Washington State University Honey Bee Program
SCHLEY INSTRUMENTS
Instructions for Assembly, Use and Care
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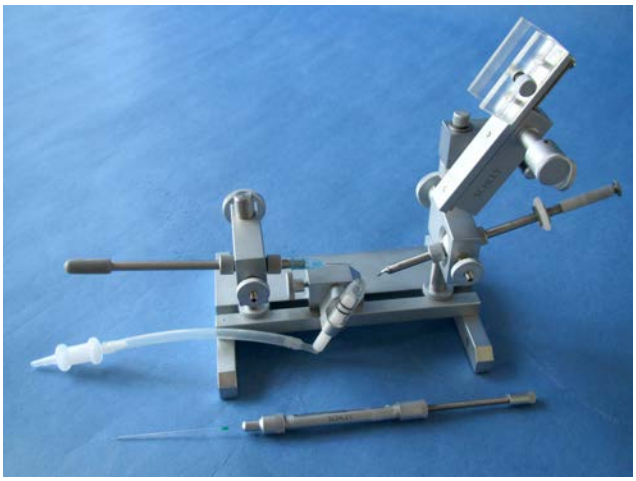
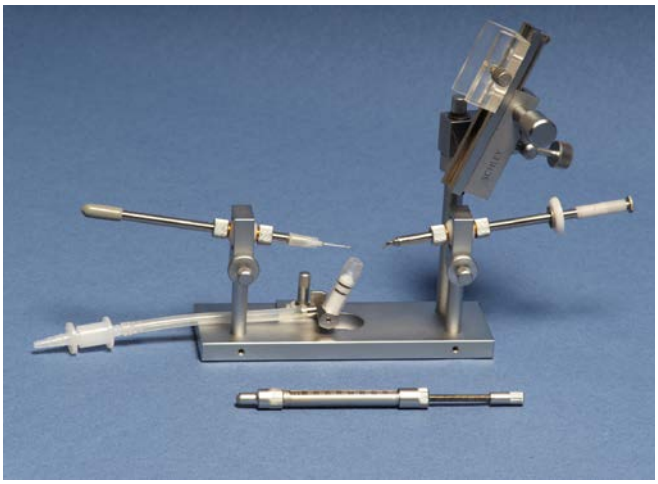


STANDARD MODEL I02



ECONOMICAL MODEL I01

The Schley Insemination Instruments are precision machined, highly adjustable and provide precision in fine and accurate movements with high repeatability and low maintenance. The instruments consist of; a sturdy base supporting; ball & socket assemblies to provide smooth movement of hooks; a ventral hook and pressure grips forceps or perforated sting hook; a syringe manipulator and syringe; and a queen holder assembly with a set of queen holder & backup tubes. Parts are made of stainless steel material and the base is brass with a plated finish. Both models accommodate the standard Schley syringe and the Harbo large capacity syringe.

STANDARD MODEL I02

The standard Model 102 instrument has a heavy, sturdy base for stability. The ball & socket hook holder assemblies are heavy duty with moveable columns for easy adjustments. The queen bee holder assembly is also highly adjustable. The instrument comes with the forceps pressure grip hook and the standard Schley syringe, unless otherwise specified. The perforated sting hook and the standard Harbo large capacity syringe are compatible and available.

ECONOMICAL MODEL I01

The Model 101 instrument is lighter in weight, has a flat base that can be securely screwed in place for stability. The ball & socket hook holder assemblies are smaller with fixed columns. The queen bee holder assembly is simplified, although adjustable. Choice of sting hooks - the forceps pressure grip hook or perforated sting hook are available. Choice of the syringe type is also available.

STANDARD MODEL I02, with Heavy, Raised Base
honeybeeinsemination.com

Basic Instruments Parts
Instrument models 102 and 101 have similar functional parts.

