Animal Reproduction Technology Equine





We need detailed knowledge of reproductive physiology in order to ensure that you are successful in the use of artificial insemination. Veterinarians and agro-scientists specialized in this field therefore, are responsible at Minitube for product development and for consulting with our clients. The technical demands of semen processing and preservation also require knowledge and expertise in other fields, such as electronics, sensorics, mechanics, chemistry, cryobiology and many others. At Minitube, these demands are met by specially trained engineers and scientists.

For product development, our teams of veterinarians and engineers cooperate closely. Together, they offer all the knowledge and experience necessary to guarantee the best possible results.

Minitube offers you specialized training programs, courses and technology transfer. In close cooperation with renowned research institutions we conduct fundamental research concerning assisted reproduction technologies as well as applied research that leads to improved techniques in production, evaluation and conservation of semen and embryos.

Originating in Tiefenbach, Bavaria, Minitube has established its competence over many years in more than 100 different countries all over the world. With several companies, highly-trained local representatives, and multilingual professionals, we keep in contact with the international Al industry. Innovative ideas, modern production techniques and a keen appreciation of product quality are the basic ingredients of our knowledge and your success.

We thank you for your interest and your confidence placed in us.

Dr. Christian Simmet

We look forward to your orders and inquiries:

Minitube International AG, Germany Phone: +49 8709 9229 0 E-mail: minitube@minitube.de

Minitube USA Phone: 800.646.4882

E-mail: info@minitube.com

Minitub do Brasil Phone: +55 51 3222 7876 E-mail: minitub@minitube.com.br Minitub Ibérica

Phone: +34 977 845 397 E-mail: info@minitub-iberica.com

Minitube Australia Phone: +61 3 5342 8688 E-mail: info@minitube.com.au **Minitub Chile**

Phone: +56 (9)97452036 E-mail: minitub@minitubchile.cl

Mexitube Alemania

Phone: +52 442 246 73 46/47 E-mail: info@mexitube.mx



CONTENTS



Contents	Page
Semen collection	02
Semen evaluation	06
Semen extenders	10
Lab equipment and supplies	13
Straw processing and freezing	16
Semen storage and transport	21
Insemination and diagnostics	23
Embryo transfer and OPU	27
Training and service	33

Minitube India

Phone: +91 11 4309 0668 E-mail: info@minitube-india.com

Minitube China

Phone: +86 185 1545 5770 E-mail: info@minitube.cn Minitube Central EuropePhone:+421 377 877 915

E-mail: mtce@minitube.sk

Minitube Canada

Phone: 800.500.7978 E-mail: info.canada@minitube.com

Minitube Middle EastPhone:+971 426 68871

E-mail: info.middle.east@minitube.com

Minitube Indonesia

Phone: +62 21 7591 75-96/94 E-mail: info@minitube.co.id

www.minitube.com



Semen collection

Hannover artificial vagina

(1) Equine artificial vagina Hannover with valve, inner liner (100 cm), 3 rubber rings, leather handle

REF. : 11220/0145

Accessories

(2) Inner liner for Hannover AV, rubber, with roll-up e	ends, sterilizable
long version, 100 cm	REF. : 11222/0002
short version, 70 cm	REF. : 11222/0003
(3) Disposable inner liner, width approx. 21 cm, rol "sensitive": smooth and resistant material	ll with approx. 200 m; REF. : 11222/0120
(4) Warming bag for collection glass, protects the se from low temperature and UV radiation	men REF. : 11225/0026
(5) Rubber band for Hannover AV	REF. : 11222/0001
Semen collection bottle	
250 ml, glass	REF. : 11245/0006
(6) Leather handle for Hannover AV	REF.: 5011222/0008





Missouri artificial vagina

Equine artificial vagina Missouri, double latex liner with valve and leather casing, adapter and collection bottle, length: approx. 50 cm **REF. : 11245/0000**

Disposable inner liner "AV-Liner", for Missouri and Hannover AV, 25/package **REF. : 11245/0450**



Colorado artificial vagina

(1) Equine artificial vagina Colorado, complete with 3 inner rubber liners (tubular, conical, straight), 10 rubber bands, 2 clamps, 25 disposable inner liners, 25 semen bottles, 25 coupling nuts, 25 nylon filters and warming bag

REF. : 11230/0000





Accessories

(2) Disposable inner liner, plastic, width 31 cm,	roll with approx. 200 m;
"sensitive": smooth and resistant material	REF. : 11232/0030
Disposable inner liner Colorado,	
(3) 25/package	REF. : 11232/0110
(4) AV shaped, 25/package	REF. : 11232/0102
(5) Semen collection bottle Colorado,	
200 ml, disposable, 100/package	REF. : 11231/0200
Coupling nut for 200 ml semen bottle,	
100/package	REF. : 11231/0301
(6) Semen filter Colorado, nylon,	
fits Colorado collection bottle, 25/package	REF. : 11231/0400

(7) small, for 200 ml collection bottle	REF. : 11225/0026
(8) large, blue	REF. : 11231/0185
Rubber inner liner for Colorado AV,	
tapered end for connection to the bottle	
flared front end	REF. : 11231/0102
(9) straight form	REF. : 11231/0101
round form	REF. : 11231/0201
tubular, flared ends	REF. : 11231/0103

Accessories for semen collection

Vaseline , 1000 g	REF. : 11905/0100
Lubricating jelly Bengen,	
1 l, water soluble	REF. : 11906/1000
(1) Semen filter, nonwoven, 150 x 60 mm,	
100/package	REF. : 11245/3100
Semen filter pouch,	
nonwoven, 10/package	REF. : 11260/1000

(2) Thermometer for artificial vagina,

Bimetal, non-breakable, up to +100°C	REF. : 11027/0000
up to +100°C, graduation 0.1°C, red filling	REF. : 11027/0100

(3) Semen collection glove, extra sensitive, sperm safe, 100/box

Size M	REF. : 11128/0055
Size L	REF. : 11128/0060
Size XL	REF. : 11128/0065
Size XXL	REF. : 11128/0070



Sterivar

Low pressure sterilizer, specially designed for artificial vaginas and accessories. Made of stainless steel, double wall with insulation. With pressure safety valve, timer, water drain and protection against overheating.

- Temperature range: up to +100°C
- Pressure: max. 0.02 bar
- Inside dimensions: 750 x 400 mm
- Power supply: 115 V/60 Hz or 230 V/50 Hz
- Power consumption: 3500 W

Sterivar 230 V	REF. : 11050/0015
Sterivar 115 V	REF. : 11050/0014
Roller base for Sterivar	REF. : 11051/0000



Hannover phantom for stallions

Hannover phantom, adjustable in height and inclination, covered with reinforced synthetic material coating, well padded, contoured body style, includes bite belt. Size of the phantom fits for all breeds: Body: 200 x 60 x 55 cm (W x H x D) Height of the dummy: 1.30 m to approx. 1.70 m

REF. : 11200/0000

Hannover phantom with hydraulic height adjustment of both legs. Hydraulic height adjustment ensures low fatigue operation. Both feet can be lifted or lowered about 40 cm either individually or together by means of a hand pump.

