



SYSTEMS DESIGN OF DE DIETRICH®

**IMPROVED EFFICIENCY
FOR YOUR PEACE OF MIND**





EQUIPMENT, **SYSTEMS**, SERVICES

FROM SINGLE REACTION UNITS TO SYSTEMS

DE DIETRICH PROCESS SYSTEMS RELIES ON A SYNERGY OF ITS COMPETENCIES AND EXPERTISE TO PROVIDE A COMPREHENSIVE OFFER AIMED AT THE FINE CHEMICAL, PHARMACEUTICAL AND RELATED INDUSTRIES. ITS DEVELOPMENT IS ORGANIZED AROUND THREE BUSINESSES: EQUIPMENT, INTEGRATED SYSTEMS AND SERVICES.

SINCE 1684

SINCE ITS CREATION IN 1684, THE FRENCH COMPANY, DE DIETRICH® HAS NEVER STOPPED EVOLVING. BY CREATING SYNERGIES WITH PARTNER COMPANIES, BY INTEGRATING KNOWLEDGE IN SKILL SETS, DE DIETRICH® IS TODAY A WORLD LEADER IN THE DESIGN AND MANUFACTURE OF EQUIPMENT AND ACCESSORIES IN ENAMELLED STEEL FOR THE CHEMICAL AND PHARMACEUTICAL INDUSTRIES.

A COMPREHENSIVE APPROACH

Whether it is a matter of equipment, systems or services, De Dietrich® develops a comprehensive approach that focuses on operational performance and cost optimisation.

SPECIFIC KNOW-HOW

For De Dietrich®, each project is exemplary and each end result a reference. Our know-how is brought to bear in the field chemicals, pharmaceuticals and allied industries working in corrosive environment.

It provides expertise from the early stage of the design up to the commissioning of a complete system including simulation, 3D model, manufacturing, qualification and training of the end user.

MULTI-PROJECT EXPERIENCE

De Dietrich®'s promise is first and foremost the expertise developed by its workforce, whether on technical issues or in project management.

It is the result of an active research and development policy that facilitates a scientific approach to our special skills.

To this expertise, which is backed up by high quality equipment, is added irreplaceable practical experience which enables us to check the validity of the choices proposed. In the end, De Dietrich® is a commitment to responsiveness to create a lasting and deeply implicated relationship with our customers.

FIT TO PURPOSE

TO YOUR PROCESS REQUIREMENTS



IN LINE WITH THE CUSTOMER'S PROCESS

Our systems are not simply designed based on our knowledge of our equipment. They also, and especially, take account of the particular requirements of the processes of our customers.

Our approach is very structured.

The starting point is a PFD process flow diagram/PID piping instrumentation diagram combined with a smart PEP project execution plan.

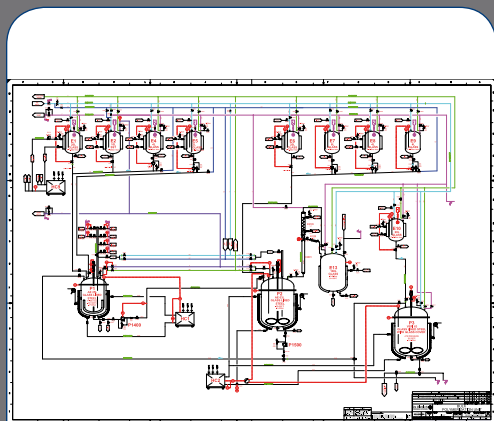
The deliverable of the detail study will consist of data sheets, 3D model layout in addition to calculation and safety studies (HAZOP) whereas required.

Communication and approval sessions with the client are key milestones before De Dietrich® starts the manufacturing.

FROM KILOLAB TO INDUSTRIAL SCALE

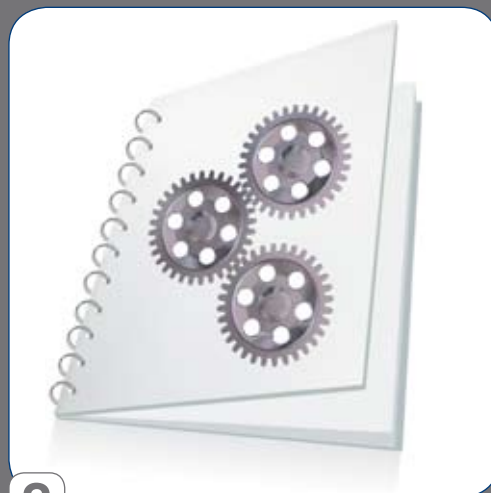
Because of our wide range equipment from glass to glass-lined items, De Dietrich® is able to size projects from kilolab to industrial scale through pilot plant.

THE LIFE CYCLE OF THE PRODUCT IN EIGHT STEPS



1

PID / PFD PROVIDED BY THE CUSTOMER OR PREPARED BY DE DIETRICH® AND APPROVED BY THE CUSTOMER



2

PREPARATION OF THE QUALITY AND QUALIFICATION DOCUMENTS (DATA SHEETS, CALCULATION NOTES, HAZOP...)

