

Christof Group

trust in solutions



**MORE
QUALITY.
MORE
ENVIRONMENTAL
PROTECTION.**

critical process equipment



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Please note:

For reasons of readability we are not using gender distinctions in our text, although both female as well as male users are being addressed.





Stefan Christof, CEO

Introduction

Sustainable business values and practices are firmly rooted in our company. Quality and reliability, honesty and respect, transparency and trust have shaped our family-run business since its beginning.

That is why we take responsibility – for our employees, the quality of our products and services as well as the way in which our business conduct affects the environment. We listen carefully to our clients to learn more about their needs, to our employees to support their ideas, to our suppliers and partners to better understand their concerns, and to public opinion to gain more knowledge. We appreciate this diversity and thrive on the active exchange that comes with it. In doing so, we remain true to ourselves. Honesty, authenticity and credibility are our hallmarks. They are our basis for creating lasting value, sustaining trust and success.

We treat each other equally and fairly. We uphold the highest standards when it comes to business ethics and competition law. We take care of our environment and use our natural resources wisely. Therefore, every project is a chance to create sustainable win-win outcomes – for the people we engage with, the environment, and for us. This integrity has earned respect all over the world.

As specialists, we also have a clear goal in sight. We want to install the best critical process equipment at the heart of tomorrow's plants. New, smart solutions made by Christof Group to step up process efficiency, lower the environmental footprint and extend the lifespan of our clients' plants. Solutions which yield additional benefits – solutions our clients can trust.



World's leading specialist in critical process equipment

With five high-end production facilities, an export ratio of more than 95% and the world-renowned operations ACE, ACE Metalna, APB and SBN, Christof Group is the first choice when it comes to critical process equipment. As technology and quality leader with more than 100 years of experience, we are proud of our intimate knowledge of industrial processes and unsurpassed material know-how.

We use it to pioneer and develop smart and customized equipment solutions for the oil and gas sector, the fertilizer, chemical, polymer, pharmaceutical, and energy industries. We combine it with our engineering skills, our sophisticated production and welding techniques. That way, we warrant reliable, safe and eco-friendly solutions for highly corrosive environments. About 3,500 projects pay tribute to the success of our solutions.

Solid footing



Certified worldwide

Our equipment complies with stringent quality requirements, relevant national legislations and leading international standards to ensure safe and eco-friendly solutions. Christof Group's worldwide certificates bear testimony to our technology and quality leadership.

- › Management System ISO 9001:2015
- › Safety Certificate Contractors SCC**2011
- › Quality requirements for welding acc. to ISO 3834-2
- › Components for steel structures acc. to EN 1090-2
- › China Manufacture License - Pressure Vessels A1/A2
- › Pressure Equipment Directive PED 14/68/EU
- › AD2000 - Merkblatt HP0
- › Pressure Equipment Act (BGBI. Nr. 161/2015) § 51 (3)
- › ASME U-Stamp
- › ASME U2-Stamp
- › ASME UM-Stamp
- › ASME S-Stamp
- › National Board of Boiler & Pressure Vessel Inspectors R-Stamp
- › HP0, TRD 201 (German welding license)
- › Korea certificate
- › PED A2
- › Federal Water Act (WHG) §19 (Germany)

Fair to each other

Quality and reliability, honesty and respect, transparency and trust. Our consistent values have shaped our family-run business since 1966. They are key to our success, just like our flat organizational structure that allows quick decision-making. Over the years, this has strengthened our excellent international reputation and earned us several awards as an Austrian Leading Company.

We treat each other fairly – our fellow colleagues within the group, our management and employees, our stakeholders and their representatives. The Austrian Corporate Governance Code provides us with additional guidance. The respect of our peers is closely tied to our credibility and integrity – our basis for creating lasting value and achieving long-term success.

We are team players. The spirit of fair play is instilled in us. We support each other, balance out weaknesses and maximize each other's strengths. We welcome new ideas, respect and value our colleagues' opinions as well as their know-how. To strengthen our team spirit, we collaborate across departments and include joint leisure activities in our schedules.

