Mobile C-arm systems
Engineered for your clinical imaging needs

→ Cardiovascular Surgery
→ Cardiology
→ Interventional Radiology
For more than 40 years, Ziehm Imaging has offered tailored imaging solutions for a diverse range of clinical applications. Through close cooperation with renowned universities, research institutes and hospitals, we are able to identify the needs of the market and thoroughly incorporate them into our product developments.
Ziehm Imaging’s product portfolio covers the entire range of applications for vascular surgery, cardiology, interventional radiology, cardiac and endovascular procedures.
Image quality. Detailed and contrast-rich imaging is an essential prerequisite for successful cardiovascular procedures. With our C-arms you can count on superb image quality – regardless of whether you need an image of a beating heart or an aortic aneurysm.

“Whether imaging extremities or a heart valve, my C-arm has to deliver detail-rich images.”

Every clinical application makes its own specific demands on the C-arm. To ensure best image quality, Ziehm Imaging offers preconfigured organ programs (e.g. trunk, extremities, heart, abdomen, bolus chase) which optimize the C-arm’s settings like generator power, filters and noise reduction. Empirical values compiled over decades and close collaboration with clinics lead to ideal system settings, regardless of which procedure you perform with the C-arm. In order to enable a quick selection, the number of organ programs is reduced to a minimum through sensible clustering of the applications.

→ “I always thought this level of image quality could only come from a fixed installed system.”
“Can I really use a mobile C-arm for cardiac applications?”

Reliability, image quality and penetration are the prerequisite for a successful procedure in cardiac surgery. Ziehm Imaging uses pulse technology with up to 25 images/second to generate crystal clear X-ray images – even of beating hearts and guide wires. In procedures such as heart valve implantation, coronary angiography and PTCA, both physician and patient benefit from sharp images. With a specially developed heart program, powerful generators and a 20 cm x 20 cm flat-panel, we guarantee the best results in even the most demanding procedures.

Image quality

More information per image

“I get more information from a square X-ray image than I do from a round one.”

Particularly for vascular AAA procedures, the size of the field of view is critical for surgical success. In 2006 we set a new benchmark by launching the first C-arm with flat-panel technology. Our square X-ray images, with an edge length of 30 cm, lead the market and provide more information per image than conventional image intensifiers. Many years of experience guarantee mature technology that benefits you as a user in everyday practice: X-ray images on a mobile C-arm of a dimension previously available only with fixed installed systems.

Penetration

“Intraoperative imaging must adapt to patients of all sizes.”

The number of cardiovascular procedures in obese patients increases every year. In these cases penetration and image quality can be particularly challenging. A perfect combination of innovative hardware and software components with powerful monoblock generator technology with up to 25 kW and specially tailored organ programs ensures the best possible image quality.
“In the OR I can step on the gas – and use CO$_2$ as a contrast medium.”

Injections of contrast media are part of everyday clinical practice in vascular surgery. Besides the practice with iodinated contrast, the use of CO$_2$ has established itself on the market. Until now, suitable technology for CO$_2$ angiography has primarily been available only on stationary systems. Ziehm Imaging, the specialist for C-arm technology, was the first to offer a specially adapted CO$_2$ characteristic curve for fast and trouble-free angiography with excellent quality.

“The quality of the C-arm is especially apparent to me in the visualization of fine peripheral vessels”

Visualization of even the smallest peripheral structures provides key information in vascular surgery. Our fully digital flat-panels display more than 16,000 shades of gray creating an image dynamic that is only known from fixed installed systems. With a resolution of up to 1.5k x 1.5k even the finest anatomical structures are revealed. In addition, the new ZAIP (Ziehm Adaptive Image Processing) technology optimizes edge enhancement of X-ray images and provides sustained noise reduction. The technology allows you to clearly identify catheters, guide wires and anatomical structures – even in the moving image. Never before has mobile imaging been so accurate.

Benefits

- Preconfigured organ programs to optimize the C-arm’s settings
- X-ray images with an edge length of 30 cm for more information per image
- Best results for patients of all sizes
- Sharp images for cardiac surgery
- Detail-rich visualization of moving objects such as in cardiac procedures
Reliability and responsibility. Your patients rely on surgical expertise and clinical experience. We make sure that both you and your OR team can also rely on your imaging system.

