

Instruction Manual and Warranty Terms

Rollers, Idlers and Garlands

1. Product Description.....	¡Error! Marcador no definido.	3
2. Product Range and Technical Specifications.....		4
2.1 Metallic Roller (RM_**)		4
2.2 Impact Roller (RA_**)		5
2.3 Return Roller with disc (RLH_** ; RLD_** ; RL1T_** ; RL2T_**).....		6
2.4 Idlers or Idler Frames (E *-**)		7
2.5 Garlands (G *-**).....		7
2.6 Roller Inner parts		8
2.7 Operation in Explosive Areas.		8
3. General Instructions.....		9
3.1 Transport		9
3.2 Storage		9
3.3 Installation of rollers, garlands and idler frames		10
3.4 Maintenance		12
3.5 Warranty.....		13

1. Product Description

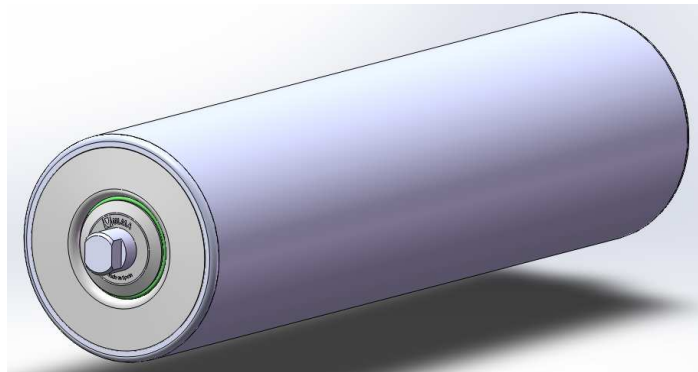
ULMA Conveyor Components rollers are designed to work in conveyor belts for Medium and Heavy Duty bulk material handling applications. Recommended working conditions are:

- Rollers are designed to work according to CEMA and VDI 2341 standards
- Working temperatures: -35°C -50°C.
- Belt Speed: Up to 7m/s, depending on dimensions.
- Suitable for adverse weather conditions
- For other working conditions please check : www.ulmaconveyor.com

Rollers can be assembled on idler frames or linked to each other in a garland system.

2. Product Range and Technical Specifications

2.1 Metallic Roller (RM_ * *)

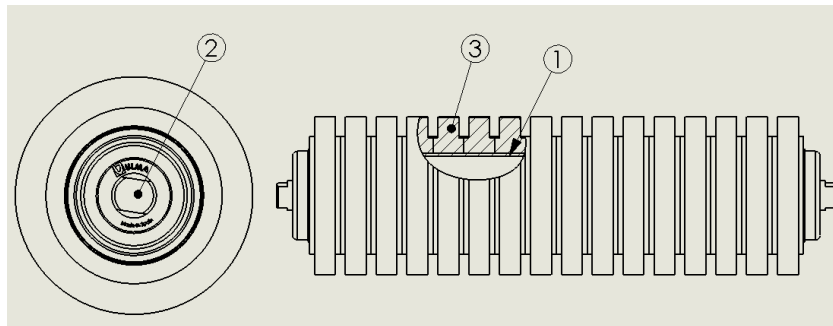
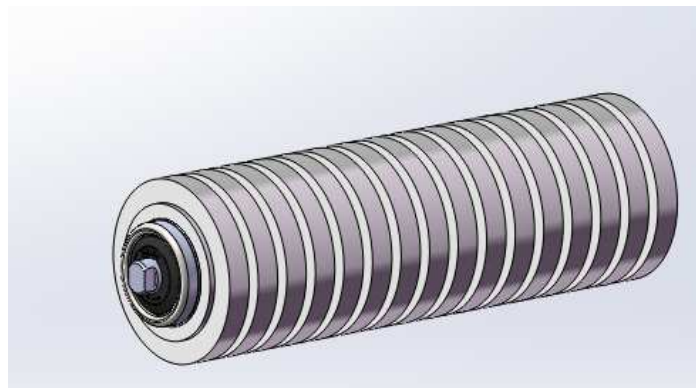


Metallic Roller Parts

1. Tube: is in direct contact with the conveyor belt. Most common materials are: (S235) Steel, (PE) plastic, rubber-coated steel and plastic coated steel. The metallic tube can be protected by a paint coating or antirust varnish. It is an area to be protected from knocks, scrapes and exposure to harsh environments during storage and transport. Otherwise product properties can be affected as the perfect contact between tube and conveyor belt is very important.

