



*C*entricoater





CENTRICOATER

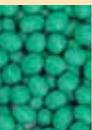
TYPICAL APPLICATION

The CIMBRIA HEID CENTRICOATER is designed for the application of coating value added seeds with costly seed treating materials. The system is a continuous batch operation utilising a highly accurate electronic scale together with a highly accurate chemical dosing system controlled by a PLC. The system provides improved seed coverage and a more uniform distribution of treatment materials on the seed as compared to traditional continuous operating drum type treaters.

ADVANTAGES OF A BATCH TYPE TREATER

COMPARED WITH A TRADITIONAL TYPE TREATER:

- † The centrifugal force in the mixing chamber allows a thinner layer of the coating materials to adhere to the seed surface, therefore less water or liquid is needed to achieve complete coverage.
- † Each batch has the correct amount of chemicals necessary and a very accurate and even distribution is ensured on each seed kernel. Tests have shown that with traditional continuous flow treaters, the deviation can reach up to 33%.
- † The mixing chamber is self-cleaning and any seed or chemicals remaining in the chamber can be easily cleaned and removed after treating each seed lot.
- † Chemicals are individually dosed into the mixing chamber, which eliminates the need for pre-mixing tanks and the treating recipe can be changed at any time (this eliminates the possibility of any surplus materials).
- † Different layers of liquid or powder chemical can be independently applied (giving operational flexibility).
- † Electronic scale, liquid flow-meter for the liquid chemicals or sightglass cylinders (fitted with level controls) ensure a very high accuracy of chemical application to the seed.
- † The complete unit is PLC controlled, which gives any indication of errors in the application process. This also assists and facilitates ease of operation for the operator.
- † The whole process can be monitored and the relevant operational information can be transmitted to any other computer. This reporting facility is necessary for compliance with Quality Standards to ISO 9002.



Function in principle



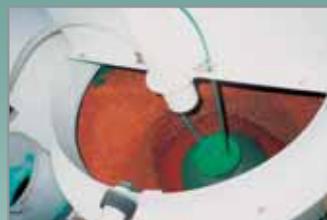
MECHANICAL COATING TECHNOLOGY

The heart of the CENTRICOATER is the mixing chamber, consisting of a stainless steel cylindrical housing with a rotation bottom or internal rotor. The seed is gently dropped from the continuous batch electronic scale into the chamber onto the rotor. This rotor moves the seed gently up the stationary chamber side wall causing a folding of seed from outward to inward in the chamber. A spinning disk in the centre of the mixing chamber, on which the treating materials are delivered from the PLC controlled dosing system, atomises the liquid treating materials into the vertical seed layer. This provides a highly intensive uniform application of seed treatment materials on each kernel of seed. All kind of treating materials, liquids and powders, can be applied effectively in this system.

The pictures are showing the fast and efficient coverage of the seed inside the mixing chamber, starting with the filling of the mixing chamber, continued by the dosing of the agents, the mixing phase and at last the complete discharging of the coated material.



filling of the coating chamber



dosing of coating agent



mixing phase



discharging of coated material





MACHINE RANGE



CC LAB



CC 10 LAB



CC 10, CC 20



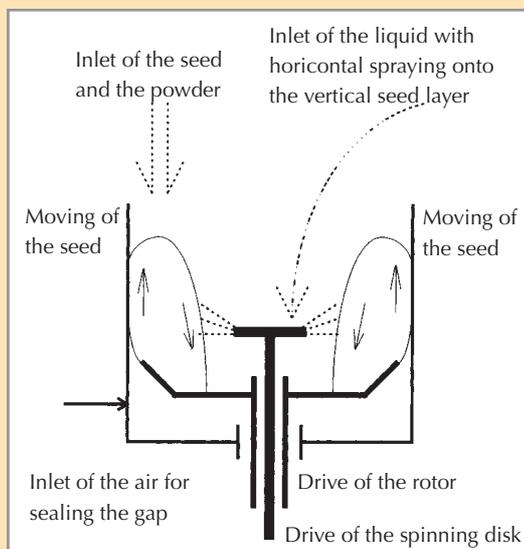
CC 50



CC 150



CC 250 DUO



CENTRICOATER PRINCIPLE

Primary feature

Using a CENTRICOATER with interaction of mixing chamber and spinning disk

Primary advantages

Equal application of seed treatments from seed to seed
Improved uniform coverage and appearance from seed to seed

