ziehmimaging

Ziehm Vision / Ziehm Vision FD

The new standard in mobile imaging

→ Flat-Panel Detector

→ Image Intensifier

Detailed view from every angle thanks to high brightness 19" TFT color flatscreens

↗ 04

Intuitive workflow with synchronized TFT touchscreens on C-arm and monitor cart

↗ 08

High resolution thanks to dynamic CCD camera with 1k x 1k technology

↗ 04

Easy integration into existing networks (with WLAN option)

↗ 10

Advanced Active Cooling for long and demanding procedures

↗ 10

C-arm movements are fully counterbalanced in all positions

↗ 08

Ziehm Vision. This C-arm sets a new benchmark in high-end mobile imaging while minimizing dose levels. It delivers state-of-the-art functionality by bundling finely tuned components with proprietary innovations. As the technology platform for the entire C-arm product family, the Ziehm Vision fits a broad spectrum of clinical applications. The optional, leading-edge flat-panel detector (FD) enables fully digital, distortion-free imaging. Thanks to its high-dynamic range, it also allows optimal, concurrent soft tissue and skeletal imaging at the same time.

For the most demanding applications.
The world's first C-arm with flat-panel.

→ Larger opening

Measuring 89.5 cm, the larger C-arm opening allows easier patient access and improved positioning.

→ Distortion-free imaging

The world´s first C-arm with flat-panel technology enables fully digital, distortion-free imaging. In addition, insensitivity to magnetic fields gives the operator added flexibility.

→ High-dynamic images

Due to its high-dynamic range, the flat-panel detector enables optimal concurrent soft tissue and skeletal imaging.

→ Automatic adjustment

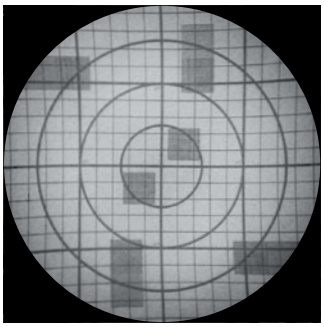
Ziehm Adaptive Image Processing (ZAIP) enhances image quality by adjusting settings fully automatically to anatomical conditions and regulating filters in real-time.

→ Larger field of view

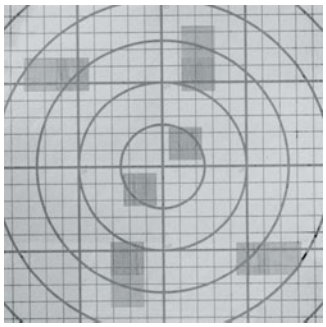
The larger surface and square shape of the panel increases the image size compared with conventional image intensifiers.

Compared field of view of flat-panel and conventional image intensifier

Image intensifier with S-shaped and pincushion distortion



Flat-panel with distortion-free image



Larger field of view

High-dynamic images
with more than
65,000 levels of gray

Flat-panel technology
for fully digital, distortion-
free imaging

Flat-panel highlights:
→ Larger opening
→ Distortion-free imaging
→ High-dynamic images
→ Larger field of view

Larger opening:
89.5 cm C-arm opening
for easy handling

01 / Perfect results. A range of finely tuned components ensures highest image quality.

→ Sharp pulses for sharper images

The Ziehm Vision comes with a highly compact monoblock generator. It generates short, sharp pulses with up to 25 frames per second, producing crystal-clear images even if the patient is moving. This intelligent pulse technology also reduces dose (as illustrated below).

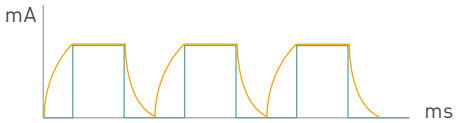
→ High-dynamic camera system

The high-dynamic CCD camera is a key component in the imaging chain. With 1k x 1k resolution and more than 4,000 shades of gray, it visualizes even the smallest anatomical structures. The optional flat-panel technology raises this to more than 65,000 shades of gray for even more detailed images.