2. Shaft: the shaft is fixed to idler frame by different shaft end design. The shaft is static while the tube is turning and working dynamically. It is recommended to hold the rollers from the shaft during manipulation. Axial impacts to the shaft to be avoided.
3. End Disc: The end disc protects the sealing system and bearing during roller life time. Impacts, knocks during manipulation or storage to be avoided. It is also important not to sustain roller weight on this component.

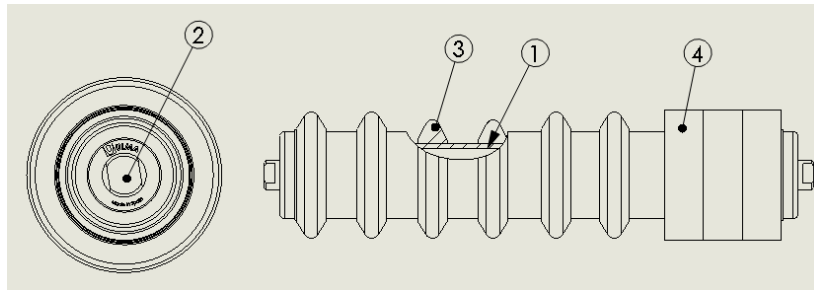
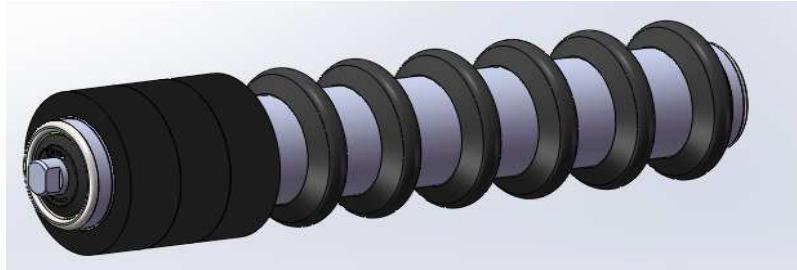
2.2 Impact Roller (RA_**)



This roller unlike the metallic roller has fixed rubber rings on the external side. This type of roller is placed in loading areas where the roller suffers impacts from handled material throughout its operating life. The roller has the same characteristics as the metallic roller and same precautions should be taken into account.

1. Tube
2. Shaft
3. Impact rubber rings

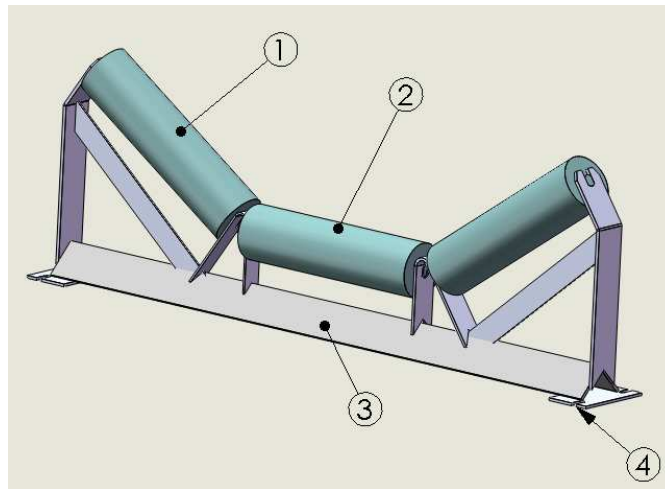
2.3 Return Roller with disc (RLH_** ; RLD_** ; RL1T_** ; RL2T_**)



These types of rollers have also fixed rubber disc on the external side. The rubber disc function is to remove dirt and sticky material from the conveyor belt. There are different rubber disc geometries and designs available depending on the application and desired rubber disc & belt contact area.

