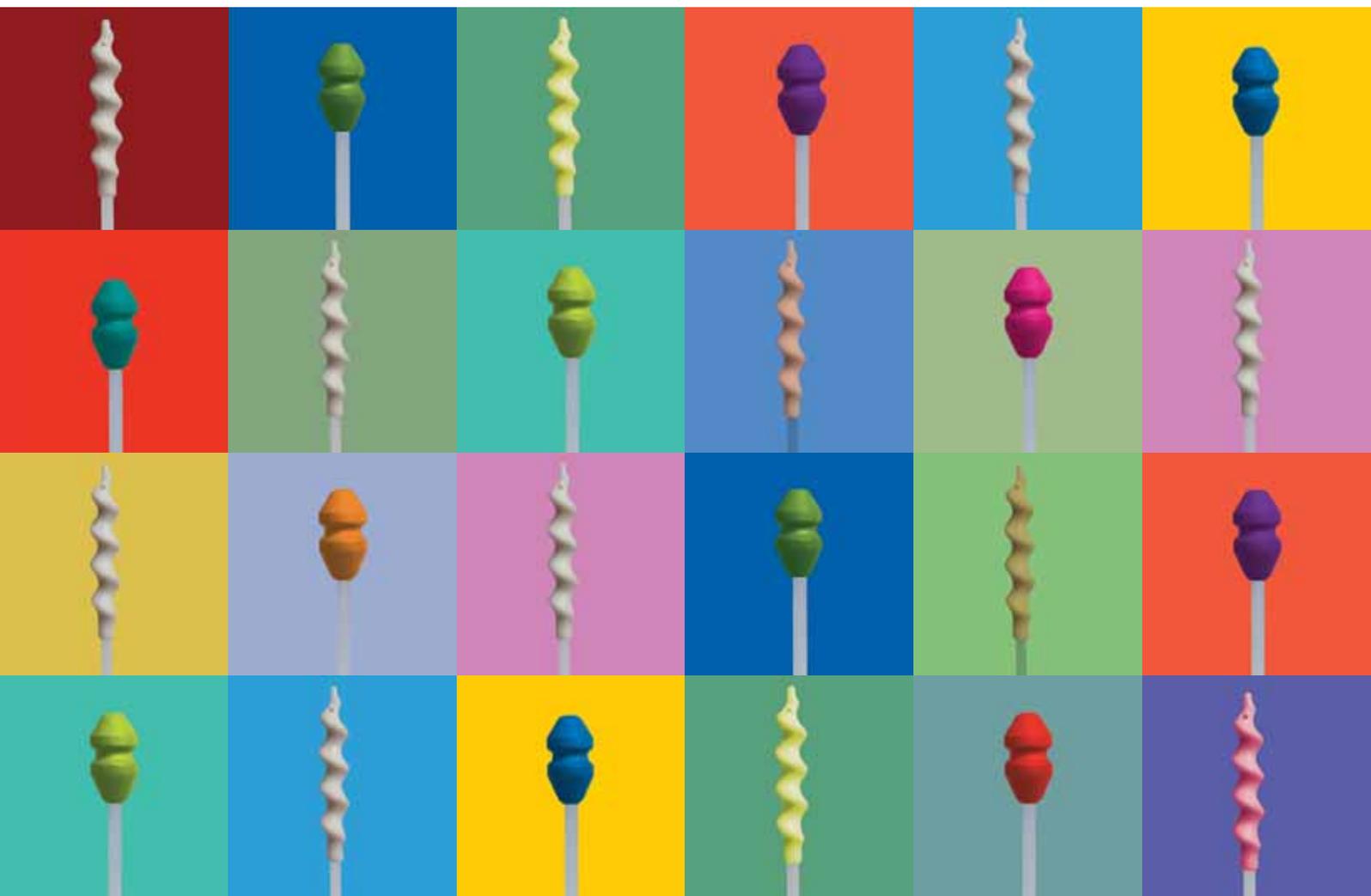


Animal Reproduction Technology

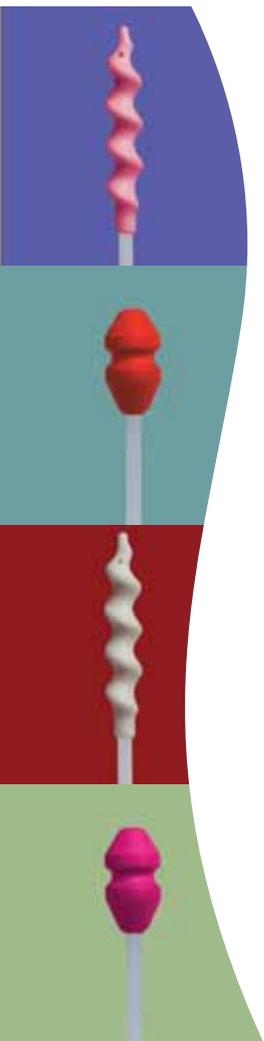
Porcine



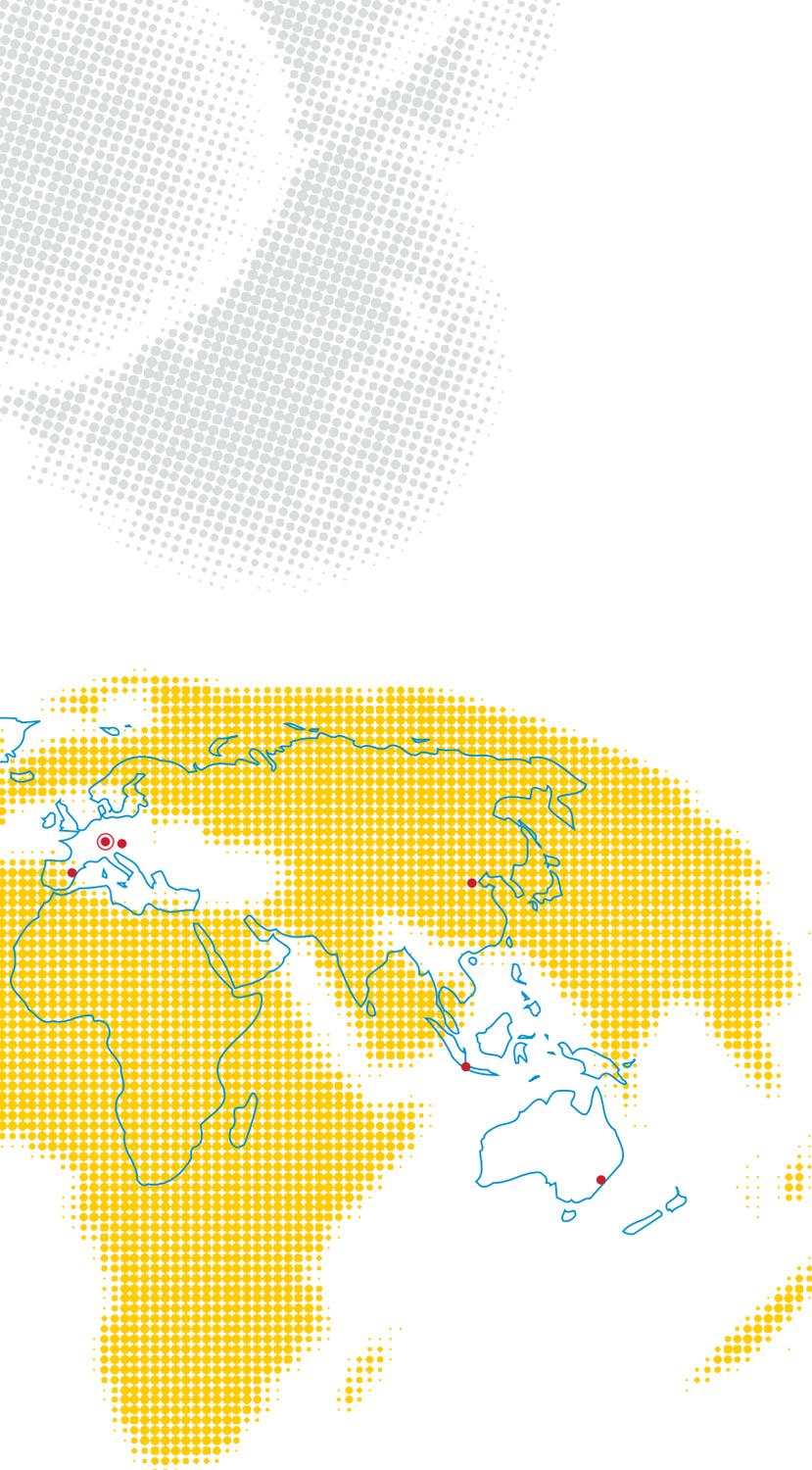
minitube



*Innovative ideas, modern production techniques
and a keen appreciation of product quality are the basic
ingredients of our knowledge and your success.*



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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 specialised 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.

With Minitube of America's international centre for biotechnology in Wisconsin, USA, the Minitube group relies on high capacity facilities for training and research. Here 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. Important elements are furthermore biotechnical services for our customers, as well as training and technology transfer.

