

MPB Conveying Solution for Tire Manufacturing

www.hongsbelt.com.cn

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创新

Innovative



智能

Smart



安全

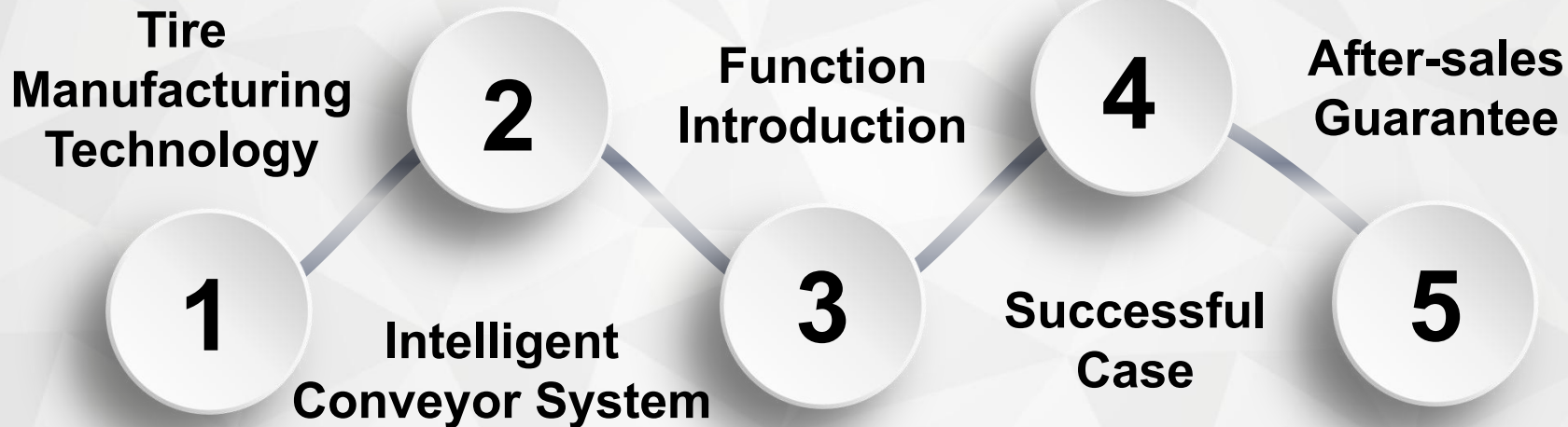
Safety



节能

Energy saving







PART 01

Tire Manufacturing Technology

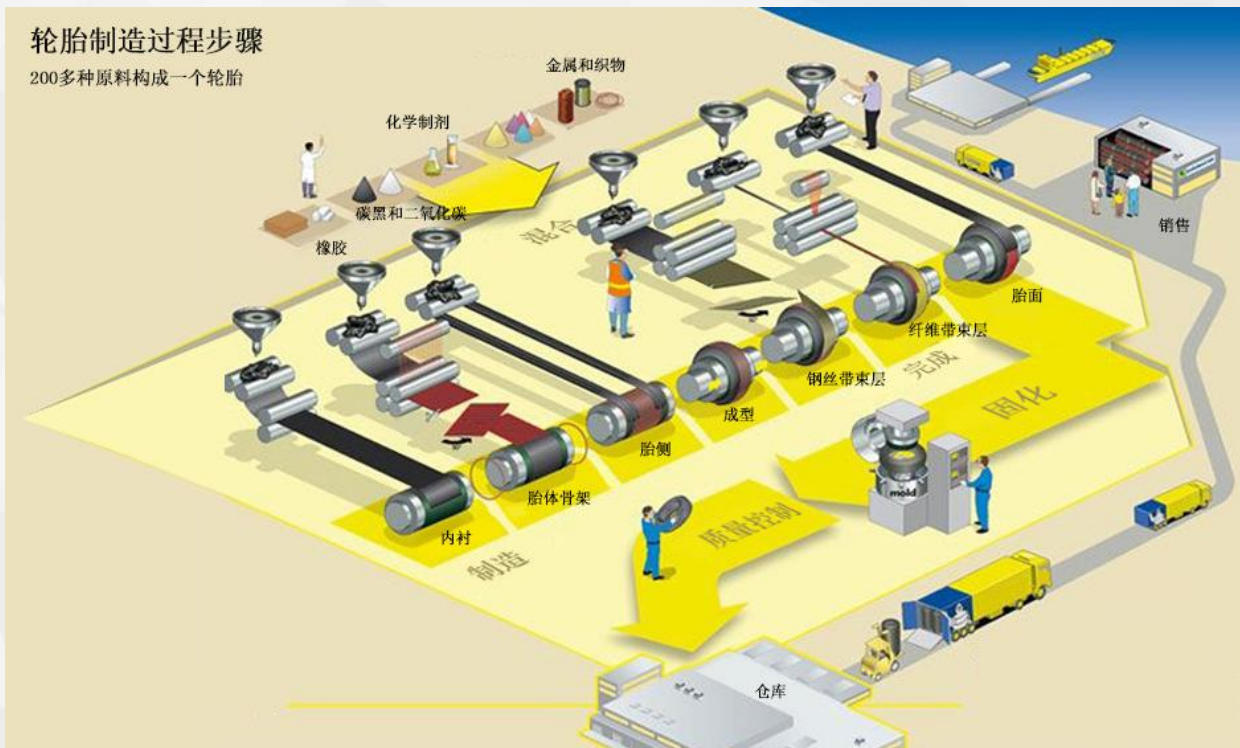
- Industry Overview
- Traditional Application
- Development Trend

