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# Crown Iron Works Company

*The Global Leader in Oil Seed Processing*



# Crown Iron Works Overview

**Manufacturing performance in the 21st century requires flexibility, market responsiveness, technical expertise, and unsurpassed quality of product.**

Across the centuries, Crown's track record of success proves they meet your specifications and work to assure your profitability; indeed, Crown Iron Works Company has been protecting the interests of its customers since 1878. Beginning as a heavy metals fabrication company, and later as a process engineering company with its own proprietary line of equipment, Crown has worked to provide solutions guaranteed to meet customer expectations. It is a corporate attitude that is even stronger today.

**Today, your system specifications and requirements demand a company that knows how to rise to the challenge and deliver.**

Today's challenge from the agricultural industry is for high capacity oilseed processing equipment with low operating costs. Crown has delivered by becoming a world-leading designer and manufacturer of oilseed processing equipment.

**At Crown, your profitability is the driving force.**

Crown has the pulse of the industry to know what revenue streams are important. Using this knowledge, we have worked to develop important advances in processing technology to improve your bottom line. Crown's preparation, dehulling, extraction, desolventizing, deodorization, biodiesel, and many other technologies are all designed to give you the maximum return on your investment. Keep an eye on our Research and Development laboratory to keep up with what is new in oilseed processing.

**Operations throughout the world.**

We can help you grow your business and profitability – No other company protects your people, performance and profits like Crown Iron Works, the world's leader in oilseed extraction.





# Crown Iron Works Divisions

## Preparation & Dehulling

As the world leader in soybean dehulling, Crown Iron Works offers three varieties of dehulling systems; Hot, Warm, and Cold Dehulling. Hot Dehulling is the ultimate system offered in areas that process beans directly from the field. Warm Dehulling is preferred by processors who import their soybeans. Cold Dehulling is offered to plants that have existing drying and conditioning equipment, but need to add dehulling equipment to produce high protein meal.

## Solvent Extraction

Crown Iron Works supplies state-of-the-art solvent extraction plants for all types of oil seeds. The heart of the process is the Crown Model III Extractor. Combining shallow bed design, and complete bed turn-over, the unique design of this extractor produces the highest efficiency, lowest energy costs, and most trouble-free operation of any extractor on the market.

With sizes from pilot size to 8000 MTPD, there is a Crown extractor perfectly suited for your plant's requirements. The Crown/Schumacher DTDC is the perfect compliment to the Crown extractor. The DTDC utilizes counter-current sparge steam design, FIFO meal conveyance and a "patented" tray design. The result is a performance which is unmatched in terms of low residual hexane and energy consumption.

## Refining, Bleaching & Deodorizing

Crown's line of edible oil processing systems are specially designed to produce a highly palatable food product for a wide variety of cooking and baking applications. From low-cost production of bulk commodity salad and cooking oils to development of the most sophisticated designer-type oils and fats system, Crown provides the processor with the latest technology and lowest operational costs.

