

ANDERSON
INTERNATIONAL CORP

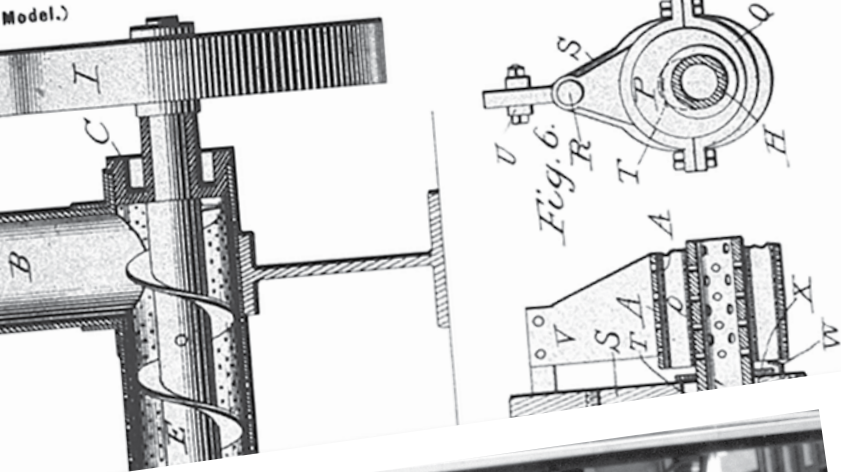
Oilseed Processing Systems from Design to Delivery



647,354.

V. D. ANDERSON.
PRESS.
(Application filed Sept. 6, 1899.)

Patented Apr. 10, 1900.



Anderson is a Global Leader in Oilseed Processing

In 1900, our founder, Valerius D. Anderson, invented the first continuous mechanical screw press - the Expeller®. It was a revolutionary new method for the continuous recovery of edible oil from oilseeds.

Since then, Anderson International Corp has designed, manufactured, and commissioned over 12,000 pieces of processing equipment for over 1,000 plant installations in over 100 countries, processing in excess of 100 different materials.

Witnesses
D. Purdie

Fig. 2.



Achieving Results

Anderson provides processing solutions that solve our clients' biggest challenges and achieve outstanding results. Our certified, experienced team is dedicated to tailoring end-to-end solutions that meet your needs now and lay a foundation of success for the future.

Designing complete processing systems, which allow each unit operation to function in unison, is a complicated and complex task. And success is only achieved when our clients derive profitability from our technologies and support. In order to achieve this goal, Anderson has processes in place to ensure the entire project from proposal to processing is as efficient as possible.

Assess

We think about the entire life-cycle of the equipment put in place. Our team provides insight into processes, infrastructure, and business goals.

Design

Anderson engineers begin with advice on equipment selections based on specific needs and budgets. Our engineering department works with you to develop a full plant design around the specified equipment.

Build

We procure materials, manufacturing and shipping over the course of a rapid 20-30 week period. Our project managers regularly provide updates.

Install

We are flexible and work with our customers' local contractors or we can provide Anderson approved contractors to oversee proper installation of all equipment per design specifications.

Train

Anderson process engineers develop standard operating procedures for each system built and provide on-site operational training for our clients' production teams.

Trust. Value. Loyalty.

Trust. Value. Loyalty. This is our motto because quality is paramount in our products and in our interactions with our customers. Anderson is committed to continuously improving our organization with this goal in mind. We demonstrated our commitment to quality by achieving ISO 9001:2008 certification in April 2014. And two years later, we were one of the industries' first companies to upgrade our certification to the new ISO 9001:2015 standard. Our focus on quality and continuous improvement enables us to offer the level of service and support that our customers have come to expect and desire.

As an ISO-certified manufacturer, we stand by our products and provide complete process support spanning the lifetime of our systems. Anderson has equipment installations from the 1920s that are still in operation today.

Our success is ultimately measured by the success and profitability our customers derive from our technologies and support. Anderson's knowledge and drive to innovate assure that our customers can rely on our technology, services, and expertise for decades to come. As we say at Anderson, "We only succeed as our customers succeed!"



What Constitutes an Oilseed Crush Plant?

Inspection and Storage

Upon receiving and unloading, raw material is inspected to assure seed is of the highest quality. Proper storage is key to protecting raw materials and for accessing quantities for continual output.



Grain Cleaning and Removal of Foreign Material

Removal of Foreign Material and Grain Cleaning eliminates unwanted material. This step also helps prevent equipment damage. Recommended Equipment: Screener Cleaners (Scalping and Precision), Aspiration, Magnets, and De-stoners.



