CHAIN CONVEYOR KCA 60

Chain Conveyor KCA 60

Operation and Maintenance Manual

CHAIN CONVEYOR KCA 60

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CHAIN CONVEYOR KCA 60

1. Declaration of conformity

EC Declaration of Conformity	CE

Kongskilde
Kongskilde Maskinfabrik A/S
Skælskørvej 64
DK 4180 Sorø

This is to declare that the machine CHAIN CONVEYOR KCA 60 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 45°.
Maximum capacity of the chain conveyor KCA 60 is 60 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, 06th December 2007

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2. Safety

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 always be 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 conveyor 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 transmission.

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 decease 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.

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.

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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.

Set up main electrical emergency stop switches 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.

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3. Assembly and installation

Drive section – return section – tightening section – angle section – extensions – extensions with side inlet are all delivered assembled.

The sections are assembled to the desired lengths. The conveyor can be mounted at an angle up to 45 degrees.

Please observe the angle section is turning the right way. On the upper surface the lid is divided. The short end must be horizontal, partly for reasons of cleaning of the angle section as well as the subsequent tightening of the chain.

The horizontal section before the angle section has a plate for the return chain which goes into the angle section.

It is very important that the chain has the proper tightening. This is controlled by dismantle one of the top plates and pushing to the center of the chain with a finger. When the chain has the right tension it may max. be moved 20 mm.

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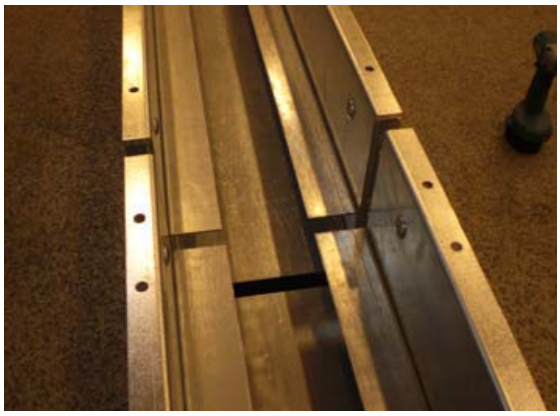
Check that all connections of the bottom plates are facing each other to make sure that there are no edges the plastic paddles may encounter. Return rails have also to be checked and adjusted if necessary. Loosen the bolts and move the nearest rails up or down if necessary



The conveyor has to be supported at both ends, and with a max. distance of 4.5 meters between the supports. It is important that the support of the drive section is making sure that the drive section is not out of angle, because of the weight of the gearbox and motor

The conveyor has to be installed horizontally in the sideways direction.

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If more than one outlet (discharge hopper) is needed, the PEHD plastic bottom board must be adjusted to the outlets location(s).
The drive section and tightening section are assembled together with the extension sections.

Mount chain with paddles, and:

1. Fully release the tensioning unit.
2. The chain is pulled into the conveyor, adjusted in length and assembled.
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

Emergency stop with key lock is used when performing maintenance and repair.

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 also be furnished with electric motors, worm gear and the same control system as in case of the pneumatically-actuated gate valves.

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

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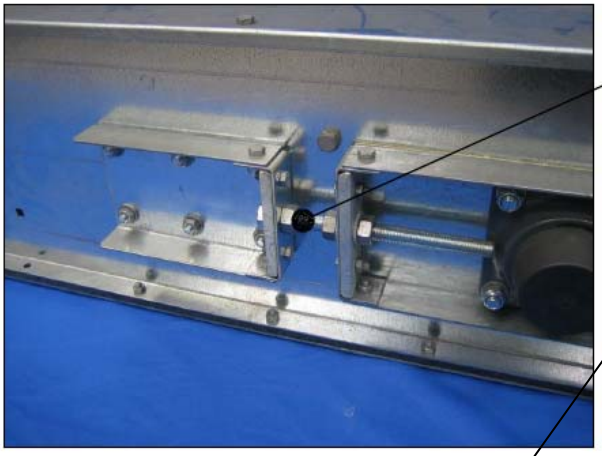
4. Instructions for operation

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

To shut down the conveyer 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.

