



HS Hi-R 700

Modular operating microscope



Tradition and Innovation – Since 1858, visionary thinking and a fascination with technology have guided us to develop innovative products of outstanding reliability: Anticipating trends to improve the quality of life.

 **HAAG-STREIT**
SURGICAL



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HS Hi-R 700

Pure precision

High flexibility and outstanding optical quality are the strong points of the operating microscope HS Hi-R 700. Its modular design and wide range of available accessories allow operation in neuro and spine surgery, ENT procedures as well as plastic and reconstructive applications.

The choice of three types of floor stands perfectly complements the optical head. The 300 W xenon illumination provides high color fidelity and clear vision, even in narrow cavities and at large working distances. Furthermore, a full range of video cameras, recording, and displaying equipment completes the system.



M.DIS

Eyepiece head with 200° inclination angle

Touch panel for user settings and motorized balancing

Easy balancing

Variable working distance
224 mm to 510 mm
or optional 200 mm to 450 mm

300 W xenon illumination
with backup module

HS MIOS

- » Individual configuration exactly for your needs
- » Impressive optical image quality
- » Extraordinary movability and precise positioning
- » Motorized balancing of floor stand
- » Highly economical due to modular design

HS Hi-R 700
on floor stand FS 3-43



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HS Hi-R 700 Better vision – The key to higher precision

Precision optics and optical systems have been developed and manufactured in our German production facility since 1864. We work according to an elaborated and certified quality process, and the assurance of our optics exceeds the requirements of the relevant

ISO standards. Looking through the eyepiece of the microscope HS Hi-R 700 will tell you more than a thousand words could about special glass, grinding, polishing, or coating. Enjoy natural viewing with the operating microscope HS Hi-R 700, which is "Made in Germany".

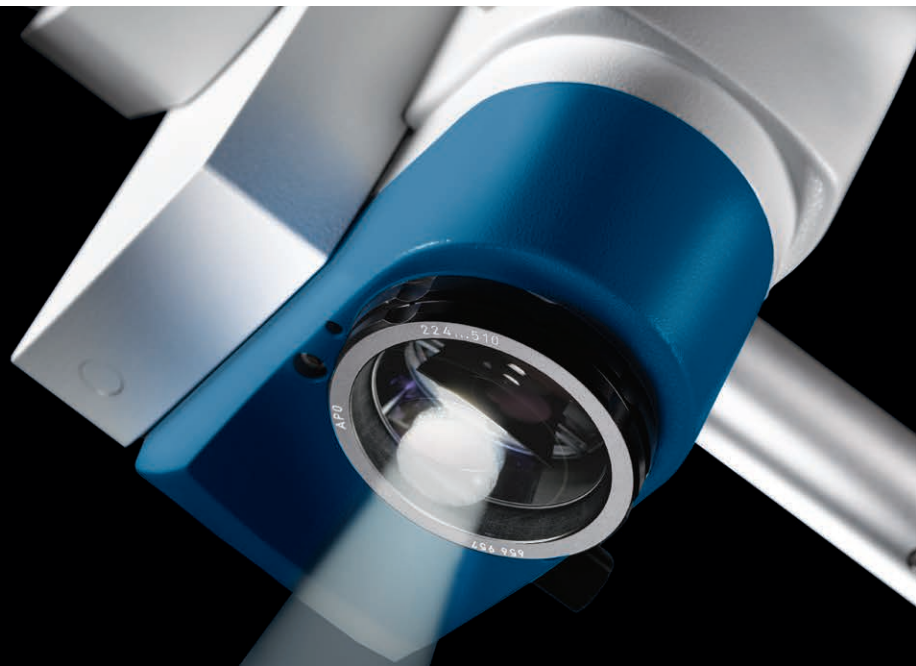
Closer to reality

The spatial recognition of objects is a decisive criterion in microsurgery. For this reason, the operating microscope HS Hi-R 700 has a large 25 mm stereo base, providing realistic 3D images and an astonishing depth perception.

Especially in high magnification the depth of field can be individually adjusted with the integrated iris diaphragm.

Optimal lighting

The small illumination angle gives uniform light, even in narrow cavities. The illumination diaphragm controls the size of the illuminated field and decreases glare.



ABOUT HAAG-STREIT SURGICAL



NATURAL MOVABILITY

Less effort

The special design of the axes provides natural movement and precise positioning of the microscope. Due to electromagnetic brakes, little force is necessary to maneuver the microscope or keep it steady in position where needed.

