatly reduce their manufacturing cost, shorten lead times and enhance the effectiveness of customer service. Chang said, "Several domestic/overseas clients who have purchased our machines for the first time are also surprised at the cost we have saved for them. Looking forward, we hope that we can continue to prove our strength with quality and technique and also expect that our straightening specialty will allow us to create for clients better added value of products."

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Multi-station Cold Formers by Harbin Rainbow Technology

Capacity/Capabilities are Significantly Upgraded
with the Addition of Complex Clamps

by Gang Hao Chang, Vice Editor-in-Chief of Fastener World

Harbin Rainbow Technology Co., Ltd. is dedicated to the import/export business and R&D of machinery, tooling and electronics products. Its product portfolio includes screw/nut cold formers, heading machines, galvanizing lines, mesh belt furnaces, etc. With years of goodwill and experience in offering technical support to the market, Harbin Rainbow has successfully become an authorized dealer of several machinery and tooling suppliers. In response to the market development and customers' ever-changing demand for fasteners in recent years, Harbin Rainbow has reinforced its R&D and developed various multi-station cold formers. The bestsellers in the market are models **RBF-84S** and **RBP-206L(H)**.

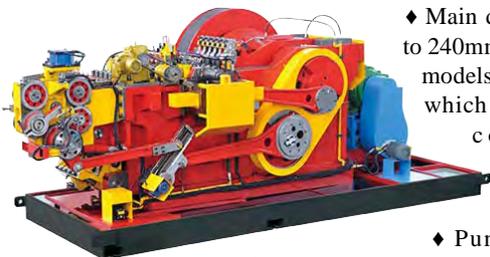
Complex Clamps are Added for the First Time Efficiency Better than Similar Models in the Industry

Considering customers' focus on the capacity and capabilities of machines, Harbin Rainbow's excellent R&D team introduced the design of complex clamps that could improve both capacity and capabilities into RBF-84S cold former and RBP-206L(H) 6-station part former, which means a new turning nut clamp is added onto the original single horizontally moving clamp in order to generate surprising working efficiency to users.

Compared to similar models in the market, RBP-206L(H) 6-station part former is particularly worth being mentioned, as it shows more competitive advantages, which are detailed as below:

◆ Main die stroke is up to 240mm (other similar models: 200-210mm), which means longer cold formed parts can be produced.

◆ Punch die stroke is up to 55mm (other similar models: 45mm), which means sophisticated parts with longer heads can be produced.



◆ The assembly dimension of the main die is $\phi 125 \times 450L$ (other similar models: $\phi 125 \times 240L$). It can be installed with dies for manufacturing sleeves with higher added value, improving the manufacturing capabilities and increasing the production of cold formed parts with higher added value.

◆ It has an independently working and replaceable complex clamp mechanism (including a horizontally moving clamp, a turning nut clamp and a turning clamp, which can be changed to different positions according to different manufacturing demands of customers.)

◆ It has a material retaining mechanism to ensure the stability of the clamp and improve efficiency in manufacturing short parts.

◆ It has a pulse calibration control system for easy calibration & testing, improving efficiency, avoiding accidents and reducing the risk of die damage.

◆ The 6th station is installed with the 7th clamp, which can deliver formed parts to the belt directly, thus avoiding part damage and enhancing the quality of cold formed parts.

◆ It has a horizontal wire rod holder. Feeding is remotely controlled by a shaft, which can be operated easily, reduce labor force and increase safety.

◆ It has an upgraded main transmission mechanism with up to 430 tons of cold forming force, much better than other similar machines.

Applicable to Sleeves, Spline Gears and Other High Speed Rail Parts and Popular Among Emerging Markets

General manager Chen said, "Our customers using other old machines in the market used to face the issue of failure to produce qualified cold formed parts. Our machines can not only solve this issue immediately, but can also simplify customers' manufacturing procedures, increase the anti-pullout strength of products and reduce the dependence on imported machines. Thus far, our machines have been widely used in production of sleeves, spline gears and parts for cars and high speed rail. We continue to gain more market share in the industry and our products have been successfully exported to emerging markets (e.g., India, Brazil and Mexico). In addition to the fact that we have applied for many patents, we will also develop more new models for different cold formed parts markets to satisfy various customers' demands."

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