

VOLUTE

VOLUTE 2: LISTEN TO THE WORLD

BY RAFAEL LOZANO-HEMMER



TABLE OF CONTENTS

GENERAL IMPORTANT INFORMATION	2
Technique	3
Description	3
Interacting with the Artwork	3
Maintenance	4
Placement Instructions	4
DETAILED TECHNICAL INFORMATION	5
Troubleshooting Assistance	6
Support (Contact Us)	7
APPENDIX I - INSTALLATION	8
Description of Components	8
Dimensional View of Installation	9
APPENDIX II - TECHNICAL DATA SHEETS	10
Wire Rope End Fitting	11
APPENDIX III - HANGING THE PIECE	12

GENERAL IMPORTANT INFORMATION

This short section must be read for proper operation.

VOLUTE (2016)

BY RAFAEL LOZANO-HEMMER

Technique

Cast polished aluminum, steel cables

Description

In the "Volute" series —words, phrases, and songs—are rendered into turbulent clouds containing layers of complex folds and vortices, with a method developed by Lozano-Hemmer's studio in conjunction with fluid dynamic scientists from Georgia Institute of Technology, Auburn University, and NYU. A custom-made laser tomograph scans the breath exhaled while spoken, then converts it into a 3D shape using photogrammetry. This shape gets printed in high-definition stainless steel. Charles Babbage's 1837 statement: "The atmosphere is a vast library that contains all the words that have been spoken in the past," inspired the series.

At the same time, the series intones a vastly different tradition, that of the "speech-scroll" (also called a speech-bubble, banderole, phylactery or volute), an illustrative device similar to those used by Olmec, Mayan, Mixtec and other Pre-Columbian cultures to represent spoken words or song.

In 1860, Édouard-Léon Scott de Martinville recorded the phrase "Au clair de la lune" on his phonautograph, making the first known recording of human speech. In "Au Clair de la Lune, Volute 1," the exact phrase was materialized. In "Au, Volute 0," just the word "Au," was made from the previous phrase.

"Listen to the World, Volute 2," (2023) was made with a laser-tomography scan of the turbulent air ejected by a single human voice as it uttered the sentence: "Listen to the World." An homage to the influential composer R. Murray Schafer, who revolutionized the arts with his practice of acoustic ecology and his concept of the "soundscape," the sculpture renders the spoken word tangible. This piece is part of two permanent collections, National Gallery of Art in Ottawa and Jumex Collection in Mexico City.

Interacting with the Artwork

Visitors to the artwork can stand at the narrow end of the sculpture and face the length of it. This is the orientation of the original speech bubble as spoken in the phrase "Listen to The World". Advise the public not to touch the artwork or bump it as marks can be left as well as damage to the surface.

Maintenance

Artwork can be wiped lightly with a dry cloth. The surface has had “Renaissance” brand micro crystalline wax rubbed on with a cloth. Please consult a conservator for long-term maintenance.

We recommend cleaning the piece at least every two months.

Placement Instructions

Please refer to Appendix I - Installation for detailed system information. Installation will require lifting equipment.

This artwork requires certified personnel to mount it in accordance with your organization’s safety needs. The sculpture is delivered with parts to suspend it safely on wire rope, it is expected that the venue displaying this artwork will use the parts included or remove supplied wire rope from its anchor and attach a new one to their own needed length and specification. See APPENDIX III: HANGING THE PIECE for detailed instructions.

DETAILED TECHNICAL INFORMATION

Troubleshooting Assistance

Prior to contacting the Antimodular Studio with a problem about your artwork, please ensure that you went through the preliminary troubleshooting steps outlined in the previous section.

The troubleshooting process will vary depending on the problem. In order to make the process easier, it is recommended that you collect and send the following information to the studio:

- Date and time when the problem first happened;
- Description of the problem;
- Actions taken so far and conclusions;
- Detailed photographs (or videos) displaying the problem;
- Detailed photographs (or videos) of the suspected faulty component;
- Detailed photographs (or videos) of the whole artwork and its surroundings;
- Personnel involved.

