Motic®

MORE THAN MICROSCOPY

IND

GM168

GEM EXAMINATION MICROSCOPE

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The GM168 is Motic's answer to the demands of jewelers and gem dealers on the stereoscopic examination of gems and precious stones.
The magnification aspect is fulfilled by the optical body of the well-established SMZ168 (in binocular or trinocular version for digital documentation). The zoom range of 1:6.7 delivers a maximum visual magnification of 50X in standard configuration.

Ease of use is guaranteed by a working distance of 113mm for perfect handling freedom. An impressive sample overview is given by a field of view of 23mm. Several specimen holders allow the flexible manipulation and positioning of any kind of gem. The standard magnification range may be increased by optional eyepieces and auxiliary objectives.

The microscope stand incorporates a 30W brightfield/darkfield illumination for transmitted light, while including a 7W fluorescent incident light source with gooseneck mount.

The tiltable microscope base (from 0° up to 45°) for individual positioning guarantees fatigue-free working for hours. The adjustable tension of the z-drive allows an individual adjustment for precise and smooth focusing especially under high magnifications.

The GM168 is a reliable instrument for basic jewelry examination and repeatable results, adaptable to a wide range of individual requirements.

Your Motic Europe team

GM168

GEM EXAMINATION MICROSCOPE

THE MECHANICS

TILTABLE STAND | ROTATABLE BASE

SMART FUNCTIONALITY WITH ERGONOMIC IMPACT

Motic's GM168 displays functionality and ergonomics in all parts of his mechanical setup. Elegant and robust, the microscope stand follows the needs of a rugged daily use.

The mounting of the GM168 eyepiece tube guarantees fatigue-free viewing in terms of viewing angle and adjustable interpupillary distance. The microscope stand is tiltable from 0° (upright) to 45° to suit individual seating positions and rotatable by 360° to share visual insights. The interpupillary distance can be set from 52-75mm, while diopter adjustment on the eyepiece tubes allow compensation of sight defects.

THE OPTICS

OBJECTIVES | EYEPIECES

RELIABLE OPTICS FOR PRECISE INFORMATION

The well-established optics of the stereo microscope SMZ168 is utilized to give precise detail information on any kind of jewel or precious stone. The basic setup works perfectly fine with 10X widefield eyepieces and a zoom body of 0.75X up to 5X magnification. Visual defects of the user may be compensated by a diopter adjustment of +/- 5 dpt on the eyepiece tubes.

Auxiliary objectives up to 2X allow duplication of the magnification with increased resolution, at the same time reducing the working distance. Additional eyepieces up to 32X may also increase the magnification, keeping the working distance of the basic setup (113mm).

THE ILLUMINATION

MULTIPLE LIGHT SOURCES | BEST ILLUMINATION

A CLEVER AND FLEXIBLE ILLUMINATION CONCEPT

Like in any other stereo microscope, the potentials of the optics can only be utilized with a clever illumination concept, adapted to the characteristics of the sample. Lucent gems certainly require more than the standard transmitted light. Besides a 30W Halogen brightfield setup, the GM168 incorporates a transmitted light dark field concept with variable iris diaphragm to visualize perfectly inclusions as well as the edges of a gem cut.

The 7W fluorescent incident illumination with 6400K (day light color temperature) is essential for a correct color grading of the gem, at the same time supplying a “soft” light to avoid spot reflexes which may disturb visual observation and digital documentation. The gooseneck mounting of the incident light suits best investigation results by varying the illumination angle.

THE ACCESSORIES

CONTRAST IMPROVEMENTS | HANDLING TOOLS

SMALL ITEMS WITH LARGE IMPACT

To achieve best possible image results, a perfect gemological microscope has to offer a series of accessories to follow the special characteristics of a gem: weak colors, +/- lucent body, strong reflections on incident light.

A variety of sample holders allows precise positioning of the gem under incident and transmitted light.

A polarization set (polarizer/analyzer) for transmitted light use enables the detection of birefringence, while an optional diffusor plate reduces reflections.

The immersion cell helps to judge the refractive index of the gem, giving some indication on the gem material.

The diamond proportion analyzer eyepiece allows the grader to determine the proportions of a given stone: table, pavilion, crown, girdle. A specialized diamond holder helps to position the gem perfectly.

DOCUMENTATION

STANDARD PHOTOMICROGRAPHY | DIGITAL DOCUMENTATION

REPRODUCIBLE DOCUMENTATION RESULTS OF HIGH RELIABILITY

Documentation is a key issue in every aspect of microscopy, with highest economic importance in quality control. The GM168 follows this requirement with different options. In any case the trinocular version of the GM168 is recommended in order to get the most convenient solution.

Traditional photomicrography by analogue or digital SLR (single lens reflex) cameras delivers high resolution images of small fields.

