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MIMO

**Definition Of Scanning Properties And
Recommendations For Photographing
Musical Instruments
Version 3**

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exploitable.

¹ OJ L 79, 24.3.2005, p. 1.

Based on partners' further practical work in digitising musical instruments and in application of version 2 of this paper (D1.5), feedback, MIMO-born images and practical hints were continuously collected by WP1 lead (GNM) in order to prepare the final version 3 of the standard paper.

An external evaluation conducted by WP5 among members of ICOM-CIMCIM led to improvements in form and content.

The attached document shall be made public as soon as the English wording will be checked by a native speaker and will be delivered as final version of Deliverable D1.8.

Attached document: *The MIMO digitization standard. Definition Of Scanning Properties And Recommendations For Photographing Musical Instruments - final Version 3 (draft)*

The MIMO Digitisation Standard

Definition of scanning properties
and recommendations for photographing
musical instruments

final version 3
- draft -

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for

MIMO
musical instrument museums online

Nürnberg, 2011

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0. Introduction

This paper is one of the outcomes of the European Community funded digitisation project MIMO – Musical Instrument Museums Online. It is largely based on practical experience of all the members of a consortium of eleven major musical instrument museums and collections in Europe. The authors want to thank all the partners who contributed by images, remarks and sharing of practical hints:

University of Edinburgh (UEDIN), Edinburgh, UK
Coordinator (WP4 – lead), Content Provider

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Digitisation (WP1 – lead), Content Provider

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Content Provider

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Content Provider

Università degli Studi di Firenze (UF), Florence, IT
Thesaurus and Classification

This final version was developed over the two years' lifetime of the project from 1. September 2009 to 31. August 2011 and has undergone permanent evaluation by the consortium as well as by external experts through members of CIMCIM – Comité international des musées et collections d'instruments de musique – a worldwide committee of the International Council of Museums ICOM. The authors are indebted to these specialists having studied the paper's evaluation version and commented on it.

A special thank goes to Prof. Arnold Myers, University of Edinburgh helping the authors in checking the English wording.

1. General considerations on standards

To better situate this paper in the realm of museum policies, some common definitions on standards are given:

- „A technical standard is an established norm or requirement about technical systems. It is usually a formal document that establishes uniform engineering or technical criteria, methods, processes and practices.“²
- „A *de facto* standard is a custom, convention, product, or system that has achieved a dominant position by public acceptance or market forces.“³
- „In social sciences, a voluntary standard that is also a *de facto* standard, is a typical solution to a coordination problem. The choice of a *de facto* standard is the better choice for situations in which all parties can realize mutual gains, but only by making mutually consistent decisions.“⁴

A standard in the frame of the MIMO-project is thus an agreement by concerned parties – the project partners – and will be based on as large a number as possible of *de facto* standards.

2. Scope

This standard text concerns in its photography part overall views of musical instruments, but – except for instruments of the violin family – no images of details. It distinguishes several levels of obligation:

- mandatory
- recommended
- optional

The *mandatory* and *recommended* views together describe a sufficient optical representation of a musical instrument according to the customs of experienced specialists like museum curators, however, as stated before, without taking in account images of details.

Mandatory view

The *mandatory* view describes the image if, for practical reasons, one and only one view can be taken or shown, e.g. the plan view of the front of a violin. In choosing this view, a public as large as possible is taken in account, even if for some specialist purposes this view is of lesser value.

Recommended views

Recommended views describe supplementary views necessary for full first information about the instrument and which mostly can be taken with very few supplementary means once the mandatory view is achieved, e.g. the plan view of the back and of the side of a violin or of a piano with half-closed lid, or the birds-eye view on the piano's soundboard. Recommended views are regularly given in this standard, if existent as *de facto* standards or proved useful by other means.

Optional views

Optional views are views which either are made for public relation purposes, e.g. the $\frac{3}{4}$ view of a violin, or which request important supplementary means once the mandatory view is taken. As optional views touch the realm of artistic purposes as well, they can't be easily systematised and are thus considered as beyond the scope of this paper.

Technical issues

Detailed advice on lighting, fixing of instruments and other technical issues are not within the scope of this standard, but they are collected as hints to create a pool of practical expertise to make photography more efficient and as safe as possible for the museum objects (see section 36).

This standard applied to all new photographs taken by MIMO consortium members as well as associated project members. This final version is intended to be a recommendation for documentary photography for all musical instrument collections. It does not concern photographs taken for artistic or public relation purposes.

3. Quality control

In digitisation processes, an efficient quality control routine must be implanted. Quality control should happen during or very close to the digitising process in order to repeat processes with a minimum amount of work and time, if necessary. Parameters and procedures of quality control should be clearly determined.

4. Master files, derivatives and digital preservation

A *master file* is the electronic document which has the best quality and serves for a collection's documentation. Once it is created, it shall not be altered and is subject to long-time preservation according to actual best practice. An important part of long-time preservation is the proper naming and saving of the file metadata in order to access it at any time.

A *derivative* is a copy of the master file which is altered to make it suitable for a special pur-

² Wikipedia, „Technical standard“, 8.11.2010

³ Wikipedia, „De facto standard“, 8.11.2010

⁴ Wikipedia, „De facto standard“, 8.11.2010

pose, e.g. low-resolution images and cut-down sound files for web-publishing. Camera metadata shall be kept within the files, if suitable.

5. Web output formats (formats for derivatives)

Images:

- JPEG
- 24bit colour⁵ / 8bit greyscale
- Length of the longest side of the image: 800 pixels

Audio:

- mp3 / AAC / WMA
- bit rate from 128 Kb/s
- preferably stereo
- up to 30 s length (up to ca. +-120 s if IPR permit)
- stakeholders have to clear IPR issues according to legislation in their countries
- output level normalized

Video:

- File format for downloading: MPEG-2; AVI; WMV; Quicktime; mp4/H264; bitrate between 300Kb/s and 2Mb/s
- File format for streaming: ASF; WMV; Quicktime; H.264 in mp4/H.264 bitrate between 300Kb/s and 1.2 Mb/s
- Frame rate of 25 frames per second
- 24-bit colour
- PAL colour encoding⁶

6. Parameters for scanning existing images

Slides, b/w-negatives, glass negatives etc. shall be scanned in such a way that the master file format of the scan corresponds roughly to A4 (297x210 mm) or larger in minimum 300 dpi resolution. Prints shall be scanned in a way to obtain a master file which gives a print-out format of the size of the original document at 300 dpi minimum. The colour format is 24 bit (3 x 8bit) for colour images and minimum 8 bit for greyscale images. The recommended file format is uncompressed TIFF. Colour profiles and suitable metadata shall be included.

7. Parameters for digitising analogical audio documents

The master file format of the digitised file should at least correspond to so-called Compact-Disc-Quality with a sampling rate of

44.100 Hz, stereo and 24 bit resolution. For archival use, the output file format must be lossless, i.e. for example WAV or AIFF. If an analogical source is in mono, care should be taken to provide both stereo channels with the signal. For further use it is recommended to digitise the entire analogical audio source at a time and cut short examples for derivatives separately. Samples should be cut in a sensible and aesthetic way, i.e. phrases should be searched which make as much musical sense as possible, and cuts should be made soft, e.g. faded in resp. out.⁷

8. Parameters for digitising analogical video documents

The recommended master file format for short videos and sufficient storage place is RAW AVI (uncompressed). The compressed alternatives to save storage space are MPEG-1(2,4), WMF, ASF, Apple ProRes or DV with a minimum bit rate of 3 Mb / s.

The minimum size should be 720x576 pixels with a frame rate of 25 frames per second. In addition, the colour format is 24 bit using PAL as colour encoding system.

For best preservation in an open software environment, a JPEG 2000 codec in an MXF wrapper should be considered, as soon as this combination is sufficiently established and the data quantities are maniable.

Before choosing one of the above mentioned digitising methods, the provider's entire technical environment must be checked to guarantee storage, further editing and delivery facilities.⁸

⁵ To avoid confusion: 24bit colour is 8bit red + 8bit green + 8bit blue

⁶ These recommendations follow those made by the ATHENA project.

⁷ For all recommendations see also: IASA Technical Committee, *Guidelines on the Production and Preservation of Digital Audio Objects*, ed. by Kevin Bradley. Second edition 2009. (= Standards, Recommended Practices and Strategies, IASA-TC 04). www.iasa-web.org/tc04/audio-preservation

⁸ These recommendations combine those made by the ATHENA project and JISC.

9. Photographing

9.1. Technical quality

The quality of the photo master file is 24bit colour at a minimum size of ca. 2.100 pixels for the longer side, corresponding to ca. 17.8 cm at 300 dpi. However, due to technical development, a larger size is recommended. The file format must be lossless, e.g. uncompressed TIFF. The colour profile and suitable metadata should be included.

9.2. Color management

Precautions for a professional colour management shall be taken. To this purpose, a visual colour reference (target) can, but needs not to be included, e.g:



GNM, MI 968

Photographed together with the object (fastest)



CM, E.2003.6.1

Photographed under same conditions and mounted in the image (slower)



layer 1 visible
GNM PI.O.3431



both layers visible

Two-layer Tiff (slowest, more storage space)

9.3. Lighting, background and mounting

Lighting should be such that no important part of the instrument is blurred by shadows or reflections. The colour and structure of the materials should be rendered as clearly and naturally as possible. In most cases, a diffuse lighting is the best point of depart. Fills, raking light to bring out surface structures, etc. belong commonly to the means of professional photographers. The views of instruments described in the following texts aim to show important organological details as form, proportions and technical details rather than to give a decorative aspect.

In serial digitisation, care should be taken to use one lighting and mounting scenario for as many objects as possible to be efficient, e.g. for a series of reflecting instruments as brass wind instruments. The object should be photographed using a neutral background, unless the spatial situation doesn't permit this, e.g. for organs. It is recommended to keep sufficient space around the object that can be cropped in printing. N.B.: In this paper, images are often

cropped close to the instrument in order to save space.

The following specifications give the appearance of the instrument in a two-dimensional image. In some cases, the requested view can be obtained by different mountings, e.g. lying on a flat surface, standing upright or being suspended. In mounting instruments for photographing, conservational concerns are more important than speed or beauty.

9.4. Distortion

Distortion by photo lenses should be minimized. It is strongly recommended to use standard lenses rather than wide angle lenses, if the spatial situation permits.

9.5. Post production

High-quality digital photography needs a certain amount of post-production, such as developing raw data, sharpening or colour control.

Other needs for post production come from the special situation in which the instrument is photographed, especially when mounting, securing, or visible light-guiding devices were used.

Whichever measure is taken, it has to be kept in mind that the aim of documentary photography is to render images which are as close as possible to the actual perception of the object.

What is common in publicity photography, e.g. correcting shapes and surfaces, isn't in photographing museum objects.

Some considerations for a first orientation:

- Supporting devices as nylon wires or Plexiglas stands need not to be removed in post-production as long as they are clearly distinguishable from the instrument itself. If ever they are removed, retouching normally should be done around the object, not within. If e.g. the removal of a nylon wire causes a "reconstruction" of a structured surface it is better to keep the wire visible.
- Distortion by photo-lenses, especially with large objects, should be corrected to give a natural aspect.
- As long as the structure of a surface is visible, it is a matter of taste and means how much reflection a photo can contain, and sometimes reflections might be made weaker in post production, but the better choice is to have a careful lighting scenario.
- The cleaning of a surface should be done on the object and not on the image.

10. Photographing musical instruments

10.1. Definitions of positions and views

Due to the great variety of instrument morphology and the fact that terms like “front side”, “back side” etc. are not applicable throughout all kinds of instruments, it is often difficult to describe verbally the angle under which a musical instrument should be photographed. Therefore, the description of the three-dimensional orientation of an item on the photo set is replaced by two parameters how it should appear in the two-dimensional photographic representation. From these indications and the example images, it is comfortable to arrange the instrument on the photo-set and place the camera so that the wished result can be obtained.