Support (Contact Us)

If you would like support for the piece, please feel free to call Lozano-Hemmer's studio in Canada:

Antimodular Research
4462 rue Saint-Denis
Montréal, Québec, Canada
H2J 2L1
Tel 1-514-597-0917
info@antimodular.com
www.antimodular.com

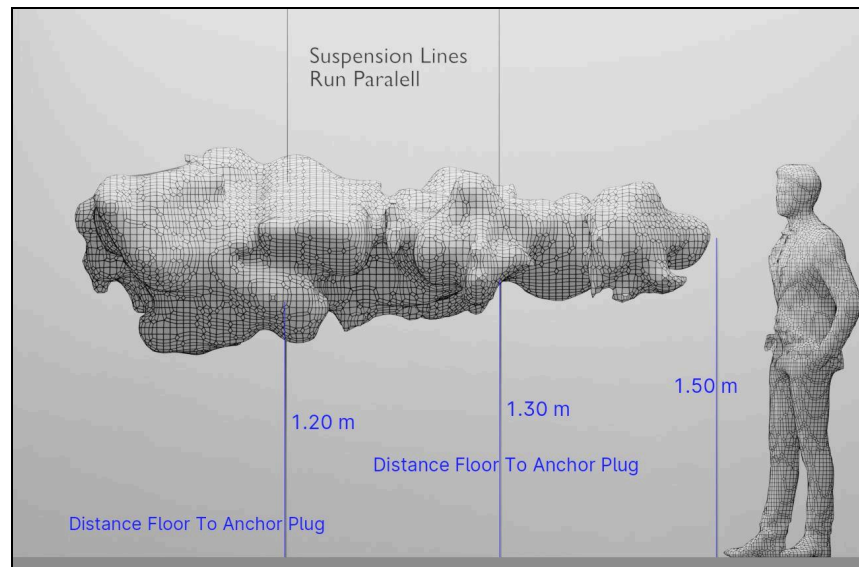
APPENDIX I - INSTALLATION

Description of Components

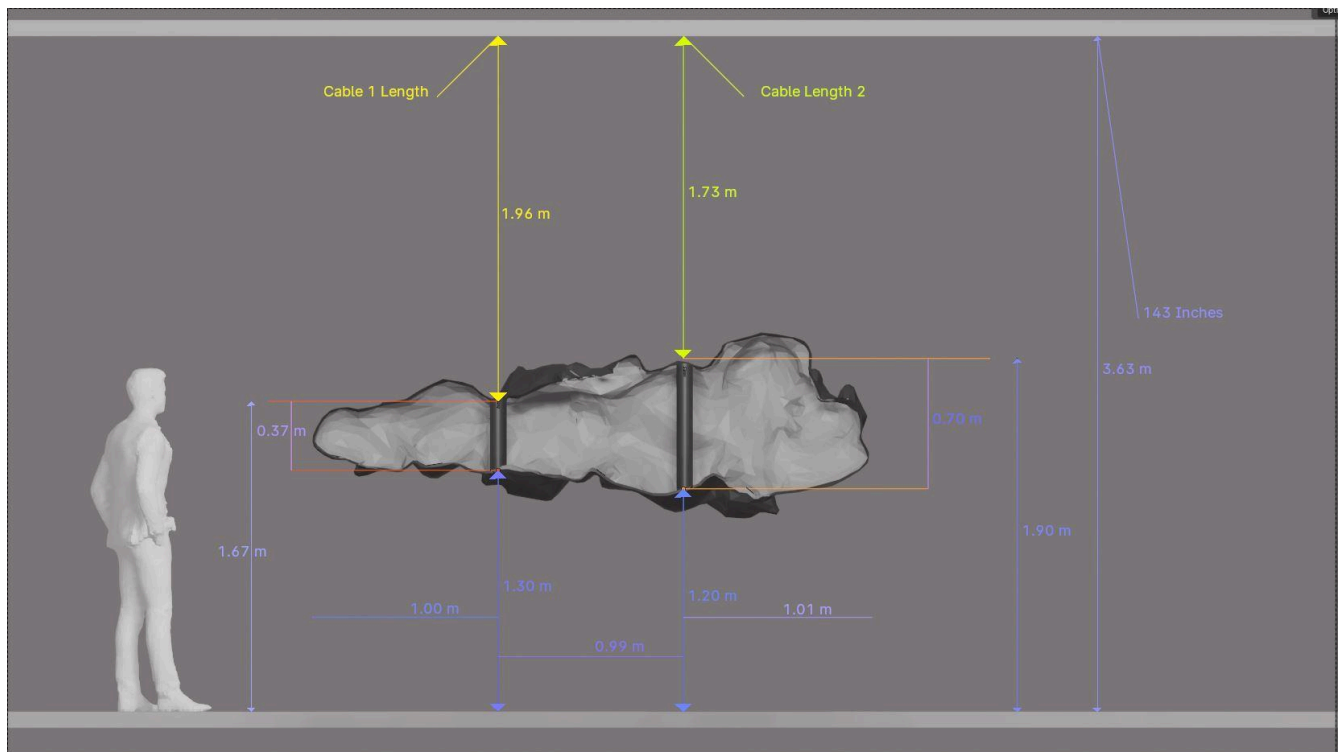
This artwork requires the following components:

Component	Description
Cast Aluminum Sculpture	Hollow shell aluminum with holes on top and bottom connected inside by a tubing channel. The anchoring is installed within this channel.
Wire Rope	We include a default length -venue may choose to change this out for an alternative
Wire Rope-Bolt thread connection	This part fixes the wire rope to the anchor bolt
Anchor Plug Assembly	Part A and Part B - these are connected with Anchor Plug Bolt
Anchor Plug Bolt	Tightens anchor plug to fix in place

Dimensional View of Installation



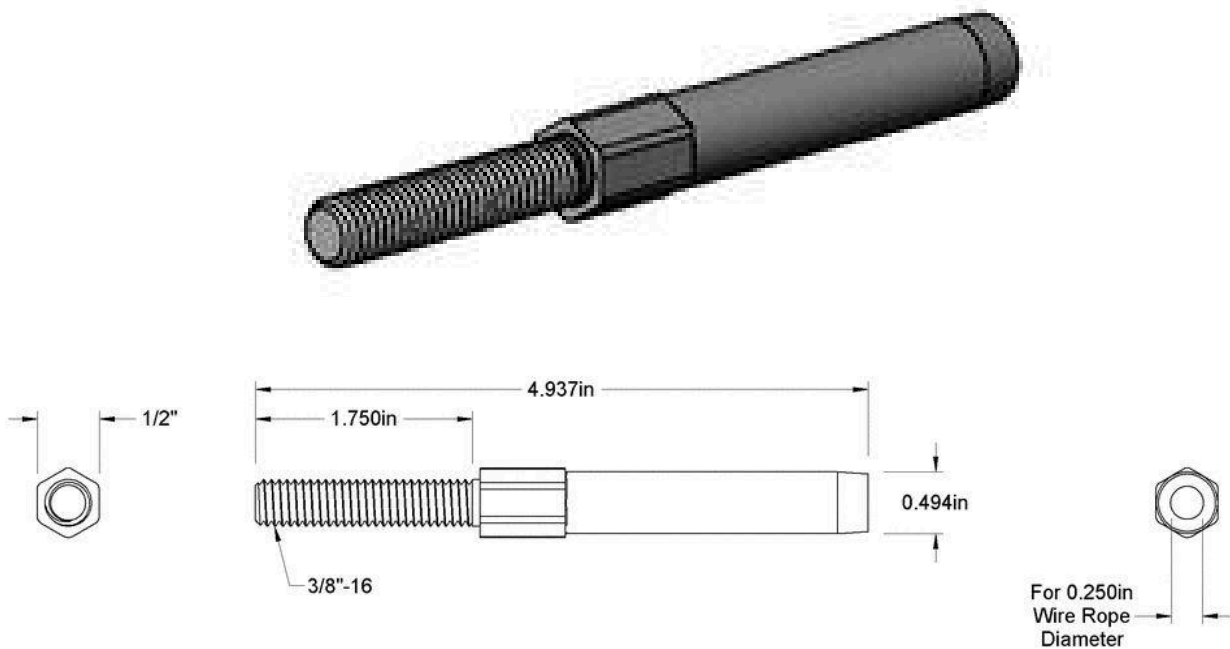
Example installation measurements for a room with floor to ceiling span of 3.63 meters/ 143":