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.

轮胎制造过程步骤

200多种原料构成一个轮胎



1

PVC Conveyor



2

Rubber Conveyor



3

Roller Conveyor



4

**Stainless Steel
Mesh Conveyor**



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

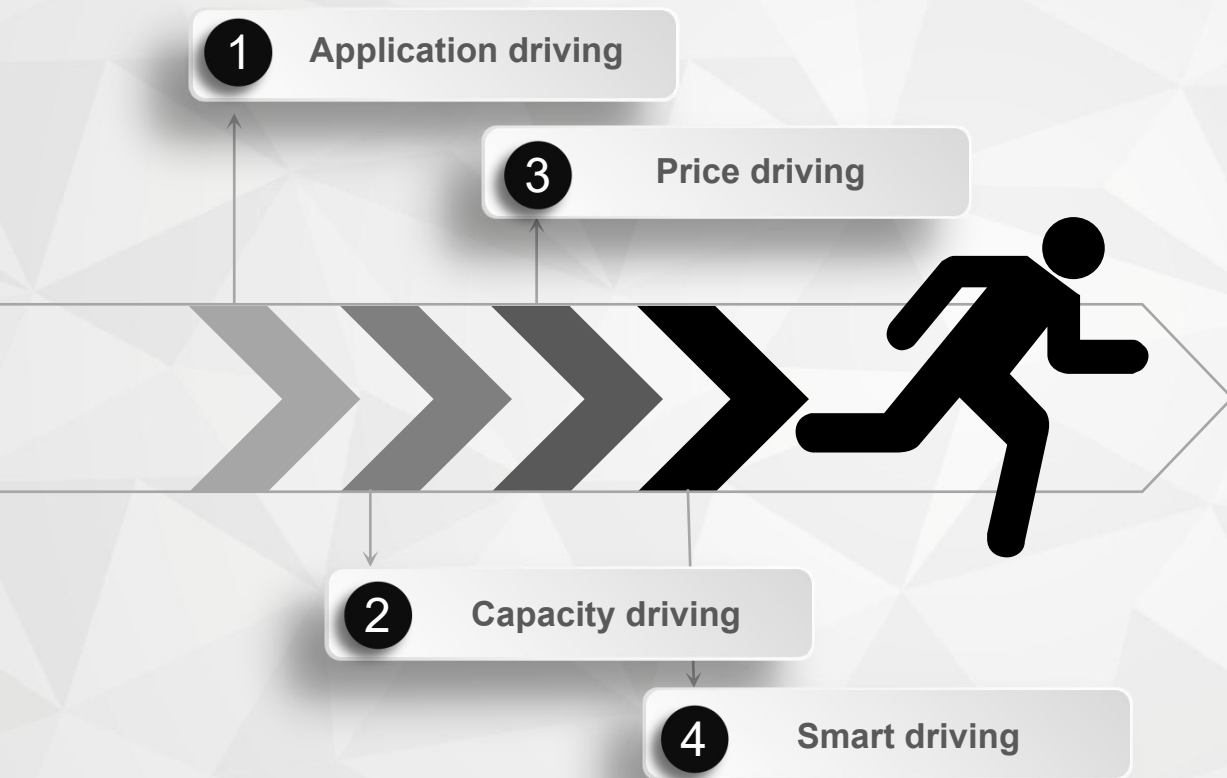
- Frequent maintenance
- Easy Slipping
- Tire damaging
- Noise pollution

4

**Stainless Steel
Mesh Conveyor**

Defects

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



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 users 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. Intelligent driving becomes a new landscape, future belongs to intelligent modular conveyor system!