1 – Stand base
2 - Left support post with hook holder, ball bearing block
3 - Right support post with hook holder, ball bearing block and syringe manipulator.
4 – Queen holder assembly with CO_2 connection
5 – Schley Insemination syringe with glass tip
6 - Micromanipulator drive for the syringe
7 – Ventral hook
8 – Pressure grip forceps hook with press button control

To clean the Instruments: Use a cloth, dampened with alcohol.

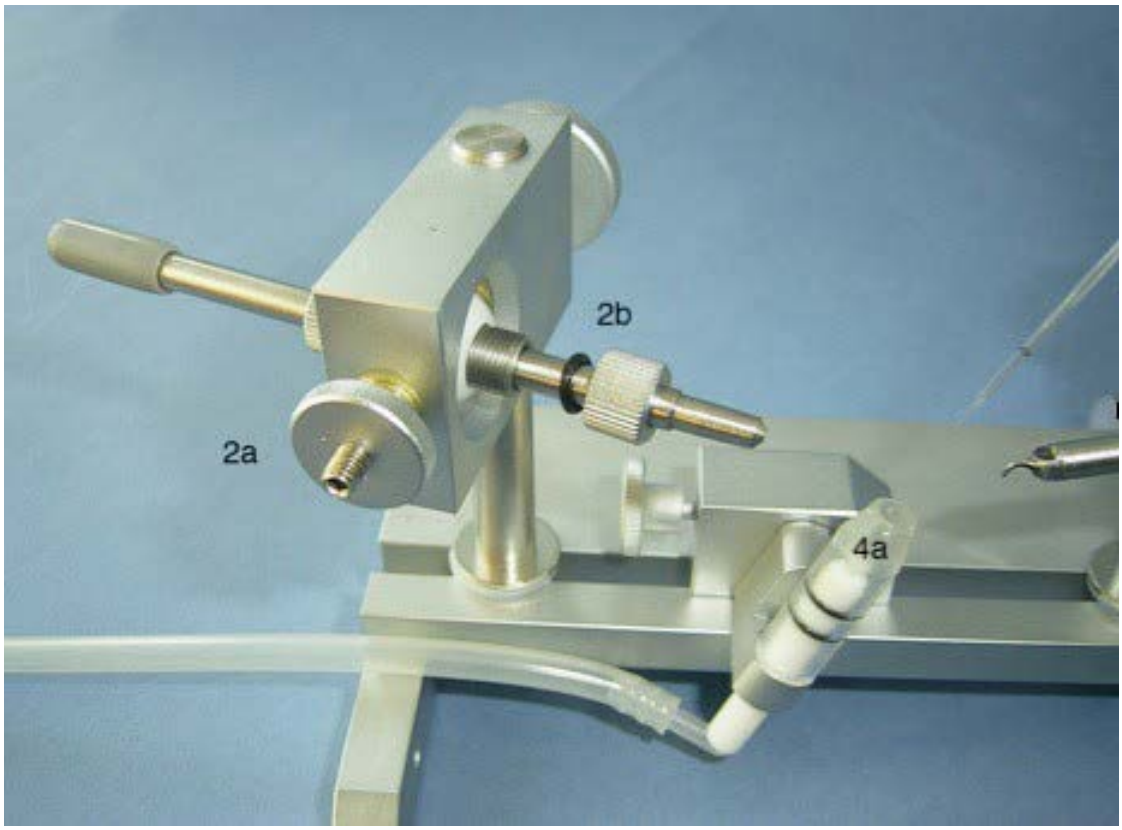
To Maintain: Grease Balls in Bearing Block and Syringe guide with silicone grease supplied.

Model 102 Tension Adjustment of the Hooks

2a: Screw to adjust tension on the ball for the hook holder block.

2b: Two O Rings secure each hook. Grease these with silicone.

Adjust hooks to move smoothly and with precision.



