

Pallet chain conveyor

Maintenance of mechanical systems

The pallet chain conveyor at a glance

> Sections

- ✓ Industrial Maintenance

> Highlights & Key Activities

- ✓ Operating part that can be connected to a containment cabinet
- ✓ Assembly, disassembly and adjustment of the conveyor and gearbox
- ✓ Study of different sensor technologies and motor starters
- ✓ Wiring of the motor outlet
- ✓ More wiring stations thanks to removable cabinet board
- ✓ Polyprod and Ermaflex Cluster Subsystem

> Specific components

- ✓ One way pallet conveyor
- ✓ Dismountable three-phase asynchronous motor
- ✓ Proximity switch (CE51 only)
- ✓ Electrical starter box (CE50 only)
- ✓ Control panel with removable electrical board (Option CE52)

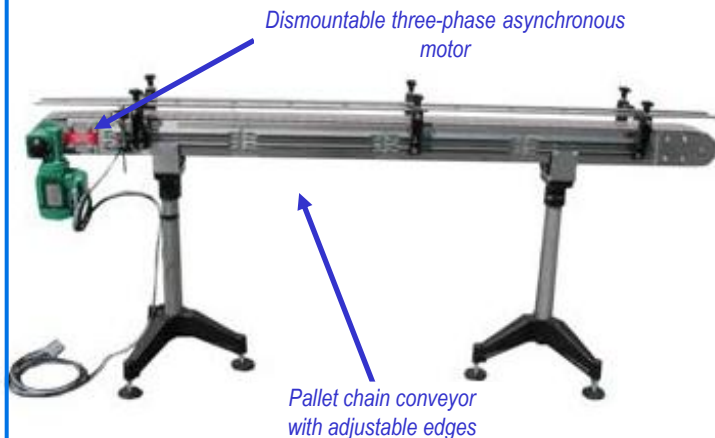
> Characteristics Conveyor

- ✓ L/ W/ H: 2210 x 500 x 1020
- ✓ Energy: Electrical: 400 V three-phase
- ✓ Mass: 73 kg.

> Features Cabinet

- ✓ L/ W/ H: 850 x 520 x 1600
- ✓ Energy: Electrical: 400 V three-phase
- ✓ Mass: 80 kg.

This system is accompanied by a technical file with SolidWorks assembly of the unit and fully modelled gearbox



Control cabinet with removable plate (Option CE52)

OU



Starter box (Integrated on CE50)

Références

- ✓ CE50 : Mechanical paddle chain conveyor with starter box
- ✓ CE51: Mechanical pallet chain conveyor (Operating part)
- ✓ CE52: Control panel with removable electrical board (To control CE51)

System architecture

Functional description

The conveyor allows products to be transferred in one direction

Mechanical paddle chain conveyor with starter box (CE50)

- ✓ It is mainly made up of:
 - A pallet conveyor with :
 - adjustable edges
 - removable three-phase asynchronous motor
 - 2 adjustable tripod legs (height)
 - Adjustable motorized conveyor head (chain tension)
 - adjustable return conveyor head (chain tension)
 - A starter kit with :
 - three-phase disconnecting switch
 - lockable emergency stop (1/4 turn)
 - short circuit and overload protection
 - push button control: on (I white) off (O black)



Mechanical paddle chain conveyor (Operating part) (CE51)

- It is mainly made up of:
 - A pallet conveyor with :
 - adjustable edges
 - removable three-phase asynchronous motor
 - 2 adjustable tripod legs (height)
 - Adjustable motorized conveyor head (chain tension)
 - adjustable return conveyor head (chain tension)
 - photoelectric proximity switch



System architecture

Spare accessories supplied with CE50 and CE51 Conveyors

- ✓ Traction wheel
- ✓ Idler wheel
- ✓ Paddle chain
- ✓ Gear motor shaft bearing
- ✓ Gearbox

Control cabinet with removable electrical board (CE52)

- ✓ It mainly contains:
 - Removable turntable
 - Potentiometer
 - Variable speed drive
 - Indicator lights, control and reset push buttons, emergency stop button

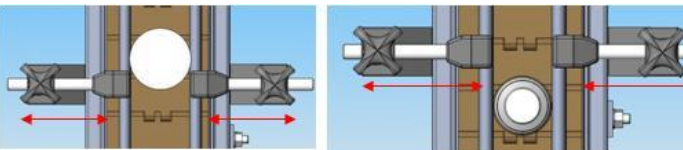


Removable board for wiring activities

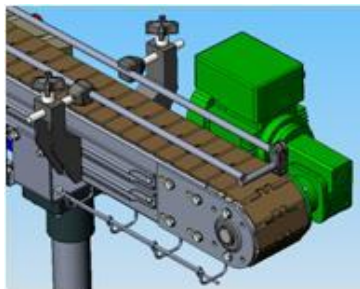
Pedagogical approach

Educational activities

- ✓ Motor connection and coupling
- ✓ Energy logging
- ✓ Mechanical study on 3D Solidworks volume modeler
- ✓ Study and analysis of parts and/or materials
- ✓ Edge adjustment



- ✓ Tension of the paddle chain
- ✓ Changing the gearbox
- ✓ Work on the gearbox (dismantling)



Examples of practical work proposed by ERM

- ✓ TP1: Intervention on the gearbox
 - Recording of equipment
 - Removal of the geared motor
 - Development of the bearing disassembly/reassembly range
 - Replacement of supplied bearings
 - Deconsolidation of equipment
 - Commissioning
 - Writing a report of the intervention
- ✓ TP2: Electrical Wiring
 - Analysis of the control scheme
 - Justification of the coupling of the three-phase asynchronous motor.
 - Wiring of the gear motor test board from the diagrams
 - Deconsolidation of the cabinet
 - Commissioning
- ✓ TP3: Functional analysis and study of the mechanical solutions from the Solidworks drawings of the conveyor and the gearbox.