PART 02

Intelligent Conveyor System

- Product Description
- Product Advantages
- Compared with Traditional Conveyor System

Modular Conveyor Belt



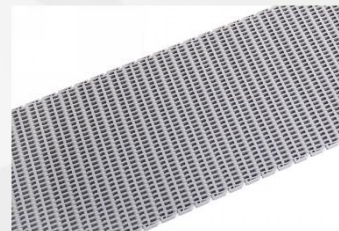
HS-3900C Tunnel Junction Belt



HS-3900C-N Inspecting Conveyor Belt



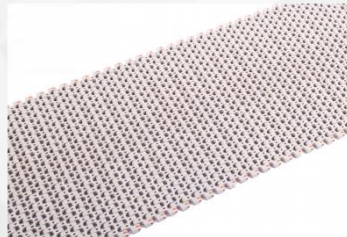
HS-3800-1C Roller Sorting Belt



HS-700B-N Flush Grid Spraying Belt



HS-700EL-N Inclined Conveyor Belt



HS-501B Flush Grid Cooling Belt



HS-1700C Conveyor Line



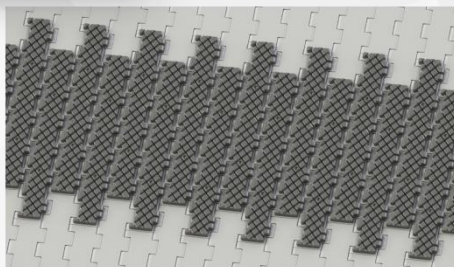
HS-2000A Flat Top Curve Conveyor

Product Description

Modular Conveyor Belt & Conveyor Components



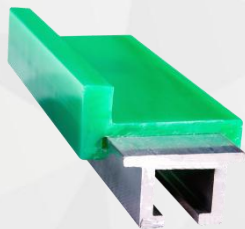
HS-3400ATire Conveyor Belt



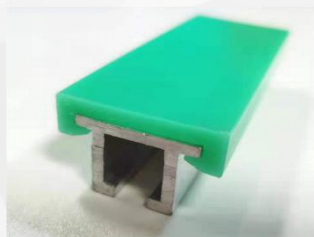
HS-3400EL Inclined Conveyor Belt



HS-3400ZS Inclined Conveyor Belt



HS-G18: L Type Guide Profile



HS-G19: Plate Type Guide Profile



HS-P21: Connector



HS-P22: Connector

Product Advantages

Easy Maintenance

1

2

Low Hidden Costs

Eliminate Slipping & Deviating

3

4

Improvement of Qualified Products

5

Multi-function Application

Product Advantages

HONGSBELT has 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 PVC & Rubber Conveyor

Common conveyor problems	PVC & rubber conveyor problems	Modular conveyor belt solutions
Guiding orientation	Caused by frequent deflections • 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	Due to zero deviation, so it may not cause any associated cost.
Safety	Frequent connections of conveyor belts might cause staff to be faced with long-time safety threats.	Without necessity for connections, without casualty risks

Compared with Roller Conveyor

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.

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.



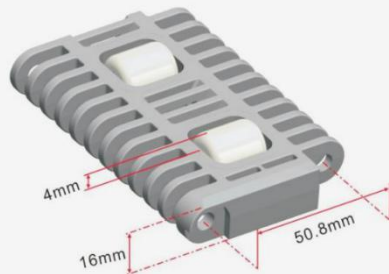
PART 03

Function Introduction

- HS-3900 Series Technical Detail
- Design Display
- Competition Advantages

HS-3900C

Pitch: 50.8mm
Minimum Width: 254mm
Open Area: 14%
Approved: FDA
Rod: Ø 5.8mm
Flight: No
Side Guard: No
Curve: No

