

Dryer-Cooler

Crown Iron Works Company

A CPM Company



The Crown Dryer-Cooler (DC) designed to meet your production requirements

The Crown Design

Crown obtained the license for the Crown/Schumacher Desolventizer-Toaster-Dryer-Cooler (DTDC) in 1976. Taking note that not every oil mill required a complete DTDC, Crown developed and designed a separate unit known as the Crown Dryer-Cooler (DC). This refinement of the DTDC has become extremely popular in vegetable oilseed plants over the years.

Points to Remember

- Over 95 Crown DCs have been installed by Crown throughout the world.
- Crown DCs are available for capacities up to 10,000 metric tons per day.
- Crown DCs operate on soybeans, canola, rapeseed, sunflower, peanuts, corn germ, woodchips, cottonseed, palm kernel, and a wide variety of other products.

Features and Advantages

- The evenly distributed flow of hot air and cool air in a true counter-current system results in high efficiency and reduces energy costs.
- Initial investment reduced as compared to a rotary steam tube dryer and cooler.
- One-piece steel shell to prevent leakage.
- Hard surfaced steel sweep arms for longer wear.
- Automatic gate mechanisms are adjustable for loading each tray with the desired depth of meal.
- Heavy duty gate bearings and seals for long wear and minimum leakage.
- Quick opening round manholes for easy access and tight closure.
- Evaporative cooling utilized to obtain a steam efficiency above 1.5 Kg of water evaporated for every Kg of steam consumed.

In the solvent extraction of oilseed flakes, the spent, or freshly extracted flakes come from the extractor with approximately 30 percent solvent (hexane) content. The typical Desolventizer-Toaster (DT) will remove this solvent by live steam evaporation and cook the meal. The Crown DC when used with a DT, will further dry and cool the meal to produce a meal with the desired characteristics for sale and storage.

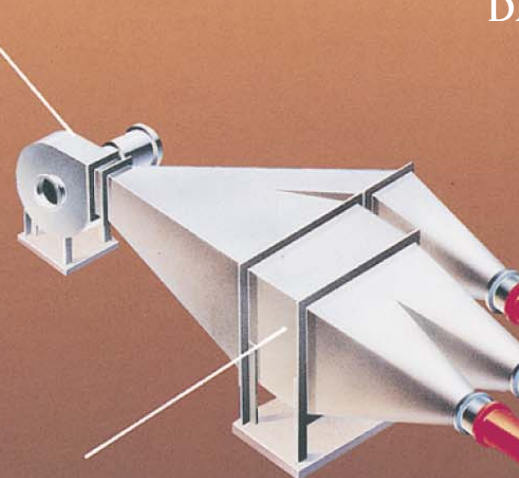
The DC consists of a vertical series of trays arranged so the meal can flow successively from the top tray to the lower trays. The material is agitated by rotating sweep arms which extend from a common central shaft. The DC utilizes gate and sail mechanisms to convey the meal from one tray to the next.

Each tray is provided with a round, quick-opening access manhole. The round, center loaded design ensures uniform contact pressure on the rubber sealing gasket. Long-life graphite-bronze radial bearings are provided on each of the trays to hold the mainshaft in alignment. A special flex coupling eliminates gearbox misalignment problems.

The drying and cooling is accomplished the same way as in our DTDC by injecting heated air in the drying section and using ambient temperature air to cool the meal in the cooling section. The evenly distributed flow of hot air and cool air in a true counter-current system results in extremely high efficiency and reduces energy costs.

