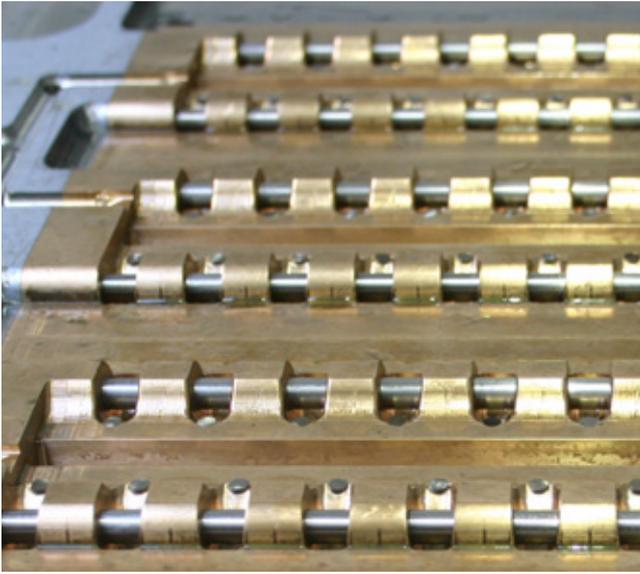




1. Introduction	02
2. Belts characteristics	02
2.1. Application in industry	02
2.2. Available Materials for Modular Conveyor Belts	03
2.2.1. Characteristics of the available materials	04
2.3. Modular Conveyor Belts Drive	04
2.4. PCS Range of products and types	04
PCS-12 AL / PCS-12 AL NEO / PCS-15 AL / PCS-25 AL / PCS-40 AL / PCS-50 AL / PCS-51 AL /	
FLAT TOP CURVE / SPECIAL APPLICATIONS	
2.5. General characteristics	05
2.6. Specifications of the components (modules and accesories)	07
2.7. Accessories available for Modular Conveyor Belts	07
2.8. Materials available for the slide guides of the Modular Conveyor Belts	08
2.9. Special applications and developments	08
3. Technical specifications	13
4. PCS products table	40
5. Engineering	41
5.1. Data for designing, choosing and setting up the belt	41
5.1.1. Structure of the conveyor	41
5.1.2. Shafts	42
5.1.3. Slide guides	43
Feed	
Return	
5.1.4. Types of Conveyors	44
Flat	
Inclined (Upward)	
With inflexions	
Curved	
Spiral of low and high speed	
5.1.5. Transferences	46
5.1.6. "Sorting" type conveyors	46
5.1.7. Accumulation conveyors	48
5.1.8. Special modular belt conveyors	48
5.1.9. Flat top curved conveyors	48
5.1.10. Continuous curve belt "carousel type"	49
5.1.11. Data of interest	49
5.1.12. Minimum turning radius	50
5.1. Sprockets table	51
6. Security	52
6.1 Effects of temperature	52
6.2 Effects of humidity	52
6.3 Effects of dust and abrasion	52
6.4 Effects of cleaning chemical agents	52
7. Charts	53
7.1. Industrial applications	53
7.2. Resistance to chemical agents	54
8. Manufacturer note	56

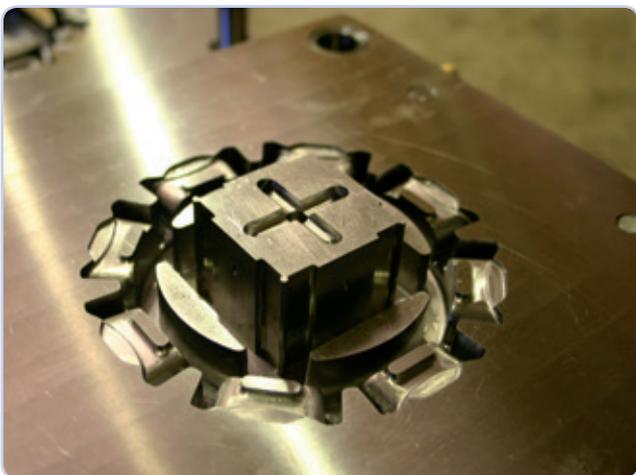


1. Introduction

PLASTIC CONVEYOR SYSTEM S.L. (PCS)® is a Spanish company set up to industrially design a range of products that provide the market a valid alternative to its needs, in all cases where the characteristics of your processes allow for and encourage the use of plastic conveyor belts constructed in modules.

Designed and manufactured in Spain, the different range of products offers great alternatives to be applied in a broad range of industrial vectors in industry, in the food industry as well as in many other fields. The modular concept allows for an unlimited number of applications to be developed, with special designs for specific needs.

There are other products being studied and continuously developed that will be added in the future to the series presented here.



2. Modular Conveyor Belts

PCS belts are manufactured from elementary plastic parts (modules) by injection, using the most modern means in this technology and at all times controlling the parameters of these processes.

The belting surfaces needed in each case are created through connection by means of articulation rods. This is where the most commonly used and known name of modular belts comes from.

The desired widths are achieved by adding precise modules, and always with their "wall-type" arrangement, combining whole modules together with half-modules or parts of them. In this way, the belt of least width corresponds to the length of the module of the chosen product.

2.1. Sectors and fields for application in industry

The construction of the different PCS modules from different thermoplastic materials allows them to be used in many varied sectors of industry. Nevertheless, in each case it is necessary to make a corresponding study before choosing the product, taking into account all the factors related to its use, such as environmental considerations, the objects to be conveyed, regulations to be complied with, and others.

PLASTIC CONVEYOR SYSTEM uses materials approved by the FDA in all those cases in which this is required by legislation or applicable rules. It also uses materials that do not require this for other uses.

Some of the sectors where modular conveyor belts are most frequently used are:

- Fish and derivatives
- Frozen foods
- Meat, poultry and their derivatives
- Bread
- Buns, bakery products and sweets
- Sugar
- Fruit and vegetables
- Tinned food
- Bottled drinks
- Parcel distribution
- Packagers, labellers and weighing devices
- Automobile
- Tyres
- Recycling processes
- Wood and derivatives
- Heat treatments and induction



In chart 7.1, there is a detailed display of the different and most appropriate uses of the different options available in modular conveyor belts.

2.2. Standard materials available for Modular Conveyor Belts

PLASTIC CONVEYOR SYSTEM® uses the following thermoplastic materials to manufacture its modules:

- Polypropylene (FDA)
- Polyethylene (FDA)
- Acetal (FDA)
- Polyamide (FDA)

Other materials used for special applications and uses that require specific characteristics, are:

- Ryton (FDA)
- Noryl (FDA)
- Special polypropylenes
- Antistatic thermoplastics
- Thermolast
- Polyurethane

The following materials are used for manufacturing cogwheels and other accessories:

- Polypropylene (FDA)
- Polyethylene (FDA)
- Acetal (FDA)
- Polyamide 6 (Nylón)
- Ryton (FDA)

The main aspects and characteristics of them are:

Polypropylene (FDA)

It is characterised by its low specific weight of approximately 0.90, floats on water. It is especially resistant to chemical agents, such as acids, bases, alcohols, and salts in general. The range of temperatures suitable for continual use of this is between +1° and +104°C. Its use is not suited to work environments that may produce strong or continuous impacts below 8°C, since it is then brittle, while it is strong and resistant above this temperature. It is the standard material for manufacturing PCS modules.

Polyethylene (FDA)

As Polypropylene, it floats on water due to its low specific weight of approximately 0.95 and behaves well against the forces of fatigue demanded of it. In addition, it has high flexibility, and a very good capacity to absorb impacts. Furthermore, its magnificent behaviour at low temperatures together with its good resistance to acids, bases and hydrocarbons in general make it the ideal thermoplastic for very specific uses. The adequate temperature range for continuous use is between -73°C and +66°C.

Acetal (FDA)

It is composed of acetalic resins, and its specific weight is approximately 1.40, which means it cannot float on water. It is mechanically and chemically more resistant than Polypropylene and Polyethylene. It behaves well to the demands of fatigue and elasticity. Its low friction coefficient is very suitable for certain applications that may cause wear, abrasion or rubbing, or for conveying heavy products or at high speeds. Also, its high electrical conductivity means its use is advisable in applications where static electricity can be accumulated. The temperature range suitable for its continuous use is between -45°C and +93°C, which gives it a great versatility in uses.

Polyamide 6 (Nylon)

This thermoplastic with or without glass fiber is highly resistant to wear and is used in manufacturing several components. Its good performance in highly abrasive conditions make its use especially recommended in wheels, conveyor parts and for articulation rods. The temperature range suitable for continuous use is between -40°C and +120°C.

Ryton (FDA)

This advanced polyphenyl sulphide compound (PPS), with or without the addition of fibreglass, gives exceptional behavioural characteristics against wear or friction, excellent chemical and hydrolytic resistance, very good dimensional stability, good electrical insulation, low flammability, and virtually zero water absorption. All of this is combined with the temperature range for its habitual use of between -45°C and +240°C, which provides possibilities for use never before considered for modular belts.

Special polypropylenes

Using the required additives in each case, it is possible to obtain very good behaviour in modular belts for very special cases of applications that need this.

Antistatic thermoplastics

Most of the materials used by PCS in their modular belts can be manufactured with additives that mean they can be considered as such, without altering the product's initial beneficial properties.

Elastometers

All existing modules can be made with elastic materials and also serve to absorb shock. They are used as elements antiskid when the slopes are moderate (less than 15%) if the items are suitable to transport.

The materials used are approved by the FDA and the range of operating temperatures are between -40° C to +100°C / 120°C (depending on the type of application).

Magnetically detectable materials

All PCS products can be manufactured upon request, with additives that make them detectable by a control security. Thus obtained, high safety levels in the detection of unwanted particles of modular belts used, and could cause injury or discomfort. In all cases, development must take into account the characteristics of control equipment installed.

2.2.1. Characteristics of available materials

The main technical characteristics of each one of the materials used in manufacturing the conveyor belt modules are:

	POLIPROPYLENE (PP)	POLYETHYLENE (PE)	ACETAL (AC)
Specific weight	0'90	0'95	1'40
Friction coefficient	acceptable	acceptable	low
Mechanical resistance	good	very good	good
Chemical resistance	good	good	very good
Abrasion resistance	limited	normal	good
Elasticity	good	very good	good
Resistance to fatigue	good	very good	good
Minimum Temperature °C	+1	-73	-45
Maximum Temperature °C	+104	+66	+93
Temp. range °C Continuous use	+5 / +103	-50 / +65	-40 / +90

2.3. Modular Conveyor Belts' Drive

The belts drive is performed by using sprocket wheels that have been specially designed for use in different PCS products. Each type of module has its suitable sprocket wheel.

The sprocket wheels (or cog wheels, or machinery) are all manufactured by injection with the thermoplastic material corresponding to each choice. In many cases there is the possibility of assembling them on square-bore drive shafts or motorised drums.

All of the PCS sprocket wheels have been designed to be mounted on square-bore drive shafts of variable dimensions according to their series and diameters. This system guarantees permanent rolling of the drive shaft

+ sprocket wheel combination, while at the same time allowing for axially-orientated movement within limits, thus combining traction and alignment of the belt.

Nevertheless, the sprocket wheels designed to be assembled on motorized drums can be used in a range of diameters outside the motorized drums of between 60 and 83 mm, by machining the original diameter in the injected piece.



In both cases, in the sprocket wheels screw-threaded holes can be machined to be used with screws to fix them to the drive shaft, in those sprocket wheels that must not have any free rolling along the drive shaft.

Other wheel sizes can be manufactured on request in each case in polyamide 6 (nylon) or stainless steel.

2.4. Manufacturing Programmes. Series and classes of products

PLASTIC CONVEYOR SYSTEM currently has a range of products designed to cover many of the possible applications in the aforementioned industrial sectors.

With the possible combinations of materials in use, a wide range of products is achieved which, combined with a study of the conditions in the working environment where the modular conveyor belt is to be used, allows for the ideal choice to be made in each case. There are two types of series:

1) Those used with food, in others words, all those conveyor belts made up of modules manufactured using thermoplastic materials authorised and recognised by the **FDA (Food and Drug Administration) of the USA, to be in direct contact with food products, and also Regulation (EC) n° 1935/2004 of the European Parliament and of the Council of 27 October 2004 on materials and articles intended to come into contact with food and repealing Directives 80/590/EEC and 89/109/EEC and regulation EU n°10/2011.**

These series can be recognised by the appearance of the letters AL (alimentary load) and they are:

2 Belts characteristics Modular conveyor belts

- PCS-12 AL / PCS-12 AL NEO / PCS-25 AL / PCS-50 AL / PCS-40 AL / FLAT TOP CURVE CLOSED

2) The series **not used with food**, in other words, not in direct contact with food products, are also manufactured with materials for use with food, are:

- PCS-15 AL ROLLER BELT
- PCS-25 AL BALL BELT
- PCS-50 AL ROLLER / ACCUMULATION
- PCS-51 AL OPENED / AL TRANSFERENCE
- FLAT TOP CURVE

3) The Special Applications are developed to satisfy clients' specific needs and uses, whether this be from exclusive designs or derived from the basic parts of the different models of PCS modular belts.

- PCS-25 AL CLOSED "INSERTS"
- PCS-25 AL OPEN/CLOSED / "TE" PERFORATED" (Elevated Temperature up to 130° C / 140° C)
- PCS-25 AL OPEN/CLOSED / "HT" PERFORATED (High Temperature up to 240° / 260° C)
- PCS-50 AL CLOSED "ANTI-SLIDE"
- PCS-25 AL CLOSED / PCS-50 AL CLOSED (with "Soft" straight flights)
- ANTISTATIC MATERIAL MODULES
- PCS-50 AL CLOSED "INSERTS"
- PCS-25 AL GRIP TOP / PCS-50 AL GRIP TOP
- PCS-FLAT TOP CURVE

They may be for use with food or not, depending on the requirements and the thermoplastic materials used on injection.

2.5. General characteristics

CLOSED

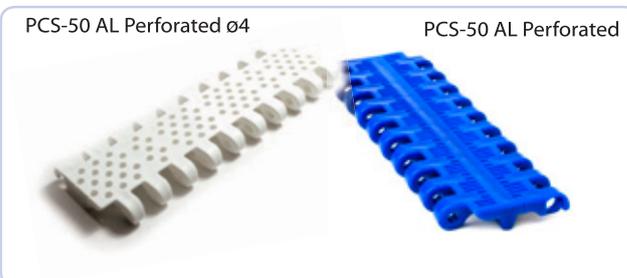
These are modules whose upper working surface is completely smooth and flat, without openings or perforations in it.

Their use is especially advisable in those applications that do not need ventilation or liquid drainage, when the volume of products to be conveyed is limited or when the interferences or tears of the items with belt parts must be avoided.



PERFORATED

The surface of these modules is flat but has openings arranged regularly along it.

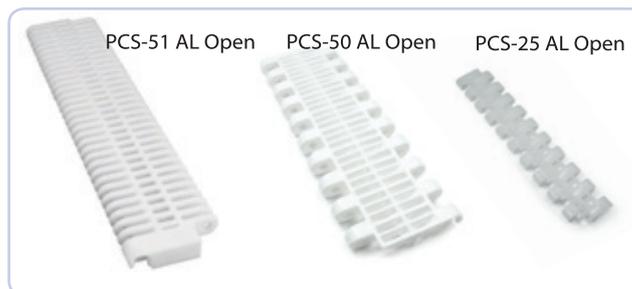


They are especially recommended for applications in which the products to be conveyed are small (bigger than the openings) and at the same time need to be treated with moderate ventilation and liquid drainage according to the percentage of perforated surface.

OPENED

These are available in the food-use series and transport series. They have been designed for use in applications in which a high ventilation or an important liquid drainage is necessary. Their "grille" or "net" construction prevents particles or odd elements from being deposited on the surface, as they have flat, smooth surfaces of small dimensions. It also facilitates maintenance and cleaning enormously with the most common methods.

Due to the quantity of openings and their sizes, the conveyance of products is conditioned by their size or volume. They must have minimum suitable dimensions, and for this reason the data shown on openings for each specific product must be consulted.



CONE TOP

Made only in the PCS-50 serie. It has a closed surface with conical pivots that provide good dragging and attachment conditions to items to be transported.

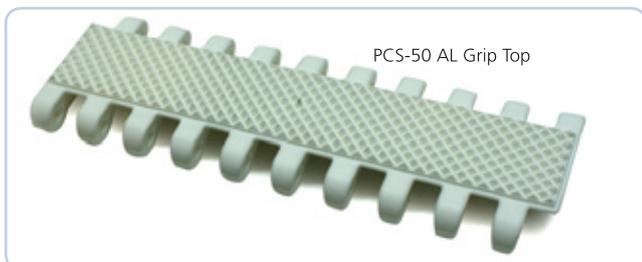


2 Belts characteristics Modular conveyors belts

Their protruding cones makes it ideal for preventing adherences and for transport on ramps or gentle slopes.

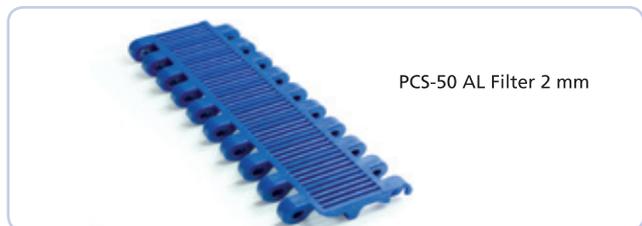
GRIP TOP

Made using the PCS-12 NEO, PCS-25 AL and closed PCS-50 AL (PP), these have one layer with a "diamond" finishing 3.5 mm in height injected from above. The injection is made with an elastomer from the food industry. Its hardness: 50 shore makes it especially advisable for transporting crates, trays, etc. on slopes of up to 30°. The elastomer material may be in white or black colour.



2 mm FILTER

Developed solely for the PCS-50 AL series. Its main characteristic is that its entire surface area has 2 mm grooves through it perpendicular to the direction of belt movement. These make it especially efficient in waste filtering applications in washing machines and water treatment.



There are two versions. One of these has a strip underneath for central transmission for the wheels, and the other is without this strip so it can be mounted sideways with metal transmission chains.

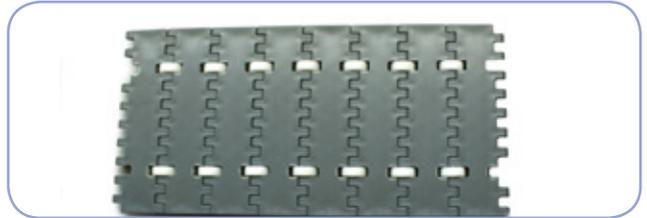
ACCUMULATION

Designed and built to minimize any friction effect of the elements to transport, this serie add rollers who achieve this effect.

PCS-15 AL Roller belt incorporates plastic or metallic rollers in a fixed position in addition to stainless steel rods.

PCS-50 AL Roller / accumulation derives from the PCS-50 AL flat top in which roller are incorporated.

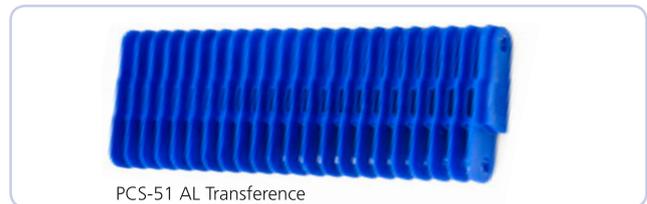
These rollers may be assembled in quantity and position completely different according to the needs of the application.



TRANSFERENCE SYSTEM

These are designed with similar criteria to the open belts. They have all the characteristics of the latter (high capacity to ventilate or drain liquids, easy cleaning and minimum depositing of undesired particles), and also the added capacity to transport products enabling their connection with the entrance to or exit from the conveyor belt to other sections of the installation.

They have raised flights, which allows them to do operations of lengthwise transfer of the products being conveyed. This is done by using PCS products called transference combs that connect with the free spaces between the raised flights of the belt modules.



CURVE

These are manufactured with characteristics that allow them to be used in setting up conveyors with curves included along the transport track, whether on the same plane or, at their maximum limit, in a spiral with the corresponding limit to the module's design.



As the opened belts, they have a high percentage of surface area with free openings that allow them to be used in applications where it is necessary to have good ventilation and a high capacity to drain liquid off.

2 Belts characteristics Modular conveyors belts



There are two versions of the module, the difference being in whether or not they include a supporting element at the end, designed to act as a guide by inserting them in the sections installed in the conveyor's frame.

FLAT TOP CURVE

Its design allows it to be used for mounting of curved conveyors with angles between 30 ° and 180 °. Being closed and suitable for food use is suitable it allows the transport of all kinds of products on it.



2.6. Specifications of the components (modules and accessories)

The "Technical Specifications" section shows every one of the specifications corresponding to all of the PCS products available at this moment. All of the data appearing here allows the designer, constructor, customer to make an adequate selection of products, modules, and accessories for being used:

- Dimensions and weights of each one of the different moduls existing.
- Number of products included per unit of measurement. (metre or square metre)
- % of open surface and number of openings.
- Standard belt widths.
- Units of packaging and their weights.
- General Characteristics.
- Recommended operating temperatures.
- Tensile strength.
- Friction coefficient.
- Construction characteristics specific to the product.
- Materials in which they are manufactured.
- Colors.
- Available accessories.
- Product availability

Other additional data that may be necessary but which is not in this document can be asked to PLASTIC CONVEYOR SYSTEM.

