

WALT DISNEY WORLD®

PROJECT RED

FLAMINGO

OPERATIONS AND REPAIR MANUAL



104 E. Vine Street, Hatfield PA 19440

contact@monkeyboysprodctions.com

215-839-6627

Revision History

Date	Version	Description	Author
04/19/24	1.0	First iteration	Bridget Reilly Beauchamp, Brieaunna Avery
	1.1	Addition of Comprehensive Materials	Bridget Reilly Beauchamp, Brieaunna Avery
	2.2	Final Iteration before installation	Bridget Reilly Beauchamp, Betsy Falk

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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 4.15.1:

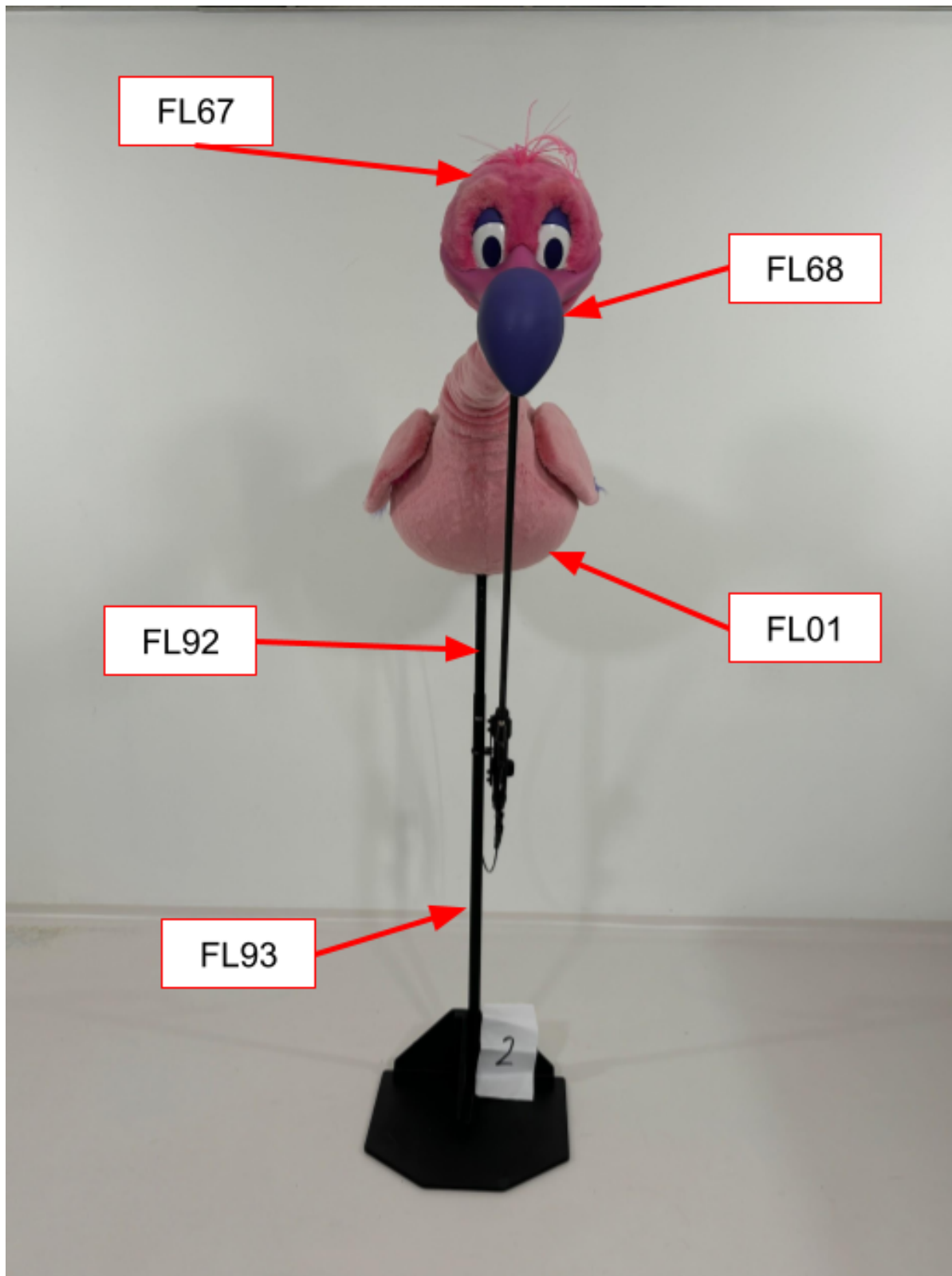
The Flamingo puppets are a series of puppets that are built on a stand or tripod where the bodies are supported by legs (not seen) with control of the head and neck by a single rod. The puppets will be placed behind scenic puppet hides, obscuring the lower half of the puppet and the puppeteer.

1.2.2 Basis of Engineering

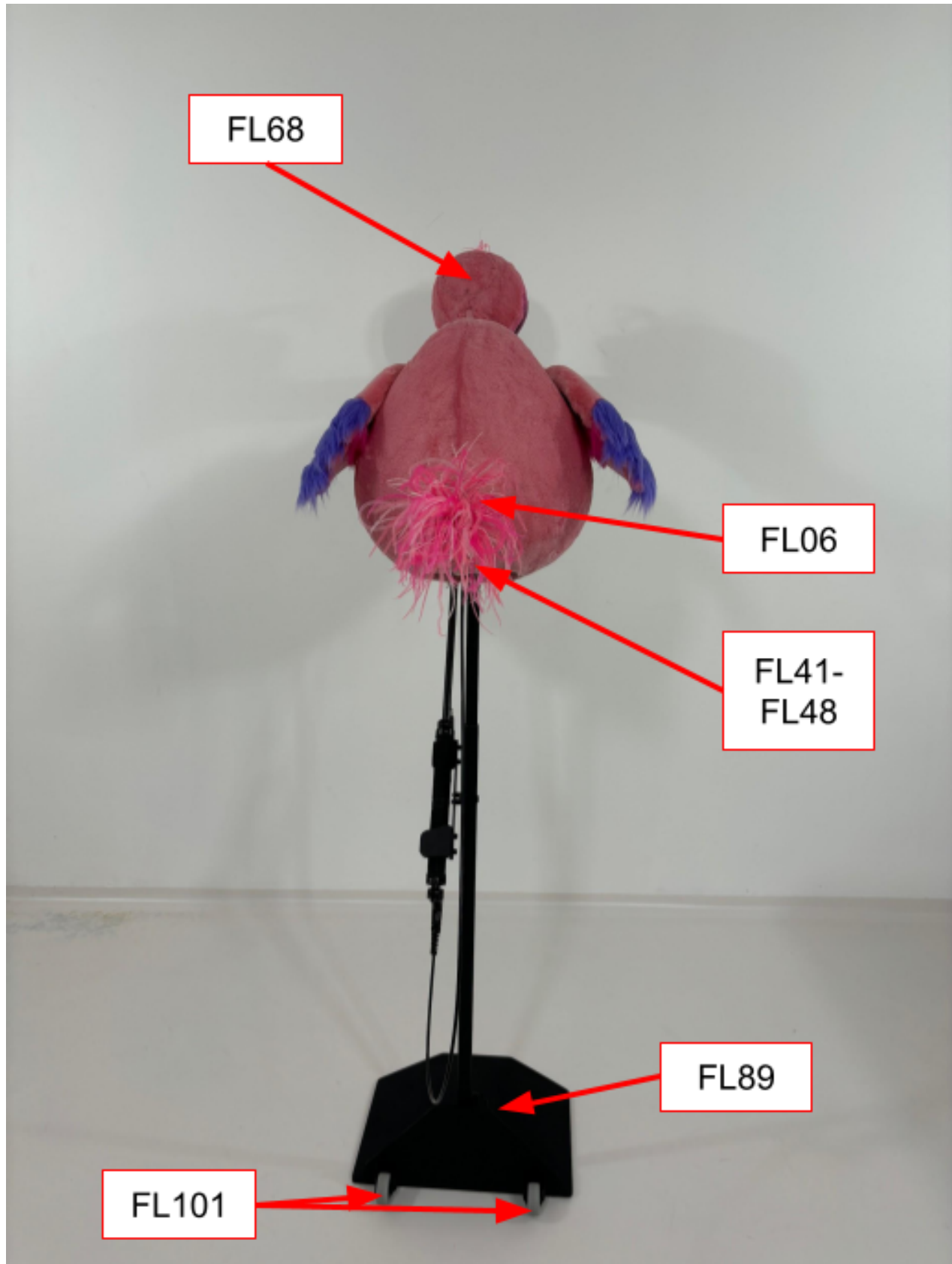
The Flamingo puppets consist of a carbon fiber body and wings, a boned, lined fabric tube neck, and a 3D printed head, all covered with faux fur. The head is mounted on a carbon fiber pole, and triggers for both the mouth and wing mechs are on that pole. The body is mounted on an aluminum rod, anchored on a plywood base.