A more convenient approach is provided by Motic's philosophy of easy digitization. The combination of the GM168 with a member of the Moticam series of digital C-mount cameras delivers excellent live images which can easily be stored for future analysis.

Find the camera that suits you best within our wide range of Moticams, starting with a basic resolution of 1.0MP up to 10.0MP High resolution cameras for documentation, going through our new generation of Wi-Fi and HD cameras.

All Motic cameras follow the "all-in-one-box" concept, and come equipped with our well-known software, ready to transform your microscope into an analysis and documentation station.

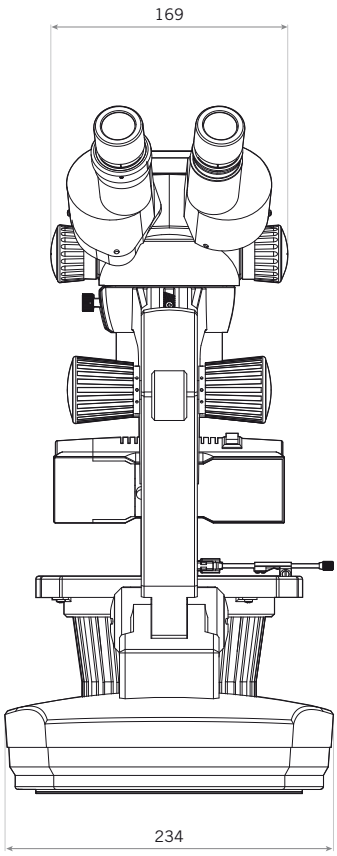
SPECIFICATIONS

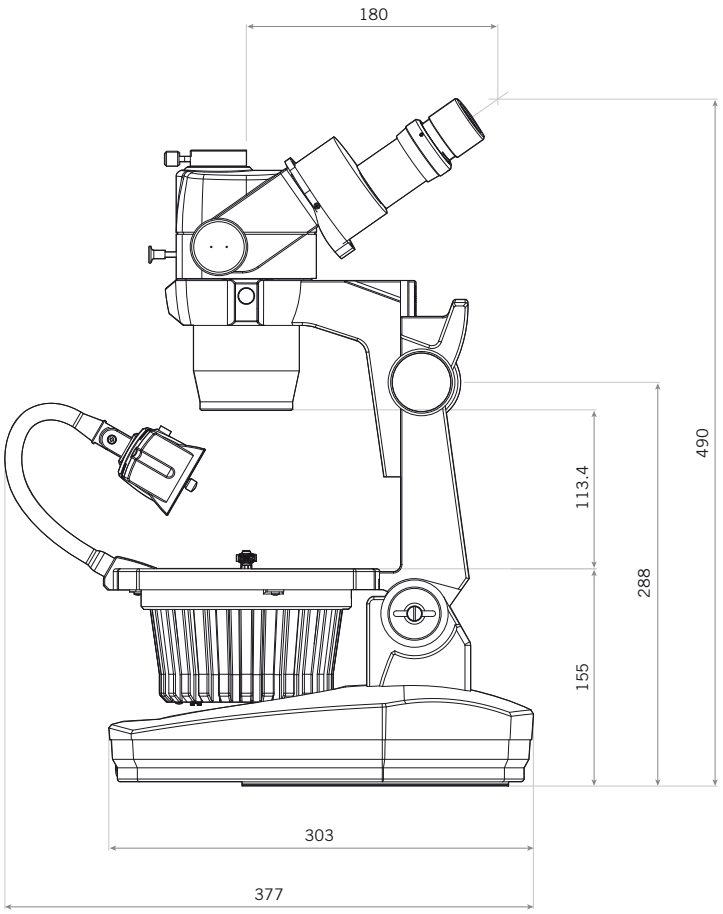
STANDARD CONFIGURATION & OPTIONAL CONFIGURATION

	General Specifications	Optional Configuration
Optical System	Greenough	
Observation tube	Binocular head 35° / Trinocular head 35°	
Interpupillary distance	52-75mm	
Eyepieces	WF10X/23mm	
Diopter adjustment	On both tubes , +/- 5 diopter	
Optional eyepieces		5X/23; 6.25X/23;15X/17; 20X/13; 30x/8; 32X/8 Micrometer eyepiece WF10X/23mm, diamond proportion analyzer
Trinocular light split	100:0 / 0:100 on right eyepiece	
Objective system	Zoom; ratio 1:6,7	
Objectives magnification	0,75X ~ 5X	
Auxiliary objectives		1.5X (WD 50mm); 2.0X (WD 34.5mm)
Working distance	113mm standard	
Stand	360º rotary base	
Base	377x239mm	
Column / Arm	45º tilting arm, 268mm height	
Head holder	for Ø76mm head	
Focus mechanism	Coarse focusing system with tension adjustment	
Focusing stroke	49mm	
Sample holders		Wire gem holder Rounded edge gem holder Diamond holder
Incident illumination	Gooseneck adjustable 7W fluorescent	MLC-150 cold light source with fiber optics
Transmitted illumination	Quartz halogen 30W with intensity control, for bright field and dark field	
Diaphragm	adjustable aperture Ø41mm - Ø2mm	
Transformer	Internal	
Power supply	100-240V (CE)	
Accessories	Stainless steel wire stone holder and aluminum carrying case	Inclusion pointer, Diffuser plate, immersion cell, Polarization kit, Rotary table for polarizer, Large gem plate
Dimensions	306x236x500mm	
Weight	9kg	