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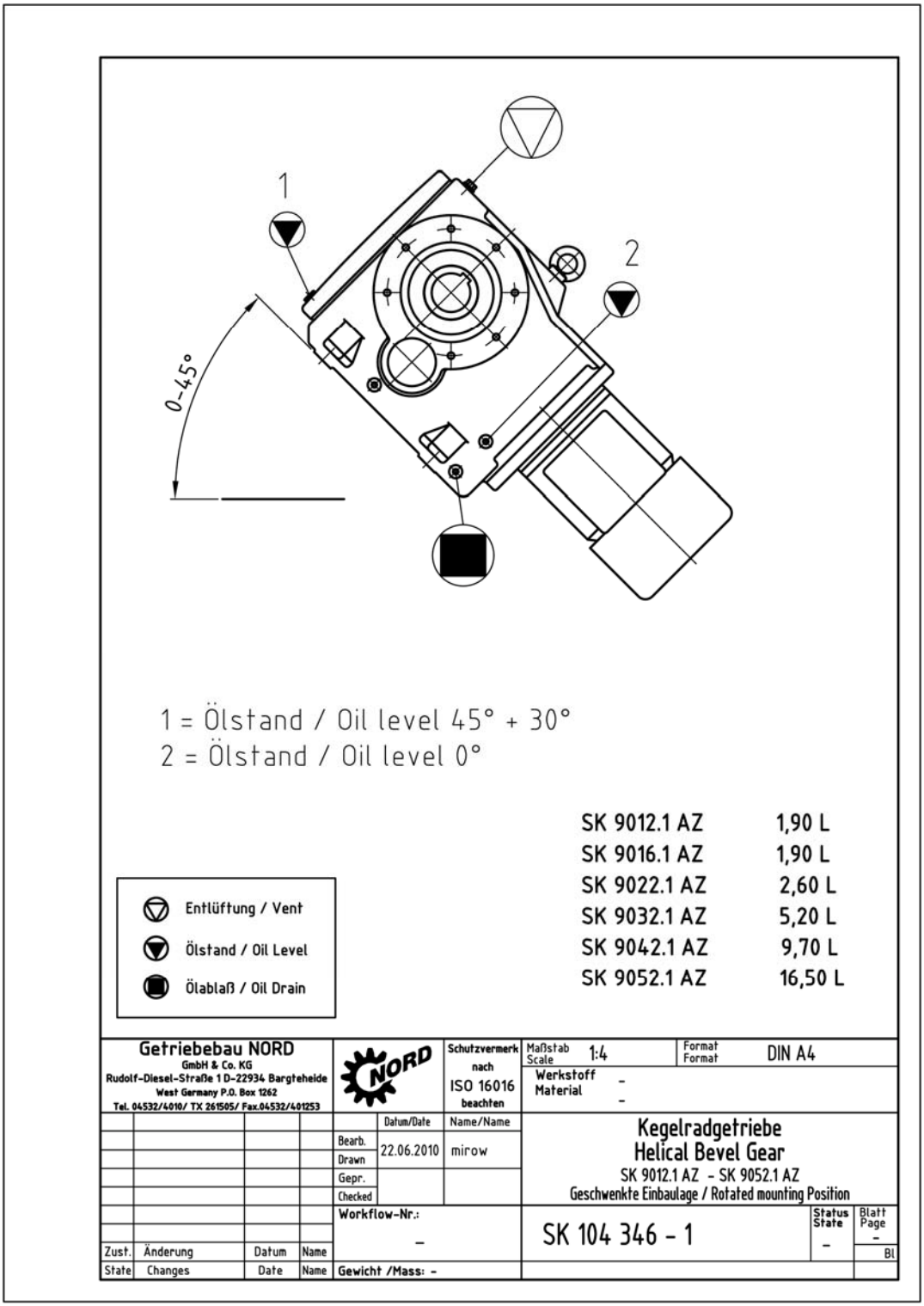

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5. Guarantee

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.

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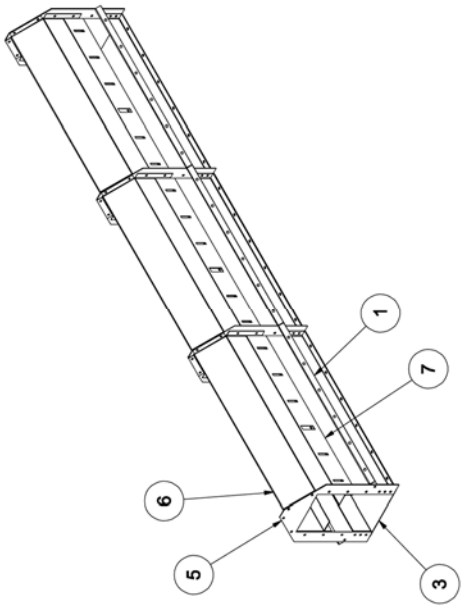
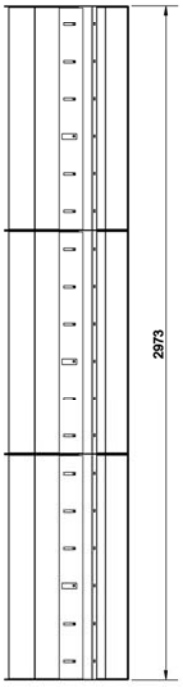
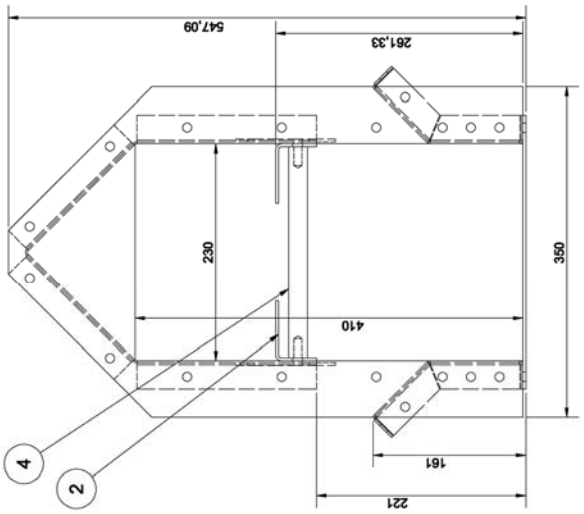
Parts List

