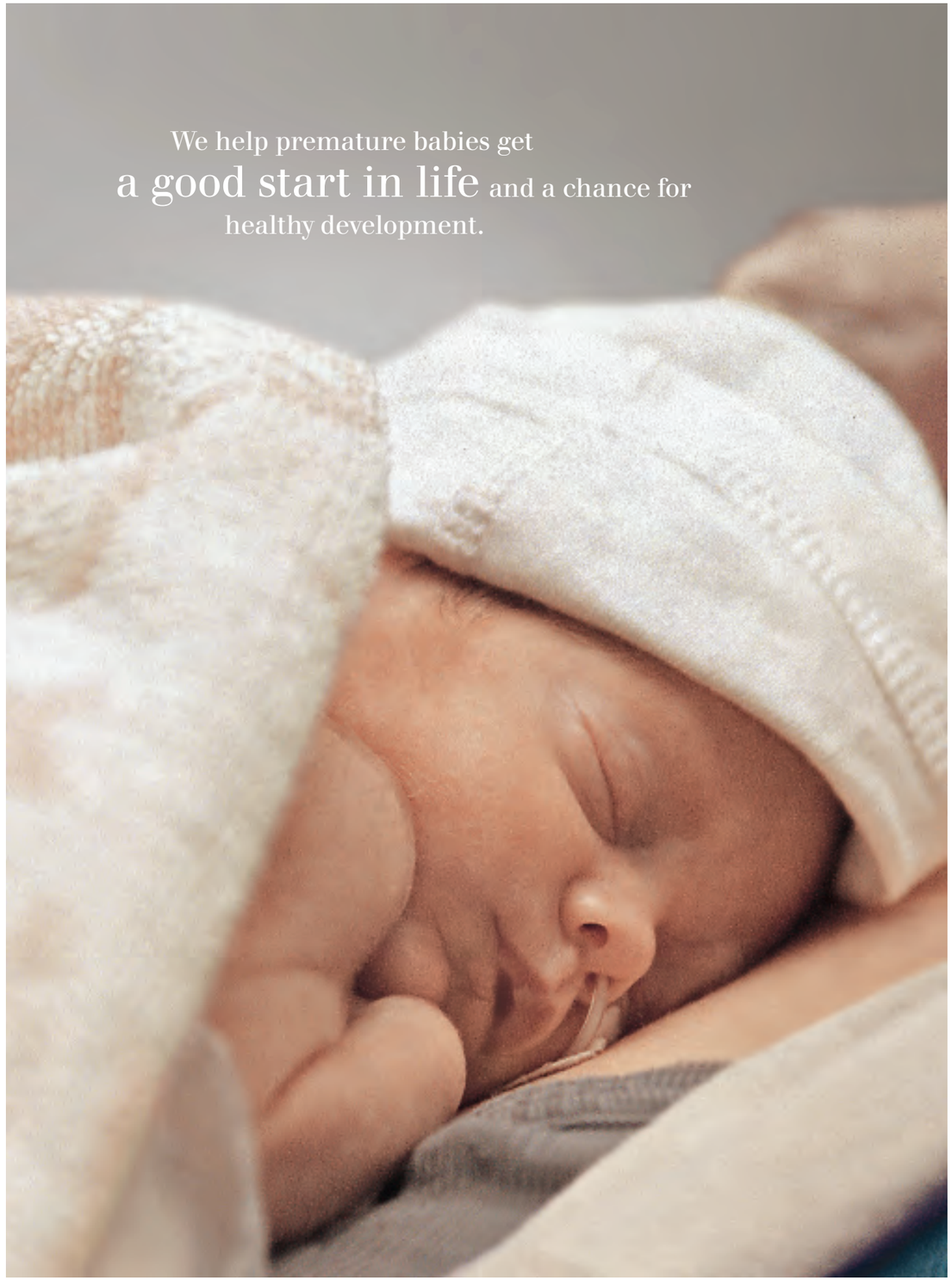
