

SHAOXING FUTIAN MACHINERY CO., LTD.



# FT-ROLLER

PRODUCT BROCHURE

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# ABOUT US

**Shaoxing Futian Machinery Co., Ltd. (former Hangzhou Fulai Mechanical Parts Co., Ltd.)** founded in the year of 2006 and locates in Zhuji city. The company focuses on precision industrial rollers such as steel rollers, stainless steel rollers, aluminum rollers and rubber covering rollers etc., As the key moving parts of material handling system, rollers are used in grand digital printer, plastic film, laminator, paper-making, tissue converting, textile, glass conveyor, mining machines, filter of sodium carbonate and any other industries widely. In addition, FUTIAN could provide extended service including machined parts, metal sheet fabrication and machine assembly.

Today FUTIAN has total 8,000-square-meter workshop and with 6S site management applied. We own **ISO 9001:2015 certified** and license of import & export, and now 80% of our products are exported to North America, Europe, Israel and Singapore and worldwide etc.

We are committed to be a "small but beautiful" company. Satisfying our customers' expectations through qualified products, timely delivery and superior value. Offering our staff a safe, clean and friendly working environment.



# MAIN PRODUCTS

Steel rollers are widely used in many industries, usually supporting the loaded section of the belt. The steel tube guarantees longevity under difficult conditions. We offer various types of anti-corrosion protection (rubber coated, powder coated, zinc plated rollers). Standard sizes are also available upon request. Usually we custom as roller dimensions.

Stainless steel gravity rollers suit a wide variety of applications. Such as textile dyeing machinery, chemical industry, corrosion resistant to ensure maximum performance over a wide range of conditions, usually we have 304L, 316L, 2205 and super stainless steel 904L.

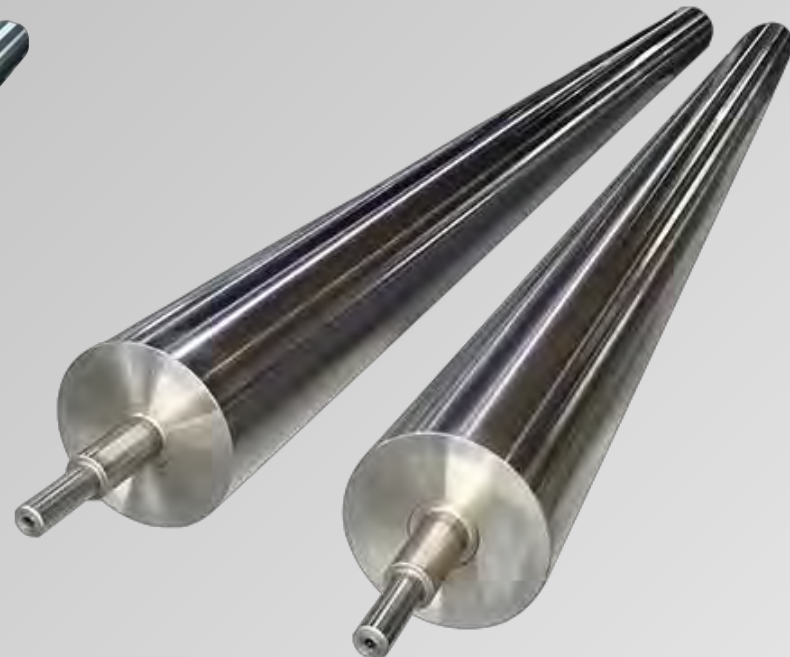
Rubber rollers are widely used in many industries, like wide format printing, paper making etc. Rubber covering possesses excellent hardness and dimensional stability, also provide consistent performance, we have EPDM/SBR/NR/CR/PU/Silicone rubber coatings.

Aluminum rolls are some of the most versatile and hardworking idlers on the market today. Weighing nearly half as much as comparable steel rollers, aluminum idlers still provide exceptional performance across a broad range of applications. in re-winders, high speed printers, and converting equipment etc.

**STEEL ROLLER**



**STAINLESS STEEL ROLLER**



**RUBBER ROLLER**



**ALUMINUM ROLLER**



# CUSTOM STEEL ROLLER

The rollers are made under the process of turning, static & dynamic balancing and final grinding, etc. It has critical requirements for the roundness, run-out, concentricity and cylindricity.