- 1- Tube
- 2- Shaft
- 3- Cleaning rubber disc
- 4- Flat rubber disc

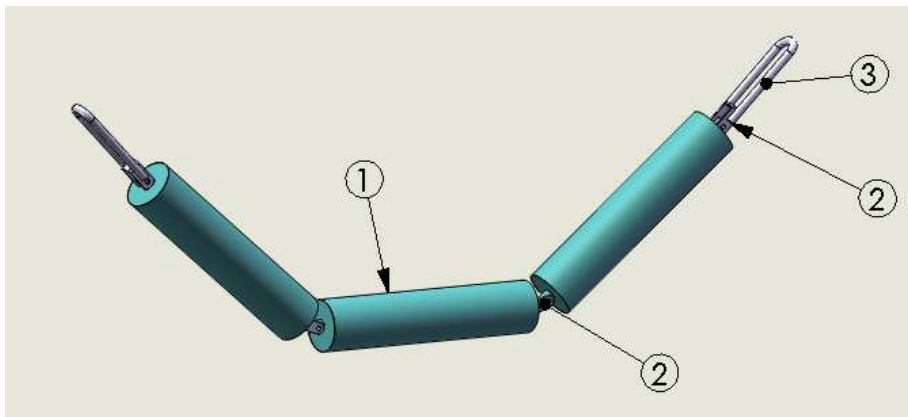
2.4 Idlers & Idler Frames (E *-**)



The support is the connection between the roller and the conveyor structure. It is a metal structure that is fastened by screws and nuts to the conveyor frame. Rollers are placed on it.

- 1 Side roller
- 2 Centre roller
- 3 Idler Frame
- 4 Conveyor structure & Idler Frame fixing steel plate.

2.5 Garland (G *-**)

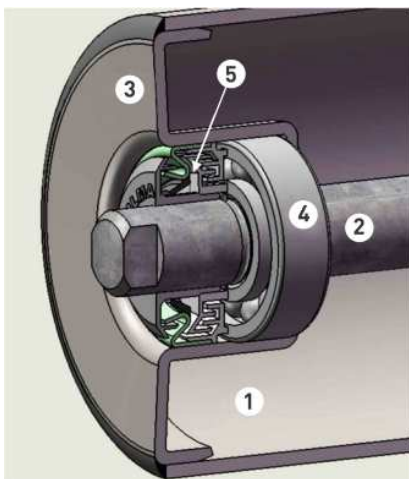


The garland is a union of rollers with garland shape. The rollers are connected by links, bolts nuts and are tied to the structure of the conveyor by means of hooks or chains.

1. Roller
2. Fixing elements
3. Hook

2.6 Roller Inner Parts

The roller is maintenance free. The roller is designed for a certain life time. These parts may vary in form and shape depending on the model or the requirements of each installation



- 1-Tube
- 2- Shaft. Tolerance shaft & bearing h6 / js6
- 3- Bearing housing. Tolerance bearing & bearing house N7/M7
- 4- Bearing (2 units of 6000 series). Inner adjustment of C3 or C4.
- 5- Sealing system. This protects the bearing against contaminants. Double protection system, labyrinths and low friction contact seal.

2.7 Operation in explosive areas.

To work in these environments the roller must have certain characteristics. These roller have the following identifying mark stamped on the shaft



A declaration of conformity is enclosed with such roller deliveries.

