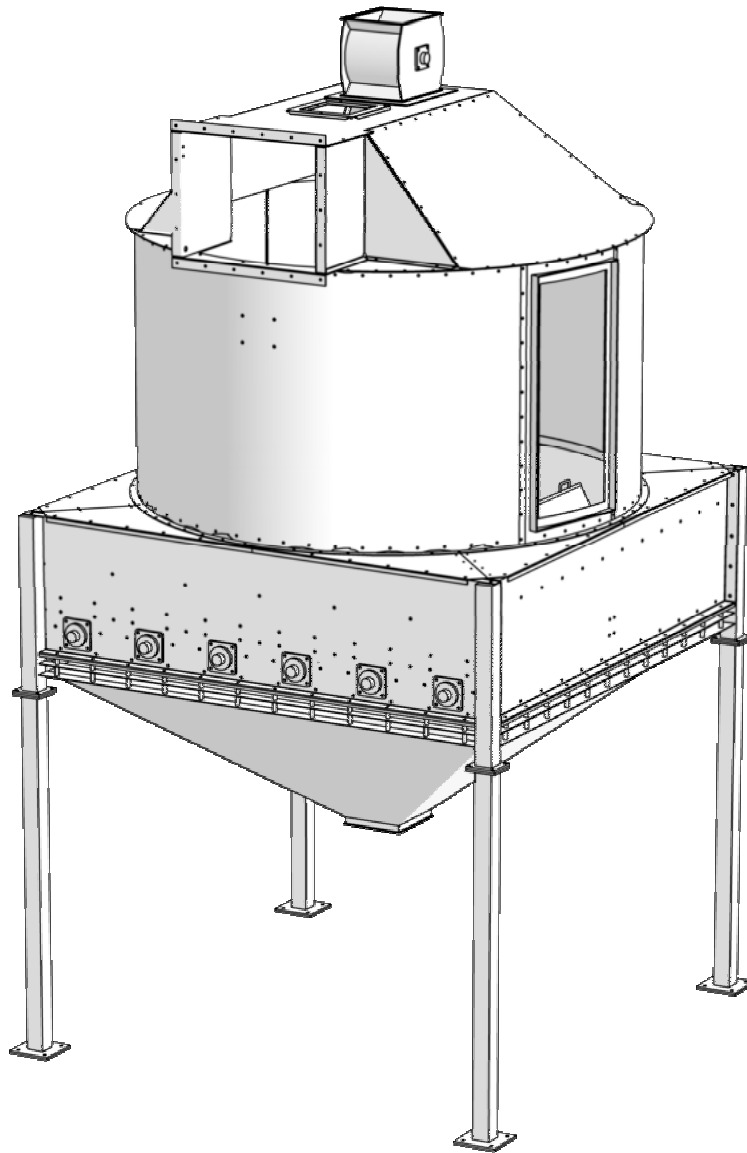


# CROCUS

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## INSTRUCTION MANUAL



## COUNTERFLOW COOLER

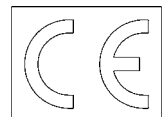
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**CROCUS**

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# Counterflow Cooler

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## **Preface**

Please read the Instruction Manual thoroughly and ensure that all instructions concerning safety, running and maintenance are followed, in order to ensure optimal operation of the machine / equipment.

Please provide the following information when making any enquiries:

**Type / Model, Fabrication number /year.**

All equipment has an attached sign, giving fabrication details.

# Counterflow Cooler

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# Counterflow Cooler

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## EU – certificate of agreement

**Manufacturer:**

Crocus I/S  
Virkevangen 25  
Assentoft  
DK-8900 Randers

Hereby declare that this machine

Type:           Crocus Counterflow Cooler

Model:       **CCR 100, CCS 100, CCS 101, CCR150, CCS150, CCS 151, CCR 200, CCS200, CCS201, CCR250, CCS250, CCS 251, CCR 300, CCS 300**

is manufactured according to regulations in EU-directive from 14<sup>th</sup> June 1989 about mutual rapprochement of the legislation in each member country concerning machines (89/392/EØF) specially referring to the directorates appendix 1 regarding essential security – and health requirements relating to construction and manufacturing of machines.

Date

4/12 03

Ejvind Møller (Manufacturer)



# Counterflow Cooler

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## **Safety regulations**

Please observe the following safety regulations for prevention of accidents.

A lockable electronic cut-off switch must be installed.

Turn off and lock the electronic switch during inspection / repair of the counterflow cooler.

Ensure that the inspection hatch is closed immediately following inspection / repair, even when the cooler is not in use.

All electrical installation / repair must be carried out according to the regulations applicable for high voltage installations and should be carried out by an authorised electrician.

Coolers may be equipped with an optional temperature thermostat placed in the ventilator suction pipe. This ensures that the ventilator is shut down if the temperature of the expelled air exceeds a set temperature and thereby inhibits the addition of oxygen in the case of fire.

# Counterflow Cooler

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## Technical description

### 1. Usage

Crocus counterflow coolers are designed to cool flakes, pellets cereals oilseeds and granular products after processing.

Coolers may be supplied in a round or square design. The CCR, round cooler, offers a highly efficient distribution of raw materials and a homogeneous cooling. The CCS, square cooler maximises capacity in relation to volume.

The industrial design of Crocus counterflow cooler makes it robust, highly reliable and ensures consistent results and uniform moisture content.

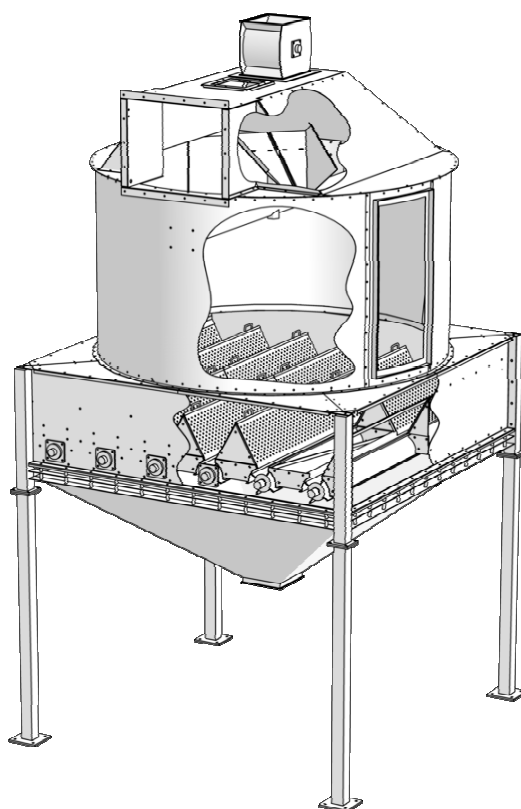
### 2. Function

Crocus CCR and CCS coolers operate on the counter-flow principle.

Heated processed material is fed into the top of the cooler where it is distributed by a rotary distributor. Whilst the material progresses through the cooler by gravity, cooling air is sucked upwards through the product ensuring that the warmest air meets the warmest products.

Air is passed through the processed material at between 0.9 – 1.2 m/s minimising evaporation and condensation of water vapour on the inside of the cooler. Expelled air has a temperature between 60-70°C and may be filtered according to requirements.

Intake and discharge are controlled by level sensors (the number and type of sensors depends upon the product to be processed). The top sensor functions as a safety precaution stopping product intake once the sensor level is reached. Product discharge is started once the lower sensor/s are covered.



Sensor levels are adjustable. The lower the sensor levels the shorter the cooling time.

# Counterflow Cooler

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## Discharge

Discharge may be pneumatically controlled or motor driven. The discharge grate is pulled back and forth with pneumatic control. The discharge grate may be adjusted in height to allow adjustment of the amount discharged with each back and forth movement.

With motor driven discharge the product is milled through a series of rotating discharge rollers. The rollers rotate continually in one direction only ensuring a homogenous discharge and inhibiting blockage due to product build-up.

The cooled product is discharged via an outlet cone.

