

Hygienic and Precision Engineering Excellence





# Multi-Sector Processing Industry Solutions



PHARMACEUTICAL



BIOTECHNOLOGY



AEROSPACE



CHEMICAL



WATER RECYCLING



FOOD AND BEVERAGE



DAIRY



TEXTILES

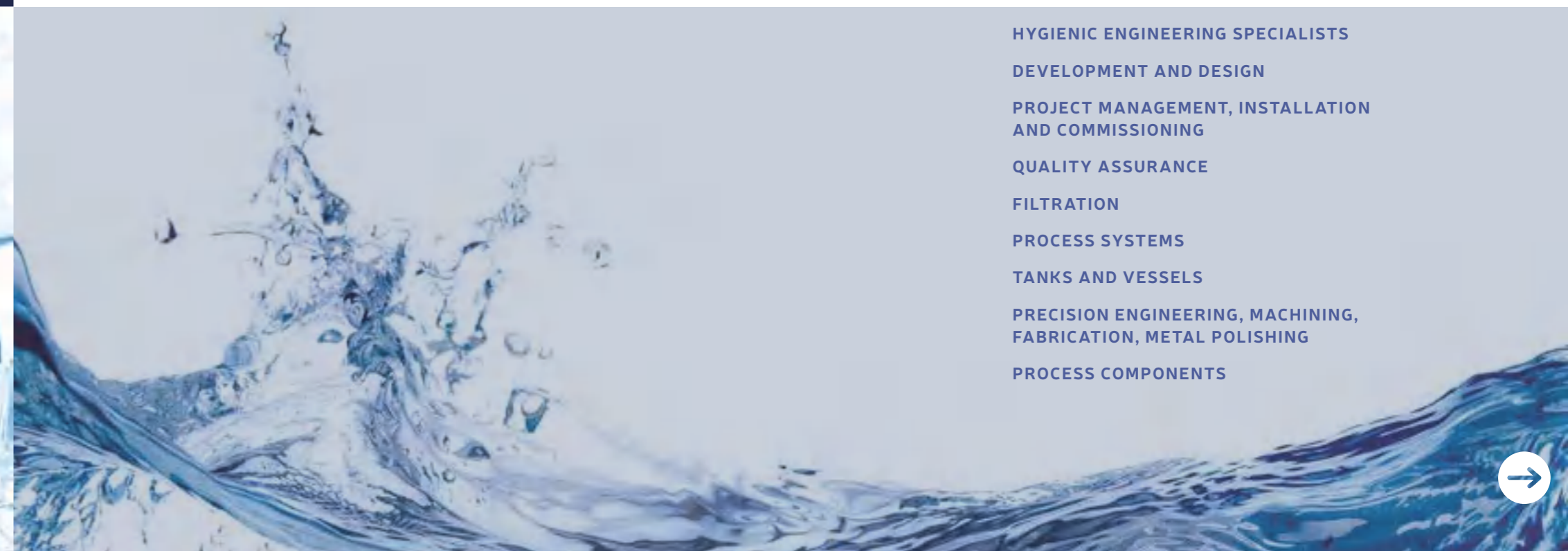
Axium's reputation for engineering excellence has developed over decades of practical experience.

Our focus is on technically demanding process operations where knowledge, compliance, documentation and quality assurance become indispensable. We lead the way in innovative bespoke solutions for filtration and liquid separation applications, combined with expertise in hygienic fabrication and precision machining.

Key business sectors include, Pharmaceutical, Biotech, Aerospace, Nuclear, Chemical, Dairy, Food and Beverage.



- HYGIENIC ENGINEERING SPECIALISTS
- DEVELOPMENT AND DESIGN
- PROJECT MANAGEMENT, INSTALLATION AND COMMISSIONING
- QUALITY ASSURANCE
- FILTRATION
- PROCESS SYSTEMS
- TANKS AND VESSELS
- PRECISION ENGINEERING, MACHINING, FABRICATION, METAL POLISHING
- PROCESS COMPONENTS





Hygienic Engineering Specialists

Accredited to ISO 9001:2015 and EN 9100:2018, we manufacture in accordance with EHEDG and ASME BPE guidelines. Operating under carefully controlled conditions we prevent cross-contamination of metals and eliminate all risk of contact with animal-based fats and oils in cutting fluids or polishing compounds.

Our components, equipment and systems are produced from a wide range of non-ferrous materials, including stainless steel, Hastelloy®, Duplex®, Inconel®, and Monel®, Titanium, Aluminium Alloys, and performance engineering plastics such as PEEK®.

With specialist engineering expertise covering a diverse range of hygienic applications we can design and manufacture PED and ATEX compliant process plant, such as filtration systems, skids, platforms, tanks, mixing vessels and bespoke precision fabrications.