Accurate application of expensive seed treatment materials $\pm 2\%$

Flexible operation for applying the agents

No waste of product due to startup and shut down

No risk of under- and overapplication of seed treatment materials

Primary benefits

More uniform field performance

Significant savings in seed treatment materials

Excellent seed appearance

Safety of a good quality for the future's market



PLC CONTROL

Feature

New generation of display

Coloured and animated screen

Advantage

Easier access and setup

Better process- overview

Benefit

With USB port for downloading recipes (optional)

Simple to teach operator



V-BELT DRIVE

Feature

Simple V-belt drive of the mixing chamber, using four V-belts

Advantage

Less motor capacity needed for operating the drive

Damping of shocks during filling the chamber

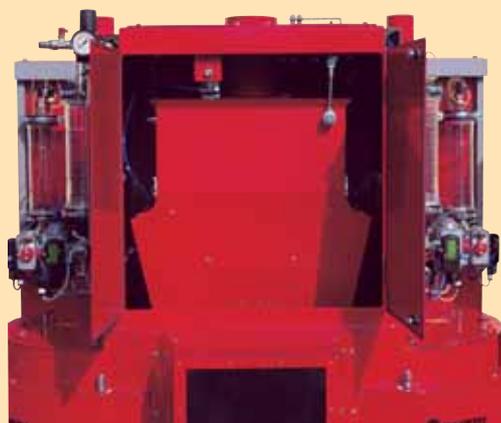
No gear box needed

Benefit

Decreased operation costs

Gentle handling of mechanical parts

No pollution due to leakage of the gearbox



ELECTRONIC SCALE

Feature

Electronic scale

Filling is done by using gross- and fineflow

Advantage

Electronic loadcells instead of a mechanical system

Exact filling of the scale within $\pm 0.25\%$ of max. weight

Benefit

Simple adjusting of the weight by the scale's controller

Improved accuracy of application





ELECTRONIC SCALE - BELTFEEDER

Feature

Beltfeeder for feeding the scale using two speeds for feeding with complete shut-off gate

Advantage

Beltfeeder instead of feeding flaps for the scale prevents malfunction of scale due to bridging in the inlet pipe during the fine flow

Benefit

Used for heavy flowing or bridging products , eg. grass seed



GLASS CYLINDER DOSING SYSTEM

Feature

Glass cylinder with electrodes for minimum-, maximum- and safety level

Advantage

Optical indication of the liquid level

Simple manual adjusting of the min. and max. electrodes

Dosing accuracy $\pm 2\%$

Residual batch mode (Automatic adjustment of agent's amount to the weight of seed)

Easy to clean

Emergency stop in case of overloading

Benefit

Fast and simple optical check of the correct amount and operation

Fast adjusting of the quantity for a new agent

Reduced seed treatment costs

Minimum maintenance



FLOWMETER AND MASSFLOWMETER DOSING SYSTEM

Feature

For dosing the agents volumetric or gravimetric

Advantage

Amount programmed in the recipe, done via input device

Permanent check of the density (only massflowmeter)

Residual batch mode (Automatic adjustment of agent's amount to the weight of seed) Dosing accuracy within 5ml or 5g

Easy to clean

Benefit

No mechanical adjustment of the quantity necessary

Automatic stop of operation in case of sedimentation in the liquid

Automatic coating of residual batches



POWDER FEEDER

Feature

Fully-integrated powderfeeder with optional variable speed drive and eccentric feeding screw