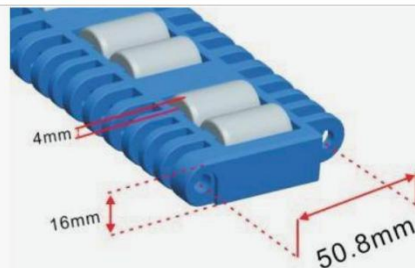


Belt Material	Belt Strength		Curve	Temperature		Belt Weight
	Straight			°C (min.)	°C (max.)	(Kg/M ²)
	Kg/M(BW)	N/M(BW)				
Polypropylene	3500	35000	--	1	100	10.7
Polyethylene	2600	26000	--	- 60	60	--
Acetal	4760	47600	--	- 40	80	--
BW – Belt Width						



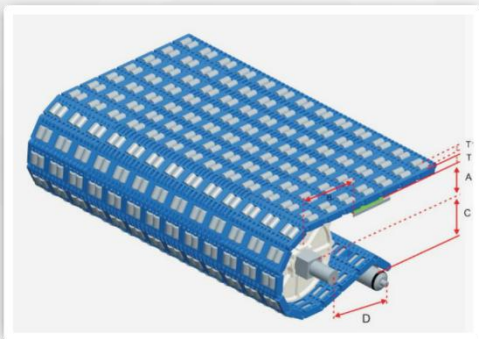
HS-3900C-N

Pitch: 50.8mm
Minimum Width: 254mm
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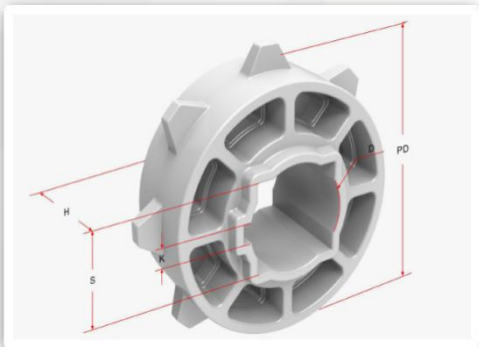


Belt Material	Belt Strength			Temperature		Belt Weight
	Straight		Curve	°C (min.)	°C (max.)	(Kg/M ²)
	Kg/M(BW)	N/M(BW)				
Polypropylene	3850	38500	--	1	100	15
Polyethylene	2860	28600	--	- 60	60	--
Acetal	5236	52360	--	- 40	80	22
HK	4760	47600	--	- 40	80	21
BW – Belt Width						

Parameter of Structure



Parameter of Sprocket



Quickly calculate the frame size according to different sprocket teeth number

Conveyor Frame Dimensions					Unit : mm	
No. Teeth	A (Min.)	B (Min.)	C (Max.)	D (Min.)	T	T1
6	37.5	55.5	33.5	200	16	4
8 / 8-Split	56.5	74.5	52.5	250		
10	72	90	68	250		
12	90	108	86	300		
16	121.75	139.75	117.75	300		
17	130	148	126	300		

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

Sprocket Dimensions						Unit: mm
No. Teeth	PD	S	D	H	K	
6	91	38.5	--	38	--	
8	129	38.5/40.5	--	38	--	
8-Split	129	38.5/40.5	--	38	--	
10	160	38.2/40.2/40.5/50.2/60.2/70.5	47.5	38	8×8	
12	196	38.5/40.5/50.5/60.5/63.5/70.5	40	38	12×8	
13	216.4	60.2	--	38	--	
16	259.5	60.5/80.5/90.5	--	49	--	
17	276	120	--	48.5	--	



Advantages of HS-3900C-N

- 1) Serried rollers ensure more contacts to the tire and stable conveying.
- 2) HS-3900C-N has a larger load capacity and stronger tension.
- 3) Smoother during conveying, reducing total cost and increasing output.
- 4) The touchless solution ensures safe handling and smooth transfers of delicate tires.
- 5) The belt's nonstick, nonporous material prevents tires from adhering, creating fewer mistracks.
- 6) Simplify the layout of the production line, easy to assemble, integrate and maintain.