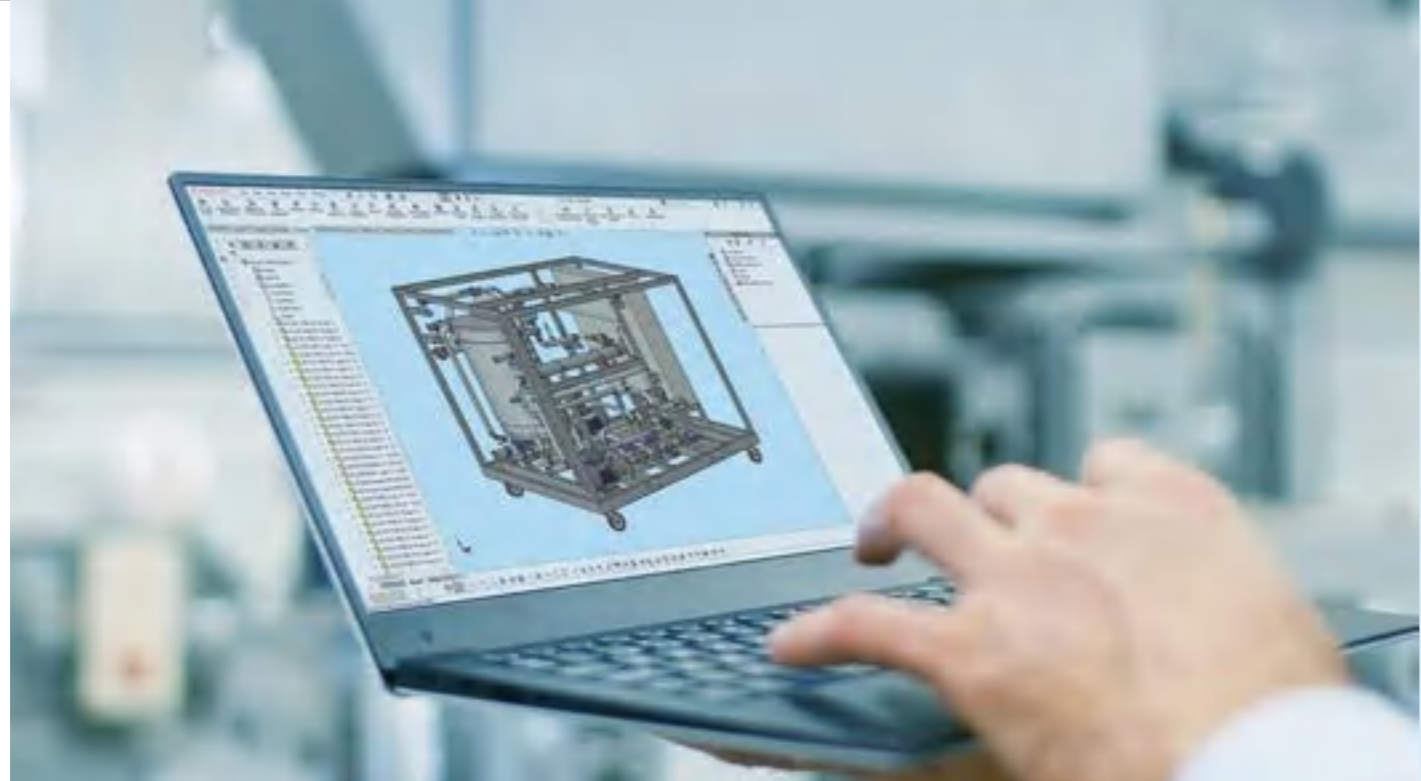


ACCREDITED TO ISO 9001:2015 AND EN 9100:2018  
QUALITY MANAGEMENT STANDARDS

WELDERS AND WELD PROCEDURES ARE APPROVED  
TO ASME IX, BS EN ISO 9606-1:2017 AND  
BS EN ISO 15614-1:2017+A1:2019 BY AN APPROVED BODY

FILTRATION, PROCESS SKIDS, FRAMES AND SYSTEMS,  
CIP SYSTEMS, TANKS AND VESSELS, PILOT SCALE  
SYSTEMS, HEATING SKIDS

PHARMACEUTICAL, AEROSPACE, FOOD, BEVERAGE,  
DAIRY, COSMETIC AND CHEMICAL SECTORS



## Development and Design

Axium's design team use the latest software, including Solidworks and Fusion 360 computer aided design (CAD) combined with computer aided machining (CAM).

We integrate the mechanical and technical development of your product into a single process, saving time and money. Our system supports 2D and 3D design, prototyping, animation and simulation capabilities, whilst being fully compatible with industry standard file formats such as STEP, DWG, DXF, STL and OBJ.