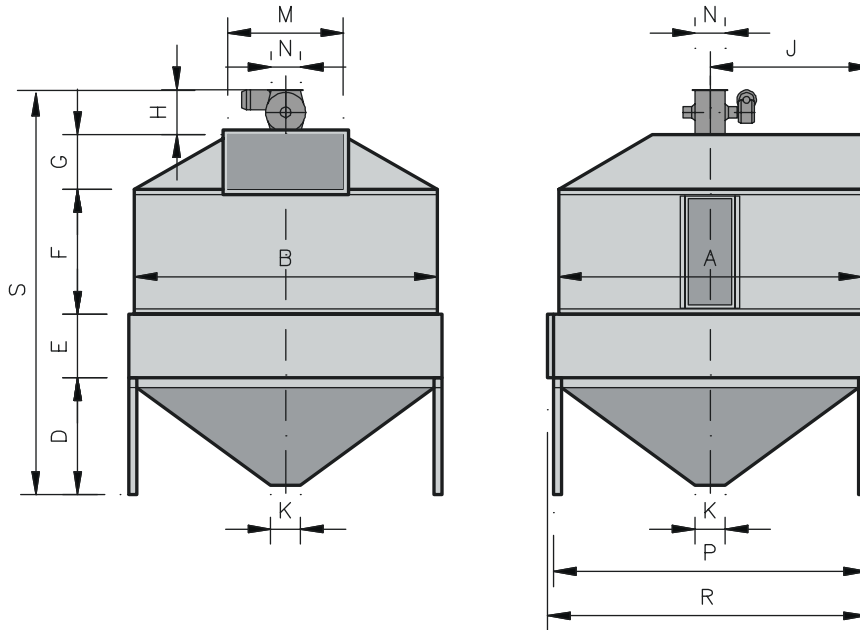
## Product change

Once the last of a product batch has been fed into the cooler, discharge should be set to manual so that discharge is continual until the product is completely emptied from the cooler.

Ensure that the height of the level sensors and discharge rollers /grid are correctly adjusted before the new product is fed into the inlet.

# Counterflow cooler

## Technical data



With fat addition in excess of 6% capacities will vary. Quoted capacities are inlet capacities. Cooling air temperature 15° C with 75% relative humidity. Cooling 5-10° C over cooling air temperature.

The capacities are valid under the following product specifications:

Pellet size: : 4 mm, 650 kg/m<sup>3</sup>  
 Water content: 15 - 16%  
 Fat content: : 4 - 6%  
 Air volume: : 900 – 1200 m<sup>3</sup>/h  
 Resistance: : 1000 – 1500 Pascal.

Type CCS:	Cap. (t/h)	Area (m <sup>2</sup> )	A	B	D	E	F	G	H	J	K	L	M	N	P	R	S
100	10	3,6	1900	1900	800	638	1150	600	375	1000	300	2040	600	305	2040	2100	3660
101	15	4,4	1900	2280	895	638	1150	600	375	1240	300	2040	600	305	2040	2100	3760
150	15	5,2	2280	2280	990	638	1150	600	375	1240	300	2420	800	305	2420	2480	3850
151	20	6,1	2280	2660	1085	638	1150	600	375	1430	300	2420	800	305	2420	2480	3950
200	25	7,1	2660	2660	1180	638	1150	600	445	1430	300	2800	1000	355	2800	2860	4110
201	30	8,1	2660	3040	1275	638	1150	600	445	1620	300	2800	1000	355	2800	2860	4205
250	35	9,3	3040	3040	1370	638	1150	600	445	1620	300	3180	1250	355	3180	3240	4305
251	40	10,4	3040	3420	1365	638	1150	600	445	1810	300	3180	1250	355	3180	3240	4400
300	45	11,7	3420	3420	1560	638	1150	700	445	1810	300	3560	1500	355	3560	3620	4590
301	50	13	3420	3800	1655	638	1150	700	445	2000	300	3560	1500	355	3560	3620	4685
350	55	14,5	3800	3800	1750	638	1150	700	445	2000	300	3940	1750	355	3940	4000	4780
351	60	15,9	3800	4180	1845	638	1150	700	445	2190	300	3940	1750	355	3940	4000	4875

Type CCR:	Cap. (t/h)	Area (m <sup>2</sup> )	øC	D	E	F	G	H	J	K	M	N	P	R	S
100	10	2,9	1900	800	630	1250	550	375	1000	305	850	355	2040	2100	3605
150	15	4,1	2280	960	630	1250	550	375	1190	305	1250	355	2420	2480	3765
200	20	5,6	2660	1120	630	1250	550	445	1380	305	1250	445	2800	2860	3995
250	25	7,3	3040	1280	630	1250	550	445	1570	305	1500	445	3180	3240	4155
300	30	9,1	3420	1480	630	1250	700	445	1760	305	1500	445	3560	3620	4505
350	35	11,3	3800	1550	630	1250	700	445	1950	305	1800	445	3940	4000	4575

We reserve the right of alteration

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# Counterflow Cooler

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## **Operating instructions**

Always ensure that transport from the cooler is operating prior to starting the cooler.

Should a breakdown occur, ensure that product intake is stopped immediately. Product intake should only be restarted once the cooler is restarted and operating normally.

## **Start up**

Ensure that transport from the cooler is operating prior to starting the cooler. Start the air ventilator prior to product intake and ensure that the height of the discharge grid/rollers is adjusted and set for continual discharge.

Adjust the height of the level sensors so that the product remains in the cooler until it reaches the desired temperature. The lower the level of the sensors the shorter the cooling time.

# Counterflow Cooler

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## Maintenance guide

### 1. Rotary valve

Check that the blades of the rotary valve rotate freely, that they are equidistant and symmetrically arranged.

Ensure that bearings are lubricated twice yearly.

For every 2000 hours in operation, and at least once a year, the rotary valve should be checked for damage and development of cracks in the rotor blades.

### 2. Gear / Gear motors

Check the oil level in all gears before start.

New gears are supplied with synthetic oil. It is recommended that the oil be changed after the first 10.000 hours of operation.

Oil change intervals are recommended for every 20.000 hours of operation, or every 4<sup>th</sup> year.

See the gear manufacturers instructions on the following pages for further information.

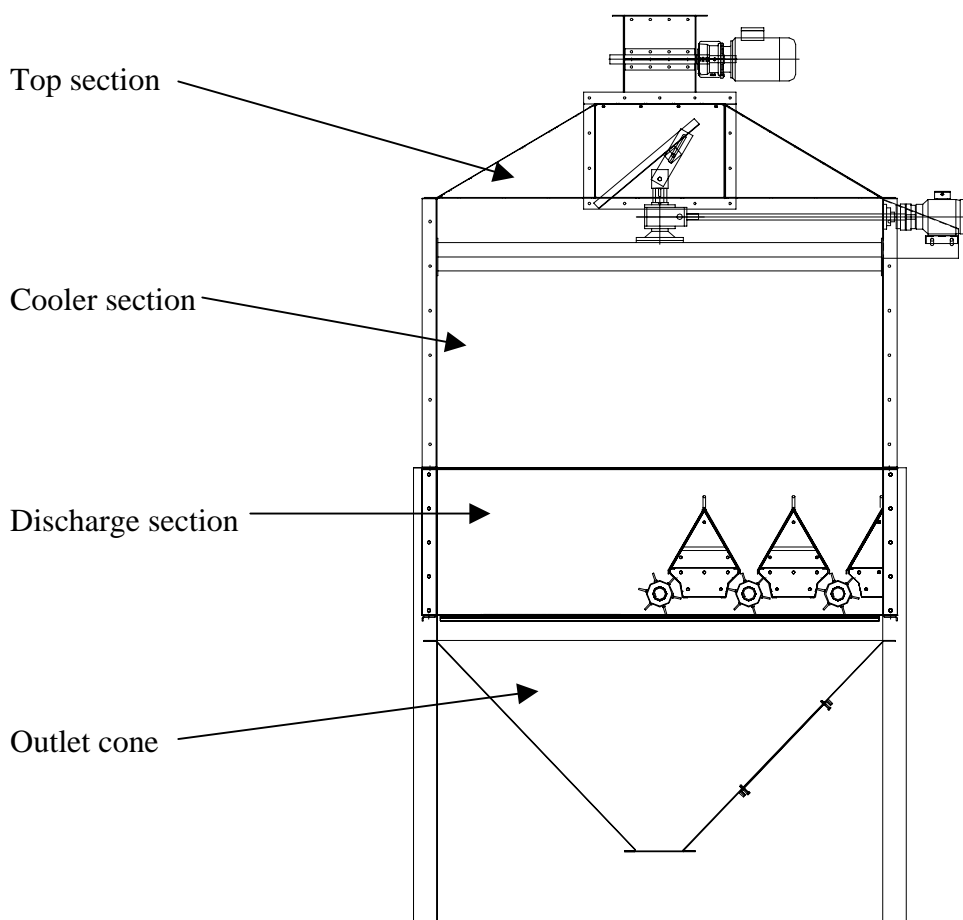
Gear motors may be cleaned for dust and dirt with compressed air.