Design Display

3900C模组方案图

比例:	A	日期:
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技术说明

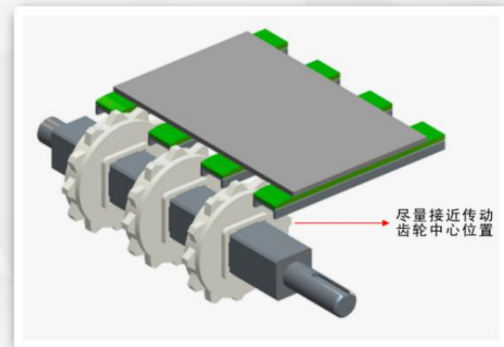
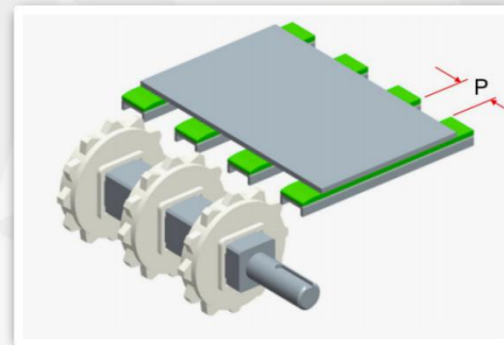
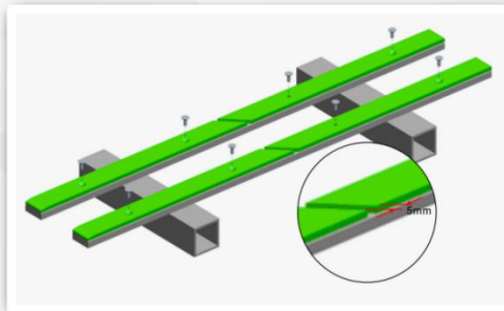
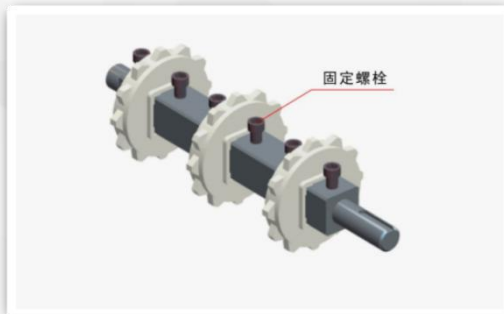
- 1、模组带型号：HS-3900C（华南新海）。
- 2、模组带宽度：1353mm.

图号:	PC	比例:	1:1
设计:	BIAO	审核:	HC, Kang

HONG'S BELT 中国南海（深圳）科技股份有限公司
Hong's Belt International (HK) Limited

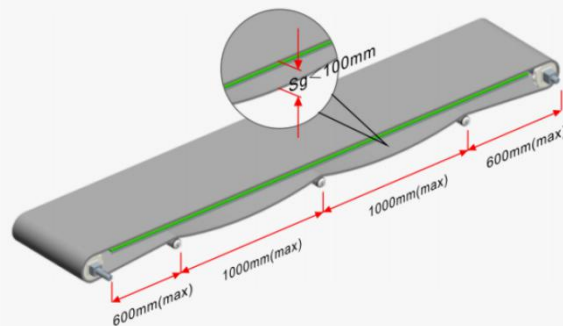
Installation Instructions

1. Deployment of sprocket
2. Installation distance of guide profile
3. Fixing of guide profile
4. Installation instructions of supporting guide profile