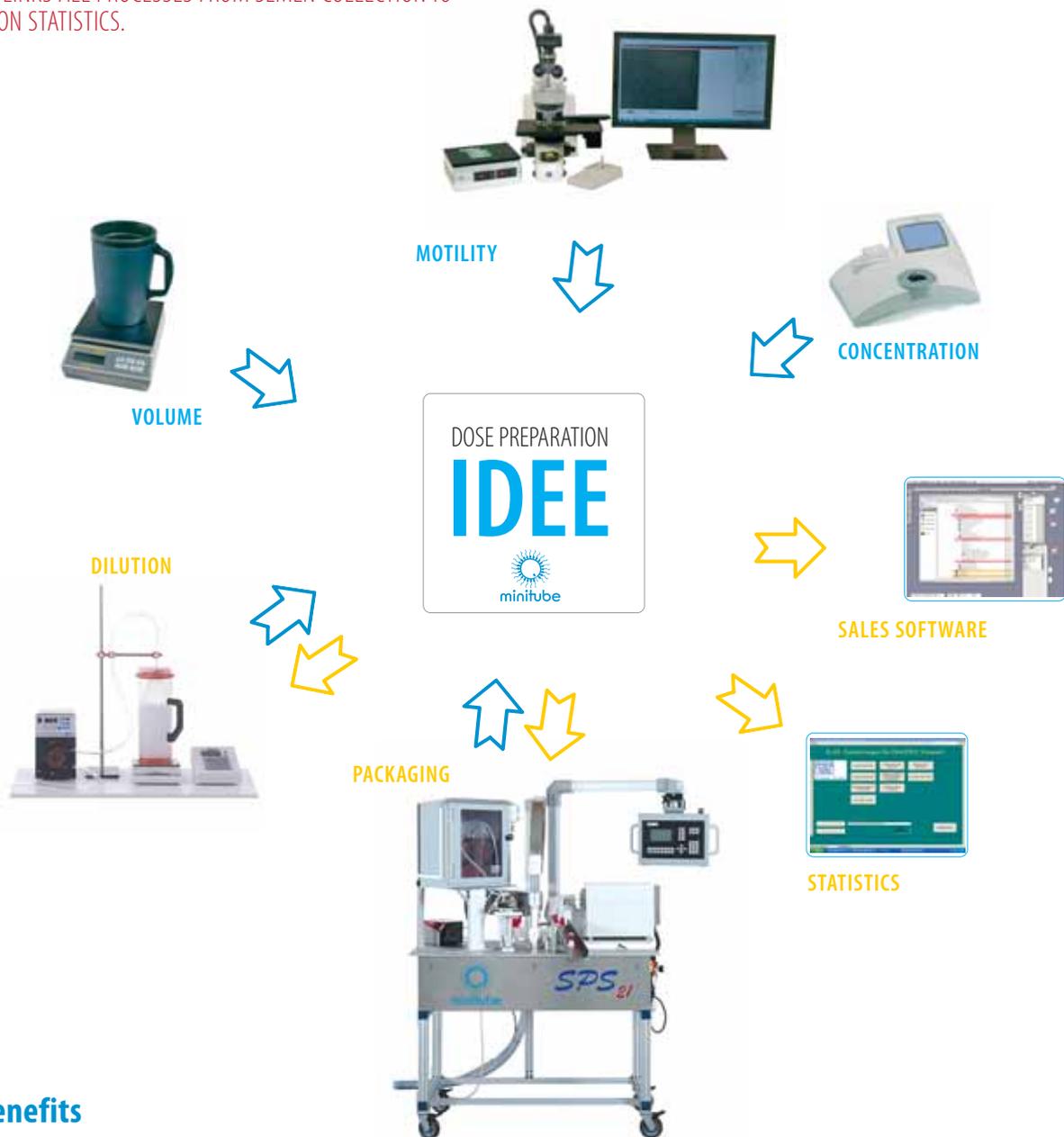
Originating in Tiefenbach, Bavaria, Minitube has established its competence over many years in more than 100 different countries all over the world. With several companies, highly-trained local representatives, and multilingual professionals handling exports, we keep in contact with the international 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
MANAGING DIRECTOR

IDEE AND IDENT: MINITUBE SOFTWARE FOR THE BOAR SEMEN LABORATORY

THE IDEE LABORATORY SOFTWARE INTEGRATES ALL EJACULATE DATA AND LINKS ALL PROCESSES FROM SEMEN COLLECTION TO PRODUCTION STATISTICS.



Your benefits

- IDEE introduces a high security level in your lab
- The whole process is standardized and optimized
- Automatic integration of ejaculate parameters due to interfaced equipment
- Automatic data transmission to and from the tube filling machine
- IDEE helps to save time and labour
- Every step is documented and verifiable
- Statistical analysis of all relevant production data
- IDEE can easily be connected to other software applications
- IDEE is a very user friendly software

IDEE AND IDENT: MINITUBE SOFTWARE FOR THE BOAR SEMEN LABORATORY

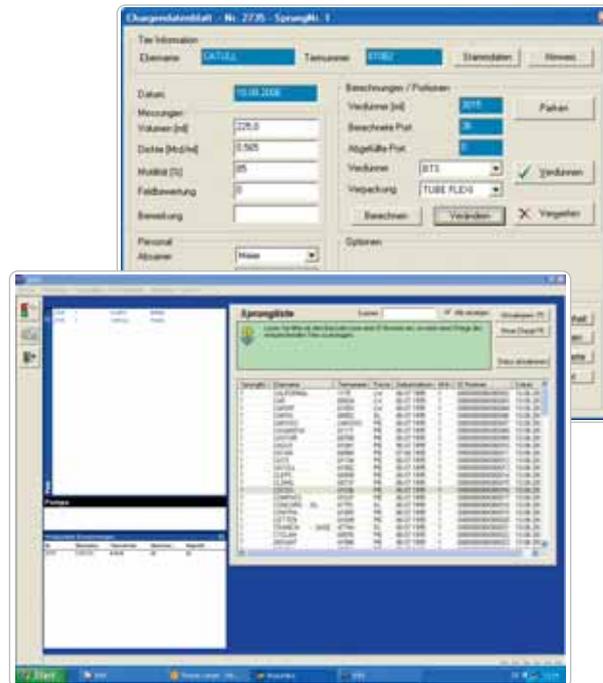
IDEE is a flexible, multitalented and modular computer program, based on an Access data base. It automates and links ejaculate analysis including record keeping of holding samples as well as extender dispensing and semen packaging in tubes. The identification of each ejaculate can be entered manually, by barcode label or through a transponder. The ejaculate data file guarantees quick and precise ejaculate data management.

The connected lab equipment like scale, photometer or Sperm Vision® transfer analysis data quickly and securely to the lab computer. Automatic calculation of extender quantities, automatic semen dilution by means of the Smart or Compact Dispenser and the data transfer to the filling machine greatly rationalize laboratory work. Production data is provided in real time for administration and sales. Due to the Access data base the connection is carried out comfortably.

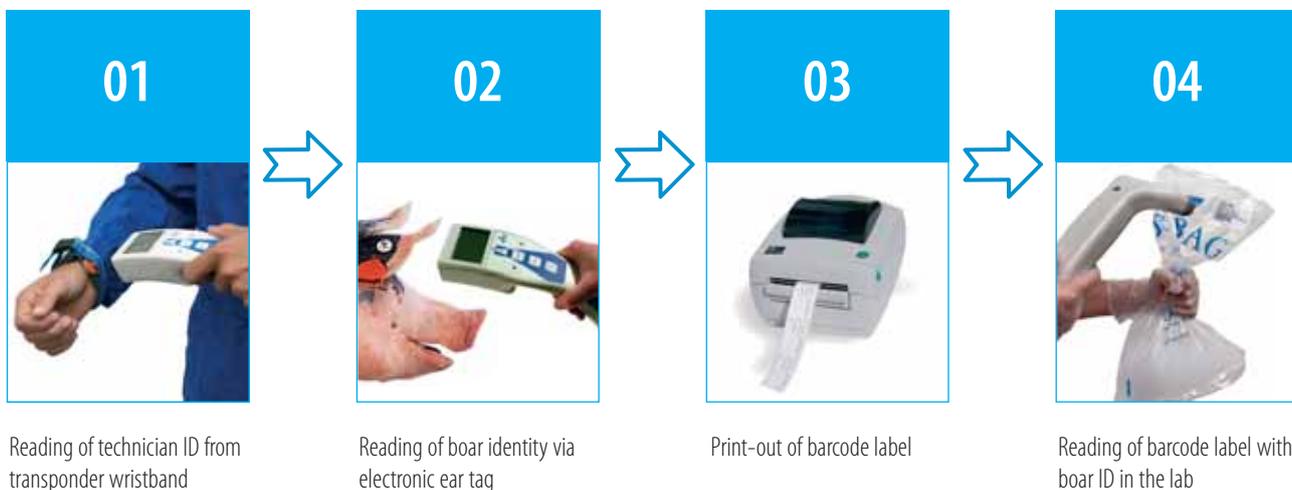
A special menu item provides for the evaluation and administration of boar and ejaculate data.

IDEE is available in English, German, Spanish, Italian and Russian Language

REF. : 18000/0000



ELECTRONIC BOAR IDENTIFICATION WITH IDENT



IDENT is available in addition to IDEE or as an independent program: The software contains collection planning, the identification of boars via electronic ear tags, the electronic identification of semen collection staff and the print-out of labels with boar identity, bar code and further information about the semen collection.

REF. : 18000/0015

AUTOMATE® BOAR DUMMY

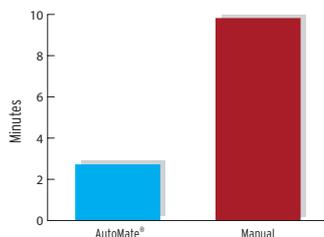
Now with more comfortable surface and exchangeable mounting element.

The AutoMate® boar dummy with integrated mechanism for automatic semen collection consists of the following components:

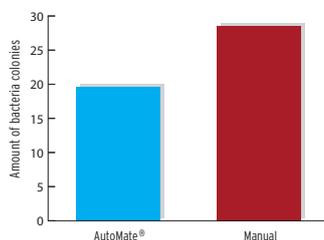
- Coated boar dummy, height adjustable by pneumatic spring.
- A slide underneath the dummy with a holder for the semen collection cup and a clamp for the AC (artificial cervix). During the whole ejaculation process the boar is free to move forward and backward. After the semen collection the boar is able to leave the dummy without assistance and the slide with the collection cup automatically rolls to a safe position underneath the dummy.
- The single use AC is a true copy of the porcine cervix in texture and surface. Its rubber cushions stimulate the boar and assure a perfect hold for the tip of his penis. A tear away inner pouch to collect the first sperm free jets of the ejaculate and a sheath leading the ejaculate into the semen collection cup are integrated in the AC.

The boar's erection is initiated with the AC fixed to the gloved hand of the collector. After starting the ejaculation, the inner sheath with the first jets of preseminal fluid is discarded. The AC is now connected to the semen collection cup and fixed in the provided clamp. The stimulating pressure on the boar's penis persists, so that the boar continues ejaculation by himself without any human assistance. After finishing the ejaculation he can leave the AutoMate® on his own. In the meantime the collector has already prepared other collections.