2.7. Accessories available for Modular Conveyor Belts

PLASTIC CONVEYOR SYSTEM has accessories to complement and widen the applications of the modular conveyor belts. Basically, they are of the following types:

Belt modules with straight flights (Series: PCS-25 AL, PCS-50 AL, PCS-50 Opened and PCS-40 AL)	
Belt modules with curved flights (Series PCS-50 AL)	
Belt modules to set up mixed flexible flights of PVC or others, both straight and sloping and of various dimensions.	
Curved belt modules with straight flights (Series PCS-40 AL)	
Sprocket wheels, or cogs, or machinery (All series)	
Side guard rail (Series: PCS-25 AL and PCS-50 al)	
Transference combs (Series: PCS-50 Transference)	
Articulation rods (All series)	
Guiding tongues below (PCS-40 AL curved series) with or without side tongue.	
Central Support for bearings (PCS-40 AL curved) with or without side tongue. - Triple (x3 Bearing)	
Support for bearings (PCS-40 AL curved series) with or without side tongue. - Single (x1 Bearing)	
Rod caps (all series)	
Several profiles: Side guides Lower guides Slip guides Special (on request)	
Support for bearings (PCS-50 AL all models) - Single (x1 Bearing)	

2.8. Materials available for slide guides in Modular Conveyor Belts

PLASTIC CONVEYOR SYSTEM has a complete range of profiles in plastic materials to construct modular conveyor belts. They are particularly suited for use as slide guides, flights, protection, or for the belts' slide rails. Used correctly, they guarantee the best performance as well as a longer useful life.

The materials used are:

- UHMW (Polyethylene of ultra high molecular weight)
- HMW (Polyethylene of high molecular weight)

The types of profiles available are:

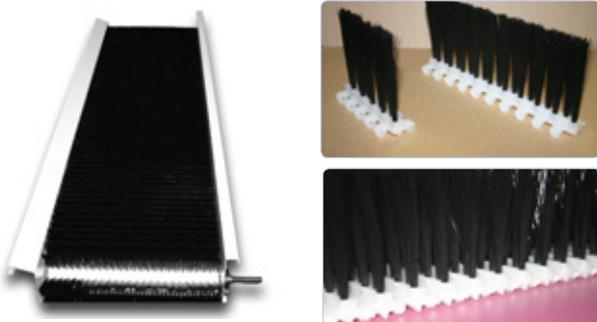
- Flat or rectangular
- In "L"
- In "Z"
- Curved
- For PCS-40 AL curved
- For PCS-40 AL LN curved
- For PCS-40 AL with side and bottom bearings
- Special designs on request.

2.9. Special applications and developments

PLASTIC CONVEYOR SYSTEM has designed and developed a series of designs for very specific and special needs and uses, always starting from their basic range of products for modular belts:

2.9.1. PCS-25 AL CLOSED "INSERTS"

Using the basic PCS-25 AL CLOSED, PCS add a continuous and flat belt along its entire length (200 mm) in which a serie of zigzagging circular orifices have been made. They allow all kind of elements to be inserted: such as different types of hair to create a "brush" effect.



This product allows to transport above the "inserts", objects that need special care in handling so as not to

be damaged, scratchaed, etc. It is especially designed to convey delicate foodstuffs. Nevertheless, according to the hardness, length, and rigidity of the inserted bristle, it can also be used to convey metallic sheets, glass and others.

Other inserts of various materials can also be made, like rubber, metallic elements, etc., always after studying the needs and conditions of use and application in close cooperation with the customer.

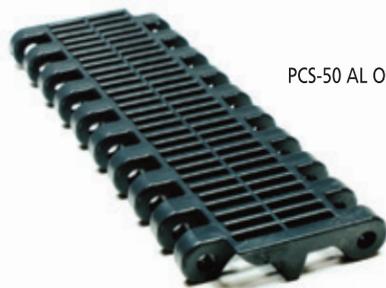
2.9.2. PCS-25 AND 50 AL PERFORATED/OPENED/ CLOSED "TE" (Elevated Temperatures)

Modules suitable for working in continuous use at up to 130 /140° C. These modules have been developed especially for cases where resistance is necessary without losing any of their properties.

Any kind of modular belt can be manufactured from these thermoplastic materials, but it is always advisable to make a study beforehand in each case. The articulation rods can be made of stainless steel or with the same kind of plastic as the belt.

2.9.3. PCS-25 AND 50 AL PERFORATED/OPENED/ CLOSED "HT" (High Temperatures)

Made from thermoplastic materials that comply with the requirements of the FDA, these have properties capable of withstanding temperatures in continuous use of up to 240°C without losing any of their characteristics.



PCS-50 AL Opened (noryl)

They are specially manufactured for application in ovens, for closing blisters, all kinds of thermoplastic wrappings, packaging and other uses. Thanks to the use of modules, they are easily adapted to any dimensional need. In all cases, it is necessary to carry out a detailed study of the case in question.

As in the case of the Elevated Temperature modular belts, any other model of the PCS range can be manufactured with these materials.

2 Belts characteristics Modular conveyors belts

2.9.4. PCS-25 AL CLOSED / PCS-50 AL CLOSED WITH "SOFT" STRAIGHT FLIGHTS

These are aimed at all those applications in which small impacts between the conveyed items and the walls can cause problems. PCS has developed these "flexible" and "soft" accessories made by elastomers approved by the FDA.

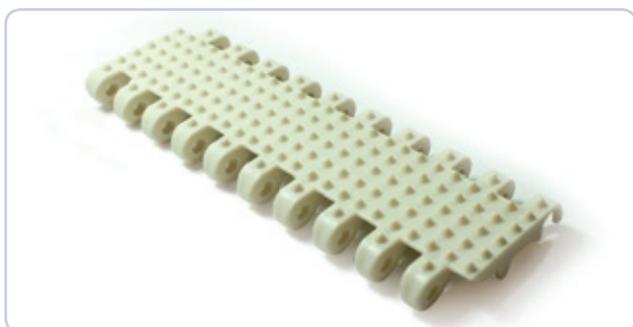
According to each case, after a study carried out, their hardness can be adjusted to offer the most suitable solution for each one. They are mounted in combination with rigid modules.

Any element of a PCS modular belt can be manufactured with these kinds of materials which, according to the type, offer an operating temperature range of between 50° and 100° C according to the application..

2.9.5. PCS-50 AL ANTI-SLIP CONE TOP

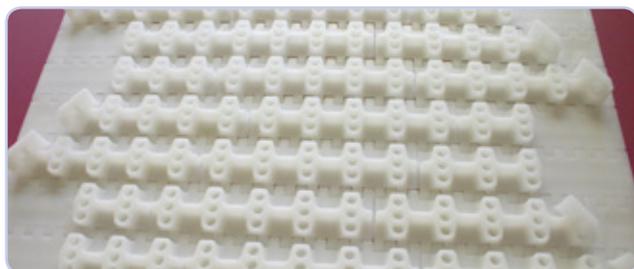
Made from elastomer material (FDA), this module has been designed to prevent the items being transported from slipping on slopes and ramps of up to 30°.

It must be assembled in combination with other modules from the same serie.



2.9.6. PCS-50 AL CLOSED "INSERTS"

Developed for a specific application, it allows the insert for large-diameter bristles, metallic rods or other elements.



2.9.7. PCS-50 AL CLOSED MIXED SUPPORT PROFILE

These are designed to enable a quick and simple set-up, on the belt itself with no additional fixing, of all kinds of flexible profiles manufactured by extrusion of PVC or other materials. By using it, different kinds of set-up can be arranged according to the application's needs.



2.9.8. PCS-50 AL CLOSED WITH FLEXIBLE "FINGERS"

Similar to the mounting of flexible profiles is possible to mount flexible cylindrical pusher for the manipulation of delicate fruits and other products.

As the two fingers are separated, a great drained of water or washing liquid is allowed.



2 Belts characteristics Modular conveyors belts

2.9.9. PCS-25 AL CLOSED/PERFORATED/OPENED WITH INSERTS AND/OR SPECIFIC POSITIONING FEATURES

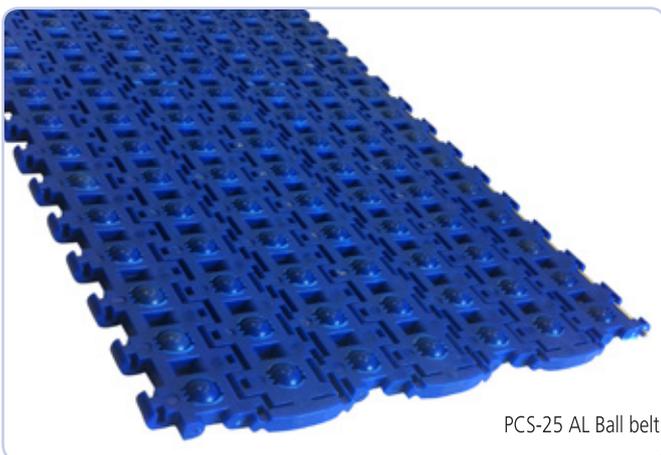
Developed for a specific application, by means of the combined use of all the belt types of the PCS-25 AL family, with the "insert" modules of the same series, allows to fix on the belt surface, positioning elements that have been specifically designed for the application.

Allows a huge variety of combinations and mounting of other sensing elements or automation.



2.9.10. PCS-25 AL BALL BELT

Designed to create as little friction as possible while it provides great save in energy. It has been planned and manufactured by ECO and can be used in various transport and accumulation applications.



Operations involving altering the path, speeding up, slowing down, rotation, accumulation and other aspects as regards the product being conveyed can be made with minimum efforts and friction, leading to significant energy savings.

Its small pitch (25.4 mm) also means it can be mounted on conveyors that require smaller products to be

transferred. As well as, it is possible to convey lighter and smaller items.

The balls embedded in the belt (polypropylene) of 10 mm in diameter can be made of acetal (POM) or stainless steel depending on their use. In any case, the articulation rods are always made of stainless steel. Statically used it has a great potential for use it in the entrance or exit of the products transported using the advantage of gravity.

2.9.11 PCS-15 AL ROLLER BELT

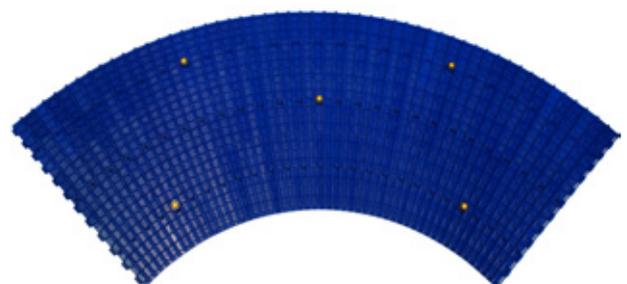
Like the PCS-25 AL Ball Belt it produce as little friction as possible while it provides great save in energy. It has been planned and manufactured by ECO and can be used in various transport and accumulation applications.



The rollers integrated in the belt (polypropylene) are manufactured in acetal (POM) or stainless steel with a 10 mm diameter. The suitability of the choice of these materials depends on the case where it is going to be used. In any case, the articulation rods are always made of stainless steel.

Its small pitch (15 mm) enables it to be used in many applications, including the small items to be transported, accumulated, etc. Statically, it has many possible applications such as creating ramps, pathways and curves based on gravity, without creating spaces or gaps between the rollers, that may otherwise could cause sudden jumps of the products transported.

2.9.12. PCS FLAT TOP CURVE.





Designed for manufacturing curved modular belt conveyors with fixed widths depending on the modules used with variable angles from 35 ° to more than 180 ° as indicated in the technical data

2.9.13. PCS-25 y 50 AL ROLLER / ACCUMULATION

PCS-25 AL Roller and PCS-50 AI Roller were developed as a variable of the basic modules: PCS-25 and PCS-50 CLOSED (or flat top). Rollers are incorporated to avoid friction in accumulation areas of the elements transported. In all cases rollers are manufactured in PA and articulation rods in acetal or inox

2.9.14. ANTI-STATIC

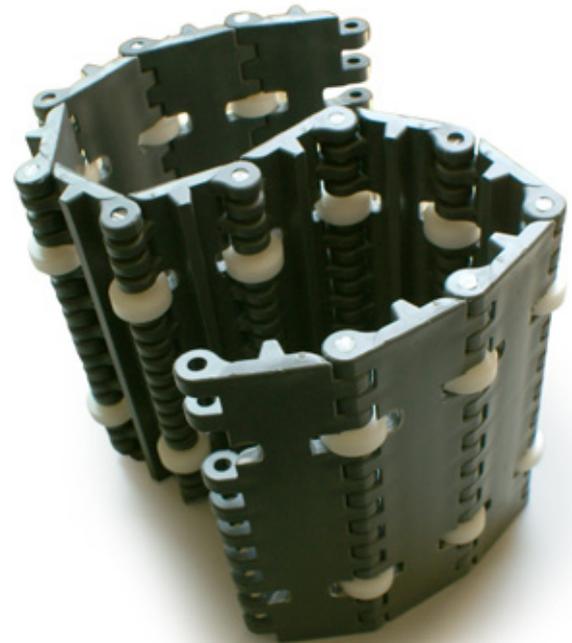
All PCS products can be manufactured from thermoplastic and antistatic materials, manufactured to order.

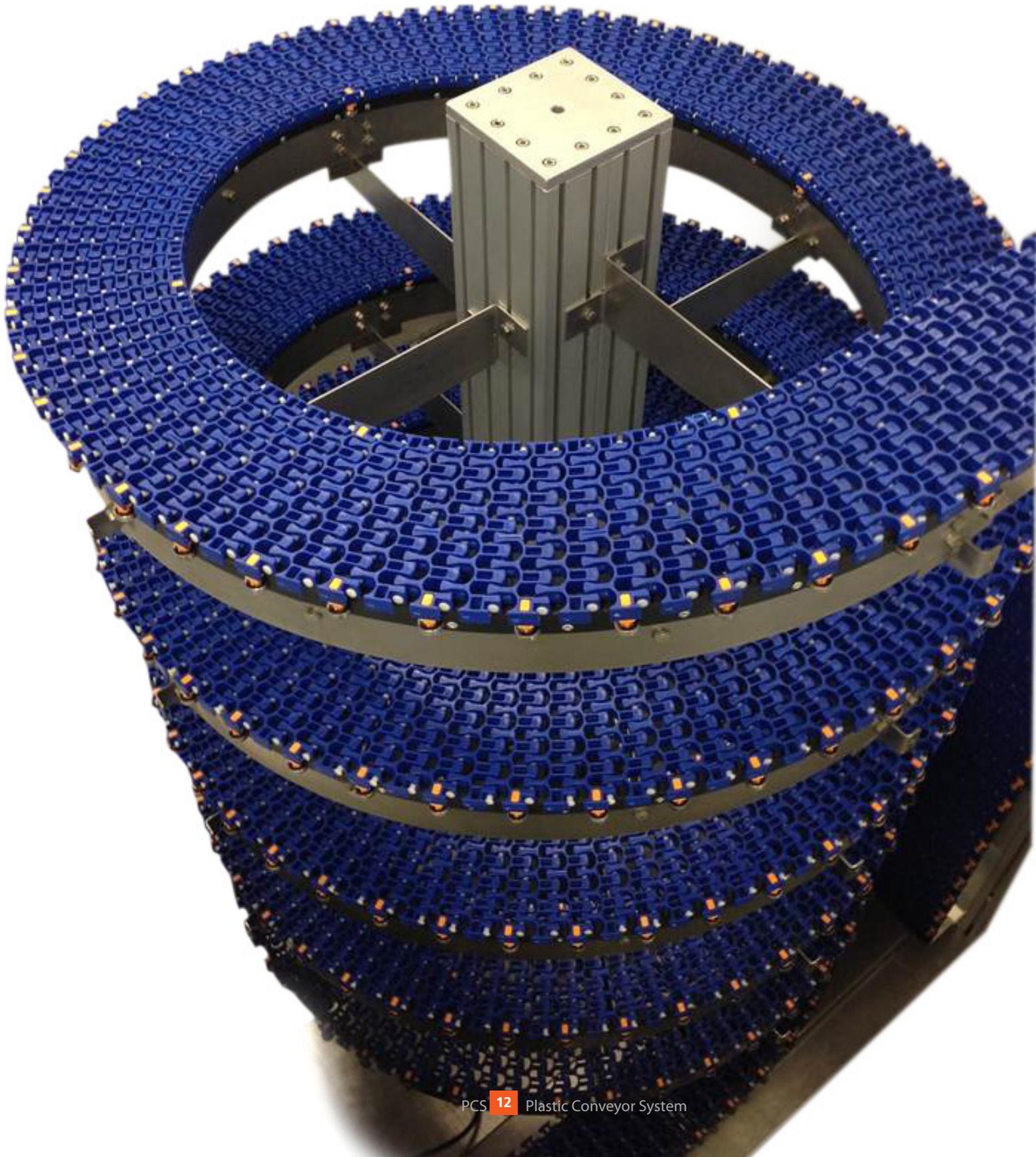
2.9.15. MAGNETIC DETECTABLE

All PCS products can be manufactured from thermoplastic and antistatic materials magnetically detectable, manufactured to order.

2.9.16. X-RAYS DETECTABLE

All PCS products can be manufactured from thermoplastic and antistatic materials X-RAYS detectable, manufactured to order.





3 Technical specifications Modular conveyor belts

PCS 12-AL	14	FLAT TOP CURVE	27
PCS-12 AL Closed	15	Flat top curve sprockets	27
Sprockets PCS-12 AL (various diameters)	15		
PCS 12-AL NEO	16	PCS 50-AL	29
PCS-12 AL NEO Closed	16	PCS-50 AL Perforated	30
PCS-12 AL NEO Perforated	16	PCS-50 AL Opened	30
PCS-12 AL NEO Opened	16	PCS-50 AL Closed	30
PCS-12 AL NEO Cone Top	16	PCS-50 AL Cone Top Closed	30
PCS-12 AL NEO Grip Top	16	PCS-50 AL Perforated Ø4	30
PCS-12 AL NEO Straight flight H15	16	PCS-50 AL Cone Top Perforated	30
Sprockets PCS-12 AL NEO (Various diameters)	17	PCS-50 AL Grip Top	30
		PCS-50 AL Filter 2 mm.	30
		PCS-50 AL Roller / accumulation	30
		PCS-50 AL Closed mixed profiles support	30
PCS 15-AL	18	Flights and side guards PCS-50 AL	32
PCS-15 AL Roller Belt	18	Sprockets PCS-50 AL (various diameters)	33
Sprockets PCS-15 AL (various diameters)	18		
		PCS 51-AL	34
PCS 25-AL	19	PCS-51 AL Opened	35
PCS-25 AL Ball Belt	19	PCS-51 AL Opened with rod retainer	35
PCS-25 AL Perforated	21	PCS-51 AL Opened with straight flight	35
PCS-25 AL Opened	21	PCS-51 AL Transference	35
PCS-25 AL Closed	21	PCS-51 AL Transference with rod retainer	35
PCS-25 AL Roller / accumulation	21	Sprockets PCS-51 AL (various diameters)	36
PCS-25 AL Closed inserts	21	PCS-51 AL Double transference comb	37
PCS-25 AL Grip Top	21	PCS-51 AL Cover for screws, transference comb	37
Sprockets PCS-25 AL (various diameters)	22		
Flight and side guards PCS-25 AL (H 50mm)	23	Guides and plastic profiles	38
PCS 40-AL	24		
PCS-40 AL Curve LN with side tongue	25		
PCS-40 AL Curve without side tongue	25		
PCS-40 AL Curve with lower tongue	25		
PCS-40 AL Curve without lower tongue	25		
PCS-40 AL Curve LN + support and bearing	25		
PCS-40 AL Curve + support and bearing	25		
PCS-40 AL Straight flight with side tongue	26		
PCS-40 AL Straight flight without side tongue	26		
Sprockets PCS-40 AL (various diameters)	26		

VERY IMPORTANT NOTE

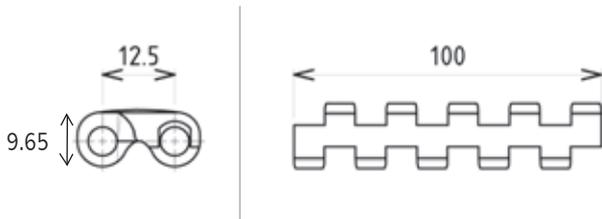
All of the designs of PCS products are available for use in STEP 3D format on the web site www.pcsbelts.es

3 Technical specifications Modular conveyor belts



**SERIES: PCS-12 AL
MODELS**

PCS-12-AL Closed



i
Due to the different contraction values of the thermoplastic materials, the different modules' lengths can vary up to -2,5 %.



SERIE: PCS-12 AL ACCESSORIES

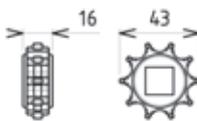


TECHNICAL DATA	PCS-12 AL Closed
Pitch	12,5 mm
Open surface	0%
Max Opening	-
Openings	-
Drive	central
Length (mm)	100
Surface (m ²)	0,00125
Parts per m ²	800
WEIGHT PER M² (Kg/m²) (Without articulation rods)	
Polypropylene	5,065
Polyethylene	5,065
Acetal	7,596
TENSILE STRENGTH (N/m 20°C)	
Polypropylene	8800
Polyethylene	5950
Acetal	14200
FRICTION COEFFICIENT (for UHMW support)	
Polypropylene	0,14
Polyethylene	0,16
Acetal	0,11
ARTICULATION ROD	
Diameter: 6,4 mm Length: 612 mm (with 2 heads). Other formats for greater widths.	
PACKAGING	
	In Boxes of 1 m ²
	Box dimensions 360 x 204 x 250 mm
APROXIMATED WEIGHT (Kg)	
	Polypropylene 7,600
	Polyethylene 7,600
	Acetal 11,400

TECHNICAL DATA	Sprockets		
	D 43	D 99	D 147
Pitch	12,5 mm		
External diameter (mm)			
mm	43	99	147
AXE			
15 x 15	✓	-	-
25 x 25	-	✓	-
30 x 30	-	✓	✓
40 x 40	-	✓	✓
D 20 (Diameter)	✓	-	-
D 30 (Diameter)	-	✓	-
D 40 (Diameter)	-	-	✓
TEETH			
N° de Teeth	10	24	36
WEIGHT PER UD (Kg/ud)			
Polypropylene	0,030	0,075	0,135
Acetal	0,045	0,110	0,205
PACKAGING			
	In Boxes of	according to units	
	Box Dimensions	"	

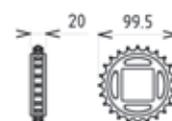
D 43

on request
(mechanized)

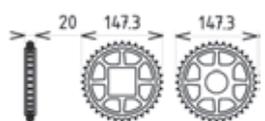


D 99

on request
(mechanized)



D 147



**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.
Articulation zones: smooth to aid cleaning.

STANDARD BELT WIDTHS (mm)

40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | ...