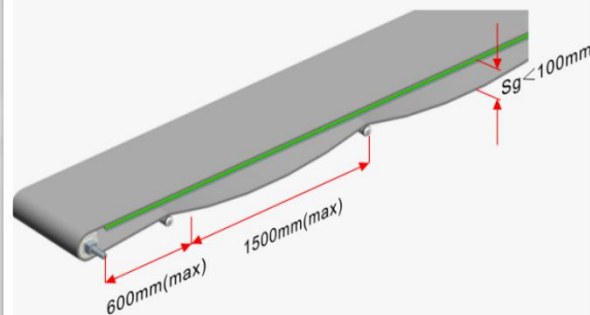
Length < 5m

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



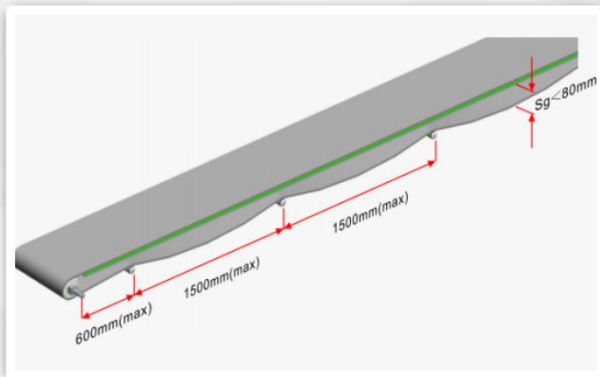
Length > 5m

2. Design of return roller with conveyor line more than 5m



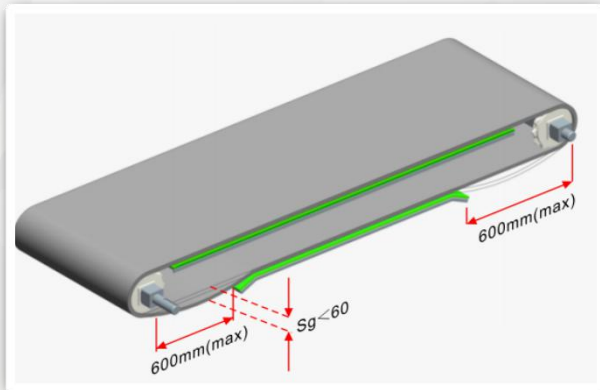
Length > 20m

3. With conveyor line more than 20m and speed about 15m/min, suggesting return support as instruction



Suspension Design

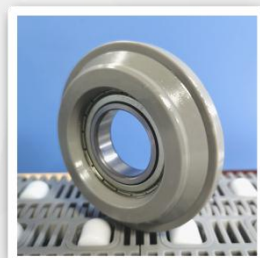
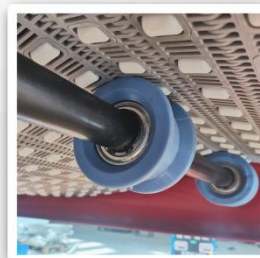
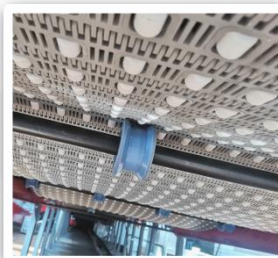
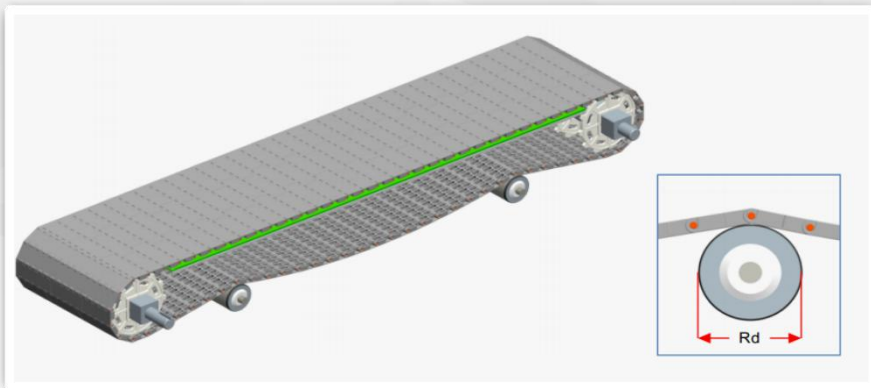
4. Suspension design of belt is very important. It influences belt elongation and service life



Return Support

Instructions:

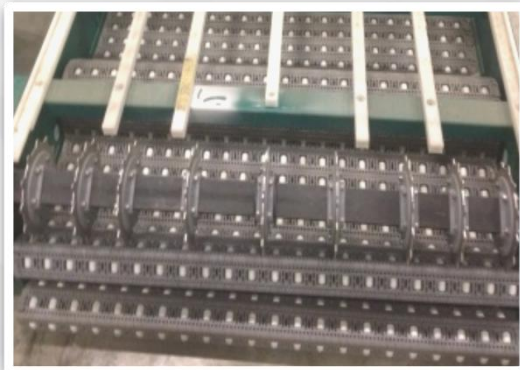
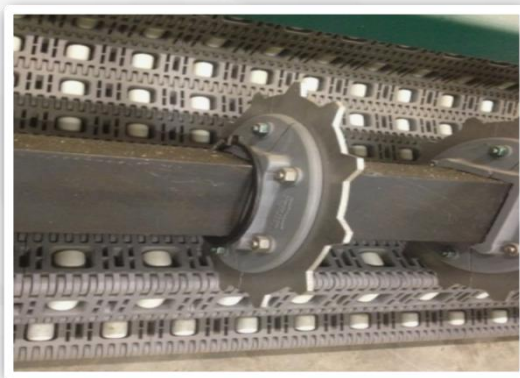
1. If we use the roller as return support, we should use ball bearing rollers to decrease the friction coefficient and reduce return tension
2. We must pay attention to the modular plastic belt pitch and choose the appropriate roller diameter to avoid large deflection angle and bevel caused by suspension, which leads to the skipping of return conveyor belt
3. Diameter of return roller for HS-3900 series should be more than 60mm.