LITTLE ADJUSTMENTS

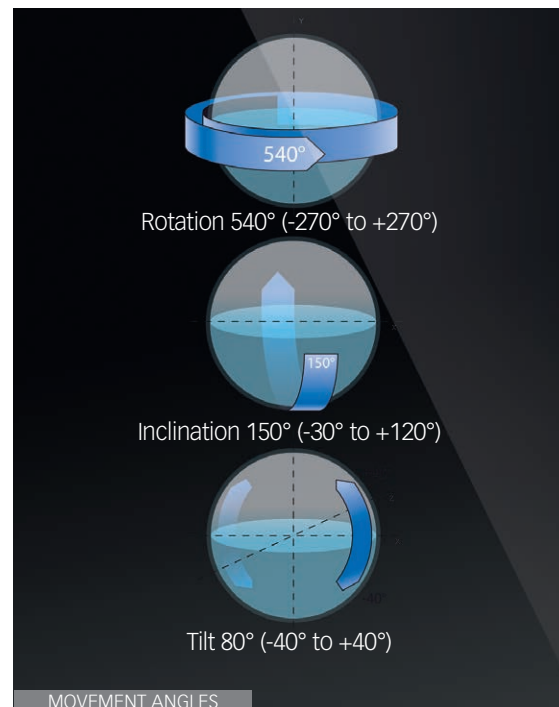
Ideal for one-handed use

Thanks to the safe balancing of HS Hi-R 700, there is less need for readjustments. The 2-knob balancing mechanism is software-assisted for quick settings, allowing accessories to also be perfectly balanced. This results in a more continuous workflow and provides one-hand use in all configurations.

HIGH DEGREE OF FREEDOM

Positioning made easy

Due to the large movement angles of HS Hi-R 700, all the positions you need are easy to reach. This provides best observation at just the right angle while also allowing the surgeon to adopt ergonomic posture.





06 | 07

Accessories

Possibilities on demand

Depending on the demands, the operating microscope HS Hi-R 700 can be configured in a modular way. Various optional accessories are available, allowing documentation, side-by-side or face-to-face assistance, hands-free operation, and increased magnification.

SECONDARY OBSERVATION

Flexibility

When working together – whether it be for side-by-side or face-to-face positioning – the right accessory is available for HS Hi-R 700:

- Lateral observer scope with inclinable eyepiece head with 3 axes and image rotation for the assistant's optimal comfort.
- Conventional Beam splitter: Used in combination with a short, straight eyepiece head – ideal for working in a 45° position – or with 160° inclinable eyepiece head for posterior fossa operations.
- DIPLOSCOPE: For relaxed ergonomic working of two surgeons in face-to-face positions and optionally with integrated camera attachment or side port, if an assistant is working in a lateral position.

MAGNIFEYE AND X-Y COUPLING

Seeing each detail

The MAGNIFEYE can be added to meet the highest demands in terms of up to 24x magnification. When using high magnification, you also benefit from the X-Y coupling of the HS Hi-R 700XY for precise horizontal movements with a range of 60 mm x 60 mm that are easily controlled via the hand switch.



LATERAL OBSERVER SCOPE



CONVENTIONAL BEAM SPLITTER



DIPLOSCOPE



MAGNIFEYE



HS HI-R 700XY WITH X-Y COUPLING



MOUTH AND FOOT SWITCHES

Hands-free operation

The positioning of the microscope is normally operated using the handles. If this is not desirable, mouth and foot switches are available.

While the mouth switch allows the microscope to be moved during positioning, the smaller foot switch EF 2000 regulates focus and zoom settings. 14 partly programmable functions can be controlled with EF 5000 and EF 5001. While EF 5000 is connected to the floor stand via cable, EF 5001 connects wirelessly.

CAMERA ADAPTATION

Documentation

HS Hi-R 700 accepts various analog and digital video cameras via HAAG-STREIT SURGICAL adapters or the space-saving solution Beam splitter T.

Documentation equipment such as a camera, monitor and recording system are also available directly from HAAG-STREIT SURGICAL (→ p. 8). These are especially set to interact with the microscope perfectly for the optimum exchange of data in their medical environment.

LASER ATTACHMENT

For improved treatment

Especially in ENT applications, CO₂ lasers are used and added to the optical head. This often negatively influences the movability and the balancing of the microscope. Adapters for laser micromanipulators can be attached to the HS Hi-R 700 that retain the microscope's overall balance and free-floating movement.



MOUTH SWITCH



FOOT SWITCH



CAMERA ADAPTATION



BEAM SPLITTER T



LASER ADAPTER



08 | 09

Imaging possibilities

Observe and document

M.DIS

Microscope mounted display

The M.DIS (Microscope Display) turns the operating microscope into a microsurgical image control center. The high-resolution screen, mounted close to the eyepiece, provides images or data for the surgeon which she/he may see by momentarily looking up from the eyepiece. The touch screen also allows numerous functions to be controlled.

