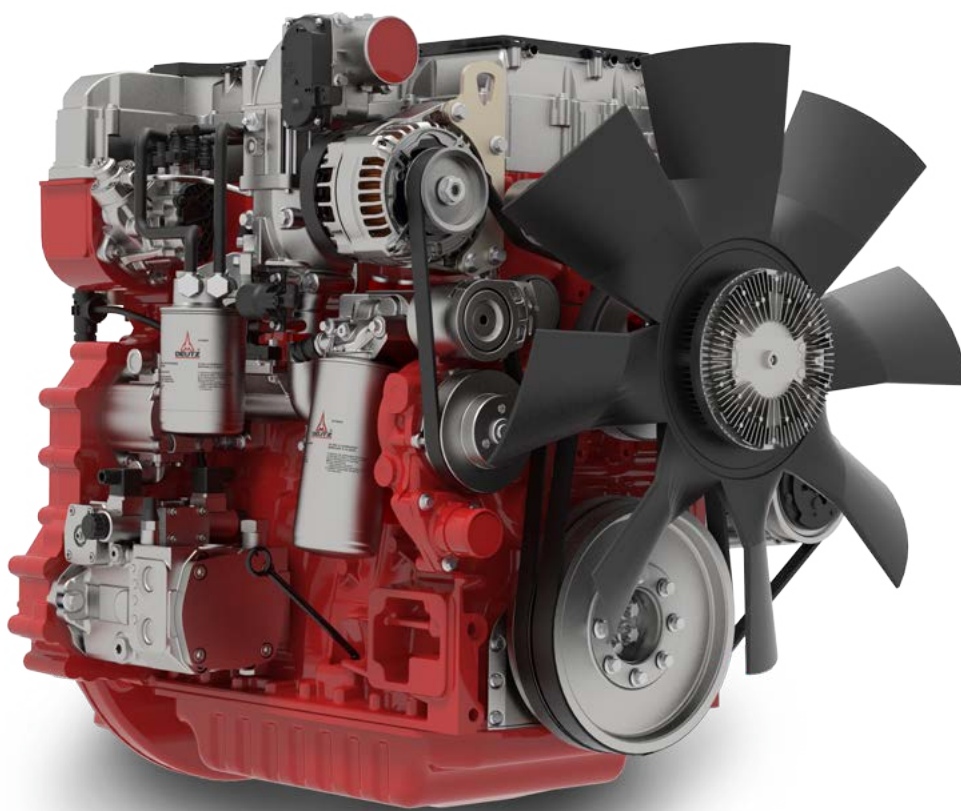


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Dear readers,

Bauma was the undisputed highlight of 2016. All the big names in the construction machine sector gathered in Munich in April to present their latest developments. DEUTZ was on location to present its whole new product range under the headline “Future Driven – Engine Technology of the Future”. Our first surprise was a real highlight: the new TCD 5.0, which we unveiled to the world for the very first time. Read everything about DEUTZ’ appearance at Bauma 2016 and our new engine project, the TCD 5.0, starting on page 6!

In August, Brazil hosted a sports event like no other. When the athletes arrived in Brazil, someone was waiting for them already: our Brazilian subsidiary, DEUTZ do Brasil, which contributed its own energy and power to the largest sports event in the world (page 15). Power is also a keyword for our US subsidiary, DEUTZ Corporation. In the second half of 2016, it will be launching its so-called Power Centers, which offer additional services to small and medium-sized machine manufacturers, in particular. Find out more on page 14. The international nature of the world of DEUTZ is well reflected in Klaus Habermaier. Many years ago, he became one of the first DEUTZ expats to go to China. He has since made Dalian his second home. In our interview on page 16, he tells us about the warm welcome he received there and about which distinction of the DDE Joint Venture he is particularly proud. We are equally proud of our long-standing cooperation with two charitable organisations, Gemeinnützige Werkstätten Köln (GWK)



and NOSTRA gGmbH. Employees from both institutions are supporting our work and demonstrating impressively that people with disabilities can make a valuable contribution to the labour market (page 17).

DEUTZ engines do great work, and they have to meet harsh demands. To ensure that an engine can work at full performance throughout its entire life span, there is one thing in particular you should keep in mind: always use original spare parts for all repair and maintenance works. Find out how to keep your DEUTZ at DEUTZ standards on page 20. Another “typically DEUTZ” phenomenon: our choir, which will be celebrating its seventieth anniversary this year. As musical ambassadors for the DEUTZ brand, its more than 100 singers have travelled the world far and wide for their concerts. Have a look at page 22 for our special birthday greetings to our beloved choir!

Note: Gender differentiation has not been applied in this document for reasons of improved legibility. The relevant terms apply for both genders in the sense of equal treatment.

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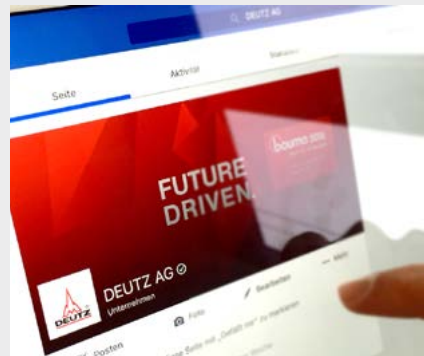
Kind regards

Dr Helmut Leube

Dr Margarete Haase

Michael Wellenzohn

DEUTZ on social networks



DEUTZ AG started with its own global Facebook channel on 1 March 2016. This was followed by a channel on LinkedIn on 1 April. Social Media Marketing was an essential element of the Bauma communication strategy and will also be a part of DEUTZ AG's marketing communication in future. Prior to, during and after the trade fair, the DEUTZ social media team posted approx. 100 items of product news and information in German, English and Spanish. Since its start, both the Facebook as well as the LinkedIn page of DEUTZ AG has already registered more than 1,500 fans with an increasing tendency (about 50 new fans join per week).

Become a DEUTZ fan to:

facebook.com/DEUTZofficial
linkedin.com/company/DEUTZofficial

DEUTZ to supply engines to Takeuchi, the Japanese manufacturer of construction machines

DEUTZ has acquired a new cooperative partner in the segment of construction machines, namely, the Japanese company Takeuchi Mfg. Co., Ltd., one of the leading manufacturers of compact excavators and tracked carriers. From mid-2016, Takeuchi will be equipping its new wheel and tracked excavators, TB295W and TB2150, with the DEUTZ TCD 3.6 diesel engine.

Hiroshi Yokoyama, General Director of Research and Development at Takeuchi, explains: „We greatly appreciate our cooperation with DEUTZ for the Stage-IV excavators. The modular exhaust after-treatment system is extremely useful to us, and the extensive experience that DEUTZ possesses in the field of exhaust gas technology is a huge benefit.“ Michael Wellenzohn, member of the board at DEUTZ AG in the field of Distribution/Service & Marketing, adds: „We are delighted to have Takeuchi as a customer in the field of compact excavators. Takeuchi is one of the most renowned manufacturers in this segment. We are looking forward to a successful cooperation.“

The engines meet the current Japanese Stage 4 emission standard as well as the EU Stage IV and US EPA Tier 4 final. Exhaust gas after-treatment is carried out by a DOC (diesel oxidation catalyst) and SCR (selective catalytic reduction) as standard. For more strictly regulated markets such as Switzerland or communal applications in Germany, a DPF (diesel particulate filter) is used. With this DPF, the machines already meet the requirements of the EU Stage V standard, which is set to come into force in 2019. The modular exhaust after-treatment system DVERT® (DEUTZ Variable Emission Reduction Technology) possesses the standard DOC/SCR or, optionally, the DPF/SCR solution to meet the individual requirements of different markets. In addition, the manufacturer will be receiving the exhaust after-treatment system as a fully assembled drop-in solution, which considerably simplifies the installation process.

