

WALT DISNEY WORLD®

## PROJECT RED

SEBASTIAN MARIONETTE

OPERATIONS AND REPAIR MANUAL



104 E. Vine Street, Hatfield PA 19440

[contact@monkeyboysprodctions.com](mailto:contact@monkeyboysprodctions.com)

215-839-6627

## Revision History

| Date       | Version | Description                         | Author                                          |
|------------|---------|-------------------------------------|-------------------------------------------------|
| 4/19/24    | 1.0     | First iteration                     | Bridget Reilly<br>Beauchamp,<br>Brieaunna Avery |
| 06/01/2024 | 1.1     | Addition of Comprehensive Materials | Bridget Reilly<br>Beauchamp,<br>Brieaunna Avery |
| 06/13/2024 | 2.2     | Final Iteration before installation | Bridget Reilly<br>Beauchamp, Betsy Falk         |
|            |         |                                     |                                                 |
|            |         |                                     |                                                 |
|            |         |                                     |                                                 |

## Table of Contents

|                                                                |    |
|----------------------------------------------------------------|----|
| 1 Introduction and Preface                                     | 4  |
| 1.1 General Project Information                                | 4  |
| 1.1.1 Notes from Monkey Boys Productions                       | 4  |
| 1.1.2 From the Disney Scope of Work, section 1.2-1.4:          | 4  |
| 1.2 Item Description                                           | 4  |
| 1.2.1 Summarized from the Disney Scope of Work, Section 4.3.1: | 4  |
| 1.2.2 Basis of Engineering                                     | 4  |
| 2 Construction and Assembly                                    | 5  |
| 2.1 Front View                                                 | 5  |
| 2.2 Rear View                                                  | 6  |
| 2.3 Left view                                                  | 7  |
| 2.4 Right View                                                 | 8  |
| 2.5 Closeup of Face                                            | 9  |
| 2.6 UV Views                                                   | 10 |
| 3 Description of Operating Modes                               | 11 |
| 3.1 Operating Modes                                            | 11 |
| 3.1.1 Storage                                                  | 11 |
| 3.1.2 Performance                                              | 11 |
| 3.2 Operating Procedures                                       | 11 |
| 3.2.1 Removing the puppet from the stand                       | 11 |
| 3.2.2 Action: Blinking Eyes                                    | 11 |
| 3.2.3 Action: Moving Mouth                                     | 11 |
| 3.2.4 Action: Moving Head                                      | 11 |
| 3.2.5 Moving Arms                                              | 12 |
| 3.2.6 Placing puppet on stand                                  | 12 |
| 3.2.7 Storage                                                  | 12 |
| 4 Detailed Diagrams of Mechanisms and Hardware                 | 13 |
| 4.1 Eye Mechanism view one                                     | 13 |
| 4.2 Eye Mechanism view two                                     | 14 |
| 5 Safety and Hazards                                           | 15 |
| 5.1 Safety Precautions and Hazard Identification               | 15 |
| 5.2 Hazard Mitigation Strategy                                 | 15 |
| 6 Repair & Service                                             | 16 |
| 6.1 Daily Checks and Inspections                               | 16 |
| 6.2 Periodic Testing                                           | 16 |
| 6.3 Routine Corrective Maintenance                             | 16 |
| 6.4 Puppet-specific Service Items                              | 16 |
| 6.5 Cleaning Fabrics                                           | 16 |
| 6.5.1 Spot Cleaning                                            | 16 |
| 6.5.2 Deep Cleaning Option 1 for widespread stains             | 17 |

|                                                                                                 |           |
|-------------------------------------------------------------------------------------------------|-----------|
| 6.5.3 Deep Cleaning Option 2 for deep stains                                                    | 17        |
| 6.5.4 In all cases                                                                              | 17        |
| 6.6 Cleaning Hard Surfaces                                                                      | 17        |
| 7 Detailed Maintenance Procedures                                                               | 18        |
| 7.1 Specialty information about obtaining access to the eye mechanism for maintenance or repair | 18        |
| 7.2 Specialty information about repairing the eye mechanism                                     | 19        |
| 7.3 Specialty information about closing the puppet after repair                                 | 25        |
| 7.4 Specialty information about restringing the controller                                      | 26        |
| <b>8 Comprehensive Parts List</b>                                                               | <b>27</b> |
| 8.1 Understructure and Base                                                                     | 27        |
| 8.2 Hardware                                                                                    | 27        |
| 8.3 Fabric and Fibers                                                                           | 29        |
| 8.4 Custom Made Parts                                                                           | 29        |
| 8.5 Paints and Dyes                                                                             | 30        |
| 8.6 Glues, Treatments, Coatings, and Chemicals                                                  | 31        |

# 1 Introduction and Preface

## 1.1 General Project Information

### 1.1.1 Notes from Monkey Boys Productions

This character is designed for use in collaboration with Walt Disney World/Disney's Hollywood Studios for use in the Voyage of the Little Mermaid Theater. All information contained herein was prepared for Monkey Boys Productions, LLC and is property of the Disney Corporation and not to be used in any way without their consent.

### 1.1.2 From the Disney Scope of Work, section 1.2-1.4:

#### *General Resort Overview*

*Movie magic comes to life at Disney's Hollywood Studios. This park features 8 sections: Hollywood Boulevard, Echo Lake, Grand Avenue, Sunset Boulevard, Commissary Lane, Star Wars: Galaxy's edge, Toy Story Land and Animation Courtyard.*

#### *General Venue Overview*

*Project Red will take place in the Voyage of the Little Mermaid (VOLM) Theater located within the One Man's Dream building next to Animation Courtyard in Disney's Hollywood Studios. The VOLM Theatre is a 400-seat theatre with a small, elevated stage with access between the house and backstage on Stage Left. All elements must fit through a double door at most due to limited load in infrastructure.*

#### *General Show Overview*

*A reimagined retelling of the classic film seen through the unique perspective of Ariel, a 16-year-old girl. Through cutting edge technology, mixed media, puppetry, and live actors, we follow Ariel's journey as she boldly pursues her dream to be part of the human world above, even if it means leaving her under the sea home.*

## 1.2 Item Description

### 1.2.1 Summarized from the Disney Scope of Work, Section 4.3.1:

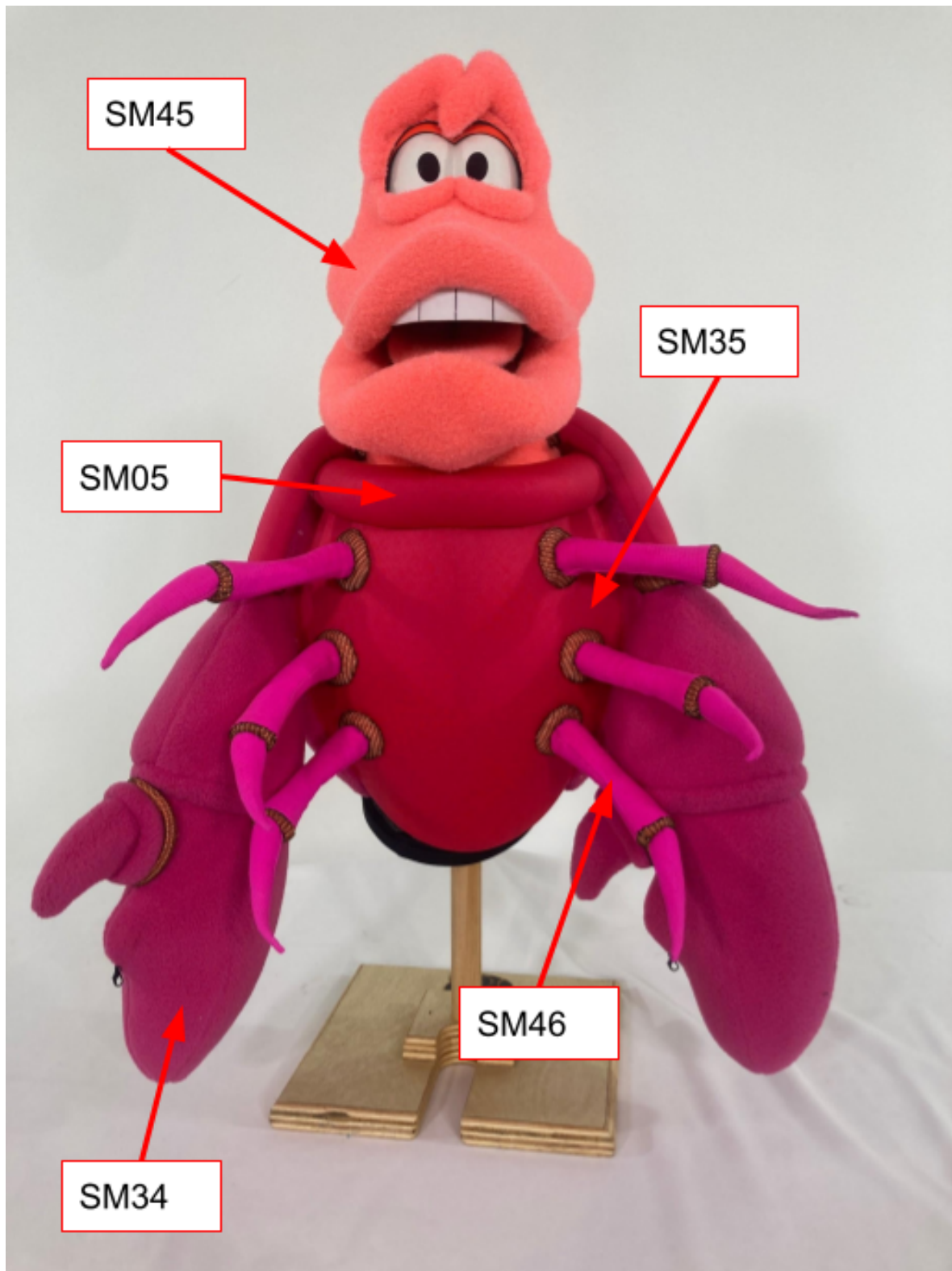
The Marionette version of Sebastian is based on the existing scale and function of the DCL Mermaid puppet. Similar to the Live hand puppet, but with modifications to the arms and the claws. Since this will be controlled by a marionette bar, the claws can be closed and any connection to the body on the right claw can be removed.

