



EXPERTISE.
PRODUCTS. SERVICES.

Tube systems and installation solutions for reliable processes
in the semiconductor, pharmaceutical, analytical and fine chemistry industries.

“PROCESS RELIABILITY

is our motivation – for processes in the semiconductor, pharmaceutical and biotechnology industries. ”



We connect processes with the highest purity

Dockweiler is a leading international manufacturer of stainless steel tube systems. The core business is the development of installation solutions for handling fluid and gaseous media in the semiconductor, pharmaceutical analytical and fine chemistry industries.

Our manufacturing expertise is your advantage

Thanks to our manufacturing expertise, we find solutions which are economical and offer high process reliability. Consultancy and services are key components for us because our customers see us as an engineering partner.

Our specialists have extensive knowledge about all specifications and consult competently on choosing the right products. Our engineers plan and develop tailor-made components with you and see it through to implementation.

Cutting-edge products for processes with the highest purity

Dockweiler supplies standard products such as tubes and fittings for highly technical sectors. We also offer tailor-made installation solutions, which fulfill the highest requirements for purity and precision. With inventory holdings of more than 1500 Kilometers in pipes and approximately 1 million fittings, we guarantee speedy availability.



Customer service from the very start

The demands on industrial processes have increased steadily in recent years. The most important indicator of our performance is successful collaboration with our customers. Our service begins right at the planning stage: In addition to our product range, Dockweiler has continually developed its service features.

Dockweiler Expertise

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Dockweiler Services

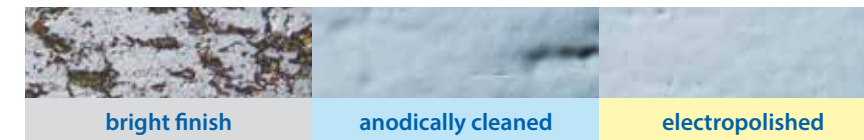
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Surface Treatment

Treatment of inner surfaces for high purity

We have decades of experience in mechanical and electrochemical **surface treatments and finishes** and we offer **optimal quality for high purity industrial applications**. In addition to standard fittings and tubes, we also finish complex special components such as manifolds, CIP lances and bubblers. The spectrum of treatments ranges from **staining to mechanical processes** to ultra pure **electrochemical polish**. This 380 x magnification illustrates the differences between the surface treatments:







In anodic processes, the material is cleaned with a stripping force of 3 to 5 μm . **The material stripping is significantly higher for the electropolishing process: which is up to 20 μm .**

ELECTROPOLISHED INNER SURFACE –
Extremely smooth and pure with a surface quality
of up to $Ra \leq 0,13 \mu m$



Qualities for Liquids

			1,0 µm
			0,9 µm
	 weldtron		0,8 µm
			0,7 µm
 bpe-direct			0,6 µm
			0,5 µm
		 safetron	0,4 µm
			0,3 µm
			0,2 µm
			0,1 µm

Qualities for Gases

 TCC ***	 finetron	 puretron	 ultron
bright finish	bright finish	–	–
anodically cleaned	anodically cleaned	–	–
–	–	electropolished	electropolished

* Hygiene grade in accordance with DIN 11864 / DIN 11865 / DIN 11866. ** in accordance with ASME BPE. *** not defined, Ra 0,80 µm on request



Collaring

Production know-how: how to

The collaring of T pieces, CIP lances or manifolds is well-developed Dockweiler know-how. **Closely-spaced outlets** often belong to the technical challenges faced. This is routine for our specialists. In combination with products resulting from our welding expertise, which stand out for their **particularly compact and flow-optimized construction**. Included in this are excentric outlets and outlets with various angles (for example, T-pieces with 45 degree outlets)

Benefits of Collaring Technology

- homogeneous transition contour from the main pipe to the branch pipe
- streamlined flow behavior
- effective welding preparation
- complete reduction in space for example in the production of manifolds
- compact component geometry

IO WELDING TECHNOLOGY FOR COMPLEX GEOMETRIES
[Find out how that works here](#)



Welding Technology

Over 30 years' experience in cutting-edge technology

Dockweiler is a pioneer in the area of orbital welding. **With the 3D inside out welding technology (IO welding) we have developed new and exciting opportunities for innovative production capabilities.** In this way, closely-spaced outlets and those with lower dead space are produced in a highly-efficient manner. This 3D internal orbital welding technology is **ideal for complex geometries** and innovative components.