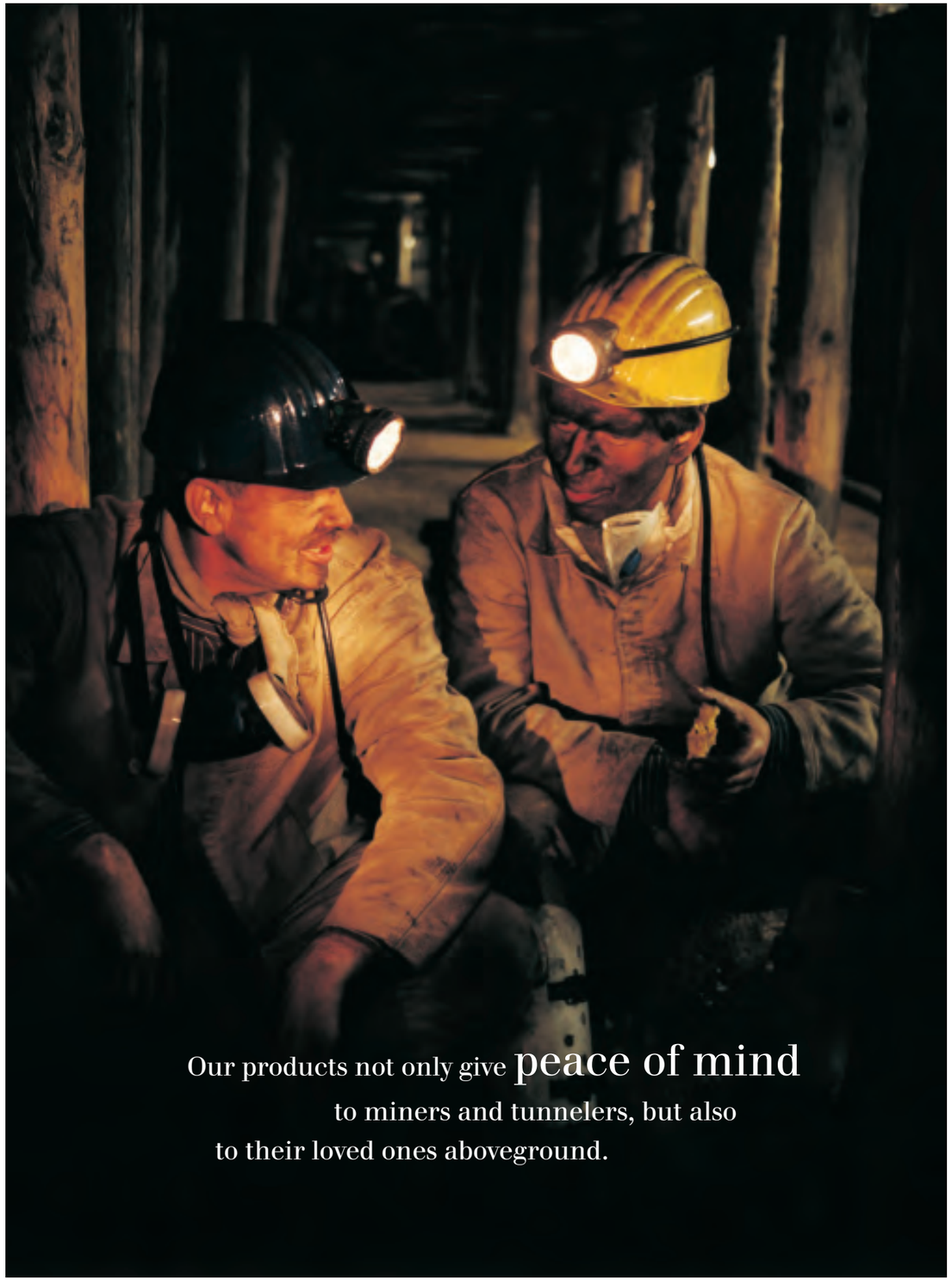
Dräger

