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Southdown Ewe Dystocia Simulator

USER MANUAL

1025616

Southdown Ewe Dystocia Simulator

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Southdown Ewe Dystocia Simulator

1 Overview

The VSI Southdown Ewe Dystocia simulator is a versatile training platform engineered for hands-on instruction in complex ovine obstetrics and lambing procedures. The simulator provides an immersive learning experience with two articulated Southdown Twin Lamb models that allows for realistic force application and natural movement during positioning exercises.

1.1 Ewe Body

The fiberglass Ewe body includes a removable top hatch for immediate access to internal structures and features interchangeable components to suit various simulation needs. Built with a durable shell, the simulator provides a platform for repeated obstetrical training exercises.

1.2 Lamb Air Bed Support

An inflatable multi-chambered air bed inside the main body cavity serves as the uterine support system for the VSI Lamb Dystocia model, and is held in place by friction alone, making it easy to remove for cleaning. This component has one large middle chamber and two smaller side bolsters; each inflated separately through valves at their cranial ends.
Attached to the side bolsters is a vinyl flap that should be draped over the edge of the hatch opening to protect the VSI Lamb Dystocia model from abrasion when loading. Once the lamb is in position inside the body, fold these flaps inside the ewe body before installing the hatch.
Use only the hand-pump provided to inflate the component. This gives you control over the air levels and prevents damage.

1.3 Uterine Bag

A translucent vinyl bag represents a rudimentary uterus to contain the lamb and the lubricant. The bag has a flange attached to the ABS ring of the perineum panel and secure with its same turn-locks. The uterine bag features a dorsal opening with a Velcro closure for inserting the lamb. Latex tubing with barbed fitting attaches the bag dorsally to one caudal central d-ring and two d-rings on the cranial walls of the internal cavity. These attachments, keep the uterine bag from prolapsing during extraction exercises.
Always apply lubricant to both the lamb and the soft perineum panel to prevent damage to the components. A diluted glycerin-based liquid soap works just as well as (or better than) standard obstetrics lubricant. Operators should wear suitable gloves, as if working on a live animal.

1.4 Birth Canal

The birth canal is composed of a resin pelvic replica and an adjustable, inflatable air bladder positioned between the pelvic bone and the internal dorsal wall of the ewe. Both components are removable to facilitate thorough cleaning or to replace the soft birth perineum panel. The Air Bladder is held securely in position solely by friction between the pelvis and the internal chassis wall. The pelvic structure rests within integrated supports on the ewe's body wall and anchors to a flat internal support via a single bolt passing through the pelvic floor. The inflation pressure can be adjusted via the single valve on the corner to achieve the desired "feel" during palpation and extraction exercises. Never use high-pressure air compressors, as over-inflation can deform or damage the component.

Pelvis Removal



1. Open the top access hatch on the ewe body



2. Unclip the latex tubing of the uterine bag from its designated d-rings inside the cavity



3. Remove the lamb bed support from the body cavity for better access.

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4. Deflate the air bladder by opening the valve.



5. Pull the bladder out from between the pelvis and the internal wall.



6. Locate, unscrew, and remove the single bolt in the center of the pelvic floor using a Phillips-head screwdriver.



7. Lift the hook-bones upward out of their side wall supports to release and detach the pelvis from the chassis.

1.5 Southdown Ewe Birthing Assembly

The soft perineum panel is secured to a rigid range flange (ABS ring), which fits inside the ewe body cavity and locks into place with plastic turn-locks. This component features an oversized vulva designed for obstetrical practice. Its modular design allows for rapid exchange between the standard Birthing Panel Assembly (1025609) and the specialized Southdown Ewe Reproductive Tract Assembly (1025613) used for palpation and reproductive training.

Perineum Panel Removal



1. Remove the pelvis by following the steps mentioned on section 1.2
2. Locate the four plastic turn-locks positioned on the corners of the panel.



3. Rotate each turn-lock counterclockwise until it releases, unlocking the panel from the body.



4. Apply moderate, steady pressure while pulling the perineum panel free from its seating. Guide the component forward into the open pelvic cavity.