REF. : 11200/1000

Accessories

Cover for phantom, synthetic material, collection side closed, with belts for attachment

REF. : 11200/2601

Leather blanket for phantom for stallions, collection side closed, with belts for attachment

	REF. : 11200/2501
Bite belt	REF. : 11200/2100
Stretch foil for protection of phantom, 300 m	REF. : 32000/0010



Lubricant ReproJelly

- Non-spermicidal lubricant, water soluble
- Iso-osmotic and sperm friendly, supports the sperm cell viability
- Batches are tested for sperm compatibility
- Ideal viscosity to better coat gloves, AI equipment and instruments

Tube with 100 ml, resealable	REF. : 11907/0100
3 I canister, without dispenser	REF. : 11907/3000
Dispenser for canister	REF. : 11907/3100







Semen evaluation

AndroVision®

This highly precise automated system for computerized semen analysis stands out for the integration of the classic CASA analysis with more **advanced assays for sperm functionality**.

Concentration and motility, acrosome integrity, viability, mitochondrial activity and DNA integrity can be assessed fast and accurately with up to 1000 cells per field, making AndroVision[®] the perfect tool for the **objective and complete semen evaluation**.

Its features make AndroVision[®] the ideal choice for semen assessment in a research and production lab. AndroVision[®] is intuitive and easy to use: **only 3 clicks from start to result.**

AndroVision [®] software, with PC and accessories	REF. : 12500/0000
AndroVision® high speed color camera	REF. : 12500/4400
Optional hardware configurations	

(1) AndroVision [®] CASA system	
portable, with laptop and accessories	REF. : 12500/0010
(2) AndroVision [®] CASA system	
with touchscreen and barcode scanner	REF. : 12500/0001





AndroVision[®] software modules

Morphology and Morphometry

Interactive system for analysis of sperm morphology and morphometry. Identifies sperm in stained as well as unstained samples and measures length and width of the sperm head, head shape and midpiece asymmetry of each single sperm cell (acc. to Kruger). Results can be classified into a large range of morphologic abnormalities.

Module Morphology and Morphometry REF. : 12500/1300

Viability

Automated count of the percentage of membrane intact sperm, based on a double stain fluorescence assay.

Module Viability*

REF. : 12500/1400

Acrosome Integrity

Automated count of percentage of sperm with damaged acrosome, based on a double stain fluorescence assay.

Module Acrosome Integrity* REF. : 12500/1600

Mitochondrial Activity

Automated count of percentage of sperm with active mitochondria, based on a double stain fluorescence assay.

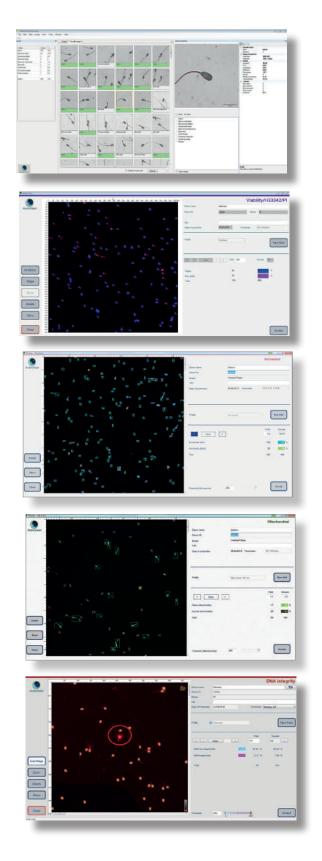
Module Mitochondrial Activity* REF. : 12500/1700

DNA Integrity

Automated reporting of the percentage of sperm with defective DNA based on the halo-technique combined with fluorescent staining.

Module DNA Integrity*	REF.	: 12500/1800
-----------------------	------	--------------

* requires fluorescence microscope



Phase contrast microscope CX 43

- Phase achromat optics with universal condenser
- Heated microscope stage with temperature control unit HT 200 with additional warming plate and two digital temperature displays (temperature adjustable)
- Ergonomic design
- 6 V/30 W halogen light

Phase contrast microscope CX 43

with phototube (trinocul	r), objectives 20x, 40x	REF. : 12005/0041
--------------------------	-------------------------	-------------------

Phase contrast microscope MBL

Functional microscope for semen analysis with heating system and temperature control unit for individual temperature adjustment.

Binocular, objectives 10x, 40x, 100x, temperature control unit HT 50

	REF. : 12010/2000
with ocular color camera (1) and 11.6" monitor (2)	REF. : 12010/2100
Trinocular, objective 20x	
with temperature control unit HT 50	REF. : 12010/2103
with temperature control unit HT 200, additional wa	rming plate,
ocular color camera and 24" monitor	REF. : 12010/2101
(1) Digital color camera for microscopes	REF. : 12110/1600
(2) Monitor 11.6" with HDMI input	REF. : 12110/1610

Semen dyes

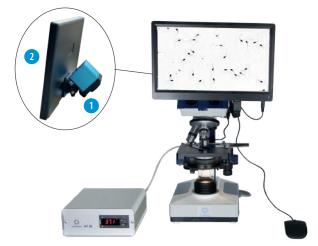
Spermac semen dye for morphological evaluation, 4 x 50 ml	REF. : 15405/0000
Farelly stain for morphological evaluation, 3 x 250 ml	REF. : 15405/0026
Eosin G , 2% solution for supravital staining, 50 ml	REF. : 15405/0025
Nigrosin , 4% solution for supravital staining, 50 ml	REF. : 15405/0029

Laboratory scale

Precision scale for the determination of the ejaculate volume, weighing range max. 2000 g, resolution 0.1 g, weighing pan 130 x 130 mm

REF. : 14295/0444







Etsan G, 2 % LID Loberto Tol Farm





MICROSCOPY, VOLUME MEASUREMENT AND PHOTOMETRY

Microscopy supplies

Microscope slide, 76 x 26 mm, 50/box	REF. : 15400/2400
Cover glass, 18 x 18 mm, 100/box	REF. : 15401/0990
Immersion oil, 8 ml	REF. : 12000/0101

Counting chambers (hemocytometers)

Thoma new	REF. : 15150/4771
Neubauer improved	REF. : 15152/4421
Bürker	REF. : 15153/0000

Pipettor

Adjustable single channel pipette,	
yellow, autoclavable, 10 – 100 μl	REF. : 12425/4810
Pipette tip , 10 – 100 μl, yellow, 1000/bag	REF. : 12425/9409



Photometer SDM 1

The SDM 1 is a **compact, highly accurate photometer** developed for measuring sperm cell concentrations. It can be calibrated for equine, bovine, canine, porcine and small ruminants. Cleaning is simple, maintenance is minimal.