A SOLUTION PROVIDER ON THE CUSTOMER PROCESS

A SINGLE PROJECT MANAGER FOR EFFECTIVE SUPERVISION

Our ambition is to deliver high quality systems on time to our customers. To that regard, De Dietrich® will point a skilled project manager from end to end supported by lead engineers. He also studies the various options with you in order to give you the best advice according to your needs. This personal approach is synonymous with the end-to-end

qualitative method applied to your project.

Our experts are fully conversant with standards and technical and administrative directives.

3D DESIGN, AN EFFECTIVE APPROACH

3D design cannot be summed up as a graphic aid alone. Admittedly, it offers a better understanding of the final unit. But it also offers the advantage of incorporating the system in its environment and checking its relevance down to the slightest detail, such as the ergonomics

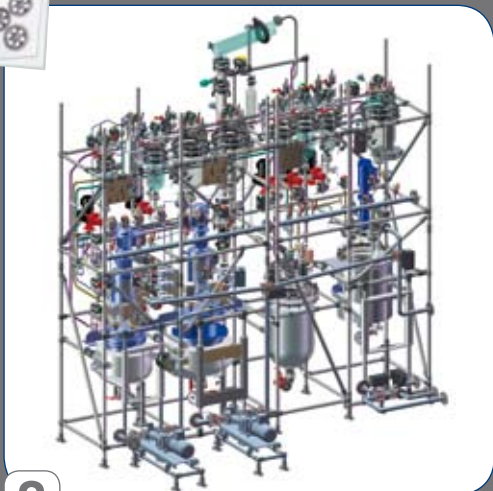
of workstations and compliance with good manufacturing practices.

A virtual visit to the actual project site can be arranged, thus facilitating any updates to the project in accordance with your comments.

When the final version is approved, it is simply a question of extracting the parts listings, the 2D construction drawings and starting assembly. This very elaborate preparatory phase markedly reduces the time spent on assembly and facilitates rapid implementation of the project.

DOCUMENTATION PART OF OUR SERVICE

De Dietrich® has set out documentary procedures that guarantee the documentary qualification and traceability of your project, from initial studies up to commissioning. The method we have perfected for the pharmaceutical industry is applied to all of our projects. Each system project is treated as a whole within the meaning of the ATEX (94/9/EC) and PED (97/23/EC) Directives. This idea involves a comprehensive study of the operating conditions. It is forwarded to our notified bodies and authorises us to mark the system as complete within the meaning of the Directives.



3

CAD 3D DESIGN. PROJECT REVIEWS WITH THE CUSTOMER AND FINAL APPROVAL



4

ASSEMBLY AND TESTS IN DE DIETRICH'S WORKSHOPS INCLUDING A FAT IN THE PRESENCE OF THE CUSTOMER

TIME TO MARKET

THROUGH A TIGHT PLANNING CONTROL

ACCURATE PROJECT PLANNING

De Dietrich® is backed up by its experience with managing equipment with long lead times. Our teams are capable of accurately planning the work and defining the delivery date for the system sticking to the schedule. On regular bases, progress report will be issued for a mutual

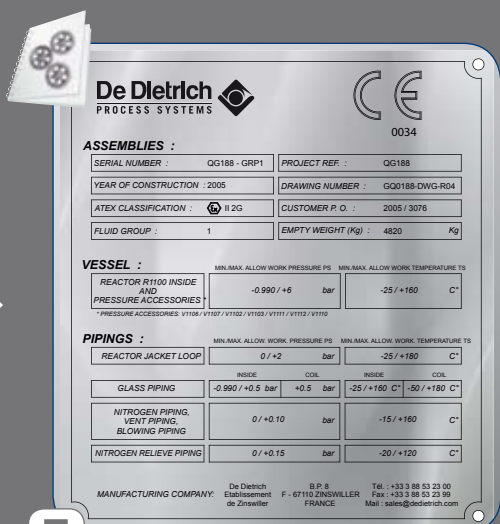
planning follow up, runs smoothly whilst guaranteeing the technical and financial conformity of proposals.

FACTORY ACCEPTANCE TEST «FAT» / SITE ACCEPTANCE TEST «SAT»

The commissioning of a system is preceded by a series of inspections.

These guarantee the optimal performance of our systems.

De Dietrich® will perform a FAT in its premises all together with the client. Once this is done, the system will be partially disassembled. This offers all the advantages of a system which has already been tested and is operational, which considerably reduces start-up lead times.



5 MARKING



6 PARTIAL DISASSEMBLY THANKS TO OUR MODULAR DESIGN FOLLOWED BY SHIPMENT

TECHNICAL SERVICES

OF RECOGNISED QUALITY

QUALIFICATION AND DOCUMENTATION

Our documentation procedures have been established in order to facilitate the Qualification of the installation. They are based on the « Life Cycle Approach » which defines what are the needs related to Qualification, at each step of the project: conception, design, procurement, fabrication, FAT, reception, installation, SAT, IQ, OQ. This documentation includes a risk

analysis for each element.