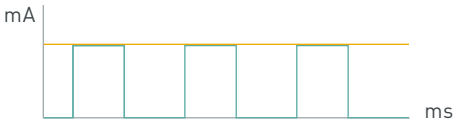
→ Contrast-rich display

Among monitors, Ziehm Imaging's dual 19" TFT color flatscreens stand out for their exceptional brightness and contrast. Even at a distance, the high-end monitors provide the physician with optimal insights by visualizing the finest details – from every angle.

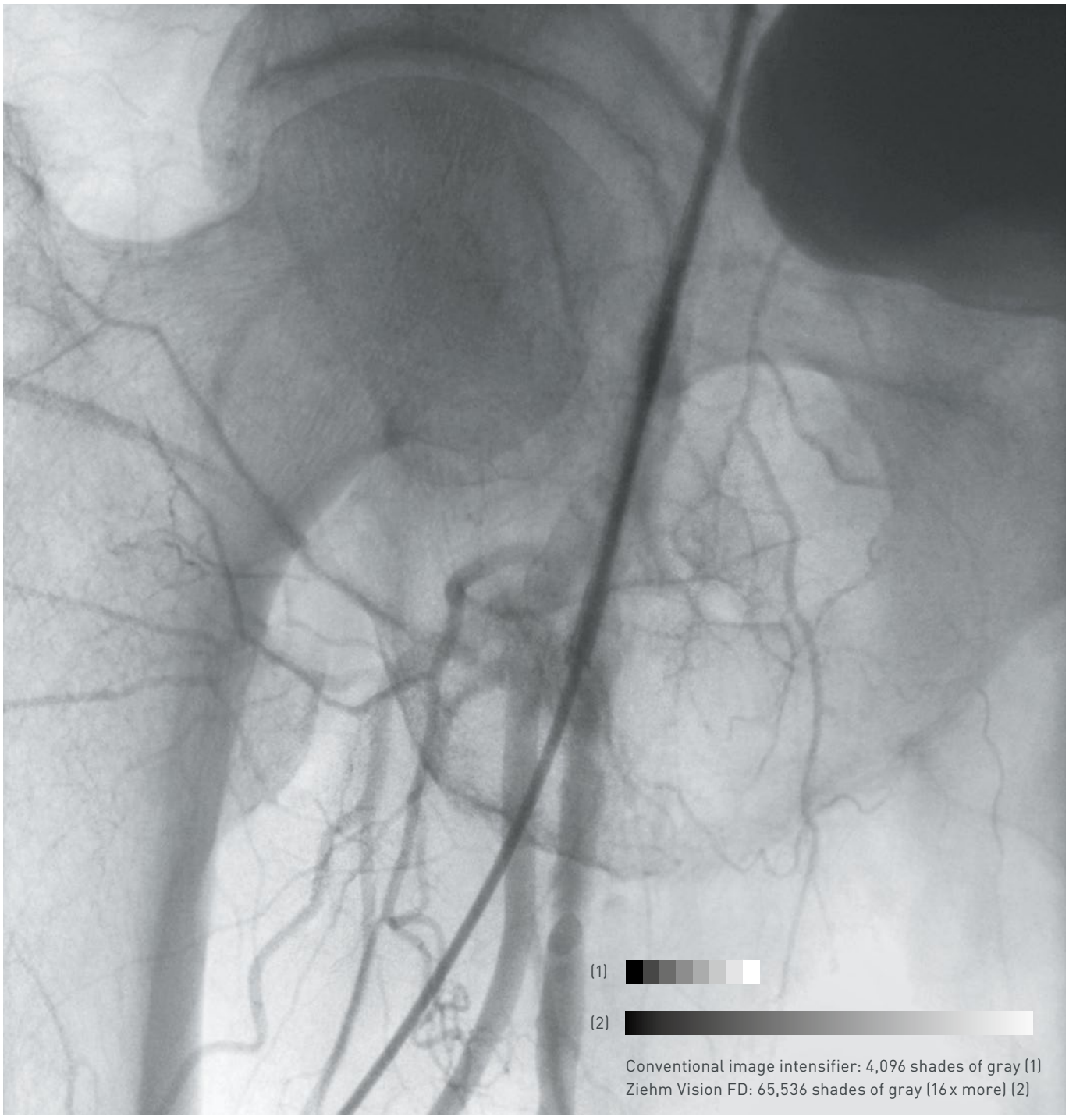
Intelligent pulse technology based on short, sharp pulses minimizes dose and maximizes image quality.