Crown Dryer-Cooler Operation

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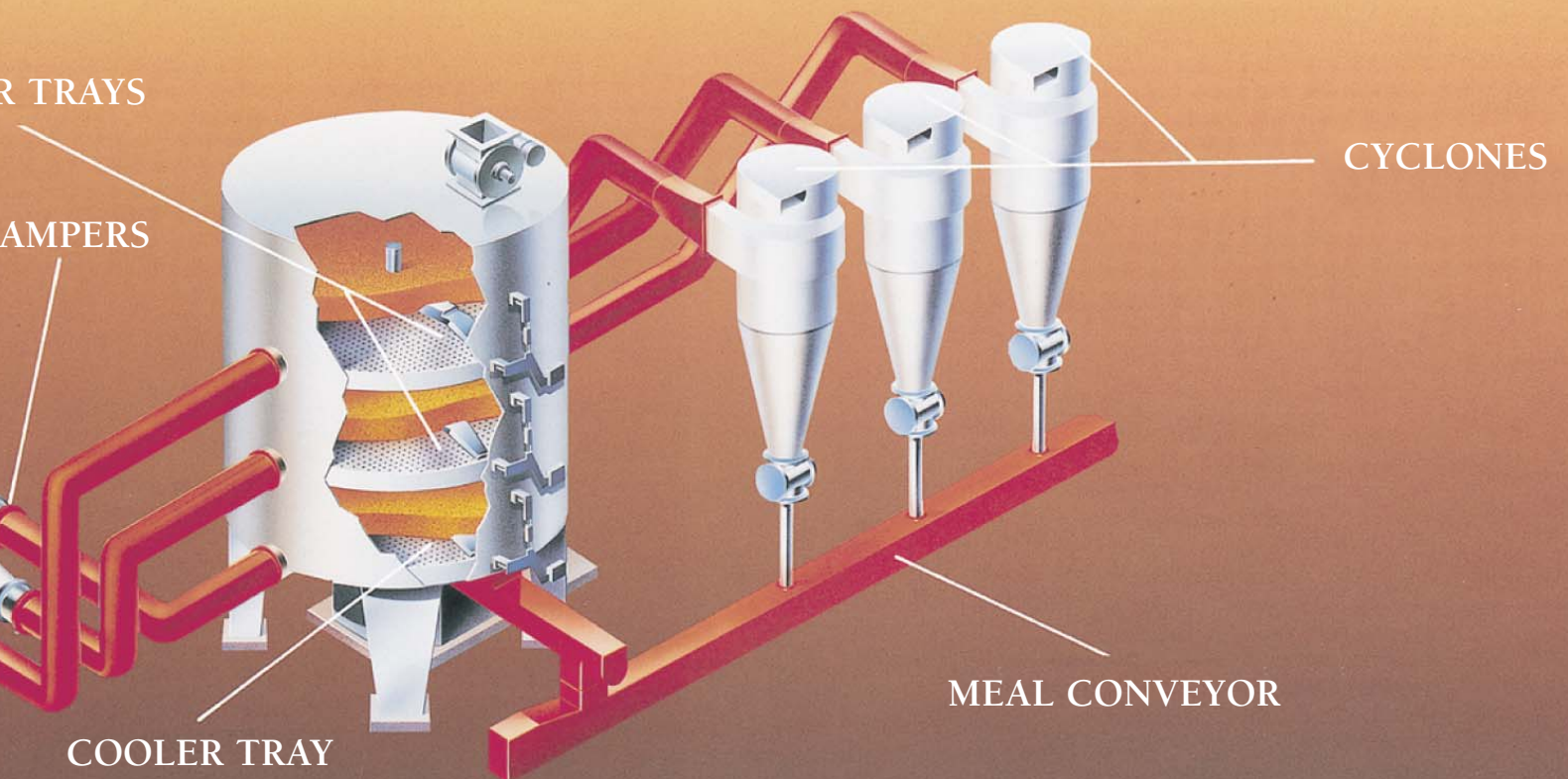
HEATERS

DRYER

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The DC has proven to be a very efficient and effective way to dry and cool most any solvent extracted vegetable oil bearing meal. The DC includes the advantages of the DTDC when used with a DT.





NORTH AMERICAN HEADQUARTERS
CROWN IRON WORKS
A CPM COMPANY
P.O. Box 1364
Minneapolis, MN 55440-1364 USA
Ph: +1-651-639-8900
Fax: +1-651-639-8051
sales@crowniiron.com
www.crowniiron.com

EUROPEAN HEADQUARTERS
EUROPA CROWN LTD.
A CPM COMPANY
Waterside Park, Livingstone Road
Hessle, East Yorkshire, HU13 0EG England
Ph: +44-1482-640099
Fax: +44-1482-649194
sales@europacrown.com
www.europacrown.com

OFFICES:
ARGENTINA, BRAZIL, CHINA, HONDURAS, INDIA, MEXICO, RUSSIA AND UKRAINE



OFFICE LOCATION
2500 West County Road C, Roseville, MN 55113 USA