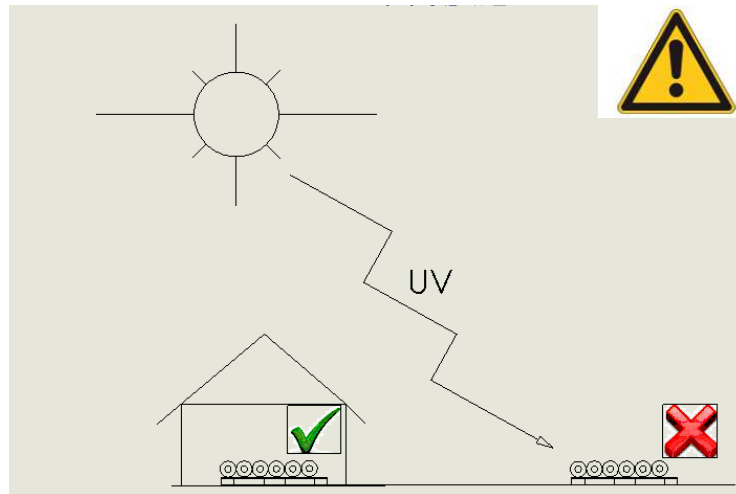
3. General instructions

3.1 Transport

- Rollers should be protected from knocks, scrapes and exposure to harsh environments during transport. Otherwise product properties can be affected
- Rollers can be delivered packed in wood pallets, wood boxes or wood crates. In the case of the strapped pallets, the restraint belts must be connected in the same direction as the strip. Avoid packages fix strapping packages to the rollers, idlers frames or garlands.
- Assembled garlands are delivered in special long palettes.
- Palettes must be lifted dead-centre

3.2 Storage

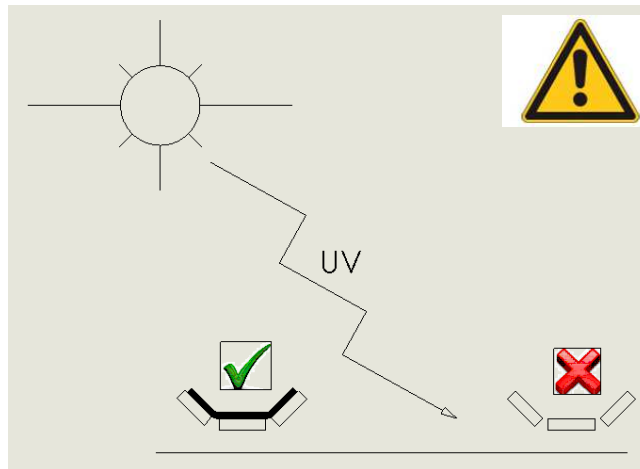
- Rollers should be protected from knocks, scrapes and exposure to harsh environments during storage. Inappropriate storing of the idlers before operation can lead to damaging and a shortened service life
- Rollers should be protected from unfavourable environmental effect, such as solar radiation and strong fluctuations in temperature. This can expedite an aging and embrittlement of rubber and plastic parts..
- There must meet a minimum separation of 100mm between pallets and from the ground.



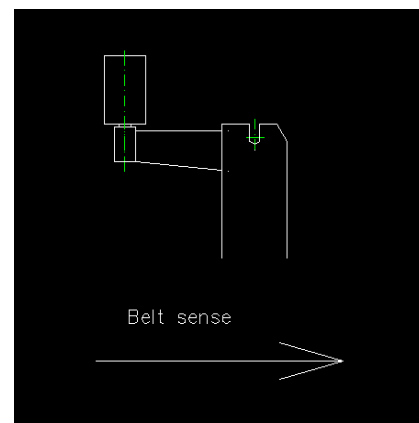
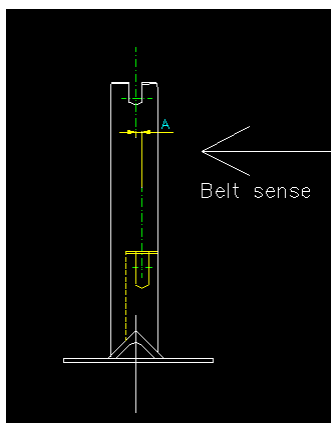
- Indoor storage shall not exceed more than 6 months. There must meet a minimum separation of 100mm from the ground. Avoid moisture condensation on packages throughout storage.
- Storage temperatures should be limited to the working conditions of the rollers. Package Stack is not allowed, since packets can warp in long storage period.
- All products must be stored on a secure, flood-free surface.