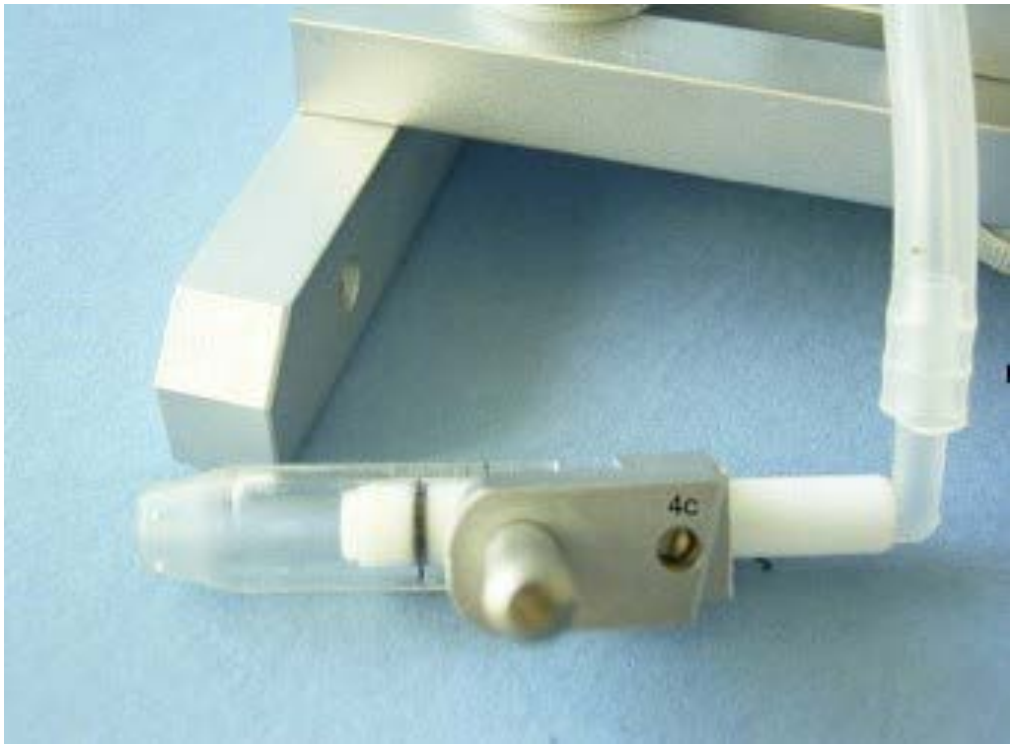
Model 101 Tension Adjustment of the Hooks

To adjust the ball tension for the hook holder block - Loosen the screw, press down on the block support and tighten at the desired tension.