HS MIOS 5

Comprehensive yet intuitive recording

MIOS stands for Microscope Imaging and Operation System. Its prime functions are the recording of operation scenes as well as the capturing and recording of snapshots, together with proper identification of patient and hospital data. Images and video streams can be stored on DVD-R/-RW, HDD, USB flash drive, and external USB hard disk drive or transmitted to the hospital PACS via DICOM.

The image data can also be edited for presentations with the optional module M.AED. When the snapshot button is pressed, a sequence of the video stream is marked. In the archive, all saved video sequences are merged into one video.

C.MOR HD

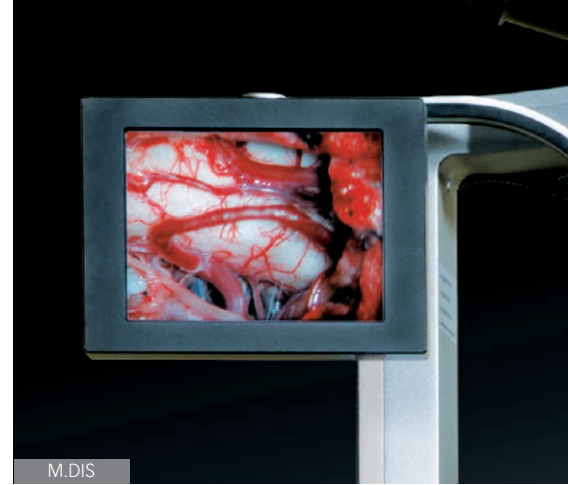
Compact HD camera

C.MOR HD is a full HD color video camera designed for the HAAG-STREIT SURGICAL microscope. Its ultra-compact camera head houses a 1/3" CMOS sensor that meets very high standards. With a resolution of 900 TV lines and an S/N ratio of 50 dB, images are crisp and sharp. Different user settings allow individual adjustments.

C.MON HD

Display in HD

With its flat design and 21.5" size, the brilliant HD monitor C.MON HD can easily be attached to the microscope's floor stand. Its touch function can be operated even with medical gloves. Due to the planar screen and glass surface, it can be disinfected easily. For the safety of the system, C.MON HD is fully approved for medical use.



M.DIS



HS MIOS



C.MOR HD



C.MON HD

Floor stands More than just carrying systems



Floor stand FS 3-43

Movability and stability in perfect balance

Three floor stands are available, all equipped with 300 W xenon light sources.

FS 2-23 – spring balanced arm with a maximum length of 1320 mm

FS 3-43 – spring balanced arm with a maximum length of 1600 mm

FS 5-33 – counterweight balanced arm with a maximum length of 1870 mm and two 300 W xenon light sources

All stands are computer-controlled with a touch screen to program the individual start settings of the microscope parameters for each surgeon. The arms feature low-friction bearings, electromagnetic brakes, and vibration dampers for free movement and stability of the working position.

The xenon light sources contain filters to protect the surgeon's eyes and the patient's tissue against ultraviolet and infrared radiation. Easily accessible cable ducts cover the cables up to the microscope suspension. The carriages are equipped with four twin castors with brakes.



Floor stand FS 2-23

Modularity, strength, compact design

The shape and internal reinforcements strengthen the floor stands FS 2-23 and FS 3-43 against wavering. For easy access, the 300 W xenon light source is located externally underneath the push bar. The upper housing contains a spare light module. Additional light sources, holders for foot switches, and trays for camera control units or other accessories may be attached to the column.

Optionally, a fixation point at the front side can hold a high resolution monitor. The carriage is protected against corrosive liquids with a plastic surface.

The special highlights of FS 3-43 are its motorized balancing and extreme arm length.



Perfect reach, stability, flexibility

The floor stand FS 5-33 integrates the latest technology with innovative damping for the lowest vibration. Even when fully equipped microscopes are mounted and the arm is stretched to its full length of 1870 mm, it still stays solid as a rock!

Servo locks and state-of-the-art castors allow effortless maneuverability. Easy handling is also achieved by the automatic balancing of the system and its self-explanatory positioning for parking.

For optimum cleaning and disinfection, all cables and accessories are covered and build into the tower. This also houses the touch screen C.TAB that supports intuitive operations and control of the whole system.

The two independent, powerful 300 W xenon light sources allow the best visibility, even in deep cavities. The quick exchange mechanism ensures the system is available quickly at all times.

Floor stand FS 5-33

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HAAG-STREIT SURGICAL GmbH

Rosengarten 10
D-22880 Wedel, Germany
Telephone +49-4103-709 04
Fax +49-4103-709 355
sales@haag-streit-surgical.com
www.haag-streit-surgical.com

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