



R & D/Test Facilities

Crown Iron Works Company





Model V Extractor with Desolventizer-Toaster



Down Draft Desolventizer (DDD)



Model II Loop Extractor

CROWN IRON WORKS LABORATORY:

A Completely Continuous Pilot Scale Crushing Facility

TESTING LABORATORY

The Crown Iron Works Minneapolis R&D Laboratory is our commitment to you for continual engineering improvement. Product demonstrations performed in combination with systems research and development, save valuable time and capital by answering questions before final system application. Crown's R&D Laboratory economically aids your process considerations.

Demonstrate your idea before bringing it up at your next board meeting. The Crown Iron Works R&D Laboratory allows you to outline your process from beginning raw material to fully processed products. You can even use our lab for limited/custom processing runs.

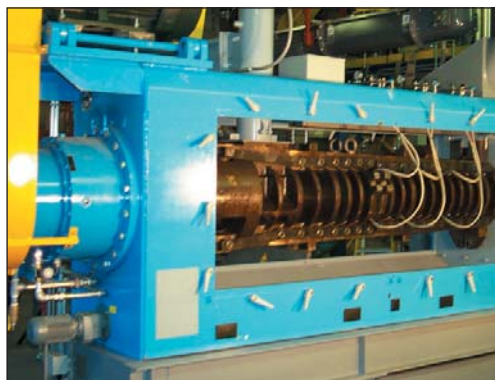
REAL WORLD PROCESSING

Prove the viability of your planned processes before you invest in new equipment, new plants and additional personnel.

With an extensive list of preparation systems, solvent extraction and recovery equipment, complete refining, bleaching and deodorizing capabilities, indirect and direct contact dryers, the Crown Iron Works R&D Lab enables you to continuously:

- Prepare your new material for the next step in processing using industry standard prep equipment (hot dehull, crack, aspirate, condition, flake, screw press, hammer mill and dry).
- Solvent Extract your specialty material with Crown Iron's wide variety of percolation and immersion extractors.
- Test alternative solvents on your materials.
- Use both high and low temperature desolventizing systems.
- Fully refine, bleach and deodorize oil samples using our skid loaded RBD Pilot Plant.
- Dry your specialty material in our wide variety of drying equipment.

Our test lab is completely equipped with lab scale versions of manufactured system components, including the Model II, IV & V Extractors, the Milling Flash Dryer, and the DTDC Desolventizer-Toaster.



HIPLEX® System

HIGH PRESSURE LIQUID EXTRACTION (HIPLEX®)

HIPLEX®

High pressure liquid extraction utilizes mechanical screw press technology along with liquid carbon dioxide and other solvents for removal of extractable materials from solids.

DRYING/DESOLVENTIZING/STERILIZATION

DTDC

For drying, desolventizing, sterilizing, or cooling of water/solvent-wet filter, flakes, powders, and agglomerates where extended residence time is required.

Flash Dryer

For drying or low temperature calcining of filter and centrifuge cakes and powders with minimal size reduction.

Milling Flash Dryer

For drying and milling of agglomerated materials into a fine powder.

DDD

Special design for desolventizing edible white flake, also suitable for drying or heating of foods and grains, polymers, and minerals with low speed agitation, to minimize breakage.



RBD Pilot Plant

COUNTER-CURRENT EXTRACTION/WASHING

Model IV

Immersion type counter-current extractor for granular materials that are heavier than solvent.

Model V

Percolation type counter-current extractor for flakes and good draining materials.



Model IV Immersion Extractor with DDD

REFINING/BLEACHING/DEODORIZING

RBD Pilot Plant

A fully self-contained, semi-works scale system for the refining, bleaching and deodorizing of edible oils.



