

# **HRi**

**Hamilton Research, Inc.**

## **Instructions for Use**



### **Disposable Shipper for Transported Semen**

**Hamilton Research, Inc.**  
P.O. Box 2639  
South Hamilton, MA 01982  
(978) 468-4460, (800) 367-0266  
Equitainer@aol.com  
<http://www.equitainer.com>



## **Table of Contents**

---

1.	Introduction .....	1
2.	About the Clipper .....	2
3.	Clipper System Components .....	3
4.	Preparation for Collection .....	4
5.	After the Collection.....	5
6.	Extending the Semen.....	6
7.	Packaging the Semen.....	6
8.	Loading the Foam Insulator Block .....	6
9.	Loading the Clipper.....	7

Patent Pending

03-Dec-01



## 1. Introduction

---

Successful transportation of semen requires attention to detail. Some procedures may be different than your customary artificial insemination practices.

The instructions in this booklet provide only the minimal direction needed to use the Equitainer. For more detailed information about collecting and shipping cooled stallion semen, we recommend our *Educational CD-ROM* or *Easy Breeder CD-ROM* that contain an updated digital version of the *Transported Semen Handbook for the Stallion Owner and Veterinarian*. The digital handbook provides greater detail and should answer most of the questions arising in using Transported Semen. It is available from Hamilton Research, Inc.

A note of caution: Not all stallions are good candidates for Transported Semen. Before shipping a sample to the mare owner, be sure to perform a trial storage in the Clipper and check the motility after 24 hours.

As a service to our customers, Hamilton Research, Inc. offers an evaluation service. For more information, please call (800) 367-0266 or visit the Hamilton Research, Inc. website at [www.equitainer.com](http://www.equitainer.com).

## 2. About the Clipper

---

The **Clipper** is a disposable system for transported semen that provides the proper thermal exchange conditions and insulation needed for successful storage and shipping of equine semen. The **Clipper** was designed to provide the same scientifically validated cooling rate as the gold standard **Equitainer** system.

The **Clipper** is the only disposable system that utilizes the “conduction” method of cooling semen in which heat is transferred between two solid objects in contact with each other. (While the term “heat” may seem contradictory to what you might expect in a cooling system, it simply means that heat is removed from the sample, instead of coldness being sent into the sample.) Other disposable systems use a “convection” method, which means that cooling depends on air movement within the container, and that the cooling process is dependent on the position of the container. Thanks to its unique design, the **Clipper’s** cooling process is not affected by the position of the container during shipping. Thus, you can be confident that proper cooling occurs during transport, regardless of position.

There are two models of the **Clipper** – one that accepts two 50 cc syringes and one that accepts two 20 cc syringes - giving you the flexibility to chose the system that fits best with your breeding program.

The **Clipper** is designed for convenient use:

- The outer box opens lengthwise for easy access to the syringes and freezer pack.
- A free-standing, foam insulator block makes it easy to insert and remove the syringes.
- A molded styrofoam shelf allows insertion of the insulator block and syringes in only one direction, so there is no guesswork involved.
- A handy document storage space in the lid provides immediate access to paperwork when opening the box.
- The lightweight **Clipper** is inexpensive to ship.

### 3. Clipper System Components

---

**Clipper Container: (One)**

Consists of an outer cardboard box and inner, molded Styrofoam insert and cover.



**Freezer Pack: (One)**

A durable, quick freeze pack that provides the cooling source.

**Foam Insulator Block: (One)** A free-standing foam insulation block into which the filled syringes are inserted and which helps control the cooling process.

**Syringes: (Two)** 20cc or 50cc, AirTite®, non-toxic, sterile syringes (syringe volume depends on the system ordered).

**Centrifuge Tube: (One)** Included with 20 cc system only. The centrifuge tube is used either for water ballast or for shipping additional extended semen.



## 4. Preparation for Collection

---

1. Store the Freezer Pack in a freezer for at least 24 hours.
2. The syringes and any equipment that will come in contact with the semen must be stored in an incubator set at 37°C (99°F) for at least 1 hour prior to use. Equine sperm are extremely sensitive to temperature shock so be sure that the temperature is accurate.
3. The Clipper and foam insulator block may be left at room temperature.
4. Mix or thaw the semen extender. Maintain the semen extender at 37°C (99°F) until ready to extend the semen. If the semen extender does not already contain antibiotics, add the appropriate antibiotic to the semen extender and mix gently.
5. The stallion's penis should be washed gently with warm water. It should be allowed to air dry or be patted dry with a paper towel. Research has shown that washing with disinfectants or soaps should be avoided, since this upsets the natural balance of bacteria and lets pathogens multiply.
6. Prepare the AV as usual for collection. Pay particular attention to the temperature of the AV, especially the tip and collection pouch during cold weather. Be sure to use a sterile filter, non-spermicidal lubricating gel and take care to avoid any types of contamination.