Height Adjustment of the Queen Holder Tube, Model 102

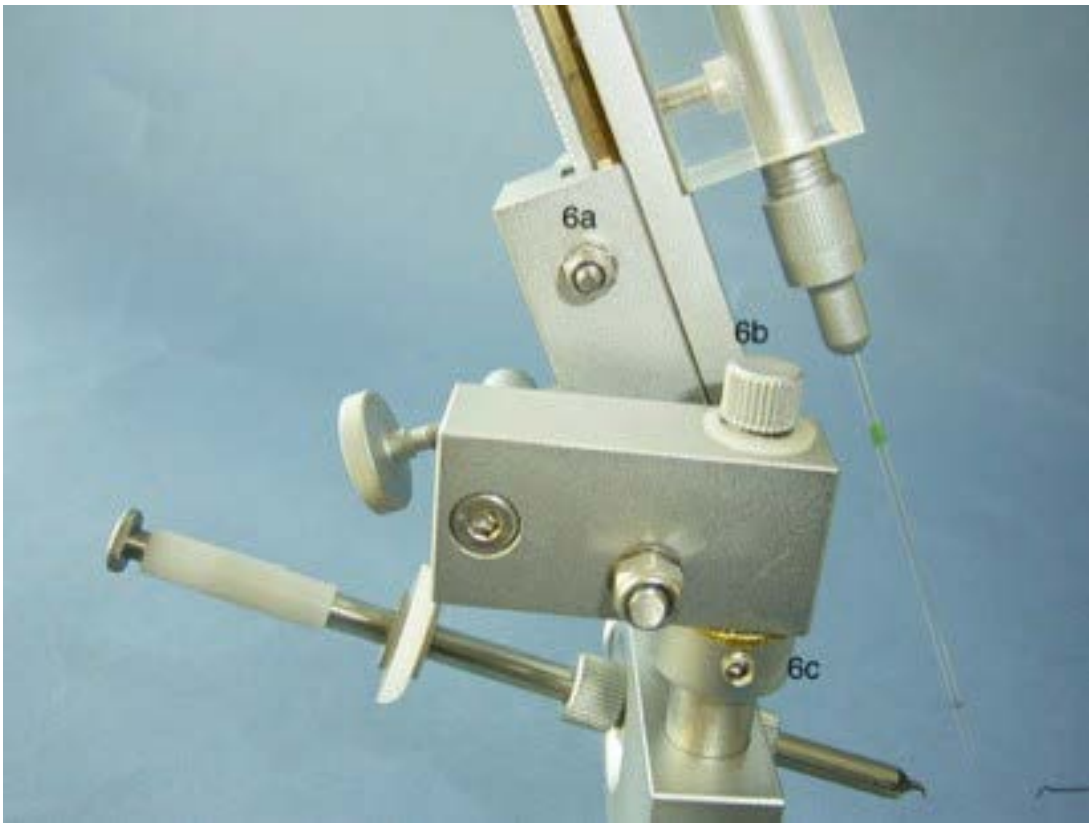
4a: The CO_2 delivery tube is adjustable in height.
4b: The queen holding tubes are made of acrylic.
Clean tubes with soap and water. Do not heat or soak in alcohol

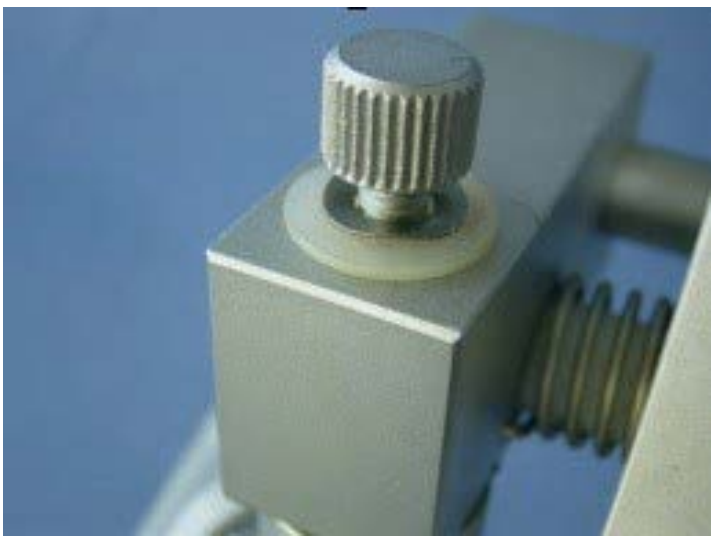
4c: Set screw to adjust the height of CO_2 delivery tube.



Syringe Drive Tension Adjustment

6a: To adjust the syringe drive tension
Turn nut counterclockwise to tighten.
Turn clockwise to loosen.
6c: Block support ring. Do not adjust too tightly.





Control of the Syringe Block Movement

6b: The lock washer under the screw reduces the rotary motion. The side screw serves this same function.

