

S401.100

ADVANCED MULTIPURPOSE VENOUS TRAINING ARM

USER GUIDE



The S401.100 Advanced Multipurpose Venous Training System is an interactive educational system developed to assist a certified instructor. It is not a substitute for a comprehensive understanding of the subject matter and not intended for clinical decision making.

User Guide 18.1.3

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1. INTRODUCTION

1.1 SPECIFICATIONS

Weight: 12 lbs

Length: 19 inches

The S401.100 Advanced Venous Training Arms accurately represent an adult arm and hand, complete with the Cephalic, Basilic, Antecubital, Radial, and Ulnar veins. The simulators also feature subcutaneous injection sites on the volar side of the forearm and the lateral side of the upper arm, as well as an intramuscular injection site in the deltoid area.

1.2 CARE AND MAINTENANCE

General

- Do not wrap this or any other Gaumard product in newsprint.
- Marks made with ballpoint pens, ink or marker cannot be removed.
- Replacement parts are available from Gaumard or from your distributor.
- Do not use povidone iodine or Betadine type antiseptic solutions as these may permanently stain the simulator.

CAUTION: Damage caused by misuse is not covered by your warranty. It is critical to understand and comply with the following guidelines.

Cautions

- Use the venous training arm with the same precautions used with a real patient.
- Have providers wash their hands prior to use to prevent dirt and oils from clinging to the material.
- Do not palpate using fingernails as this may tear the skin; palpate using the pads of the fingers.
- Vein tubing contains latex, which may cause allergic reactions. Users allergic or sensitive to latex should avoid contact. Discontinue use of this product and seek medical attention if an allergic reaction occurs.

Operating Temperatures

- Operating temperature: 50°- 95° F (10°- 35° C).
- Humidity: 5% - 95% (non-condensing).

Storage

- Store the venous training arm in a cool, dry place.
- Humidity: 40% - 60% (non-condensing).
- Do not stack or store heavy materials on top of the bag. Please store and ship it in the bag provided.

Cleaning

- The venous training arm is water proof. It should be cleaned with a cloth dampened with diluted liquid dishwashing soap.
- Do not clean with harsh abrasives.
- Dry thoroughly after every cleaning.
- After drying, application of baby powder can return the arm to its lifelike feel.

IV Arm

- Only use Gaumard's simulated blood provided in the standard package. Any other simulated blood containing sugar or any additive may cause blockage and/or interruption of the veins in the IV arm.
- The use of needles larger than 22 to 23 gauge will reduce the lifetime of the arm skin and veins.
- Always purge with clean water, then drain the vein reservoirs at the end of each simulation session. Doing so will retard the formation of mold and prevent clogging of the system.
- The skin of the training arm can be cleaned with a mild detergent, or soap and water. After drying the arm, lightly dust it with talcum powder. This will keep the training arm supple and easy to use.
- We recommend flushing veins with a 70:30 mix of clean water to isopropyl alcohol (IPA) after each use to prolong the life of the vasculature.
- For more information regarding the replacement of veins and other consumable items please contact technical support. Contact information is provided in section 6.3.

WARNING: Vein tubing contains latex which may cause allergic reactions. Users allergic or sensitive to latex should avoid contact. Stop using the product and seek medical attention if an allergic reaction occurs.

2. OVERVIEW

2.1 FEATURES

- Simulated cephalic, basilic, antecubital, radial, and ulnar veins
- Subcutaneous injection areas on the volar side of the forearm and the lateral side of the upper arm
- Prominent venous network
- Intramuscular injection site in deltoid area
- Veins in the dorsum of the hand
- Resealing veins and outer skin
- Realistic "pop" as needle enters vein
- Squeeze bulb to increase or decrease venous pressure
- Blood collection exercises with simulated blood
- Administration of medication by intravenous bolus
- Simulation of clenched fist and tourniquet position
- Simulation of collapsed veins
- TB test sites

3. INITIAL SETUP

3.1 UNBOXING

- Lift the arm from the box and remove the bag it is shipped in.
- Rest the arm on a bed or clean, flat surface.

