

# A DYNAMIC TEAM AT YOUR SERVICE.

EQUIPMENT



## SALES TEAM



**DEPARTMENT EQUIPMENT MANAGER**  
Franck Bardini  
franck.bardini@tournaire.fr



**PROCESS EXPERTISE  
BUSINESS DEVELOPMENT**  
Jean-Marie Chiocci  
jean-marie.chiocci@tournaire.fr



**SALES ENGINEER**  
Laurent Wagner  
laurent.wagner@tournaire.fr



**SALES ENGINEER**  
Eric François  
eric.francois@tournaire.fr



**INTERNATIONAL SALES ENGINEER**  
Nicolas Tétard  
nicolas.tetard@tournaire.fr

## SERVICES TEAM



**DESIGN OFFICE MANAGER**  
Laurent Blassiau  
laurent.blassiau@tournaire.fr



**PURCHASING DEPARTMENT MANAGER**  
Laurent Perot  
laurent.perot@tournaire.fr



**PRODUCTION MANAGER**  
Patrick BOURULLEC  
patrick.bouroullec@tournaire.fr



**TECHNICAL SALES CUSTOMER SERVICE**  
Michel Beysson  
michel.beysson@tournaire.fr



**EXECUTIVE ASSISTANT**  
Karine Condo  
karine.condo@tournaire.fr



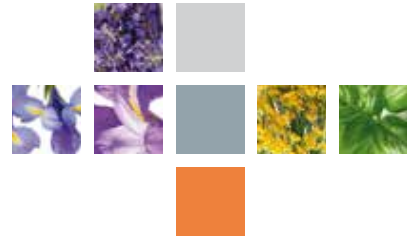
“ WORKING TOGETHER  
WITH OUR CLIENTS TO CREATE  
SUSTAINABLE VALUE! ”

## PRESENT IN 70 COUNTRIES



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## TOURNAIRE PRODUCES THE BEST, PROTECTS THE MOST.



Founded in 1833, Tournaire accompanied the first perfume plant distillers in Grasse. Over the years Tournaire continually built up its expertise as the perfume industry developed and to meet the specific needs of its clients. Today the Tournaire Group is organized in two divisions:

- The Equipment Division, a specialist right from the start in the engineering, manufacture, installation and commissioning of pilot units or full made-to-measure production plants for the processing of natural raw materials ;
- and the Packaging Division, offering the widest range of technical packaging on the market (pure aluminum, coextruded plastic or glass), with the highest levels of quality, service and safety.

Present in more than 70 countries throughout the world, Tournaire has 240 employees, mainly working in its Grasse site, and its turnover in 2016 was € 57 millions, with 56% international sales.