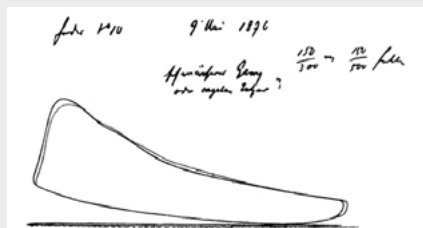
Girls' Day at DEUTZ

This year, DEUTZ AG once again invited girl pupils who are interested in technology to the "Girls' Day" campaign day for girls. On 28 April, 21 girls were able to find out everything about the commercial technical apprenticeships at DEUTZ, directly on site. In a company presentation, the pupils learned about the company and its products. They found out, among others, in which devices DEUTZ engines are deployed, and which additional forms of technology the company offers, including, for instance, solutions in the field of exhaust gas treatment. During the subsequent tour of the technology centre, the pupils heard, live and in person, the history of the first engine producer worldwide and were given the opportunity to admire the historic collection of engines with the first four-stroke engine on earth. In addition to this, also in this year, the Info Mobile of the metal and electrical industry (M+E) employers' associations awaited the girls. The Info Mobile offers an additional insight into the occupational areas of the metal and electric industry and provides demonstrative experimental stations for typical M+E jobs. With the purpose of giving girls an insight into technical training professions and getting them interested in technology, DEUTZ has been actively involved in "Girls' Day" for many years. "Speaking for myself, this commitment is very close to my heart, since "Girls' Day" can show them how interesting a technical vocational training can be. And this can mean the decisive step toward making a career decision," explains Dr Margarete Haase, DEUTZ management board member for Finances, Personal, Investor and Public Relations.



140 years of four-stroke engine

The expert of engine history is celebrating a special anniversary in 2016. It was exactly 140 years ago that Nicolaus August Otto completed the first operative four-stroke test engine on earth. This four-stroke engine from 1876 with compressed charge, which was operated with illuminating gas and could be used for all fuels and modes of use represented the foundation of worldwide motorisation for the City of Deutz, located on the right side of the Rhine. After having requested patent protection in June of 1876, the first serial four-stroke engine could already be delivered in October. The 4 PS engine, with the engine number 3001, was delivered to a brewery in (Cologne) Mülheim with the comment "on a trial basis".



The indicator diagram of 9 May 1875

Third millionth DEUTZ engine from Cologne-Porz



On the 16th of June, the third millionth engine rolled off the line at the main plant in Cologne-Porz. The engine of the TTCD 7.8 series marks yet another highlight in the company's long history. Since its founding more than 150 years ago, DEUTZ could already register the production of

the group's ninth millionth engine in the past year. In June 1993, DEUTZ commissioned a new engine factory at Cologne-Porz, which already then was considered one of the most modern worldwide. Today, worldwide, Cologne-Porz is the company's most important assembly location and also

the company's headquarters. Additionally, DEUTZ started with camshaft and crankshaft production at its new shaft centre in Porz a few weeks ago and, as such, has reached yet another important milestone in the consolidation of its German locations.

DES Service-Award

Already in the week before Bauma, with the "International Bauma Meeting Cologne" at the headquarters in Cologne-Porz, the DEUTZ team tuned the dealers and representatives from across the world in on the upcoming days. All product novelties and innovations were presented and intensively discussed in presentations and workshops. The DES Service Award was part of the two-day event. DES stands for Dealer Evaluation System, according to which the best DEUTZ dealers have been distinguished in different regional categories in the EMEA economic region (Europe, Near East and Africa) since 2011. What is more – for the first time – a prize was awarded for "Strongest improvement in comparison with the previous year".

The winner for the 2015 fiscal year:

North /West /Southern Europe region: *DEUTZ Austria*

Region Africa: *Deutz Dieselpower, South Africa*

Middle East region: *Ectra, Egypt*

Eastern Europe region: *SIA Desetra, Latvia*

The strongest improvement in comparison to the previous year: *Al Obeidly, Qatar*



A film for the cathedral city

The city of Cologne has produced a new image film to present its most beautiful sides. Also a part of it: DEUTZ AG. With the support of well-known Cologne companies, among these also DEUTZ AG, the Köln plus Partner e. V. association made an image film for the business location of Cologne. Chairpersons from a number of different Cologne companies, organisations as well as the University of Cologne demonstrate how varied the popular Rhine metropolis is, and the film also describes the benefits of the location. After all, the film was also realised for the city of Cologne in global support of the brand process. The business and science sectors, as well as the vibrant metropolis of Cologne, are at the centre of the four-minute film. The film has been produced in German and English. It can therefore be deployed internationally. The film can be watched in the DEUTZ media library at the following link:

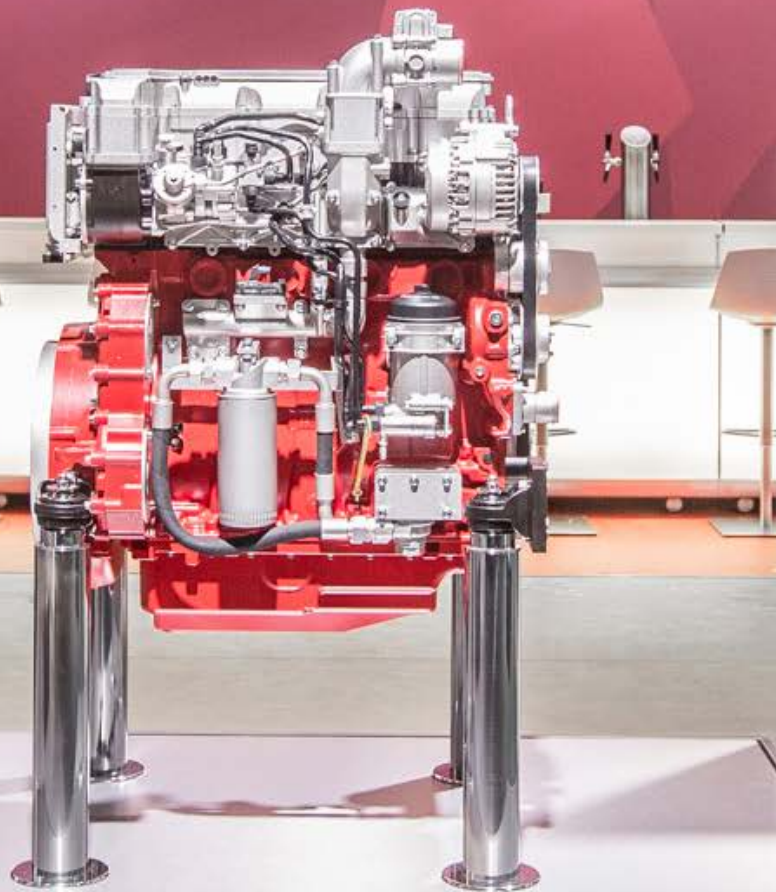
http://youtu.be/_su4ZleZKm4



FUTURE DRIVEN.