3.2 PACKAGE CONTENTS



1. Multipurpose Venous Training Arm
2. Smoked Lucite Base with Stand
3. Simulated Blood Concentrate
4. Intra-dermal Sites
5. Manual Squeeze Bulb
6. Dispensing Blood Bag
7. Funnel
8. Replacement Arm Skin
9. Rubber Stopper
10. Mineral Oil Lubricant
11. Talcum Powder
12. Soft Carrying Bag

3.3 DEVICE SIZE RECOMMENDATIONS

Procedure	Device Size
Needle stick	22 G or smaller
Infusion of large amounts of fluid	19 G / 14-18 G cannula
General infusion	21 G / 20 G cannula
Subcutaneous injection	25-27 G
Intradermal injection	26 G
Intramuscular injection	20-23 G

3.4 BLOOD DISPENSING BAG & STAND ASSEMBLY

1. Lift the hinged metal stand into position on the Lucite base.



2. Place the blood bag on the stand.



3. Place the arm on the base and secure it with the straps provided by gently pressing down on the snaps.



4. Insert the venous tube to the dispensing bag port at the bottom of the bag.



4. WORKING WITH THE SIMULATOR

4.1 FILLING THE VENOUS SYSTEM

1. Using the funnel, fill the blood dispensing bag with water or the simulated blood provided. The dispensing bag holds up to 1.5 Liters.

NOTE: Follow the instructions on the blood concentrate to make up to 1 gallon.

2. Place the drainage tube in a container.



3. Be sure the drainage tube is unclamped to allow the fluid to flow into the venous system.

NOTE: Place the drainage hose in a collection container. If fluid does not flow all the way through the drainage hose, position the drain tubing lower than the IV arm.



4. Clamp the tube closed when there are no air bubbles left in the venous system and attach the black rubber stopper to the upper port.



4.2 SIMULATING VENOUS PRESSURE

To simulate bulging veins from a tourniquet placement, follow the steps below:

1. Attach the squeeze bulb to the dispensing bag at the squeeze bulb port.



2. Apply the desired pressure to the veins via the squeeze bulb.



3. Practice the desired procedure.



4.3 SIMULATING COLLAPSED VEINS

To relieve venous pressure or simulate collapsed veins, release the air pressure by loosening the squeeze bulb's valve.



4.4 INJECTION IN THE DORSUM OF THE HAND

- Three veins are located in the dorsum of the hand to allow injections.
- Follow section "4.1 Filling the Venous System" to setup the arm for dorsal injections.



1. To access the dorsum of the hand, lift the straps that hold the arm in place.



2. Rotate the arm to a prone position.



3. Press the straps back in place.



4.5 IV INFUSIONS

Unclamp the drainage tube to ensure the veins do not overflow when practicing injections, IV therapy or IV infusions.



4.6 BLOOD COLLECTION

1. Ensure the drain tube is clamped. To simulate a tourniquet, follow the steps in section 4.2 "Simulating Venous Pressure."



2. Attach the black rubber stopper.



3. Perform the blood collection exercise.



4.7 FLUSHING THE VENOUS SYSTEM

Clean and dry the vasculature at the end of the simulation session to prevent mold or clogs.

1. Unclamp the drainage tube and place the end of the hose in a container.



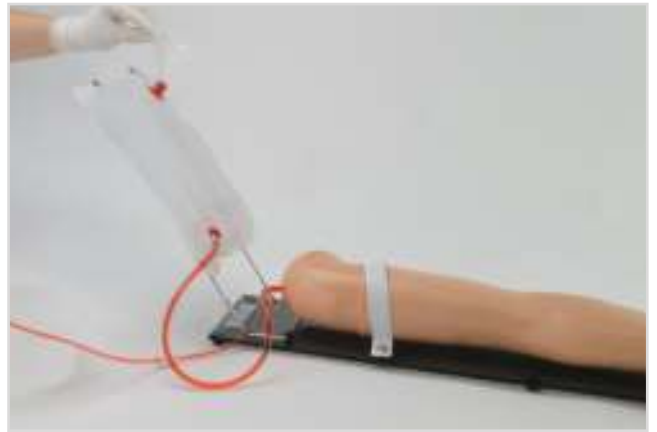
2. Replace the black rubber stopper with the squeeze bulb.