### ▶ TOURNAIRE'S EQUIPMENT DIVISION: DELIBERATELY LOOKING TO THE FUTURE

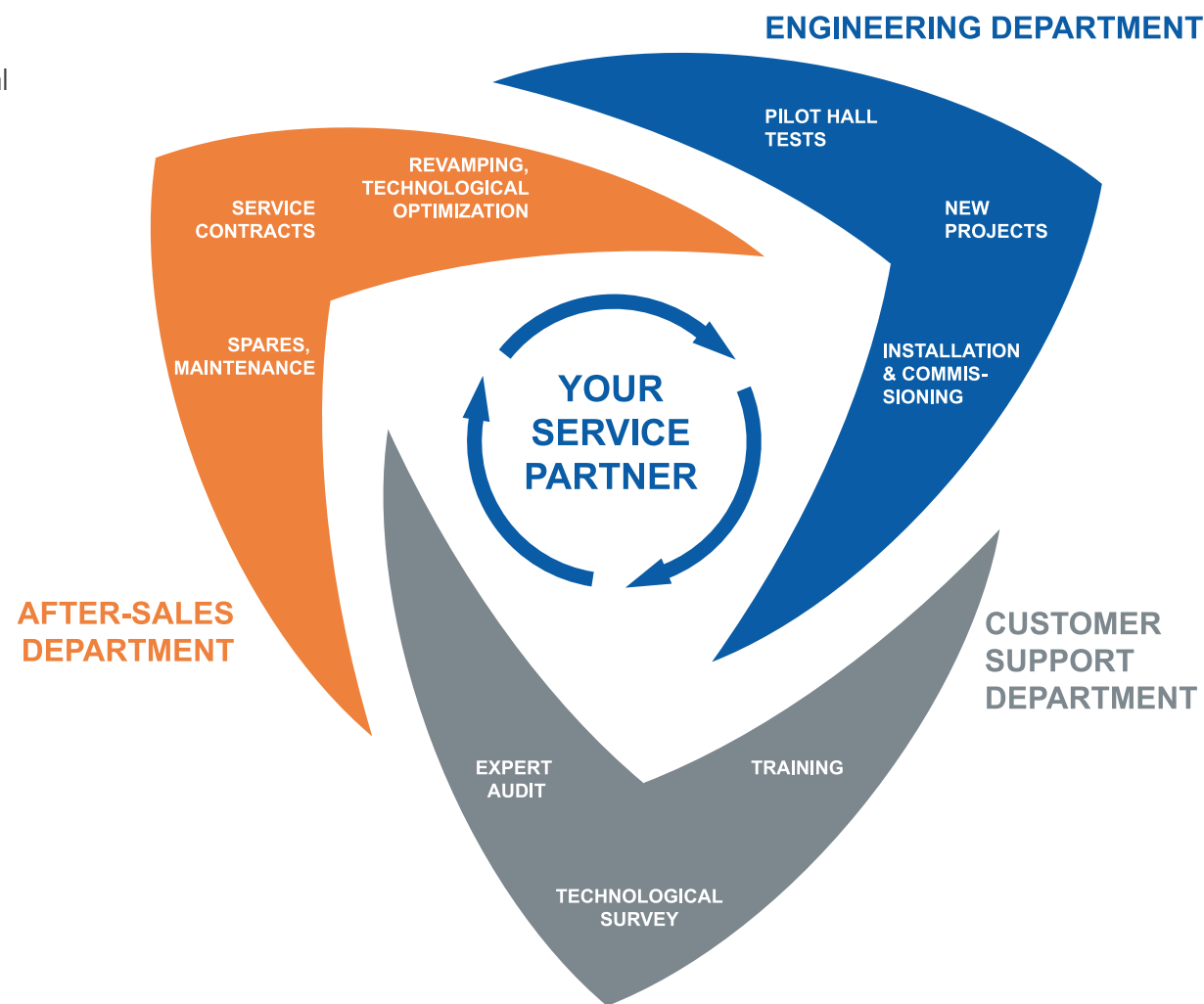
In a fragmented and divided market such as that of the industrial equipment sector, Tournaire's Equipment Division is the only supplier capable of adopting a cross-cutting approach, designing a complete production process based on premium solutions and, thanks to its unique engineering skills, offering customized turnkey equipment that corresponds precisely to the needs and expectations of its clients.

#### ▶ OUR MISSION:

- To enhance the value of your products and solutions and to contribute to your industrial performance thanks to the support of our "Transformation" know-how.

#### ▶ OUR COMMITMENTS:

- To support you throughout the life-cycle of your industrial processes thanks to our extensive, ever-evolving offer,
- To propose even more innovative solutions, from pilot halls to the revamping of your existing facilities.



- ▶ Optimized, competitive solutions, adapted to your specific needs.
- ▶ Quality, On-time delivery and Performance: commitments backed by 180 years of experience.

- ▶ An attentive Service Partner.
- ▶ Teams committed to our Client values to guarantee your long-term satisfaction.

## TOURNAIRE, EQUIPMENT DIVISION



### ▶ INNOVATIVE SOLUTIONS FOR PRECIOUS RAW MATERIALS.

Flowers, leaves, gums, resins, seeds, bark, roots, medicinal plants ... Tournaire's Equipment Division has always believed that quality products deserve quality processing. This ambition is shared and put into practice every day by our staff, whose know-how, enthusiasm and professionalism are universally acknowledged.

In partnership with our industrial clients, who are naturally demanding – *perfumes, flavorings, cosmetic, health, specialty chemicals, etc.* – we design and implement solutions for extraction, distillation, rectification, with batch, static or stirred extractors, in an unending quest for innovation and performance.

### ▶ TURNKEY AND MADE-TO-MEASURE TO MEET YOUR NEEDS.

The only supplier on the market capable of designing a complete production process with premium solutions, Tournaire's Equipment Division, thanks to its unique engineering skills, can offer you turnkey and customized solutions that precisely meet your needs. We install our products throughout the world, following an optimized quality process.