# Counterflow Cooler

## Assembly instructions

### Contents

Rotary valve assembly	pages 2
Top section assembly	pages 3
Cooler section assembly	page 4
Discharge section assembly	page 5



# Counterflow Cooler

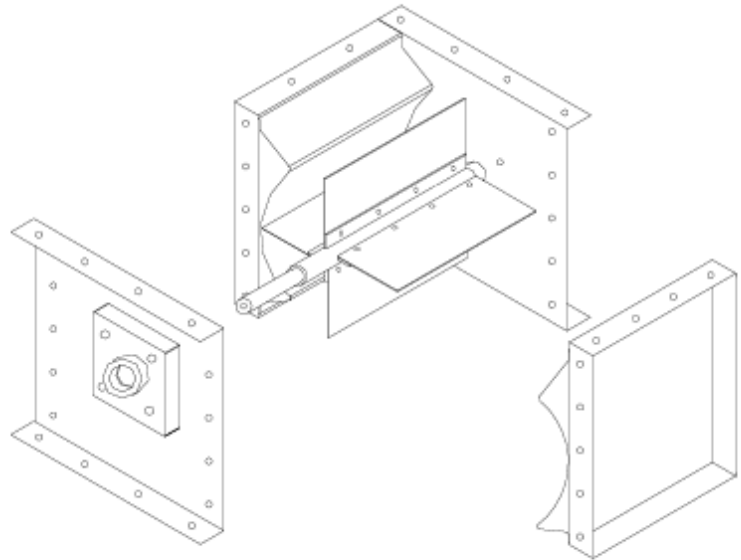
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## Rotary valve assembly

Assemble the Rotary valve as shown.

Mount the motor on the axel bolting it to the fitting as shown.

Use stainless steel bolts.  
Seal all joints with SIKA.



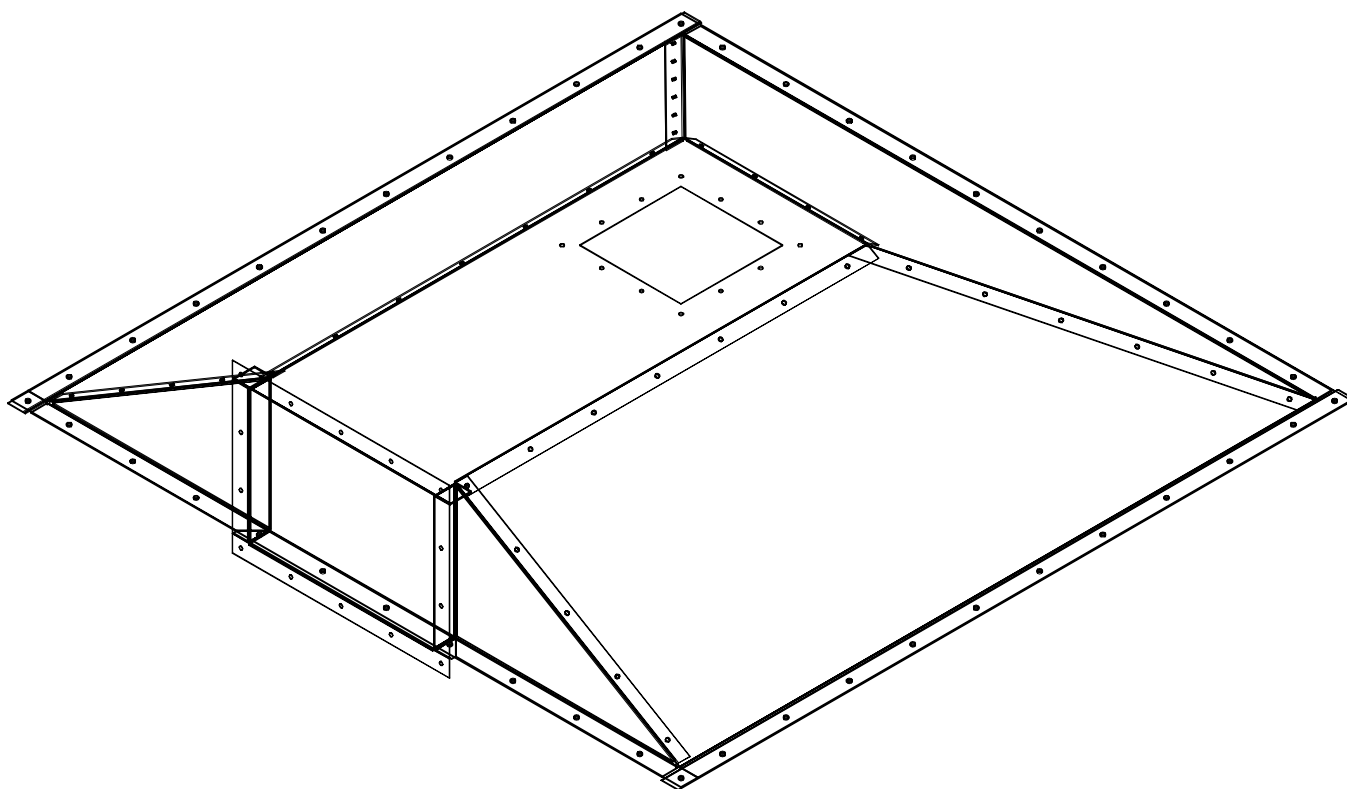
# Counterflow Cooler

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## Top Section Assembly

M8x16 FRH Stainless steel bolts should be used to assemble the top section. These bolts have flat heads. Fit bolts from the inside and nuts from the outside.