3. Squeeze the bulb to push the remaining fluid out of the venous system.



4. When the blood dispensing bag is empty, refill the bag with a solution of 70:30 water to isopropyl alcohol.



5. Attach the squeeze bulb to the port to purge the venous system. Continue to push air through it to dry.



4.8 SUBCUTANEOUS & INTRAMUSCULAR INJECTION SITES

- The arm contains 2 subcutaneous injection sites
- The intramuscular site is located on the deltoid of the arm.

CAUTION: Avoid the use of iodine or Betadine-type solutions as these may permanently stain the arm skin.



Intramuscular injection site



First subcutaneous injection site



Second subcutaneous injection site

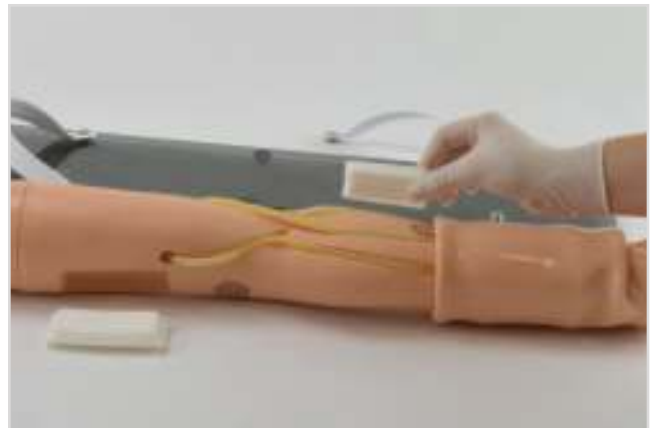
4.9 CHANGING THE INJECTION SITES

The injection sites are removable and replaceable.

1. To remove the subcutaneous sites, carefully roll down the skin.

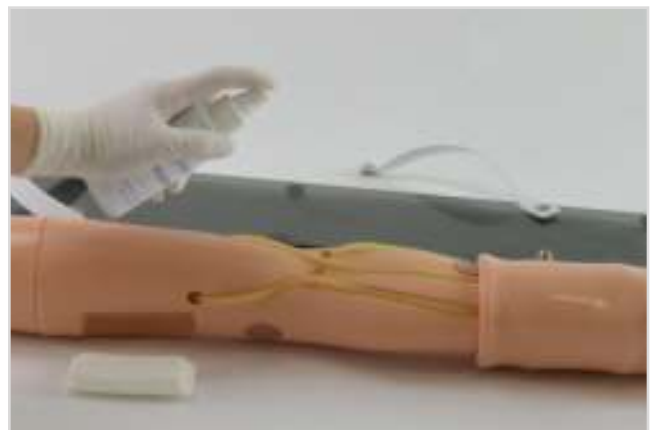


2. Lift out the used injection site and replace it with the new one.



3. Use the provided lubrication to assist in rolling the skin back in place.

NOTE: To purchase new subcutaneous and intramuscular sites, refer to section 6.1 for the part number.



4.10 TB SCREENING SITES

- There are 2 TB sites on the arm that may be utilized for TB screening.
- Perform the TB tests in the sites highlighted below.