10.2. The *position* parameter

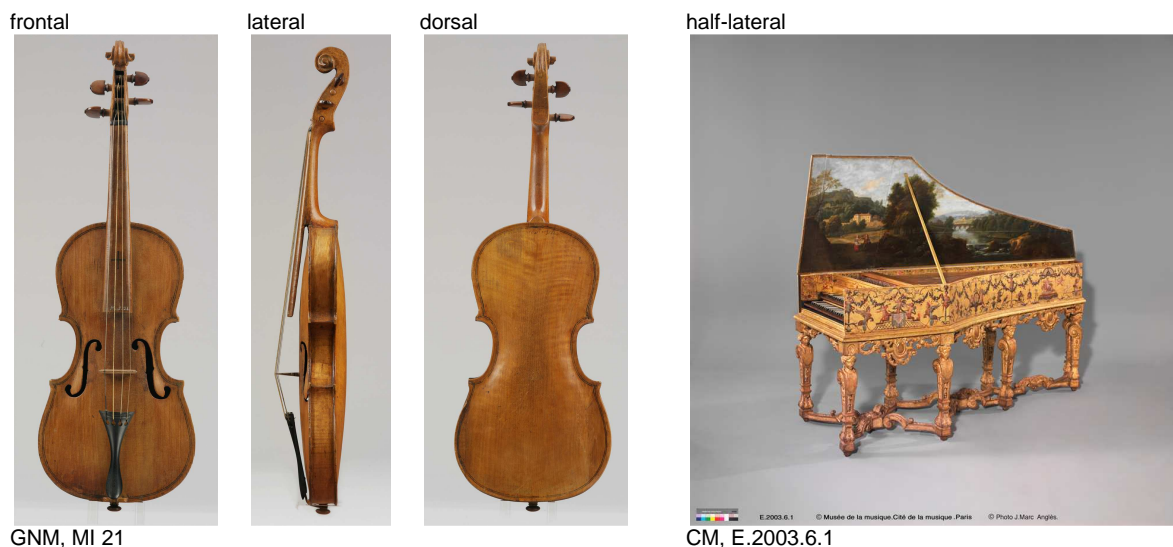
The *position* parameter does not refer to the three-dimensional orientation of the instrument in space, but to the line of its longest axis in the two-dimensional representation. Positions are:



The oblique position doesn't fix a specific angle. It often goes with a camera position more or less slightly from above. The direction bottom-left to top-right is appropriate for the most instruments and aesthetically more appreciated.

10.3. The *view* parameter

The *view* parameter depends on organological conventions and defines which side of an instrument faces the camera lens. Views are:



The half-lateral view is a camera position anywhere between the frontal and the lateral position at an angle appropriate to the type of instrument. A possible half-lateral view with a camera position between lateral and dorsal is often employed to show e.g. guitars or viola da gambas with ornamented sides and backs. This latter type of view is optional.

In some cases, especially if the instrument's shape depends mainly from natural forms, the view can be *variable*, e.g. for shell horns.

Common combinations of these parameters are thus:

- HL** Oblique position and half lateral view
- V** Oblique position and variable view

The instrument's longest axis is appearing in the photo in an oblique line from bottom left to top right. According to the details which shall be shown (e.g. keyboards), the view is more or less slightly from above. Typically, the instrument is standing or lying on a flat surface.

- F** Horizontal position and frontal view
- L** Horizontal position and lateral view
- D** Horizontal position and dorsal view

The instrument's longest axis is appearing in the photo in a horizontal line. The camera faces the side of the instrument which is commonly considered as front side, lateral side, or back side. In most cases, the instrument is lying or standing on a flat surface.

- F** Vertical position and frontal view
- HL** Vertical position and half lateral view
- L** Vertical position and lateral view

The instrument's longest axis is appearing in the photo in a vertical line. The camera faces the side of the instrument which is commonly considered as front side, lateral side, or back side. The instrument is standing on a flat surface or is suspended. Usually, the photo is taken from a central perspective.

11. Details for instruments and instrument groups

The main goal of the specifications given hereafter is to show the most interesting organological details supposed to be of the most use for a broad bandwidth of interested people. Consequently, the representation described in most cases doesn't show the playing position of the instrument. This is striking e.g. for violins where the playing position can't show important information like the shape, the proportions or the grain of the wood. Where the playing position doesn't infer with an organologically appropriate view, it is taken in account, e.g. for transverse flutes, harps or upright pianos.

In the following, the different instrument types are grouped in a simple, intuitive manner, without trying to establish a new organological system. In the beginning of each chapter, instruments belonging to different groups are recalled (e.g. organs = keyboard instrument and wind instrument).

The position and view parameters are given for the mandatory view.

12. Keyboard instruments

Nyckelharpa, see: String instruments with necks

Wing-shaped keyboard instruments: Oblique position and half lateral view.



The instrument's keyboard appears in an oblique line from top left to bottom right. Lids should be opened to procure a maximum of organological information (mandatory). A half-closed and/or closed lid are recommended views to show the presumed historical playing set-ups (pianofortes) or the furniture aspect e.g. of decorated cases. Further recommended views are a bird's-eye view and, if applicable, a plans view of a painted lid.⁹

⁹ It might be easier to photograph a detachable lid apart from the instrument, although this would be a detail photograph and not an overall view strictly spoken.



mandatory



recommended



recommended



recommended



recommended

Harpsichord (GNM, MIR 1073)



mandatory



recommended



recommended



recommended

Grand pianoforte (GNM, MIR 1102)



mandatory



recommended



recommended



recommended

Bentside spinet (GNM, MINE 90)



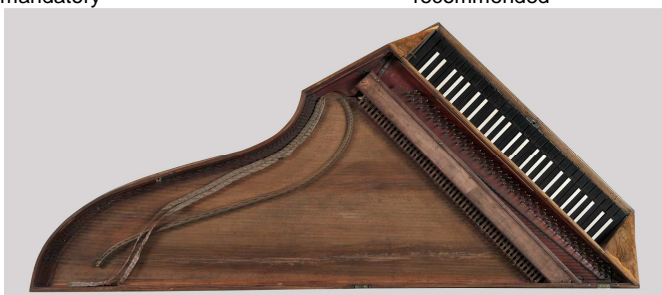
mandatory



recommended



recommended



recommended

Bentside pianoforte (GNM, MIR 1176)

Regals: Oblique position and half lateral view. Regals are shown with the bellows open which is farer away from the camera, if technically possible. If not, the closed view is sufficient.



mandatory / recommended



mandatory / recommended

Regal (GNM, MI 80)

Rectangular or polygonal stringed keyboard instruments: Horizontal position and frontal view. The keyboard is facing the camera in a horizontal line with the lid open for the sake of more organological information (mandatory). A half closed lid is recommended to show a possible historical playing setup, a closed lid to show the furniture aspect. An oblique-half lateral view can be added to give a better idea of the depth of the instrument.



automatic spinets
clavichords
double virginals

eolodicons
nail pianos
orphicas

physharmonicas
spinets
square pianos

terpodions
virginals
work box pianos



mandatory



recommended



recommended



recommended

Clavichord (GNM, MI 442)



mandatory



recommended



recommended



recommended

Virginal (GNM, MIR 1086)



mandatory



recommended



recommended



recommended

Square piano (GNM, MINe 171)

Electric and electronic keyboard instruments: Horizontal position and frontal view. The keyboard or a similar playing device is facing the camera in a horizontal line. For instruments with a stand or larger parts above the keyboard, the image layout can be described as: **Vertical position and frontal view.**



mandatory

Trautonium (ULEI, 4096)



mandatory

Electronic organ (CM, E.995.18.1)

Upright keyboard instruments: Vertical position and frontal view.

The keyboard is facing the camera in a horizontal line. The view with open keyboard flap is mandatory. The view with closed keyboard flap and – for organs closed doors, if existent – is recommended. For stringed instruments, a view with removed front panels to show the construction is recommended.



chamber organs
clavicytheriums
giraffe pianos

harmonicons
harp pianos
pianinos

portative organs
positive organs
procession organs

pyramid pianos
reed organs



mandatory

Upright piano (piano console) (CM, E.2000.29.1)



recommended



recommended



mandatory



recommended



recommended

Giraffe piano (SMV-MTM, M466)



mandatory

Physharmonika (GNM, MIR 1027)



recommended



mandatory

Reed-organ (SMV-MTM, X5575)

Accordions resp. hand harmonicas: oblique position and half lateral view / horizontal position and frontal view.



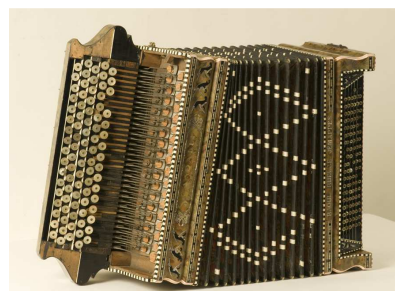
The instrument should be positioned so that the treble keyboard is visible. An additional view with the bass keyboard visible is recommended. Instruments with large bellows are photographed frontally, the bellow opened in a U-shaped manner, so that both playing sides are visible. Instruments with protruding descant keyboard are photographed frontally.

bandoneons

concertinas

aeolas

hand-aeolines



mandatory

Accordion (MIM-BE, 4729)



mandatory

Accordion (MIM-BE, HB160)

Hurdy-gurdies and organ hurdy-gurdies: Oblique position and half lateral view. For hurdy-gurdies, a closed lid is mandatory, an open lid is recommended.



mandatory

Hurdy gurdy (GNM, MI 75)



recommended

Push up piano players: Oblique position and half lateral view.

A view of the front side (i. e. the side that is not facing the piano) is mandatory.

The view should be slightly from above and from the left to give an idea of the instrument's profile. If possible, one program carrier belonging to the player should be inserted (usually a perforated disc or a paper music roll), and if the player features a lid, this should be opened to allow a view on the sound carrier. A view with closed lid and a view of the back side (i.e. the side facing the piano) is recommended.



mandatory

Push up piano player (ULEI, 4058)



recommended

13. Woodwind instruments

Cornetts, see: Brass or other lip-vibrated instruments
 Serpents, see: Brass or other lip-vibrated instruments
 Mouth organs, see: Free reed wind instruments
 Cane (walking stick) flutes, see: Cane (walking stick) instruments
 Cane (walking stick) clarinets, see: Cane (walking stick) instruments

Transverse flutes. The main tone holes are facing the camera (mandatory), the mouth-hole is on the left side. A view of a different side is recommended, if there are important organological details:



Western traversos	albisifonos
nose flutes	didses
flauts	



mandatory



recommended

Transverse flute with bass extension (GNM, MIR 326)

Straight-form woodwind instruments, mainly end-blown: vertical position and frontal view. “Straight-form” refers to the general extension of the instrument. Thus, bassoons and curtails are classified as “straight-form” for this purpose. The frontal view is mandatory, the dorsal view is recommended, if there are important organological details.



algaitas	contrabasso-	mayhorns	serpents
auloi	phones	melodions	shakuhachis
bassoons	csakans	multiple flageolets	shawms
bone flutes	curved cornettos	multiple flutes	sonas
straight bassett	double flageolets	musettes	sorduns
horns	dulcians	mute cornettos	straight bassett
cane bassett horns	dvojnices	nays	horns
cane flutes	straight English	oboe d'amores	tabor-pipes
cane instruments	horns	oboes	tarogatos
chalumeaus	flageolets	panpipes	walking stick in-
clarinets	giorgi flutes	pommers	struments
clarinets d'amore	heckelclarinas	racketts	windcap shawms
contrabassoons in	heckelphones	recorders	zurnas
bassoon-like shape	hichirikis	sarrusophones	



mandatory

Clarinet
(GNM, MI 336)



recommended



mandatory

Oboe
(GNM, MI 428)



recommended



mandatory

Recorder
(GNM, MI 138)



recommended



mandatory

Flageolet
(GNM, MIR 229)



recommended



mandatory

Double flageolet (possibility of supplementary lateral views)
(GNM, MIR 235)



recommended



recommended



recommended



mandatory

Bassoon
(GNM, MI 472)



recommended



mandatory

Double bassoon
(GNM, MIJ 21)



recommended

Curved or angular woodwind instruments: Vertical position and half lateral view. The instrument is placed in a way that the mouthpiece is in the top left of the photo, the body directed to the right (mandatory). A half dorsal view is recommended, if there are important organological details to show.



bass clarinets
bass oboes
saxophones
crumhorns

contrabassoons
with several
windings
pibcorns

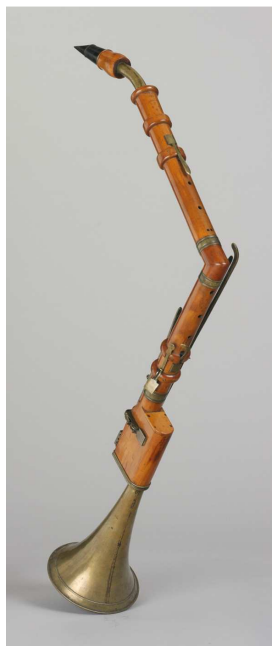
tenor cornettos
curved/angular
basset horns

curved/angular
cors anglais



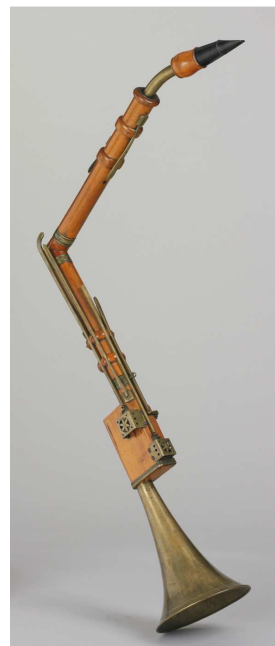
mandatory

Saxophone (CM, E.715)



mandatory

Basset horn (GNM, MIR 466)



recommended

Bagpipes: horizontal position and lateral view. The bagpipe is placed in a way, that the bag and, if existing, the bellows are positioned in the middle of the image and the pipes are loosely arranged in front of or beside the bag. If possible, the pipes are in a more or less vertical position with the tone holes visible.