Other non-standard width dimensions: increases of 20 in 20 mm on standard widths.
Minimum width of assembled alternating belt; brick type: 100 mm.
Minimum width of assembled continuous belt: 40 mm.

SERVICE TEMPERATURES

Polypropylene +1°C / +104°C Polyethylene -73°C / +66°C
Acetal -45°C / +93°C

STANDARD COLORS

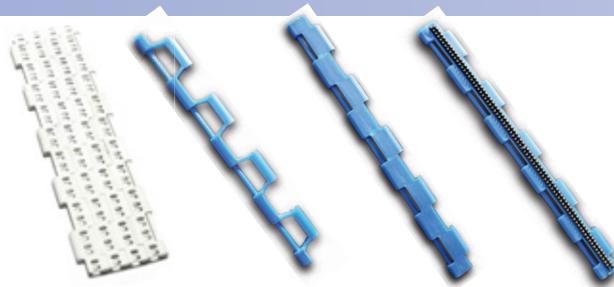
Polypropylene			
Polyethylene			
Acetal			

Other colors are available on demand (consult)

Materials approved by the **FDA** and **EU (EC) N°1935/2004**

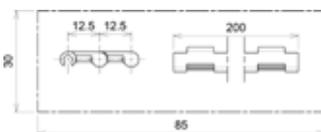


SERIE: PCS-12 AL NEO

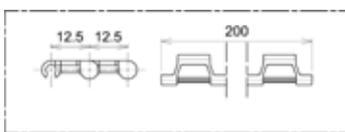


TECHNICAL DATA	PCS-12 AL NEO Perforated	PCS-12 AL NEO Opened	PCS-12 AL NEO Closed	PCS-12 AL NEO Grip Top	PCS-12 AL NEO Cone top	PCS-12 AL NEO Straight flight 15mm
Pitch	12 mm					
Open surface	20%	36%	0%	0%	0%	0%
Max Opening	4,5 x 2 mm	4,5 x 13,4 mm	-	-	-	-
Openings	98	29	0	-	-	-
Drive	central					
Length (mm)	200 / 160 / 120 / 80 / 60 / 40			200	200	200
Surface (m ²)	0,005 / 0,004 / 0,003 / 0,002 / 0,0015 / 0,001			0,005	0,005	0,005
parts per m ²	400 / 500 / 666 / 1000 / 1333 / 2000			200	200	200
Top Coating	-			-	elastomer 3,5mm - 50 Sh	
WEIGHT PER M² (Kg/m²) (Without articulation rod)						
Polypropylene	2,800	2,400	3,200	3,400	3,300	-
Polyethylene	2,800	2,400	3,200	-	3,300	-
Acetal	4,004	3,432	4,576	-	7,720	-
TENSILE STRENGTH (N/m 20°C)						
Polypropylene	1200	-	1215	1215	1215	-
Polyethylene	-	-	-	-	-	-
Acetal	2350	-	2410	2410	2410	-
FRICITION COEFFICIENT (for UHMW support)						
Polypropylene				0,14		
Polyethylene				0,16		
Acetal				0,11		

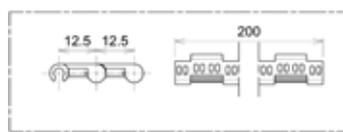
PCS-12 AL NEO Closed



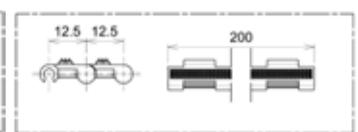
PCS-12 AL NEO Opened



PCS-12 AL NEO Perforated



PCS-12 AL NEO Grip Top



**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.
Articulation zones: smooth to aid cleaning

SERVICE TEMPERATURES

Polypropylene	+1°C / +104°C	Polyethylene	-73°C / +66°C
Acetal	-45°C / +93°C		

STANDARDS BELT WIDTHS (mm)

40 | 80 | 120 | 160 | 200 | ...

Other non-standard width dimensions: increases of 40 in 40 mm on standard widths.
Minimum width of assembled alternating belt; brick type: 120 mm. Minimum width of assembled continuous belt: 40 mm.

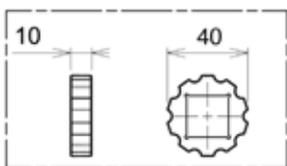
STANDARD COLORS

Polypropylene			
Polyethylene			
Acétal			
Other colors are available on demand (consult)			

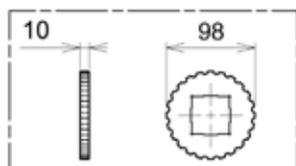


TECHNICAL DATA	Wheels				
	D 40	D 65	D 98	D 146	D 171
Pitch	12,5 mm				
EXTERNAL DIAMETER (mm)	40	65	98	146	171
AXE					
20 x 20	✓	-	-		
D20	✓	-	-		
30 x 30	-	✓	✓		
D30	-	✓	✓	✓	✓
40 x 40			✓	✓	✓
D40				✓	✓
TEETH					
N° of teeth	10	16	24	36	42
WEIGHT PER UD (Kg/ud)					
Polypropylene					
Acetal					
PACKAGING					
 In Boxes of	according to units				
Box dimensions	„				

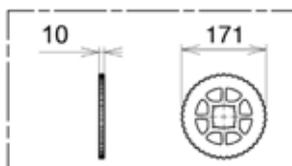
D40/D10



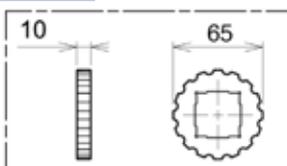
D98/D24



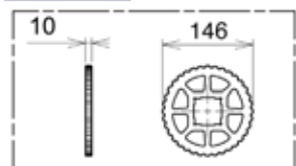
D171/D42



D65/D16



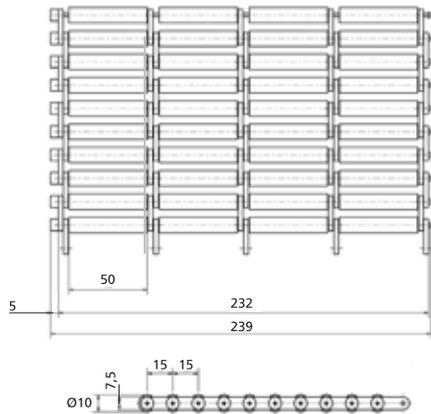
D146/D36





SERIE: PCS-15 AL ROLLER BELT

PCS-15 AL Roller Belt



TECHNICAL DATA	PCS-15 AL Roller Belt
Pitch	15 mm
Open surface	25%
Max Opening	5 x 54 mm
Openings	according to width
Drive	sobre los Rollers
Rollers length (mm)	50 mm
Surface (m ²)	according to width
Parts per m ²	1056
Rollers diameter	10 mm
Roller color	blue / INOX
separation between rollers	15 mm
WEIGHT PER M² (Kg/m²) (Without articulation rod)	
Polypropylene + roller AC	5,500
Polypropylene + roller INOX	7,700
TENSILE STRENGTH (N/m a 25°C)	
Polypropylene	33000
MAXIMUM BELT STRESS (recomendable) (N/m a 25°C)	
	7000
MAXIMUM LOAD PER ROLLER	
	5 N/w POM / SS 15 N/w
FRICTION COEFFICIENT (for UHMW support)	
Polypropylene	0,002 / 0,003
ARTICULATION ROD	
	INOX-Diameter: 2'0 mm. Length: according to width.
PACKAGING	
	Accordint to belt dimensions

SPROCKETS

Diameter (mm)	D77	D146	D155
N° teeth	14	30	31
Axe (mm)	40 x 40 Ø On demand	40 x 40 Ø On demand	40 x 40 Ø On demand
Material	Polyamide / Inox	Polyamide / Inox	Polyamide / Inox

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.

STANDARD BELT WIDTHS (mm)

73 | 129 | 186 | 242 | 298 | 355 | 411 | 468 | ...

Other non-standard width dimensions: increases / decreases of 50 in 50 mm on standard widths.
Minimum width of assembled continuous belt: 74 mm.

**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

SERVICE TEMPERATURES

Polypropylene +1°C / +104°C Acetal -45°C / +93°C

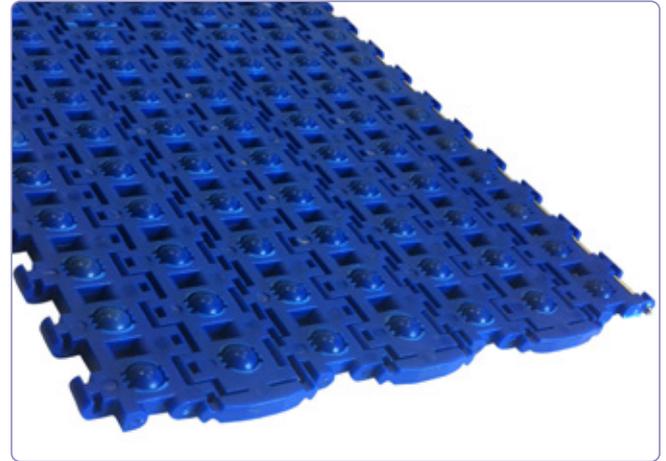
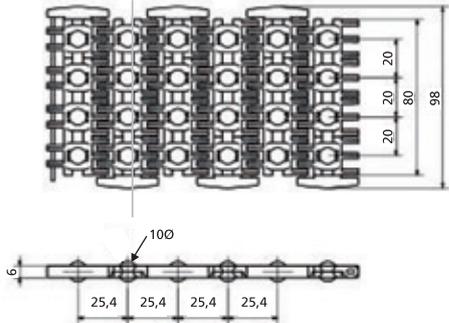
STANDARD COLORS

Polypropylene 
Acetal 



SERIE: PCS-25 AL BALL BELT
Pitch: 1" (25,4 mm)

PCS-25-AL Ball Belt



TECHNICAL DATA	PCS-25-AL Ball Belt
Pitch	25,4 mm
Open surface	8%
Max Opening	6 x 7 mm
Openings	according to width
Drive	central
Length (mm)	100 / 105
Surface (m ²)	according to width
Parts per m ²	380
Balls per m ²	2000
Balls color	white - blue / INOX
Separation between balls	20 mm
Ball diameter	10 mm
WEIGHT PER M² (Kg/m²) (Without articulation rod)	
Polypropylene + Bola POM	4,100
Polypropylene + Bola INOX	11,200
TENSILE STRENGTH (N/m a 25°C)	
Polypropylene	20000
MAXIMUM BELT STRESS (recomendable) (N/m a 25°C)	
	5000
MAXIMUM CHARGE PER BALL	
	5 N/w POM / SS 15 N/w
COLAPSE FACTOR	
	7,5 x belt width
FRICTION COEFFICIENT (for UHMW support)	
Polypropylene	0,002 / 0,003
ARTICULATION ROD	
	INOX-Diameter: 2'0 mm. Length: according to width.
PACKAGING	
	Accordint to belt dimensions

SPROCKETS

Diameter	D84	D108	D138	D150
N° teeth	10	13	18	17
Axe (mm)	40 x 40 Ø On demand			
Material	Polyamide / Inox	Polyamide / Inox	Polyamide / Inox	Polyamide / Inox

FEATURES

FRICTION COEFFICIENT 0,002

STANDARD BELT WIDTHS (mm)

53 | 73 | 93 | 113 | 133 | 153 | 173 | 193 | ...

Standard extreme modules 109 mm. Standard central modules 100 mm. Other dimensions of nonstandard width: increment / decrement of 20 in 20 mm on standard widths. Minimum width of side mounted alternating brick type: 78 mm. Minimum width continuous band mounted 58 mm.

**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

SERVICE TEMPERATURES

Polypropylene +1°C / +104°C Acetal -45°C / +93°C

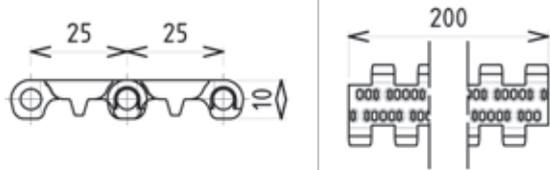
STANDARD COLORS

Polypropylene 

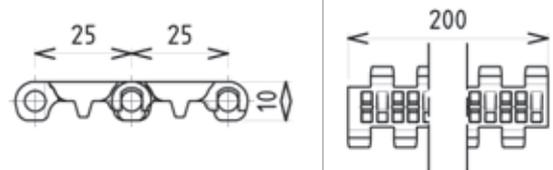


SERIE: PCS-25 AL MODELS

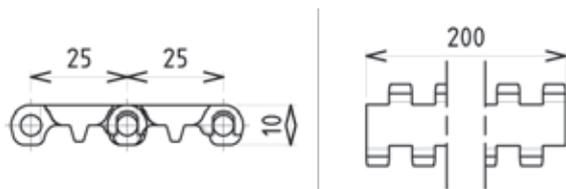
PCS-25 AL Perforated



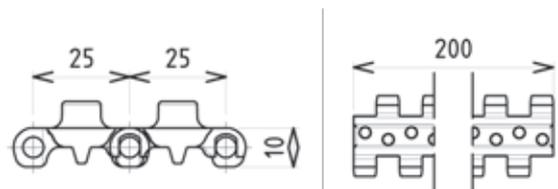
PCS-25 AL Opened



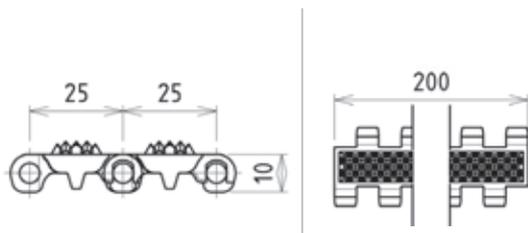
PCS-25 AL Closed



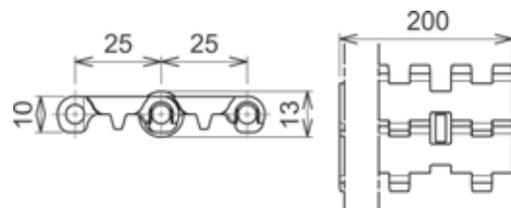
PCS-25 AL Closed inserts



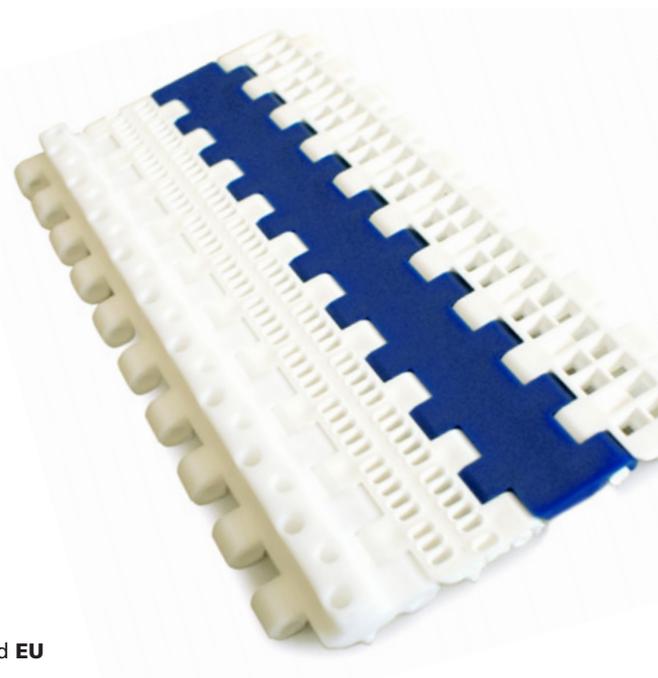
PCS-25 AL Grip Top



PCS-25 AL Roller / Accumulation



Due to the different contraction values of the thermoplastic materials, the different modules' lengths can vary up to -2,5 %.



① Top profile with 20 holes of 5mm diameter to embed hairs of different thicknesses and hardnesses according to application needs. Rubber pivots or elastomers, plastics, metal or other materials can be also inserted. Inner surface smooth with rounded edges and smooth articulation areas facilitate the cleaning.

② Elastomer black or white



SERIE: PCS-25 AL



TECHNICAL DATA	PCS-25 AL Perforated	PCS-25 AL Opened	PCS-25 AL Closed	PCS-25 AL Closed inserts	PCS-25 AL Grip Top	PCS-25 AL Roller/Acumula	
Pitch	25 mm						
Open surface	20%	36%	0%	0%	0%	0%	
Max Opening	4,5 x 2 mm	4,5 x 13,4 mm	-	-	-	-	
Openings	98	29	0	-	-	-	
Drive	central						
Length (mm)	200 / 100 / 60 / 40			200	200	200	
Surface (m ²)	0,005 / 0,0025 / 0,0015 / 0,010			0,005	0,005	0,005	
Parts per m ²	200 / 400 / 666 / 1000			200	200	200	
Top coating	-			-	elastomer 3,5mm - 50 Sh	-	
WEIGHT PER M² (Kg/m²) (Without articulation rod)							
Polypropylene	4,400	4,000	5,200	7,000	5,900	5,200 + Rollers	
Polyethylene	4,400	4,000	5,200	-	-	5,200 + Rollers	
Acetal	6,600	4,900	7,600	-	-	7,600 + Rollers	
TENSILE STRENGTH (N/m a 20°C)							
Polypropylene	13800	12240	14400	14400	14400	14400	
Polyethylene	8600	7735	9100	-	-	9100	
Acetal	19800	18360	21600	-	-	21600	
FRICITION COEFFICIENT (for UHMW support)							
Polypropylene	0,14						
Polyethylene	0,16						
Acetal	0,11						
ARTICULATION ROD							
Diameter: 5'0 mm Length: 612 mm (with 2 heads) Other formats for higher widths							
PACKAGING							
	In Boxes of	1,5 m ²			146 units	-	
	Box Dimensions	360 x 204 x 250 mm					
APOXIMATED WEIGHT (Kg)							
	Polypropylene	6,700	6,000	7,900	10,600	8,600	-
	Polyethylene	6,700	6,000	7,900	-	-	-
	Acetal	10,000	7,350	11,500	-	-	-

**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.

SERVICE TEMPERATURES

Polypropylene	+1°C / +104°C	Polyethylene	-73°C / +66°C
Acetal	-45°C / +93°C		

STANDARD BELT WIDTHS (mm)

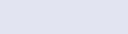
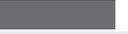
40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | ...

Other non-standard width dimensions: increases of 20 in 20 mm on standard widths.

Minimum width of assembled alternating belt; brick type: 100 mm.

Minimum width of assembled continuous belt: 40 mm.

