

## **CHAIN CONVEYOR KCC 40**

# **Chain Conveyor KCC 40**

# **Operation and Maintenance Manual**

## **CHAIN CONVEYOR KCC 40**

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## CHAIN CONVEYOR KCC 40

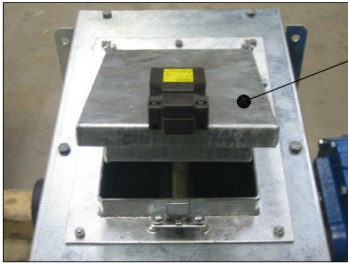
### 1. Declaration of conformity

EC Declaration of Conformity	<b>CE</b>
Kongskilde Kongskilde Maskinfabrik A/S Skælskørvej 64 DK 4180 Sorø	
This is to declare that the machine CHAIN CONVEYOR KCC 40 has been manufactured in accordance to provisions of the COUNCIL DIRECTIVE on the approximation of the laws of the Member States relating to machinery (98/37/EC, Clause 1).	
The chain conveyor is an appliance designed for horizontal transportation of crop grains, seeds and granulates with the maximum inclination angle of 7°. Maximum capacity of the chain conveyor KCC 40 is 40 tons per hour.	
Moreover, the appliance meets requirements of the following standards and codes: Regulation of the Danish Labour Surveillance Authority No BEK 561 of 24/06/1994 with further amendments in regulations No BEK No 669 of 07/08/1995 and BEK No 831 of 27/11/1998.	
Sorø, 06 <sup>th</sup> December 2007	

## **CHAIN CONVEYOR KCC 40**

### **2. Safety**

The chain conveyor is equipped with a protecting cover to prevent the machine from overfilling as well as the safety switch that is tripped when the cover is being opened or is pushed outwards by excess of material conveyed by the appliance.



In addition, the chain conveyor should be equipped with a main power switch locked with a key. This switch is to be used to shutdown the conveyor before dismantling its covers to prevent the machine from unintentional starting up. The safety switch must be placed on the conveyor or within its working area.

### **ALL THE COVERS AND GUARDS MUST ALWAYS BE IN PLACE WHEN THE MACHINE IS RUNNING.**

Protective covers and other guard must be dismantled for repairs. To perform such maintenance and repair operations the conveyor chain must be started from time to time.

Therefore, the operations must be always carried out in witness of authorized and competent staff. When any work inside the conveyor body is in progress, the safety switch must be disconnected and access to it must be secured with a key lock.

It is forbidden to use the electric motor to restart the clogged elevator by short on and off voltage pulses supplied to the motor in short time intervals as such attempts may lead to failure of the motor or the pulling module.

### **Safety rules:**

The assembling team, the plant owner and operators must learn and be familiar with the safety rules included into this manual as well as general safety rules effective at the workplace. All the safety rules must be strictly observed.

Any negligence to these issues may lead to serious occupational accidents whilst incorrect operation is often a reason for downtimes and decrease of the plant performance.

### **Safety rules must always be obeyed:**

Read operation manuals, observe safety decals placed on the machine and follow all the applicable safety rules.

Never remove the safety decals. Replace worn or damaged signs with new ones.

## CHAIN CONVEYOR KCC 40

Learn how to operate the appliance in correct manner and never allow inexperienced persons to run the machine.

In any functionalities of the machine or operation of its parts is not fully clear contact the supplier or an authorized representative of the manufacturer to avoid any mistakes in the machine operation.

Wear always a helmet, safety goggles and protecting shoes during operation of the machine and the maintenance work in accordance to the general safety rules.

### **Be ready that something wrong may happen at any time:**

First-aid kit(s) should be placed in easy accessible, purposefully marked locations, clearly visible and known to anyone involved or staying within the vicinity.

Information board with emergency phone numbers (ambulance service and fire brigades) must be placed at visible locations.

Fire extinguishers should be available at hand.

Information with the list of persons authorized to operate the main power switch along with contact details of them must be placed at central locations.

### **Rotating parts of machinery pose hazards.**

All the safety guards and covers should be always in place to prevent from accidental contacts between rotating parts of machinery and limbs of human bodies or loose clothes as such contacts may lead to heavy injuries.