- Raw semen samples can be used without dilution
- LED light source provides stable output
- Cuvette is securely fixed in the correct measuring position
- Calibration is performed automatically with each sample measurement
- The semen concentration is displayed in million sperm/ml
- Power supply: with included mains adapter 100 240 V or batteries

Photometer SDM 1, calibrated for equine semen REF. : 12300/0101

Accessories

Microcuvette for SDM 1, 100/box	REF. : 12300/1111
Multispecies software	
for reprogramming to other species	REF. : 12300/0130







Semen extenders

EquiPlus

Balanced medium with dry milk for preservation of sperm activity up to 72 hours. Designed for 5°C storage and transport.

With antibiotics:

Powder

3570/0202
3570/0210
8570/0250
3570/0260
<u>3570/0261</u>
8570/0301

Without antibiotics:

Powder, for 1 l, without antibiotics	REF. : 13570/0201
Powder, for 100 ml, without antibiotics	REF. : 13570/0240





Gent

For fresh semen, with egg yolk and antibiotic, ready to use.

45 ml	REF. : 13571/0045
100 ml	REF. : 13571/0100

EquiPlus Reinforcer

Designed to improve sperm transport in the uterus and to optimize survival of viable spermatozoa in the mare's reproductive tract. Semen is recovered post-breeding, then evaluated and extended before it is placed back into the mare during reinforcement breeding. Ready-to-use, requires no dose calculations.

15 ml

REF. : 13570/0600

CushionFluid

For gentle centrifugation of stallion spermatozoa. Assures a higher yield of sperm cells as compared to standard centrifugation.

REF. : 13580/0001

Centrifugation medium

Powder for 1 l transparent EDTA – Glucose solution **REF. : 13565/0001**

Water for semen extenders

Bidistilled, sterilized, pyrogen-free	
11	REF. : 13570/1000
100 ml	REF. : 13570/1100



CushionFluid



Reinforcer





Minitube extenders are produced according to highest GMP-certified quality standards.

All components are from constantly excellent, controlled sources. Each extender batch is tested for its chemical, microbiological, physical and biological properties.

Certificates are available upon request.



Spectrum - The SBS CryoSystem

The SBS CryoSystem consists of a range of Spectrum freezing extenders, which feature different cryoprotectants and specific different egg yolk or milk content. **The Spectrum concept allows to identify the best freezing extender for each individual stallion.**

All Spectrum extenders are presented as ready to use solutions. There is no need to source individual components or to add antibiotics.

Spectrum Red

- High egg yolk content
- No milk
- Best combined with rapid cooling and freezing

30 ml

REF. : 13572/0030

Spectrum Blue

- Complex formula
- Low in milk and egg yolk
- Best combined with slow cooling and freezing
- The cryoprotectant is highly membrane permeable

30 ml

<u>Semen extenders</u>

REF. : 13572/0050

Spectrum Green

- Milk-based
- Low in egg yolk
- Best combined with rapid cooling and freezing
- Beneficial for certain stallions only

30 ml

REF. : 13572/0040

Test Freeze Kit

Minitube offers a Test Freeze Kit, containing the main Spectrum extenders in smaller quantities, plus centrifugation medium and CushionFluid for centrifugation. With the help of this Test Kit, it is possible to find the best Spectrum extender for each stallion.

- 2 x Spectrum Orange (15 ml), 2 x Spectrum Red (15 ml)
- 1 x Spectrum Blue (15 ml), 1 x Spectrum Violet (15 ml), 1 x Spectrum Green (15 ml)
- 2 x CushionFluid, 30 ml
- 2 x SBS Centrifugation Medium, 120 ml

Test Freeze Kit

REF. : 13572/0000

With Spectrum extenders and the SBS CryoSystem it is possible to achieve pregnancy rates with frozen-thawed semen which are comparable to cooled semen.

Spectrum extenders are presented in convenient package sizes. Transport and storage at -20°C.

Spectrum Orange

- Complex formula
- Low in milk and egg yolk
- Best combined with slow cooling and freezing

30 ml

REF. : 13572/0020

Spectrum Violet

- Complex formula
- Low in milk, contains egg yolk
- Best combined with slow cooling and freezing
- Contains a balanced combination of cryoprotectants

30 ml

REF. : 13572/0060

Spectrum extenders are not available in Australia.







Lab equipment and supplies

Universal cabinet

For warming and sterilization. Temperature range: +30°C to +220°C.

Various sizes available (dimensions inside, W x H x D)

32 l , 400 x 320 x 250 mm, 44 kg, 230 V	REF. : 14127/0032
32 l , 400 x 320 x 250 mm, 44 kg, 115 V	REF. : 14127/0033
53 l , 400 x 400 x 330 mm, 55 kg, 230 V	REF. : 14127/0053
53 l , 400 x 400 x 330 mm, 55 kg, 115 V	REF. : 14127/0054
108 l , 560 x 480 x 250 mm, 72 kg, 230 V	REF. : 14127/0108
108 l , 560 x 480 x 250 mm, 72 kg, 115 V	REF. : 14127/0109
256 l , 640 x 800 x 500 mm, 96 kg, 230 V	REF. : 14127/0256
256 I , 640 x 800 x 500 mm, 96 kg, 115 V	REF. : 14127/0257

Water bath

Electronic temperature control, stainless steel, with grid and lid.

 $\boldsymbol{7}\,\boldsymbol{I}$, inner dimensions: 240 x 210 x 140 mm (W x H x D)

230 V	REF. : 14078/0001
115 V	REF. : 14078/0002

10 I, inner dimensions: $350 \times 210 \times 140 \text{ mm}$ (W x H x D)

230 V	ref. : 14079/0001
115 V	REF. : 14079/0002





Centrifuge Minitube

- With swing out rotor
- Complete with buckets for vials: 4 x 100 ml/4 x 50 ml/8 x 15 ml
- Speed in g (RCF) and rpm: max. speed 4000 rpm/2200 x g
- Memory: 99 programs

230 V	REF. : 14601/0000
110 V	REF. : 14601/0001

Laboratory centrifuge

- With quadruple swing out rotor
- Beaker for 100 ml vials
- Max. RCF: 2540 xg (stepwise adjustment of 10 xg)
- Last run memory

100 - 240V / 50-60Hz

REF. : 14602/0580

Rolling mixer RM5

For gentle, constant homogenization of semen doses in tubes. Appropriate for use inside the refrigerator. Dimensions: $430 \times 180 \text{ mm}$ (W x H)

230 V	REF. : 14340/0348
115 V	REF. : 14340/0349

Shaker

Platform with two fixation devices and non-slip rubber pad, includes timer. Shaking frequency: 150-1350 cycles/min Area of platform: 220 x 220 mm

230 V	REF. : 14703/0304
115 V	REF. : 14703/0305

Laboratory heating plate

For keeping raw ejaculates warm until analysis is completed. Preset temperature: 37°C. Integrated control unit, external power supply. Heated area: 470 x 260 mm. Suitable for 115 V und 230 V.

