

ADVANCING THE FUTURE

SEED PREPARATION AND OIL EXTRACTION PLANTS

MORE
THAN
45
YEARS



SINCE
1976

TNL TECNAL successfully develops and produces equipment and facilities for vegetable oil extraction, conveying, cleaning, drying and storage of grain, port facilities, feed mills and equipment for corn ethanol plants.

We give immediate and tailored answers, according to the needs of each customer. It is the Brazilian way to export its high technology, serving more than 50 countries of all continents.

For the future, we aim for the continued growth and development of our technologies for seed processing. **TNL TECNAL** is proud to be one of the world's leader in quality and technology in the agribusiness sector.



Located in the city of Ourinhos, in the state of São Paulo, TNL TECNAL has an industrial complex of more than 125,000m² and currently employs more than 600 employees, being a benchmark for productivity, quality and social responsibility.

PREPARATION AND VEGETABLE OIL EXTRACTION PLANTS

With design, engineering and processes developed under new concepts, **TNL TECNAL** has the most advanced technology for seed preparation and oil extraction. Combined with the best yield rates and the lowest production costs (solvent, steam, electricity and labor) we are today a highlight in the vegetable oil scenario, meeting the most demanding international standards of quality and productivity.





EQUIPMENT FOR SEED PROCESSING



HULL AND FINES SEPARATOR

TNL TECNAL hull and fines separator was designed to separate large, medium and fine product.

These machines have an orbital oscillation system, which guarantees excellent separation performance, with smooth operation, without vibrations in the structure. The machine is provided with ventilation system and cyclone.

- High yield;
- Robustness and practicality;
- Maximum utilization.

SUNFLOWER SEED CRACKER / DEHULLER

CAPACITIES: 100, 150 AND 200 TPD

TNL TECNAL sunflower seed cracker/dehuller has a grooved feeder and a body equipped with metal beaters and angled knives for seed dehulling.

The pulp and hulls are discharged onto separator sieves, where they will be separated through sieves and aspiration.

- Feed flow regulation system;
- Easy access to internal parts, facilitates maintenance;
- Impact rotor with high strength blades.



AIR COLUMNS

For hull and fine separation. Hi-efficiency are collumms, equipped with internal pipes that provide a better detaching of hulls from the core.

Rotary feeder distributes the material uniformly.

SEED DRIER / CONDITIONER

The vertical seed drier/conditioner combines the functions of conditioning the whole seed with the hulls, which heats the grain slowly from approximately 25°C to 75°C, and the function of drying the seed, reducing its moisture, from approximately 13.5% to 10.5%.

This results in a good cracking of the seeds, a perfect separation of the hulls and an excellent flaking.



CRACKERS

CAPACITIES UP TO 1,500 TPD

TNL TECNAL crackers mill provide the cracking of the beans in 4 to 8 pieces. It is equipped with 4 rolls mounted on spherical roller bearings with different speed between them, with opening regulations of the rolls with a scaled wheel, allowing fine adjustments – even in the closest point the rolls do not touch each other. Quick hooking/unhooking to open quickly the rolls in case of emergencies and start-up of the machine. The feeder is equipped with a magnetic plate and with a device for adjustments and control of the feeding flow of material.

- Robust and easy to operate;
- Rolls protection system against foreign bodies;
- Start-up without forcing the motor.



ROTARY CONDITIONER / ROTARY MEAL DRIER

CAPACITIES UP TO 5,000 TPD

TNL TECNAL rotary conditioners are the perfect equipment for oil seeds conditioning.

- Homogeneous conditioning or drying;
- Low power consumption;
- Low steam consumption;
- Low maintenance cost;
- Feeding screw and discharge bin made to order, according to the specific need of each customer.

Can be installed inside or outside the building.

Heating pipes can be of carbon steel or stainless steel.



FLAKERS

CAPACITIES: 200, 300 AND 500 TPD

TNL TECNAL Flakers are designed and built for precise operation in obtaining the desired flake thickness.

- Robust and easy to operate.
- Equipped with first line rolls, manufactured in Europe.
- Power transmission by only one motor, what allows equal maintenance of the two rolls if compared to flakers with one motor for each roll.
- Easy removal and mounting of the rolls from the frame. Split bearing houses help the job and there is no need to remove them. Removal of hydraulic cylinders is also not necessary.
- Flaking rolls mounted with spherical roller bearings drive system which provides different speed for each roll.
- The adjustment of the flake thickness is done by hydraulic piston system, with independent pressure adjustments through external device, mounted in the main body of the flaker.
- The feeding is done by an exclusive homogeneous distribution system, with double shafts for mixing materials with different granulometry. Feeder is equipped with self-cleaning magnet system.
- Safety stopper to avoid collision between rolls, easy adjustment performed by the operator without the need of long stops.