— Monoblock — Splitblock generator



— Pulsed — Continuous fluoroscopy



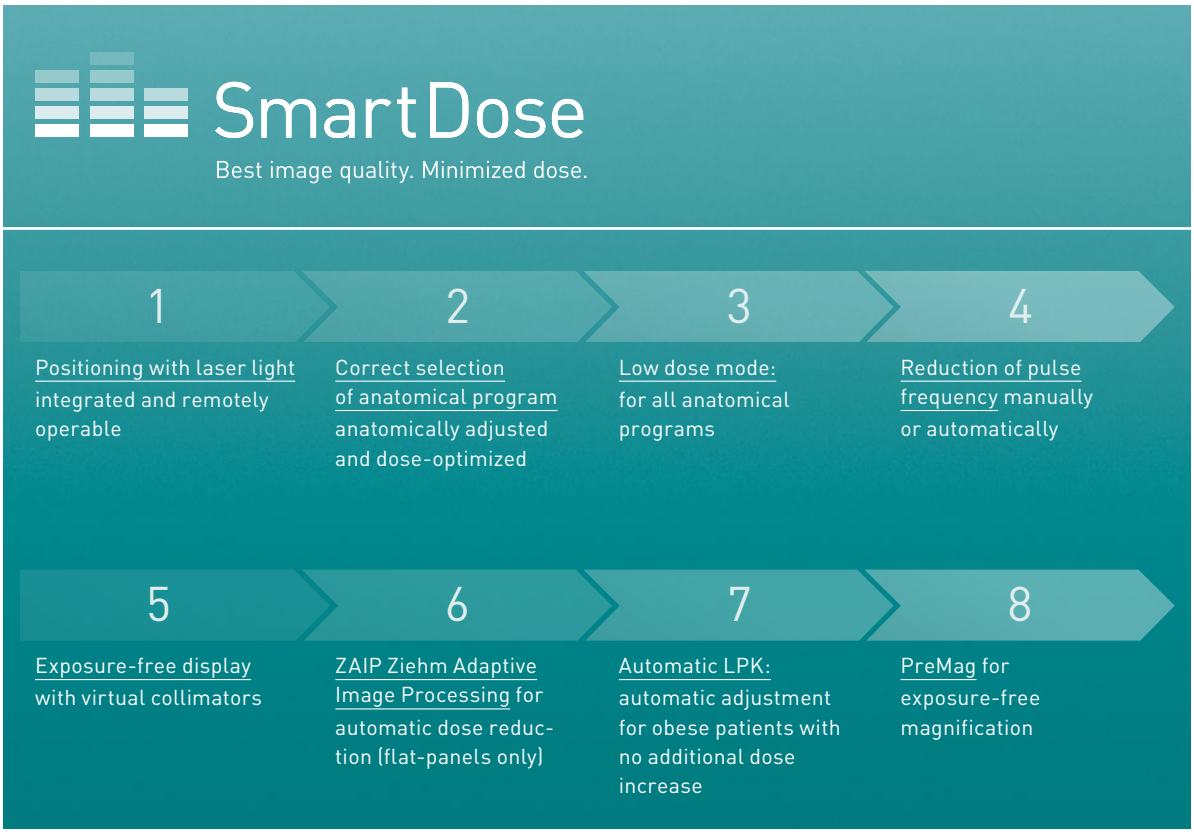
Conventional image intensifier: 4,096 shades of gray (1)
Ziehm Vision FD: 65,536 shades of gray (16 x more) (2)

02 / Smart Dose. Best image quality. Minimized dose.