Laboratory heating plate

REF. : 12055/0010

REF. : 15120/7000

Infrared thermometer

For temperature measurement without contact. With laser for marking the measuring point. Measurement range: -50 to +200°C /+200 to +800°C. Display in °C or °F selectable. With case and battery.

Infrared thermometer











Glass ware

We offer a variety of measuring pipettes, graduated cylinders, beakers, dispensers, test tubes, Erlenmeyer flasks etc.

Please contact us for further information.

Plastic vials

Plastic vial with graduation

30 ml , with screw cap, 50/package	REF. : 17231/0030
50 ml , with screw cap, 25/package	REF. : 17220/0017
13 ml, sterile, with cap, 100/package	REF. : 17230/6001
13 ml , round bottom, without cap, 100/package	REF. : 17230/6000

Screw cap for 13 ml plastic vial, 1000/package

red	REF. : 17230/6055
blue	REF. : 17230/6056
green	REF. : 17230/6058
white	REF. : 17230/6054
violet	REF. : 17230/6057
yellow	REF. : 17230/6059

Rack

for 20 plastic vials 12/13 ml, acrylic glass	REF. : 17230/9384
for 20 plastic vials 30 ml, acrylic glass	REF. : 17231/9384
for 24 test vials of 18 mm, stainless steel,	
with numbers	REF. : 14076/0005

Sterile bags

With incorporated wire and write-on tag, 100/package

Volume 60 ml	REF. : 17224/0250
Volume 120 ml	REF. : 17224/0500
Volume 350 ml	REF. : 17224/1000

Disposable syringes

All plastic, sterilized, in sizes from 1 ml to 50 ml

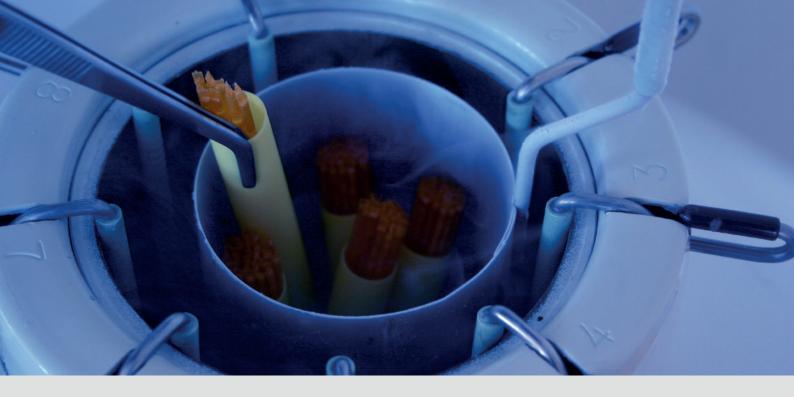
1 ml , 100/package	REF. : 19801/0001
2 ml , 100/package	REF. : 19801/0002
5 ml , 100/package	REF. : 19801/0005
10 ml , 100/package	REF. : 19801/0010
20 ml , 100/package	REF. : 19801/0020
30 ml , 500/package	REF. : 19801/0063
50 ml , 300/package	REF. : 19801/0060











Straw processing and freezing

Semen straws

MediumStraw, 0.5 ml, clear, 2500/bag	REF. : 13408/0010
EcoStraw, 0.5 ml, clear, 2500/bag	REF. : 13408/3010

EcoStraws feature a plug with a shorter inner wick section that absorbs 3-4% fewer sperm cells than the corresponding symmetrical plugs of standard semen straws. They are ideal for overnight equilibration of semen at refrigerated temperatures. EcoStraws are used in exactly the same way as standard semen straws.

Semen straws made by Minitube are available in many different colors, and pre-printed upon request.

Macrotubes

2.5 ml , length: 140 mm	REF. : 13441/0133
4 ml , length: 240 mm	REF. : 13441/0240
5 ml , length: 280 mm	REF. : 13441/0280

Sealing balls for macrotubes: Metal or glass, available in many different colors.





EasyCoder

Clean and odorless printing of straws without ink and solvents.

- Thermal transfer printer with automatic straw supply (output: 3600 straws per hour) for immediately non-abrasive print
- Unparalleled neat and clear printing on 0.5 and 0.25 ml straws; easy and quick conversion between different straw sizes
- Prints up to 3 lines per straw, including barcodes, logos and specific characters
- Control via PC by a clear and user-friendly Minitube software
- Easy handling, little maintenance required
- Dimensions (L x W x H): 660 x 370 x 310 mm (PC not included)
- Power supply: 110 V/50-60 Hz or 230 V/50-60 Hz

EasyCoder printer	REF. : 13038/0000
Thermal transfer ribbon, black	REF. : 13038/0010



MultiCoder

Professionalize your lab process with quick and easy machine readable labeling of samples.

Your benefits

- Very versatile: print system can label most kinds of materials such as plastics, glass or aluminum
- Manually moveable slide and a unique, easy-to-use carrier system allow for a speedy work process
- Easily writeable information on the smallest amount of space, including text, barcode, QR-Code and logo

Product features

- High resolution inkjet printing
- Print head protection system (avoids drying-out of ink)
- Sensor based technique for print activation allows perfect manual workflow
- LED signalling of printer status
- No tools needed for change of product carriers
- Pre-designed print layouts
- Upload of MS Excel based data formats possible
- Automatic creation of content for ready-to-print designs via database

MultiCoder printer

REF. : 13145/0000

More information needed? Please ask for the MultiCoder leaflet!



UNIQUE, FLEXIBLE & VERSATILE

Quick and easy print on a whole range of items: semen straws, goblets, cassettes, culture dishes, macrotubes, syringes, cryovials and many more

MPP Uno

Automatic filling and sealing machine for 0.25 and 0.5 ml straws.