# PROVEN HIGH-PERFORMANCE PROCESSES.

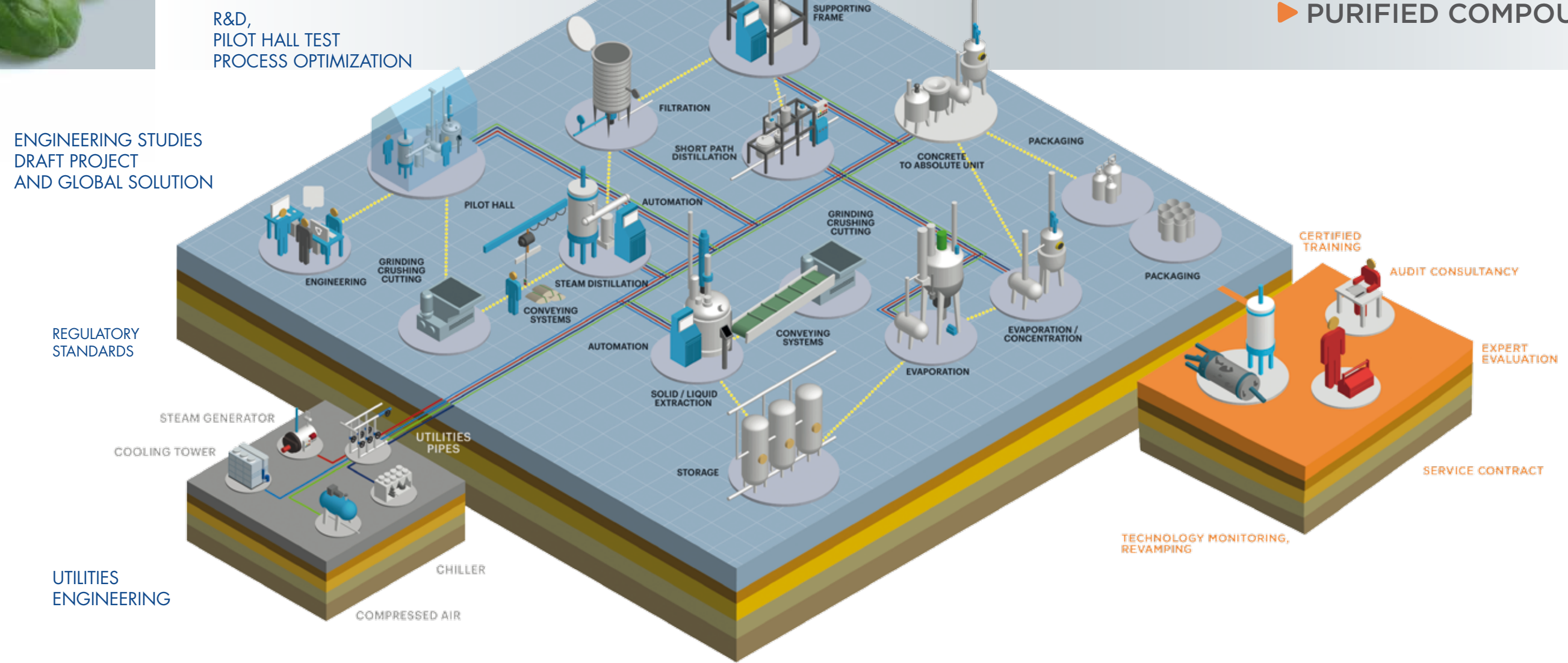
The pioneer spirit that was at the origin of Tournaire has led us to develop innovative solutions incorporating the latest techniques and processes on the market.



▶ FLOWERS,  
LEAVES, GUMS,  
RESINS, SEEDS,  
BARK, ROOTS...

## DESIGN, MANUFACTURE AND COMMISSIONING OF TURNKEY UNITS

- ▶ ESSENTIAL OIL
- ▶ VEGETAL EXTRACT
- ▶ CONCRETE
- ▶ ABSOLUTE
- ▶ PURIFIED COMPOUND



R&D,  
PILOT HALL TEST  
PROCESS OPTIMIZATION

ENGINEERING STUDIES  
DRAFT PROJECT  
AND GLOBAL SOLUTION

REGULATORY  
STANDARDS

UTILITIES  
ENGINEERING

## YOUR TAILOR-MADE SOLUTION IS OUR STANDARD



# FIELDS OF APPLICATION.

**B**y distillation and extraction, or by fractionation, we transform natural raw materials into essential oils, extracts, concretes, absolutes, etc., for the perfume, food flavoring, cosmetic and health sectors, in close collaboration with the R&D departments of our clients.

## ▶ PERFUMERY

The processing of raw materials derived from plants is a field in which Tournaire's Equipment Division has more than 180 years of experience. This allows us to propose the most highly-developed distillation and extraction solutions. Steam distillation and extraction by volatile solvents are the processes most widely used to obtain natural extracts.

## ▶ FLAVORINGS & INGREDIENTS

The production of flavorings is also part of the historic core business of Tournaire's Equipment Division, which can thus support its clients by offering the widest range of equipment items and units dedicated to the production and purification of natural extracts.