zampognas
musettes de cour

dudas
cornemuses

bocks



mandatory

Musette de cour (CM, E.112)



mandatory

Bock (GNM, MIR 490)

Pigeon whistles: Horizontal position and lateral view. The instrument is shown as it is attached on the bird, the latter thought flying to the right side. A view on the top, showing the slits and labia, is recommended



mandatory

Pigeon whistle (MIM-BE, 2164-11)

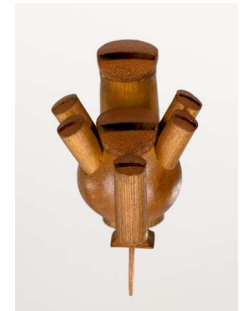


recommended



mandatory

Pigeon whistle (MIM-BE, 0710)



recommended

14. Brass and other lip-vibrated wind instruments

Cane (walking stick) trumpet, see: Cane (walking stick) instruments

Brass wind instruments whose bells are not directed upwards in playing position: Horizontal position and lateral view. For brasswind-instruments, “lateral” means a view on the coil(s) or curves so that their form can be distinguished, independently from what the actual playing position is (e.g. trumpets with perinet valves vs. trumpets with rotating valves). The side facing the camera is the one providing the larger amount of organological information (e.g. valves, triggers). If there is no evidence for such a side, the instrument’s bell is directed to the right side.



aida trumpets
Büchels
clavicors
cornets
cornophones
cupid’s horns
fanfare horns

flugel horns
fog horns
French horns
glass trumpets
harmonicors
helicons
hunting horns

invention horns
invention trumpets
keyed horns
keyed trumpets
Kuhlo-horns
military bugles
natural horns

natural trumpets
orchester horns
posthorns
Russian horns
slide trumpets
trumpet bugles

Supplementary crooks belonging to instruments can be shown with the instrument. In this case, they should be oriented as if they were inserted. For instruments with many crooks, i.e. orchestral horns, a supplementary photo showing the crooks only should be considered.



mandatory (bell facing right)
Trumpet (UEDIN, EUCHMI 4568)



mandatory (facing left, valves visible)
Cornet (UEDIN, EUCHMI 1136)

Trombones: Horizontal position and lateral view. Assembled with the slide and bell bows at right-angles, the bell facing right; photographed at ca. 45 degrees to both, the camera positioned above a point between the two slide stays.



Bell over the shoulder instruments: Horizontal position and lateral view. The bell is directed to the right of the image.



mandatory
Trombone (UEDIN, EUCHMI 5735)



mandatory
Saxhorn (ULEI, 1757)

Horns with circular coils except post horns: Horizontal position and lateral view. The blowpipe is on a horizontal line, the side containing the more important organological information is facing the camera: French horns, parforce horns.



mandatory

French horn (UEDIN, EUCHMI 209)



mandatory

Parforce horn (UEDIN, EUCHMI 3494)

Posthorns: Horizontal position and lateral view. The coil is oriented downwards, blowpipe and bell pointing symmetrically upwards, the bell oriented to the right. An orientation of the bell to the left is admitted if there are important organological details as finger holes to show.



mandatory

Posthorn (UEDIN, EUCHMI 3052)



mandatory

Posthorn with finger hole (UEDIN, EUCHMI 4454)

Brass instruments whose bells are directed upwards in playing position: Vertical position and lateral view.

The bell-end of the instrument is pointing upwards. The side facing the camera is the one providing the larger amount of organological information (e.g. valves, triggers). If there is not such a side, the instrument's coil is on the left side:



tubas
tenor horns
ophicleides

bombardons
barytons
bass horns

saxhorns
euphoniums
lurs



mandatory

Saxhorn (MIM-BE, 2020)



mandatory

Bass tuba (GNM, MI 685)



mandatory

Tenor horn (GNM, MI 686)

Shell horns: oblique position and variable view. The instrument appears in an oblique line in the photo, but the view is variable, according to the instrument's form and special features.



mandatory

Shell horn (UEDIN, EUCHMI 3172)



mandatory

Shell horn (ULEI, 2423)

Lip-vibrated wind instruments with finger holes: Vertical position and frontal view. The finger holes are facing the camera. A view of the backside is recommended, if there are finger holes or interesting details.

Treble cornetts
Mute cornetts
Tenor cornetts

Serpents
Bass cornets
Cornettinos

Straight cornets
Russian bassoons



mandatory

Cornett (GNM, MI 119)



recommended

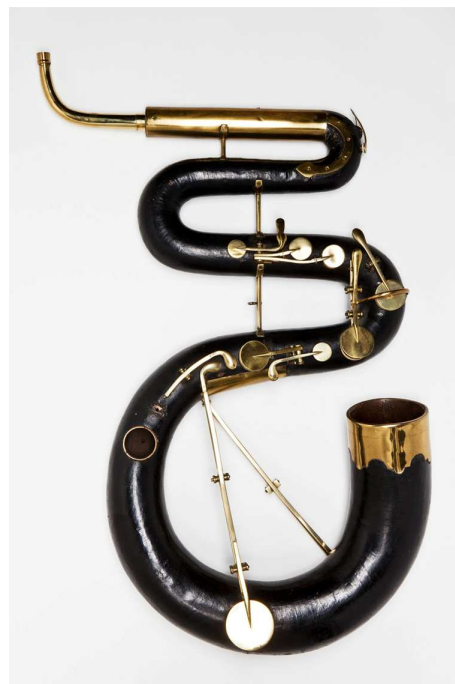


mandatory

Mute cornett (GNM, MI 121)



recommended



mandatory

Serpent
(UEDIN, EUCHMI 4440)



mandatory

Russian bassoon
(GNM, MIR 49)

Curved horns without coils: Horizontal position and lateral view. The camera is at a right angle with the curve. For side-blown horns, the instrument can be inclined in deviating from the right-angle view in order to show the mouthpiece. If there are important organological details as finger holes which can be shown only with the bell to the left, this view is admitted as mandatory.



Alphorns
hunting horns

oliphants
transverse horns

crescents
shepherd's horns



mandatory (bell facing right)

Bockhorn (SMV-MTM, N416)



(mandatory, if details on the left side)

Kohorn (SMV-MTM, N13436)



mandatory

Side-blown horn (CM, E.140)

Very large curved horns without coils can be photographed upright, the bell facing to the right. If lighting permits, the photograph can be turned by a right-angle in post-processing to match the specification for smaller curved horns.

15. Free reed wind instruments

Harmoniums, see: keyboard instruments

Accordions, see: keyboard instruments

Mouth organs: Vertical position and lateral view. The calabash is oriented to the bottom, the pipes to the top. The side containing the organological information is facing the camera. If there is no such a side, the mouthpiece is directed to the right: Shengs etc.



Harmonicas: Oblique position and half-lateral view. The instrument is shown in a way that the blowing apertures and the lid are visible.



mandatory

Harmonica
(UEDIN, EUCHMI 2476)



mandatory

Sheng
(CM, E.2294)

16. Cane (walking-stick) instruments

Cane resp. walking-stick instruments: horizontal position and frontal view. This is independent of the mode of sound production and applies to flutes, clarinets, trumpets, violins or other. A view of the back or lateral side is recommended, if there are interesting organological details, and depending on the type of instrument.



mandatory

Cane violin
(GNM, MIR 770)

recommended

recommended

mandatory

Cane clarinet/flute
(GNM, MIR 484)

recommended

mandatory

Cane trumpet
(GNM, MIR 123)

17. String instruments with necks, bowed or plucked

Bowed zither, see: box-shaped string instruments

Bridge harps, see: harps

Vinas as tube zithers, see: tube zithers

Lute- and violin-like instruments: Vertical position and frontal view. A suspension of the particular object might be necessary, if the shape of the body doesn't allow a different fixing device (see Practical hints section). For examples see below.



accord guitars
angelicas
arpeggiones
balalaikas
bandolons
bandurrias
banjos
bass citterns
bass guitars

bassoon violins
bent neck lutes
bipanchi vinas
biwas
bowed mandolas
bracs
bumbasses
cane violins
cellos

chitarrones
citterns
cobzas
colasciontinos
concert guitars
contrabasses
contraltos
crwth
descant lutes

domras
double neck guitars
er hus
esrars
feles
flamenco guitars
gitterns

guitars with
freerunning bass
strings
kacchapi vinas
kinnari vinas
gusles
harp citterns
key citterns
kissars
kits
klarfideln
lira da braccios
lyra citterns
lyra guitars

lyras
mandolins
mandoras
nyckelharpas
pandurinas
philomeles
pipas
pochettes
rebabs
rebecs
renaissance lutes
rotas
san xians
sarangis
saz

shamisens
silent violins
sitars
small basses
spike fiddles
sultanas
Swedish lutes
tamburas
tanburs
tanburs
tars
theorbos
Thuringian Forest
zithers
torbanas

travel violins
trumscheits
twin-neck guitars
uds
ukuleles
Vinas: lute-like
viola d'amores
viola da gambas
violas
violins
western guitars
yue gins

Instruments of the violin family: Vertical position and frontal view. For the lateral view, the soundboard is directed to the left side. Care should be taken in lighting so that as less reflections as possible are visible on the top and the back, showing grain and wood colour as well as possible. To avoid distortion, the camera lens should be positioned at a height symmetrically between upper and lower corners. If possible in the workflow, the camera should be raised at the height of the scroll to take extra shots of this part without distortion.



mandatory

Violin (GNM, MI 21)



recommended



recommended



views on scroll

Lute instruments: Vertical position and frontal view. The frontal view is mandatory, lateral and dorsal views are recommended. In lateral view, the orientation of the strings depends on the orientation of the pegs, i.e. the lateral pegs should be visible, if their order is asymmetrical.



mandatory



recommended



recommended



mandatory



recommended



recommended

Setar (SPK, IC 15351)

Bipanchi vina (CM, E.796)

Lute instruments with several peg-boxes: Vertical position and frontal view. In lateral view, the strings are usually oriented to the right to show details of the peg-boxes.



mandatory



recommended



recommended

Bass Cittern (GNM, MI 65)

Lute instruments with supplementary gourd resonators: Vertical position and frontal view. To show the overall volumes of the instrument, a photo in oblique position and half lateral view is recommended, the instrument resting on its two resonators.



mandatory

recommended

recommended

recommended

Sitar (MIM-BE, 4028)

Spike fiddles: Vertical position and frontal view.



Nyckelharpas: Vertical position and frontal view. The plan view on the instrument's strings, the peg-box oriented to the bottom of the image, is mandatory.



mandatory



recommended

Spike tube fiddle Endingidi (MIM-BE, 3606)



mandatory

Nyckelharpa (SMV-MTM, X5662)

Compound bow (pluriarc) instruments: Vertical position and half lateral view. The oblique frontal view is mandatory, the half dorsal view is recommended.



mandatory

Bow lute lukombe (MIM-BE, 1927)



recommended

Stick zithers: Horizontal position and lateral view. The calabash can be on either side or in the middle.



mandatory

Stick zither (RMCA, MO.0.0.36808)

18. Box-shaped string instruments, plucked, struck or bowed

See also: keyboard instruments
See also: harps
Open harps, see: harps
Angular harps, see: harps

Non trapezoid zither instruments: Oblique position and half lateral view resp. horizontal position and lateral view. The oblique angle is only slight to show volumes and a tuning device. A supplementary bird's eye view is recommended.



aliquodiums
arpanetti
autoharps
bowed melodions
bowed zithers
Concert zithers
descant zithers
double zithers
double psalmodicons
non-symmetrical dulcimers
epinettes des Vosges

harp zithers
horn zithers
kanteles
keyed monochords
kotos
kratzzithers
Mittenwald zithers
monochords
pedal dulcimers
psalmodicons
qanuns

raft zithers
resonance zithers
Salzburg zithers
santurs
struck zithers
transverse zithers
triple zithers
vinas
zithers without fingerboards



mandatory
Schlagzither (ULEI, 442)



mandatory
Accord zither (ULEI, 4056)



mandatory
Box zither Scheitholt (GNM, MIR 660)



mandatory
Raft zither(GNM, MINE 10)



mandatory

Qanun (MIM-BE, ASI000)



mandatory

Zheng (MIM-BE, 2011.208)

Symmetrical dulcimers, hammered or plucked: Horizontal position and frontal view. A bird's eye view is recommended.



mandatory

Hammered dulcimer (GNM, MI 249)



recommended

Aeolian harps conceived for upright position: Vertical position and frontal view. Depending on the type of instrument, other views, e.g. lateral or dorsal, can be added as recommended views.



mandatory



recommended

Aeolian harp (GNM, Inv.no MIR 738)

Aeolian harps conceived for horizontal position: Horizontal position and frontal view. Depending on the type of instrument, other views, e.g. lateral or dorsal, with or without lid, if present, can be added as recommended views.



mandatory

Horizontal aeolian harp (GNM, MIR 734)



recommended

19. Tube zithers

Kacchapi vina, Kinnari vina, Bipanchi vina, and all other lute-like vinas, see: string instruments with necks