REF. : 11100/0202



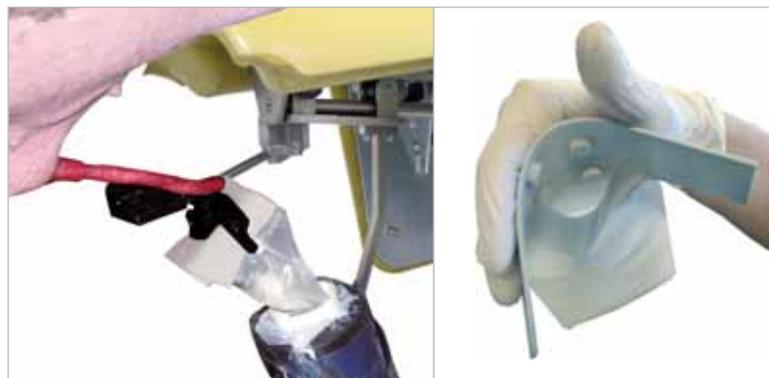
Efficiency increase and time saving: reduces the time needed for semen collection by about 72%



Hygiene improvement: reduces bacteria contamination considerably

Your benefits

- Suitable for all boars, easy to handle, adaptable to existing installations
- Simple mechanics, no electric or pneumatic connections necessary, requires low maintenance
- Reduced physical stress for semen collectors increases motivation and the image of this profession



Accessories

Semen collection cup complete,
for use with artificial cervix

REF. : 11100/0216

AC made of sponge rubber

REF. : 11100/0211

Rubber mat for boar dummy,
150 cm x 100 cm x thickness 23 mm

REF. : 11100/0040

Collection Dummy

The Minitube boar dummy is also available without the AutoMate®.

It is height adjustable and spring mounted, easy to use and offers an optimal collection comfort for the boar. It is equipped with a massive bottom plate for secure fixation and wide foot supports. The smooth and easy to clean surface of the firm plastic cover guarantees maximum hygiene.

REF. : 11100/0001

US BAG™

Your benefits

- The complete one-way solution from semen collection to packaging
- Quick and clean preparation of the semen collection cup: filter and inner surface of the US Bag™ are kept contamination free
- Simple and efficient semen processing, because the ejaculate remains in the US Bag™ for dilution and packaging
- No more time-consuming sterilization
- Essential improvement of lab hygiene

Technical features

- Semen friendly material
- Integrated non woven filter
- Perforation line for tearing off the filter after use
- 100/package

US Bag™, volume 3.5 l REF. : [11123/0100](#)

US Bag™ short, volume 2 l REF. : [11123/0110](#)

US Bag™ with spout, volume 3.5 l REF. : [11123/0200](#)

Accessories

Semen collection cup, insulated, extra wide opening, volume 1 l REF. : [11123/1000](#)

Semen collection glove, extra sensitive, non-toxic to sperm, 100/box

Size M REF. : [11128/0055](#)

Size L REF. : [11128/0060](#)

Size XL REF. : [11128/0065](#)

Hygienic glove, for the protection of the collection glove during boar preparation, 100/box REF. : [11128/0100](#)

Semen collection bag, 210 x 300 mm, 100/box REF. : [11123/3010](#)

Filter for boar semen, non woven tissue, non-absorbing, 240 mm diameter, 200/package REF. : [11123/3020](#)



Sperm Vision® Automorphology

Sperm Vision® Automorphology is a CASA system with an automated morphology module to detect and classify secondary sperm abnormalities at production line speed.

Your benefits

- **Comprehensive:** Sperm Vision® Automorphology provides an exact analysis of concentration, progressive motility and percentage of secondary abnormalities of each semen sample assessment. Removes technician to technician variability and errors.
- **Consistent:** It removes technician to technician variability and errors.
- **Speed:** Quick consistent analysis of 600 sperm in less than 30 seconds, saving time and labor.
- **Optimized process:** Sperm Vision® provides a standard for evaluation and calculation criteria significantly improving the accuracy of each analysis. The desired target concentration for spermatozoa per dose can be lowered considerably.
- **Versatility:** Sperm Vision® is the only system to access motility, concentration, and morphology automatically while integrating directly into the semen processing and packaging system.
- **Documentation:** Images, video files, and all analysis data are archived and can be exported to other programs. The database and reports are essential to quality assurance documentation.
- **Validated:** A detailed validation report is available upon request.

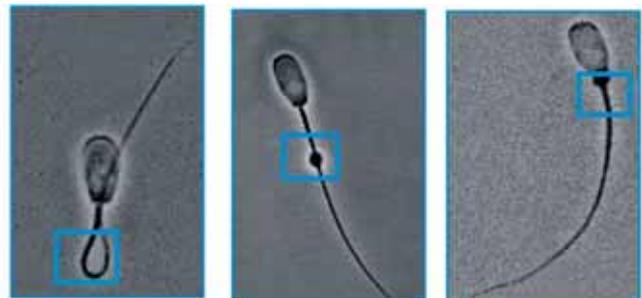
Technical features

- Real time and simultaneous motility, morphology and concentration assessment
- Comparative measurements of up to 16 fields with average value calculation
- Motility parameters DCL, DAP, DSL, VCL, VAP, VSL, LIN, WOB, STR, BCF, AOC, ALH
- User-defined tolerance values and standard deviations
- Morphology tool with automatic sperm recognition at 100x magnification
- Compatible with IDEE and PRISM
- Optional viability tool

Sperm Vision® Automorphology REF. : 12520/3650



Automated Detection of Secondary Sperm Abnormalities



Bent Tails

Distal Droplets

Proximal Droplets

Accessories

Zeiss AxioScope.A1

Phase contrast microscope with excellent image quality, can be retrofit with a ScanStage

REF. : 12008/0040

CASA objective

20x negative phase contrast, Zeiss

REF. : 12006/0231

Zeiss Camera Adapter

0.63x

REF. : 12108/0004

ScanStage

Automatic ScanStage for microscope, with integrated heating system, positioning $\pm 5 \mu\text{m}$, suitable for a variety of microscopes, requires controller

REF. : 12048/0000

Temperature Control Unit HT 300

for heated microscope stage

REF. : 12055/0302

MICROSCOPY AND VOLUME MEASUREMENT

Phase Contrast Microscope CX 31

- Infinity optic system: sharp images over the complete field
- Phase achromatic optics with universal condenser
- Binocular
- Heated original microscope stage with temperature control unit HT200 with additional warming plate and two digital temperature displays
- Temperature freely selectable
- Ergonomic design
- Phase achromatic objectives
- 6 V / 30 W halogen light

with objectives 10x, 20x, 40x, 100x REF. : [12004/0331](#)

with photo tube (trinocular),
with objectives 10x, 20x, 40x REF. : [12004/0631](#)



Phase Contrast Microscope MBL 2000

Functional microscope for semen analysis with phase achromatic objectives 10x, 40x, 100x, heating system with temperature control unit HT50 with digital temperature display and freely selectable temperature adjustment

Binocular REF. : [12010/2000](#)

with ocular video camera and monitor REF. : [12010/2100](#)



Semen Dyes

Spermac, for morphological evaluation
4 x 50 ml REF. : [15405/0000](#)

Farely stain, for morphological evaluation,
consisting of 3 components, 250 ml each REF. : [15405/0026](#)

Eosin G, solution for supravital staining,
50 ml REF. : [15405/0025](#)

Nigrosin, solution for supravital staining,
50 ml REF. : [15405/0029](#)



Laboratory Scales

Precision scale for the determination of the ejaculate volume or for weighing out extender, weighing range: max. 6 000 g, resolution 1 g, weighing pan 150 x 170 mm

REF. : [14273/0440](#)

Precision scale for accurate weighing of antibiotics or extender powder, weighing range: max. 2 000 g, resolution 0.1 g, weighing pan 130 x 130 mm

REF. : [14295/0444](#)



PHOTOMETRY

Photometer SDM6



Your benefits

- Touch screen operated, large display
- Programs for the determination of sperm concentration of boar, bull, stallion, ram and buck semen
- Automatic calculation of extender volume and number of doses
- Display of semen concentration in 10^9 sperm cells/ml
- Optional: integrated printer for printout of production data of ejaculate
- Serial and parallel interfaces for data transfer

Technical features

- Spectral range: 340 - 578 nm
- Filter: 546 nm
- Halogen lamp
- Use of 10 mm macro cuvettes
- Analysis time: 2 seconds/sample
- Power supply: 230 V/ 50 Hz or 110 V/60 Hz

Photometer SDM6, for the determination of semen concentration and for dose calculation, with integrated printer

REF. : 12300/0006

Photometer SDM6, without printer

REF. : 12300/0008

Accessories

Paper for printer

REF. : 12300/0311

Macro cuvette, 4 ml, 100/package

REF. : 12301/0003

NaCl solution, 0.9 %, 1 l

REF. : 12301/4667

Dispenser 0.5 - 5 ml for NaCl solution

REF. : 12428/1815

Varipette 10 - 100 μ l, with digital display

REF. : 12425/4810

Pipette tip yellow, 1000/package

REF. : 12425/9409

Automatic Dilutor Microlab 503 A, for precise sample preparation. Complete with reagent and sample syringes.

REF. : 12421/0505



Photometer SDM 1



The SDM 1 is a compact, highly accurate photometer developed for measuring sperm cell concentrations. It can be calibrated for porcine, bovine, equine, canine and small ruminant species. Cleaning is simple, maintenance is minimal. The semen concentration is displayed in million sperm cells/ml.

- Calibration for boar semen
- No dilution of semen samples necessary
- LED light source provides stable output
- Cuvette is securely fixed in the correct measuring position
- Calibration is performed automatically with each sample measurement

Photometer SDM 1

REF. : 12300/0100

Accessory

Microcuvette for SDM 1, 100/box

REF. : 12300/1111

WATER PREPARATION

Water Treatment Plant

PureLab water treatment plant with 200 l tank and sterile filter.

