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 AI 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
CEO

We look forward to your orders and inquiries:
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 ends, sterilizable  
- **long version**, 100 cm  **REF. :** 11222/0002  
- **short version**, 70 cm  **REF. :** 11222/0003

(3) Disposable inner liner, width approx. 21 cm, roll with approx. 200 m; „sensitive”: smooth and resistant material  
**REF. :** 11222/0120

(4) Warming bag for collection glass, protects the semen from low temperature and UV radiation  
**REF. :** 11225/0026

(5) Rubber band for Hannover AV  
**REF. :** 11222/0001

(6) Semen collection bottle  
- 250 ml, glass  
**REF. :** 11245/0006

(7) 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

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Disposable inner liner „AV-Liner“, for Missouri and Hannover AV, 25/package

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**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

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### Accessories

(2) Disposable inner liner, plastic, width 31 cm, roll with approx. 200 m; „sensitive“: smooth and resistant material

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Disposable inner liner Colorado,

(3) 25/package

(4) AV shaped, 25/package

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(5) Semen collection bottle Colorado, 200 ml, disposable, 100/package

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Coupling nut for 200 ml semen bottle, 100/package

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(6) Semen filter Colorado, nylon, fits Colorado collection bottle, 25/package

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Warming bag

(7) small, for 200 ml collection bottle

(8) large, blue

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Rubber inner liner for Colorado AV, tapered end for connection to the bottle

(9) straight form

round form

tubular, flared ends
Semen collection

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
SEMEN COLLECTION

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

**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.

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**Accessories**

- **Cover for phantom**, synthetic material, collection side closed, with belts for attachment
  
  **Ref.**: 11200/0000

- **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

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**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 l 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

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**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
MICROSCOPY, VOLUME MEASUREMENT AND PHOTOMETRY

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 (trinocular), 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 warming 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

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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**
  - for 1 l, with Lincomycin and Spectinomycin [REF.: 13570/0202]
  - for 100 ml, with Lincomycin and Spectinomycin [REF.: 13570/0210]

- **Liquid**
  - 200 ml, with Lincomycin and Spectinomycin [REF.: 13570/0250]
  - 200 ml, with Ticarcillin [REF.: 13570/0260]
  - 200 ml, with Amikacin and Penicillin [REF.: 13570/0261]
  - 100 ml, with Gentamycin [REF.: 13570/0301]

**Without antibiotics:**

- **Powder**, for 1 l, without antibiotics [REF.: 13570/0201]
- **Powder**, for 100 ml, without antibiotics [REF.: 13570/0240]
CHILLED SEMEN PROCESSING

**Gent**

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

<table>
<thead>
<tr>
<th>Volume</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 ml</td>
<td>13571/0045</td>
</tr>
<tr>
<td>100 ml</td>
<td>13571/0100</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Volume</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 ml</td>
<td>13570/0600</td>
</tr>
</tbody>
</table>

**CushionFluid**

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

<table>
<thead>
<tr>
<th>Volume</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 ml</td>
<td>13580/0001</td>
</tr>
</tbody>
</table>

**Centrifugation medium**

Powder for 1 l transparent EDTA - Glucose solution

<table>
<thead>
<tr>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>13565/0001</td>
</tr>
</tbody>
</table>

**Water for semen extenders**

Bidistilled, sterilized, pyrogen-free

<table>
<thead>
<tr>
<th>Volume</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 l</td>
<td>13570/1000</td>
</tr>
<tr>
<td>100 ml</td>
<td>13570/1100</td>
</tr>
</tbody>
</table>

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.
CRYOPRESERVATION OF SEMEN

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  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 Cushion Fluid, 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 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 L**, 640 x 800 x 500 mm, 96 kg, 115 V
  - REF.: 14127/0257

**Water bath**

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

- **7 L**, inner dimensions: 240 x 210 x 140 mm (W x H x D)
  - 230 V
    - REF.: 14078/0001
  - 115 V
    - REF.: 14078/0002
- **10 L**, inner dimensions: 350 x 210 x 140 mm (W x H x D)
  - 230 V
    - REF.: 14079/0001
  - 115 V
    - REF.: 14079/0002
LAB EQUIPMENT AND SUPPLIES

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 x 180 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 and 230 V.