So normal. Your heart beats.
You draw breath.
So normal, you hardly think
about it.
Life.
So wonderful. And so fragile.
So fragile, it’s all we think about.

“Everything we do, we do with passion – and we do it for people’s lives!”

Stefan Dräger, Chairman of the Executive Board


We help premature babies get
a good start in life and a chance for
healthy development.


Our products not only give peace of mind
to miners and tunnelers, but also
to their loved ones aboveground.

The world’s best hospitals and
medical teams rely on
our expertise.
From Johannesburg to New Orleans.
From Beijing to Lübeck.

We help firefighters and rescue workers
breathe easy in the hottest situations.

Technology for Life

Dräger is technology for life. Every day, we live up to that responsibility by putting all of our passion, knowledge and experience into improving lives with outstanding and

innovative technology that puts life first. We dedicate our efforts to those who depend on our technology the world over, to the environment, and to a better future.

“Now, as a developer, I have the chance to make life easier for doctors and care personnel, and also to help patients. And in the end, that’s the way to save lives.”

Frank Franz
Smart Software Solutions

SmartPilot View
Sleeping throughout anesthesia: Dräger’s “SmartPilot View” shows anesthetists a calculation of how deeply the patient is anesthetized – at the current point in time and as a forecast. A great help for doctors in determining the correct dosage.

Life is all about progress

If you want to keep up, you have to keep developing. This is why Dräger is working every single day on helping shape the future with its products. In a place where ideas become reality: research and development.

Frank Franz loves new ideas. His job involves research on innovative concepts and promising technologies – without knowing beforehand whether he will get a product out of it that is ready to be launched in the market. Frank Franz, Project Manager for technology projects in basic research, is on the hunt for the product of the future – a mission as exciting as it is challenging. “In the very early stages of development, we can afford to think through a range of different ideas and discard the ones that don’t work. The more we invest in development, the less risk we can afford to take. This means our job is effectively to develop ideas to remove the risks from them,” Franz explains.

This was very much the case for the development of the “SmartPilot View”. This software calculates how certain pain medication and soporifics react with one another in the patient’s body under anesthetic. For the first time, the anesthetist can follow the progress of the anesthetic via an image on a monitor and adjust the dosage as necessary. When basic research started on this project, there were already scientific models which described the way these medications reacted when combined. Mathematically correct – but pretty abstract. The big question was: Could this really become a product? Frank Franz and his colleagues in the interdisciplinary project team worked together with anesthetists to determine how the data needed to be visually presented in order to be usable in hospitals. As soon as initial simulations were available, the software was tested on site. Frank Franz places a particularly high value on involving medics early on in development: “We’re the interface between science and its users. We need to know what’s really going to help those working in hospitals. It’s the only way of eliminating the risk that our product will miss the mark.”

As a qualified nurse and EMT, Frank Franz is very well acquainted indeed with the working conditions of his products’ users. It wasn’t until later on that he decided to go to university and became a developer. What made him retrain? “In the hospital, I worked with medical technology every day and was always discovering ways in which products could be

→ Inventions arise where promising ideas meet customer needs.
Basic research prepares new technologies for the product development stage.

improved. Now, as a developer, I have the chance to make life easier for doctors and care personnel, and also to help patients. And in the end, that's the way to save lives." It is Frank Franz's mission to do justice to this noble ideal, which is why he doesn't withdraw into an ivory tower to work on his developments: "Dräger permits me to go off once a year and spend a few days working in a critical care unit. While there, I observe what the issues are that affect the people working there, which helps me to stay down to earth and reminds me of what we're working for."

"SmartPilot View" has proved a winner for Frank Franz and his colleagues. Not only did the software pass the technical risk analysis, but has made it from basic research through product development to the market launch stage. Frank Franz, however, isn't taking this success as a reason to rest on his laurels. He's already developed and implemented a follow-up idea: "SmartPilot Xplore", an app for iPhone and the iPod touch, which simulates the way the "SmartPilot View" works and so not only supports sales teams, but also helps train medics to use the software. It's just one idea of many which developers have found enthusiastic support for at Dräger. This support is a key source of motivation for Frank Franz in his work: "I have a lot of freedom to be creative and inventive, without losing sight of our users' needs. It's a great feeling. What better technology can you develop than Technology for Life? That's 100 percent Dräger."

110

patents
were issued to Dräger by patent and trademark offices across the globe in 2010. In the same period, Dräger's patent departments received more than 90 reports of new inventions from their developers.

Dräger X-plore 5500
Making breathing safe: The “Dräger X-plore 5500” is the right choice when both high respiratory protection and a good view of the surroundings are important. Its special filters and chemical-resistant visor provide optimum protection for industrial tasks.

“We need to keep focused and concentrate absolutely the whole time while we’re working. After all, a respiratory protection mask is not a toy. The entire product needs to be absolutely perfect.”

Claudia Laszig
Mask production

Uncompromising standards

Nowhere else is Technology for Life as tangible as it is in production. Here's where Dräger makes products to which people all over the world entrust their lives.