3.3 Installation of rollers, garlands and idler frames

- Rollers must be handled by holding them on both ends of the shaft. If you want to hold them by the shell you must use a magnet handling system. The latter only applies to metallic rollers.
- If the ends are coated in varnish, clean them with a rag before handling to assure a proper grip.
- With manual handling, we recommend using safety gloves and boots.
- Rollers should not be unwrapped until just prior to installation.
- Immediately after installing it, place the conveyor belt over the rollers (2 weeks max.) . This requirement consists in protecting the rollers and their different components (ex. the rubber rings from ultraviolet light and other effects of the weather).



- Install the supports and brackets by tightening the screws with washers to keep them from loosening with vibrations.
- Check the proper positioning of the idlers by checking the proper clip angle, in training idlers (the guide roller's back position must follow the belt's direction)



- The ends of the rollers must not be damaged during assembly.
- The garlands must be handled by holding the hooks available for this on the conveyor's structure.

- If there are ATEX requirements, these components must be integrated in the conveyors where the static electricity may be grounded in accordance to the ATEX directive.

3.4 Maintenance

The rollers, idlers and garlands are products that do not require maintenance. The rollers are lubricated for life and the sealing system is prepared to operate in dusty and humid environments. Any repairs annul the product's ATEX compliance.

Since there may be uncontrollable factors, you must perform visual checks weekly, ensuring the conveyors proper performance. Below we cite some points to keep in mind:

- Avoid accumulation of materials in the operating area.
- When cleaning the rollers, avoid directly spraying water on the front area of the roller. Also avoid using liquids with high acid levels or highly corrosive products.
- Rollers or defective garlands must be immediately replaced, since otherwise they may damage other components. Replacement is required in the following conditions:
 - Ball bearing failure. An unusual noise is heard
 - Retainer failure
 - Excessive wear on the roller's shell.
 - Excessive tears or wear of the rubber rings.

For more information see:

<http://www.ulmaconveyor.com>

3.5 Warranty

Ulma's guarantee for rollers and idlers is for 12 months after shipment, under the conditions of FCA Otxandio, Spain (Incoterms 2010).

This guaranty's scope: Ulma Conveyor only assumes responsibility for defective material in the transfer of risks.

It is exempt from assuming costs derived from secondary damage.

The rollers supplied must only be used in the conveyor's zones (superior, lower and impact branch) for which they have been designed. Any other use of the rollers annuls this guaranty.

Ulma Conveyor Components or its contractual partners, respectively, have the right to inspect the damaged rollers on-site, and perform a suitable inspection in a reasonable period. During the guarantee period, Ulma Conveyor Components will proceed to repair or replace the defective rollers in justified claims.

Only claims for rollers and supports installed in accordance with the instructions of this document will be accepted, along with those conveyor belts operated professionally.

All claims due to the following reasons are excluded from the guaranty:

- Inappropriate or improper use of the rollers and idler frames.
- Not following this instruction manual.
- A different use from that established of the rollers and idler frames.
- Regular wear and tear. This guaranty does not include the typical 1% annual failure of rollers in conveyor belts.
- Damage caused by the misalignment of the belt.
- A tilt angle $> 2^\circ$ in the stations.
- Damage caused by an inadequate belt tension.
- Damage caused by improper cleaning and maintenance of the conveyor belt.
- Damage caused by impacts (crashes and falls) of the rollers and supports.
- Changes and modifications of the product made by the client.
- Attempts to repair the product.
- Returning the product improperly fastened during transport.
- Inappropriate storage of the rollers. The rollers must be stored undercover and protected from the weather.
- Roller corrosion. Ulma Conveyor's standard paint is designed to protect the rollers during transport and storage prior to installation for up to 12 months from being sent FCA Otxandio and complying with the storage instructions 3.2. The Ulma Conveyor guaranty is valid until the opening of the packages. After installation of the rollers, the conveyers must be started up as soon as possible,

within 14 days. Otherwise they may rust inside the bearings, in the track and balls. For this same reason, avoid stops in operations longer than 14 days.

- Avoid any electric current from passing through the roller's bearings.

All claims must be reported in writing within 3 days from the incident. Claims must include the order and project number, shipment date, etc.