STANDARD COLORS

Polypropylene			
Polyethylene			
Acetal			
Other colors on demand (consult)			

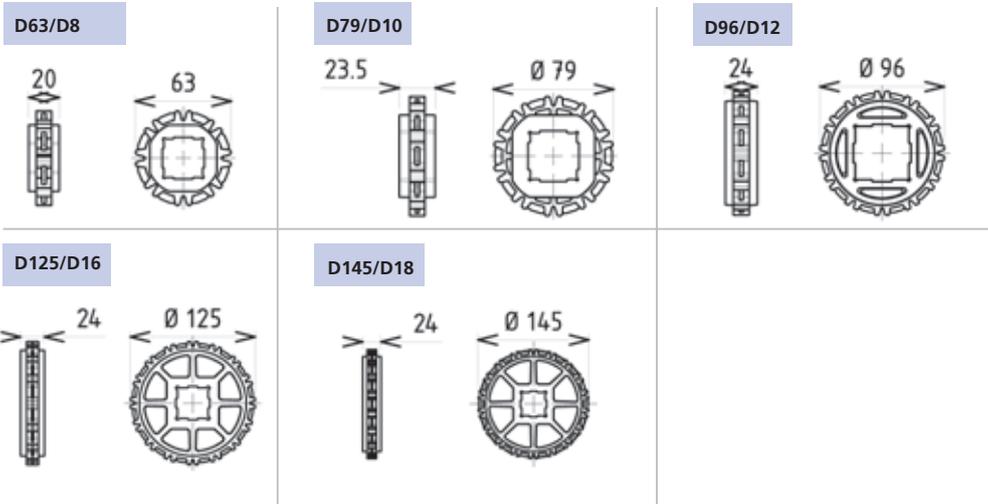


**SERIE: PCS-25 AL
ACCESORIES**



SPROCKETS

TECHNICAL DATA	SPROCKETS				
	D 63	D 79	D 96	D 125	D 145
Pitch	25 mm				
External diameter (mm)					
in mm	63	79	96	125	145
AXE					
25x25	✓	-	-	-	-
D 18 (Diameter)	✓	-	-	-	-
30x30	-	✓	✓	✓	✓
40x40	-	-	✓	✓	✓
D 30 (Diameter)	-	-	-	-	✓
TEETH					
N° of teeth	8	10	12	16	18
WEIGHT PER UD (Kg/ud)					
Polypropylene	0,035	0,045	0,060	0,093	0,095
Acetal	0,053	0,063	0,083	0,134	0,135
PACKAGING					
 In Boxes of	according to units				
Box Dimensions	"				





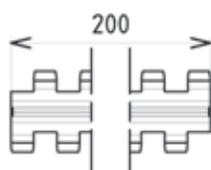
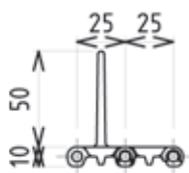
**SERIE: PCS-25 AL
ACCESSORIES**



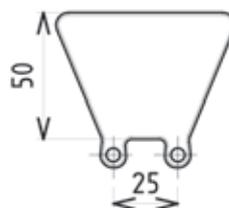
TECHNICAL DATA	Straight flight	Side Guards	
	H 50	H 50	
Pitch	25 mm	25 mm	
Open surface	0%	-	
Drive	central	-	
Height (mm) (modifiable on demand)	50	50	
Length (mm)	200	-	
Surface (m ²)	0,005	-	
Parts per m. Linear	5	40	
WEIGHT PER UD (Ud/m²)			
Polypropylene	0,059	0,480	
Polyethylene	0,059	0,480	
Acetal	0,085	0,720	
TENSILE STRENGTH (N/m a 20°C)			
Polypropylene	14400	-	
Polyethylene	9100	-	
Acetal	21600	-	
FRICITION COEFFICIENT (for UHMW support)			
Polypropylene	0,14	-	
Polyethylene	0,16	-	
Acetal	0,11	-	
ARTICULATION ROD			
Diameter: 5'0 mm Length: 612 mm (with 2 heads) Other formats for greater widths			
PACKAGING			
	In Boxes of	according to units	according to units
	Box dimensions	"	"
APOXIMATED WEIGHT (Kg)			
	Polypropylene	according to units	according to units
	Polyetiyene	"	"
	Acetal	"	"



PCS-25 AL Closed straight flight



Side guards

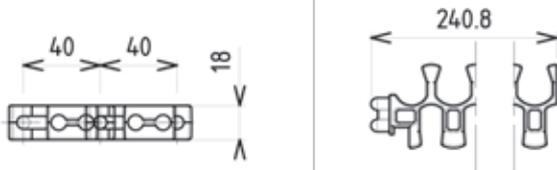


3 Technical specifications Modular conveyor belts

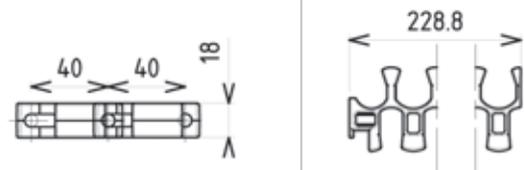


SERIE: PCS-40 AL CURVE (Inside radius 2,2) MODELS

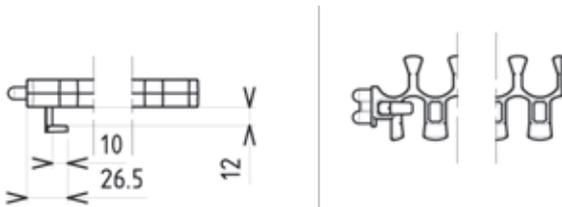
PCS-40 AL Curve LN (with side tongue)



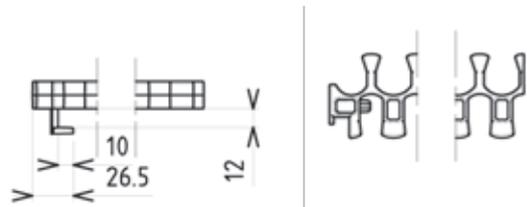
PCS-40 AL Curve (without side tongue)



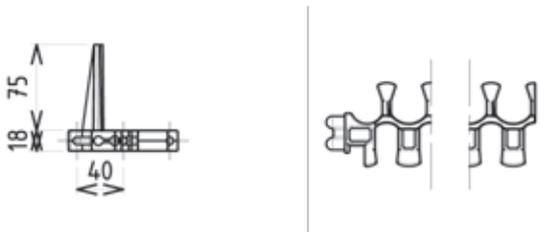
PCS-40 AL Curve LN with lower tongue



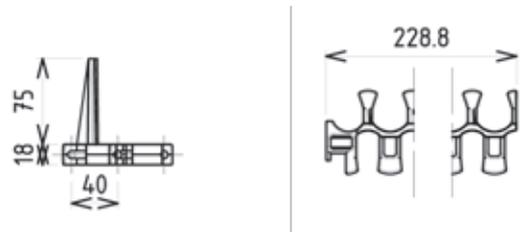
PCS-40 AL Curve with lower tongue



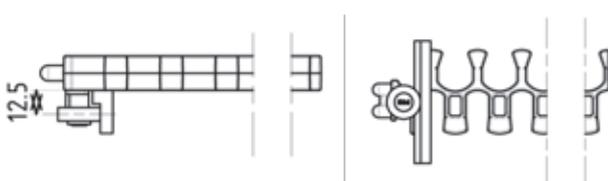
PCS-40 AL Straight sides with side tongue



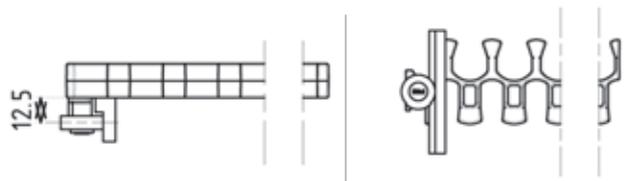
PCS-40 AL Straight sides with side tongue



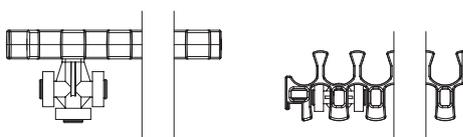
PCS-40 AL Curve LN with support and bearing



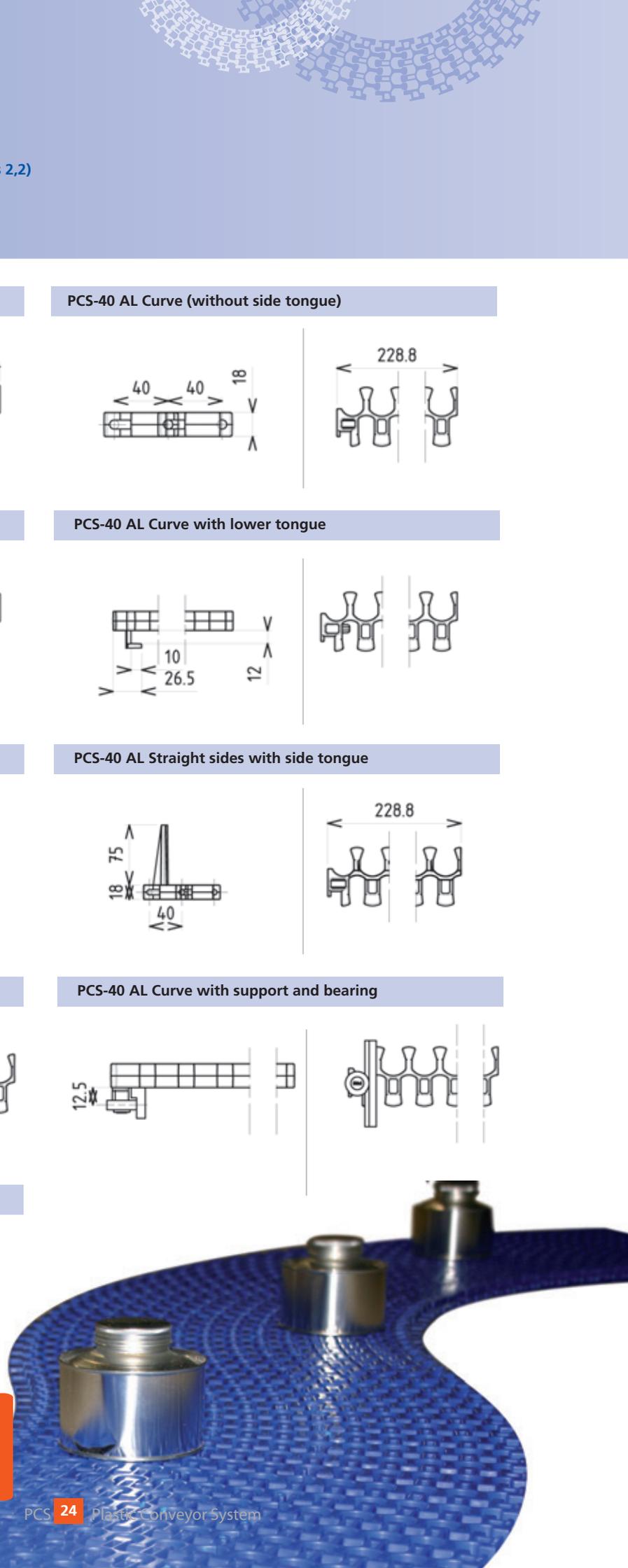
PCS-40 AL Curve with support and bearing



PCS-40 AL Curve with central support and 3 bearings

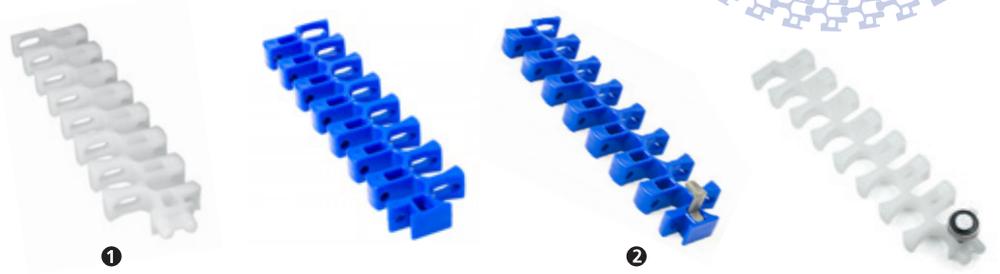


i
Due to the different contraction values of the thermoplastic materials, the different modules' lengths can vary up to -2,5 %.





SERIE: PCS-40 AL



TECHNICAL DATA	PCS-40 AL Curve LN (with side tongue)	PCS-40 AL Curve (without side tongue)	PCS-40 AL Curve LN / Curve + lower tongue	PCS-40 AL Curve + support and bearing
Pitch	40 mm			
Open surface	54 %			
Max Opening	21 x 12 mm			
Openings	21			
Drive	central			
Length (mm) - Lateral	227 / 141 / 113 / 85			
Length (mm) - Central	201 / 115 / 86 / 58			
Surface (m ²) - Lateral	0,0092 / 0,0057 / 0,0045 / 0,0034			
Surface (m ²) - Central	0,0081 / 0,0046 / 0,0034 / 0,0022			
Parts per m ² - Lateral	109 / 175 / 222 / 294			
Parts per m ² - Central	123 / 217 / 294 / 455			
Parts per m. Linear	4,4			
Guiding tongue dimension	20 x 11 x 8	-	-	-
WEIGHT PER M² (Kg/m²) (Without articulation rod)				
Polypropylene	6,000		According mounting	According mounting
Polyethylene	6,000		According mounting	According mounting
Acetal	8,700		According mounting	According mounting
TENSILE STRENGTH (N/m a 20°C)				
Polypropylene		21000		
Polyethylene		13000		
Acetal		30100		
FRICTION COEFFICIENT (for UHMW support)				
Polypropylene		0,14		
Polyethylene		0,16		
Acetal		0,11		
ARTICULATION ROD				
Diameter: 6'4 mm Length: 612 mm (with 2 heads) Other formats for greater widths				
PACKAGING				
	In Boxes of	1 m ²		
	Box Dimensions	360 x 204 x 250 mm		

**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.

STANDARD BELT WIDTHS (mm)

144 | 172 | 200 | 228 | 256 | 284 | 312 | 340 | ...
 Other non-standard width: 28 in increments of 28 mm on standard widths.
 Minimum width of alternating brick type mounted side: 144 mm.

SERVICE TEMPERATURES

Polypropylene	+1°C / +104°C	Polyethylene	-73°C / +66°C
Acetal	-45°C / +93°C		

STANDARD COLORS

Polypropylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Polyethylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Acetal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other colors on demand (consult)			



SERIE: PCS-40 AL ACCESORIES



④

PCS-40 AL straight flight with/out side tongue

TECHNICAL DATA	H 75
Pitch	40 mm
Open surface	54%
Max Opening	21 x 12 mm
Openings	21
Drive	central
Length (mm)	227
Surface (m ²)	0,0092
Parts per m. Linear	4,4
Guiding tongue dimension	20 x 11 x 8
WEIGHT PER UD (Kg/Ud)	
Polypropylene	0,107
Polyetiyene	0,107
Acetal	0,155
RESISTENCIA TRACCIÓN (N/m a 20°C)	
Polypropylene	14200
Polyetiyene	8100
Acetal	15000
FRICION COEFFICIENT (for UHMW support)	
Polypropylene	0,14
Polyetiyene	0,16
Acetal	0,11
PACKAGING	
 In Boxes of	according to units
Box Dimensions	"

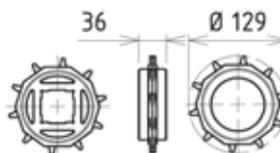


③

Sprockets

TECHNICAL DATA	D 129
Pitch	40 mm
Diameter	
en mm	129
AXE	
40 x 40	✓
D 70 (Diameter)	✓
TEETH	
Nº de teeth	10
WEIGHT PER UD (Kg/Ud)	
Polypropylene	0,150
Acetal	0,215
PACKAGING	
according to units	

D129/D10



LOWER TONGUE

SUPPORT + BEARING

SUPPORT + 3 BEARINGS



⑤

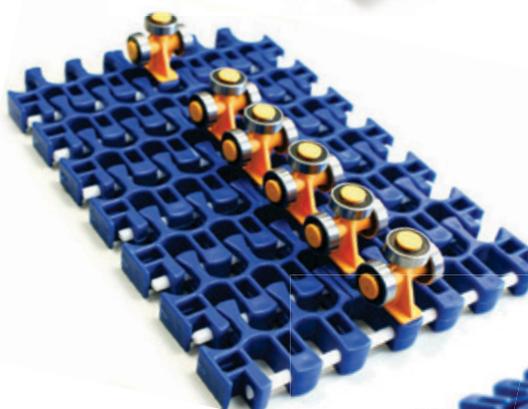
① This model has a tongue at one of its ends to get the belt along a specific profile to get the upper part of the profile level with the upper part of the belt.

② The PCS-40 AL Curve LN and the PCS-40 AL Curve can integrate on the standard lateral modules of L=227mm, a tongue on its lower side for a different kind of belt guide. The fitting of such a tongue does not change the belts' size or other characteristics.

③ As with what has been defined in ②, the support with bearing on its lower side can be mounted on these modules.

④ Height 75 mm. The height and length can be changed on request.

⑤ In central positions can be mounted with 3 bearings.





SERIE: PCS - CURVE FLAT TOP CLOSED

TECHNICAL DATA

Closed surface	100%
Openings	0
Drive	Positive gear
Length of modules	200 mm
Articulation modules	without rods (clip)
Belt materials	Polypropylene / Acetal
Sprockets material	Polyamide

RADIUS

Inside R.	600	800	1000
Bandwidth (max.)	600	400	200

BANDWIDTH ACC. RADIO

Inside Radius. (mm)	Width	Width	Width
600	200	400	600
800	200	400	-
1000	200	-	-

CONVEYOR DATA

Chassis	Steel / Stainless steel
Sliding guides	PE -1000
Speed	Up to 80 M / Min.
Load (max.)	80 Kg / M

* Requested Community Design
(OAMI) 002219402-0001

Accurate sprockets (according to bandwidth)

R600 / A600	1 + 2	+3 + 4	+5 + 6
R600 / A400	1 + 2	+ 3 + 4	
R600 / A200	1 + 2		
R800 / A400		+3 + 4	+5 + 6
R800 / A200		+ 3 + 4	
R1000 / A 200			+5 + 6

Sprockets	Diameter / Teeth
1	D65 / D36
2	D72 / D38
3	D81 / D39
4	D90 / D40
5	D99 / D41
6	D106 / D42



**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

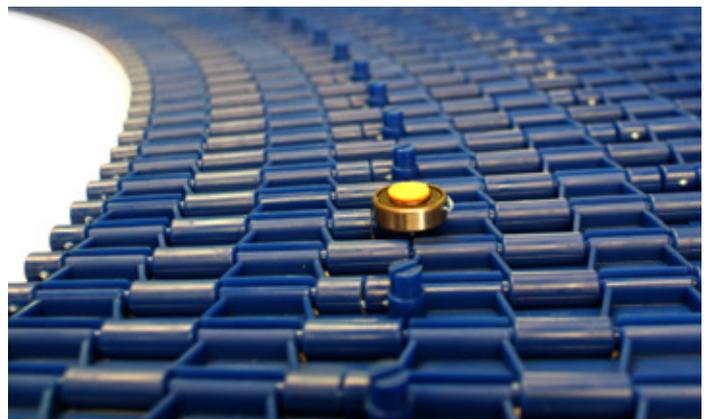
SERVICE TEMPERATURES

Polypropylene +1°C / +104°C Acetal -45°C / +93°C

STANDARD COLORS

Polypropylene  

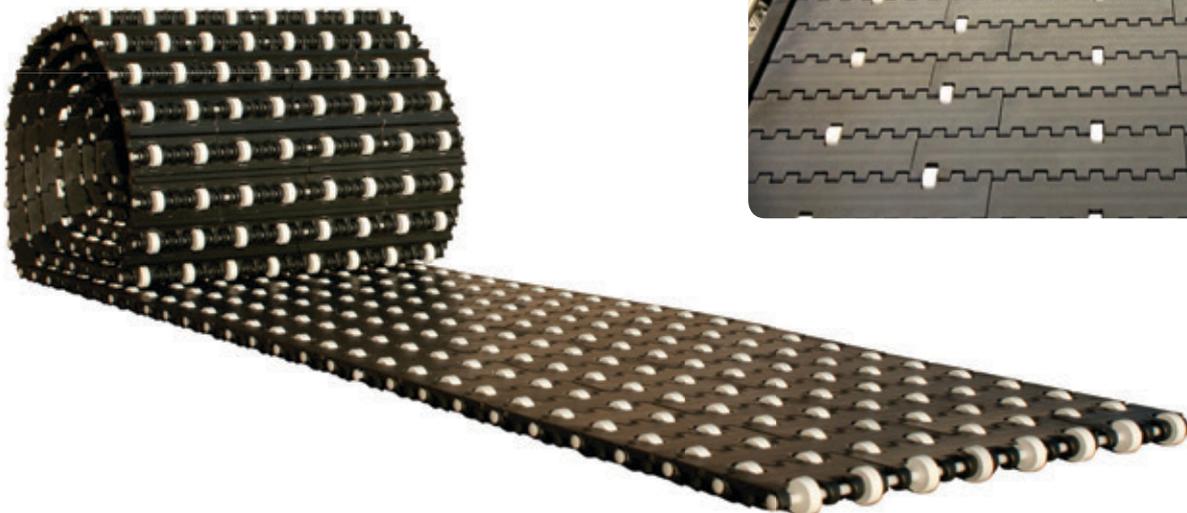
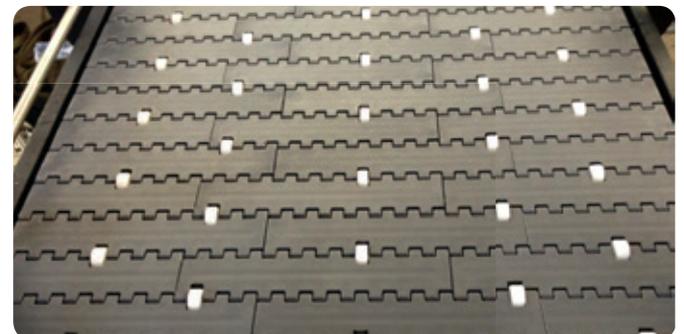
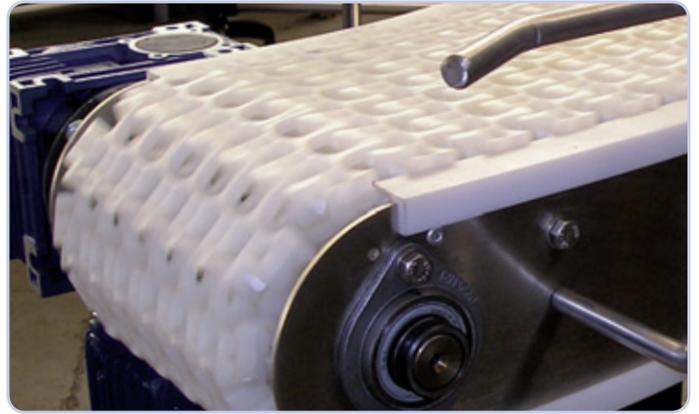
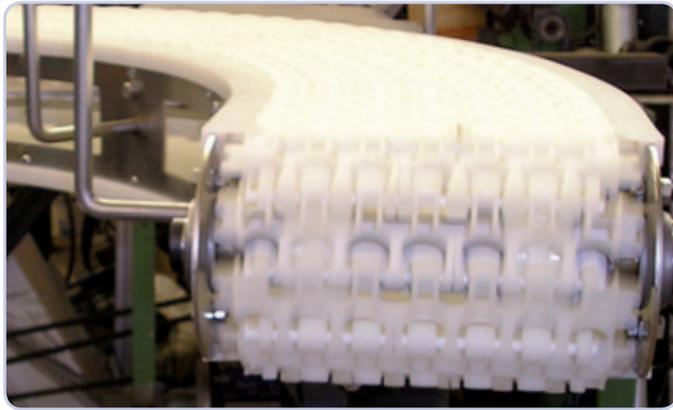
Acetal  