Forearm

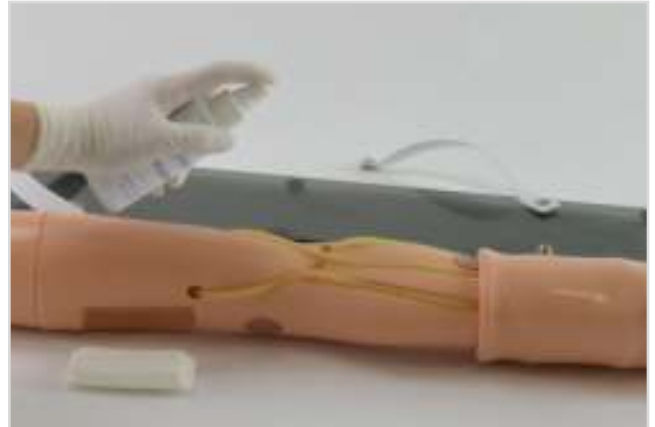


Upper Arm

5. ROUTINE MAINTENANCE

5.1 REPLACING THE ARM SKIN

1. Starting at the top of the arm, gently slide the skin off the arm.

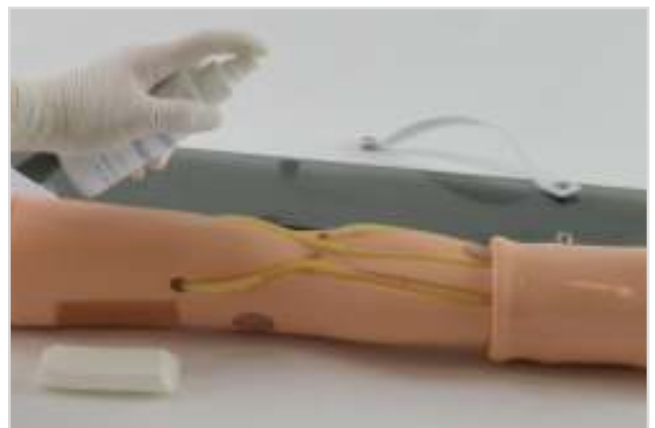


2. To install the new arm skin, roll the skin onto to the clenched fist and slide it into place over the arm.

NOTE: Place the subcutaneous pads in their designated slots while sliding the arm skin back on.



3. Use the lubricant provided to ease the skin into place.



4. It is recommended to tape the veins down to prevent them from kinking and sliding out of place.



5.2 REVEINING THE ARM

Remove the Arm Skin

1. Gently pull back the lip of the arm skin.



2. Fold the skin over itself and brace the IV arm to slide the arm skin off.



3. Pull the arm skin completely off and set it aside.



Remove the Veins

1. Remove the injection pad from the upper arm and set it aside.



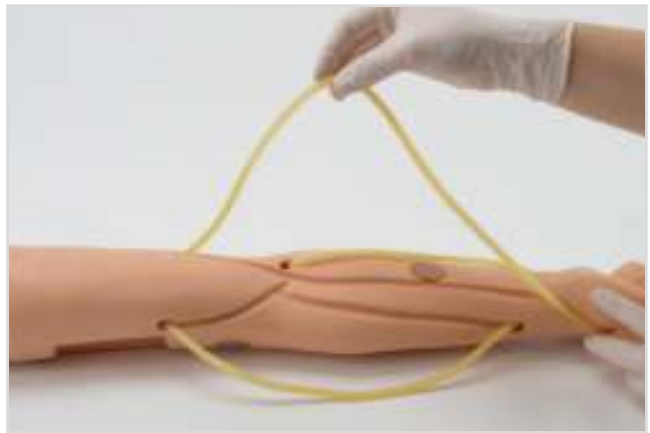
2. Push the fill and drain tube in slight to provide some slack, then gently pull the tubing out through the injection pad socket to give it some slack.



3. Disconnect the veins from the fill and drain hoses.



4. Remove the vein tubing.



Reveining

The following pictures depict the holes in the IV Arm with labeled numbers. These labels are not provided and are only for visual aid purposes.

NOTE: The use of tools, such as needle nose pliers or a hemostat, are useful in the process of reveining the arm. Be sure to use these tools gently while handling the vein tubing so as to not damage them. Tools are not provided with your purchase.

1. To aid in the process of reveining, label the holes 1-10 as shown.



2. Insert one end of the new vein tubing into hole #1.

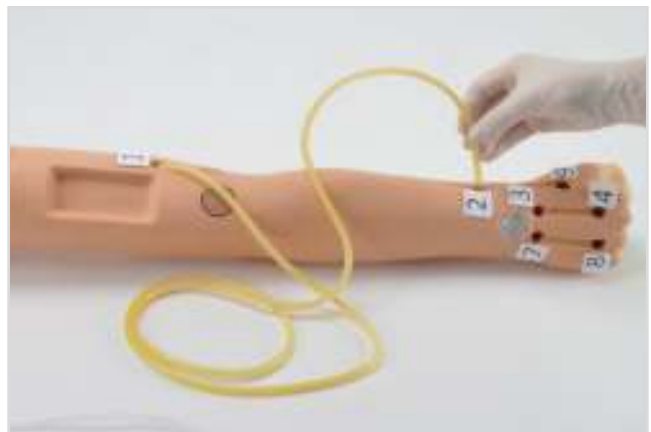


3. Gently pull the vein tubing out through the opening at the upper arm.

NOTE: This end of the tubing will be reconnected to the fill hose once the reweaving is complete. Do not let it be pulled back into the arm. Tape it down on this end if needed.



