

# Schmidt+Clemens taking plant support to the next level

It's busy and exciting times at Schmidt+Clemens, the privately owned German manufacturer of specialised alloys and components that supplies to the petrochemical industry, separation technology, power technology, and industrial-furnace-construction industries. The company is expanding on its core business as a foundry and is moving further into the field of support services in order to help its customers in an even broader variety of tasks ranging from setting up their construction sites, maintenance planning and general maintenance, infrastructure, and installations, right through to recommissioning and ensuring that clients always have sufficient qualified staff on hand. Through these installation service activities, Schmidt+Clemens is equipped and ready to take on even the most demanding challenges. Managing Aging Plants magazine talked to Mr. Christian Lenz, Commercial Head of the Service Division about this decision – what it entails and why the company is in such a unique position to address the concerns with which its customers are faced, and solve them in a supportive, cost-effective, and reliable way.

*By John Butterfield and Gillian Gane*

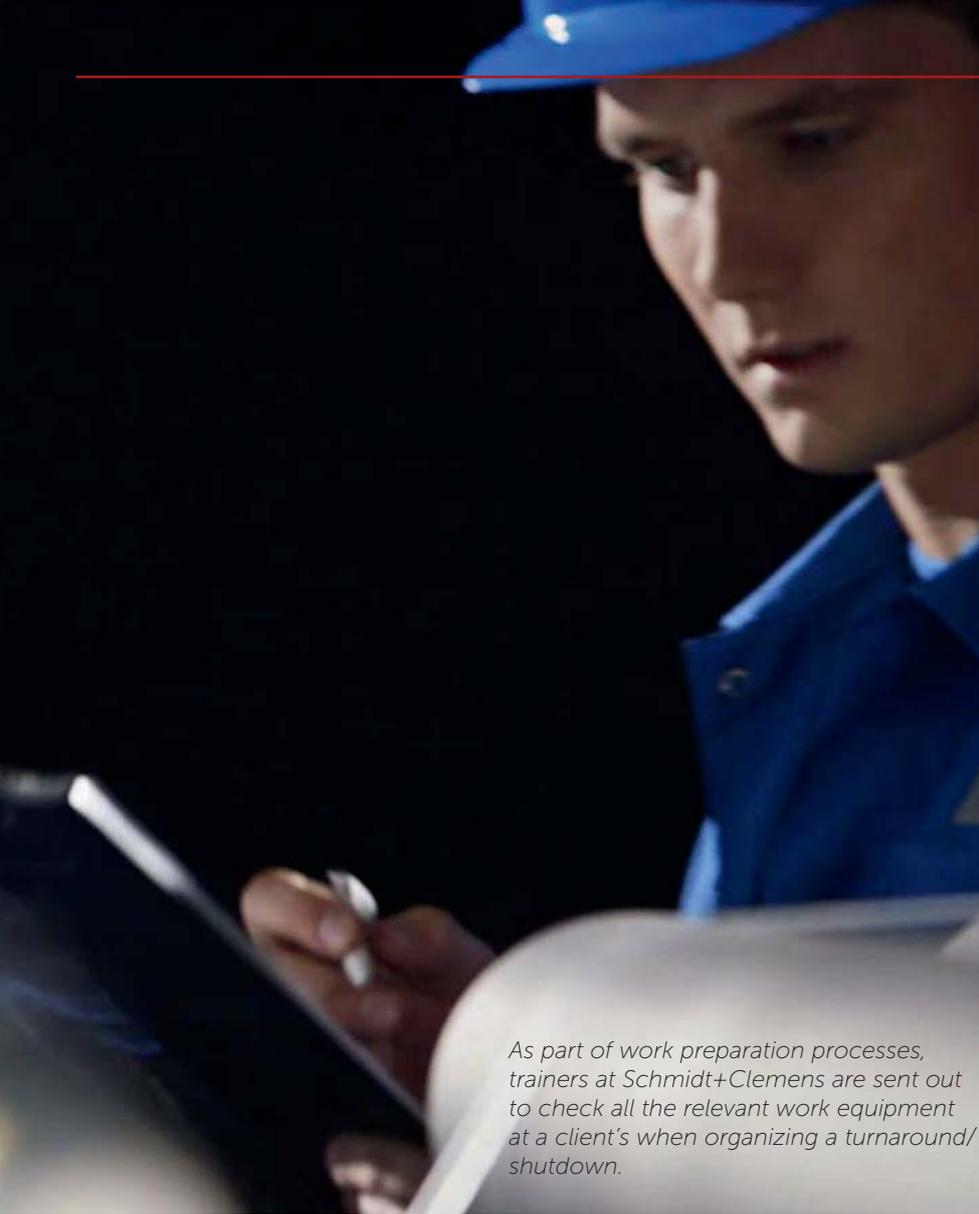
## **Present day status**

Founded in 1879, Schmidt+Clemens has been a leading force in the supply of high-quality special steel solutions for almost 140 years in connection with spun casting, static casting, investment castings, and forgings. The company is, moreover, very much a presence on the international stage.