Competitive Advantages

Similar
Products of
EUR&USA
Brands

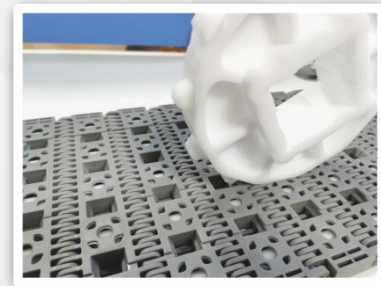
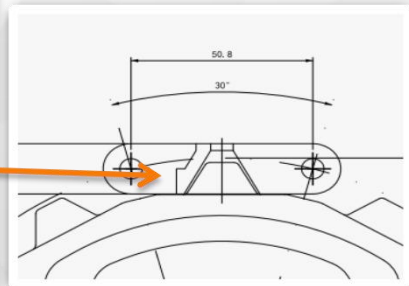
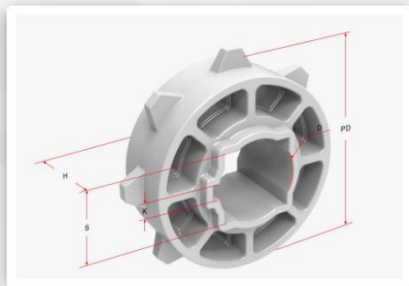
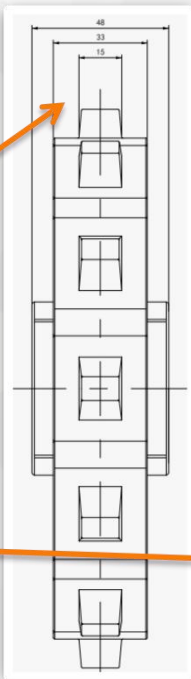
1. Since the belt design leaves small sprocket position, just 4mm for the tooth width of the sprocket. Plastic sprockets wouldn't be strong and wear-resistant enough.
2. Alternatively, steel sprocket are adopted to improve the wear resistance and tension strength, but the cost increases greatly and higher processing precision is required.
3. Since the sprocket position is too small, the contact between sprocket and belt is not tight, it causes belt offset. Besides, if the sprocket wrongly installs, the steel sprocket and plastic belt will wear directly and cause serious damage.
4. The complicated site installation wastes too much time.



**Advantages
of Hongsbelt
Sprockets**

Design 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 material molded sprocket sharply decreases production cost.
4. Offset from the belt caused by the bending of sprocket position is avoided.
5. Please refer to drawings on the right