Technical features

- Production capacity approximately 30 l per hour
- Latest technology, based on reverse osmosis
- Membrane free of cellulose
- Micro-processor control for the control of water quality
- Alert function in case a filter change is required
- Self-purification function guarantees long operating life of the membrane
- Indication of the purified water quality in conductivity and % deionization

Your benefits

- High purity degree of the purified water
- High security due to self purification, quality tests and warning notices
- Requires low maintenance

Connection: 230 V/50 Hz, 115 V/60 Hz, 100V/50 Hz or 100 V/60 Hz

REF. : [14010/2000](#)



Water Distillers

Monodistiller 2008

Stainless steel
With reservoir
Usage of cooling water: 72 l/h
Connection: 220 V/ 3 ph or 400 V / 3 ph + 0
Input: 6 000 W



Capacity: 8 l/h, reservoir 16 l

REF. : [14054/2008](#)

Capacity: 12l/h, reservoir 24 l

REF. : [14054/2012](#)

Bidistiller 2108

Stainless steel
Capacity: 8 l/h
Usage of cooling water: 198 l/h
Connection: 220 V/ 3 ph or 400 V / 3 ph + 0
Input: 11 500 W

REF. : [14052/2108](#)

Set of tubes for distiller,
for water supply and drain

REF. : [14055/2100](#)

Semen Dyes

| | |
|--------|-----------------------------------|
| Red | REF. : 13900/0200 |
| Blue | REF. : 13900/0300 |
| Green | REF. : 13900/0500 |
| Yellow | REF. : 13900/0600 |



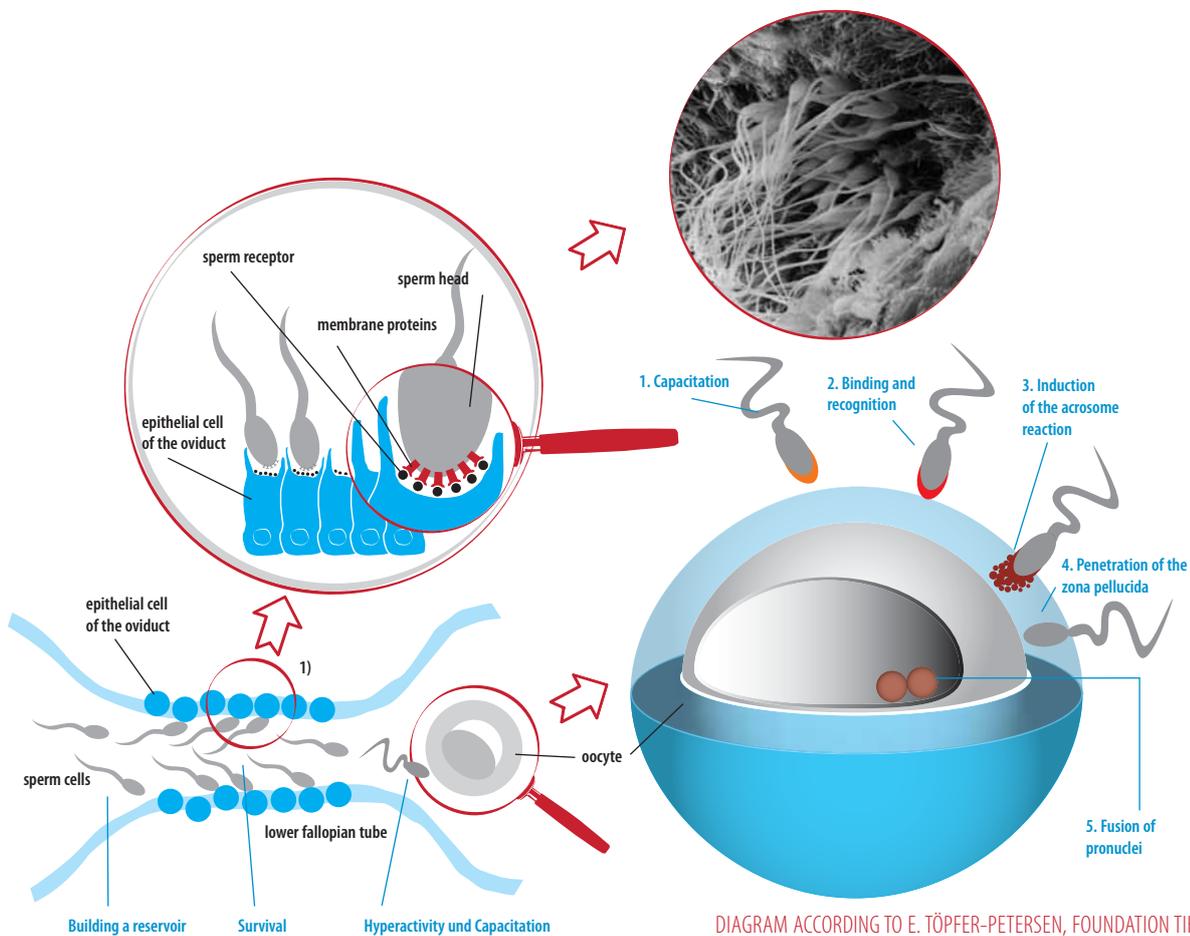
MINITUBE BOAR SEMEN EXTENDERS

The basic principle: a scientific concept

The semen cell's ability to fertilize must be conserved during the whole storage time of the semen. This is the most important task of modern semen conservation media. Besides the motility of the sperm cell also the functionality of its membrane must be conserved. Minitube's high quality extenders protect the motility of the semen cells, the integrity of their acrosomes, and especially the functionality of the plasma membrane. Due to the triple protection provided by the extender media the semen cell's ability to fertilize is conserved even at long term storage times, and even when the storage

conditions are not always ideal. Androstar® Plus and Androhep® Plus remarkably reduce the negative effect of the cold shock motility and acrosome integrity. They are able to compensate unexpected variations of temperature far from the recommended storage and transport temperature of +17°C, and even a decline down to +10°C: the cooperation of pH-value, ionic strength, type of the ion, osmotic pressure, antioxidant agent and a specific protective factor for the membrane balance stress for the semen. Thus these extenders are particularly suitable for transport under difficult climatic conditions.

The Physiology of Fertilization



- Transportation of the sperm cells by means of uterus contractions and **active motion** to the fallopian tube
- Binding of a part of the spermatozoa to the epithelial cells of the fallopian tube's wall ¹⁾
- Creation of a sperm cell reservoir with morphologically intact and fully functional semen cells

- Fertilisation relevant signals from the fallopian tube captured by the **plasma membrane**
- Sperm cells leaving the sperm cell reservoir by means of specific reactions of the plasma membrane and capacitation for preparing the fertilization
- **Acrosome reaction** and fusion of the sperm with the oocyte

Minitube Extenders protect the 3 most important factors for a successful insemination:

- Motility of the sperm cells
- Functionality of the plasma membrane
- The acrosome

The production standard GMP*: High safety and uniform quality



The production facility of our extenders meets the strict regulations of the GMP guidelines and is authorized to produce pharmaceuticals for human medicine. The production machines are fully automatic. Thus sources of errors are excluded



and a high sanitary standard is guaranteed. All steps of the production comply with the rigorous GMP standards that demand complete control and documentation of the production process.

Complete documentation and quality control



Volumetric measuring of sperm cells



Motility analysis



Viability evaluation



Flow cytometric analysis

The components of the Minitube extenders feature extreme purity and certified origin. Prior to their processing all components are subject to a rigorous and documented quality control. This standard together with the individual quality control of the mixing procedure leads to the continuously excellent conservation properties for semen of any batch. After a further strict control at the end of the production, corresponding quality certificates are issued to the extenders. They

certify the chemical and physical purity of each batch as well as the superior semen conservation properties of the extender. For the corresponding measurements the latest methods for semen cell analysis are applied: flow cytometry, volumetric measuring of the sperm cells and motility, as well as viability analysis with the automated Sperm Vision® system. The extensive quality controls and their documentation in each production step guarantee highest security.

*„Good manufacturing practice“ comprises strict directives for the quality control of the production process and -environment during the manufacturing of pharmaceutical products and medical devices which outreach the common ISO-norms. All processes are exactly described and documented on each

production level. All raw materials and components are subject to a rigorous quality control. Thus a continuously high quality of the products is guaranteed.

MINITUBE BOAR SEMEN EXTENDERS

The range of products: for every application the right extender

Long term Extenders

Androhep® EnduraGuard®

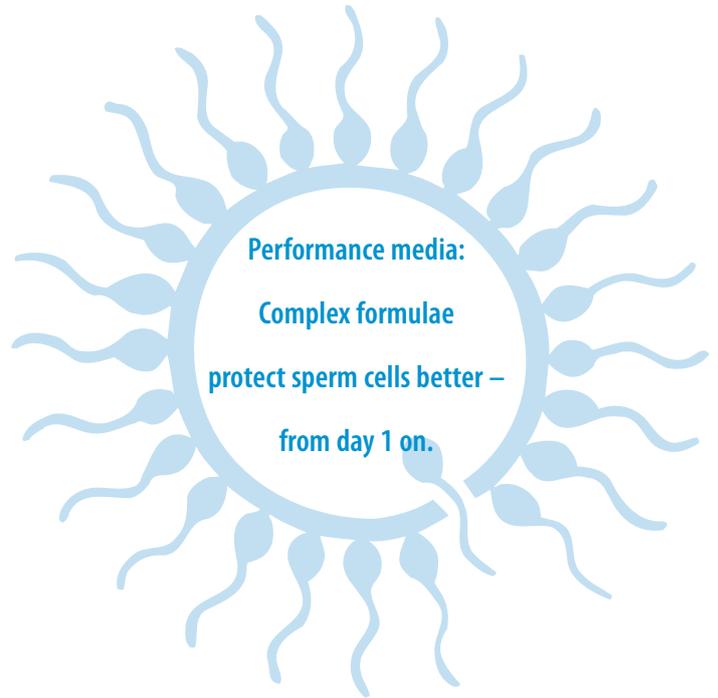
High fertility and farrowing rates, combined with an extremely long storage time of up to 10 days. The highly cleaned protein included in this medium, has got a direct effect on maintaining the fertilizing capacity of the sperm cells. The long semen durability enables various controls to be performed prior to its application.

Androhep® Plus

The perfect medium for suboptimal conditions and for the long distance transport. The component "Plus" specifically stabilizes the membrane and protects the fertilizing capacity. The formula of Androhep® Plus produces a maximum reduction of the sperm metabolism during storage. Thus the energy reserves are being conserved.

Androstar® Plus

The economic long term extender. Ideal to facilitate the transport and the availability of semen on weekends. Contains the factor "Plus" for membrane stabilization. Thus the sperm cells are less susceptible to damages due to sub-optimal storage conditions: the temperature limit tolerated by the sperm cells, extends to the range of +10°C to +25°C.