Product features

- Seals and fills 1 straw per cycle (ideal for handling small volumes)
- Sealing performed by ultrasound
- Conversion between 0.25 ml straws and 0.5 ml straws without exchanging any parts and within only a few minutes
- Very compact device which takes up little space
- Vacuum pump and pressure controller integrated into the device
- Ultrasonic generator in an external casing that can be installed at a distance of up to 2.5 m (ON/OFF switch directly on the machine)
- Completely closed filling and sealing area: best hygienic and safety conditions fully guaranteed

Technical features

- Capacity: approx. 4000 straws/hour
- Hopper capacity: 2200 straws of 0.25 ml or 1300 straws of 0.5 ml
- Machine dimensions: 460 x 350 x 410 mm (W x H x D) plus ultrasound generator
- Power supply: 110 V/60 Hz or 230 V/50 Hz

MPP Uno, complete

REF. : 13017/0000



Accessories

Straw hopper, for 0.25 and 0.5 ml straws	REF. : 13018/0006
Filling nozzle 0.5 ml	REF. : 13017/0017
Suction nozzle 0.5 ml	REF. : 13017/0027
Fixing unit for filling and suction blocks, stackable, stainless steel	REF. : 13017/0050
Washer for 0.25 ml and 0.5 ml nozzles, 5000/bag	REF. : 13021/3001
Filling and suction tubing, 380 mm, sperm friendly bevelled edge, 100/aluminum foil bag	material (silicone), REF. : 13021/3800

Semiautomatic system SFS 133

Product features

- Straws are filled and sealed 6 by 6
- Sealing is done securely and hygienically with metal or glass sealing balls (available in different colors)
- An air bubble of 1 cm is automatically produced in each straw
- Capacity: approx. 2000 straws/hour

Semiautomatic system SFS 133, with vacuum bottle,

filling and suction head for 0.5 ml straws	REF. : 13133/0133

 Low density vacuum pump, 30-60 Hg, with manometer and valve

 230 V/50 Hz
 REF. : 13133/0267

 115 V/50 Hz
 REF. : 13133/0268

Cartridge loading device,

with loading block and 10 cartridges for 36 straws 0.5 ml REF. : 13133/0005



Accessories

Washer for all filling and suction nozzles, 5000/bag	REF. : 13021/3001
Silicone tubing for SFS	
transparent, 3 x 1 mm, length 10 m	REF. : 13133/3550
Filling head with 6 nozzles	REF. : 13133/1000
Suction head with 6 nozzles	REF. : 13133/2000
Metal sealing ball for 0.5 ml straws	REF. : 13400/9900

Automatic freezer lceCube

Computer controlled freezer, with comfortable data input and automatic recording of the freezing curve.

Product features

- Temperature range: +40 to -180°C
- Freezing rates: 0.01 to 60°C/min
- Heating rates: 0.01 to 15°C/min
- Display accuracy: 0.01°C
- Temperature measurement via 2 Pt-100 resistance thermometers
- Capacity: approx. 900 x 0.5 ml straws per freezing cycle

Software for freeze programming and control. Unlimited storage of programs and processed files, color graphic display of all temperature curves, wide possibility of parameter settings.

Dimensions: 540 x 420 x 520 mm (L x W x H), weight: 29 kg

IceCube 14S with connector kit for LN2 pressure container

<u>(1) with 10" tablet</u>	REF. : 16821/3000
with 12" touch screen monitor,	
to connect to own PC or laptop	REF. : 16821/2000
without screen, to connect to own PC or laptop	REF. : 16821/1000



Larger alternative:

IceCube 14M - capacity: approx. 2300 x 0.5 ml straws

with 12" touch screen monitor	REF. : 16820/7000
without screen	REF. : 16820/6000



Accessories

REF. : 16821/5036
REF. : 16821/5037
REF. : 16821/5030
REF. : 16821/5018
REF. : 16820/1900
REF. : 16501/0204
REF. : 16821/5031

(6) Embryo freezing with the IceCube

Autoseeding Preparation for freezing embryos	REF. : 16821/5019
Autoseeding Rack*, capacity: 35 x 0.5 ml straws	REF. : 16821/5020
Autoseeding Rack*, capacity: 43 x 0.25 ml straws	REF. : 16821/5021

*Spacer included

www.minitube.com

FREEZING OF STALLION SEMEN

Freezing units

The freezing units are compact and easy to handle. They are made of a styrofoam box of high quality, an inner container of stainless steel and a floating rack. The stainless steel container is filled with liquid nitrogen. The rack keeps the needed distance between 0.5 ml or 0.25 ml straws during the first down phase, while it floats on liquid nitrogen. After that, the straws get manually immersed into the nitrogen.

- Distance between straws and liquid nitrogen level can be adjusted
- Fits 0.5 ml and 0.25 ml straws
- Low nitrogen consumption
- High quality styrofoam chest and stainless steel inner box
- Easy transport

(1) for 20 straws	REF. : 15043/0636
(2) for 90 straws	REF. : 15043/0736

Accessories

Straw processing and freezing

REF. : 15043/0738
REF.: 5015043/0600
REF.: 5015043/0900



Storage systems for straws

Short and long triangular cassettes for 10/20 straws 0.5 ml or 28/56 straws 0.25 ml	REF. : 16981/xxxx
Short and long flat cassettes	
for 3/6 straws 0.5 ml or 6/12 straws 0.25 ml	REF. : 16980/xxxx
Available in multiple colors.	
Goblet, diameter 65 mm, white, 25/bag	REF. : 16965/0133
Goblet, diameter 35 mm, white, 25/bag	REF. : 16935/0135
Goblet, diameter 13 mm, white, 300/bag	REF. : 16913/0133
Goblet, diameter 10 mm, white, 300/bag	REF. : 16910/0010
Goblet, diameter 7.1 mm, white, 500/bag	REF. : 16907/0071
Goblet canes , for 2 x 10 mm goblets	REF. : 16965/6000
for 2 x 13 mm goblets	REF. : 16965/6013
Divider for goblets, 100/bag, 12 cm	REF. : 16967/0065
Identification rod, 140 mm length	
for 0.25 ml straw	REF. : 16903/0210
for 0.5 ml straw	REF. : 16903/1210



www.minitube.com



Semen storage and transport

Neopor transport box

Minitube transport box, made of highly insulating Neopor, complete with two ice-packs, two syringes (20 ml) and outer shipping carton, holding optimal temperature for approx. 45 hours.

Neopor transport box

REF. : 17229/0002

Equitainer

World-wide proven system for cooling, storage and transport of fresh semen.

(1) Equitainer, comes with 1 tube-style isothermalizer, 2 freezer cans, and 6 tubes (50 ml)

· · ·	REF. : 17220/0015
(2) Freezer can	REF. : 17221/0120
(3) Isothermalizer for two 50 ml tubes	REF. : 17220/0016
(4) 50 ml tube	REF. : 17220/0017



Cryo container (MVE storage container)

ET 20 with 6 canisters 279 x 73 mm; capacity: 3732 x 0.5 ml semen straws; normal working duration: 107 days; neck opening: 55 mm; total height: 627 mm; weight (full): 26 kg

REF. : 16503/2056

ET 35 with 6 canisters 279 x 108 mm; capacity: 3732 x 0.5 ml semen straws; normal working duration: 175 days; neck opening: 55 mm; total height: 679 mm; weight (full): 42 kg

REF. : 16503/3606

ET 40-10 with 10 canisters 279 x 73 mm, capacity: 16400 x 0.5 ml semen straws; normal working duration: 59 days; neck opening: 127 mm; total height: 670 mm; weight (full): 45 kg

REF. : 16503/3710

Other capacity/size on request.