Materials approved by the **FDA** and **EU**



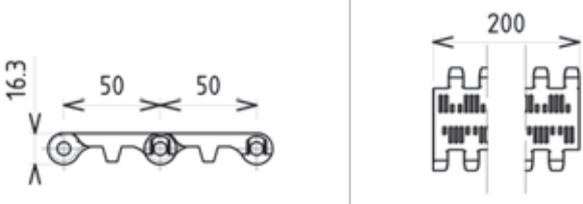
SERIE: PCS-50 AL
EXAMPLES



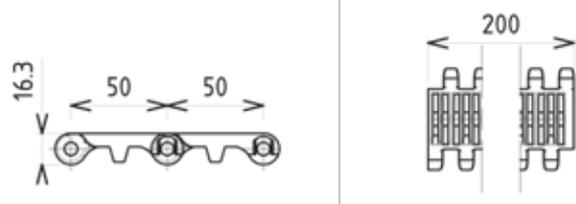


**SERIE: PCS-50 AL
MODELS**

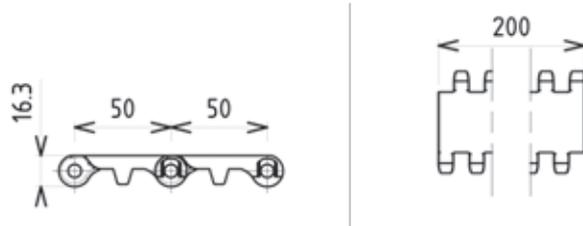
PCS-50 AL Perforated



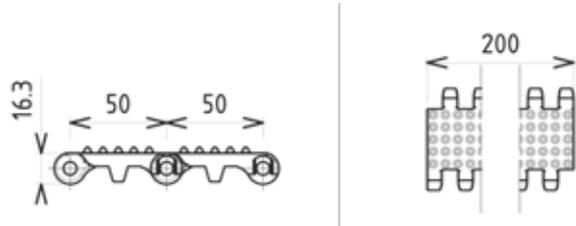
PCS-50 AL Opened



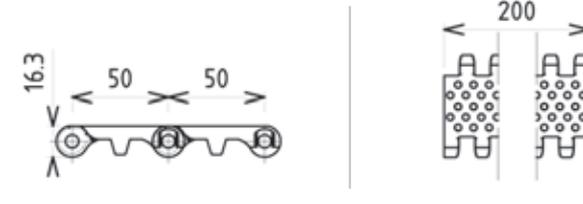
PCS-50 AL Closed



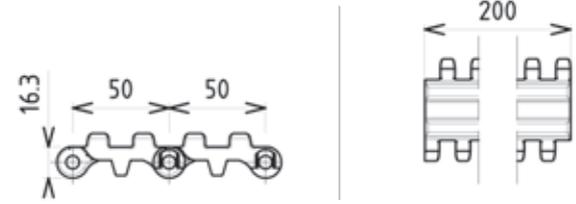
PCS-50 AL Closed Cone Top



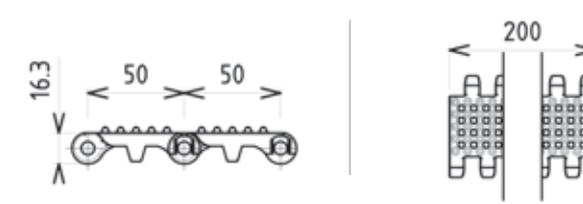
PCS-50 AL Perforated $\varnothing 4$



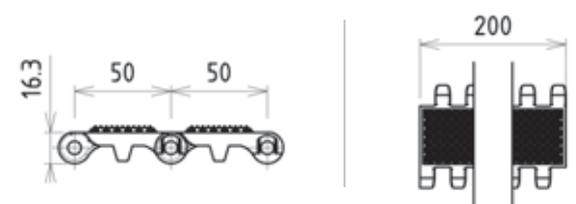
PCS-50 AL Support profiles



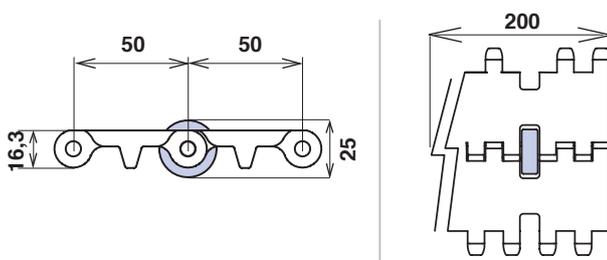
PCS-50 AL Cone Top Perforated



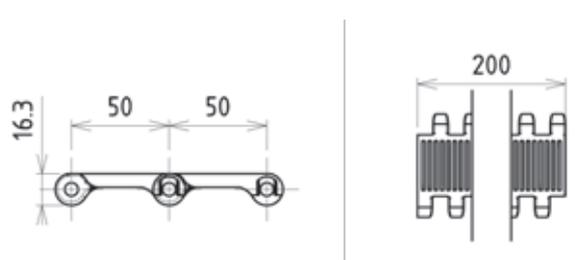
PCS-50 AL Grip Top



PCS-50 AL Roller / Accumulation



PCS-50 AL Filter 2 mm.



i
Due to the different contraction values of the thermoplastic materials, the different modules' lengths can vary up to -2,5 %.



TECHNICAL DATA	PCS-50 AL Perforated	PCS-50 AL Opened	PCS-50 AL Closed	PCS-50 AL Cone top	PCS-50 AL Perforated Ø4	PCS-50 AL Cone Top Perforated	
Pitch						50 mm	
Open surface	19%	50%	0%	0%	16 %	12%	
Max Opening	10 x 2 mm	4 x 33,4 mm	-	-	Ø 4 mm	Ø 4 mm	
Openings	96	29	-	-	81	96	
Drive						central	
Length (mm)	200 / 100 / 60 / 40			200	200	200	
Surface (m ²)	0,010 / 0,005 / 0,003 / 0,002			0,010	0,010	0,010	
Parts per m ²	100 / 200 / 333 / 500			100	100	100	
Parts per m. Linear	-			-	-	-	
Top coating	-			-	-	-	
WEIGHT PER M² (Kg/m²) (Without articulation rod)							
Polypropylene	7,000	5,900	7,600	7,900	6,800	6,900	
Polyethylene	7,000	5,900	7,600	7,900	6,800	6,900	
Acetal	10,000	8,350	11,000	11,430	9,800	9,930	
TENSILE STRENGTH (N/m a 20°C)							
Polypropylene	13000	11100	14200	14200	13100	13200	
Polyethylene	7600	6900	8100	8110	7800	7900	
Acetal	13500	11475	15000	15200	13700	13900	
FRICITION COEFFICIENT (for UHMW support)							
Polypropylene						0,14	
Polyetiyene						0,16	
Acetal						0,11	
ARTICULATION ROD							
Diameter: 6'4 mm Length: 612 mm (with two heads)							
PACKAGING							
	In Boxes of	1 m ²		0,90 m ²	1 m ²	1 m ²	
	Box dimensions	360 x 204 x 250 mm					
APOXIMATED WEIGHT (Kg)							
	Polypropylene	7,100	6,000	7,700	8,000	6,900	7,000
	Polyethylene	7,100	6,000	7,700	8,000	6,900	7,000
	Acetal	10,100	8,450	11,100	11,530	9,900	10,030

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.
Articulation zones: smooth to aid cleaning.

STANDARD BELT WIDTHS (mm)

40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | ...

Other non-standard width dimensions: increases of 20 in 20 mm on standard widths.

Minimum width of assembled alternating belt; brick type: 100 mm.

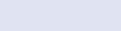
Minimum width of assembled continuous belt: 40 mm.

SERVICE TEMPERATURES

Polypropylene +1°C / +104°C Polyethylene -73°C / +66°C
Acetal -45°C / +93°C

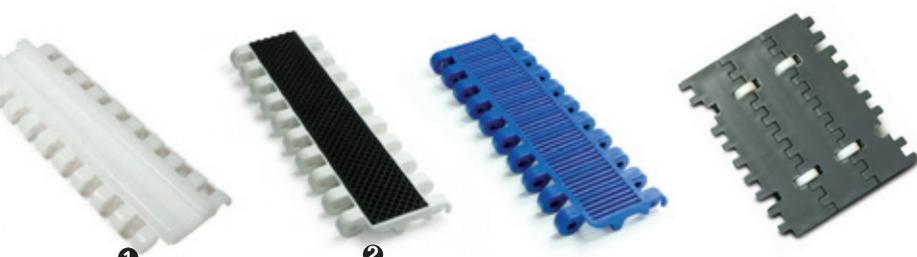
**REMEMBER;
TEMPERATURES
ARE IMPORTANT**

STANDARD COLORS

Polypropylene   
Polyethylene   
Acetal   

Other colors on demand (consult)

- This enables various kinds of flexible, standard, straight or sloping profiles to be mounted with heights from 20 to 80 mm depending on the type.
- Black or white elastomer



① PCS-50-AL Soporte mixed profiles (elastomer/pvc)	② PCS-50 AL Grip Top	PCS-50 AL Filter 2 mm.	PCS-50 AL Roller accumulation
0%	0%	40%	-
-	-	2 x 32 mm	-
-	-	49	-
200	200	200	200
0,010	0,010	0,010	0,010
100	100	100	100
5	-	-	-
-	elastomer 3,5mm - 50 Sh	-	Polyamide sprockets D25
0,092	7,750	5,900	7,600 + Rollers
0,092	7,750	5,900	7,600 + Rollers
0,133	11,200	8,500	11,000 + Rollers
14200	14200	11000	14200
8100	8100	6700	8100
15000	15000	11250	15000
Other sizes on demand			
according to units	98 units.	1 m ²	-
according to units	360 x 204 x 250 mm		-
-	7,850	6,000	-
-	-	-	-
-	-	-	-



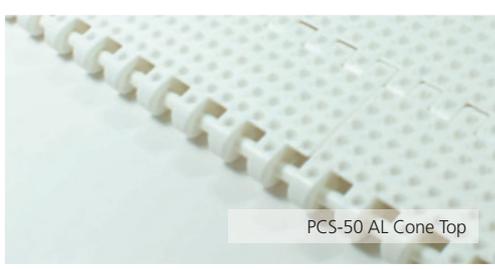
PCS-50 AL Closed



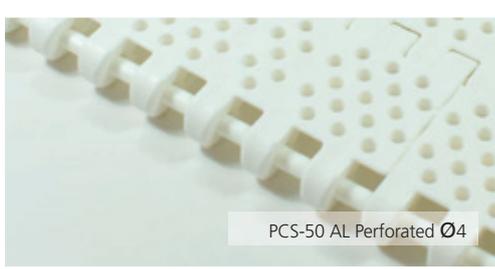
PCS-50 AL Perforated



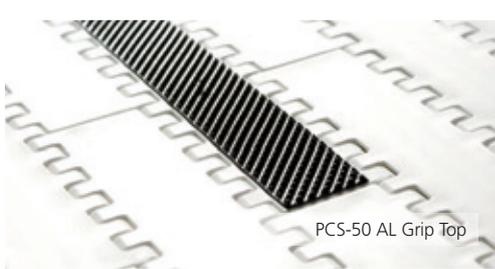
PCS-50 AL Opened



PCS-50 AL Cone Top



PCS-50 AL Perforated Ø4



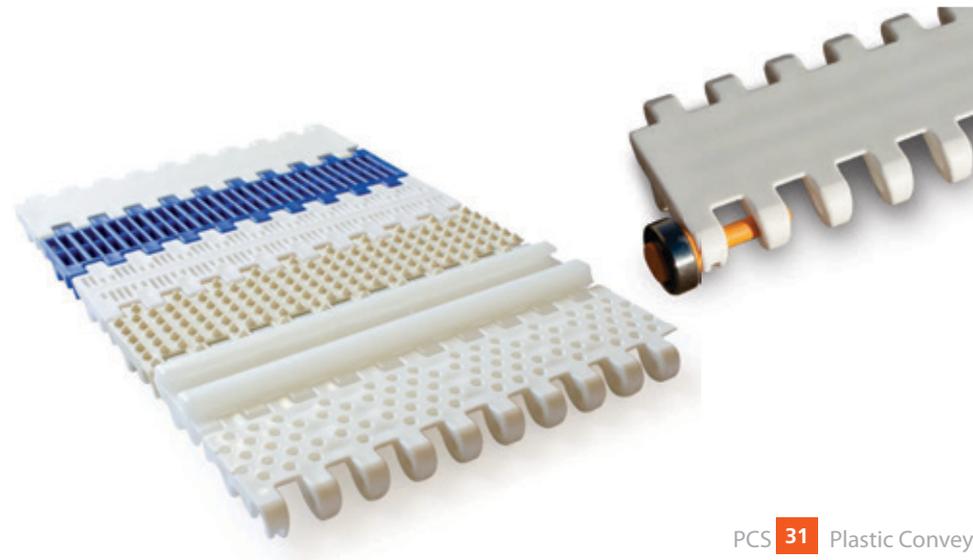
PCS-50 AL Grip Top



PCS-50 AL Filter 2 mm



PCS-50 AL Roller accumulation



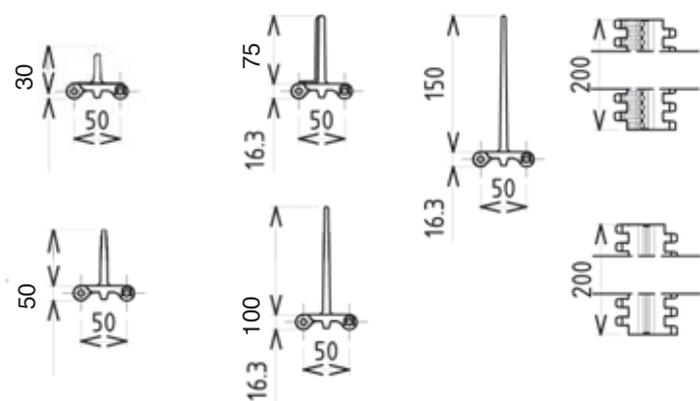


**SERIE: PCS-50 AL
ACCESORIES I**

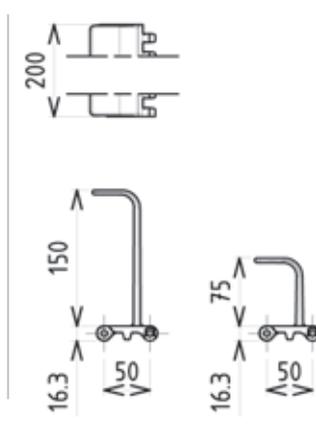


TECHNICAL DATA	Straight profiles					Curved profiles		Grooved curved profile		Side guards			
	H 30	H 50	H 75	H 100	H 150	H 75	H 150	H 75	H 150	H 50	H 75	H 100	
Pitch	50mm												
Drive	central												
Height (mm) (modifiable on demand) ②	30	50	75	100	150	75	150	75	150	50	75	100	
Length (mm) (modifiable on demand) ②	200					200		200		-	-	-	
Surface (m ²)	0,010					0,010		0,010		-	-	-	
Parts per m. Linear	5					5		5		20			
WEIGHT PER UNIT (Kg/U.)											WEIGHT PER M. Linear (side)(KG/M. Linear)		
Polypropylene	0,100	0,115	0,170	0,195	0,235	0,200	0,300	0,216	0,324	0,340	0,560	0,860	
Polyethylene	0,100	0,115	0,170	0,195	0,235	0,200	0,300	0,216	0,324	0,340	0,560	0,860	
Acetal	0,143	0,165	0,245	0,281	0,340	0,290	0,435	0,313	0,470	0,495	0,815	1,235	
TENSILE STRENGTH (N/m a 20°C)													
Polypropylene	14200									-	-	-	
Polyethylene	8100									-	-	-	
Acetal	15000									-	-	-	
FRICITION COEFFICIENT (for UHMW support)													
Polypropylene	0,14									-	-	-	
Polyethylene	0,16									-	-	-	
Acetal	0,11									-	-	-	
PACKAGING													
In Boxes of	according to units												
Box Dimensions	"												

STRAIGHT PROFILES



CURVED PROFILES



SIDE GUARDS



① The H75 model has two different faces. One of them presents ribs which prevents the adhesion of the elements to be transported. The other is completely smooth and the profil can be assembled in both directions.

② The height and width of the profiles can be modified on request

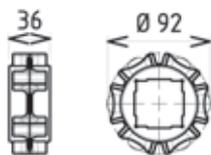


**SERIE: PCS-50 AL
ACCESSORIES II**

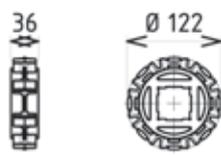


TECHNICAL DATA	SPROCKETS				
	D 92	D 122	D 156	D 188	D 255
Pitch	50 mm				
External diameter (mm)	92	122	156	188	255
AXE					
40x40	✓	✓	✓	✓	-
50x50	-	-	✓	✓	✓
60x60	-	-	✓	✓	✓
65x65	-	-	✓	✓	-
D 70 (Diameter)	-	✓	-	-	-
TEETH					
N° of teeth	6	8	10	12	16
WEIGHT PER UD (Kg/ud)					
Polypropylene	0,110	0,155	0,255	0,355	0,580
Acetal	0,165	0,235	0,370	0,530	0,841
PACKAGING					
 In Boxes of	according to units				
Box Dimensions	"				

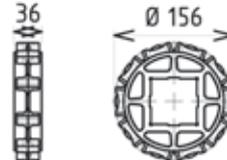
D92/D6



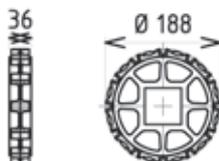
D122/D8



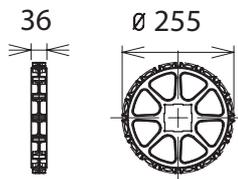
D156/D10



D188/D12



D255/D16

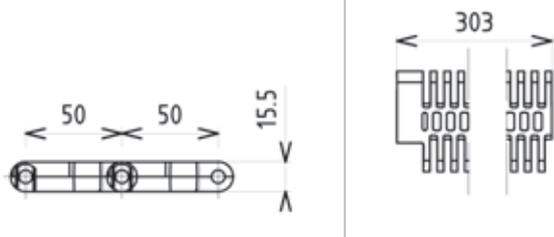


Special execution sprockets for drummotors
(stainless steel or nylon)

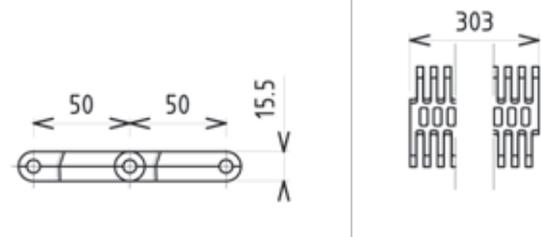




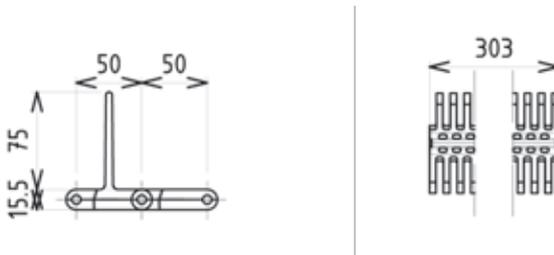
PCS-51 AL Open with retaining rod



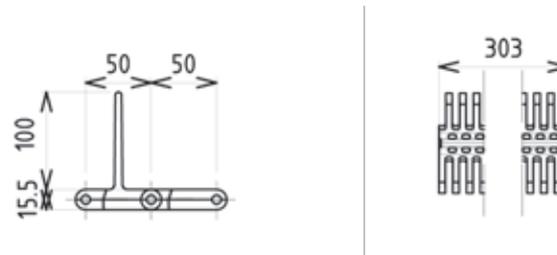
PCS-51 AL Open without retaining rod



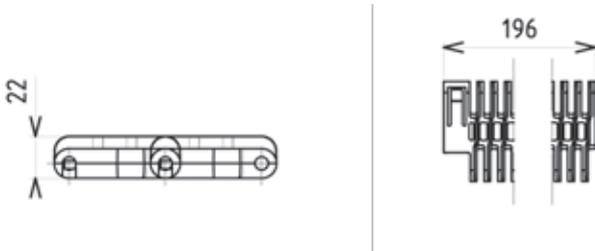
PCS-51 Open AL Straight profile H75



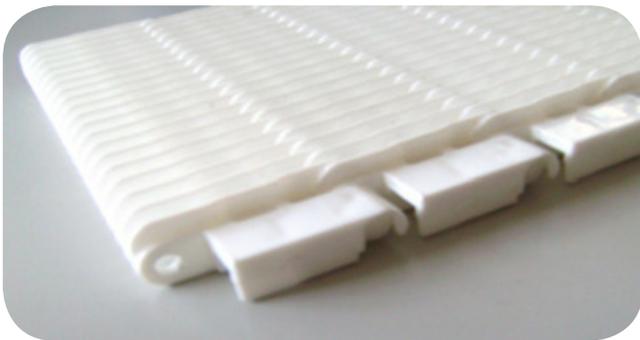
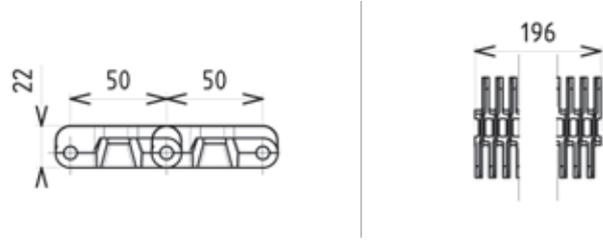
PCS-51 Open AL Straight profile H100



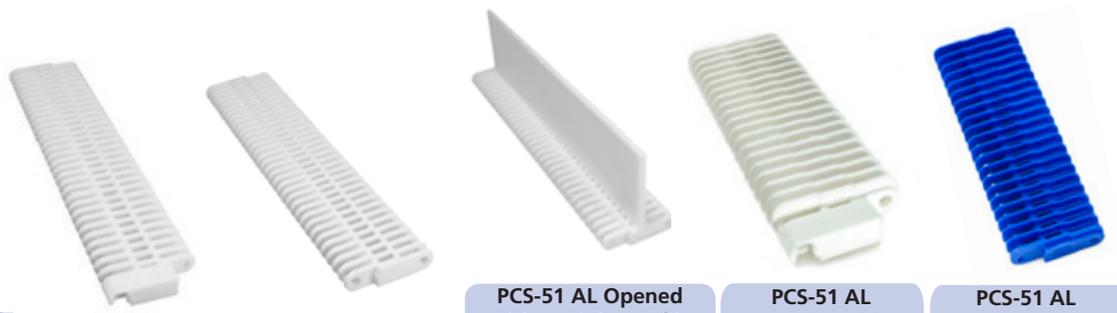
PCS-51 AL transfer with retaining rod



PCS-51 AL transfer without retaining rod



Due to the different contraction values of the thermoplastic materials, the different modules' lengths can vary up to -2,5 %.