Androhep® EnduraGuard®

Androhep® Plus

Androstar® Plus

| | |
|------------|-------------------|
| 1 litre | REF. : 13532/0001 |
| 5 litres | REF. : 13532/0005 |
| 10 litres | REF. : 13532/0010 |
| 100 litres | REF. : 13532/0100 |

| |
|-------------------|
| REF. : 13529/5001 |
| REF. : 13529/5005 |
| REF. : 13529/5010 |
| REF. : 13529/5100 |

| |
|-------------------|
| REF. : 13531/1001 |
| REF. : 13531/1005 |
| REF. : 13531/1010 |
| REF. : 13531/1100 |

MINITUBE BOAR SEMEN EXTENDERS

Medium- and Standard Extenders

M III®

The formula contains antioxidants that prevent the damaging effect of metabolites in the conservation medium and thus guarantee the durability of the semen for a period of 4 days.



M III®

| | |
|-----------|-------------------|
| 1 litre | REF. : 13515/0001 |
| 5 litres | REF. : 13515/0005 |
| 10 litres | REF. : 13515/0010 |
| 83 litres | REF. : 13515/0083 |

Minitube extenders are available with different antibiotics. The antibiotics are selected according to very strict criteria and each batch is tested completely.

Extenders without antibiotics and separately compounded antibiotics are available alternatively.

Euro Cocktail for the preservation of boar semen according to the norm 90/429 of the European Community. Contains streptomycin, penicillin, lincomycin, and spectinomycin. The quantity is sufficient for 5 litres extender.

REF. : 13540/5000

BTS

The classic formula improved by Minitube provides a balanced medium for the storage of up to 3 days.



BTS

| | |
|---------------------------------|-------------------|
| 1 litre | REF. : 13525/0001 |
| 5 litres | REF. : 13525/0005 |
| 10 litres | REF. : 13525/0010 |
| 20 litres | REF. : 13525/1020 |
| 100 litres | REF. : 13525/1100 |
| 100 litres, without antibiotics | REF. : 13525/0100 |

Thus the compatibility for the metabolism and the cell structure of the sperm is guaranteed as well as the stability and the efficiency of the antibiotics for the entire preservation time.

Gentamicin sulphate

| | |
|-------------------------------|-------------------|
| 12.5 g for 50 litres extender | REF. : 13540/3050 |
| 25 g for 100 litres extender | REF. : 13540/3100 |

PROCESSING OF BOAR SEMEN EXTENDER

SmartDispenser

Technical features

- Consists of an electronic control unit and a balance and is interfaced with a pump. The constant feed back between pump and control unit guarantees a measuring precision of ± 2 g
- Can be combined with a heated extender tank
- The SmartDispenser can be combined with the IDEE system
- Very modest space requirements

SmartDispenser, consisting of electronic control unit and scale

REF. : [13200/0600](#)

Accessories

Peristaltic pump, complete with silicone tubing, tubing support and stainless steel sinker, 3.4 l/min

REF. : [13200/0013](#)

Peristaltic pump, complete with silicone tubing, tubing support and stainless steel sinker, 5 l/min

REF. : [13200/0690](#)

Silicone tubing for peristaltic pump 13200/0013, 25 m/roll

REF. : [13200/0011](#)

Silicone tubing for peristaltic pump 13200/0690, 15 m/roll

REF. : [13200/0695](#)

Semen mixing cylinder, 3.5 l

REF. : [13203/0001](#)

Semen mixing cylinder, 5.5 l

REF. : [13210/0030](#)



PROCESSING OF BOAR SEMEN EXTENDER

Heated Extender Vat, 100 and 200 litres

Technical features

- Double wall and double bottom with heating system
- Temperature control unit HT 50 with freely adjustable temperature up to +55°C
- All stainless steel, easy to disinfect
- On wheels
- Time switch



Your benefits

- The selected extender temperature is reliably maintained during the whole production day
- Disposable round bottom plastic bags provide an optimal hygiene standard

| Capacity | Heated extender vat | Round bottom plastic bag |
|--------------------|-----------------------------------|-----------------------------------|
| 100 litres, 1200 W | REF. : 13201/0100 | REF. : 13201/4115 |
| 200 litres, 1700 W | REF. : 13201/0200 | REF. : 13201/4116 |

Accessories

Stirring drive for storage vat

Consisting of a magnetic stirring drive integrated in the bottom, stirring stick and speed control at the temperature control unit. Only the stirring stick is located in the liquid. It can quickly be disassembled, cleaned and sterilized.

REF. : [13201/1000](#)

Base platform with wheels and scale

The integrated scale allows reading of the exact remaining extender quantity at any time.

| | |
|--------------------|-----------------------------------|
| for 100 litres vat | REF. : 13201/0300 |
| for 200 litres vat | REF. : 13201/0320 |

Heated Extender Vat, 20 litres

Technical features

- Double wall and double bottom with heating system
- Temperature control unit HT 50 with freely adjustable temperature up to +55°C
- All stainless steel, easy to disinfect
- 2 openings in the lid allow the connection to an automatic pump, or to the Compact- or SmartDispenser

REF. : [13201/0020](#)

Accessory

Round bottom plastic bag for 20 l vat REF. : [13201/4112](#)



AUTOMATIC FILLING MACHINES FOR BOAR SEMEN

TwinPacker, MiniBSP and SPS 21

Your benefits

Computerized packaging lines for boar semen:

TwinPacker, MiniBSP and SPS 21 are synonyms for automated boar semen production. Producing more than 100 million tubes per year worldwide, these Minitube machines prove their worth every day as reliable and efficient cornerstones for the A.I. industry.

Technical features

- Machine control via industrial PC with touch screen
- Easy menu navigation
- Filling accuracy ± 1 ml
- Sealing of the tubes with ultrasound (MiniBSP and SPS 21)
- Automatic labelling, also possible with barcodes and company logo via thermal transfer printer
- Fully automatic data transfer between laboratory software IDEE and packaging line in real time
- Layout of labels can easily be adjusted and changed by the operator
- Industrial design and high quality technology ensure consistency of your semen production
- The processing speed of up to 2100 tubes per hour provides your laboratory with efficiency and high performance
- The automation of semen production saves labour time and increases the product quality
- interfaces to IDEE or other computer programs make the production data available in real time to sales and administration
- Our service team provides full service via hotline, by remote access via tele-service or on the spot
- Profitability is the aim! Cost-effective production without wastage due to the use of tubes for semen packaging

| |  TwinPacker |  MiniBSP |  SPS 21 |
|--|--|---|---|
| Maximum capacity in tubes per hour* | | | |
| in continuous operation | 550 | 900 | 2100 |
| in production conditions | 400 | 900 | 1600 / 2100** |
| Tube magazine capacity | 9 magazines for 4 tubes | 210 (integrated) optional 2100 (external) | 2100 (external) |
| Required space | 72 x 90 x 138 cm (table) | 180 x 65 cm (table) | 150 x 110 cm (without magazine) |
| Serial data connection | Yes | Yes | Yes |
| Operating pressure | - | 6 bar (5 - 10) | 6 bar (5 - 10) |
| Compressor capacity | - | > 350 l/min | > 440 l/min |
| Pressure tank | - | 100 l | 250 l |
| Electric connection | 230 V, 50 Hz | 230/110 V, 50/60 Hz | 230/110 V, 50/60 Hz |

* performance data may vary depending on production conditions

** semen pool processing

TWINPACKER

Compact and robust table top machine for filling and labelling boar semen tubes – the ideal solution for small and medium sized boar centres.

Technical features

- Dual working cycle that processes 2 semen tubes at a time
- Capacity: up to 550 tubes per hour
- Filling with peristaltic pumping system: produces a precise volume from the first tube on (± 3 ml)
- No semen loss during the startup of the filling hose
- Secure sealing of tubes by means of thermal pulse- welding technique
- Print of individually designed labels and barcodes
- Connection with IDEE laboratory software possible
- Easy maintenance and service



REF. : [13214/0000](#)

Accessories

Filling tube with stainless steel sinker REF. : [13214/0010](#)

Tube magazine for 4 tubes REF. : [13214/0020](#)

Label roll with 2 500 labels REF. : [13214/3049](#)



MINI BSP

The automatic filling machine for boar semen MiniBSP is a space saving table model and is suitable for the processing of up to 900 tubes per hour.

Technical features

- Integrated tube magazine for 210 tubes
- Option: External tube magazine for 2100 tubes
- Control of filling level by electronic weighing cells: allows the adjustment of the filling level per tube via software with a filling accuracy of ± 1 ml
- Ultrasonic welding unit
- Very fast exchange of the label roll
- Table with roller base and transport belt for sorting the ejaculates is available as an option
- Second filling station for tubes with automatic ejaculate change: While the machine is processing the ejaculate the second one can be prepared and the machine automatically switches to the second filling station. Thus the machine can be used without interruption. The speed of theoretical and real production is identical.



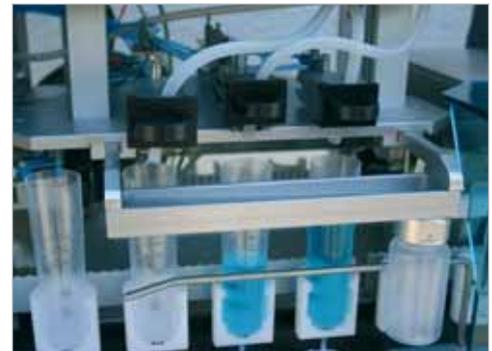
REF. : 13210/0005

Accessories

Third tube filling station with extender dispenser (standard for SPS 21, option for MiniBSP)

After adding pre-extended ejaculate, this station fills each tube with the remaining volume of extender. The two phase dilution saves time and leads to a faster cooling of the semen, as the second dilution step is performed with extender that is maintained at room temperature.

REF. : 13210/0045



Punching station

Every filled and sealed tube is punched at a short distance above the sealing seam. By this small opening the tube can be hung up during insemination. (Option also available for SPS 21)

REF. : 13210/0060

External tube magazine for 2100 tubes REF. : 13210/0050

Mobile MiniBSP table, with conveyor belt for automatic separation of ejaculates into storage boxes, including 3 storage boxes

REF. : 13210/0091



SPS 21

Automatic filling machine for boar semen. The highest capacity filling line among the Minitube filling machines is the ideal solution, when large quantities of tubes should be filled, sealed and labelled in short time. The SPS 21 is designed for very low maintenance requirements.