Protocols for Installation Qualification (IQ) and Operational Qualification (OQ) are prepared according our standards and submitted to the customer for approbation.

The very early preparation of all these documents represents a real help and a valued gain of time for the customer, who just have finally to carry out the Performance Qualification (PQ) of the system, that remains under his responsibility.

A STRONG TECHNICAL CULTURE

Our service provisions are backed up by our workforce with its strong technical culture: engineers, chemists, electricians, welders...

Our service, maintenance and assistance teams guarantee that your production will be able to go ahead in complete safety wherever you are in the world.

THE RECOGNITION OF NOTIFIED BODIES

The reliability of our service provisions is measured in light of the official recognition of notified bodies. All of our procedures and service provisions satisfy a qualification and inspection protocol, which certifies their validity and high technicity.

Our equipment also benefit from prevailing ministerial accreditations and bear witness to the commitment to quality shared by our entire workforce. It bears the CE marking within the meaning of the ATEX and PED machines directives and can be sold with guarantees of cleanability and/or a qualification.



7

QUICK AND EASY ASSEMBLY ON SITE



8

SAT

FROM THE SUPPLIER TO THE CUSTOMER, TRACEABILITY GUARANTEED

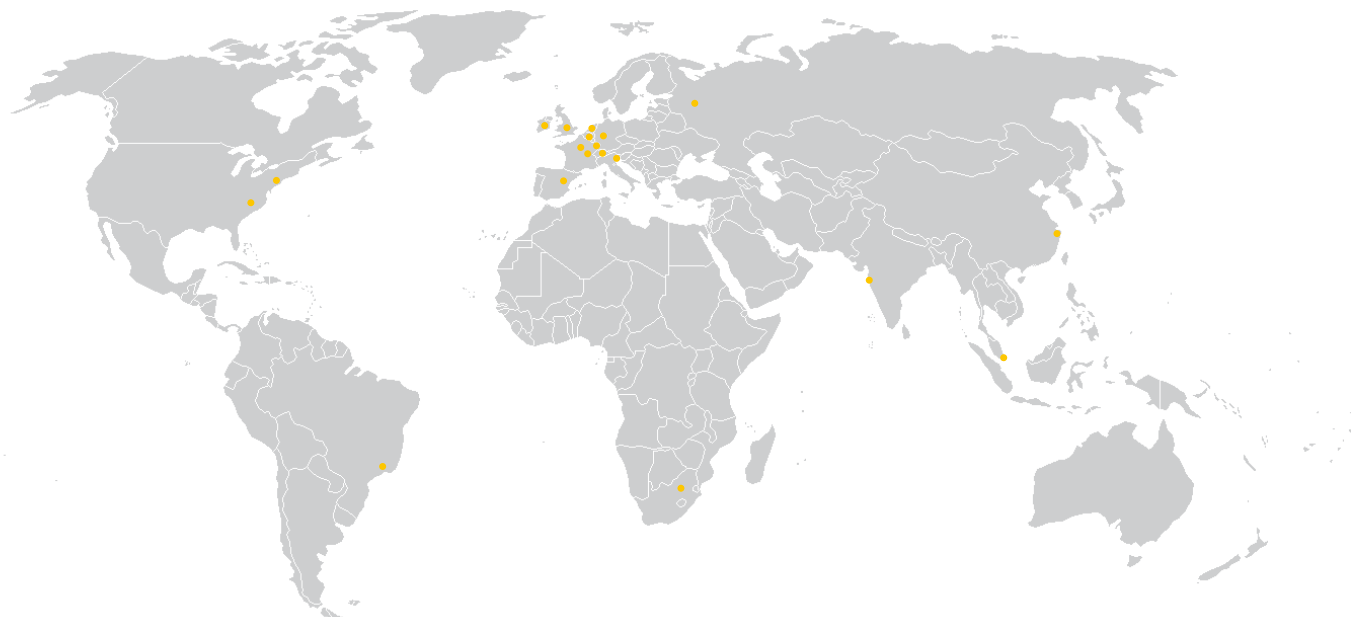


A WIDE SCOPE OF WORK

De Dietrich® integrated systems focus on three of the Group's businesses: Glass-lined reactors and other glass-lined components, filter-dryers and glass reactors and components combined to process utilities, instrumentation, electricity and automation in addition to ancillary equipment like but not limited to heating/cooling units, vacuum pumps, powder handlings...

KILOLAB. BOEHRINGER, INGELHEIM





De Dietrich PROCESS SYSTEMS



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The international business group De Dietrich Process Systems is the leading provider of system solutions and reactors for corrosive applications as well as plants for mechanical solid/liquid separation and drying. The system solutions from De Dietrich Process Systems are used in the industrial areas of pharmaceuticals, chemicals and allied industries.

www.dedietrich.com