## Oleochemical & Biodiesel

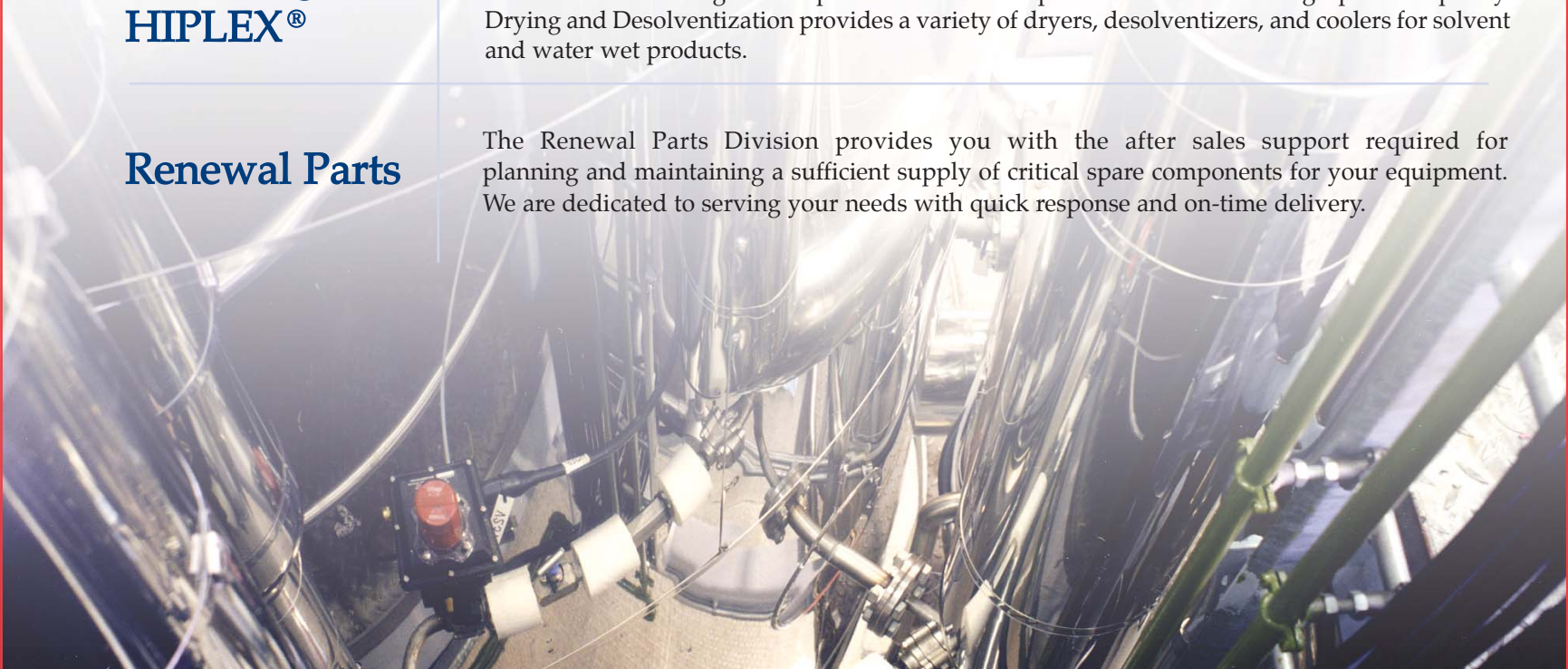
Crown has developed a number of unique oleochemical processes for glycerine production and other various oleochemical plants. Crown's fatty acid recovery systems provide new market opportunities from low-value soapstock streams. Crown's methyl ester technology is setting standards for petroleum-replacing "green" applications including detergent replacers and biodiesel for alternative fuel markets.

## Specialty Processing/ HIPLEX®

Crown serves the Nutraceutical, Specialty Chemical, Food, and Waste Industries in the areas of Specialty Extraction, CO<sub>2</sub> Extraction, and Drying. Specialty Extraction provides process recovery of essential oils and extracts. High Pressure Liquid Extraction (HIPLEX®) uses non-hazardous solvents to extract high value products at low temperatures to maintain high product quality. Drying and Desolventization provides a variety of dryers, desolventizers, and coolers for solvent and water wet products.

## Renewal Parts

The Renewal Parts Division provides you with the after sales support required for planning and maintaining a sufficient supply of critical spare components for your equipment. We are dedicated to serving your needs with quick response and on-time delivery.





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# Research & Development

**The Crown Iron Works Research & Development Lab**, located at our corporate office in Roseville, Minnesota, is our commitment to you for continual engineering improvement.

**The facility consists** of a preparation building and an explosion proof building to house our extraction processing equipment. In the area of preparation the pilot plant can continuously hot dehull, crack, aspirate, flake, extrude, expell, hammer mill, and dry/condition material before extraction. In the area of extraction, Crown's Models III, IV, V, and our new Continuous Supercritical Extractor are being put on line in such a way that the prep area can feed to any of the four extractors. These four extractors have the capability of feeding to either our traditional desolventizer or our edible desolventizing systems. In the area of refining, we have an interesterification, hydrogenation, and winterization skid along with another for refining, bleaching and deodorization. In addition to the above areas Crown has other R&D technologies that are being piloted in our facility.

**A strong committment to Research & Development**, with the addition of the explosion proof extraction area, Crown can demonstrate current and future processes to our clients. We also see the opportunity for this facility to aid in the research of new processes and projects. We have made large investments in the past and are continuing to add to these investments to build a facility that will operate as close to a real production plant as possible. Clients can come to our facility in the strictest of confidentiality and perform their experiments. Again, Crown is doing its best to provide clients with a place to refine their ideas and pilot test them before risking capital expenditures.



# Crown Locations



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