→ Comprehensive concept for dose reduction

Ziehm Imaging has incorporated SmartDose in the current generation of mobile C-arms. This comprehensive concept for dose reduction allows the physician and staff to significantly reduce dose while optimizing image quality. SmartDose benefits both patients and staff alike. With significant savings Ziehm Imaging sets the benchmark in user-friendly adjustment of dose exposure.

To achieve best results in intraoperative imaging, all C-arms with flat-panel detector are equipped with ZAIP (Ziehm Adaptive Image Processing) using hardware-based filters and the latest algorithms for noise filtering, edge enhancement and dose optimization.



→ Automatic adjustment of settings

The Ziehm Vision greatly simplifies patient positioning and dose control. ODDC technology (object detected dose control) creates a matrix over the entire scan field and uses 256 measurement cells to scan the region of interest in real time. All settings, including the dose level and noise filters, are automatically adapted to the patient's position.

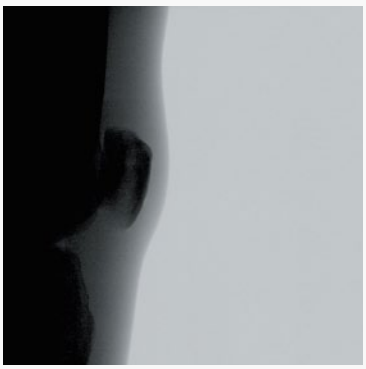
ODDC's measurement cells automatically detect motion. If the patient is not moving, the pulse frequency can be lowered significantly. If, however, motion is detected in the region of interest, the pulse frequency automatically increases to a maximum of 25 frames per second.

ODDC reduces patient dose and overexposure. The system detects metal parts in the scanned zone (e.g. plates, pins, instruments or implants) and automatically adjusts generator output and video levels to reduce metal distortion and improve image quality.

"The average dose reduction when using 25 pulses/sec resulting from object detection and automatic down-pulsing was 21 %, and the maximum dose reduction was 60 %."

(Gosch D. et al. "Influence of Grid and Object Detection on Radiation Exposure and Image Quality using Mobile C-Arms – First Results", RöFo, 09/2007, page 896 onwards)

ODDC highlights



Conventional image quality

ODDC: Grid-controlled adjustment of radiation levels, filters and pulse frequency

Crystal-clear images achieved with minimal doses

03 / New dimension in usability. The Ziehm Vision supports your clinical workflow and sets standards for intuitive guidance.

→ Best-in-class ergonomics

With a footprint of 0.8 m², the Ziehm Vision is one of the smallest C-arms on the market. Its compact design and easy-drive system means it can be maneuvered with minimal effort during procedures. The steer and brake function is activated via a single lever. All C-arm movements are fully counterbalanced in every position, making the unit extremely comfortable to use. In addition, different colored scales and handles allow the surgeon and staff to quickly and easily select the desired function.

→ Intuitive workflow

The Vision Center is a rotating and tilting touchscreen control panel mounted on the mobile stand and the monitor cart. It provides access to the same, synchronized controls found on both units. This intelligent user interface coupled with clear and easy-to-follow icons makes operating the imaging system easy and intuitive. From a short list of anatomical programs, the operator simply selects the desired option to automatically adjust the imaging parameters to the region of interest, always ensuring the best image quality and lowest dose levels. Additionally, with SmartArchive it has never been easier or faster to access the current patient data at any time.

→ Fit for the future

The Vision Center is a touchscreen with an open, modular software architecture, ensuring maximum flexibility. This interface can be easily upgraded and expanded with additional software modules without the need for hardware changes.

Above: Optimal counterbalanced C-arm movements for fast and easy positioning

Below: Ziehm SmartEye displays the live X-ray image on the user interface. SmartControl enables the user to intuitively manipulate the X-ray image directly from the touchscreen.