Particle Size Reduction

Efficient size reduction of the seeds allows for easier oil removal during separation. Recommended Equipment: Roller Mills: Cracking & Flaking, Grinders, and Vertical and Horizontal Hammer Mills.



Heat Treatment for Conditioning, Drying, and Cooking

Heat is applied to rupture the oil bearing structures of the seed and deactivate harmful anti-nutritional factors. Our Extruder shears, cooks, and dries the material. Recommended Equipment: Steam Jacketed Vessels, High Shear Extruders, Roasters, Hot Air Belt Dryers, Plate Heat Exchangers, and Expanders.



Oil Recovery

The Anderson Expeller® press allows for the most efficient separation of oil without the use of harmful chemicals.
Recommended Equipment: Expeller.



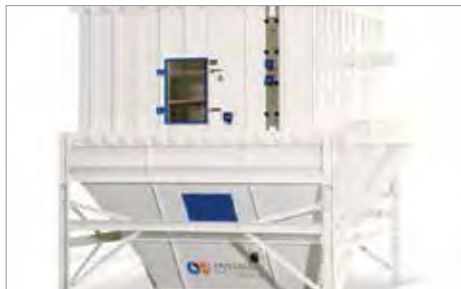
Oil Clarification for Removing Solid Impurities from Product Oil

A screening system allows for the removal of bulk solids from the oil. This is done using gravity to minimize energy consumption. Filtration is required to reduce solid contaminants in the product oil to less than 1% by weight. Recommended Equipment: Centrifugal Separation (decanters and centrifuges), Pressure Leaf Filters and Settling Tanks.



Cake Cooling & Grinding

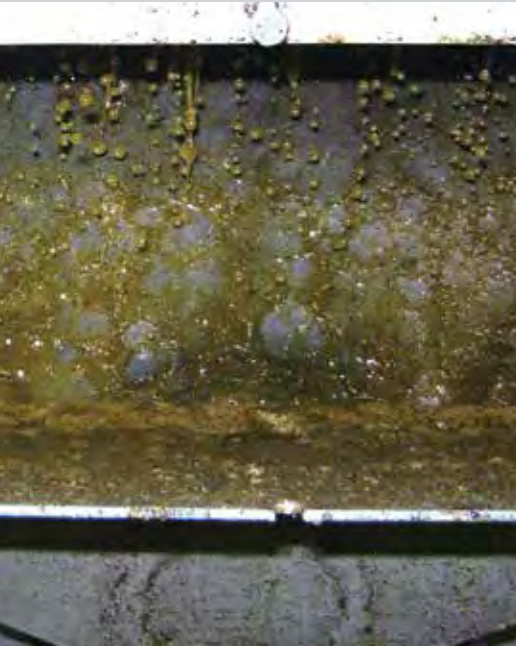
Expeller cake is hot and must be cooled to preserve product quality and allow for safe storage. Once cool, the irregular shaped Expeller cake is ground into a meal for easier storage. Recommended Equipment: Counterflow Cooler, Belt Coolers, and Hammermill.



Material Handling Equipment

The most efficient equipment for transport is based on individual client needs and available space.
Recommended Equipment: Drag and Screw Conveyors, Bucket Elevators, and Pneumatic Conveying Systems.





Dox™ Extruder

The Dox (Dry Oilseed Extruder) is designed to mechanically shear, cook, and dry the material being processed for improved oil recovery. The high-shear environment ruptures the oil-containing bodies within the oilseed and generates frictional heat. This heat deactivates harmful enzymes within the oilseed, flash-dries excess moisture, and cooks the proteins for a more efficient pressing.

Installing a Dox ahead of an Expeller® doubles the capacity of the press, replaces expensive steam-heated cooking vessels, doubles the life of the pressing parts, and reduces meal oil residuals to under 6%. The oilseeds processed with this extruder are low oil content seed (less than 25% oil).

Model	Connected HP	Capacity (MTPD)
8" Dox & Dox-Hivex	150-200	40-60
12" Dox & Dox-Hivex	300-400	100-150

Highlights

- Processes low oil content seed
- Reduces meal oil residuals to under 6%

Features

- High Shear Discharge Head
- Optional Drainage Cage
- V-Belt or Gear Drive
- Manually or Hydraulically Operated Choke
- VFD Driven Feeder
- Shear Pins

Applications

- Soybean
- Whole Cottonseed
- Pre-press Cake

Dox-Hivex™ Extruder

The Dox-Hivex™ Extruder incorporates a drainage cage to allow for the extrusion of high oil content materials (over 30%) while recovering over 50% of the available oil.