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Installation



1. Orient the perineum panel ensuring the external anatomical features face outward and any internal vinyl sleeves extend forward into the body cavity. If exchanging the component for the Southdown Ewe Reproductive Tract Assembly (1025613) ensure the attached inflatable rectum extends inwards into the cavity for proper fit.



2. Align the perineum panel and engage all turn-locks by rotating them clockwise until secured.
3. Insert the pelvis into the cavity and align the hook bones with their respective mounts, seat the pelvic floor flat against the internal support and tighten the single bolt into the pelvic frame using a Phillips-head screwdriver until secured.



4. Re-clip the vinyl uterine bag to its three d-rings, slide the inflatable bladder back into position, and re-anchor the pelvis using the pelvic floor and hook-bone alignment mounts.

1.5.1 Southdown Ewe Reproductive Tract Assembly (1025613)

The Ewe Reproductive Tract is engineered specifically for the ewe model, and comes permanently attached to the perineum panel. The uterine body and horns are suspended inside the pelvic cavity via magnets hook placed along the broad ligament. The magnets attach to small steel plates embedded in the body wall of the horse.

Installation

1. Follow the steps mentioned above in section 1.5 to remove and install the new perineum panel.
2. To install the uterus, reach into the interior cavity and guide the broad ligament magnets toward the steel plates embedded in the interior body walls until they snap into position.

These magnets may be repositioned within the area of the broad ligament to a desired position. The uterus also incorporates a cervix and urethral orifice designed for palpation practice and anatomical illustration.

1.5.2 Ovaries

The Ewe Reproductive Tract component includes three interchangeable stages of ovarian development (1025611) A ligament is also attached to the ovaries and is trapped between the uterine broad ligament and body wall.

Installation and Removal

1. Insert the tube of the chosen ovary stage into the tip of the uterine horn until approximately 1 inch (2.5cm) of tube remains exposed between the horn and the ovary.
2. Place the ovarian ligament back between the broad ligament magnet and the body wall mounting plate, snapping the magnet back into position.
3. To remove, locate the broad ligament magnet holding the ovarian ligament against the interior body wall. Pull the magnet away from the body wall plate to free the ligament.
4. Grasp the connective tube attached directly to the ovary and pull until it releases from the end of the uterine horn. Always pull on the tube, never on the ovary itself.

1.6 Milking System

The milking system consists of an internal main storage tank, connecting siphon hoses, and a pair of udders. The system operates via a natural siphon action when milked. A separate fluid bottle is provided for specific diagnostic exercises; this bottle can be attached to any individual udder by replacing the main storage tank feed hose for that specific teat.

Filling the tank

1. Remove the Lamb Air Bed from the abdominal cavity to gain clear access to the storage tank
2. Unscrew the cap located on top of the main storage tank
3. Pour the desired simulator fluid directly into the tank through the top fill opening (VSI does not recommend using real milk as it can be difficult to clear it from the tubing).
4. Securely tighten the tank cap to ensure a proper seal. Milk each teat as you would on a live animal.

Note: Minor post-milking dripping from the teats is normal.

Removing the Udder and Storage Tank

For deep cleaning or component replacement, the udder and main storage tank should be removed together as a single unit.



1. Remove the Lamb Air Bed if its not already removed and locate the plastic bulkhead panel inside the ewe.



2. Unscrew the fastening knows and remove the bulkhead panel.



3. Carefully pull the storage tank and udder assembly out of the ewe body together, keeping all connecting hoses attached during extraction.



4. Once the assembly is completely outside the simulator, disconnect the hoses as needed.

Always disconnect hoses from the storage tank end whenever possible. Avoid removing hoses directly from the udder barbs unless the udder itself needs to be replaced.

1.7 Tail

The ewe features a flexible, detachable tail mounted to the rear chassis directly above the perineum panel. The tail is secured from inside the body cavity by two wingnuts. Because the perineum panel assembly covers these nuts, the internal components must be removed first to gain access.