Vinas: Oblique position and half lateral view. The instrument is resting on its gourds. Vertical positions with frontal, lateral and dorsal views are recommended.



mandatory

Vina (MIM-BE, 0083)



recommended



recommended



recommended

Whole tube zithers as valihas: Horizontal position and lateral view. The mandatory view is showing the most important organological details. For more details, the instrument can be photographed from four sides in executing quarter turns.



mandatory

Whole tube zither Valiha (MIM-BE, 3799)



recommended

20. Harps

Aeolian harp, see: box-shaped string instruments
Autoharp, see: string instruments with necks
Nyckelharpa, see: string instruments with necks

Frame harps: Vertical position and half-lateral view. The base of the harp pillar is in the bottom left and the top end of the sound box is in the upper right of the photo. A lateral view to show the proportions is recommended.



hook harps

pedal harps

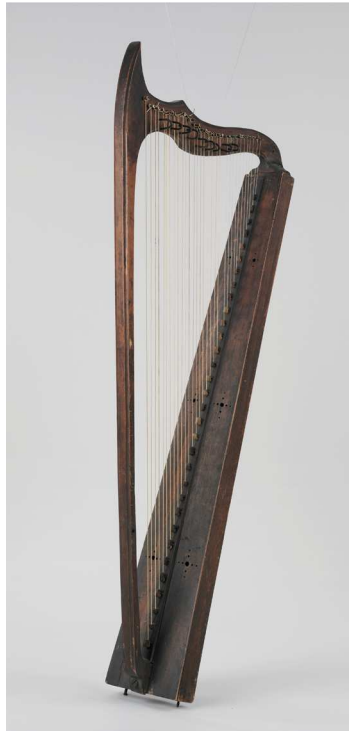
diatonic harps

chromatic harps.



mandatory

Chromatic harp (CM, E.983.8.1)



mandatory

Hook harp (GNM, MIR 231)



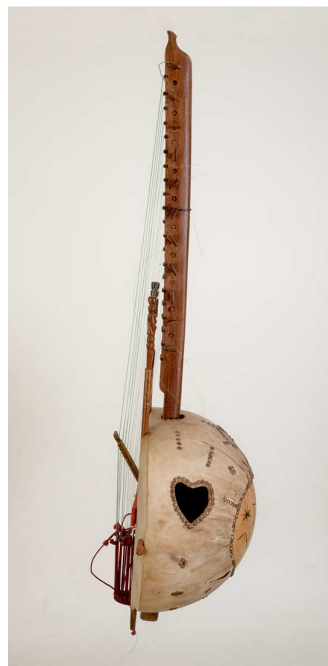
recommended

Bridge harps: Vertical position and frontal view. The neck being (almost) in a same plane with the soundboard, the instrument is photographed like a lute-like instrument.



mandatory

Kora (MIM-BE, 2008.032)



recommended



recommended

Open harps: Oblique position and half-lateral view. A supplementary lateral view showing the angle of the neck is recommended.



mandatory



recommended

Arched harp Kundi (MIM-BE, Inv.no 3556)

21. Box-shaped mechanical instruments

mechanical pianos, see: keyboard instruments
piano players, see: keyboard instruments

Small, mostly rectangular programme music instruments: Oblique position and half-lateral view. If there is no side with very important organological information, the front-line of the instrument should be in the direction bottom-left to top-right.



bird organs
music boxes

organ clocks
organettes

barrel organs
serinettes



mandatory

Serinette (MIM-BE, 2001.010)



mandatory

Music box (MIM-BE, 1946)

22. Drums

Drums in anthropomorphic or zoomorphic shape, see: instruments in anthropomorphic or zoomorphic shape

Slit drums in non-anthropomorphic shape: Oblique position and half-lateral view.



Shallow frame drums: vertical position and half-lateral view. The view is obliquely on the membrane, showing at the same time the frame. A view from the backside is recommended, if there are important details.



tambourines

riqs

tars

bendirs



mandatory

Slit drum (MIM-BE, 1984.003)



mandatory

Riq (SPK, VII b 146)



recommended

Drum instruments conceived for horizontal playing position: Oblique position and half-lateral view. One membrane is visible. A photo on the other membrane is recommended.



mandatory



recommended

Drum played sideways (SPK, VII c 83)

All hour-glass shaped drums, with or without variable tension: Oblique position and half-lateral view. A lateral view, showing the profile shape, is recommended.



mandatory

Hour-glass shaped drum (MIM-BE, 692)



recommended

Drums not played horizontally and friction drums: Vertical position and lateral view. The drum is standing upright on one of the two membranes resp. the bottom of the body. The camera position is obliquely from above in a way to distort the body proportions as a less as possible, but give an idea of the membrane.



barrel drums
conical drums
cup-shaped drums
cylindric drums

daikos
foot drums
friction drums
kettledrums

lansquenet drums
rommelpots
side drums
tablas

tsuzumis
vessel drums



mandatory

Drum (ULEI, 1944)



mandatory

Drum (RMCA, MO.0.0.30974)



mandatory

Drum (RMCA, MO.1997.21.2)

Long African and Asian drums (> 1,5 m): Horizontal position and lateral view. The perspective showing a membrane is mandatory. A profile view showing the shape is recommended.



mandatory

Long African drum (MIM-BE, 323)



recommended

23. Rattles

Strung rattles and rattles without handles: Oblique position and half lateral view. Strung rattles are typically spread out on a flat surface and photographed obliquely from above. If there is a part of the string without fixed shells or with a device for fixing etc., this part is oriented to the top or top right of the photo. Rattles without any of these characteristics are shown obliquely in view showing their volume and function as well as possible.





mandatory

Strung rattle
(RMCA, MO.1953.74.4070)



mandatory

Strung rattle
(RMCA, MO.0.0.6006)



mandatory

Strung rattle
(RMCA, MO.0.0.34952)



mandatory

Rattle without handle
(RMCA, MO.1953.74.3270)



mandatory

Rattle without handle
(RMCA, MO.1975.30.46)



mandatory

Rattle without handle
(RMCA, MO.1953.74.3881)

Vessel rattles with handles: Vertical position and lateral view. They appear vertically with the handle oriented to the bottom of the image.



mandatory

Vessel rattle with handle (MIM-BE, 3209)



Vessel rattle with handle (MIM-BE, 3205)



Vessel rattle with handle (MIM-BE, 1977.022)

24. Concussion idiophones (clappers, cymbals etc.)

Concussion idiophones as clappers, cymbals etc.: Horizontal position and lateral view. The camera sees the objects from above at an almost right angle, showing the more important side resp. sides. For a pair of cymbals, one element can show the hollow side, the other the dome. A lateral view to show the profile is recommended.



mandatory

Cymbals (SPK, IC 23801)



mandatory

Cymbals (SPK, IC 30113 a,b)



mandatory

Cymbals (MIM-BE, 1979.009-05)



recommended



mandatory

Cymbals (MIM-BE, AR0019)



recommended

Castanets: Horizontal position and lateral view. The cord, if still preserved, is at the top of the photo. Both shells are overlapping in an appropriate manner to show the cavity. The photo is taken from a bird's eye perspective. With a pair of castanets, one pair of shells can be entirely open.



mandatory

Castanets (SPK, VII a 6)



mandatory

Castanets (MIM-BE, 2010.047)

25. Bowed resp. friction idiophones

Nail violins: Horizontal position and lateral view. The side giving the most organological information is facing the camera. The photo is taken slightly from above to show the soundboard.



Glass harmonicas: Horizontal position and frontal view. The photo is taken slightly from above to show the glass shells.



Musical saws: Vertical position and lateral view. The cutting edge is directed to the right side of the image.



mandatory

Nail violin (MIM-BE, 1947)



mandatory

Glass harmonica (GNM, MI 408)



mandatory

Musical saw
(ULEI, 5194)

26. Plucked idiophones

Sansas: Oblique position and half-lateral view. The tongues are appearing in an ascending line.



mandatory

Sansa (RMCA, MO.1993.5.9)

27. Mallet idiophones

Mallet instruments, played sideward: Oblique position and half-lateral view. The view is slightly from above. In choosing the camera angle, attention should be made to show important organological details, e.g. bars and resona-



tors. The side from which the instrument is played is facing the camera. If this side cannot be determinate, either side can be chosen, and it is recommended to take images of both sides in order to make a possible later choice based on further research.

xylophones
lithophones

metalophones
vibraphones

marimbas
gambang

slentos



mandatory

Xylophone gambang (CM, E.1116)



mandatory

Metallophone slento (CM, E.1117)

Special care should be taken for instruments whose different pitches are obtained more by differing thickness than by lengths of the lamellas. The oblique angle should be slight, and a horizontal view is accepted.



mandatory

Xylophone (RMCA, MO.0.0.31354-15)



mandatory

Xylophone (MIM-BE, 3854)

Mallet instruments, played from the bass end: Vertical position and frontal view. The bars are appearing in horizontal lines, seen from above, the lowest pitched bar to the bottom of the image.



metalophones

lithophones

straw fiddles

glockenspiels



mandatory

Glockenspiel (GNM, MIR 561)



mandatory

Straw fiddle (GNM, MIR 514)

28. Struck upright or hanging idiophones

Struck upright or hanging idiophones: Vertical position and frontal view. Appropriate side and back views are recommended.



bells
gongs

tam-tams
triangles

tubular bells
Turkish crescents



mandatory

Gong (CM, E.2000.11.1)



recommended



recommended

29. Trumps

Trumps, also called “jew’s harps”: Horizontal position and dorsal view. The end where the tongue is plucked is located on the right side of the image. The view is obliquely from above.

Finger activated trumps, string activated trumps.



mandatory

Trump (MIM-BE, 2008-040)



mandatory

Trump (MIM-BE, S 2629)



Trump (MIM-BE, 2001.060)

30. Musical bows

Musical bows held upright: Vertical position and lateral view. The curve of the bow is directed to the right side of the image. The instrument can be slightly turned (half-lateral) to show the cavity of a calabash: Berimbaus etc.



mandatory

Berimbau (MIM-BE, 3085)

Mouth-bows held horizontally or obliquely: Horizontal position and lateral view. The curved side is oriented to the bottom of the image.



mandatory

Mouth bow (GNM, MIR 1259)

31. Instruments in anthropomorphic or zoomorphic shape

Slit drums in anthropomorphic shape: Vertical position and frontal view. A view on the slits is mandatory. A view from a different side showing the sculptural quality of the object is recommended.



Other Instruments in anthropomorphic or zoomorphic shape: Variable positions and views. For the mandatory photo, position and view should be chosen so that the sculptural character of the instrument is stressed, if possible, also showing organological features. Recommended photos can show the playing position (if different) or organological details. A representation showing the sculptural quality and, if possible, organological details is mandatory. A supplementary view showing the playing position and/or important organological details is recommended.



mandatory

Anthropomorphic slit-drum (MIM-BE, 1984.008)



recommended



mandatory

Whistle (MIM-BE, 1838)



recommended

32. Sets of musical instruments

Consistent sets of instruments: Horizontal position and frontal view. They are disposed in playing setup, photographed from an audience (mandatory) or player's (recommended) view: Gamelans, drum sets etc.



mandatory

Drum set (CM, E.996.4.1)



recommended

33. Parts of musical instruments

An exception to the focus of this paper on entire musical instrument views are some important parts being crucial for playing, but which can't always be attributed to a certain instrument.

String instrument bows: Horizontal position and lateral view. The frog resp. the holding is directed to the right, the stick to the top, the hair to the bottom. For bows of violins and the like an extra photo of the frog and the tip is recommended.



mandatory



recommended

Violin bow (MIM-BE, 238)



recommended

Mouthpieces of brass wind instruments: Vertical position and lateral view. A view slightly from above on the cup is recommended.



Beaters for percussion and hammered string instruments: Horizontal position and lateral view. The handle end is directed to the right, the head to the left.



mandatory



recommended



recommended



mandatory



mandatory

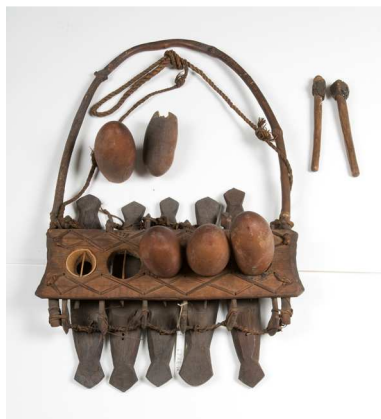
Trumpet mouthpiece (MIM-BE)

Drum beater (GNM, MIR 634A)

Pair of drumsticks (GNM, MIR 640A,B)

34. Instruments in bad condition

Many objects in bad condition or with partial losses are nevertheless important sources for information about the development and variety of musical instruments. If the instrument is broken in several parts, the parts in the photo should be arranged in a way that the image gives an idea of its original shape and construction. As for this group of instruments and for technical reasons, it is not always possible to apply the definitions of view and positions in this document, these definitions may in this case be suspended.