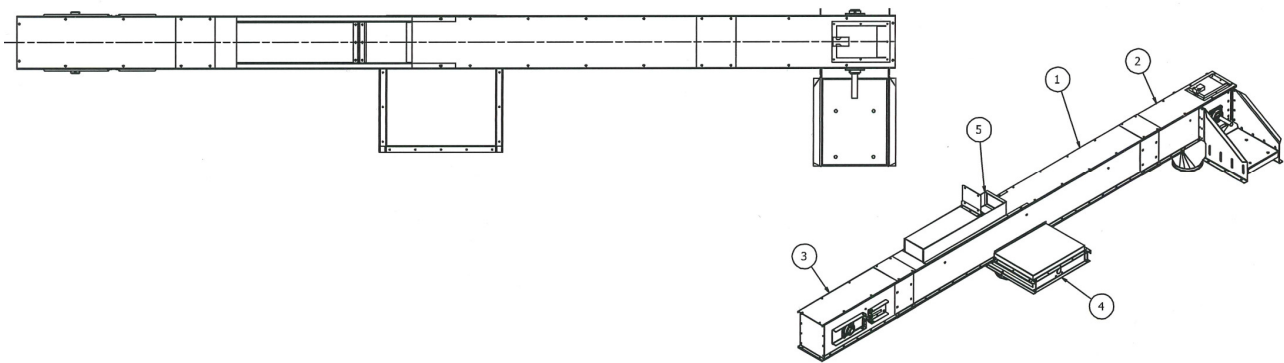
During maintenance work all the electric circuits must be disconnected and reliably secured against accidental or unintentional reclosure by third persons. Switch the electric supply off and disable reclosure at as many levels as possible.

Clothes and overalls that are worn for maintenance work should be snug-fitting to the body.

## CHAIN CONVEYOR KCC 40

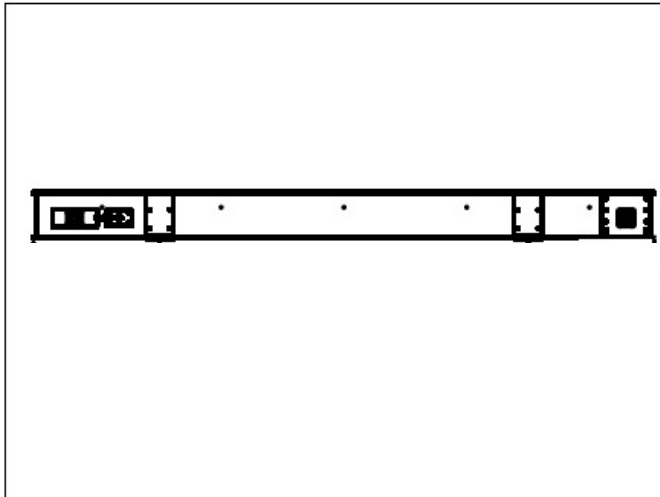
### 3. Assembly and installation

The chain conveyor is made up of the following components: tensioning unit (2), discharge head (3), extension unit (1), chain and intermediate outlet (4).



The extension unit channel should be adjusted to the required length, where the HDPE board serves as a bottom lining whilst the side walls and upper cover are made of steel. The following bolts are used for assembly of the channel.

## CHAIN CONVEYOR KCC 40



Typical conveyor

Assembly to the desired length  
Discharge head and tensioning unit are preassembled at factory.

The following bolts are used to assembly the conveyor:

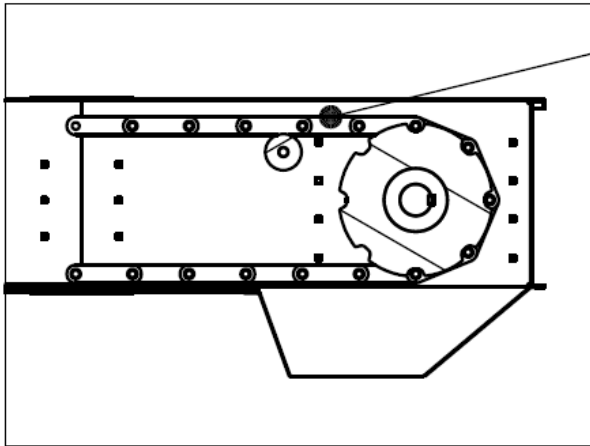


1. KCC 40: 10 x20 mm
  - KCC 60: 10 x 20 mm
  - KCC 80: 10 x 20 mm
  - KCC 100: 10 x 20 mm
  - KCC 120: 10 x 20 mm
2. KCC 40: 8 x 25 mm
  - KCC 60: 8 x 25 mm
  - KCC 80: 8 x 25 mm
  - KCC 100: 10 x25 mm
  - KCC 120: 10 x 25 mm
3. KCC 40: 8 x30mm
  - KCC 60: 8 x 30 mm
  - KCC 80: 8 x30 mm
  - KCC 100: 10 x 30 mm
  - KCC 120: 10 x 30 mm
4. KCC 40: 8 x 16mm
  - KCC 60: 8 x 16 mm
  - KCC 80: 8 x16 mm
  - KCC 100: 10 x 20 mm
  - KCC 120: 10 x 20 mm

## CHAIN CONVEYOR KCC 40

If more than one outlet (discharging hopper) is needed, the bottom board must be adjusted to the outlet location(s).

The discharge head and the tensioning unit are assembled together with the extension unit.



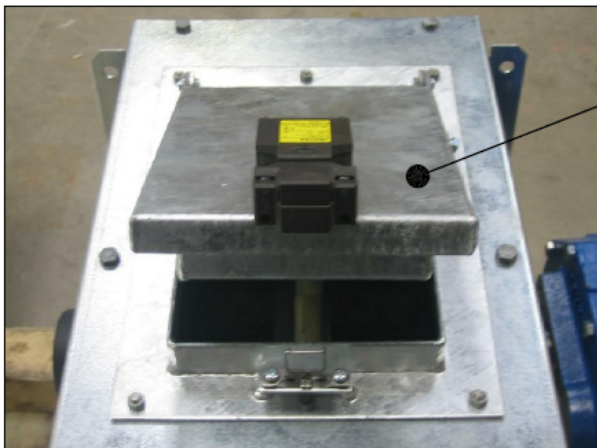
Install the chain and push plates in the following way:

1. Fully release the tensioning unit.
2. Take the chain off, adjust its length and lock the snap link.
3. Tension the chain with use of the tensioning unit.
4. Reinstall all the guards and covers.



Switch the power on.

1. All the covers and guards must be in place.
2. Electric connections must be installed by an authorized electrician.
3. Check direction of conveying



Install the safety switch that is triggered on overfilling, check its operability.

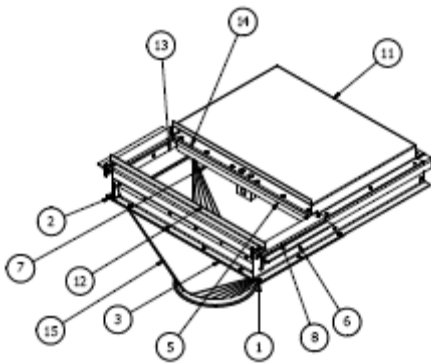
Prior to install that switch make sure that the main power switch, lockable with a key, is in place on the conveyor or within the closest vicinity.



## CHAIN CONVEYOR KCC 40

Intermediate outlets can be mounted down the conveyor track as needed. Intermediate outlets represent gate valves placed in tight boxes. Gate valves at intermediate outlets are equipped with a solenoid actuator and sensor contacts. The sensors make it possible to display status of gate valves on the control panel and to indicate whether the gate is open or closed. Intermediate outlets can be also furnished with electric motors, worm gear and the same control system as in case of the pneumatically-actuated gate valves.

The intermediate outlet can be also go with a hand-operated gate valve.



The intermediate outlet is made up of the frame, the gate valve of the PE board combined with a pneumatic cylinder. To mount the outlet it is necessary to make an opening in the conveyer bottom at the location of the outlet and then attach the outlet frame to the conveyer frame and bottom plate by means of bolts.