2 Construction and Assembly

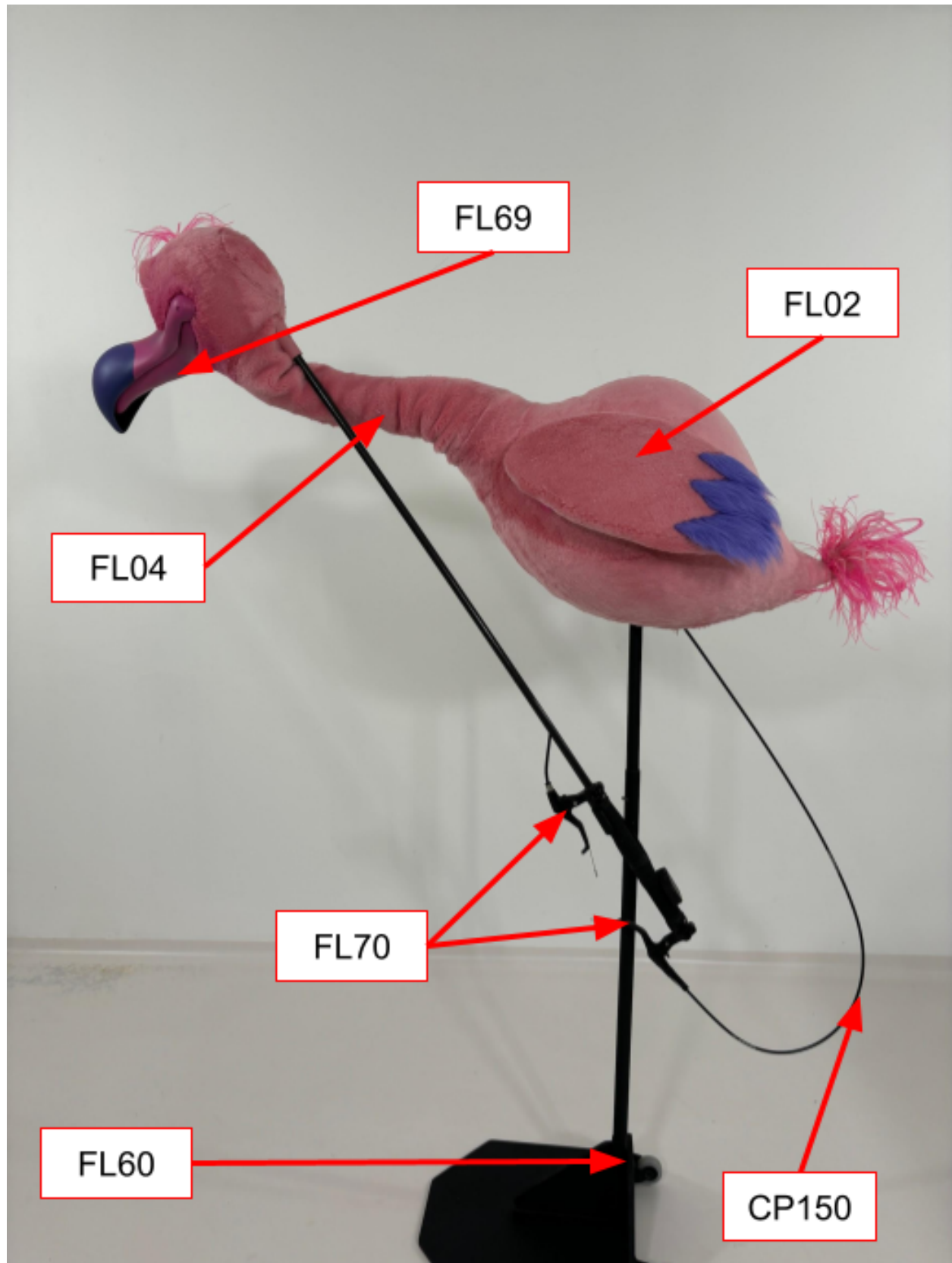
2.1 Front View



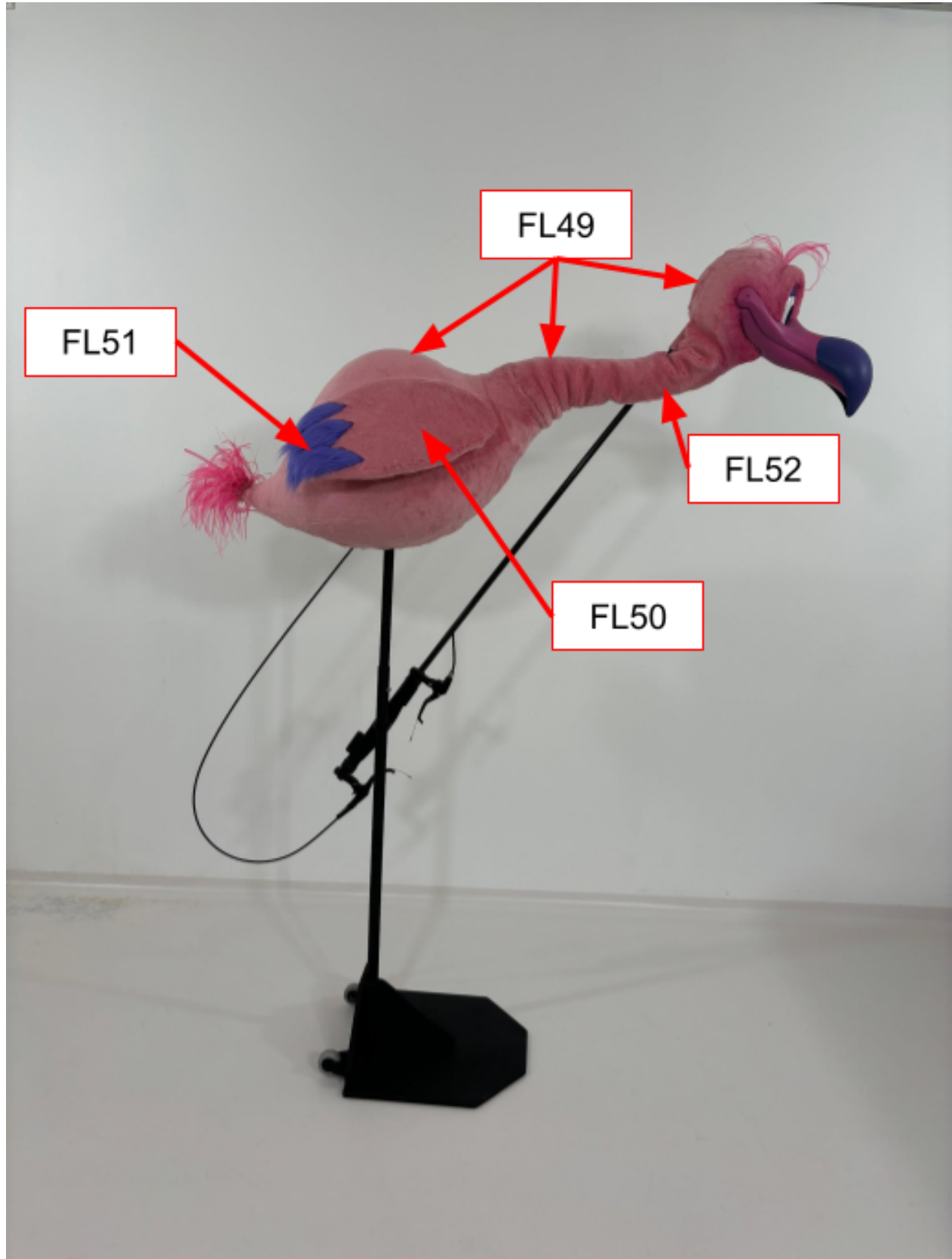
2.2 Rear View



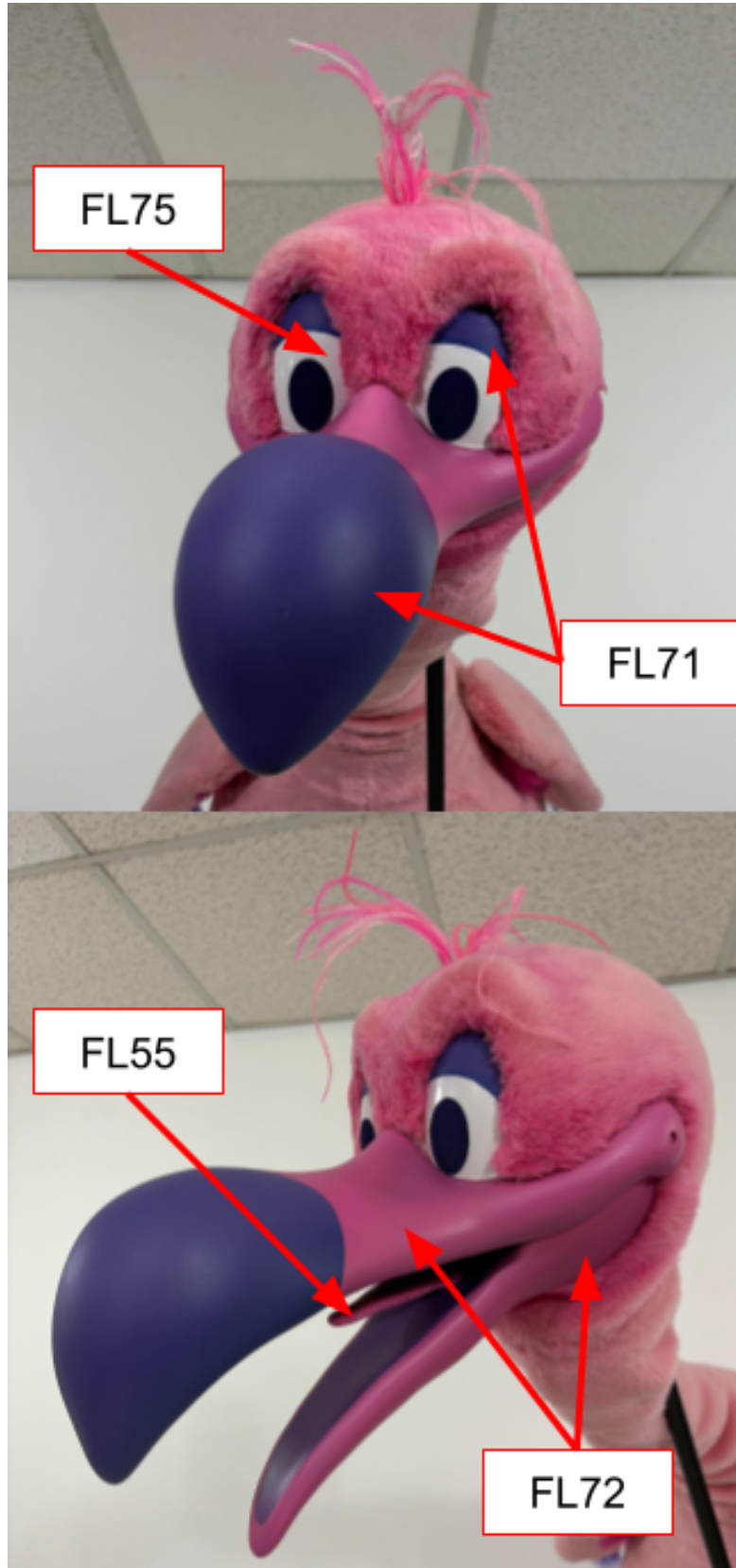
2.3 Left view



2.4 Right View



2.5 Closeup of Face



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 Moving the puppet into place

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

The puppeteer should grasp the pole by both hands and tip the puppet back until the casters are engaged, then, continuing to use both hands, carefully push the puppet into place. Once there, tip the puppet forward until it is resting fully on the stand.