Benefits of Welding Technology

- 3D internal orbital welding technology for complex geometries such as 45° or 60° outlets and saddle welds
- precisely reproducible welding processes due to a parameter database and automatization
- consistent quality thanks to Dockweiler orbital welding with pressure and residual oxygen monitoring
- Minimization of δ ferrite content
- low dead space and closely-spaced outlets
- machine-controlled TIG processes
- 100% weld seam testing
- straightforward documentation with computerized processes



Cleanroom Production

High purity environment for high purity products

For products which are used in the semiconductor industry, production must take place in a high purity environment. There must be no contamination from foreign particles or residues. These conditions are only possible in the cleanroom. High purity products such as manifolds or bubblers are welded, assembled, tested and packaged in the cleanroom.

For the most exacting requirements in cleanrooms, we rely on highly trained and experienced specialists. A high level of discipline and forward-thinking are among the demands we make of our employees. Regular retraining and further development in the area of cleanroom production ensures a high standard of quality for our products and thus your process reliability now and in the future.

Benefits of Cleanroom Manufacturing

- orbital welding of manifolds, UHP systems or complex vacuum systems
- assembly of components such as valves and bubblers
- quality checks and leak detection using helium leak testing
- residue-free cleaning
- particle-free packaging
- from production to packaging: everything takes place in a self-contained work process



THE BEST WELD SEAM IS NO WELD SEAM
[Find out how that works here](#)



3D Bending

Fewer weld seams for more reliability and purity

With our 3D bending technology, we are in the position to reduce the number of welding seams to a requisite minimum. This is particularly advantageous in complex tube systems.

Along with our collaring expertise and our welding know-how, we produce space-saving and dead-space-optimized solutions for custom applications.

Benefits of 3D Bending Technology

- Minimization of weld seams for aspects of hygiene and safety
- CAD-construction and automatic production
- 3D measuring technology and documentation
- mid-process inspection for quality assurance

“PRODUCTS FOR HIGH PURITY PROCESSES.”

Whether it's a standard product or a custom solution – everything is made to Dockweiler's high quality standard. ”



Tubes and Fittings

Standard Dockweiler products

Our standard products satisfy the highest surface quality and purity standards. They are used in the semiconductor, pharmaceutical and chemical analysis industries, and further high tech industries, to transport fluids and gases. Our standard products include tubes, elbows, T-pieces, reducers and caps.



Technical Data

Dimensions

Imperial: 1/8" - 6"
ISO: DN 8 - DN 200
Metric: DN 4 - DN 150
Pipe: DN/NPS 6 - DN/NPS 20

Materials

1.4404, 1.4435, UNS S31603 (316L), 1.4539, UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)

Surface

- $Ra \leq 0,80 \mu m - \leq 0,13 \mu m$
- bright finished, anodical cleaned, electropolished

Standards

ASME-BPE, DIN 11864, DIN 11865, DIN 11866

COAX Tubes and Fittings

The double-wall tube for critical media

With the COAX double-wall tube system we offer a safe solution for the safe transport of explosive, toxic, corrosive or highly viscous media. COAX consists of an internal process tube and an external safety tube, between which, for example, a control center is alerted to a carrier gas leakage or steam maintains fluidity of viscous media in the process tube.

FOR CRITICAL MEDIUMS: ►
the COAX double-wall tube system



Technical Data

Dimensions

Imperial: 1/4" - 1"

Materials

1.4404, 1.4435, UNS S31603 (316L)

Surface

- $Ra \leq 0,80 \mu m - \leq 0,13 \mu m$
- bright finished, anodical cleaned, electropolished

Presslok

The alternative to welding

The Presslok system complements our product line. It allows for very quick, reliable and reproducible pipe connections for process cooling water, inert gases or low-pressure systems, without any welding.



Technical Data

Dimensions

Imperial: 1/2" - 4"

Materials

UNS S31603 (316L), UNS S30403 (304L)

Pressure Resistance

1/2" - 1 1/2": 20 bar and 2" - 4": 13 bar

Custom Fittings

When standard do not meet the requirements
Customized fittings manufactured to your specifications are the tailor-made solution when standard fittings do not meet customer requirements. Our service starts with drafting and extends to 3.1 documentation. Custom components include:

- **T-pieces with excentric branch** for residue-free drainage
- **Branches with various angles**, e.g. 45° or 60°
- **flow-optimized Y-pieces**
- **180°-elbows with outlet**, called “Point-of-Use” elbows



Technical Data

Dimensions
Imperial, Pipe, ISO, Metric
Materials
1.4404, 1.4435, UNS S31603 (316L), 1.4539, UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)
Surface
• Ra ≤ 0,80 µm - ≤ 0,13 µm
• bright finished, anodical cleaned, electropolished
Standards
ASME-BPE, DIN 11864, DIN 11865, DIN 11866

All custom fittings are prepared with welding-optimized ends. At the end, they are appropriately cleaned and packaged. They are available in all current materials and in all Dockweiler surface qualities.