ENGINE TECHNOLOGY FOR TOMORROW

THE NEW TCD 5.0



The new TCD 5.0 was the absolute highlight of the DEUTZ product campaign.

The DEUTZ product campaign at Bauma 2016

Bauma was the highlight of 2016. All the big names in the construction machine sector gathered in Munich in April to present their latest developments. In keeping with its motto, „FUTURE DRIVEN – ENGINE TECHNOLOGY OF THE FUTURE“, DEUTZ presented a whole new product range and started the event with a great surprise.

DEUTZ already presented its exhibition programme for Bauma 2016 at the start of the year. With the TCD 2.2, the two gas engines G 2.2 and G 2.9, as well as a number of new service products, the DEUTZ booth was already well-equipped. However, the actual highlight – the TCD 5.0 – would only be shown exclusively in Munich at the trade fair.

The new engine project is a water-cooled inline four-cylinder with five litre cubic capacity. The serial introduction is planned for 2019, in time for the next EU Stage V emission standard. The particularly compact diesel with turbocharging and intercooling has a performance of 100 to 150 kW and offers another powerful alternative within the DEUTZ product world. Thereby, the engine follows the downsizing principle, which means it generates more performance with less cubic capacity. Thus, larger engines can be replaced, or more performance can be generated with the same size. What is more, the engine works more efficiently. This, in connection with the weight reduction, allows improved fuel consumption. The installation dimensions and client interfaces are virtually identical with those of the well-known TCD 4.1, which is a benchmark regarding its compactness.

The trade fair exhibit TCD 5.0, made of steel and iron, took centre stage at the booth in Hall A4 and, from the first day, attracted the attention of visitors. With its pipeless construction that displays a reduced number of parts, the platform, which was redeveloped from scratch, drew particular attention. What is more, so as to bypass heat protection measures, a stringent separation of the

hot and cold side was attained, as well as a reduced power loss in the oil and water cycle. The engine also has an overhead camshaft, a cross flow cylinder head with a high cross-linking of parts and functions, maintenance-free hydraulic valve-clearance compensation, and a robust dust and shock-resistant cylinder head cover.



"With the TCD 5.0 engine, we would like to fill the performance gap in the range between 100 and 150 kW. At the same time, we are developing a new technological foundation with outstanding product properties," Michael Wellenzohn, member of the management board of DEUTZ AG for the area Sales/ Service & Marketing, explains. So as to satisfy the high emission regulations of EU Stage V, the TCD 5.0 will have the tried-and-tested DEUTZ exhaust gas treatment, consisting of diesel particulate filter (DPF), Selective Catalytic Reduction (SCR) and diesel oxidation catalyst (DOC), which are already successfully deployed in Stage IV.

Clever exhaust gas treatment

An additional highlight at the DEUTZ booth was the new Smart EAT System. This solution for exhaust gas treatment consists of a so-called Single Unit, in which the DOC, DPF and SCR (incl. dosing unit) can all be accommodated. By means of this, the entire technology for exhaust gas treatment has been integrated extremely compactly in just one part. Thus the client gains addition-

al installation space in his device. However, should this be required, the SCR system and the DOC/DPF unit can also be installed separated as a so-called Flexible Unit, if the available space can be utilised better in this manner. Thereby, the system

► "With the TCD 5.0 engine, we would like to fill the performance gap in the range between 100 and 150 kW."

Michael Wellenzohn

follows the modular logic of the tried-and-tested DVERT construction kit (DEUTZ Variable Emission-Reduction-Technology) which, depending on the application, always provides the best individual solution.

For the lower output range, DEUTZ presented a total of three new engines. With 22 to 56 kW, the new three cylinder version of the successful TCD 2.9 four cylinder – the TCD 2.2 – will provide an additional option especially for the lower load range in the area of material handling and compact construction machinery. What is more, DEUTZ introduces two liquid gas version (also referred to as LPG) of the TCD 2.2 and TCD 2.9. The engines bear the description G 2.2, respectively G 2.9 and are particularly suited for forklift use in buildings. This

is because using liquid gas as a fuel creates significantly reduced emissions. They satisfy the requirements of EU Stage V with the help of a 3-way catalytic converter – without the need for an elaborate exhaust gas treatment system – and thus constitute a convenient alternative.

All TCD / G 2.2 and 2.9 versions are based on the same engine platform, allowing the client to use comprehensive synergies for the integration, e.g. in terms of connectors or spare parts. Starting as of 2019, the new engines will be launched on the market for EU Stage V.

What is more, new engine versions were presented in the compact area: in the future, the TCD 2.9 and 3.6 will become more powerful and offer more performance. In the new high torque version, the TCD 2.9



generates 375 Nm and the TCD 3.6 generates 390 Nm maximal torque. Thereby, despite this, they remain under the power threshold of 56 kW, which is relevant for the next exhaust gas emission Stage V, so that they can do without the SCR system. In addition to this, due to the sole use of an open diesel oxidation catalyst (DOC) for exhaust gas treatment, both engines satisfy the currently valid EU Stage IV. Furthermore, the extremely successful TCD 3.6 was exhibited as a Powerpack in Munich, which comprises the engine, cooling system and exhaust gas treatment.

The TCD 2.9 was presented with a performance of 75 kW, as a high-power version for mobile work machinery. This allows to replace a larger engine in the client machine. The result is an advantage in terms of weight, installation space, and overall cost.

"Stage V ready", up to 16 litre cubic capacity

Apart from the novelties, DEUTZ also announced an update for the large TCD 12.0 and 16.0 V-engines at Bauma 2016. Just in time for the exhibition, these also received the "Stage V ready" seal. This means that DEUTZ will equip the six or eight cylinders with diesel particulate filters for EU Stage V. With the changeover from the currently valid EU Stage IV to Stage V, the construction size and execution remain virtually identical, so that no costly changes will be needed on the client's device. By means of this, DEUTZ has a Stage V – capable product range from 2.2 to 16 litre cubic capacity.

All in all, Bauma 2016 was once again an exhibition of superlatives and is rightly considered the largest trade fair in the world. From 11 to 17 April, about 580,000 guests from 200 countries visited the premises in Munich. This represents an increase of more than nine per cent. A total of 3,423 exhibitors registered – 1,263 national and 2,160 international – from 58 countries. Here, they presented their product novelties, further developments and innovations on a record surface of 605,000 square metres. In this regard, with a surface of approximately 400 square metres, the DEUTZ booth was a complete success. The guests were astounded throughout by the large number of new products and the attractive presentation. Therefore, there always was a lot of hustle and bustle between the different exhibitions, yet the DEUTZ booth personnel never got tired of answering every question in countless client conversations.

Images and impressions of Bauma can be found at: www.future-driven-deutz.com



With the addition of its new Smart EAT, DEUTZ now offers all three exhaust after-treatment systems (DOC, DPF and SCR) in one single unit.