APPENDIX II - TECHNICAL DATA SHEETS

Wire Rope End Fitting

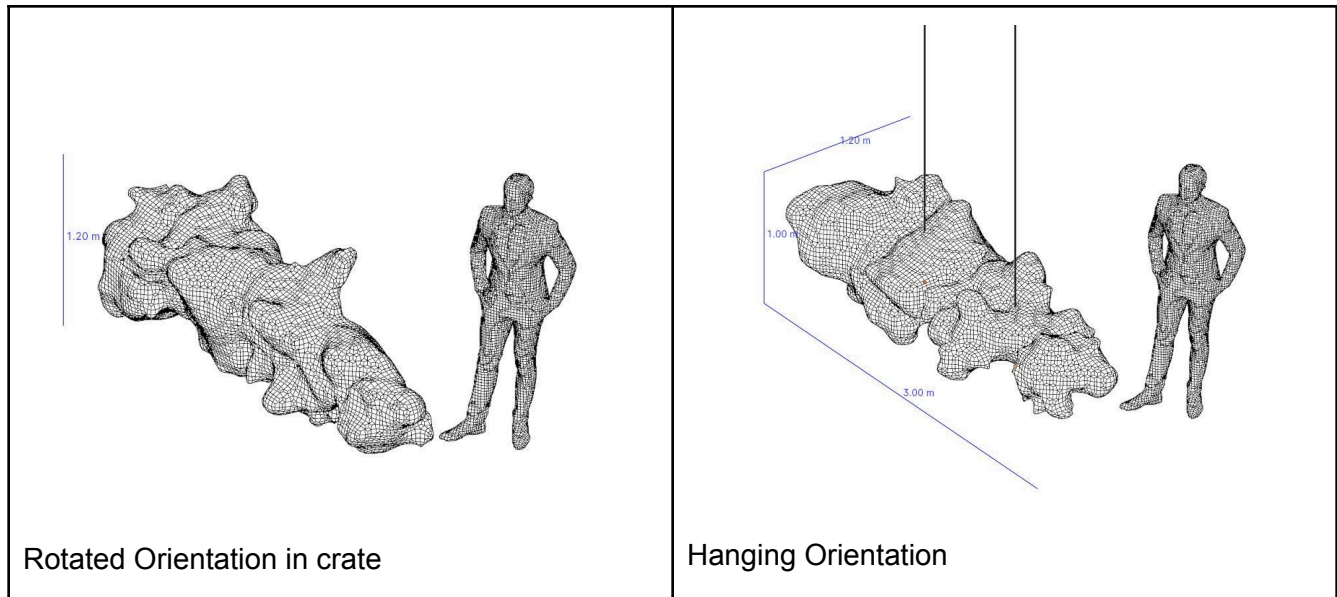
Wire rope end fitting in use.



Specification	Details
Manufacturer	McMaster-Carr
Model Name	3870T33
Rope Diameter	1/4 inch

APPENDIX III - HANGING THE PIECE

Open the crate, and review the orientation the sculpture is in, compared to the orientation it will have when hanging; the wire rope will exit from the small holes on top - the large holes on the bottom are where the anchoring hardware slides inside.



- 1) Ensure you have certified staff onsite to install heavy loads. The sculpture weighs approximately 500 lbs and needs to be mounted accordingly.