## CHAIN CONVEYOR KCC 40

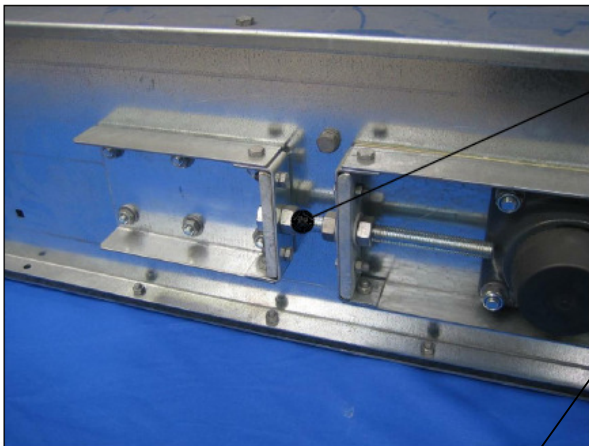
### 4. Instructions for operation

**The machine must be started up prior to open the material supply.**

**To shut down the conveyor it is first necessary to cut off material supply to the conveyor and then let the machine run until all the supplied material is discharged. Only after having the conveyor emptied its engine can be stopped.**

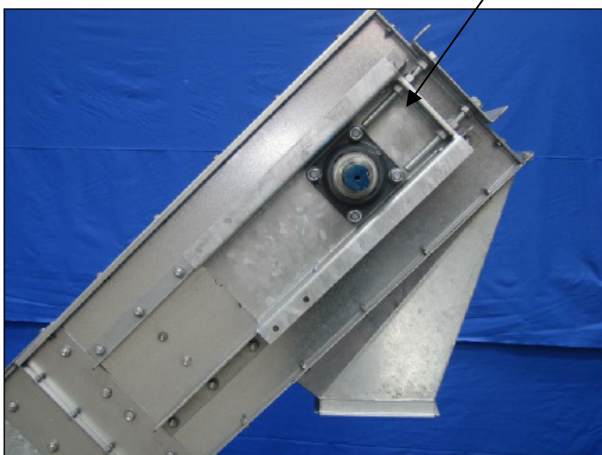
The chain conveyor is operated continuously in collaboration with other components of the line. During everyday operation of the machine the operator should pay attention to any unusual noise that may be heard from the conveyor. The reasons for such a noise can be the following:

- a. Loose driving or reverse pulley sprockets on their shafts that results in runoff of the chain, the chain is misaligned and hits the conveyor enclosure. If so, pulley sprockets must be centred, aligned and screwed tight.
- b. Excessive slack of the chain – the chain must be tensioned.



Regular adjustment of the chain tension is carried out with use of the chain tensioning screw of the conveyor.

If necessary, the chain can be also tensioned at the end of the discharge head.



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- a. Check chain and push-plates for possible damages that may be caused by foreign bodies trapped inside the conveyor. Replace defective parts and check whether the chain can move with no obstacles.
- b. Check for loose or missing components and pay particular attention to push plates, reversing rolls, bearings and bolts that fix all these parts together.
- c. Be vigilant when the motor or the transmission gear is the actual source of noise. Every time, when such components run noisily it may lead to breakdowns thereof.
- d. Monitor the conveyor for mechanical damages, such as blistering, perforations, deformations of panels, side walls or guards.
- e. Inspect all the other equipment of the line, sometimes the conveyor can transfer or amplify noise produced by other components of the plant.

For inspection and maintenance operations of the transmission gear and the motor please refer to relevant operation manuals provided by manufacturers of that equipment.

## **CHAIN CONVEYOR KCC 40**

### **5. Guarantee**

The guarantee covers the manufacturing process and materials of the delivered equipment. The guarantee is applicable provided that the equipment is operated and maintained in accordance to this manual and used for the intended purpose.

The guarantee terms assume repairs of defects and failures within the delivered equipment but explicitly exclude any implied or consequential loss, if any.