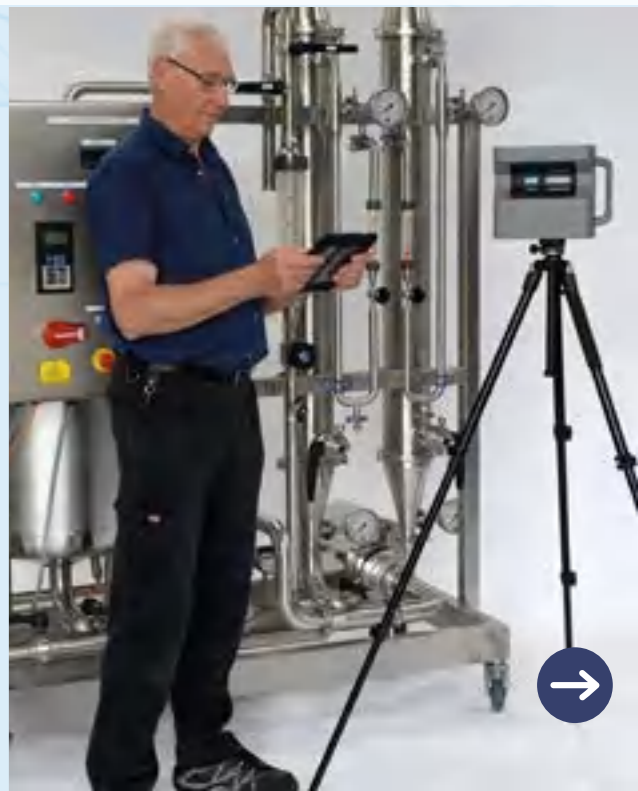
With our design expertise we provide a seamless and efficient manufacturing process from concept to production.



In-house design service utilising the latest 3D Modelling Software



DEDICATED DESIGN TEAM  
3D SCANNING, DESIGN AND DRAWINGS  
SOLIDWORKS, CAD, CAM



# Project Management



We understand Axium's reputation rests firmly on the ability of our engineering team to deliver a successful outcome for your project. Your success is our success!

An appointed engineer is involved early in the planning stage of your project to ensure a practical understanding of the scope, objectives, milestones and deliverables. Highly qualified and respected for their technical proficiency they become your main point of contact from initial trials and design through to commissioning and operator training. On completion you receive a full document dossier composed of drawings, inspection reports, materials and test certificates, along with installation and operating manuals for the equipment supplied.



A dedicated team of highly qualified chemical, mechanical and project engineers are with you every step of the way.



- DEDICATED PROJECT ENGINEER EVERY STEP OF THE WAY
- PRODUCT AND PROCESS DEVELOPMENT
- 3D DESIGN AND DRAWINGS
- VALIDATION, TESTING AND MATERIALS CERTIFICATION
- INSTALLATION, COMMISSIONING, TECHNICAL TRAINING
- REAL TIME SUPPORT FOR FULLY AUTOMATIC SYSTEMS
- SCHEDULED MAINTENANCE PACKAGES





## Commissioning and Installation

Once FAT (factory acceptance test) has been conducted and the system is delivered, our engineers and site team undertake installation, commissioning, training and SAT (site acceptance test). Ultimately signing over to you on successful completion.

- HIGHLY EXPERIENCED PROJECT MANAGEMENT TEAM
- SPECIALISTS IN HYGIENIC AND FILTRATION TECHNOLOGY
- INSTALLATION, COMMISSIONING, TESTING AND OPTIMISATION
- OPERATOR AND MAINTENANCE TRAINING
- ONGOING TECHNICAL SUPPORT SERVICES



# Quality Assurance



Inspection,  
Traceability and  
Certification

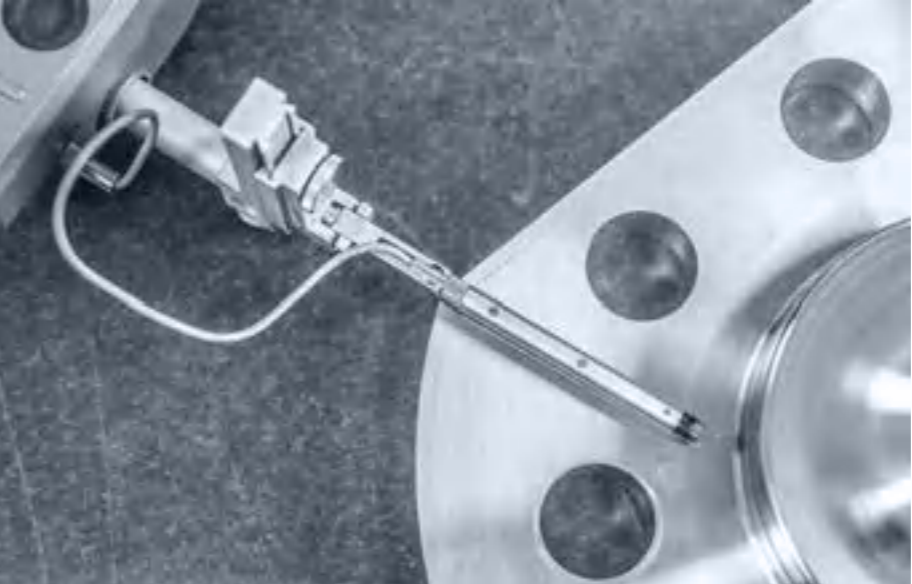
**Axiom Process is accredited to ISO 9001:2015 and EN 9100:2018.**