Advantage

Easy adjustment of amount of powder, programmed via input device Simple and accurate dosing by volume within $\pm 5\%$

Residual batch mode (Automatic adjustment of agent's amount to the weight of seed)

Horizontal rotating stirrer above feeder screw

Big diameter of asymmetric designed hopper prevents bridging of powder

Benefit

No mechanical adjustment of the quantity necessary

Automatic coating of residual batches

Useable for many types of powder and applications





CAPACITY AND SIZES

The CENTRICOATER is available in six different chamber sizes (2 kg up to 250 kg) and ten different models.

The CENTRICOATER is available as a single chamber for manual feeding operation, as a single chamber with PLC-control for single batch coating and as a full-automated compact machine for quick installation, using computer automatic control with different options (residual batch coating, library of recipes, protocol printer, ...).

The standard lab-coaters CC-Lab and CC10LAB are designed for the manual coating of small quantities of seeds in a laboratory or in breeding stations. The lab-coaters are operating similar to the industrial used coaters, only in a smaller scale. All products are scaled manually by the user, before filling into the lab-coater. Also the opening of the inlet and discharge flap is done manually.

For a more pleasant use of the lab-coaters it is also possible to equip the lab-coaters with a scale for the seed, with pumps for the liquid agents and with a powder feeder.

The special executions of the CC10 and CC20 are used for automatized coating of single batches. The coater consists of the mixing chamber, the necessary equipment for dosing the agents, eg. pumps and powder feeders, and the PLC-control for the automatized coating procedure.

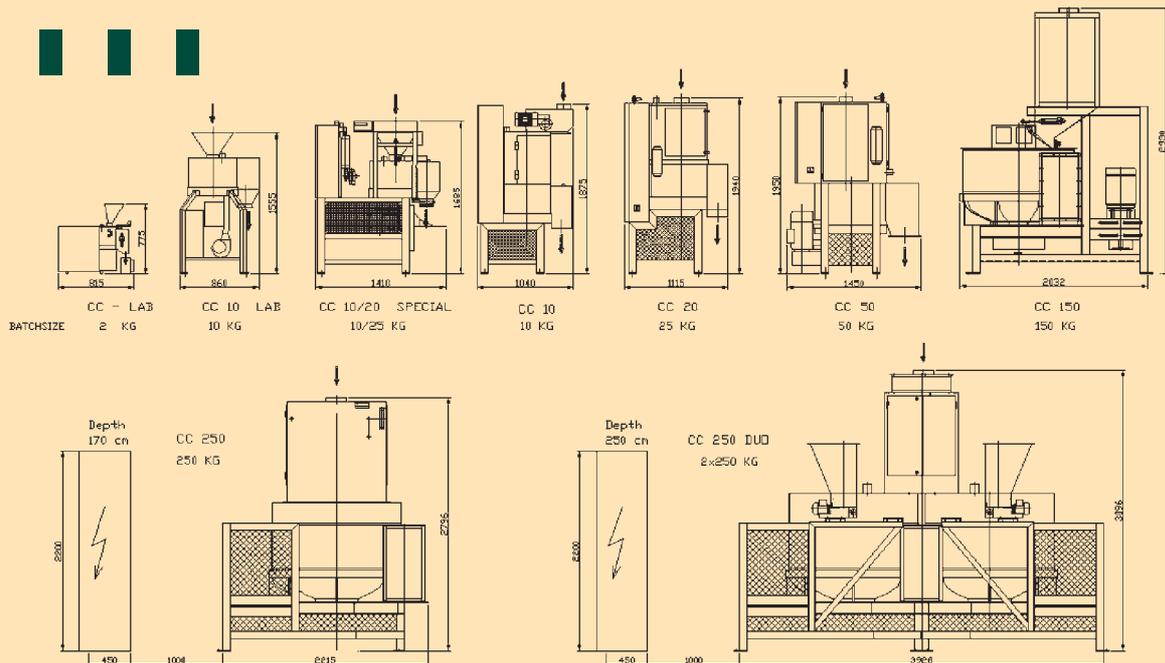
There is no scale included with this coater. As optional equipment an indicator for the weight inside the pre-bin is available. This type will be mainly used in small breeding stations, which have prescaled amounts of seed.

