

Tire Manufacturing Conveyor System

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Innovative



Smart

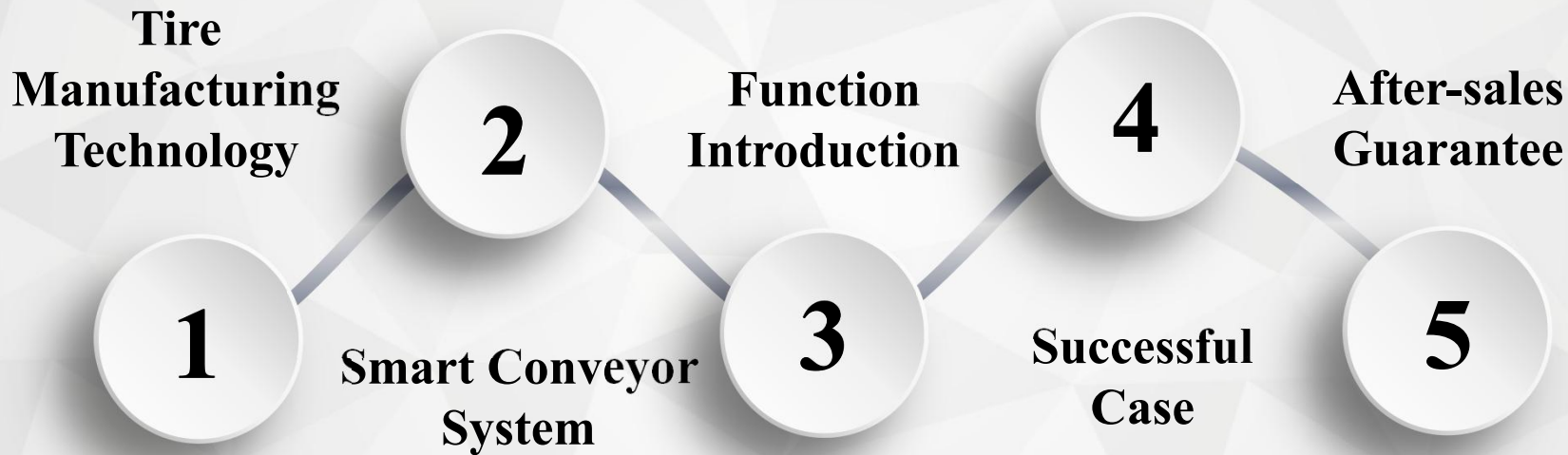


Safety



Energy saving

Contents





PART 01

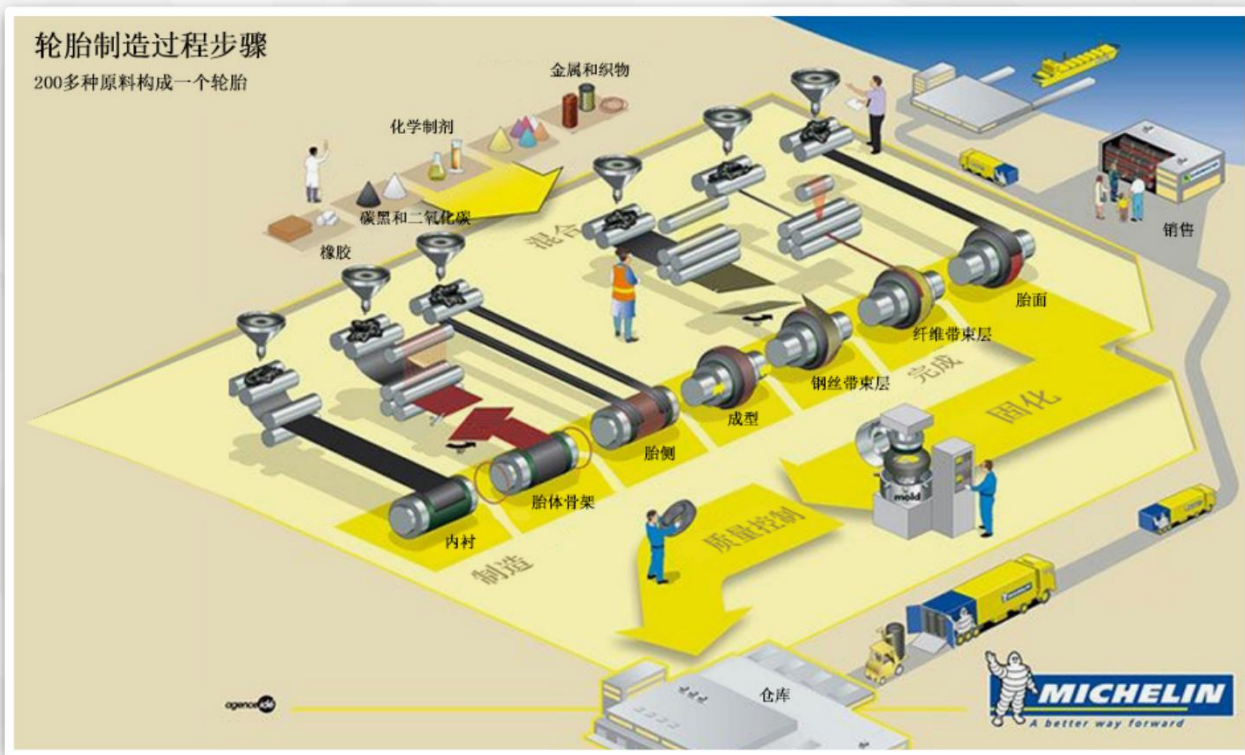
Tire manufacturing Technology

- Industry Overview
- Traditional Application
- Development trend

Industry Overview

Manufacturing Process

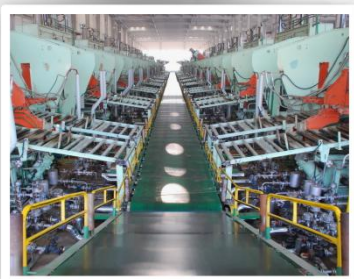
Along with the growing market demand and increasing competition, the popularity of automation has run through the whole tire manufacturing, including rubber mixing & batch-off, rubber extrusion & processing and finished-tire handling. Accordingly, conveying system of each process has been promoted continuously, which leads to the destined coming of smart system.



Traditional Application

1

PVC Conveyor



2

Rubber Conveyor



3

Roller Conveyor



4

**Stainless steel
mesh conveyor**



The Defects of Traditional Application

1

PVC Conveyor

Defects

- Complex structure
- Short service life
- Inconvenient maintenance
- Easy Slipping
- Easy excursion

2

Rubber Conveyor

Defects

- Odor Polluting
- Complex structure