Laboratory heating plate REF. : 12055/0010

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 REF. : 15120/7000
LAB EQUIPMENT AND SUPPLIES

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.
PRINTING OF SEMEN STRAWS

**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!
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

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
- 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 material (silicone), bevelled edge, 100/aluminum foil bag  REF. : 13021/3800

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
FREEZING OF STALLION SEMEN

Automatic freezer IceCube

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

(1) with 10“ tablet  
with 12“ touch screen monitor, to connect to own PC or laptop  
without screen, to connect to own PC or laptop

(2) Rack for IceCube 14S, for 36 straws  
(3) Handling rack for IceCube 14S  
(4) Spacer for IceCube 14S  
(5) Pliers for racks  
(6) Embryo freezing with the IceCube

Larger alternative:

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

Accessories

- Loading device for straw rack  
- Liquid Nitrogen pressure container, 60 l  
- Roller base for LN² pressure container  
- Pliers for racks

*Spacer included

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**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**

**Loading block for 90 straws floating rack**  REF. : 15043/0738

**Additional rack**

(3) for freezing unit for 20 straws  REF.: 5015043/0600  
(4) for freezing unit for 90 straws  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
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.

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
SEMEN STORAGE AND TRANSPORT

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

SC 4/2 with 1 canister 278 x 67 mm; capacity: 3.6 l 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): 91 kg; IATA-compliant

REF. : 16504/2001

SC 4/3 with 1 canister 278 x 46 mm; capacity: 4.3 l 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

Protective shipping container for Vapor Shipper, made of plastic, IATA-compliant

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

Long pipette with very flexible shaft for deep intrauterine insemination

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

Length: 75 cm
- 5/package
- 1/package, sterilized
  - REF.: 17209/1175
  - REF.: 17209/1275
Deep intrauterine insemination pipette with inner catheter

For deep intrauterine insemination with small volumes of liquid semen, if straws cannot 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 and diagnostics

**Insemination pipettes for liquid semen**

1. Length: 60 cm, rounded tip, 25/bag, fits luer syringe  
   Reference: 17209/2000

2. With tubing, 1/bag, sterilized  
   Reference: 17209/2210

3. Length: 65 cm, larger diameter, 25/bag, fits luer syringe  
   Reference: 19290/1105

4. Semen transfer adapter for syringe, length 13 cm, 10/bag  
   Reference: 17229/0020

**Hygienic sheath**

To protect ET or AI pipette during uterine passage, length: 62.5 cm (70/roll)

Disposable sheath  
Reference: 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  
Reference: 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)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Reference</th>
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<tbody>
<tr>
<td>35°C</td>
<td>17044/0035</td>
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<tr>
<td>37°C</td>
<td>17044/0037</td>
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<td>38°C</td>
<td>17044/0038</td>
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<tr>
<td>50°C</td>
<td>17044/0050</td>
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</tbody>
</table>

Transformer for thawing unit 12 V / 220 V  
Reference: 17165/1395

Thermometer for thawing unit  
Reference: 17049/0000

**Insemination gloves**

1. Sensitive, green, 5 finger, shoulder length, 100/box  
   Reference: 17080/0015

2. Super-sensitive, transparent, 100/box  
   Reference: 17080/0050

Single packed, sterilized, 50/package  
Reference: 17080/0250

www.minitube.com
Insemination and diagnostics

**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 x 230 x 120 mm (W x H x D)  
   REF.: 17215/0149
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  \hspace{1cm} \text{REF.:} 19009/0027
CH 32  \hspace{1cm} \text{REF.:} 19009/0032
CH 36  \hspace{1cm} \text{REF.:} 19009/0036
EMBRYO TRANSFER

**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**

2. **Y-tubing** for embryo collection with the EmSafe filter  
   - **Luer end**  
     **REF. : 19011/0100**  
   - **Foley end**  
     **REF. : 19011/0200**

3. **Y-tubing** for embryo collection with the MiniFlush® filter  
   - **Luer end**  
     **REF. : 19011/0000**  
   - **Foley end**  
     **REF. : 19011/0001**

4. **Luer adapter**  
   for CH 28-38 catheters and for foley catheters  
   **REF. : 19009/1238**

**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
- Excess fluid is controlled and removed through outlet tubing with attached thumb clamp (entry hole is 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

**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**
Medi a for flushing and holding

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

- **With BSA, 2 l**  
  REF. : 19982/6202
- **With PVA, 2 l**  
  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 x 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**

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  
  REF. : 19025/0050

- **(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
EMBRYO TRANSFER

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

Sheath for equine embryo transfer, front end opening, individually packaged, 10/package, sterilized [REF. : 19290/1050]
Sheath for equine embryo transfer, side openings, individually packaged, 10/package, sterilized [REF. : 19290/1060]
Finger support and ring, for use with sheath for equine ET and AI stylet 17209/1065 [REF. : 19290/1048]
Equine embryo transfer pipette, metal tip with side opening, flexible, 1/package, disposable, sterilized, use with AI stylet 17209/1065 [REF. : 19290/1065]
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 AND OPU

Embryo transfer with 0.25 ml straws

Deep intrauterine ET/AI 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”  
**REF. : 19009/3105**

consists of outer needle and inner cannula

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  
**REF. : 23362/0002**

Stopper assembly  
Snugly connects to 50 ml tubes, 1/package  
**REF. : 23360/1100**
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 go 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