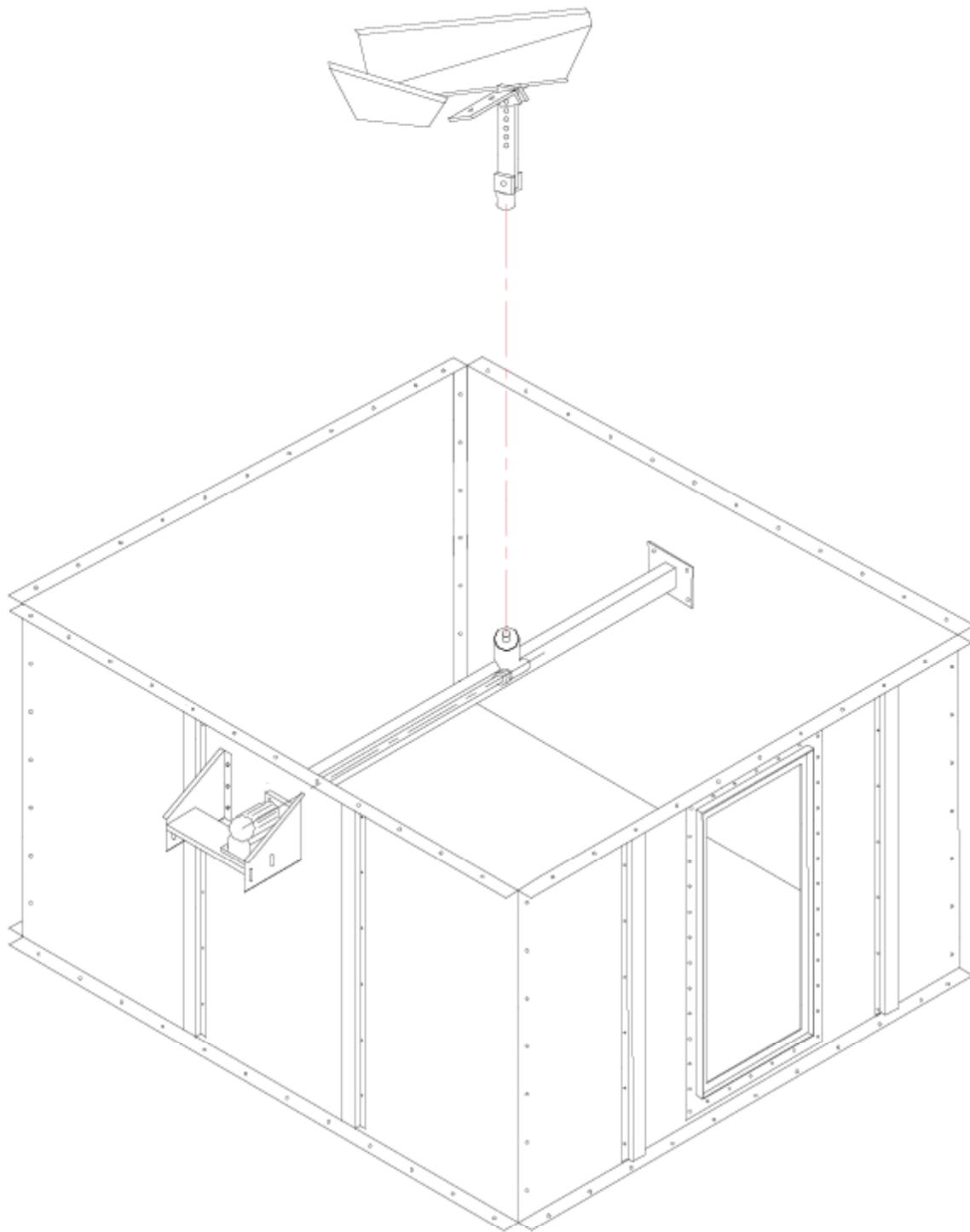
Do not tighten bolts before the top section is mounted on the Cooler section.  
Joints must be sealed with SIKA.



# Counterflow Cooler

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## Cooler Section Assembly



# Counterflow Cooler

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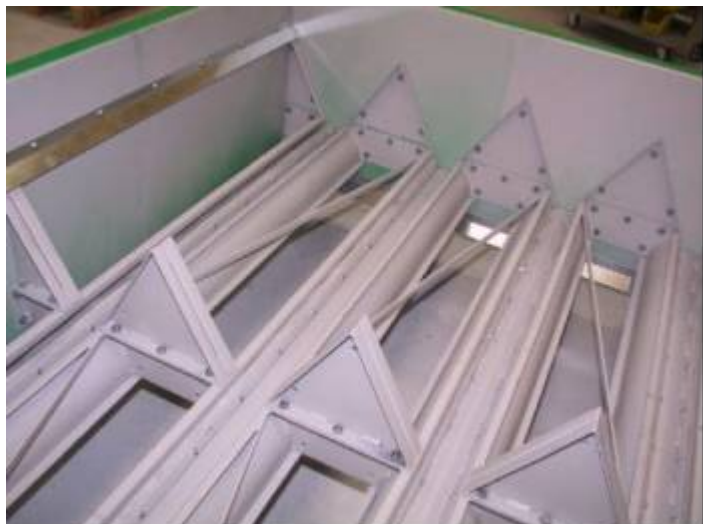
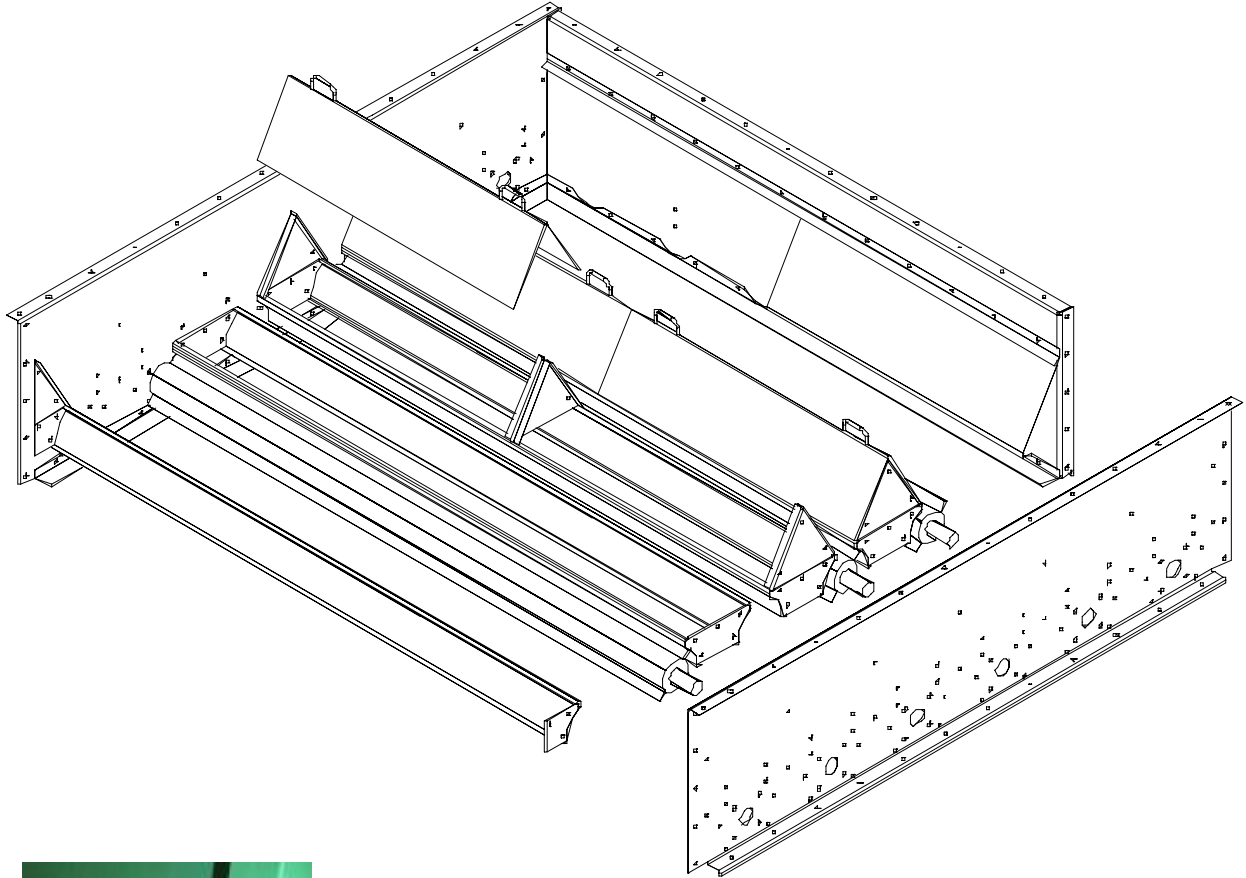
Distribution gear motor