3.2.2 Action: Flapping Wings

Flamingo wings are neutral when close to the body. To flap the wings upward, the performer should squeeze the lower bike brake with whichever hand they choose. To flap downwards, release the bike brake.

3.2.3 Action: Moving Mouth

Character's mouth is closed in a neutral position. To open the mouth, the performer should squeeze the upper bike brake with the hand not used for the wings. To close, release the bike brake.

3.2.4 Action: Moving Head

To move the character's head from side to side, the performer should swivel their wrists. To move the flamingo's head up and down, they should tilt their hands forward and back.

3.2.5 Moving puppet off stage

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

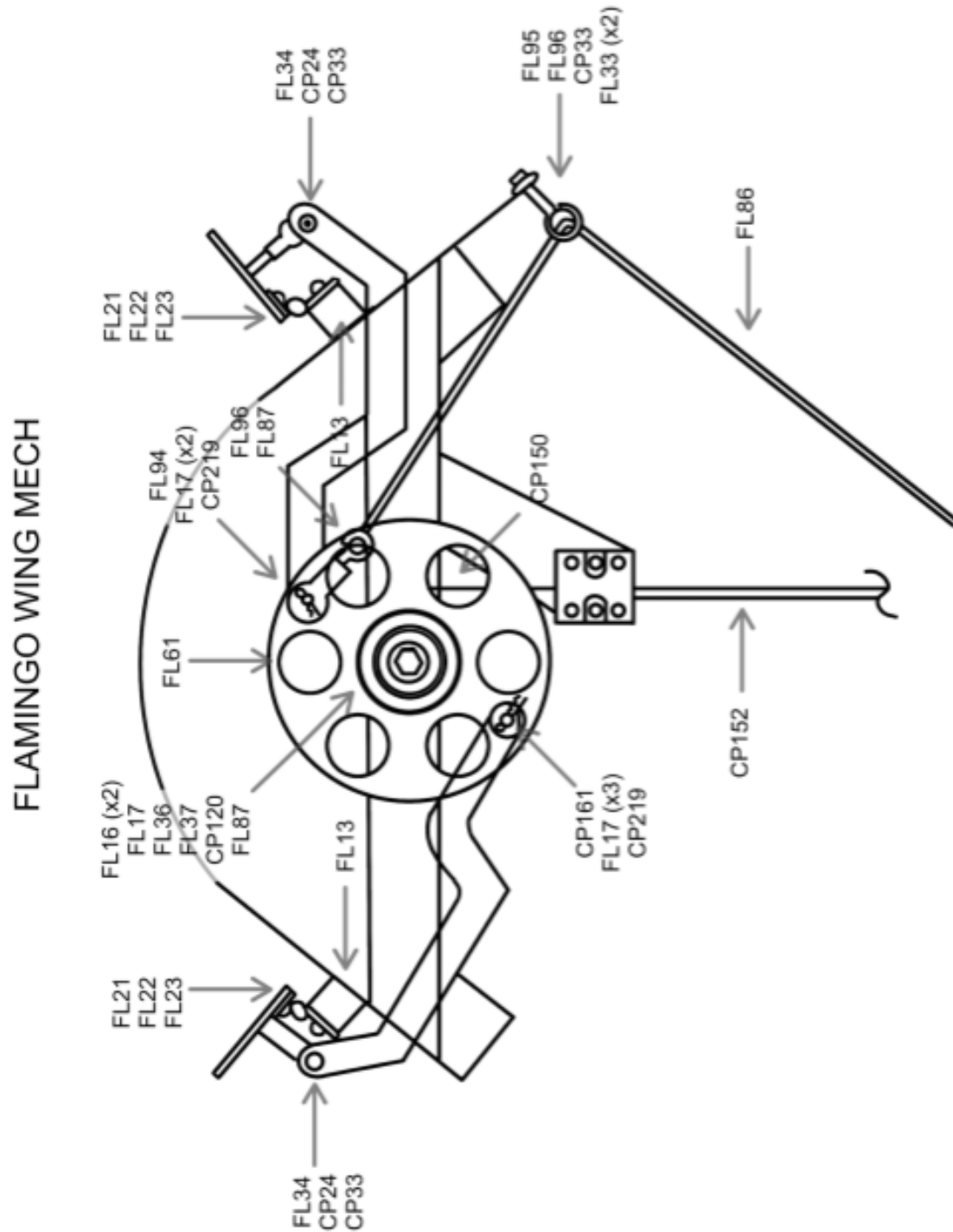
3.2.6 Storage

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.