- Inconvenient maintenance
- Easy Slipping
- Easy excursion

3

Roller conveyor

Defects

- Frequent maintenance
- Easy Slipping
- Tire damaging
- Noise pollution

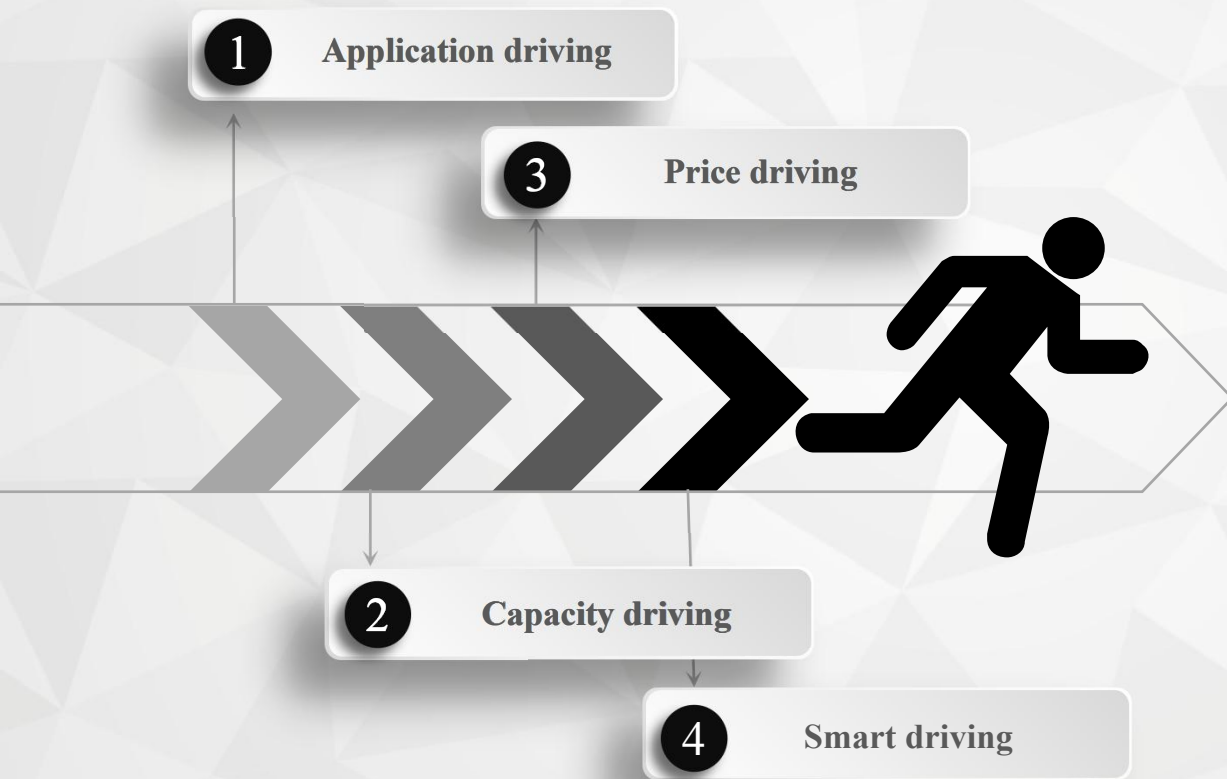
4

**Stainless steel
mesh conveyor**

Defects

- Noise pollution
- Tire damaging
- Inconvenient maintenance
- Lubrication Requiring
- Easy Rusting

Development trend



Developing so far, tire manufacturing line has been using PVC belt, rubber belt, roller, metal conveying to meet end-user's needs--to replace manual work by machine, at that time, market was pushed by application. Later, with the force of capacity, automation, from individual process manufacturing, developed to the whole line reform. As for the increasing of capacity, market supply and demand gradually achieved a balance, cost control becomes the primary factor in competition, end customers all concern how to control the product quality. Thus high-quality modular plastic conveyor system was introduced to tire manufacturing line, which solved all kinds of problem occurred before. Smart driving becomes a new landscape, future belongs to smart modular conveyor system!