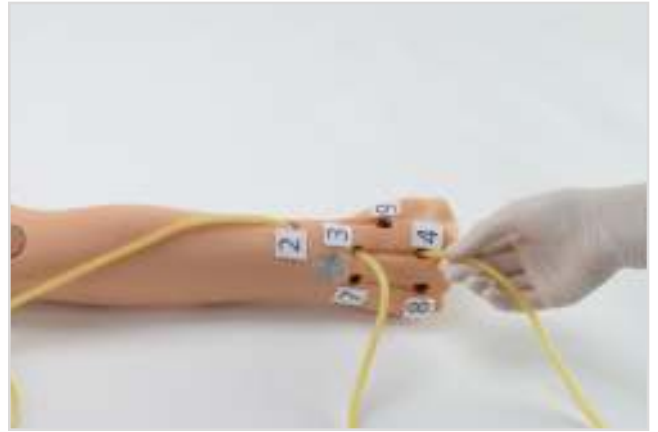
4. Feed the other end of the vein tubing into hole #2.



5. Pull the end of the vein tubing that was inserted into hole #2 out through hole #3.



6. Feed the tubing into hole #4.



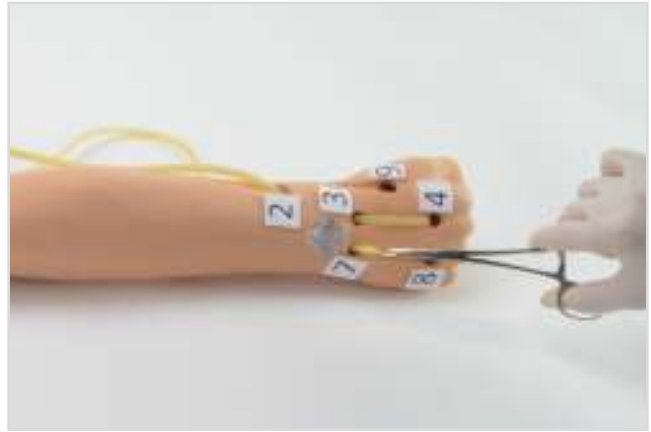
7. Pull the tubing out through hole #5, on the ventral side.



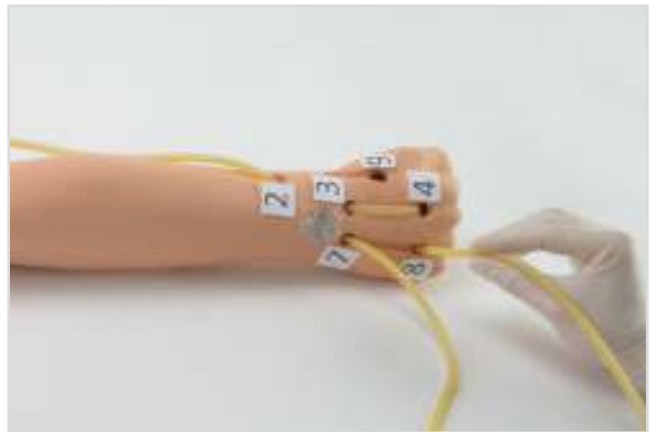
8. Feed the tubing into hole #6.



9. Pull the tubing through hole #7 on the dorsal side.



10. Feed the tubing into hole #8.



11. Pull the tubing out through hole #9.



12. Feed the tubing into hole #10 on the ventral side.



13. Pull the tubing out through the upper arm hole.



Reconnecting the Vein Tubing

1. Both ends of the vein tubing should be visible through the upper arm opening. Reconnect the end of the vein tube that leads to hole #1 to the thicker, clear filling hose.

NOTE: Be sure to slide the vein tubing so that it is flush to the very bottom of the white connector that is on the fill hose.