Applications

- Canola/Rapeseed
- Sunflower
- Cottonseed meats
- Peanuts/Ground Nuts
- Palm Kernel
- Copra



Anderson Oil Expeller®

The new line of Anderson Oil Expeller presses are designed to continue Anderson's long-standing tradition of providing the industry with the most durable and efficient mechanical screw presses on the market.

Along with maintenance- and operator-friendly packages, the systems can press over 100 metric tons per day (MTPD) in a single machine with residuals as low as 5% when paired with Anderson's extrusion technology. With minimal modifications the Anderson Oil Expeller® presses can change from one oilseed application to another, allowing for adaptation to market shifts and fluctuation. In addition, the machinery limits the downtime required for maintenance, increasing the profitability of the press.

Model	Connected HP	Capacity (MTPD)	Residual Oil
12/12-6	250-300	100-120	5-7%
10/10-6	150-200	60-80	5-7%
7/7-4.5	75-100	35-45	5-7%

Features

- Integral press maintenance hoist
- Feed and discharge shaft support for maximum wear life of wetted parts
- Hydraulically adjustable choke for better control
- Fully-reversible gearbox for clearing plug without machine disassembly
- Proprietary dual cast, hard-faced worm design

Applications

- Soybean
- Canola/Rapeseed
- Sunflower
- Peanuts/Ground Nuts
- Copra
- Palm Kernel