ITEM	PART NUMBER	DESCRIPTION	MASS	QTY
1	928-11-0294	Plade sideindl.	3,8 kg	6
2	928-16-0279	Skinne returkæde	7 kg	2
3	928-52-0001	Bundplade	20,2 kg	1
4	928-52-0226	Aksel	,5 kg	3
5	928-52-0293	Skilleplade sideindl.	1,7 kg	4
6	928-52-0295	Tag sideindl.	11,6 kg	3
7	928-52-0629	Begrænser plade	2,3 kg	6



Mass N/A
Area N/A
Density N/A
Designed by Christian
Checked by
Approved by
Date
Date 12-08-2005
KCA 60 - Sideindløb
928-52-5041
Edition
Sheet 1 / 1





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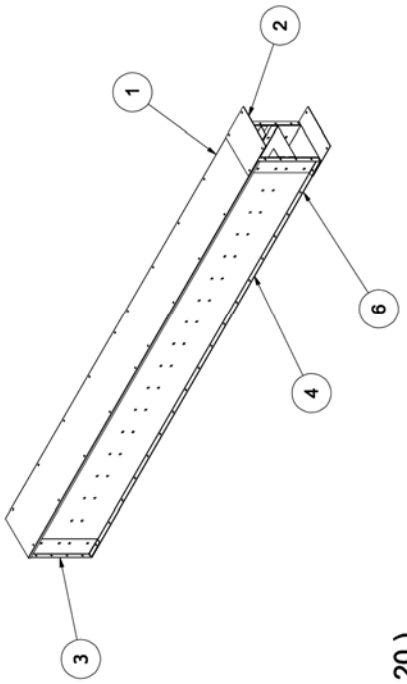
Parts List

ITEM	PART NUMBER	DESCRIPTION	MASS	QTY
1	928-10-0003	Topplade	14,9 kg	1
2	928-10-0442	Samlelaske	1,5 kg	2
3	928-16-0271	Samlelaske side	1,4 kg	4
4	928-16-0276	Sideplade	21,5 kg	2
5	928-16-0279	Skinne returkæde	7 kg	2
6	928-52-0001	Bundplade	20,2 kg	1
7	928-52-0277	Deleplade	21,3 kg	1



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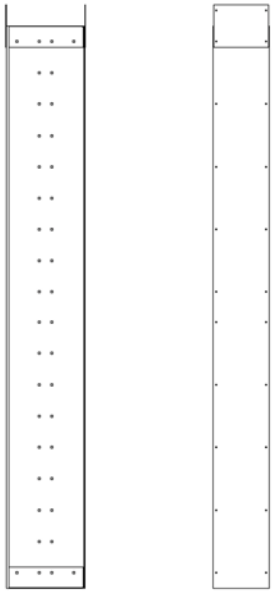

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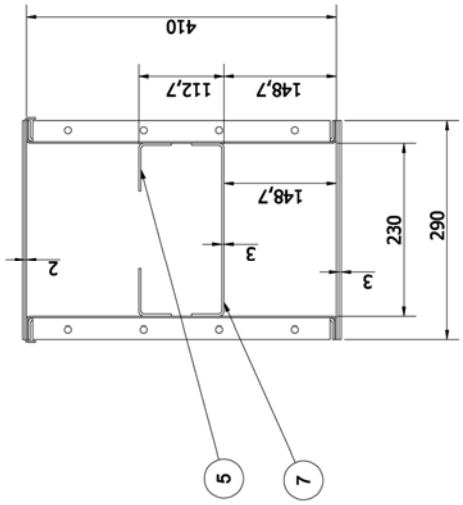

Mass N/A	Designed by Christian	Checked by	Approved by	Date	Date 10-07-2005
Area N/A					KCA 60 - Forl. 2970
Density N/A					928-52-5042
					Edition Sheet 1 / 1