Connection Components

Integrate instrumentation and control elements
Dockweiler connection components give you the option of integrating instrumentation and control elements to control temperature, flow rate and pressure in your system. These are manufactured for both gases and liquids, depending on the customer specification. Instrumentation T-pieces can be equipped with various sensors, which measure the flow rate while the system is in operation, for example.

In addition to threaded, flanged or clamp connections, the Dockweiler connection components can also be equipped with the patented ZeroCon connection. With our many years of manufacturing expertise, we ensure low dead space design and flow-optimized profile.

PURGE TEE
for connecting measuring and control elements ▶



Technical Data

Dimensions
Imperial, Pipe, ISO, Metric
Materials
1.4404, 1.4435, UNS S31603 (316L), 1.4539, UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)
Surface
• Ra ≤ 0,80 µm - ≤ 0,13 µm
• bright finished, anodical cleaned, electropolished

Connections

For a wide range of applications
We offer an equally diverse range of stainless steel tube systems with corresponding connections and gaskets in Dockweiler quality. For the straight-forward connection of tubing components, our range includes aseptic screw connections, clamp or flange connections in accordance with DIN 11864 and TriClamp connections in accordance with DIN 32676. For the highest purity and impermeability standards, we offer our customers the patented ZeroCon connection and Dockweiler Cap.



Technical Data

Dimensions
Imperial: 1/4" - 1"
Materials
1.4404, 1.4435, UNS S31603 (316L), 1.4539, UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)
Surface
• Ra ≤ 0,80 µm - ≤ 0,25 µm
• bright finished, anodical cleaned, electropolished

Gaskets and O-Rings

Total traceability
from production to assembly is already an industry standard for quality stainless steel components. In contrast, as a rule, traceability for elastomers ends with installation at the latest. Clear identification is no longer guaranteed.

All Dockweiler gaskets are laser marked and satisfy USP Class VI and are made from FDA approved materials. This way, we are able to ensure total traceability, required in particular for pharmaceutical facilities.



DOCKWEILER LASERMARKED GASKETS
For total traceability ▶

Technical Data

Dimensions
Imperial: 1/4" to 6"
ISO: 13.50 mm - 114.30 mm
Metric: 6.00 mm - 154.00 mm
Materials
PTFE, FKM, PTFE/FKM, EPDM, VMQ, PTFE/316L, PTFE/EPDM



Flexible Hoses

PolyFlow – technical hoses

Dockweiler hoses made from high quality elastomer and thermoplastic produce flexible connections for system components. They have all necessary approvals (like FDA, USP, Class VI) and comply with the pharmaceutical requirements. For us, every hose is one of a kind: Lengths, connections and materials can be mixed and matched and are tailor made. TriClamp, aseptic connections, welding ends and ZeroCon are available as connectors. Dockweiler hoses are used in the chemical and pharmaceutical industries as well as the food sector and biotechnology sector. They are used wherever quick and flexible connections are required.



◀ DIVERSE CONNECTION OPTIONS:
Dockweiler hoses with TriClamp, Aseptic connections, welding ends and ZeroCon

Flextron – the “flexible” hose

The Dockweiler Flextron corrugated hose was developed for us in the semiconductor and fine chemical industries. The highest demands are placed on the purity of the process media in these industries. Flextron's electropolished inner surface allows for these requirements to be met in all aspects of the supply system - from the gas tank to the manufacturing facility.

Flextron is manufactured from mechanically corrugated stainless steel (1.4404), as standard. A stainless steel wire braid can also be used to achieve a higher pressure resistance. The unique combination of electropolished surface and flexible corrugated hose minimizes the risk of contamination and enables gas transport under full UHP conditions throughout the system. With Flextron, oscillations and vibrations can be decoupled and done to the highest purity standards.



Technical Data

Measurements

Nominal Size: 1/4" - 2"
Length: up to 40 m
Temperature Range: from -60 °C to +180 °C

Material

Internal liner: EPDM, silicone, PTFE



Technical Data

Connection Sizes

1/4" - 1"

Material

1.4404, UNS S31603 (316L)

Surface

- Ra ≤ 0,40 µm / ≤ 0,25 µm
- electropolished



With its fittings, Dockweiler ensures highly reliable, hygienic and efficient control in the production process. Depending on the sector, application and the purity, cleanability and impermeability requirements, ball valves or T-valves are used.