Xylophone manza (MIM-BE, 3219)



Xylophone manza (MIM-BE, 817)



Clavichord (GNM, MINE 60 A)

35. Miscellaneous

Vessel flutes and animal voice imitating devices, Cuckoos, duck pipes etc., vessel flutes, such as ocarinas. The position of the particular instrument as well as the view on it depends both on form characteristics of the object and on details which should be shown. In most cases, an oblique position and a half lateral view is appropriate.

Different idiophones: Shaken idiophones, scraped idiophones. The position of the instrument is depending on form characteristics and special details of the object: Stamping sticks, scrape vessels, bull-roarers, ratchets.

36. Practical hints for serial digitisation

Based on the practical work with digitising, all partners of the MIMO project would like to share their experience to make photographing processes more efficient and more reliable in accordance with conservational aspects. In applying some of these hints, it should be checked which of them are useful for a particular scenario.

Responsibility, care and security

The responsible person for the musical instruments to be photographed, normally the collection's curator should supervise the entire photographing process and should ideally be present to answer questions or take decisions. A conservator should equally be present to allow a secure handling of the instruments and to prevent them from risky operations. Instruments should only be handled by trained staff and under generally accepted museum standards. Operations like dusting, suspending, fixing instruments and the use of adhesive or any other potentially harmful materials and procedures should only be executed by trained personnel and in the case of doubt, a conservator's advice should be asked. In photography environments, care should also be taken to avoid harmful exposure to heat, UV-rays and other environmental influences as undue climatic conditions.

Make sure that transporting and storing ways and devices comply to common law in order to avoid accidents and legal pursuit.

Organisation

As musical instruments present a great variety of shapes, sizes, materials, weights and surface structures, photographing them on a high-quality level in a serial process in an efficient procedure in compliance with conservational needs is a challenge. The procedure has thus to be thoroughly organised.

If the particular budget allows enough staff, each of them should be responsible for definite assignments in order to work efficiently together: taking minutes, positioning and returning musical instruments, fetching not yet photographed items, naming and checking images etc.

For proceeding fast, it is essential to group beforehand instruments with similar characteristics, as determined by photographic needs. Some of the respective parameters might thus not correspond to common organological practice, where others do:

- size (e.g. group square pianos in descending length)
- type (e.g. instruments of the violin family)
- suspension type (instruments standing alone, as most clarinets vs. instruments needing a security fixing, as bassoons)
- surface reflectance (polished brass instruments vs. terra cotta darabukkas)
- place on the photoset (on the floor vs. on a table)
- colour (ebony and lighter background vs. ivory and darker background)

Every change of one of these parameters may necessitate a time-consuming change of the lighting, lenses, camera position or the presentation environment of the instruments.

Precise checklists with instruments per photo session are an efficient means to know what has to be fetched and what has already been photographed. Photographed items should be registered and can be marked as such, e.g. by loosely tying a cotton thread around them or add a paper label. For being sure about marking methods, a conservator's advice should be asked.

To avoid confusion in putting back instruments in showcases and storing facilities, it is useful to take a snapshot of the particular situation.

Instruments should be prepared in advance by checking their condition or dusting them before going to the photoset. The transport ways between collection resp. reserve and photoset

should be as short as possible to save time and to minimize transporting risks and harsh climatic changes. If space permits, makeshift studios can be set up in the reserves.

Photographing instruments in a publicly accessible space in a museum can be a good publicity action. But before doing this, make sure to work in the most professional and secure environment to give a positive example on how to document and handle musical instruments.

Photographing

As said in the introduction, no technical advice shall be given here to professional photographers, seen that they know their profession. However, some organizational hints might be useful to facilitate museum management in serial digitization.

File naming for images on the photo set should imperatively use the object's inventory number as most reliable identifier, adding, if necessary, suffixes etc. if different views of an instrument are taken. It goes without saying that the technical metadata should always be preserved during saving, naming, post-processing etc.

A quality check of the images is indispensable; best is to do it immediately after the image is taken, this might slightly slow down a particular photo session, but keeps from having to fetch and prepare an item a second time. Checking should not be left to the photographer alone, but should be executed by trained museum staff in taking in using the photographer's technical expertise.

The object should not fill the entire image surface. Space should be let around for cropping, and rulers, inventory numbers, logos, color charts possibly taken and their respective shadows should not disturb this space.

Presenting instruments on the photo set

Please note: In the following, all advices concerning the presentation of instruments on the photo set should be checked before using them and applied by trained and reliable staff. If a method seems too risky, it is better to search for a different means to obtain a similar result. Neither the authors nor the members of the MIMO project having procured these advices can take any responsibility for damages occurred elsewhere in applying them.

To secure e.g. wind instruments photographed standing upright, a flexible wire covered by a smooth material can be passed through the photo table. An appropriate squeezing device makes the length adjustable. Another way is to have holes of different diameters drilled in a plank between photo table and background paper, in which smoothed wooden rods of different lengths and diameters can be inserted. Whatever method is used, the wire or rod should be black to be less apparent in the finger holes. Inserting something in a woodwind instrument's bore should always be done with extreme caution and only if necessary.

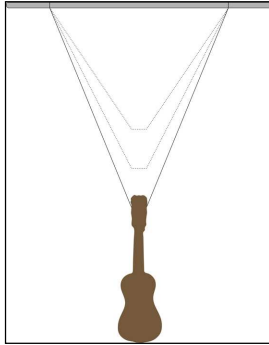
Security suspensions, e.g. for bassoons standing upright, can be fixed and adjusted in a quick flexible manner in fixing nylon wires to a transversal suspending bar by winding these wires two to three times around a portion of the bar equipped with double adhesive tape. Touching the adhesive surface with gloves should be avoided, and the adhesive force of the tape should be checked frequently to replace it in time. A surplus length of the wire can be attached to another portion of double adhesive tape fixed at a different point of the bar.

A quick and secure suspension method for stringed instruments with necks and pegs (lutes, violins etc.) consists in fixing a sling of nylon-wire to a bar. Fixing several wires in different



Flexible, adjustable wire seen from underneath the photo table photo ULEI

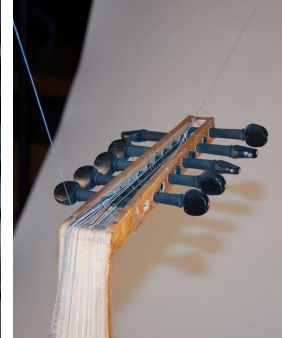
lengths prepares for instruments in different sizes. Instruments are suspended in the wire by their pegs, what works for frontal, dorsal and lateral views. Before suspending an instrument, double-check if the pegs are well fixed and solid enough and if the geometry of the instrument permits it. A wire running in front of a non-ornamental peg can in general easily be re-touched.



The fixing device
all photos and drawing GNM



for lateral views



for frontal/dorsal views

To fix small objects on a surface or to prevent them from rolling away, photographers often use a flexible adhesive paste which contains grease and lets residues on the instruments' surfaces, as Hama Haftpast (TM). A better solution is to use natural rubber paste as Groom Stick (TM) as it is used in paper conservation for cleaning or clean bees wax. It needs a little bit of practice to hold the instrument with one hand wearing a glove and applying the paste with the other bare hand. Applying any adhesive to worn or textile surface might be harmful. Before applying any adhesive, a conservator's advice should be asked.

A quick solution for photographing mouthpieces, necessitating post-production: First, the mouth-piece is photographed using a supporting arm, if wished, in different positions, then the arm is put away in post-processing.



mouthpiece support (MIM-BE)
all photos MIM-BE



mandatory



recommended



recommended

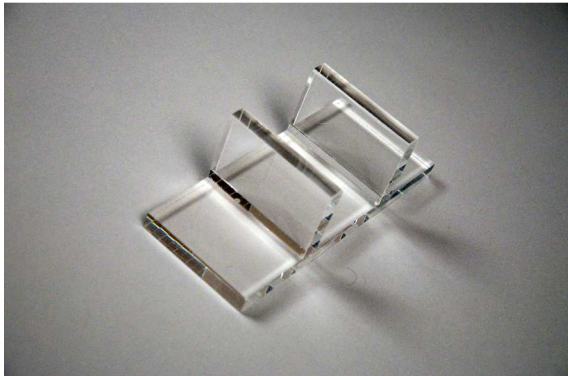
Another quick solution for photographing mouthpieces, mostly avoiding post-production, is to put them on a square Plexiglas rod which is scarcely visible in the photo.

To avoid shadows on the background, objects can be placed on a clear Plexiglas sheet at a sufficient distance from the background. It is important to give the background an even lighting in order to keep it uniform. A careful lighting on the object itself and the use of a polarizing filter helps avoiding the object's reflecting contour on the Plexiglas.



Plexiglas background device, here for trumpets. The black stripe in the background retaining unwished reflections doesn't appear in the final visual field. The instrument is secured from slipping away on the inclined surface by a nylon wire fixed on the black clamp on top of the Plexiglas sheet.
photo GNM

To position violins and other such instruments, which don't stand upright for photographing on their own, set them in a Plexiglas ring, in a water glass or in a double-T-form Plexiglas stand with smoothed edges.



Plexiglass-stand
all photos GNM



37. Index

Position and view parameters are given in short form, e.g.: “Oblique / half lateral” = “Oblique position and half lateral view”.

A

Abanangbweli: vertical / frontal
 Accordion: oblique / half lateral
 Accordzither: oblique / half lateral
 Adufe: oblique / half lateral
 Adungu: oblique / half lateral
 Aeolian harp, played horizontally: horizontal / frontal
 Aeolian harp, played vertically: vertical / frontal
 Aeolian organ: vertical / frontal
 Agogo: oblique / half lateral
 Alboka: horizontal / lateral
 Algaita: vertical / frontal
 Algoja: vertical / frontal
 Alphorn: horizontal / lateral
 Althorn: horizontal / lateral
 Alto bugle: horizontal / lateral
 Alto clarinet: vertical / half lateral
 Alto crumhorn: vertical / half lateral
 Alto dulcian: vertical / frontal
 Alto fagotto: vertical / frontal
 Alto flugelhorn: horizontal / lateral
 Alto flute: vertical / half lateral
 Alto horn: vertical / lateral
 Alto keyed bugle: horizontal / lateral
 Alto ophicleide: vertical / lateral
 Alto rothophone: vertical / half lateral
 Alto saxhorn: vertical / lateral
 Alto saxophone: vertical / half lateral
 Alto saxotromba: vertical / lateral
 Alto shawm: vertical / frontal
 Alto trombone: horizontal / lateral
 Amakondere: horizontal / lateral
 Ambassa: vertical / frontal
 Anata: vertical / frontal
 Angel lute: vertical / frontal
 Angklung: vertical / lateral
 Antiphonel: vertical / half lateral
 Anzona: vertical / frontal
 Aporo: vertical / frontal
 Appalchian dulcimer: oblique / half lateral
 Arch harp-lute: vertical / frontal
 Arched harp: oblique / half lateral
 Archicistre: vertical / frontal
 Archlute: vertical / frontal
 Arghul: vertical / frontal
 Armandine: oblique / half lateral
 Arpanetta: vertical / half lateral
 Arpeggione: vertical / frontal
 Arpi Guitare: vertical / frontal
 Arpicordo: oblique / half lateral
 Assa muta chati: oblique / half lateral
 Atamo: vertical / frontal
 Aulos: vertical / frontal
 Autoharp: oblique / half lateral
 Automatic piano: horizontal / frontal
 Azibwazi: horizontal / frontal

B

Bagili: vertical / lateral
 Baglama: vertical / frontal

Bagpipe: vertical / half lateral
 Bajiao gu: vertical / half lateral
 Bajon: vertical / frontal
 Bak: oblique / half lateral
 Balafon: oblique / half lateral
 Balalaika: vertical / frontal
 Ballad horn: horizontal / lateral
 Bamboo pipe: vertical / frontal
 Banam: vertical / frontal
 Bandoneon: oblique / half lateral
 Bandora: oblique / half lateral
 Bandura: vertical / frontal
 Bandurria: vertical / frontal
 Banhu: vertical / frontal
 Banjo: vertical / frontal
 Banjo-mandolin: vertical / frontal
 Banjulele: vertical / frontal
 Bantyu: oblique / half lateral
 Barbiton: vertical / frontal
 Bargumi: horizontal / lateral
 Baritone bugle: horizontal / lateral
 Baritone flugelhorn: horizontal / lateral
 Baritone rothophone: vertical / half lateral
 Baritone saxhorn: vertical / lateral
 Baritone saxophone: vertical / half lateral
 Baritone saxotromba: vertical / lateral
 Baritone sudrophone: vertical / lateral
 Barrel drum: vertical / frontal
 Barrel organ: vertical / half lateral
 Baryton: vertical / frontal
 Basetlya: vertical / frontal
 Basi: vertical / frontal
 Bass bugle: horizontal / lateral
 Bass clarinet: vertical / half lateral
 Bass cornett: vertical / frontal
 Bass crumhorn: vertical / half lateral
 Bass drum: vertical / frontal
 Bass dulcian: vertical / frontal
 Bass flugelhorn: horizontal / lateral
 Bass flute: horizontal / frontal
 Bass guitar: vertical / frontal
 Bass horn: vertical / lateral
 Bass new violin: vertical / frontal
 Bass ophicleide: vertical / lateral
 Bass recorder: vertical / frontal
 Bass rothophone: vertical / half lateral
 Bass saxhorn: vertical / lateral
 Bass saxophone: vertical / half lateral
 Bass shawm: vertical / frontal
 Bass sordun: vertical / frontal
 Bass trombone: horizontal / lateral
 Bass trumpet: vertical / lateral
 Bass tuba: vertical / half lateral
 Basse de musette: vertical / frontal
 Basse de violon: vertical / frontal
 Basset clarinet: vertical / frontal
 Basset horn: vertical / frontal
 Basset recorder: vertical / frontal
 Basson d'amour: vertical / frontal
 Bassonore: vertical / frontal
 Bassoon: vertical / frontal
 Basuri: horizontal / frontal
 Bata: oblique / half lateral
 Battery: horizontal / frontal
 Bawu: horizontal / frontal
 Baya: vertical / frontal
 Baz: vertical / frontal
 Bazombe: vertical / lateral