Technical features

- Double filling station enables speed adjustment up to 2100 tubes per hour
- External tube magazine for 2100 tubes can be located at a relative distance, even in another room
- For treatment of single ejaculates or pools with up to 10 l volume
- Simple design: The components can easily and quickly be disassembled for cleaning
- Filling with electronic weighing cells: enables adjustment of the filling level in every tube via software and ensures a very exact filling volume (± 1 ml)
- Second filling station for automated ejaculate exchange
- Third filling station for two phase extender addition
- Servo powered tube transport
- High speed thermal transfer printer
- Communicates with IDEE and other laboratory software programs via integrated PC

REF. : [13209/0000](#)



Accessories

External tube magazine for 2100 tubes. This tube magazine can also be connected with the MiniBSP

REF. : [13210/0050](#)

Collection magazine for tubes

REF. : [13210/0021](#)

Dispensing gear

REF. : [13210/0160](#)

Beaker for semen, 5 l graduated

REF. : [13210/0101](#)

Label made of special paper

REF. : [13210/4841](#)

Tool set, for SPS 21 und MiniBSP

REF. : [5013210/0021](#)



SEMI-AUTOMATIC PACKAGING SYSTEM FOR BOAR SEMEN

Your benefits

- Easy to handle
- Maximum hygiene – only the dispensing nozzles are sterilized and reused
- The perfect complement to the US Bag™



Technical features Semen Dispensing Unit

- Rugged frame made of stainless steel
- With track for tube magazine or bottle magazine
- For mixing cylinders with disposable plastic bags in 2 sizes: 3.5 and 5.5 l

REF. : 13203/0000

Technical features Sealing Unit

- Simultaneous sealing of 6 tubes
- With magazine track and pedal switch
- Both jaws with 4 mm heating wires
- Individual adjustment of heating and cooling cycles
- Output: 600 tubes/hour

REF. : 13225/0000

Accessories

Anti-adhesive tape for sealing jaw REF. : 13225/0201

Heating wire, 4 mm wide, length 620 mm, pair REF. : 13225/0100

Dispensing nozzle made of sperm friendly plastic material, to be sterilized in hot water or vapour

REF. : 13203/0013

Tube magazine for 6 boar semen tubes, stainless steel REF. : 13204/9006

Tube magazine for 6 Superflexitubes REF. : 13204/7006

Bottle magazine for 24 boar semen bottles, stainless steel REF. : 13204/0024

Semen mixing cylinder
3.5 l REF. : 13203/0001
5.5 l REF. : 13210/0030

Insert ring for semen mixing cylinder
3.5 l REF. : 13203/0005
5.5 l REF. : 13210/0035

Semen dispensing bag, disposable, non-toxic material, 100/roll
3.5 l REF. : 13203/4001
5.5 l REF. : 13203/4010

Label printer with dispenser max. label size 104 mm width x 279 mm length, Interface RS 232, USB and parallel
REF. : 18700/2844

Holder for label roll REF. : 18700/3000

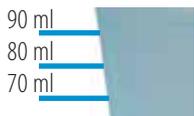


QUICKTIP FLEXITUBE®

the clever solution for the conservation of boar semen

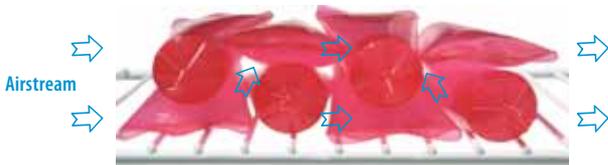
Your benefits

- Ideal for boar semen
- Optimal for handling in the laboratory
- Brilliant for insemination: the practical QuickTip twist-off tip provides for a quick, easy and hygienic insemination
- Exact and easy filling through the large opening and filling level lines
- Easy handling in the manual or automatic treatment

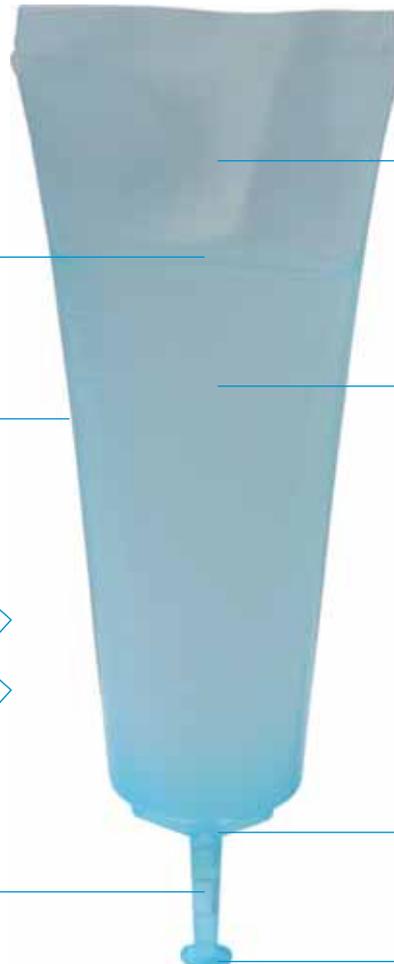


Filling level line:
easy to read

Shape:
little air passages between the tubes allow for steady cooling of each semen dose in the fridge



Spout:
ensures an airtight fit of the tube on all different kinds of catheters



Material:
sperm friendly polyethylene

Flexible walls:
for a complete semen uptake by the sow



Tube bottom:
particularly reinforced, so that the tube stands upright on the catheter

Ergonomic twist-off tip:
No tool necessary with QuickTip tubes

QuickTip Flexitube®, very soft wall
QuickTip Superflexitube, extra soft wall

Both tubes are available in different colors:

- transparent
- red
- yellow
- green
- blue
- orange

Flexitube®

- REF. : 13452/0396
- REF. : 13452/1396
- REF. : 13452/2396
- REF. : 13452/3396
- REF. : 13452/4396
- REF. : 13452/5396

Superflexitube

- REF. : 13452/0796
- REF. : 13452/1796
- REF. : 13452/2796
- REF. : 13452/3796
- REF. : 13452/4796
- REF. : 13452/5796

Tube clamp REF. : 13452/0005

AIR CONDITIONED BOXES AND TEMPERATURE CONTROLLED SEMEN STORAGE UNITS

Air Conditioned Boxes

Your benefits

- Air conditioned boxes and temperature controlled semen storage units can heat and cool to provide the desired temperature independent from the outside temperature
- Internal ventilation system for an even temperature distribution within the box
- Exact, electronic control
- Minitube air conditioned boxes have a 12V DC connection for mobile use

Air conditioned box, 40 l, capacity: 100 Flexitubes® or bottles, preset temperature: +17°C

REF. : [17161/1032](#)

With variable temperature setting and digital temperature display

REF. : [17161/0032](#)

Air conditioned box, 18 l, capacity: 70 Flexitubes® or bottles, temperature preset to +17°C

REF. : [17161/0020](#)

Air conditioned box, 8 l, capacity 24 tubes or bottles, temperature preset to +17°C

REF. : [17161/0008](#)

For all air conditioned boxes:

Transformer 230V / 12V, output 5 A

REF. : [17165/1395](#)

Digital temperature logger TempControl 17, for temperature recording for 72 h, during transport of boar semen (measurement range: 15-19°C)

REF. : [17165/0000](#)



40 litres



8 litres

18 litres



Temperature Controlled Semen Storage Units

Temperature controlled storage unit: with variable temperature setting for double purpose: for semen storage at 17°C or for pre-warming the semen collection items to +40°C. Digital temperature display clearly legible from the outside. Power supply: 230 V

for 300 tubes / bottles

REF. : [14160/0300](#)

for 700 tubes / bottles

REF. : [14160/0352](#)

Temperature controlled storage unit with temperature preset to +17°C, for 300 tubes / bottles

REF. : [14160/0200](#)

Klima Kit digital: electronic control for keeping +17°C in any refrigerator. No installation required. Power supply: 110 V or 230 V, target value adjustable

REF. : [14160/9001](#)



New Generation Insemination catheter with patented „Poly Gel“ tip

With ClearGlide™ Minitube has developed a revolutionary new catheter for artificial insemination of sows. Its patented unique poly gel tip has an

excellent gliding property, adjusts perfectly to the cervix and offers superior locking of the catheter during insemination.



Your benefits:

- Excellent gliding capacity
- Flexible poly gel tip adjusts perfectly to the cervix - offering superior locking
- The sealing flange reduces semen backflow during insemination
- The recessed shaft avoids injuries

Technical features

- New material with unique molecular structure
- Poly gel tip has different hardness zones
- Non-absorbent tip
- High elasticity of the material: soft tip, compact shaft

ClearGlide™, with handle, 25/bag,
500/box

REF. : [17106/4026](#)

ClearGlide™, without handle, 25/bag,
500/box

REF. : [17106/3026](#)

SafeBlue ClearGlide™

ClearGlide™ is also available in SafeBlue-hygienic presentation



Your benefits

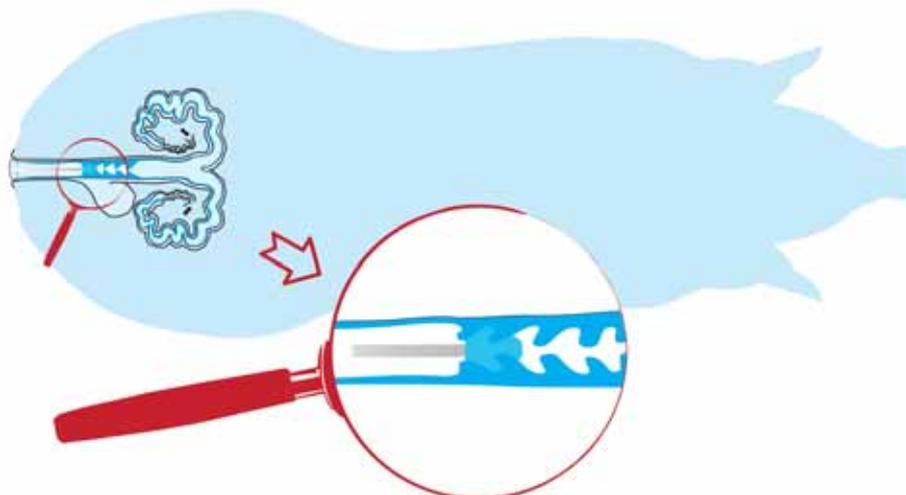
- First class insemination catheter
- Single packed
- Optimal insemination hygiene with proven higher insemination success rates

SafeBlue ClearGlide™,
100/package

REF. : [17106/3005](#)

SafeBlue ClearGlide™,
with handle, 100/package

REF. : [17106/4005](#)



SAFEBLUE® INSEMINATION CATHETERS

The SafeBlue® hygiene concept – proven increase of reproductive performance

A clean catheter and a clean insemination process maintain the uterus free from bacterial contamination, and thus are of great importance for the insemination success.