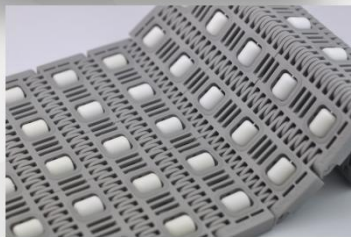
PART 02

Smart Conveyor System

- Product Description
- Product advantage
- Compared with traditional conveyor system

Product Description

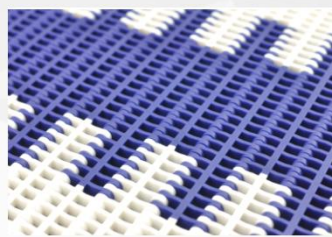
Modular Conveyor



HS-3900C Tire
Accumulation Belt



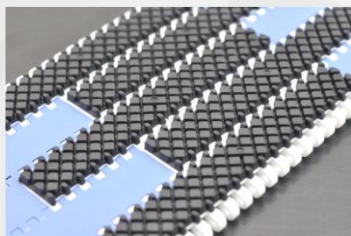
HS-3800-2C
Roller Sorting Belt



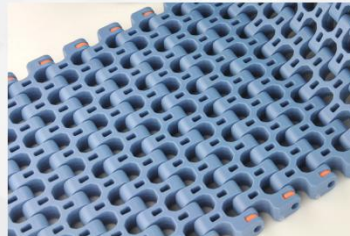
HS-700B-N Flush
Grid Spraying Belt



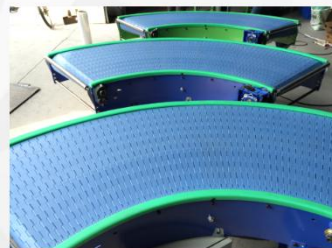
HS-1700B Flush
Grid Spraying Belt



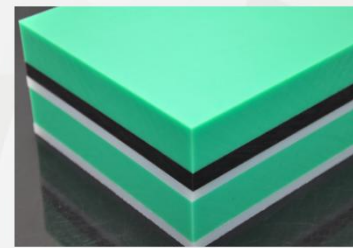
HS-700A-EL
Inclined Belt



HS-501B Flush
Grid Cooling Belt



HS-2000A Plate
turning conveyor



High Polymer
6,000,000 Wear Strip

Product Advantages

Easy Maintenance

1

2

Low hidden costs

Eliminate slipping & Deviating

3

4

Improvement of Qualified Products

5

Multi-function application

Product advantage

We, HONGSBELT, have been proving our high-quality and innovation through constantly introduction of new materials . After successful cooperation with our customers, we have developed a large number of optional belt solutions for tire manufacturing. Due to obvious advantages compared to traditional conveyor belt, after eliminating a lot of after-sale service&security risks, we have largely invested in the development of modular conveyor belt. Now HONGSBELT offers thousand types of smart modular belt of different material and color, which can run through every process of tire manufacturing.

Compared with traditional conveyors

Common conveyor problems	Regular fabric flat belt problems	Modular conveyor belt solutions
Guiding orientation	<p>Caused by frequent deflections</p> <ul style="list-style-type: none">• Reduce the output and/or bear fracture risks of conveyor belt in the production process• Constantly increase HR costs for the control of pollutions• Replace conveyor belt• Re-adjust tension device• Trim edge damages• Replace pulley	<p>Due to zero deviation, so it may not cause any associated cost.</p>
Safety	<p>Frequent connections of conveyor belts might cause staff to be faced with long-time safety threats.</p>	<p>Without necessity for connections, without casualty risks</p>

Compared with Roller conveyors

Common conveyor problems	Roller conveyor problems	Modular conveyor belt solutions
Repair and maintenance	Multiple failures require frequent replacement of components and continuous maintenance, thus resulting in costly downtime.	Modules can reduce maintenance and repair costs by 85%.
Costs	Wear and avulsion may cause frequent replacement or reconstruction of the entire system.	Almost zero maintenance extends the belt's service life, and increases time-based value. Through the comparison of installation of new roller conveyor system, the modification cost has been reduced by 50%.
Tire damage	Rough transmission may cause damage risks, and also hit other tires in dead zone.	Smooth transmission surface and consistent spacing are necessary, in order to avoid tire damages.
Back pressure	Zero-pressure accumulation zone fault causes the case to move slowly, thus resulting in blocking and inaccurate case counting.	Consistent low back-pressure accumulation can achieve zero damage. After the accumulation, the consistent spacing of case can be kept through restart, thus eliminating the blocking.

Compared with PVC traditional conveyors

Common conveyor problems	Metal conveyor mesh belt problems	Modular conveyor belt solutions
Fatigue of conveyor belt	Metal conveyor belt has a limited service life, prone to metal fatigue.	The service life of modular conveyor belt is usually 5-7 times as long as that of metal conveyor belt.
Repair and maintenance	For the maintenance of metal conveyor belt, it needs cutting, welding and grinding. Therefore, it may take up valuable production time and generate safety risks.	It is very convenient and rapid to repair modular conveyor belt: Pull out hinge pin and then replace the module according to the needs.
Product trace	Metal conveyor belt will leave traces on the product, which may bring adverse effect on product value.	Excellent product release capacity and fewer product traces equal the reduction of product losses and improvement of output.
Product contamination	Loose metal sheet and residual lubricant may contaminate the product.	Modular conveyor belt adopts full-plastic structure, without necessity for lubrication, without any metal contamination, so it can eliminate dark spots.
Safety	Frequent connections of conveyor belts might cause staff to be faced with long-time safety threats.	Without necessity for connections, without casualty risks.