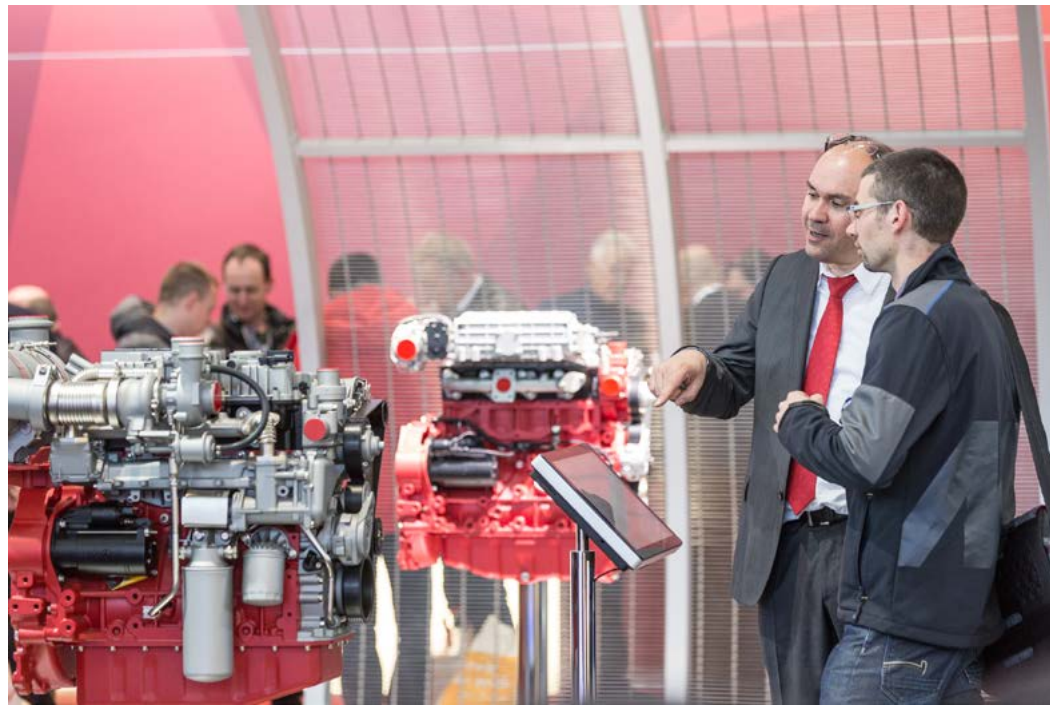
The new DEUTZ G 2.9 gas engine.



Michael Wellenzohn, member of the management board of DEUTZ AG for Sales/ Service & Marketing, in a professional discussion.



Impressions Bauma 2016





One engine, a lot of innovation – the TCD 5.0

DEUTZ presented its latest engine project, the TCD 5.0, at Bauma 2016. The serial launch of the four-cylinder in-line engine is planned for 2019, on time for the EU Stage V. DEUTZWorld spoke to Dr Markus Schwaderlapp, Director of Research and Development, and Wilhelm Feuser, Director of Projects and Strategy, at DEUTZ AG.

DEUTZWorld: The TCD 5.0 will complement the DEUTZ product catalogue in the performance range from 100 to 150 kW. What are the benefits of this new developmental project?

Dr Markus Schwaderlapp: The engine is a brand-new development with a cubic capacity of five litres to fulfil the upcoming EU Stage V emission standard. Its emission concept is designed in a modular way and allows for the representation of so-called emission downgrades using spe-

cially aligned hardware. This new technological platform offers a lot of advantages. We have, for instance, achieved a reduction in consumption by five per cent. In addition, the engine is fitted with an overhead camshaft, a cross-flow cylinder head and a maintenance-free hydraulic valve-clearance compensation. The performance and torque requirements are met even at low speeds of 1.700 rotations per min⁻¹. We have also significantly increased the permissible drive ratings of the PTOs (power take-off). Thanks to the compact size of the engine, the new five-litre model can also be installed as a „drop-in solution“ in the interior of a DEUTZ TCD 4.1.

DEUTZWorld: For what applications is the engine particularly well suited?

Wilhelm Feuser: The TCD 5.0 can be used for industrial and agricultural purposes alike. Its modular design allows it to be equipped with the required, application-specific components on demand. This includes rigid oil

sumps for frameless tractors, for instance. In this case, the engine (including the sump) constitutes a supporting element in the gearbox/frontal axis system. The large number of high-powered auxiliary drives for attachment to commercial hydraulic pumps and the compact design of the engine make it particularly interesting for use in construction machines, such as wheel loaders, excavators, rollers, etc.

DEUTZWorld: Visually, the pipeless construction is particularly striking. How do customers benefit from this?

Dr Markus Schwaderlapp: The particularly low number of external pipes enables the customer to install hydraulic lines and arrange other machine components in a space-efficient way on the machine side. In addition, this design comes with a considerable increase in quality and sturdiness, the risk of potential leaks is significantly reduced, and the unit is less sensitive to vibrational loading.

DEUTZWorld: The TCD 5.0 is equipped with an overhead camshaft. What is the benefit of this?

Dr Markus Schwaderlapp: This design primarily allows us to ensure our future viability for developing a variable valve train. This variability improves the effectiveness of the heat management system in achieving the required exhaust temperatures for the exhaust aftertreatment. It also further improves the overall efficiency of the system.

DEUTZWorld: What is the motivation for separating the cold and hot sides of the engine?

Dr Markus Schwaderlapp: On the one hand, it helps the customer install the engine: on the so-called service side, i.e. the side with the most serviceable components (filter, oil dipstick, etc.), does not have any hot components that require a touch guard. On the other hand, it improves the initial assembly at our plant and simplifies servicing of the unit. Last, but not least, omitting the sometimes very complex heat shields saves a considerable amount of money.

DEUTZWorld: You have also reduced the power loss in the oil and water cycle. How does this influence performance, and on which technical development is it based?

Dr Markus Schwaderlapp: By reducing the power loss in the oil and water cycle, we are also reducing the overall level of fuel consumption. We have decided to fundamentally optimise these cycles. By significantly reducing total resistance (above 50

per cent), we can decrease dissipation across the entire characteristic range.

DEUTZWorld: The installation dimensions of the TCD 5.0 are almost identical to those of the TCD 4.1. How did you achieve this compact size?

Wilhelm Feuser: A particularly critical measurement for the engine installation is the length of the engine. For this reason, we focussed on achieving the optimal distance between the cylinders and reducing the length of the front and rear ends of the engine. These measures have enabled us to achieve nearly the same level of compactness as we did with the TCD 4.1.

DEUTZWorld: Can existing DEUTZ customers install the engine in their machines without adjustments?

Wilhelm Feuser: Yes, it can be installed with any noteworthy adjustments. Integration costs are low because the connectors are all positioned in the same places. All serviceable components are located on the same side of the engine. The length of the engine is the same, which means that the gearbox and cooling system can be positioned in the same way too.