The sterilized, hygienically packed catheter, the use of the sheath as protection foil during the passage through the vulva and especially the fact that extra lubricant, which is often a source for bacterial contamination, is no longer needed, make of the SafeBlue® a unique hygiene concept for the insemination.

A number of scientific publications and practice reports emphasize the positive effect of the SafeBlue® concept: in field trials 30 to 100 piglets more per 100 inseminated sows could consistently be achieved.



Your benefits

- The sterilized catheter remains clean and free of contamination during storage and until insemination
- Due to the protective sanitary sheath, the catheter remains clean during the insertion in the vulva. Only in the clean area the catheter tip is pushed through the sheath.
- No more need for time consuming preparations: dry cleaning of the vulva is sufficient.
- No more fumbling with lubricants
- Improved pregnancy rates and litter numbers

Technical features

- Each catheter is sterile and packed individually in a protective sanitary sheath
- Catheter tips are covered with sperm friendly lubricant
- Available for Foamtip®, Spirette® and SoftGilt™

SafeBlue Foamtip®, 100/dispenser box REF. : [17106/9176](#)

SafeBlue Spirette®, 100/dispenser box REF. : [17102/9560](#)

SafeBlue SoftGilt™, 100/dispenser box REF. : [17109/9001](#)

SafeBlue Foamtip®



SafeBlue Spirette®



SafeBlue SoftGilt™



INSEMINATION CATHETERS

Spirette®

- The tip – a true copy of nature
- For a perfect sealing and stimulation of the cervix
- A strong lock in the cervix for successful insemination

- Large handle
- 4/bag

Spirette® Standard

REF. : 17102/9067



Foamtip®

- Tapered foam end for gentle insertion and removal
- Firm foam for better lock, increased stimulation and prevention of semen backflow

- Non absorbing foam to prevent loss of semen
- Safelock thread at the end of the shaft for excellent fixation of the Flexitube®

Foamtip® Safelock® without handle, 25/bag

REF. : 17106/5077

Foamtip® with handle, 25/bag

REF. : 17106/5376



SoftGilt™

SoftGilt™ for gilts without handle, 25/bag

REF. : 17109/9000

SoftGilt™ for gilts with handle, 25/bag

REF. : 17109/9002



Extension for Insemination Catheters

Minitube provides extensions for insemination catheters for hanging up semen tubes on a wire, providing a hygienic connection between semen dose and catheter. Stiff and flexible extensions are available.



Flexible extension

- Suitable for all catheters
- Applicable for all insemination techniques: the tube can be fixed in almost every position
- Available either packed individually or in units of 100 pieces

Flexible extension, 1/bag

REF. : 17108/1001

Flexible extension, 100/bag

REF. : 17108/1100



Stiff extension, with adapter

- Suitable for all catheters
- The adapter allows an easy and secure fixation of the semen tube
- Also available in a set with Foamtip® catheter

Extension, with adapter, 1/bag

REF. : 17108/0001

Extension, with adapter, 100/bag

REF. : 17108/0100

Foamtip® Safelock blue with extension,

1/bag, 400/box

REF. : 17107/0001

INSEMINATION CATHETERS

Verona®: Trans-Cervical AI Catheter

Your benefits

- Ideal for the trans-cervical insemination of sows: all semen cells reach the uterus and can therefore easier be transported into the fallopian tube by uterine contractions
- The fertility of the inseminated sow can thus be improved, or can be maintained with a reduced amount of sperm per dose
- The Foamtip® head of the outer catheter is already lubricated; the whole catheter is individually packaged in the hygienic SafeBlue® sheath
- Smooth, round, atraumatic tip of the inner catheter : no extra piece, that could detach from the inner catheter
- Inner catheter with very small diameter: nearly no semen remains in the catheter
- Sterilized by gamma irradiation

Trans-cervical catheter Verona with Foamtip®,
single packed, 10/bag

REF. : 17112/0000



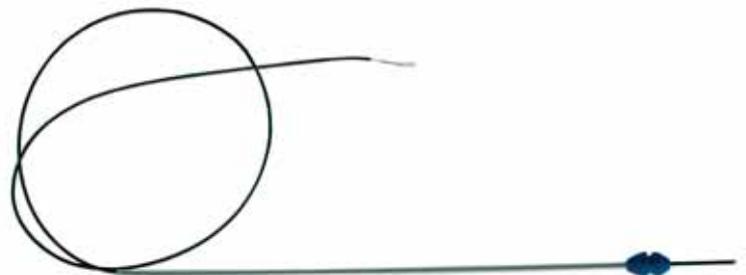
DeepBlue® Deep Intrauterine AI Catheter

Your benefits

- For the deep intrauterine insemination of specially sensitive semen: ideal for doses with very low numbers of sperm for frozen-thawed or sexed semen
- The flexible and at the same time firm and soft inner catheter, with a length of more than 1.50 m can be inserted over the complete distance of an uterus horn up to its tip
- A small metal tip facilitates the entry into the cervix
- Patented (University of Murcia, Spain)

DeepBlue® AI Catheter, individually packaged,
sterilized

REF. : 17113/0100



MELROSE CATHETERS AND ACCESSORIES

The sterilizable catheter made of natural rubber or plastic

Your benefits

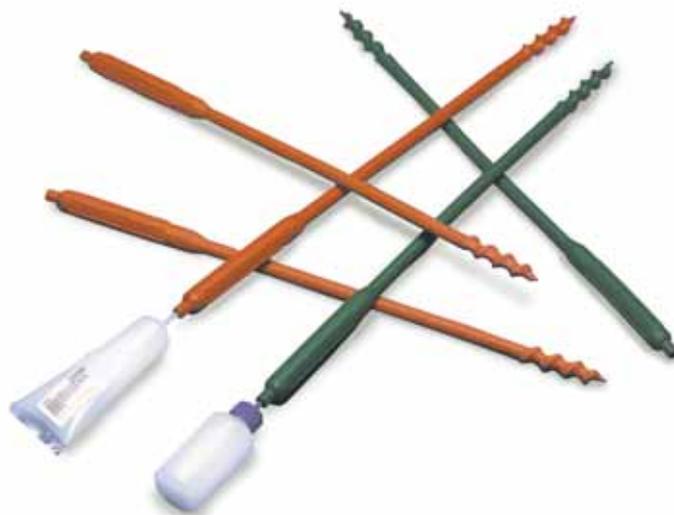
- Thousands of inseminations without producing waste
- Can be sterilized more often than any copy

Melrose insemination catheter made of rubber, orange

REF. : [17110/9060](#)

Melrose insemination catheter made of plastic, green

REF. : [17110/9085](#)



Accessories

Container for sterilization and transport of Melrose catheters made of stainless steel. The Melrose catheters are steam sterilized in a hanging position thus protecting the perfect shape of the catheter tips.

Container for 9 catheters

REF. : [17191/0009](#)



Sterivar steam sterilizer for 100 Melrose catheters, stainless steel, double wall with pressure safety valve, timer and water drain.

Operation: +100°C/0.02 bar

Power supply: 230 V/50 Hz

REF. : [11050/0015](#)

Insert rack for sterilizer

for 100 Melrose catheters

REF. : [17190/0101](#)

Roller base for Sterivar

REF. : [11051/0000](#)



ACCESSORIES FOR PORCINE INSEMINATION

Breeding Clamp

Your benefits

- Very easy handling: the clamp is just clipped on the back of the sow
- Elastic compressing arms stimulate the sow through pressure to the flanks
- Made of stainless steel, easy to clean, rounded edges for maximum safety in the barn
- Effective fixation of any catheter, no need for an elongation tubing between catheter and semen tube
- Flexible rubber holder fits all sows and allows movement during the insemination
- Easily speeds up to 30 inseminations per technician per hour
- Available in 2 different sizes



For sows REF. : 17114/4000

For gilts REF. : 17114/4001

Breeding Belt

Practical with broad ribbon, velcro fastening, clamp and cord for the fixation of the tube or bottle, individually adjustable to the size of the animal

REF. : 17114/2100



Lubricant miniLube™

Non spermicidal lubricant, water soluble

- Iso-osmotic and sperm friendly, supports the sperm cell viability
- Batches are tested for sperm compatibility
- Ideal viscosity
- Produced by Minitube in a Hepa-filtered dedicated clean room

Tube with 90 ml, resealable REF. : 17116/7000

Gallon 3.8 l, without dispenser REF. : 17116/7010

Dispenser for 3.8 l gallon REF. : 17116/7011



PREGNANCY DETECTION

Ultrasound Scanner

Portable ultrasound scanner for pregnancy detection. Very robust, battery operated, with 3.5 Mhz probe, carrying case and wrist holder.

Ultrasound Scanner REF. : [23500/0000](#)

Spare probe for scanner REF. : [23500/0100](#)



Day 20



Day 23

Doppler Pregtector

Portable Doppler ultrasonic device with inclined scanning area for pregnancy detection for sows. Positive diagnosis with the Doppler audio signal from day 25 after A.I. onwards. Battery operated, complete with headset, instruction CD, and carry case

REF. : [23350/2050](#)

Pregnancy Tester

For pregnancy detection after 30 days by ultrasonic waves. Operated with rechargeable or normal battery. Very handy, robust and easy to operate. Good freedom of movement due to a probe connected to a spiral cable. Complete with carry case, test body, wrist band and contact gel bottle.