PART 03

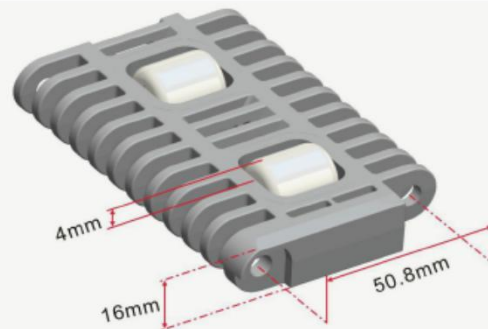
Function introduction

- HS-3900C Technical Detail
- Design display
- Competition Advantage

Technical Detail

Technical Parameters

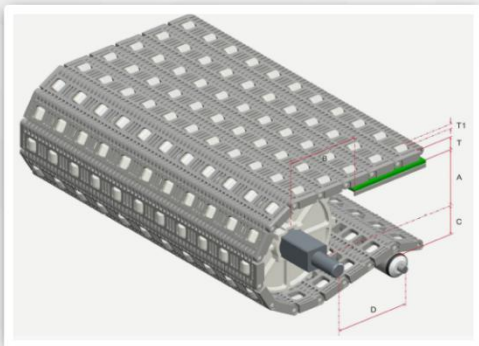
Pitch: 50.8mm
Minimum Width: 152mm
Open Area: 14%
Approved: FDA
Rod: Ø 6mm
Flight: No
Side Guard: No
Curve: No



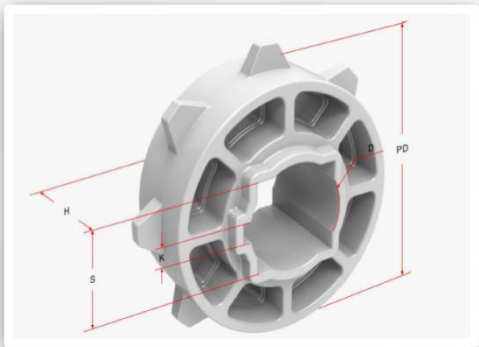
Belt Material	Belt Strength		Curve	Temperature		Belt Weight
	Straight			℃ (min.)	℃ (max.)	(Kg/M ²)
	Kg/M(BW)	N/M(BW)				
Polypropylene	3500	35000	--	1	100	10.7
Polyethylene	2600	26000	--	-60	60	
Acetal	4760	47600	--	-40	80	

Technical Detail

Parameter of structure



Parameter of supporting Sprocket



Quickly calculate the frame size according to different sprocket teeth number

No. Teeth	A (Min.)	B (Min.)	C (Max.)	D (Min.)	T	T1
8	56	50	69	250	16	4
12	88	55	103	250		
16	138.2	60	138	250		

Quickly find out the pitch diameter&matching shaft hole of different teeth sprocket

Sprocket Dimensions			Unit: mm		
No. Teeth	PD	S	D	H	K
8	133	35	40.5	48.5	12×8
12	196	38.5/40.5/60.5/70	40.5	48.5	12×8
16	260.4	80.5	---	---	---

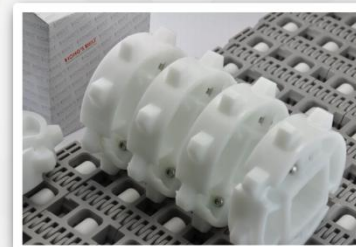
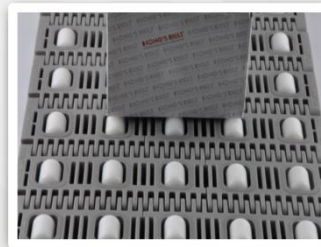
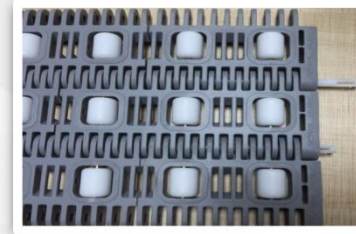
Design display

Belt assembly structure

Assembly Diagram (Flow Chart) of Modular

Plastic belt

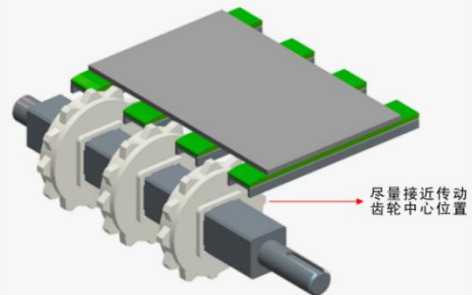
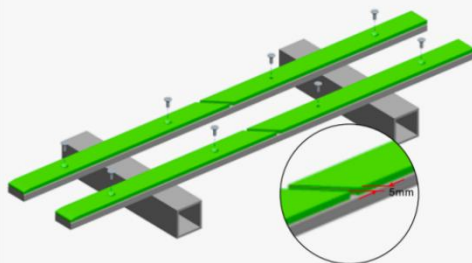
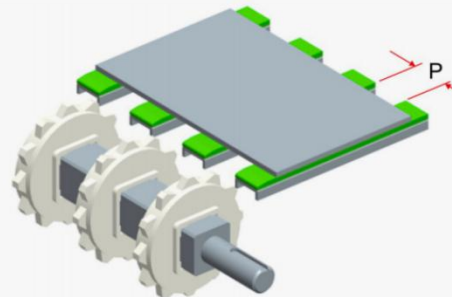
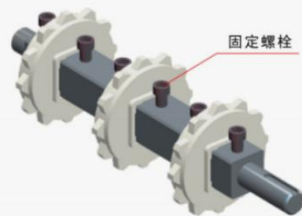
1. Steel nails, Roller and fixed caps
2. Fix rollers at high temperature and frequency
3. Modules in three width dimensions
4. Assembling, one long and one short + middle module
5. Complete the model
6. inserted the one body rod
7. Easily assemble&disassemble with a small sharp plier