Removal and Installation

1. Remove the air bladder, pelvis, and perineum panel assembly as described in Sections 1.3 and Section 1.4



2. Locate the two wingnuts on the inside wall directly above the perineum opening and unscrew both wingnuts.



3. From the outside of the chassis, grasp the tail at its root and pull it straight up and out.



4. To re-install it insert the mounting studs of the replacement tail into the receiving holes at the base of the tail root on the outer chassis.

5. From inside the body cavity, thread the two wingnuts onto the studs and tighten securely.
6. Reinstall the perineum panel assembly, pelvis, and air bladder as described in sections 1.3 and section 1.4.

2 Care, Maintenance, and Use

2.1 Use

Always handle the soft reproductive tract components delicately to avoid tearing seams or attachment points. When removing or exchanging ovaries, grasp the connective tube attached directly to the ovary rather than pulling on the ovary itself or its surface features. When unseating the uterus from the body cavity wall, disengage the broad ligament magnets gently to avoid straining the fabric attachment points.

2.2 Lamb Safety

Position the drop mat directly behind the ewe model during extraction procedures to create a cushioned landing surface in case the lamb falls upon delivery. Always lay down the drop mat during any demonstration or extraction exercise where a drop potential exists.
Never allow the VSI Lamb model to fall or drop onto hard laboratory floors, as this can crack or fracture internal components and surface coatings.

2.3 Cleaning

Wash the exterior body shell using mild soap, water, and a low-pressure washer. Do not apply harsh solvents, abrasive pads, or chemical to the resin surface. After each training session, clean the perineum panel, rectal sleeve, and interior body cavity with warm water and mild soap to remove all lubricant residue. Allow all components to air-dry completely in a shaded area away from direct sunlight before packing or storage.
The most effective method for cleaning the internal lines and teats is to fill the tank with warm, soapy water and milk it completely through all four teats. Wipe the exterior of the udder and teats with mild detergent or isopropyl alcohol. Never use harsh solvents or abrasive materials, as these can damage the silicone components.

2.4 Lubricant

Only use water-based lubricants. Generously lubricate the calf, internal birth canal, and soft perineum prior to any practice. Excess lubrication fluid naturally collects inside the cavity and can be drained through a dedicated drain port located on the ventral midline (umbilical region). Over time, dried lubricant residue can clog the drain port. Periodically inspect the ventral midline hole and clear any obstructions using warm water to ensure continuous fluid discharge during training labs.

2.5 Storage

The fiberglass epoxy body and internal assemblies must be kept indoors in a climate-controlled environment and indoors only. High temperatures can cause the epoxy resin to soften and deform over time. Keep the uterine horns and broad ligament flat and unfolded; folding or creasing the uterus during storage can cause material deformation.

2.6 Inspection & Repairs

Minor cosmetic repairs, like paint chips or surface wear on the acrylic finish, can be restores using the provided Acrylic Latex Touch-Up Paint.
Regularly inspect the perineum panel, uterus, and broad ligament for surface wear, small tears, or loose magnet cups. Minor surface damage or punctures on soft components can be repaired using the VSI Silicone Repair Kit (1026461); clean damaged areas with isopropyl alcohol and allow the repairs to cure for at least 24 hours before using the component again.

3 Replacement Parts

Southdown Model Uterine Bag	1025617
Southdown Ewe Birthing Panel Assembly	1025609
Southdown Model Birthing Panel	1025610
Southdown Model Pelvic Bladder	1025612
Southdown Lamb Air Bed	1025608
Southdown Large Lamb	1025618
Southdown Medium Lamb	1026066
Southdown Small Lamb	1026068
Southdown Ewe Reproductive Tract Assembly	1025613
Southdown Ewe Ovary Set	1025611
Southdown Model Tail	1025614
Southdown Model Teats	1025615
Southdown Ewe Milk Tank	1026475

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IF YOU HAVE ANY QUESTIONS OR NEED SUPPORT, PLEASE SCAN HERE

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