Continuous use

“The cooling technology of a mobile C-arm must not be inferior to a fixed system.”

Long and complex procedures, such as AAA, TAVI or EVARs, require uninterrupted, reliable usage of the C-arm. The unique liquid cooling system Advanced Active Cooling (AAC) of our C-arms, with more than 100kHU/minute, is significantly more effective in clinical performance than cooling systems of conventional devices. In combination with an intelligent heat management system, overheating can be excluded and uninterrupted work is guaranteed.

“We can’t afford system failures due to overheating.”

Colored brake levers

“Clear communication is fundamental, especially in critical situations.”

Colored brake levers allow you as the surgeon to give simple and straightforward instructions for positioning the C-arm.
Safety

“Motorization without collision protection is irresponsible.”

In every procedure, the patient’s safety is always top priority. This is why we developed intelligent features for our motorized C-arms.

The operator must deliberately take hold of the joystick as movements are only activated by touching the joystick in at least two contact points. For this reason uncontrolled movements of the C-arm by accidentally touching the joystick can be prevented. Also, the circumferential lower edge of the flat-panel has the integrated Distance Control system for automatic and non-contact surface detection. Patient and instruments are detected before contact can take place. The device can immediately go from full speed to complete standstill.

Sterility

“Sterility counts.”

Sterility is a sensitive topic, and not just in the field of vascular surgery. Ziehm Imaging offers customized sterile covers for C-arms with image intensifiers as well as flat-panel detectors. Easy application and perfect fit prevent gaps and creases, thus providing the best possible protection against microbial contamination.

With a closed-loop cooling system, Ziehm Imaging sets the highest standards for sterility in the OR. Unlike air-cooled generators, uncontrolled air circulation in the sterile OR environment is prevented.

Benefits

→ Liquid cooling system for long and complex procedures
→ Fast, effective handling thanks to colored brake levers
→ Highest standards for sterility in the OR
→ Collision protection due to intelligent features
With the Remote Vision Center you can control the C-arm directly from the OR table.

Tailored to your workflow. We make sure you can focus on your procedure and not the operation of the C-arm: with an intuitive touchscreen controlled by your fingertips, workflow-oriented software and completely motorized movements.

"With full control of the C-arm at the OR table, I can determine what I want to see and when I want to see it."

Hybrid OR applications with more than one physician treating the patient, as well as dedicated vascular and cardiovascular procedures require flexible C-arm control options. That’s why our units are equipped with the Vision Center: Touchscreen control panels are mounted on the C-arm as well as on the monitor cart and are synchronized with one another. With an identical user interface, they provide complete control at both the C-arm and the workstation. In addition, the C-arm can be supplemented with a Remote Vision Center and optionally with the Position Control Center. This combination comes with a fully motorized 4 axes movement, which makes the system completely operable directly from the sterile OR table.

→ “I need to be in full control of the surgical environment and my equipment.”
The Ziehm Vision RFD Hybrid Edition offers 4 axes motorization and can be steered easily by the Position Control Center. Store up to 3 individual C-arm positions and retrieve them at any time during your procedure. This saves valuable OR time, eliminates cumbersome manual positioning and improves accuracy. Make your C-arm isocentric with the touch of a single button. Combine manual and electronic movement by activating/deactivating motorization within seconds.

“C-arm positioning must not be an issue in the OR.”

The overscan with 165-degree orbital rotation gives you greater flexibility when positioning the C-arm. Increased imaging angles facilitate your cardiovascular procedure. In addition, the wider C-arm opening enabled by the flat-panel detector allows you to quickly and easily position the system around the patient. This additional space provides a more comfortable working environment without the need to move the unit away from the OR table.

“Ready to go

“Our C-arm must be quick to set up and easy to position.”

