

HumaScope Stereo

| User Manual



Cat.-No. 14900/01

Human



REVISION LIST OF THE MANUAL

No.	Rev. / DATE	REVISION DESCRIPTION
01	01/2012-03	First edition
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1 INTRODUCTION

This manual is considered as a part of the instrument; it has to be at the operator's hand as well as at the maintenance operator's availability. For accurate installation, use and maintenance, please read the following instructions carefully. In order to avoid instrument or personal damages, carefully read the "GENERAL SAFETY WARNINGS", describing the suitable operating procedures. In case of breakdowns or any troubles with the instrument, apply to the local Technical Service.

2 USER WARRANTY

HUMAN warrants that instruments sold by one of its authorised representatives shall be free of any defect in material or workmanship, provided that this warranty shall apply only to defects which become apparent within one year from the date of delivery of the new instrument to the purchaser.

The HUMAN representative shall replace or repair any defective item at no charge, except for transportation expenses to the point of repair.

This warranty excludes the HUMAN representative from liability to replace any item considered as expendable in the course of normal usage, e.g.: lamps, valves, syringes, glassware, fuses, diskettes, tubing etc.

The HUMAN representative shall be relieved of any liability under this warranty if the product is not used in accordance with the manufacturer's instructions, altered in any way not specified by HUMAN, not regularly maintained, used with equipment not approved by HUMAN or used for purposes for which it was not designed.

HUMAN shall be relieved of any obligation under this warranty, unless a completed installation / warranty registration form is received by HUMAN within 15 days of installation of this product.

This warranty does not apply to damages incurred in shipment of goods. Any damage so incurred shall be reported to the freight carrier for settlement or claim.

3 INTENDED USE OF THE INSTRUMENT

The instrument has to be used for the expected purposes and in perfect technical conditions, by qualified personnel, in working conditions and maintenance operations as described in this manual, according to the GENERAL SAFETY WARNINGS. This manual contains instructions for professional qualified operators.

4 GENERAL SAFETY WARNINGS

Use only chemical reagents and accessories specified and supplied by HUMAN and/or mentioned in this manual.

Place the product so that it has proper ventilation.

The instrument should be installed on a stationary flat working surface, free from vibrations.

Do not operate in area with excessive dust.

Work at room temperature and humidity according to the specifications listed in this manual.

Do not operate this instrument with covers and panels removed.

Only use the power cord specified for this product, with the grounding conductor of the power cord connected to earth ground.

Use only the fuse type and rating specified by the manufacturer for this instrument, use of fuses with improper ratings may pose electrical and fire hazards.

To avoid fire or shock hazard, observe all ratings and markings on the instrument.

Do not power the instrument in potentially explosive environment or at risk of fire.

Prior to cleaning and/or maintaining the instrument, switch off the instrument and remove the power cord.

For cleaning use only materials specified in this manual, otherwise parts may become damaged.

It is recommended always to wear protective apparel and eye protection while using this instrument.

Respective warning symbols, if appearing in this manual, should be carefully considered.

5 DISPOSAL MANAGEMENT CONCEPT

The currently valid local regulations governing disposal must be observed. It is in the responsibility of the user to arrange proper disposal of the individual components.

All parts which may comprise potentially infectious materials have to be disinfected by suitable validated procedures (autoclaving, chemical treatment) prior to disposal. Applicable local regulations for disposal have to be carefully observed.

The instruments and electronic accessories (without batteries, power packs etc.) must be disposed off according to the regulations for the disposal of electronic components.

Batteries, power packs and similar power source have to be dismantled from electric/electronic parts and disposed off in accordance with applicable local regulations.

6 INSTRUMENT DISINFECTION

Instruments or parts which may come in contact with biological samples (patient specimens, controls etc.) should be considered at least potentially infectious.

Before doing any servicing on the instrument it is very important to thoroughly disinfect all possibly contaminated parts. Before the instrument is removed from the laboratory for disposal or servicing, it must be decontaminated/disinfected. Decontamination/disinfection should be performed by authorised welltrained personnel, observing all necessary safety precautions. Instruments to be returned have to be accompanied by a disinfection certificate completed by the responsible laboratory manager. If a disinfection certificate is not supplied, the returning laboratory will be responsible for charges resulting from non-acceptance of the instrument by the servicing centre, or from authority's interventions.

