

## **USE AND MAINTENANCE MANUAL**

<b>IDENTIFICATION OF SUPPLIED COMPONENTS</b>	
<b>IDLE AND DRIVEN ROLLERS FOR UNIT HANDLING ROLLER CONVEYORS</b>	
<b>DOCUMENT IDENTIFICATION</b>	
<b>DOCUMENT:</b>	CImanual rev. 01
<b>ISSUED:</b>	2018/04/04
<b>APPROVED:</b>	2018/04/04

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## 1) REGULATIONS AND GENERAL INFORMATION



### DANGER / ATTENTION

This symbol is used to identify operations which require particular attention.

Thus information alongside this symbol must be respected before proceeding to the above-mentioned operations.



### CAUTION / WARNING

This symbol is used to provide useful indications in the execution of some operations or interesting information.

It is recommended that the indications provided be followed before proceeding to the above-mentioned operations.

### 1.1 “INSTRUCTION MANUAL” document identification

The instruction manual is a document which is issued by the DUGOMRULLI srl company and is an integral part of the supply of rollers. It is unequivocally identifiable so as to allow the traceability and any necessary future references.

All reproduction and diffusion rights of the present manual and related cited or attached documentation are confidential.

### 1.2 Document aims

The aim of this instruction manual is to provide the client and staff who will install Dugom “IDLE AND DRIVEN ROLLERS FOR UNIT HANDLING ROLLER CONVEYORS” and who will be responsible for the maintenance of the conveyors, with the information required for the correct installation and the best condition maintenance.



**Ensure that the safety precautions have been read, understood and followed by all the staff responsible for the Dugom conveyor rollers installation and conveyor maintenance.**

### 1.3) General precautions and manufacturer responsibility limits

Every interaction between the worker and the Dugom “IDLE AND DRIVEN ROLLERS FOR UNIT HANDLING ROLLER CONVEYORS”, in terms of the expected use and the entire lifecycle of the roller, has been thoroughly and exhaustively analysed by the company during the design, construction and writing of the instruction manual phases. Despite this, clearly nothing can substitute experience, appropriate training and “common sense” of those who install the rollers and/or maintain the conveyors.

Not following the precautions or specific warnings in this manual, the improper use of all or part of the goods or the use of unauthorised spare parts, violate all safety regulations in relation to the design, construction and expected use of the goods and relieve DUGOMRULLI from any responsibility in the case of damage to persons or things.

DUGOMRULLI is therefore not responsible for the failure of the user in not observing the safety precautions outlined in this manual.

#### **Instruction manual safekeeping.**

This document is part and parcel of the supply and must be downloaded from the DugomRulli web site [www.dugomrulli.it](http://www.dugomrulli.it), kept and used for all the operative life of the product even if given to third parties.

#### 1.4) **Manufacturer identification information**

The identification of the DUGOMRULLI srl company as the manufacturer of the Dugom “idle and driven rollers for unit handling roller conveyors” is in accordance with the legislation in force via the following acts:


- Branding plate of the rollers themselves.
- Instruction manual

## 2) **OBLIGATIONS AND DUTIES**

### 2.1) **Employer duties**

The employer is responsible for the diffusion of the present document to all staff who interact with the Dugom “rollers for unit handling conveyors”.


### 2.2) **Obligations in case of intervention**

 Workers who are called upon to interact with the Dugom “rollers for unit handling conveyors” must read and learn the present manual before carrying out any intervention, and adopt the relative specific safety instructions.

### 2.3) **Regulation abidance obligations**

Workers must, however, necessarily adopt and abide by general work injury prevention regulations prescribed by the destination country’s instructions and legislation.

### 2.4) **Obligations in case of malfunction and potential dangers**

 Workers must notify their direct superiors of any malfunction or circumstance which could generate any possible risk to workers or facilities.

### 2.5) **Conveyor’s manufacturer obligations**

#### 2.5.1) OVERHEAD ROLLER CONVEYORS:

The assembly must also include all suitable protection, requested by the laws, to prevent any fall of the loads carried or parts of the conveyor, including the rollers, to prevent damage to workers or equipment located in the area beneath.

#### 2.5.2) CHAIN AND BEL DRIVEN ROLLER CONVEYORS


a) Chains and belts which transmit the movement to the rollers must be suitably protected, in order to avoid any damage to operators.

b) It is absolutely forbidden to assemble idle rollers and controlled ones in an alternate order if the distance between their axles is less than 500 mm. Otherwise, workers’ limbs may get caught.

#### 2.5.3) LIVE STORAGE SYSTEMS

They consist of a quantity of gravity roller conveyors. The conveyor’s incline is always designed to assure the movement of an unit load even if it has not moved for a long time. The moving speed must be limited by speed regulators with an assembling center distance no bigger than the length of the shorter unit load.

### 2.6) **User obligations**

 The user must inform the conveyor supplier in reasonable time, or, in the case of direct supply, DUGOMRULLI srl, of any anomalous situation observed during the functioning of the rollers.