We value diversity. We are active in many different countries and thrive on the daily contact with different people, their cultures, languages, religions, and their diverse backgrounds. Their individual skills and different ways of thinking enrich our lives. We always lend an ear, keep an open mind and focus on the matter at hand. As specialists, we are also eager to attract people who are willing to share our goals and contribute their range of experiences and skill sets. That is why we encourage and motivate both new young talents and seasoned experts. If they choose to join the Christof Group team, they will welcome the job security that comes with our family name – it is synonymous with continuity, growth and diversity.

We hone our skills. Regular trainings open up new perspectives and support our efforts to continuously expand our knowledge base. Our employee meetings and staff appraisals help us to accurately determine the need for training and qualification programs. After all, we are specialists in our field and want to remain among the best in the world.

We act ethically. Whether clients, employees, business partner or suppliers, we are proud of our long-term relationships. As a renowned global player, we conduct our business ethically and treat our competitors fairly and justly. In doing so, we adhere to the highest standards, including potential conflicts of interest, gifts, hospitality invitations as well as all types of corruption. We are also guided by the International Labour Organisation's Declaration on Fundamental Principles and Rights at Work, the UN Global Compact and the UN Declaration of Human Rights as well as the Universal Declaration of the European Convention for the Protection of Human Rights and Fundamental Freedoms.

Fair to the environment

We care for our environment. Responsible action and taking care of our environment has defined our business conduct for decades. In this sense, we do our best to keep our production processes and daily operations carbon neutral. We use water and energy sparingly and efficiently because our natural resources are precious. To maintain a small ecological footprint, we continuously optimize our production processes, develop and use new technologies, invest into our facilities and machines, reuse and recycle metal and material waste, and increase our fleet of e-cars. Switching to LED-lighting has already saved 24.34 tons of CO₂.

Energy Audit 2019

The Energy Audit Report 2019 was carried out according to the Austrian Energy Efficiency Act (specifically: § 18, Attachment III of the Federal Energy Efficiency Act - EEffG) to further improve the energy efficiency of the Christof Group operations ACE, APB and SBN.

The report defines the areas of energy distribution (buildings, processes, transport) as well as the consumption according to energy sources (electricity, natural gas, diesel). In 2019, the entire energy consumption totaled 6,386,682.82 kWh [of which: natural gas 64%, diesel 28%, electricity 8%]. Processes consumed 77% of the entire energy, buildings 17%, transport 6%. The energy consumption according to locations was distributed among ACE (48%), SBN (29%), APB (16%) and the Christof Holding AG office building (7%). Some 87% of the energy consumption could be attributed to the world market leaders ACE and SBN. Within Christof Group, production workshop heating, component heating and welding processes consume most of the energy.

Besides outlining optimization possibilities, the Energy Audit Report recommends the introduction of an energy monitoring system as a key step to boost energy efficiency within ACE, SBN and APB.

Sustainable win-win outcomes are our goal – for the people we engage with, the environment and for us.

trust in solu





itions

A mission. A goal. A promise.

"We manufacture top-quality critical process equipment to help step up safety and environmental protection in production plants all over the world. To maintain the highest quality standards, we pool our technological expertise and think outside the box to meet our clients' needs with speed, quality and reliability. Our goal is to install new and smart solutions at the heart of tomorrow's industrial plants. Solutions which reduce complexities and costs, minimize risks, provide long-term investment security and maximize plant productivity. Solutions which go beyond quality. This is what we understand as solutions our clients can trust."

Stefan Christof, CEO

One team. One passion.

"The high specialization of our teams, their relentless dedication and troubleshooter skills have earned widespread international recognition, an excellent reputation and several awards as an Austrian Leading Company. In tackling tasks, our teams act in sync. This close collaboration provides our company with a solid foundation for lasting success. Our teams are also driven by the passion to count among the best in the world. As our brand ambassadors they proudly convey the Christof Group brand image to the outside."

Markus Fuchsbichler, COO

More quality. More environmental protection.

Our clients deal with critical media and high pressure. To provide them with the best high-quality equipment, we use highly resistant materials and employ precision workmanship. We combine our proven knowledge of industrial processes with state-of-the art welding and production techniques to deliver reliable, safe and eco-friendly equipment solutions in line with stringent quality requirements. After all, our equipment must ensure a regular heartbeat in our clients' plants.