Installation instructions

Installation instructions

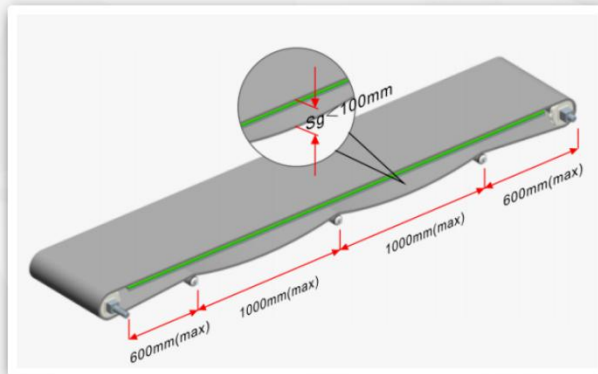
1. Deployment of Sprocket
2. Installation space of wear strip
- 3 . Fixed mode of wear strip
4. Installation instructions of supporting sliding rail



Belt return support of conveyor

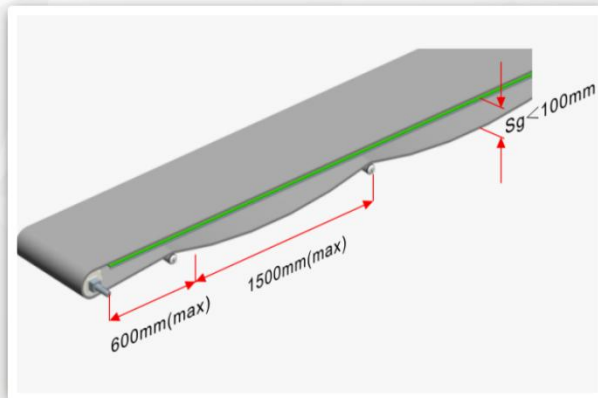
Length < 5m

1. Design of return roller for the conveyor with the line body less than 5m



Length > 5m

2. Design of line body above 5m

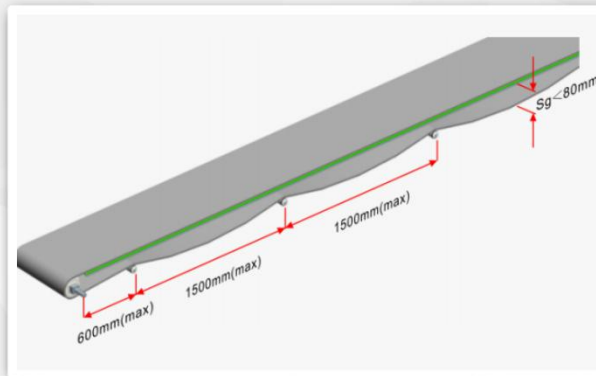


Belt return support of conveyor

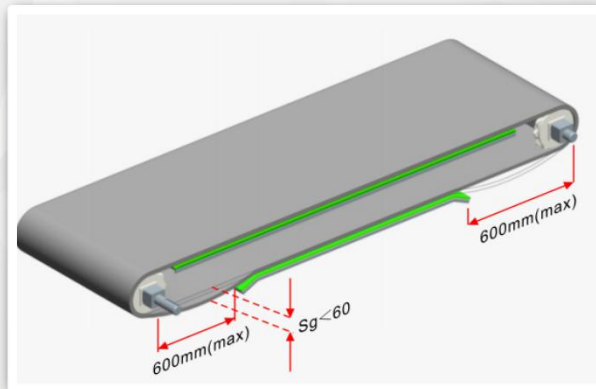
Length > 20m

Suspension design

3. The conveying speed of the line body above 20m is about 15m/min, Return-stroke supporting as instruction:



4. Suspension design of belt, very important. Influence belt elongation & service life

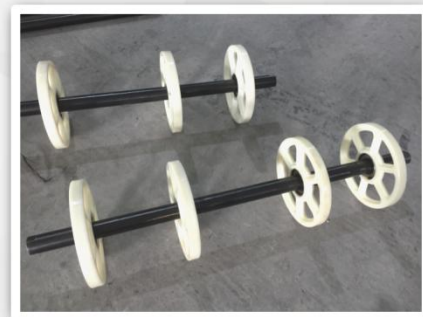
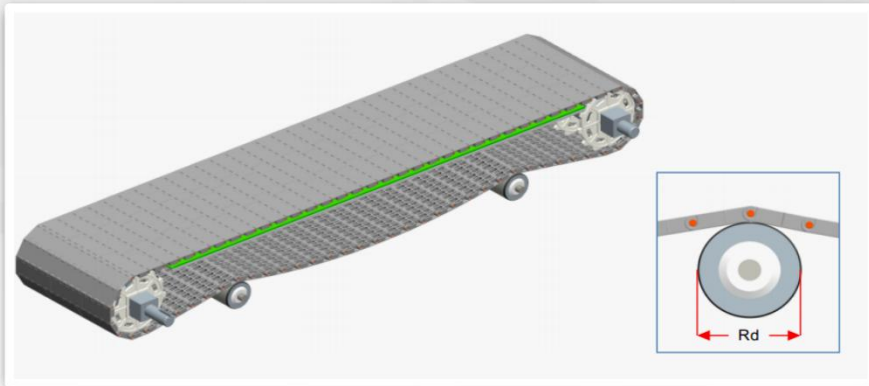