It is useful to have rolling equipment to easily move the sculpture to its exhibiting location.

- 2) Position the sculpture under the anchor points from where it will eventually hang in your venue.

- 3) Acquire a means of lifting the sculpture. This may be a small gantry crane, winch equipment and/or fabric straps and slings. Rig the equipment to lift the artwork from ground to exhibiting height but keep it rested in the crate to start.

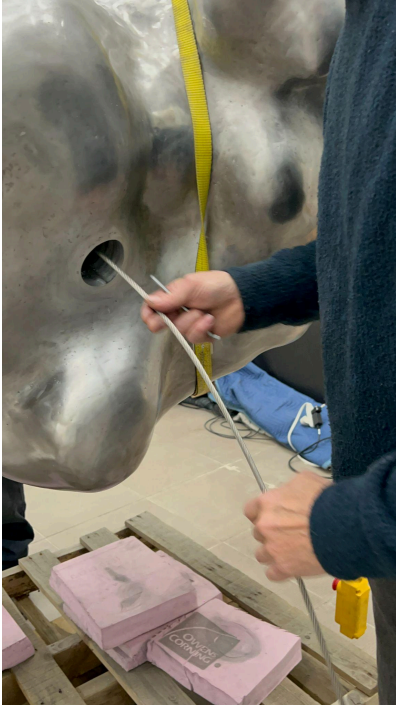


- 4) Certified staff should decide if you will use the wire rope provided or purchase a new wire rope to the length and specification your site needs. If you are purchasing your own wire rope, you will need to remove the one supplied below from its fitting and thread your new wire rope in.

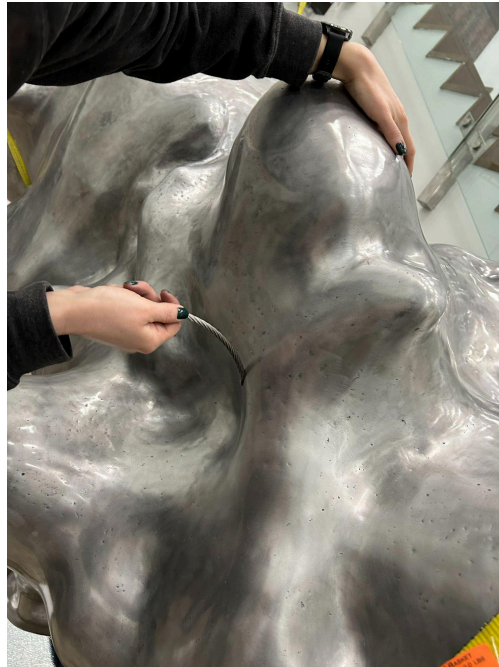


- 5) Once the wire rope and bolt anchor part is assembled, take loose ends and thread each into the sculpture via the big holes (bottom) and out through the small holes (top). This may require that you temporarily tape each loose end tightly for easy threading in the holes.

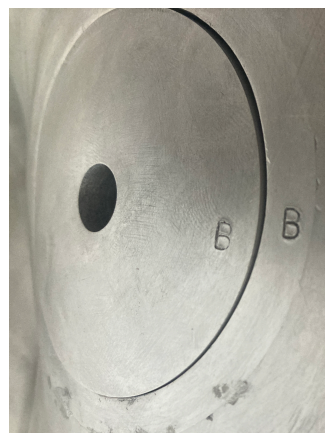
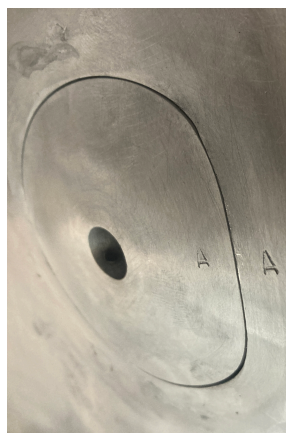
(Bottom Hole)