Capacity:  
max.12,000mm in length,  
max.1,800mm in diameter.

Rollers can be coated  
teflon, paint, chrome and  
zinc plating according to  
the working conditions.



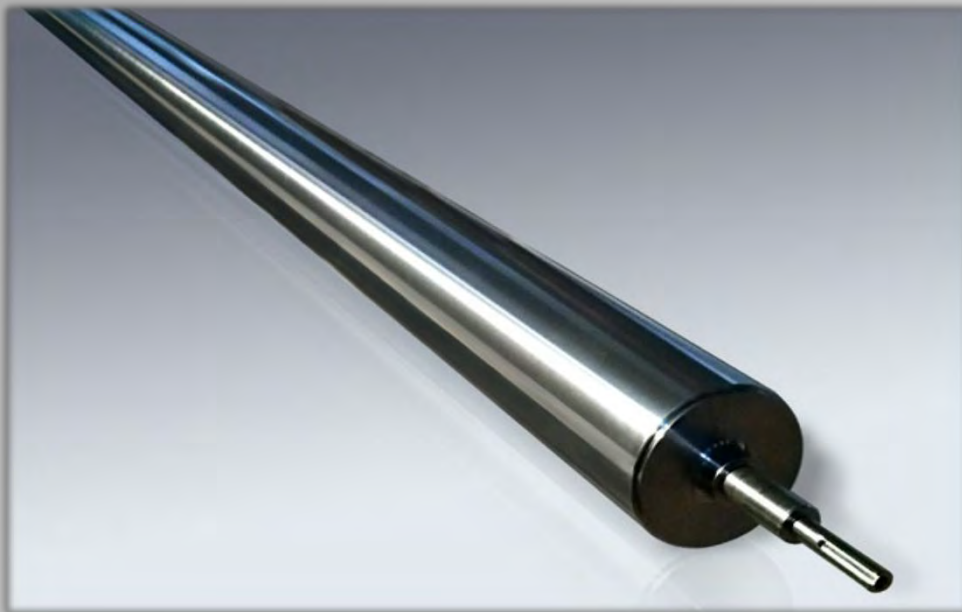


# CUSTOM STAINLESS STEEL ROLLER

Regular stainless steel roller material models are 304L, 316L, duplex stainless steel 2205 and super stainless steel 904L. The selection of materials depends on consideration of both corrosion resistance and budget.

Capacity:  
max.16,000mm in length,  
max.1,800mm in diameter.

Regular surface treatment of stainless steel rollers:  
Passivation/acid pickling/acid cleaning Electro polishing, Dye penetration inspection for welding





# CUSTOM RUBBER ROLLER

When choosing rubber, you need to consider the chemical resistance, wearing resistance and antistatic property. Different equipment have different requirements for rubber, such as printing equipment care more about ink reaction.

Capacity:  
max.12,000mm in length;  
1,800mm in diameter

There are various rubber types that you can choose, such as EPDM (Ethylene-Propylene-Diene Monomer); PU (Polyurethane); Silicone Rubber; NBR (Buna Nitrile); SBR (Styrene-Butadiene Rubber latex); CR (Neoprene) etc.