CAKE GRINDING HAMMER MILL



SEED CLEANING TRASH and HULL REMOVAL



TRAMP METAL MAGNETS

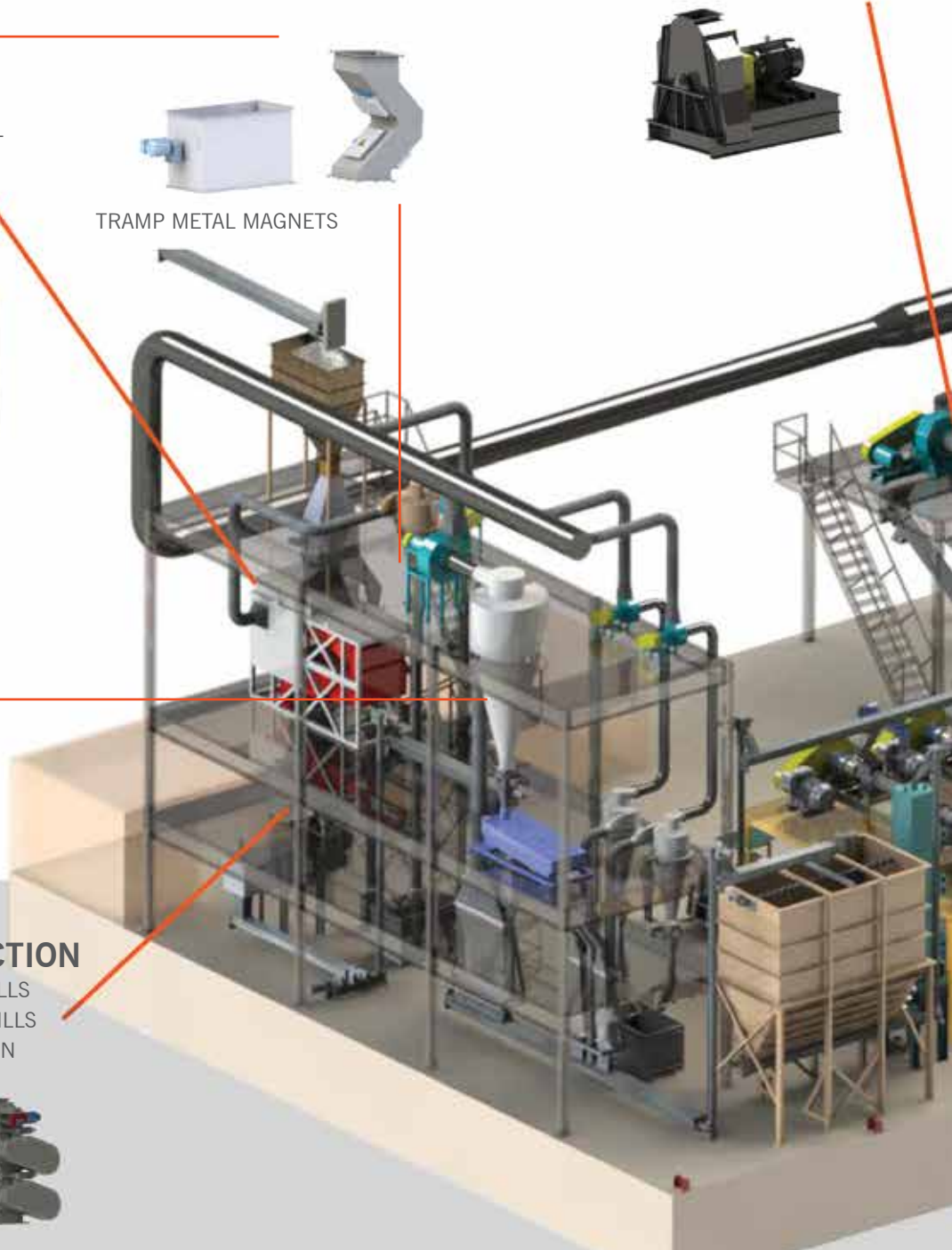


SEPARATING AND ASPIRATION



SIZE REDUCTION

ROLLER MILLS
HAMMER MILLS
EXTRUSION



CONTROLS

A PLANT-WIDE CONTROL SYSTEM ALLOWS MULTIPLE PIECES OF EQUIPMENT TO OPERATE IN UNISON.