Ball Valves and Valves

T-valves

are a combination of premium diaphragm valve and high quality stainless steel tubing. Here, to optimize dead space, a T-piece's outlet was orbitally welded with a valve body. Particular attention was paid to the combination of hygiene and costs in a pharmaceutical setting. The T-valve bridges the gap between standard diaphragm valves with a lot of dead space and very expensive block valves.



Ball valves

We categorize our ball valves into 3-part and 1-part versions. Ball valves are available with welding ends, VCR, cutting ring fittings or flange connections, depending on the size and area of application. For valves with cutting ring fittings, our VSR80 tube is the ideal combination.

Technical Data

Dimensions

Imperial, ISO, Metric

Materials

1.4435, 1.4404, UNS S31603 (316L), UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)

Surface

- Ra ≤ 0,80 µm - ≤ 0,25 µm
- bright finished, anodical cleaned, electropolished

Technical Data

Dimensions

Imperial, Metric

Materials

UNS 31603 (316L)/PTFE

Surface

- Ra ≤ 0,80 µm
- bright finished, anodical cleaned

COMPLEX COMPONENTS FROM DOCKWEILER:
Customized solutions suitable for your requirements ►



Customized Solutions

Custom production, single or small-scale production

When it comes to implementing complex components and systems, Dockweiler is your manufacturing specialist. Maximizing productivity is the primary goal.

This requires a highly reliable, efficient and hygienic solution. The focus here is on low dead space and surface optimization.

Whether it's a single or small-scale production run, contract production or customized manufacturing: Our team supports you with longstanding application knowledge and translates your requirements into suitable customized solutions. At Dockweiler, we always do our best when it comes to customer-specific solutions. We offer you an unparalleled synergy in manufacturing expertise.

Technical Data

Dimensions

Imperial, ISO, Metric, Pipe

Materials

1.4404, 1.4435, 1.4539, 2.4602, UNS S31603 (316L), UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)

Surface

- $Ra \leq 0,80 \mu m - \leq 0,13 \mu m$
- bright finished, anodical cleaned, electropolished



Process Vessels

For safe transport and storage

Dockweiler process vessels comply with the highest standards for storage, transport and removal of critical or high purity mediums - for example, organometallic compounds in the fine chemistry or semiconductor industries. Our HPS series makes us the only manufacturer worldwide to offer these bubblers for solids, too.

From melt selection and the most meticulous orbital welding seams, to the perfect inner surface, our bubblers offer the high quality typical of Dockweiler, like an internal surface Ra value up to $\leq 0,25 \mu m$ (10 μin) and are completely electropolished, down to the last welding seam.

Extensive testing of the whole bubbler protects the environment and people. All our process bubblers are helium-leak tested up to $\leq 4.0 \times 10^{-9}$ mbar l s⁻¹

Technical Data

Materials

1.4404, 1.4435, UNS S31603 (316L), UNS N08367 (AL-6XN), UNS N08904 (904L), UNS N06022 (C22)

Application Areas

for fluids (HPL and ECO series) and solids (HPS)

Volumes

from 200 ml to 56 l

Surface

- $Ra \leq 0,80 \mu m - \leq 0,13 \mu m$
- bright finished, anodical cleaned, electropolished



Welding Equipment

The innovative EcoPurge system

The EcoPurge System was developed to provide purge gas control and monitoring while orbital welding tube systems. Specifically the ID tool is designed to for use with either CFOS or EP tubing systems without affecting surface quality.

EcoPurge drastically reduces the volume of purge gas required for welding by creating a purge dam. While reducing consumption the tool also monitors O₂ concentrations and pressure in the weld zone. Together this allows for very quick, accurate, and colorless welding results. General reduction of 95% gas volume and up to 60% labor savings can be achieved.

Welding rings for stainless steel

Product safety plays a primary role in the production of pharmaceutical materials. In order to obtain the high quality as in the base material, unwanted microscopic metallographic constituents, which are created during the welding process, must be minimized. Dockweiler welding rings significantly reduce the formation of ferrite and thus ensure a value of less than 3%. Where raw materials have a high quota of molybdenum, any brittleness and the formation of corrosive components are reliably counteracted.



◀ IDEAL FOR THE SEMICONDUCTOR AND PHARMACEUTICAL INDUSTRIES:
Specially developed for UHP and CFOS applications

“DOCKWEILER-SERVICE FROM A TO Z

Our expert knowledge for your processes: analyses, assessments, consulting, training and much more for your success. ”



Laboratory Services

Analyses, assessments and more

Quality is inextricably linked to our products and the manufacturing process. For example, a T-piece for the semiconductor industry is subjected to up to 50 different tests before it reaches the customer. Our Quality Department doesn't just put our own products through their paces. Dockweiler also offers a broad range of laboratory services for third parties.