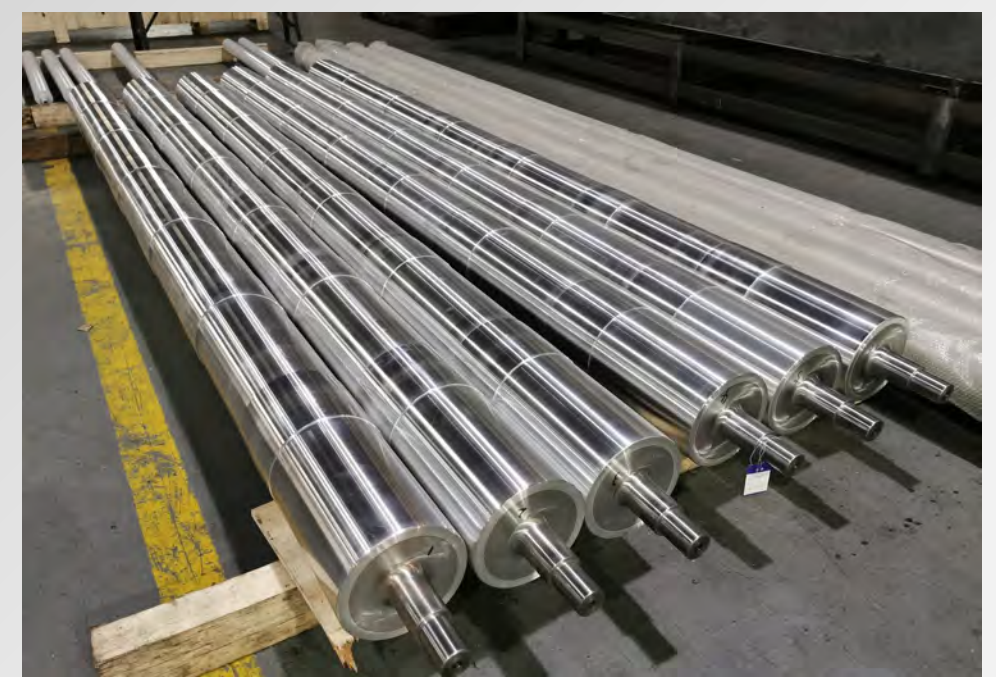
# CUSTOM ALUMINUM ROLLER

Our aluminum guide rollers have the characteristics of high strength, low resistance, light weight, flexible rotation, no-rusty, wear resistance and corrosion resistance.

Capacity:  
max.6,000mm in length,  
600mm in diameter.

Surface treatments:

01. Anodizing treatment HV300.
02. Hard anodic oxidation treatment HV700, dark brown or HV500 in black.
03. Teflon treatment of anti-adhesion, anti-corrosion.
04. Chrome coating.





# CUSTOM IDLER ROLLER

We produce various CNC machined belt rollers and assembly. The precision belt rollers are used in the airport baggage conveyor and logistics conveyors...

Most rollers are made out of material Q345B/S355J2 tube + SKF bearings + CNC machined parts/bearing in house with paint or EPDM/PU finished.

The troughing/carry Idler roller is used in belt conveyor.