### 1.2.2 Basis of Engineering

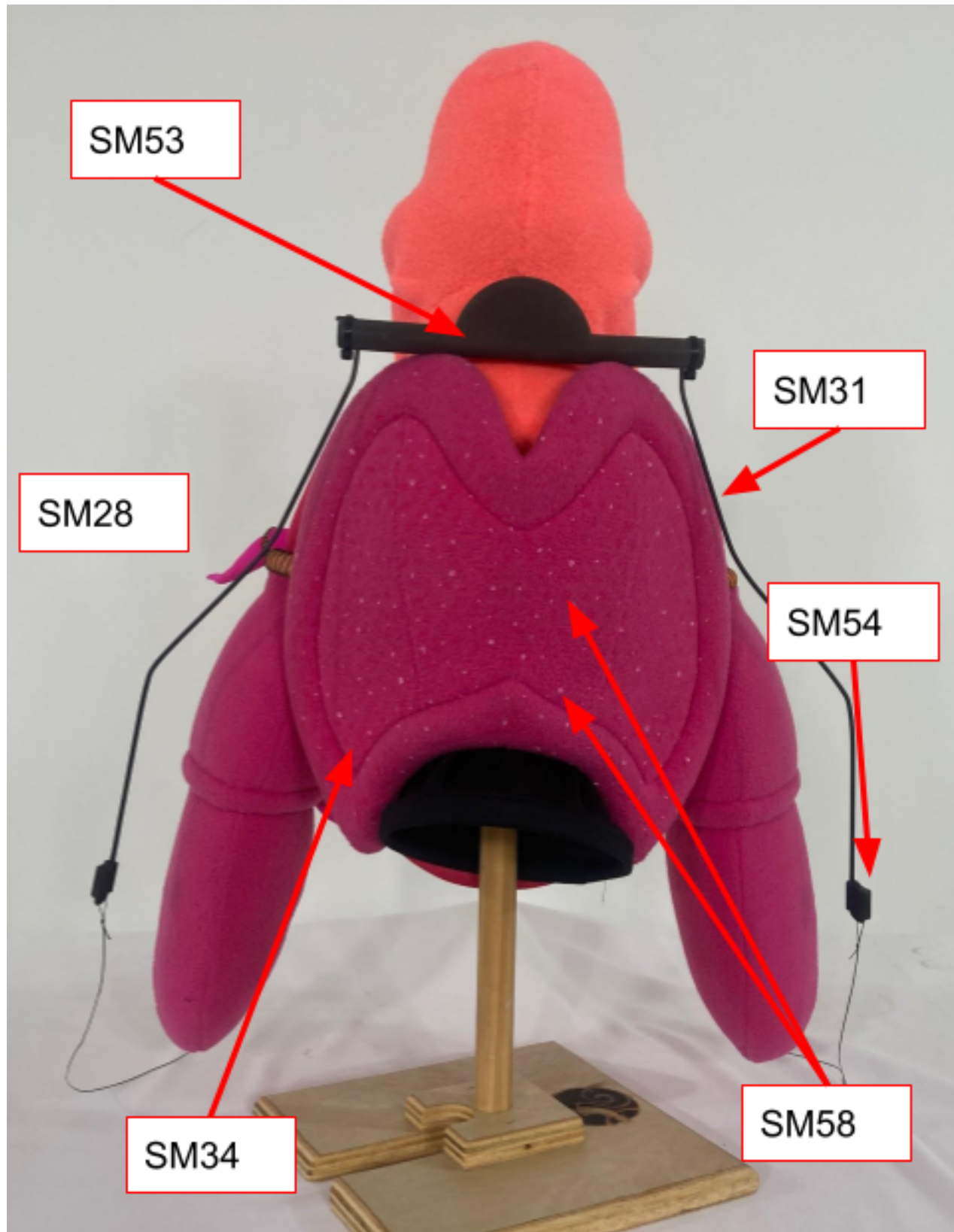
Sebastian is built primarily of laminated polyfoam and L400 foam with a carbon fiber mask to support the facial mechanisms. He is covered in a variety of UV-reactive materials. including fleece, spandex, and stretch netting. His eyes are built on a string-and-spring mechanism mounted inside the mouth plate, which is removable from the head for repair and maintenance. His claws are attached to a custom 3D printed marionette controller with dacron line.

