



CENTRE
DE MUSIQUE
BAROQUE
Versailles

TECHNICAL SPECIFICATIONS

« *French Bass Violin of the Grand Siècle* » (1610-1710)

1. THE BASS VIOLIN OF GASPAR BORBON, INV. NO. 2879 (MIM)

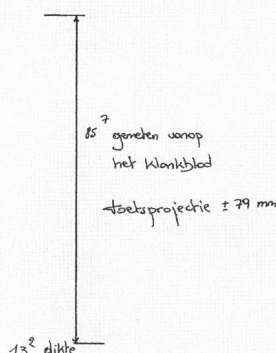
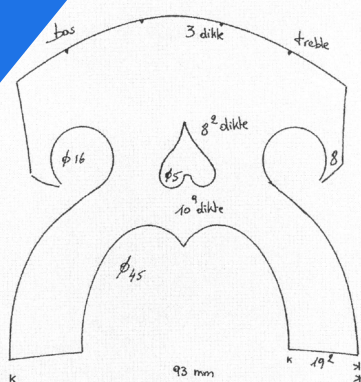
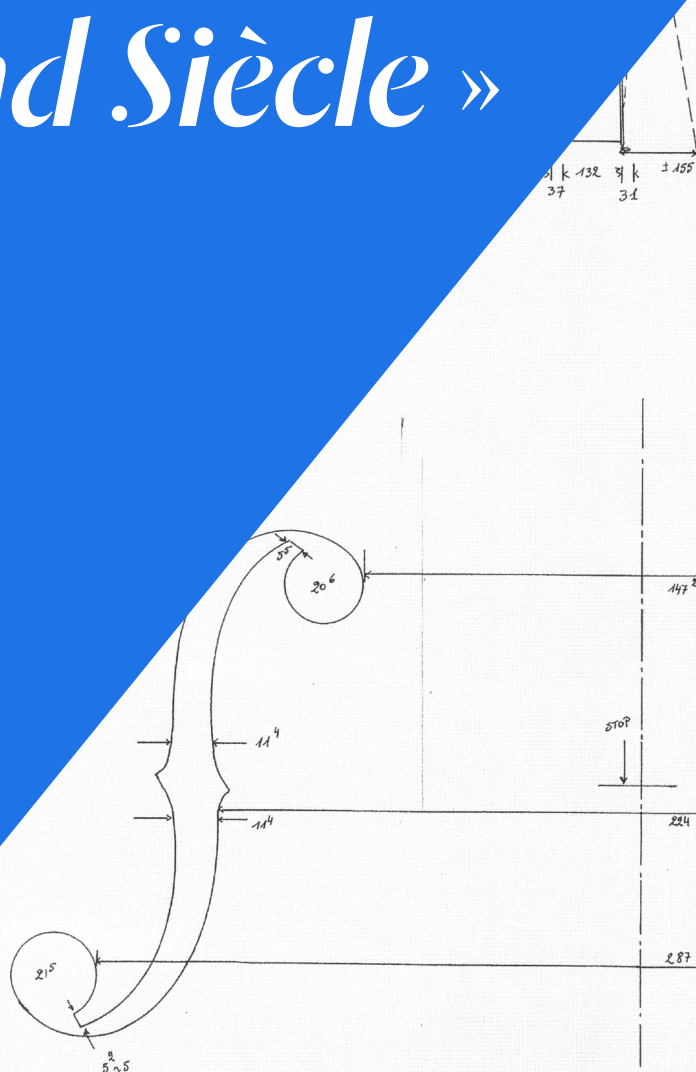


Image par Katrien Vandemeersch

TECHNICAL SPECIFICATIONS

The bass violin of Gaspar Borbon, inv. No. 2879 (mim)¹

Preamble

The bass violin project is led by a committee of experts composed of:

- Elena ANDREYEV
- Bruno COCSET
- Tormod DALEN
- Hervé DOUCHY
- Alban FRAMBOISIER
- Alain GERVREAU
- Michael GREENBERG
- Hager HANANA
- Étienne MANGOT

Additional experts outside of this committee that have been consulted for this project are :

- Anne-Emmanuelle CEULEMANS
- Mirte MAES
- Marc VANSCHEEUWIJCK

This set of specifications is part of the project “*French Bass Violins of the Grand Siècle*”, initiated by the *Centre de musique baroque de Versailles* (CMBV) to add too its Instrument Collection. It concerns the experimental construction of a bass violin inspired by the model of Gaspar Borbon (MIM no. 2879), following a historical, technical, and educational approach. As the project is supported by corporate sponsorship, the instrument's construction must meet several criteria:

- Experimental **reconstruction** of an instrument based on historical sources and technical drawings, particularly regarding parts of the instrument that may have been altered
- **Construction** without a mold, in accordance with 17th-century workshop techniques (Article XI)
- **Training and transmission** of knowledge through the integration of an apprentice into the building process (Article IV)
- Complete **documentation** of the entire process (Article III)

To construct an instrument using the “Borbon” method means adapting to an approach where asymmetry is not seen as a flaw, but rather as a natural outcome of the technique itself. Every decision must be made through close observation of the instrument — whether through images, measurements, traces of materials — or even through hands-on experimentation in the workshop, with the collaboration of a professional musician. The research does not aim for perfect geometry, but rather seeks to uncover a coherent historical narrative.