Vapor shipper

ET-40

SC 4/2 with 1 canister 278 x 67 mm; capacity: 3.6 | liquid nitrogen, approx. 880 x 0.5 ml semen straws or 90 macrotubes; static holding time: 13 days; neck opening: 70 mm; total height: 468 mm; weight (full): 9.1 kg; IATA-compliant REF. : 16504/2001

ET - 20

SC 4/3 with 1 canister 278 x 46 mm; capacity: 4.3 | liquid nitrogen, approx. 420 x 0.5 ml semen straws or 30 macrotubes; static holding time: 21 days; neck opening: 51 mm; total height: 492 mm; weight (full): 9.5 kg; IATA-compliant

REF. : 16504/3001

ET-35

Protective shipping container for Vapor Shipper, made of plastic, IATAcompliant

REF. : 16504/3010

CryoCube[™] Dry Shipper

Cryogenic shipping option for biological samples at -150°C in any orientation without sacrificing temperature.

Static holding time: 5 days; LN2 capacity: 2 l; 1 canister 127 x 35 mm; capacity: 182 x 0,25/88 x 0.5 ml straws; neck opening: 35 mm; overall dimensions: 305 x 305 x 305 mm (D x H x W)

REF. : 16505/0100









Insemination and diagnostics

Universal pipettes

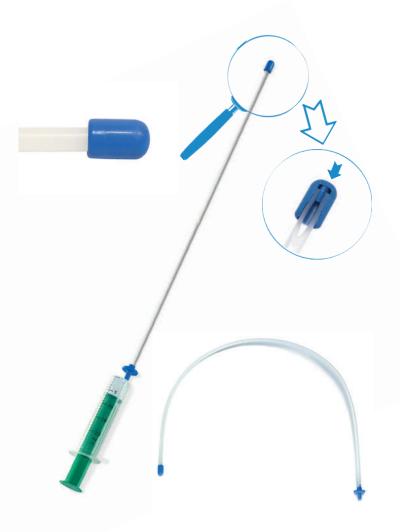
- Suitable for liquid and frozen-thawed semen in straws
- Smooth round tip for gentle introduction
- Flexible shaft facilitates handling
- Precision tooled tip with inner cone for 0.5 ml straws to allow direct position of semen into the uterus and to ensure 100% semen delivery
- The reload system: if used with the AI stylet for 0.5 ml straws, the same pipette can be reloaded with consecutive straws in situ
- Finger handle with adapter to fit syringe and macrotube straw

Length: 57 cm

5/package	REF. : 17209/0005
1/package, sterilized	REF. : 17209/0001

Long pipette with very flexible shaft for deep intrauterine insemination

Length: 65 cm	
5/package	REF. : 17209/1165
1/package, sterilized	REF. : 17209/1265
Length: 75 cm	
Length: 75 cm 5/package	REF. : 17209/1175



Deep intrauterine insemination pipette with inner catheter

For deep intrauterine insemination with small volumes of liquid semen, if straws can not be used. The pipette is equipped with an inner catheter to reduce the volume of the channel where the semen has to pass through.

Length: 65 cm	
5/package	REF. : 17207/1165
1/package, sterilized	REF. : 17207/1265
Length: 75 cm	
5/package	REF. : 17207/1175
1/package, sterilized	REF. : 17207/1275



Deep intrauterine kit

Includes deep intrauterine universal pipette with inner catheter, 5 ml syringe, supersensitive glove

Length: 65 cm	REF. : 17207/2065
Length: 75 cm	REF. : 17207/2075



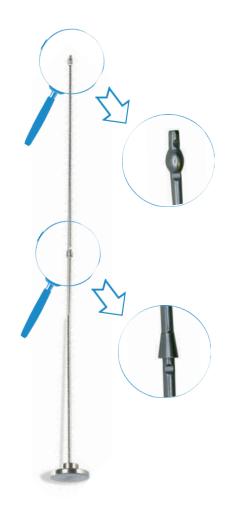
Stylet for insemination of frozen semen

With Universal pipette plus stylet. Semen in 0.5 ml straws is directly placed into the uterus, ensuring 100 % semen delivery. The stylet is made of stainless steel and is provided with 2 knobs to pull out empty straws, thus the same pipette can be reloaded several times.

Stylet for pipettes

Flexible stylet for deep intrauterine or transcervical insemination with 0.5 ml straws and 2 knobs for pulling out empty straws

Length: 57 cm	REF. : 17209/1057
Length: 65 cm	REF. : 17209/1065
Length: 75 cm	REF. : 17209/1075



Insemination pipettes for liquid semen

(1) Length: 60 cm, rounded tip,	
25/bag, fits luer syringe	REF. : 17209/2000
(2) With tubing, 1/bag, sterilized	REF. : 17209/2210
(3) Length: 65 cm, larger diameter,	
25/bag, fits luer syringe	REF. : 19290/1105
(4) Semen transfer adapter for syringe,	
length 13 cm, 10/bag	REF. : 17229/0020

Hygienic sheath

To protect ET or AI pipette during uterine passage, length: 62.5 cm (70/roll)
Disposable sheath
REF.: 17209/5070

MiniCutter

- Precise cut of 0.25 and 0.5 ml straws
- Facilitates straight cut at exactly the right length, which helps to avoid semen loss
- Ergonomic shape, easy to keep clean

MiniCutter for straws

REF. : 17062/0010

Thawing unit MT 30/54

- Electronic temperature control
- Central, built-in thawing chamber with lift
- Accuracy: 0.2°C
- Power supply: 12 V DC (car battery)

Thermometer for thawing unit	REF. : 17049/0000
Transformer for thawing unit 12 V / 220 V	REF. : 17165/1395
50°C	REF. : 17044/0050
38°C	REF. : 17044/0038
37°C	REF. : 17044/0037
35°C	REF. : 17044/0035

Insemination gloves

(1) Sensitive, green, 5 finger, shoulder length, 100/box	REF. : 17080/0015
(2) Super-sensitive, transparent, 100/box	REF. : 17080/0050
Single packed, sterilized, 50/package	REF. : 17080/0250



Uterus culture swab

Consists of introduction pipette with pre-perforated cap for sampling without risk of contamination. Predetermined breaking point of the sample-protecting sheath. Includes two closing caps for transport of the swab to the lab. Swab may be inserted directly into AMIES transport medium to avoid dehydration of the sample. Individually packaged and sterilized.