## 2 Construction and Assembly

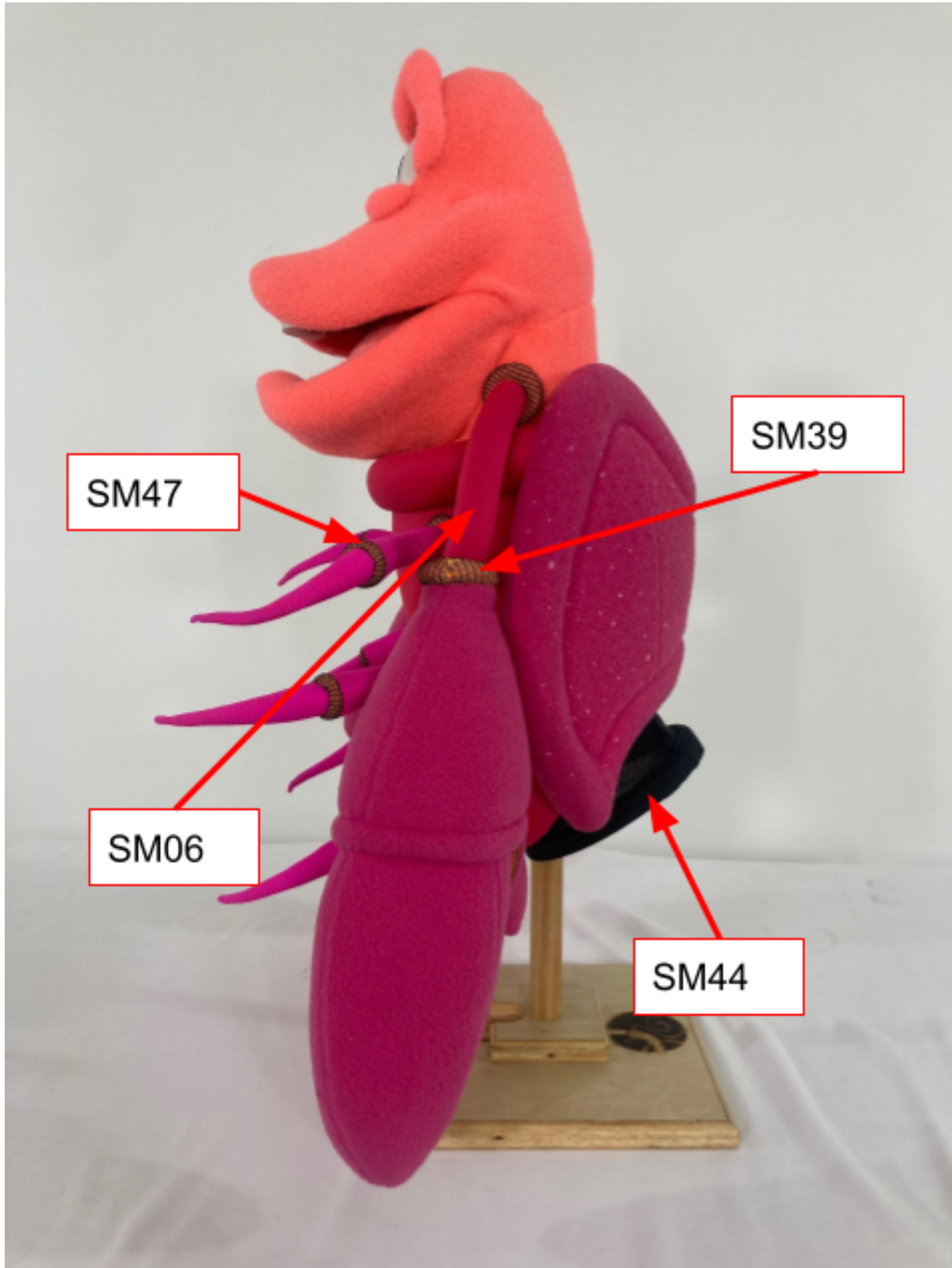
### 2.1 Front View



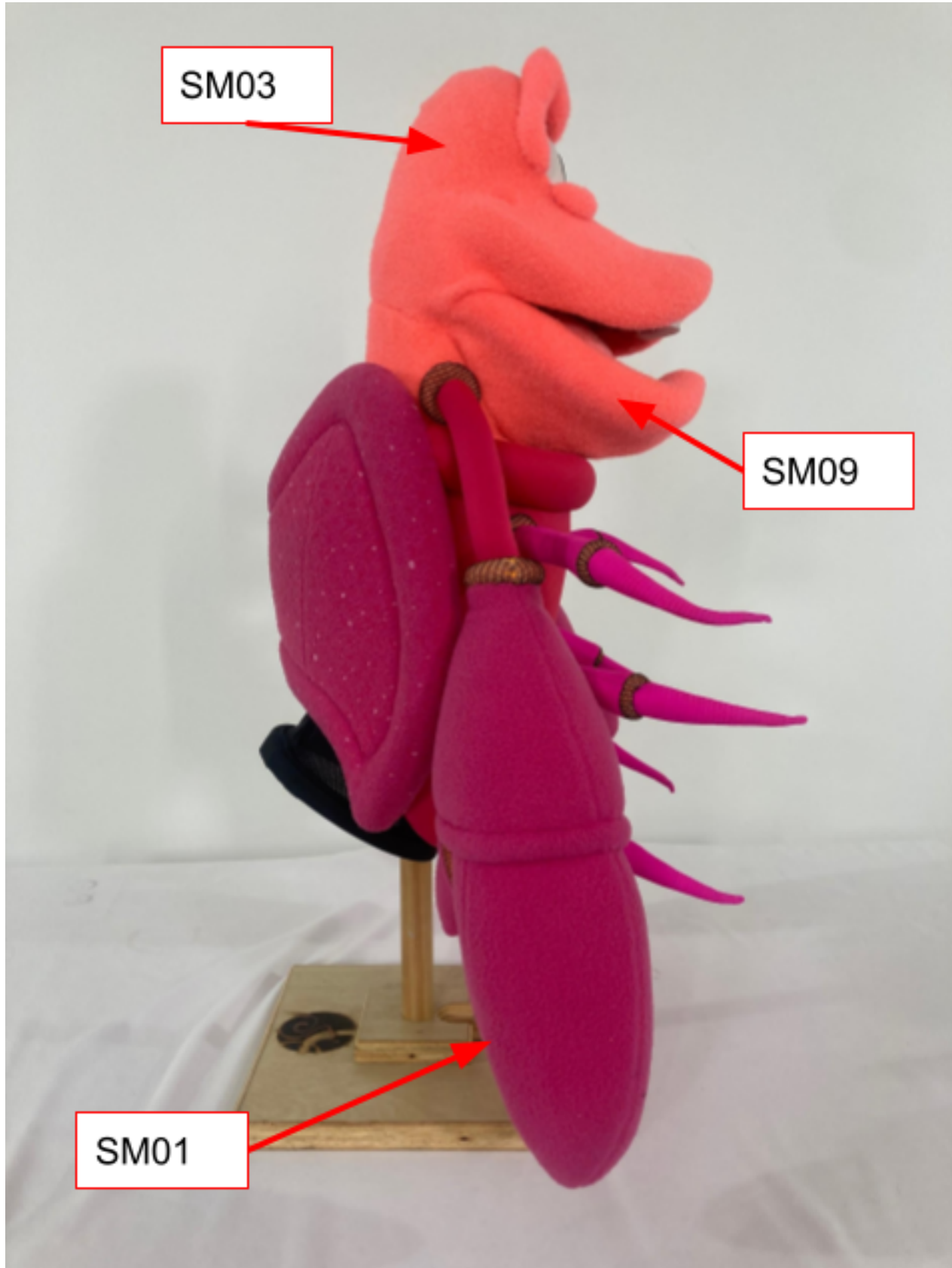
## 2.2 Rear View



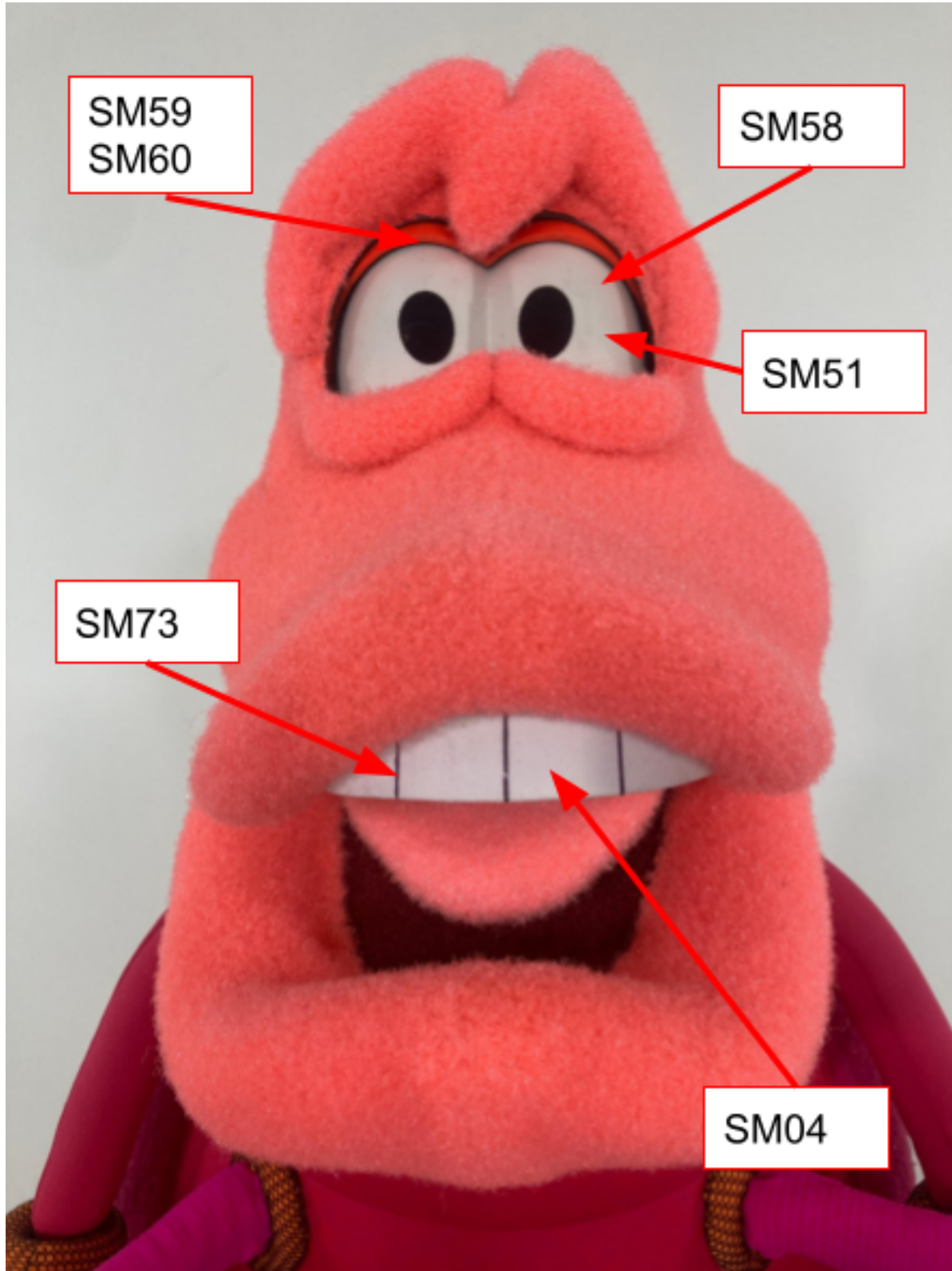
### 2.3 Left view



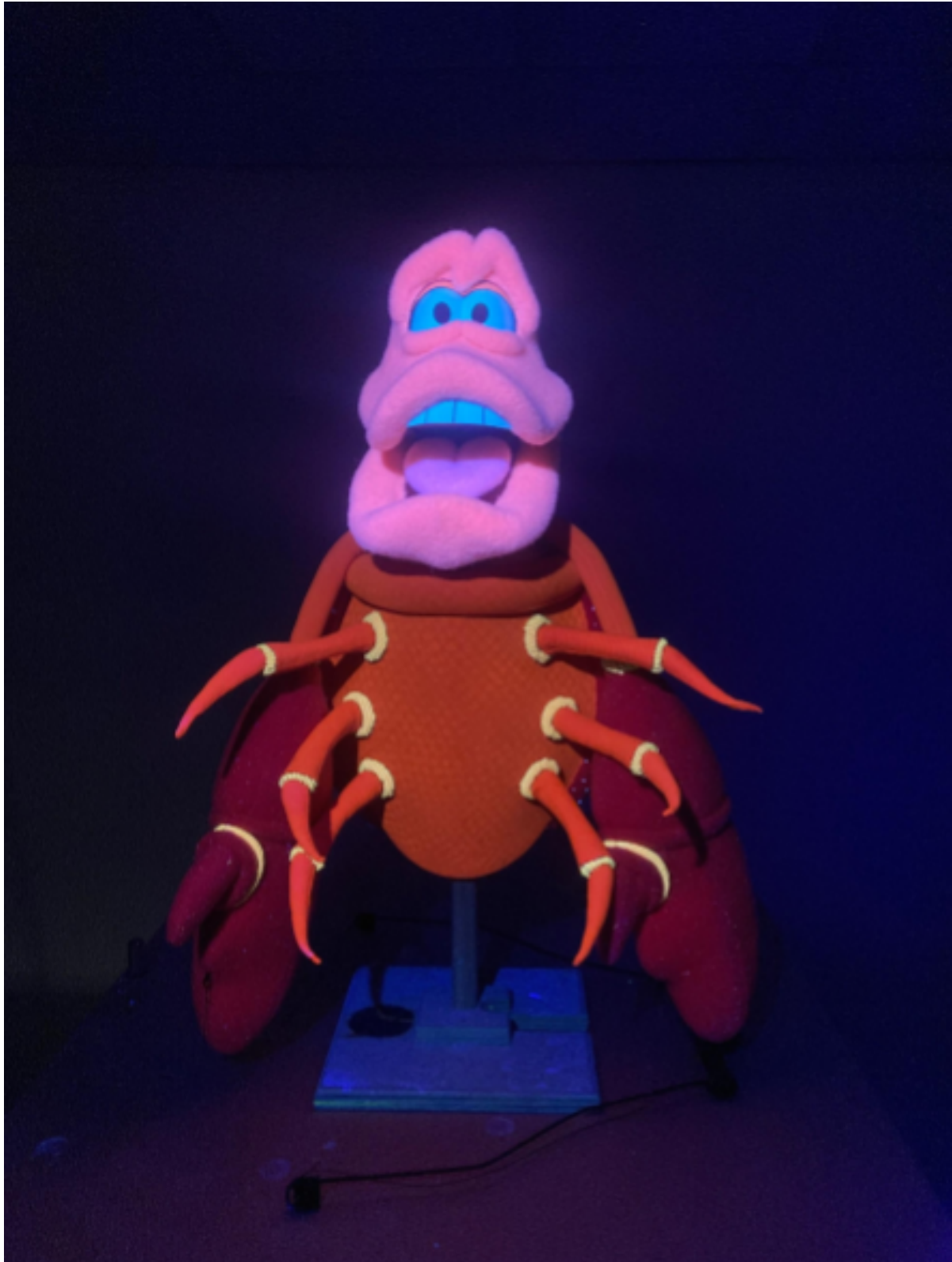
## 2.4 Right View



## 2.5 Closeup of Face



## 2.6 UV Views



### 3 Description of Operating Modes

#### 3.1 Operating Modes

##### 3.1.1 Storage

The puppet will be stored on a stand during the show.

Between performances, the puppet should be covered with its custom cover in order to protect it from the elements.

At no point should a puppet be stacked on top of or underneath another puppet or prop.

##### 3.1.2 Performance

The puppet is operated by a single performer. They should be able to do all performing actions without assistance.

#### 3.2 Operating Procedures

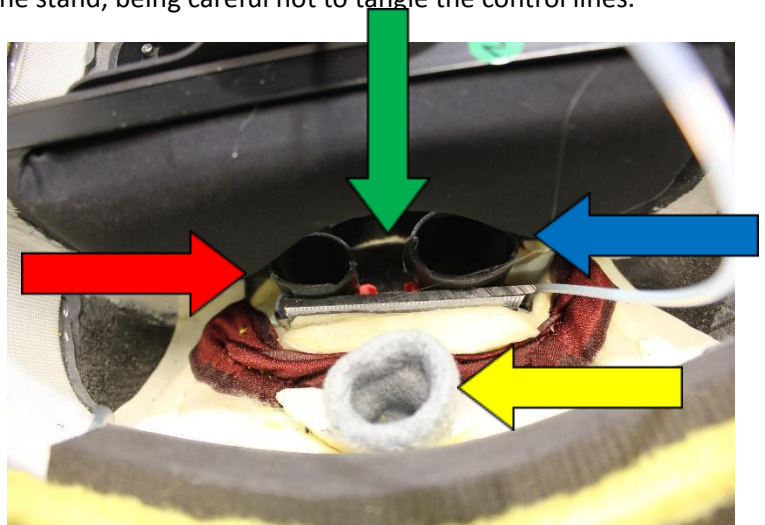
##### 3.2.1 Removing the puppet from the stand

*\*\*Please ensure that you have clean hands before handling this puppet.\*\**

To remove the puppet from the stand, support the head and controller with your left hand and the body with your right. Slowly and carefully lift the puppet off the stand, being careful not to tangle the control lines.

Once the puppet is off the stand, cradle it with your left arm and insert your right hand inside. Carefully insert your pointer finger into the left loop (red arrow) and your ring and pinky fingers into the right loop (blue arrow). Place your thumb into the bottom loop (yellow arrow) and place your middle finger on the slide actuator (green arrow)

*\*\*NOTE: The picture at right is not the inside of this puppet, but the layout is the same.\*\**



##### 3.2.2 Action: Blinking Eyes

Character's eyes are neutral in an "open" position.

Sebastian's eyes are open in the neutral position. To close his eyes, the performer should pull back on the slider with the middle finger of their right hand.

##### 3.2.3 Action: Moving Mouth

Sebastian's mouth is open in a neutral position. To close the puppet's mouth, the performer should close their right hand.

##### 3.2.4 Action: Moving Head

To move Sebastian's head from side to side, swivel your right wrist. To move his head up and down, tilt your right hand forward and back.

### 3.2.5 Moving Arms

To manipulate Sebastian's hands, the performer should grasp the control rod in their non-dominant hand. Raising and lowering the rod will raise and lower the claws. Tilting the rod will raise and lower the claws in opposition to one another. In order for the hands to activate, the strings must be fully extended above the claws, with no slack in the line.