2. Reconnect the end of the vein tubing that leads from hole #10 to the slimmer drainage clear hose.

NOTE: Be sure to slide the vein tubing so that it is flush to the very bottom of the white connector that is on the drain hose.



3. Replace the injection pad over the opening in the upper arm.

NOTE: Refer to section "5.1 Replacing the Arm Skin" for instruction on how to reattach the arm skin.

Please contact Technical Support if further assistance is needed for the reveining process.



6. APPENDIX

6.1 REPLACEMENT PARTS LIST

Product	Type	Item Number	Contents
Dispensing Blood Bag	Consumable	S401.100.811	Blood dispensing bag with tubing
Artificial Blood Concentrate	Consumable	S401.100.812	One 4oz bottle
Arm Skin	Consumable	S401.100.813	Set of two arm skins
Squeeze Bulb	Replacement Part	S401.100.816	Squeeze bulb with tubing and flange
Rubber Stoppers	Replacement Part	S401.100.824	Set of 4 black rubber stoppers
Sub-Q Site	Consumable	S401.100.834	Set of two subcutaneous injection sites
Talcum Powder	Consumable	S401.100.948	One 4oz bottle
Lubricant	Consumable	S401.100.974	One 4oz bottle

6.2 EXCLUSIVE ONE-YEAR LIMITED WARRANTY

Gaumard warrants that if the accompanying Gaumard product proves to be defective in material or workmanship within one year from the date on which the product is shipped from Gaumard to the customer, Gaumard will, at Gaumard's option, repair or replace the Gaumard product.

This limited warranty covers all defects in material and workmanship in the Gaumard product, except:

- » Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
- » Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to properly clean the Gaumard product;
- » Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative.

This one-year limited warranty is the sole and exclusive warranty provided by Gaumard for the accompanying Gaumard product, and Gaumard hereby explicitly disclaims the implied warranties of merchantability, satisfactory quality, and fitness for a particular purpose. Except for the limited obligations specifically set forth in this one-year limited warranty, Gaumard will not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory regardless of whether Gaumard has been advised of the possibilities of such damages. Some jurisdictions do not allow disclaimers of implied warranties or the exclusion or limitation of consequential damages, so the above disclaimers and exclusions may not apply and the first purchaser may have other legal rights.

This limited warranty applies only to the first purchaser of the product and is not transferable. Any subsequent purchasers or users of the product acquire the product "as is" and this limited warranty does not apply.

This limited warranty applies only to the products manufactured and produced by Gaumard. This limited warranty does not apply to any products provided along with the Gaumard product that are manufactured by third parties. For example, third-party products such as computers (desktop, laptop, tablet, or handheld) and monitors (standard or touch-screen) are not covered by this limited warranty. However, third-party products are covered by the warranties provided by the respective third-party manufacturers and such warranties are transferred from Gaumard to purchaser upon purchase of the Gaumard product. Defects in third-party products are covered exclusively by the warranties provided by the third-parties. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Please contact the third-party manufacturer for information regarding the availability of extended warranties for third-party products.

Any waiver or amendment of this warranty must be in writing and signed by an officer of Gaumard.

- » In the event of a perceived defect in material or workmanship of the Gaumard product, the first purchaser must:
- » Contact Gaumard and request authorization to return the Gaumard product. Do NOT return the Gaumard product to Gaumard without prior authorization.
- » Upon receiving authorization from Gaumard, send the Gaumard product along with copies of (1) the original bill of sale or receipt and (2) this limited warranty document to Gaumard at 14700 SW 136 Street, Miami, FL, 33196-5691 USA.

If the necessary repairs to the Gaumard product are covered by this limited warranty, then the first purchaser will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then the first purchaser will be liable for all repair costs in addition to costs of shipping and handling.

6.3 CONTACT TECHNICAL SUPPORT

Before contacting Technical Support, please make sure to have the following:

1. Your simulator's serial number
2. Access to the simulator for possible troubleshooting as needed

Technical Support

Email: support@gaumard.com

USA: 800-882-6655

INT: 01-305-971-3790

6.4 GENERAL INFORMATION

Sales and Customer Service

E-mail: sales@gaumard.com

USA: 800-882-6655

INT: 01-305-971-3790

Fax: 305-252-0755

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