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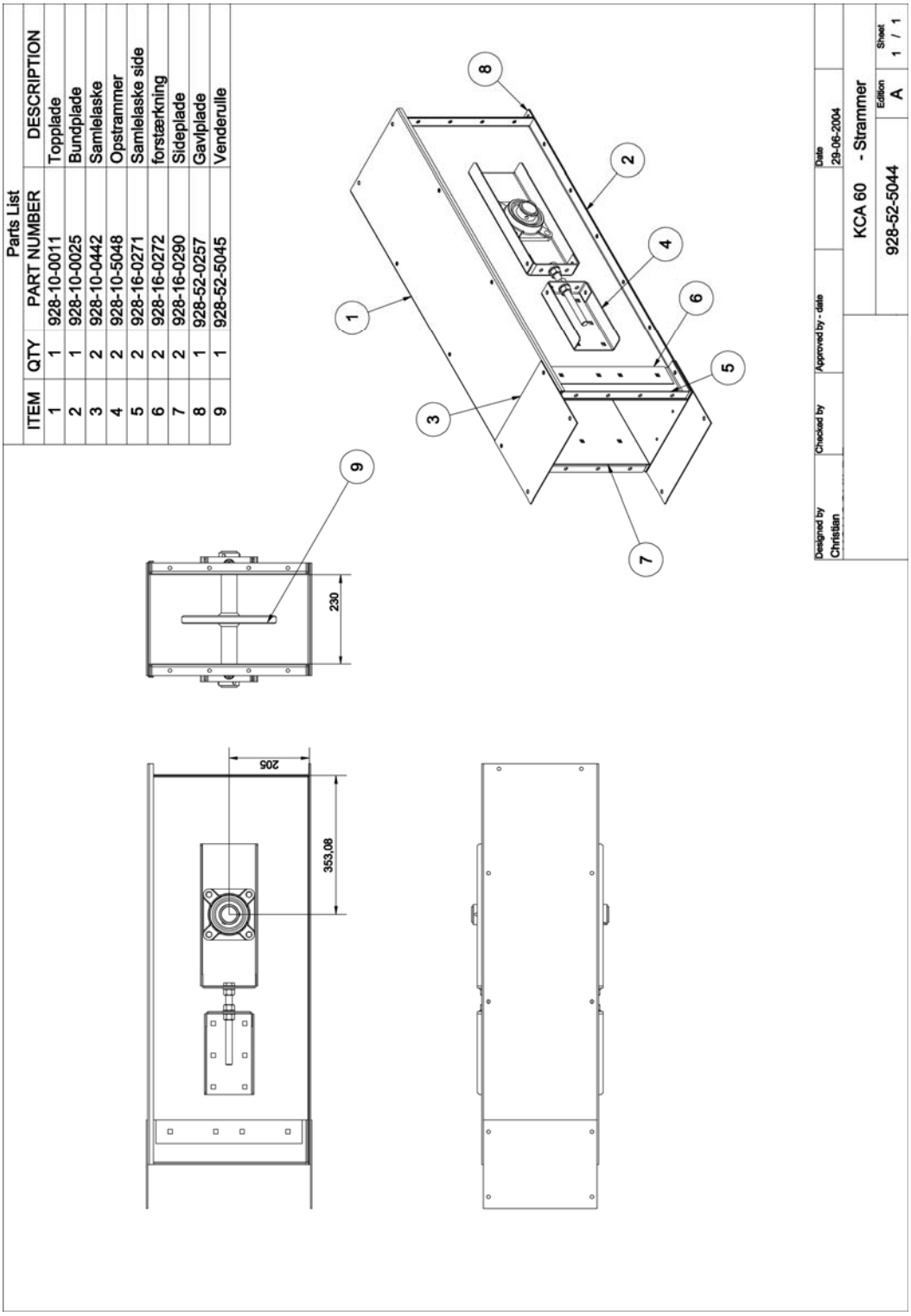
Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	928-10-0011	Topplade
2	1	928-10-0025	Bundplade
3	2	928-10-0442	Samlelaske
4	2	928-10-5048	Opstrammer
5	2	928-16-0271	Samlelaske side
6	2	928-16-0272	forstærkning
7	2	928-16-0290	Sideplade
8	1	928-52-0257	Gavlplade
9	1	928-52-5045	Venderulle



Designed by Christian
Checked by
Approved by - date
Date 29-06-2004
KCA 60 - Strammer
928-52-5044
Edition A
Sheet 1 / 1