Rigorous procedures ensure all aspects of our supply, including material selection, design, production, inspection, packaging and delivery, conform exactly to specification.

We provide 100% inspection, advanced measuring technology, testing and traceability certification, surface finish records, weld maps, logs and procedures, dye penetrant weld testing, radiography and pressure testing.

Corrective and preventative action procedures are in place to ensure meticulous quality control standards, along with a continuous improvement program to further staff development and optimise value for customers.

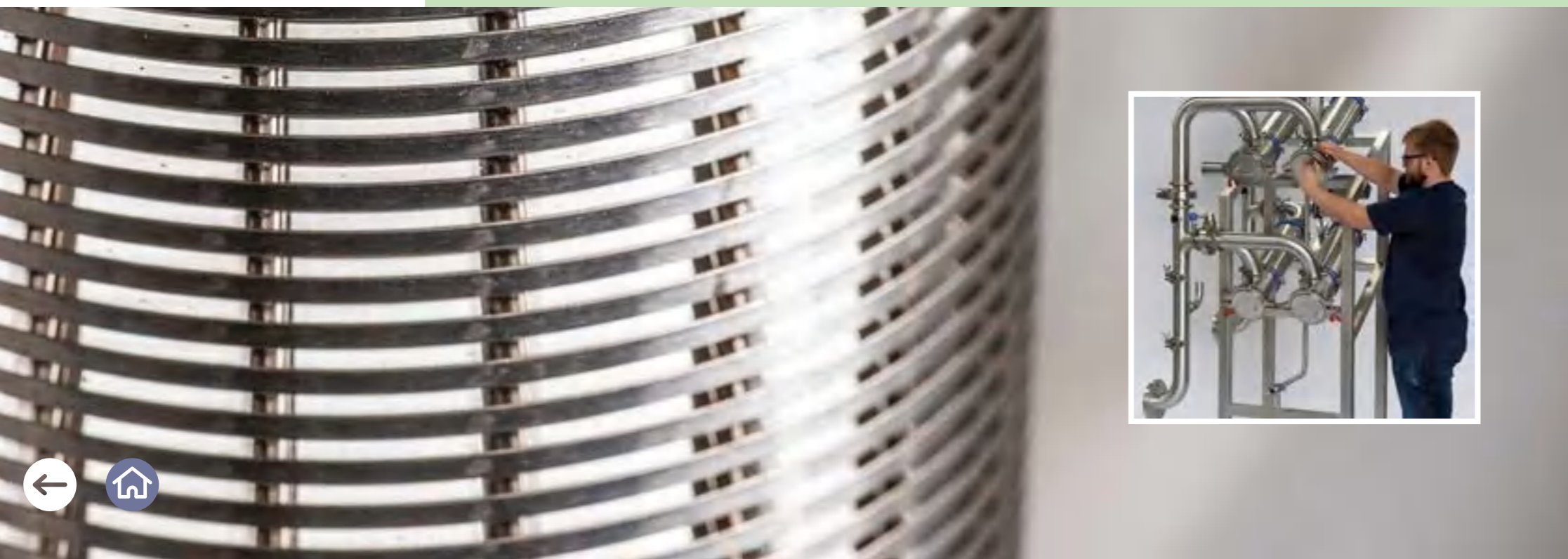
- 100% INSPECTION
- FULL MATERIALS CERTIFICATION
- SURFACE FINISHES TO 0.10µm Ra
- NITRIC ACID OR CITRIC ACID PASSIVATION TO ASTM A967
- ULTRASONIC CLEANING AND VACUUM PACKING
- LASER, MECHANICAL, AND ELECTROCHEMICAL ETCHING





## Filtration

Axium's core expertise focusses on Liquid Filtration with primary emphasis on membrane technology for sanitary and specialist in-process applications. For low impact solutions you will find clear environmental benefits for this technology in wastewater separation, recovery and recycling operations. Additionally, we produce a range of high specification wedge wire and sintered mesh filters for hygienic processes and quality engineered strainers for general purpose applications.