Claudia Laszig spends her working day making Technology for Life. As a production worker helping to manufacture masks for Dräger, she works each day with her colleagues producing respiratory protection masks from the X-plore series. These masks are used primarily in firefighting and industrial sector – from metal processing, lacquering and shipbuilding to applications in the chemical and automotive industries. Using special filters, they protect their wearers from hazardous particles, gases or vapors, making it possible for them to breathe safely even in the toughest of conditions.

Claudia Laszig is well aware of the responsibility borne by those who manufacture such sensitive products: "We need to keep focused and concentrate absolutely the whole time while we're working. After all, a respiratory protection mask is not a toy. The entire product needs to be absolutely perfect." An insidious danger to product quality arises when production workers suffer fatigue due to monotonous work. "Errors happen most easily when work becomes routine and your concentration and attention begin to slide. We can't afford for that to happen," explains Claudia Laszig.

Dräger prevents this danger by means of a special workflow: Every mask passes through six stages in its progress through the production line, with different workers performing tasks such as fitting visors, connectors and head straps, until finally the mask is complete and ready for shipping. So what's special about it? After one-and-a-half hours working on a particular stage, the workers change places and move a stage further in the production line, meaning that they work on all stages in the course of a working day. Claudia Laszig appreciates these working conditions: "I've worked in other places where you spend eight hours a day in exactly the same place doing exactly the same thing again and

➔ There’s no alternative to excellent quality if you don’t compromise on your own standard. Individual responsibility and teamwork are key for Dräger’s production workers.

again. That way of working doesn’t keep you on your toes. Your attention drifts. But here I get a lot of variety in my work; it never gets dull.”

A further advantage of this way of working is that employees feel responsible for the entire mask and not just for one stage of production, thus actively helping to shape product quality. To give employees further encouragement to take responsibility for quality, Dräger has adapted a clear and simple system from road traffic: traffic lights. Every production line has a set of them; when things are running normally, the lights are green. If a production worker finds a faulty part during work, he or she can set the traffic lights to amber to tell his or her colleagues to be on the alert for other faulty parts. Should more be discovered, the workers switch the lights to red – and production stops, only to start up again once all errors have been eliminated and all faulty parts replaced. Quality is always top priority.

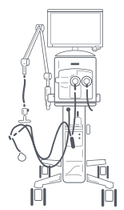
“Dräger places a high value on our experience and our views as production workers,” emphasizes Claudia Laszig. “In doing this, the company shows us that our opinions count and are taken seriously.” In her view, this way of working together is the key to success: “For me, Dräger is about quality and teamwork. We all need to pull together as a team – and then the product will do its job as well.”