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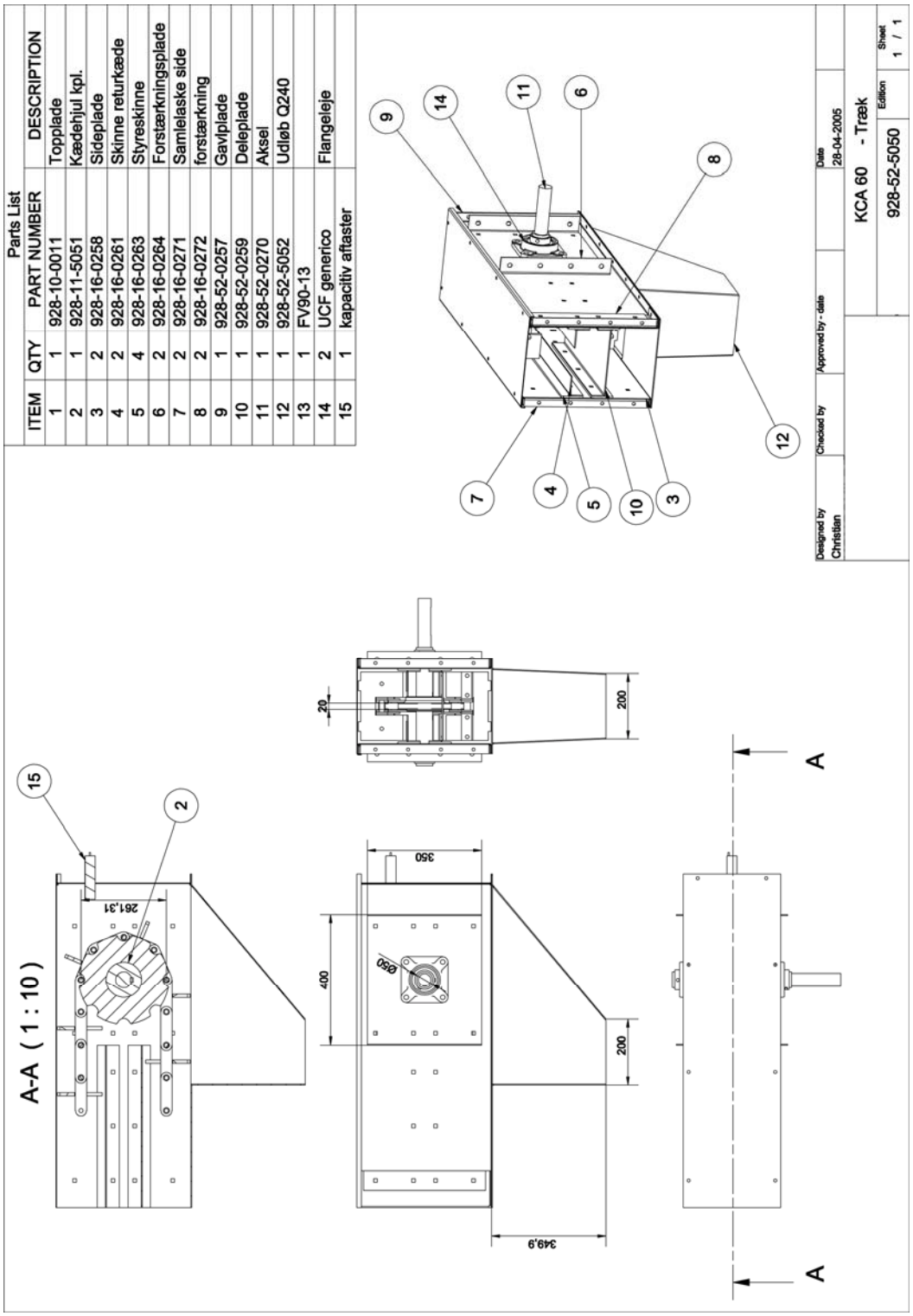

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	928-10-0011	Topplade
2	1	928-11-5051	Kædehjul kpl.
3	2	928-16-0258	Sideplade
4	2	928-16-0261	Skinne returkæde
5	4	928-16-0263	Styreskinne
6	2	928-16-0264	Forstærkningsplade
7	2	928-16-0271	Samlelaske side
8	2	928-16-0272	forstærkning
9	1	928-52-0257	Gavlplade
10	1	928-52-0259	Deleplade
11	1	928-52-0270	Aksel
12	1	928-52-5052	Udløb Q240
13	1	FV90-13	
14	2	UCF generico	Flangeleje
15	1	kapacitiv aftaster	