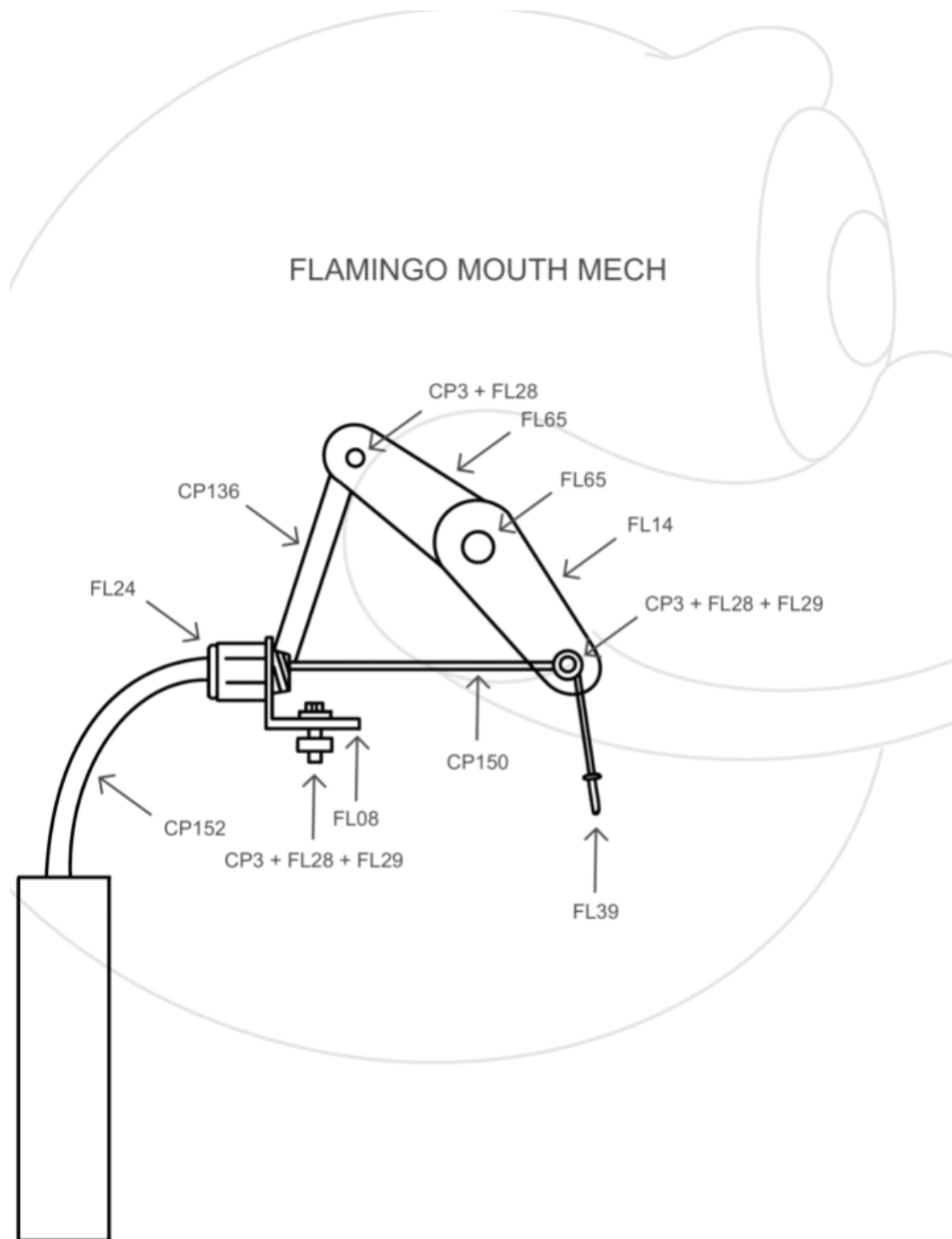


4 Detailed Diagrams of Mechanisms and Hardware

4.1 Wing Mechanism

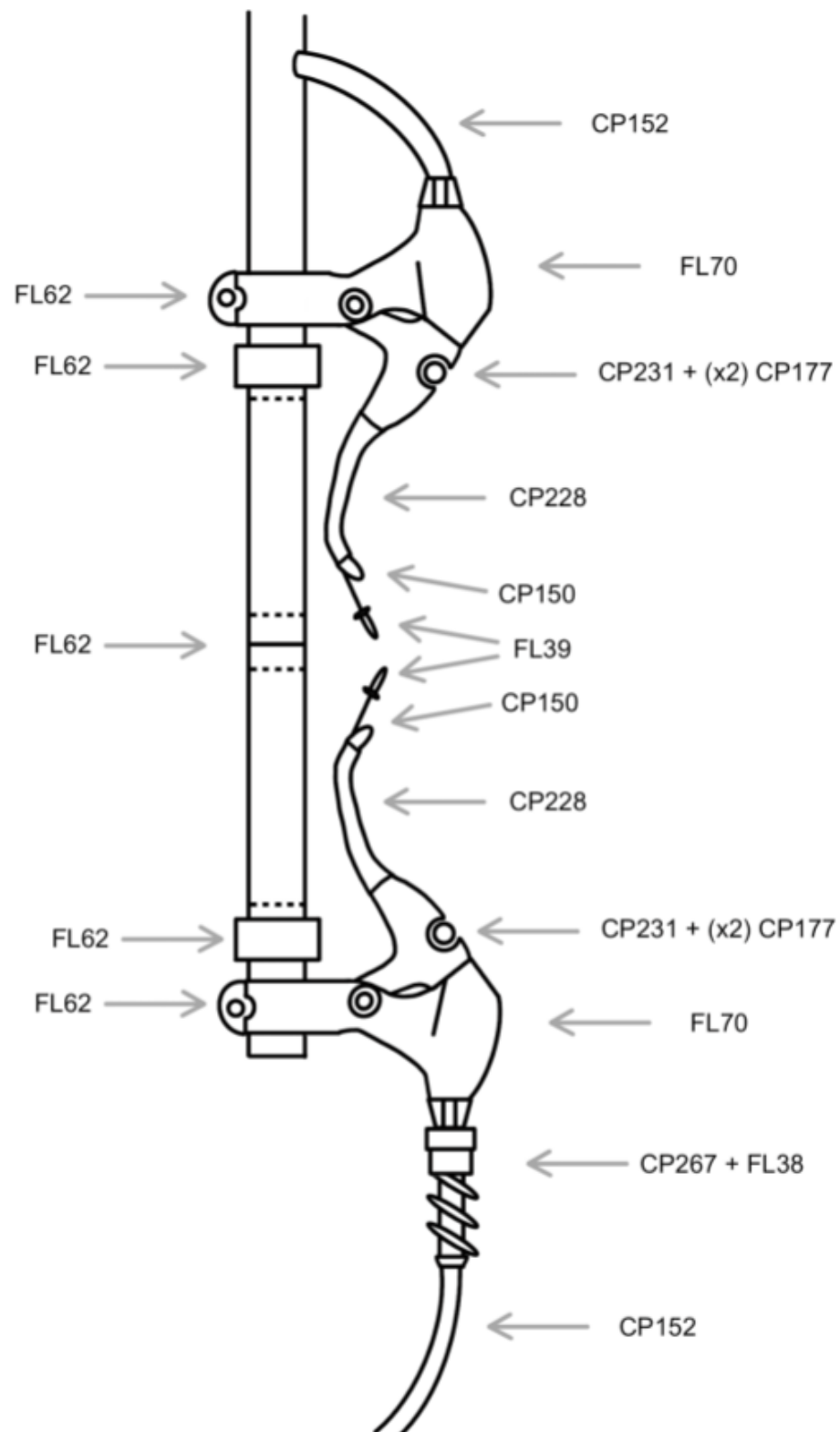


4.2 Mouth Mechanism



4.3 Handle Mechanism

FLAMINGO HANDLE MECH



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
Wings	engage mech
Mouth	engage mech
Casters	make sure wheels move easily and are free of debris

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
Wing mech	manually & visually	weekly
Mouth mech	manually & visually	weekly

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
hair & tail feathers	replace/refresh	as needed
face paint	touch up	as needed

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. 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

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

- 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.

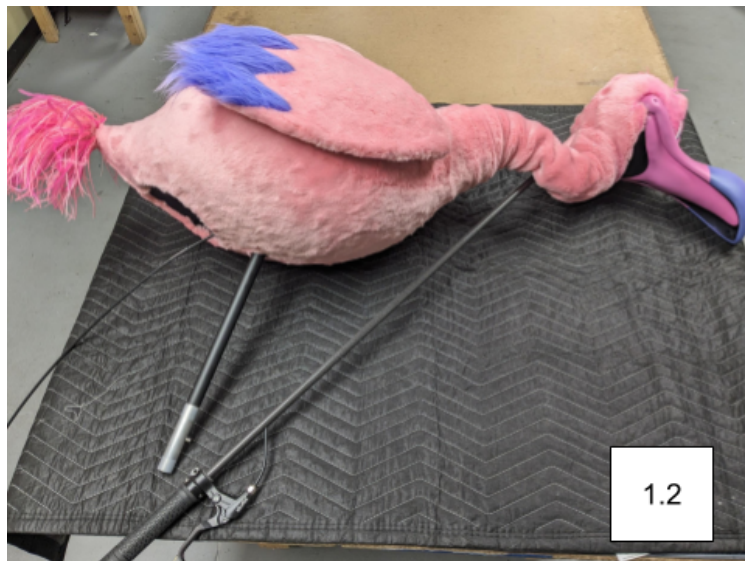
7 Detailed Maintenance Procedures

7.1 Specialty information about Removing/Replacing Flamingo From its Stand

1. With one hand holding the pole directly under the flamingo, use your other hand to depress the spring button on the lower pole section. Lift the flamingo to release the upper pole section from the lower section (fig. 1.0 & 1.1)



2. At this point with your free hand remove the head pole from its rest and transport to the desired work surface.
3. Flamingo can be laid on its side on a large clean surface covered in a soft towel or moving blanket to protect the beak and painted surfaces. (figure 1.2)



4. To replace onto the stand slide the upper pole into the lower pole with the spring button facing forward. Depress the button so that it can be lowered into the lower pole segment and insert until the button springs into its machined slot.

7.2 Specialty information about Adjusting Flamingo Height

Tools needed- small needle nose pliers

1. With the flamingo laying on a work surface as mentioned in step 3 of “Removing/Replacing flamingo from stand,” look into the service port on the bottom and locate the cotter pin and clevis pin holding the pole to its receiver. (fig. 2.0)
2. With small needle nose pliers remove the cotter pin and then remove the clevis pin. (fig.2.1)
3. Slide the pole in or out to desired position, line up the holes, and replace the clevis pin(front to back) securing it with the cotter pin.
4. Note: it may be necessary to add some 5mil x $\frac{3}{4}$ ” UHMW tape to the section of pole inside the receiver (between holes) to reduce slop at this connection. (fig. 2.2)
5. Replace flamingo back in stand as described in step 4 of “ Removing/Replacing flamingo from stand.”



7.3 Specialty information about Removing/Replacing the Neck From Body

Tools needed- 4mm hex

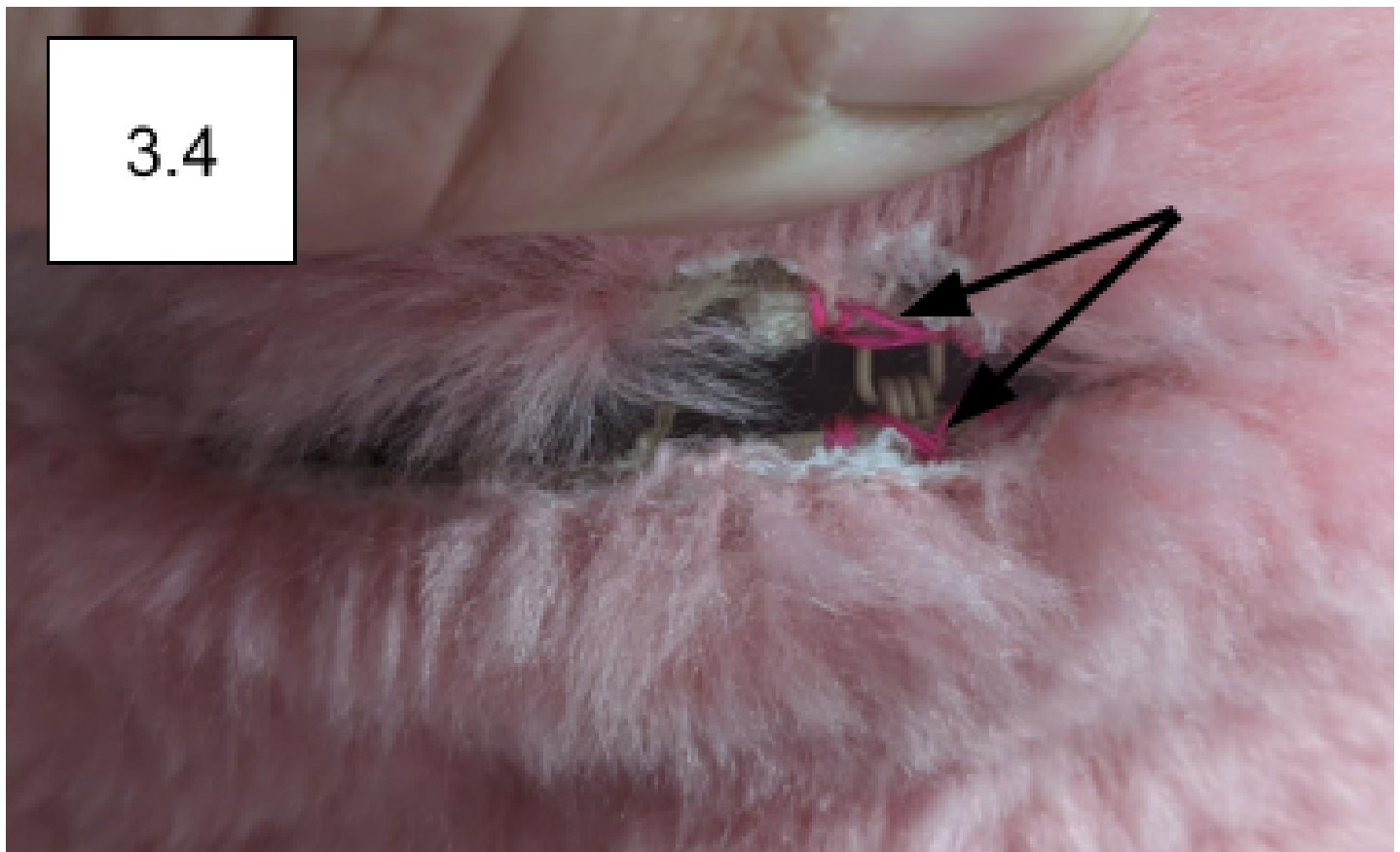
1. Locate the seam at the neck and peel back to expose the inner hooks. (fig 3.0)