PART 04

Successful case

- Field Application
- Display of Partners

**Rubber
Cooling**



HS-501B/HS-700B-N

**Spraying
Line**



HS-501B/HS-700B-N

**Trench
conveyor**

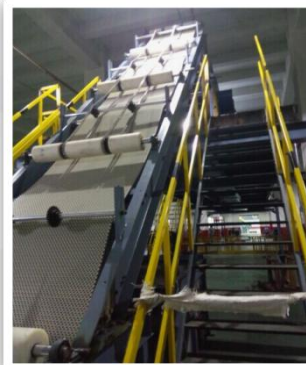


HS-3900C

**Logistics
Storage**



HS-3900C/HS-3900C-N







PART 05

After-sales Guarantee

- Guarantee for Delivery Time
- After-sales Response

Standardization

Mass Production

Advanced Equipment

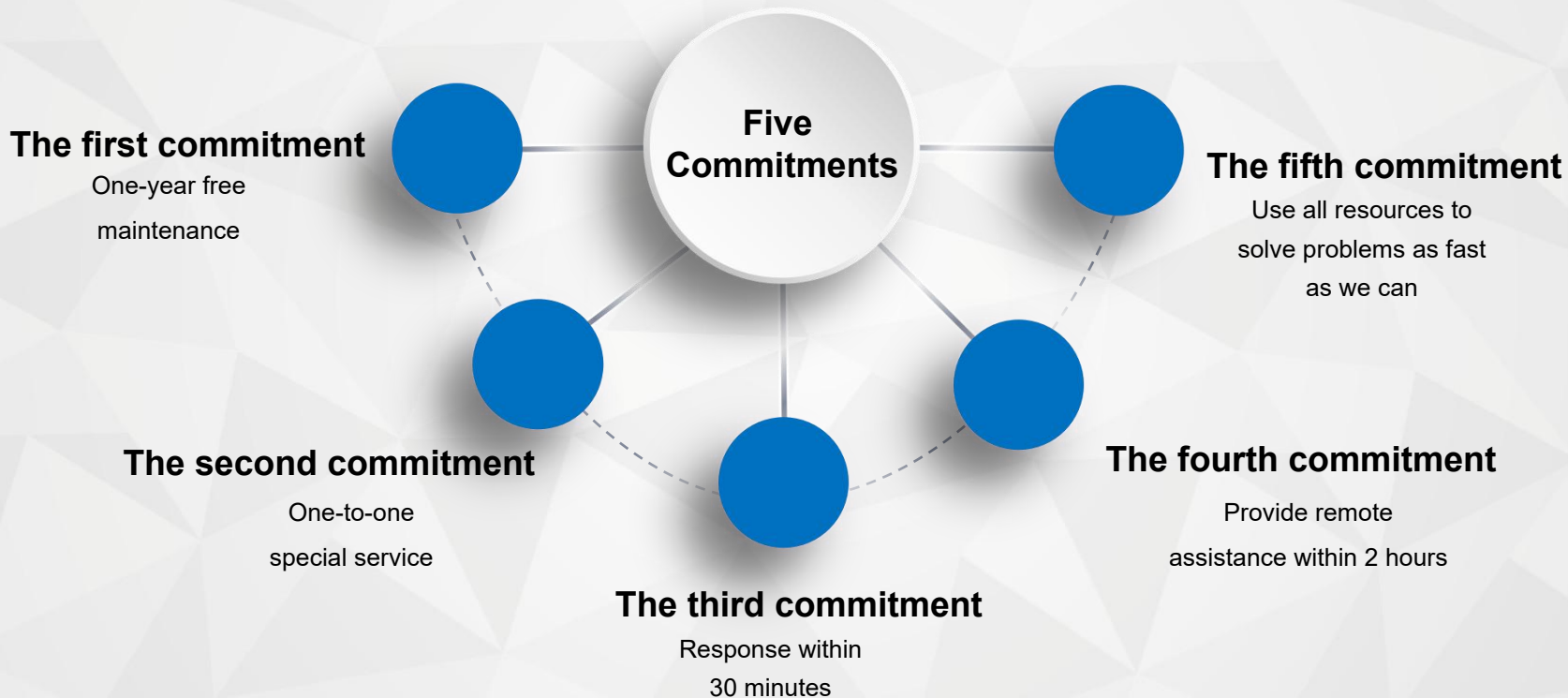
Accessory Inventory

Immediate Schedule for Production

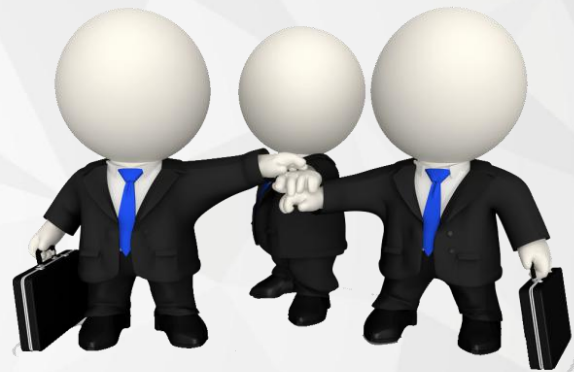


1. Standard production process and assembly sequence to meet the requirement of mass production.
2. Bring in advanced foreign processing equipment with higher precision so as to ensure quality and appearance.
3. Related accessories of conveying equipment are all in stock, and the conveyor belt is self-produced 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
谢谢



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