In cold weather, a standard AV cover or quilted mitt should be placed over the collection bag or bottle.

## 5. After the Collection

---

1. If using a collection pouch or bag, transfer the ejaculate into a new sterile cup. If a collection bottle was used, this is not required.
2. Maintain the ejaculate at 37°C (99°F) until ready to extend. Dilution should occur within 5 minutes after collection for best results. If left unextended for greater than 15 minutes, sperm survivability will be greatly decreased.
3. Record the volume of the raw ejaculate. Determine the concentration of the raw ejaculate and calculate the proper dilution ratio to achieve a final sperm concentration of 50 million sperm per ml of extended semen (see chart below for help).

<b>Initial Concentration</b>	<b>Dilution Ratio*</b>
100 M/ml	1 part semen to 1 part extender*
150 M/ml	1 part semen to 2 parts extender
200 M/ml	1 part semen to 3 parts extender
250 M/ml	1 part semen to 4 parts extender
300 M/ml	1 part semen to 5 parts extender
350 M/ml	1 part semen to 6 parts extender
400 M/ml	1 part semen to 7 parts extender

\* A dilution of 1 part semen to 1 part ejaculate may not provide enough protection for the sperm and result in adverse effects on sperm survival. Thus, it may be best to dilute the sample 1:2 or 1:3 and send a larger insemination dose.

## 6. Extending the Semen

---

1. Based on the determined dilution ratio, add the appropriate amount of semen extender to the semen slowly by pouring down the side of the cup,  $\frac{1}{4}$  at a time, mixing gently.
2. The extended semen should be left at room temperature during the packaging process.

## 7. Packaging the Semen

---

1. Fill the syringe with extended semen. It is **important** that the syringe is filled to capacity (either 20cc or 50cc) for proper cooling.
2. Replace the protective cap on the syringe tip.
3. Label the syringe with the stallion's name and other pertinent information.

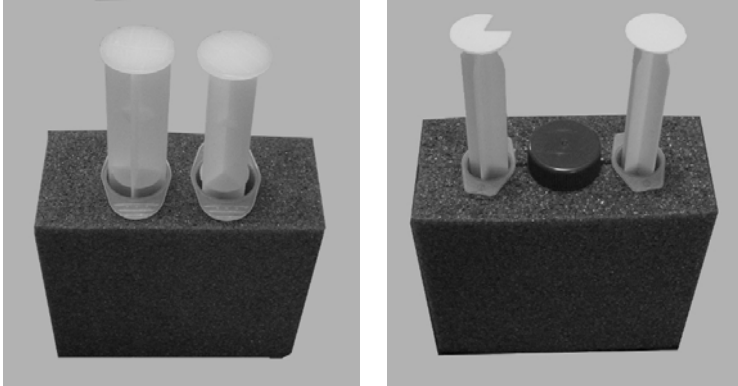
## 8. Loading the Foam Insulator Block

---

**EXTREMELY IMPORTANT:** All openings in the foam insulator block must be occupied with filled syringes (and the centrifuge tube for the 20cc system). Even if you are only sending one dose of semen, it is **vital** that the second opening is also filled. This may be accomplished using a syringe filled with water.

1. Place the labeled, syringe filled with extended semen into one of the openings of the foam insulator block.
2. If shipping two doses, place the second labeled syringe tube filled with extended semen into the second port.
3. If you are only shipping one dose of semen, fill an empty syringe to capacity with water. Label the syringe to indicate that the tube contains only water and should not be used for insemination. Place the syringe into the empty port.

4. For the 20 cc system, fill the centrifuge tube with 50 ml of water (or an additional 50 ml of extended semen). Label the tube and insert into the middle port of the foam insulator block (see Figure 2, right).



*Figure 2. Properly Loaded Foam Insulators.  
All openings MUST be filled, either with sample or water.*

## **9. Loading the Clipper**

---

1. Place frozen Freezer Pack at the bottom of the container.
2. Position the internal styrofoam support shelf above the freezer pack.
3. Put the foam insulator containing the syringes into the cut out area of the styrofoam support shelf. It will only fit in one direction.
4. Place the Styrofoam lid on top.
5. Place the paperwork into the depression of the Styrofoam lid.
6. Close the box lid and tape securely.