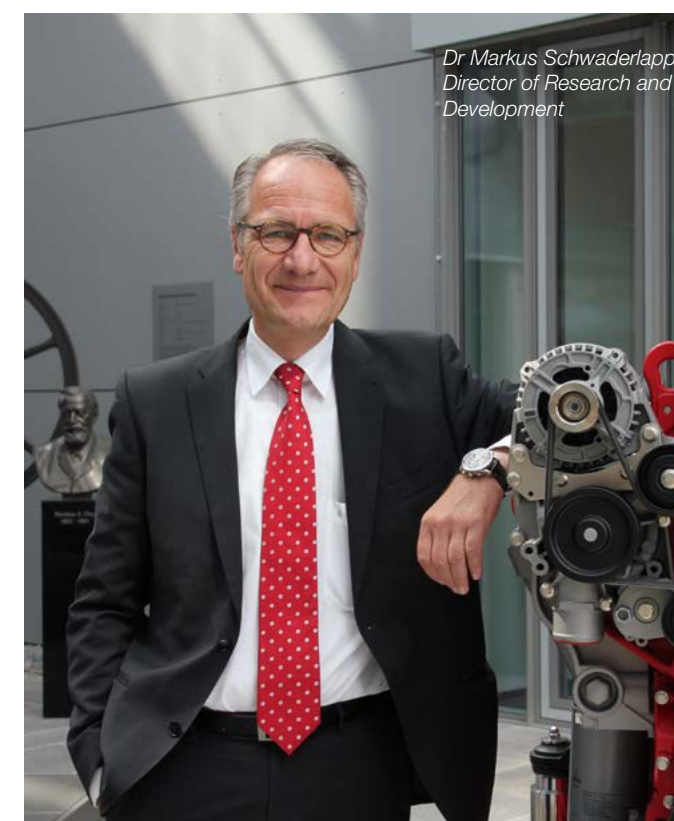
DEUTZWorld: The TCD 5.0 follows the downsizing trend, which makes it particularly efficient. How relevant is fuel consumption for future industrial engines?

Wilhelm Feuser: Depending on the segment of application, reducing fuel consumption is an important selling point that

will become increasingly important for the selection of economical drive solutions. Besides, reducing consumption is the only way to reduce CO₂ emissions.

DEUTZWorld: The serial launch of the engine is planned to coincide with the introduction of EU Stage V in 2019. Which exhaust gas treatment strategy does DEUTZ follow with the TCD 5.0?

Dr Markus Schwaderlapp: The TCD 5.0 will be equipped with the same systems as the current TCD product range: A diesel particulate filter (DPF), selective catalytic reduction (SCR) and a diesel oxidation catalyst (DOC). Especially for the DPF, we have already accumulated extensive expertise from our experience with our serial „Stage-V ready“ engines. Of course, we will continue to optimise our exhaust gas treatment systems. These efforts will be aimed particularly at reducing dimensions and simplifying installation procedures. Considering the large amount of segments we cover with our engines, this optimisation is particularly important. Besides, emission standards for industrial engines are very different across the world. The modular structure of our emission concept allows for adjustments to the hardware to take these differences into account.



Dr Markus Schwaderlapp,
Director of Research and
Development



Wilhelm Feuser, Director of
Projects and Strategy



Close to customers

DEUTZ Power Center

Starting in the second half of 2016, the DEUTZ Corporation in Georgia (USA) will be introducing a new business concept. Via so-called Power Centres, special small and medium-sized machine manufacturers will be offered additional services such as application-specific development services. Especially technical sales resources are made available for this, which have been optimally aligned to the customers' needs.

Robert Mann, DEUTZ Corporation president and CEO, said: "Changing exhaust legislation has continued to make our products more complex. As a result, we want to better assist our OEM partners that may be challenged by the transition from Tier 3 to Tier 4 emission standards. Our new DEUTZ Power Centres will provide a level of technical excellence and support that fills that important niche".

The official opening of the first DEUTZ Power Centre Midwest is anticipated in North Kansas City. Thereby, the new concept supplements the current DEUTZ Service Centre and does not only offer parts, service and maintenance services

but it also plans, develops and manufactures propulsion systems under the DEUTZ trademark. What is more, in the own sales area of the Power Centre, customers can also purchase new diesel or natural gas engines by DEUTZ as well as overhauled DEUTZ Xchange engines.



Here, customers benefit from the customised technical services of their local Power Centres and receive faster access to the best possible solutions. By means of this, DEUTZ can individually satisfy all of the customers' machine and configuration requirements. In addition to this, the engines are delivered in accordance with the needs (just-in-time), so that they can be installed directly after receipt by the customer.

The plan is to open additional DEUTZ Power Centres in other parts of the country, to the extent that there are sufficient customers and a corresponding demand in these regions.

"Our DEUTZ Power Centres and Service Centres are all about helping our customers be as efficient and productive as possible", Robert Mann said. "They're simply another example of our commitment to providing the best engine solutions and service available in the industry today".

DEUTZ goes Rio!

On 5 August 2016, a world-class highlight launched at Rio Megastore! Participants from more than 200 countries are coming to Rio to join what is possibly the largest athletic competition in the world. DEUTZ is already there!



Just like we were there for the 2014 Football World Cup, DEUTZ Brazil will also be present for the 2016 Summer Games. Different DEUTZ engines have been installed in various machines during infrastructural construction works in Rio de Janeiro. The DEUTZ Brazil team is on location to make sure that its very own technicians and service retailers in the region can prevent interruptions in the case of technical problems.

A total of 16 events are held at the Megastore. The boulevard and play area will be

open to the public, while the Arena of the Future, which hosted many matches of this large-scale event, will be totally dismantled and transformed into four municipal schools. The Water Stadium will turn into two gyms, which will be installed in areas where currently no option for sports activities exists. Other facilities will be dedicated to the training of top athletes, in an effort to guarantee the future of the national sport. Extensive construction and conversion measures are necessary, and any helping hand and all the technical expertise is needed, such as from the Brazilian DEUTZ branch, for instance.

DEUTZ runs a customer service branch in Brazil, which offers warranty and other services for DEUTZ products in addition to selling spare parts and engines. Over the course of the past three years, the company has been investing intensively in the expansion of its network services and retail locations throughout the country, thereby effectively increasing its customer service and support. The strategy is to continue investing in the expansion of the service dealer network in the country.



At Home in the Land of Smiles

Klaus Habermaier is absolutely dedicated to DEUTZ. He went to China many years ago as one of the first expatriates, where he helped establish the joint venture in Weifang. With the DDE joint venture, the Vice Manager of the mechanical manufacturing and assembly division has in the meantime found his home away from home in China. In myDEUTZ, he talks about how he was received there, and why he sometimes still needs an interpreter today.

DEUTZWorld: Mr Habermaier, you have been in China since before the founding of the DDE joint venture, exactly two years prior to this. As such, you are a pioneering expatriate. Back then, what was it that persuaded you to move the centre of your life to China?

Klaus Habermaier: First and foremost, it was the challenge at a professional, cultural and human level that appealed to me. Establishing a production plant in German and Chinese cooperation at the other side of the world is definitely something special. In addition to that, after seven years in the vehicle engine division, I was ready to go back to industrial engine manufacturing. I am a qualified machine fitter, and through evening classes, I obtained my certification as a master engineering builder in crafts as well as my REFA technician certificate. Furthermore, I also wanted to take the next step that would allow me to have a greater impact in the operative field.

DEUTZWorld: Which experience did you bring along to China from DEUTZ in Cologne?

Klaus Habermaier: A great deal of technical and professional expertise gained at DEUTZ but also very good experience regarding teamwork. All of these factors naturally also influence my work here in China.

DEUTZWorld: What distinguishes the co-operation in our joint venture?

