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BOVINE THERIOGENOLOGY MODEL

Care, Handling, and Maintenance

This document has been created to describe the care and maintenance of the Bovine Theriogenology Model, to avoid misuse and damage and to increase longevity of use.

Cow Body

This bovine model has been entirely hand crafted, which may result in minor inconsistencies between models form, fit, and finish. The material used to create the cow body is fiberglass infused with an epoxy resin. This resin has been chosen for its durability and environmentally friendly characteristics, providing safety during its use and curing process. Although UV resistant, it is sensitive to high temperatures, and not intended to be exposed for long periods under hot sunlight where it may suffer deformation. Your model is intended for indoor use. The Bovine Theriogenology Model is best cleaned with mild soap and water with a low-pressure washer, and never with harsh solvents.

Birth Canal

A replica pelvis cast in resin and a single multi-chambered air bladder, which are fit between the pelvis and inside wall of the cow, create the birth canal of the cow. The pelvis and air bladder may be removed for cleaning and to exchange or replace the perineum panel. The bladder is held in place merely by friction. The pelvic bone structure is seated in supports on the body wall of the cow and attached to a flat support via a single bolt through the pelvic floor. This bolt needs to be removed in order to remove the pelvic bone structure. The pressure of the bladder can be adjusted for the desired “feel” via a small valve, with the provided hand pump, and should be inflated only with a hand pump in order to control the inflation and avoid damage. Over-inflation may result in distortion of the pelvic bone structure.

Perineum Panel Assembly

The soft perineum panel has been designed with flexibility and durability in mind. This component will wear and possibly tear, but can be repaired with the provided silicone adhesive or a similar, readily available silicone adhesive. Any tears should be repaired as soon as they are discovered. To repair the soft material, clean the damaged area thoroughly with isopropyl alcohol, apply the adhesive, set the tear, and avoid use for at least 12 hours. A good repair can be as strong as the original cast material. This panel is a replaceable part, which, in time, may require a refit depending on the amount of use. The flexible panel is attached to a rigid ring flange which fits inside the cow, locked in place with plastic turn-locks.

Included in the perineum panel assembly is an inflatable rectum which can be inflated to a desired firmness to simulate pressure of the rectal muscles. It should only be inflated with the provided hand pump. Over-inflation can damage the part.

To remove the perineum panel assembly, first remove the pelvis. The pelvic bone structure is seated and bolted in supports on the body wall of the cow and attached to a flat support via a single bolt through the pelvic floor. This bolt needs to be removed in order to remove the pelvic bone structure. Lift the hook-bones from their mounts and the pelvis will be released. The inflatable rectum is suspended dorsally with a plastic clip, which needs to be unclipped. Now, the perineum panel assembly can be released by loosening the steel wing-nuts and turning the twist-locks to a free position, and by carefully tugging and flexing the rigid perineum mounting flange until it is free. The soft panel can now be separated from the rigid ring/flange by removing the plastic fasteners attaching the soft panel to the mounting ring. Water-based lubricant should always be used in conjunction with the VSI dystocia calf model or whenever the area is palpated.

Multi-stage Uterus System

The VSI Ltd. multi-stage bovine uterus system consists of five separate uterus models, all with interchangeable ovaries.

Represented are:

- 1) An open cow uterus that is suitable for artificial insemination training.
- 2) A heifer uterus that is suitable for artificial insemination training.
- 3) A uterus at approximately 45 days of pregnancy with a slightly enlarged horn and amniotic vesicle
- 4) A uterus at approximately 60 days of pregnancy with uterine slip and fetus
- 5) A uterus at approximately 90 days of pregnancy with uterine slip, fetus, and placentomes

Bovine Ovaries

The Bovine Ovary Set contains two each of 5 different stages of ovaries. These include anestrus ovaries and various ovaries with follicles and corpus luteum.

Each uterine horn terminates with a flexible line and a small semi-rigid nylon tube, which is used as a connector for the ovaries. This connector inserts into a hole in the ovary, allowing the ovaries to be easily interchanged. Always remove the ovaries by grasping the nylon tube and then gently removing the ovary. Failure to do this will result in damage to the uterine horn and/or the connector line.

Installation

The uterus models are positioned within the pelvis via the broad Ligament. Each uterus broad ligament clamps on to the wing of the ilium, using the provided clamps, to create the desired anatomical positioning. The vaginal end of the uterus is simply inserted thru the perineum panel from the inside and rests in the space between the exterior vulva and the interior of the perineum panel.

To exchange uteri, grasp the uterus at the caudal end and gently pull to release it from the perineum panel, then remove the broad ligament from the ilium of the pelvis by releasing the clamps. The cervix is represented in all of the pregnant uterus models, but as an illustrative and palpable representation, not intended for practical artificial insemination instruction, nor for the insertion of any other instruments, as this may damage the soft material used to create the models.

These elements are created with various rubber products and are filled with a water-based fluid. They have a delicate nature and must be handled with care. They can be cleaned with mild detergent and water and can be repaired should they become damaged using the appropriate provided repair kit(s).

Please note: Only the “open” uterus models are intended for artificial insemination training. The cervix is represented in all of the pregnant uterus models, but as an illustrative and palpable representation, not intended for practical artificial insemination instruction, nor for the insertion of any other instruments, as this may damage the soft material used to create the models.

Latex rubbers are sensitive to **ultra-violet light**, therefore the model should always be kept out of direct sunlight. **Petroleum products** such as Vaseline will also break down latex. When handling the model, ensure your hands are free of such products.

Tail

The flexible tail is detachable. The tail is fastened via two acorn nuts inside the cow, directly above the attaching system of the perineum panel. When these nuts are removed, the tail can be detached by pulling straight up at the tail root.

Please contact Veterinary Simulator Industries Ltd. for specific repair instructions or any concerns or inquiries.

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