Beatbox: oblique / half lateral
 Beganna: vertical / frontal
 Bell: vertical / frontal
 Bell harp: vertical / frontal
 Bendir: vertical / half lateral
 Bengala: vertical / frontal
 Berimbau: vertical / half lateral
 Bersag horn: horizontal / lateral
 Bianqing: horizontal / frontal
 Bianzhong: vertical / frontal
 Bilangdao: vertical / frontal
 Bimbonifono: vertical / lateral
 Bin: oblique / half lateral
 Biniou: vertical / half lateral
 Bird instrument: oblique / half lateral
 Bissex: vertical / frontal
 Biwa: vertical / frontal
 Bladder pipe: vertical / half lateral
 Bo: horizontal / lateral
 Board zither: oblique / half lateral
 Boatswain's call: horizontal / lateral
 Bodhran: vertical / half lateral
 Bokongo: vertical / lateral
 Bolange: oblique / half lateral
 Bolon: vertical / frontal
 Bombarde: vertical / frontal
 Bombardon: vertical / lateral
 Bonang: oblique / half lateral
 Bongos: vertical / frontal
 Bouhe: vertical / half lateral
 Bouzouki: vertical / frontal
 Bow: horizontal / lateral
 Bowed zither: oblique / half lateral
 Bowl lyre: vertical / frontal
 Bozhong: vertical / frontal
 Bronze drum: vertical / frontal
 Buccin: horizontal / lateral
 Buccina: vertical / lateral
 Buche des Flandres: oblique / half lateral
 Buchla: horizontal / frontal
 Bucium: horizontal / lateral
 Bugle: horizontal / lateral
 Buhai: vertical / frontal
 Bullroarer: oblique / half lateral
 Bumbass: vertical / frontal
 Buruw: horizontal / lateral
 Buzuq: vertical / frontal

C

Cabinet pianoforte: vertical / frontal
 Cabrette: vertical / half lateral
 Cajon: vertical / half lateral
 Caledonica: vertical / frontal
 Cane flute: vertical / frontal
 Cane oboe: vertical / frontal
 Cane violin: vertical / frontal
 Canh: vertical / frontal
 Cap ke: vertical / frontal
 Carillon: vertical / frontal
 Carnyx: vertical / half lateral
 Castanets: horizontal / lateral
 Cavaquinho: vertical / frontal
 Cecilium: vertical / frontal
 Celesta: horizontal / frontal
 Celestina: vertical / frontal
 Cencerro: vertical / frontal
 Ceterone: vertical / frontal

Chabara: horizontal / lateral
 Chalmei: vertical / half lateral
 Chalumeau: vertical / frontal
 Chalumeau double: vertical / frontal
 Chamber organ: vertical / frontal
 Changgo: vertical / frontal
 Chap: horizontal / lateral
 Charango: vertical / frontal
 Chekker: horizontal / frontal
 Chi: horizontal / frontal
 Chiboni: vertical / half lateral
 Chime bar: horizontal / frontal
 Ching: vertical / frontal
 Chipendani: vertical / lateral
 Chirawatta: vertical / frontal
 Chirimia: vertical / frontal
 Chitarra battente: vertical / frontal
 Chitende: vertical / lateral
 Chizeze: vertical / frontal
 Chogur: vertical / frontal
 Choke cymbal: horizontal / lateral
 Chromatic harp: vertical / half lateral
 Chum choe: horizontal / lateral
 Chwago: vertical / frontal
 Cikara: vertical / frontal
 Cimbasso: vertical / lateral
 Citole: vertical / frontal
 Cittern: vertical / frontal
 Clappers: oblique / half lateral
 Claquebois: horizontal / frontal
 Claquoir: vertical / half lateral
 Clarinet: vertical / frontal
 Clarinette d'amour: vertical / frontal
 Clarsach: vertical / half lateral
 Clavecin brisé: oblique / half lateral
 Clavecin oculaire: oblique / half lateral
 Claves: oblique / half lateral
 Clavichord: horizontal / frontal
 Clavicor: horizontal / lateral
 Clavicytherium: vertical / frontal
 Claviharpe: vertical / frontal
 Clavi-lame: horizontal / frontal
 Clavioline: horizontal / frontal
 Claviorgan: vertical / frontal
 Coach horn: horizontal / lateral
 Cobza: vertical / frontal
 Colascione: vertical / frontal
 Componium: vertical / frontal
 Concertina: oblique / half lateral
 Conch-shell trumpet: oblique / half lateral
 Cong: vertical / frontal
 Congas: vertical / frontal
 Conical drum: vertical / frontal
 Console piano: horizontal / frontal
 Contrabass bugle: horizontal / lateral
 Contrabass ophicleid: vertical / lateral
 Contrabass saxhorn: vertical / lateral
 Contrabass sordun: vertical / frontal
 Contrabass tuba: vertical / lateral
 Contralto saxhorn: vertical / lateral
 Contrebasse à anche: vertical / lateral
 Cornamusa: vertical / frontal
 Cornet: horizontal / lateral
 Cornett: vertical / frontal
 Cornettino: vertical / frontal
 Cornopean: horizontal / lateral
 Cornophone: vertical / lateral
 Cornu: vertical / lateral

Courtaut: vertical / frontal
 Cowbells: vertical / frontal
 Crash cymbal: horizontal / lateral
 Crotal: horizontal / frontal
 Crumhorn: vertical / half lateral
 Crwth: vertical / frontal
 Crystal Baschet: oblique / half lateral
 Cuckoo (in recorder-like shape): vertical / frontal
 Cumbus: vertical / frontal
 Cura kaval: vertical / frontal
 Curtal: vertical / frontal
 Cylindrical drum: vertical / frontal
 Cymbals: horizontal / lateral
 Cymbalum: oblique / half lateral

D

Daf: vertical / half lateral
 Dagù: vertical / frontal
 Daire: vertical / half lateral
 Daluo: vertical / frontal
 Damaha: vertical / frontal
 Damaru: oblique / half lateral
 Damau: vertical / frontal
 Dan buau: oblique / half lateral
 Dan cong chien: vertical / frontal
 Dan day: vertical / frontal
 Dan gao: vertical / frontal
 Dan moi: horizontal / dorsal
 Dan nguyet: vertical / frontal
 Dan nhi: vertical / frontal
 Dan tam: vertical / frontal
 Dan tinh: vertical / frontal
 Dan tranh: oblique / half lateral
 Dan t'run: oblique / half lateral
 Dan ty ba: vertical / frontal
 Dan xen: vertical / frontal
 Daph: vertical / half lateral
 Darabukka: vertical / frontal
 Davul: oblique / half lateral
 Decacord: vertical / frontal
 Def: vertical / half lateral
 Descant recorder: vertical / frontal
 Dessus de musette: vertical / frontal
 Dhak: oblique / half lateral
 Dhimay: oblique / half lateral
 Dhol: oblique / half lateral
 Dholak: oblique / half lateral
 Di: horizontal / frontal
 Diatonic accordion: oblique / half lateral
 Diatonic harp: vertical / half lateral
 Dibu: vertical / frontal
 Dibu dimbwa: vertical / frontal
 Dibu dimbwa: vertical / frontal
 Dibu dinganga: vertical / frontal
 Didjeridu: vertical / frontal
 Digital harpsichord: horizontal / frontal
 Digital pianoforte: horizontal / frontal
 Dilruba: vertical / frontal
 Dinh nam: vertical / lateral
 Diple: vertical / frontal
 Dital harp: vertical / frontal
 Djaouak: vertical / frontal
 Djembe: vertical / frontal
 Djouak: vertical / frontal
 Dobatsu: horizontal / lateral
 Dobro: vertical / frontal
 Dolzaina: vertical / frontal
 Dombra: vertical / frontal

Domo: oblique / half lateral
 Dongxiao: vertical / frontal
 Donno: oblique / half lateral
 Doppioni: vertical / frontal
 Dora: vertical / frontal
 Dotara: vertical / frontal
 Double bass: vertical / frontal
 Double bassoon: vertical / frontal
 Double clarinet: vertical / frontal
 Double flageolet: vertical / frontal
 Double flute: vertical / frontal
 Double horn: horizontal / lateral
 Double psaltery: horizontal / frontal
 Double zither: oblique / half lateral
 Dril-bu: vertical / frontal
 Drum, played vertically: vertical / frontal
 Duct flute: vertical / frontal
 Duduk: vertical / frontal
 Dudy: vertical / half lateral
 Duff: vertical / half lateral
 Dulali: vertical / frontal
 Dulcian: vertical / frontal
 Dulcimer: oblique / half lateral
 Dumbelek: vertical / frontal
 Dung-chen: horizontal / lateral
 Dung-dkar: oblique / half lateral
 Duplex: horizontal / lateral
 Dutar: vertical / frontal
 Dvojnice: vertical / frontal

E

Echo cornet: horizontal / lateral
 Ekatantri vina: vertical / frontal
 Ekinimba: vertical / frontal
 Ekole: oblique / half lateral
 Ekonting: vertical / frontal
 Ektara: vertical / frontal
 Electric bass guitar: vertical / frontal
 Electric guitar: vertical / frontal
 Electric harpsichord: horizontal / frontal
 Electric organ: horizontal / frontal
 Electric piano: horizontal / frontal
 Electric violin: vertical / frontal
 Electronic organ: horizontal / frontal
 Embilta: vertical / frontal
 Embuchi: horizontal / lateral
 Enanga: oblique / half lateral
 End blown flute: vertical / frontal
 Endingidi: vertical / frontal
 Engalabi: vertical / frontal
 English guitar: vertical / frontal
 English horn: vertical / frontal
 Enkwanzi: vertical / frontal
 Ennanga: oblique / half lateral
 Epinette des Vosges: oblique / half lateral
 Eraqyeh: vertical / frontal
 Erhu: vertical / frontal
 Erxian: vertical / frontal
 Esraj: vertical / frontal
 Eunuch flute: vertical / frontal
 Euphonicon: horizontal / frontal
 Euphonium: vertical / lateral
 Experimental violin: vertical / frontal

F

Fairground organ: vertical / frontal
 Faluo: oblique / half lateral

Fanfare trumpet: horizontal / lateral
Fenghuangqin: oblique / half lateral
Fiddle: vertical / frontal
Fife: horizontal / frontal
Flageolet: vertical / frontal
Flexatone: oblique / half lateral
Flicorno soprano: horizontal / lateral
Flicorno, played upright: vertical / lateral
Flugelhorn: horizontal / lateral
Fluier: vertical / frontal
Flute (transverse): horizontal / frontal
Flûte à bec colonne: vertical / frontal
Flûte d'accord: vertical / frontal
Flûte d'amour: horizontal / frontal
Flûte harmonique: vertical / frontal
Flûte Vermeulen: vertical / frontal
Flûtet: vertical / frontal
Fodrahi: vertical / frontal
Fonic: vertical / frontal
Frame drum: vertical / half lateral
Friction drum: vertical / frontal
Fula: vertical / frontal
Fue: horizontal / frontal
Fujara: vertical / frontal
Furulya: vertical / frontal

G

Ga: vertical / frontal
Gadulka: vertical / frontal
Gaita: vertical / half lateral
Gajde: vertical / half lateral
Gakudaiko: vertical / frontal
Galoubet: vertical / frontal
Gambang: oblique / half lateral
Gambus: vertical / frontal
Gamelan: horizontal / frontal
Ganga: vertical / half lateral
Garawung: vertical / frontal
Gardon: vertical / frontal
Gasba: vertical / frontal
Gaza: vertical / frontal
Gekkin: vertical / frontal
Geling: vertical / frontal
Gemshorn: vertical / half lateral
Gendang: oblique / half lateral
Gender: oblique / half lateral
Ghanta: vertical / frontal
Ghayta: vertical / frontal
Gheteh: vertical / frontal
Ghichak: vertical / frontal
Ghugha: vertical / frontal
Gibeemba: vertical / frontal
Giorgi flute: vertical / frontal
Giraffe piano: vertical / frontal
Gittern: vertical / frontal
Glass glockenspiel: horizontal / frontal
Glasschord: horizontal / frontal
Glaw ng yao: vertical / frontal
Glockenspiel: horizontal / frontal
Gmebaphone: horizontal / frontal
Gmebogosse: horizontal / frontal
Go: vertical / frontal
Goblet drum: vertical / frontal
Gong: vertical / frontal
Gong ageng: vertical / frontal
Gopiyatra: vertical / frontal
Gora: vertical / lateral

