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## **VIDEO LAPAROSCOPY TRAINER LTS 2000** **STUDY EXERCISES**

### **SET UP**

Place the LTS 2000 simulator box on a table or stand so that the top of the box is substantially at the level of the wrist.

Remove the abdominal wall frame (cassette) to expose the box interior. Align the floor control rings to adjust the height levels of the floor mat to a preferred configuration. Attach exercise models to the floor mat in desired locations. Return the abdominal wall frame to its original locked position. Insert the two metal rods into the corresponding openings located externally on one side of the frame.

Attach the timer to the Velcro strip located on the wide non-rubbery portion of the frame, midway between the external posts. Insert the first trocar through the rubbery abdominal wall in the area identified by the label. This point is in the midline approximately 3 cm from the edge of the narrow side of the non-rubbery portion of the frame. Placing the primary port closer to the solid edge limits the degree of laparoscopic manipulations. Introduce secondary trocars into the simulator, as required. Once inserted, the cannulas will remain stable on the abdominal wall almost indefinitely. Do not use threaded trocars, as they will compromise the integrity of the abdominal wall with continued manipulations.

Introduce the laparoscope into the simulator through the primary port. Attach the laparoscope to the video camera, light source and connect the assembly to a video monitor placed at a comfortable height for viewing. Begin practicing. The exercise manipulations may be recorded for subsequent review using a video recorder. Practice with the laparoscope requires two people. The assistant holds the camera and the operator employs two hands to perform the exercises

No assistant is needed when the camcorder is utilized. To employ the camcorder, connect it to a standard tripod and place the assembly next to the opening adjacent to the narrow portion of the non-rubbery frame, as marked. Ambient light is sufficient for the camcorder to function properly. Use separate score sheets (as provided) for exercises performed using the laparoscope and those conducted with the camcorder.

### **FORMING EXTRA CORPOREAL ROEDER LOOP KNOT**

**Exercise 1:** Form Roeder loop knot over external post using the string.

### **COORDINATION SKILLS**

These exercises seek to improve orientation, hand-eye coordination and manual dexterity in video surgery through manipulation of three-dimensional objects from a two dimensional screen using laparoscopy instruments and entry ports.

#### **Peg Board and Posts Model**

**Exercise #2:** Pick up beads from open cup with the dominant hand and place on peg board (form letters or geometric shapes, for practice purposes only, not for testing).

**Exercise #3:** Pick up beads with the non-dominant hand and transfer to the dominant hand and repeat previous exercise.

**Exercise #4:** Pick up rings and feed onto post with one curve.

**Exercise #5:** Pick up rings and feed onto post with two curves.

**Hoops - 3D to 2D Model**

**Exercise #6:** Using the dominant hand pass a long 5 mm probe between hoops in three different levels using the color code as a marker.

**Oviduct Cannulation Model**

**Exercise #7:** Elevate the free end of plastic tube with the non-dominant hand and feed a pipe cleaner through the tube with the dominant hand. (Retrieve the pipe cleaner from the other end for practice purposes only, not for testing).

**SUTURING AND KNOT TYING SKILLS****Rubber Tube Model**

Attach a small segment of thin rubber tube to the single clamp platform.

**Exercise #8:** Place tube in dangling position within clamp. Using a standard suture, form a Roeder loop on the external post of the simulator. Place the suture crossing point inside the jaws of an alligator forceps to preserve the integrity of the loop as it is introduced into the box. Pull tube inside the Roeder loop and cinch the loop using a knot pusher. Repeat the process. Cut the rubber tube in between the two loop ties.

**Vessel Model**

Attach the vessel model to the clamp or drill platform or directly to the floor of the simulator.

**Exercise #9:** Pass a needle behind one or more vessels excluding the ureter (white) and tie using an extracorporeal knot and knot-pusher.

**Sponge Cloth Model**

Staple or otherwise attach a piece of cloth to a foam sponge. Create an incisional gap in the center of the cloth. Fix the model to the 4 clamp or 4 nail platform.

**Exercise #10:** Place single stitches to approximate the edges of the incision and tie with an extracorporeal knot.

**Exercise #11:** Add two half hitches in opposite directions to exercise 9 or 10.

**EXERCISES NOT UTILIZED FOR TESTING**

The following exercises are not included in the study protocol. They may be used for practice but not for testing:

1. Straight tube cannulation; standard exercise 6 of brochure.
2. Rubber tube stapling; standard exercise 11 of brochure.
3. Sponge cloth single stitch EC knot; standard exercise 11 of brochure.
4. Rubber tube transfixation; advanced exercise 1 of brochure.
5. Sponge cloth single stitch with preformed knots; advanced exercise 4 of brochure.
6. Sponge cloth continuous stitch; advanced exercise 5 of brochure.
7. Orange myomectomy; advanced exercise 6 of brochure.
8. Meat morcellation; advanced exercise 7 of brochure.
9. Bag manipulation; advanced exercise 8 of brochure.