Klaus Habermaier: Our joint venture, DDE, has excellent Chinese colleagues who are

outstanding both on a human and professional level. They are extremely cooperative.

DEUTZWorld: By now, you are virtually fluent in Chinese. Is this a decisive advantage when dealing with your Chinese colleagues?

Klaus Habermaier: Yes, of course this is an advantage, as I can work faster on site in the workshop. It is also beneficial when working with engineers, since the discussions can be held directly with the employees. However, since I also do not understand everything they say in their vernacular and require support for written translations, I still have an interpreter at my disposal.

DEUTZWorld: What distinguishes the products of our joint venture, DDE?

Klaus Habermaier: Ultimately, everything that distinguishes DEUTZ: a great competitive position, sturdiness, the process of continuous improvement, and an excellent design coupled with high quality. The engines are produced at a state-of-the-art plant in China and undergo rigorous quality tests prior to dispatch. DDE uses high-functioning systems such as Six Sigma and "Centre Groups and Quality Gates", currently still being implemented, in the assembly and mechanical production divisions. In addition, our employees contribute their own, individual quality awareness and cultivate it by means of "section control and worker self-inspection". We are facing the future together, based on the present and future requirements of our customers and the market.

DEUTZWorld: Which expectations do the Chinese have regarding an engine?

Klaus Habermaier: The DEUTZ brand is very popular and has a very good reputation in China. Correspondingly, the expectations of Chinese customers regarding DEUTZ engines are also very high, since our engines are not among the least expensive on the Chinese market.

DEUTZWorld: In your opinion, what is the foundation for the success of the DDE JV?

About our partner in conversation



Klaus Habermaier started working at DEUTZ in 1990 as a case worker in mechanical manufacturing/operations scheduling in the Mannheim plant. After having taken over the management of mechanical manufacturing operations scheduling and assembly with vehicle engines, he went to China as a project manager in 1997. Here, for the cooperation with the Chinese partner Weifang, he prepared and executed the relocation of the machines and tools and the staff's visa formalities. As a project manager on site in Weifang from 1999 to 2001, he was responsible for building up of the joint venture to prepare it for serial production. As the Head of Mechanical Manufacturing Operations Scheduling for Large-Sized Engines, he returned to Mannheim from 2001 to 2004, until a quality project once again led him to Weifang for 9 months. From 2005 to 2006, he was responsible for the establishment of Hall 41 in Cologne-Porz for the TCD 2013 engine until it was ready for serial production. From 2006 until the end of May 2007, he was responsible for the planning and implementation of the floor mounting for the 2011 engine in Cologne Deutz and on site in China/Xiamen for the Linde lift truck OM at Linde in Xiamen. He has been involved in the DDE joint venture since June 2007. Since April 2016, he has been Vice Manager of the mechanical manufacturing and assembly division.

Klaus Habermaier: There is no constant change of the DEUTZ employees at DDE, the current team at DDE has been the same for a long time. This strengthens the joint venture from the inside.



Living COMMUNITY

Inclusion – a phrase that almost everyone has already heard at some point, but what exactly does this mean? The answer to this question can actually be described with one single word: Belonging. Inclusion incorporates all people in society, be it with or without disability. This refers to kindergartens, schools and the working environment. Because, ultimately, first and foremost, with disabilities or not, children, juveniles or adults are all: people. At DEUTZ, the integration of disadvantaged persons and persons with disabilities has already been actively and very successfully implemented for a long time. This is proven by two examples.

Already for more than 30 years, DEUTZ AG has successfully cooperated with NOSTRA gGmbH, one of the largest and oldest integration companies in Germany. NOSTRA currently employs more than 100 persons in insurable employment and in accordance with the BAT-KF tariff. Thereby, the disabilities cover a broad scope. Mentally and learning disabled, deaf and physically disabled people find work here, just as people with psychological constraints. Due to the close cooperation with NOSTRA regarding the packing and completing of the entire engine spare parts pallet, persons with disabilities are fully integrated at the DEUTZ

► In Germany, 18.1 million people have impairments – this is more than 20% of the population.

AG premises in Cologne-Kalk, and treated as equal employees on the labour market. Cooperation between the engine manufacturer and integration company started with the packaging of simple counting aids, as a small "extended workbench". In the course of time, more and more demanding activities were added such as, for instance, the packaging of small and large engine parts as well as the completion of sealing kits and spare parts kits. Today, about 50 full-time employees execute the great variety of different orders, and even complex certifications such as, e.g. DIN EN ISO 9001 are satisfied. Needless to say, the employees' limitations are taken into account with the planning and steering as well as with supervision and instructions. This is ensured by NOSTRA gGmbH, among others, also with an own social service and trained instruction personnel.

DEUTZ can also look back at more than 40 years of successful cooperation with "Gemeinnützige Werkstätten Köln GmbH" (GWK). Since 1969, GWK has offered work opportunities for people with disabilities in Cologne, and the cooperation with DEUTZ has already existed since the workshop started business in 1972. Today, GWK employs about 1500 people under the guidance of about 400 employees.

About 2500 different items are packed for DEUTZ in the „packaging“ department.

These include, among others, cylinder head gaskets, fuel filters, fan belts, washers, screws, thermostats, smaller seals, fuel pumps and bearing shells. With the help of an automatic machine, the items are bundled by about 62 employees, packed in



bags or boxes, weighed and labelled. In the „assembly“ department, about 35 employees working at machines manufacture items such as tension rollers, oil seals, oil dipsticks, fuel pipes, pressure transducers and clamping straps.

Printing orders have been processed on behalf of DEUTZ at the „pallet“ location in Cologne-Gremberg since 2008. The activities consist of the printing of filters in a screen and dabber printing procedure. Fan belts are also packed and bundled. 15 employees are working in this area.

Due to the great variety of different working steps, employees with different abilities can be integrated, and they benefit from the continuity of the unvarying orders. The coordination between both companies ensues in the course of regularly conducted status talks, which take place at DEUTZ and at the production locations of GWK in an alternating rhythm. Through this, the DEUTZ employees always gain an authentic impression of the current status of order processing.

NOSTRA & GWK – two successful cooperation stories that prove every day that persons with disabilities can also provide a valuable and economically important contribution.



In January 2016, Klaus Habermaier was awarded the "Best Employee of 2015" prize by the DDE joint venture.



The Groupe MECALAC S.A. is synonymous with innovative, compact construction machines that meet all current requirements for urban, rail, and municipal construction sites. Its production sites are located in France, Germany, and Turkey. During an interview with DEUTZWorld, Alexandre Marchetta, Executive Vice President of Groupe MECALAC S.A., explained why his company relies on DEUTZ as a partner for everything drive-related.



Compactness counts



► „We aim to ensure that the technical additions implemented to keep up with the progressive regimentation of the emission standards are as inconspicuous to our customers as possible.“

Alexandre Marchetta (Executive Vice President, Groupe MECALAC S.A.)



DEUTZ TCD 3.6

DEUTZWorld: Mr. Marchetta, when it comes to drive systems for your machines, you exclusively use DEUTZ products. Which characteristics of these engines do you particularly appreciate?

Alexandre Marchetta: We particularly appreciate the compact size of the DEUTZ engines, as it allows for their easy and cost-efficient installation in our products. In addition, the engines come with a great scope of services, high torque, and strong performance. Another favourable aspect is their reduced maintenance requirements: thanks to their meeting the requirements of Stage IV using a DOC-only solution, they do not need a DPF, which translates into lower maintenance efforts for us.