7 NOTICE

Every effort has been made to avoid errors in text and diagrams, however, HUMAN GmbH assumes no responsibility for any errors which may appear in this publication. It is the policy of HUMAN GmbH to improve products as new techniques and components become available. HUMAN GmbH therefore has to reserve the right to change specifications if necessary in the course of such improvements.

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2 APPLICATIONS

The HumaScope Stereo is a binocular stereo microscope which can magnify micro objects continually and show stereo up-right images. It provides clear high-contrast images, in wide field and long working distance. HumaScope Stereo has been designed to be used to observe magnified images of specimen in routine and research applications.

Do not use this instrument for any purpose other than its intended use.

3 SPECIFICATIONS

3.1 Main Specifications

Cat.no. 14900	Binocular stereo microscope	
Cat.no. 14901	Trinocular stereo microscope	
Observation Tube	Binocular head 45° inclined with diopter adjustment on both oculars	
Eyepiece	WF10X (view field 20mm)	
	Diopter adjustment +/- 5 diopter	
	Rubber eyeguard	
	Inclination 45°	
	Interpupillary distance 55 – 75 mm	
Objective	Objectives range of zoom magnification	
	Zoom magnification	0.7 - 4.5
	Total magnification	7 - 45 X
	Visual field	28.5~4.5 mm
	Working distance	88mm
Illumination transmitted light	LED 7V, 5 W adjustable	
Illumination reflected light	Annular LED illumination 3.5V, 3W adjustable	
Vertical movement	55mm ≤ h < 140mm	
Base size	215 X 160 X 60mm	
Power Supply	85-240V 50-60Hz	

3.2 Optical Specifications

Eyepiece	REF	WF10X		WF15X		Working distance (mm)
Main frame		Total magnification	Range of field	Total magnification	Range of field	90
Standard		7x - 45x	Ø28.6 – Ø 4.4		Ø21.4 – Ø 3.3	90
Additional objectives						
0.5x	14900/6	3.5x – 22.5x	Ø57.2 – 8.9	5.3x – 33.75x	Ø42.9 – 6.7	137
0.75x	14900/7	5.3x – 33.8x	Ø38.1 – 5.9	7.9x – 50.6x	Ø28.6 – 4.4	103
1.5x	14900/9	10.5x – 67.5x	Ø19.0 – 2.96	15.8 – 101.3x	Ø14.3 – 2.2	48
2.0x	14900/10	14x – 90x	Ø14.3 – 2.2	21x – 135x	Ø10.7 – 1.7	29

3.3 Content

Component	Number	Component	Number
Stereo microscope	1	Dust cover	1
Eyepieces WF10x	2	Manual	1
Power cord	1	Hexagon tool	1
Compress reed	2	Replacement fuse	1
Grit plastic glass board	1	Eyecup	2
Organic glass board	1		