It is severely forbidden for the user and/or third parties to make changes of any type to the present technical document.

DUGOMRULLI srl is not responsible for the malfunction and/or dangers due to the failure to observe what is mentioned above.

### 3) GENERAL WORK INJURY PREVENTION INSTRUCTIONS

Conveyors are important material handling equipment for any kind of industrial and commercial businesses. In addition to speed and efficiency improvements, conveyors have reduced accidents related to manual material handling processes.

Like any other piece of equipment with moving components, conveyors can be unsafe if installed or operated improperly and they do not conform to specified safety regulations and codes. These potential safety hazards apply to conveyor maintenance as well as conveyor operation.

**Users and workers are obliged to respect work injury prevention regulations, both at legal and company level, and in particular must respect the following points:**



All the operational staff must not be under the influence of sedatives, drugs or alcohol.



All the operational staff must wear individual protective devices.

Maintenance personnel should always observe the following precautions when working on a conveyor.

1. Always wear the personal protective equipment required by the evaluation of the risk analysis and the current legislation;
2. Never touch moving conveyor parts as belts, pulleys, rollers or other components and never perform maintenance while a conveyor is in operation;
3. Before intervening, perform all electrical and mechanical safety measures required by the specific safety plans and / or current regulations;
4. Use suitable equipment and, if required, with appropriate certification;
5. Once the maintenance work has been completed, all the components and / or parts removed and / or tampered with in order to carry out the work itself must be restored;
6. Before starting the conveyor again, make sure that:
  - I. all tools and personnel are clear of any moving parts;
  - II. there are no operators near the conveyor;
  - III. all casings and guards previously removed have been reset.

Conveyor maintenance should only be carried out by trained personnel. Failure to follow proper safety precautions can lead to serious bodily injury.

### 4) PRODUCT DESCRIPTION

#### Terminology

The rollers are the essential support of the unit loads handled on the conveyors, whose movement is made by the rollers themselves in case of belt/chain driven roller conveyors.

The rollers are installed on a conveyor frame, which is not part of DUGOMRULLI supply.

The driven rollers are made to rotate by means of chains or belts.

## DESCRIPTION AND USE

Permanently lubricated Dugom “idle and driven rollers for unit handling roller conveyors” are typically manufactured for use in unit handling roller conveyors. They can be used also to support belt conveyors handling unit loads and in automatic machines as, for instance, wrapping machines, palletizers, etc. Normal expected functioning temperature ranges from -10°C to +90°C. Working temperatures different from those indicated must be notified in the ordering phase and would require the use of appropriate lubricants and bearings.



Dugom “idle and driven rollers for unit handling roller conveyors”, can be made of steel or plastic. Steel rollers can be coated with soft CPV, polyurethane, rubber etc. These aren't conductors and do not allow the loading on the conveyors frame of electrostatic loads.

## 5) STORAGE AND INSTALLATION

### STORAGE BEFORE INSTALLATION

The conveyors are often installed on the worksite. In this case, the rollers must be kept in the original packaging for the whole storage period.

The packaging has been designed in order to prevent oxidation and damage during the transportation and in order to prevent any damage to the workers when opening.



The packages may be not stackable.



Packages should be kept indoors during transport and subsequent storage.

### ASSEMBLY:

Assembly does not require special tools.

Some rollers are inserted in the slots of the frame (drop in).

Others are fixed by bolts.



Disassembly too does not require the use of any special tools and must always be done when the rollers are stationary and the motor is shut-off.



ATTENTION



Workers who carry out the installation must wear individual protective devices.



The belts or the chains driving the rollers must always be protected with appropriate covers to prevent any damage to the workers whenever the conveyors are accessible.

## 6) Ordinary maintenance

The rollers are permanently lubricated, therefore cannot be re-lubricated.

The free rotation of the rollers can be made difficult by

- the interposition of material, in particular between the rollers and their support, which prevents or slows down the rotation.
- the seizure/breakage of the bearings.

It is the role of the maintenance service to regularly inspect the system, and in particular, to:

- a. ensure that there is no accumulation of material or tools which prevents the rotation of the rollers.
- b. Check the state of wear and tear of the rollers while considering the following:
  - b1) The rollers were chosen according to the project duration indicated by the supplier of the conveyor. Once that duration period has expired, the installed rollers should be replaced, or at least subject to periodical checks.
  - b3) When they start to deteriorate, rollers lose smoothness and show anomalous wear and tear of the shell, which can be detected visually (first sign).
  - b4) Damaged bearings are noisy and this noise can be heard by maintenance workers (second sign).

Rollers which are apparently damaged must be disassembled while the system is stationary (see above) and replaced.



Special construction does not allow for the restoring of the product. Any repair work is therefore out of the question, as the original features of the roller cannot be reset.

Belt and chain tension should be checked and adjusted as needed to prevent excess wear, twisting or improper engagement with the pulleys or sprockets. Drive chain take-up should also be inspected and may need periodic adjustment since the chain tends to lengthen as wear occurs.