DEUTZWorld: The new EU Stage V emission standard will come into effect in 2019. What is the greatest challenge posed to MECALAC by this standard?

Alexandre Marchetta: Making the transition to engines that are equipped for Stage V without compromising on the compactness and multifunctionality of our machines will be challenging. We therefore aim at standardising our installation process in order to reduce our development costs and, above all, to ensure that the technical additions implemented to keep up with the progressive regimentation of the emission standards are as inconspicuous to our customers as possible.

DEUTZWorld: Do you feel that DEUTZ products and services have adequately prepared you for EU Stage B?

Alexandre Marchetta: Yes, DEUTZ engines with DPF (diesel particulate filters) already meet the requirements of EU Stage V today. All we need now is for the exhaust after-treatment systems, consisting of SCR (selective

catalytic reduction)+DPF or DOC+DPF, to be optimised a little further.

DEUTZWorld: In April, the greatest highlight of the industry took place: Bauma 2016. What is the significance of Bauma for MECALAC?

Alexandre Marchetta: Bauma is a global showcase for our entire industry; it is unmissable for any OEM. It is an opportunity to present oneself and see the market and one's own competitors. More importantly, it puts us in direct contact with our customers, allowing us to find out about their exact requirements in a direct exchange.

DEUTZWorld: How did you like DEUTZ' appearance at the trade fair?

Alexandre Marchetta: We really enjoyed it. DEUTZ has an excellent image, which is demonstrated by the countless machines that are equipped with DEUTZ engines. They were present at many OEM stalls.

DEUTZWorld: DEUTZ presented its latest product innovations at Bauma. (They include the new TCD 2.2, two high-torque varieties of the TCD 2.9 and 3.6 with 375

/ 390 Nm torque, a high-power version of the TCD 2.9 with 75 kW performance, and the completely new TCD 5.0 four-cylinder.) What do you think of the new DEUTZ product programme?

Alexandre Marchetta: It is certainly the most complete and coherent product programme in the output range of 40 to 170 kW, which is the range that is relevant for us. With respect to the 3B, 4, and 5 emission standards, the new product range was introduced at exactly the right time. The engines of this new range appear to be very well-designed and inspire great confidence.

DEUTZWorld: The perfect construction machine engine is ...?

Alexandre Marchetta:... ideally, an engine you never think about because it works quietly and with low emissions. In our line of business, the compact size of our devices and, thus, their engines, is also crucial. It ensures flexible application methods in narrow spaces with optimal visibility for the operator on the construction site. And our clients are what really counts in the end.



How to keep your DEUTZ a DEUTZ

DEUTZ engines do great work, and they have to meet harsh demands. To ensure that an engine can work at full performance throughout its entire service life, there is one thing in particular you should keep in mind: always use original spare parts for all repair and maintenance work.

Original DEUTZ SPARE PARTS



Original DEUTZ spare parts are designed, tested and approved especially for use in DEUTZ engines – to ensure maximum performance and the longest possible service life. The DEUTZ spare parts ensure the highest quality thanks to strict quality assurance measures. We guarantee the availability and short delivery periods of all parts for at least 15 years after discontinuation of the series. Repair kits manufactured for specific engines are available at cheap package prices and with a one-year warranty. Depending on the type of repair and engine, DEUTZ repair kits contain the most important original spare parts. They are individually configurable. DEUTZ Spare Parts – technically and economically the best choice.

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Original DEUTZ maintenance parts and operating liquids

Original spare parts are not the only necessity for increasing the lifespan of an engine. Careful, regular maintenance also contributes considerably to keeping the engine in a functional state and preserve its value. What matters most is the quality of the maintenance parts and operating liquids used. Only high-quality products that are tailored perfectly to the specific engine are suitable to optimally protect the engine from wear and tear and damage. The original DEUTZ maintenance parts are renowned for their high quality, perfect precision fit and long service life. These maximise the performance and service life of the engine while keeping overall operating expenses manageable.

DEUTZ GASKETS guarantee the reliable sealing of all media inside the engine.



To ensure the safe, optimal performance of a combustion engine, the contained elements – combustion gas, coolant and lubricant – must be sealed against each other and the outside environment at all times. Especially in the combustion chambers inside the engine, the trend towards higher levels of ignition pressure of up to 200 bar and temperatures beyond 400 °C are placing ever higher demands on the sealing materials used. For this reason, DEUTZ engines are equipped exclusively with high-quality gaskets that ensure 100% tightness and a long service life.

Face the cold with DEUTZ COOLANTS



All water-cooled engines require an effective cooling system protector to ensure the continued functioning of the engine. Using unsuitable coolants frequently compromises the sealing of the cooling system due to corrosion and incompatibility with the sealing materials. In the worst case, pitting of aluminium components can severely damage the engine. Original DEUTZ coolants are designed especially for use with the materials used in DEUTZ engines. It reliably prevents corrosion, cavitation and freezing in all high-speed engines.

Proven by experience: DEUTZ OILS

Even the best engine can only live up to its potential if it is given high-quality lubricants. Original **DEUTZ** oils are top-class, partially or fully synthetic consumables for highly-charged and high-stress diesel engines. They are suitable for use all year round, offer a high degree of wear protection, and prevent sedimentation.



DEUTZ CLEAN-DIESEL InSyPro® fuel additive



The high-powered DEUTZ Clean-Diesel InSyPro® fuel additive was developed for the demanding fuel requirements of modern diesel engines. As a 2-in-1, dual-action additive, it prevents sedimentation and clogging in the sensitive injection components, which can occur as a result of aged bio-diesel contained within the diesel fuel. DEUTZ Clean-Diesel InSyPro® can also be used as an impact cleaner to remove existing sedimentation. The additive has been approved for all Tier-4 engines and applications.

DEUTZ FILTERS

Lubricant, fuel, combustion air – all of these media must be filtered as efficiently as possible in order to maintain the high performance and functionality of your engine. Original DEUTZ filters give you the highest quality, best filtration capacity, and a long service life. They afford the greatest possible protection for your engine to guarantee its consistent performance and low fuel consumption.



DEUTZ V-BELTS



are intended specifically for the individual engines and made from excellent, stretch-resistant material.

Over the course of their service life inside the engine, V-belts cover enormous distances of up to 250,000 km. Despite permanent extreme strains and temperatures of up to 140 °C, the precise transmission of power from the crankshaft to the auxiliary units must be ensured at all times. Neglecting this may result in a loss of performance and engine problems. This is why DEUTZ exclusively uses belts that

Successful for seven decades

DEUTZ-Chor Köln is celebrating its 70th anniversary



Preserving the tried and tested, realising innovations and risking the exceptional – for 70 years, DEUTZ-Chor Köln has been successful with these axioms. The choir, which has gained worldwide recognition in the meantime, currently has more than 100 active singers. With large vocal quality and great enthusiasm, it turns concerts into major musical events.