4 COMPONENTS

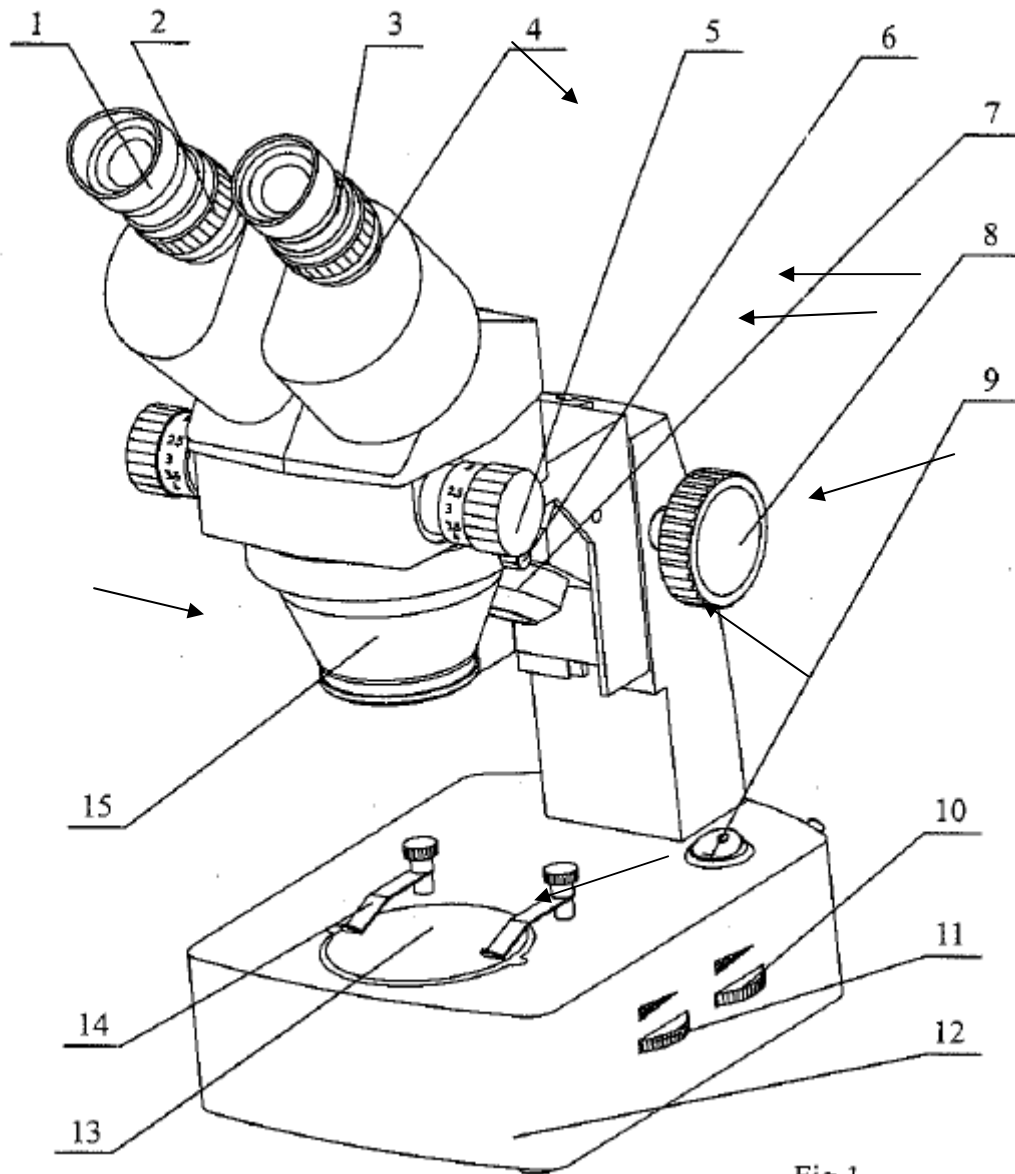


Figure 1

Fig.1

1 = Eyepiece shade	6 = Head fixing screw	11 = Adjustment transmitted light
2 = Diopter ring	7 = LED illumination, reflected light	12 = Base
3 = Ocular (Eyepiece)	8 = Focusing knob	13 = Organic glass board or grid plastic board
4 = Eyepiece sleeve	9 = Power switch	14 = Compress reed
5 = Zoom Knob	10 = Adjustment reflected light	15 = Objective tube

5 STRUCTURE

5.1 Head

The binocular head (figure 3) can be inclined at angles from 10° to 45° and the eyepieces can be extended up to 40 mm. The Siedentopf head does not require compensating adjustment for different interpupillary distances. This ensures an optimum eye level and comfortable viewing position, regardless of the operator's physique. A digital camera can be attached to a connector.

5.2 Microscope Body

The microscope body contains the objectives and the zoom system. The special optic provides 3 D images.

5.3 Illumination System

HumaScope Stereo is equipped with a LED lamp for reflected illumination (figure 2) and with a LED for transmitted illumination (figure 3). The intensity of both lamps is adjustable by a wheel in the base. Furthermore for more convenient illumination, the lamp of the reflected light can be tilt up and down.