Swab with AMIES transport medium	REF. : 17214/2951
Swab without transport medium	REF. : 17214/2950

Cytology brush

For picking up cells of the uterus of mares to perform cytology smears for immediate evaluation.

REF. : 17214/2960

Speculum for mares

(1) Disposable speculum made of cardboard, inside with reflecting aluminum coating, smooth front edge for gentle introduction, inner diameter: 3 cm, length: approx. 43 cm

REF. : 17210/0000

(2) LED-light, battery operated (up to 250 h), with clip for fixing, length: 96 mm

REF. : 17210/0010

(3) Metal case with lid and handles for sterilization and transport of speculum and cervical forceps, $560 \times 230 \times 120$ mm (W x H x D)

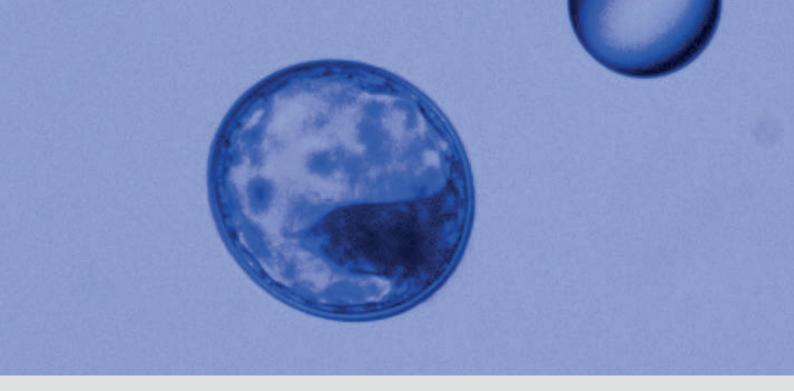
	REF. : 1/215/0149
(4) Polansky speculum	REF. : 17210/4200
(5) Cervical forceps according to Götze	
with lamp, 54 cm	REF. : 17212/0055
without lamp	REF. : 17212/0054
Biopsy forceps, 66 cm length	REF. : 17214/5066

Colostrum refractometer

Determines the amount of immunoglobulin in the mare colostrum to ensure sufficient supply for the new born foal. Colostrum of good quality should be frozen for emergency use. Only one drop of colostrum is required for testing. No batteries, no consumables, easy handling. Case included.

REF. : 24400/0150





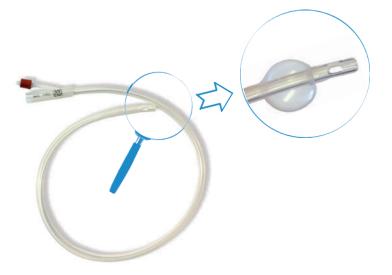
Embryo transfer and OPU

Embryo flushing catheters for mares

Made of silicone, sterilizable, length approx. 90 cm, Foley end, 2 large front ports, open ended, 100 ml balloon, sterilized.

The balloon, when inflated, facilitates tight closure of the cervix. All sizes allow high flow of flushing media in combination with high-flow Y-junction.

CH 28	REF. : 19009/0027
CH 32	REF. : 19009/0032
CH 36	ref. : 19009/0036



Flushing tubing

Disposable Y-junction tubing with clamps, to be used in combination with any catheter. Tubing made of very smooth, flexible material. End for filter connection requires no extra adapter. Sterilized, 1/bag.

(1) High flow Y-junction tubing, spike port REF. : 19982/0202

Y-tubing for embryo collection with the EmSafe filter

		: 19011/0 ⁻	100
REF.	. :	: 19011/0	200
® filter			
REF.	. :	19011/0	000
REF.	. :	19011/0	001
REF.	. :	: 19009/1	238
	REF REF	REF. :	[®] filter <u>REF. : 19011/0</u> <u>REF. : 19011/0</u> <u>REF. : 19009/1</u>



Filters for embryo collection

- All-in-one dual purpose filters and search dishes: embryos are recovered directly from the filter dish
- Secure fixation of the lid during collection and easy to open after collection (no screw cap)
- Integrated search dish engraved with a grid makes it easy to search and find embryos (mesh size is ideal for all bovine and equine embryo sizes)
- Filter mesh cannot get dry as it remains in contact with fluid

EmSafe

EmSafe is ideal for both large and small embryos. The filter system automatically holds a minimum level of 60 ml rinsing fluid in the dish. An angled filter mesh provides an optimal flow-through rate and the air vent in the lid is secured by a filter.

(1) EmSafe filter

REF. : 19010/6000

MiniFlush®

Vertical all-in-one embryo recovery system with a large filter surface area. The vertical design provides higher flow rates and reduces plugging of the embryo filter. Due to its shallow design, the filter is perfectly suited for use with all microscopes even when the working distance is limited. Embryos are easily found with the aid of the highly visible grid.

With the MiniFlush[®] the entire flushing procedure can be completed without the need to monitor fluid levels as the filter automatically maintains a constant 20 ml volume.

(2) MiniFlush® filter

REF. : 19222/2000

- Excess fluid is controlled and removed through outlet tubing with attached thumb clamp (entry hole ist big enough to ensure the necessary flow speed of the flushing medium)
- Connection to all types of Y-tubing (bovine and equine) is possible
- Absolute tightness
- Sterilized





Media for flushing and holding

EquiFlush

Ready for use, contains buffers, BSA or PVA and antibiotics

With BSA, 21	REF. : 19982/6202
With PVA, 2	REF. : 19982/6212

EquiHold - Applicable for

- holding embryos at ambient conditions
- transporting embryos
- washing and rinsing embryos
- loading embryos for transfer to recipient animal

Contains buffers, glucose, pyruvate, BSA, amino acids, growth factors and antibiotic

3	Х	5	ml	vials	
---	---	---	----	-------	--

REF. : 19982/6250

Vitrification

Equine VIT-Kit

Vitrification is a proven method for cryopreservation of equine embryos. The VIT-Kit for equine embryos contains everything needed for vitrification of three equine embryos: equilibration medium (3 x VS1, 3 x VS2, 3 x VS3), 3 x diluent, 1 x syringe 1 ml, 1 x pipette tip, 4 x 5-well dish, 10 x 0.25 ml sterile straws, 10 x 0.5 ml sterile straws, 3 x ID-sticks, 1 x 10 mm goblet cane, 3 x 10 mm goblets

REF. : 19982/6251

REF. : 19025/0050

Handling of embryos

Micropipettor for handling of embryos, easy and precise pipetting by handling wheel, for all sizes of capillary tubes up to 1 ml

Model A	REF. : 19022/0000
Model B	REF. : 19022/0002

Glass capillary tube, 250/package	
20 µl	REF. : 19022/0020
50 µl	REF. : 19022/0050

(1) **Steripette** for embryo handling, 55 mm, individually packed, sterilized, 50/package, for use with 1 ml insulin syringe