## Stainless Steel Filters

**Axium's 316L stainless steel filters have been designed for precision and performance.**

Offering defined cut-off points they are perfectly suited for hygienic and other applications where filtration consistency is essential.

### One housing, three filtration options!

Our filters are designed to accept three distinctly different elements including sintered mesh, wedge wire and perforated tube. Each has its own special characteristics. Safety clamps are fitted as standard meaning no tools are required to remove an element. With multiple configurations and a full range of interchangeable elements Axium's filters offer an ideal solution for many applications.

### Custom options

Duplex, Triplex or Multiplex filtration arrangements offer increased capacity and other benefits. Further options include duty-standby, back-flush and automatic operation. Filters can also be supplied jacketed for heating or cooling duties to cater for temperature sensitive feed streams.

One filter housing,  
three filter screen options



**90°, STRAIGHT-THROUGH AND IN-LINE VERSIONS  
STANDARD LENGTH AND COMPACT MODELS**

**EASY MAINTENANCE – NO TOOLS REQUIRED FOR  
ELEMENT REMOVAL**

**FILTRATION LEVELS FROM 5 MICRONS UP TO  
6,000 MICRONS (NOMINAL) AS STANDARD**

**SINTERED MESH, WEDGE WIRE SCREEN AND  
PERFORATED TUBE OPTIONS**

**HEATING/COOLING JACKETS**

**CUSTOM VERSIONS AVAILABLE**





## Membrane Filtration and Separation



If you are looking for the best possible opportunity to improve process performance or find solutions for challenging filtration applications, Axium can help by innovative use of microfiltration, ultrafiltration, nanofiltration and reverse osmosis technology.

Our expertise can be applied to explore, develop and optimise process separation applications, reduce waste, recover water and investigate untapped product streams from separated by-products. Based on solid research we offer plant design, build, testing, qualification and validation to the very highest level. On completion our training and tailored maintenance support packages provide comprehensive reassurance.



PROCESS RESEARCH AND DEVELOPMENT

BESPOKE MEMBRANE FILTRATION SYSTEM DESIGN

MANUFACTURE, INSTALLATION, TESTING, QUALIFICATION AND VALIDATION

PILOT, BATCH, CONTINUOUS, MOBILE, SKID MOUNTED OR CONTAINERISED SYSTEMS, SEMI AND FULLY AUTOMATIC OPTIONS

## Research and Pilot Trials

**Pilot trials ensure accurate representation of full-scale commercial processes.**

They are the most reliable way to determine separation performance, process viability, system design parameters and the operational economics of membrane filtration on liquid feed streams.

Axiom Process is your foundation for process investigations and optimisation under fully controlled conditions, ensuring accurate results.

Our range of mobile membrane filtration systems and supporting equipment, such as prefiltration, heating and mixing skids, in-house laboratory and dedicated wet test facility, combine to provide a comprehensive research resource for those considering crossflow membrane filtration technology.