Return-stroke support roller

Instructions :

1. If we use the roller as return-stroke support mode, we should use ball bearing rollers to decrease the friction coefficient and reduce lower return-stroke tension
2. We must pay attention to the Modular Plastic belt Pitch and choose the appropriate roller diameter, in order to avoid that modular plastic belt, due to too large deflection angle caused by suspension, will cause bevel, thus generating bouncing of return-stroke conveyor belt at movement
3. It is recommended that the return diameter of HS-3900C should be above 60mm.

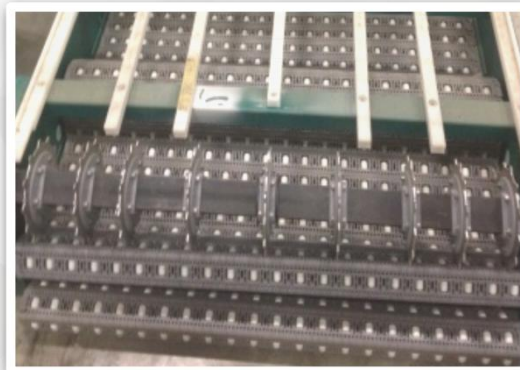
Return-stroke support roller



Competition Advantage

**Similar
products of
EUR&USA
brands**

1. Since the belt design leaves small Sprocket position, only 4mm in width, the design tooth width of the supporting Sprocket is 4mm. Nylon plastic Sprocket are adopted has poor wear resistance or the tension is not enough.
2. Passively, steel Sprocket are adopted to improve the wear resistance and tension strength, thus the cost of the product increases greatly and higher processing precision is required.
3. Since the Sprocket position is too small, the contact between sprocket and the belt is not tight, which will cause belt offset, or sprocket are installed incorrectly, which will make steel wheel and plastic belt directly wear and even cause serious damage.
4. It wastes too much time in site installation, which is so complex.

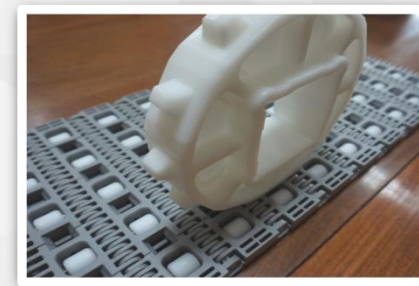
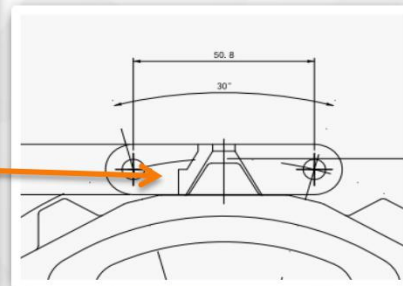
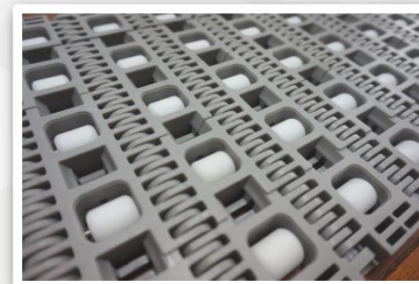
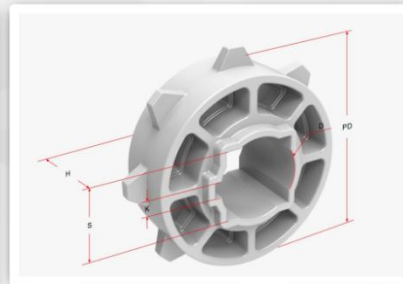
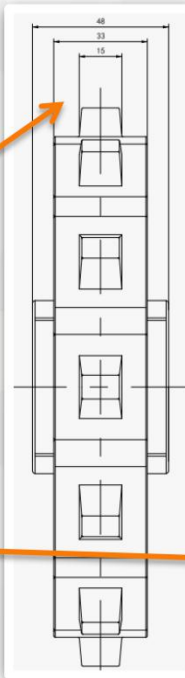


Competition Advantage

Design specificity and advantages :

1. The sprocket position is large enough, and well arranged sprockets can bear greater loading pressure.
2. The tooth width of the sprocket reaches 15mm, which improves wear resistance and prevents sprocket breakdown caused by heavy load.
3. POM is adopted to manufacture sprocket, which sharply decrease production cost.
4. Offset from the belt caused by the bending of sprocket position is avoided.
5. Please refer to drawings on the right