Our uncompromising commitment to quality is a key success factor and an integral aspect of our business policy. In our manufacturing processes, it helps us to think outside the box and fabricate products with a consistent high level of accuracy and precision. In the execution of services, it helps us to act swiftly and flexibly. We are known to go the extra mile to provide sophisticated and workable solutions, even when things get tight.

To stay one step ahead with the best critical process equipment, we will continue to step up our quality levels. We will also focus on developing our own technologies and special materials because as specialists we want to fabricate the most durable critical process equipment for tomorrow's industries. To achieve this goal, we will tap into the unused potential of innovative highly resistant materials and novel production techniques. We will deepen our skills and knowledge in the polymer, oil and gas sectors as well as in urea and ammonia synthesis. Besides that, we will devote special attention to research and development, the collaboration with leading technology providers and new acquisitions that best complement our endeavors.

More quality. More safety.

Whether in high-pressure technology or in the medium-pressure range, we warrant reliable, safe and eco-friendly solutions. We apply superior skills in vessel engineering and top-quality workmanship. We use highly resistant materials and special metals just like novel hardware and software. We pool our expertise to ensure safer operations and provide more safety to help prevent incidents, leakages and environmental pollution.

Highly resistant in harsh environments. Clients all over the world rely on our advanced knowledge and processing techniques of highly resistant materials and special metals.

Special materials:

- › Carbon Steel
- › Cladded Steels
- › Copper Alloys
- › Duplex Steels
- › High Silicone Steel – 1.4361 (Böhler A 610)
- › Nickel-based Steel (handled in total 378 tons in the last 10 years)
- › Safurex® (handled in total 4,000 tons in the last 10 years)
 - Safurex® Star
 - Safurex® Degree
- › Stainless Steel – 25.22.2 (handled in total 500 tons in the last 10 years)
- › Titanium Grade 2

The right treatment. To process the special materials and metals we work with, we use sophisticated welding and production techniques to ensure top-quality results and durability.

Special techniques

Cladding	Digital X-Rays	Equipment Modernization
explosion and roll cladding, strip cladding and overlays	groundbreaking accuracy saves time and money, view test images in the cloud	energy-efficient heat transfer and heat exchange technologies for refineries, chemical and fertilizer industries
Equipment Optimization	Inner Bore Welding	Multilayer Designs
state-of-the-art designs for HP equipment for the fertilizer and petrochemical industries	no leakages thanks to gap-free connections	more safety, strength and stability for pressure vessel shells

More continuity

We continuously invest into our facilities and machinery, improve our manufacturing techniques and develop new ones. That way, we ensure sophisticated and workable solutions and on-time deliveries, even when project schedules are tight. The Quality Management System ISO 9001:2015, our group-wide quality assurance, the 5S lean manufacturing methodology, and employees who actively contribute new ideas guarantee our reliability across markets.

Many business partners have been loyal customers since day one. This continuity is based on many years of cooperation, an understanding for customer requirements, the ability to anticipate their needs as well as solution-oriented action. We enjoy equally long-term business and service relationships with our suppliers. They welcome our regular appraisals and, if needed, the support offered through complementary trainings to raise the awareness for correct and complete deliveries.



Healthy and safe

Keeping our employees healthy and safe is one of our top priorities. Healthy and motivated employees enjoy their work and are keen to pursue common goals. As their employer, we do our best to support them with voluntary fringe benefits, by actively promoting their health, providing them with top-quality protective equipment and clothing, and conducting training to increase their safety awareness in different situations.

Many of our employees carry out our specialized tasks in an industrial setting. By training them regularly in industrial safety and accident prevention and the identification of potential hazards, we strive to create a safe and healthy workplace for them, even beyond Christof Group's premises.

The Safety Certificate for Contractors SCC[®]:2011 provides us with the international standards for safety, health and environmental protection. Similarly, the machinery, equipment and facilities we use as well as our manufacturing processes comply with the highest safety standards.

Whether engineer or skilled professional, we value the know-how and expertise of every team member, just as much as innovative ideas. Our open and cooperative work environment enables our teams to hone their skills and develop new ones in knowledge transfers among each other. By acting in sync, they ensure our continuity and stability. That way, they add value to our diversity and the future growth of our group.