### 3.2.6 Placing puppet on stand

To place the puppet on its stand, reverse the actions described in section 3.2.1

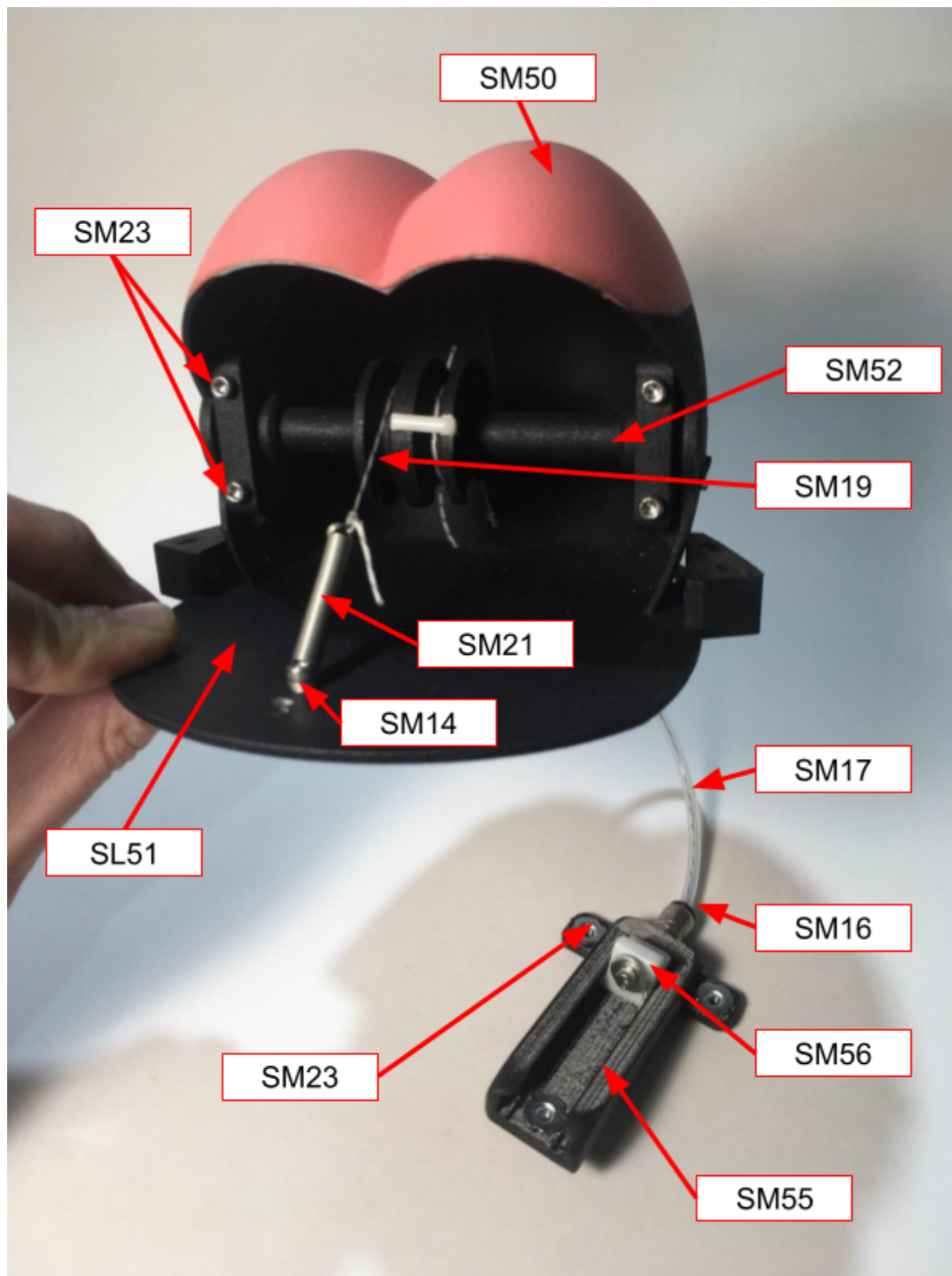
### 3.2.7 Storage

To store the puppet ensure that the puppet is stable on the stand and lower the cover over the top. Draw the string around the bottom of the puppet and pull the cord lock to secure it in place. The cover does not need to be cinched completely closed around the stand.

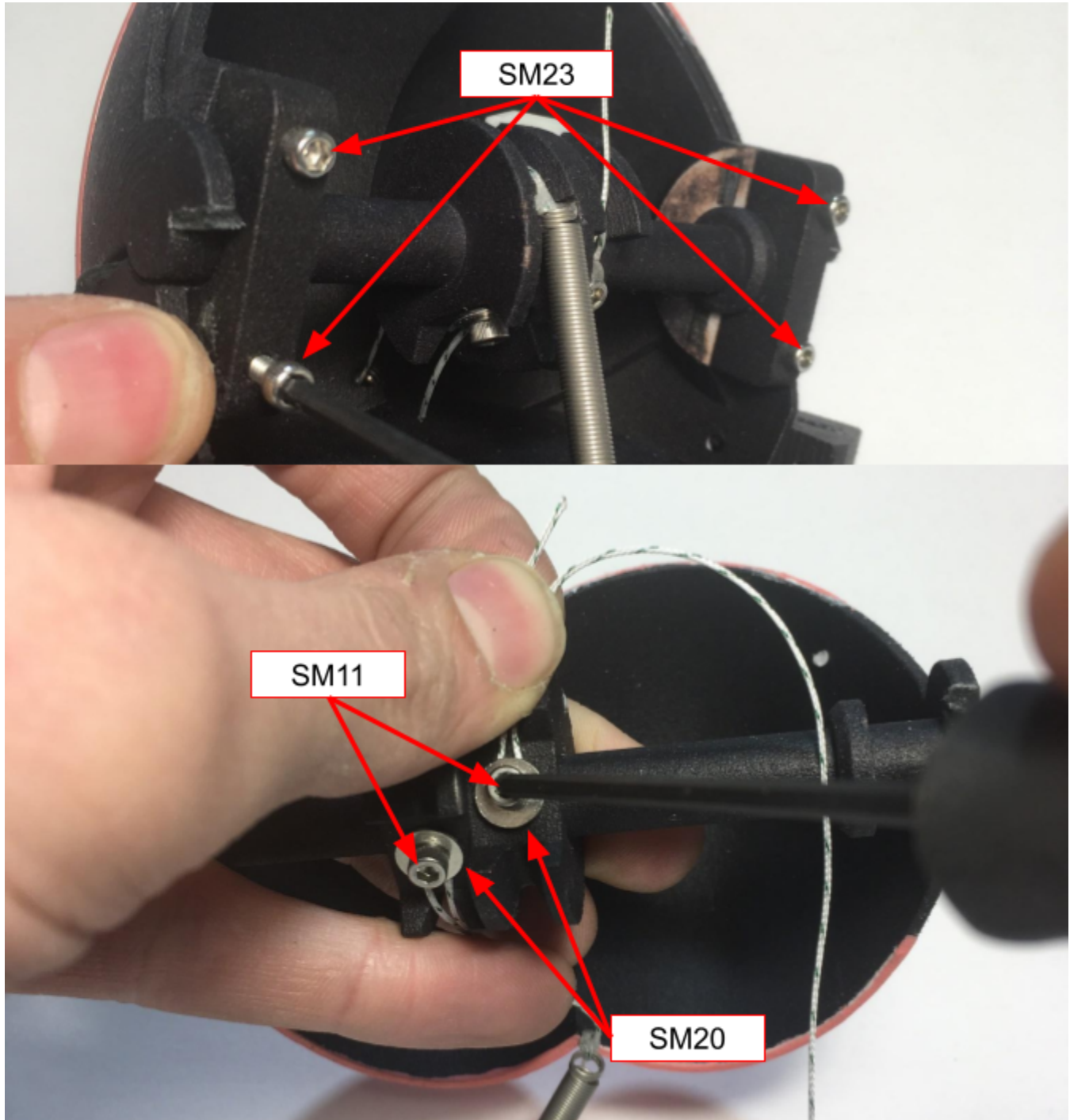


## 4 Detailed Diagrams of Mechanisms and Hardware

### 4.1 Eye Mechanism view one



## 4.2 Eye Mechanism view two



## 5 Safety and Hazards

### 5.1 Safety Precautions and Hazard Identification

As is the case with any puppet, care must be taken when handling this item to make sure that the item does not become damaged beyond normal expectations.

- Care should be taken that the puppet and its accessories do not crash against walls, doorframes, other props, or other items. This could cause the puppet to become damaged or soiled.
- If the hardware on the puppet becomes loosened, pieces of the puppet will be likely to behave erratically. Care should be taken to ensure that all hardware is present and properly tightened at all times.
- All electrical systems should be regularly checked and maintained to the utmost safety standards.

