



CPM Crown's Cold Dehulling Process

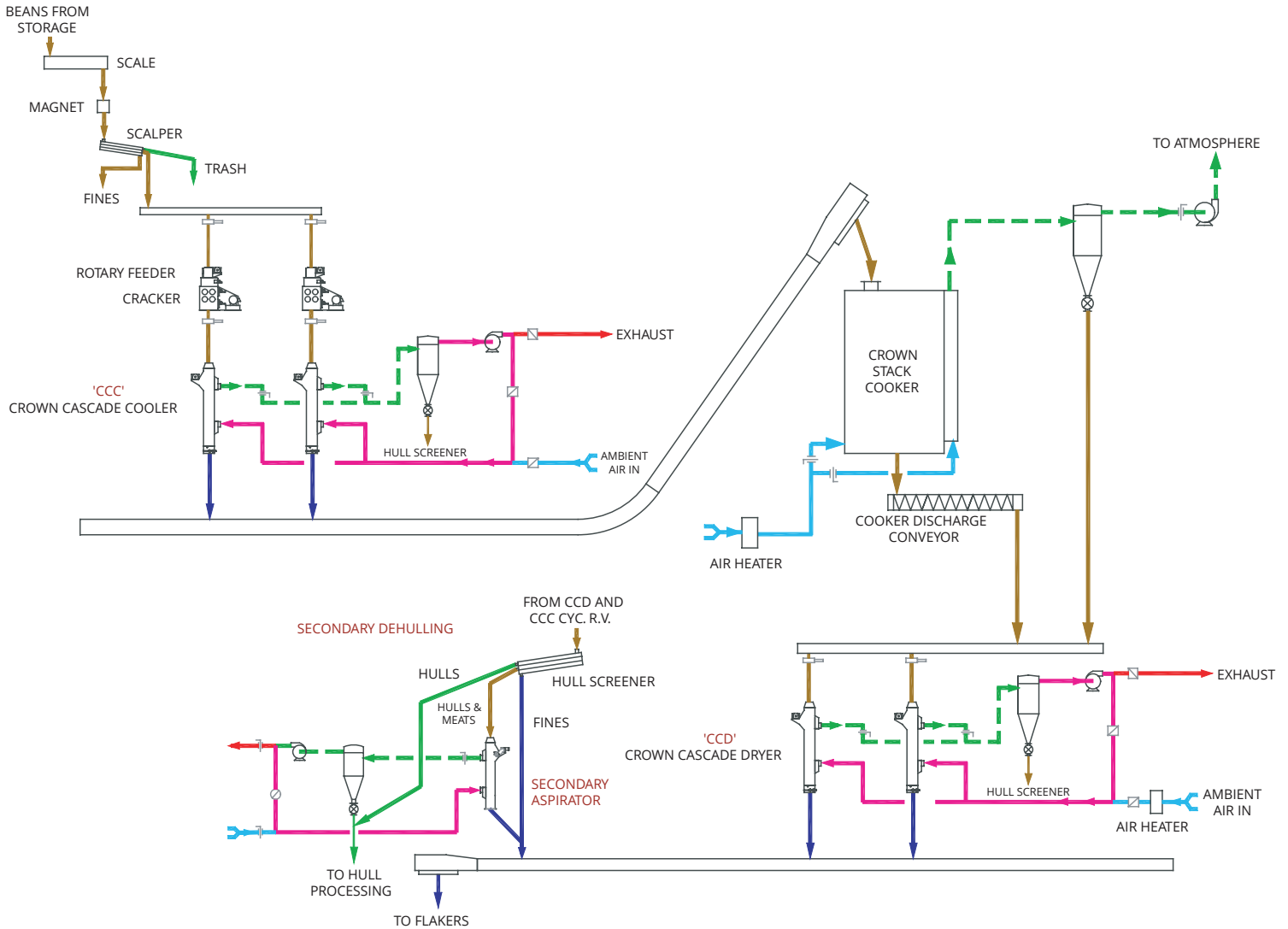


DESIGNED TO ADD ASPIRATION TO EXISTING PREPARATION EQUIPMENT

The CPM Crown Cold Dehulling process is used when the customer has a grain dryer or conditioners already installed and they simply want to add aspiration to their system to create a high protein meal. The cold dehulling system will have the Crown Aspirator after the cracking rolls. In the Aspirator, the beans and hulls cascade downward, releasing hulls from the meats. Re-circulated countercurrent heated air will lift the hulls, separating the two products. After the Aspirator, the meats enter either an existing rotary conditioner or stack cooker for additional conditioning. In this conditioner, additional hulls are released from the meats. This material is sent to the Aspirator. As in the Aspirator, the meats cascade downward,

releasing the last remaining hulls. The heavier meats fall out the bottom of the Aspirator as the lighter material is lifted with the countercurrent airflow. In the Aspirator, warm air is again introduced to maintain proper extraction temperatures. The product lifted in the Aspirator and Aspirator is a combination of hulls and small meats that are separated in the Crown Secondary System. A two-deck Hull Screener is used to size the material in three cuts: hulls sent to hull processing, meats sent to flakers, and the middle cut, a combination of small meats and hulls. The middle cut is sent to a Crown Secondary Aspirator where the final fiber and hull fat separation is controlled.

Typical Cold Dehulling Flowsheet



LEGEND			
MEATS & HULLS OR SEED		HULLS, SMALL MEATS & AIR	
RECIRCULATING AIR		HULLS, DUST & AIR	
EXHAUST AIR		HULLS, TRASH	
AMBIENT AIR		MEATS OR FLAKES	
		PNEUMATIC DAMPER	
		MANUAL DAMPER	
		SLIDE GATE DAMPER	

NOTE: ALL EQUIPMENT AND DUCTWORK CROSSHATCHED TO BE FIELD INSULATED

Specifications of the Two-Line Cold Dehulling system may be modified or changed to meet specific client requirements and/or manufacturing necessity.

- Crown Aspirators CCD, CCC, and Secondary (All patented):**
 counter-current, re-circulated air flow provides ultimate particle size separation while reducing the amount of emissions.

- Crown Secondary Dehulling System (Patented):**
 Final sizing and separation of hulls and meats lifted in the CCD and CCC.

For ongoing innovation, Crown's technology and team are second to none.

CPM Crown's Global Innovation Center is a facility unlike any other. A fully functional 15,000 sq. ft. pilot plant, analytical lab and training facility, the GIC offers piloting capabilities from benchtop lab scale to multiple tons per day of continuous production, simulating real life and enabling customers to develop and test new product concepts in a confidential, controlled environment.

The GIC has capabilities in preparation, extraction, desolventizing, drying, deodorizing, refining, fat splitting, renewable diesel and specialty extraction (including Hemp CBD Oil). Crown's technical expertise, R&D and full lifecycle process provide guidance and support at every step from feasibility, trials and custom processing to commercial-sized operations and aftermarket.



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