SPECIFICATIONS

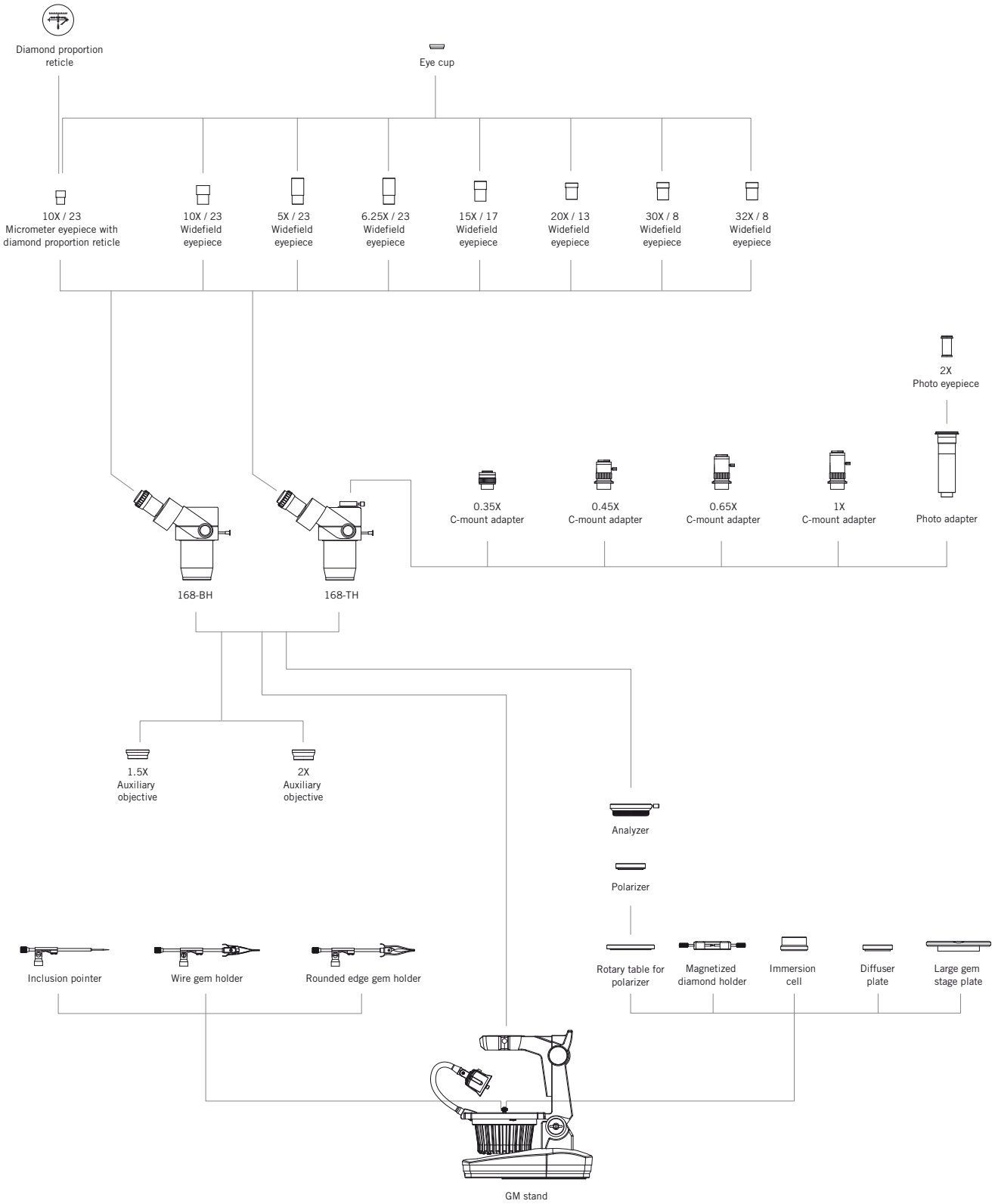
SCHEMATIC DIAGRAMS (units:mm)





SPECIFICATIONS

SYSTEM DIAGRAM



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