TECHNICAL DATA	PCS-51 AL Opened with retaining rod		PCS-51 AL Opened without reten. rod		PCS-51 AL Opened with straight profile		PCS-51 AL transfer with retaining rod		PCS-51 AL transfer without retaining rod	
					H75 ①	H100				
Pitch	50 mm									
Drive	central									
Height (mm) (modifiable on demand)					75	100				
Open surface	32%		32%		23%		32%		32%	
Max Opening	12 x 4,7 mm		12 x 4,7 mm		5 x 3 mm		12,5 x 5 mm		12,5 x 5 mm	
Openings	99		99		122		63		63	
Length (mm)			303						196	
Surface (m ²)			0,015						0,10	
Parts per m ²			66						100	
Parts per m. Linear	-		-		3,30				-	
WEIGHT PER M² (Kg/m²) (Without articulation rod)										
Polypropylene	7,985		8,185		0,226		0,257		9,000	
Polyethylene	7,985		8,185		0,226		0,257		9,000	
Acetal	11,580		11,870		0,328		0,373		11,580	
TENSILE STRENGTH (N/m - 20°C)										
Polypropylene	33000									
Polyethylene	26000									
Acetal	38500									
FRICTION COEFFICIENT (for UHMW support)										
Polypropylene	0,14									
Polyethylene	0,16									
Acetal	0,11									
ARTICULATION ROD										
Diameter: 6'4 mm Length: 612 mm (with two heads) Other sizes on demand										
PACKAGING										
	In Boxes of	1 m ²								
	Box Dimension	360 x 204 x 320 mm								
APROXIMATED WEIGHT (Kg)										
	Polypropylene	8,085	8,285	according to units		9,100	9,500			
	Polyethylene	8,085	8,285	"		9,100	9,500			
	Acetal	11,680	11,970	"		11,680	11,970			

FEATURES

Lower surface: smooth, with rounded edges to aid cleaning.
Articulation zones: smooth to aid cleaning.

STANDARD BELT WIDTHS (mm)

Transference	196	204	212	220	228	236	...
Opened	303	311	319	327	335	343	...

Other dimensions of nonstandard width: 8 increases over standard 8 mm wide.

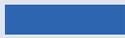
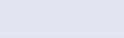
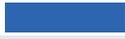
① Height of straight profile 75 mm with holes in the bottom for better drainage.

REMEMBER; TEMPERATURES ARE IMPORTANT

SERVICE TEMPERATURES

Polypropylene	+1°C / +104°C	Polyethylene	-73°C / +66°C
Acetal	-45°C / +93°C		

STANDARD COLORS

Polypropylene			
Polyethylene			
Acetal			
Other colors on demand (consult)			

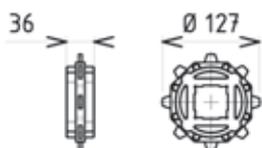


**SERIE: PCS-51 AL
ACCESORIES I**

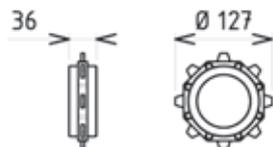
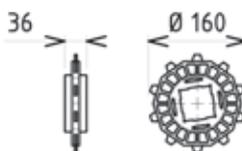


TECHNICAL DATA	SPROCKETS		
	D 127	D 160	D 193
Pitch	50 mm		
Diameter exterior (mm)	127	160	193
AXE			
40 x 40	✓	✓	✓
50 x 50	-	✓	✓
60 x 60	-	✓	✓
65 x 65	-	✓	✓
D 70 (Diameter)	✓	-	-
TEETH			
N° de teeth	8	10	12
WEIGHT PER UD (Kg/Ud)			
Polypropylene	0,155	0,200	0,360
Acetal	0,235	0,295	0,540
PACKAGING			
 In boxes of	According to units		
Box dimensions	"		

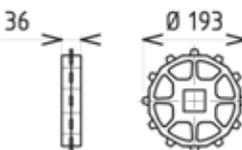
D127/D8



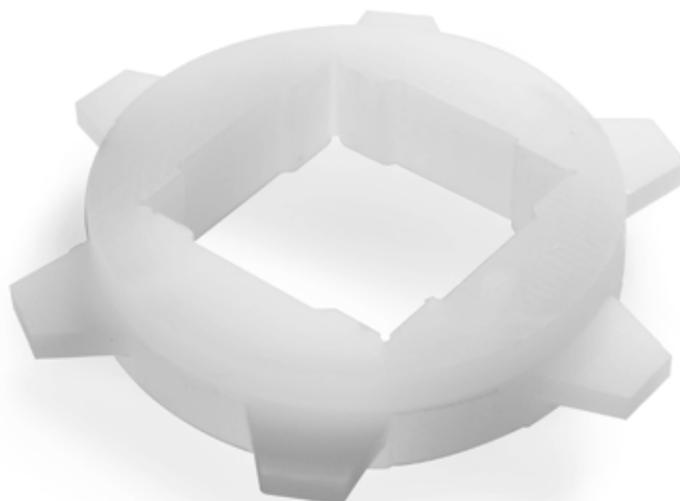
D160/D10



D193/D12



Special execution sprockets for drummotor (nylon)





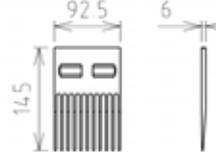
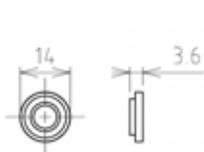
①

Cover for transference comb screws	
TECHNICAL DATA	
Dimensions	17,6 x 29'5 mm
Parts per comb (single or double comb)	2
Acetal	0,015
Polypropylene	0,01
FEATURES	
They are designed to seal the transference combs' fixing slits to the conveyors' bases or chassis. They are mounted by applying pressure or with suitable adhesives. They are also supplied separately.	
PACKAGING	
Served with combs according to the model ordered.	

②

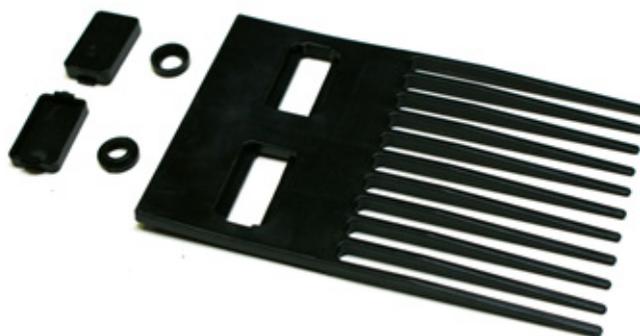
Transference comb	
TECHNICAL DATA	Simple
Dimensions	92 x 145 mm
Parts per m of transfer.	10,8
WEIGHT PER UD (Kg/Ud)	
Acetal	0,054
Polypropylene	0,037
PACKAGING	
according to units	

washer and screw cover



Comb

- ① They are designed to seal the transference combs' fixing slits to the conveyors' bases or chassis. They are mounted by applying pressure or with suitable adhesives. They are also supplied separately.
- ② Smooth surfaces with rounded edges to ease exchange of the transported product. They are supplied with six caps for the fixing holes to prevent dirt entering and ease cleaning.



OPTIONS
FOR BETTER INTERCHANGEABILITY, CAN
BE USED PP COMBS FOR PP BELTS AND
AC COMBS FOR ACETAL BELTS



ACCESORIES AND COMPLEMENTS PROFILES

Flat or rectangular profiles



CODE	Level A in mm	Level B in mm	Level C in mm	Level D in mm
PRPE20	20	3	4	5
PRPE25	25	3	4	5
PRPE40	40	3	4	5
PRPE50	50	3	4	5

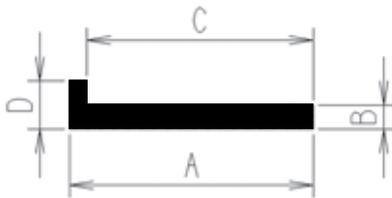
FORMAT: 50 M. ROLLS / COLOR: Green

Modular rectangular profile



Flat profile module, with assembly and alignment system with two slot holes (7,80 X 9,90 mm) for countersink screws, and dimensions: 40 x 5 x 500 mm. Format: In boxes of 50 units (25 m. or individual units).

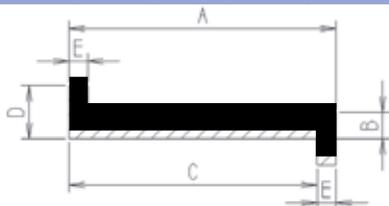
"L" Profile



CODE	Level A in mm	Level B in mm	Level C in mm	Level D in mm
PLPE20	25	3	20	9
PLPE 40206	40	6	34	20

FORMATS: 50 M. ROLLS FOR PLPE 20
COLOR: Green
AND 2 M. SECTIONS FOR PLPE 40206
COLOR: Green

"Z" Profile



CODE	Level A in mm	Level B in mm	Level C in mm	Level D in mm	Level E in mm
PZPE21	21	3	15	6	3

FORMAT: 50 M. ROLLS / COLOR: Green

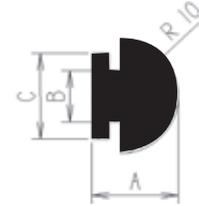
Clamping profile



CODE	Level A in mm	Level B in mm	Level C in mm	Level D in mm
PPPE25	25	10,5	20	3
PPPE40	40	10,5	20	3

FORMAT: 50 M. ROLLS / COLOR: Green

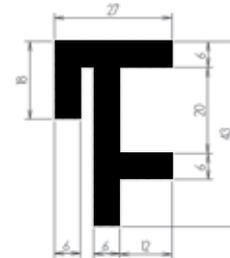
Curved profile



CODE	Level A in mm	Level B in mm	Level C in mm
PCVPE21	15	9	15

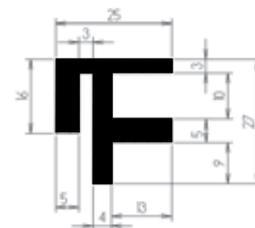
FORMAT: 2 M. SECTIONS / COLOR: Green

For PCS-40 AL Curved



CODE: PCV40PE

For PCS-40 LN Curved



CODE: PCV40PELN

FORMAT: 2 M. SECTIONS
COLOR: White (black optional)



FIXING CLIP SPROCKETS



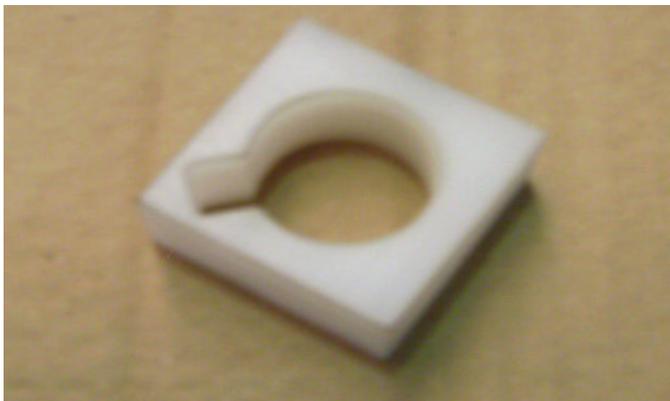
MATERIAL	AXE
INOX	25X25
INOX	30X30
INOX	40X40
INOX	50X50
INOX	60X60

RETURN WHEEL



MATERIAL	EXT. DIAM	AXE.DIAM	WIDTH
PE-1000	60	12	25

AXE ADAPTERS (On demand)



MATERIAL	Initial Axe	Axe D. Max
Polyamide	25X25	18
	30X30	20
	40X40	30
	50X50	35
	60X60	40
	65X65	50

EVACUATION FLEXIBLE FINGERS



4 PCS products table Modular conveyor belts

4. PCS Products

Quick reference table showing the main characteristics of modular belts and accessories.

SERIE	PITCH	MODEL	STANDARD MODULES (length mm)	STRAIGHT FLIGHTS (height mm)	CURVED FLIGHTS (height mm)	SIDE GUARDS (length mm)	SPROCKETS (Ø y n° of teeth)	SHAFTS (section type)	
PCS-12-AL									
	12,5	Closed	100	-	-	-	147-36	30 40 40	
PCS-12-AL NEO									
	12,5	Perforated	50	15	-	-	39-10	■ 20 ● 20	
		Closed					63-16	■ 30 ■ 30	
		Opened					95-24	■ 30 ■ 40 ● 30	
		Grip top					143-30	■ 40 ● 30 ● 40	
		Cone top					167-42	■ 40 ● 30 ● 40	
PCS-15-AL									
	15	Roller belt	50	-	-	-	77-14	■ 40	
							146-30	■ 40	
							150-31	■ 40	
PCS-25-AL									
	25	Perforated		50	-	50	63-8	■ 25 ● 18	
		Closed	40				79-10	■ 30	
		Opened	60				96-12	■ 30 ■ 40	
		Grip top	100				125-16	■ 30 ■ 40	
		Roller/acum.	200						
	25,4	Inserts	200 (Unique)				145-18	■ 30 ■ 40 ● 30	
		Ball belt	105				84-10	■ 40	
							108-13		
							138-17		
							150-18		
PCS-40-AL									
	40	Curve (with side tongue)	lateral 229 central 201						
		Curve LN (without side tongue)	142 113 85	201 115 86 57	75	-	-	125-10	■ 40 ● 70
PCS-50-AL									
	50	Perforated		30					
		Closed	40		50		50		
		Opened	60		75	75	75	92-6	■ 40
			100		100		100	122-8	■ 40 ● 70
			200					156-10	■ 40 ■ 50 ■ 60 ■ 65
		Cone top			150	150		188-12	■ 40 ■ 50 ■ 60 ■ 65
		Perforated Ø4						255-16	■ 50 ■ 60
		Grip top							
		Filter 2 mm							
		Support prof.							
	Roller / acum.	200 Unique							
PCS-51-AL									
	50	Opened	303	75	-	-	127-8		
		Opene with retainer	Unique	100			160-10	■ 40 ● 70	
							193-12	■ 40 ■ 50 ■ 60 ■ 65	
		Transference	196					■ 40 ■ 50 ■ 60 ■ 65	
		Transf. with retainer	Unique						
PCS-FLAT TOP CURVE									
		Flat Top curve	200 3 Radius	-	-	-	According to widths	■ 40	



5. Engineering

5.1. Tips for the choice, selection and installation of the belt

A large number of combinations and designs can be made from the existing PCS products for the construction of modular conveyor belts. However, there are some working guidelines that must be taken into account before beginning the process of designing them, and these are complemented with other lesser but important such as the choice of certain colors to identify and personalize the belt, among others.

This methodology involves collecting a minimum of data and information necessary to carry the project out successfully, and this information is the following:

Specifications for the preparation of a modular conveyor belt project.

CHARACTERISTICS OF THE BELT AND THE CONVEYOR	
DIMENSIONS	
Total belt width	...
Total belt length	...
Distance between shafts	...
Flat track	...
Non-flat track	...
Load to be transported (kg)	...
Speed	...
Impacts on the load	...
Progressive / normal start-up of geared motor	...
Acumulation	...
Other aspects	...

WORK PROCESS TO BE FOLLOWED BY THE BAND AND THE CONVEYOR I	
ABOUT THE PRODUCT	
Foodstuffs (direct contact between belt and product)	...
No foodstuffs	...
Dimensions	...
Shape	...
Hardness / fragility	...
Humidity	...
Chemical action (pH) / corrosivity	...
Abrasiveness	...
Temperature	...
Other aspects	...

WORK PROCESS TO BE FOLLOWED BY THE BAND AND THE CONVEYOR II	
ABOUT WORK ENVIRONMENT	
Humidity of surroundings	...
Temperature of surroundings	...
Chemical action (pH) / corrosivity	...
Abrasivity from surroundings	...
Danger from surroundings	...
Other aspects	...

MAINTENANCE AND CONSERVATION	
CLEANING	
Cleaning agent	...
Chemical action (pH) / corrosivity	...
Continuous / non-continuous cleaning	...
Temperature	...
Additional precautions	...
Other aspects	...

Once the study and analysis have been performed, a suitable choice of PCS products can be made to be used in the project. Nevertheless, in all those cases where large conveyors are concerned, with very heavy loads or in working conditions with temperatures near the maximums and minimums advisable for each type of product, the technical department of PLASTIC CONVEYOR SYSTEM must be consulted, and in all cases their advice should always be followed.

The use of a start-up system with progressive speed by means of the installation of a frequency converter or something similar makes a notable contribution to the maintenance and useful lifespan of the modular belt.

5.1.1. Structure of the conveyor

Aside from the overall dimensions that the conveyor must comply with to meet the project's needs, there are a series of aspects that must be taken into account that make a notable contribution to the good working of the modular belts.



The life span and good working of the modular belt depends to a large extent on a correct design and on setting up and aligning well the slide guides. The structure must ensure the absence of sharp elements or wear at the contact points with the belt. Also, a correct arrangement of the return rolls on the bottom surface of the conveyor is essential for absorbing the differences in forces and maintains the tension, compensating for stretching and contraction of the belt. Similarly, it is essential for there to be the best possible parallelism between the drive and tensor shafts. Similarly, it is essential that the drive and tensor shafts are as parallel as possible.

5.1.2. SHAFTS & SPROCKETS

The number of wheels to be mounted per shaft is determined by the machine's manufacturer, normally based upon:

- Width: spaced out between 100 and 200 mm (preferably, odd number, to be the central wheel fixed).
- Weight or load to be transported (traction that can be provided).
- Speed.
- Other criterion from the manufacturer.

The sprockets or pinions manufactured by PCS consider two basic possibilities to solve the technical problems for the drive shafts:



All the series of PCS products have the two versions for sprockets, except for the PCS-25 AL, which is only available

for assembling on a square shaft of 30mm side. In all the other cases, the size of shaft for which the sprockets have been designed is 40mm square side. This means that it is



not necessary to make keyways or pins.

Within the same series, all the components can be assembled on the models of sprockets designed for them. So the design and logistics are simplified notably with respect to both manufacture and post-sales assistance. In the case of the PCS-50 Open and PCS-50 Transference series, the sprockets are interchangeable.

In the version manufactured for assembling directly onto the motorized drum, the standard sprockets are manufactured with an inside diameter of 70 mm. This diameter can be worked on to achieve the necessary measurement, thus allowing it to be coupled for use with motorized drums of up to 83 mm outside diameter.

The most common and advisable system for assembling the sprockets is to fix one of them (at least) to the shaft by using grub screws through the bushing of the sprockets, both for the square shaft and the motorized drum. To do this, the sprockets have up to four points to be machined axially and without a thread.

Optionally, PCS supplies the sprockets with this machine work already performed to M8, which means an important saving in time and a cutting of costs when setting up.

The rest of the sprockets are "floating" idle along the shaft. This implies that they self-adjust to the movement of the belt. When there is an odd number of sprockets to be assembled, it is advisable to fix the central sprocket to the shaft. If there is an even number, it is advisable to fix either of the two central sprockets, though this means that the longitudinal axis of the belt will be asymmetrical. Other wheel sizes are made on request from stainless steel or polyamide 6 (nylon).

IMPORTANT

SPROCKETS MUSTN'T BE POSITIONED UNDER THE UNION POINT MODULES WITH ROD RETAINER, BECAUSE IT'S POSSIBLE TO HAVE FAILURES IN THE DRIVE BELT (JUMPS OF TEETH)

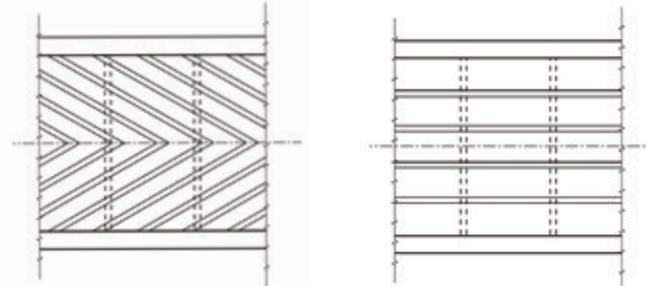
5.1.3. Slide guides

FEED

There are various solutions to adapt the support surface of the the modular conveyor belt on which will operate with its corresponding load. Nevertheless, whichever one is chosen, it is advisable to ensure that the contact of the plastic modules with the support be on a polished surface free of protrusions, sharp pieces or edges that may do damage

Plastic profiles are used (for operating temperatures up to -73°C / +66°C), like those shown in the aforementioned section "Materials available for Modular Conveyor Belt slide guides".

For heavy loads (above 40 - 50 kg/m²), it is advisable to



manufacture the support surface using plastic profiles (of 30 mm minimum width) in a "V" or "fishbone" shape.

Usually, the separation between the profiles varies between 50 and 150 mm, depending on the conveyor manufacturers.

In cases where the conveyor is not very wide, and the load is not heavy (up to 30 - 40 kg/m²), the recommended arrangement for the support surface is the longitudinal one. In this case, the most common separation between them varies between 50 and 150 mm.