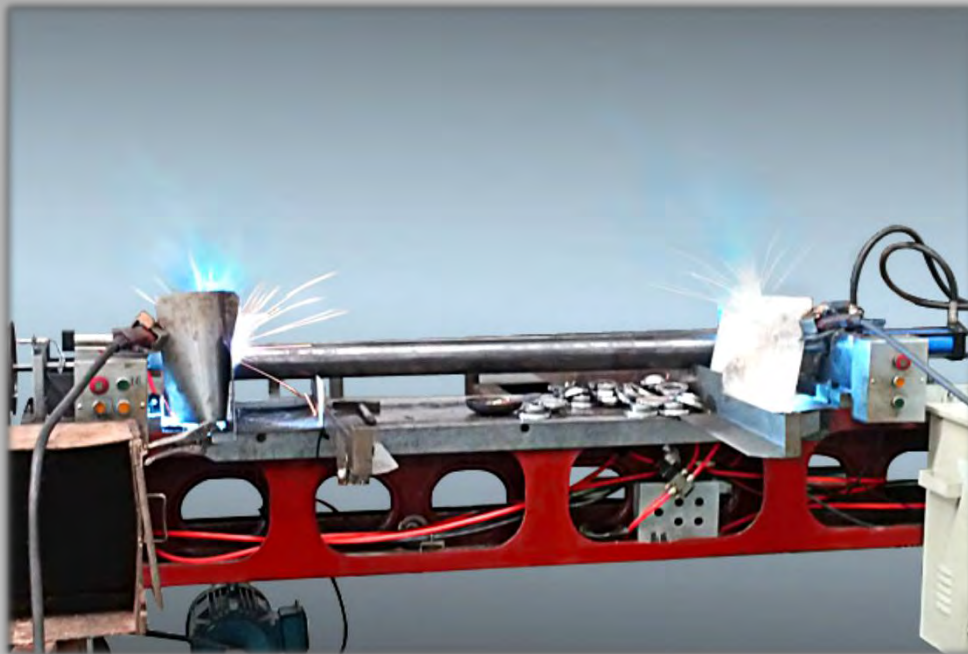
Standard: JIS/CEMA/DIN/ISO

Roller diameter: D60 – 220mm

Size: customized

Finish: powder coating, zinc plating or paint

Welded pipe + Deep grooved bearings + Labyrinth seals





# CUSTOM GUIDE ROLLER

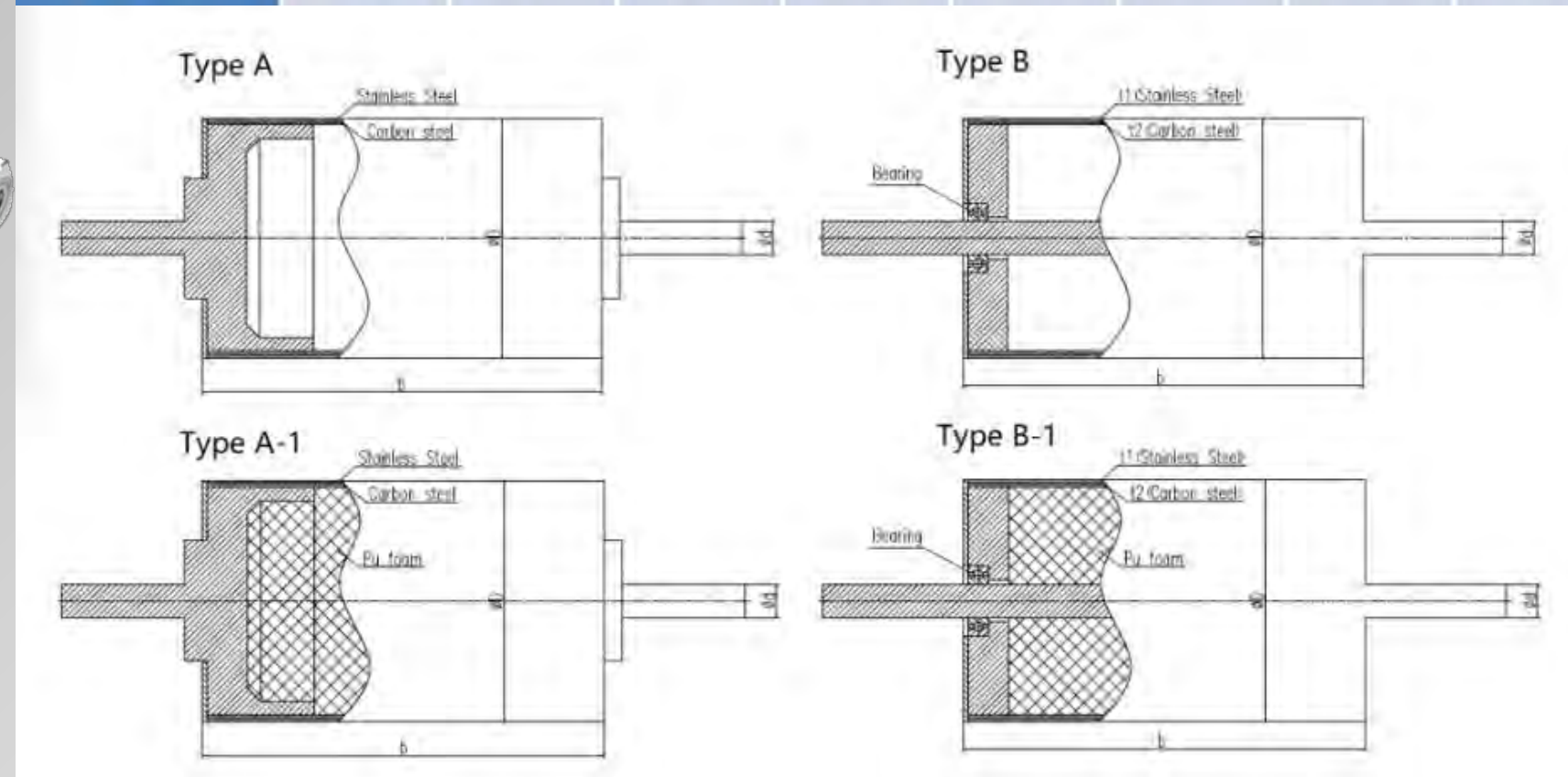
Run-out: max 0.2 -0.4  
Roughness: Ra0.8  
Dynamic balancing: G40 or less  
Welding inspection by dye penetrant