¹ The bass violin, Inv. no.2879 sur Carmentis : <https://carmentis.kmkg-mrah.be/eMP/eMuseumPlus>



The instrument's plan will be provided to the luthier by Ms. Katrien Vandermeersch. This plan must be used exclusively within the framework of the project led by the CMBV.

The technique requiring the instrument to be built without the use of an inner mold is mandatory for the construction of this instrument.

The instrumental collection project of the Centre de musique baroque de Versailles has been made possible thanks to the support of the CMBV Endowment Fund and its patrons. The reconstruction of the bass violins of the Vingt-quatre Violons du Roi was made possible through the support of Crédit Agricole Île-de-France and the Fondation Crédit Agricole Pays de France, the project's main sponsor.

ARTICLE I

Subject of the present specifications

This document is the first to outline the principles governing the construction of the bass violin dated 1702 and held at the Museum of Musical Instruments in Brussels (inv. no. 2879), attributed to Gaspar Borbon (1673–1705), musician and luthier at the Brussels court.

ARTICLE II

General principles of manufacturing and reconstruction of the object

This specification document is exclusively dedicated to the description of model inv. no. 2879, attributed to Gaspar Borbon (1673–1705) and housed at the Museum of Musical Instruments in Brussels. This model serves as the sole reference to be followed for the reconstruction. The instrument to be built must faithfully reproduce the construction features of the original, based on the currently available historical, technical, and material data.

The copy must match the original in terms of dimensions, aesthetics, and functionality. Its construction shall rely on materials analogous to those of the original instrument, in accordance with the detailed indications in the appendix and in Article XI (notably regarding ivory components, paint, and varnish).

The reconstruction process may incorporate certain asymmetries or specific features of the original model, in the spirit of historical, mold-free techniques (see Article XI).

The maker commits to applying their full range of skills, workshop experience, and historical expertise to successfully carry out this reconstruction. The CMBV will provide all scientific, visual, and documentary resources in its possession at the time the contract is executed.

The key technical decisions agreed upon at the signing of this specification document are detailed in Article XI.

ARTICLE III

Documentation of the construction

Instrument makers are invited to provide complete documentation simultaneously with the delivery of the instrument, both digital and paper, tracing the making of the instruments. This documentation must include at minimum:

- A detailed description of the materials, tools, and techniques used, between 1000 and 3000 words in length (approximately 2 to 5 pages);
- Photographic documentation illustrating the main stages of the work, with at least 5 to 15 photos covering each key phase of the construction;
- A tracking sheet for the instruments provided, including recommendations for their maintenance and conservation, spanning 1 to 3 pages;
- One or more video or audio recordings of the main construction phases (minimum 1 to 4 videos). If recorded with a mobile phone, filming is requested in “landscape” format (phone held horizontally).

This documentation will be partially made public on the CMBV website, in an internal workspace, in order to highlight and share the construction process.

ARTICLE IV

Internship as part of the project

In addition to the technical requirements outlined above, each selected luthier is asked to host an apprentice as part of a mentorship carried out during the making of the instruments. This mentorship reflects a strong commitment to the transmission of know-how, supported by the project’s patron and the CMBV. This person is welcomed—whether at the start of their training or already specializing—will be selected in agreement with the instrument maker. Special consideration will be given to applicants from the Île-de-France region, although this is not a strict requirement.

Financial arrangements may be defined on a case-by-case basis : the apprentice may be paid either directly by the workshop itself of the instrument maker or by the CMBV, depending on needs and budgetary balance. The budget allocated to support this educational aspect, distributed according to the duration of the mentorship and the number of apprentices involved, may be funded by the CMBV.

A written report will be requested from the apprentice at the end of the mentorship period to document their experience and contribute to the project’s legacy.

ARTICLE V

Construction oversight

The luthier undertakes to inform the members of the projects committee of the progress of the work according to a mutually agreed schedule. Any technical choices and/or modifications envisaged during the course of the work must be approved by the committee.

ARTICLE VI

Person in charge of follow-up and reception of work

The work will be carried out under the supervision of Adriana Isaku, project manager and coordinator of the “bass violin” project at the CMBV.

