



## 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 quality of life.

**HS** HAAG-STREIT  
SURGICAL

# Pure Precision



## OUR HIGHLIGHTS:

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 large working distances. A full range of video cameras, recording, and displaying equipment completes the system.



M.DIS

Eyepiece head with 200°  
inclination angle

Easy  
balancing

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

Touch panel for user settings  
and motorized balancing

300 W xenon  
with backup module

HS MIOS

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

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



## Better Vision – The Key to Higher Precision



### WHY HAAG-STREIT OPTICS?

Since 1864 precision optics and optical systems have been developed and manufactured in our German production plant. We work according to an elaborated and certified quality process, and the quality of our optics exceeds the requirements of the relevant ISO standards. Looking through the oculars of the microscope HS Hi-R 700 will tell you more than a thousand words about special glass, grinding, polishing, or coating. Enjoy natural viewing with apochromatic optics '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 images and an astonishing depth perception.

### OPTIMAL LIGHTING

The small illumination angle of 3° gives uniform light even in narrow cavities. The illumination diaphragm controls the size of the illuminated field and decreases glare.



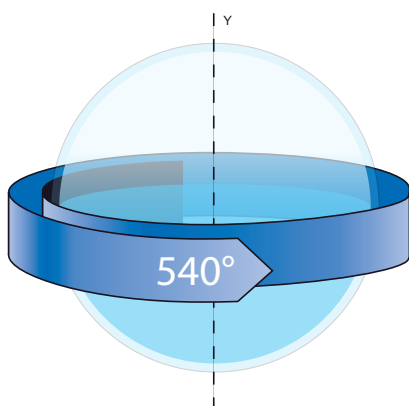
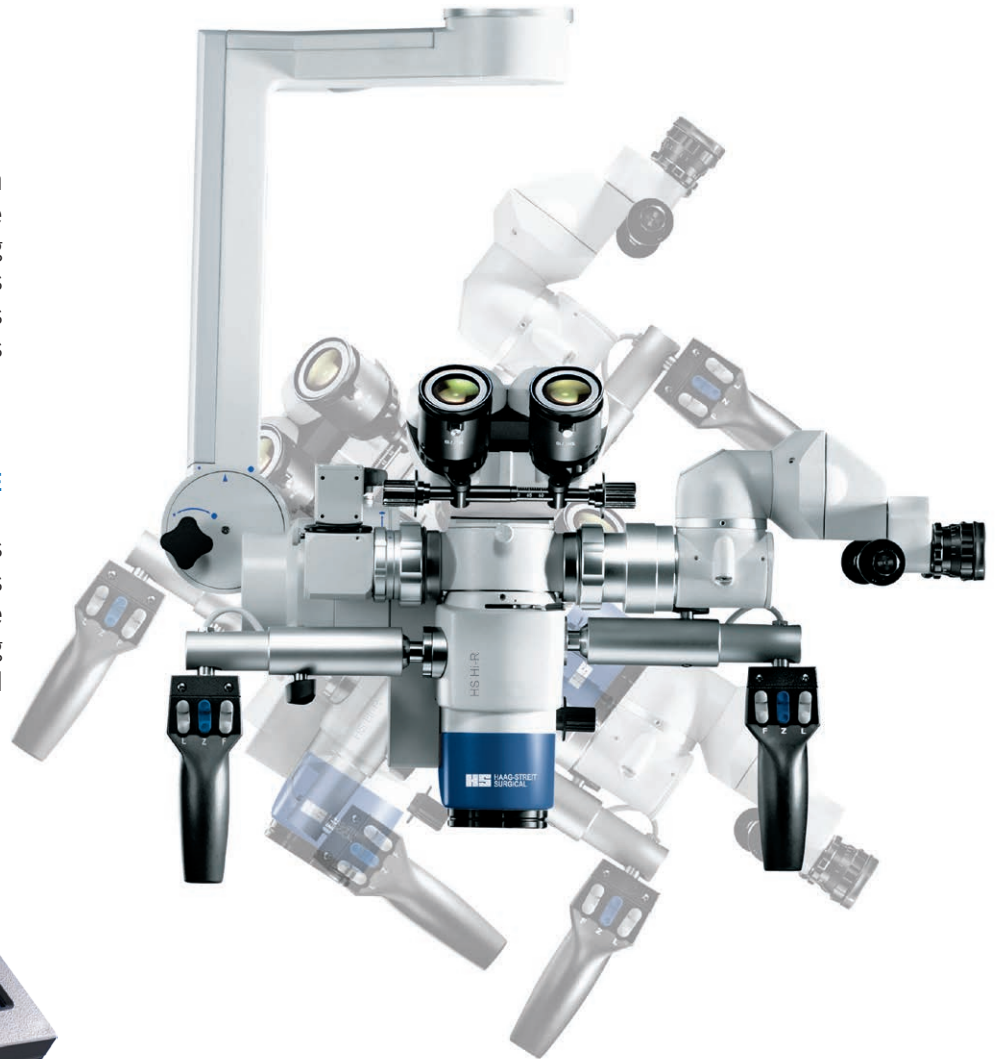
# Most Natural Movability