Door

# Counterflow Cooler

## Discharge section assembly



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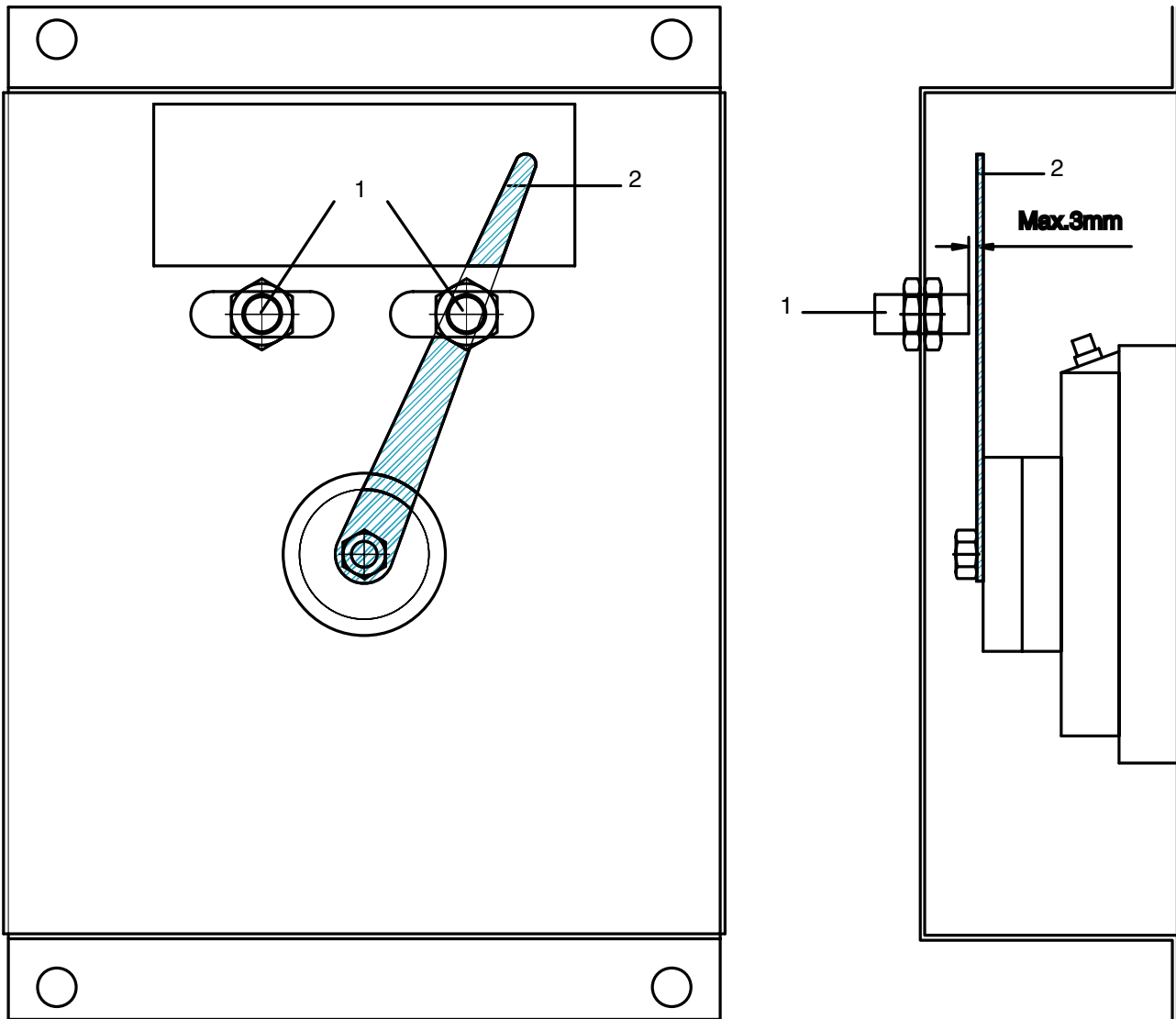
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# Counterflow Cooler

## Discharge control



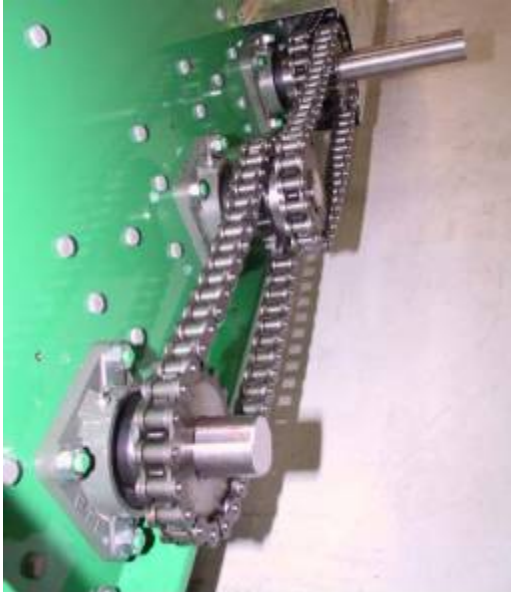
Discharge is regulated by opening and closing the discharge section base. When the base opens is regulated by the adjustable stop sensors (1)

### **IMPORTANT**

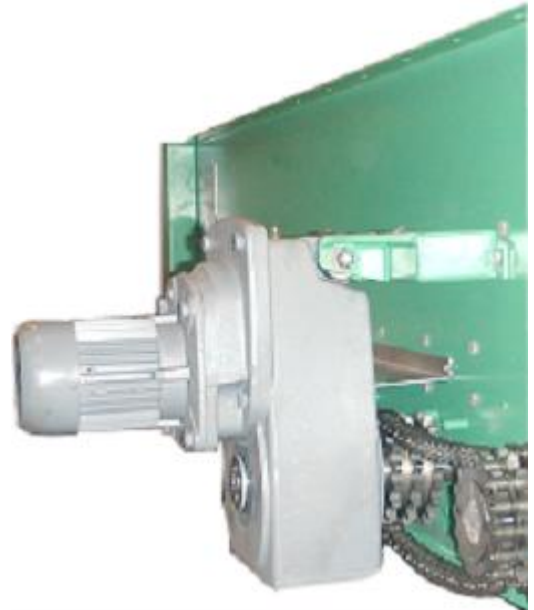
Ensure 3 mm clearance between the stop sensors and display arm prior to upstart (2) and test for signal.

# Counterflow Cooler

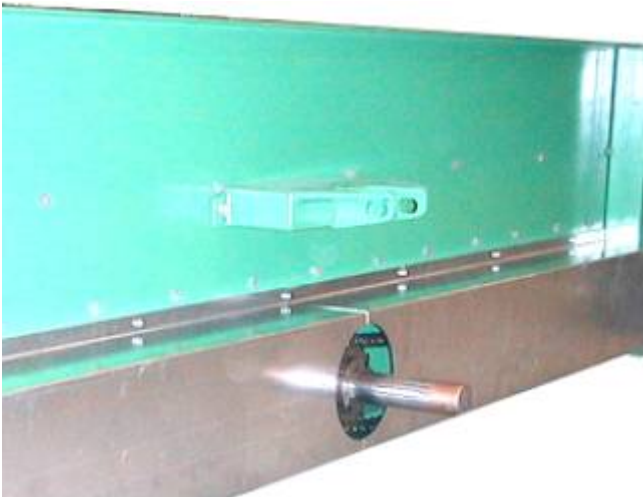
## Discharge section assembly -Chain drive