- Individual Equipment Push Button or Touch Screen Panels
- Automated Plant-Wide Control System



Complete oilseed milling systems for over a century.

CAKE COOLING
VERTICAL COOLER



OIL FILTRATION
PRESSURE LEAF FILTER



OIL SCREENING
SCREENING TANK

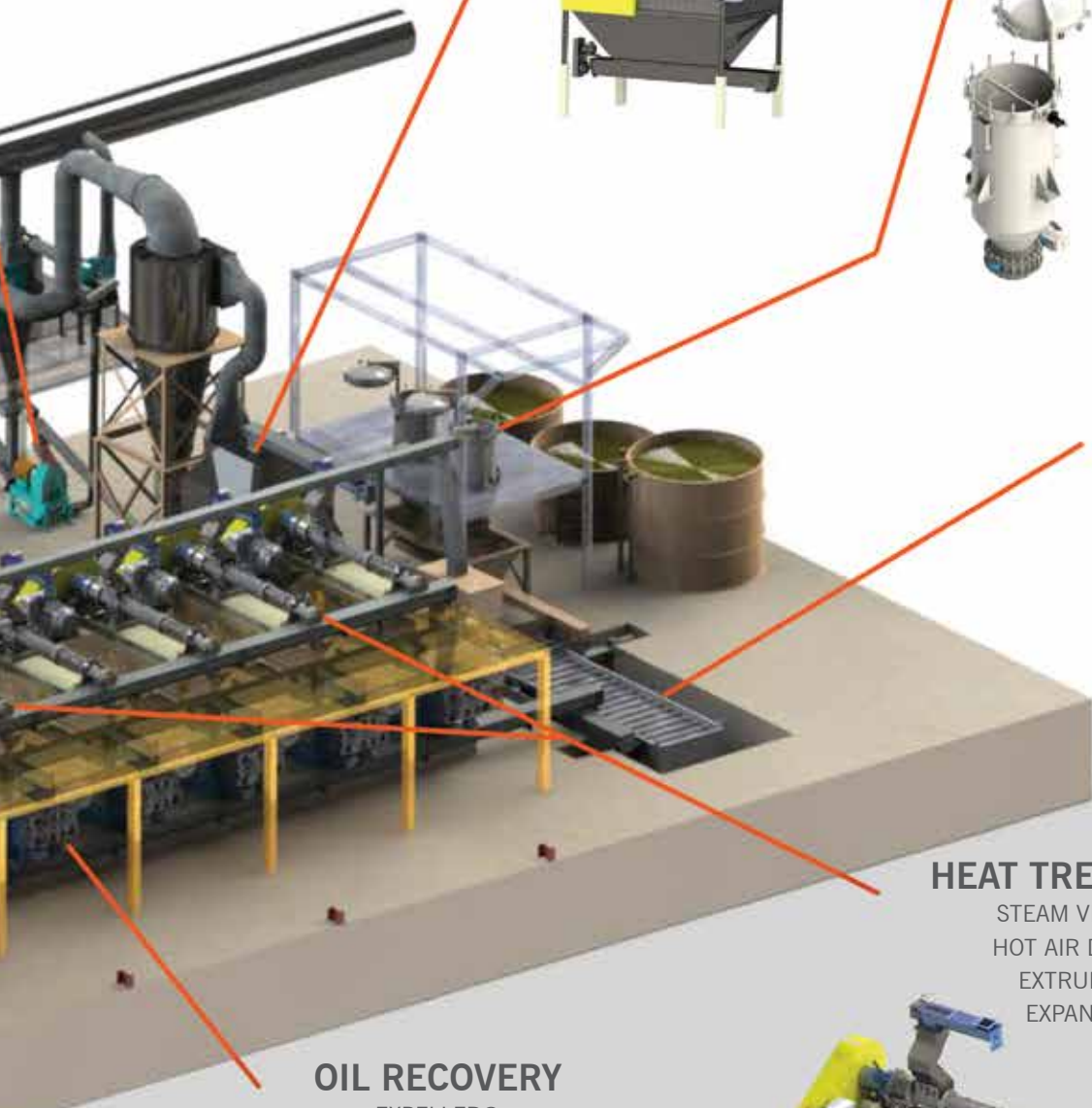
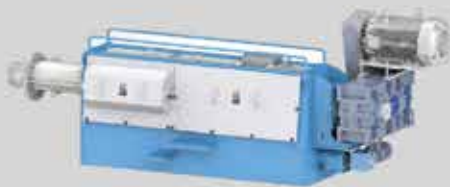