EQUIPMENT FOR SEED PROCESSING

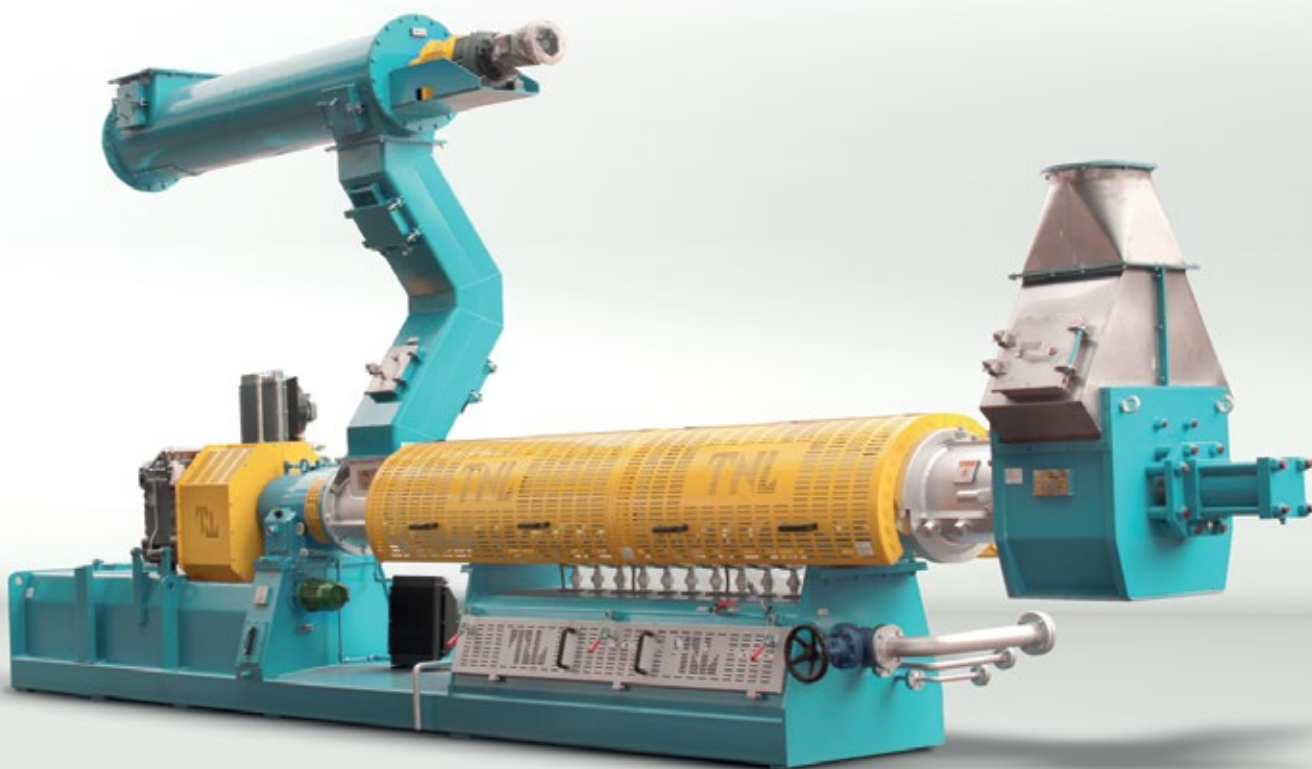
EXPANDER

CAPACITIES: UP TO 4,000 T/24H (SOYBEAN BASIS)

TNL TECNAL was the first company in the world to design and manufacture, in 1978, expanders for application in seed preparation for oil extraction. Since then, TNL TECNAL has been continuously innovating and updating its Expanders.

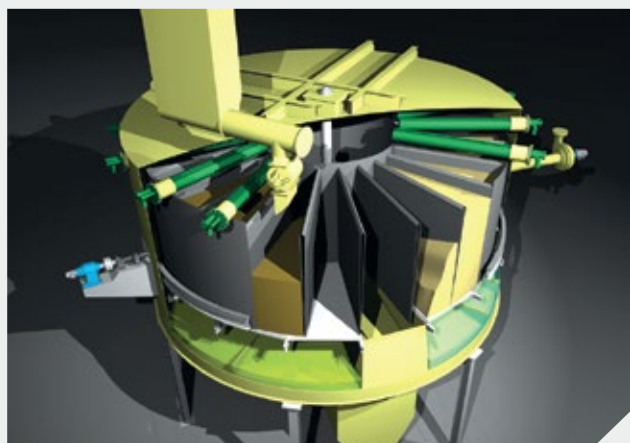
Years of experience have lead TNL TECNAL to have the most reliable and efficient expanders in the world, with more than 500 expanders running successfully in more than 200 customers around the world.

TNL TECNAL Expanders provide maximum efficiency and minimum wearing, thus low maintenance cost.



**AVAILABLE FOR: SOYBEAN, SUNFLOWER, RAPESEED,
COTTONSEED, RICE BRAN AND OTHER OIL SEEDS.**

VEGETABLE OIL EXTRACTION PLANTS



ROTARY CELLS EXTRACTOR FIX BOTTOM TYPE

CAPACITIES FROM 300 TO 5,000 TPD

TNL TECNAL rotary cells extractor is comprised of a set of cells mounted in a gas-proof casing with solvent pumping & showers spray systems. The cells are fixed on a central shaft, mounted on bearing and move over a fix and self-cleaning screen. The equipment operates at low speed, low level of friction, low power consumption and almost maintenance free.

- more contact time and area;
- less pumps;
- less energy consumption.



DESOLVENTIZER AND TOASTER - DT CAPACITIES FROM 300 TO 5,000 TPD

TECNAL DTs or DTDCs have the latest design and the most modern operating technology that provide very efficient desolventization at low steam consumption.



DISTILLERY

Full distillery equipment line, with modern technology and design. Approximately 35% more efficient, providing a high and constant miscella flow.

GLOBAL PRESENCE



Over 45 years exporting to the world.



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