2. Release the hooks all the way around the neck.
3. Release the inner velcro attaching the neck boning to the inside of the body. (fig 3.1)
4. To completely remove the head, neck, and pole from the body it is necessary to remove the lower bike brake from the head pole. A 4mm hex will loosen the handle shaft collar. (fig 3.2)
5. Place head, neck, and head pole on a large clean surface covered in a soft towel or moving blanket to protect the beak and painted surfaces for servicing. (3.3)



6. To reattach the neck to the body, place the head pole in its rest. (reattach the bike brake from step 5 if necessary).
7. Re-adhere the inner boning velcro inside of the neck hole of the body.
8. Line up the pink thread marked bra hooks and hook these first. (fig 3.4)



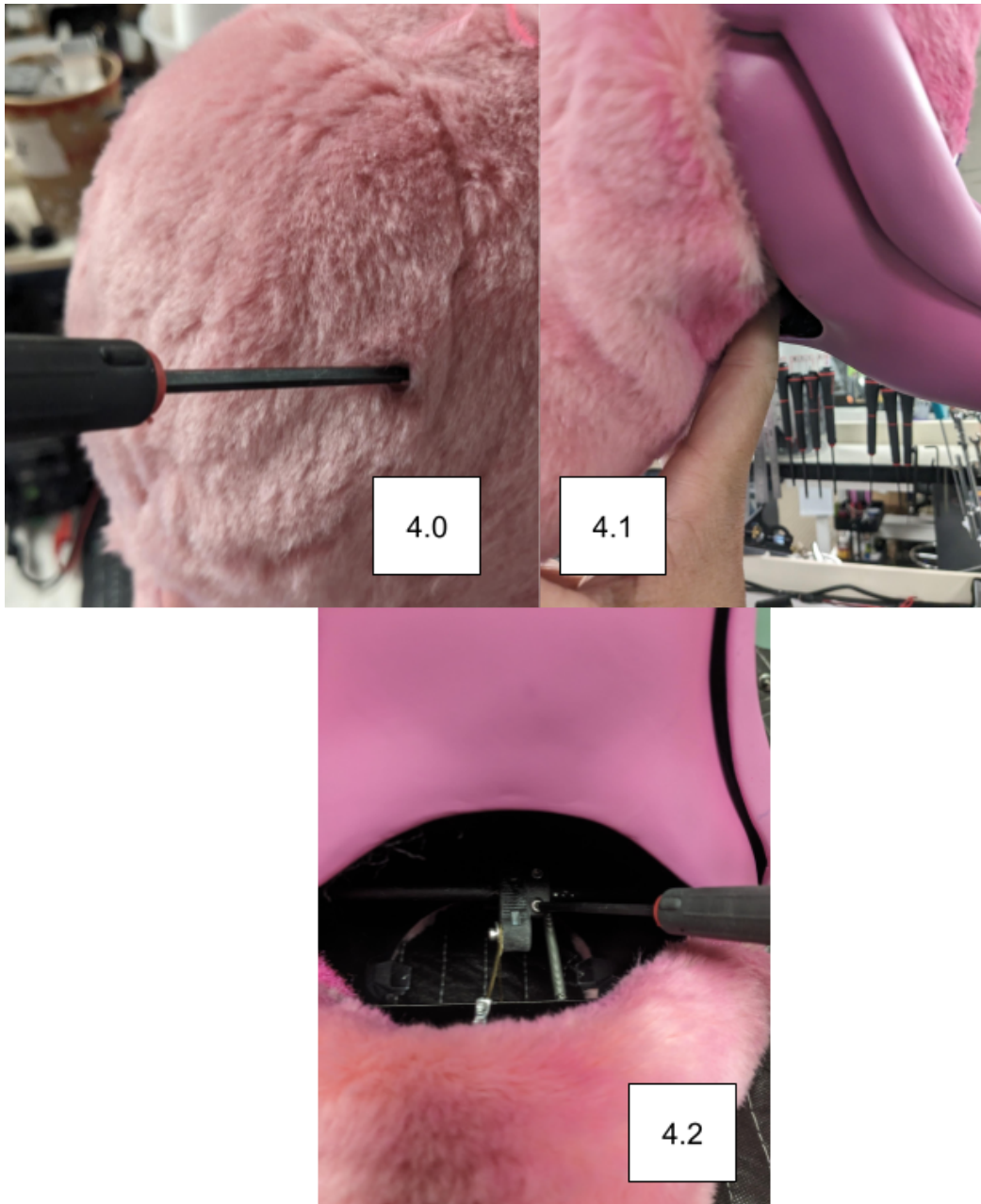
9. Work along the neck from the marked hooks in one direction until the neck is fully connected
10. Dress fur to blend seam

***While not necessary, it may be easier to service the mouth mech by removing the whole head and neck from the body.**

7.4 Specialty information about Replacing or Adjusting Mouth Spring

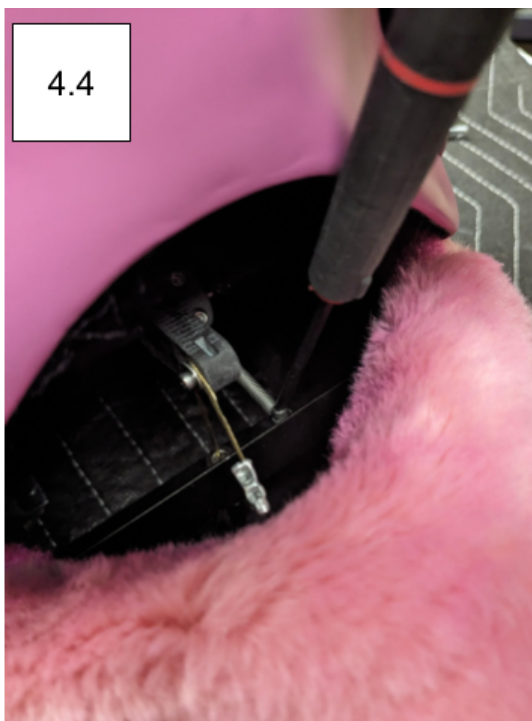
Tools needed- 3/32" Hex driver bit and small 1/4" ratchet, 3/32" ball end hex driver, small 1/4" wrench or socket

1. Remove the rear hatch on the head by unscrewing the 4x 4-40 screws with a 3/32" driver (fig. 4.0)
2. Release the velcro from the lower jaw by pressing up in the rear center where the fabric meets the jaw. Fold the fabric in to create front access to the mouth mech. (fig. 4.1)
3. Loosen the two 4-40 screws on the control arm to release tension on the spring with a 3/32" ball end hex driver. (fig. 4.2)



4. For only spring adjustment, position the control arm to create the desired tension then retighten and skip to step 11.

5. For spring replacement locate and remove the 4-40 nylon lock nut acting as a jam nut on the back of the aluminum cross brace using a small $\frac{1}{4}$ " wrench or socket. (fig. 4.3)
6. From the front, remove the 4-40 screw that is holding the spring to the cross brace using a $\frac{3}{32}$ " ball end hex driver. (fig 4.4)
7. Remove the 4-40 screw attaching the spring to the control arm with a $\frac{3}{32}$ " bit in a small ratchet or clock the control arm to access from under the cheek with a $\frac{3}{32}$ " ball end hex driver. (fig 4.5)
8. Prep the new spring with the 4-40 screws. (fig. 4.6)

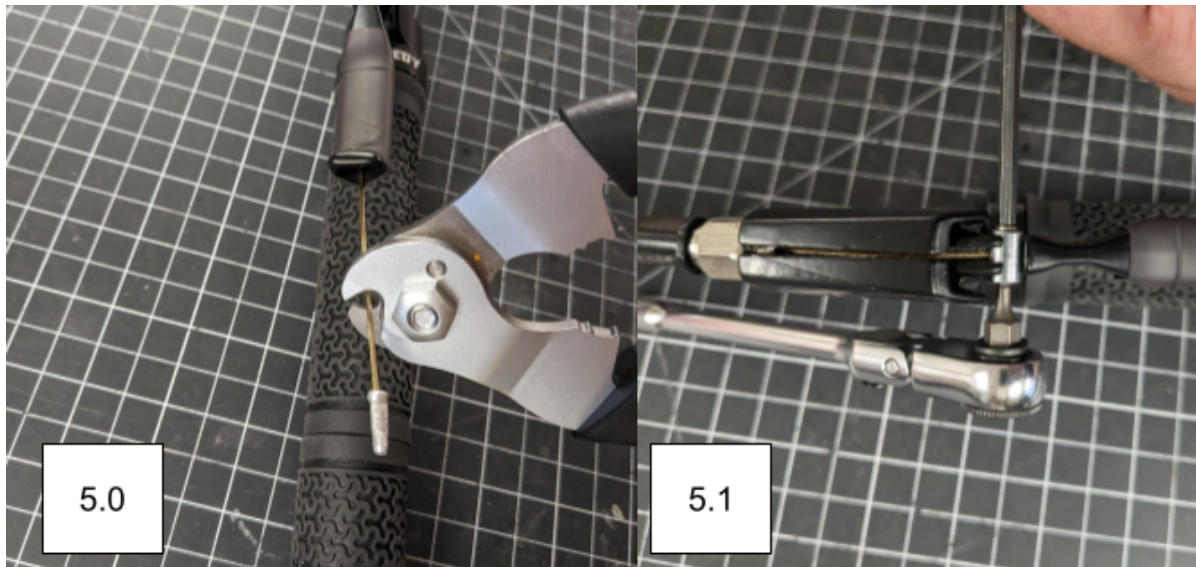


9. Reattach one of the screws to the control arm. Reattach one to the aluminum cross brace so that it protrudes the back approximately 3/16".
10. Replace the 4-40 nylon lock nut on the protruding threads and snug it up to the aluminum cross brace.
11. Reach in through the rear hatch and clock the spring control arm rear facing with an upward angle to preload with some tension. While holding it in that position, from under the jaw, retighten the two clamping screws on the control arm.
12. Re-attach the fabric/velcro to the lower jaw starting in the center and working your way out.
13. Test the mouth trigger for proper operations and make adjustments if necessary.
14. Replace the rear hatch.