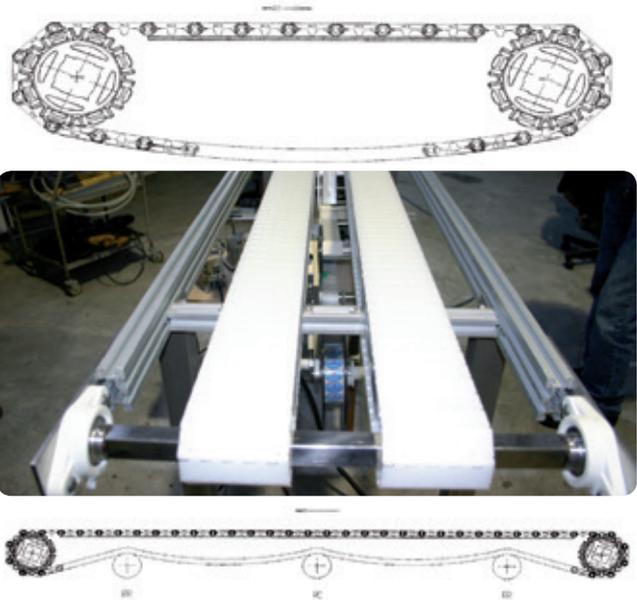
RETURN

One must consider the solution to be applied according to the total length between the conveyor shafts and whether the conveyor is flat or not. Conveyors are considered shorts when the wheel base is shorter than

1800mm. If wheelbase is longer than 1800mm, conveyors are considered long.

For short and flat conveyors, it is not necessary to install return rollers for the modular belt. In these cases, the maximum sag for the catenary curve produced will vary between 25 and 100 mm.

For long conveyors, there are two technical solutions that coexist and which are usually used for the return guide of modular conveyor belts. The difference between them lies in the use or not of rollers to uphold the belt. The choice adopted depends very much on the criteria of the



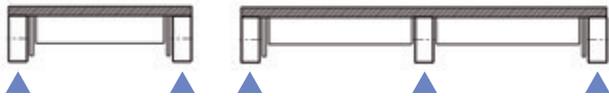
conveyor manufacturer and also on whether or not the conveyor belt has side guards and/or straight or curved flights.

The use of return rollers allows catenary curves of the conveyor belt between them. That means that the conveyor belt can maintain a suitable tension and absorb the thermal contractions and stretchings due to the effect of temperature. The distance between the drive shaft and the tensor shaft, and the various return rollers to be installed, normally varies according to the values in the following Chart:

Distance between	Minimum (mm)	Maximum (mm)
Conveyor drive shaft & first return roller	400	550
First return roller & central roller	950	1.200
Central roller & central roller	950	1.200
Central roller & last return roller	400	500
Last return roller & conveyor tensor shaft	550	550
Catenary curve sag	25	100

It is advisable that the rollers should have a diameter greater than 70 mm so as not to mark the modules, and a width greater than 40 mm.

When the conveyor belt has side guards or flights (straight or curved), always the solution is to replace each transverse return roller by two shorter located such that they support and guide the belt along and within the belt margins between the guard and the end of the belt.



For conveyors with a width between guards of less than 500 mm, the two rollers are located at the ends. When this width is greater, it is necessary to locate a third roller at the conveyor's central axis in order to keep and guide the belt. In this case, if the belt is mounted with straight or curved flights, it is necessary to leave a strip of belt in the centre without these flights.

Other solutions substitute the rollers by metallic supports covered with smooth plastic or frames made of these materials. Combinations of return rollers and plastic slide tracks are very frequent in the same conveyor.

When there is a wide and heavy conveyor belt with no central support, it is advisable assembling the belt completely with stainless steel rods, or also combining these rods with ones manufactured in thermoplastics. In this case, it is appropriate to consult our Technical Department.

5.1.4. Types of conveyors

FLAT BELT

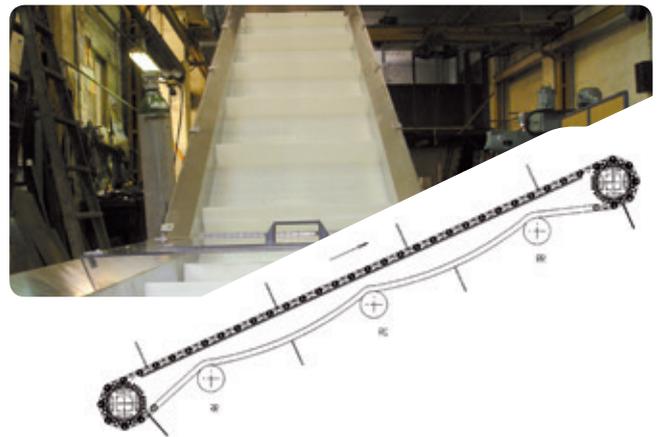
In the previous section some of the basic characteristics have been described to deal with the most commonly applied technical solutions to this kind of conveyor. In general, these conveyors that do not have any geometrical variation in their track are known as flat conveyors. They consist only of modules with smooth conveyor belts,



combined with flights and with or without side guards.

INCLINED BELT

These are conveyors with smooth conveyor belts combined with inclined or curved sections (Grip Top / Cone Top) that are used to rise products, whether with or without guards.



In these cases, the aforementioned considerations with respect to the distance between return rollers that were made for flat conveyor belts are not valid. Instead, the following recommendations must be considered:

Distance between	Minimum (mm)	Maximum (mm)
Conveyor drive shaft & first return roller	400	550
First return roller & central roller	950	1.200
Central roller & central roller	950	1.200
Central roller & Last return roller	950	1.200
Last return roller & conveyor tension shaft	550	1.200
Centenary curve sag	25	100

In the cases where the slope of the conveyor is greater than 30°, the catenary curves may not be enough by themselves to maintain a suitable tension and absorb the contractions and stretching created due to the effect of temperature. Thus, it is necessary to design an additional stretching system according to the conveyor manufacturer's criterion.

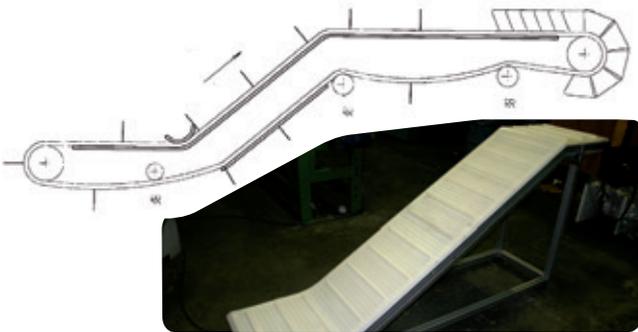
WITH INFLEXIONS

These are conveyors that have various changes of levels and planes along their path.

For getting the conveyor belt follow the slide paths completely at the points of inflection from flat to inclined, arc-shaped supports are fixed (with a maximum radius of 600 mm) on the side strips of the belt free of

flights. If the belt has side guards, these supports are also located between these and the side ends.

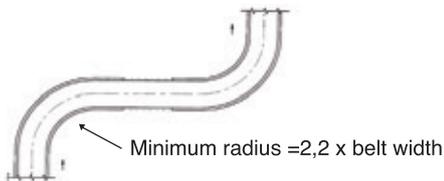
In the following diagram, the most frequently used type is shown. The constructor of this will decide the choice of solutions to be applied for the return of the belt, which as always, will depend on the flights and the side guards.



The recommended distances between return rollers are the same as those for inclined conveyors. It is recommended that the minimum diameter of the return rollers be greater than 80 mm.

CURVED

These have curves along their path, which may be on the same or different levels and combined or not with straight track sections. The PCS-40 AL curved modules are made to reach a minimum internal radius curve that is determined by the width of the conveyor belt. They are available in the LN version with a guiding tongue at one end and without it.



The minimum radius is the result of multiplying the belt width by 2.2. When the module has a tongue, this is not added to the belt width.

Most manufacturers of this equipment make the chassis with plastic slide guides that accompany the conveyor belt

throughout its entire feed route. To do this, one may choose to guide the LN modules by means of the tongue or along the entire height of the modules in the other version. The expansion and contraction of the conveyor belt due to the effect of temperature must always be taken into account.

The solutions to be applied for the belt return are equally variable according to the conveyor constructor's criterion, the belt's path and the composition of the belt modules whether or not they have flights. It is recommended again that, on the return path, the belt should be guided at its sides along the entire path except for at least one straight section (if it's possible) with two return rollers. The catenary curve is produced in this section to absorb the contractions or expansions of the belt.

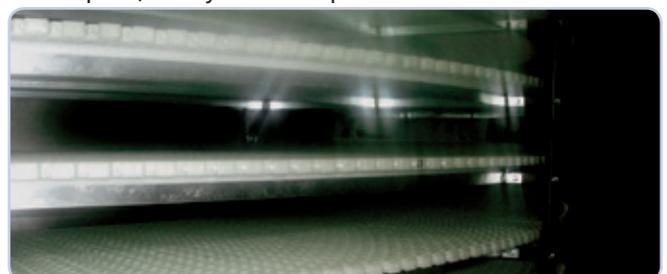
In those cases where the side slide guides do not accompany the belt in all of the straight sections, care must be taken to extend the guides at the entrance and exit of each curve in a straight section which cannot be less than the belt width.

In any case, the commonly adopted solutions take into account the following data:

Distance between	Minimum (mm)	Maximum (mm)
Conveyor drive shaft & first return roller	400	550
First return roller & central roller	950	1.200
Central roller & central roller	950	1.200
Central roller & last return roller	950	1.200
Last return roller & conveyor tensor shaft	550	1.200
Minimum inside radius of curvature	2,2 x belt width	-
Minimum straight section between drive shaft & first curve	2,2 x belt width	-
Minimum straight section between two curves.	2,2 x belt width	-
Minimum straight section between tensor shaft & first curve	2,2 x belt width	-
Centenary curve sag	25	100

LOW-SPEED SPIRALS

Some manufacturers of special equipment use modular belts to construct spiral conveyors. Along the feed path the belt turns 360° while at the same time moving vertically along an axis that passes through its centre. The belt is normally guided on both its side ends along the entire path, always at slow speeds.



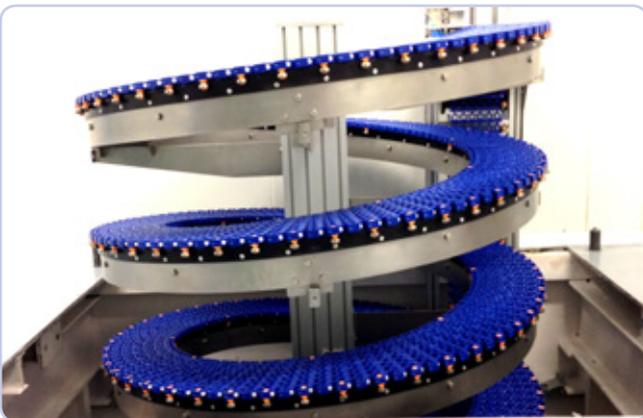
The return of the conveyor belt can be made by different technical solutions according to the equipment's manufacturer



HIGH-SPEED SPIRALS

Other much faster types of spirals (up to 60-65 mts/min), only for lifting or lowering of items being transported, use the PCS-40 AL CURVED modular belt with bearings mounted on its sides.

Depending on the purpose, speed, width of belt, turning radius, etc., bearings can be mounted on all stretches where the belt passes, or spaces can be left between them as desired. At the same time, bearings can be mounted on one of the belt's side edges, or on both of them.

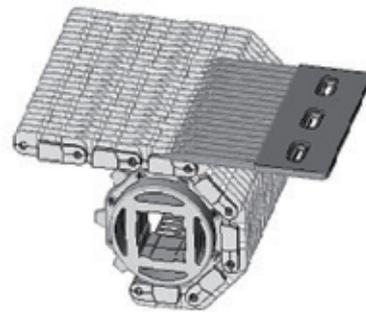


By introducing the bearings, the aim is to reduce the effort and side friction on the modular belt as much as possible, since they rest upon the running belt which has a specific sliding profile.

5.1.5. Transferences

In those cases where the PCS-51 TRANSFERENCE modules are used, and where the conveyed product needs to be transferred to another conveyor or element of the installation without knocking, transference combs are used (simple or double).

These combs are assembled on the structure with screws that are applied in the ready-made grooves in the combs located along the same axis. It is very important that the screws allow axial movement of the comb so that the fingers can adjust themselves to the grooves in the transference belt modules, which can vary due to the effect of temperature, movement, and other reasons.



The openings can be blocked to improve maintenance and cleaning by means of the covers that are supplied with the combs. They are assembled under pressure, and to open them only a sharp flat tip is needed (such as a screwdriver).

5.1.6. "Sorting" type conveyors

This design enables less powerful motors to be installed than usual in conveyors of a similar size, which contributes to significant electric power savings.

By using the PCS-25 AL Ball Belt, the products on the conveyor can be moved in many different ways. However, we must take into account certain limitations for the items to be moved, which are always related to the contact surface with the belt: it must be as smooth as possible, and the contact area.

As seen in section 2.9.11 of this catalogue, the PCS-25 AL Ball Belt has balls of 10 mm diameter embedded in the belt that can spin freely. Their centres are separated 20 mm (in the same pitch) and 25.4 mm with respect to the next pitch, providing a support surface of a rectangle of 20 x 25 mm (between centres). Therefore, the minimum area for conveying products should exceed these limits.

When this contact area between the conveyed product and the belt is well exceeded, it is possible to move them even if the packaging has a crack or hole.

It should be noted that the products conveyed can double their longitudinal conveyance speed on their journey

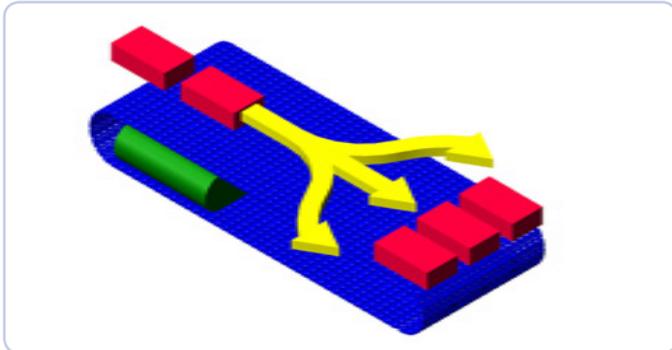


along the machine due to the spinning effect of the balls.

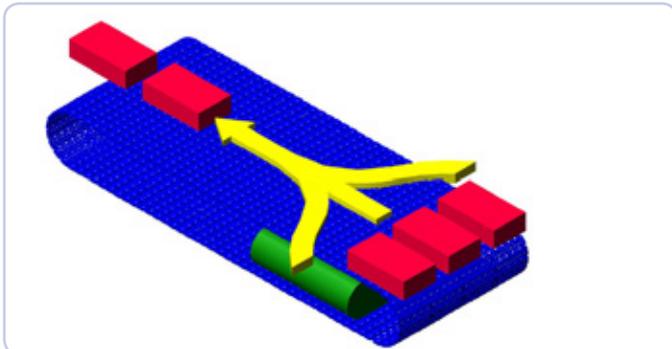
The typical movements you can do with the items conveyed are:

Longitudinal misalignment

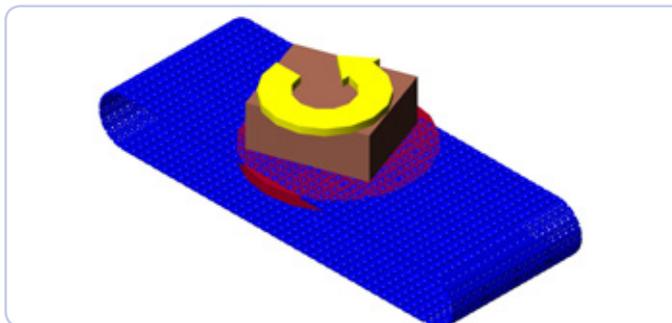
One (or more) inlet lines / several outlet lines.



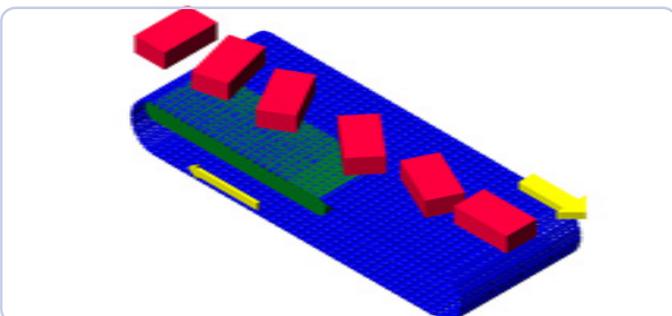
Several inlet lines / one (or several) outlet lines.



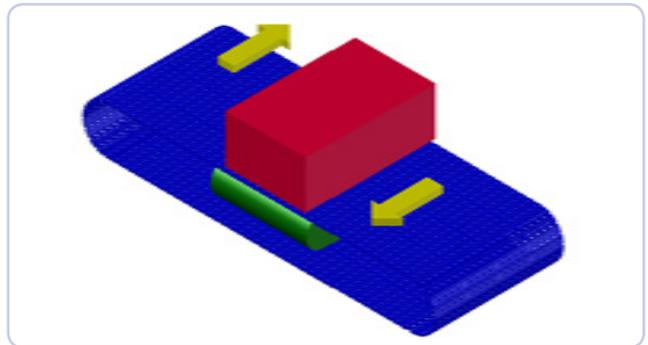
Rotation of products in static (with the belt stopped).



Rotation of transported products in movement (with the belt working).



Outlets (or diversions) for the products being conveyed.



Acceleration (or deceleration) of the products being conveyed (i.e., separating or bringing the items closer), towards the inlet of the conveyor or its output.

Naturally, in each case or project it is necessary to study adequately the different variables that affect the structural characteristics of the conveyor. For example.

- size (or sizes) of the product(s) to be moved.
- type, size, physical shape and contact area of the products on the belt.
- type (or types) of movements to be made.
- transport speed of the items.
- other variables specific to each case.

All of these influence the design of the conveyor, mainly as regards its dimensions. A high speed may mean the machine needs to be longer (and / or wider) depending on the size of the product conveyed and the movements to be made.

The products are moved in various ways and each manufacturer applies their discretion and experience. Basically, the idea is to move the belt's balls on the underside by means of PVC or other conveyor belts moving sideways, using static or mobile items, etc.

As noted above, the design of these machine components depends on the same parameters as the length or width of the conveyor.



5.1.7. Accumulation conveyors

PCS- 15 Al Roller belt

As in the previous case, this belt, which is basically made with freely spinning rollers, which contributes to significant electric power savings due to very low levels of friction in sliding over the conveyor's frame.



They are a great solution for accumulation conveyors and also for transport conveyors.

Statically used they become into gravity roller paths with many uses, including transport of small products, due to the small distance between the rollers' shafts (15 mm).

PCS- 25 y 50 Al Roller / Accumulation

Basically in the case of PCS-25/50 AL Closed with free rollers turning on the rods of different modules, the assembly of these can be adapted to the different needs of the process / work to be done.

It has the distinguishing feature, of the free rotation Rollers in number and position, which are most suitable for each case

5.1.8. Special modular belt conveyors

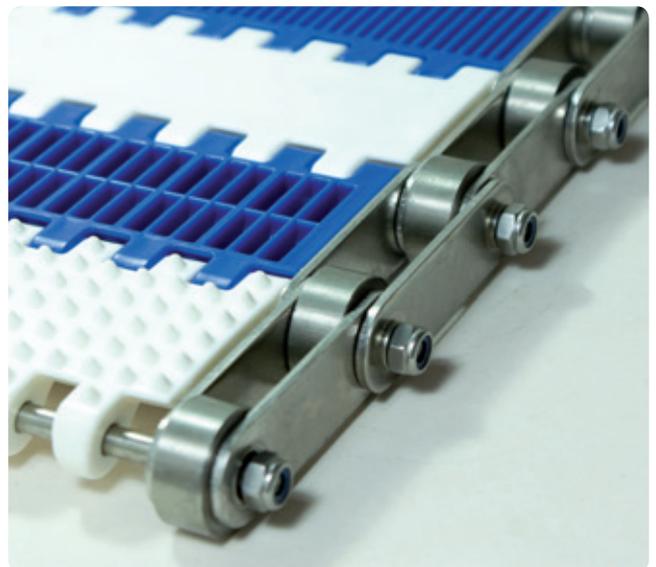
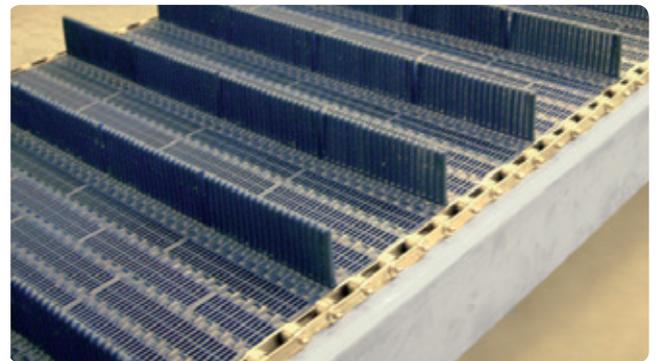
In certain cases where the use of a modular belt may be limited by the immediate environment, such as dust, sand, small stones and other abrasive elements, the advantages of modular belts can be cancelled out by very premature wear in their components, for example in the sprockets and articulation rods, which are usually the firsts elements to be damaged.

One solution for using modular belts without these risks is to make them with metal chains and rollers with hollow

shafts at the two sides. The articulation rods are in this case made of metal (stainless steel) and are mounted at both ends of the chains' rollers.

The original sprockets of the modular belt are replaced with metal sprockets (stainless steel or as required, as with the chains) and the mechanism for their movements is put in directly onto the metal chains.

The modular belt can be made with all possible combinations of different modules, accessories, etc. It is mainly used in the recycling industry, waste water treatment facilities, agricultural irrigation, aggregates, etc.



5.1.9. Flat top curve conveyors

The new curved conveyors with defined angle, is to say that can be performed as needed, are made with the new modular belt PCS Flat top curve. This type of conveyor eliminates the need to incorporate straight sections at the entrance and exit of the curve thanks to the conical modules.

Incorporates guided bearings for the bottom, circulating by PE-1000 guide curves as needed for the design. At the same time these guides serve as support and slipping. Belt widths and available internal radius, are listed at the technical specifications in this catalogue.