5,000

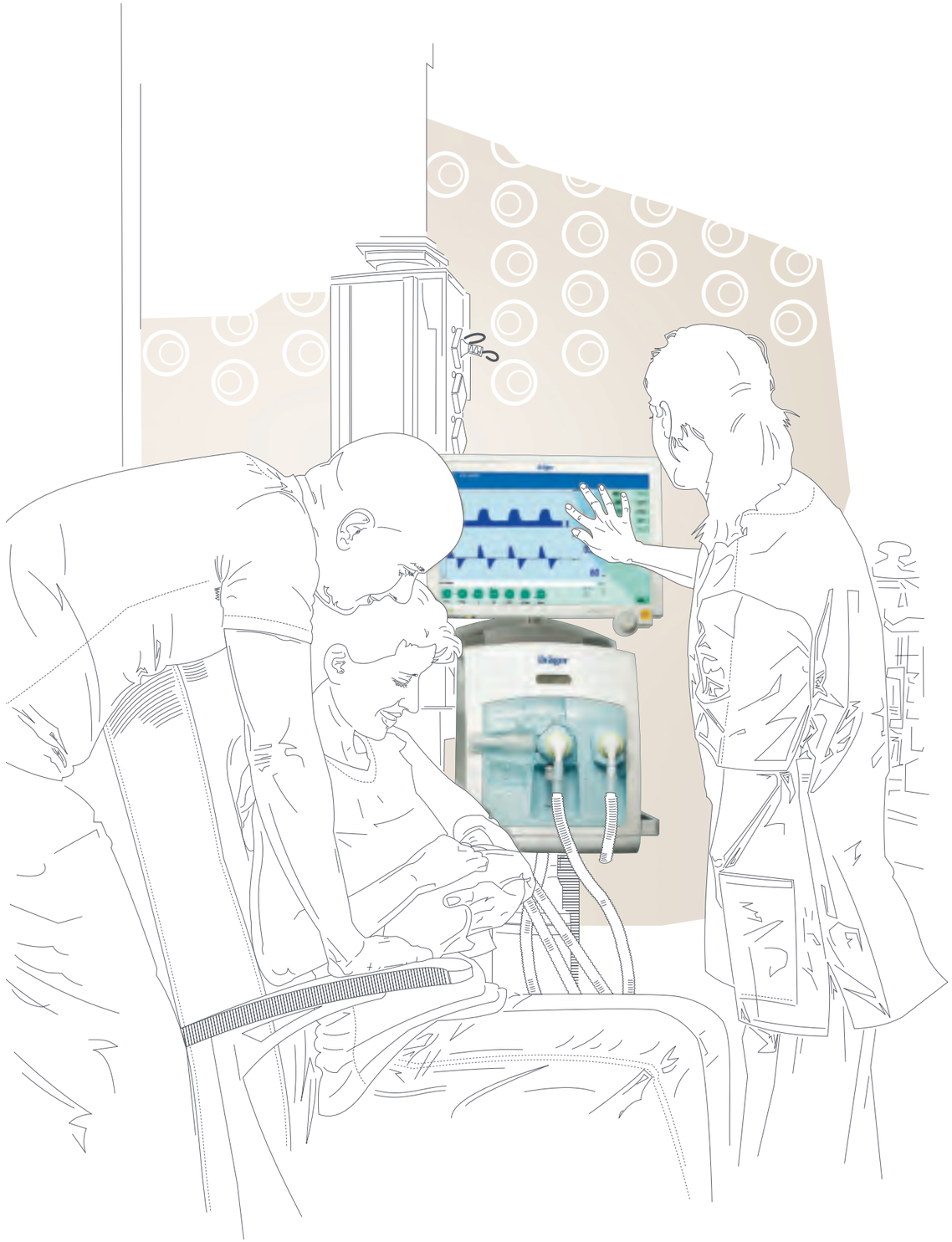
respiratory protection masks
in various protection classes are produced by Dräger in an average working week. Wherever there’s danger in the air – be it from particles, vapors or gases – Dräger masks make breathing safe.

“With computers, you can try different ways of reaching your objective. With devices that are critical to life, like Dräger’s, that isn’t an option. There are no alternatives; we need the right solution.”

Lars Hollenga
TechLine



Babylog VN500
Big help for little ones. Ventilating neonates is an extremely difficult task. The “Babylog VN500” rises to this challenge, providing comprehensive ventilation therapy for the smallest of patients.



With the safest of nets

Each and every day, Dräger service technicians support users of Dräger technology in hospitals. What the customers don't see is that even behind the scenes there are Dräger employees working away with passion to find the right solution for every technical issue: the staff of the TechLine.

When Lars Hollenga's phone rings, it usually means there's a challenge in store for him. For two years now, he has been working on the TechLine, a support service for Dräger service technicians. He's a great support to his colleagues working in hospitals, with just one example being his help finding answers to technical questions on products: How do I configure the neonatal ventilator? What does the warning on the display mean? Which spare part do I need?

The TechLine is currently manned by seven employees, all of whom have technical training; some worked as technicians in hospital settings themselves before switching to dispensing advice by phone. In other words, the TechLine staff are specialists with comprehensive product know-how and thus on a level with the service technicians they advise. This task has little to do with conventional call center work, as Lars Hollenga explains: "In terms of being contactable by phone, we are subject to internal standards that are just as strict as they would be in a typical call center. In every other way, though, we're much more of a competence center." The service technicians agree: They can always rely on expert advice from the TechLine, a source of support they are glad to have. "I'm always really pleased to get positive feedback from my colleagues on site," enthuses Lars Hollenga. "They often express how grateful they are for our help."