### 5.2 Hazard Mitigation Strategy

There is always a chance of breakage and small injury when handling puppets and props, but Monkey Boys Productions has done their best to keep these chances low and keep both performers and technicians safe. All items have been built to be safe to handle with little chance of injury when handled correctly.

- All carbon fiber parts have been sanded to a smooth surface and sealed or covered.
- All wires and other such electrical parts have been assembled in the most safe and logical way to avoid injury and avoid becoming a hazard to performers or technicians.
- Weights and distribution of weight have been thought through to make the carrying and handling of the props easier on the performers to avoid muscular injury or strain.

These puppets are not a hazard to the environment or the performance location.

## 6 Repair & Service

### 6.1 Daily Checks and Inspections

The following list is provided as a basis for daily inspection of the puppet. Items may be added to or removed from this list as the on-site technical director sees fit.

| Check Point  | How to Inspect                                                                            |
|--------------|-------------------------------------------------------------------------------------------|
| Body Snaps   | Physically check that the four snaps that connect the upper body to the shell are secure. |
| Eye blink    | Activate the eye mechanism and visually check to ensure the eye fully opens and closes    |
| Arm movement | Waggle the controller                                                                     |

### 6.2 Periodic Testing

The following list is provided as a basis for periodic testing of the puppet. Items may be added to or removed from this list as the on-site technical director sees fit.

| Check Point        | How to Inspect                                                                                        | When to Inspect |
|--------------------|-------------------------------------------------------------------------------------------------------|-----------------|
| Legs               | Visually check for fraying or tears                                                                   | Weekly          |
| Eye blink hardware | Place hand inside puppet and gently touch screws and connection points, looking for loose connections | Monthly         |

### 6.3 Routine Corrective Maintenance

The following list is provided as a basis for routine maintenance of items that will commonly need replacement or adjustment. Items may be added to or removed from this list as the on-site technical director sees fit.

| Check Point              | Corrective Action  | When to Address                |
|--------------------------|--------------------|--------------------------------|
| Spring for Eye mechanism | Replace Spring     | As needed                      |
| Marionette string        | Replace black line | As needed (if worn or damaged) |

### 6.4 Puppet-specific Service Items

A basic service kit has been supplied for use with this specific prop. Refills of the items in this kit can be handled by direct purchase from the source or by emailing [contact@monkeyboysproductions.com](mailto:contact@monkeyboysproductions.com). A full manifest of these items is supplied inside the kit and is included on the final page of this manual.

### 6.5 Cleaning Fabrics

**\*\*\*Please note that using liquids or detergents on UV treated fabrics may cause the UV reactivity to fade\*\*\***

#### 6.5.1 Spot Cleaning

- Spot clean as soon as dirt and grime are noticed.
- Gently wipe with Shout or Tide wipe.
- Dab product into deeper stains.

- Blot and gently wipe with a clean, white towel.
- Make sure that the area dries well.

#### 6.5.2 Deep Cleaning Option 1 for widespread stains

- Dilute a drop of Woolite detergent in room temperature water.
- Dab on with a white cloth.
- Gently wipe & dab with clean white towel.

#### 6.5.3 Deep Cleaning Option 2 for deep stains

- Spray Bissell Pro Carpet Cleaner on worst of spot.
- Allow it to rest for 1 minute.
- Carefully dab and wipe with a clean towel, being mindful that fabric doesn't pull away from the material beneath.

#### 6.5.4 In all cases

- DO NOT rub, twist, or pull when cleaning
- DO NOT use heat, steam, or pressure
- DO NOT use bleach or other harsh chemicals
- DO NOT immerse in or saturate with water

### 6.6 Cleaning Hard Surfaces

**\*\*\*Please note that using liquids or detergents on UV treated surfaces may cause the UV reactivity to fade\*\*\***

- Hard surfaces (Carbon fiber, plastic, aluminum, grip tapes, etc.) can be wiped clean with water or a mild cleanser such as Dawn dish detergent diluted in water.
- Always use a soft cloth and work carefully to avoid scratching or damaging any coatings or paints.
- Always wipe all surfaces dry immediately after cleaning to avoid leaving water spots or otherwise damaging finishes.

## 7 Detailed Maintenance Procedures

### 7.1 Specialty information about obtaining access to the eye mechanism for maintenance or repair

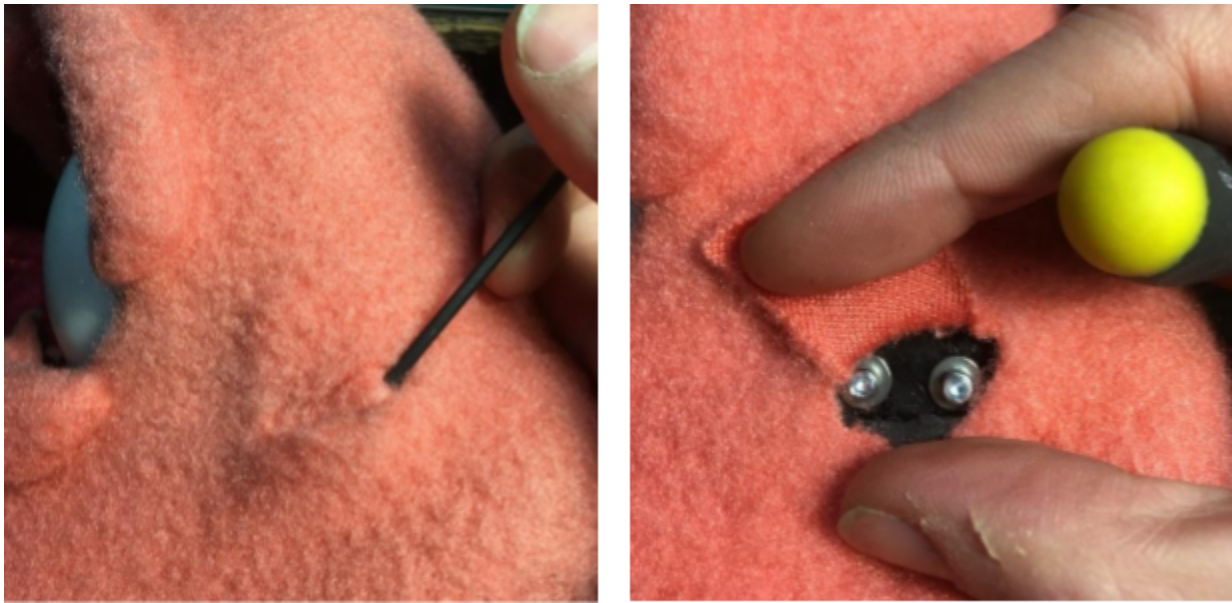
1. Squeeze the boning tube in the base of the puppeteer sleeve. Turn the tube sideways and push it up into the puppet.
2. Slide your hand up into the shell between the puppeteer sleeve and the foam in the outer shell. Use your fingers to open the snaps that connect the neck fabric to the shell (only some pictured here)



3. Slide the neck and sleeve out of the shell to disconnect the two pieces.
4. Remove the screws in the roof of the mouth that are marked in blue.



5. Use a small tool to open the flap on the side of the head and remove the screw that hold the eyes in place. Repeat on the other side of the head.



6. Reach your hand inside the puppet and carefully and gently remove the eye mechanism as well as the slider located on the mouth palate.

## 7.2 Speciality information about repairing the eye mechanism

There are two individual areas of the eye mechanism that may need repair or replacement.

The **return spring** that opens the eye. [start at photos 1 -3]

The **trigger string** that closes the eye. [skip to photos 4-10]

1. Detaching Outer Eyelids Mech
  - a. Detach the screw (SM14) used to hold the return spring (SM21) to the Inner Eye Mech (SM51).
  - b. Remove both the left and right axle sandwiches (SM52) by unscrewing the 4 socket heads (SM15)



## 2. Attach New Return Spring to Eyelids

- a. Using a small flame, singe the end of your new string (SM19)
- b. Wrap the string in a clockwise direction underneath the washer (SM20) on left side of Eye-lid mech pulley, and tighten the screw (SM11) to clamp the string.
- c. From this screw and washer measure and mark 2.25" length of this string
- d. Wrap the new string (SM19) around the bent top-end of the provided spring (SM21), and tie a square-knot at the 2.25" mark.
- e. Trim and use a small flame to singe the end of the string



## 3. Glue Knot

- a. Add 1 drop of super glue on the square-knot to reinforce its hold.  
\*Careful to not add too much super glue as it may corrode the string\*



4. Attach New Trigger String
  - a. Using a small flame singe end of string (SM19)
    - i. Wrap the string in a clockwise direction underneath the washer (SM20) on right side of Eye-lid mech pulley, and tighten the screw (SM11) to clamp the string.