Chain drive



Gear motor



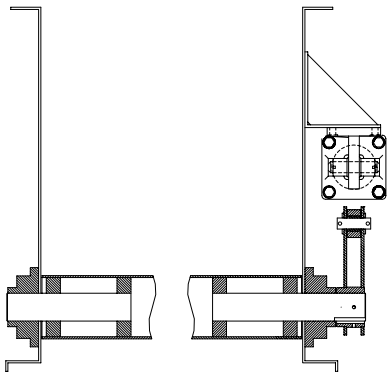
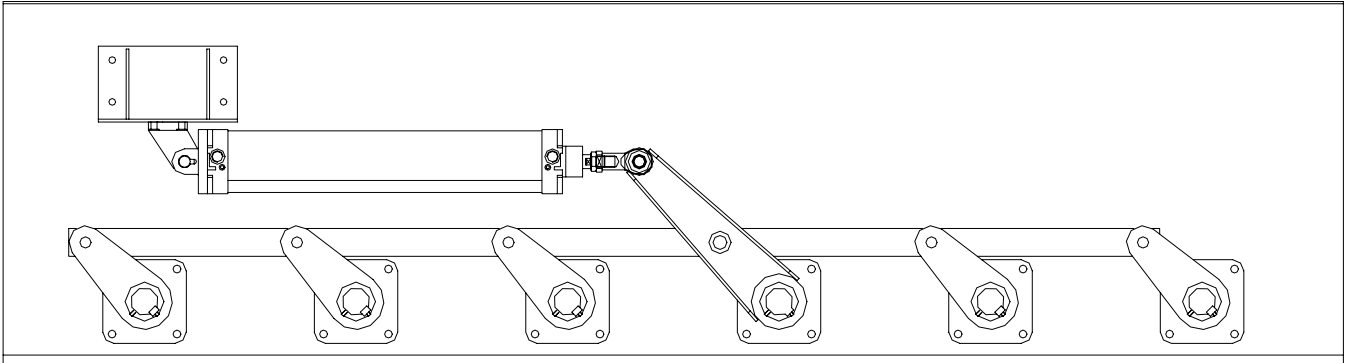
Chain guard



Rotor bearings

# Counterflow Cooler

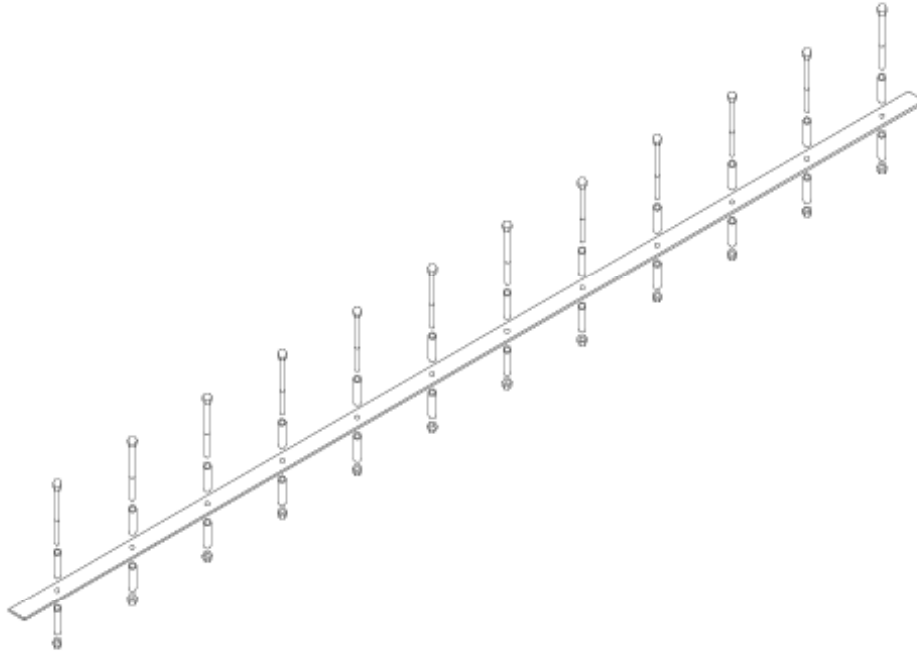
## Pneumatic drive assembly



# Counterflow Cooler

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## Outlet cone assembly



**Cooler**  
Type CCS 100 M

**CROCUS**  
Virkevangen 25 , Assentoft  
DK - 8900 Randers

03-10-2005

Pos.	Sparepart no.	Part name	Dimension	Materiale	Unit	Number
<b>502 Rotary valve</b>						
1	80-501	Side plate		AISI 304	Piece	2
2	80-502	End plate		AISI 304	Piece	2
3	80-504	Rotary valve plate		AISI 304	Piece	4
4	80-510	Shaft	Ø40	AISI 304	Piece	1
5		Bearing	FWS 40 U		Piece	2
6	80-506	Frame, gear motor			Piece	1
7		Gear motor	TEFC 0,55 kW, SK 1282AG - 80S/4, 44 rpm		Piece	1
<b>503 Top section CCS 100</b>						
1	80-111	Top plate	2.5 mm	AISI 304	Piece	1
2	80-112	End plate	2.5 mm	AISI 304	Piece	1
3	80-113	Side plate Right/Left	2.5 mm	AISI 304	Piece	2
4	80-114	Front part Right/Left	2.5 mm	AISI 304	Piece	2
5	80-115	Flange	2.5 mm	AISI 304	Piece	1
<b>504 Cooler section CCS 100</b>						
1	80-250-S	Motor Bar			Piece	1
2	80-251	Motor Bracket			Piece	1
3	80-252	Bracket side			Piece	2
4	80-260	Shaft, product distribution	Ø25x885	st.37-2k	Piece	1
5	80-262	Bush	Ø25xØ25mm		Piece	1
6		Bearing	PTI FWS 25 U		Piece	1
7		Coupling	Bico-110 TL	Ø19/Ø25	Piece	1
8		Worm gear	STM	type RI 85 reduction 1:15	Piece	1
9		Motor	0,55 kW TEFC type VEM K21R80K4/ STM gear motor type AMP 32/2 IEC 80 reduction 1:6,9		Piece	1
10	80-271	Product distribution plate			Piece	2
11	80-272	L - fitting			Piece	2
12	80-273	Adjustable part			Piece	1
13	80-274	Washer	80x70x12	St.37.2	Piece	1
14	80-275	Mounting unit			Piece	1
15	81-381	Side plate motor bracket		AISI 304	Piece	1
16	80-382	Gable plate		AISI 304	Piece	1
17	81-383	Side plate		AISI 304	Piece	1
18	80-384	Gable plate with door		AISI 304	Piece	1
19	80-450-S	Door frame			Piece	1
20	80-453	Door unit			Piece	1
21	80-815	Motor guard			Piece	1
22		Door lock			Piece	2
23		Sensor	Nivector FTZ 968 AC		Piece	1
<b>505 Discharge section</b>						
1	81-045	Cover A1			Piece	2
2	80-045	Cover A2			Piece	2
3	81-046	Cover B			Piece	2
4	80-049	Plate, rigde holder			Piece	20
5	80-050	Plate, rigde holder - side			Piece	8
6	81-052	Rotor			Piece	5
7	81-053	Rotor bar		St.37.2	Piece	4
8	81-054	Rotor bar - side			Piece	2
9	80-305	End plate		St.37.2	Piece	2
10	81-306	Side plate			Piece	2
11	81-370	Ridge			Piece	8
12	81-371	Ridge - side			Piece	4
13	80-764	Leg - standard			Piece	4
<b>506 Chain drive</b>						
1		Chain	16B1		Piece	4
2		Gear motor	NORD SK4282AG-80S/4 0,55 Kw - 3,5 rpm.		Piece	1
3		Sprocket wheel f. taper bush	16B3 Z19 TL-2517		Piece	8
4	80-800	Frame - gear motor			Piece	1
5		Bearing	PTI FWS 40		Piece	10
6	80-810	Chain guard			Piece	2
<b>507 Outlet cone/ hopper</b>						
1		Bolt / nut	M10x120 / M10		Piece	44
2		Bush	3/8" pipe		Piece	88
3	80-762	Flange			Piece	2
	81-762	Flange			Piece	2
4		Leg			Piece	4
5		Inspection door			Piece	1