Our services extend from positive material identification (PMI), x-ray inspections, cryotests, surface analyses, corrosion tests to pure gas analyses and helium leak testing. We are happy to carry out the tests required for your products in our own laboratory and advise you.



Material Consultancy and Metallurgy

Which stainless steel material is the right one?

Are you not sure which stainless steel material is the right one for your application? Would you like to know the difference between UNS S361603 and 1.4404?

Our metallurgists will help you out and will happily advise: on the right choice of materials and on technical questions such as weldability or resistance to corrosion. How does the sulfur content affect the welding seam or what properties does ferrite have? These are just a few of the common questions our experts are happy to answer.

Cleaning Processes

For various industrial applications

Different industries and areas of application have various requirements in the purity of surfaces. Thus Dockweiler offers a variety of different cleaning processes: from cleaning internal surfaces in accordance with ASTM A632, S3 and dry cleaning processes, up to the most up to date high purity ultra pure and vacuum cleaning process with subsequent residual gas analysis. Also available for highly complex geometries and capillary structures.

We supply the product purity you need for your process.

Engineering Services and Application Know-How

For technical custom solutions

We understand the specific challenges of diverse industries in the transport of high purity media. All our expertise flows together into our engineering know-how. In close contact with our customers we take ideas, rough sketches and develop them into tangible, technical, customized solutions. With regard to implementation, we apply the following: "If you can draw it, we can make it".

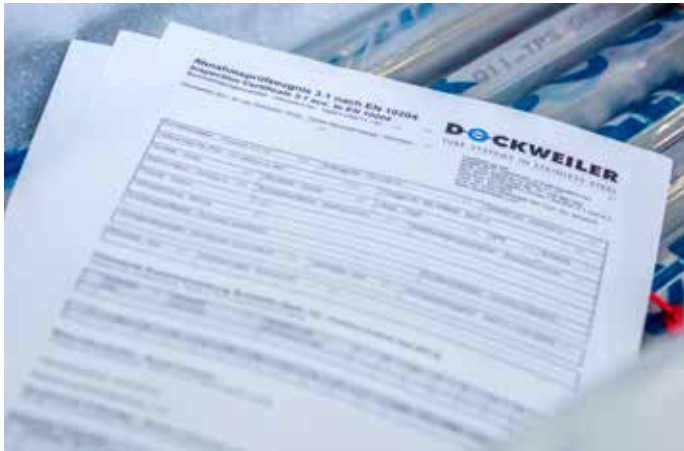
Take advantage of our engineering services with optimized manufacturing processes, customer-specific solutions and new developments. With decades of know-how in the pharmaceutical and semiconductor industries we are engineering partner to industry and research.

Technical Documentation

Material and test reports also online

Dockweiler is taking documentation quality to the next level with the WebCert digital certificate portal: All our certificates and test reports are available via this optional service. It means that our customers can view documents online as soon as the goods have left our warehouse.

This service is a big plus for plant operators in particular, since these days, material test reports are becoming increasingly more essential and extensive.



FIND OUT MORE:

You can find more information about WebCert here



Training

Dockweiler transfer know-How

We not only attach a great importance to training our employees, but we also offer our customers the opportunity to undergo training at Dockweiler on "stainless steel tube systems". In addition to regular webinars, we publish posts on YouTube for different topics.

We also provide interested installers, technicians and customers with the opportunity to study further directly in Neustadt-Glewe at one of our Dockweiler Academy events.



FIND OUT ONLINE:

Link to our YouTube Channel



Logistics and Warehouse Service

Quick availability for standard products

Availability is paramount to our customers. As a result, we maintain a stock of over 1500 km tubes and a million fittings and gaskets in our six international central storage facilities. These can be delivered within 24 hours, upon request.

So that you can operate in a more flexible way, alongside our classic consignment warehouses, Dockweiler also offers swap bodies and containers as mobile storage. The swap bodies can be used to carry out installation and pro-

duction projects (SKID manufacturing or system installations), for example.

Cleaning and packaging of the tubes and fittings is just as important so that these reach the customer safely and in a protected manner. We have been certified as an AEO(C) customs authorized economic operator since 2011 and as a recognized consignor since 2013. This guarantees quicker customs clearance and thus shorter delivery times.



Certificates



AD 2000 HPO



DIN EN ISO 9001



DIN EN ISO 14001



PED 2014/68/EU and AD 2000 WO



Additional certificates can be found on our website

www.dockweiler.com

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