7.5 Specialty information about Replacing Mouth Mech Cable

Tools needed- cable cutters, crimping tool, 3/32" Hex driver bit and small 1/4" ratchet, 3/32" ball end hex driver, small 1/4" wrench or socket

1. Follow steps 1 and 2 of "Replacing or Adjusting Spring" to gain access to the mouth mech.
2. To remove the old cable cut off the heat shrink on the top bike brake handle and cut the end crimp off the cable using cable cutters. (fig. 5.0)
3. Loosen the two set screws clamping the cable in the bike brake lever with two 3/32" hex drivers. (fig. 5.1)
4. In the head, using a 3/32" ball end hex driver, loosen the 4-40 screw clamping the cable to the control arm accessing it through the right cheek area. (fig. 5.2)



5. Pull the cable out from below the jaw to remove. Note- the cable clamp in the handle lever from step 3 will fall out once the cable is removed.
6. Slide new cable into the cable housing in the head from below the jaw. About an inch from the end, put a 90 degree bend in the cable and install an end crimp. (fig. 5.3)



7. Attach the new cable to the control arm using the washer and screw from step 4.

8. Put the barrel clamp from step 3 in the brake lever and thread the cable through this and the handle. (fig. 5.4)
9. Have someone hold open the mouth all the way or prop it all the way open with something soft like a rolled up towel. With the mouth all of the way open pull the cable through the brake handle removing any slack and holding the bike brake lever to the pole handle (fig. 5.5) and lightly snug the two set screws clamping the cable from step 3. Note- fully tightening these set screws can deform the cable making further adjustments difficult.



10. Release the jaw and gently check mechanism operation for full range of motion. The pole handle should act as a stop so that the mouth is all the way open when the brake lever hits the pole handle.
11. Make any necessary adjustments and then fully tighten the set screws clamping the cable.
12. Cut off excess cable and crimp on an end crimp.
13. Install 2 inches of $\frac{3}{4}$ " heat shrink tubing over handle and cable.

Servicing the Wing Mech- *Read First*

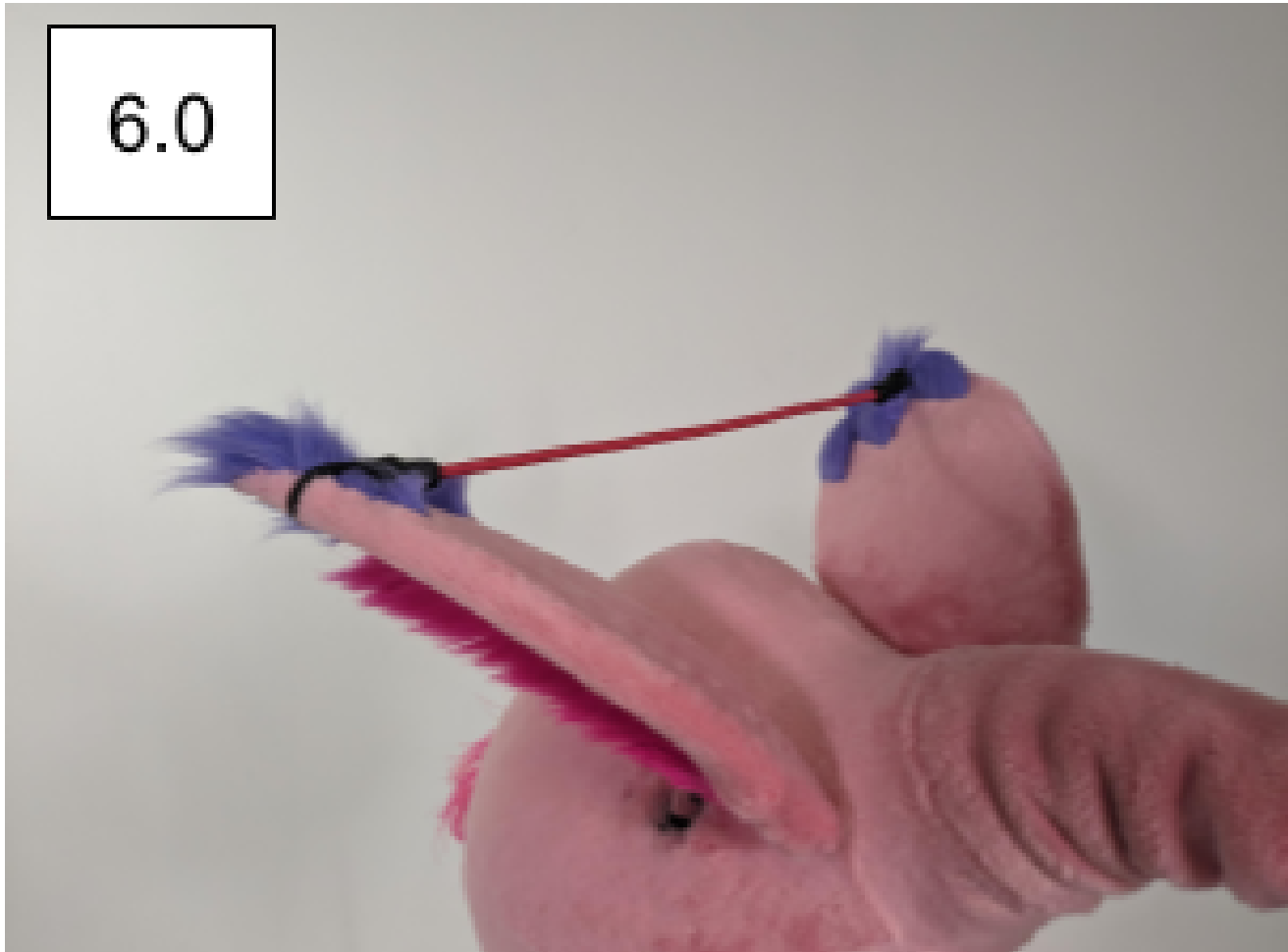
****Service beyond adjusting the bungee assist or cable at the brake lever requires removing the neck for access. Follow instructions in "Removing/Replacing Neck From Body" to do this.***

Wing Service position- Using a 24" bungee, hook both wing tips to hold the wings in a fully open position (fig. 6.0)

7.6 Specialty Information about Replacing Wing Mech Cable

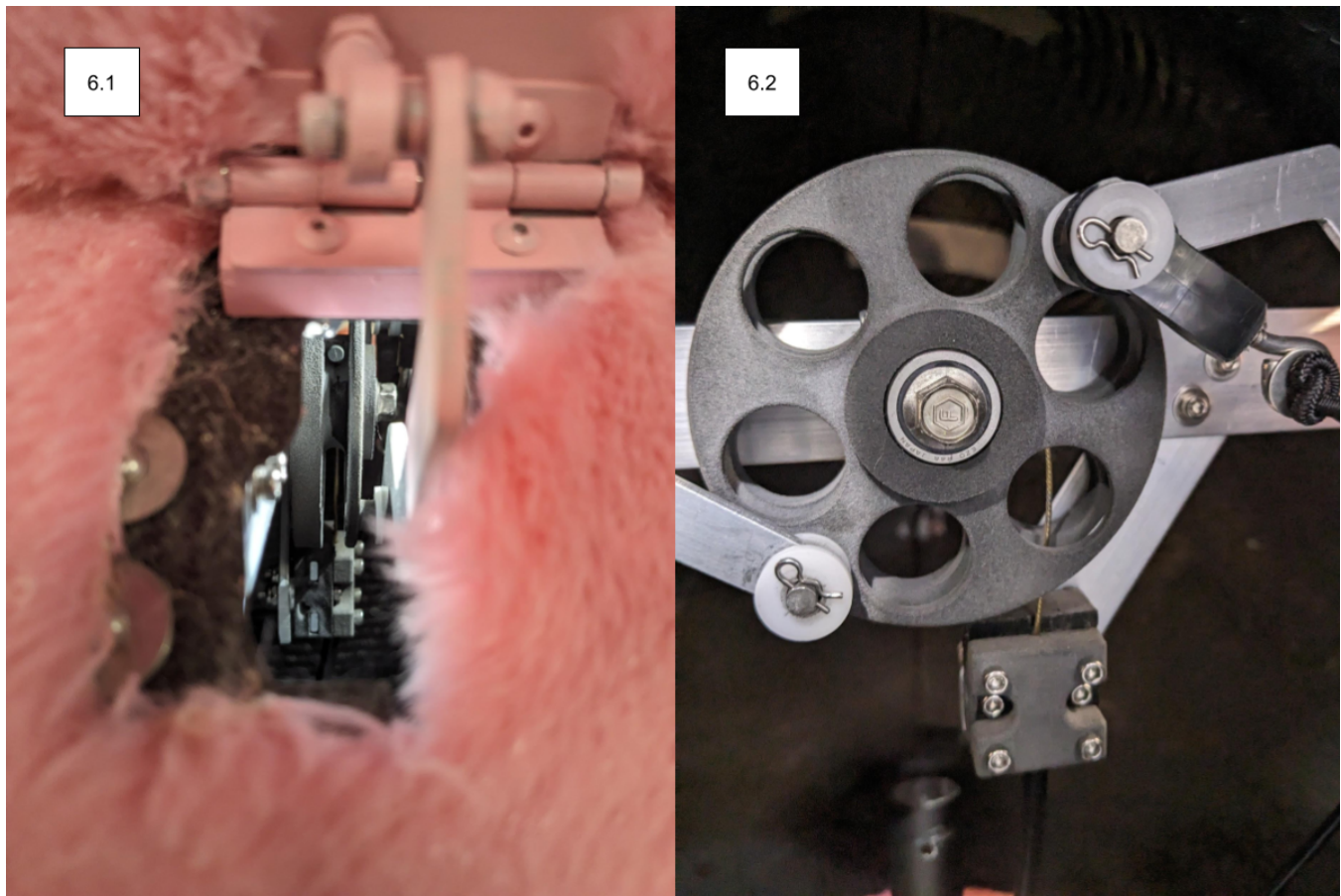
Tools needed- 3/32" Hex driver bit and small ¼" ratchet, 3/32" ball end hex driver

1. Place the wings in their service position (fig. 6.0)



2. Remove the heat shrink tubing from the brake lever and cut the crimp off the end of the wing mech cable (lower bike brake).
3. Loosen the two set screws clamping the cable in the brake lever using two 3/32" hex drivers as seen in fig. 5.1.
4. Push the cable in through the brake handle. Reaching through the neck or up through the bottom service port on the flamingo body, pull the cable out of the pulley and out through the hole under the right wing. Note- if the cable has been deformed by the clamp it may be necessary to cut again to remove deformed section, also be aware that the clamping barrel piece will fall out once the cable is removed.