5. Thread New Trigger String

- a. Thread this string under the white bridge, inside the groove of the pulley, around and out of the bottom



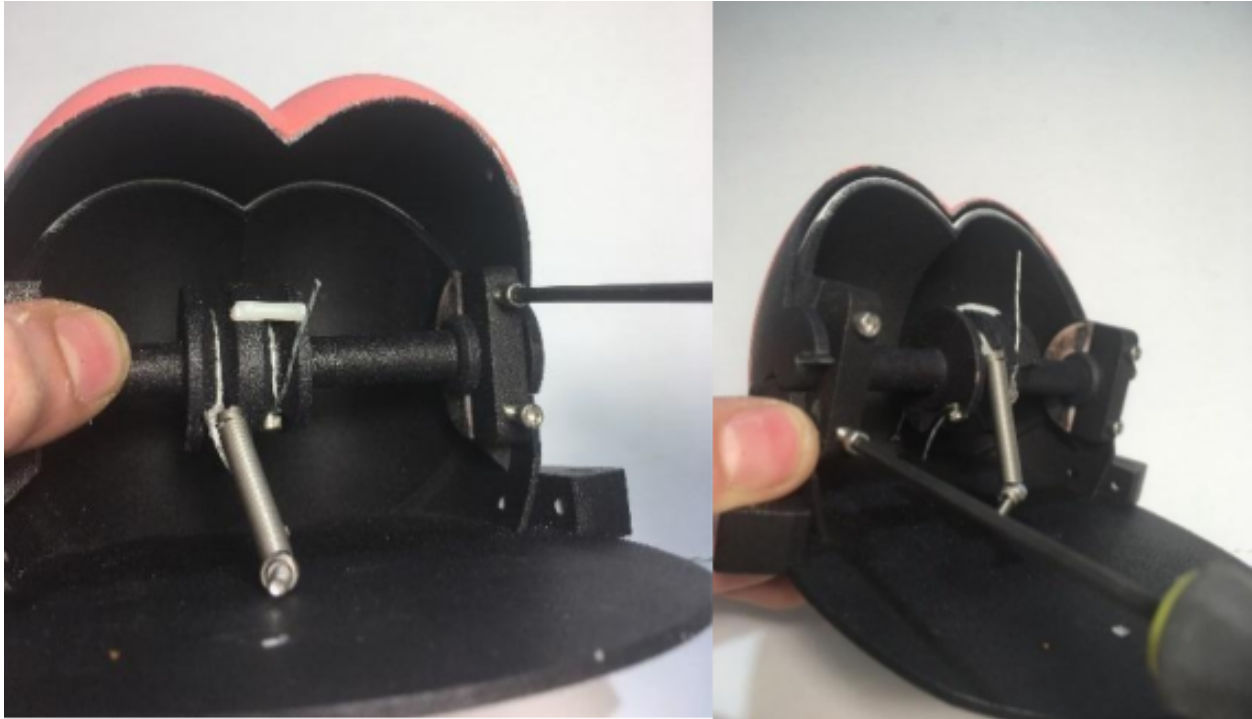
6. Thread Through Inner Mech

- a. Thread this string through the hole centered inside the mech eyes completely



7. Attach Outer Eyelid Mech

- a. a. Insert the Outer Eyelid mech's (SM50) axle into its position on the Inner Mech (SM51)  
\*Be careful, as to not scratch the the paint job on the inner eye mech\*
- b. Attach both the left and right axle sandwiches (SM52) by screwing the 4 socket heads (SM15) into each side



8. Attach Return Spring to Inner Eye Mech
  - a. Carefully attach bottom-end of spring (SM21) into its hole in the mech platform (SM51) using socket head screw (SM14)  
\*DO NOT OVER TIGHTEN\*



9. Thread the Trigger

- a. Thread the trigger string until it travels through the teflon tube (SM17), push-to-fit connector (SM16), slide (SM55), and trigger (SM56)



10. Attach the Trigger String

- a. Wrap the trigger string clockwise underneath the trigger's washer (SLM18 and screw (SM14).
- b. Using a 3/32" hex driver carefully push the trigger forward, pull the trigger string taught, and tighten the screw until it firmly holds the new string.

**\*DO NOT OVER TIGHTEN\***



### 7.3 Specialty information about closing the puppet after repair

To return the puppet to performance condition, perform the steps in section 7.1 in reverse.

Take care to ensure that the screws are lined up and that the mechanism is securely installed before reassembling the puppet.

**\*\*When replacing these screws, do so very carefully.**

- Use direct and bright lighting.
- Align inner mech with care, using the screw holes to peer at inner mech placement.
- Carefully screw one screw halfway into a hole on one side, and then do the same to the opposite side.
- If there is resistance felt during this process, stop and remove the screws and reposition the mech.  
Check to ensure the eyes are accurately positioned inside their sockets.

Finish with the second left and right side screw. Tighten all four screws alternating from the left to the right side.

**\*DO NOT OVER TIGHTEN\***

## 7.4 Specialty information about restringing the controller

1. Cut Black Dacron String to roughly 22".
2. Tie one end to the marionette handle.
3. Tie a loop in the other end of the string. The string should be 18" (or whatever length the performer chooses as the correct length) from loop to loop.
4. Using the lobster clip on each claw, clip the end of the string in



## 8 Comprehensive Parts List

### 8.1 Understructure and Base

| Part # | Part                                      | Usage                     | Vendor                                               | Vendor Part ID |
|--------|-------------------------------------------|---------------------------|------------------------------------------------------|----------------|
| SM01   | 1/2" Bra Foam                             | Claws, Legs               | Finebrand                                            |                |
| SM02   | 1/2" L300                                 | Head, Shell, Belly        | FoamFactory                                          |                |
| SM03   | 1/4" L400                                 | Back of skull             | FoamFactory                                          |                |
| SM04   | 1/2" L200 (white)                         | Teeth                     | FoamFactory                                          |                |
| SM05   | 1" Polyfoam Rod                           | Neck Bolster              | <a href="http://foambyemail.com">foambyemail.com</a> | TF112          |
| SM06   | 7/8" Polyfoam Rod                         | Arms                      | <a href="http://foambyemail.com">foambyemail.com</a> | TF78           |
| SM07   | 3/8" Polyfoam Rob                         | Claw Details              | <a href="http://foambyemail.com">foambyemail.com</a> | TF38           |
| SM08   | 3/32" rubber sheet, cut into 1/5" circles | On either end of the arms |                                                      | KVLLB          |
| SM09   | 1/2" Polyfoam                             | Gold detailing, lower lip | <a href="http://foambyemail.com">foambyemail.com</a> |                |

### 8.2 Hardware

| Part # | Part                                   | Quantity | Usage                                                 | Vendor        | Vendor Part ID |
|--------|----------------------------------------|----------|-------------------------------------------------------|---------------|----------------|
| SM10   | Size 10 snaps                          | 10       | Attach neck fleece to inside shell                    | Wawak         | SOS10BK        |
| SM11   | 1/2" 4-40 ss socket head screw         | 2        | attach strings to axle                                | McMaster-Carr | 92196A070      |
| SM12   | 5/16" 4-40 ss socket head screw        | 2        | Attach thumb loop to mouth plate                      | McMaster-Carr | 92196A107      |
| SM13   | 5/16" 4-40 philips flat undercut screw | 7        | Attach finger loops and slider to mouth plate         | McMaster-Carr | 91099a160      |
| SM14   | 1/4" 4-40 ss socket head screw         | 1        | Attach spring to eye mech plate and string to trigger | McMaster-Carr | 92196A106      |
| SM15   | 3/4" 4-40 ss socket head screw         | 4        | Attach mech to mask                                   | McMaster-Carr | 92196A113      |
| SM16   | push-to-connect tube fitting           | 2        | Connecting mech tube                                  | McMaster-Carr | 5779K241       |
| SM17   | 1/8" D Teflon Tubing                   | 5.5"     | Connect mech to slider                                | McMaster-Carr | 5239K24        |