The sprocket of HS-3900C





PART 04

Successful case

- Field application
- Display of partners

Field application

**Rubber
Cooling**



HS-900B-HD

**Spraying
Line**



HS-501B

**Tunnel
Junction**



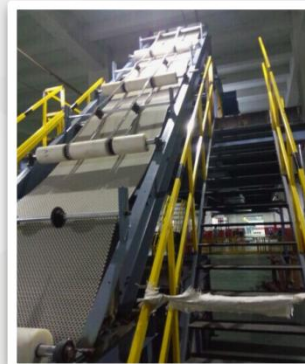
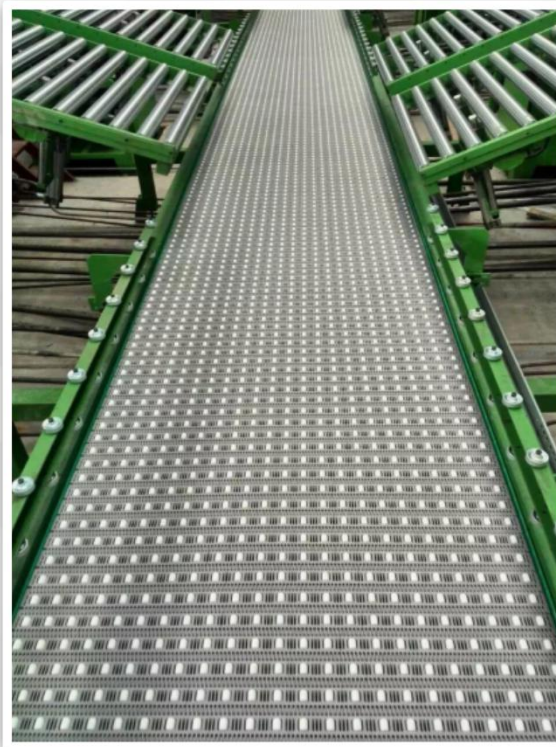
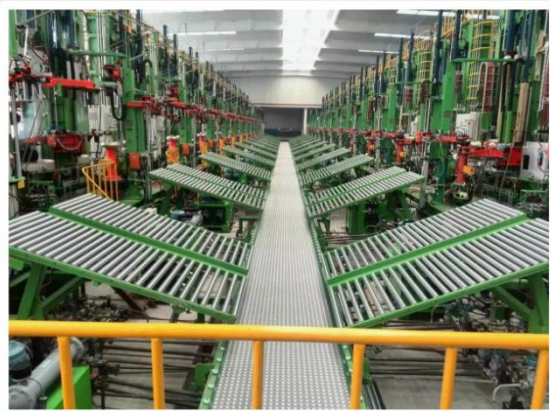
HS-3900C

**Logistics
Storage**



HS-3900C

Field application



Successful case

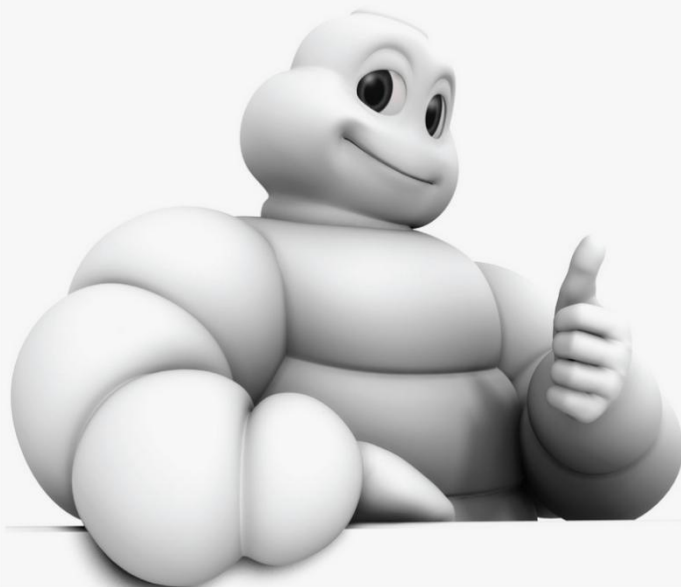
Michelin

In early 2015, Michelin China Regional Purchasing Department Manager, Technical Department Manager, Accessories Department Manager and France Global Purchasing Director performed a field research to our company. After strict examining, Hongsbelt was recognized as their authorized supplier.

Michelin placed a trial order in May, which was confirmed successful at the end of 2015 after 24-hour none stopping work for 6 months in Shenyang factory. At the same time, Michelin confirmed Hongsbelt roller modular conveyor belt HS-3900C to be their bulk purchase product with their supporting manufacturers.

Michelin's comment on Hongsbelt:

HONGSBELT conveyor belt is of high quality , reliable !



Successful case

Qingdao Double star

Started cooperating with us in early 2011, Qingdao Doublestar has always been purchasing our modular conveyor belt, we have kept a long-term friendly cooperation.

Customer's feedback: HONGSBELT modular conveyor has a very stable performance.



Sailun Jinyu Tires

At the end of 2014, Sailun Jinyu Tires bought Hongsbelt modular belt HS-501B mainly for linkage line to replace imported belt.

Customer's feedback: HONGSBELT provides imported quality with domestic price during practical application.



Xinyuan Group

Xinyuan Group bought Hongsbelt modular belt HS-3900C for curing trench line in 2014.

Customer's feedback: Hongsbelt conveyor belt has a fairly stable performance applied till now.