Stainless steel guide roller is a cost-effective choice:

- 1) Fast production
- 2) Much cheaper than expensive precision machined stainless steel roller
- 3) Higher roundness and straightness than usual welded stainless steel pipes



No.	1	2	3	4	5	6	7	8	9
O.D. mm	100	114	125	140	150	165	180	200	254





# CUSTOM AIR SHAFT ROLLS

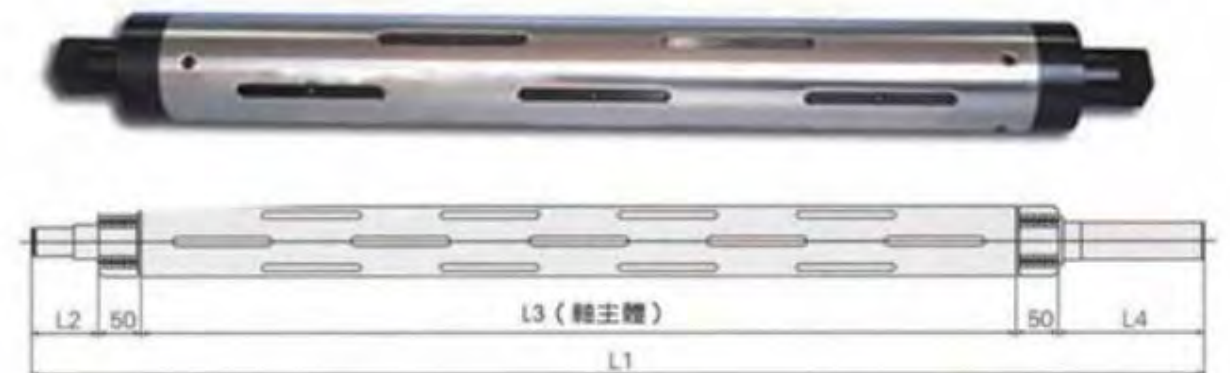
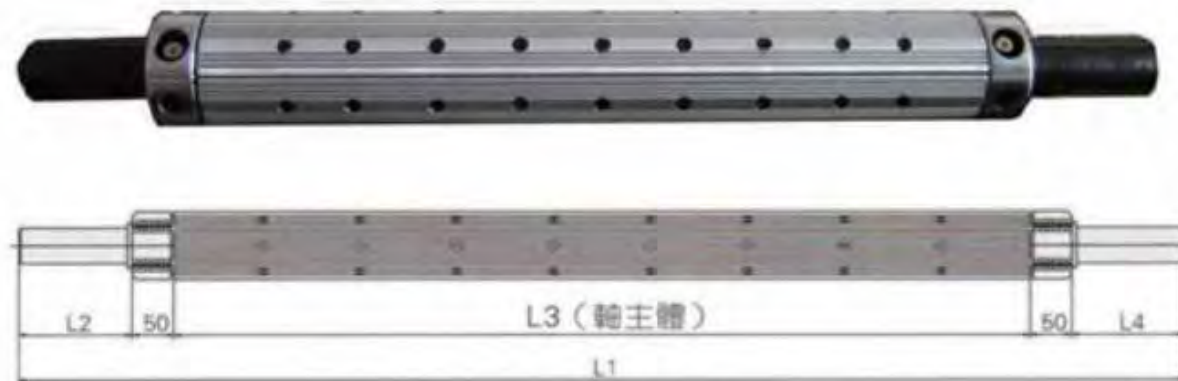
## Material:

Aluminum (standard), steel, stainless steel and carbon fiber construction; (Shaft body is made of high quality steel, the surface hard chromium plating; Aluminum convex key, telescopic flexible; Configuration of high quality rubber bladder with quick exhaust gas mouth, good sealing effect, long service life; Removable shaft head, simple maintenance).

## Surface treatments:

Blacking, polishing, anodize, chrome plating, zinc plating, nickel plating, tinting.

Airshafts—also called “Air Expanding shafts”, “Air Bars” or “Air Mandrels”, used in the manufacturing processes for fitting into a core onto materials, such as paper, card and plastic film industry etc.