## LESS EFFORT

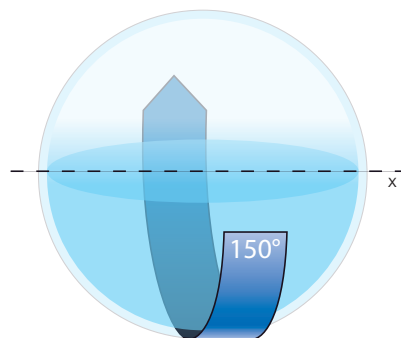
During surgery, time is an essential factor. Thanks to safe balancing and precise positioning of the HS Hi-R 700, there is less need for readjustments. This results in a more continuous workflow.

## IDEAL FOR ONE-HANDED USE

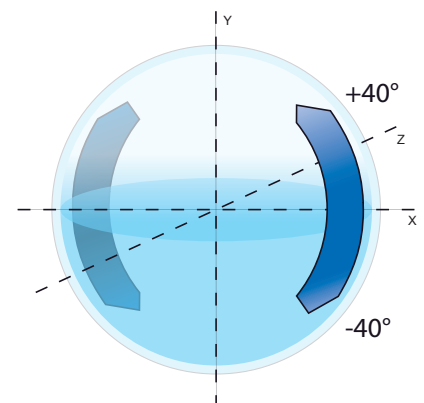
The special design of the axes provides natural movements and precise positioning of the microscope. The 2-knob balancing mechanism is software-assisted for quick setting.



Rotation 540° (-270° to +270°)



Inclination 150° (-30° to +120°)



Tilt 80° (-40° to +40°)





## Accessories



### LATERAL OBSERVER SCOPE WITH INCLINABLE EYEPIECE HEAD

With 3 axes and image rotation for the assistant's optimal comfort.



### ILLUMINATION SPOT

Stepless variation of the illuminated field via one-button operation.



### CAMERAS

The HS Hi-R 700 accepts still as well as analog or digital video cameras (→ C.MOR HD, p. 8) via HAAG-STREIT SURGICAL adapters.



### DIPLOSCOPE

For relaxed ergonomic working of two surgeons in face-to-face position and, optionally, with integrated camera attachment or side port, if an assistant is working in lateral position.



### BEAM SPLITTER T

The space saving solution to attach digital video cameras.



### CONVENTIONAL BEAM SPLITTER

Used in combination with short, straight eyepiece head – ideal for working in 45° position – or with 160° inclinable eyepiece head for posterior fossa operations.



### MAGNIFEYE

Increases the magnification up to 24x.



### X-Y COUPLING

Horizontal movements with a range of 60 mm x 60 mm, controlled via the right hand grip.



### MOUTH SWITCH

Hands-free movement of the microscope in three axes.



### LASER ADAPTER

Connection of laser micromanipulators.



### INTEGRATED IRIS DIAPHRAGM

Individual adjustment of the depth of field.

### FOOT SWITCH

Foot switch EF 5000 / EF 5001 (14 functions) and EF 2000 (4 functions).



# Image Management

## M.DIS

The M.DIS (**M**icroscope **D**isplay) turns the operating microscope into a microsurgical image control center. The high-resolution screen, mounted close to the oculars, provides images or data for the surgeon which she/he may see by momentarily looking up from the oculars. The touch screen allows control of numerous functions.



## HS MIOS

MIOS stands for **M**icroscope **I**maging and **O**peration **S**ystem. Its prime functions are recording of operation scenes, capturing and recording of snapshots, together with proper identification of patients' 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

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 500 dB images are crisp and sharp. Different user settings allow for individual adjustments.



## C.MON HD

With its flat design and the size of 21.5" 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.







## Freedom and Stability in Perfect Balance



Floor stand FS 3-43

### THE MICROSCOPE THAT FOLLOWS PRECISELY YOUR COMMANDS

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

**FS 2-23** – spring balanced arm with maximal length 1320 mm

**FS 3-43** – spring balanced arm with maximal length 1600 mm

**FS 4-20** – counterweight balanced arm with maximal length 1700 mm and two 300 W xenon light sources

All stands are computer-controlled with a touch screen for programming the individual start settings of the surgeons and the microscope parameters. 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

Regarding the FS 2-23 and FS 3-43, the shape and the internal reinforcements make the stands extremely stable against vibrations. 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 (with transformers) for camera control units or other accessories may be attached to the column.

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

Special highlights are the extreme arm lengths of the floor stands FS 3-43 and FS 4-20.



Floor stand FS 4-20

The floor stand FS 4-20 with PermaBalance always remains balanced thanks to its patented design as accessories on the microscope, if not needed, are stored in the overhead compartment above the microscope head. Its precision parts, rounded shapes, muted colors, covered cables, and easy cleaning and disinfection are additional features. The carriage houses two independent 300 W xenon light sources.