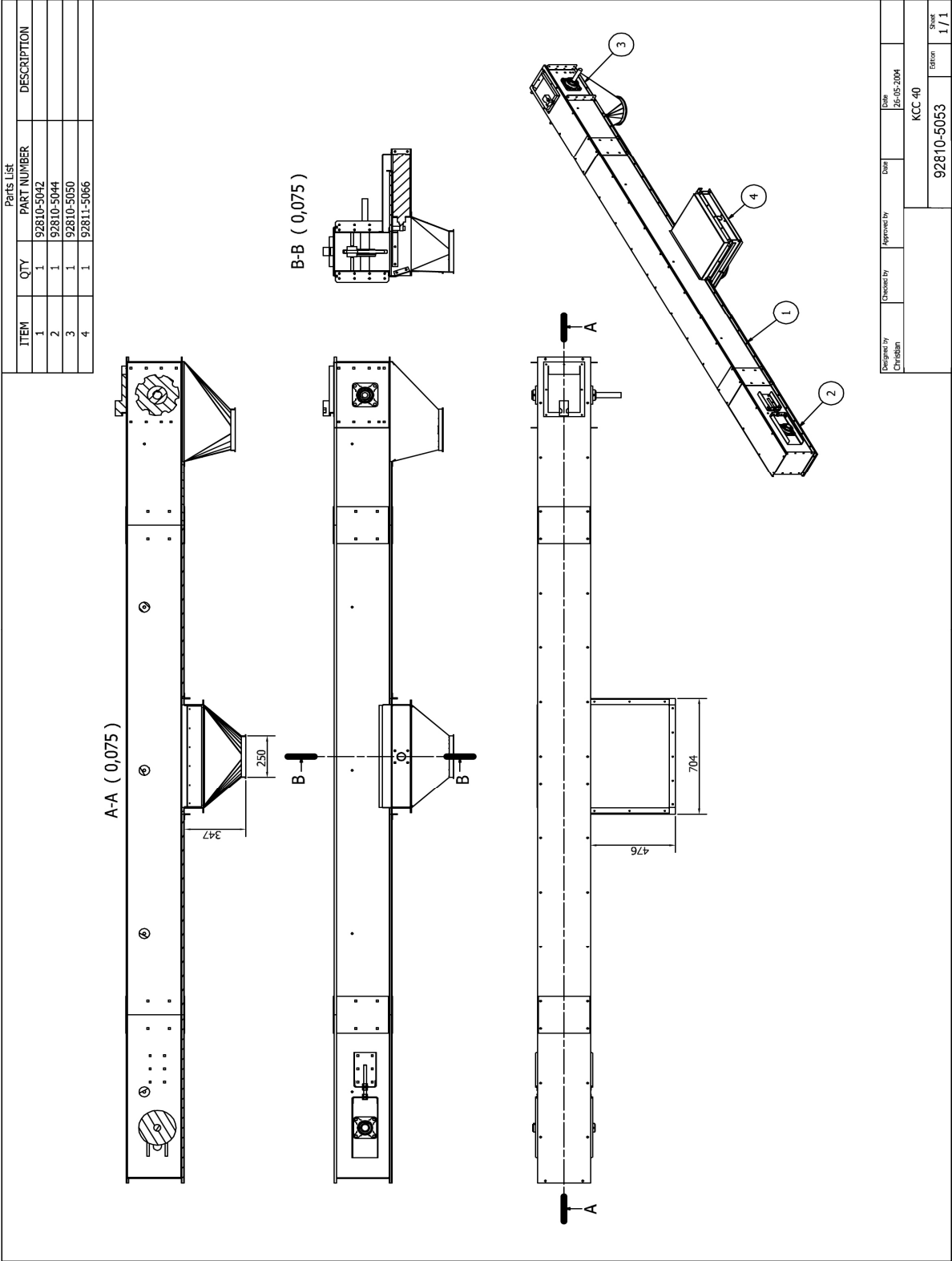
During the guarantee period, all repairs or replacement of defective components can be carried out solely under a preliminary consent and acceptance from the manufacturer.

With regard to the applied motors, terms of guarantees assumed by manufacturers of such motors are effective.

The guarantee period is defined by the relevant regulations in force.

### **6. Assembly drawings and spare parts**

CHAIN CONVEYOR KCC 40



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Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	92810-0000	
2	1	92810-0001	
3	1	92810-0002	
4	1	92810-0003	
5	2	92810-0004	
6	1	92810-0005	
7	1	92810-0442	
8	3	92810-5043	

The diagram illustrates a mechanical assembly. The top view shows a rectangular frame with a central vertical support. Dimensions include a total width of 310, a central support width of 210.5, and a base thickness of 230 and 290. A callout '8' points to a central vertical component. The side view shows a long rectangular component with a length of 2970. A perspective view shows the assembly with callouts 1 through 7 pointing to various components and 8 pointing to the central vertical component.