Designed by Christian | Checked by | Approved by - date | Date 28-04-2005

KCA 60 - Træk

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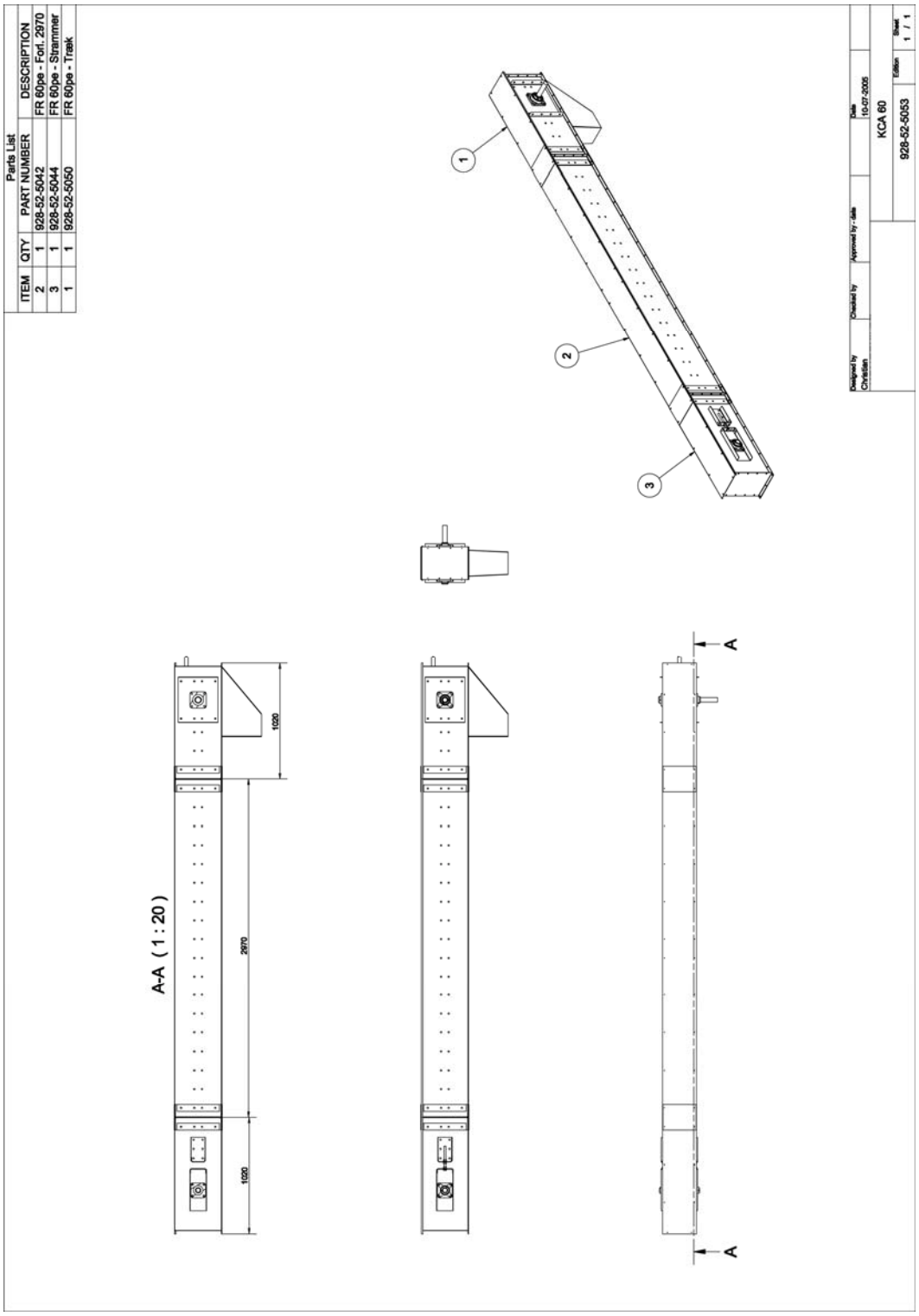

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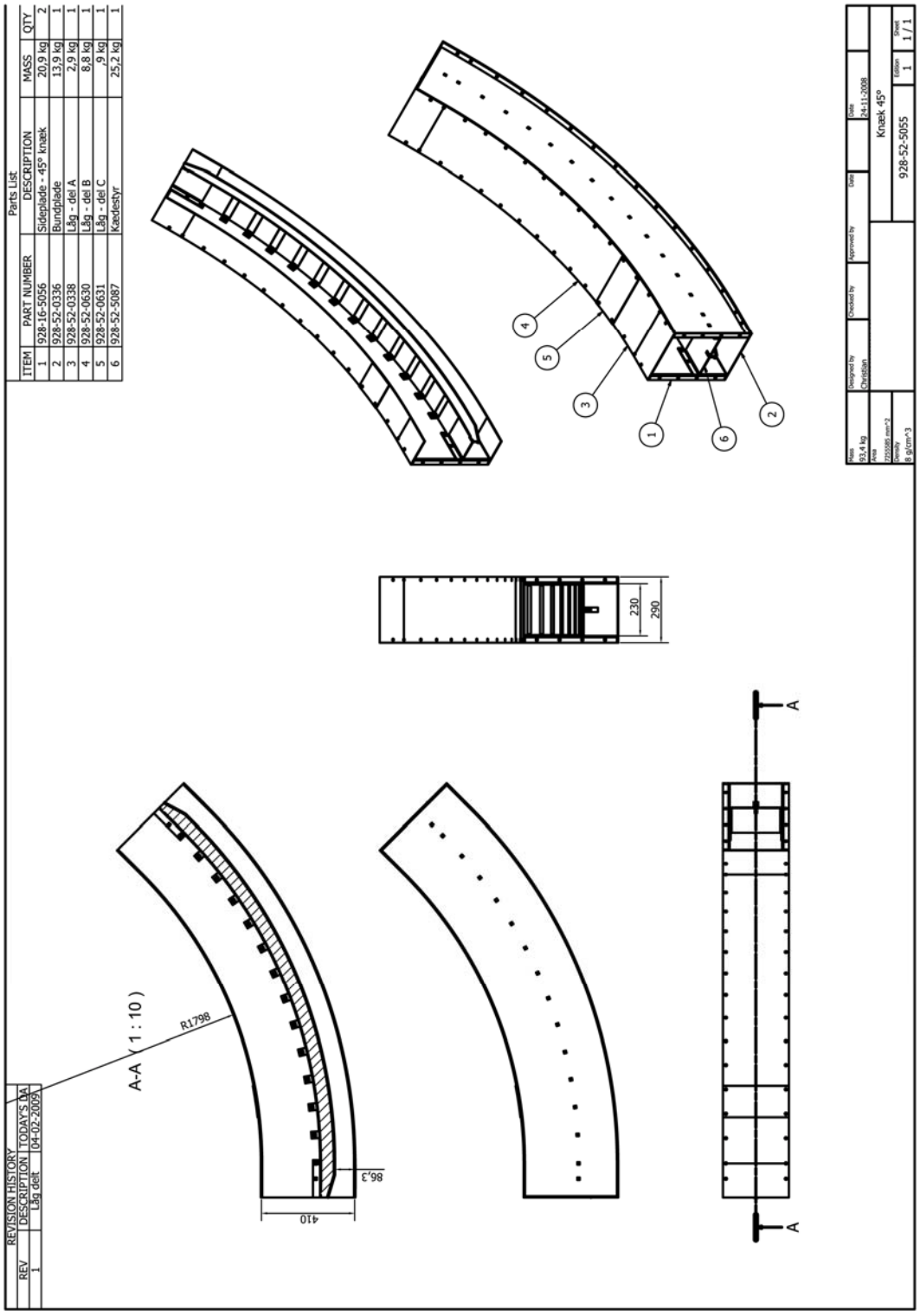