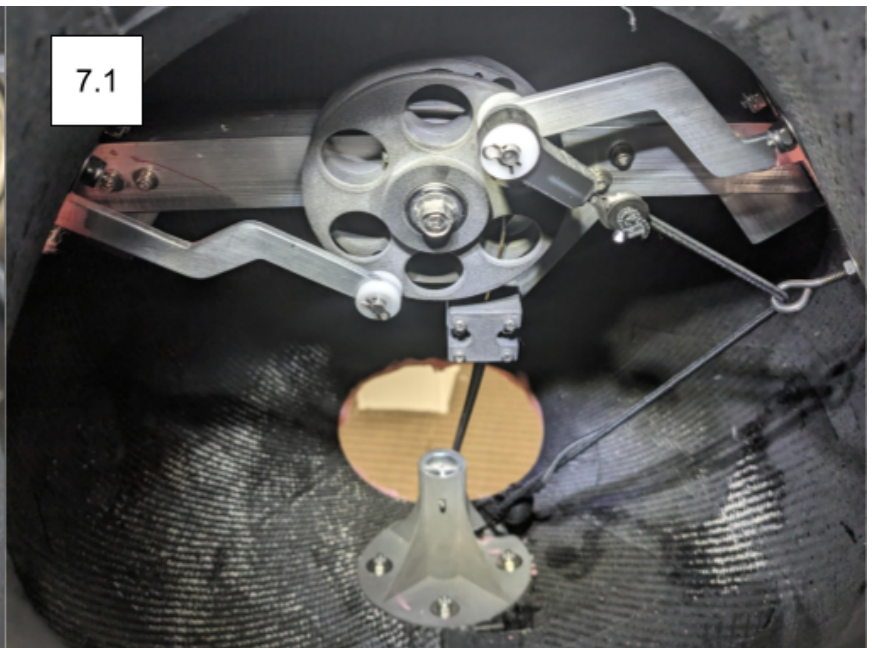
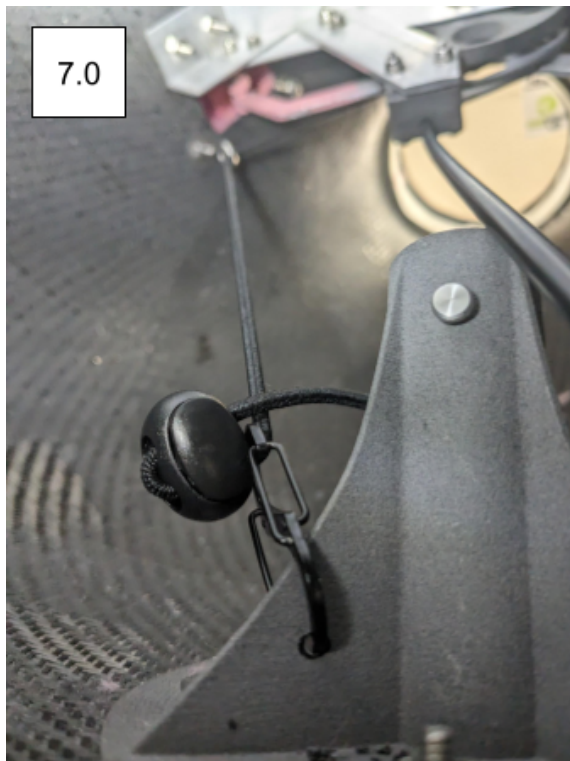
5. Feed the new cable in through the hole under the right wing and into/through the hole in the pulley, around it a quarter turn and into the cable housing and continue to feed the entire cable through until the ball end seats against the pulley. (fig 6.1 and 6.2)



6. At the handle end place the barrel clamp into the brake lever and feed the cable through the clamp and the handle.
7. Pull the cable tight through the handle and with the handle lever most of the way depressed (leaving $\frac{1}{4}$ " - $\frac{1}{2}$ " gap between the brake lever and hand) , snug up the set screws clamping the cable. Notes- Over tightening the set screws may deform the cable making further adjustments difficult. The stiff cable and tight radius of the pulley usually holds some play/slack in the cable, this is why you should not totally depress the brake lever when tightening the clamp. Leaving room for the lever to further depress will allow the lever's mechanical advantage to take up that slack and give the wings their full range of motion.
8. Take the wings out of their service position by removing the bungee and gently testing the brake lever for proper range of motion.
9. Make any necessary cable adjustments and fully tighten the set screws clamping the cable.

7.7 Specialty Information about Replacing Wing Mech Bungee Assist

1. From the large access hole in the bottom of the flamingo, locate the bungee connection with double cord lock. (fig.7.0)
2. Unclip the bungee from the “S” carabiner. For adjustment skip to step 8, for replacement continue to step 3.
3. Remove the cord lock from the bungee
4. From the top, locate the knotted end of the bungee and remove the whole bungee and washer through the neck hole.
5. Prepare a new 24” section of $\frac{1}{8}$ ” bungee with a #10 washer and figure-8 knot on one end.
6. Feed the free end of the bungee through the eye hook attached to the pulley, then the eye hook below the left wing hole, then to the large bottom access hole (fig. 7.1)
7. From the large bottom access hole, feed the bungee through one hole of the double cord lock then back through the other hole.
8. Adjust the tension of the bungee by feeding more or less bungee through the cord lock.
9. Clip the taught side of the bungee to the “s” carabiner using the cord lock as a “stop.”
10. Test the wing mech for desired pull. Note- the more tight the bungee is, the higher the resting state of the wings will be. If the bungee is too tight the wings will lose action. Ideally the resting state holds the wings slightly off of the body and helps give a bouncing motion while actuating the wings.



8 Comprehensive Parts List

8.1 Understructure and Base

Part #	Part	Usage	Vendor	Vendor Part ID
FL01	Carbon Fiber	body	Rockwest Composites	P/N 14008-LYD
FL02	J foam	wings	JMS Plastics Supply	JF110BK060
FL03	Zote foam	wing bone	JMS Plastics Supply	705111-6
FL04	1/2" Rigilene boning	neck	wawak	MTR331
FL05	flexible perforated polypropylene	wing tee nut support	mcmaster	9293T66
FL06	1" L200 foam	tail poof	Foamfactory	XPE2
FL07	1" x 1" x 1/16" Aluminum angle	Internal body structure	mcmaster	8982K39
FL08	3/4" x 1/16" aluminum angle	internal head structure	mcmaster	8982K56
FL09	1"x 1/8" Aluminum flat stock	Internal body structure	mcmaster	8975K578
FL10	1-1/2" x 1/8" Aluminum flat stock	Head handle rest	mcmaster	8975K581
FL11	1-1/2" x 1/16" Aluminum flat stock	Wing plates	mcmaster	8975K199
FL12	1.25" PVC	Head handle rest	lowes	#23981
FL13	3/8" extruded pvc board	wing spacers	Lowe's	#1243066
FL14	1/4" aluminum rod	jaw axle	mcmaster	8974k22
FL15	1/2" soft (craft) foam	small build out on body	Katz Foam and Fabrics	N/A
FL89	1/2" Maple plywood	stand	2'x4'	Lowe's
FL90	3/4"x 3/4" pine board strip	stand	19"	Lowe's
FL91	3/4"x1" pine board strip	stand	6"	Lowe's
FL92	1" Clam rake tubing	stand (lower to base)	34"	Fazzios
FL93	7/8" Clam rake tubing	stand (upper to puppet)	20.5"	Fazzios

8.2 Hardware

Part #	Part	Quantity	Usage	Vendor	Vendor Part ID
--------	------	----------	-------	--------	----------------