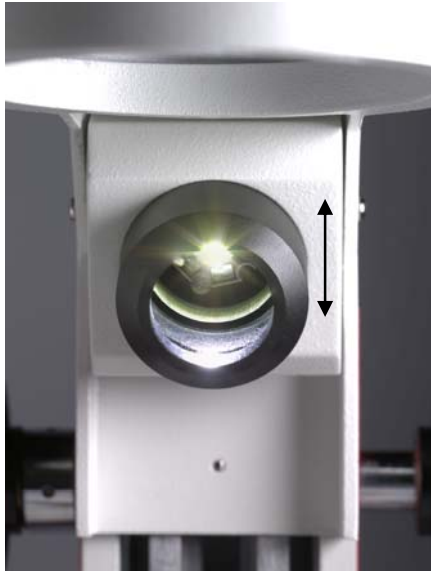


Figure 2



Figure 3

5.4 Base

The base (figure 2) supports the entire weight of the microscope. It has four rubber feet to stabilise the instrument. The base contains the complete electronic circuit . the lamp source of the transmitted illumination, the power switch (1)and the adjustment wheels for the reflected illumination (2) and transmitted illumination (3).

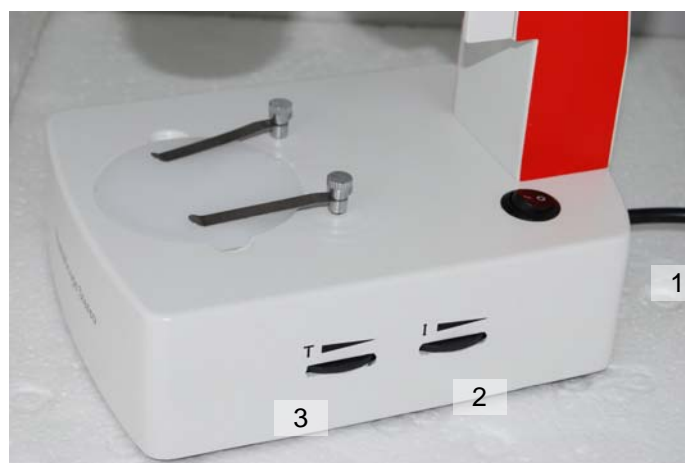


Figure 4

6 ASSEMBLY & OPERATION

6.1 Assembly

1. The HumaScope Stereo is shipped in a styrofoam box. Open the styrofoam box carefully. Wrap the foil and place the microscope onto a plan table.
2. Loosen the fixation screw (6) and turn the eyepiece tubes into forward position.
3. Fix the head with the screw.
4. Remove the caps covering the eyepiece tubes and insert the eyepieces.
5. Place the compress reeds into the mount holes in the base.
6. Plug in the power.
7. Turn on the power switch (9) and turn on the transmitted light with the adjustment wheel (12). Check if the lamp is burning. Then put the grit plastic board (13) on the base and take down the organic glass board (13).
8. Switch on the reflected light by turning the reflected light adjustment wheel T (10) frontwards.
9. Adjust the interpupillary distance. If necessary perform diopter adjustment as explained in section 6.2.

6.2 Operation

6.2.1 Adjustment of interpupillary distance

Observe a specimen with both eyes. While holding the left and right eyepiece sleeves (4) with both hands, adjust for binocular vision until the left and right fields of view coincide completely.

6.2.2 Adjustment of diopter

1. Turn left and right diopter adjustment rings (2) to position "0"
2. Place an easy to observe specimen on the stage plate.
3. Set zoom adjustment knob (5) to 4.5x. Observe with your right eye and rotate the focus adjustment knob (8) to bring the specimen into focus. Then observe with your left eye and turn the left diopter ring (2) until the image gets sharp.
4. Turn the zoom knob (5) to 0.7x.
5. Observe with your right eye and turn the diopter adjustment ring (2) until the image is in focus.
6. Then check for you left eye and adjust diopter if necessary.
7. Turn zoom knob (5) to 4.5x and turn focusing knob (8) to get a clear image. After the adjustment the image should be clear from 0.7x to 4.5x

6.2.3 Connection of a camera

If a trinocular head is used, the camera can be joined with the 1x CCD camera adapter REF 149000/10 and mounted onto the trinocular. Please refer to figure 5 below. Fix the adapter with the screw (1). Observe an image with both eyes and bring into focus. Then adjust the image of the camera using the adjustment ring (2) of the 1x CCD adapter until the image is clear..