In this regard, the choir has been decisively characterised by distinguished artistic leaders such as, for instance, Oswald Gilles. He conducted the choir for 20 years, and the choir acquired first worldwide recognition under his direction. The choir has been under the artistic direction of Heinz Walter Florin since 2000. With him, DEUTZ-Chor Köln travelled to Belarus, Russia and other European countries – always in conjunction with major concert appearances. For in-

stance, a large concert trip to Austria and Italy took place in 2011. With the creation of a mass in Salzburg Cathedral and another mass in the St. Mark's Basilica of Venice. The trip to China in 2008 was also of particular significance. Not only were there concert performances in Changsha and Dalian, but also in Beijing, in the concert hall of the Forbidden City, where DEUTZ-Chor held a concert together with the Beijing Symphony Orchestra. In 2012, within the framework of the City of Cologne's China year, another mutual concert was hosted in the Cologne Philharmonic Orchestra. In the past year, this was followed by three performances in Istanbul within the context of the "Kunst und Industrie – ein kultureller Brückenschlag" (Art and Industry – a Cultural Bridge Building) trip.

However, DEUTZ-Chor Köln impresses not only with its spectacular concert trips but also, especially, with its musical quality. In mutual music-making with large orchestras, soloists and other important choirs, DEUTZ-Chor has demonstrated its team-player talent. Its repertoire comprises all musical styles and genres: popular and sacred music, opera literature, operetta,

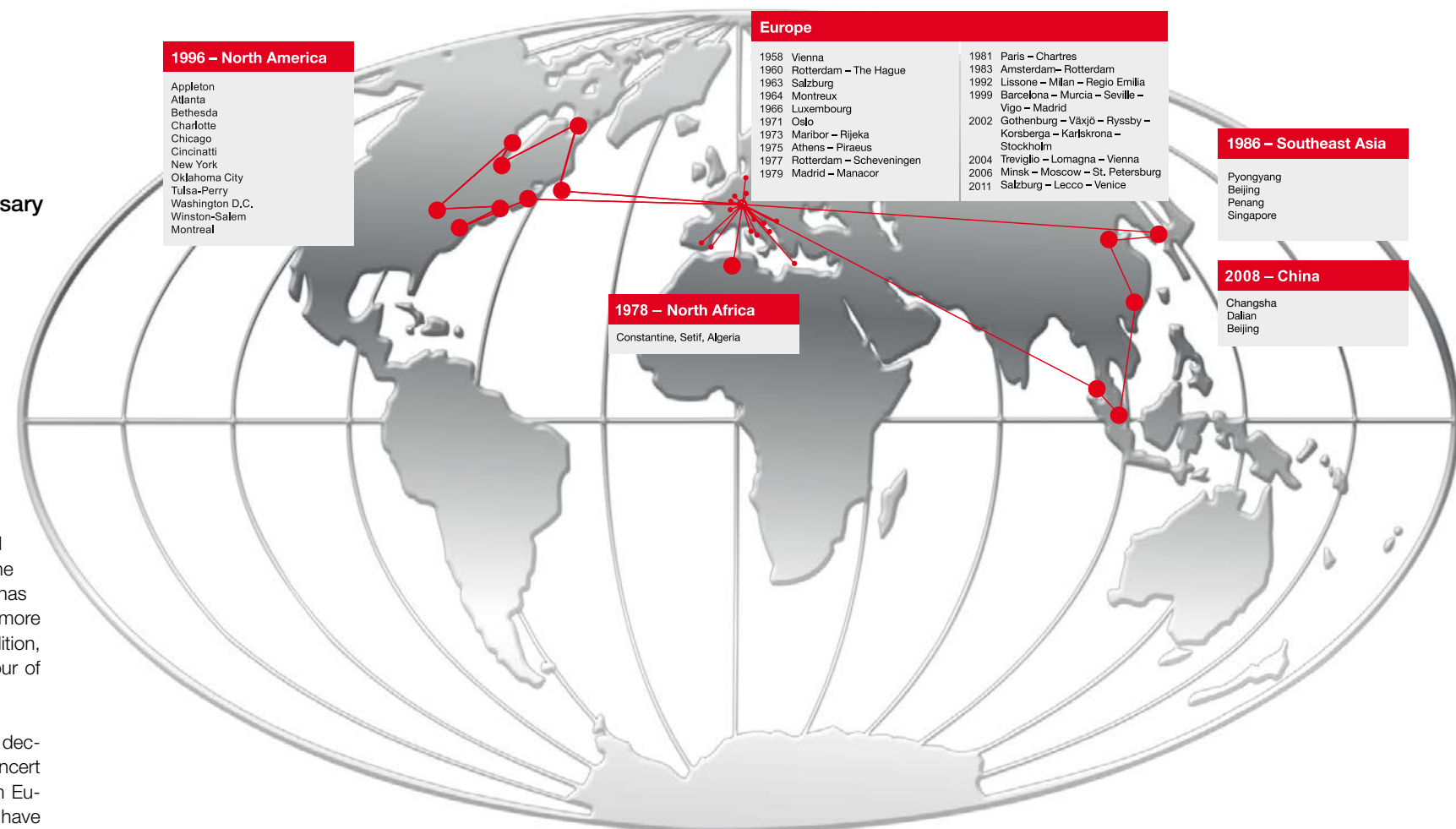
musicals and symphony, classic, light entertainment, pop and rock but also chansons and Schlager music. This also includes concerts boasting a great entertainment value – sung with artistic prowess, verve and a great deal of joy. The concerts in the run-up to Christmas, which the choir has been organising on a regular basis for more than 30 years, also have a long tradition, as well as numerous concerts in favour of social establishments.

Within the course of the past seven decades of "choir life", all of these concert appearances in Cologne, Germany, in Europe, America, Asia and North Africa have also always been related to the multi-national global player, Cologne-based DEUTZ AG. Thereby, the choir sees itself as an important representative and as part of a traditional corporate culture. Simultaneously, time and again, DEUTZ-Chor Köln acts as an ambassador of the city of Cologne and the musical mediator between countries and people.

DEUTZ-Chor Köln – a life with music and for music since 1946. And this is also how it will remain in future. The choir will continue to face musical and artistic challenges and master these successfully.

With a gala concert under the motto of "Wiener G'schichten", the choir celebrated itself and its loyal audience in the Cologne Philharmonic Orchestra on the 25th and 26th of June 2016. During a joyous and energetic festival, "Wiener G'schichten" (Viennese Stories) are told: thereby, the musical roundelay covers everything from Johann Strauß to Robert Stolz. The choir is supported by the soloists Eva Lind and Herbert Lippert of the Vienna State Opera and the Symphony Orchestra Wuppertal.

In addition to this, the choir is also undertaking a concert tour to Berlin and Dresden in this year and will be celebrating a memorial service during the Feast of the Assumption in Cologne.





Performed by DEUTZ

Each machine is only as good as its engine. Therefore, leading machine manufacturers have chosen the latest cutting-edge technology from DEUTZ, be it in mobile machines, agricultural equipment, ships propulsion or commercial vehicles applications.

For example this means that DEUTZ engines are installed into more than 100,000 new mobile machines worldwide per year and one out of two pieces of airport equipment are installed with DEUTZ engines and one out of three hectares of farm land in Germany is cultivated with DEUTZ powered machines.

DEUTZ is one of the world's largest independent engine producers, with an integrated power range from 25 to 520 kW. From the first installation consultancy to the life-long service support of the engine, we are completely dedicated to our customers. So that you receive products and services to your satisfaction.

The engine company.