Lars Hollenga's experience has now advanced to the point that he can answer many of his colleagues' questions straight away. If the problem proves trickier, he promises to call back as soon as possible. "It's often the case that technicians call when they've already taken the cover off the device. Then I need to provide them with a speedy solution," says Lars Hollenga. He is aided in his search by a web-based database into which the TechLine staff enter all questions that have occurred so far and the answers they found. There's a good chance that a similar case has occurred in the past: And even if the database can't help, Lars Hollenga and his colleagues are far from stumped. They can call on the expertise of product specialists and developers, as he explains: "We work very closely together – hand in hand, in fact. When an issue comes up for the first time, it takes me a bit of time and trouble to find a suitable solution, but next time I'll be able to help right away." It's also useful that the TechLine staff have their own lab available to them, containing most Dräger devices. In this way, Lars Hollenga can test possible settings directly on

→ Users need to be able to rely on medical technology at all times. If there is a problem at any point, a rapid remedy is essential.
Dräger's technical support service is a real safety net – Dräger's commitment is to giving customers the best possible support.

the device itself and give the technician practical, first-hand advice. "We then go through the individual steps of the process simultaneously with the device while we're talking to each other," he comments.

All TechLine team members are aware of how vital precision is for the work of hospital technicians. Lars Hollenga offers a comparison from his previous life as an IT service provider: "With computers, you can try different ways of reaching your objective. With devices that are critical to life, like Dräger's, that isn't an option. There are no alternatives; we need the right solution." For Lars Hollenga, finding the right solution is his essential task. He will continue supporting his colleagues in the best possible way. For him, it's an expression of a firm belief: "100 percent Dräger means doing all we can in-house to help our technicians out there in the field do a perfect job for the customer."

2,100

entries
is the current tally of a database in which Dräger archives all technical questions on its products that arise and the answers found – an invaluable help to TechLine staff in their daily work.

Dräger X-am 5600
Sensitive “nose” to sniff out danger. Compact, light and easy to use, the waterproof gas detection device “Dräger X-am 5600” can sniff out up to six gases simultaneously, despite rough and tough industrial surroundings.

“There are plenty of manufacturers making good products. What we need to do is provide something special, developments that give the customer extra benefits and set us apart from the competition. I call them ‘wow’ features.”

Maike Koch
Customer Process Monitoring

What customers need

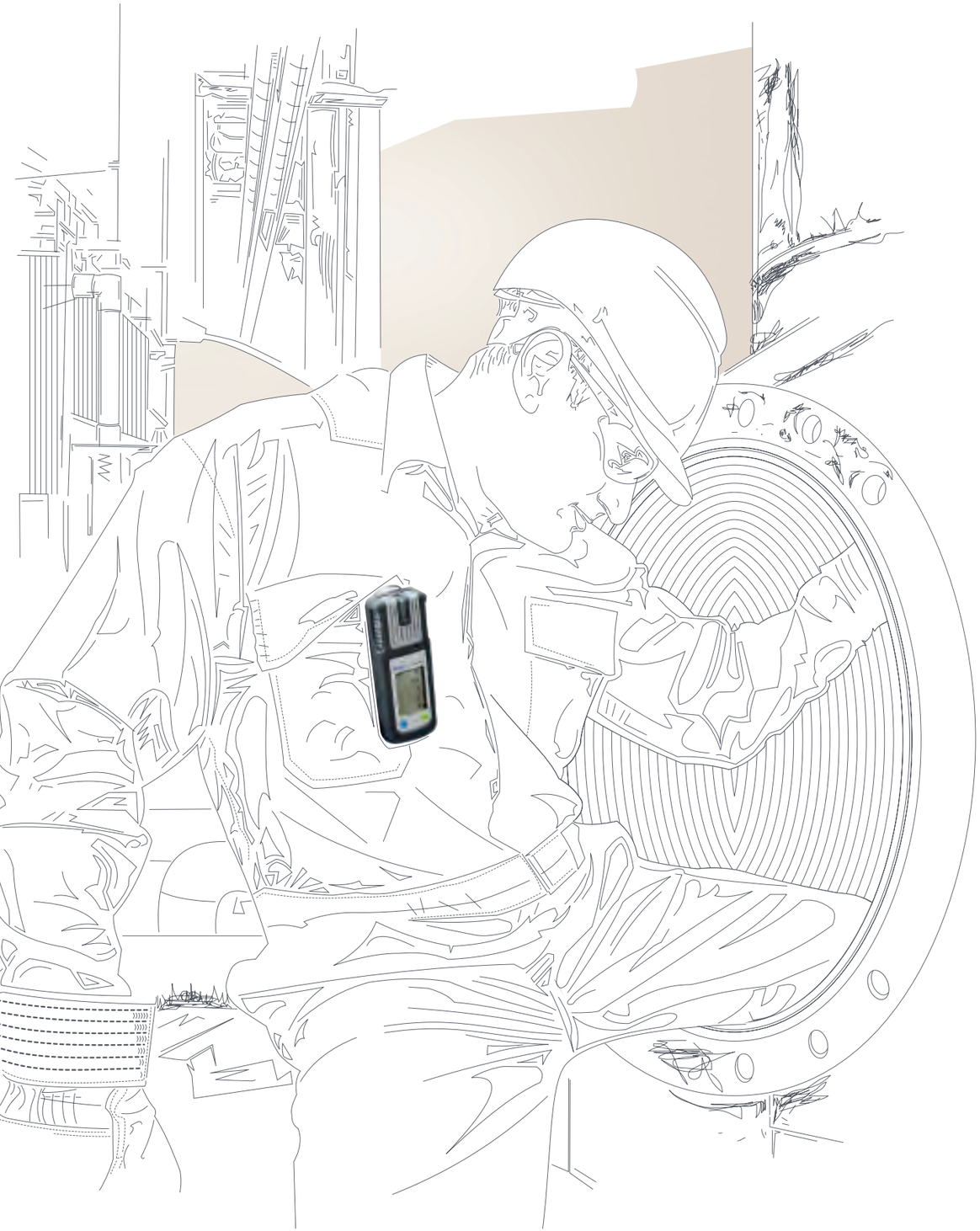
A company that wants to develop and sell products is faced with one essential question: What do my customers want? Dräger has developed an outstanding method for finding that all-important answer: It's called Customer Process Monitoring.