**Cooler**  
Type CCS 101 M

**CROCUS**  
Virkevangen 25 , Assentoft  
DK - 8900 Randers

03-10-2005

Pos.	Sparepart no.	Part name	Dimension	Materiale	Unit	Number
<b>502 Rotary valve</b>						
1	80-501	Side plate		AISI 304	Piece	2
2	80-502	End plate		AISI 304	Piece	2
3	80-504	Rotary valve plate		AISI 304	Piece	4
4	80-510	Shaft	Ø40	AISI 304	Piece	1
5		Bearing	FWS 40 U		Piece	2
6	80-506	Frame, gear motor			Piece	1
7		Gear motor	TEFC 0,55 kW, SK 1282AG - 80S/4, 44 rpm		Piece	1
<b>503 Topsection CCS 101</b>						
1	80-111	Top plate	2.5 mm	AISI 304	Piece	1
2	80-112	End plate	2.5 mm	AISI 304	Piece	1
3	80-113	Side plate Right/Left	2.5 mm	AISI 304	Piece	2
4	80-114	Front part Right/Left	2.5 mm	AISI 304	Piece	2
5	80-115	Flange	2.5 mm	AISI 304	Piece	1
<b>504 Cooler section CCS 101</b>						
1	80-250-S	Motor Bar			Piece	1
2	80-251	Motor Bracket			Piece	1
3	80-252	Bracket side			Piece	2
4	80-260	Shaft, product distribution	Ø25x885	st.37-2k	Piece	1
5	80-262	Bush	Ø25xØ25mm		Piece	1
6		Bearing	PTI FWS 25 U		Piece	1
7		Coupling	Bico-110 TL	Ø19/Ø25	Piece	1
8		Worm gear	STM 0,55 kW TEFC type VEM K21R80K4/ STM gear motor type AMP 32/2 IEC 80 reduction 1:6,9	type RI 85 reduction 1:15	Piece	1
9		Motor			Piece	1
10	80-271	Product distribution plate			Piece	2
11	80-272	L - part			Piece	2
12	80-273	Adjustable part			Piece	1
13	80-274	Washer	80x70x12	St.37.2	Piece	1
14	80-275	Mounting unit			Piece	1
15	81-381	Side plate motor bracket		AISI 304	Piece	1
16	80-382	Gable plate		AISI 304	Piece	1
17	81-383	Side plate		AISI 304	Piece	1
18	80-384	Gable plate with door		AISI 304	Piece	1
19	80-450-S	Door frame			Piece	1
20	80-453	Door unit			Piece	1
21	80-815	Motor guard			Piece	1
22		Door lock			Piece	2
23		Sensor	Nivector FTZ 968 AC		Piece	1
<b>505 Discharge section</b>						
1	81-045	Cover A1			Piece	2
2	80-045	Cover A2			Piece	2
3	81-046	Cover B			Piece	2
4	80-049	Plate, rigde holder			Piece	20
5	80-050	Plate, rigde holder - side			Piece	8
6	81-052	Rotor			Piece	5
7	81-053	Rotor bar		St.37.2	Piece	4
8	81-054	Rotor bar - side			Piece	2
9	80-305	End plate		St.37.2	Piece	2
10	81-306	Side plate			Piece	2
11	81-370	Ridge			Piece	8
12	81-371	Ridge - side			Piece	4
13	80-764	Leg - standard			Piece	4
<b>506 Chain drive</b>						
1		Chain	16B1 NORD SK4282AG-80S/4		Piece	4
2		Gear motor	0,55 Kw - 3,5 rpm.		Piece	1
3		Sprocket wheel f. taper bush	16B3 Z19 TL-2517		Piece	8
4	80-800	Frame - gear motor			Piece	1
5		Bearing	PTI FWS 40		Piece	10
6	80-810	Chain guard			Piece	2
<b>507 Outlet cone/ hopper</b>						
1		Bolt / nut	M10x120 / M10		Piece	44
2		Bush	3/8" pipe		Piece	88
3	80-762	Flange			Piece	2
4	81-762	Flange			Piece	2
4		Leg			Piece	4
5		Inspection door			Piece	1

**Cooler**  
 Model CCS 101 P

**CROCUS**  
 Virkevungen 25 , Assentoft  
 DK - 8900 Randers

03-10-2005

Pos.	Sparepart no.	Part name	Dimension	Material	Unit	Number
<b>502 Rotary valve</b>						
1	80-501	Side plate		AISI 304	Piece	2
2	80-502	End plate		AISI 304	Piece	2
3	80-504	Rotary valve plate		AISI 304	Piece	4
4	80-510	Shaft	Ø40	AISI 304	Piece	1
5		Bearing	FWS 40 U		Piece	2
6	80-506	Frame gear motor			Piece	1
7		Gear motor	TEFC 0,55 kW, SK 1282AG - 80S/4, 44 rpm		Piece	1
<b>503 Top section CCS 101</b>						
1	80-111	Top plate	2.5 mm	AISI 304	Piece	1
2	80-112	End plate	2.5 mm	AISI 304	Piece	1
3	80-113	Side plate right/left	2.5 mm	AISI 304	Piece	2
4	80-114	Front plate right/left	2.5 mm	AISI 304	Piece	2
5	80-115	Flange	2.5 mm	AISI 304	Piece	1
<b>504 Cooler section CCS 101</b>						
1	80-250-S	Motor Bar			Piece	1
2	80-251	Motor bracket			Piece	1
3	80-252	Bracket side			Piece	2
4	80-260	Shaft product distribution	Ø25x885	st.37-2k	Piece	1
5	80-262	Bush	Ø25xØ25mm		Piece	1
6		Bearing	PTI FWS 25 U		Piece	1
7		Coupling	Bico-110 TL	Ø19/Ø25	Piece	1
8		Worm gear	STM 0,55 kW TEFC type VEM K21R80K4/ STM gear motor type AMP 32/2 IEC 80 reduction 1:6,9	type RI 85 reduction 1:15	Piece	1
9		Motor			Piece	1
10	80-271	Product distribution plate			Piece	2
11	80-272	L-Fitting			Piece	2
12	80-273	Adjustable part			Piece	1
13	80-274	Washer	80x70x12	St.37.2	Piece	1
14	80-275	Distributor assembly fitting			Piece	1
15	81-381	Side plate motor bracket		AISI 304	Piece	1
16	80-382	Gable plate		AISI 304	Piece	1
17	81-383	Side plate motor bracket		AISI 304	Piece	1
18	80-384	Gableplate with door		AISI 304	Piece	1
19	80-450-S	Door frame			Piece	1
20	80-453	Door			Piece	1
21	80-815	Motor guard			Piece	1
22		Door lock			Piece	2
23		Sensor	Nivector FTZ 968 AC		Piece	1
<b>505 Discharge section</b>						
1	81-045	List A1			Piece	2
2	80-045	List A2			Piece	2
3	81-046	List B			Piece	2
4	80-049	Plate, rigde holder			Piece	20
5	80-050	Plate, rigde holder - side			Piece	8
6	81-052	Rotor			Piece	5
7	81-053	Rotor bar		St.37.2	Piece	4
8	81-054	Rotor bar - side			Piece	2
9	80-305	End plate		St.37.2	Piece	2
10	81-306	Side plate			Piece	2
11	81-370	Ridge			Piece	8
12	81-371	Ridge - side			Piece	4
13	80-764	Leg -standard			Piece	4
<b>506 Pneumatic drive</b>						
1	80-653	Cylinder bar			Piece	1
2	80-663	Arm, short			Piece	4
3	80-666	Arm, long			Piece	1
4	80-672	Transmission rod			Piece	1
5	80-675	Lock shaft, arm short			Piece	4
6	80-676	Lock shaft, cylinder	Ø20		Piece	1
7	80-677	Lock shaft, arm long	Ø25		Piece	1
8		Cylinder	Ø80 mm		Piece	1
9		Bearing	Pti FWS 40		Piece	10
10	80-810	Chain guard	Galv.		Piece	1
<b>507 Outlet cone / hopper</b>						
1		Bolts / nuts	M10x120 / M10		Piece	44
2		Bush	3/8" pipe		Piece	88
3	80-762	Flange			Piece	2
	81-762	Flange			Piece	2
4		Leg			Piece	4
5		Inspection hatch			Piece	1