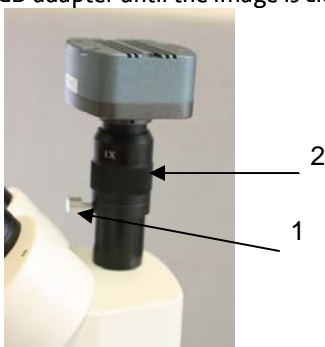


Figure 5

7 ILLUMINATION

Latest LED technology is used for reflected and transmitted illumination. The lifetime of a LED lamp is between 30.000 and 50.000 hours. Considering the lamp is switched on 6 hours per day, 365 days per year, we expect an average lifetime of 20 years for the LED lamps. For that reason no replacement is foreseen for the LED lamps.

8 CARE

- As with any other optical instrument, the microscope should be kept in a cool, dry, dust- and acid-free location. The instrument should be covered with a dust cover after use.
- Never disassemble the lenses; these are precisely adjusted and glued in place at the factory. Stains can be removed from the lens by wiping it carefully with a soft, clean cloth moistened with alcohol. Take care, however, that alcohol does not seep it into the objectives to avoid dissolving the glue. Dust on the lens can be removed using a clean lens brush.
- The focussing assembly is precisely adjusted at the factory and should not be dismantled.
- When not in use, cover the microscope with the dust cover and store in a dry place at ambient temperature. We recommend to store microscopes in a closed container with drying agent.

9 MAINTENANCE

9.1 Cleaning Frame and Stage

Disconnect the plug from main socket before cleaning. Clean the painted parts with a soft cloth. To remove spots of grease aviation gasoline is recommended. Do not use organic solvents such as alcohol, ether or thinner etc. for cleaning the painted parts or plastic components.

9.2 Clean Optical Parts

Microscope eyepieces and objectives are coated. They should not be wiped while dry as dirt or dust may scratch the coating. It is best to remove parts from the frame prior to cleaning. Always loose dust away first. Use cotton swabs or lens tissue moistened with a lens cleaner or a small amount of a alcohol/ether mixture or diethyl benzene.

Since alcohol and ether are highly flammable, the mixture must be handled carefully.

Then wipe the surface clean with a good quality lens tissue..

10 DISPOSAL MANAGEMENT CONCEPT

The currently valid local regulations governing disposal must be observed. It is in the responsibility of the user to arrange for proper disposal of the individual components.

All parts which have come into contact with potentially infectious materials must be disinfected using a valid procedure (autoclaving, chemical treatment) prior to disposal. The instrument and electronic accessories (without batteries, power packs etc.) must be disposed of in accordance with regulations for the disposal of electronic components.

Batteries, power packs etc. must be separated from electric/electronic parts and disposed of in accordance with applicable local regulations.

11 OPTIONAL ACCESSORIES

REF - Human	Accessory
14900/1	Wide field eyepiece WF10X(20mm)
14900/2	Wide field eyepiece WF15X(15mm)
14900/3	Wide field eyepiece WF20X(12mm)
14900/4	Wide field eyepiece WF25X(9mm)
14900/5	Divisional wide field eyepiece 10X(20mm) 0.1mm/Div
14900/6	Objective 0.5X W.D.137mm
14900/7	Objective 0.75X W.D.103mm
14900/9	Objective 1.5X W.D.48mm
14900/10	Objective 2X W.D.29mm
14900/11	1X ccd adapter
14900/12	0.5X ccd adapter

HUMAN

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The logo graphic consists of a thick red horizontal bar that is broken in the middle by a white, 3D-style chevron shape pointing to the right.

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