The compact, lightweight design and the easy-drive system ensure that the C-arm is easy to maneuver in the OR. You can quickly move it into another room or department. Steering and braking functions are controlled by just one lever. Due to short set-up times your C-arm is quickly up and running.
Administration in clinical environments is steadily growing. This makes it even more important to have quick access to patient data and keep images intuitively archived in the existing IT networks. SmartArchive provides thumbnail views on the touchscreen that make it easy to quickly scroll through and find locally stored images on the C-arm. Our C-arms also offer wireless transmission of X-ray images to the PACS in DICOM 3.0 format. Encrypted WLAN technology is used to ensure that sensitive patient data is handled with the utmost responsibility.

Benefits

- Remote control of C-arm directly from OR table
- Central access to all functions via synchronized touchscreens
- Intuitive workflow
- Short set-up times and easy positioning

Wizard guided workflow

“I need subtraction and roadmapping – fast and easy.”

Never before has it been possible to perform roadmapping (RSA) from a single DSA image. Choose one or a sequence of your best DSA images and eliminate breathing artifacts to create more accurate roadmaps. A new RSA can be created from any existing data set at any time without additional injection of contrast media. This saves valuable OR time and additional dose.
Minimum dose. It is of utmost concern to us to keep the dose from our C-arms as low as possible. With SmartDose you, your team and patients benefit from the latest technical innovations.

“I want to selectively penetrate only areas that are relevant for my procedure.”

An integrated laser device enables exposure-free positioning. The field of view can be precisely minimized to the relevant structure by using virtual collimators. With SmartControl you can optimally adjust them with your fingertip on the touchscreen.

In pediatric imaging, you can significantly lower the C-arm dose with a single click. When combined with a corresponding organ program, this ensures a particularly gentle examination. In both pediatric procedures and examinations involving extremities, the detachable grid can additionally help reduce dose.

→ “I want to make sure that we are working with the minimum dose.”
Automatic dose reduction

“Can I be sure that my C-arm operates with the lowest possible dose?”

ZAIP (Ziehm Adaptive Image Processing) not only improves image quality, it also lowers the dose by up to 24% – without any manual adjustments. System settings align fully automatically to real-time anatomical conditions.

Unlike continuous fluoroscopy, Ziehm Imaging provides pulse technology, which only utilizes the necessary dose for the respective intervention. Pulses can be reduced from 25 to 8 pulses/second, corresponding to a dose reduction of 66%.

Radiation-free magnification

“Magnification 2, exposure 0!”

PreMag is a radiation-free preview function for magnification settings 1 and 2. It allows operators to precisely select the point of interest in the X-ray image – just by touching the screen. The high-quality digital images provide all the required information by just zooming in and preventing additional exposures.
Powerful performance with up to 25 kW for crystal-clear images during demanding applications.

Ziehm Adaptive Image Processing (ZAIP) for improved image quality and optimal visualization.

Motorized movements for easy positioning of the C-arm in 4 axes.

Remote Vision Center to fully control all imaging functions.

Synchronized to contrast media injectors for contrast-rich cardiovascular images.

"I don’t need a dedicated hybrid room. My C-arm meets the expectations of the most demanding vascular procedures – and it’s mobile."
### Features

| Flat-panel (cm) | – | – |
| Image intensifier (cm) | 23/31 | 23/31 |
| Pulsed monoblock generator (kW) | 2kW | up to 20kW |
| Opt.: Endoscopic landscape color monitor | • | • |

### Applications

| Vascular surgery | • | • |
| Angioplasty | • | • |
| Electrophysiology | • | • |
| Cardiac surgery | • | • |
| Coronary imaging | • | • |

### Ziehm Vision

Cutting-edge technologies and functionality for elementary vascular procedures.

### Ziehm Vision R

Powerful solution for excellent mobile imaging.

### Ziehm Vision FD

The world’s first mobile C-arm with flat-panel technology.

### Ziehm Vision RFD

The mobile interventional suite.

### Ziehm Vision RFD Hybrid Edition

Motorized C-arm with all the capabilities and features demanded by a hybrid room.

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Optimal solution for your clinical requirements. Our C-arms set international benchmarks and are ideal for applications in vascular, cardiovascular, cardiac interventions and interventional radiology. With a multitude of options, our C-arms can be specifically tailored to your requirements. We would be pleased to consult with you personally.
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Engineered for your clinical imaging needs

→ Cardiovascular Surgery
→ Cardiology
→ Interventional Radiology