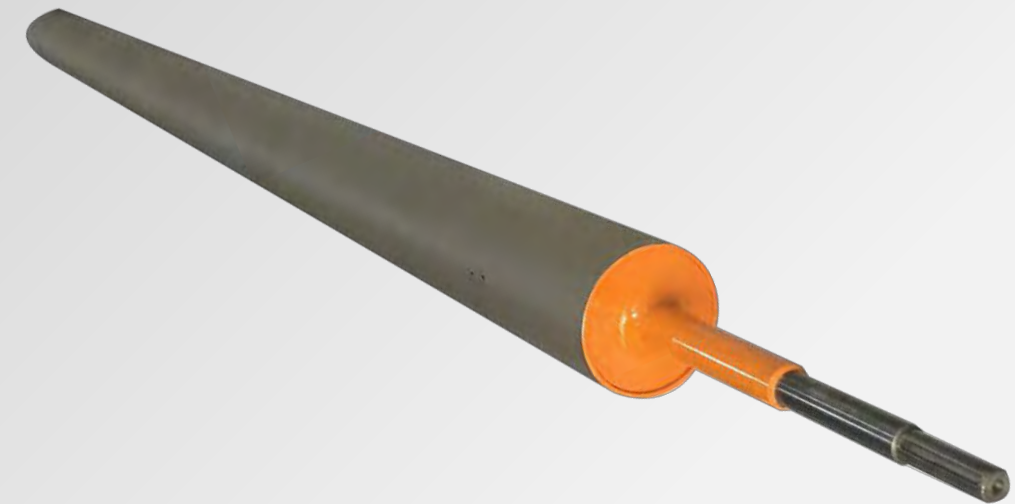


# CUSTOM TUNGSTEN CARBIDE ROLLER

Futian custom helicon roller  
Length of roller: 3,800mm  
Diameter: 215mm  
Run-out: 0.05mm

Tungsten Carbide rolls are used in the manufacture of mill rolls for extended life in applications where long rolling campaigns are required. Their extreme hardness makes them suitable for wire rods finishing blocks and some shaping applications.

The cemented carbides rolls are divided into the conventional WC-Co alloys and the corrosion resistant alloys with a mixed binder Co-Ni-Cr. The binder contents vary according to the specific requirements of the rolling mill. We also offer composite roll rings that are a combination of cemented carbide and steel. Unlike the relatively brittle cemented carbide rings, these composite rings open up a wide range of applications. These roll rings can be shrunk on the shaft without any clearance between the shaft and the ring, leading to an increased stiffness of the roll shaft and a higher rigidity of the system. For the transmission of higher torques, keyways can be machined in the faces or in the inner diameter of these roll rings. These rings are used in the intermediate stands and blocks with a 3-ring layout as well as stretch reducing tube mills.





## QUALITY ASSURANCE

During machining, samples are taken for examination of microstructure and machining is allowed to proceed only if the microstructure is found proper. Hardness of the rolls is checked on the barrel surface as well as the face of barrel to check the depth of useful hardness. The machined surfaces are also examined for any surface defect like blowholes, inclusions, dross and cracks etc. Stage inspection of dimensions is carried out. A final dimension check is carried out at the end of all machining operations. Once clearance is obtained from the Q.A. Department, rolls are finally painted with ant-corrosive paint and packed for shipping.

In order to maintain dimensional accuracy of the rolls all measuring instruments are periodically checked for deviations against a set of Standard Instruments duly calibrated and certified from authorized centers. Samples are also taken out periodically from barrel of some rolls to test the mechanical properties of rolls checked for proper bonding between the shell and the core.

**STEEL ROLLER SURFACE  
ROUGHNESS CHECK**



**MEASURING END'S  
LENGTH**



**OUR ROLLS ON DYNAMIC  
BALANCING**



**RUNOUT INSPECTION OF  
ROLLS**



**RUBBER ROLLER  
SURFACE ROUGHNESS**



**RUBBER ROLLER HARDNESS  
CHECK**



**MEASURING END'S  
DIAMETER**



**OUR ROLLS ON DYNAMIC  
BALANCING**



**COATING THICKNESS  
INSPECTION**





## WIDE APPLICATIONS

### WIDE FORMAT DIGITAL PRINTING

Wide format digital printer always needs high precision black painted or Teflon coated steel rollers, EPDM or Urethane rubber rollers and aluminum rolls. As professional precise roller manufacturer, we are able to supply steel roller, rubber roller and aluminum roller etc.