The operator fills the prepared amount of seed inside the pre-bin of the coater. After starting the coating procedure the PLC-control makes one batch automatically according to the programmed recipe, so each batch is reproduceable to the others. After removing the coated seed and feeding the new seed again, the next batch can be done.

The compact-coater series, starting with CC10 up to CC250DUO, is designed for a quick installation at the client's site. After connecting the seed-pipes for filling and discharging, the main power supply and the compressed air for operation and the flexible tubes for delivering the agents, the coater is ready for production. The coaters are equipped with an electronic scale, mounted on the mixing chamber and with a programmable logic control PLC for automatic operation after programming the necessary data and amounts of agents into the recipe. The check of the amount of agents is done manually in the calibrating mode. In the recipe library are stored all necessary data, like the timeschedule for coating, weight of seed, amount of agents, speed of the different drives.

Training mode for CENTRICOATER - PLC - control **NEW**

Especially for weight-gaining operation the CENTRICOATER - PLC - control can be equipped with a special training modul, which allows online - training of recipes by manual operation of the CENTRICOATER and its equipment. The parameters of the trained cycle will be optimized by the PLC-control. and can be stored for automatic operation of the CENTRICOATER, for use in the following coating process.

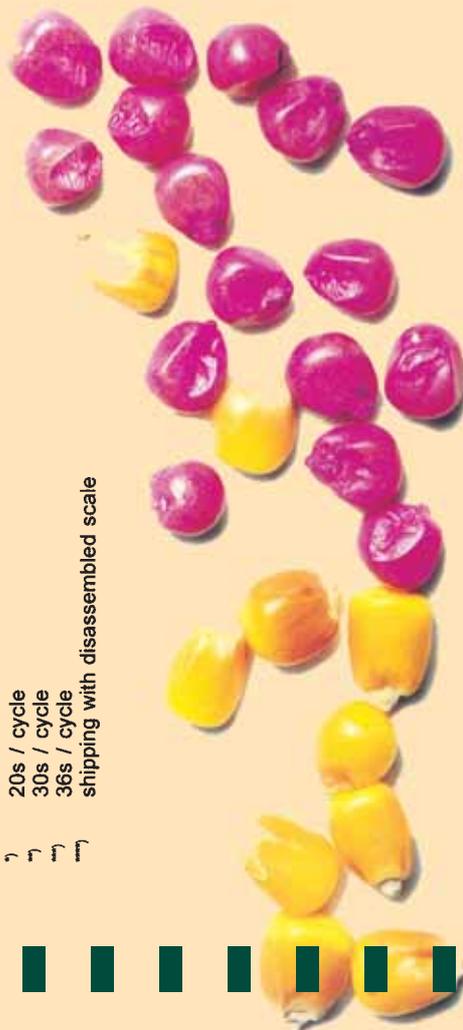


CENTRICOATER

Type		CC-Lab CC 10 LAB	CC 10 Special CC 20 Special	CC 10	CC 20	CC 50	CC 150	CC 250	CC 250 DUO
Batchsize (wheat)	kg (lbs)	2 (4,4) 10 (22)	10 (22) 25 (55)	10 (22)	25 (55)	50 (110)	150 (165)	250 (550)	2x 250 (2x 550)
Nominal capacity, Cyclotime see remarks	batches/h	Manual operated	appr. 60 ... 120 dep. on operator	180 ¹⁾	180 ¹⁾	180 ¹⁾	120 ²⁾	100 ³⁾	200 ³⁾
Nominal capacity & batchsizes Cyclotime see remarks	Wheat Maize Sunflower	-----	-----	10kg / 1,8/h ¹⁾ 8kg / 1,5/h ¹⁾ 5kg / 0,9/h ¹⁾	25kg / 4,5/h ¹⁾ 22kg / 4,0/h ¹⁾ 13kg / 2,3/h ¹⁾	50kg / 9,0/h ¹⁾ 45kg / 8,1/h ¹⁾ 25kg / 4,5/h ¹⁾	150kg / 18/h ²⁾ 135kg / 16/h ²⁾ 75kg / 9/h ²⁾	250kg / 25/h ³⁾ 225kg / 22/h ³⁾ 125kg / 12/h ³⁾	2x 250kg / 50/h ³⁾ 2x 225kg / 45/h ³⁾ 2x 125kg / 25/h ³⁾