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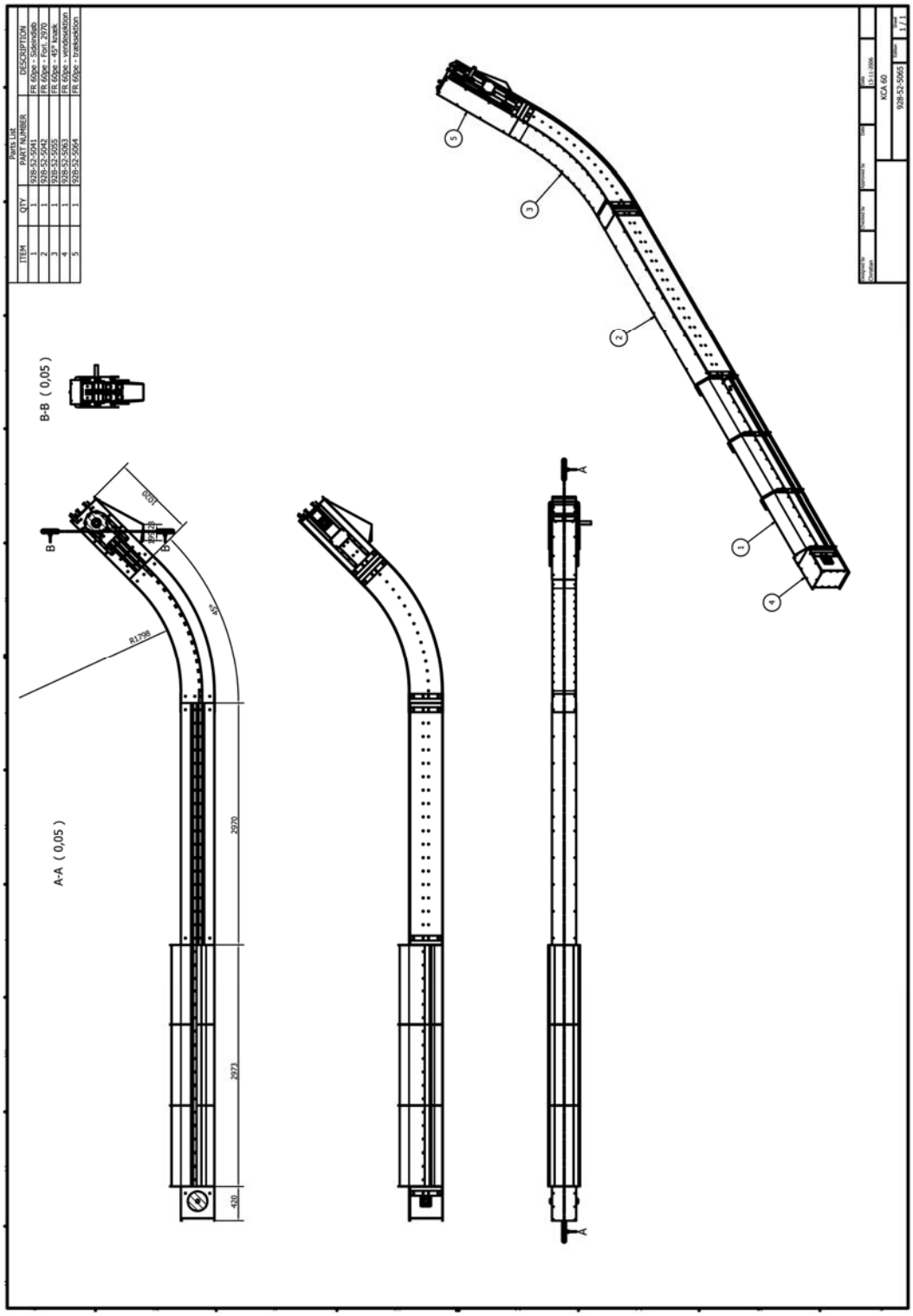