Successful case

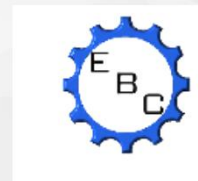
Larsen & Toubro Limited

India Clients: Larsen & Toubro Limited

They have been buying our modular conveyor belt HS-700B&HS-700EL for rubber cooling since 2013, which is very stable and easy to maintain.



Foreign partners



Foreign partners



Все гениальное
просто!

FLEMAC



Domestic partners



Domestic partners



中国一汽



比亚迪汽车



润兴 runxing



台湾明晖集团
山东明玮



开拓科技



莱因自动化
自信 简单 高效 专业





PART 05

After-sales guarantee

- Guarantee for delivery time
- After-sales response

Guarantee for delivery time

Standardization

Mass production

Advanced equipment

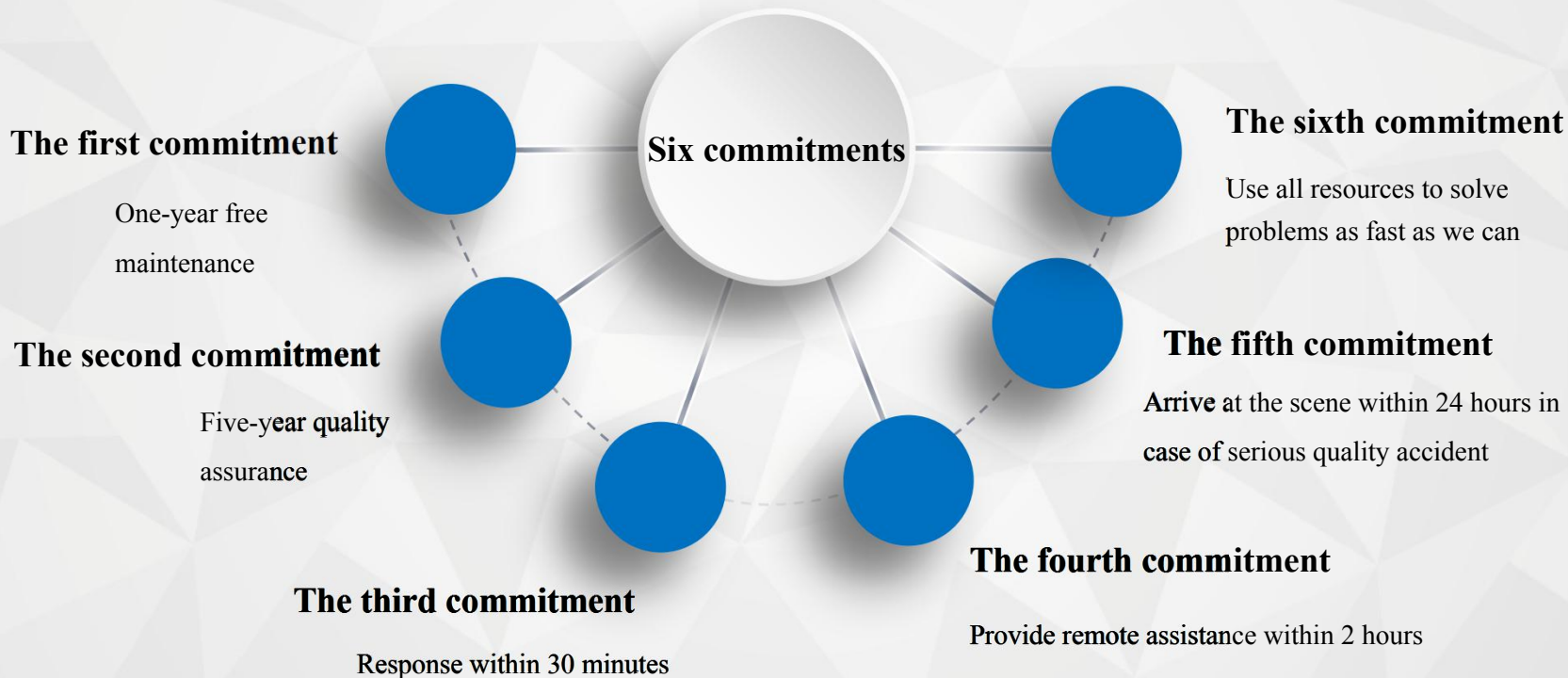
Accessory inventory

Immediate schedule for production

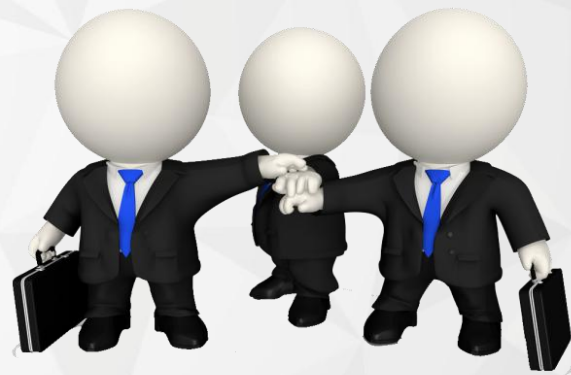


1. Standard production process and assembly sequence to meet the requirement of mass production.
2. Bring in advanced foreign processing equipment with higher precision so as to ensure quality and appearance.
3. Related accessories of conveying equipment are all in stock, and the conveyor belt is self-produced to ensure immediate schedule for production.
4. Delivery within appointed time after the drawings are confirmed, and leave the factory after successful pilot run.

After-sales response



THANKS



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