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HAAG-STREIT SURGICAL distributes products manufactured by MÖLLER-WEDEL through dedicated representatives as well as national sister companies globally.



HAAG-STREIT-SURGICAL as well as MÖLLER-WEDEL maintain a Quality Management System for Medical Products according to ISO 13485. MÖLLER-WEDEL is not only developing innovative products but also producing them conscious to the environment. Fulfilling an Environmental Management System according to ISO 14001 is the guide line. Both, the Quality as well as the Environmental Management System, are certified by TÜV.



All products are conform to the EC guidelines and thus CE labeled.

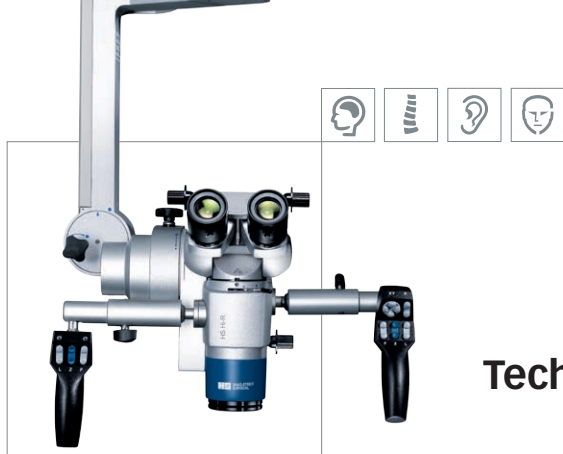


# HS Hi-R 700

Technical Data

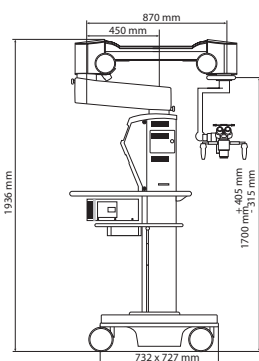




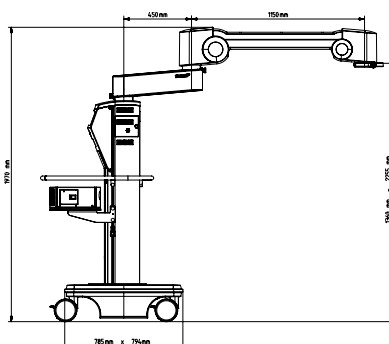


## Technical Data HS Hi-R 700

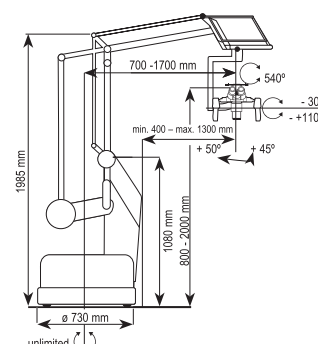
Operating microscope	HS Hi-R 700	HS Hi-R 700XY
Optics	apochromatic	
Stereo base	25 mm	
Working distance	standard: 224 mm to 510 mm (nom.), alternative: 200 mm to 450 mm (nom.), motorized	
Magnification (Mot. zoom 1:6)	1.4x to 14.3x (1.5x to 15.2x for alternative focus assembly)	
Diameter of visual field	14.7 mm to 156 mm (13.8 mm to 142.2 mm for alternative focus assembly)	
Illuminated field	13 mm to 205 mm	
Inclinable eyepiece head (10x wide angle oculars)	200°	
Diopter setting on the oculars	-8 D to +5 D	
Inclination angles	-30° to +120°	
Lateral tilt	-40° to +40°	
Rotation	540°	
X-Y coupling		60 mm x 60 mm
Brakes	electromagnetic	
Weight (without accessories)	11.5 kg	14.1 kg



FS 2-23



FS 3-43



FS 4-20

Floor stands	FS 2-23	FS 3-43	FS 4-20
Arm reach (max.)	1320 mm	1600 mm	1700 mm
Swivel area	2 x 270°		360°
Door height	1936 mm	1970 mm	1985 mm
Floor stand carriage	732 mm x 727 mm	794 mm x 785 mm	730 mm x 730 mm
Carrying capacity	5.5 kg to 17.0 kg	10.0 kg to 22.0 kg	13.7 kg to 18.7 kg
Brakes	electromagnetic		
Balancing	mechanical, sensor-aided	motorized	PermaBalance
Vertical travel at suspension	1390 mm to 2110 mm	1360 mm to 2255 mm	1080 mm to 2310 mm
Illumination	300 W xenon with backup module	2 x 300 W xenon	
Protection filter	UV/IR		
Operating voltage	100 VAC, 115 VAC, 230 VAC, 240 VAC; 50/60 Hz; selectable		
Max. power consumption	1000 VA	1200 VA	1500 VA
Weight	250 kg	345 kg	219 kg
Foot switch	4 and 14 functions		

Ceiling units on request. Subject to alterations.