**Cooler**  
Type CCS 150 M

**CROCUS**  
Virkevangen 25 , Assentoft  
DK - 8900 Randers

03-10-2005

Pos.	Sparepart no.	Part name	Dimension	Materiale	Unit	Number
	<b>502</b>	<b>Rotary valve</b>				
1	80-501	Side plate		AISI 304	Piece	2
2	80-502	End plate		AISI 304	Piece	2
3	80-504	Rotary valve plate		AISI 304	Piece	4
4	80-510	Shaft	Ø40	AISI 304	Piece	1
5		Bearing	FWS 40 U		Piece	2
6	80-506	Frame, gearmotor			Piece	1
7		Gear motor	TEFC 0,55 kW, SK 1282AG - 80S/4, 44 rpm		Piece	1
	<b>503</b>	<b>Topsection CCS 150</b>				
1	81-111	Top plate	2.5 mm	AISI 304	Piece	1
2	81-112	Front plate - angel	2.5 mm	AISI 304	Piece	1
3	81-113	Sideplate, right/left	2.5 mm	AISI 304	Piece	2
4	81-114	Frontpart, right/left	2.5 mm	AISI 304	Piece	2
5	81-115	Flange	2.5 mm	AISI 304	Piece	1
	<b>504</b>	<b>Cooler section CCS 150</b>				
1	81-250-S	Motor bar			Piece	1
2	80-251	Motor Bracket			Piece	1
3	80-252	Bracket side			Piece	2
4	81-260	Shaft, produkt distribution	Ø25x1070	st.37-2k	Piece	1
5		Bush	Ø25xØ25mm		Piece	1
6		Bearing	PTI FWS 25 U		Piece	1
7		Coupling	Bico-110 TL	Ø19/Ø25	Piece	1
8		Wormgear	STM	type RI 85 reduction 1:15	Piece	1
9		Motor	0,55 kW TEFC type VEM K21R80K4/ STM gear motor type AMP 32/2 IEC 80 reduction 1:6,9		Piece	1
10	80-271	Produkt distribution plate			Piece	2
11	80-272	L - bracket			Piece	2
12	80-273	Adjustable part			Piece	1
13	80-274	Washer	80x70x12	St.37.2	Piece	1
14	80-275	Mounting unit			Piece	1
15	81-381	Side plate motor bracket		AISI 304	Piece	1
16	81-382	Gable plate		AISI 304	Piece	1
17	81-383	Side plate		AISI 304	Piece	1
18	81-384	Gable plate with door		AISI 304	Piece	1
19	80-450-S	Door frame			Piece	1
20	80-453	Door unit			Piece	1
21	80-815	Motor guard			Piece	1
22		Door lock			Piece	2
23		Sensor	Nivector FTZ 968 AC		Piece	1
	<b>505</b>	<b>Discharge section</b>				
2	81-045	Cover A			Piece	2
3	81-046	Cover B			Piece	2
4	80-049	Plate, rigde holder			Piece	24
5	80-050	Plate, rigde holder - side			Piece	8
6	81-052	Rotor			Piece	6
7	81-053	Rotor bar		St.37.2	Piece	5
8	81-054	Rotor bar - side			Piece	2
9	81-305	End plate		St.37.2	Piece	2
10	81-306	Side plate			Piece	2
11	81-370	Ridge			Piece	10
12	81-371	Ridge - side			Piece	4
13	80-764	Leg - standard			Piece	4
	<b>506</b>	<b>Chain drive</b>				
1		Chain	16B1 NORD SK4282AG-80S/4		Piece	5
2		Gear motor	0,55 Kw - 3,5 rpm.		Piece	1
3		Sprocket wheel f. taper bush	16B3 Z19 TL-2517		Piece	10
4	80-800	Frame - gear motor			Piece	1
5		Bearing	PTI FWS 40		Piece	12
6	81-810	Chain guard			Piece	2
	<b>507</b>	<b>Outlet cone/ hopper</b>				
1		Bolt / nut	M10x120 / M10		Piece	48
2		Bush	3/8" Pipe		Piece	96
3	81-762	Flange			Piece	4
4		Leg			Piece	4
5		Inspection door			Piece	1
6		Handel for inspection door			Piece	2



**Cooler**  
Type CCS 151 M

**CROCUS**  
Virkevangen 25 , Assentoft  
DK - 8900 Randers

03-10-2005

Pos.	Sparepart no.	Part name	Dimension	Materiale	Unit	Number
<b>502 Rotary valve</b>						
1	80-501	Side plate		AISI 304	Piece	2
2	80-502	End plate		AISI 304	Piece	2
3	80-504	Rotary valve plate		AISI 304	Piece	4
4	80-510	Shaft	Ø40	AISI 304	Piece	1
5		Bearing	FWS 40 U		Piece	2
6	80-506	Frame, gearmotor			Piece	1
7		Gear motor	TEFC 0,55 kW, SK 1282AG - 80S/4, 44 rpm		Piece	1
<b>503 Topsection CCS 151</b>						
1	80-111	Top plate	2.5 mm	AISI 304	Piece	1
2	80-112	Front plate - angel	2.5 mm	AISI 304	Piece	1
3	80-113	Side plate right/Left	2.5 mm	AISI 304	Piece	2
4	80-114	Front plate right/left	2.5 mm	AISI 304	Piece	2
5	80-115	Flange	2.5 mm	AISI 304	Piece	1
<b>504 Cooler section CCS 151</b>						
1	80-250-S	Motor Bar			Piece	1
2	80-251	Motor Bracket			Piece	1
3	80-252	Bracket			Piece	2
4	80-260	Shaft, product distribution	Ø25x885	st.37-2k	Piece	1
5	80-262	Bush	Ø25xØ25mm		Piece	1
6		Bearing	PTI FWS 25 U		Piece	1
7		Coupling	Bico-110 TL	Ø19/Ø25	Piece	1
8		Worm gear	STM 0,55 kW TEFC type VEM K21R80K4/ STM gear motor	type RI 85 reduction 1:15	Piece	1
9		Motor	type AMP 32/2 IEC 80 reduction 1:6,9		Piece	1
10	80-271	Product distribution plate			Piece	2
11	80-272	L - bracket			Piece	2
12	80-273	Adjustable part			Piece	1
13	80-274	Washer	80x70x12	St.37.2	Piece	1
14	80-275	Mounting unit			Piece	1
15	81-381	Side plate motor bracket		AISI 304	Piece	1
16	80-382	Gable plate		AISI 304	Piece	1
17	81-383	Side plate		AISI 304	Piece	1
18	80-384	Gable plate with door		AISI 304	Piece	1
19	80-450-S	Door frame			Piece	1
20	80-453	Door unit			Piece	1
21	80-815	Motor guard			Piece	1
22		Door lock			Piece	2
23		Sensor	Nivector FTZ 968 AC		Piece	1
<b>505 Discharge section</b>						
1	81-045	Cover A1			Piece	2
2	80-045	Cover A2			Piece	2
3	81-046	Cover B			Piece	2
4	80-049	Plate, rigde holder			Piece	20
5	80-050	Plate, rigde holder - side			Piece	8
6	81-052	Rotor			Piece	5
7	81-053	Rotor bar		St.37.2	Piece	4
8	81-054	Rotor bar - side			Piece	2
9	80-305	End plate		St.37.2	Piece	2
10	81-306	Side plate			Piece	2
11	81-370	Ridge			Piece	8
12	81-371	Ridge - side			Piece	4
13	80-764	Leg - standard			Piece	4
<b>506 Chain drive</b>						
1		Chain	16B1 NORD SK4282AG-80S/4		Piece	4
2		Gear motor	0,55 Kw - 3,5 rpm.		Piece	1
3		Sprocket wheel f. taper bush	16B3 Z19 TL-2517		Piece	8
4	80-800	Frame - gear motor			Piece	1
5		Bearing	PTI FWS 40		Piece	10
6	80-810	Chain guard			Piece	2
<b>507 Outlet cone/ hopper</b>						
1		Bolt / nut	M10x120 / M10		Piece	44
2		Bush	3/8" pipe		Piece	88
3	80-762	Flange			Piece	2
4	81-762	Flange			Piece	2
4		Leg			Piece	4
5		Inspection door			Piece	1