REF. : [23350/2835](#)



Charger for 220 V REF. : [23350/2840](#)

Charger for 115 V REF. : [23350/2841](#)



A.I. EDUCATIONAL MATERIAL

A.I. in Focus DVDs

Detailed videos about modern boar semen production and artificial insemination of the sow. Semen collection, assessment, processing, insemination techniques and pregnancy detection are shown in a comprehensive and detailed way. All DVDs are available in several languages.

- Semen collection and boar training
- Semen evaluation and processing
- Heat detection, insemination and pregnancy detection
- Modern insemination management
- Intrauterine insemination with Verona and DeepBlue catheter

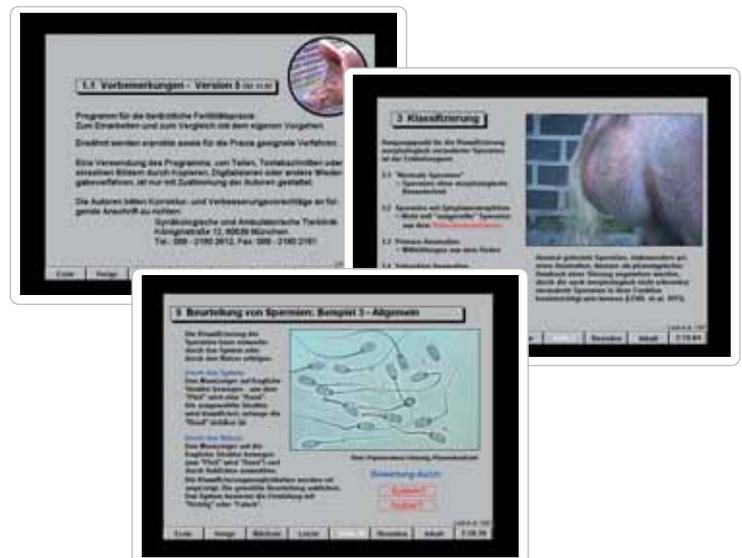


The Sperm Morphology Software

An interactive instruction tool:

Normal and abnormal morphology of porcine and bovine sperm is explained and illustrated. With many drawings, photos, video films and detailed explanations. Different staining techniques are demonstrated and explained. With multiple-choice questions for a large selection of microscopic pictures for training the eye.

CD-ROM, English REF. : 22300/1000



The Swine A.I. Book

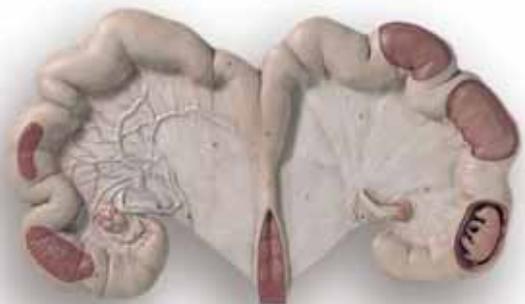
Guide for porcine artificial insemination, practice orientated and easy to understand. Available in English and Spanish

English REF. : 22300/0020

Uterus Model

An anatomically correct model of the reproductive tract of a sow. 3 dimensions, 37 x 60 cm

REF. : 22600/0000



EMBRYO TRANSFER IN SWINE

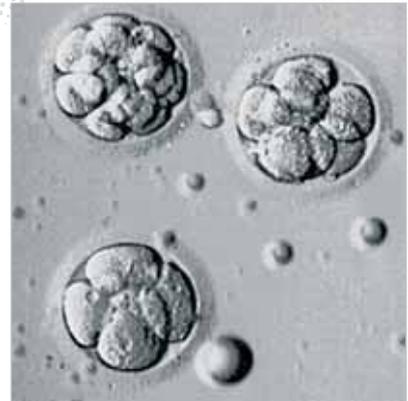
DeepBlue® ET

Catheter for the Non-Surgical Transfer of Embryos in Swine

In cooperation with the University of Murcia in Spain, Minitube has developed a deep intrauterine catheter: the DeepBlue® ET. This catheter is especially designed for the non surgical embryo transfer in swine.

Technical features

- Outer catheter SafeBlue®: disposable insemination catheter, with lubricant coated catheter head
- Inner catheter: flexible probe, 180 cm long, 4 mm external diameter, 0.7 mm internal diameter
- Non-traumatic tip of the inner probe considers the special sensitivity of the uterus wall during the progesterone phase
- Special design of the internal probe allows to reach the middle or the anterior third of the uterine horn
- Individually packaged and sterilized



Your benefits

- Transfer of the embryos in the barn is possible without sedation of the sow
- High level of hygiene: the hygienic sanitary sheath of the SafeBlue® system protects the tip of the catheter during the canalization through the outer genital tract and thus avoids contamination of the uterus
- High farrowing rate: several field trials prove the efficiency of the DeepBlue® catheter. By a transfer of a mean of 24-30 embryos per sow, results of 70% conception rate and an average litter size of 7.5 have been recorded



DeepBlue® ET Catheter REF. : 19295/0200

Embryo Transport Kit

Your benefits

- Heavy duty box – impact resistant
- Water resistant surfaces
- Airline approved – due to pressure relief valve that adjusts for rapid altitude changes during flight
- Electrical components isolated in metal enclosure

Technical specifications

- Outer dimensions: 43 x 24 x 34 cm
- Capacity of battery: 30 h
- Weight of kit: approx. 10 kg

Transport box with dry battery and battery charger for portable incubator holds temperature for 30 hours during transport. Incubator to be ordered separately. (19180/0000 see above)

REF. : 19180/2101

Transportvial with securesnap cap,
round bottom, 5 ml

REF. : 19180/5006

Media for Embryo Transfer in Swine

PorcPRO™ E-Flush for flushing

500 ml

REF. : 19982/3000

PorcPRO™ E-Cleave with BSA for the culture until the early morula, 100 ml

REF. : 19982/3010

PorcPRO™ E-Hold with HEPES, holding medium, 250 ml

REF. : 19982/3020

PorcPRO™ E-Blast for the culture of morulae and blastocysts, 90 ml

REF. : 19982/3030

Customized media upon request



FREEZING OF BOAR SEMEN

Freezing Extenders for Boar Semen

The freezing of boar semen is of great importance for the conservation of gene material in order to preserve and protect genetic variety. Furthermore, freezing facilitates the exchange of gene material between geographically distanced breeding populations. However, boar sperm are more sensitive to the processes of freezing than sperm of other species. The Minitube group provides a number of extender media, devices and procedures to reduce stress for boar semen cells during the freezing process and to ensure insemination success with frozen semen.

Androhep CryoGuard® freezing extender for boar semen, 510 g for 10 l

REF. : [13533/2006](#)

Androhep CryoGuard® Thaw, 500 g for 10 l, concentrated culture medium for boar semen, for dilution after thawing process

REF. : [13533/3010](#)



Semiautomatic Filling and Sealing System SFS 133

For 0.5 ml straws. The straws are filled and sealed 6 by 6. Safe and hygienic sealing system with balls. The air bubble is created automatically. Output: 2000/hour approx.

REF. : [13133/0133](#)

Vacuum pump, with adjustable valve and manometer

REF. : [13133/0267](#)

Loading block with rack and 10 magazines for 36 straws each

REF. : [13133/0005](#)



EasyCoder 2.0

Thermo transfer printer for semen straws with automatic straw feeder. Unmatched clean and clear, non-abrasive print. Prints up to 3 lines per straw, even with barcodes, logos and specific characters. Very simple handling, only little maintenance required.

REF. : [13038/0000](#)



Colour band for straw printer Easy Coder, roll with 200 m

REF. : [13038/0010](#)



FREEZING OF BOAR SEMEN

Cooling Cabinet

Cold handling box on rolls
Temperature range +2°C to -20°C
Dimensions: 150 x 100 x height 88.5 cm
220 V

REF. : 14335/3000



Refrigerated Centrifuge

with swing out rotor, 4 buckets and 4 x 600 ml polypropylene bottles with caps. All parameters programmable, incl. precooling. Speed selection in a range of 100 to 15 000 min⁻¹. Memory for 10 programs.
Dimensions: 65 x 68.5 x height 40.5 cm

REF. : 14602/0400



Cryogenic Container for Storage

MVE Cryogenic container SC 20/20, volume: 20.5 l
With 6 canisters 279 x 38 mm, working holding time: 142 days
Neck opening: 51 mm
Height: 652 mm
A full range of cryogenic containers is available

REF. : 16520/2006



Thawing Device

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

MT 35/42: set to +38°C REF. : 17043/3542

MT 47/54: set to +50°C REF. : 17045/0150

Other temperature settings upon request.

Accessories

Transformer for thawing devices for 12V / 220V REF. : 17165/1395

Thermometer for thawing devices REF. : 17049/0000



FREEZING OF BOAR SEMEN

IceCube

Computer controlled freezer with comfortable data input on the monitor and automatic recording of the freezing curve. Temperature range: down to -180°C , cooling rates: 0.01 to $60^{\circ}\text{C}/\text{min}$

IceCube 14M, capacity: approx. 2300 0.5 ml straws, with integrated PC and touch screen monitor

REF. : [16820/7000](#)

IceCube 14M, without monitor REF. : [16820/6000](#)

IceCube 14S, capacity: approx. 900 0.5 ml straws, with touch screen monitor, can be connected to an external PC

REF. : [16821/2000](#)

IceCube 14S, without monitor REF. : [16821/1000](#)

Accessories

Container for nitrogen, pressurized, 60 l, with manometer, security valves, liquid and gas phase withdrawal

REF. : [16820/1900](#)

Double rack for IceCube 14M, for 92 straws 0.25 ml or 0.5 ml REF. : [16820/1614](#)

Loading device for double rack, for 92 straws 0.25 ml or 0.5 ml REF. : [16820/1618](#)

Handling rack with 2 thread bars for IceCube 14M REF. : [16820/1610](#)

Rack for IceCube 14S, for 36 straws 0.25 ml or 0.5 ml (1) REF. : [16821/5036](#)

Loading device for rack, for 36 straws 0.25 ml or 0.5 ml REF. : [16821/5037](#)

Handling rack with 2 thread bars for IceCube 14S (2) REF. : [16821/5030](#)



IceCube 14S



Straws

0.5 ml straws
in many different colours

Macrotubes
5 ml, 280 mm length, 100/package REF. : [13441/0280](#)

Sealing balls for Macrotubes
made of glass or metal, available in different colours





Minitüb is an ISO 9001:2008 certified company.