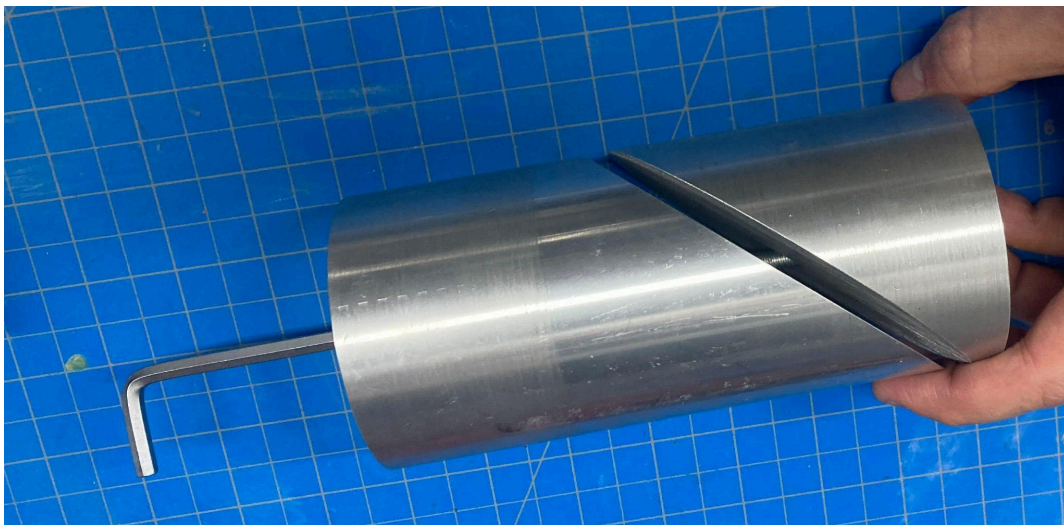
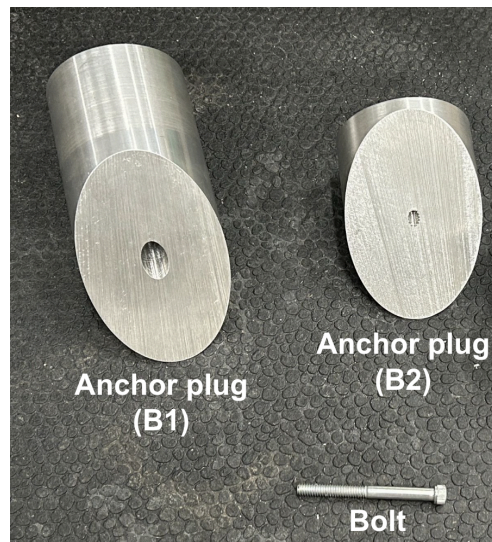
(Top Hole)



- 6) Pull the wire rope all the way through until the anchor stops against the inside of the hole. It will rest there, while we close the bottom hole with anchor plugs.
- 7) Locate anchor plugs. One is marked "A" for hole "A" The other is marked "B" for hole "B" when complete, they are fixed into the bottom hole like this, with the letters aligned:



- 8) Pre-fit the anchor plug components, loosely threading the bolt through the 2 wedge pieces:



- 9) Insert anchor plugs into the bottom hole ensuring that the letters on both sides of the seam align. Rotate the plug in the socket until the surface is well-matched. Using a CR - V 3/16 "Hex Key" or "Allen Key", turn the bolt firmly to set it in position. This will expand the anchor plug and tighten it in place.



- 10) Lift the sculpture to its 1.5 Meter height (at small end- specific locations listed Pg 15) , with the wire rope hanging freely unattached. This can be done with fabric strapping or slings as shown again here. Using at least 3 people, gently rotate the sculpture in its slings to 'suspended orientation'.



- 11) Connect each loose end of the wire rope to your overhead mounting surface. This may be a rated anchor in the wall or ceiling, or rated beam and must be approved by your own team. Once this is done, fabric straps can be removed and the sculpture is ready for exhibition.