When Maike Koch tells people what she does for a living, she can often see a question mark appear above their heads. She is a Customer Process Monitoring (CPM) Manager for Dräger. But what does that mean? What's the job behind the abbreviation?

Her job is finding out for Dräger what customers need, to understand workflows on site, to ascertain what customers expect from the devices they rely on in their day-to-day work. "Our aim is to develop solutions which give our customers the best possible support. There are plenty of manufacturers making good products. What we need to do is provide something special, developments that give the customer extra benefits and set us apart from the competition. I call them 'wow' features," Maike Koch explains. In her search for these "wow" features, Maike Koch places great value on listening carefully and making precise observations. She visits her customers regularly, discusses with them their issues and wishes and watches them at work. This is vital because it's often during these visits that she is able to notice difficulties with workflows or with using devices, which could be resolved with a few simple adjustments to optimize the product or with a completely new concept.

Take the development of the Dräger X-am product family of portable gas detectors: In the past, Dräger noticed that industrial personnel were often carrying several detection devices for different gases around with them in their shirt or lab coat pockets. This simple observation led Dräger to draw several conclusions: "We now offer multi-gas detection devices which can detect up to six different gases at once," Maike Koch explains. "Additionally, toxic gases can get to the sensor from two sides, even when the device is being carried in a shirt pocket. The device warns in three ways: with sound, visually and by vibrating."

Customers are pleased about this interest in their daily work: "I'm always welcome. Customers are happy that we want to know their views. They like to discuss new ideas with the potential to simplify processes or save them time and money," says Maike Koch.