### FLOAT GLASS CONVEYOR LINE

Float glass production technology is one of the three main ways of modern glass production. The glass produced by float glass has the advantages of purity, good transparency, high flatness and suitable for cutting.

The original glass plate from the annealing furnace is dragged by the cold end roller from a whole large plate, and then reprocessed step by step through the emergency falling plate area, cutting area, horizontal breaking acceleration area, breaking edge area, vertical division, falling plate area and so on, so as to become qualified finished plate meeting the requirements of the market and customers.

It can be said that all operations of the newly produced glass belt at the cold end are completed with the assistance of rollers, so the quality of rollers directly affects the final glass quality, and the circular runout of roller is one of the important factors affecting the glass quality.

### FT-ROLLER for wide format digital printer:

Roller length: 3,000mm~6,000mm

Roller diameter: 76~230mm

Cylindricity: 0.05~0.10

Roller coating: wet paint, Teflon coating and zinc plated for steel roller, EPDM or PU for rubber roller, and anodizing for aluminum roller.



WIDE FORMAT  
DIGITAL PRINTING

### FT-ROLLER for glass conveyor lines

Roller length: Max 6,000mm

Roller diameter: 76~165mm

Cylindricity: 0.05~0.10; Runout:  $\leq 1\text{mm}$ ; Shore A: 60-70°

Surface treatment: Yellow painted roller with EPDM rubber rings.

The O.D. of roller: 76-165mm

The roller length: up to max. 6,000mm

The cylindricity required: 0.15mm



FLOAT GLASS  
CONVEYOR LINE



## WIDE APPLICATIONS

### PAPER MAKING

We deliver large size and pulleys and rolls' solution for paper making industru such as pressing rolls ,calender rolls, vaccum rolls, suction blind drilled press rolls, pope reel drums, rewinder rolls and so on.

### LOGISTICS CONVEYOR LINE

We supply custom conveyor rollers for logiistics chain and belt conveyor, such as airport baggage handling systems, parcel handling systems ,automation solutions for warehouses or any other web handling equipment company. Our workshop equipped CNC lathes, CNC grinding machine, dynamic balancing machine etc.

### FT-ROLLER for paper making

Roller length: 12,000mm

Roller diameter: 2,000mm

Capacity: Diameter up to 2,000mm x length up to 12,000mm



### FT-ROLLER for logistics conveyor lines

Roller length: Max 6,000mm

Roller diameter: cutsom

Surface treatment: zinc plated, painted etc.

The O.D. of roller: 50 - 180mm

The roller length: up to 2,000mm

The cylindricity required: 0.05mm

Coating: paint, zinc plating and phosphatizing etc.





## WIDE APPLICATIONS

### TEXTILE & DYEING MACHINE

Textile&dyeing industry includes weaving and non-woven fabrics,printing and dyeing, finishing, dryer. Roller plays a key role as conveyor in textile and dyeing industry, we could supply steel roller(chrome plated,color painted,tefon finished), rubber roller(NBR, EPDM, PU and silicone etc.aluminum rolls, oscillation rolls,spreading rolls, expanding rolls, stainless steel rolls,heating rollers, driven pulleys, tailor pulleys, nip rolls, printing rollers, glue spreading roller,squeezing rollers etc.

### SODIUM FILTER LINE

We supply high grade precision stainless steel rollers made out of 316L, duplex stainless steel 2205 and super anstenitic stainless steel 904L.

The welding inspection, pickeling&passivation treatment is a must for the stainless steel rollers. The production line also need large size SBR rubber driven pulleys and tail pulleys.

### FT-ROLLER for textile industry

Roller length: 1,200~6,000mm(uaually)

We supply various rollers for textile machinery such as non-woven fabric. The roller material could be steel, aluminum, stainless steel.

The O.D. of roller: 100-820mm

The roller length: up to max.6,000mm

The cylindricity required: 0.05mm (in full length)

Coating: Teflon, zinc plating, electroless nickel plating or rubber coated.

Dynamic balancing speed: max. 2200rpm

### TEXTILE&DYEING MACHINE



### FT-ROLLER for filter lines

Roller length: 3,500~5,800mm

Roller diameter: 1,200mm

Surface treatment: pickeling&passivation

RPA is a leading company in the filter of sodium carbonate, and we supply them the 304L, 316L, 2205 and 904L stainless steel rollers and large SBR rubber coated idler and driven pulleys D1210mm.