Gralla: vertical / frontal
Grand fortepiano: oblique / half lateral
Great bass clarinet: vertical / half lateral
Great bass shawm: vertical / frontal
Grossbass recorder: vertical / frontal
Guan: vertical / frontal
Guinbri: vertical / frontal
Guiro: oblique / half lateral
Guitar: vertical / frontal
Guitarron: vertical / frontal
Gusle: vertical / frontal

H

Hajhuj: vertical / frontal
Handbell: vertical / frontal
Hansho: vertical / frontal
Hardanger fiddle: vertical / frontal
Harmonica: oblique / half lateral
Harmonichord: oblique / half lateral
Harmoni-cor: horizontal / lateral
Harmonieflute: vertical / frontal
Harmonium: vertical / frontal
Harp: vertical / half lateral
Harp guitar: vertical / frontal
Harp lute: vertical / frontal
Harp lyre: vertical / frontal
Harpsichord: oblique / half lateral
Harpsichord-piano: oblique / half lateral
Hautbois de Poitou: vertical / frontal
Hawaiian guitar: vertical / frontal
Heckelphone: vertical / frontal
Helicon: horizontal / lateral
Heliophon: horizontal / frontal
Hichiriki: vertical / frontal
High treble shawm: vertical / frontal
High treble viol: vertical / frontal
Hit-hat mounted jingles: vertical / frontal
Hityogiri: vertical / frontal
Hnè: vertical / frontal
Hoddu: vertical / frontal
Hommel: oblique / half lateral
Horagai: oblique / half lateral
Horn: horizontal / lateral
Hourglass drum: vertical / frontal
Huagu: vertical / frontal
Huaigu: vertical / half lateral
Huangnigu: vertical / frontal
Huchet: horizontal / lateral
Hudko: vertical / frontal
Hunting horn: horizontal / lateral
Huqin: vertical / frontal
Hurdy-gurdy: oblique / half lateral
Huruk: vertical / frontal

I

Ifambu: horizontal / frontal
Ikembe: oblique / half lateral
Ilimba: oblique / half lateral
Imzad: vertical / frontal
Inanga: oblique / half lateral
Insimbi: oblique / half lateral
Inventionshorn: horizontal / lateral
Irish harp: vertical / half lateral
Irregular violin: vertical / frontal

J

Jaltarang: vertical / frontal
Jarana: vertical / frontal
Jengglong: vertical / frontal
Jew's harp: horizontal / dorsal
Jinghu: vertical / frontal
Jingle: oblique / half lateral

K

Ka: vertical / frontal
Kabaro: vertical / frontal
Kaburu: vertical / frontal
Kacapi: oblique / half lateral
Kacchapi vina: vertical / frontal
Kagurabue: horizontal / frontal
Kahala: horizontal / lateral
Kakko: oblique / half lateral
Kalangu: vertical / frontal
Kalimba: oblique / half lateral
Kamaica: vertical / frontal
Kamanche: vertical / frontal
Kambre: vertical / frontal
Kani: vertical / frontal
Kanjira: vertical / half lateral
Kantele: oblique / half lateral
Kara: vertical / frontal
Kara: vertical / frontal
Karna: horizontal / lateral
Kartal: horizontal / lateral
Kasar: vertical / frontal
Kasat: horizontal / lateral
Kasso: vertical / frontal
Kaval: vertical / frontal
Kayagum: oblique / half lateral
Kazoo: horizontal / lateral
Kementses: vertical / frontal
Kempul: vertical / frontal
Ken: vertical / frontal
Ken bau: vertical / frontal
Ken be: vertical / lateral
Ken doi: vertical / frontal
Ken meo: horizontal / lateral
Ken mot: vertical / frontal
Kena: vertical / frontal
Kendang: oblique / half lateral
Kenong: vertical / frontal
Kenyen: oblique / half lateral
Kettledrum: vertical / frontal
Ketuk: vertical / frontal
Keyed bugle: horizontal / lateral
Keyed trumpet: horizontal / lateral
Khaen: vertical / lateral
Khalam: vertical / frontal
Khanjari: vertical / half lateral
Khartal: horizontal / lateral
Khloi: vertical / frontal
Khloy: vertical / frontal
Khol: oblique / half lateral
Khong mong: vertical / frontal
Khuur: vertical / frontal
Kiangl: vertical / frontal
Kidi: vertical / frontal
Kili: vertical / frontal
Kin: oblique / half lateral
Kinanda: oblique / half lateral
Kinnari vina: vertical / frontal
Kiringi: oblique / half lateral

Kisaanj: oblique / half lateral
Kisfejes citera: oblique / half lateral
Kissar: vertical / frontal
Kit: vertical / frontal
Kkwaenggwari: vertical / frontal
Kokyu: vertical / frontal
Komabue: horizontal / frontal
Komun'go: horizontal / frontal
Komuz: vertical / frontal
Kopuz: vertical / frontal
Kora: vertical / frontal
Kori: oblique / half lateral
Koto: oblique / half lateral
Kotsuzumi: vertical / frontal
Krajappi: vertical / frontal
Krar: vertical / frontal
Kudu: vertical / frontal
Kundi: oblique / half lateral
Kundye: vertical / frontal
Kyi-waing: vertical / frontal
Kyi-zi: vertical / frontal

L

Laba: horizontal / lateral
Lamellaphone: oblique / half lateral
Launeddas: vertical / frontal
Legwegwe: vertical / frontal
Ligombo: oblique / half lateral
Likembe: oblique / half lateral
Limonaire: vertical / frontal
Lira: vertical / frontal
Lira da braccio: vertical / frontal
Lira organizzata: oblique / half lateral
Lirone: vertical / frontal
Lithophone: vertical / frontal
Lituus: vertical / lateral
Longdi: horizontal / frontal
Lu: vertical / frontal
Ludaya: horizontal / frontal
Lukombe: oblique / half lateral
Luo: vertical / frontal
Luogu: vertical / half lateral
Lur: vertical / lateral
Lutar: vertical / frontal
Lute: vertical / frontal
Lute-guitar: vertical / frontal
Lute-harpsichord: oblique / half lateral
Lutheal: oblique / half lateral
Lyra: vertical / frontal
Lyra glockenspiel: vertical / frontal
Lyre: vertical / frontal
Lyre guitar: vertical / frontal
Lyre piano: vertical / frontal
Lyre-bandurria: vertical / frontal

M

Machete: vertical / frontal
Madaku: oblique / half lateral
Madimba: oblique / half lateral
Madiumba: oblique / half lateral
Malakat: horizontal / lateral
Mamokhorong: vertical / frontal
Mandole: vertical / frontal
Mandolin: vertical / frontal
Mandolncelle: vertical / frontal
Mandolone: vertical / frontal
Mandore: vertical / frontal

Mandore: vertical / frontal
Manjira: horizontal / frontal
Manza: horizontal / lateral
Maracas: vertical / frontal
Marimba: oblique / half lateral
Marimba: horizontal / frontal
Masenqo: vertical / frontal
Masul: vertical / frontal
Mattauphone: oblique / half lateral
Mazhar: vertical / half lateral
Mbejn: vertical / frontal
Mbila: oblique / half lateral
Mbira: oblique / half lateral
Mbombu: vertical / frontal
Mechanical clock: vertical / frontal
Mechanical harpsichord: oblique / half lateral
Mechanical organ: vertical / frontal
Mechanical pianoforte: oblique / half lateral
Mellophone: horizontal / lateral
Mellotron: horizontal / frontal
Melodeon: oblique / half lateral
Melodica: vertical / frontal
Melophone: oblique / half lateral
Mendzan: oblique / half lateral
Metallophone: oblique / half lateral
Midi instrument: horizontal / frontal
Mi-gyaung: oblique / half lateral
Mijwiz: vertical / frontal
Milanese mandolin: vertical / frontal
Mirliton: oblique / half lateral
Mishiba: vertical / frontal
Mizmar: vertical / frontal
Modeku: oblique / half lateral
Mokita: vertical / frontal
Mokkin: oblique / half lateral
Mokugyo: vertical / frontal
Monochord: oblique / half lateral
Mouth bow: vertical / lateral
Mouth organ: vertical / lateral
Mrdanga: oblique / half lateral
Mukhavina: vertical / frontal
Mukupiela: vertical / frontal
Murali: horizontal / frontal
Murcang: horizontal / dorsal
Musette: vertical / frontal
Musette: vertical / half lateral
Musical bow: vertical / lateral
Musical bowl: vertical / frontal
Musical box: vertical / half lateral
Musical glasses: horizontal / frontal
Musical saw: vertical / lateral
Mute cornett: vertical / frontal
Muyu: oblique / half lateral
Mvet: horizontal / lateral
Mwanzi: vertical / frontal
Myonga: oblique / half lateral

N

Nafir: horizontal / lateral
Nagara: vertical / frontal
Nagasvaram: 9.3.5 vertical / frontal
Nail violin: horizontal / frontal
Nakers: vertical / frontal
Nangara: vertical / frontal
Naqqara: vertical / frontal
Narsiga: horizontal / lateral
Natural cornet: horizontal / lateral

Natural trumpet: horizontal / lateral
Naturhorn: horizontal / lateral
Nay: vertical / frontal
Ndere: vertical / frontal
Ndingidi: vertical / frontal
Ndjembo: oblique / half lateral
Ndongo: vertical / frontal
Neapolitan mandolin: vertical / frontal
Nedomu: oblique / half lateral
Nembongo: horizontal / lateral
Neocor: vertical / lateral
Ney-e anban: vertical / half lateral
Ngoma: vertical / frontal
Ngombi: oblique / half lateral
Ngonge: vertical / frontal
Nguru: vertical / frontal
Nkoko: vertical / frontal
Nkoni: vertical / frontal
Nokan: horizontal / frontal
Nonga: vertical / frontal
Northumbrian pipe: vertical / half lateral
Nose flute: horizontal / frontal
Notched flute: vertical / frontal
Nupur: vertical / frontal
Nyastaranga: vertical / frontal
Nyckelharpa: vertical / frontal
Nyo: vertical / frontal

O

Oboe: vertical / frontal
Oboe da caccia: vertical / half lateral
Oboe d'amore: vertical / frontal
Ocarina: horizontal / lateral
Octavin: vertical / half lateral
Octobass: vertical / frontal
Odaiko: oblique / half lateral
Oliphant: horizontal / lateral
Ombi: oblique / half lateral
Omnitonic horn: horizontal / lateral
Ondes Martenot: horizontal / frontal
Ondioline: horizontal / frontal
One-string fiddle: vertical / frontal
Ophicleide: vertical / lateral
Ophimonocleide: vertical / lateral
Orchestrion: vertical / frontal
Organ: vertical / frontal
Organistrum: oblique / half lateral
Orpharion: vertical / frontal
Orpharion: vertical / frontal
Orpheon: oblique / half lateral
Orphica: horizontal / frontal
Otsuzumi: oblique / half lateral
O-zi: vertical / frontal

P

Paiban: vertical / frontal
Paixiao: vertical / frontal
Pakhavaj: oblique / half lateral
Pandeiro: vertical / half lateral
Panduri: vertical / frontal
Pangi: horizontal / lateral
Panpipe: vertical / frontal
Para: oblique / half lateral
Penny whistle: vertical / frontal
Penorcon: vertical / frontal
Percussion stick: horizontal / lateral
Percussion tubes: vertical / frontal

Phagotus: vertical / frontal
 Phorminx: vertical / frontal
 Pi: vertical / frontal
 Pi phat: horizontal / frontal
 Pianet: horizontal / frontal
 Pianino: vertical / frontal
 Piano à pédalier: oblique / half lateral
 Piano organise: vertical / frontal
 Piano table: horizontal / frontal
 Pianoforte: oblique / half lateral
 Piano-guitar: vertical / frontal
 Piano-harp: vertical / frontal
 Pianola: horizontal / frontal
 Picco pipe: vertical / frontal
 Piccolo flute: horizontal / frontal
 Pifano: horizontal / frontal
 Piffaro: vertical / frontal
 Pinak: vertical / lateral
 Pipa: vertical / frontal
 P'iri: vertical / frontal
 Pitu: vertical / frontal
 Piva: vertical / half lateral
 Player piano: horizontal / frontal
 Pluriarc: oblique / half lateral
 Poikilorgue: horizontal / frontal
 Polyphon: oblique / half lateral
 Popgun: oblique / half lateral
 Portable harpsichord: oblique / half lateral
 Portative organ: vertical / frontal
 Portuguese guitar: vertical / frontal
 Positive organ: vertical / frontal
 Post horn: horizontal / lateral
 Psaltery, asymmetrical: oblique / half lateral
 Psaltery, symmetrical: horizontal / frontal
 Puk: vertical / half lateral
 Pungi: vertical / frontal
 Pu-ti-pu: vertical / frontal
 Puutoorino: vertical / frontal
 Pyramid pianoforte: vertical / frontal
 Pyrophone: vertical / frontal