HEAT TREATMENT

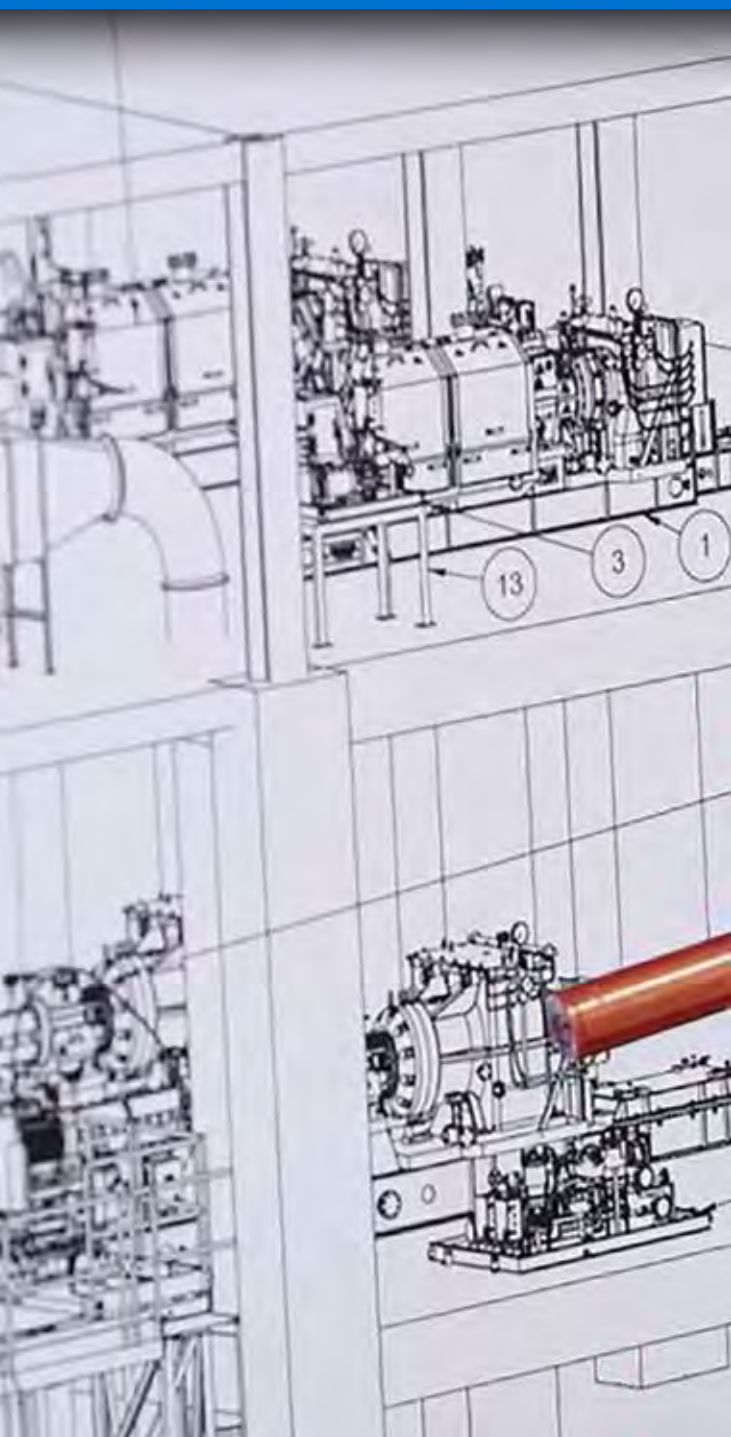
STEAM VESSELS
HOT AIR DRYERS
EXTRUDERS
EXPANDER



OIL RECOVERY
EXPELLER®

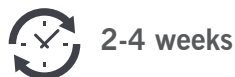


Project realization through project management support.



Equipment Selection, Preliminary Design, and System Proposal

Anderson process engineers assist with equipment selection based on the customer's specific needs and also provide budgetary figures.



Contract Negotiation and Approval

Once orders are placed, a project management representative is assigned and drives all deliverables.



System Design

Anderson's engineers design plant layouts and equipment specifications for client review and feedback.



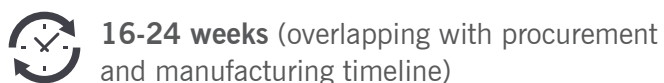
Procurement of Materials, Manufacturing, and Shipping

During this phase, Anderson's project manager provides continual updates for client.



Equipment Installation Supervision and Inspection

Anderson works with the customer's local contractor or supplies an Anderson approved contractor to oversee proper installation of all equipment per our design specifications.



Operator Training and Commissioning

Anderson process engineers develop standard operating procedures for each system and provide on-site operational training for the production team.

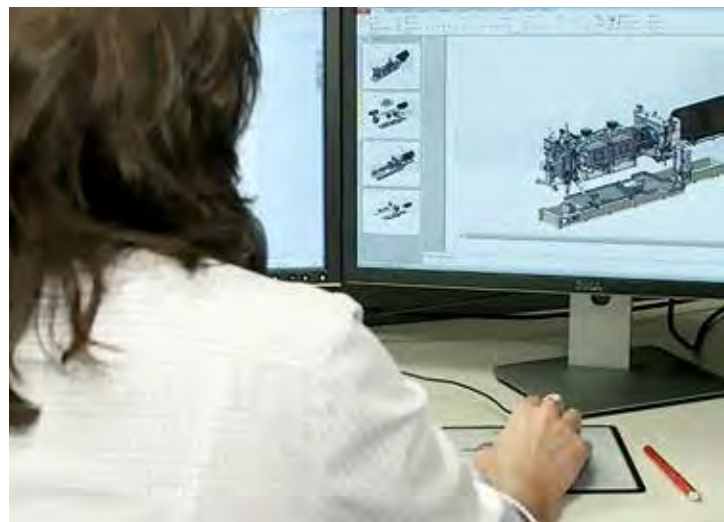


Aftermarket Support

Each client receives the full support of our technical service team for continuous process operations and maintenance of their facility:

- Operation training
- Maintenance training
- Engineering design support for project expansion
- Dedicated inventory programs

For the lifetime of a facility – through maintenance training and after market spare parts supply – we are here for you.



Anderson's Worldwide Representation

Our sales representatives are located globally to support clients in over 100 countries with process expertise, durable equipment, innovative designs and metallurgies, replacement parts, research and development, total plant layouts, installation supervision, and provides the training necessary for optimal performance of the entire system.

Rosario, Argentina
Sydney, Australia
São Paulo, Brazil
Santiago, Chile
Beijing, China
Cairo, Egypt
Oldenburg, Germany
Thessaloniki, Greece
Mumbai, India
Moerkapelle, Netherlands
Auckland, New Zealand
Stow, Ohio, U.S.
Houston, Texas, U.S.
Metro Manila, Philippines
Voronezh, Russia
Johannesburg, South Africa
Seoul, South Korea
Taipei, Taiwan
Fort Worth, Texas
Istanbul, Turkey



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Expeller, Diamondbar, and Expander-Dryer are registered trademarks of Anderson International Corp

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BY THE NUMBERS

1900

YEAR ANDERSON INVENTED
THE EXPELLER® PRESS

12K

PIECES OF CAPITAL EQUIPMENT SOLD

130

YEARS OF EXPERIENCE

>80

OILSEEDS, BEANS, AND
NUTS PROCESSED