CP161	Clevis Pin 3/16" x 31/64 usable length	1	wing mech pivot	mcmaster	92390A101
CP158	Clevis Pin 1/8" x 1-7/64" usable length	1	stand mount to pole	mcmaster	92390A095
FL94	Clevis Pin 3/16" x 55/64 usable length	1	wing mech pivot (with bungee assist)	mcmaster	98306A104
FL16	3/4" permanently lubricated ball bearing for 1/4" shaft	2	wing mech pulley bearing	mcmaster	2342k164
FL17	#10 delrin washer	7	to space wing pushrod arms on pulley clevis	mcmaster	95647A213
FL18	spring button for 3/8"-5/8" round tube	1	head rod to head	mcmaster	94282A412
FL19	spring button for 1/2" to 1-1/4" round tube	1	stand pole	mcmaster	92988A530
FL20	1/4" aluminum round stock	8.5"	jaw axle		
FL21	1/8" rotary shaft	6.5"	wing hinges	mcmaster	1257K39
FL22	1" piano hinge	4"	wing hinges	mcmaster	1581A311
FL23	1/8" shaft collar	4	wing hinges	mcmaster	6157k11
FL24	push to connect tube fitting 5mm	1	mouth mech cable housing receiver	mcmaster	7397N112
FL25	mounting shaft collar	1	Head handle rest to stand connection	servo city	
CP219	SS hairpin cotter pin	3	wing control arm clevis pins, trigger clevis pin, body to pole clevis pin		92391A005
CP135	.020 Spring	1.5"	wing return spring	mcmaster	9665k54
CP136	0.026 Spring	1.5"	mouth return spring	mcmaster	9665k15
CP2	4-40 x 3/8" SS Socket head screw	15	Internal body frame, head frame to head, control arm spring/cable attachment, trigger cable attachment	mcmaster	92196A108
CP3	4-40 x 1/2" SS Socket head screw	71	Mouth Mech control arm clamps, trigger mount clamp, spring mount to head frame, trigger mount clamp,	mcmaster	92196A110

			internal body framewing mech spring mounts		
CP5	4-40 x 3/4" SS Socket head screw	4		mcmaster	92196A112
FL26	4-40 x 7/8" SS Socket head screw	2	cable housing mount to internal body frame	mcmaster	92196A114
FL27	4-40 SS Nylon locknut	10	internal body frame, head frame	mcmaster	91831A005
FL28	4-40 Square nut	17		mcmaster	94855A281
FL29	#4 SS washer	25	back hatch	mcmaster	92141A005
CP24	6-32 x 5/8" SS Socket cap screw	4	Wing control arm control arm to pushrod, wing plate to ball joint stud	mcmaster	92196A150
FL30	6-32 x 1/2" SS Button Head Screw	8	pole mount to body, internal frame to body	mcmaster	92949A148
FL31	6-32 x 3/4" SS Button head screw	4	wings to body	mcmaster	92949A151
FL32	6-32 x 1" SS Button head screw	6	wing to hinge plate mounting	mcmaster	92949A153
CP33	6-32 SS nylon lock nut	19		mcmaster	91831A007
FL33	#6 x 5/8" SS fender washer	18	Pole mount to body, internal frame to body, wing hinges to body	mcmaster	90313A101
FL34	6-32 Spherical end link	2	wing flap control arm	mcmaster	
FL35	6-32 SS Tee nut insert for wood	6	wing to hinge plate mounting	mcmaster	90973A035
CP43	8-32 x 1/2" Flat head Phillips Screw	4	Head Pole Rest to PVC	mcmaster	91771A194
CP47	8-32 SS Nylon Locknut	4	Head Pole Rest to PVC	mcmaster	91831A009
FL36	1/4-20 x 1-1/2" long Flange head bolt	1	wing pulley to internal frame	mcmaster	90166A116
CP120	1/4-20 Stainless locknut	1	Wing pulley to internal frame	mcmaster	91831A029
FL37	1/4" SS washer	1	between nut for pulley mount and frame	mcmaster	92141A029

CP133	1/4" Delrin washer	1	Space wing pulley from frame	mcmaster	95647A216
CP150	Bike shifter cable		wing mech	amazon	
CP152	Bike cable Housing		wing mech	amazon	
CP267	Flex Cord Grip	1	cable housing mount at bike brake	mcmaster	69915K42
CP231	SS Female Threaded Round Standoff	1	cable adjustment at bike brake	mcmaster	91125A463
CP177	10-32 set screw	2	cable adjustment at bike brake	mcmaster	94355A328
FL38	5/16" -18 Vented set screw	1	cable stop ini bike handle	mcmaster	91979A712
FL39	Cable end crimp	1	wing mech cable end at bike brake	amazon	
FL40	M4x0.7x10mm SS socket head screw	2	Mounting shaft collar to Head pole rest	mcmaster	91292A116
CP228	3/4" heat shrink	2"	bike brake handle	amazon	B01JR8CIZA
FL87	#10 SS washer	1	bungee stop at pulley eye hook		92141A011
FL95	6-32 SS hex nut	2	Jam nut at wing control arm post, jam nut on outer bungee eye hook		91841A007
FL96	3/4" SS eye bolt	2	bungee assist and redirect		9489T52
FL97	#8 x 1" flathead wood screws	27	Wood base		
FL98	#8 x 1/2" flathead wood screw	4	caster attach to base (lower 2 screws)	lowes	57231
FL99	#8 x 1/2" sharp point lathe screws	4	caster attach to base (upper 2 screws)	lowes	276809
FL100	S hook Carabiner	1	lower bungee connection	mcmaster	6043T11
FL88	Double cord lock	1	bungee lock	amazon	
FL101	2" non-marking rigid caster	2	stand wheels	lowes	235611

8.3 Fabric and Fibers

Part #	Part	Usage	Vendor	Vendor Part ID
FL41	Crinoline Horsehair Braid Tube - 4mm - Hot Pink	Flamingo Tail	Humboldt Haberdashery	n/a
FL42	Crinoline Horsehair Braid Tube - 4mm - Light Pink	Flamingo Tail	Humboldt Haberdashery	n/a
FL43	Crinoline Horsehair Braid Tube - 4mm - Pale Pink	Flamingo Tail	Humboldt Haberdashery	n/a
FL44	Crinoline Horsehair Braid Tube - 6mm - Hot Pink	Flamingo Tail	Humboldt Haberdashery	n/a
FL45	A Plume of Ostrich Feather - Coral	Flamingo Tail	Feather Place	B825--CO
FL46	A Plume of Ostrich Feather - Candy Pink	Flamingo Tail	Feather Place	B825--CP
FL47	A Plume of Ostrich Feather - Pink Orient	Flamingo Tail	Feather Place	B825--PO
FL48	A Plume of Ostrich Feather - Shocking Pink	Flamingo Tail	Feather Place	B825--SP
FL49	Stretch fur #85 pink	Flamingo body, head, neck and wings	Sunplus	85
FL50	Periwinkle solid shaggy fur	Flamingo wings	Big Z	SKU: ZXD08620
FL51	Neon Pink UV reactive shaggy fur	Flamingo wings	Big Z	SKU: NWUV03
FL52	white athletic mesh	neck	yarrington mills	F728MF
FL53	3/4" white velcro hook and loop	Flamingo neck to body		B0BPDJQV87
FL54	hook and eye tape in beige	neck to body	wawak	# HET15BE
FL55	Pink winella	tongue		n/a
FL56	White nylon thread	most stitching	wawak	ATDP1000
FL57	Tan nylon thread	stitching the hook and eyes on	wawak	ATDP1209
FL58	F3 fleece dyed pink	chin connection to beak	Dharma Trading	N/a
FL59	black 1" velcro hook side	inside bottom beak for chin connection	Amazon	B000QC6HCC
FL86	1/8" black bungee	wing mech	amazon/SGT Knots	

8.4 Custom Made Parts

Part #	Part	Quantity	Usage	Vendor	Filename
FL60	Stand Receiver	1	mounts body to stand post	Tom	All Flamingo 3D files in Box Drive: https://disney.box.com/s/1isucwkrq3n0l08ob7xwdyd17vam56kb
FL61	Wing Mech Pulley	1	controls wing flapping	Ada	
FL62	Handle Bushings	4	adapts bike handles and bike brake to head rod	Tom	
FL63	Reinforced trigger mount for 14mm shaft	1	mounts mouth trigger to head rod	Tom	
FL64	Standard index Trigger	1	actuates mouth		
FL65	Mouth mech control arms	2	attached cable and spring return to mouth mech	Michael	
FL66	Head cap	1	closes access hole on back of head	Tom	
FL67	Head back	1	back of the head, mechs are installed in this part	Tom	
FL68	Head beak	1	glues to back of head	Tom	
FL69	Head Jaw	1	moving lower jaw, mounts into head	Tom	
FL70	Modified Fomtor Bike brake	1			

8.5 Paints and Dyes

SDS sheets are available in the separate SDS Project Packet.

Part #	Part	Usage	Vendor	Vendor Part ID
FL71	Behr Exterior Flat Wizard's Potion	Beak	home depot	P550-6

FL72	Behr Exterior Flat Heart Breaker	Beak	home depot	P120-4
FL73	Behr Exterior Flat Love at First Sight	Hardware touchups in fur	home depot	P140-3
FL74	Behr Exterior Flat Romantic Moment	Inside beak	home depot	P570-5
FL75	White Gloss Interior/Exterior Spray Paint and Primer in One Aerosol	Eye - White	Home Depot	310275621
FL76	Primer			
FL77	406 Fluorescent Fuchsia (Primary)	Dye - fleece velcro inner beak/chin	Dharma Trading Co.	406
FL78	478 Purple Pop (fluor.)	Dye - fleece velcro inner beak/chin	Dharma Trading Co.	478
FL79	642 Flo. Red (Neon)	Dye - fleece velcro inner beak/chin	Dharma Trading Co.	642
FL102	Wicked Colors – W030 Opaque White	Body Shadows & Decal	Airbrush Paint Direct	W030
FL103	Wicked Colors – W007 Blue	Body Shadows & Decal	Airbrush Paint Direct	W007
FL104	Createx Wicked Colors W031 Jet Black	Body Shadows & Decal	Amazon	W031
FL105	Rustoleum 2x Ultra Cover Paint & Primer Flat White	Eyes	Amazon	FFFFFF

8.6 Glues, Treatments, Coatings, and Chemicals

SDS sheets are available in the separate SDS Project Packet.

Part #	Part	Usage	Vendor	Vendor Part ID
FL80	barge	glue foam seams	Frankford Leather	BAPCPAR
FL81	Fabri-Tac	attaching feather and crinoline		
FL82	Epoxamite 102	carbon fiber body	Smooth-On	N/A
FL83	5 Mil UHMWPE Low friction tape for telescoping poles	reduce friction and take up slop between pole sections	amazon	B08CFVY2GT
FL84	Loctite Super Glue Professional Liquid	glue head print parts together	amazon	B004Y960MU

FL85	Insta-Shield Flame Retardant	Fire treatment	Northeast FireShield	N/A
FL106	wood glue	wooden base	lowes	