Q

Qanun: oblique / half lateral
 Qarqab: horizontal / frontal
 Qasaba: vertical / frontal
 Qin: oblique / half lateral
 Qing: vertical / frontal
 Qobuz: vertical / frontal
 Qoshnai: vertical / frontal
 Quinticlave: vertical / lateral
 Quinton: vertical / frontal
 Quwaytara: vertical / frontal

R

Rabab: vertical / frontal
 Rababa: vertical / frontal
 Rabel: vertical / frontal
 Racket: vertical / frontal
 Raft zither: horizontal / frontal
 Rammana: vertical / half lateral
 Ranat: oblique / half lateral
 Ratchet: horizontal / lateral
 Rattle with handle: vertical / frontal
 Rattle without handle: oblique / half lateral
 Ravanhattha: vertical / frontal
 Rebec: vertical / frontal
 Recorder: vertical / frontal

Reed horn: horizontal / lateral
 Reed organ: horizontal / frontal
 Reedpipe: vertical / frontal
 Regal: oblique / half lateral
 Rgya-gling: vertical / frontal
 Riqq: vertical / half lateral
 Rkang-gling: horizontal / lateral
 Rnga: vertical / half lateral
 Rol-mo: horizontal / lateral
 Rondador: vertical / frontal
 Rothophone: vertical / half lateral
 Rozhok: vertical / frontal
 Ruan: vertical / frontal
 Russian bassoon: vertical / frontal
 Ruudga: vertical / frontal
 Ryuteki: horizontal / frontal

S

Sackbut: horizontal / frontal
 Sackbut: horizontal / lateral
 Saenghwang: vertical / lateral
 Sahnai: vertical / frontal
 Sajat: horizontal / lateral
 Sakara: vertical / half lateral
 Salpinx: vertical / frontal
 Saluang: vertical / frontal
 Sampler: horizontal / frontal
 Sanasel: vertical / frontal
 Sanfona: oblique / half lateral
 Sanj: horizontal / frontal
 Sankh: oblique / half lateral
 Sanshin: vertical / frontal
 Santur: oblique / half lateral
 Sanxian: vertical / frontal
 Sanza: oblique / half lateral
 Sao: horizontal / frontal
 Saradiya vina: vertical / frontal
 Sarangi: vertical / frontal
 Sarasvati vina: vertical / frontal
 Sarinda: vertical / frontal
 Sarod: vertical / frontal
 Saron barung: oblique / half lateral
 Saron demung: oblique / half lateral
 Saron panerus: oblique / half lateral
 Sarong: vertical / frontal
 Sarrusphone: vertical / lateral
 Sarunai: vertical / frontal
 Satara: vertical / frontal
 Saung-gauk: oblique / half lateral
 Saxhorn: vertical / lateral
 Saxophone: vertical / half lateral
 Saxotromba: vertical / lateral
 Saz: vertical / frontal
 Sbub-chal: horizontal / lateral
 Schreyerpfeife: horizontal / frontal
 Scraped stick: vertical / frontal
 Scraped vessel: horizontal / lateral
 Scraper: vertical / lateral
 Se: oblique / half lateral
 Sekere: vertical / frontal
 Seljefloyte: horizontal / frontal
 Serpent: vertical / frontal
 Serpent Forveille: vertical / frontal
 Serpenticleide: vertical / frontal
 Sesheh: vertical / frontal
 Setar: vertical / frontal
 Sgar dham: vertical / frontal
 Sgra-snyan: vertical / frontal

Shabbaba: vertical / frontal
Shagu: vertical / frontal
Shakuhachi: vertical / frontal
Shamisen: vertical / frontal
Shawn: vertical / frontal
Sheng: vertical / lateral
Sheypur: horizontal / lateral
Shilla-shilla: vertical / frontal
Shinobue: horizontal / frontal
Shkashek: horizontal / frontal
Sho: vertical / lateral
Shofar: horizontal / lateral
Shoko: vertical / frontal
Shuangqing: vertical / frontal
Shuiniao: vertical / frontal
Side drum: vertical / frontal
Sigu niyu: vertical / frontal
Sihu: vertical / frontal
Sil-snyan: horizontal / lateral
Simbing: oblique / half lateral
Sinh tien: oblique / half lateral
Sistrum: vertical / frontal
Sitar: vertical / frontal
Sitari: horizontal / frontal
Sixian: vertical / frontal
Sizzle cymbal: horizontal / lateral
Sleigh bell, mounted: vertical / frontal
Slentem: oblique / half lateral
Slento: oblique / half lateral
Slide flute: horizontal / frontal
Slide trumpet: horizontal / lateral
Slit drum: vertical / frontal
Small pipe: vertical / half lateral
So duang: vertical / frontal
So sam sai: vertical / frontal
So u: vertical / frontal
Sock cymbal: vertical / frontal
Sodina: vertical / frontal
Sogo: vertical / frontal
Solovox: horizontal / frontal
Sonorophone: vertical / lateral
Sopilka: vertical / frontal
Sopranino recorder: vertical / frontal
Soprano bugle: horizontal / lateral
Soprano crumhorn: vertical / half lateral
Soprano flugelhorn: horizontal / lateral
Soprano saxhorn: vertical / lateral
Soprano saxophone: vertical / frontal
Soprano trombone: horizontal / lateral
Sordun: vertical / frontal
Sousaphone: vertical / frontal
Spinnet: oblique / half lateral
Square pianoforte: horizontal / frontal
Sralai: vertical / frontal
Sruti-box: oblique / half lateral
Steel drum: vertical / frontal
Still shawm: vertical / frontal
Straight cornett: vertical / frontal
String drum: vertical / frontal
Sudrophone: vertical / lateral
Suffara: vertical / frontal
Suling: vertical / frontal
Sultana: vertical / frontal
Suona: vertical / frontal
Surbahar: vertical / frontal
Surmandal: oblique / half lateral
Surnay: vertical / frontal
Surune: vertical / frontal

Suzu: vertical / frontal
Svirel: vertical / frontal
Swanee whistle: vertical / frontal
Swanee-sax: vertical / half lateral
Swanga: vertical / frontal
Symphonium: oblique / half lateral
Synclavier: horizontal / frontal
Synthesizer: horizontal / frontal
Syrinx: vertical / frontal

T

Tabl: oblique / half lateral
Tabla: vertical / frontal
Tablak: vertical / frontal
Taegum: horizontal / frontal
Taga: vertical / frontal
Taiko: vertical / frontal
Talempong: horizontal / frontal
Tam am la: vertical / frontal
Tama: vertical / frontal
Tambora: oblique / half lateral
Tambourin de Provence: vertical / frontal
Tambourine: vertical / half lateral
Tambura: vertical / frontal
Tamtam: vertical / frontal
Tanbur: vertical / frontal
Tangent piano: oblique / half lateral
Tanggu: vertical / frontal
Taogu: oblique / half lateral
Tapan: oblique / half lateral
Tar: vertical / frontal
Tar: vertical / half lateral
Tarogato: vertical / frontal
Tarol: horizontal / frontal
Tarompet: horizontal / lateral
Tasa: vertical / frontal
Tbel: oblique / half lateral
Tebashul: vertical / frontal
Telharmonium: horizontal / frontal
Temple block: oblique / half lateral
Tenor bugle: horizontal / lateral
Tenor cor: horizontal / lateral
Tenor crumhorn: vertical / half lateral
Tenor drum: vertical / frontal
Tenor dulcian: vertical / frontal
Tenor new violin: vertical / frontal
Tenor oboe: vertical / frontal
Tenor recorder: vertical / frontal
Tenor rothophone: vertical / half lateral
Tenor saxophone: vertical / half lateral
Tenor shawm: vertical / frontal
Tenor trombone: horizontal / lateral
Tenor viol: vertical / frontal
Tenor violin: vertical / frontal
Tenora: vertical / frontal
Tenoroon: vertical / frontal
Thali: horizontal / frontal
Thanh la: vertical / frontal
Theorbo: vertical / frontal
Theremin: vertical / frontal
Third flute: horizontal / frontal
Thon: vertical / frontal
Tibia: vertical / frontal
Tikara: vertical / frontal
Tilinca: vertical / frontal
Timbrh: oblique / half lateral
Timila: vertical / frontal

Ting-ting-shags: horizontal / lateral
Tobol: vertical / frontal
Tomba: vertical / frontal
Tong: horizontal / dorsal
Transverse flute: horizontal / frontal
Tråskofiol: vertical / frontal
Trautonium: vertical / frontal
Trebel recorder: vertical / frontal
Treble cornett: vertical / frontal
Treble shawm: vertical / frontal
Treble viol: vertical / frontal
Triangle: vertical / frontal
Triple clarinet: vertical / frontal
Tritonikon: vertical / lateral
Trombita: horizontal / lateral
Trombone: horizontal / lateral
Trompe de Lorraine: horizontal / lateral
Trong com: vertical / frontal
Trumpet: horizontal / lateral
Trumpet marine: vertical / frontal
Tsimbi: oblique / half lateral
Tsuridaiko: vertical / frontal
Tuba: vertical / lateral
Tuba curva: vertical / lateral
Tuba-Dupré: vertical / frontal
Tubaphone: vertical / frontal
Tube zither: horizontal / lateral
Tubilattes: vertical / frontal
Tubular bell: vertical / frontal
Tulum: vertical / half lateral
Tumba: vertical / frontal
Tumbadora: vertical / frontal
Tuohitorvi: horizontal / lateral
Turhi: horizontal / lateral
Turi: horizontal / lateral
Turkish crescent: vertical / lateral
Txanbela: vertical / frontal
Txirula: vertical / frontal
Txistu: vertical / frontal
Tyepondo-pinge: vertical / frontal
Tympanon: oblique / half lateral

U

Ud: vertical / frontal
Uganda drum: vertical / frontal
Ugubhu: vertical / lateral
Ugubhu: vertical / lateral
Ukulele: vertical / frontal
Umakhweyana: vertical / lateral
Union pipe: vertical / half lateral
UPIC: horizontal / frontal
Upright pianoforte: vertical / frontal

V

Valiha: horizontal / lateral
Valimba: oblique / half lateral
Valve horn: horizontal / lateral
Valve trumpet: vertical / lateral
Vamsa: horizontal / frontal
Variable tension hourglass drum: oblique / half lateral
Veuze: vertical / half lateral
Vibraphone: oblique / half lateral
Vihuela: vertical / frontal
Vina: oblique / half lateral
Viol: vertical / frontal

Viol double bass: vertical / frontal
Viola: vertical / frontal
Viola alta: vertical / frontal
Viola arpa: vertical / half lateral
Viola bastarda: vertical / frontal
Viola da gamba: vertical / frontal
Viola d'amore: vertical / frontal
Viola pomposa: vertical / frontal
Violao: vertical / frontal
Violin: vertical / frontal
Violin d'amore: vertical / frontal
Violin Midi: vertical / frontal
Violoncello: vertical / frontal
Violone: vertical / frontal
Virginal: horizontal / frontal

W

Wagner tuba: vertical / lateral
Wagon: horizontal / frontal
Wambee: oblique / half lateral
Waniguchi: vertical / frontal
Wankara: vertical / frontal
Wasamba: vertical / frontal
Washboard: vertical / frontal
Washint: vertical / frontal
Water organ: vertical / frontal
Whip: oblique / half lateral
Whistle: vertical / frontal
Woodblock: oblique / half lateral

X

Xiao: vertical / frontal
Xirularru: vertical / half lateral
Xizambi: vertical / lateral
Xun: vertical / frontal
Xylophone: oblique / half lateral
Xylophone with approx. equal length of bars: horizontal / lateral

Y

Yanggum: oblique / half lateral
Yangqin: horizontal / frontal
Yaogu: vertical / frontal
Yaoling: vertical / frontal
Yaqin: oblique / half lateral
Yehu: vertical / frontal
Yotsudake: horizontal / lateral
Yu: oblique / half lateral
Yueqin: vertical / frontal
Yunluo: vertical / frontal

Z

Zampogna: vertical / half lateral
Zamr: vertical / frontal
Zarb: vertical / frontal
Zeze: horizontal / frontal
Zhangu: vertical / frontal
Zheng: oblique / half lateral
Zhong: vertical / frontal
Zhonghu: vertical / frontal
Zither: oblique / half lateral
Zuffolo: vertical / frontal
Zukra: vertical / half lateral
Zummara: vertical / frontal
Zurna: vertical / frontal

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