## ▶ COSMETICS

Positioned well upstream in the value chain, the equipment and units offered by Tournaire are present in many applications designed for the manufacture of ingredients for cosmetics, through processes of extraction, purification, mixing, filtration, etc.

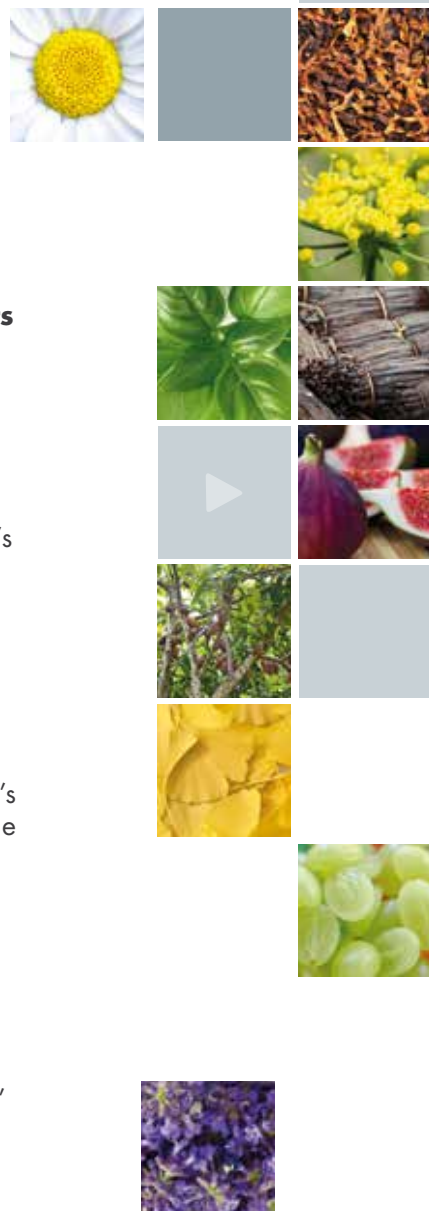
## ▶ SPECIALTY CHEMICALS

Tournaire's equipment range covers a large number of basic operations involved in chemical engineering, in particular:

- The primary stages of synthesis/reaction, condensation and decantation;
- The intermediate stages of concentration, crystallization, evaporation or rectification;
- The finishing, filtration and drying stages..

## ▶ HEALTH

The health sector makes extensive use today of the expertise and processes of Tournaire's Equipment Division because we take into account, right from the start the standards, directives and references now mandatory in this very demanding market, in which the use of natural ingredients is developing rapidly.



# DOMAINS OF EXPERTISE

**D**epending on your line of business, Tournaire's Equipment Division Equipment can offer a series of solutions:

- ▶ **ENGINEERING:** Right from the first stages of your project our engineering team can help you define the most effective solutions for your specific requirements and support you through the feasibility studies, draft project, budgeting and design phases, through to the production, installation and commissioning of your made-to-measure unit.
- ▶ **PILOT HALL:** Producing made-to-measure units in response to needs expressed by our clients is one of Tournaire's special skills. Our Pilot Hall helps you to validate the technical feasibility of your industrial unit and/or customized solution and precisely determine the key sizing and performance parameters.
- ▶ **PROCESSES:**
  - DISTILLATION:** A full multi-purpose range of batch distillation and hydro-distillation units working under pressure or at atmospheric pressure.
  - RECTIFICATION:** Batch or continuous rectification units working at atmospheric pressure or under vacuum down to 0.5 mbar absolute pressure.
  - EXTRACTION:** A unique range of static or stirred batch extractors for the processing of a great variety of raw materials, from the most fragile flowers to bulk or crushed materials.
  - EVAPORATION:** Batch or continuous evaporation units working at atmospheric pressure or under vacuum down to 0.1 mbar absolute pressure
  - FILTRATION/DRYING:** Single-plate pressurized or non-pressurized filters; multi-stage pressurized filters; stirred filter-dryers (Nutsche filters).
  - MOLECULAR DISTILLATION:** for the separation, purification or decoloring under extreme vacuum conditions (1.10<sup>-3</sup> millibars) of heat-sensitive products with high molar weight and viscosity, and products with high melting or boiling point.
  - SUB-CRITICAL WATER EXTRACTION:** An innovative solvent-free extraction process compliant with sustainable development criteria (energy efficient, reduced VOC emissions, no trace of solvents).
- ▶ **YOUR SERVICE PARTNER:** Our commitment to support you is backed by a wide range of Expert Service offerings available throughout the life cycle of your installations: installed bases, spare parts, trouble shooting, certified training, audit, service contracts, revamping, etc.

## SOME REFERENCES