The O.D. of roller: from 168 to 1,210mm

The length: up to max. 8,000mm

The weld inspection and pickling & passivation

### SODIUM FILTER CLINE





## WIDE APPLICATIONS

### TISSUE CONVERTING MACHINE

Tissue converting machinery needs lots of different rollers such as aluminum rollers, precise machined and precise machined front and back folding rollers, spiral knife roller and Tunsten carbide coated steel roller etc.

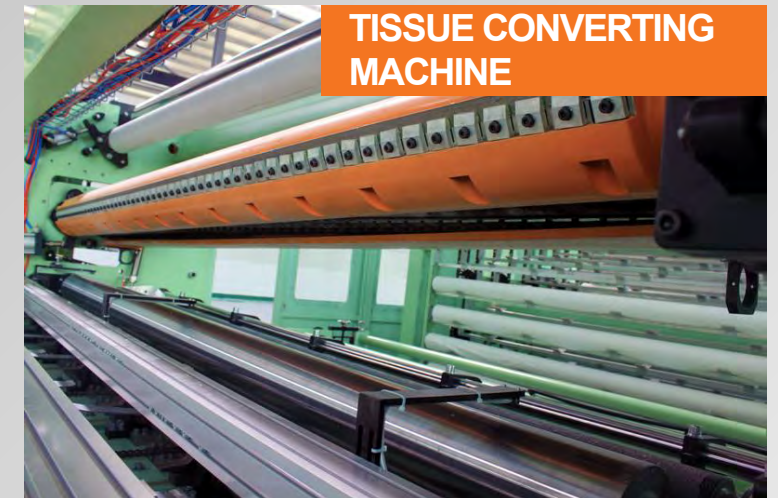
### FT-ROLLER for converting machine

Roller length: 2,500~4,000mm(uaually)

Roller diameter: 76~310mm

Cylindricity: 0.05

Surface treatment: Tunsten carbide or electroless nickel plating for steel rollers, EPDM or NBR for rubber roller and anodizing for aluminum rolls.



TISSUE CONVERTING MACHINE

### MINING CONVEYOR LINE

Trough roller (idler roller, carrier idlers, pulleys, return rollers, impact roller and rubber roller etc.) is as part of belt conveyor used in power plant, cement mill, fertilizer plant, steel mill, coal mine etc. widely.

### FT-ROLLER for mining conveying machine

The O.D. of roller & pulleys: from 60 – 219mm mostly

The length: 160-3200mm

Coating: powder coating, paint, zinc plating etc.

As part of belt conveyor is as part of belt conveyor used in power plant, cement mill, fertilizer plant, steel mill, coal mine etc.



MINING CONVEYOR LINE



## WIDE APPLICATIONS

### PACKAGING MACHINE

We deliver precise rollers. Usually its roller needs to be bored inside of tube in order to get an uniform tube wall thickness, in addition, most of rollers needs to be dynamic balanced at higher rotary speed.

#### FT-ROLLER for packaging machine

The O.D. of roller: 150 - 280mm  
The roller length: up to 2,500mm  
The cylindricity required: 0.05mm  
Coating: chrome  
Pressure test needed at 6 bar( ≥8 hours)  
Paint side plates: 300°C heat-resistant



### LAMINATING MACHINE

Laminating machines are used for multilayer composite such as paper-plastic and aluminum-plastic film etc. We produce various precision high-speed steel roller, aluminum roller and stainless steel rollers for laminating machine.

#### FT-ROLLER for laminating&coating machine

Dynamic balancing: max.2,500rpm  
Cylindricity: 0.02  
Dynamic balancing speed: max.2,500rpm  
Cylindricity: 0.02mm







SGS

## Factory View

Around 8000 m<sup>2</sup> workshop with cnc equipments  
under 6s site management







SGS

# Customers Around the World

With our consistency in product quality, we are able to offer our clients with a wide range of precision rollers and other metal products. All products are available in various standards as well as customized sizes to meet the diverse requirements of our customers. 80% of our products are exported to Europe, North America, Israel, Singapore, etc.





# CONTACT US

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