Power supply (appr.)	kw (HP)	1,1 (1,5) 2,2 (3,0)	3,0 (4,0) 4,0 (5,5)	3,0 (4,0)	4,0 (5,5)	7,5 (11,0)	20,0 (28,0)	20,0 (28,0)	35,0 (50,0)
Switchboard		On CC	On CC	On CC	On CC	On CC	Switchboard 2500x450, 2200 (100 x 18, 87)	Switchboard 2500x450, 2200 (100 x 18, 87)	Switchboard 2500x450, 2200 (100 x 18, 87)
Operation		Manually operated	Coating process PLC-controlled	Fully PLC- controlled	Fully PLC- controlled	Fully PLC- controlled	Fully PLC- controlled	Fully PLC- controlled	Fully PLC- controlled
Designed for		Laboratory	Small lots, pre- bagged seed	Installation in a seed line	Installation in a seed line	Installation in a seed line	Installation in a seed line	Installation in a seed line	Installation in a seed line
Pneumatic	m ³ /h at 6 bar	1,0 ---	1,0 2,0	1,5	2,5	4,0	6,0	6,0	8,0
Aspiration	m ³ /h (cfm)	local hood 100 (60)	200 (120) 300 (180)	200 (120)	300 (180)	300 (180)	500 (300)	500 (300)	750 (440)
Dimensions (appr.)	mm (inch)		1450 (57) 700 (28) 1700 (67)	1100 (43) 800 (31) 1900 (75)	1150 (45) 800 (31) 1950 (77)	1450 (57) 800 (31) 1950 (77)	2100 (83) 1700 (67) 2930 (115)	2250 (89) 1800 (71) 3100 (122)	4000 (157) 1800 (71) 3100 (122)
Weight net (depending on additional equipment)	kg (lbs)	105 (235) 185 (410)	400 (900) 550 (1220)	400 (900)	550 (1220)	850 (1900)	2200 (4900) + 750 (1700)	2500 (5550) ³⁾ + 750 (1700)	4500 (10000) ³⁾ + 750 (1700)

¹⁾ 20s / cycle
²⁾ 30s / cycle
³⁾ 36s / cycle
 shipping with disassembled scale

Many additional accessory for supplementing a complete plant:
 Mixing tanks 100l, 200l, 400l, 600l and 800l, with stirrer and switchboard
 Washwater tanks 100l, 200l, 400l, 600l and 800l
 Sample taker systems for automatic sampling
 ect.





CIMBRIA HEID GmbH
Heid-Werkstrasse 4
A-2000 Stockerau, Austria
Phone: (+43) 2266 699
Fax: (+43) 2266 65590
E-mail: heid@cimbria.at
Homepage: www.heid.cimbria.com

Holding company:
A/S CIMBRIA
Cimbria House - P.O. Box 40
7700 Thisted Denmark
Phone: (+45) 96 17 90 00
Fax: (+45) 96 17 90 19
E-mail: cimbria@cimbria.com
Homepage: www.cimbria.at