|      |                                      |     |                                                                                                                 |               |                 |
|------|--------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------|---------------|-----------------|
| SM18 | 1/8" aluminum rivet washer           | 1   | slider trigger string sandwich                                                                                  | McMaster-Carr | 90183A213       |
| SM19 | IGFA braided Dacron, 30 lb. test     | n/a | Eye Mech                                                                                                        | Amazon        | ASIN B005EJ4NNC |
| SM20 | 1/8" ss washer                       | 2   | Connecting string to pulley                                                                                     | McMaster-Carr | 92141A005       |
| SM21 | ss spring, 0.02                      | 1   | Eye Mech                                                                                                        | McMaster-Carr | 9665K54         |
| SM22 | 4-40 square nut                      | 11  | Connecting axle sandwich, Attaching carbon fiber head shell to mech, inside pulley connecting strings to pulley | McMaster-Carr | 94855A281       |
| SM23 | tee-nut 4-40                         | 3   | Connect sliders to mouth plate                                                                                  | McMaster-Carr | 90975A002       |
| SM24 | Steel Round-Base Weld Nuts           | 6   | Connect and finer loops                                                                                         | McMaster-Carr | 90596A111       |
| SM25 | Plastic Spring Cord Locks            | 2   | Attach arms to body                                                                                             | Amazon        | B0B4JL4K31      |
| SM26 | 3/16" Brass Grommet                  | 2   | Arm to body connection                                                                                          | McMaster      | 9604K21         |
| SM27 | 1/4" Red and Silver Grommet          | 4   | Used in 3D printed part, where string connects claws                                                            | Amazon        | B088K23B9J      |
| SM28 | Black Dacron                         |     | Marionette string                                                                                               | Bass Pro Shop | 298211          |
| SM29 | German Plastic Boning - 12mm x 1.5mm |     | base of neck sleeve, inside upper body                                                                          | Corset Making | CMS-PWB12-10    |
| SM30 | Bungee, 1/8" Diameter                |     | Inside Arms                                                                                                     | Amazon        | B007FJZWF2      |
| SM31 | 0.125 Dia. Spring steel 3ft long     | 1   | Marionette Handle, and lower Lip stay                                                                           | McMaster      | 9667K55         |
| SM32 | Black Lobster Claw Clasps            | 2   | attach claws to string                                                                                          | amazon        | B08XMCJ2SW      |
| SM74 | Black Steel Lock Zip Ties            | 2   | Marionette Handle                                                                                               | amazon        | B00NV7M5DY      |

### 8.3 Fabric and Fibers

| Part # | Part                                                | Usage                                                        | Vendor                   | Vendor Part ID  |
|--------|-----------------------------------------------------|--------------------------------------------------------------|--------------------------|-----------------|
| SM33   | Twill Tape                                          | Shell, to stitch down fabric and to reinforce leg attachment | Wawak                    | TPE121BK        |
| SM34   | Anti Pill Plush Fleece Solids Very Berry            | Shell and Claws                                              | Joann's                  | Item # 16181109 |
| SM35   | Stretch Scuba Neoprene- Pink                        | Belly                                                        | Joann's                  | Item # 17687187 |
| SM36   | Gutermann Mara 70 #877                              | Throughout                                                   | Wawak                    | GTDP877         |
| SM37   | Faux Leather                                        | Inside Shell to anchor whopper popper and grommets           | JoAnn Fabric & Crafts    | 18242503        |
| SM38   | Wine Craft Velour                                   | Mouth                                                        | CR's Crafts              | 86073           |
| SM39   | Procool Dri-QWick Sports Mesh CoolMax Fabric, Black | Neck Sleeve and inside shell                                 | Wazoodle                 | W-154           |
| SM40   | Black Nylon Thread                                  | Throughout                                                   | Wawak                    | ATDS4000BL      |
| SM41   | Black leather                                       | mechanism                                                    | Michael's Arts & Crafts  | 10356039        |
| SM42   | Black velour adhesive film                          | Pupils                                                       | Astek Home               | 205-1719        |
| SM43   | White 1/2" Boning Casing                            | base of neck sleeve, inside upper body                       | corsetmakingsupplies.com | CMS-PWB12-10    |
| SM44   | Custom dyed MILLISKIN SHINY - WHITE                 | Gold details                                                 | Spandex House            | N/A             |
| SM45   | White F3 Fleece                                     | Face Fleece                                                  | Dharma Trading           | F3F             |
| SM46   | Milliskin Matte (Hot Pink)                          | Legs                                                         | Spandex World            | 779             |
| SM47   | Big Hole Fishnet                                    | Stencil for Shell Belly paint                                | Spandex World            | 10903           |
| SM48   | Athletic Net                                        | Stencil for Shell Back paint                                 | Spandex World            | 14370           |

### 8.4 Custom Made Parts

| Part # | Part | Quantity | Usage | Vendor | Filename |
|--------|------|----------|-------|--------|----------|
|--------|------|----------|-------|--------|----------|

|      |                     |   |                         |  |                                                                                                                                                                                                |
|------|---------------------|---|-------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SM49 | Face mask Nylon     | 1 |                         |  | **All Sebastian Marionette 3D files are in the Box Drive:<br><a href="https://disney.box.com/s/zb27v23z4df05xccyiv0siveabq61lg0">https://disney.box.com/s/zb27v23z4df05xccyiv0siveabq61lg0</a> |
| SM50 | Eye Lids Nylon      | 1 |                         |  |                                                                                                                                                                                                |
| SM51 | Eyes and Mech plate | 1 |                         |  |                                                                                                                                                                                                |
| SM52 | Axel Connector      | 2 |                         |  |                                                                                                                                                                                                |
| SM53 | Marionette Handle   | 1 |                         |  |                                                                                                                                                                                                |
| SM54 | Marionette Bushings | 2 | Clips Handle to strings |  |                                                                                                                                                                                                |
| SM55 | Slider              | 1 |                         |  |                                                                                                                                                                                                |
| SM56 | Slider switch       | 1 |                         |  |                                                                                                                                                                                                |
| SM57 | Grommets            | 2 |                         |  |                                                                                                                                                                                                |

## 8.5 Paints and Dyes

SDS sheets are available in the separate SDS Project Packet.

| Part # | Part                                      | Usage                                   | Vendor             | Vendor Part ID |
|--------|-------------------------------------------|-----------------------------------------|--------------------|----------------|
| SM58   | Wildfire Lighting UV Paint OPTIC WHITE    | White of eyes, eye lids, spots on shell | World Paint Supply | WFQT           |
| SM59   | Wildfire Lighting UV Paint DEEP YELLOW    | Eye lids                                | World Paint Supply | WF6OZ          |
| SM60   | Wildfire Lighting UV Paint BRIGHT RED     | Eye lids                                | World Paint Supply | WF6OZ          |
| SM61   | Blickrylic Fire Red                       | Mouth screws                            | Dick Blick         | 00711-3116     |
| SM62   | Blickrylic Primary Blue                   | Mouth screws                            | Dick Blick         | 00711-5016     |
| SM63   | Blickrylic Burnt Umber                    | Mouth screws                            | Dick Blick         | 00711-8056     |
| SM64   | Fluorescent Red Jacquard Acid Dye         | Face Fleece                             | Dharma Trading     | 642            |
| SM65   | Fluorescent Safety Orange Dharma Acid Dye | Gold Details                            | Dharma Trading     | 456            |
| SM66   | Wicked Colors Fluorescent Orange (W027)   | Shell Belly and back paint              | Amazon             | B01HYA2JAW     |
| SM67   | Createx Colors Pearlized Red (5309)       | Shell Belly and back paint              | Amazon             | B01NAUZGAX     |

|      |                                          |                       |        |            |
|------|------------------------------------------|-----------------------|--------|------------|
| SM68 | Wicked Colors Fluorescent Magenta (W029) | Shell Back Paint      | Amazon | B01HYA3UOG |
| SM69 | Createx Colors 4011 Reducer              | In all airbrush paint | Amazon | B071JZF3C2 |

## 8.6 Glues, Treatments, Coatings, and Chemicals

SDS sheets are available in the separate SDS Project Packet.

| Part # | Part                                   | Usage                       | Vendor               | Vendor Part ID |
|--------|----------------------------------------|-----------------------------|----------------------|----------------|
| SM70   | Barge                                  | Throughout                  | Frankford Leather    | BAPCPAR        |
| SM71   | Fabri-tac                              | Throughout                  | Amazon               | B01EIMPRQM     |
| SM72   | Loctite Super Glue Professional Liquid | Mech and marionette control | amazon               | B014MPEDCY     |
| SM73   | Black Fine Point Sharpie               | Teeth Lines                 | Amazon               | B07Z6NZ45S     |
| SM75   | Insta-Shield Flame Retardant           | Fire treatment              | Northeast FireShield | N/A            |