(2) Disposable syringe,	, 1 ml, Luer end, sterilized	REF. : 19025/0000

(3) Embryo culture dish with lid, sterilized, 5 wells, rounded well edges, mouse embryo batch tested, 4/bag REF. : 19021/0005







Stereo microscope

Stereo zoom microscope, mirror for improved visualization of zona pellucida, total magnification from 10x to 70x, eye-pieces 10x, 110 V/60 Hz or 230 V/50 Hz

Stereo microscope, binocular	REF. : 12014/0000
Stereo microscope, trinocular	REF. : 12014/1000

Accessories	
Heated stage, 180 x 180 x 10 mm	REF. : 12055/0003
Control unit HT 50,	
adjustable temperature, digital display	REF. : 12055/0050



Embryo transfer with 0.5 ml straws

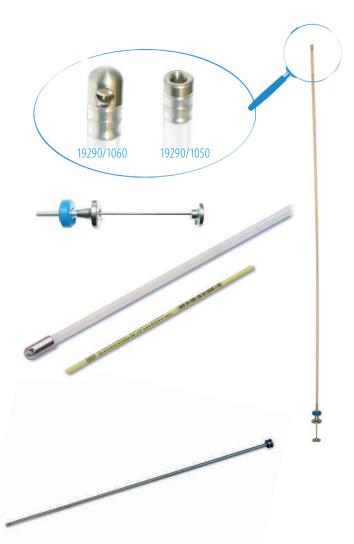
	equine embryo transfer , front end opening, individually D/package, sterilized
	REF. : 19290/1050
	r equine embryo transfer , side openings, individually D/package, sterilized
	REF. : 19290/1060
Finger sup 17209/1065	port and ring, for use with sheath for equine ET and AI stylet
	REF. : 19290/1048
•	bryo transfer pipette , metal tip with side opening, flexible, lisposable, sterilized, use with Al stylet 17209/1065
	REF. : 19290/1065
Inner cath	eter for equine embryo transfer pipette, to flush embryo into the

Inner catheter for equine embryo transfer pipette, to flush embryo into the uterus with approx. 2 ml volume, no need to load it into a straw REF. : 19290/1066

Stainless steel ET instrument

Sterilizable transfer instrument for 0.5 ml straws, 1 side outlet, length 55 cm, screw-off tip

REF. : 19290/0000



Embryo transfer with 0.25 ml straws

Deep intrauterine ET/Al set, with finger support, stylet, fixation rings REF. : 17015/0100

Sheath for equine ET/AI, with 0.25 ml straws, side opening, for usage with stylet 17015/0100, sterilized, individually packaged, 10/bag

REF. : 17015/0660



Embryo transfer > day 8

ET/AI Pipette, rounded ends, fits luer syringe, sterilized, 1/bag, length 65 cm REF.: 19290/1101



Straws

0.5 ml straw, transparent, sterilized

with sealing ball, 1/package	REF. : 19043/0001
with sealing ball, 10/package	REF. : 19043/0010
without sealing ball, 1/package	REF. : 19043/1011
without sealing ball, 10/package	REF. : 19043/1010
length 90 mm, without wick, 10/package	REF. : 19044/9110

0.25 ml straw, transparent, sterilized, 10/package

with ID rod seal in many bright colors	REF. : 19040/00xx
with glass sealing ball	REF. : 19041/0010
without seal	REF. : 19042/0010



Minitube OPU Media

EquiPlus OPU Recovery Medium, 500 ml of ready-to-use medium, contains BSA, for collection of equine oocytes

	REF. : 19982/2281
Heated aluminum block for 50 ml tubes	REF. : 23361/3200





Ultrasonic device LOGIQ® V2

- Portable, easy to use ultrasound system for linear and convex sector ultrasound providing excellent image quality
- High quality documentation and data transfer system
- Various operating modes, standard features and system options
- High-resolution LCD monitor with high angle of sight
- Keyboard equipped with trackball and illuminated buttons
- Dimensions: 12 x 40 x 37 cm (H x L x W)
- Weight: 6 kg with battery
- 100-240 VAC / 50/60 Hz

Ultrasonic device LOGIQ® V2	REF. : 23360/0000
Convex sector probe, 6.0 - 10.0 MHz	REF. : 23360/0002
Endo-linear rectal probe, 5.0 - 10.0 MHz	REF. : 23360/0003



Ultrasound probe holder

- Probe holder has a needle guide included and is used with the double lumen needle: the two spaces allow simultaneous or alternating aspiration and injection of fluids into and from the follicles
- OPU needle is connected to the aspiration and flushing pump for equine OPU, Ref. 23362/0002 (230 V) or 23362/0003 (115 V)

Probe holder for GE probe	REF. : 19009/3100
Probe holder for Esaote probe	REF. : 19009/3101
Probe holder for Sonosite probe	REF. : 19009/3102
Probe holder for BCF/Mindray probe	REF. : 19009/3103
Cover for probe holder, 144/package	REF. : 23360/1260
Double lumen needle, 12 G, 25"	
consists of outer needle and inner cannula	REF. : 19009/3105
Replacement needle, 12 G, 25"	REF. : 19009/3106

OPU pump for follicle aspiration and flushing

- Two pumps and a warming block are combined into one unit for convenient oocyte aspiration
- Pressure level and hysteresis are programmable by the user
- The pump is operated by foot switches
- Operating voltage: 220–240 V~, 50–60 Hz; also available for 115 V (Ref. 23362/0003)

OPU pump for follicle aspiration and flushing

Stopper assembly

Snugly connects to 50 ml tubes, 1/package	REF. : 23360/1100





REF. : 23362/0002

TRAINING AND SERVICE

Training and education

Minitube cooperates with universities and leading Equine studs. The collective experience and knowledge is incorporated into our seminars where the latest technologies and practices are demonstrated and trained with course participants. With the courses being interactive workshops, presentations, discussions, demonstrations and practical work qo hand in hand.

- Semen processing in the laboratory
- Embryology / IVF
- Equine AI and ET
- Deep intrauterine insemination in horses

Besides these standard seminars, Minitube also offers individual seminars upon request. All participants in our seminars receive valuable seminar documentation and a certificate of participation.

Please contact us to get more information: **seminars@minitube.de**



Mobile lab service

Minitube Middle East offers unique professional lab service to customers particularly in remote areas. The Mobile Lab is a van equipped with high-quality Minitube equipment to analyze and preserve/freeze animal semen or embryos.

Minitube Middle East offers the service to customers in the United Arab Emirates, Saudi Arabia and Oman, in regions which otherwise have no access to a professional laboratory for semen and embryo preservation.

Please contact us for further information about the service and if you would like to discuss how to construct your own mobile laboratory: **minitube@minitube.de**



Minitüb is an ISO 9001:2015 certified company.



www.minitube.com