With headquarters in Lindlar-Kaiserau in Germany, it also has production facilities in Spain, the Czech Republic, Saudi Arabia, and Malaysia. Additionally, it has three corporate distribution companies in the USA, India, and Brazil, over thirty commercial agencies, and 1000 people working for it worldwide, consolidating its global presence.

## **Why do customers need installation services?**

"In the branch of industry where we work, we supply components for steam reformers and steam crackers furnaces," begins Mr. Lenz. "When Schmidt+Clemens takes projects within these two industries, we never think of them as being completed when the



*As part of work preparation processes, trainers at Schmidt+Clemens are sent out to check all the relevant work equipment at a client's when organizing a turnaround/shutdown.*

components have left our factories and the invoices have been dispatched. They are only finished when all our deliveries have been installed and when our clients' furnaces are up and running/back in perfect operation. Such achievements can only be realized by offering considerable support services to our clients. In the past, our service division always used to carry out some on-site activities for clients but now we concentrate on doing this much more fully in a structured and commercial way."

There are a number of reasons why Schmidt+Clemens are following this track. Firstly, the materials used in steam crackers and steam reformers are becoming increasingly capable but, at the same time, demands made on the processing and installation of these high-end materials, particularly in petrochemical plants, are constantly rising. As such operators in plants have to focus their attention and activities first and foremost on optimizing operations. Unfortunately, the knowledge

and skills needed to accomplish this task may not always be available to their clients in-house because suitably experienced staff may have either left the company through retirement or have moved job, and their positions might not have been replaced to keep staff resource costs down. As 'own' service and maintenance capabilities are reduced so the management of these client organizations are compelled to outsource shutdowns to external companies and/or consultants. Mr. Lenz: "when our tubes are used in steam reformers they have a lifetime of around 100,000 hours, which is close on twelve years of service. When our clients therefore come to replace them, they often find that they have no one in-house who has experienced this work in the last turnaround/shutdown. In these cases, Schmidt+Clemens' Service Division is able to step in with the necessary experience and support simply because they carry out such procedures on a daily basis."

"Similarly, a further challenge for clients in recent years has been the rapid and complicated development of materials to increase the lifetime of components. Our customers may not always have the experience at hand to be able to follow these advances and decide upon the best solutions to use. For example, up to around fifteen years ago there were effectively only three materials available for producing the high alloy stainless steels coils used in ethylene furnaces for the decoking process – HK40, 35/25 and 45/35. Now this number has considerably multiplied – each alloy having its own unique characteristics for providing a cost effective solution to reduce decoking time and thereby reduce the time when the furnace lies idle. We can help them in deciding what is appropriate for their particular organization," continues Mr. Lenz.

Today's highly developed alloys often require very explicit handling and need to be welded to exacting guidelines that can only be performed by well-trained personnel. "This is where our staff comes into its own," says Mr. Lenz "because again due to our vast knowledge and experience we are able to handle installations and the functioning of components like coils, harps, reformer tubes, manifolds and t-pieces much more economically and safely than our clients would be able to achieve. These types of tasks can take place as either part of a new-build project, or as a scheduled shutdown, or even in emergency circumstances. Whatever the conditions, our goal is to bring our clients' plants to the highest possible level of efficiency and availability as quickly as possible. For our clients this means a reduction in their downtime when a plant is being maintained, and significantly faster plant availability with 100% reliability." Moreover, to make their clients new plants work as efficiently as possible Schmidt+Clemens will already come on-board before dismantling existing equipment and so analyse the components to be replaced. Taking care of a materials analysis in this early stage allows the chance to incorporate optimisations in terms of materials and design into the new systems. Further to personnel and know-how Schmidt+Clemens Installation Services are also able to make all the machinery, tools, and materials available at short notice.



The company is very much a presence on the international stage. Seen here from the air its headquarters in Lindlar-Kaiserau in Germany.