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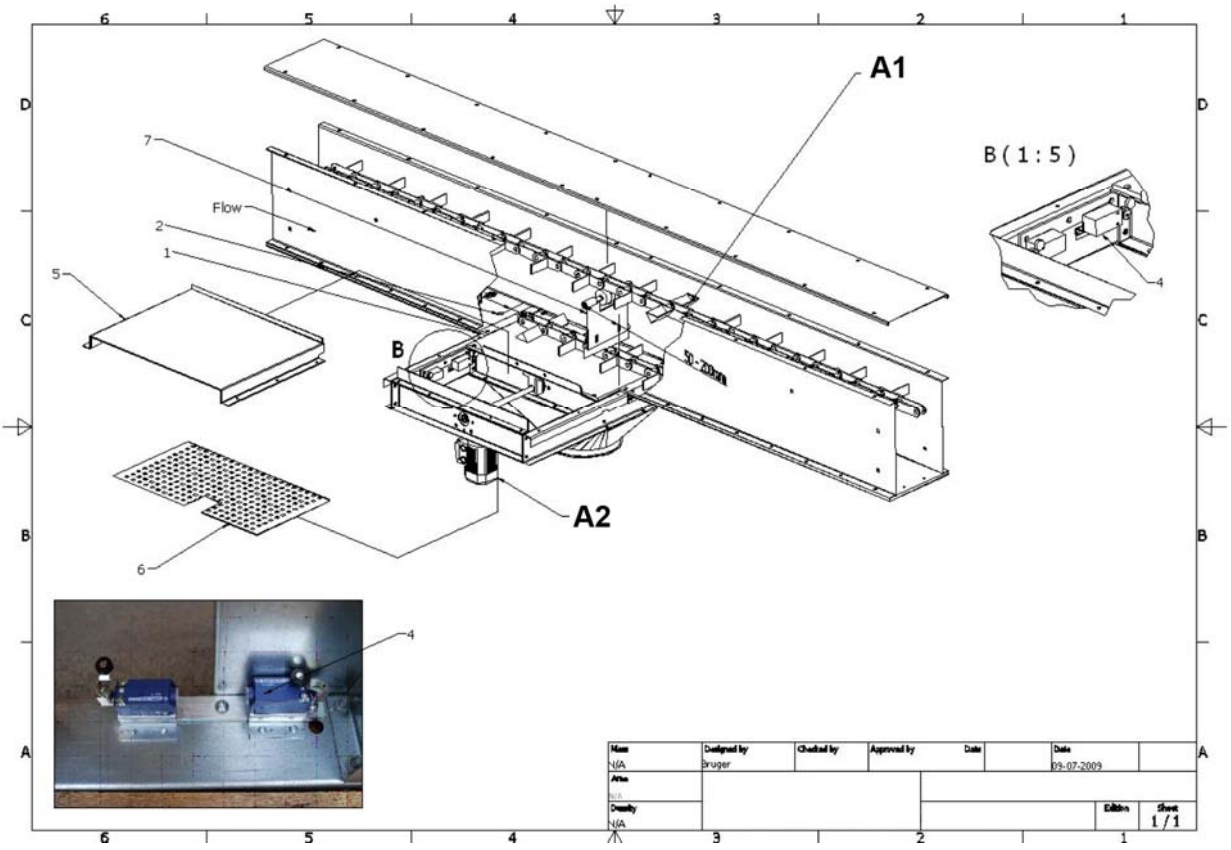

Intermediate outlet

1. Make a cutout for the intermediate outlet in the bottom plate and the plastic plate.
2. Mount 2 countersunk 6 x 16 screws, at each side of the intermediate outlet
3. Mount the intermediate outlet.
4. Adjust switches to stop the motor before the plate is in the two extreme positions.
5. Mount top guard
6. Mount safety guard
7. Mount brush; check that the chain will be swept clean

A1
If the intermediate outlet is used as outlet at the end of the conveyor, the chain has to be mounted with return buckets.

A2
Only to be opened and closed once the chain of the conveyor is operating (otherwise there could be a collision between the plate and chain)