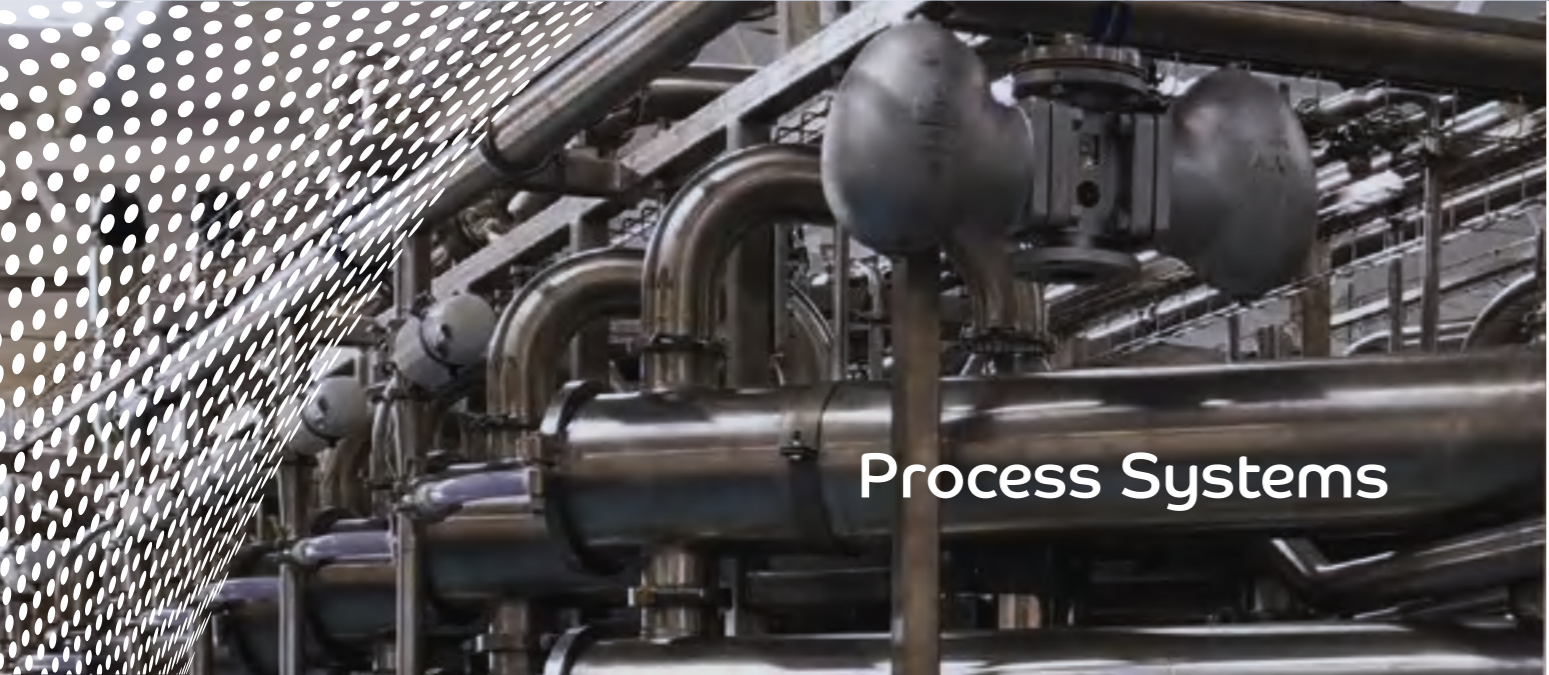


**TRUSTED PARTNER FOR RESEARCH AND COMMERCIAL DEVELOPMENT OF INNOVATIVE LIQUID FILTRATION AND SEPARATION PROCESSES**

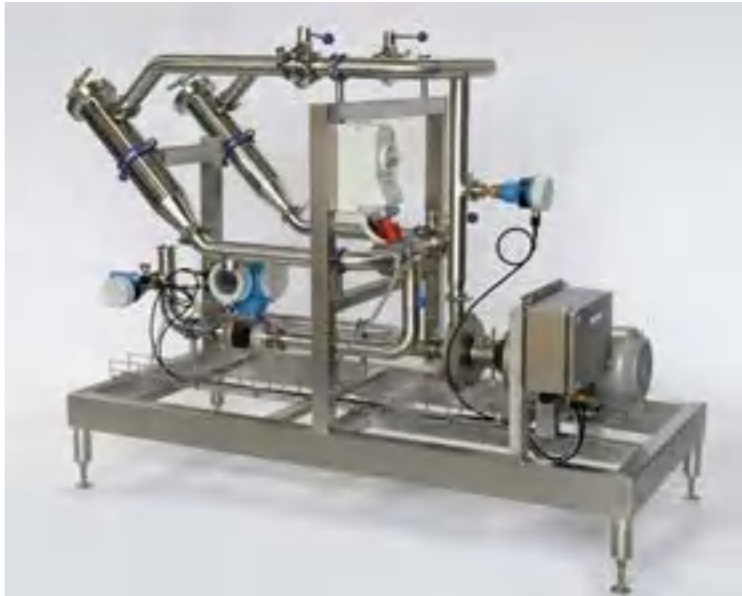
**LOCAL AND REMOTE TRIAL OPTIONS WITH EXPERIENCED TEST ENGINEERS**

**DETAILED TRIALS REPORT AND RECOMMENDATIONS**





# Process Systems



Axiom's technical expertise is built on diverse practical experience, involving problem solving, process design, control and development; delivering system solutions that meet expectations.

Whether it's a custom frame, mobile CIP skid or fully automated membrane filtration system, our committed engineers guide you from principal objectives through concept development and detailed design engineering, to manufacture and successful deployment.

- PROCESS SKIDS AND SYSTEMS
- MIXING VESSELS
- PILOT SYSTEMS
- CIP SYSTEMS
- MEMBRANE SYSTEMS
- HEAT EXCHANGERS

## Customised Tanks and Vessels



As one of the UK's leading hygienic stainless steel fabricators we have extensive in-house experience in the design and manufacture of bespoke high-end customised process tanks and mixing vessels. Typically manufactured in 304 or 316L stainless steel or higher-grade materials such as Duplex® and Hastelloy® for specialised applications.

Axium's coded welders and expert polishers are at the forefront for high-specification hygienic fabrication, where weld integrity, surface finish and surface contact materials are critical concerns for the end user.

Manufacturing follows PED and ATEX directives when required and adheres to EHEDG and ASME BPE guidelines.