**Training as a key to saving costs**

Another process where Schmidt+Clemens has significantly benefitted its clients is by offering professional welding training. Mr. Lenz takes up the story: "A well-known saying is that 'A chain is only as strong as its weakest link.' Applied to the demands made by steam crackers and steam reformers this means that even the very best high-performance materials are only as capable as the welding seams that connect them. Schmidt+Clemens is not only one of the leading experts in special steel solutions in the petrochemical industry, we also know how to optimally join these solutions together. For example, our heat resistant tubes often remain in operation for ten years or more, which means that it is important that welders know how to prevent creep. This is vital and ensures that when only certain components are exchanged, the old and the new parts still work perfectly and durably together. Furthermore, although many of our clients may have some well-trained welders with experience in high alloys, very few of them have practical skills in welding aged to new material. We have and it is this knowledge and compe-

tence that we share with our customers in the form of training and supervision to their welders on their sites – something which is greatly appreciated." Schmidt+Clemens trainings focus on highly specialised welding techniques and special skills such as grinding, purging, peening, and beveling. Moreover, their order-related training programs are geared to special welding activities like space restrictions, geometries, job preparation, and material

conditions. All trainings are characterized by their direct practicality. When Schmidt+Clemens is involved in a turnaround at a client their welding experts from their Installation Services are always directly on site in order to coordinate and monitor the whole process. We often send in one of our welding trainers for seven, ten, or even fourteen days' work on-site before the shutdown to examine the skills available at the client so that we can ensure a tight turnaround. Our trainers not only play an active role in further developing the client's welder skills but also in choosing the best qualified persons in each case for specific jobs during the turnaround. "It's often a question of keeping a good overview of what is happening, or what could happen and prevent problems occurring," adds Mr. Lenz. Schmidt+Clemens trainers therefore often take samples of what can happen if incorrect welding is done to the job site. In this way the customer and its welders can see for themselves, the effects of a wrong decision. They are then more readily convinced to ask for help rather than to just do things."

As part of the work preparation process, the trainers that Schmidt+Clemens sends out check all the relevant work equipment. They, additionally, have at least ten years' background in the company's own weld shops and as such have accumulated a lot of character-building experience working on a wide diversity of sites with numerous trainees in a multitude of world regions. "To date we have successfully handled over



The centrifugal casting production method is one of the core technologies of the Schmidt+Clemens Group.



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eighty projects in thirty countries in this way and are especially proud of our accident-free work record. It has become second nature to work across language barriers and cultures."

#### Why else would a customer be looking to turnkey suppliers?

"We have already seen that because of the long lifetime of our products, large-scale maintenance at clients is not something that regularly occurs. There can often be ten-to-fourteen years between renewals and the customer's workforce resources may be limited. Turnarounds can also involve the coordination of hundreds of people," says Mr. Lenz. "One of the biggest shutdowns we have handled meant coordinating 800 people, 90% of whom were subcontractors. This is

not something that most clients' have experience in and generally working from the perspective of a lack of knowledge costs dearly. In addition, experience is not built up overnight. If a company tries to take on such tasks without the necessary skills, then they can run into all sorts of problems. I suppose that you could compare the situation to buying a house for the first time – you just don't have a good overview of what it involves, it is just something you struggle through. Our clients could do the same but they would undoubtedly come up against issues that should be avoided and it would take them much longer from start to finish without the accurate planning, knowledge, and skills we can provide them with. Organizing turnarounds is not a part of our clients'



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DNA, nor should it be. They shouldn't be wasting their resources on understanding things like scaffolding activities and crane capacities and their subsequent placements on site, and accommodation for hired-in contractors, etc. They need to concentrate on their core businesses of producing, ethylene, hydrogen or ammonia, etc. This is therefore where our Installation Services Department always plays a key role."

In the case of emergencies, Schmidt+Clemens target is to be on site within twenty-four hours or as near as possible to this depending on the specific location. This is as it should be because if you are looking at a shutdown of a big methanol reformer furnace, for example, every day it is out of commission costs the owner roughly 1 million US\$. Saving time is therefore imperative to saving money and every day counts. So where components have to be suddenly exchanged and unexpectedly, Schmidt+Clemens international production network allows it to produce all requisite special steel parts quickly to the highest quality standards even when large quantities are needed. Its staff can then deliver them directly to the place of use where installation work can begin immediately saving still-stand time and thereby saving money. "As well, our ongoing investments in Research & Development and our people ensures that we can always work according to the latest technical standards regardless of where we are in the world and use the knowledge we gain to further improve our products," remarks Mr. Lenz.

#### Conclusion

Already the approach of Schmidt+Clemens Installation Services in bearing fruits and is the source of many appreciation letters from well satisfied customers. Mr. Lenz: "By removing non-core business tasks from our clients and providing solutions to their challenges through our knowledge, skills, and expertise, we allow our clients to not only concentrate on what really matters to them to be successful in a cost effective and productive way but are also able to provide ourselves with a whole new area of business in which to make use of our considerable talents."