ARTICLE VII

Rights

The photographs, negatives and digital files supplied in the documentation produced by the luthier (Article III) may be used by the CMBV for publishing and/or exhibition purposes, with the letter carrier assigning all rights. In return, any publication, communication or dissemination by the CMBV in any medium whatsoever referring to the documentation produced by the letter carrier under the present contract must explicitly mention his name.

ARTICLE VIII

Deadline

The instrument must be delivered on the date agreed with the instrument maker when the order form is signed.

ARTICLE IX

Price

The prices fixed for this construction are final and non-revisable. They are specified in the purchase order appended to these specifications.

ARTICLE X

Transfer of property

The instrument maker retains ownership of the said goods until full and effective payment of the price by the CMBV.

ARTICLES XI

Technical choices and specifications

This guide presents a manufacturing method based on the study of historical sources, practical workshop experience, as well as technical analysis (notably through 3D scans) of original instruments preserved at the Musical Instruments Museum of Brussels (MIM). It is a moldless approach, in which construction begins from the back of the instrument, following a process faithful to ancient practices.

Order of construction and method principles

1. Construction begins with the instrument base, which forms the basic element of the assembly
2. Small grooves are cut into the edges of the base to accommodate the splints (these grooves resemble thread channels, but are not positioned in the same place, to preserve the strength of the wood)

3. The ribs are bent by hand, without a mold, until they fit naturally into the grooves. This method may result in some asymmetry in the contours of the top, which is normal and contributes to the aesthetics of this type of instrument
4. The head and neck first. Before fitting the ribs, the one-piece neck is glued directly to the bottom. Next, the splints are fitted into the grooves and the neck block. The top plate is drawn from the actual contour formed by the splints in place, so the shape is rarely perfectly symmetrical

Wood and choice of materials

1. **Back:** often made of maple (not too flamed)
2. **Purfling:** probably rosewood on the original; in replicas, walnut can be used, possibly darkened with iron acetate (when looking at instruments made by Borbon, it seems that the walnut is not darkened)
3. Alternatives such as poplar are possible, but maple remains the most historically credible choice for the back

Construction details by component

1. **Back plate**
 - Symmetrical back, raised shape based on photos and scans
2. **Scroll**
 - Slightly asymmetrical scroll (like the damaged original)
 - To be reconstructed by drawing inspiration from other scrolls attributed to Borbon
3. **Neck angle and base of the neck**
 - The neck of the Borbon MIM2879 appears original but not in its initial position. Under string tension, the angle is about 87° relative to the body
 - Tilted approximately 4° relative to the back plate, allowing for a bridge height of about 78 mm – plausible for an antique cello
 - The heel is integrated with the upper block. The ribs fit into lateral grooves in the heel (visible on the CT scans)
4. **Length of the neck²**
 - Shorter than on a modern cello. Suited for playing against the chest or shoulder
 - The fifth point (1/3 along the vibrating string) falls exactly on the edge of the back
5. **Ribs**
 - The ribs fit into the grooves of the back
 - The depth of the ribs will be identical to that of the original
6. **The front plate**
 - The outline is traced once the ribs are in place: resulting in a slightly asymmetrical shape
7. **Bass bar**
 - Small, low, slightly inclined, and carved into the top plate, but with careful attention to the flexibility of the bass bar throughout the construction, aiming to achieve an instrument of good sound quality

Final adjustments and sound projection

8. **Bridge**
 - The position is difficult to determine, but must be based on:
 - a) The list of iconographic sources produced by the CMBV ;

² Maes, Mirte - The neck length as an organological [...]the viol and violin type (2021) <https://bit.ly/406CshE>

- b) The proportions (vibrating string, case);
- c) visible traces on the instrument (bridge footprints, internal marks).
- There are indications that a higher position (± 2.5 cm above the current position) was used
- Experimentation required and to be observed on the original object

9. **Sound post**

Will depend on final bridge position and bridge placement, to be discussed with the committee

The detachable parts

10. **Tailpiece**

Must be based on the list of iconographic sources compiled by the CMBV and consistent with the chronological and geographical context of the original instrument

11. **Button**

You'll need a button that allows you to insert different lengths of wooden ends pins

12. **Endpin**

A wooden endpin should be made for the instrument, either in several sizes or as an adjustable one allowing for greater diversity in the ways in which it is played

13. **Pegs**

It is essential that the pegbox has enough space to accommodate a pure gut B-flat string

Decorative aspects and varnish

14. **The varnish**

Must try to match the varnish of the original, if possible (to be determined at the inspection of the instrument by the luthier, the museum and the CMBV)

15. **Painting**

There is no paint on the original instrument, so none is required

16. **Ivory**

There is no ivory on the original instrument, so none is required

Instrument maker

Last name:

First name:

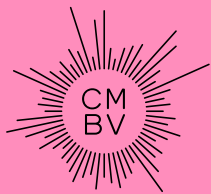
Date:

Instrument price :

Delivery date :

Signature

(preceded by the words "read and approved")



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