**PRESSURE TANKS AND VESSELS**

**PHARMACEUTICAL GRADE VESSELS**

**ATEX, PED, ASME BPE, EHEDG**

**MOBILE VESSELS**

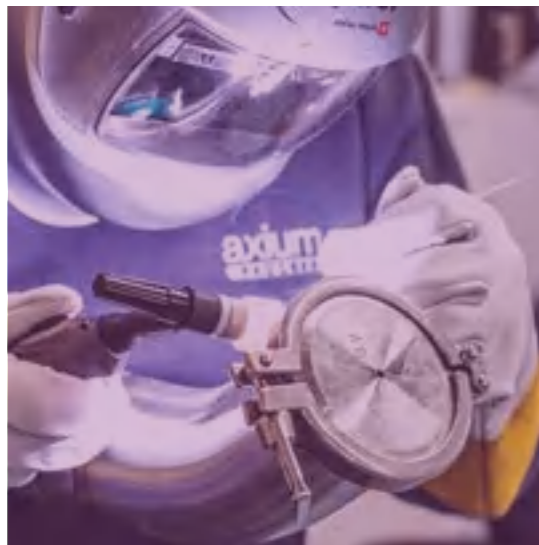
**MIXING SKIDS**

**INTEGRATED STIRRING SYSTEMS AND CIP PROCESSES**

**TANK ANCILLARIES**



## Fabrication



### Custom Fabrication

Our fully qualified welders have considerable experience producing high specification parts and custom fabrications. From complex pipework to high-end pharmaceutical equipment and aerospace components Axiom provides a comprehensive manufacturing resource.

### Super Alloys

Using MIG, TIG and Orbital welding facilities we work with most non-ferrous materials including Austenitic stainless steel, Duplex®, Super Duplex®, Hastelloy®, Titanium and Aluminium alloys.

Axiom's aerospace team are qualified to CAP553 BCAR-A8-10 and work with numerous grades of stainless steel and aluminium alloy tube and plate typically used in Aerospace applications.

### Design and materials control

In-house hygienic design follows ASME BPE and EHEDG guidelines. Materials control is strict to avoid any ferrous contamination of non-ferrous materials.



ACCREDITED TO ISO 9001:2015 AND EN 9100:2018

WELDERS AND WELD PROCEDURES ARE APPROVED TO ASME IX, BS EN ISO 9606-1: 2017 AND BS EN ISO 15614-1:2017+A1:2019 BY AN APPROVED BODY

MANUFACTURE IS IN ACCORDANCE WITH PED AND ATEX DIRECTIVES AND EHEDG, ASME BPE HYGIENIC SPECIFICATIONS

ONLY NON-FERROUS METALS AND ENGINEERING PLASTICS ARE PROCESSED ON-SITE TO AVOID CROSS-CONTAMINATION



# Precision Engineering Excellence

A First Class Engineering Service delivered by Specialist Engineers

We offer comprehensive in-house precision engineering resources and technical expertise. This includes CAD/CAM design and 3D programming, a fully equipped CNC machine shop, precision welding and fabrication services, metal polishing, electro-polish and bead-blast processes.

Specialising in 304/316L austenitic and Duplex® stainless steel and super alloys such as Hastelloy® and Titanium, as well as a wide variety of aluminium alloys and engineering plastics the focus is on precision and traceability. Quality is assured with extensive inspection, test, certification and documentation procedures.



Precision Machining, with full traceability!

Our high-quality machining services cater for one-off and batch orders, complex developments and super-precision aerospace components. Product contact materials such as cutting oils and polishing compounds are certified animal by-product free.

- MULTI-TASK CNC MACHINE TOOLS
- FUSION 360 CAD/CAM PROGRAMMING
- MANUFACTURING IN ACCORDANCE WITH EHEDG AND ASME BPE GUIDELINES
- TSE CERTIFIED CUTTING FLUIDS
- 24/7 PRODUCTION CAPACITY IF REQUIRED
- AEROSPACE ACCREDITED
- ISO 9001:2015, EN 9100:2018, (AS9100D AND JISQ9100:2016)



## Precision Metal Polishing

If you are looking for the supply of high-specification precision polishing, from dull polish to mirror finish we are one of the few companies that process stainless steel and non-ferrous metal components to specific surface finish and precise dimensional tolerance requirements.

Precision metal polishing is highly skilled. It is conducted in stages using a variety of abrasive compounds to reach the required standard. Welds can be dressed to match the parent metal and are effectively invisible.

Hygienic surfaces must be perfectly crack and crevice free to minimise contamination and prevent bacteria growing, especially in hard to clean areas. To conform with the European Directorate for the Quality of Medicines and FDA requirements for TSE (Transmissible Spongiform Encephalopathy) compliance, all polishing compounds and cutting oils used at Axium Process are certified animal by-product free.