5.1.10. Continuous curved belt conveyor "carousel type"

This new PCS belt , enables the manufacture of straight and curved conveyors, without breaking the work plane, because it doesn't need to use sprockets or pinions for the traction. Also profiles guides usually used to impart the shape or path are eliminated.



Its construction is possible by the use of the PCS-40 AL Curve belt, gifted with the new central support of three bearings. The geometry of the conveyors can be varied, but always "closed" . This gives great possibilities to be adapted to the various processes that may arise, and the belt guiding is centrally and inferiorly done, thanks to the central support three bearings , which , at the same time helps to eliminate great part of the friction, the excessive energy use and the damage of building elements.



5.1.11. Data of interest

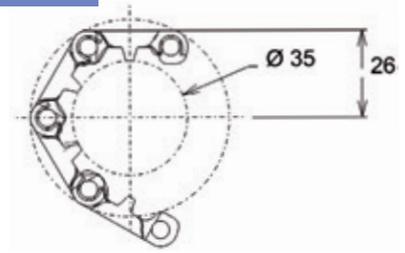
To design the conveyors and for the manufacture of the PCS modular belts, it is very useful to know the dimensions and limits between the centre of the sprocket (and the shaft) and the upper surface of the belt (or work surface). These are shown in the following chart, for each one of the existing types:

5.1.12. Minimum turning radius

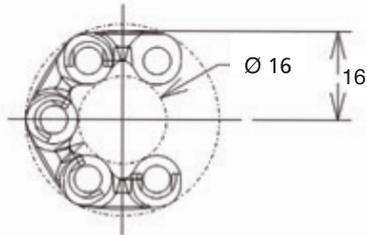
According to the applications and designs, the modular belts can turn on rollers, without the need of wheels or sprockets, achieving smaller turns radius

This information is very useful for the designer or user, and in the next table we can see the minimum turning radius recommended for the models of modular belt where this applications is more frequent.

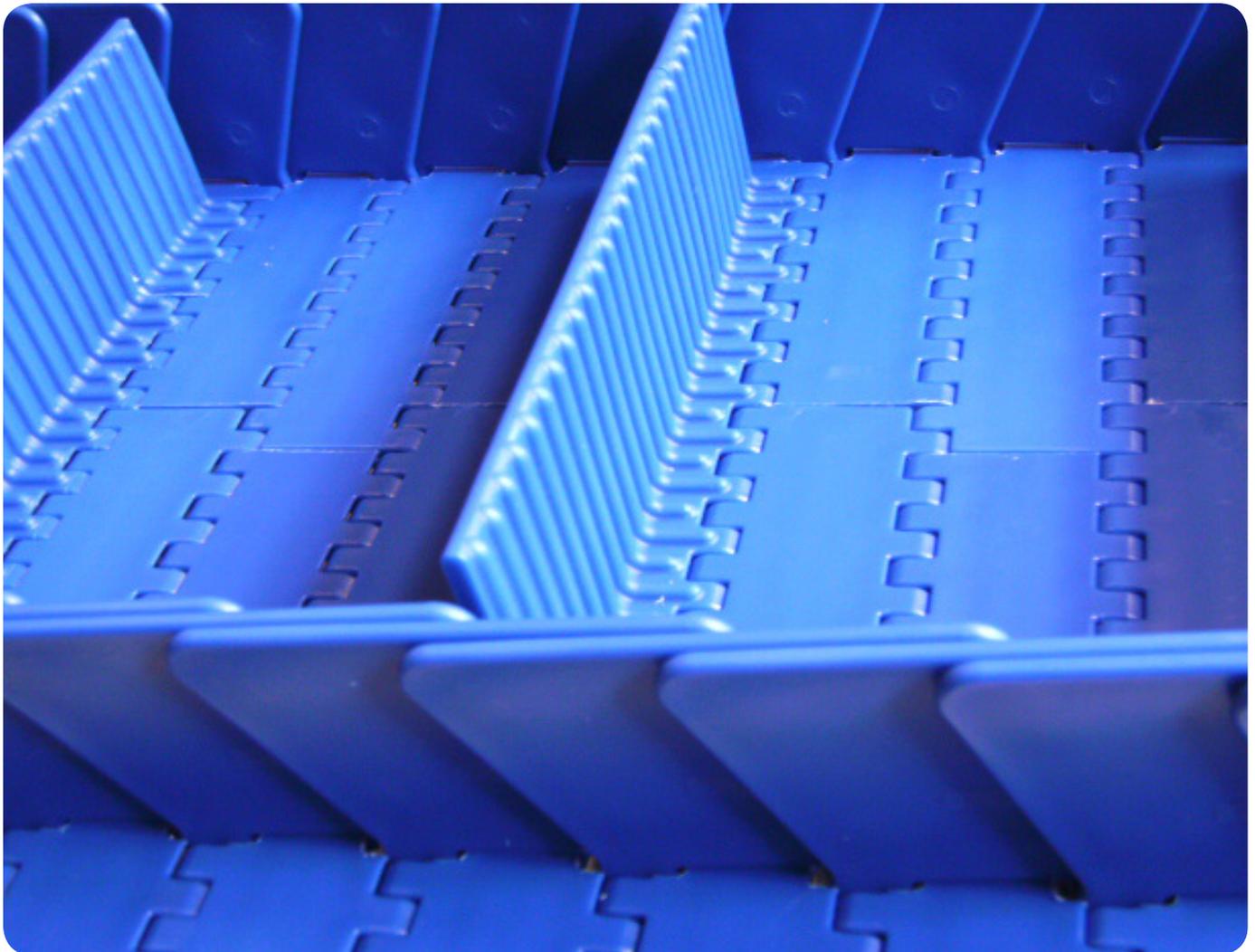
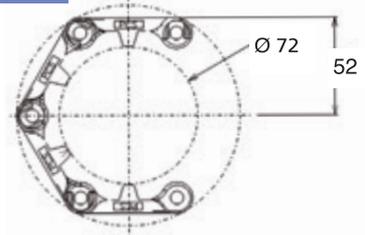
PCS-25 AL



PCS-12 AL



PCS-50 AL





PCS-12 AL	PCS-12 NEO AL	PCS-15 AL	PCS-25 AL	PCS-50-AL	PCS-51-AL (opened/transference)	AL Curve
D43/d10 	D39/d10 	D77/d14 	D63/d8 	D92/d6 	D127/d8 	D129/d10
D99/d24 	D63/d16 	D146/d30 	D79/d10 	D122/d8 	D160/d10 	
D147/d24 	D95/d24 	D150/d31 	D96/d12 	D156/d10 	D193/d12 	
	D143/d30 		D125/d16 	D188/d12 		
	D167/d42 		D145/d18 	D255/d16 		
			D84/d10 (Ball Belt) 			
			D108/d13 (Ball Belt) 			
			D138/d17 (Ball Belt) 			
			D150/d18 (Ball Belt) 			

6 SECURITY

6.1 Temperature effects

The thermoplastic materials used in the manufacture of PCS products are inflammable. Therefore they should not be exposed to direct contact with a flame.

Neither should they be used at temperatures outside the rang recommended for each and every product, which are shown in the corresponding technical documentation.

In case of fire involving these products, the gases given off on combustion are toxic and dangerous.

6.2 Humidity effects

The effects of permanent humidity at high percentages can be harmful to some thermoplastic materials. In cases where the surrounding conditions are like that, the materials expressly recommended in this catalogue must be used. It is also recommended, consult PLASTIC CONVEYOR SYSTEM's Technical Department.

6.3 Dust and abrasion effects

As in all cases where mechanisms are applied, the permanent presence of dust can damage the parts of the modular belts, although some thermoplastic materials have a greater resistance to abrasion than others. In these cases, follow the recommendations in this manual or consult PLASTIC CONVEYOR SYSTEM's Technical Department.

A regular cleaning of the conveyors, as always, helps to prolong their useful life and good conditions for use.

6.4 . Chemical cleaning agents effect

At the point 7.2 "Resistance to chemicals", there are exposed the chemical resistance data of the different plastic materials that use PCS to manufacture conveyor belts and accessories. Results are quoted with reference to two values of temperature considered, 20 °C and 60 ° C and are endorsed by testing laboratory data and their own manufacturers.

However, the action of various chemical agents under a formula or commercial product, can modify these behaviors and we must be cautious with these and we have to consult the manufacturer to check whether we can damage the modular belt or not.

There are some cleaning products or chemical ones that can achieve a higher temperature than the plastic modular belt. This added to the mentioned in the previous paragraph can damage the belt material.

The use of an "multi-purpose cleaner" is very frequent because it helps to keep clean the belts or conveyors. Customers must know the properties of these cleaners, for avoiding future damages in belts, conveyors or both.





7. Charts

7.1. Industrial Applications

The following chart displays the most common and recommended applications, although other types of belt can be used.

	Polypropylene	Polyetyene	Acetal
FISH			
General transport	✓	✓	✓
Metal detectors	-	✓	-
Elevators	✓	✓	-
Preparation and control	✓	✓	-
Waste	✓	✓	-
Packing	✓	✓	✓
Frozen	-	✓	✓
MEAT			
General transport	✓	✓	✓
Metal detectors	-	✓	-
Elevators	✓	-	✓
Cutting	✓	-	✓
Cutting out	✓	-	✓
Boning	✓	-	✓
Preparation and control	✓	-	-
Packing	✓	-	✓
POULTRY			
Operations on live poultry	✓	✓	-
General transport	✓	✓	✓
Metal detectors	-	✓	-
Elevators	✓	✓	-
Cutting	-	✓	-
Boning	-	✓	-
Cold operations	-	✓	-
Preparation and control	✓	✓	-
Packing	✓	✓	✓
Frozen	-	✓	✓
FRUIT & VEGETABLES			
Pre-cleaning and cleaning	✓	✓	✓
General transport	✓	✓	✓
Waste	✓	✓	✓
Elevators	✓	✓	-
Classification and control	✓	✓	-
Sterilization	✓	-	-
Packing	✓	✓	✓
Cooling	✓	-	-

	Polypropylene	Polyetyene	Acetal
BAKERY PRODUCTS			
Cleaning	✓	-	✓
Freezing	-	✓	✓
Operations with dough	-	✓	✓
General transport	✓	-	✓
Metal detectors	✓	✓	-
Glazing / sugaring / flouring	✓	-	✓
Packing	✓	✓	✓
Operations with bread	✓	-	-
Bagging	✓	✓	-
DRINKS			
Filling, closing and labelling	✓	-	✓
Withdrawal and boxing	✓	-	✓
Metal detectors	✓	✓	-
Transferences	✓	-	-
Box elevators	✓	-	✓
MANUFACTURE OF TINS			
General transport	-	-	✓
Varied operations	-	-	✓
Cleaning	-	-	✓
Accumulators / classifiers	✓	-	✓
Packing			✓
MANUFACTURE OF TYRES			
Entrance and exit of mixes	-	-	✓
Immersion	✓	-	
Cooling of rubber	✓	-	✓
Elevators	✓	-	
Varied operations	-	-	✓
Refrigeration	-	-	✓
Draining	-	-	✓
Accumulators	✓	-	✓
VARIOUS			
Package distribution	✓	-	✓
Filtered water	✓	✓	✓

	Ryton or material depends on application
Boilers	✓
blisters Ovens	✓
heat treatment	✓
Transport of hot items (various)	✓



7.2. Resistance to chemical agents

This guide gives information on the resistance of the most commonly used thermoplastic materials to the most common chemical agents, based on data provided by the manufacturers. It is not, therefore, a specification from PLASTIC CONVEYOR SYSTEM.

B = good M = bad X = dubious - = no information

CHEMICAL NAME	Polypropylene		Polyetyene		Acetal	
	20°	60°	20°	60°	20°	60°
Fuel oil	B	X	B	M	X	X
Cocoa oil	B	B	-	-	-	-
Coconut oil	B	B	B	B	-	-
Linseed oil	B	B	B	B	B	B
Corn oil	B	B	B	B	-	-
Motor oil	B	X	-	-	B	B
Olive oil	B	B	B	B	-	-
Cotton seed oil	B	B	B	B	-	-
Mineral oil	X	M	B	M	B	B
Lubricating oil	B	X	-	-	B	B
Oil for/from transformers	B	X	X	X	-	-
Amyl acetate	X	M	X	M	-	-
Butyl acetate	M	M	X	M	-	-
Lead acetate	B	B	B	B	-	-
Ethyl acetateB	B	B	X	X	X	M
Acetone	B	B	B	B	X	X
Acetic acid 5%	B	B	B	B	B	-
Acetic acid	B	B	B	X	-	-
Arsenic acid	B	B	B	B	-	-
Benzene sulphonic acid 10%	B	B	B	B	-	-
Benzoic acid	B	B	B	B	-	-
Boric acid	B	B	B	B	-	-
Hydrobromic acid 10%	B	B	B	B	-	-
Bromic acid	M	M	M	M	-	-
Butyric acid	B	-	B	X	-	-
Citric acid 10%	B	B	B	B	B	-
Citric acid	B	B	B	B	-	-
Hydrochloric acid 10%	B	B	B	B	M	M
Hydrochloric acid	B	B	B	B	M	M
Chloroacetic acid	B	B	-	-	-	-
Chlorosulphonic acid	M	M	M	M	-	-
Chromic acid 50%	B	B	B	X	-	-
Diglycholic acid 30%	B	B	B	B	-	-
Stearic acid	B	X	B	B	-	-
Phthalic Acid 50%	B	B	B	B	-	-
Hydrofluoric acid 35%	B	B	B	B	M	M
Phosphoric acid 30%	B	B	B	B	-	-
Phosphoric acid 85%	B	B	B	B	-	-
Formic acid 85%	B	X	B	B	-	-

CHEMICAL NAME	Polypropylene		Polyetyene		Acetal	
	20°	60°	20°	60°	20°	60°
Lactic acid	B	B	B	B	-	-
Lauric acid	B	B	B	B	-	-
Malic acid 50%	B	B	B	B	-	-
Methylsulphuric acid	B	B	B	B	-	-
Nitrous acid	X	-	-	-	-	-
Nitric acid 30%	B	X	-	-	M	M
Nitric acid 50%	X	M	B	X	M	M
Fuming nitric acid	M	M	M	M	M	M
Oleic acid	B	M	-	-	B	B
Oxalic acid	B	B	B	B	-	-
Palmitic acid 70%	B	B	B	B	-	-
Perchloric acid 20%	B	B	B	B	-	-
Sulfamic acid 20%	B	B	-	-	M	M
Sulphurous acid	B	-	B	B	-	-
Sulphuric acid 3%	B	B	B	B	B	B
Sulphuric acid 50%	B	B	B	B	M	M
Fuming sulphuric acid	B	X	B	X	M	M
Tartaric acid	B	B	B	B	-	-
Tannic acid 10%	B	B	B	B	-	-
Trichloroacetic acid	B	B	-	-	-	-
Hydroiodic acid	M	M	-	-	-	-
Butyl acrylate	M	M	B	X	-	-
Bromine water	M	M	-	-	-	-
Chlorine water 0'4%	B	X	-	-	M	M
Aqua regia	M	M	X	M	-	-
Alcohol (all kinds)	B	B	B	B	-	-
Mineral alcohols	X	M	-	-	-	-
Alum (all kinds)	B	B	B	B	-	-
Ammonia	B	B	B	B	-	-
Carbon dioxide	B	B	B	B	-	-
Aniline	B	B	B	M	-	-
Lime sulphur	B	-	-	-	-	-
Sulphur	B	B	B	B	-	-
Ligroine	X	M	-	-	-	-
Lard	-	-	B	B	-	-
Margarine	B	B	B	B	-	-
Molasses	B	B	B	B	-	-
Mercury	B	B	B	B	-	-
Methyl ethyl ketone	B	X	M	M	-	-
Methyl isobutyl ketone	B	X	-	-	-	-
Naphtha	B	X	X	M	-	-
Silver nitrate	B	B	B	B	-	-
Nitrobenzene	B	X	M	M	-	-
Nitrous oxide	B	-	-	-	-	-
Oxygen	M	M	-	-	-	-
Sugar	B	B	B	B	-	-
Benzene	X	M	X	M	B	B
Sulphur dioxide	B	B	B	B	-	-



CHEMICAL NAME	Polypropylene		Polyetiylene		Acetal	
	20°	60°	20°	60°	20°	60°
Bórax	B	B	B	B	-	-
Liquid/vapour bromine	M	M	M	M	-	-
Beer	B	B	B	B	-	-
Silver cyanide	B	B	-	-	-	-
Cyclohexane	B	X	M	M	-	-
Cyclohexanol	B	X	X	M	-	-
Cyclohexanone	B	X	M	M	-	-
Sodium chlorite	B	X	B	B	-	-
Chlorine gas	M	M	X	M	M	M
Liquid chlorine	M	M	M	M	M	M
Chlorobenzene	M	M	X	M	-	-
Chloroform	M	M	M	M	-	-
Clorox MR	B	X	-	-	M	M
Amyl chloride	M	M	X	M	-	-
Sulphur chloride	B	-	-	-	-	-
Ethylene chloride	M	M	-	-	-	-
Methylene chloride	X	M	M	M	-	-
Methyl chloride	M	M	-	-	-	-
Stannous chloride	B	B	B	B	-	-
Stannic chloride	B	B	B	B	-	-
Aluminium compound	B	B	B	B	-	-
Ammonium compound	B	B	B	B	-	-
Barium compound	B	B	B	B	-	-
Calcium compound	B	B	B	B	-	-
Zinc compound	B	B	B	B	-	-
Copper compound	B	B	B	B	-	-
Magnesium compound	B	B	B	B	-	-
Mercury compound	B	B	B	B	-	-
Nickel compound	B	B	B	B	-	-
Potassium compound	B	B	B	B	-	-
Sodium compound	B	B	B	B	-	-
Ferric/ferrous compound	B	B	B	B	-	-
Cresol	B	B	B	X	-	-
Detergents	B	B	B	B	B	B
Dextrine	B	B	B	B	-	-
Diethylamine	B	B	-	X	-	-
Dimethylamine	B	-	-	-	-	-
Carbon disulphide	X	M	X	M	-	-
Diethyl ether	M	M	M	M	X	X
Ethyl ether	X	X	-	-	-	-
Ethylamine	B	B	-	-	-	-
Phenol 5%	B	B	B	B	-	-
Phenol	B	B	B	B	-	-
Brake fluid	B	B	-	-	B	B
Formaldehyde 37%	B	B	B	X	-	-
Tributyl phosphate	B	X	-	-	-	-
Triethyl phosphate	B	X	-	-	-	-
Trisodium phosphate	B	B	B	B	-	-

CHEMICAL NAME	Polypropylene		Polyetiylene		Acetal	
	20°	60°	20°	60°	20°	60°
Freon	-	-	B	X	X	X
Benzyl butyl phthalate	B	X	-	-	-	-
Isooctyl phthalate	B	B	-	-	-	-
Dimethyl phthalate	B	B	-	-	-	-
Diocetyl phthalate	B	X	-	-	-	-
Furfural	M	M	X	M	-	-
Gasoline	X	M	B	M	B	B
Glycerol	B	B	-	-	-	-
Ethylene glycol 50%	B	B	B	B	B	X
Glucose	B	B	B	B	-	-
Barium base soap grease	B	X	-	-	-	-
Calcium base soap grease	B	X	-	-	-	-
Heptane	M	M	X	M	B	B
Hexane	B	X	M	M	-	-
Potassium hydroxide	B	B	B	B	-	-
Sodium hydroxide 60%	B	B	B	B	B	B
Sodium hydroxide	B	B	B	B	-	-
Sodium hypochlorite 60%	B	-	-	-	M	M
Isooctane	M	M	B	-	-	-
Citric juices	B	B	B	B	-	-
Lanoline	B	X	B	B	-	-
Plating solutions	B	B	B	B	-	-
Developing solutions	B	B	B	B	-	-
Sulphate solutions	B	B	-	-	-	-
Magnesium sulphate	B	-	B	B	-	-
Hydrogen sulphide	B	B	B	B	-	-
Carbon tetrachloride	M	M	M	M	B	X
Tetrahydrofuran	X	M	-	-	-	-
Toluene	M	M	M	M	X	M
Trementine	X	M	X	M	-	-
Trchloroethylene	M	M	M	M	-	-
Turbosine	X	M	X	X	B	B
Urea	B	B	B	B	-	-
Ozone	M	M	X	M	-	-
Perchloroethylene	M	M	M	M	-	-
Potassium permanganate	M	X	M	M	-	-
Hydrogen peroxide 3%	B	B	B	B	B	B
Hydrogen peroxide 90%	X	X	B	X	-	-
Kerosene	X	M	X	X	B	B
Saline solution 10%	B	B	B	B	B	B
Tallow	B	B	B	X	-	-
Vaseline	B	-	-	-	-	-
Vinegar	B	B	B	B	-	-
Wine	B	B	B	B	-	-
Whisky	B	B	-	-	-	-
Xylene	M	M	M	M	-	-
Iodine crystals	B	B	X	B	-	-
Potassium iodide	B	B	B	B	-	-
Tomato juice	B	B	B	B	-	-

8- Manufacturer note

All reference technical data regarding PCS products have been obtained as a result of laboratory tests with specimens or manufactured products. They are exposed in this catalog and they are recommendations. These results may be altered by the design features and / or by the machine manufacturing.

However, PCS is not responsible for the different applications given to PCS products in machines or installations which have not been implemented by PCS, neither of uses to which they were intended, as the condition use are completely beyond their control.

PCS market expertise for the development of new products and applications may require modifications to the information contained in this catalog without any prior obligation of notification the copies in force.

Like the uses of PCS products are not under PCS control, no liability can be assumed about the appropriateness of the use and the capacity of the products described in this catalog.

This, is just as aplicable to the results, production volumes and processing, and to the potential direct or indirect damages, defects, damage and subsequent consequences that may arise.