Measures implemented in 2019:

Health care

- › Vaccinations and checks of vaccination certificates
- › Health care counselling

Occupational safety

- › Provision of top-quality protective equipment and clothing
- › Employee trainings for different situations in different fields of expertise

Fringe benefits

- › Company outings and celebrations
- › Modernization and redesign of social areas

Direct personal appreciation

- › Voluntary bonus payments
- › Personal gifts to employees on special occasions

Smart solutions for a healthy heart



Experience, technology and quality leadership spur us on to innovate smart solutions for tomorrow's industrial plants. We ensure a regular heartbeat – even when we are challenged to repair the unrepairable. Technical complexities fascinate us. We tackle them with know-how, quality and precision workmanship. In doing so, we set the pace for the fertilizer, chemical and petrochemical industries.

We help feed the world

To feed a growing population, agriculture is challenged to manage its areas with maximum efficiency. However, many farmlands lack nitrogen. Therefore, to produce high yielding high quality crops and enrich the soil with the nutrition it needs, farmers rely on nitrogen-rich fertilizers. We provide the key components needed in fertilizer plants – high-quality critical process equipment.

We make fertilizer production safer

The production process of fertilizer puts the stripper pipes of high-pressure equipment under enormous corrosive stress. To effectively counter this strain, the new Super Duplex material Safurex® Star was developed and introduced in 2019.

In March 2019, SBN was the first to produce a high-pressure stripper made out of Safurex® Star and Safurex® Degree. The HP stripper made its way directly from Ternitz, Austria, to Sittard-Geelen, Netherlands, where it will ensure the optimal performance of a urea plant.



We repair the “unrepairable”

In 2016, SBN carried out a unique repair of a pool condenser tubesheet that was severely damaged by flow-accelerated corrosion. At the same time, SBN developed and produced its replacement. The repair not only averted the threat of a significant loss of production in a urea plant, it also prevented leakages:

Complexity is our game

In tandem with Stamicarbon, SBN devised a unique game plan to temporarily restore full operation to the client's plant in China after the emergency repair. It kicked off the manufacture of a new pool condenser, complete with design improvements, at the same time. Delivery time ex-works was 12 months. Normally this takes 18 months.

Our experts perfectly mastered all repair challenges. They minimized the risk for failure, ensured the temporary operation of the repaired pool condenser with a proper condensate monitoring program and conductivity measurements, restored the strength of the tubesheet according to AD-2000 regulations, and completed the repair in only 4 months.

Excellent teamwork between SBN, Stamicarbon and the client, unmatched manufacturing expertise, state-of-the-art design knowledge, precision workmanship, and reliable partners made the seemingly impossible possible. All repair works and the delivery of the new pool condenser were successfully concluded within 12 months. With better safety for humans and the environment, full operation of the urea plant was restored in minimum time.

We build plants for biopolymers

Plastics are everywhere: in clothing, houses, cars, toys, smartphones and numerous other consumer goods. Unfortunately, most of them end up in the environment – a huge burden, as we know. The alternative is bio-based plastics. These renewable polymers are produced from naturally growing crops and plants. They are biodegradable and can be thermally recycled in line with the principles of a modern circular economy.

ACE has put its knowledge to work to support research in the production of bio-based plastics derived from e.g. maize-starch. Working in tandem with partners, ACE developed and built the first pilot plants.

We provide smart equipment

Unscheduled downtimes are expensive. That is why we closely collaborate with our customers and produce high-quality durable equipment, ensuring safety and maximum plant productivity. We want to give our clients the edge – and peace of mind.

Therefore, we focus on new smart solutions. In 2019, we introduced our novel “Digital X-Ray” testing method. To also produce “smart equipment” in the future, we are researching into new ways of using special sensors to facilitate preventive maintenance and allow all logistics and maintenance works to be scheduled well in advance. Unforeseen downtimes due to leakages can thus be prevented, clients can order new equipment in time and even increase productivity levels. It is our goal to provide them with real value, inspire confidence and create new levels of trust for the future.

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