10.7
58
Fluoroscopy
0.00
00:00
Fluoro
Vascular
Patient
Post Proc.
Measure
Archive
Config

→ Prolonged use

C-arms need to be in continuous use during lengthy, demanding procedures such as vascular and cardiac interventions. The Ziehm Vision's Advanced Active Cooling system (AAC) keeps the generator at an ideal operating temperature and in the event of a temperature increase, the pulse frequency is automatically reduced, until the generator's temperature has cooled down. This guarantees uninterrupted usage especially during long and difficult procedures.

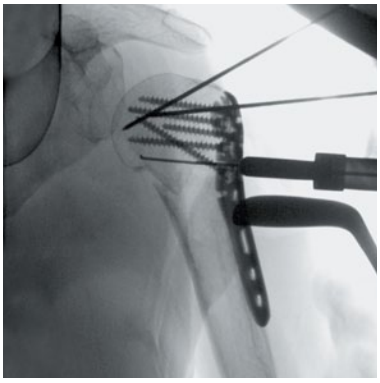
→ Seamless integration

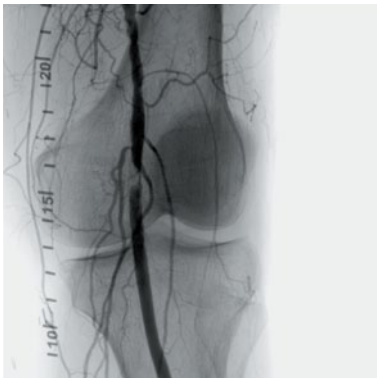
The open interface, Ziehm NetPort, enables easy integration into existing IT networks. Patient data saved in DICOM 3.0 format is transferred – via WLAN for example – to the PACS or HIS/RIS. Data can be retrieved from the monitor cart at any time. Data can also be backed up to DVD or USB and be printed on transparencies or paper.

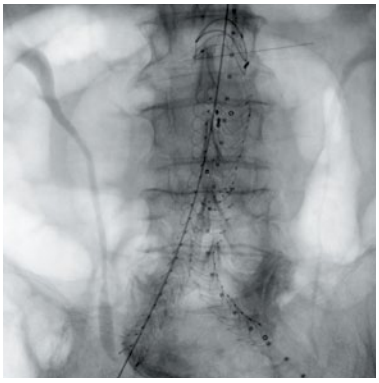
→ Wireless freedom

Increase safety in the OR by benefitting from fewer cables on the OR floor with Ziehm Imagings' wireless freedom concept: WLAN allows you to store images wirelessly to the PACS from any location. With Ziehm Wireless Video option, live images can be transferred to wall-or ceiling mounted monitors in real-time. Profiting from the wireless dual-plus-footswitch increases flexibility and safety even further, as relevant functions like initiating X-ray can be controlled wirelessly. Encrypted technology is used for all our wireless technologies to ensure that sensitive patient data is handled with the utmost responsibility.

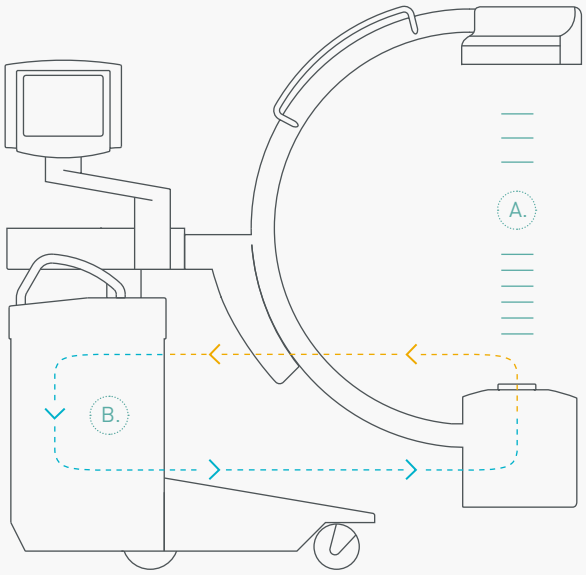
Continuous imaging even during demanding procedures