Adjustment of Micromanipulator syringe drive tension in the standard, older model instrument

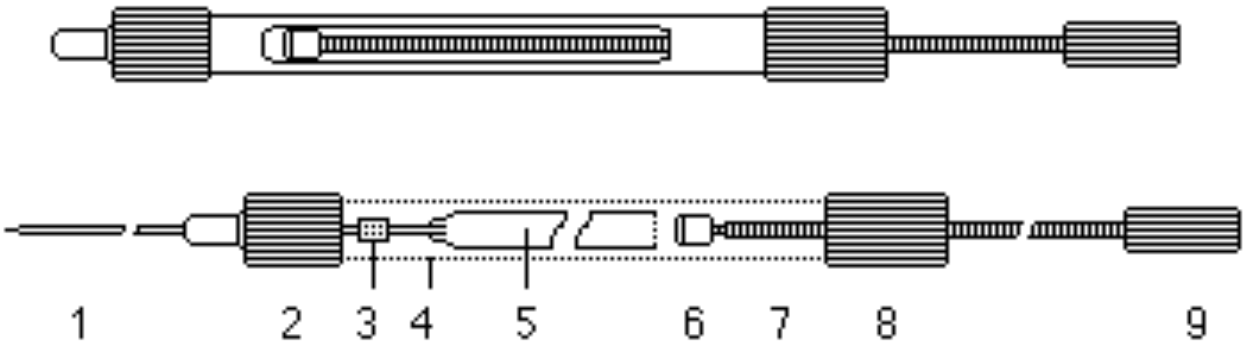
The Micromanipulator syringe drive tension in the older model instrument lacks the 6a adjustment screw. To adjust, Remove the drive screw and place pressure on the spring disk, hold while tightening the set screw.

Dorsal Pressure Grip Forceps

Clean forceps hook with alcohol and dry.

For storage: Coat forceps with silicone grease.

Instructions for Assembly and Use of the Schley Syringe



To Attach The Glass Tip

The glass tip (1) is fitted through the perforated screw cap (2). A small piece of 4-6mm silicon tubing is used to seal the tip and provide stability (3). Slide the silicone tubing on the glass tube, 3mm past the open end. The glass tip is then fitted through the perforated screw cap (2) and fitted into the (4) the graduated syringe barrel (5). The piston (6) is then attached to the threaded spindle (7).

The screw-cap (8) is screwed onto the other end of the syringe case. The syringe is controlled with the knob (9). The parts 6-9 are attached to each other to make up a unit, assembled and filled with saline before the glass tip is positioned. The graduated barrel, piston and winding-spindle should be lubricated with silicon grease. The syringe becomes stable when the casing (4), glass tip (1) and sealing (3) have been compressed, and the screw-cap (2) has been tightened.

Filling of the Schley Syringe

Fill the syringe sterile saline solution. Solution is expelled directly into the graduated syringe (5) with a disposable syringe (5-20 ml) and needle or a pipette. All remaining air bubbles must be expelled, or avoided by flicking the sides.

Insemination Tip

The syringe uses glass tips with a diameter of 1.5 mm (1). A piece of silicon tube, 4-6 mm, is used as a pressure seal (3) pushed onto the wide end of the glass tip (1). The wide end of the glass tip is then pushed about 1-5 mm into the syringe-cylinder (5) and attached. Remove all air bubbles from the syringe-cylinder. Bubbles will cause a " spongy" syringe response. When the syringe is properly assembled, the liquid column is responsive in very accurate uptake and delivery, in precise response to the movement of the spindle control (9). After use, place the glass tip (1) in disinfectant solution.

Problem Solving

Air Bubbles

If the liquid column in the capillary opening of the glass tip of the syringe " jumps", and collection of semen is difficult - Check for and remove all air bubbles. Note - if the silicone tubing seal is too short, less than 4 mm, this is not a sufficient seal.

Syringe Piston Sticks

Use the original piston with the original cylinder and lubricate with silicon grease.

Play in the Screw-Cap

Lubricate the spindle with silicon grease.

Occasional Sticking of the Spindle

Pressure of the Mount Screw holding the syringe cylinder is too tight, Loosen.

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