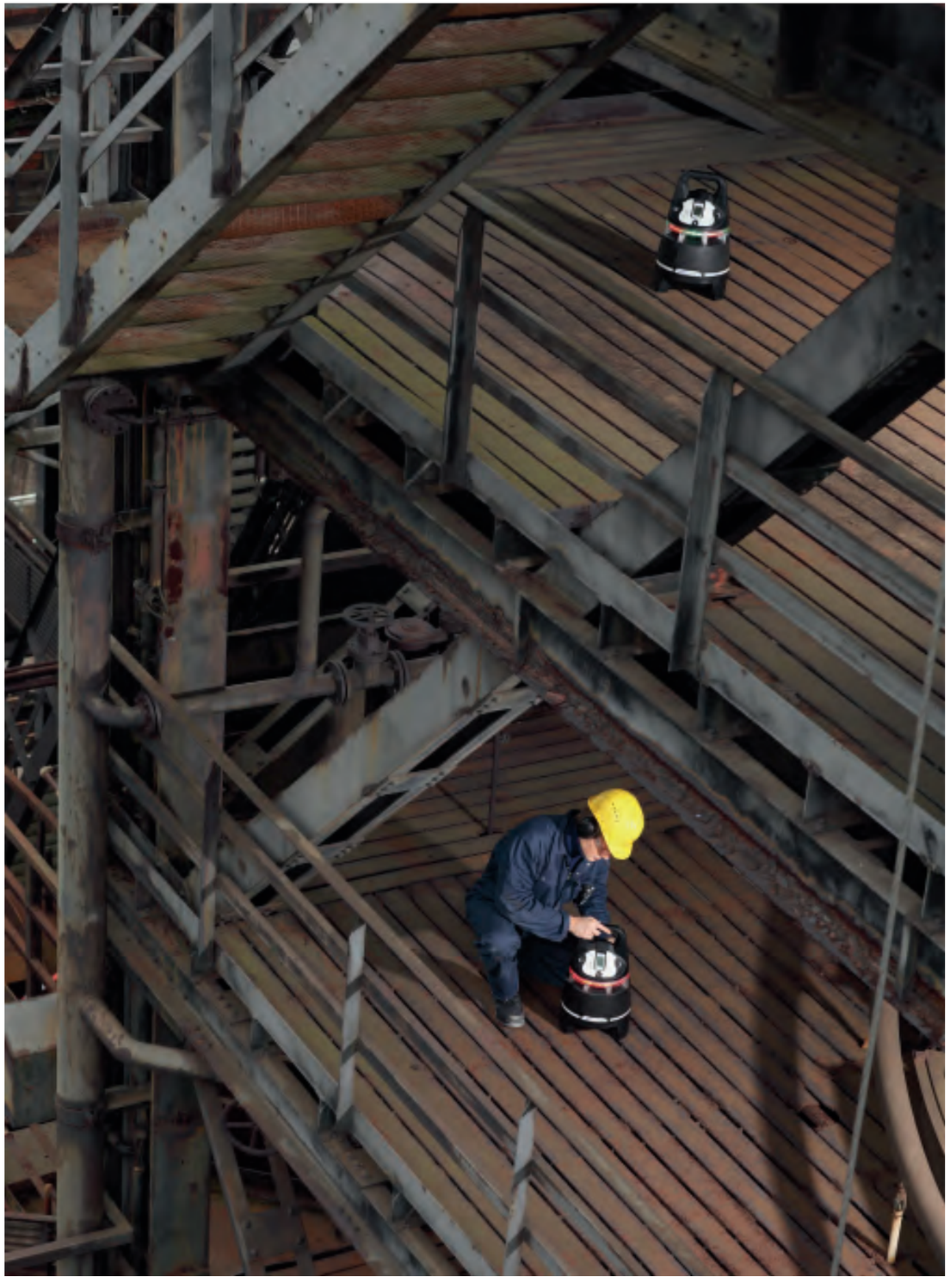
➔ Safety technology isn’t an end in itself; its job is to protect lives. If we don’t know what our customers need, we will lose out. This is why Dräger takes time to ascertain customer needs before it goes to the drawing board.

The road from CPM Manager Maike Koch’s customer visit to a finished product is almost always a long one, which makes it vital for her to document every observation precisely and analyze it carefully. This process also entails thinking about how products available today meet customer needs. Working closely with developers as well as product and market specialists, Maike Koch takes a careful look at the competitive environment. Once all the results have been pulled together and all pros and cons weighed up, she passes her report to the relevant product managers, who make sure the market requirements are included in the specifications that go to the development department.

Meanwhile, with the carefully researched product bursting with “wow” features still being firmly in the development stage, Maike Koch is embarking on her next project – with a different product, different areas of application and different customers. It’s this variety that makes her job so interesting; however diverse the products and their users’ needs may be, one thing remains constantly true for Maike Koch: “Our products protect people from danger. We’re only fulfilling our objective to be 100 percent Dräger when we’re providing our customers with solutions that really support them.”

40

visits to customers
are clocked up on average by a Customer Process Monitoring Manager in the course of a project. Through engaging in discussions and making observations, CPM managers discover what a product’s potential buyers require and wish for.



Dräger

Did you know?

Not all products mentioned in this publication are for sale in every country of the world.

Drägerwerk AG & Co. KGaA
Moislinger Allee 53–55
23558 Lübeck, Germany
Tel +49 451 882-0
Fax +49 451 882-2080
www.draeger.com

Corporate Communications
Tel +49 451 882-3998
Fax +49 451 882-3944
info@draeger.com

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