CERTIFIED SURFACE FINISHES FROM DESCALED TO 0.1  $\mu\text{m}$  Ra

PRECISION TOLERANCES

MANUAL POLISHING, ELECTROPOLISHING AND BEAD BLASTING

POLISHING COMPOUNDS CERTIFIED ANIMAL BY-PRODUCT FREE





## Custom Process Components

For those difficult to find parts or something unusual, we offer a bespoke fabrication service, including customising standard components from our comprehensive range of stock items.



FDA APPROVED SEAL MATERIALS

UNIONS

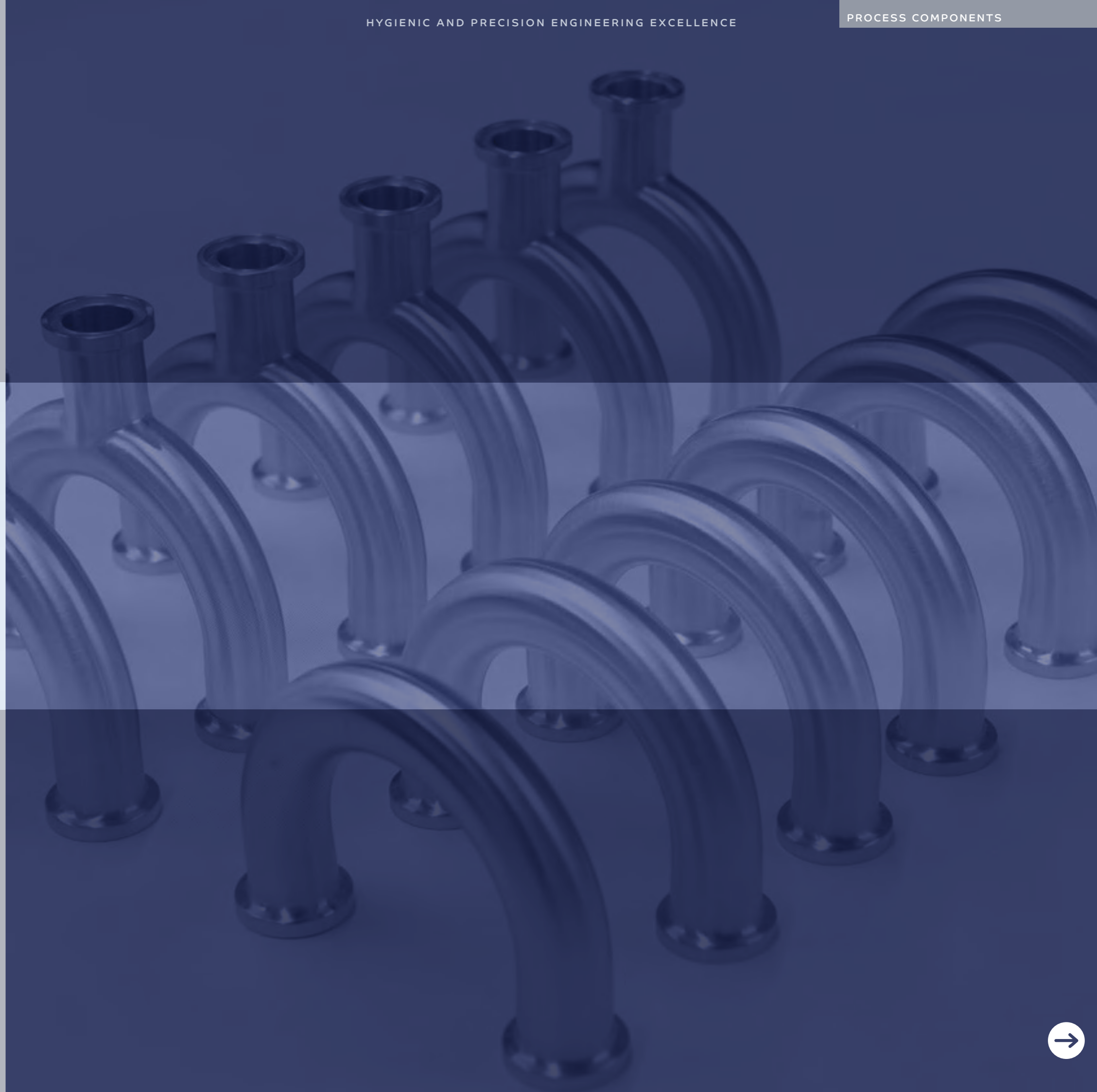
SAMPLE VALVES

STAINLESS STEEL MANWAYS

STAINLESS STEEL SPRAYBALLS

SIGHT GLASSES

TUBE AND PIPE FITTINGS







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PHARMACEUTICAL • BIOTECHNOLOGY • AEROSPACE • CHEMICAL • WATER RECYCLING • FOOD AND BEVERAGE • DAIRY • TEXTILE