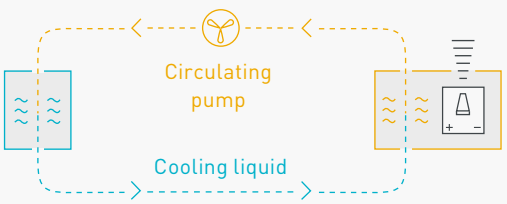
Advanced Active Cooling keeps generator temperatures down and automatically adapts the pulse rate



A.
Automatic pulse regulation ensures continuous imaging

B.
Cooling cycle, heat exchanger

High capacity heat radiator with cooling liquid



Pulsed monoblock generator: Heat is transferred to a built-in heat radiator

04 / Broadest application spectrum. Our units are engineered for the widest range of clinical applications.

Ziehm Imaging sets new standards for C-arm functionality with the Ziehm Vision. It is the solution of choice for demanding minimal-invasive and interventional procedures such as vascular surgery, cardiology, neurosurgery, trauma and orthopedics. Equipped with leading-edge flat-panel technology, the Ziehm Vision FD is also ideally suited to interventional radiology.

Ziehm Vision

Ziehm Vision FD

Product	Ziehm Vision	Ziehm Vision FD
1k x 1k technology	•	•
Shades of gray	4,096	65,536
Distortion-free imaging	–	•
Fully digital imaging	–	•
Pulsed monoblock generator	•	•
ZAIP (Ziehm Adaptive Image Processing)	–	•
ODDC	•	•
DICOM	optional	optional
Interface to 2D navigation systems	23 cm I.I. only	–
Advanced Active Cooling	•	•
C-arm opening	76 cm	89.5 cm
Field of view: 9"/23 cm image intensifier	363 cm^2	–
Field of view: 12"/31 cm image intensifier	594 cm^2	–
Field of view: 20 cm x 20 cm flat-panel	–	396 cm^2
SmartControl	•	•
SmartVascular	optional	optional
Remote Vision Center	optional	optional
WLAN	optional	optional
Wirelss Video	optional	optional
Wirelss Footswich	optional	optional
Anatomical Marking Tool (AMT)	optional	optional

05 / Maximize your uptime. Make sure to get the best service for your daily business.

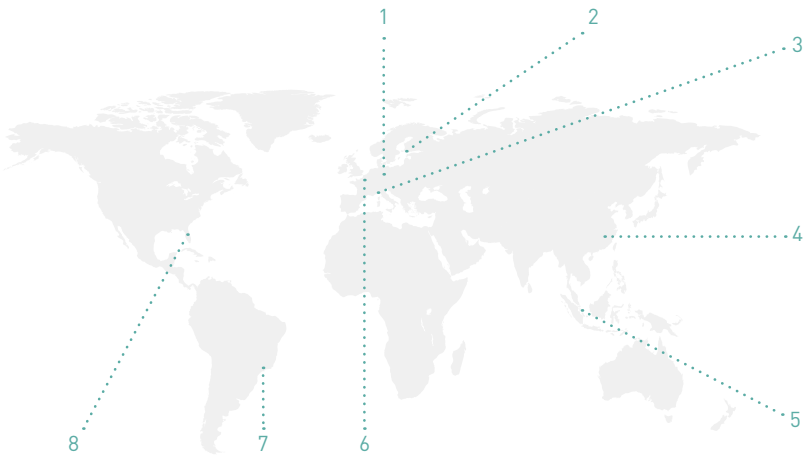
Rely on Ziehm Imaging for flexible and fast service to stay at the cutting edge of technology. Tailored service packages, remote service, and individual upgrade paths keep you competitive in your daily hospital routine.

→ Ziehm Service Packages

With tailored service packages we offer you peace of mind and financial security, making yearly costs, including spare parts and traveling costs, more predictable.

→ Ziehm Remote Service

Regardless of your needs, our experts are on hand. Ziehm Remote Service delivers faster and easier troubleshooting for your system. Thanks to our worldwide network of service centers, you can always rely on Ziehm Imaging for flexible and solution-oriented service.



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