CHAIN CONVEYOR KCC 40

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	92810-0035	
2	1	92810-0036	

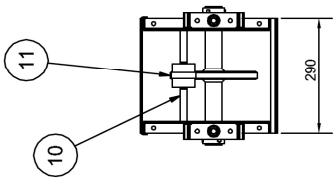
Technical drawing of a chain conveyor component. The drawing includes a top view, a side view, and an isometric view. The top view shows a circular flange with a central hole and a diameter of 55mm. The side view shows a cylindrical component with a total height of 230mm. The isometric view shows the component with two callouts: '1' pointing to the central shaft and '2' pointing to the flange.

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			Sheet 1 / 1

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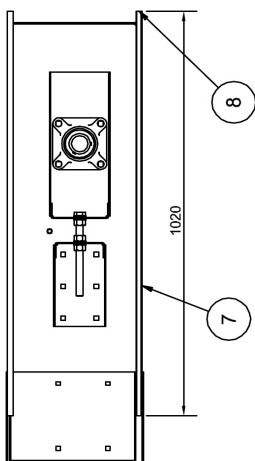
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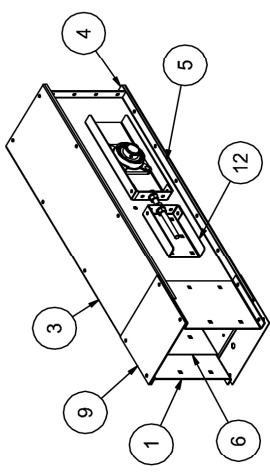
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8





Parts List			DESCRIPTION
ITEM	QTY	PART NUMBER	
1	2	92810-0004	
2	1	92810-0005	
3	1	92810-0011	
4	1	92810-0013	
5	1	92810-0023	
6	1	92810-0024	
7	1	92810-0025	
8	1	92810-0026	
9	1	92810-0442	
10	1	92810-5043	
11	1	92810-5045	
12	2	92810-5048	

Designed by  
Christian

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Approved by - data

Date  
26-05-2004

KCC 40

92810-5044

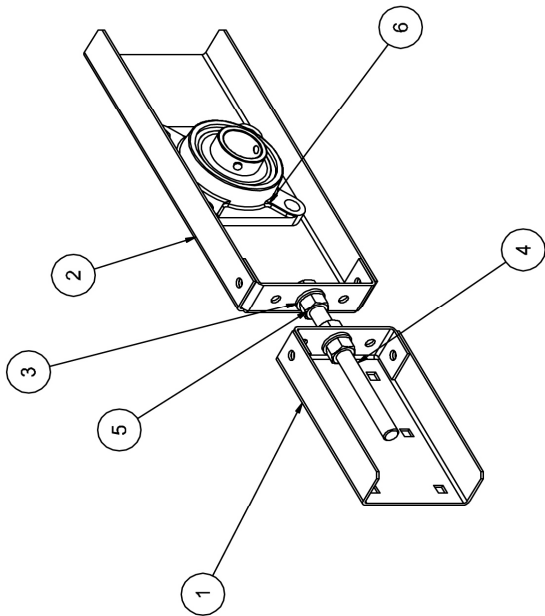
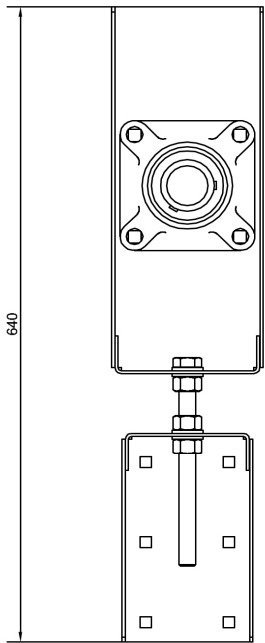
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# CHAIN CONVEYOR KCC 40

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	92810-0028	
2	1	92810-0030	
3	4	DIN 125 - A 17	
4	1	ISO 4017 - M16 x 200	
5	3	ISO 4032 - M16	
6	1	UCF generico	



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CHAIN CONVEYOR KCC 40

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Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	92810-0009	
2	1	92810-0010	
3	1	92810-0011	
4	1	92810-0013	
5	2	92810-0014	
6	1	92810-0015	
7	1	92810-0016	
8	1	92810-0017	
9	1	92810-5051	
10	1	10-5061	
11	1	JSNY5A	
12	2	UCF generico	

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Christian			19-05-2004

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